GRE JUN 2013

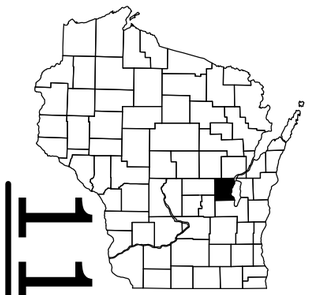
PROJECT ID: 1120-09-76
WITH: N/A

COUNTY: WINNEBAGO

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 272



N

DESIGN DESIGNATION

			CTH Y
A.D.T.	2004	=	1,600
A.D.T.	2035	=	2,700
D.H.V.		=	290
D.D.		=	50-50
T.		=	N/A
DESIGN SPEED		=	50 MPH
ESALS		=	N/A

CONVENTIONAL SYMBOLS

PLAN
- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- RETAINING WALL
- WOODED OR SHRUB AREA
- DITCH FLOW LINE

PROFILE
- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES
- OVERHEAD COMMUNICATIONS (C-OH)
- UNDERGROUND COMMUNICATIONS (C-UG)
- OVERHEAD ELECTRIC (OH)
- UNDERGROUND ELECTRIC (E)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

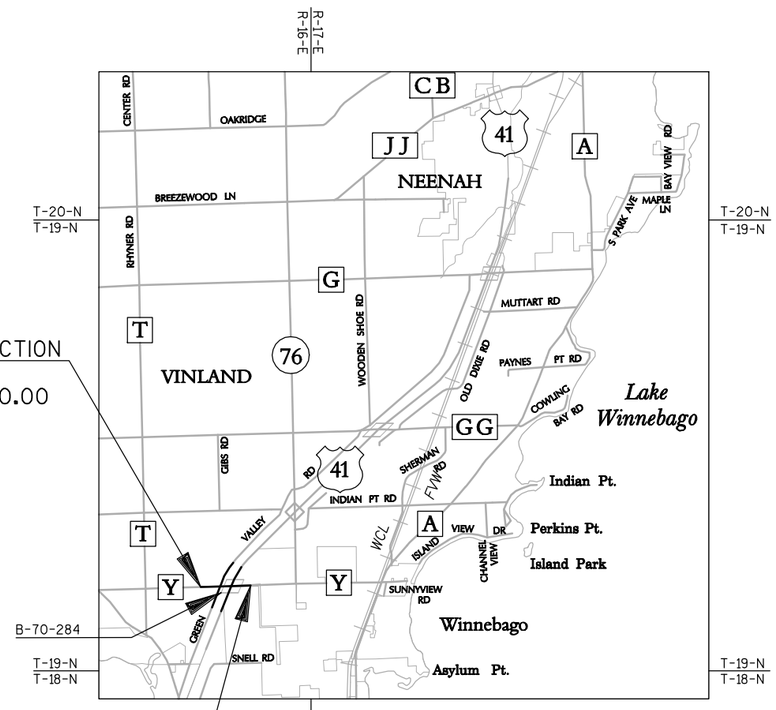
PLAN OF PROPOSED IMPROVEMENT

STH 26 - BREEZEWOOD LANE

USH 45 - BREEZEWOOD LANE
CTH Y
WINNEBAGO COUNTY

CTH Y OVERPASS B-70-284

STATE PROJECT NUMBER
1120-09-76



BEGIN CONSTRUCTION
I.D. 1120-09-76
STA 10'CTHY'+50.00
Y = 496973.00
X = 786846.72

END CONSTRUCTION
I.D. 1120-09-76
STA 31'CTHY'+50.00
Y = 496984.87
X = 787846.68

LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.40 MILE

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, (WCCS), WINNEBAGO COUNTY HORIZONTAL DATUM NAD 83 (91). ALL DISTANCES ARE GROUND. ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO VERTICAL DATUM 1929 ADJUSTMENT(NGVD 29).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1120-09-76	WISC 2013351	1

ORIGINAL PLANS PREPARED BY
GREMMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
Stevens Point · Fond du Lac

WISCONSIN
BENJAMIN L. OITZINGER
E-36149
NEENAH, WI
PROFESSIONAL ENGINEER

4/12/2013 (Date)
(Signature)

ORIGINAL PLANS PREPARED BY
CH2MHILL
MILWAUKEE, WISCONSIN

WISCONSIN
KRISTIN C. ATKINS
41768
MENDOTA HEIGHTS, MN
PROFESSIONAL ENGINEER

4/12/13 (Date)
(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WisDOT NER
Designer	CH2M HILL/GREMMER
Project Manager	TOM BUCHHOLZ
Regional Examiner	MARC ROESLER
Regional Supervisor	CHAD DEGRAVE
C.O. Examiner	

APPROVED FOR DISTRICT OFFICE
DATE: 4/12/13 (Signature)

E

FILE NAME : ch_0976_010101_ti.dgn PLOT DATE : 22-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 10560:1

WISDOT/CADDS SHEET 10

2

GENERAL NOTES

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, THE CONTRACTOR SHALL FIELD VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.

CURB HEIGHTS AT THE END OF CURB AND GUTTER SHALL TAPER FROM 0 TO 4 INCHES OR 0 TO 6 INCHES IN 10 FEET.

EXISTING DRIVEWAYS AND FIELD ENTRANCES SHALL BE RESTORED IN KIND AS DIRECTED BY THE ENGINEER IN THE FIELD AND AT THE LOCATION DETERMINED BY THE ENGINEER.

TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL WILL NOT BE PERMITTED IN WETLANDS.

BROKEN CONCRETE CONTAINING RE-BAR SHALL NOT BE USED AS RIPRAP OR RIPRAP HEAVY.

CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF SALVAGED TOPSOIL OR TOPSOIL WHERE REQUIRED.

A SAWED JOINT IS REQUIRED WHERE NEW HMA OR CONCRETE PAVEMENT SURFACE MEETS EXISTING HMA OR CONCRETE PAVEMENT SURFACE.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

THE EROSION CONTROL ITEMS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. THE ENGINEER MAY MODIFY LOCATIONS AS NEEDED. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

EXISTING ELEVATIONS SHALL BE VERIFIED IN THE FIELD.

BENCHMARKS ARE LOCATED BY HAND HELD GPS AND ARE WITHIN APPROXIMATELY 20' HORIZONTALLY OF WHERE SHOWN ON THE PLAN.

DESIGNER NOTES

DESIGN PLANS, SPECIFICATIONS, AND ESTIMATE FOR STRUCTURES B-70-284, R-70-44, AND R-70-45 PROVIDED BY WISDOT.

DESIGN PLANS, SPECIFICATIONS, AND ESTIMATE FOR EROSION CONTROL AND DRAINAGE PIPES PROVIDED BY GREMMER & ASSOCIATES.

UTILITY COORDINATION AND UTILITY SPECIFICATIONS BY BECHER HOPPE ASSOCIATES.

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR ALL REMAINING ITEMS PROVIDED BY CH2M HILL, INC.

REFERENCE LINE CALL OUTS

'CTG'	CTH G
'CTGG'	CTH GG
'CTY'	CTH Y
'DIX'	DIXIE ROAD/OLD DIXIE ROAD
'GRV'	GREEN VALLEY ROAD
'JSA'	USH 41 SOUTHBOUND ENTRANCE RAMP
'JSB'	USH 41 SOUTHBOUND EXIT RAMP
'JSC'	USH 41 NORTHBOUND ENTRANCE RAMP
'JSD'	USH 41 NORTHBOUND EXIT RAMP
'JSN'	STH 76 NORTHBOUND
'JSS'	STH 76 SOUTHBOUND
'NAB'	USH 41 NORTHBOUND
'SAB'	USH 41 SOUTHBOUND
'WSR'	WOODEN SHOE ROAD

STANDARD ABBREVATIONS

AEW	APRON END WALL
AGG	AGGREGATE
AH	AHEAD
BAD	BASE AGGREGATE DENSE
BK	BACK
BM	BENCH MARK
BT	BEGIN TRANSITION
CE	COMMERCIAL ENTRANCE
C&G	CURB AND GUTTER
C/L OR ℄	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CP	CULVERT PIPE
CPCM	CULVERT PIPE CORRUGATED METAL
CPCS	CULVERT PIPE CORRUGATED STEEL
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
EOP	EDGE OF PAVEMENT
ET	END TRANSITION
FE	FIELD ENTRANCE
FS	FULL SUPERELEVATION
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
M/L	MATCH LINE
NB	NORTHBOUND
NC	NORMAL CROWN
NORM	NORMAL
OFF	OFFSET
PACS	PIPE ARCH CORRUGATED STEEL
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
POB	POINT OF BEGINNING
POE	POINT OF END
PT	POINT OF TANGENT
PUU	PIPE UNDERDRAIN UNPERFORATED
R	RADIUS OF CURVE
RAB	ROUNDABOUT
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPERELEVATION
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
TYP	TYPICAL
UTL EASE	EXISTING UTILITY EASEMENT
VD	DRAIN SLOTTED VANE
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT

HMA PAVEMENT LAYERS

4" HMA PAVEMENT TYPE E-1
- 1.75" UPPER LAYER - 12.5mm
- 2.25" LOWER LAYER - 19.0mm

5" HMA PAVEMENT TYPE E-0.3
- 2" UPPER LAYER - 12.5mm
- 3" LOWER LAYER - 19.0mm

ORDER OF SECTION 2 SHEETS

PROJECT OVERVIEW
WETLAND OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
EROSION CONTROL
STORM SEWER
SIGNING/PAVEMENT MARKING
LIGHTING
TRAFFIC CONTROL
DETOUR SIGNING
ALIGNMENT PLAN

UTILITIES

AMERICAN TRANSMISSION CO. LLC
(ELECTRIC TRANSMISSION)
MIKE OLSEN
SENIOR SURVEYING SPECIALIST
801 O'KEEFE ROAD
P.O. BOX 6113
DE PERE, WI 54115-6113
OFFICE: (920) 338-6582
MOBILE: (920) 660-2390
molsen@atcllc.com

AT&T LEGACY
(LONG DISTANCE COMMUNICATION)
WILLIAM KOENIG
C/O JMC ENGINEERS & ASSOCIATES, INC.
16100 S. REDWOOD ROAD
CALVIN, IN 46511
OFFICE: (574) 842-8830
MOBILE: (608) 628-0575
jmc140@verizon.net

AT&T WISCONSIN
(LOCAL COMMUNICATION)
(FOR FACILITIES SOUTH OF STATION 904'SAB/NAB'+80)
CHARLES BARTELT
70 E. DIVISION STREET
FOND DU LAC, WI 54935
OFFICE: (920) 929-1013
MOBILE: (920) 410-5104
cb1461@att.com

(LOCAL COMMUNICATION)
(FOR FACILITIES NORTH OF STATION 904'SAB/NAB'+80)
CHRIS SABOURIN
221 W. WASHINGTON ST, 4TH FLOOR
APPLETON, WI 54911
OFFICE: (920) 735-3252
MOBILE: (920) 556-2819
cs2719@att.com

CITY OF NEENAH PUBLIC WORKS & UTILITIES
(LIGHTS, SANITARY SEWER AND WATER)
GERRY KAISER
211 WALNUT STREET
P.O. BOX 426
NEENAH, WI 54956
OFFICE: (920) 886-6241
MOBLE: (920) 209-9456
gkaiser@ci.neenah.wi.us

KDL
(COMMUNICATION)
JIM KOSTUCH
13935 BISHOPS DRIVE
BROOKFIELD, WI 53005
OFFICE: (262) 792-7238
James.kostuch@kdllnc.com

TIME WARNER CABLE
(COMMUNICATION)
VINCE ALBIN
CONSTRUCTION ADMINISTRATOR
3520 DESTINATION DRIVE
APPLETON, WI 54915
OFFICE: (920) 831-9249
MOBILE: (920) 378-0444
vince.albin@twcable.com

US SIGNAL
(COMMUNICATION)
DAN MEYER
C/O MEYER SERVICES
4520 N. GREENVILLE DRIVE
APPLETON, WI 54913-8801
OFFICE: (920) 734-0081 ext. 12
MOBILE: (920) 209-9030
dan@meyer-usa.com

WE ENERGIES
(ELECTRIC AND GAS DISTRIBUTION)
(SEND ALL CORRESPONDENCE TO)
DAN SANDE
333 W. EVERETT STREET -A299
MILWAUKEE WI 53203
OFFICE: (414) 221-4578

(ELECTRIC DISTRIBUTION CONSTRUCTION FIELD CONTACT)
JIM QUINN
P.O. BOX 1699
APPLETON, WI 54912
OFFICE: (920) 380-3401
MOBILE: (920) 450-9430
Jim.quinn@we-energies.com

(GAS DISTRIBUTION CONSTRUCTION FIELD CONTACT)
CODY BECKMAN
P.O. BOX 1699
APPLETON, WI 54912
OFFICE: (920) 380-3422
MOBILE: (920) 428-1038
cody.beckman@we-energies.com

WISCONSIN PUBLIC SERVICE CORPORATION
(ELECTRIC DISTRIBUTION)
DAVE PETERSEN
ELECTRIC ENGINEER
3300 N. MAIN STREET
OSHKOSH, WI 54901
OFFICE: (920) 236-5910
MOBILE: (920) 680-2036
dtpetersen@wisconsinpublicservice.com

(GAS DISTRIBUTION)
PAUL SPANGLER
3300 N. MAIN STREET
OSHKOSH WI 54901
OFFICE: (920) 236-5908
MOBILE: (920) 660-3150
paspangler@wisconsinpublicservice.com

DIGGERS HOTLINE

Call 811 3 Work Days Before You Dig
or Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

OTHER CONTACTS

CANADIAN NATIONAL RAILWAY
(RAILROAD FLAGGING)
DARYL LANG
2800 LIVERNOIS, SUITE 330
TROY, MI 48083
PHONE: (248) 740-6227
FAX: (248) 740-6031
daryl.lang@cn.ca

(MAIN RAILROAD)
JACKIE MACEWICZ
MANAGER PUBLIC WORKS
1625 DEPOT STREET
STEVENS POINT, WI 54481
PHONE: (715) 345-2503
CELL: (715) 572-7803
FAX: (715) 345-2534
jackie.macewicz@cn.ca

24 HOUR EMERGENCY
RAILROAD SIGNAL CONTACT
(800) 616-3432

CALL BEFORE YOU DIG:
CANADIAN NATIONAL RAILWAY IS NOT PART OF THE DIGGERS HOTLINE SYSTEM
CALL CHRISTINE GRZESIAK
(715) 345-2506
WHEN DIGGING ON RAILROAD R/W

CITY OF NEENAH PUBLIC WORKS
LARRY WETTERING
211 WALNUT STREET
P.O. BOX 426
NEENAH, WI 54957-0426
PHONE: (920) 751-4625

DNR LIAISON
BOBBI JO FISCHER
427 EAST TOWER DRIVE
SUITE 100
WAUTOMA, WI 54982
PHONE: (920) 787-4686 EXT 3007

TOWN OF NEENAH
BOB SCHMEICHEL
TOWN CHAIRMAN
215 MANDELLA COURT
NEENAH, WI 54956
(920) 729-5995

WINNEBAGO COUNTY HIGHWAY DEPARTMENT
901 WEST COUNTY ROAD Y
ERNEST WINTERS
OSHKOSH, WI 54901
PHONE: (920) 232-1700

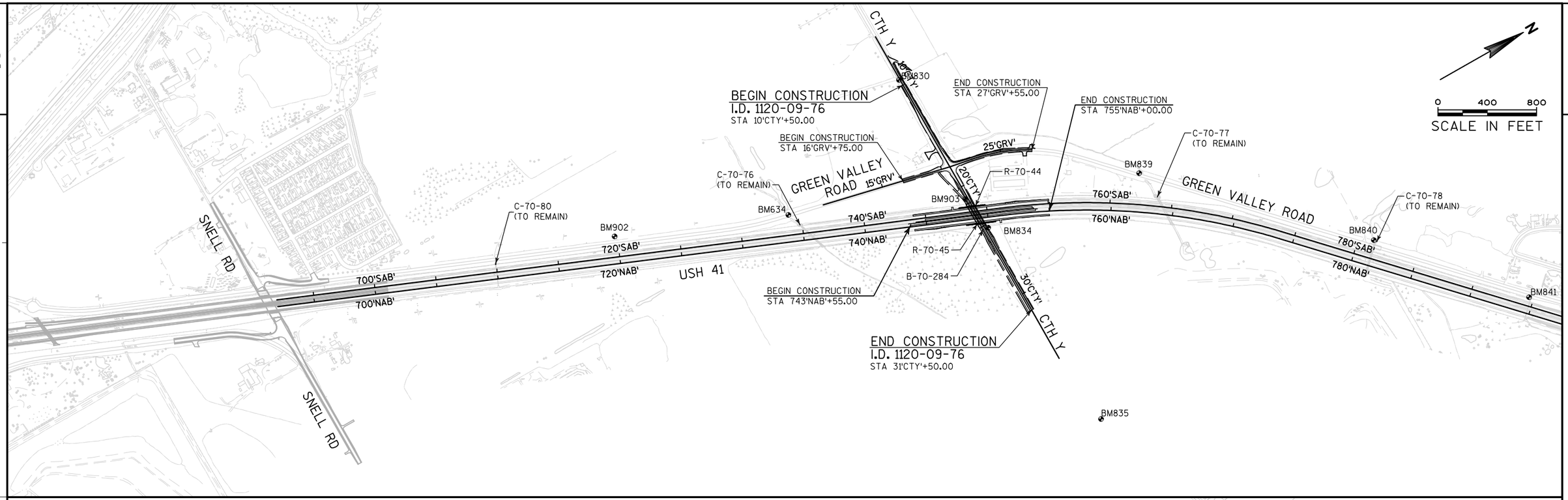
TOWN OF OSHKOSH
GERALD FREY
TOWN CHAIRMAN
4804 ISLAND VIEW DRIVE
OSHKOSH, WI 54901
PHONE: (920) 233-2391

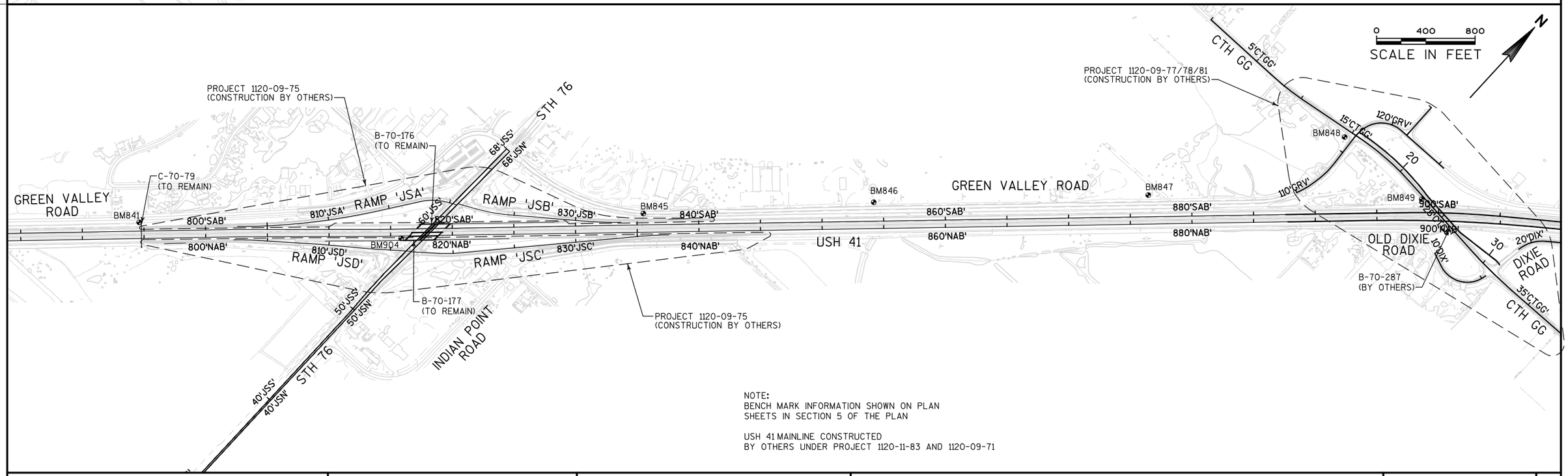
TOWN OF VINLAND
RAYMOND BATLEY
TOWN CHAIRMAN
1519 COWLING ROAD
NEENAH, WI 54956
(920) 729-1966

WINNEBAGO COUNTY SURVEYOR
JERRY BOUGIE
WINNEBAGO COUNTY COURT HOUSE
448 ALGOMA BLVD
OHSHKOSH, WI 54903-2808
PHONE: (920) 236-4839

WISCONSIN HIGHWAY BUSINESS SIGNS/ DIVISION OF DERSE, INC.
MARK ROGNSVOOG
3800 W. CANAL STREET
MILWAUKEE, WI 53208
PHONE: (414) 257-2000

WISCONSIN STATE PATROL
SGT. NELSON
851 S. ROLLING MEADOWS DRIVE
P.O. BOX 984
FOND DU LAC, WI 54936-0894
PHONE: (920) 929-3700 EXT. 3006





NOTE:
BENCH MARK INFORMATION SHOWN ON PLAN SHEETS IN SECTION 5 OF THE PLAN

USH 41 MAINLINE CONSTRUCTED BY OTHERS UNDER PROJECT 1120-11-83 AND 1120-09-71

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	PROJECT OVERVIEW	SHEET 3	E

2

2

SNELL RD

W-1

W-129

R/L USH 41 SB

W-124

W-127

10'GRV

W-126

W-125

700'SAB'

720'SAB'

USH 41

740'SAB'

700'NAB'

720'NAB'

740'NAB'

WALTER RD

R/L USH 41 NB

W-128

W-123

SNELL RD

LEGEND

IMPACTED WETLANDS

WETLANDS

N

0 200 400

SCALE IN FEET

BEGIN CONSTRUCTION
I.D. 1120-09-76
STA 10'CTY'+50.00

AREA OUTSIDE OF SLOPE INTERCEPTS WAS NOT EVALUATED FOR MITIGATION

R/L CTH Y

15'CTY

W-118A

W-119

25'GRV

W-155

W-118

20'GRV

W-120

W-117

W-116

W-113

W-112

W-111

R/L GREEN VALLEY ROAD

15'GRV

W-166

W-122

20'CTY

W-156

760'SAB'

GREEN VALLEY ROAD

R/L USH 41 SB

W-106

W-105

W-104

W-124

W-127

10'GRV

W-125

740'SAB'

USH 41

760'NAB'

780'SAB'

W-126

740'NAB'

W-121

25'CTY

W-157

W-114

W-110

780'NAB'

W-109

W-108

W-107

W-103

W-101

R/L USH 41 NB

W-123

W-128

30'CTY

END CONSTRUCTION
I.D. 1120-09-76
STA 31'CTY'+50.00

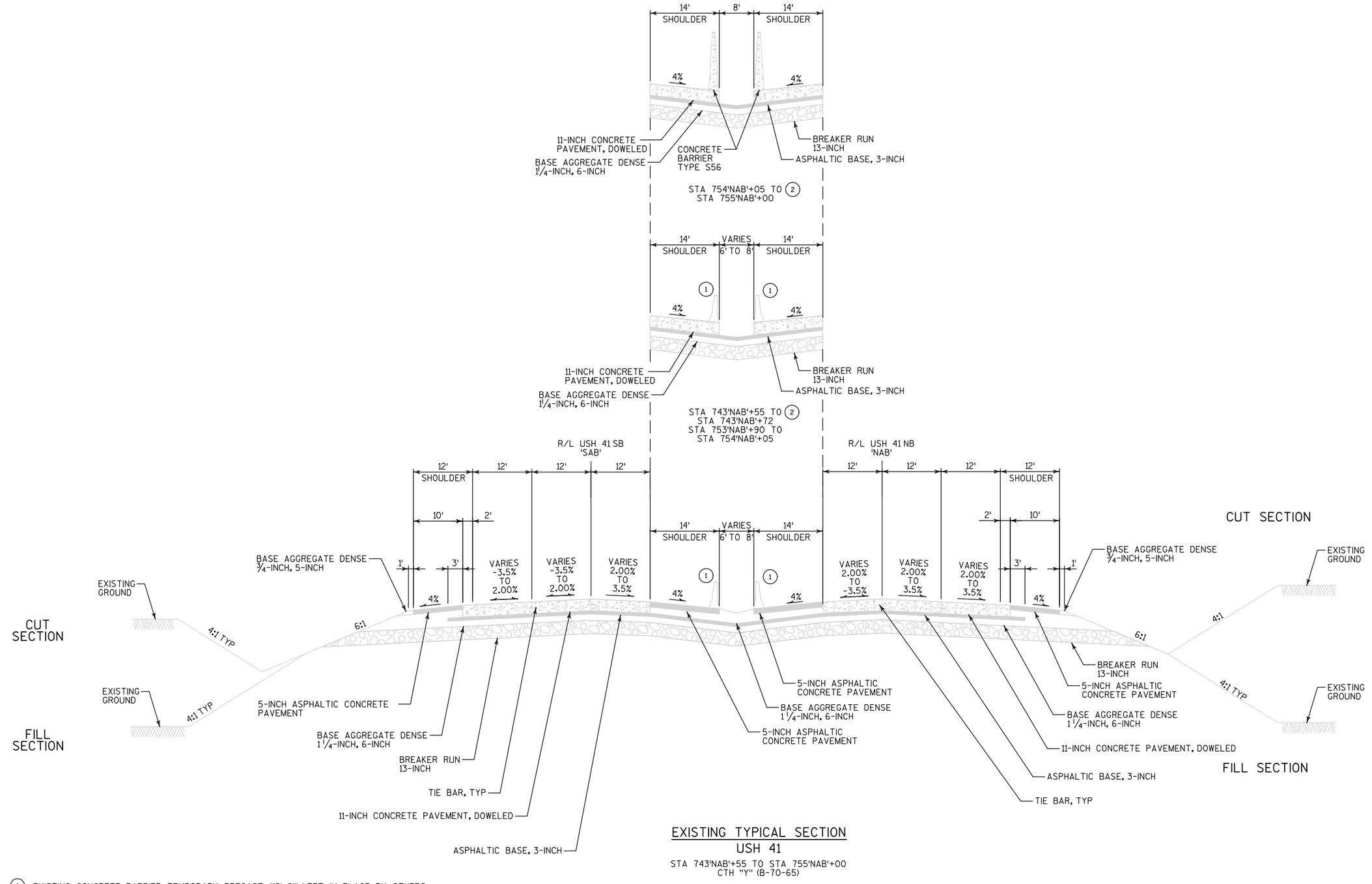
CTH Y

N

0 200 400

SCALE IN FEET

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	WETLAND OVERVIEW	SHEET 4	E



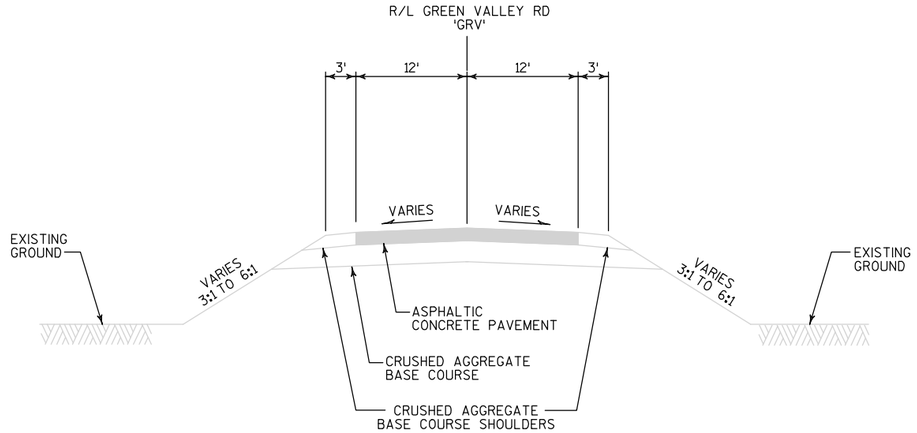
EXISTING TYPICAL SECTION
USH 41
STA 743'NAB'+55 TO STA 755'NAB'+00
CTH "Y" (B-70-65)

(1) EXISTING CONCRETE BARRIER TEMPORARY PRECAST (12'-6") LEFT IN PLACE BY OTHERS

(2) SEE PLAN SHEET FOR SOUTHBOUND LIMITS

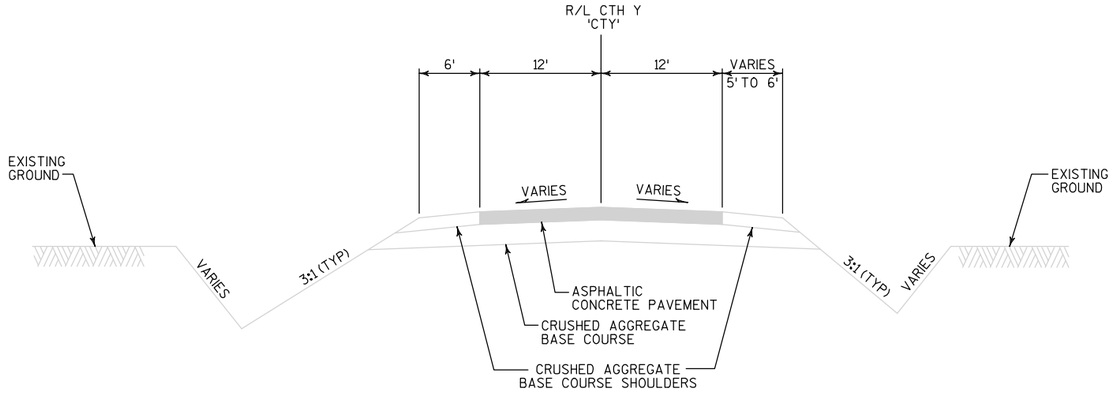
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - USH 41	SHEET 5	E

2



EXISTING TYPICAL SECTION
GREEN VALLEY ROAD

STA 16'GRV'+75 TO STA 27'GRV'+55



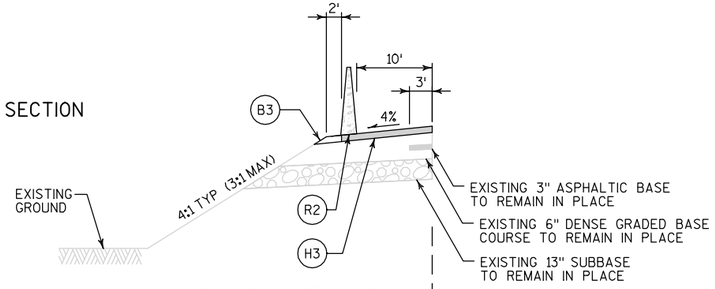
EXISTING TYPICAL SECTION
CTH Y

STA 9'CTY'+15 TO STA 21'CTY'+33
STA 23'CTY'+96 TO STA 31'CTY'+50
CTH Y OVER USH 41 (B-70-284)

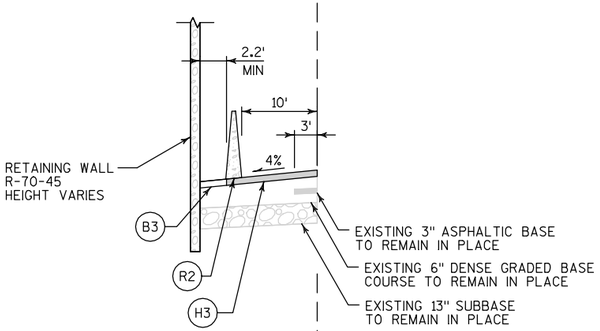
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - CTH Y AND GREEN VALLEY ROAD	SHEET 6	E

2

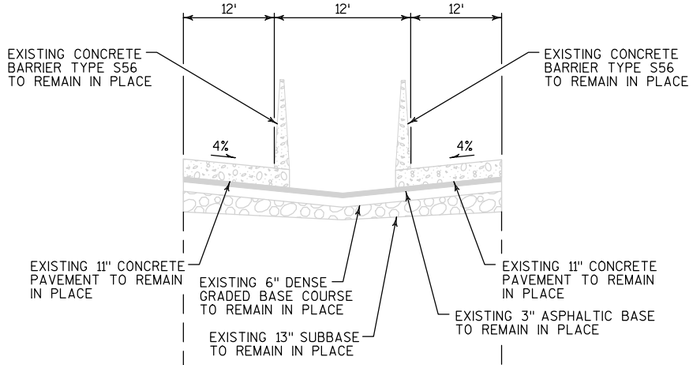
FILL SECTION



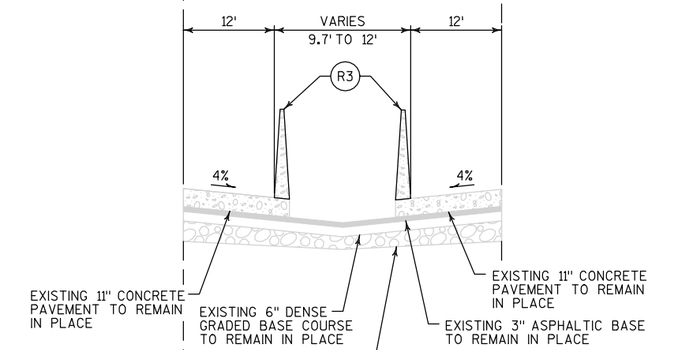
STA 749'SAB'+90 TO STA 751'SAB'+50



STA 747'SAB'+75 TO STA 749'SAB'+90

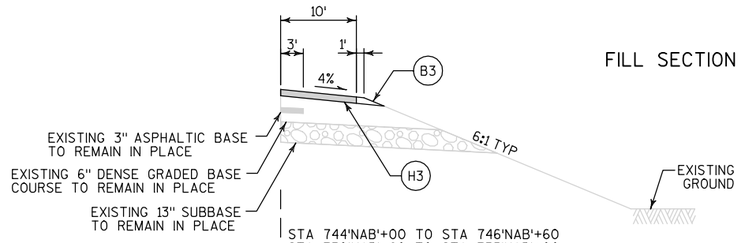


STA 754'NAB'+05 TO STA 755'NAB'+00 (2)

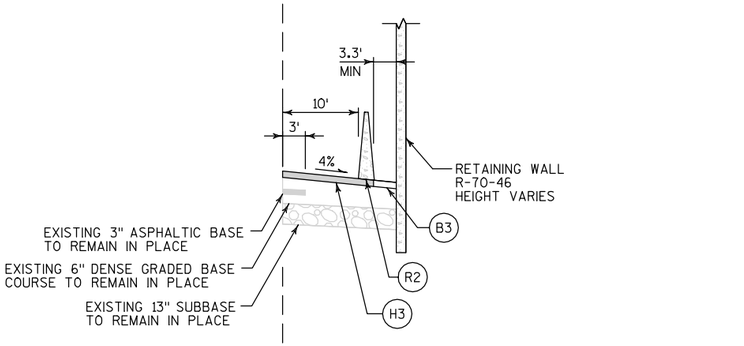


STA 743'NAB'+55 TO STA 743'NAB'+72 (2)
STA 753'NAB'+90 TO STA 754'NAB'+05

FILL SECTION



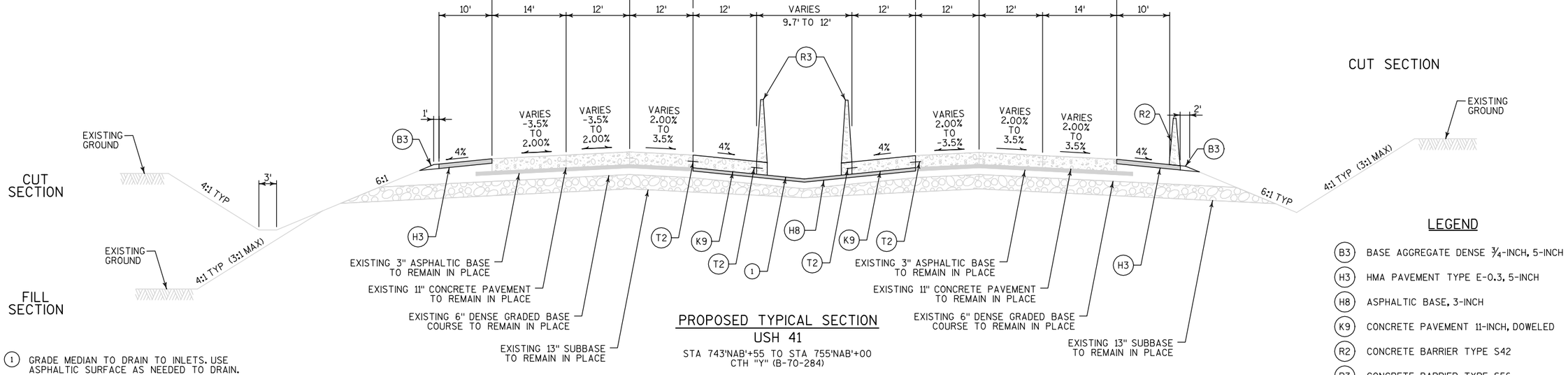
STA 744'NAB'+00 TO STA 746'NAB'+60
STA 750'NAB'+60 TO STA 755'NAB'+00



STA 748'NAB'+20 TO STA 750'NAB'+60

R/L USH 41 SB 'SAB'

R/L USH 41 NB 'NAB'



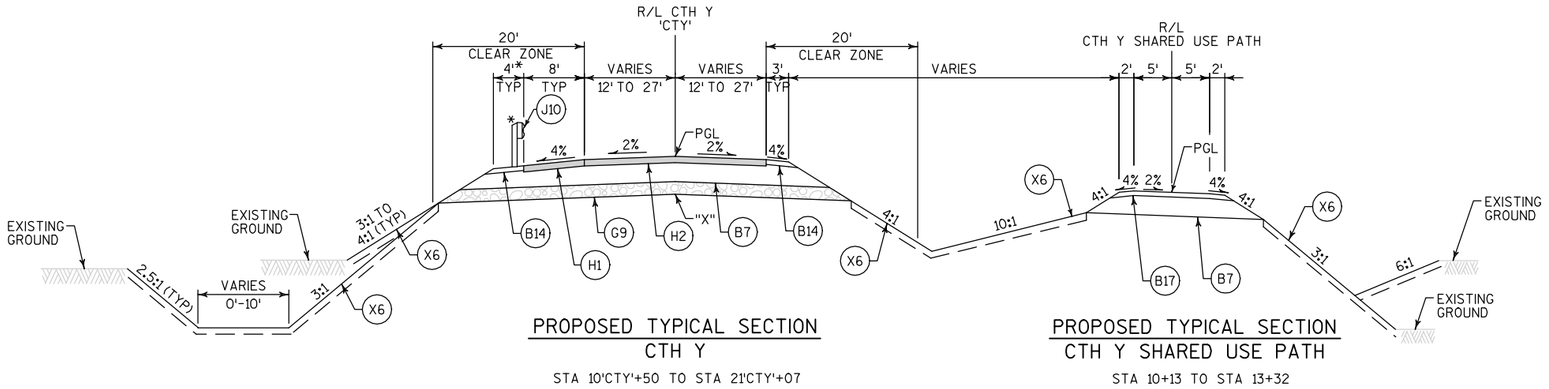
(1) GRADE MEDIAN TO DRAIN TO INLETS. USE ASPHALTIC SURFACE AS NEEDED TO DRAIN.

(2) SEE PLAN SHEET FOR SOUTHBOUND LIMITS

LEGEND

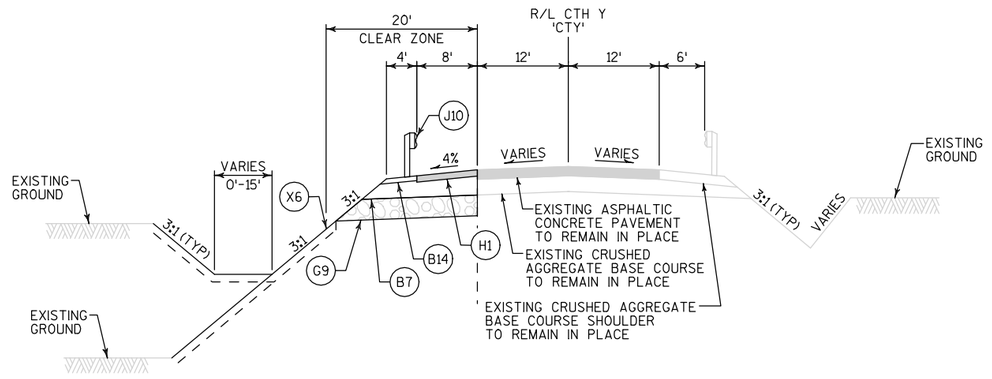
- (B3) BASE AGGREGATE DENSE 3/4-INCH, 5-INCH
- (H3) HMA PAVEMENT TYPE E-0.3, 5-INCH
- (H8) ASPHALTIC BASE, 3-INCH
- (K9) CONCRETE PAVEMENT 11-INCH, DOWELED
- (R2) CONCRETE BARRIER TYPE S42
- (R3) CONCRETE BARRIER TYPE S56
- (T2) DRILLED TIE BARS

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - USH 41	SHEET 7	E



PROPOSED TYPICAL SECTION
CTH Y
STA 10'CTY'+50 TO STA 21'CTY'+07

PROPOSED TYPICAL SECTION
CTH Y SHARED USE PATH
STA 10+13 TO STA 13+32



PROPOSED TYPICAL SECTION
CTH Y
STA 9'CTY'+15 TO STA 10'CTY'+50

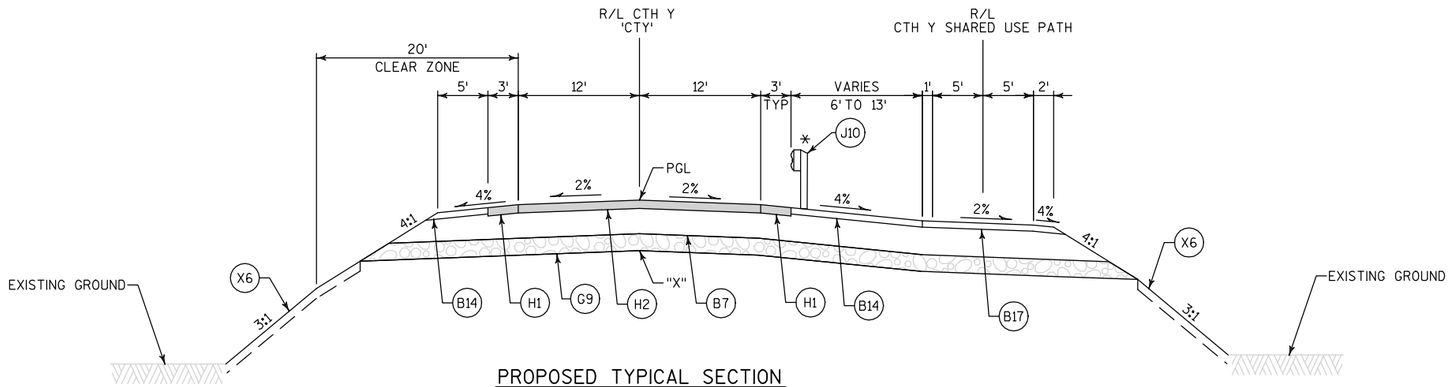
LEGEND

- (B7) BASE AGGREGATE DENSE 1 1/4-INCH, 12-INCH
- (B14) BASE AGGREGATE DENSE 3/4-INCH, 3-INCH
- (B17) LIMESTONE SCREENINGS, 3-INCH
- (G9) BREAKER RUN 8-INCH
- (H1) HMA PAVEMENT TYPE E-0.3, 4-INCH
- (H2) HMA PAVEMENT TYPE E-1, 4-INCH
- (J10) MGS GUARDRAIL TYPE 3
- (X6) SALVAGED TOPSOIL, SEED, MULCH OR E-MAT AND FERTILIZER

* SEE PLAN FOR LOCATIONS

"X" = POINT REFERENCED TO ON CROSS SECTIONS

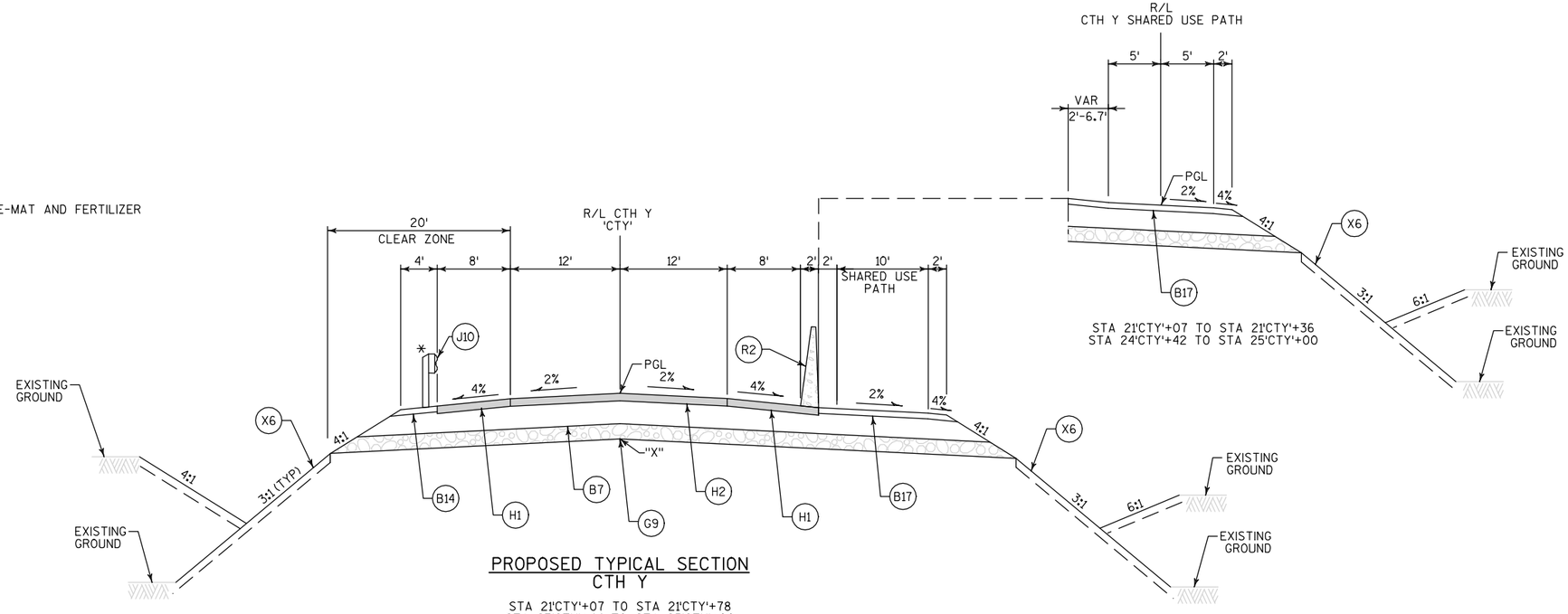
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - CTH Y	SHEET 8	E



PROPOSED TYPICAL SECTION
CTH Y
STA 25'CTY'+00 TO STA 31'CTY'+50

LEGEND

- (B7) BASE AGGREGATE DENSE 1 1/4-INCH, 12-INCH
- (B14) BASE AGGREGATE DENSE 3/4-INCH, 3-INCH
- (B17) LIMESTONE SCREENING, 3-INCH
- (G9) BREAKER RUN 8-INCH
- (H1) HMA PAVEMENT TYPE E-0.3, 4-INCH
- (H2) HMA PAVEMENT TYPE E-1, 4-INCH
- (J10) MGS GUARDRAIL TYPE 3
- (R2) CONCRETE BARRIER TYPE S42
- (X6) SALVAGED TOPSOIL, SEED, MULCH OR E-MAT AND FERTILIZER



STA 21'CTY'+07 TO STA 21'CTY'+36
STA 24'CTY'+42 TO STA 25'CTY'+00

PROPOSED TYPICAL SECTION
CTH Y
STA 21'CTY'+07 TO STA 21'CTY'+78
STA 23'CTY'+44 TO STA 25'CTY'+00

* SEE PLAN FOR LOCATIONS

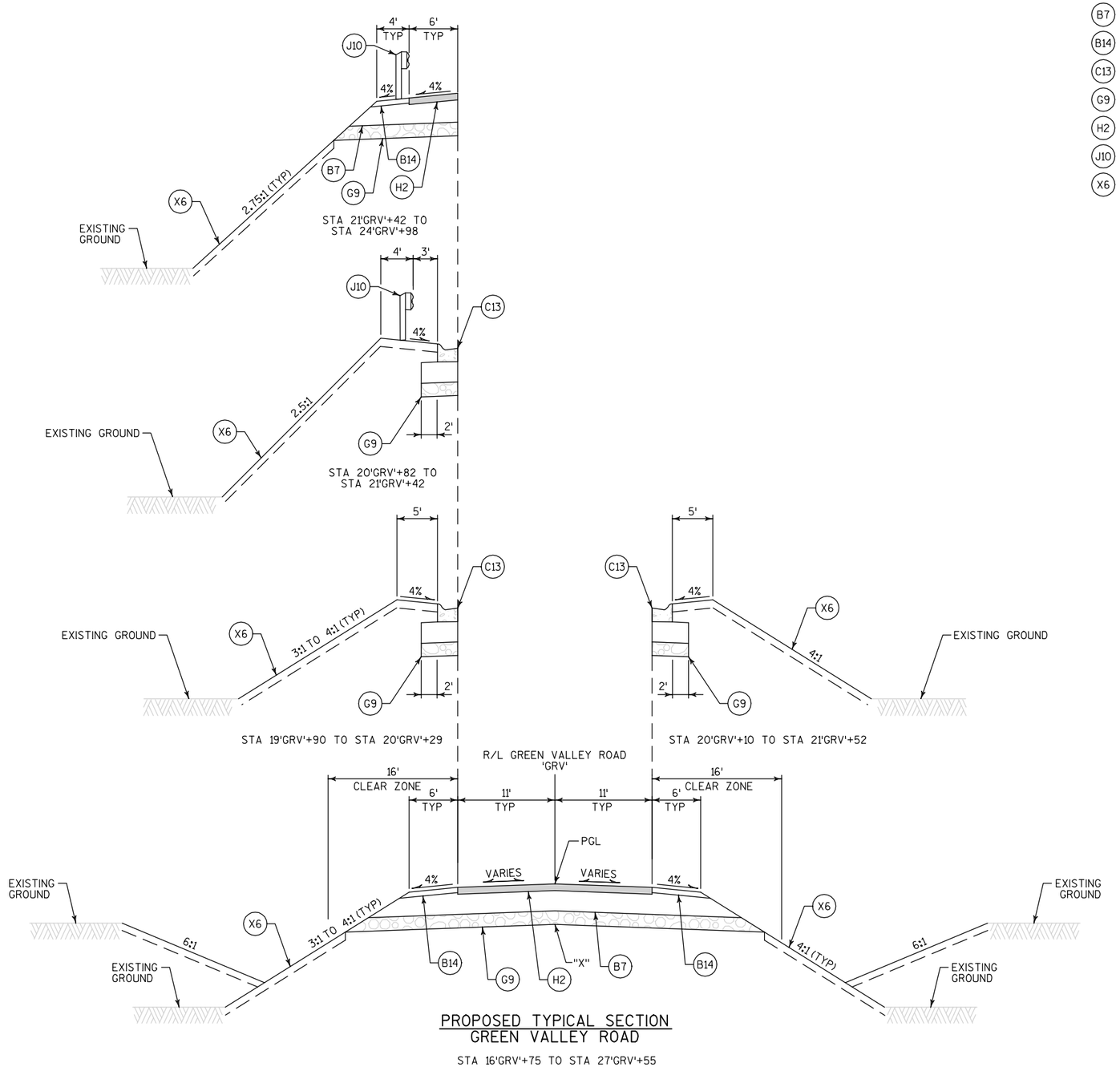
"X" = POINT REFERENCED TO ON CROSS SECTIONS

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - CTH Y	SHEET 9	E

2

LEGEND

- (B7) BASE AGGREGATE DENSE 1 1/4-INCH, 12-INCH
- (B14) BASE AGGREGATE DENSE 3/4-INCH, 3-INCH
- (C13) CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D
- (G9) BREAKER RUN 8-INCH
- (H2) HMA PAVEMENT TYPE E-1, 4-INCH
- (J10) MGS GUARDRAIL TYPE 3
- (X6) SALVAGED TOPSOIL, SEED, MULCH OR E-MAT AND FERTILIZER

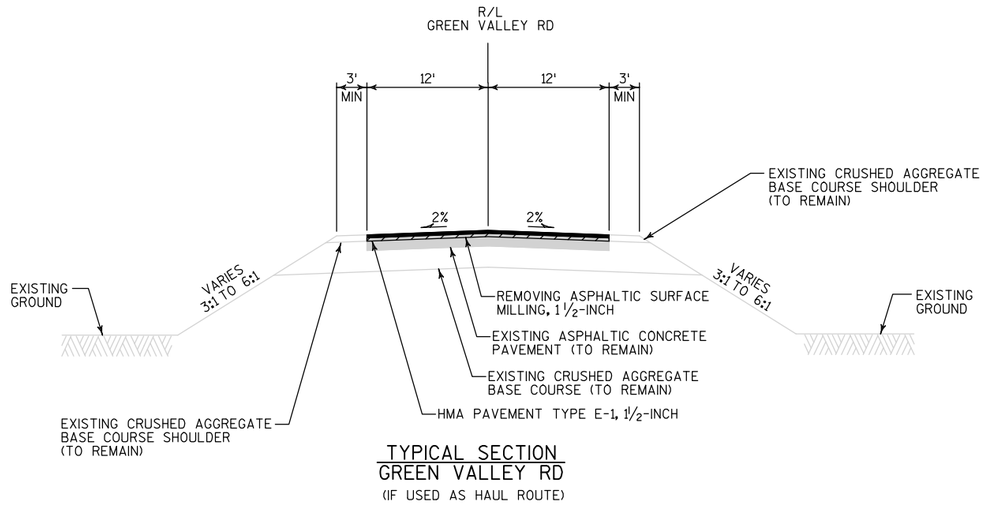


PROPOSED TYPICAL SECTION
GREEN VALLEY ROAD

STA 16'GRV'+75 TO STA 27'GRV'+55

"X" = POINT REFERENCED TO ON CROSS SECTIONS

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - GREEN VALLEY ROAD	SHEET 10	E

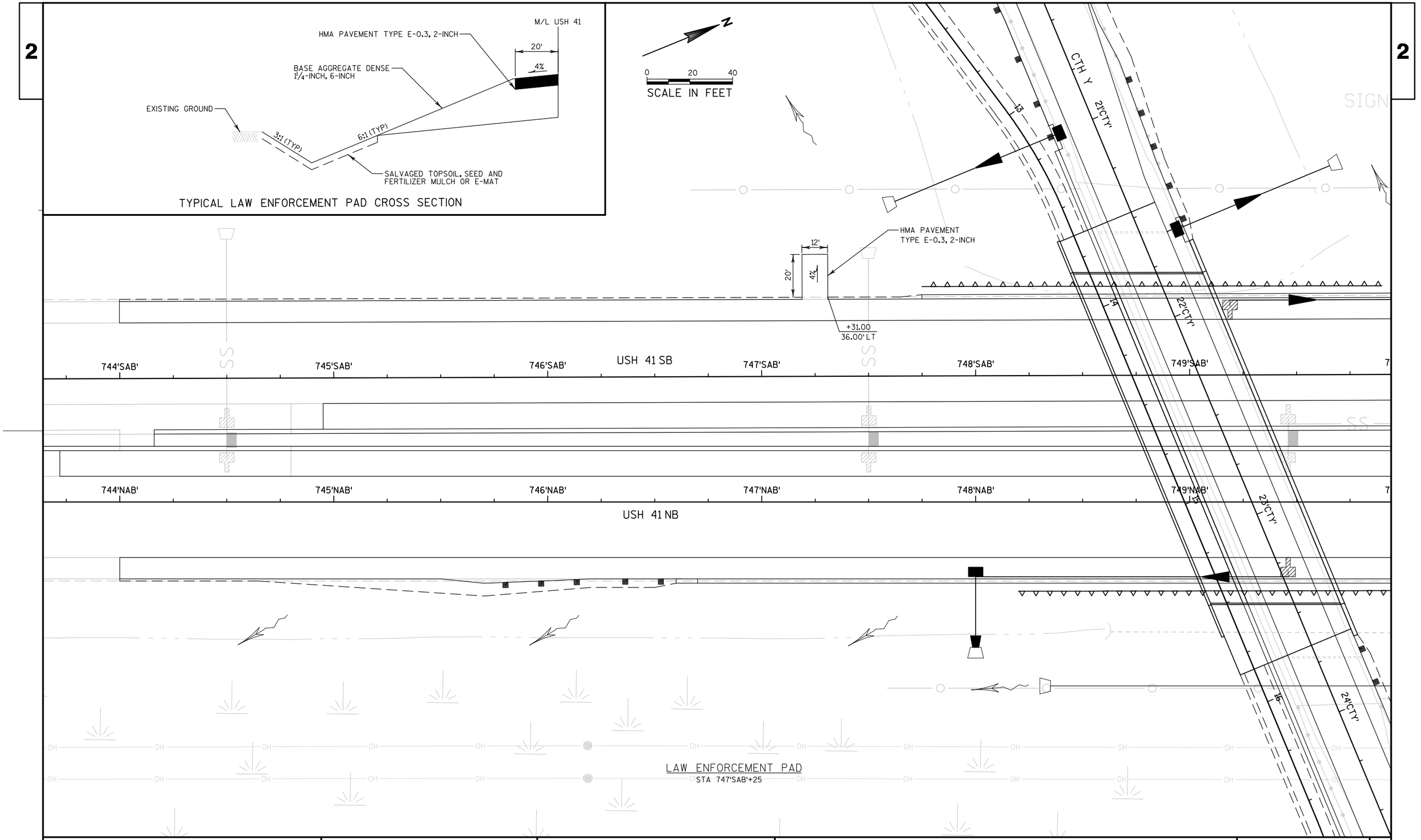


TYPICAL SECTION
GREEN VALLEY RD
(IF USED AS HAUL ROUTE)

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - GREEN VALLEY ROAD	SHEET 11	E

FILE NAME : ch_0976_020307_ts.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 15:1

TYPICAL LAW ENFORCEMENT PAD CROSS SECTION



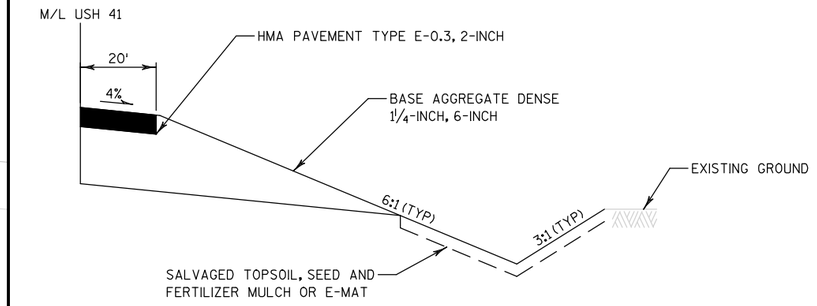
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CONSTRUCTION DETAILS	SHEET 12	E

2

N

0 20 40

SCALE IN FEET



TYPICAL LAW ENFORCEMENT PAD CROSS SECTION

750'SAB' 751'SAB' 752'SAB' USH 41 SB 753'SAB' 754'SAB' 755'SAB'

750'NAB' 751'NAB' 752'NAB' 753'NAB' 754'NAB' 755'NAB'

USH 41 NB

+94.00
36.00' RT

20'
4%
12'

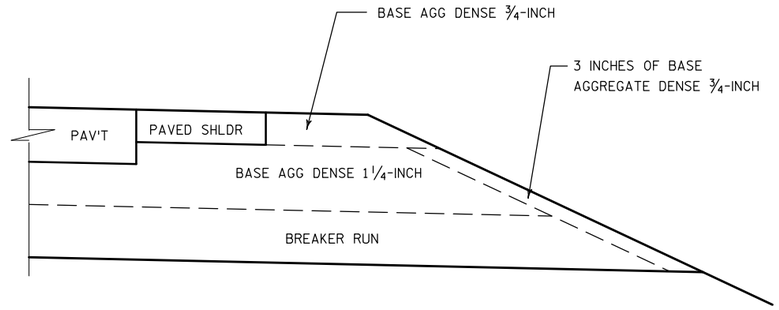
HMA PAVEMENT
TYPE E-0.3, 2-INCH

24'CTY' CTH Y

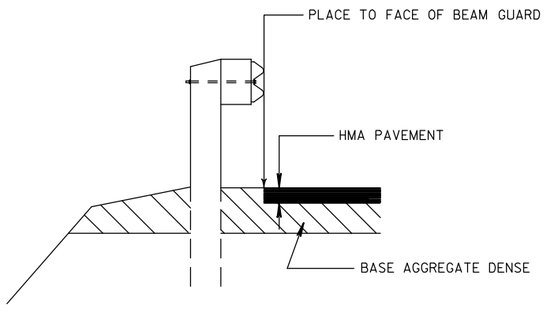
LAW ENFORCEMENT PAD
STA 751'NAB'+00

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CONSTRUCTION DETAILS	SHEET 13	E

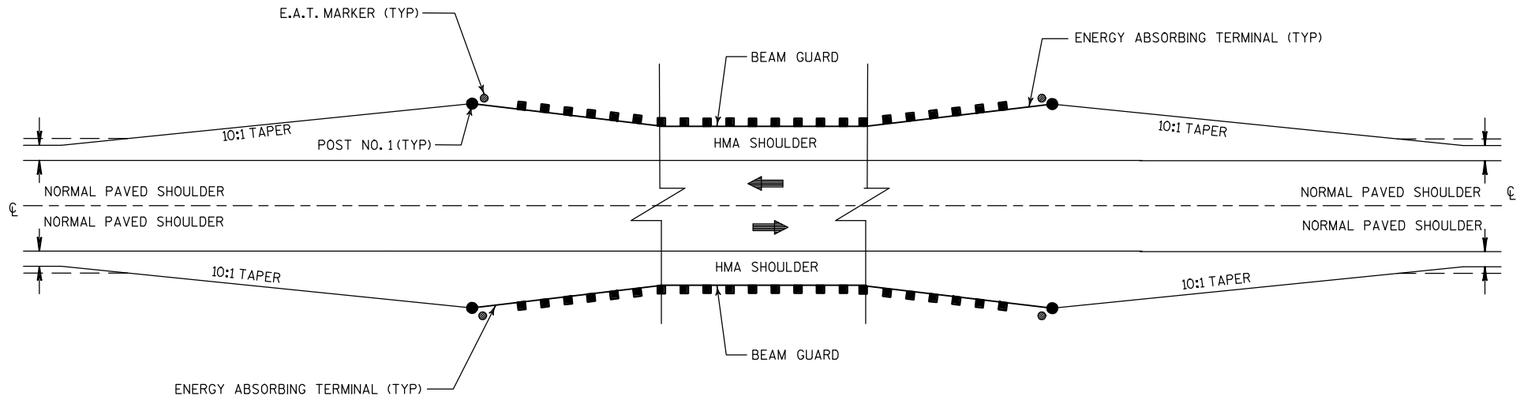
2



BASE AGGREGATE DENSE DETAIL

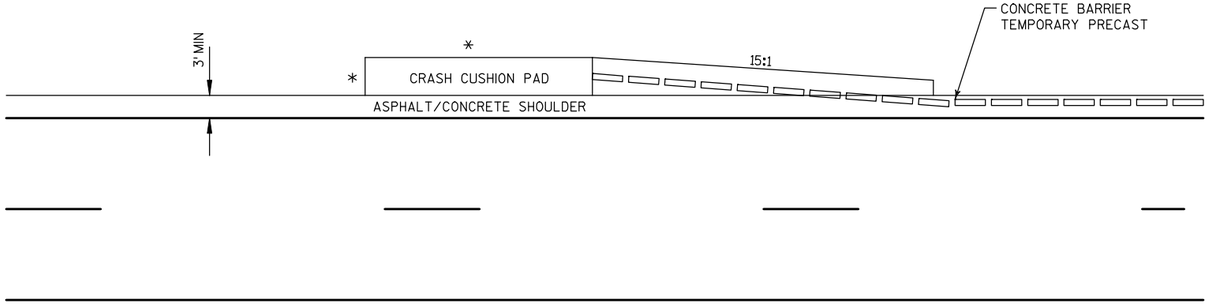


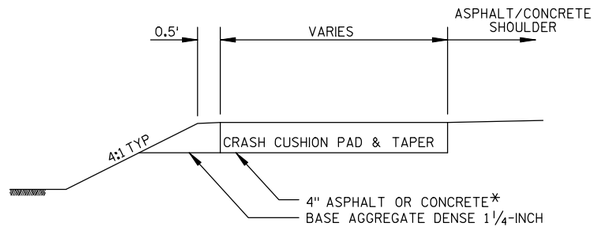
NOTE: SEE SDDS FOR BEAM GUARD ITEMS FOR ADDITIONAL DETAILS



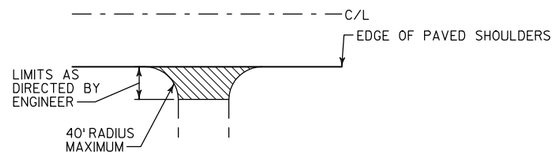
DETAIL FOR HMA SHOULDER AT BEAM GUARD

2



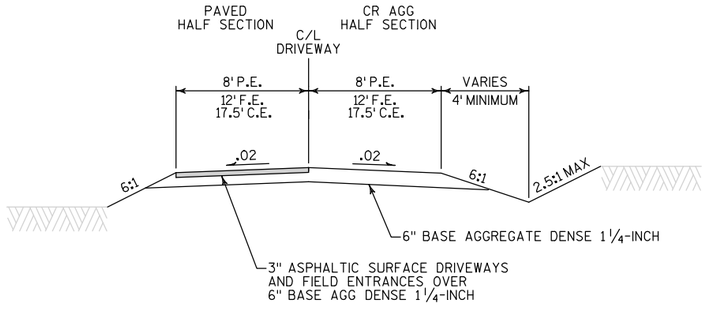


TEMPORARY CRASH CUSHION PAD DETAIL



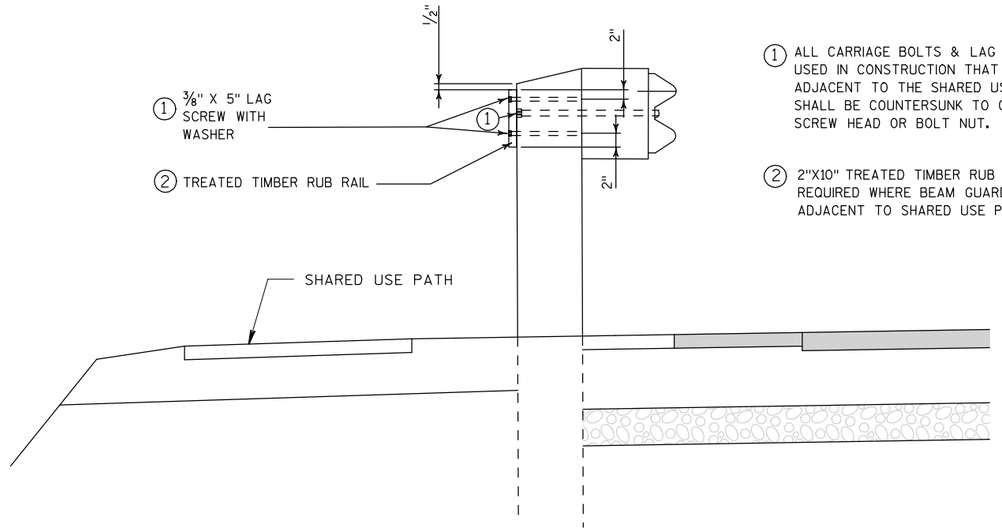
RURAL DRIVEWAY DETAIL

NOTE:
ADD TOPSOIL, FERTILIZER AND SEED AS NEEDED TO RESTORE DRIVEWAY TO ORIGINAL CONDITION.



TYPICAL SECTION
FOR RURAL DRIVEWAY

NOTE:
DRIVEWAY PROFILES NOT EXPECTED TO EXCEED 12%.
PLACE LOW POINT OF DRIVEWAY PROFILE OVER DITCH FLOW LINE.

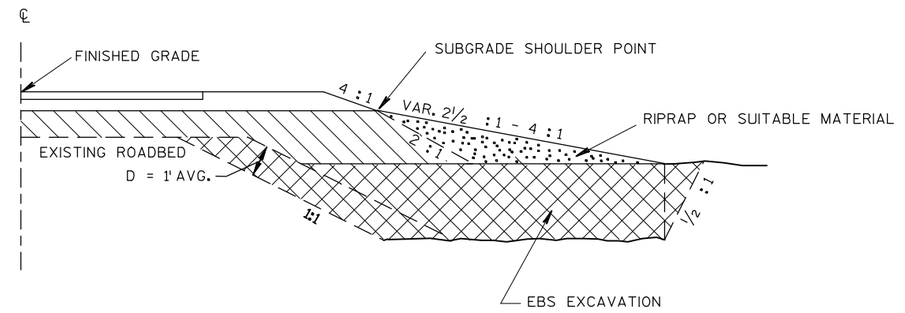


1. ALL CARRIAGE BOLTS & LAG SCREWS USED IN CONSTRUCTION THAT ARE ADJACENT TO THE SHARED USE PATH SHALL BE COUNTERSUNK TO CLEAR SCREW HEAD OR BOLT NUT.

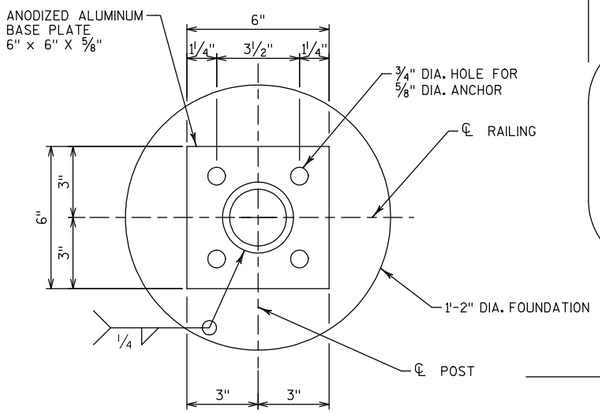
2. 2"X10" TREATED TIMBER RUB RAIL REQUIRED WHERE BEAM GUARD IS ADJACENT TO SHARED USE PATH

TREATED TIMBER RUB RAIL DETAIL

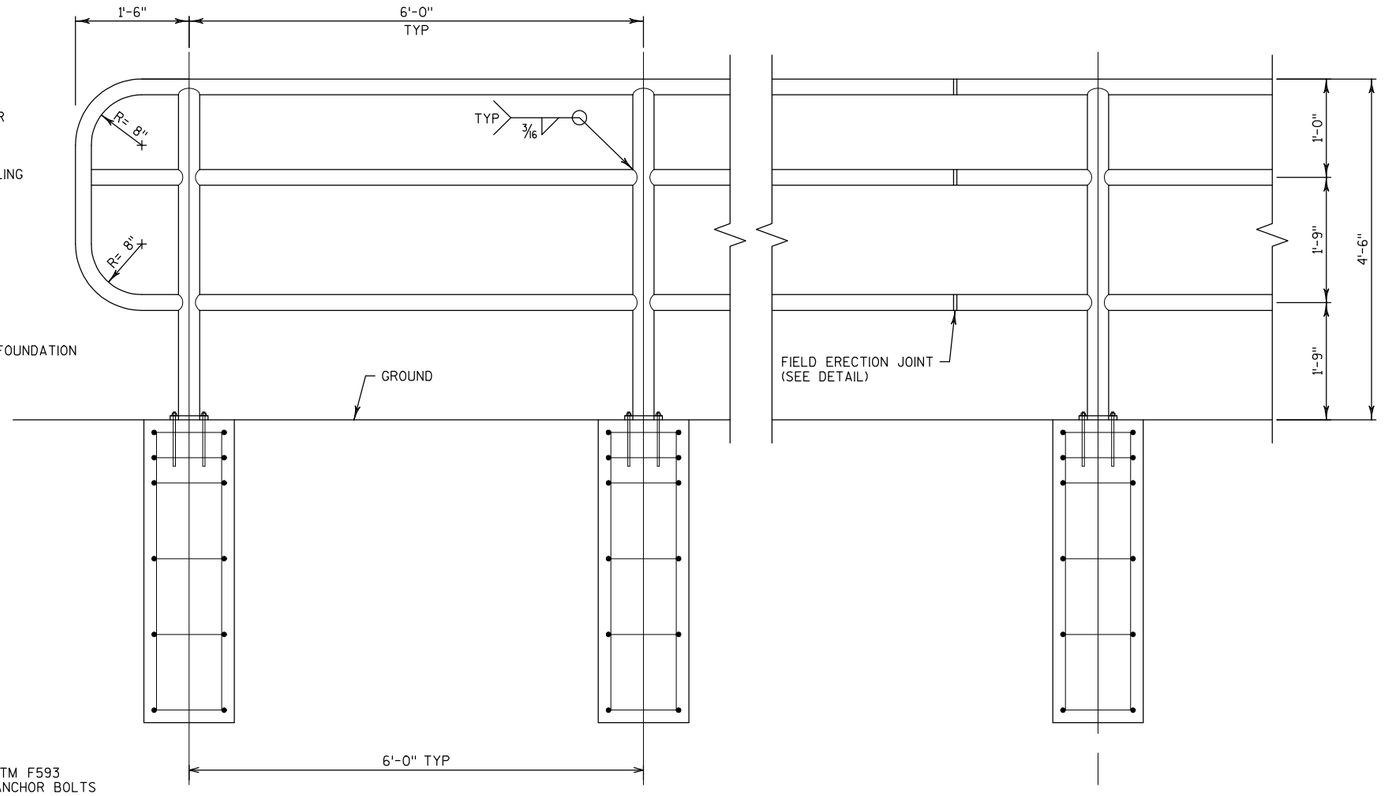
STA 20'CTY'+17 TO STA 21'CTY'+07 RT
STA 25'CTY'+00 TO STA 25'CTY'+90 RT



EBS EXCAVATION AT CTH Y



BASE PLATE PLAN
RAILING 54-INCH



ELEVATION VIEW
RAILING 54-INCH

TYPICAL SECTION
RAILING 54-INCH

LEGEND

○ 3/8" DIA x 1/2" WELDED STUD

△ WELD BEADS (3) AT 120° AROUND CIRCUMFERENCE (4) PLACES ON PIPE. GRIND BEADS SO THAT SLEEVE FITS FREELY IN THE I.D. OF PIPE.

FIELD ERECTION JOINT DETAIL
RAILING 54-INCH

PLAN
RAILING 54-INCH

NOTES

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE STANDARD SPECIFICATIONS.

ALL POST SPA. ARE TAKEN HORIZ. ALONG CENTER LINE OF RAILING AT BASE OF POST.

THE BID ITEM SHALL BE "RAILING 54-INCH" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE MINIMUM OF 4 POSTS.

ALL MATERIAL SHALL BE ANODIZED AFTER FABRICATION.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

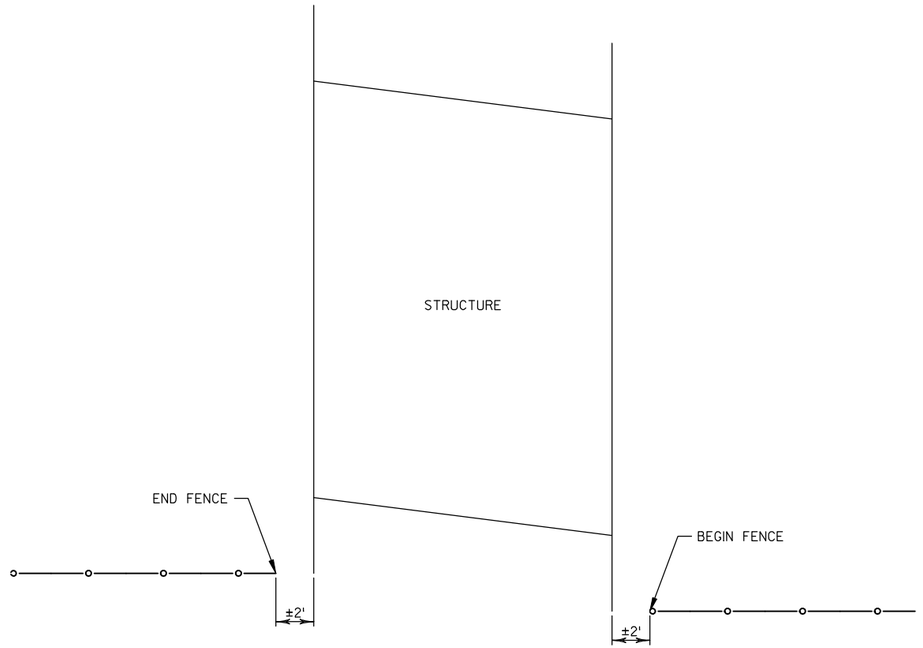
CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STAINLESS STEEL SHIMS SHALL BE PROVIDED AND USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

CAULK AROUND PERIMETER OF BASE PLATE WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL JOINTS TO BE WELDED, SEE SPECIAL PROVISIONS, SHOP DRAWINGS REQUIREMENT

2



PLAN VIEW

FENCE DETAIL AT STRUCTURES

NOT TO SCALE

NOTES

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

ENCASEMENT: THE ENCASING MATERIAL AROUND THE PIPE SHALL BE IN ACCORDANCE WITH SPECIFICATIONS OF 415 FOR CONCRETE PAVEMENT.

THE PIPE USED SHALL BE A 15" DIAMETER SDR-35 POLYVINYL CHLORIDE SEWER PIPE. THE PIPE SHALL CONFORM TO ASTM D-3034.

SURFACE DRAIN: BEFORE PAVING OVER THE DRAIN, COVER THE TOP OF THE DRAIN TO KEEP MATERIAL OUT OF THE PIPE.

THE ANGLE OF THE DRAIN TO THE FLOW OF WATER SHOULD BE AS CLOSE TO 90° AS POSSIBLE.

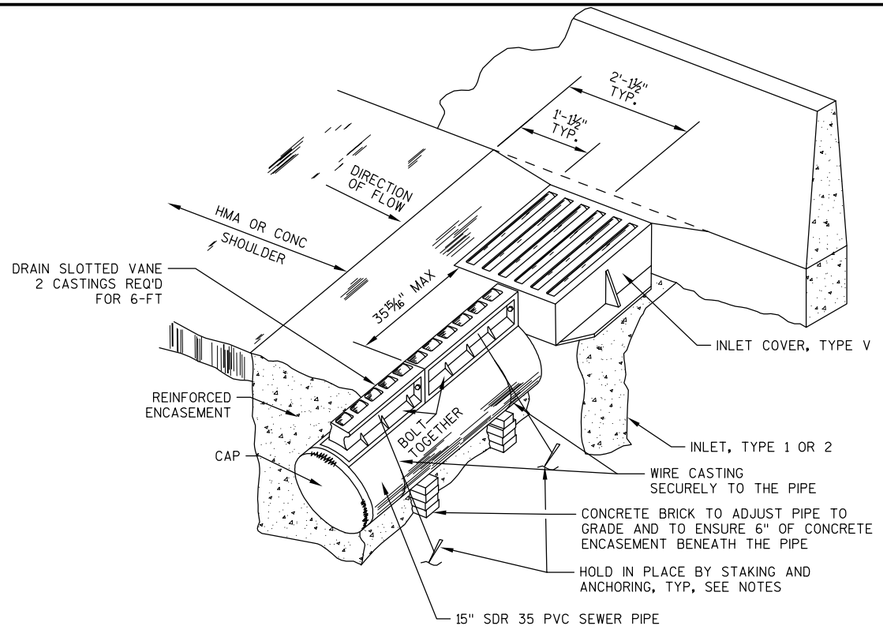
THE FIRST DIGIT OF BAR MARK SIGNIFIES THE BAR SIZE.

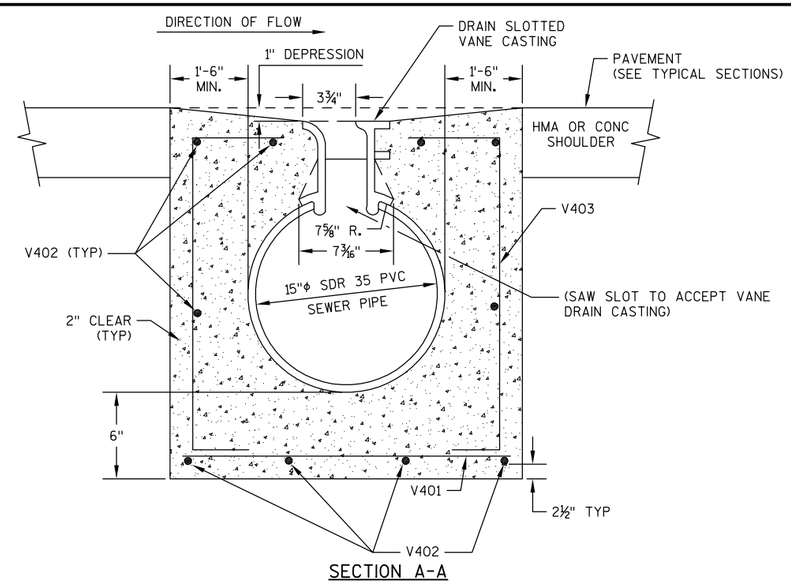
ALL DIMENSIONS ARE OUT TO OUT OF BAR.

ALL REINFORCEMENT BARS SHALL BE EPOXY-COATED STEEL.

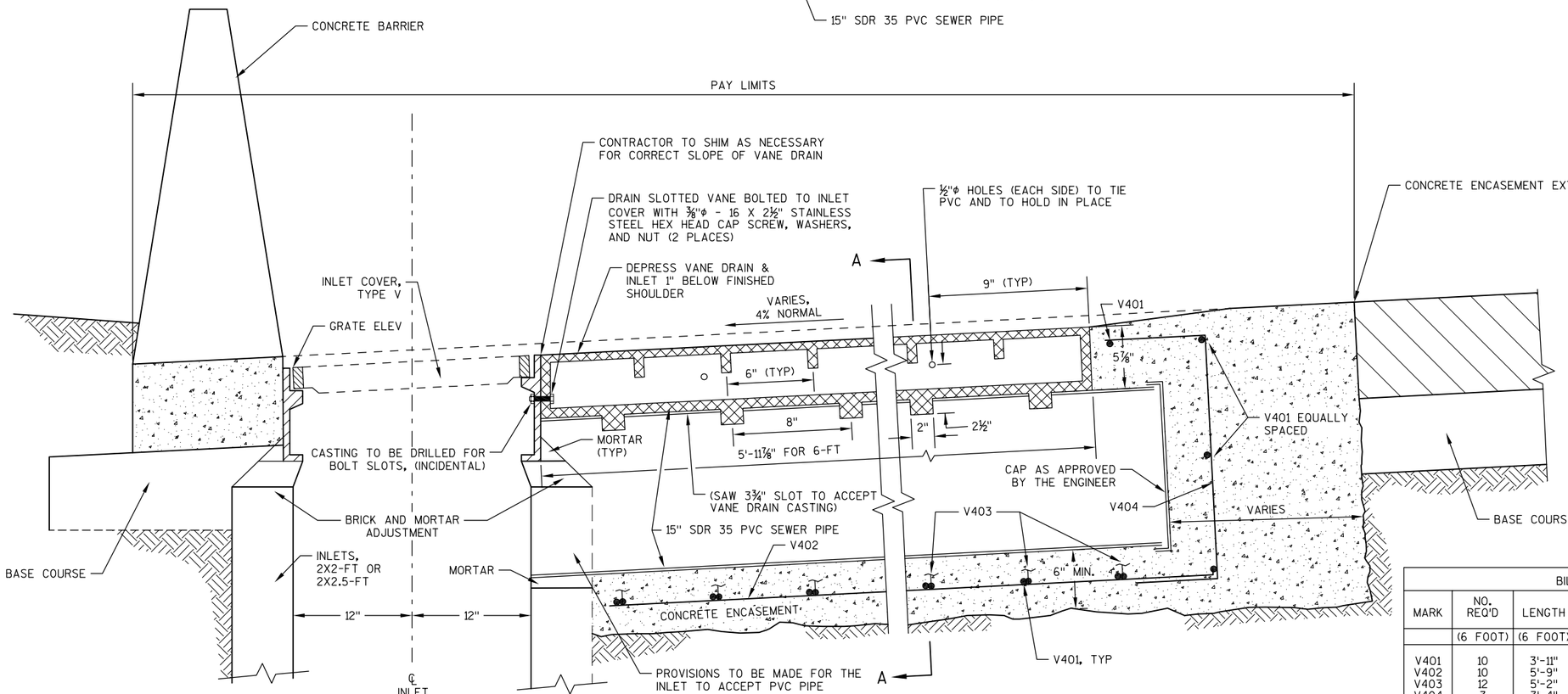
APPROX. WEIGHT OF DRAIN SLOTTED VANE CASTING = 87 POUNDS.

THE CASTING AND PVC PIPE SHALL BE SECURELY STAKED AND ANCHORED INTO PLACE DURING THE PLACEMENT OF THE CONCRETE ENCASEMENT.



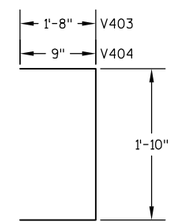


SECTION A-A



DRAIN SLOTTED VANE, TYPE A 6 FT

SHOULDER INSTALLATION



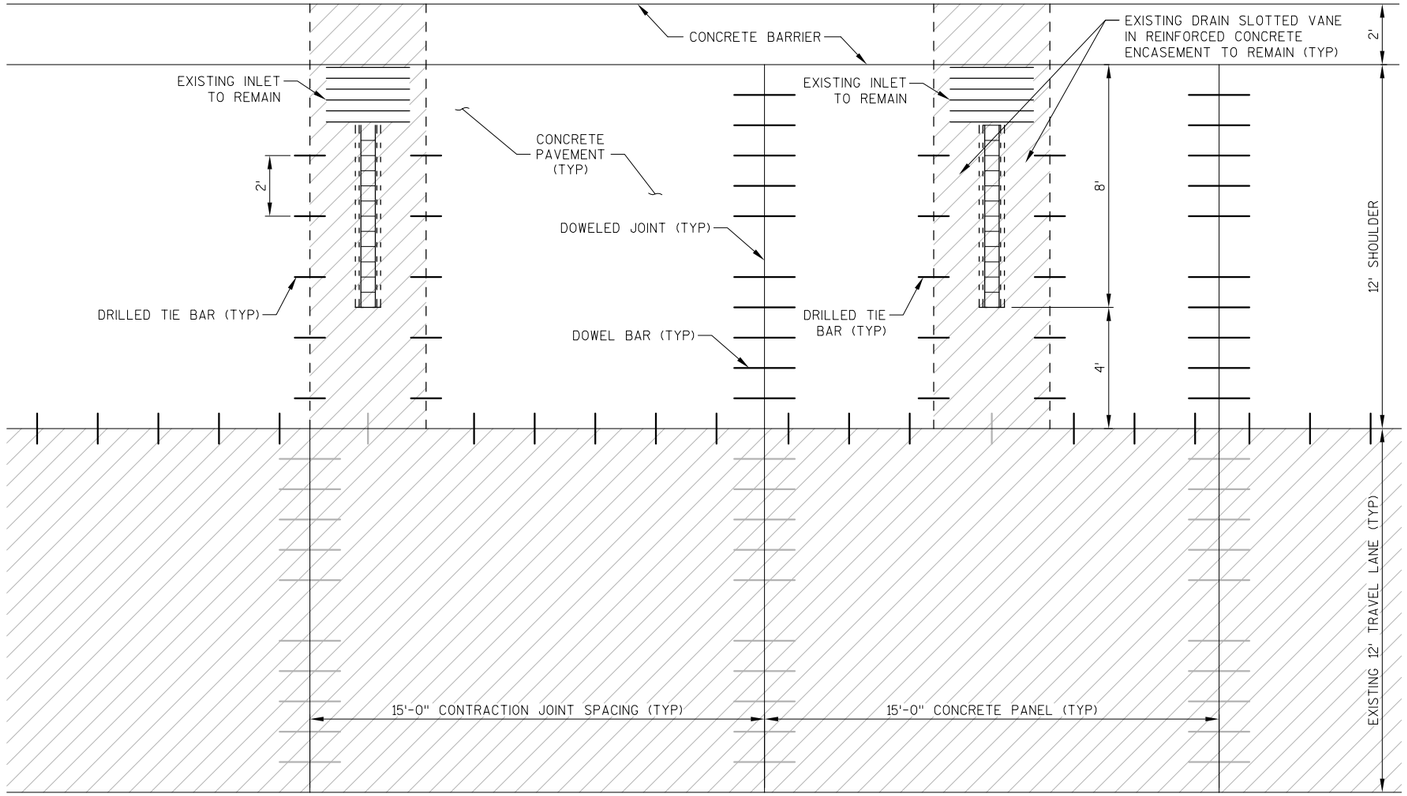
V403, V404

BILL OF BARS *				
MARK	NO. REQ'D	LENGTH	BENT	LOCATION
	(6 FOOT)	(6 FOOT)		
V401	10	3'-11"		HORZ. - END/BOTTOM
V402	10	5'-9"		HORZ. - SIDES/TOP/BOTTOM
V403	12	5'-2"	X	VERTICAL - SIDES
V404	3	3'-4"	X	VERTICAL - END

* INCIDENTAL TO THE ITEM OF SLOTTED DRAIN TYPE A 6-FT

2

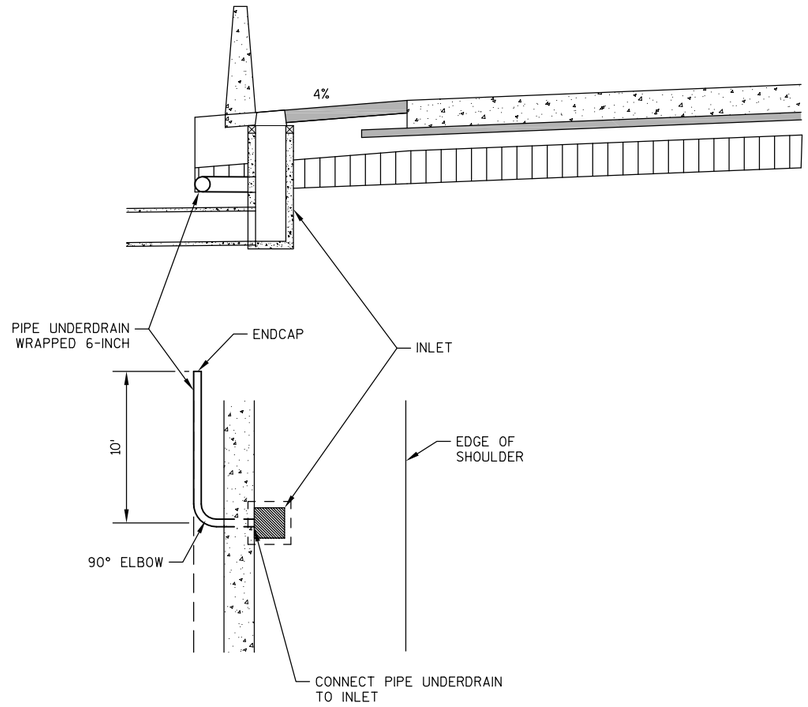
EXISTING CONCRETE



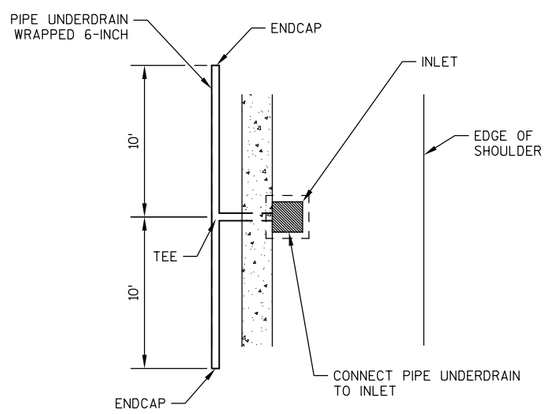
DRAIN SLOTTED VANE AT DOWELED JOINT

DRAIN SLOTTED VANE IN CENTER OF CONCRETE PANEL

CONCRETE PAVEMENT SHOULDER AT EXISTING DRAIN SLOTTED VANE LOCATIONS



ON GRADE



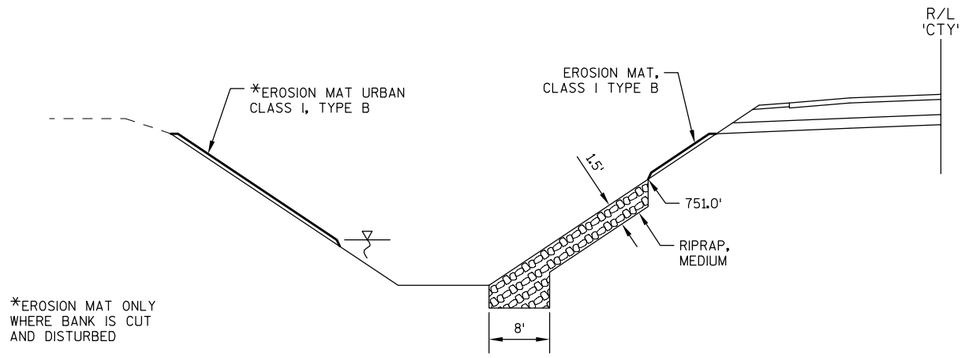
AT LOW POINTS

NOTES:

BACKFILL 3" AROUND PIPE UNDERDRAIN WITH BASE AGGREGATE OPEN GRADED (INCIDENTAL TO PIPE UNDERDRAIN)

CENTER OF PIPE UNDERDRAIN TO CONNECT TO INLET 6" BELOW SUBGRADE

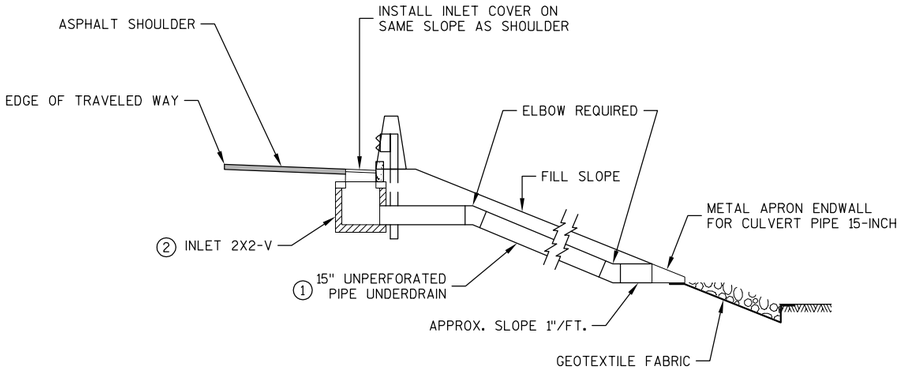
DETAIL FOR PIPE UNDERDRAIN AT OUTSIDE SHOULDER INLETS



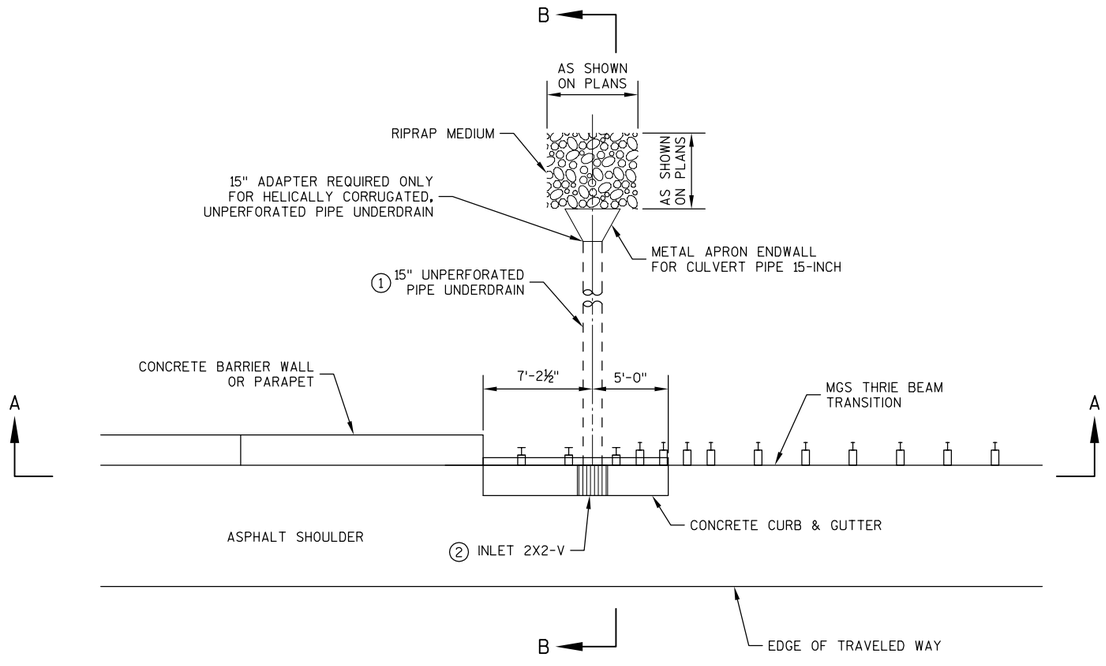
*EROSION MAT ONLY WHERE BANK IS CUT AND DISTURBED

DETAIL FOR CHANNEL TREATMENT

STA 10'CTY'+00 - STA 18'CTY'+00, LT



SECTION B-B



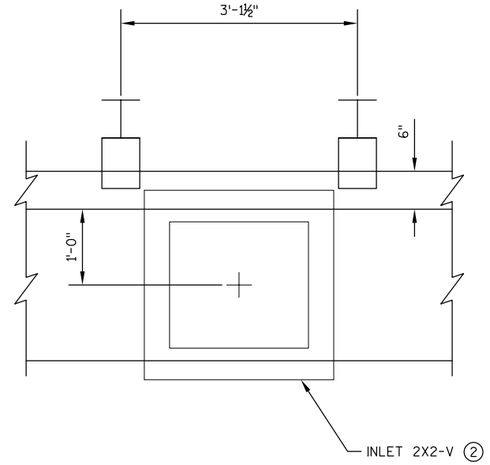
PLAN VIEW

GENERAL NOTES:

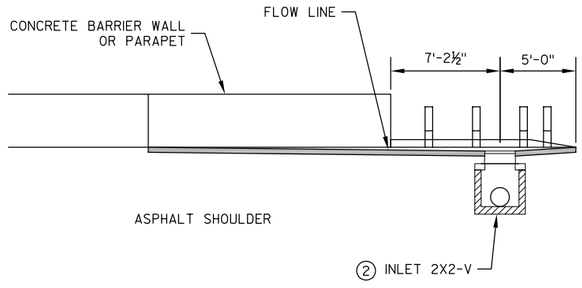
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.

② SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.



PLAN VIEW

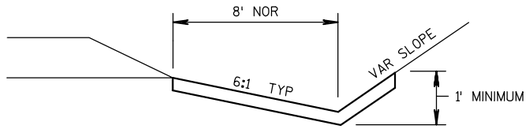


SECTION A-A

DRAIN DROP INLETS AT STRUCTURE DETAIL

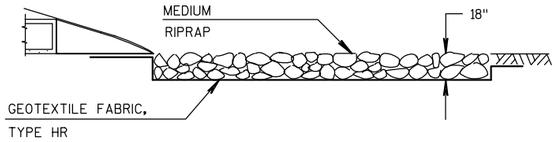
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CONSTRUCTION DETAILS	SHEET 22	E

FLAT BOTTOM DITCHES

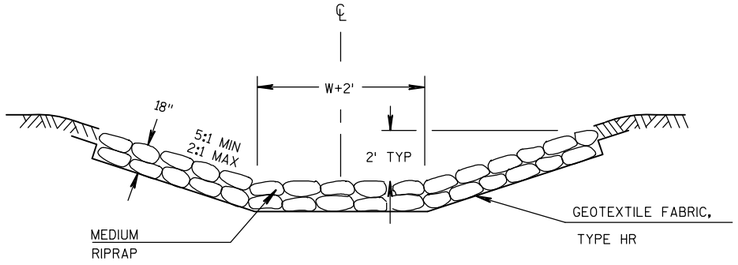


V-DITCHES

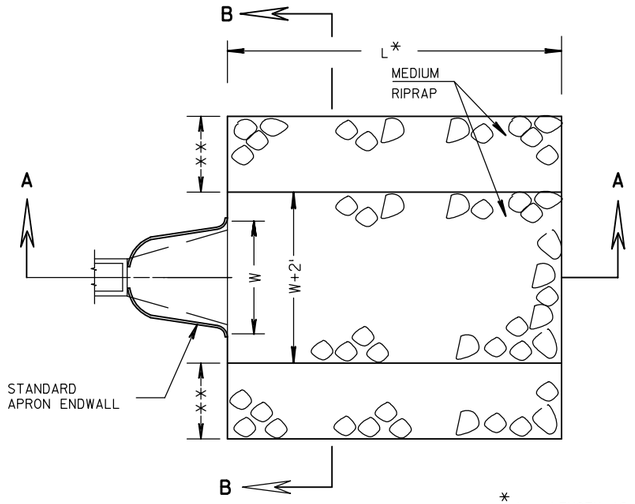
EROSION MAT DETAILS FOR DITCHES



SECTION A-A



SECTION B-B



PLAN VIEW

* L = LENGTH AS SHOWN ON PLANS

** ADDITIONAL WIDTH TO MATCH TOP OF SLOPE

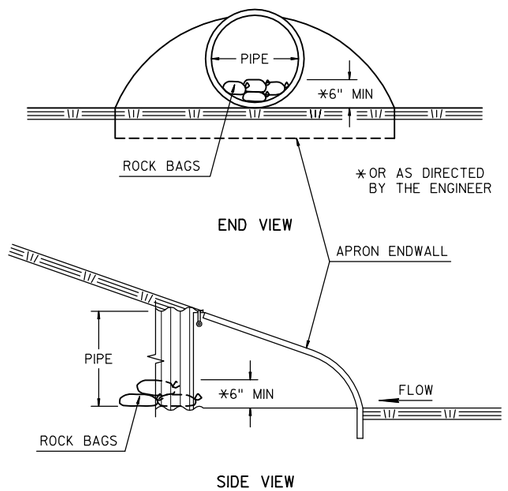
MEDIUM RIPRAP AND GEOTEXTILE FABRIC

DETAIL AT APRON ENDWALLS

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP-TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE-TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

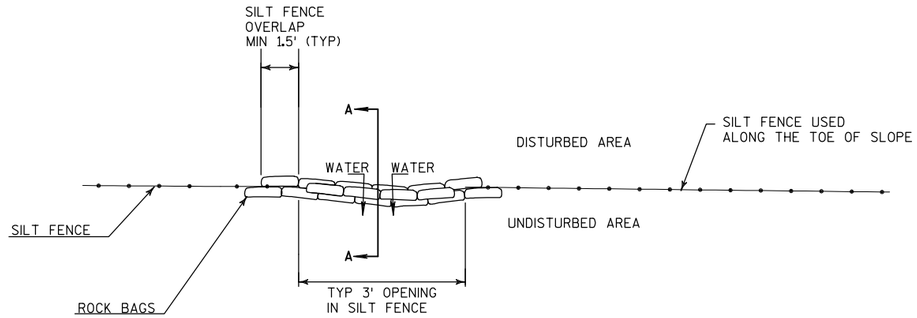
TOTAL PROJECT AREA = 17.1 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 12.6 ACRES



SIDE VIEW

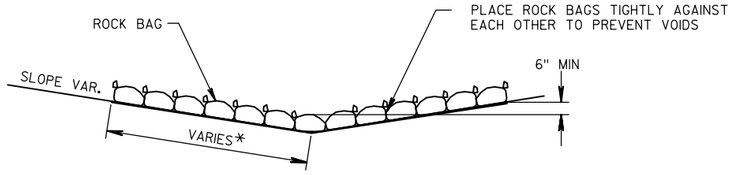
CULVERT PIPE CHECKS DETAIL

SECTION A-A

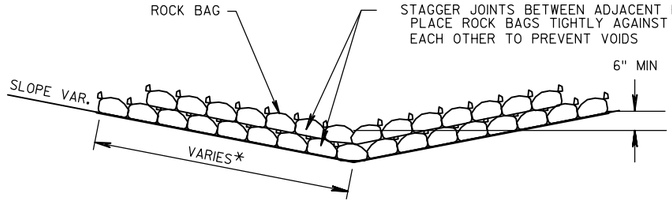


PLAN VIEW

ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL



SIDE VIEW (SINGLE LAYER)

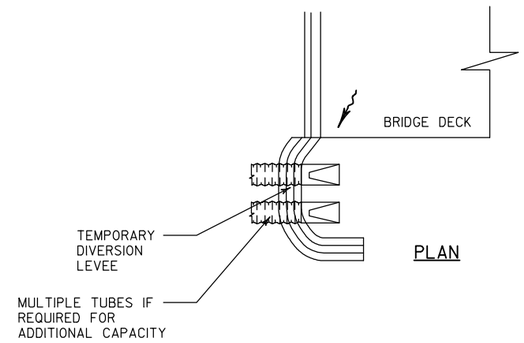


* LENGTH AND NUMBER OF BAGS MAY VARY
DEPENDING ON DESIRED DEPTH OF WATER POOL

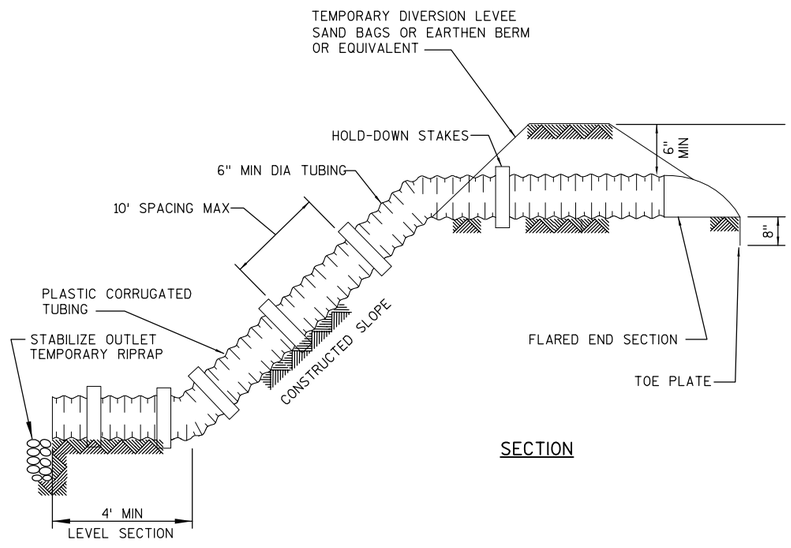
SIDE VIEW (MULTIPLE LAYER)

ROCK BAGS USED FOR DITCH CHECKS DETAIL

ROCK BAGS DETAIL



PLAN



SECTION

NOTES:
1. TEMPORARY LEVEE SHALL BE CONSTRUCTED FROM EARTHEN BERM, SAND BAGS, OR OTHER EQUIVALENT MATERIAL TO TEMPORARILY DIVERT WATER ALONG THE TOP OF SLOPE.
2. ADD MULTIPLE CONDUITS DOWN THE SLOPE AS REQUIRED FOR DISCHARGE CAPACITY.
3. CONDUIT MATERIAL SHALL BE HEAVY DUTY FLEXIBLE MATERIAL SUCH AS NON-PERFORATED CORRUGATED PLASTIC TUBING OR SPECIALLY DESIGNED FLEXIBLE TUBING.
4. THE FLARED END SECTION AT THE INLET SHALL BE WATER-TIGHT WITH HAND COMPACTED MATERIAL AROUND THE PIPE AND END SECTION.
5. THE SOIL MATERIAL AROUND THE PIPE SHALL BE HAND COMPACTED IN 6" LIFTS TO FILL ALL VOIDS IN THE TUBING CORRUGATIONS.
6. REMOVE TEMPORARY DRAINS AND TEMPORARY LEVEES AFTER SLOPE IS FULLY STABILIZED WITH VEGETATION AND EROSION CONTROL FEATURES.
7. TEMPORARY OUTLET STABILIZATION SUCH AS RIPRAP OR OTHER APPROVED METHOD IS INCIDENTAL TO THE TEMPORARY SLOPE DRAIN ITEM.

TEMPORARY SLOPE DRAIN DETAIL

2

GREEN VALLEY RD

N

0 50 100
SCALE IN FEET

WETLAND LIMITS, TYP

734'SAB' 736'SAB' 738'SAB' 740'SAB' USH 41 SB 742'SAB' 744'SAB' 746'SAB' 748'S

TYPE D

734'NAB' 736'NAB' 738'NAB' 740'NAB' 742'NAB' 744'NAB' 746'NAB' 748'N

TYPE D

USH 41 NB

MATCH LINE 748'NAB'+00

LEGEND

- SILT FENCE
- TURBIDITY BARRIER
- SLOPE INTERCEPT
- COFFER DAM
- INLET PROTECTION*
- CULVERT PIPE CHECKS
- ROCK BAGS
- ROCK BAGS (SILT FENCE RELIEF)
- TEMPORARY DITCH CHECK
- TSD TEMPORARY SLOPE DRAIN AT BRIDGES
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING

* INLET PROTECTION SHALL BE TYPE B UNLESS OTHERWISE NOTED IN THE PLANS.

ALL EXISTING INLETS WITHIN THE PROJECT LIMITS SHALL RECEIVE INLET PROTECTION.

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

NOTE:
TEMPORARY EROSION CONTROL ITEMS ARE SHOWN FOR ALL STAGES OF WORK ON THIS SHEET. SEE THE MISCELLANEOUS QUANTITIES SHEETS FOR ADDITIONAL INFORMATION.

N

0 50 100
SCALE IN FEET

WETLAND LIMITS, TYP

MATCH LINE 748'NAB'+00

CTH T

TSD

15" PUU

72"CY

18" SS

750'SAB' TYPE D USH 41 SB 752'SAB' 754'SAB' 756'SAB' 758'SAB' 760'SAB' 762'SAB'

750'NAB' 752'NAB' 754'NAB' 756'NAB' 758'NAB' 760'NAB' 762'NAB'

TYPE D

USH 41 NB

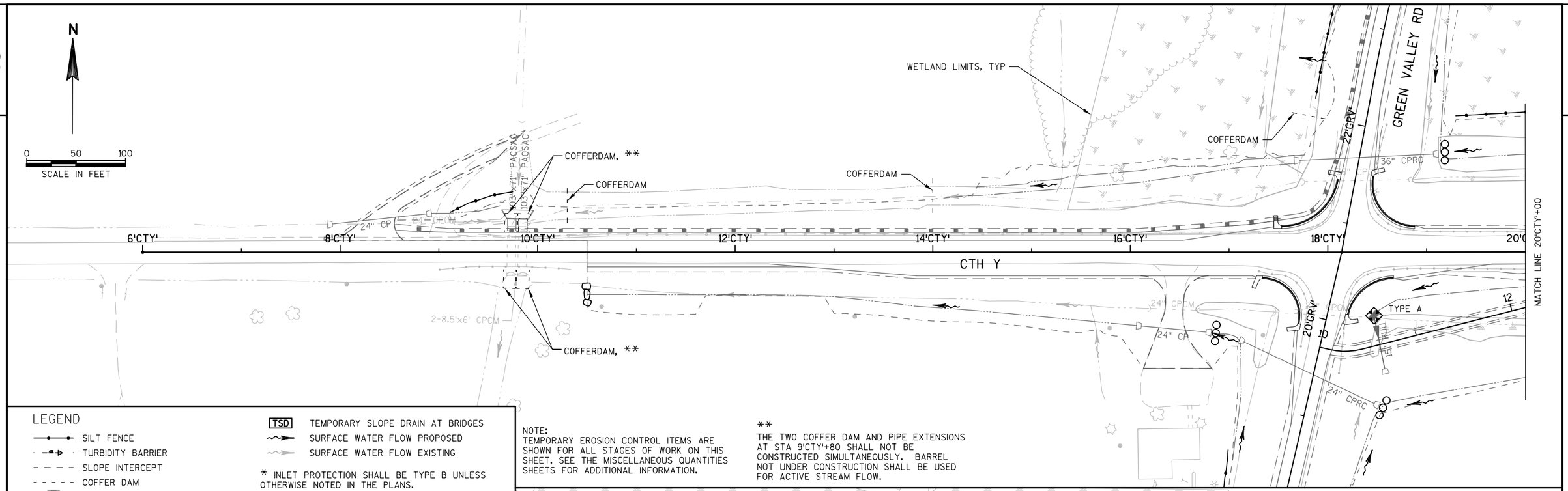
18" SS

48" CPRC

24"CY

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL TEMPORARY - USH 41	SHEET 25	E

FILE NAME : GR_0976_022001_ECT PLOT DATE : 12 APR 2013 15:33:22 PLOT BY : GABLO PLOT NAME : PLOT SCALE : 1:2



LEGEND

- SILT FENCE
- TURBIDITY BARRIER
- SLOPE INTERCEPT
- COFFER DAM
- INLET PROTECTION*
- CULVERT PIPE CHECKS
- ROCK BAGS
- ROCK BAGS (SILT FENCE RELIEF)
- TEMPORARY DITCH CHECK
- TSD TEMPORARY SLOPE DRAIN AT BRIDGES
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING

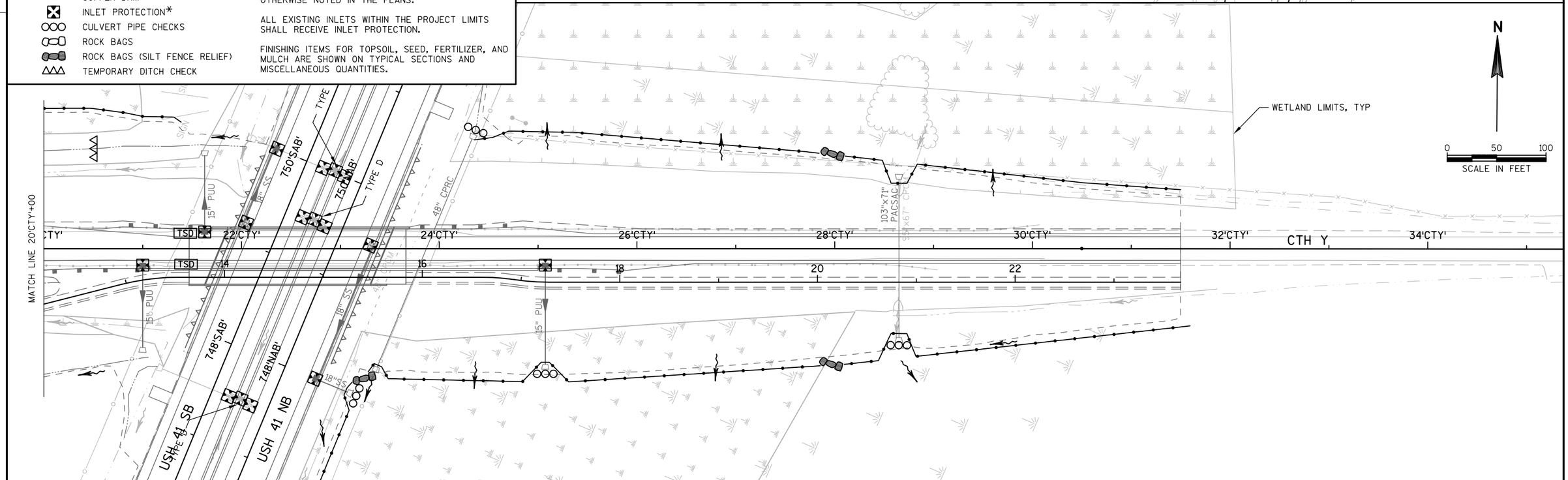
* INLET PROTECTION SHALL BE TYPE B UNLESS OTHERWISE NOTED IN THE PLANS.

ALL EXISTING INLETS WITHIN THE PROJECT LIMITS SHALL RECEIVE INLET PROTECTION.

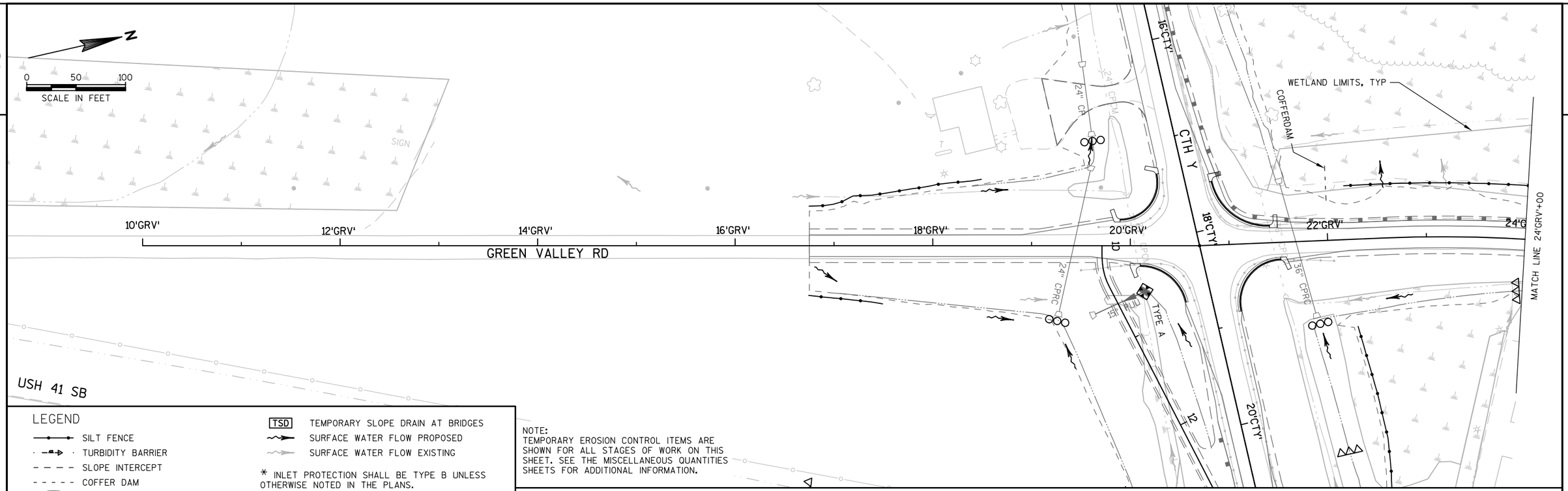
FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

NOTE:
TEMPORARY EROSION CONTROL ITEMS ARE SHOWN FOR ALL STAGES OF WORK ON THIS SHEET. SEE THE MISCELLANEOUS QUANTITIES SHEETS FOR ADDITIONAL INFORMATION.

**
THE TWO COFFER DAM AND PIPE EXTENSIONS AT STA 9'CTY'+80 SHALL NOT BE CONSTRUCTED SIMULTANEOUSLY. BARREL NOT UNDER CONSTRUCTION SHALL BE USED FOR ACTIVE STREAM FLOW.



PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL TEMPORARY - CTH Y	SHEET 26	E



LEGEND

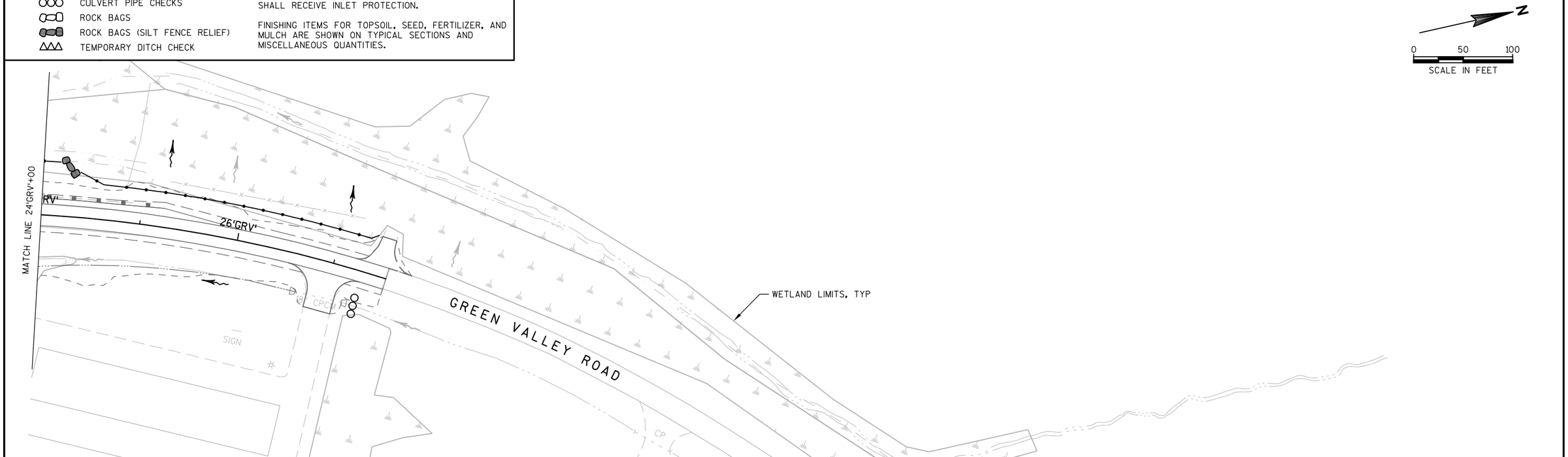
- SILT FENCE
- TURBIDITY BARRIER
- SLOPE INTERCEPT
- COFFER DAM
- INLET PROTECTION*
- CULVERT PIPE CHECKS
- ROCK BAGS
- ROCK BAGS (SILT FENCE RELIEF)
- TEMPORARY DITCH CHECK
- TSD TEMPORARY SLOPE DRAIN AT BRIDGES
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING

* INLET PROTECTION SHALL BE TYPE B UNLESS OTHERWISE NOTED IN THE PLANS.

ALL EXISTING INLETS WITHIN THE PROJECT LIMITS SHALL RECEIVE INLET PROTECTION.

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

NOTE:
TEMPORARY EROSION CONTROL ITEMS ARE SHOWN FOR ALL STAGES OF WORK ON THIS SHEET. SEE THE MISCELLANEOUS QUANTITIES SHEETS FOR ADDITIONAL INFORMATION.



PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL TEMPORARY - GREEN VALLEY ROAD	SHEET 27	E

2

N

0 50 100

SCALE IN FEET

WETLAND LIMITS, TYP

GREEN VALLEY RD

CTH Y

6'CTY' 8'CTY' 10'CTY' 12'CTY' 14'CTY' 16'CTY' 18'CTY' 20'C

MATCH LINE 20'CTY'+00

2-8.5'x6' CPCM

24" CP

24" CPCM

24" CPRC

20'GRV

36" CP

12

10

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT CLASS II TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- SLOPE INTERCEPT
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING
- RIPRAP MEDIUM

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

N

0 50 100

SCALE IN FEET

WETLAND LIMITS, TYP

MATCH LINE 20'CTY'+00

22'CTY' 24'CTY' 26'CTY' 28'CTY' 30'CTY' 32'CTY' CTH Y 34'CTY'

14 16 18 20 22

750'SAB' 750'NAB' 748'SAB' 748'NAB'

18" SS

USH 41 SB

USH 41 NB

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL PERMANENT - CTH Y	SHEET 28	E

FILE NAME : GR_0976_022101_ECP PLOT DATE : 12 APR 2013 15:34:52 PLOT BY : GABLO PLOT NAME : PLOT SCALE : 1:2

WISDOT/CADDS SHEET 42

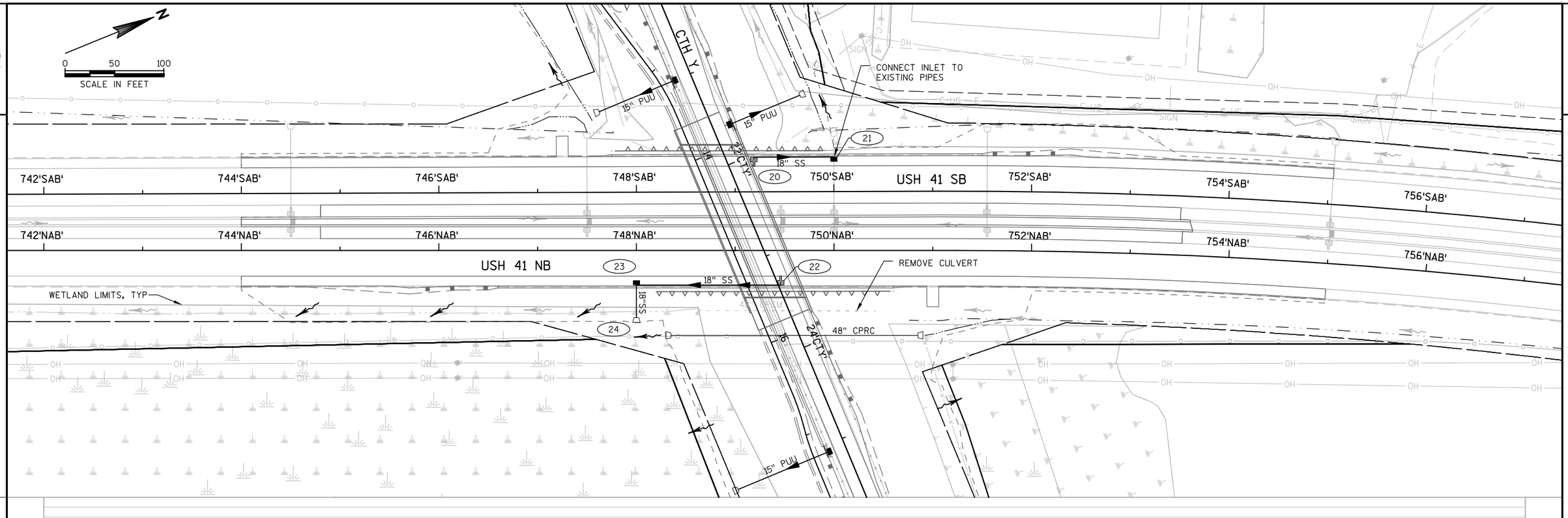
LEGEND

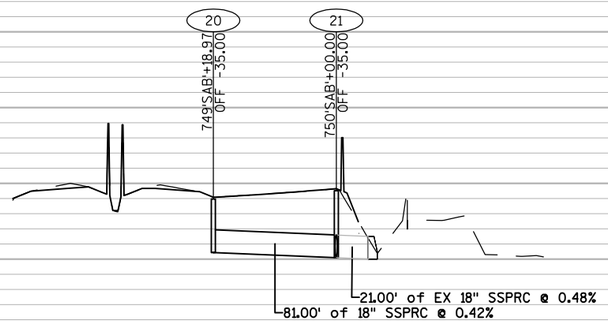
- EROSION MAT CLASS I TYPE B
- EROSION MAT CLASS II TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- SLOPE INTERCEPT
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING
- RIPRAP MEDIUM

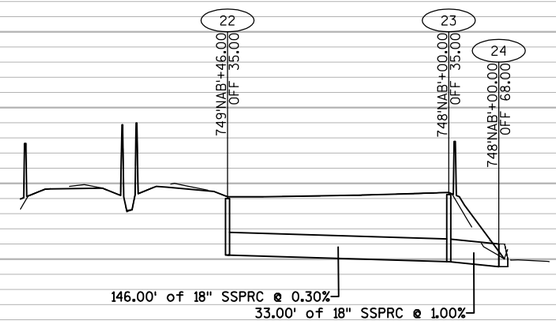
FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL PERMANENT - GREEN VALLEY ROAD	SHEET 29	E

FILE NAME : GR_0976_022102_ECP PLOT DATE : 12 APR 2013 15:35:19 PLOT BY : GABLO PLOT NAME : PLOT SCALE : 1:2





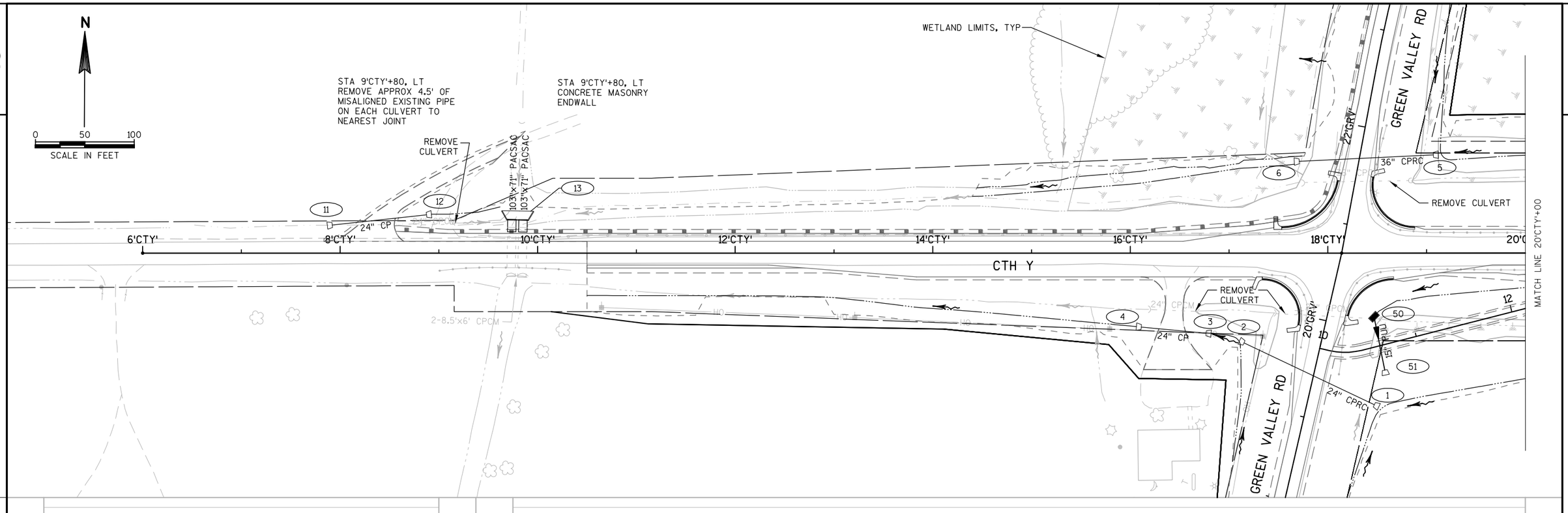


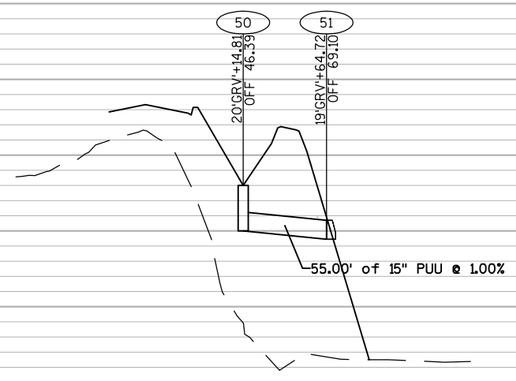
20	21
RIM: 753.97	RIM: 754.53
SUMP: 750.44	SUMP: 750.10
DEPTH: 3.52	DEPTH: 4.43
INV OUT: 750.44 18" SSPRC	INV IN: 750.10 18" SSPRC
	INV IN: 750.10 EX 18" SSPRC
	INV OUT: 750.10 EX 18" SSPRC

22	23	24
RIM: 754.00	RIM: 754.28	INV: 749.50 18" SSPRC
SUMP: 750.27	SUMP: 749.83	
DEPTH: 3.73	DEPTH: 4.45	
INV OUT: 750.27 18" SSPRC	INV IN: 749.83 18" SSPRC	
	INV OUT: 749.83 18" SSPRC	

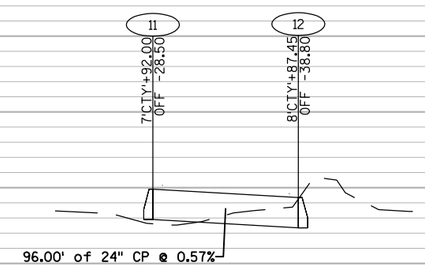
NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

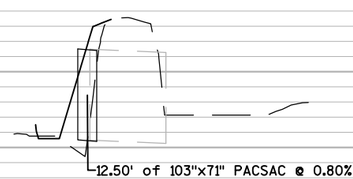
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - USH 41	SHEET 30	E



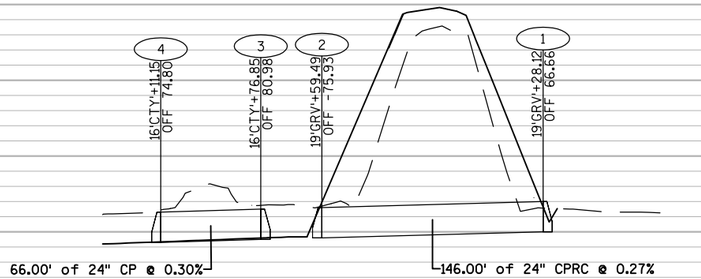


NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

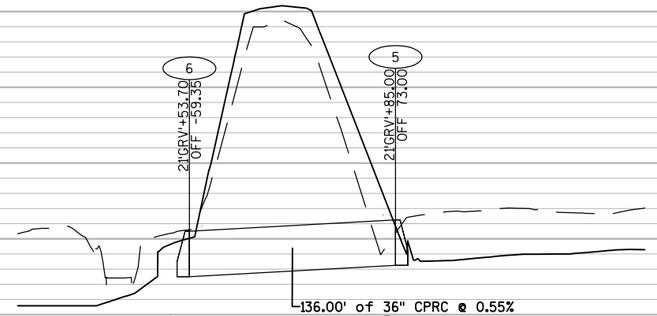




PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - CTH Y	SHEET 31	E



4 INV: 749.30 24" CP
3 INV: 749.50 24" CP
2 INV: 749.60 24" CPRC
1 INV: 750.00 24" CPRC

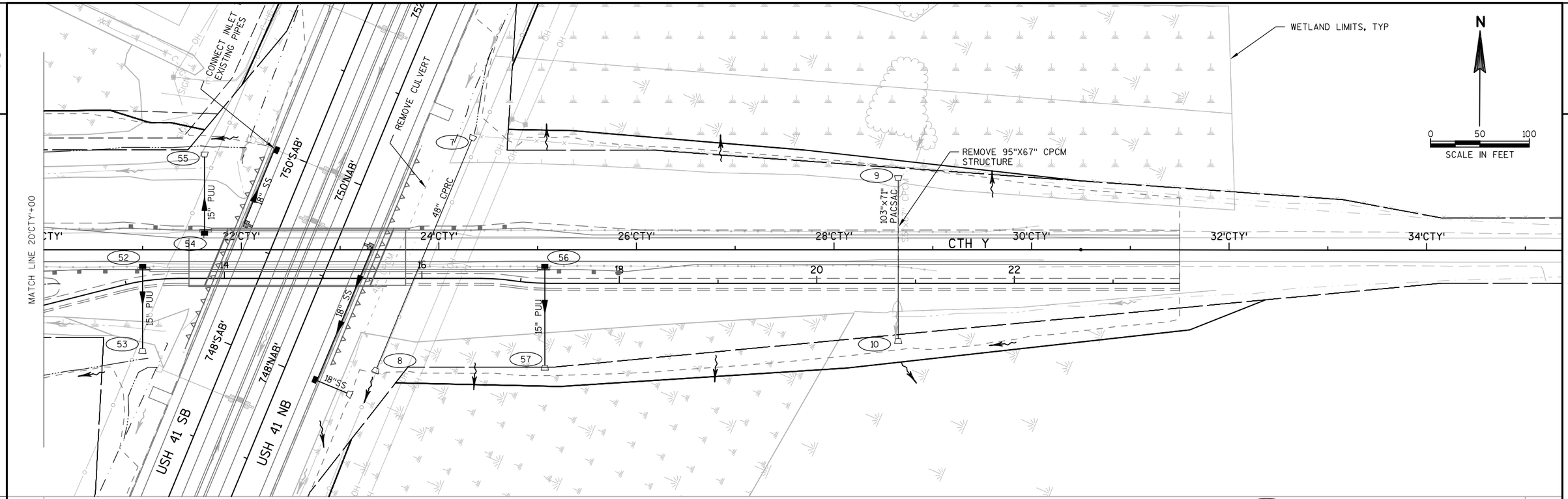


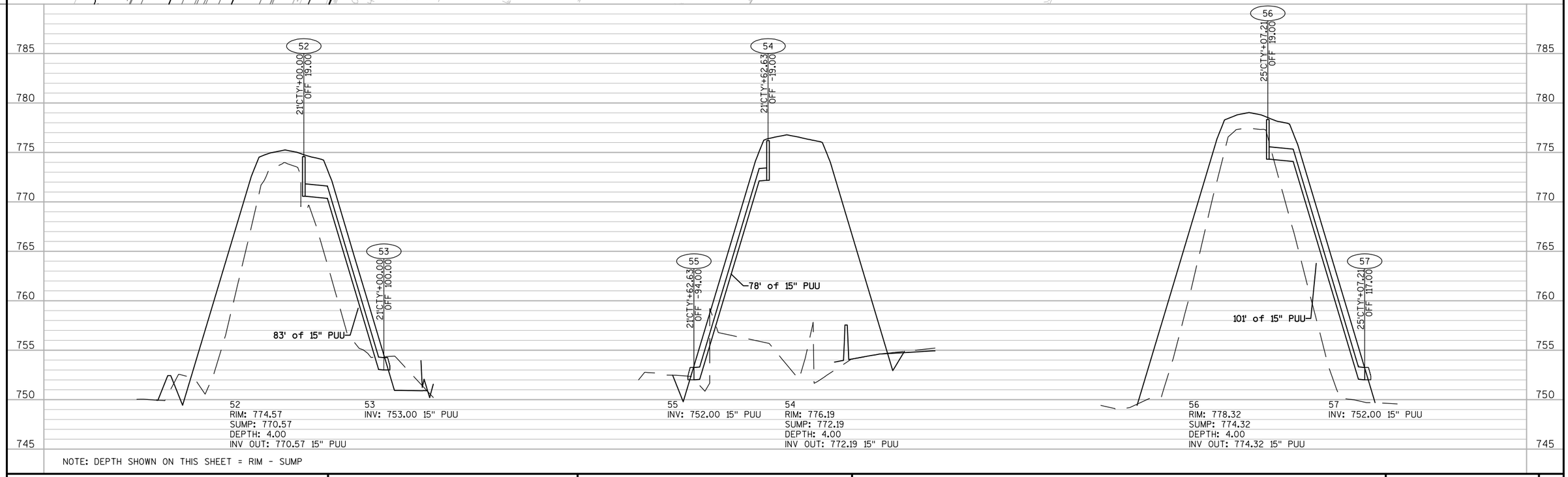
6 INV: 747.50 36" CPRC
5 INV: 748.25 36" CPRC

780 775 770 765 760 755 750 745 740

NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - CTH Y	SHEET 32	E





52
RIM: 774.57
SUMP: 770.57
DEPTH: 4.00
INV OUT: 770.57 15" PUU

53
INV: 753.00 15" PUU

55
INV: 752.00 15" PUU

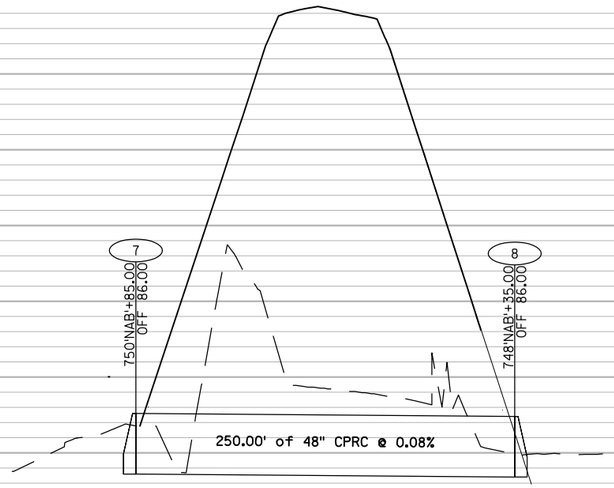
54
RIM: 776.19
SUMP: 772.19
DEPTH: 4.00
INV OUT: 772.19 15" PUU

56
RIM: 778.32
SUMP: 774.32
DEPTH: 4.00
INV OUT: 774.32 15" PUU

57
INV: 752.00 15" PUU

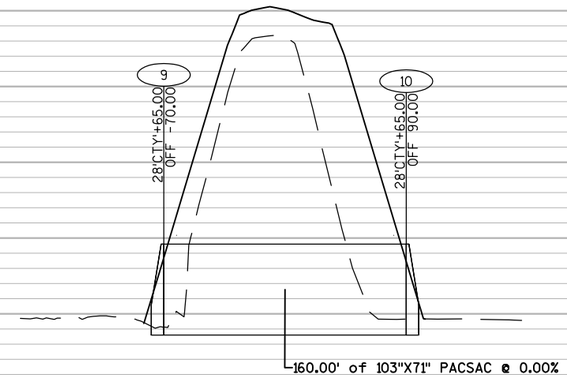
NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - CTH Y	SHEET 33	E



7
INV: 748.60 48" CPRC

8
INV: 748.40 48" CPRC



9
INV: 748.60 103"X71" PACSAC

10
INV: 748.60 103"X71" PACSAC

NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - CTH Y	SHEET 34	E

STRUCTURE											DISCHARGE PIPE						
NO.	STATION	(8) LOCATION (FT)	STRUCTURE	COVER TYPE	(1) RIM/GRATE ELEV	(2) TOP OF STRUCT ELEV	DISCHARGE PIPE UPSTREAM ELEV	(3) STRUCTURE DEPTH (FT)	REMARKS	CONNECTION TO PIPE UNDEDRAIN REQUIRED SEE DETAIL	SIZE (INCHES)	DISTANCE (FT)	SLOPE (%)	PIPE TYPE	PIPE CLASS	DRAINS TO	DISCHARGE PIPE DOWNSTREAM ELEV
1	19'GRV'+28.12	66.66	Endwall RC	---	---	---	750.00	---			24	146.00	0.27%	CPRC	IV	2	749.60
2	19'GRV'+59.49	-75.93	Endwall RC	---	---	---	749.60	---			24	---	---	---	---	---	---
3	16'CTY'+76.85	80.98	Endwall	---	---	---	749.50	---			24	66.00	0.30%	CP	III	4	749.30
4	16'CTY'+11.15	74.80	Endwall	---	---	---	749.30	---			24	---	---	---	---	---	---
5	21'GRV'+85.00	73.00	Endwall RC	---	---	---	748.25	---			36	136.00	0.55%	CPRC	IV	6	747.50
6	21'GRV'+53.70	-59.35	Endwall RC	---	---	---	747.50	---			36	---	---	---	---	---	---
7	750'NAB'+85.00	86.00	Endwall RC	---	---	---	748.60	---			48	250.00	0.08%	CPRC	IV	8	748.40
8	748'NAB'+35.00	86.00	Endwall RC	---	---	---	748.40	---			48	---	---	---	---	---	---
9	28'CTY'+65.00	-70.00	Endwall PA Steel	---	---	---	748.60	---			103X71	160.00	0.00%	PACSAC	10-GAUGE	10	748.60
10	28'CTY'+65.00	90.00	Endwall PA Steel	---	---	---	748.60	---			103X71	---	---	---	---	---	---
11	7'CTY'+92.00	-28.50	Endwall	---	---	---	747.90	---			24	96.00	0.57%	CP	III	12	747.35
12	8'CTY'+87.45	-38.80	Endwall	---	---	---	747.35	---			24	---	---	---	---	---	---
13	9'CTY'+80.00	-34.00	Masonry Endwall	---	---	---	745.50	---	CONNECT TO EXIST TWIN PIPES, PROP 12.5' EACH PIPE		103X71	25.00	---	PACSAC	10-GAUGE	EXIST	---
14	27'GRV'+18	35.80	Endwall Steel	---	---	---	---	---	CONNECT TO EXIST CPCM		18	---	---	EXIST CPCM	---	---	---
15	27'GRV'+69	37.80	Endwall Steel	---	---	---	---	---	CONNECT TO EXIST CPCM		18	---	---	EXIST CPCM	---	---	---
20	749'SAB'+18.97	-35.00	Inlets 2x2-Ft	V,VD	753.97	752.72	750.44	2.28		X	18	81.00	0.42%	SSPRC	IV	21	750.10
21	750'SAB'+00.00	-35.00	Inlets 2x2-Ft	V	754.53	753.28	750.10	3.18	CONNECT INTO EXIST PIPE	X	18	---	---	---	---	---	---
22	749'NAB'+46.00	35.00	Inlets 2x2-Ft	V,VD	754.00	752.75	750.27	2.48		X	18	146.00	0.30%	SSPRC	IV	23	749.83
23	748'NAB'+00.00	35.00	Inlets 2x2-Ft	V	754.28	753.03	749.83	3.20		X	18	33.00	1.00%	SSPRC	IV	24	749.50
24	748'NAB'+00.00	68.00	Endwall RC	---	---	---	749.50	---			18	---	---	---	---	---	---
50	20'GRV'+14.81	46.39	Inlets Median 2 Grate	MS	763.00	763.00	760.00	3.00			15	55.00	1.00%	PUU	---	51	759.45
51	19'GRV'+64.72	69.10	Endwall Steel	---	---	---	759.45	---			15	---	---	---	---	---	---
52	21'CTY'+00.00	19.00	Inlets 2x2-Ft	V	774.57	773.32	770.57	2.75			15	83.00	---	PUU	---	53	753.00
53	21'CTY'+00.00	100.00	Endwall Steel	---	---	---	753.00	---			15	---	---	---	---	---	---
54	21'CTY'+62.63	-19.00	Inlets 2x2-Ft	V	776.19	774.94	772.19	2.75			15	78.00	---	PUU	---	55	752.00
55	21'CTY'+62.63	-94.00	Endwall Steel	---	---	---	752.00	---			15	---	---	---	---	---	---
56	25'CTY'+07.21	19.00	Inlets 2x2-Ft	V	778.32	777.07	774.32	2.75			15	101.00	---	PUU	---	57	752.00
57	25'CTY'+07.21	117.00	Endwall Steel	---	---	---	752.00	---			15	---	---	---	---	---	---

1) GRATE ELEVATIONS SHOWN FOR TYPE V & VD COVERS ARE DEPRESSED 0.08' FROM NORMAL GUTTER FLOWLINE ELEVATION.
2) TOP OF STRUCTURE ELEVATION = RIM/GRATE ELEVATION - CASTING DEPTH - 6" ADJUSTMENT
3) STRUCTURE DEPTH = TOP OF STRUCTURE ELEVATION - INVERT ELEVATION.
4) JOINT TIES ARE REQUIRED AT REINFORCED CONCRETE APRON ENDWALLS AND ADJOINING 2 SECTIONS OF STORM SEWER PIPE. JOINT TIES ARE INCIDENTAL TO REINFORCED CONCRETE PIPE, STORM SEWER.
5) MANHOLES SHALL BE CONSTRUCTED IN A WAY THAT WILL ALLOW THE CASTING TO BE ALIGNED IN THE MIDDLE OF A LANE OR ON A LANE LINE.
6) CONTRACTOR SHALL VERIFY EXISTING PIPE SIZES, MATERIALS AND INVERT ELEVATION WHEN CONNECTING NEW STORM SEWER INTO EXISTING PIPES PRIOR TO MANUFACTURING STRUCTURES.
7) STATION/ OFFSET OF CONCRETE APRON ENDWALLS ARE TO PIPE END.
8) LOCATION OFFSET: NEGATIVE DISTANCE EQUALS LEFT OF REFERENCE LINE, POSITIVE DISTANCE EQUALS RIGHT OF REFERENCE LINE.
9) DRAIN SLOTTED VANE NOTED IN STRUCTURE DATA TABLES AS VD.

2

N

0 50 100
SCALE IN FEET

742'SAB'
742'NAB'
744'SAB'
744'NAB'
746'SAB'
746'NAB'
748'SAB'
748'NAB'
750'SAB'
750'NAB'
752'SAB'
752'NAB'
754'SAB'
754'NAB'
756'SAB'
756'NAB'

R/L SHARED USE PATH
R/L USH 41 SB
R/L USH 41 NB
R/L CTH Y
R/L SHARED USE PATH

24'GRV'
26'GRV'
12
20'CTY'
16
24'CTY'
18
26'CTY'
20
28'CTY'

2-10
Hwy Y
M1-94
54" X 21"

2-11
Hwy Y
M1-94
54" X 21"

LEGEND

- WOOD POSTS
- SIGN-MOVE
- T SINGLE DELINEATOR STEEL POST
- ● DELINEATOR AND DELINEATOR BRACKET

2

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	PAVEMENT MARKING/SIGNING - USH 41	SHEET 36	E

FILE NAME : ch_0976_024501_pm.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42

LEGEND

EPOXY	EPOXY
MDY4	PAVEMENT MARKING 4-INCH (DOUBLE YELLOW)
MWE4	PAVEMENT MARKING 4-INCH (WHITE EDGE LINE)
MW8	PAVEMENT MARKING 8-INCH (WHITE)
MY4	PAVEMENT MARKING 4-INCH (YELLOW)
YS4-12.5	PAVEMENT MARKING 4-INCH (YELLOW SKIP) (12½' SEGMENT, 37½' GAP)
	WOOD POSTS
	SIGN-MOVE
	SIGN-REMOVE AND REPLACE
	SIGN-REMOVE EXISTING

N

0 50 100

SCALE IN FEET

6'CTY' 8'CTY' 10'CTY' 12'CTY' 14'CTY' 16'CTY' 18'CTY' 20'CTY'

CTH Y

R/L CTH Y

R/L GREEN VALLEY ROAD

GREEN VALLEY ROAD

22'GRV'

20'GRV'

10 12

MATCH LINE STA 20'CTY'+00

1-1 ADOPT-A-HIGHWAY SPONSOR 30" X 36"

1-2 SPEED LIMIT 45 R2-1 24" X 30"

1-3 STOP R1-1 30" X 30"

1-4 CROSS TRAFFIC DOES NOT STOP W4-4P 24" X 12"

1-5 R5-2 24" X 24"

1-6 STOP R1-1 30" X 30"

1-7 CROSS TRAFFIC DOES NOT STOP W4-4P 24" X 12"

1-8 1-9 WEST FRONTAGE ROAD M1-95A 24" X 30"

1-10 1-11 M6-4 21" X 21"

1-12 GREEN VALLEY RD

1-13 * 45 TON BRIDGE 1/2 MILE AHEAD R12-55 48" X 18"

YS4-12.5 EPOXY — EXTEND PAVEMENT MARKING TO STA 27'GRV'+55

YS4-12.5 EPOXY — EXTEND PAVEMENT MARKING TO STA 16'GRV'+75

MWE4 EPOXY

MW8 EPOXY

MY4 EPOXY

MDY4 EPOXY

R/L SHARED USE PATH

BEGIN CONSTRUCTION
STA 10'CTY'+50.00

R/L USH 41 SB

R/L USH 41 NB

750'SAB'

750'NAB'

748'SAB'

748'NAB'

USH 41 SB

USH 41 NB

2-1 W5-52L 12" X 36"

2-4 W5-52R 12" X 36"

2-3 * WEIGHT LIMIT 45 TONS R12-1 24" X 30"

2-5 REMOVE SOLAR FLASHING LIGHT POLE

W2-1 30" X 30"

2-6 35 M.P.H. W13-1 18" X 18"

2-7 W5-52L 12" X 36"

2-8 * WEIGHT LIMIT 45 TONS R12-1 24" X 30"

2-9 W5-52R 12" X 36"

2-13 * 45 TON BRIDGE 1/2 MILE AHEAD R12-55 48" X 18"

22'CTY' 24'CTY' 26'CTY' 28'CTY' 30'CTY' 32'CTY' 34'CTY'

14 16 18 20 22

CTH Y

END CONSTRUCTION
STA 31'CTY'+50.00

* VERIFY LOCATION AND WEIGHT LIMIT IN FIELD

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	PAVEMENT MARKING/SIGNING - CTH Y	SHEET 37	E

2

STREET LIGHTING PLANS PREPARED BY

WISCONSIN
MIKE D.
SCARMON
E-37613
EVANSVILLE,
WI
PROFESSIONAL ENGINEER

4/15/2013
(DATE)

(SIGNATURE)

LIGHTING PLAN LEGEND

180+25'NAB' - 33'LT - LB6
STATION — OFFSET — LIGHT UNIT NUMBER

- CONCRETE BASE TYPE 7 MEDIAN
- PULL BOX (24" X 42" STEEL)
- CONDUIT RIGID NONMETALLIC (2-INCH SCHEDULE 40 UNLESS NOTED OTHERWISE)

GENERAL NOTES:

1) WISCONSIN DOT NORTHEAST REGION ELECTRICAL UNIT SHALL APPROVE THE FINAL LOCATION FOR ALL CONCRETE BASES IN THE FIELD PRIOR TO CONSTRUCTION. CONTACT THEM 3 DAYS IN ADVANCE AT (920) 492-5654 OR (920) 492-5628.

2) THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

3) LIGHTING INSTALLATION WORK WILL TAKE PLACE UNDER TRAFFIC IN THE USH 41 MEDIAN. REFER TO THE PROJECT SPECIAL PROVISIONS TO IDENTIFY WORKING RESTRICTIONS AND REQUIREMENTS.

NOTES:

1) TOP OF CONCRETE BASE TO BE 1-FOOT BELOW THE TOP OF THE LOWEST BARRIER.

2) ROUTE CONDUIT ALONG SIDE MEDIAN INLETS, SIGN FOOTINGS & BRIDGE PIERS.

3) CONDUIT DEPTH TO BE 6" BELOW BOTTOM OF BREAKER RUN. DEPTH WILL VARY.

4) DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF SECTION 654 OF THE STANDARD SPECIFICATIONS.

5) THE BASES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD DETAIL DRAWING FOR CONCRETE BASE, TYPE 7, EXCEPT FOR THE DETAILS AND OTHER INFORMATION AS SPECIFICALLY SHOWN. PROVIDE REINFORCEMENT AS SHOWN IN THE SDD AND ACCOUNT FOR THE ADDITIONAL BASE HEIGHT.

6) ALL CONDUIT ENDS SHALL PROJECT 4" ABOVE THE CONCRETE BASE PRIOR TO INSTALLATION OF THE PVC CAPS AND SHALL BE LOCATED WITHIN A 6" DIA. CIRCLE ABOUT CENTER OF BASE.

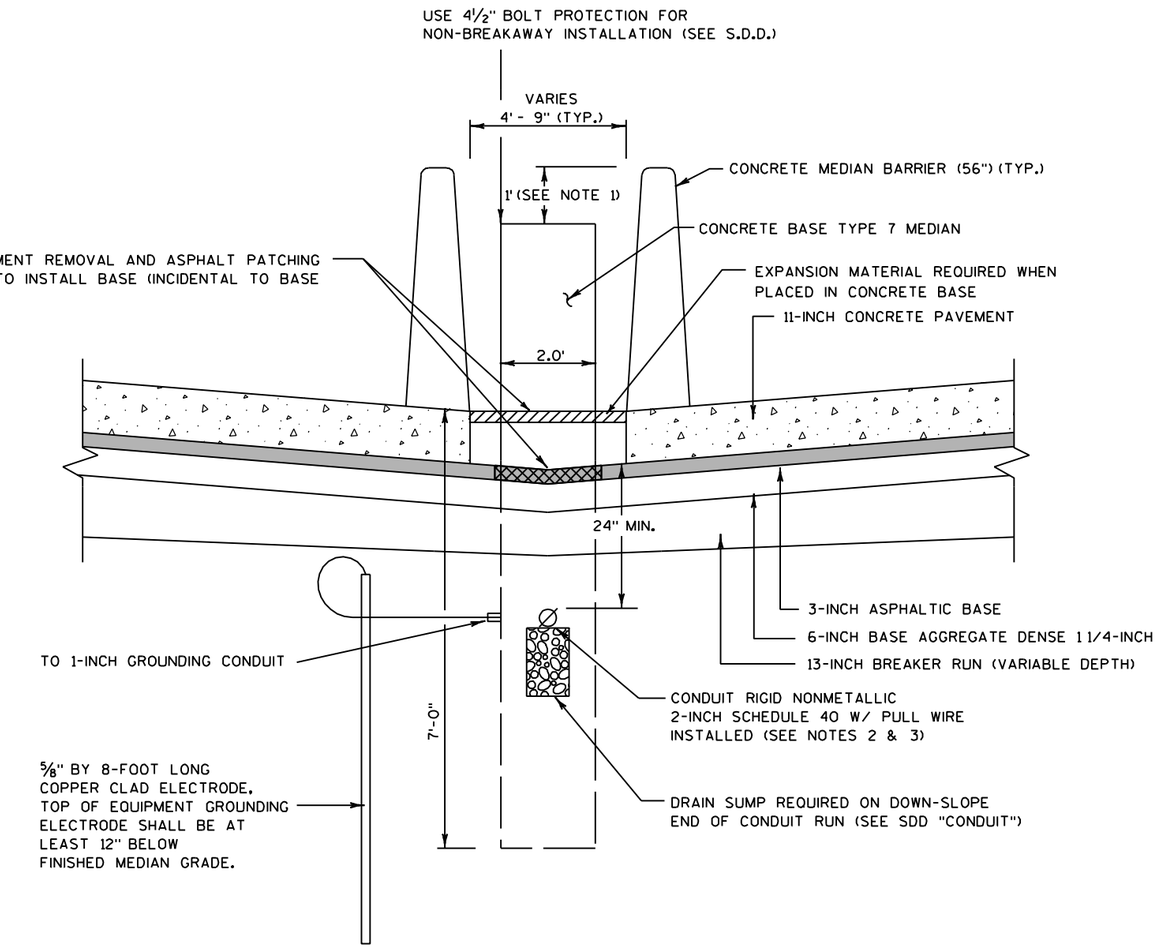
ESTIMATED QUANITIES PER BASE (APPROX.)

APPROX. CUBIC YARDS OF CONCRETE	1.24
LBS. OF HOOP BAR STEEL	44
LBS. OF VERTICAL BAR STEEL	92
1" DIA. X 7.5' ANCHOR RODS	4

NOTES:

ALL QUANTITIES INCIDENTAL TO "CONCRETE BASE TYPE 7 MEDIAN" BID ITEM SPV.0060.351

QUANTITIES ARE APPROXIMATE AND MAY VARY IN SECTIONS WITH GRADE SEPARATION.

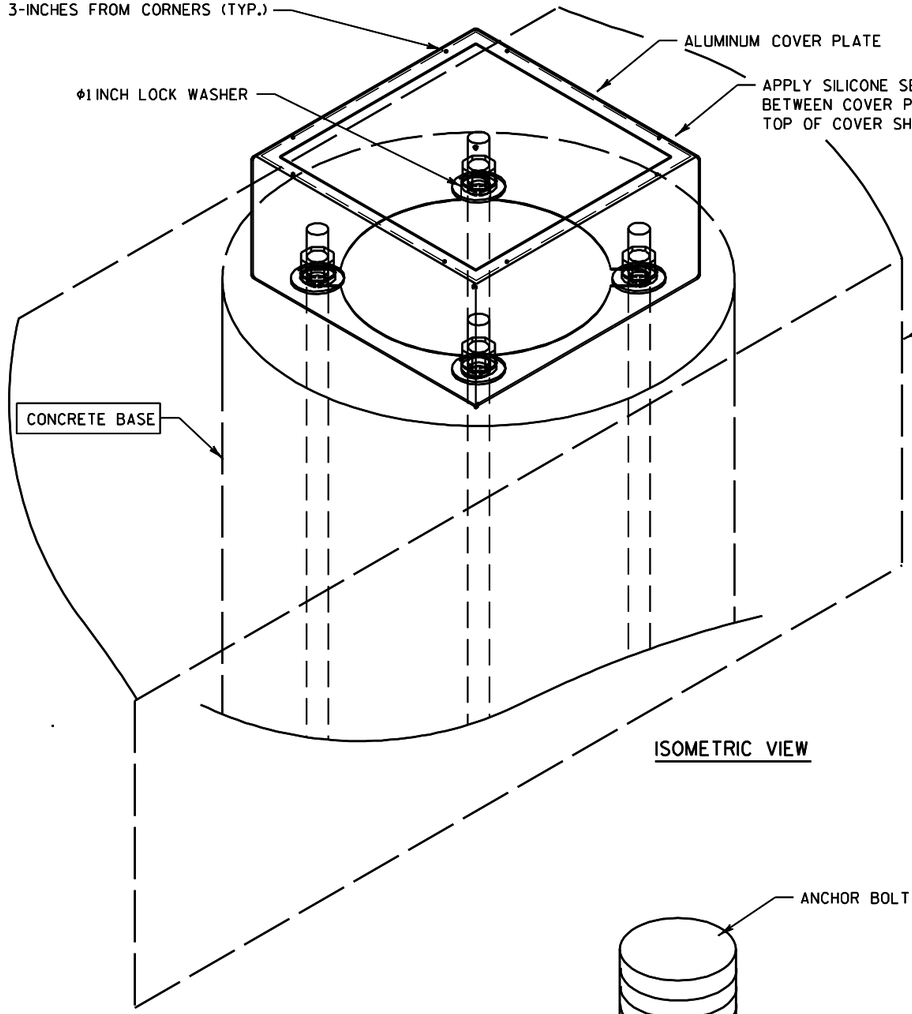


CONCRETE BASE TYPE 7 MEDIAN
NO SCALE

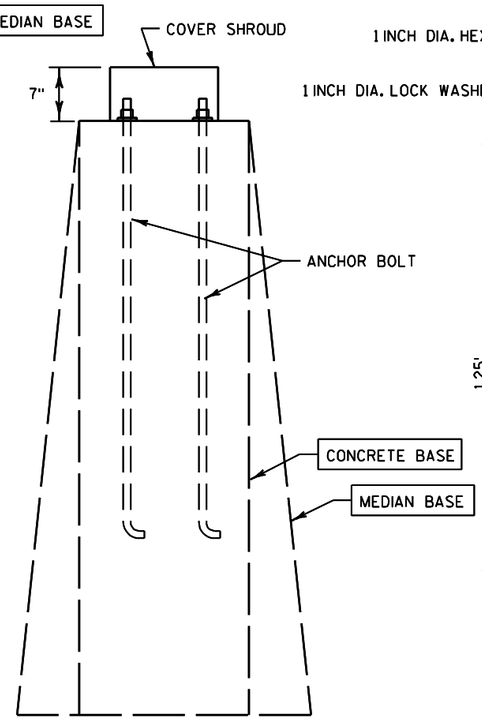
SHEET 1 OF 5

2

PROJECT NO: 1120-09-76/77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	LIGHTING PLANS	SHEET 38	E



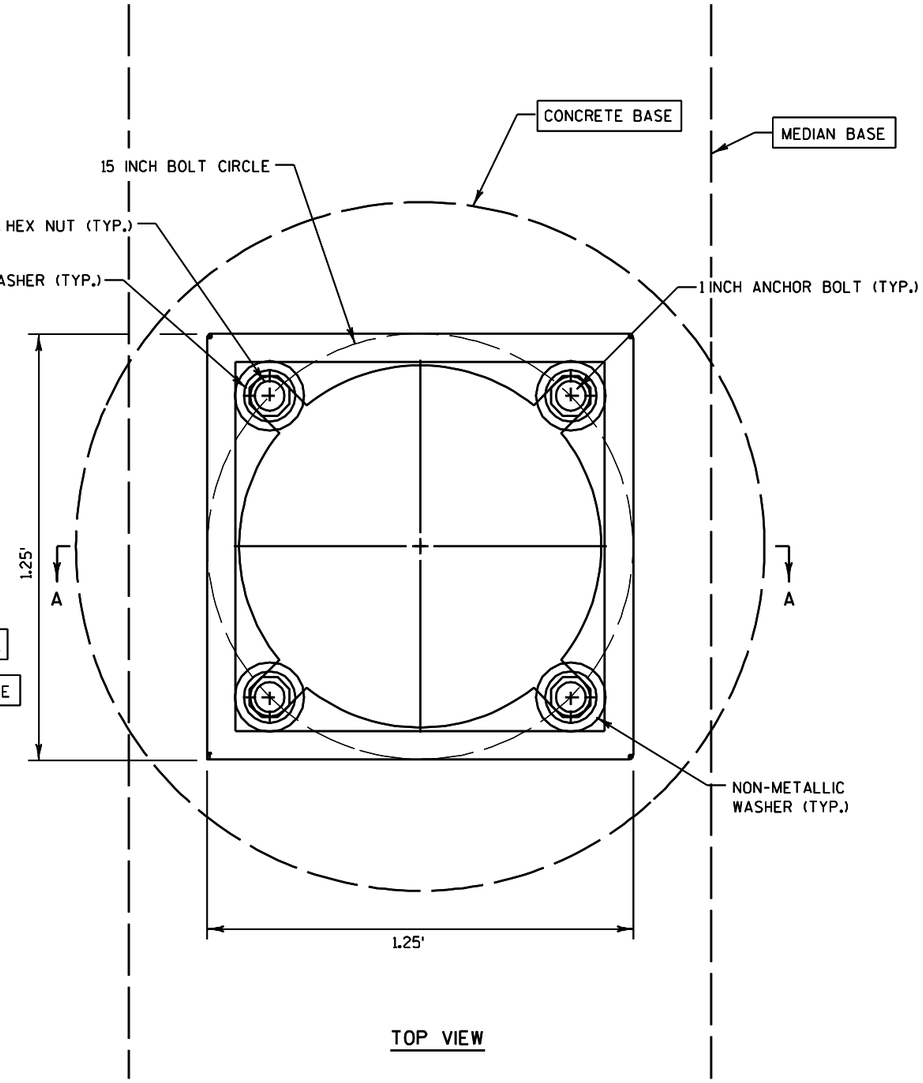
ISOMETRIC VIEW



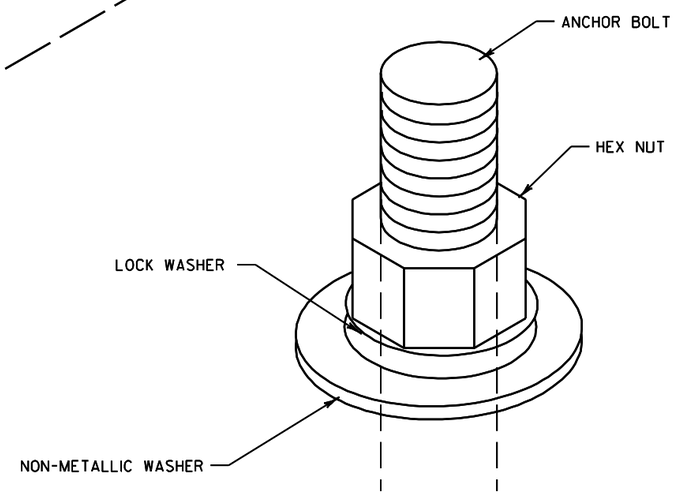
SECTION A-A

NOTE:

ANCHOR BOLTS/NUTS NOT INCLUDED WITH COVER SHROUD ITEM.



TOP VIEW



ANCHOR BOLT DETAIL

ANCHOR BOLT COVER SHROUD

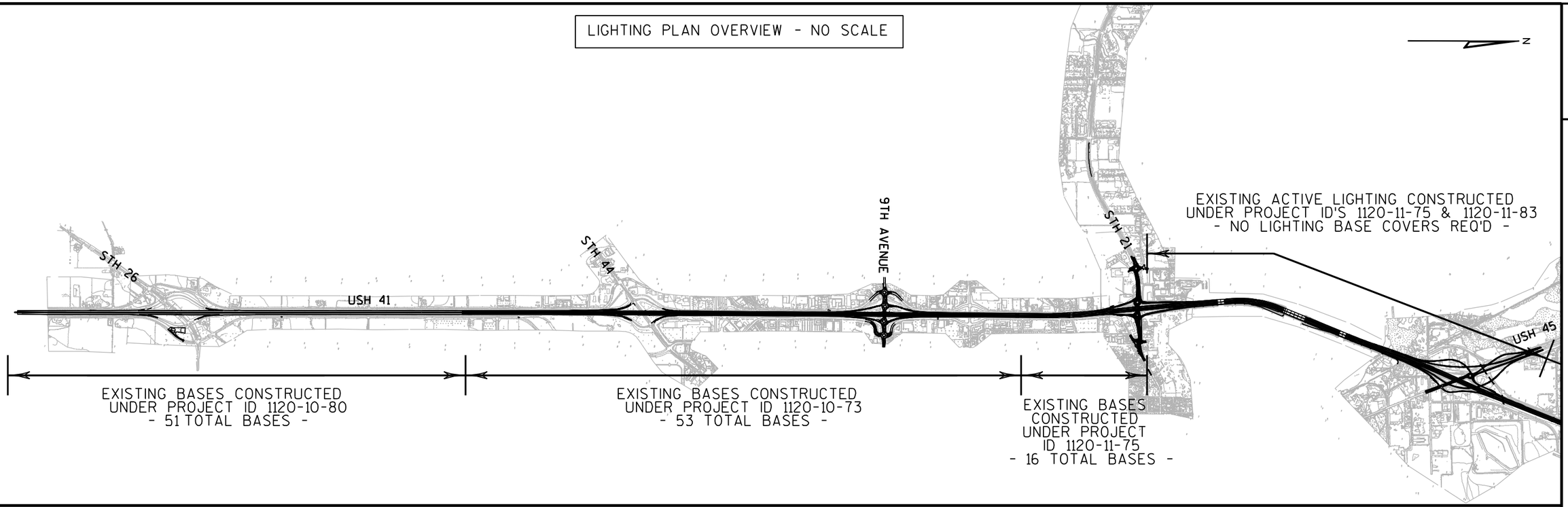
NO SCALE

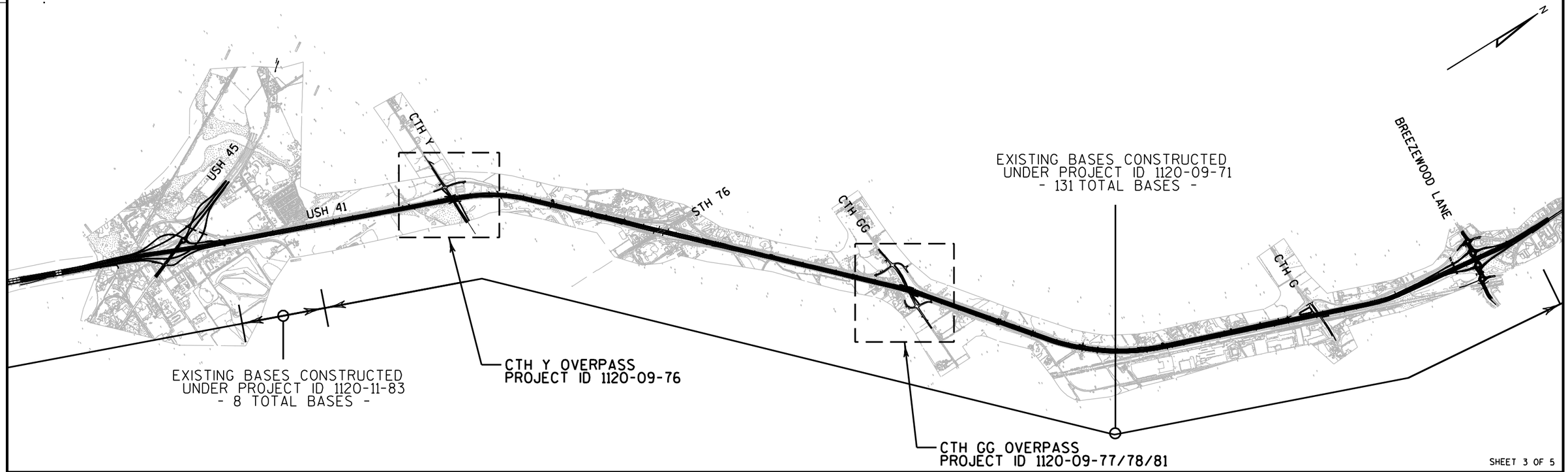
PROJECT NO: 1120-09-76/77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	LIGHTING PLANS	SHEET 39	E

FILE NAME : g:\wdotne\wne30-0739\winnebago county - 01\1120-09-76 overpass structures & light bases\dgn\plan sheets\023501_lp.dgn PLOT DATE : 4/15/2013 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

WISDOT/CADDS SHEET 42

LIGHTING PLAN OVERVIEW - NO SCALE





SHEET 3 OF 5

PROJECT NO: 1120-09-76/77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	LIGHTING PLANS	SHEET 40	E

FILE NAME : g:\wdotne\wne30-0739\winnebago county - 01\1120-09-76 overpass structures & light bases\dgn\plan sheets\023502_lp.dgn PLOT DATE : 4/15/2013 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

2

GREEN VALLEY ROAD

CTH Y

USH 41 SB

USH 41 NB

R/W

INTERCEPT EXISTING CONDUIT WITH PULLBOX

CONNECT CONDUIT TO EXISTING PULLBOX

PB4 - EXISTING

CONNECT CONDUIT TO EXISTING PULLBOX

PB4X - EXISTING

742'SAB' 744'SAB' 746'SAB' 748'SAB' 750'SAB' 752'SAB' 754'SAB' 756'SAB'

742'NAB' 744'NAB' 746'NAB' 748'NAB' 750'NAB' 752'NAB' 754'NAB' 756'NAB'

OH SIGN

STA. 744'NAB'+70 - 28.0'LT - LB15

PB3X - EXISTING

STA. 747'NAB'+60 - 29.5'LT - LB16

LB14 - EXISTING

STA. 750'NAB'+60 - 30.0'LT - LB17

STA. 750'NAB'+25 - 30.0'LT - PB3

LB19 - EXISTING

STA. 753'NAB'+42 - 30.0'LT - LB18

SHEET 4 OF 5

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	LIGHTING PLANS	SHEET 41	E

2

GENERAL NOTES FOR TRAFFIC CONTROL

1) THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

2) CONFLICTING TRAFFIC SIGNS SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER. (INCIDENTAL TO WORK)

3) A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE WORK AREAS IF WARRANTED BY CONDITIONS OR AS DIRECTED BY THE ENGINEER. HOWEVER, CONTRACTOR SHALL NOT USE FLAG PERSONS TO DIRECT, STOP OR CONTROL TRAFFIC ON USH 41 AT ANY TIME. (INCIDENTAL TO WORK)

4) ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

5) "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

6) FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A TYPE C WARNING LIGHT.

7) ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED, AND EQUIPPED WITH TWO TYPE "A" (LOW INTENSITY FLASHING) LIGHTS.

8) DIMENSIONS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE FACE OF BARRIER ADJACENT TO TRAFFIC. STATION CALL-OUTS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE CENTER OF THE BARRIER.

9) CONCRETE BARRIER TEMPORARY PRECAST THAT IS SHOWN AS MATCHING PERMANENT CONCRETE BARRIER SHALL BE TIED TO THE PERMANENT BARRIER VIA A TEMPORARY THRIE BEAM CONNECTION. SEE DETAIL.

10) STAGING LIMITS BETWEEN PROPOSED ROADWAY EMBANKMENTS AND EXISTING ROADWAYS OPEN TO TRAFFIC ASSUME A MAXIMUM 2:1 SLOPE.

11) PORTABLE MESSAGE BOARDS (PCMS) TO BE MAINTAINED FOR NB AND SB USH 41. PORTABLE MESSAGE BOARD SHOULD BE CHANGED AS APPROPRIATE OR AS DIRECTED BY THE ENGINEER. (PAID AT BID UNIT PRICE)

12) ANCHOR CONCRETE BARRIER TEMPORARY PRECAST PER SDD "CONCRETE BARRIER TEMPORARY PRECAST 12'-6" AND IN TAPER LOCATION.

13) ALWAYS PROVIDE A MINIMUM 1' CLEAR FROM EDGE OF TRAVEL LANE TO THE TOE OF THE CONCRETE BARRIER TEMPORARY.

14) COORDINATE WITH ADJACENT PROJECTS PRIOR TO INSTALLATION OF G20-1 SIGNS.

STANDARD WISDOT
WORK ZONE TRAFFIC CONTROL SYMBOLS

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK ZONE
- DIRECTION OF TRAFFIC

NON-STANDARD
WORK ZONE TRAFFIC CONTROL SYMBOLS

- CRASH CUSHIONS TEMPORARY

2

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	TRAFFIC CONTROL GENERAL NOTES	SHEET 42	E

FILE NAME : ch_0976_026000_tc.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 100:1
WISDOT/CADDS SHEET 42

2

LEGEND

- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- TEMPORARY PRECAST CONCRETE BARRIER
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, 500 FEET DESIRABLE, DISTANCE TO EXISTING SIGNS.

THIS SHOULDER CLOSURE IS TYPICAL FOR CLOSING RIGHT SHOULDER - REVERSE FOR CLOSING LEFT SHOULDER.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS, TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

FOR A SHOULDER CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

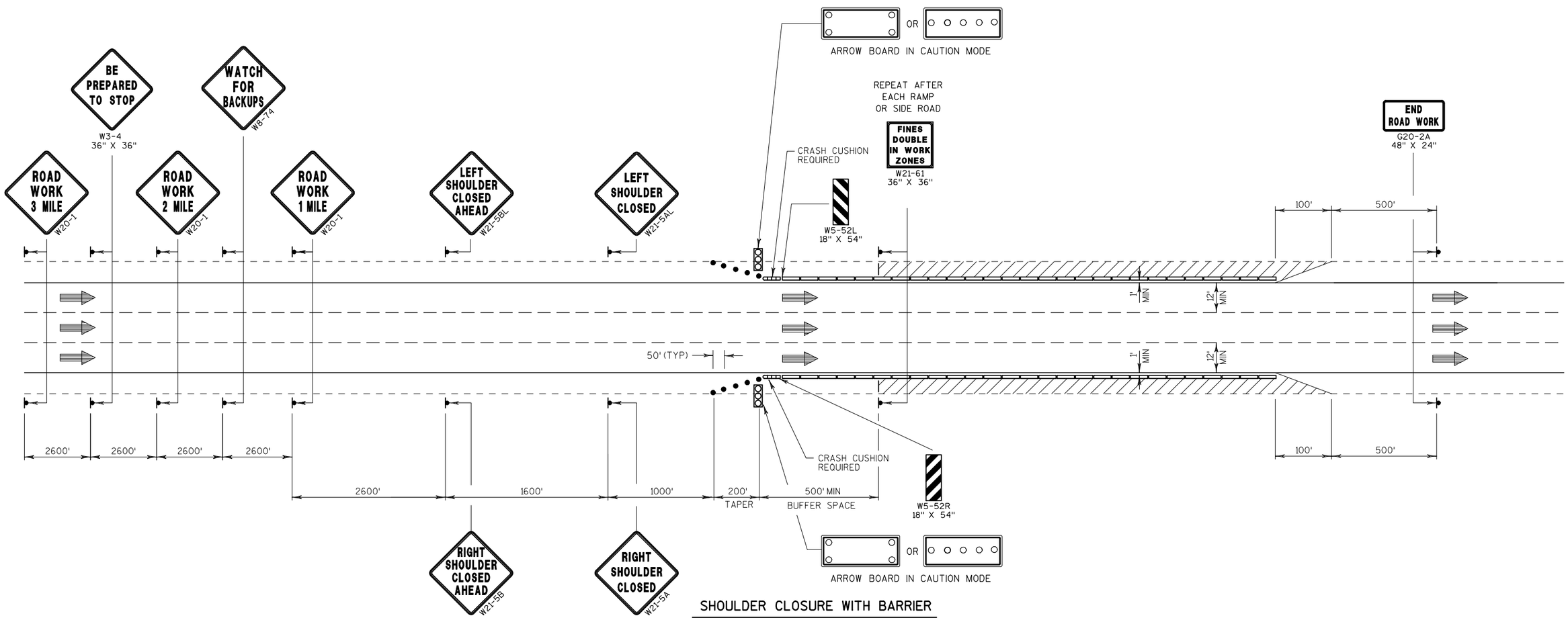
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE SHOULDER CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE SHOULDER CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ½ THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND SHOULDER CLOSURE DRUMS FOR A MINIMUM OF 1500 FEET IN FRONT OF THE DRUMS.

TRAFFIC CONTROL DEVICES NOT IN USE SHALL BE LAID DOWN OR REMOVED, TURNING OF DEVICES TO OBSCURED THE MESSAGE WILL NOT BE ALLOWED.

PLACE SHOULDER CLOSURE SIGNS AS APPROPRIATE THROUGHOUT ALL STAGES.

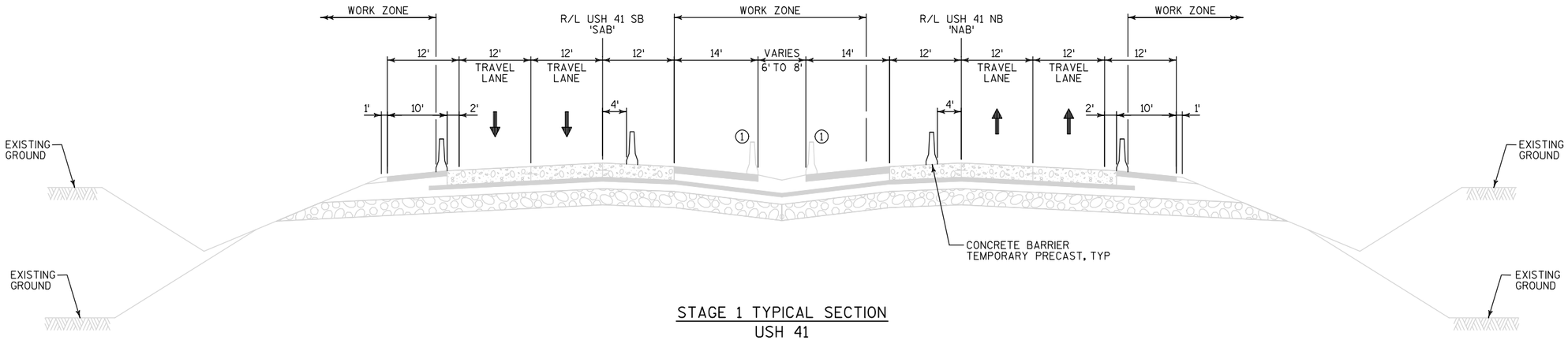


SHOULDER CLOSURE WITH BARRIER

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	TRAFFIC CONTROL DETAIL	SHEET 43	E

FILE NAME : ch_0976_026001_tc.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 200:1

2

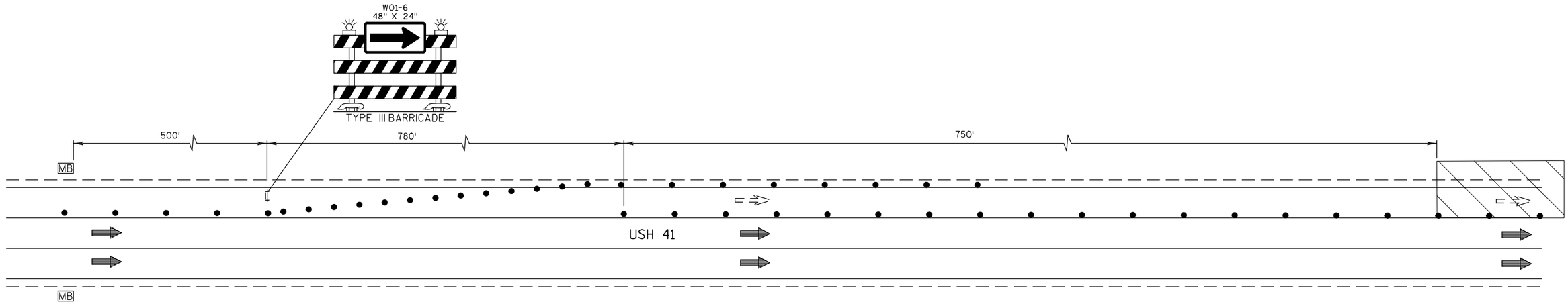


STAGE 1 TYPICAL SECTION
USH 41

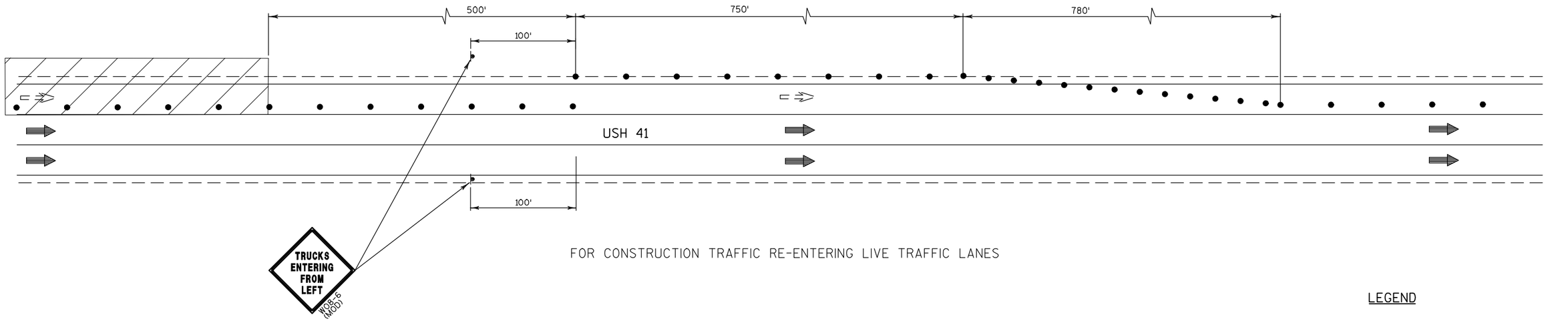
① REMOVE EXISTING CONCRETE BARRIER TEMPORARY PRECAST (12'-6") LEFT IN PLACE BY OTHERS

NOTE: SEE TRAFFIC CONTROL PLAN SHEETS FOR CONCRETE BARRIER TEMPORARY PRECAST LIMITS.

2



FOR CONSTRUCTION TRAFFIC EXITING LIVE TRAFFIC LANES



FOR CONSTRUCTION TRAFFIC RE-ENTERING LIVE TRAFFIC LANES

NOTE:
SPACING AND LOCATIONS OF DEVICES IN THE FIELD SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER

ADJUST LANE CLOSURE AND SIGNING BASED ON SIDE ROAD BEING ACCESSED.

SEE OTHER TRAFFIC CONTROL DETAILS AND STANDARD DETAIL DRAWINGS FOR LANE CLOSURE DETAILS

PORTABLE MESSAGE SIGN MESSAGES SHOULD READ:

FRAME 1	FRAME 2
TRUCKS EXITING LEFT	TRAFFIC STAY LEFT

TRAFFIC CONTROL DETAIL FOR CONSTRUCTION ACCESS TO USH 41

LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL SIGN
- USH 41 TRAFFIC
- CONSTRUCTION TRAFFIC
- WORK ZONE
- MB — PORTABLE CHANGEABLE MESSAGE BOARD

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	TRAFFIC CONTROL DETAIL	SHEET 45	E

2

LEGEND

WORK ZONE

N

0 50 100

SCALE IN FEET

CRASH CUSHION TEMPORARY

W5-52L
18" X 54"

R/L USH 41 SB

STA 743'SAB'+00.00

734'SAB' 736'SAB' USH 41 SB 738'SAB' 740'SAB' 742'SAB' 744'SAB' 746'SAB' 748'

734'NAB' 736'NAB' USH 41 NB 738'NAB' 740'NAB' 742'NAB' 744'NAB' 746'NAB' 748'

MATCH LINE STA 748'NAB'+00

CRASH CUSHION TEMPORARY

STA 738'NAB'+50.00

W5-52R
18" X 54"

STA 739'NAB'+00.00

R/L USH 41 NB

INSTALL CONCRETE BARRIER
TEMPORARY PRECAST

CONSTRUCTION

CONSTRUCT USH 41.
CONSTRUCT STRUCTURE B-70-284.

TRAFFIC

USH 41 NB AND SB MAINLINE PRIMARILY OPEN TO TWO LANES OF TRAFFIC. SINGLE LANE CLOSURES ALLOWED OVERNIGHT AS NEEDED.

NOTES

SEE "SHOULDER CLOSURE WITH BARRIER" DETAIL FOR ADVANCED SIGNING.

SEE SDD "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H."

SHARED USE PATH

14' 22'CLY

16' 24'CLY' CTH Y

R/L SHARED USE PATH

R/L CTH Y

INSTALL CONCRETE BARRIER
TEMPORARY PRECAST

R/L USH 41 SB

MATCH LINE STA 748'NAB'+00

SAB' 750'SAB' 752'SAB' 754'SAB' 756'SAB' USH 41 SB 758'SAB' 760'SAB' 762'SAB'

NAB' 750'NAB' 752'NAB' 754'NAB' 756'NAB' USH 41 NB 758'NAB' 760'NAB' 762'NAB'

R/L USH 41 NB

STA 756'NAB'+00.00

N

0 50 100

SCALE IN FEET

W5-52R
18" X 54"

STA 760'SAB'+00.00

STA 760'SAB'+50.00

CRASH CUSHION TEMPORARY

W5-52L
18" X 54"

CRASH CUSHION TEMPORARY

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	USH 41 TRAFFIC CONTROL STAGE 1	SHEET 46	E

2

R11-2B
48" X 30"
BRIDGE OUT
TYPE III BARRICADE

R/L GREEN VALLEY ROAD

N

0 50 100
SCALE IN FEET

R3-2
24" X 24"

R/L CTH Y

6'CTY' 8'CTY' 10'CTY' CTH Y 12'CTY' 14'CTY' 16'CTY' 18'CTY' 20'CTY'

22'GRV'

MATCH LINE STA 20'CTY'+00

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURE" DETAIL C AND D

12

20'GRV'

10

R/L SHARED USE PATH

R3-1
24" X 24"

GREEN VALLEY ROAD

R/L GREEN VALLEY ROAD

LEGEND

WORK ZONE

CONSTRUCTION

CONSTRUCT CTH Y EAST OF GREEN VALLEY ROAD AND STRUCTURE B-70-284.

TRAFFIC

CTH Y CLOSED TO TRAFFIC EAST OF GREEN VALLEY ROAD. GREEN VALLEY ROAD OPEN TO TRAFFIC.

R11-2B
48" X 30"
BRIDGE OUT
TYPE III BARRICADE

CONCRETE BARRIER TEMPORARY PRECAST

CONCRETE BARRIER TEMPORARY PRECAST

R/L USH 41 SB

750'SAB'

750'NAB'

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURE" DETAIL D

R/L CTH Y

N

0 50 100
SCALE IN FEET

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURE" DETAIL C AND D

MATCH LINE STA 20'CTY'+00

'CTY' 22'CTY' 24'CTY' 26'CTY' 28'CTY' 30'CTY' 32'CTY' CTH Y 34'CTY'

14 16 18 20 22

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURE" DETAIL D

748'SAB'

748'NAB'

USH 41 SB

USH 41 NB

R/L USH 41 NB

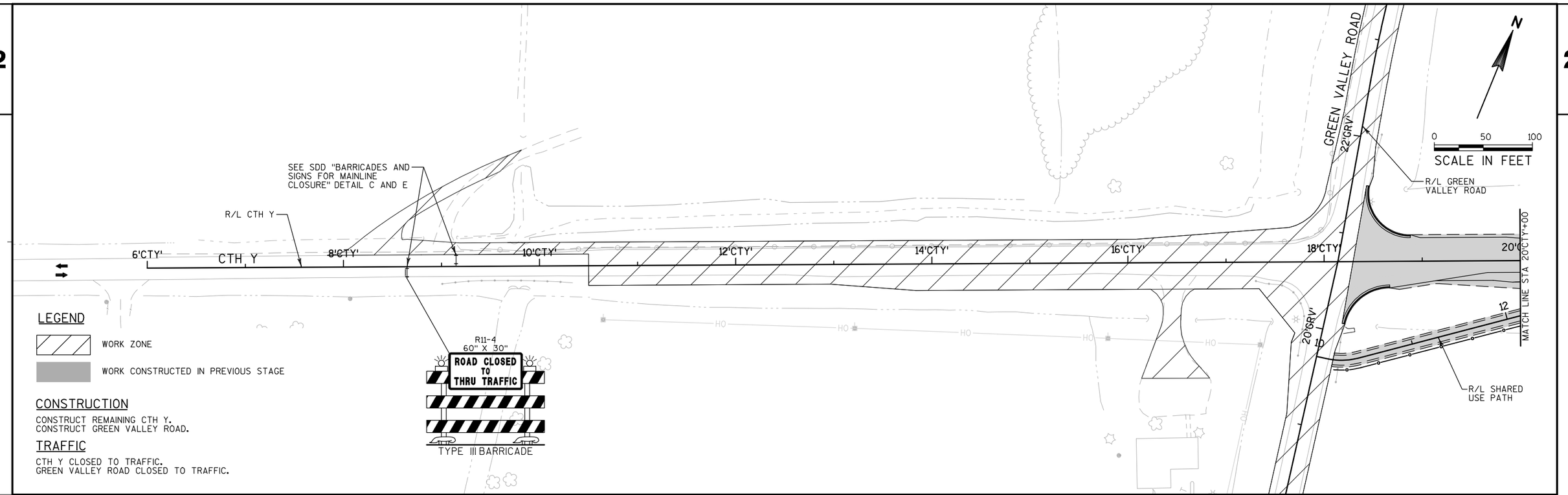
R/L SHARED USE PATH

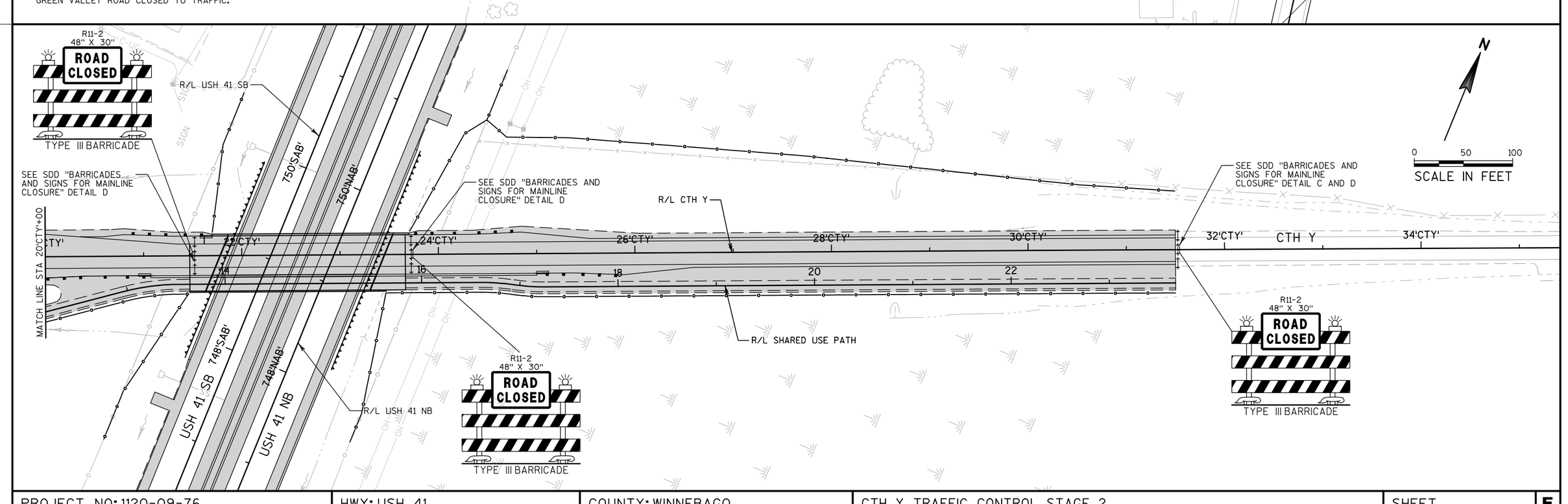
R11-2B
48" X 30"
BRIDGE OUT
TYPE III BARRICADE

R11-2B
48" X 30"
BRIDGE OUT
TYPE III BARRICADE

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CTH Y TRAFFIC CONTROL STAGE 1	SHEET 47	E

2





PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CTH Y TRAFFIC CONTROL STAGE 2	SHEET 48	E

2

LEGEND

WORK ZONE

WORK CONSTRUCTED IN PREVIOUS STAGE

CONSTRUCTION

CONSTRUCT REMAINING CTH Y.
CONSTRUCT GREEN VALLEY ROAD.

TRAFFIC

CTH Y CLOSED TO TRAFFIC.
GREEN VALLEY ROAD CLOSED TO TRAFFIC.

R11-2
48" X 30"
ROAD CLOSED
TYPE III BARRICADE

R/L CTH Y

CTH Y
16'CTY'

N
0 50 100
SCALE IN FEET

R/L GREEN VALLEY ROAD

10'GRV' 12'GRV' 14'GRV' 16'GRV' 18'GRV' 20'GRV' 22'GRV' 24'GRV'

18'CTY'

GREEN VALLEY ROAD

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURE" DETAIL C AND D

SHARED USE PATH 12'

R/L SHARED USE PATH

20'CTY'

MATCH LINE STA 24+00

2

N
0 50 100
SCALE IN FEET

MATCH LINE STA 24+00

R/L GREEN VALLEY RD

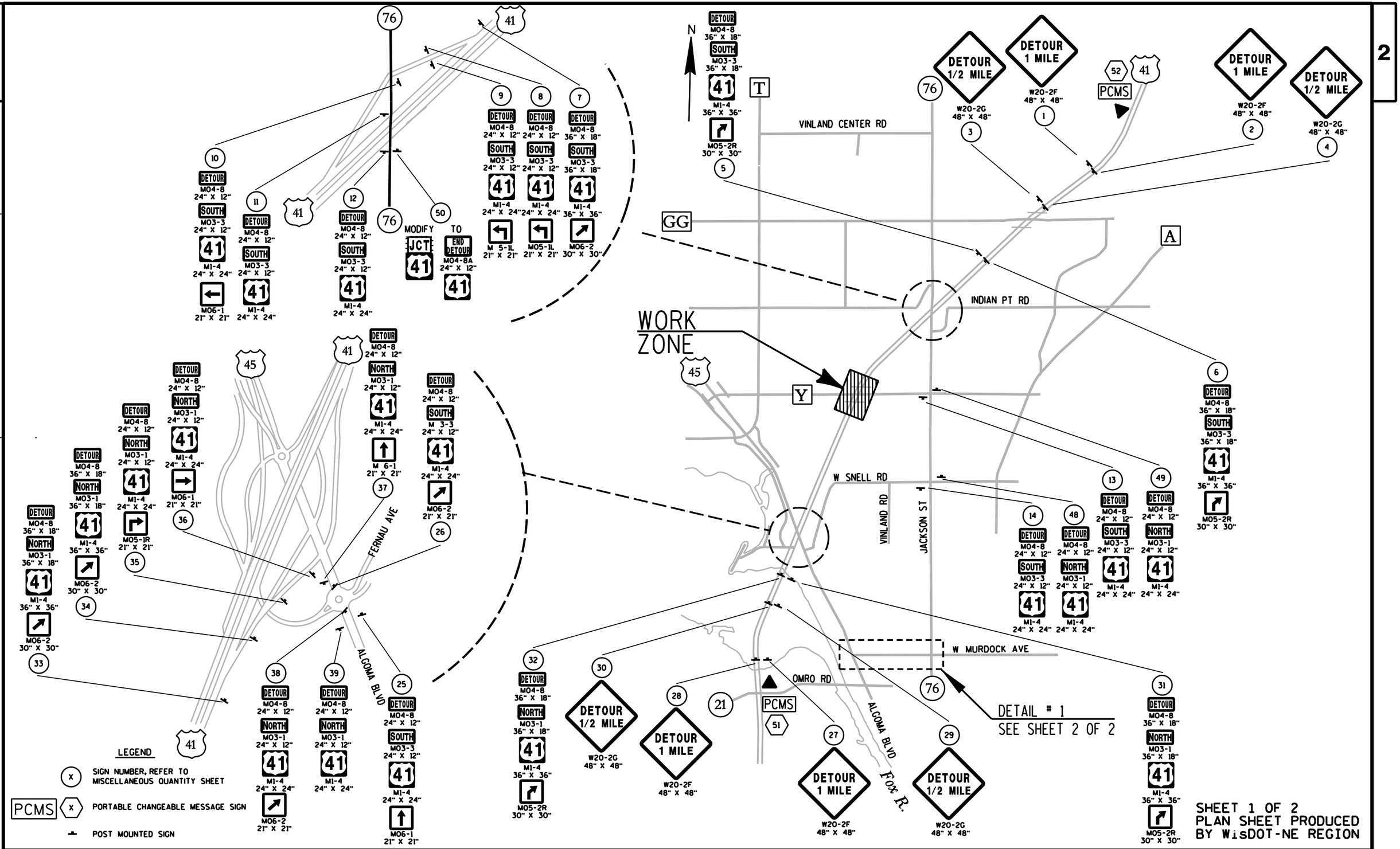
26'GRV'

R11-4
60" X 30"
ROAD CLOSED TO THRU TRAFFIC
TYPE III BARRICADE

GREEN VALLEY ROAD

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURE" DETAIL C AND E

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	GREEN VALLEY ROAD TRAFFIC CONTROL STAGE 2	SHEET 49	E



SHEET 1 OF 2
PLAN SHEET PRODUCED BY WisDOT-NE REGION

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	DETOUR SIGNING DETAIL-CTH Y	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

2

N

W SMITH ST

W LINWOOD AVE

VIOLA ST

W GRUENWALD AVE

COLUMBIA AVE

W MURDOCK AVE

HOBBS AVE

ALGOMA BLVD

HAMILTON ST

MINERVA ST

PLYMOUTH ST

SHERIDAN ST

CRANE ST

PARKSIDE DR

MITCHELL ST

VINLAND ST

BEECH ST

ELMWOOD AVE

SPRUCE ST

WALNUT ST

CEDAR ST

LIBERTY ST

WESTERN ST

ONTARIO ST

WISCONSIN ST

JACKSON ST

45

76

DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M06-1 21" X 21" — 41

DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M05-1L 21" X 21" — 40

DETOUR M04-8 24" X 12"
SOUTH M03-3 24" X 12"
41 M1-4 24" X 24" — 24

DETOUR M04-8 24" X 12"
SOUTH M03-3 24" X 12"
41 M1-4 24" X 24"
M06-1 21" X 21" — 23

DETOUR M04-8 24" X 12"
SOUTH M03-3 24" X 12"
41 M1-4 24" X 24"
M05-1R 21" X 21" — 22

DETOUR M04-8 24" X 12"
SOUTH M03-3 24" X 12"
41 M1-4 24" X 24" — 21

DETOUR M04-8 24" X 12"
SOUTH M03-3 24" X 12"
41 M1-4 24" X 24" — 20

DETOUR M04-8 24" X 12"
SOUTH M03-3 24" X 12"
41 M1-4 24" X 24" — 19

DETOUR M04-8 24" X 12"
SOUTH M03-3 24" X 12"
41 M1-4 24" X 24" — 15

DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24" — 47

DETOUR M04-8 24" X 12"
SOUTH M03-3 24" X 12"
41 M1-4 24" X 24"
M05-1R 21" X 21" — 16

DETOUR M04-8 24" X 12"
SOUTH M03-3 24" X 12"
41 M1-4 24" X 24"
M06-1 21" X 21" — 17

DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M06-2 21" X 21" — 46

DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24" — 42

DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24" — 43

DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M05-1L 21" X 21" — 44 / 76

DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M06-1 21" X 21" — 45

DETOUR M04-8 24" X 12"
SOUTH M03-3 24" X 12"
41 M1-4 24" X 24"
M06-2 21" X 21" — 18

LEGEND

(X) SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET

PCMS (X) PORTABLE CHANGEABLE MESSAGE SIGN

POST MOUNTED SIGN

DETAIL 1

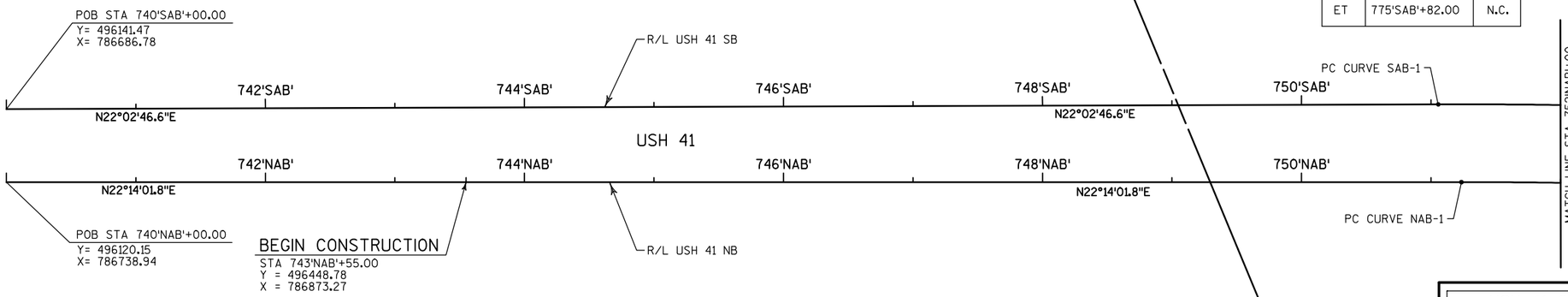
SHEET 2 OF 2
PLAN SHEET PRODUCED
BY WisDOT-NE REGION

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	DETOUR SIGNING DETAIL-CTH Y	SHEET	E

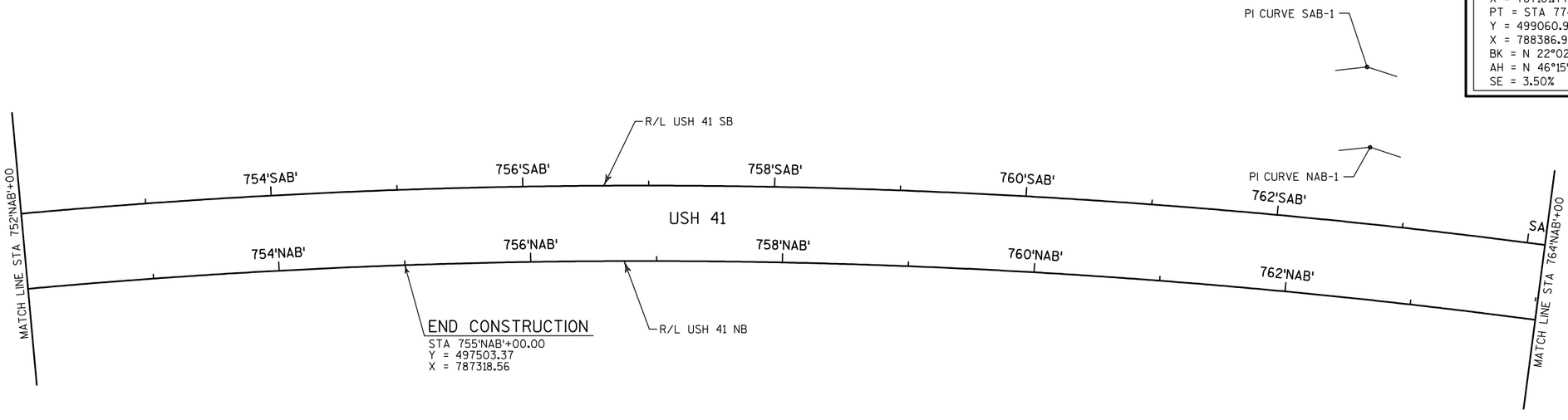
FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

2

SUPERELEVATION		
CURVE SAB-1		
	STA	SE
BT	749'SAB'+10.00	N.C.
FS	751'SAB'+58.00	3.50%
FS	773'SAB'+34.00	3.50%
ET	775'SAB'+82.00	N.C.



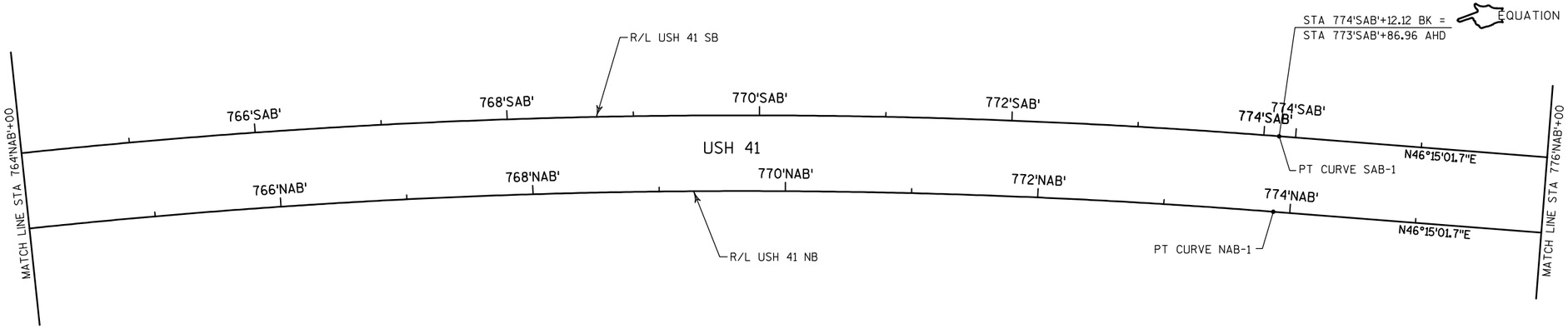
USH 41 SB	USH 41 NB
CURVE SAB-1	CURVE NAB-1
PI= STA 762+76.31	PI= STA 762+72.07
Y = 498251.34	Y = 498223.29
X = 787541.21	X = 787598.67
DELTA = 24°12'15.1"	DELTA = 24°00'59.9"
T = 1170.73	T = 1148.63
L = 2306.54	L = 2263.52
R = 5460.00	R = 5400.00
PC = STA 751+05.58	PC = STA 751+23.45
Y = 497166.22	Y = 497160.07
X = 787101.77	X = 787164.04
PT = STA 774+12.12	PT = STA 773+86.96
Y = 499060.91	Y = 499017.57
X = 788386.91	X = 788428.40
BK = N 22°02'46.6" E	BK = N 22°14'01.8" E
AH = N 46°15'01.7" E	AH = N 46°15'01.7" E
SE = 3.50%	SE = 3.50%



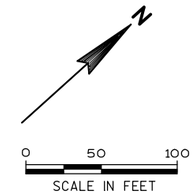
SUPERELEVATION		
CURVE NAB-1		
	STA	SE
BT	749'NAB'+28.00	N.C.
FS	751'NAB'+76.00	3.50%
FS	773'NAB'+34.00	3.50%
ET	775'NAB'+82.00	N.C.

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	ALIGNMENT PLAN - USH 41	SHEET 52	E

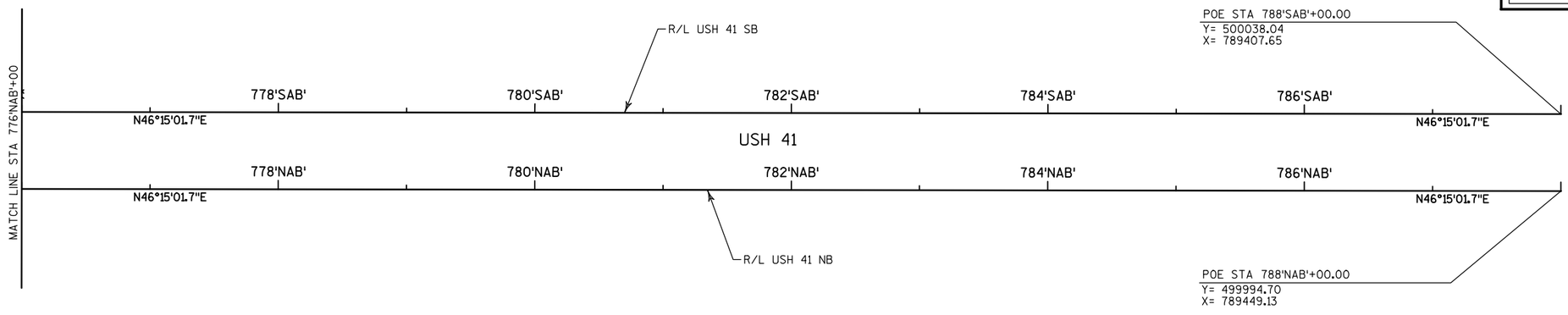
2



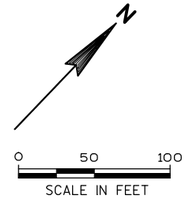
SUPERELEVATION		
CURVE SAB-1		
	STA	SE
BT	749'SAB'+10.00	N.C.
FS	751'SAB'+58.00	3.50%
FS	773'SAB'+34.00	3.50%
ET	775'SAB'+82.00	N.C.



USH 41 SB	USH 41 NB
CURVE SAB-1	CURVE NAB-1
PI= STA 762+76.31	PI= STA 762+72.07
Y = 498251.34	Y = 498223.29
X = 787541.21	X = 787598.67
DELTA = 24°12'15.1"	DELTA = 24°00'59.9"
T = 1170.73	T = 1148.63
L = 2306.54	L = 2263.52
R = 5460.00	R = 5400.00
PC = STA 751+05.58	PC = STA 751+23.45
Y = 497166.22	Y = 497160.07
X = 787101.77	X = 787164.04
PT = STA 774+12.12	PT = STA 773+86.96
Y = 499060.91	Y = 499017.57
X = 788386.91	X = 788428.40
BK = N 22°02'46.6" E	BK = N 22°14'01.8" E
AH = N 46°15'01.7" E	AH = N 46°15'01.7" E
SE = 3.50%	SE = 3.50%

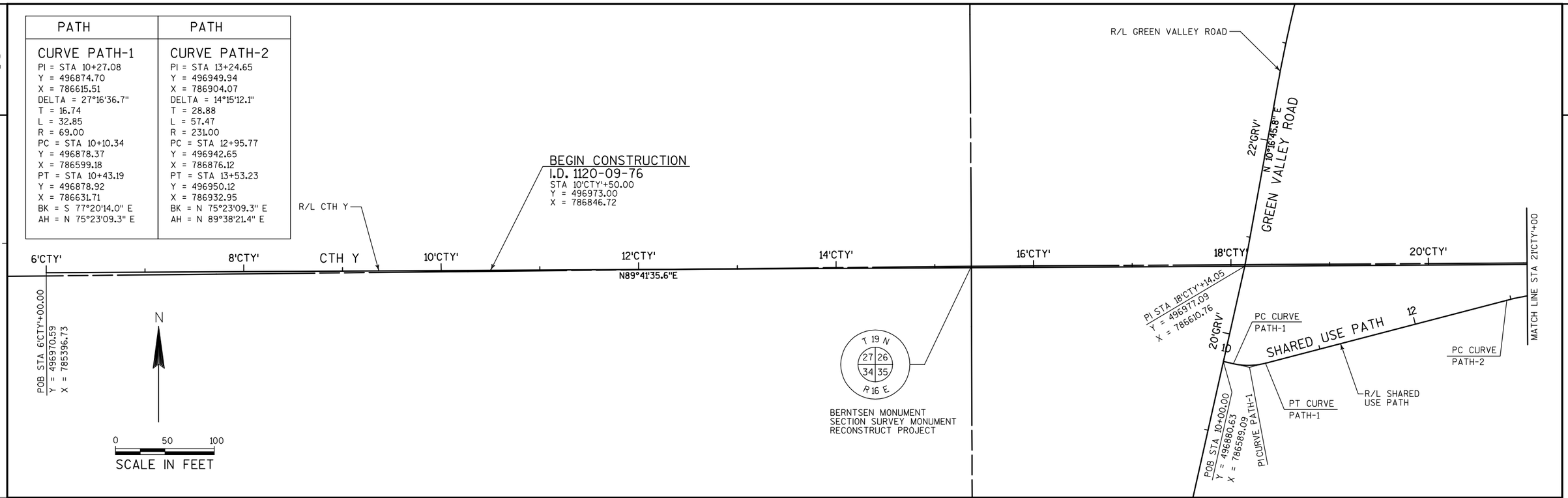


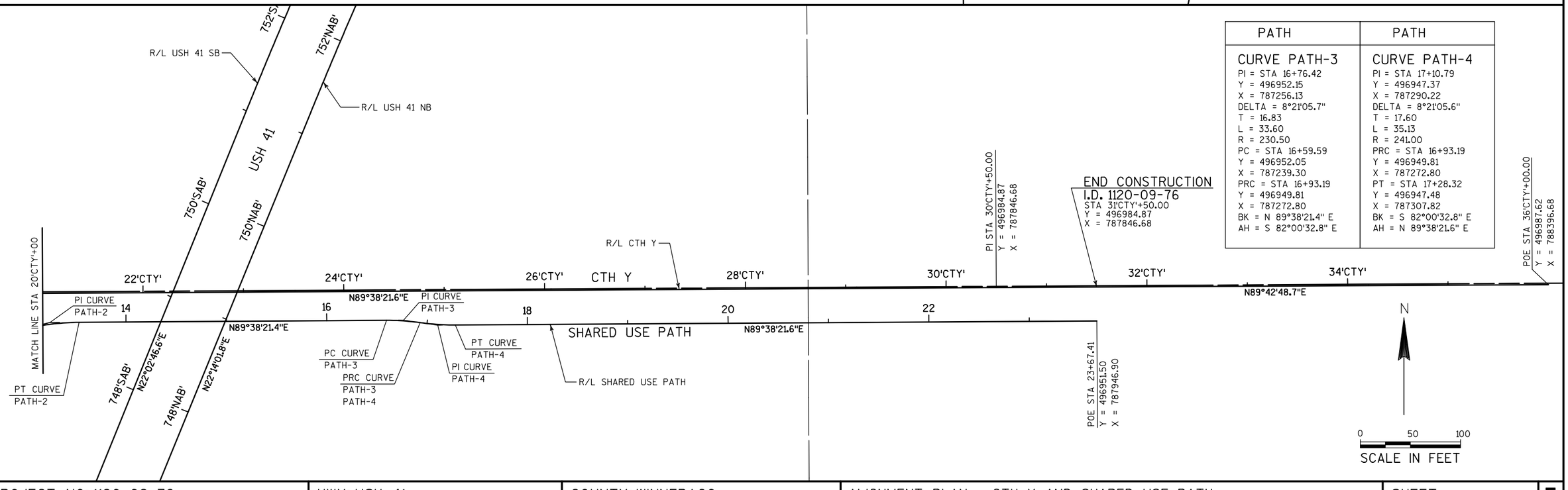
SUPERELEVATION		
CURVE NAB-1		
	STA	SE
BT	749'NAB'+28.00	N.C.
FS	751'NAB'+76.00	3.50%
FS	773'NAB'+34.00	3.50%
ET	775'NAB'+82.00	N.C.



PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	ALIGNMENT PLAN - USH 41	SHEET 53	E

PATH	PATH
CURVE PATH-1 PI = STA 10+27.08 Y = 496874.70 X = 786615.51 DELTA = 27°16'36.7" T = 16.74 L = 32.85 R = 69.00 PC = STA 10+10.34 Y = 496878.37 X = 786599.18 PT = STA 10+43.19 Y = 496878.92 X = 786631.71 BK = S 77°20'14.0" E AH = N 75°23'09.3" E	CURVE PATH-2 PI = STA 13+24.65 Y = 496949.94 X = 786904.07 DELTA = 14°15'12.1" T = 28.88 L = 57.47 R = 231.00 PC = STA 12+95.77 Y = 496942.65 X = 786876.12 PT = STA 13+53.23 Y = 496950.12 X = 786932.95 BK = N 75°23'09.3" E AH = N 89°38'21.4" E





PATH	PATH
CURVE PATH-3 PI = STA 16+76.42 Y = 496952.15 X = 787256.13 DELTA = 8°21'05.7" T = 16.83 L = 33.60 R = 230.50 PC = STA 16+59.59 Y = 496952.05 X = 787239.30 PRC = STA 16+93.19 Y = 496949.81 X = 787272.80 BK = N 89°38'21.4" E AH = S 82°00'32.8" E	CURVE PATH-4 PI = STA 17+10.79 Y = 496947.37 X = 787290.22 DELTA = 8°21'05.6" T = 17.60 L = 35.13 R = 241.00 PRC = STA 16+93.19 Y = 496949.81 X = 787272.80 PT = STA 17+28.32 Y = 496947.48 X = 787307.82 BK = S 82°00'32.8" E AH = N 89°38'21.6" E

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	ALIGNMENT PLAN - CTH Y AND SHARED USE PATH	SHEET 54	E

2

N

0 50 100

SCALE IN FEET

GVR
CURVE GRV-1
PI = STA 25+09.02
Y = 497408.86
X = 786689.07
DELTA = 20°05'12.3"
T = 251.14
L = 497.12
R = 1418.00
PC = STA 22+57.88
Y = 497161.75
E = 786644.25
PT = STA 27+55.00
Y = 497625.54
E = 786816.02
BK = N 10°16'45.8" E
AH = N 30°21'58.1" E

SUPERELEVATION		
CURVE GRV-1		
	STA	SE
BT	21'GRV'+75.00	N.C.
FS	22'GRV'+75.00	3.60%
FS	27'GRV'+25.00	3.60%
ET	28'GRV'+50.00	N.C.

N

0 50 100

SCALE IN FEET

10'GRV' GREEN VALLEY ROAD

12'GRV'

N 12°39'46.1" E

POB STA 10'GRV'+00.00
Y = 495932.91
X = 786376.16

R/L GREEN VALLEY ROAD

MATCH LINE STA 13'GRV'+25

N89°41'35.6"E

12'CTY'

141'CTY'

R/L CTH Y

CTH Y

16'CTY'

PI STA 20'GRV'+70.21
Y = 496977.09
X = 786610.76

18'CTY'

20'CTY'

MATCH LINE STA 13'GRV'+25

R/L GREEN VALLEY ROAD

14'GRV'

16'GRV'

N 12°39'46.1" E

GREEN VALLEY ROAD

18'GRV'

20'GRV'

BEGIN CONSTRUCTION
STA 16'GRV'+75.00
Y = 496591.50
X = 786524.13

SHARED USE PATH 10

SHARED USE PATH 12

R/L SHARED USE PATH

22'GRV'

N 10°16'45.8" E

24'GRV'

PI CURVE GRV-1

PC CURVE GRV-1

26'GRV'

END CONSTRUCTION
STA 27'GRV'+55.00
Y = 497625.54
X = 786816.02

PC CURVE GRV-1

R/L USH 41 SB

N22°02'46.6"E

742'SAB'

744'SAB'

746'SAB'

N14°01.8"E

742'NAB'

USH 41

744'NAB'

R/L USH 41 NB

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	ALIGNMENT PLAN - GREEN VALLEY ROAD	SHEET 55	E

DATE 24APR13 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1120-09-76 QUANTITY
0010	108.4400	CPM PROGRESS SCHEDULE	EACH	1.000	1.000
0020	201.0105	CLEARING **P**	STA	1.000	1.000
0040	201.0205	GRUBBING **P**	STA	1.000	1.000
0060	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	5.000	5.000
0070	203.0200	REMOVING OLD STRUCTURE (STATION) 01. STA. 28'CTY'+65	LS	1.000	1.000
0080	203.0200	REMOVING OLD STRUCTURE (STATION) 02. STA. 9'CTY'+74	LS	1.000	1.000
0090	203.0200	REMOVING OLD STRUCTURE (STATION) 03. STA. 9'CTY'+85	LS	1.000	1.000
0100	203.0200	REMOVING OLD STRUCTURE (STATION) 04. STA 22+65	LS	1.000	1.000
0150	204.0110	REMOVING ASPHALTIC SURFACE **P**	SY	6,150.000	6,150.000
0170	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	12,400.000	12,400.000
0180	204.0170	REMOVING FENCE **P**	LF	1,450.000	1,450.000
0190	204.0180	REMOVING DELINEATORS AND MARKERS	EACH	8.000	8.000
0240	205.0100	EXCAVATION COMMON **P**	CY	5,446.000	5,446.000
0250	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 01. B-70-284	LS	1.000	1.000
0280	206.5000	COFFERDAMS (STRUCTURE) 01. STA. 9'CTY'+74	LS	1.000	1.000
0290	206.5000	COFFERDAMS (STRUCTURE) 02. STA. 9'CTY'+85	LS	1.000	1.000
0300	206.5000	COFFERDAMS (STRUCTURE) 03. STA. 10'CTY'+30	LS	1.000	1.000
0310	206.5000	COFFERDAMS (STRUCTURE) 04. STA. 14'CTY'+00	LS	1.000	1.000
0320	206.5000	COFFERDAMS (STRUCTURE) 05. STA. 22'GRV'+00	LS	1.000	1.000
0330	208.0100	BORROW **P**	CY	55,508.000	55,508.000
0340	210.0100	BACKFILL STRUCTURE **P**	CY	535.000	535.000
0350	211.0100	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 01. ID 1120-09-76	LS	1.000	1.000
0370	211.0200	PREPARE FOUNDATION FOR CONCRETE PAVEMENT (PROJECT) 01. ID 1120-09-76	LS	1.000	1.000
0390	213.0100	FINISHING ROADWAY (PROJECT) 01. ID 1120-09-76	EACH	1.000	1.000
0420	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	1,800.000	1,800.000
0430	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	15,100.000	15,100.000
0440	311.0110	BREAKER RUN	TON	9,150.000	9,150.000
0450	315.0100	ASPHALTIC BASE	TON	565.000	565.000
0460	415.0110	CONCRETE PAVEMENT 11-INCH	SY	2,980.000	2,980.000
0470	415.0410	CONCRETE PAVEMENT APPROACH SLAB **P**	SY	275.000	275.000
0480	416.0610	DRILLED TIE BARS	EACH	788.000	788.000
0490	416.0620	DRILLED DOWEL BARS	EACH	40.000	40.000
0510	416.1110	CONCRETE RUMBLE STRIPS SHOULDER **P**	LF	1,890.000	1,890.000
0520	455.0105	ASPHALTIC MATERIAL PG58-28	TON	180.000	180.000
0530	455.0605	TACK COAT	GAL	300.000	300.000
0540	460.1100	HMA PAVEMENT TYPE E-0.3	TON	485.000	485.000
0550	460.1101	HMA PAVEMENT TYPE E-1	TON	3,270.000	3,270.000
0570	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	2,093.000	2,093.000
0580	465.0105	ASPHALTIC SURFACE	TON	125.000	125.000
0590	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	24.000	24.000
0600	465.0315	ASPHALTIC FLUMES	SY	45.000	45.000
0610	465.0400	ASPHALTIC SHOULDER RUMBLE STRIP **P**	LF	2,210.000	2,210.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1120-09-76 QUANTITY
0630	502.3200	PROTECTIVE SURFACE TREATMENT **P**	SY	1,280.000	1,280.000
0660	503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH **P**	LF	990.000	990.000
0670	504.0900	CONCRETE MASONRY ENDWALLS **P**	CY	7.300	7.300
0680	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES **P**	LB	13,040.000	13,040.000
0690	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES **P**	LB	106,570.000	106,570.000
0700	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	24.000	24.000
0710	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 01. B-70-284	EACH	20.000	20.000
0740	509.5100.S	POLYMER OVERLAY **P**	SY	260.000	260.000
0750	513.4090	RAILING TUBULAR SCREENING (STRUCTURE) 01. B-70-284	LS	1.000	1.000
0780	516.0500	RUBBERIZED MEMBRANE WATERPROOFING **P**	SY	32.000	32.000
0800	517.1010.S	CONCRETE STAINING (STRUCTURE) 01. B-70-284 **P**	SF	3,990.000	3,990.000
0850	517.1015.S	CONCRETE STAINING MULTI-COLOR (STRUCTURE) 01. B-70-284 **P**	SF	1,490.000	1,490.000
0860	517.1015.S	CONCRETE STAINING MULTI-COLOR (STRUCTURE) 02. R-70-44 **P**	SF	1,590.000	1,590.000
0870	517.1015.S	CONCRETE STAINING MULTI-COLOR (STRUCTURE) 03. R-70-45 **P**	SF	2,110.000	2,110.000
0880	517.1050.S	ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 01. B-70-284 **P**	SF	1,490.000	1,490.000
0890	517.1050.S	ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 02. R-70-44 **P**	SF	1,590.000	1,590.000
0900	517.1050.S	ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 03. R-70-45 **P**	SF	2,110.000	2,110.000
0980	520.0124	CULVERT PIPE CLASS III 24-INCH	LF	162.000	162.000
1010	520.1024	APRON ENDWALLS FOR CULVERT PIPE 24-INCH	EACH	4.000	4.000
1080	521.1015	APRON ENDWALLS FOR CULVERT PIPE STEEL 15-INCH	EACH	4.000	4.000
1090	521.1018	APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH	EACH	2.000	2.000
1130	522.0324	CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH	LF	146.000	146.000
1150	522.0336	CULVERT PIPE REINFORCED CONCRETE CLASS IV 36-INCH	LF	136.000	136.000
1160	522.0348	CULVERT PIPE REINFORCED CONCRETE CLASS IV 48-INCH	LF	250.000	250.000
1170	522.1018	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	EACH	1.000	1.000
1180	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	2.000	2.000
1200	522.1036	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	EACH	2.000	2.000
1210	522.1048	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 48-INCH	EACH	2.000	2.000
1240	550.2106	PILING CIP CONCRETE 10 3/4 X 0.365-INCH	LF	4,480.000	4,480.000
1250	601.0411	CONCRETE CURB & GUTTER 30-INCH TYPE D	LF	36.000	36.000
1260	601.0557	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	LF	290.000	290.000
1270	603.1142	CONCRETE BARRIER TYPE S42 **P**	LF	1,000.000	1,000.000
1280	603.1156	CONCRETE BARRIER TYPE S56 **P**	LF	2,010.000	2,010.000
1300	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	7,010.000	7,010.000
1310	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	7,010.000	7,010.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1120-09-76 QUANTITY
1320	604.0400	SLOPE PAVING CONCRETE **P**	SY	44.000	44.000
1330	606.0200	RIPRAP MEDIUM	CY	1,120.000	1,120.000
1350	608.0418	STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 18-INCH	LF	260.000	260.000
1360	611.0642	INLET COVERS TYPE MS	EACH	2.000	2.000
1380	611.0654	INLET COVERS TYPE V	EACH	7.000	7.000
1390	611.3220	INLETS 2X2-FT	EACH	7.000	7.000
1400	611.3902	INLETS MEDIAN 2 GRATE	EACH	1.000	1.000
1410	612.0215	PIPE UNDERDRAIN UNPERFORATED 15-INCH	LF	317.000	317.000
1420	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	740.000	740.000
1430	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2.000	2.000
1450	614.0305	STEEL PLATE BEAM GUARD CLASS A **P**	LF	1,087.500	1,087.500
1460	614.0340	STEEL PLATE BEAM GUARD OVER LOW-FILL CULVERTS CLASS A **P**	LF	100.000	100.000
1470	614.0345	STEEL PLATE BEAM GUARD SHORT RADIUS **P**	LF	52.500	52.500
1480	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	2.000	2.000
1490	614.0390	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	EACH	1.000	1.000
1500	614.0905	CRASH CUSHIONS TEMPORARY	EACH	4.000	4.000
1510	614.0920	SALVAGED RAIL **P**	LF	2,540.000	2,540.000
1520	614.0925	SALVAGED GUARDRAIL END TREATMENTS	EACH	16.000	16.000
1540	614.2300	MGS GUARDRAIL 3 **P**	LF	50.000	50.000
1550	614.2500	MGS THRIE BEAM TRANSITION **P**	LF	234.000	234.000
1560	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	6.000	6.000
1570	616.0206	FENCE CHAIN LINK 6-FT **P**	LF	1,390.000	1,390.000
1590	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. ID 1120-09-76	EACH	1.000	1.000
1620	619.1000	MOBILIZATION	EACH	0.350	0.350
1630	621.0100	LANDMARK REFERENCE MONUMENTS	EACH	4.000	4.000
1640	624.0100	WATER	MGAL	270.000	270.000
1660	625.0500	SALVAGED TOPSOIL **P**	SY	46,400.000	46,400.000
1670	627.0200	MULCHING **P**	SY	20,600.000	20,600.000
1680	628.1504	SILT FENCE	LF	4,830.000	4,830.000
1690	628.1520	SILT FENCE MAINTENANCE	LF	2,415.000	2,415.000
1700	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	12.000	12.000
1710	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	6.000	6.000
1720	628.2004	EROSION MAT CLASS I TYPE B	SY	22,400.000	22,400.000
1730	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	1,050.000	1,050.000
1740	628.2023	EROSION MAT CLASS II TYPE B	SY	410.000	410.000
1750	628.6510	SOIL STABILIZER TYPE B	ACRE	8.400	8.400
1760	628.7005	INLET PROTECTION TYPE A	EACH	1.000	1.000
1770	628.7010	INLET PROTECTION TYPE B	EACH	20.000	20.000
1780	628.7020	INLET PROTECTION TYPE D	EACH	5.000	5.000
1790	628.7504	TEMPORARY DITCH CHECKS	LF	65.000	65.000
1800	628.7555	CULVERT PIPE CHECKS	EACH	80.000	80.000
1810	628.7560	TRACKING PADS	EACH	7.000	7.000
1820	628.7570	ROCK BAGS	EACH	115.000	115.000
1830	629.0210	FERTILIZER TYPE B	CWT	30.000	30.000
1840	630.0120	SEEDING MIXTURE NO. 20	LB	880.000	880.000
1850	630.0130	SEEDING MIXTURE NO. 30	LB	270.000	270.000
1860	630.0200	SEEDING TEMPORARY	LB	640.000	640.000
1870	633.0100	DELINEATOR POSTS STEEL	EACH	4.000	4.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1120-09-76 QUANTITY
1880	633.0500	DELINEATOR REFLECTORS	EACH	18.000	18.000
1890	633.1000	DELINEATOR BRACKETS	EACH	14.000	14.000
1900	633.5200	MARKERS CULVERT END	EACH	14.000	14.000
1910	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	6.000	6.000
1920	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	9.000	9.000
1940	637.0202	SIGNS REFLECTIVE TYPE II **P**	SF	73.740	73.740
1950	638.2102	MOVING SIGNS TYPE II	EACH	4.000	4.000
1960	638.2602	REMOVING SIGNS TYPE II	EACH	20.000	20.000
1970	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	14.000	14.000
1980	638.4000	MOVING SMALL SIGN SUPPORTS	EACH	3.000	3.000
1990	642.5201	FIELD OFFICE TYPE C	EACH	1.000	1.000
2000	643.0100	TRAFFIC CONTROL (PROJECT) 01. ID 1120-09-76	EACH	1.000	1.000
2030	643.0300	TRAFFIC CONTROL DRUMS	DAY	27,709.000	27,709.000
2040	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	2,512.000	2,512.000
2050	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	2,913.000	2,913.000
2060	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	3,520.000	3,520.000
2070	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	913.000	913.000
2080	643.0900	TRAFFIC CONTROL SIGNS	DAY	7,715.000	7,715.000
2090	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	260.000	260.000
2100	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01. ID 1120-09-76	EACH	1.000	1.000
2120	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	7,840.000	7,840.000
2130	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	2,250.000	2,250.000
2140	646.0106	PAVEMENT MARKING EPOXY 4-INCH **P**	LF	8,670.000	8,670.000
2150	646.0126	PAVEMENT MARKING EPOXY 8-INCH **P**	LF	450.000	450.000
2160	646.0600	REMOVING PAVEMENT MARKINGS	LF	400.000	400.000
2170	646.0841.S	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH **P**	LF	200.000	200.000
2180	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	1,560.000	1,560.000
2190	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	1,023.000	1,023.000
2200	653.0140	PULL BOXES STEEL 24X42-INCH	EACH	1.000	1.000
2210	690.0150	SAWING ASPHALT	LF	455.000	455.000
2220	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	975.000	975.000
2230	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT $5.00/HR	HRS	1,200.000	1,200.000
2240	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT $5.00/HR	HRS	540.000	540.000
2250	SPV.0035	SPECIAL 0601. HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES **P**	CY	764.000	764.000
2260	SPV.0060	SPECIAL 0001. SECTION SURVEY MONUMENTS RECONSTRUCT PROJECT	EACH	1.000	1.000
2270	SPV.0060	SPECIAL 0201. DRAIN SLOTTED VANE TYPE A 6-FOOT	EACH	2.000	2.000
2280	SPV.0060	SPECIAL 0202. APRON ENDWALLS FOR PIPE ARCH STEEL 103X71-INCH	EACH	2.000	2.000
2290	SPV.0060	SPECIAL 0251. SEDIMENTATION BASIN	EACH	4.000	4.000
2300	SPV.0060	SPECIAL 0252. TEMPORARY SLOPE DRAIN	EACH	2.000	2.000
2310	SPV.0060	SPECIAL 0301. REMOVING CONCRETE BARRIER TEMPORARY TRANSITION TYPE 32 TO 56	EACH	2.000	2.000
2320	SPV.0060	SPECIAL 0351. CONCRETE BASES TYPE 7 MEDIAN	EACH	4.000	4.000
2330	SPV.0060	SPECIAL 0352. ANCHOR BOLT COVER SHROUD	EACH	263.000	263.000

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LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1120-09-76 QUANTITY
2350	SPV.0075	SPECIAL 0301. TRUCK MOUNTED ATTENUATOR WITH OPERATOR	HRS	300.000	300.000
2360	SPV.0075	SPECIAL 0302. TRUCK MOUNTED ATTENUATOR WITHOUT OPERATOR	HRS	300.000	300.000
2370	SPV.0090	SPECIAL 0001. RAILING 54-INCH **P**	LF	1,050.000	1,050.000
2380	SPV.0090	SPECIAL 0201. PIPE ARCH CORRUGATED STEEL ALUMINUM COATED 103X71-INCH 10 GAUGE	LF	185.000	185.000
2390	SPV.0090	SPECIAL 0301. TREATED TIMBER RUB RAIL **P**	LF	180.000	180.000
2400	SPV.0090	SPECIAL 0302. REMOVING CONCRETE BARRIER TEMP PRECAST LEFT IN PLACE BY OTHERS	LF	1,930.000	1,930.000
2410	SPV.0090	SPECIAL 0601. FENCE CHAIN LINK POLYMER-COATED 6-FT **P**	LF	429.000	429.000
2420	SPV.0105	SPECIAL 0001. SURVEY PROJECT ID 1120-09-76/77/78/81	LS	1.000	1.000
2430	SPV.0105	SPECIAL 0002. REMOVING FLASHER ASSEMBLY	LS	1.000	1.000
2440	SPV.0105	SPECIAL 0601. RAILING PIPE GALVANIZED R-70-18	LS	1.000	1.000
2450	SPV.0105	SPECIAL 0602. RAILING PIPE GALVANIZED R-70-19	LS	1.000	1.000
2480	SPV.0105	SPECIAL 0605. RAILING PIPE GALVANIZED R-70-44	LS	1.000	1.000
2490	SPV.0105	SPECIAL 0606. RAILING PIPE GALVANIZED R-70-45	LS	1.000	1.000
2500	SPV.0120	SPECIAL 0251. WATERING FOR SEEDED AREAS	MGAL	55.000	55.000
2510	SPV.0165	SPECIAL 0601. WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD **P**	SF	5,250.000	5,250.000
2520	SPV.0165	SPECIAL 0602. LONGITUDINAL GROOVING BRIDGE DECK **P**	SF	6,670.000	6,670.000
2530	SPV.0195	SPECIAL 0001. LIMESTONE SCREENINGS	TON	330.000	330.000

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CLEARING AND GRUBBING ITEMS

STATION - STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
CAT 0010			
15'CTY'+00 - 16'CTY'+00	LT	1	1
TOTALS		1	1

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH	COMMENTS
CAT 0010			
STAGE 1			
23'CTY'+60	LT & RT	1	REMOVE 179 LF OF CPCM 48-INCH
STAGE 1 SUBTOTAL		1	
STAGE 2			
20'GRV'+05	LT & RT	1	REMOVE 105 LF OF CPCM 24-INCH
21'GRV'+44	LT & RT	1	REMOVE 105 LF OF CPCM 36-INCH
9'CTY'+00	LT	1	REMOVE 34 LF OF CPCM 24-INCH
16'CTY'+44	RT	1	REMOVE 47 LF OF CPCM 24-INCH
STAGE 2 SUBTOTAL		4	
TOTAL		5	

REMOVING OLD STRUCTURE

STATION	LOCATION	203.0200 LS	COMMENTS
CAT 0010			
STAGE 1			
28'CTY'+65	LT & RT	1	REMOVE 106 LF OF 95"X67" CPCM
STAGE 1 SUBTOTAL		1	
STAGE 2			
9'CTY'+74	LT	1	PARTIALLY REMOVE 4.5 LF OF 8.5'X6' CPCM
9'CTY'+85	LT	1	PARTIALLY REMOVE 4.5 LF OF 8.5'X6' CPCM
STAGE 2 SUBTOTAL		2	
TOTAL		3	

REMOVING ASPHALTIC SURFACE

STATION - STATION	LOCATION	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0120 ASPHALTIC SURFACE MILLING SY	COMMENTS
CAT 0010				
STAGE 1				
743'NAB'+72 - 755'NAB'+00	LT & RT	3,219	--	
744'SAB'+00 - 755'SAB'+04	LT & RT	2,931	--	
TOTAL		6,150	--	
STAGE 2				
Green Valley Road Haul Route	LT & RT	--	12,400	BTWN CTH Y AND SNELL
TOTAL		--	12,400	

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REMOVING FENCE

STATION - STATION	LOCATION	204.0170 REMOVING FENCE LF
CAT 0010		
STAGE 1		
24'CTY'+41 - 31'CTY'+51	LT	722
747'NAB'+59 - 751'NAB'+71	RT	378
746'SAB'+67 - 750'SAB'+47	LT	350
TOTAL		1,450

REMOVING DELINEATORS AND MARKERS

STATION - STATION	LOCATION	204.0180 REMOVING DELINEATORS AND MARKERS EACH	COMMENTS
CAT 0010			
STAGE 1			
744'NAB'+00 - 755'NAB'+00	RT	4	DELINEATORS
744'SAB'+00 - 755'SAB'+04	LT	4	DELINEATORS
TOTAL		8	

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COFFERDAM AND SEDIMENTATION BASIN ITEMS

STATION	206.5000 COFFERDAMS LS	SPV.0060.0251 SEDIMENTATION BASIN EACH
CAT 0010		
STAGE 2		
9'CTY'+74	1	1
9'CTY'+85	1	--
10'CTY'+30	1	1
14'CTY'+00	1	1
22'GRV'+00	1	1
TOTALS	5	4

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EARTHWORK SUMMARY

DIVISION	FROM/TO STATION	LOCATION	EXCAVATION COMMON (ITEM #205.0100) CUT (NOTE 1)	EBS EXCAVATION (NOTE 2)	SALVAGED / UNUSABLE PAVEMENT MATERIAL (NOTE 3)	AVAILABLE MATERIAL (NOTE 4)	REDUCED EBS IN FILL (NOTE 5) FACTOR 0.80	EXPANDED EBS BACKFILL (NOTE 6) FACTOR 1.30	UNEXPANDED FILL	EXPANDED FILL (NOTE 7) FACTOR 1.25	MASS ORDINATE +/- (NOTE 8)	WASTE	BORROW (ITEM #208.0100) (NOTE 9) FACTOR 1.15	COMMENTS
1	18'CTY'+00 - 22'CTY'+00	CTH Y	681	0	0	681	0	0	13,666	17,083	-16,401			
	23'CTY+91 - 31'CTY'+50	CTH Y	592	0	0	592	0	0	28,556	35,695	-35,102			
	743'NAB'+72 - 755'NAB'+00	USH 41 NORTHBOUND	180	0	0	180	0	0	0	0	180			
	743'SAB'+72 - 755'SAB'+00	USH 41 SOUTHBOUND	123	0	0	123	0	0	0	0	123			
DIVISION 1 SUBTOTAL			1,576	0	0	1,576	0	0	42,222	52,778	-51,201	0	47,105	
2	8'CTY'+55 - 18'CTY'+00	CTH Y	1,726	1,200	0	2,926	960	1,560	5,741	7,536	-4,609			
	16'GRV'+75 - 27+'GRV'55	GREEN VALLEY ROAD	2,144	0	0	2,144	0	0	5,335	6,668	-4,525			
								0						
DIVISION 2 SUBTOTAL			3,870	1,200	0	5,070	960	1,560	11,075	14,204	-9,134	0	8,403	
GRAND TOTAL			5,446	1,200	0	6,646	960	1,560	53,297	66,982	-60,335	0	55,508	
TOTAL EXCAVATION COMMON			5,446											

1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
2) EBS EXCAVATION TO BE BACKFILLED WITH CUT MATERIAL.
3) SALVAGED/UNUSABLE PAVEMENT MATERIAL = LENGTH * TYPICAL WIDTH * TYPICAL DEPTH
4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL + EBS
5) REDUCED EBS IN FILL - EXCAVATED EBS MATERIAL IS USEABLE IN FILLS OUTSIDE THE 1:1 SLOPE. EBS IN FILL REDUCTION FACTOR = 0.8.
6) EXPANDED EBS BACKFILL - THIS IS TO BE FILLED WITH CUT MATERIAL. EBS BACKFILL FACTOR = 1.3.
7) EXPANDED FILL. FACTOR = 1.25. EXPANDED FILL = (UNEXPANDED FILL - REDUCED EBS + EXPANDED EBS BACKFILL) * FILL FACTOR
8) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
9) BORROW = MASS ORDINATE / FILL FACTOR * BORROW FACTOR

PREPARE FOUNDATION ITEMS

LOCATION	211.0100 PREPARE FOUNDATION FOR ASPHALTIC PAVING 1120-09-76 LS	211.0200 PREPARE FOUNDATION FOR CONCRETE PAVEMENT 1120-09-76 LS	COMMENTS
CAT 0010			
STAGE 1			
1120-09-76	1	1	
TOTALS	1	1	

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BASE AGGREGATE AND BREAKER RUN ITEMS

STATION - STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	311.0110 BREAKER RUN TON	SPV.0195.0001 LIMESTONE SCREENINGS TON
CAT 0010					
STAGE 1					
744'NAB'+00.00 - 755'NAB'+00.00	RT	160	170	135	--
743'SAB'+99.96 - 755'SAB'+04.19	LT	160	170	135	--
18'CTY'+14.05 - 21'CTY'+77.56	LT & RT	120	1,335	1,000	--
21'CTY'+77.56 - 23'CTY'+45.71	LT & RT	--	70	--	--
23'CTY'+45.71 - 31'CTY'+50.00	LT & RT	335	2,590	1,575	--
10+13.38 - 13+82.72	LT & RT	--	585	--	97
15+50.87 - 23+67.47	LT & RT	115	1,465	1,050	201
STAGE 1 SUBTOTALS		890	6,385	3,895	298
STAGE 2					
7'CTY'+50.05 - 18'CTY'+14.05	LT & RT	330	3,660	2,135	--
16'GRV'+75.00 - 20'GRV'+45.58	LT & RT	135	1,305	790	--
20'GRV'+94.62 - 27'GRV'55.00	LT & RT	270	2,305	1,475	--
STAGE 2 SUBTOTALS		735	7,270	4,400	--
UNDISTRIBUTED					
PROJECT		175	1,445	855	32
TOTALS		1,800	15,100	9,150	330

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CONCRETE PAVEMENT ITEMS

STATION - STATION	LOCATION	415.0110 CONCRETE PAVEMENT 11-INCH SY	715.0415 INCENTIVE STRENGTH CONCRETE PAVEMENT DOL	416.0410 CONCRETE PAVEMENT APPROACH SLAB SY	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	416.1110 CONCRETE RUMBLE STRIPS SHOULDER LF	COMMENTS
CAT 0010								
STAGE 1								
743'NAB'+72 - 753'NAB'+90	LT	1,589	476	--	349	20	1,018	
744'SAB'+95 - 753'SAB'+67	RT	1,359	407	--	349	20	872	
744'NAB'+50	LT	--	--	--	10	--	--	FOR EXISTING INLET
747'NAB'+50	LT	--	--	--	10	--	--	FOR EXISTING INLET
749'NAB'+46	LT	--	--	--	10	--	--	FOR EXISTING INLET
750'NAB'+00	LT	--	--	--	10	--	--	FOR EXISTING INLET
751'NAB'+55	LT	--	--	--	10	--	--	FOR EXISTING INLET
747'SAB'+50	RT	--	--	--	10	--	--	FOR EXISTING INLET
749'SAB'+46	RT	--	--	--	10	--	--	FOR EXISTING INLET
750'SAB'+00	RT	--	--	--	10	--	--	FOR EXISTING INLET
751'SAB'+55	RT	--	--	--	10	--	--	FOR EXISTING INLET
21'CTY'+57 - 21'CTY'+86	LT & RT	20	47	138	--	--	--	
23'CTY'+36 - 23'CTY'+66	LT & RT	12	45	137	--	--	--	
STAGE 1 SUBTOTALS		2,980	975	275	788	40	1,890	
TOTALS		2,980	975	275	788	40	1,890	

HMA & ASPHALTIC ITEMS

STATION - STATION	LOCATION	315.0100 ASPHALTIC BASE TON	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL	460.1100 HMA PAVEMENT TYPE E-0.3 TON	460.1101 HMA PAVEMENT TYPE E-1 TON	460.2000 INCENTIVE DENSITY HMA PAVEMENT DOL	465.0105 ASPHALTIC SURFACE TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	465.0315 ASPHALTIC FLUMES SY	465.0400 ASPHALTIC SHOULDER RUMBLE STRIP LF	COMMENTS
CAT 0010												
STAGE 1												
744'NAB'+00 - 755'NAB'+00	LT & RT	283	20	33	--	362	232	63	--	--	1,101	
743'SAB'+99 - 755'SAB'+05	LT & RT	283	20	33	--	363	232	62	--	--	1,109	
18'CTY'+14 - 21'CTY'+62	LT & RT	--	20	34	60	360	230	--	--	--	--	
23'CTY'+61 - 31'CTY'+50	LT & RT	--	35	52	171	631	404	--	--	--	--	
STAGE 1 SUBTOTALS		565	94	152	231	1,716	1,098	125	--	--	2,210	
STAGE 2												
9'CTY'+15 - 18'CTY'+14	LT & RT	--	45	72	189	821	525	--	--	14	--	
16'GRV'+75 - 20'GRV'+46	LT & RT	--	15	30	--	267	171	--	--	16	--	
20'GRV'+94 - 27'GRV'55	LT & RT	--	26	46	65	466	298	--	24	14	--	
Green Valley Road Haul Route	LT & RT	--	56	308	--	1,016	650	--	--	--	--	BTWN CTH Y AND SNELL
STAGE 2 SUBTOTALS		--	85	148	254	1,554	995	--	24	45	--	
TOTALS		565	180	300	485	3,270	2,093	125	24	45	2,210	

NOTE: ASPHALTIC SURFACE CALCULATED USING 3 INCHES OF DEPTH FOR LENGTH OF PROJECT BETWEEN USH 41 MEDIAN BARRIER. FIELD FIT AS NEEDED.

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CONCRETE MASONRY ENDWALLS

STATION - STATION	LOCATION	504.0900 CY	INVERT	COMMENTS
CAT 0010				
STAGE 2				
9'CTY'+80	LT	7.3	745.50	AT N. END OF TWIN 103X71-INCH PIPE ARCHES
TOTAL		7.3		

CULVERT PIPE ITEMS

STATION	LOCATION	STEEL PIPE THICKNESS INCHES	520.0124 CULVERT PIPE CLASS III 24-INCH LF	520.1024 APRON ENDWALLS FOR CULVERT PIPE 24-INCH EACH	521.1018 APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH EACH	522.0324 CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	522.0336 CULVERT PIPE REINFORCED CONCRETE CLASS IV 36-INCH LF	522.0348 CULVERT PIPE REINFORCED CONCRETE CLASS IV 48-INCH LF	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	522.1036 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH EACH	522.1048 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 48-INCH EACH	633.5200* MARKERS CULVERT END EACH	SPV.0060.0202 APRON ENDWALLS FOR PIPE ARCH STEEL 103X71-INCH EACH	SPV.0090.0201 PIPE ARCH CORRUGATED STEEL ALUMINUM COATED 103X71-INCH 10-GAUGE LF
CAT 0100														
STAGE 1														
748'NAB'+35 - 750'NAB'+85	RT	--	--	--	--	--	--	250	--	--	2	2	--	--
28'CTY'+65	C/L	0.138	--	--	--	--	--	--	--	--	--	2	2	160
STAGE 1 SUBTOTALS			--	--	--	--	--	250	--	--	2	4	2	160
STAGE 2														
7'CTY'+92 - 8'CTY'+87	LT	0.064	96	2	--	--	--	--	--	--	--	--	--	--
9'CTY'+80	LT	0.138	--	--	--	--	--	--	--	--	--	--	--	25
16'CTY'+44	RT	0.064	66	2	--	--	--	--	--	--	--	--	--	--
19'GRV'+43	C/L	--	--	--	--	146	--	--	2	--	--	2	--	--
21'GRV'+68	C/L	--	--	--	--	--	136	--	--	2	--	2	--	--
27'GRC'+44	RT	0.064	--	--	2	--	--	--	--	--	--	--	--	--
STAGE 2 SUBTOTALS			162	4	2	146	136	--	2	2	--	4	--	25
TOTALS			162	4	2	146	136	250	2	2	2	8	2	185

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

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CONCRETE CURB AND CURB AND GUTTER

STATION	-	STATION	LOCATION	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF	601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D LF	COMMENTS
CAT 0010						
STAGE 1						
17'CTY'+53.45	-	18'CTY'+10.47	LT	--	80	DWY ENTRANCE CURB
17'CTY'+33.64	-	17'CTY'+70.67	RT	--	69	
STAGE 1 SUBTOTALS				--	149	
STAGE 2						
18'CTY'+45.80	-	18'CTY'+88.07	LT	--	76	
18'CTY'+19.97	-	18'CTY'+66.76	RT	--	65	
20'CTY'+95.00	-	25'CTY'+12.21	LT & RT	36	--	
STAGE 2 SUBTOTALS				36	141	
TOTALS				36	290	

CONCRETE BARRIER ITEMS

STATION-STATION	LOCATION	603.1142 CONCRETE BARRIER TYPE S42 LF	603.1156 CONCRETE BARRIER TYPE S56 LF
CAT 0010			
STAGE 1			
743'NAB'+55 - 754'NAB'+05	MED	-	1,050
746'NAB'+60 - 750'NAB'+60	RT	400	--
744'SAB'+16 - 753'SAB'+77	MED	-	960
747'SAB'+75 - 751'SAB'+50	LT	375	--
21'CTY'+07 - 25'CTY'+00	RT	225	--
TOTALS		1,000	2,010

CONCRETE BARRIER TEMPORARY PRECAST

STATION - STATION	LOCATION	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	SPV.0090.0302 REMOVING CONCRETE BARRIER TEMPORARY PRECAST LEFT IN PLACE BY OTHERS LF	SPV.0060.0301 REMOVING CONCRETE BARRIER TEMPORARY TRANSITION TYPE 32 TO 56 EACH	COMMENTS
CAT 0010						
STAGE 1						
738'NAB'+50 - 756'NAB'+00	LT	1,755	1,755	966	1	
738'NAB'+50 - 756'NAB'+00	RT	1,750	1,750	--	--	
743'SAB'+00 - 760'SAB'+50	LT	1,755	1,755	--	--	
743'SAB'+00 - 760'SAB'+50	RT	1,750	1,750	964	1	
TOTALS		7,010	7,010	1,930	2	

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RIPRAP AND GEOTEXTILE FABRIC ITEMS

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY
CAT 0010			
STAGE 1			
21'CTY'+63	LT	6	12
20'GRV'+06	RT	4	9
10+62	RT	15	30
STAGE 1 SUBTOTALS		32	64
STAGE 2			
9'CTY'+12.16 - 18'CTY'+14.05	LT	750	1,501
17'CTY'+25	RT	17	35
STAGE 2 SUBTOTALS		863	1,726
UNDISTRIBUTED			
		225	460
TOTALS		1,120	2,250

STORM SEWER ITEMS

LOCATION	521.1015 APRON ENDWALLS FOR CULVERT PIPE STEEL 15-INCH EACH	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH EACH	608.0418 SSPRC CLASS IV 18-INCH LF	611.3220 INLETS 2X2-FT EACH	611.3902 INLETS MEDIAN 2 GRATE EACH	611.0642 INLET COVERS TYPE MS EACH	611.0654 INLET COVERS TYPE V EACH	612.0215 PIPE UNDERDRAIN UNPERFORATED 15-INCH LF	612.0406 PIPE UNDERDRAIN WRAPPED 6-INCH LF	633.5200 * MARKERS CULVERT END EACH	SPV.0060.0201 DRAIN SLOTTED VANE TYPE A 6-FOOT EACH
CAT 0100											
STAGE 1											
USH 41	--	1	260	4	--	--	4	--	60	1	2
CTH Y	4	--	--	3	1	2	3	317	--	5	--
TOTALS	4	1	260	7	1	2	7	317	60	6	2

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	MISCELLANEOUS QUANTITIES	SHEET NO:	E

FILE NAME : N:\pds\design_id\ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _Dec. 2003 ORIGINATOR : DIST 4_ PLOT SCALE : 1:1

BEAM GUARD AND GUARDRAIL ITEMS

STATION	-	STATION	LOCATION	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0340 STEEL PLATE BEAM GUARD OVER LOW-FILL CULVERTS CLASS A LF	614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS LF	614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL EACH	614.0390 STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL EACH	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	SPV.0090.0301 TREATED TIMBER RUB RAIL LF	COMMENTS
CAT 0010													
STAGE 1													
745'NAB'+70	-	746'NAB'+63	RT	--	--	--	--	--	--	39	1	--	
751'SAB'+47	-	752'SAB'+40	LT	--	--	--	--	--	--	39	1	--	
19'CTY'+95	-	21'CTY'+10	RT	--	--	--	--	--	25.0	39	1	--	
20'CTY'+79	-	21'CTY'+73	LT	--	--	--	--	--	--	39	1	--	
23'CTY'+67	-	24'CTY'+90	LT	--	--	--	--	--	25.0	39	1	90	
24'CTY'+97	-	25'CTY'+90	RT	--	--	--	--	--	--	39	1	90	
STAGE 1 SUBTOTALS				--	--	--	--	--	50.0	234	6	180	
STAGE 2													
8'CTY'+56	-	17'CTY'+65	LT	762.5	100.0	--	1	--	--	--	--	--	
20'GRV'+91	-	25'GRV'+25	LT	325.0	--	52.5	1	1	--	--	--	--	R=36', #CRT POSTS=6
STAGE 2 SUBTOTALS				1,087.5	100.0	52.5	2	1	--	--	--	--	
TOTALS				1,087.5	100.0	52.5	2	1	50.0	234	6	180	

CRASH CUSHIONS TEMPORARY

STATION	LOCATION	614.0905 EACH	CRASH TEST CONDITION	OBJECT MARKING PATTERN	WIDTH REQUIREMENT FT
CAT 0010					
STAGE 1					
738'NAB'+50	RT	1	TL-3	OM-3R	2
738'NAB'+50	LT	1	TL-3	OM-3L	2
760'SAB'+50	RT	1	TL-3	OM-3R	2
760'SAB'+50	LT	1	TL-3	OM-3L	2
TOTAL		4			

SALVAGED RAIL

STATION - STATION	LOCATION	614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARDRAIL END TREATMENTS EACH
CAT 0010			
STAGE 1			
744'NAB'+00	LT	-	1
744'SAB'+00	RT	-	1
753'NAB'+30	LT	-	1
753'SAB'+62	RT	-	1
18'CTY'+50 - 21'CTY'+44	LT	280	1
18'CTY'+35 - 21'CTY'+25	RT	270	1
24'CTY'+04 - 30'CTY'+07	LT	533	2
23'CTY'+90 - 29'CTY'+04	RT	442	2
STAGE 1 SUBTOTALS		1,525	10
STAGE 2			
9'CTY'+39 - 17'CTY'+94	LT	810	1
17'CTY'+29 - 17'CTY'+73	RT	47	1
19'GRV'+67 - 20'GRV'+26	LT	12	1
19'GRV'+49 - 20'GRV'+50	RT	55	1
20'GRV'+96 - 21'GRV'+90	LT	46	1
21'GRV'+15 - 22'GRV'+07	RT	45	1
STAGE 2 SUBTOTALS		1,015	6
TOTALS		2,540	16

FENCING AND RAILING ITEMS

STATION - STATION	LOCATION	616.0206 FENCE CHAIN LINK 6-FT LF	SPV.0090.0001 RAILING 54-INCH LF
CAT 0010			
STAGE 1			
747'NAB'+59 - 749'NAB'+15	RT	160	--
749'NAB'+78 - 751'NAB'+71	RT	198	--
746'SAB'+67 - 748'SAB'+38	LT	174	--
749'SAB'+02 - 750'SAB'+47	LT	148	--
24'CTY'+50 - 31'CTY'+50	LT	710	--
10'+17 - 13'+65	LT	--	350
R-70-18 USH 45 Ramp F	LT	--	350
R-70-19 USH 45 Ramp F	LT	--	350
TOTALS		1,390	1,050

WATER

STATION - STATION	LOCATION	624.0100 WATER MGAL	SPV.0120.0251 WATERING FOR SEEDED AREAS MGAL
CAT 0010			
STAGE 1			
744'NAB'+00.00 - 755'NAB'+00.00	RT	5	--
743'SAB'+99.96 - 755'SAB'+04.19	LT	5	--
18'CTY'+14.05 - 21'CTY'+77.56	LT & RT	25	--
21'CTY'+77.56 - 23'CTY'+45.71	LT & RT	1	--
23'CTY'+45.71 - 31'CTY'+50.00	LT & RT	45	--
10+13.38 - 13+82.72	LT & RT	7	--
15+50.87 - 23+67.47	LT & RT	28	--
STAGE 1 SUBTOTALS		116	0
STAGE 2			
7'CTY'+50.05 - 18'CTY'+14.05	LT & RT	61	50
16'GRV'+75.00 - 20'GRV'+45.58	LT & RT	22	--
20'GRV'+94.62 - 27'GRV'55.00	LT & RT	41	--
STAGE 2 SUBTOTALS		124	50
UNDISTRIBUTED		30	5
TOTAL		270	55

WATER PROVIDED FOR COMPACTION OF SUBGRADE, BASE, PREPARATION OF FOUNDATION AND DUST ABATEMENT

ADDITIONAL WATER PROVIDED ON CTH Y W OF USH 41 FOR WATERING SEEDING MIXTURES ALONG THE RIVER

LANDSCAPING ITEMS

STATION - STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB
CAT 0010							
STAGE 1							
744'NAB'+00.00 - 755'NAB'+00.00	RT	2,403	1,976	2	38	19	33
743'SAB'+99.96 - 755'SAB'+04.19	LT	1,619	1,376	1	21	16	22
18'CTY'+14.05 - 21'CTY'+77.56	LT & RT	4,389	1,942	3	93	18	60
23'CTY'+45.71 - 31'CTY'+50.00	LT & RT	5,882	903	4	123	24	80
10+13.38 - 13+82.72	RT	2,183	157	1	59	--	30
15+50.87 - 23+67.47	RT	6,344	732	4	135	25	86
STAGE 1 SUBTOTALS		22,820	7,086	15	469	102	311
STAGE 2							
7'CTY'+80.16 - 18'CTY'+14.05	LT & RT	7,482	4,356	5	124	53	102
16'GRV'+75.00 - 20'GRV'+45.58	LT & RT	2,757	2,444	2	47	19	38
20'GRV'+94.62 - 27'GRV'55.00	LT & RT	4,044	2,592	3	57	35	55
STAGE 2 SUBTOTALS		14,284	9,393	9	228	107	195
UNDISTRIBUTED		9,297	4,122	6	183	61	134
TOTALS		46,400	20,600	30	880	270	640

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SILT FENCE ITEMS

STATION - STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 MAINTENANCE LF
CAT 0010			
STAGE 1			
744'NAB'+00 - 748'NAB'+37	RT	458	229
19'CTY'+30 - 21'CTY'+39	LT	900	450
23'CTY'+34 - 31'CTY'+60	RT	900	450
24'CTY'+35 - 31'CTY'+50	LT	746	373
STAGE 1 SUBTOTALS		3,004	1,502
STAGE 2			
9'CTY'+11 - 9'CTY'+75	LT	67	34
16'GRV'+74 - 17'GRV'+49	RT	75	38
16'GRV'+75 - 18'GRV'+49	LT	178	89
22'GRV'+18 - 27'GRV'+37	LT	537	269
STAGE 2 SUBTOTALS		857	429
UNDISTRIBUTED			
		969	485
TOTALS		4,830	2,415

EROSION CONTROL MOBILIZATIONS ITEMS

LOCATION	628.1905 EROSION CONTROL EACH	628.1910 EMERGENCY EROSION CONTROL EACH
CAT 0010		
STAGE 1	6	3
STAGE 2	6	3
TOTALS	12	6

EROSION MAT ITEMS

STATION - STATION	LOCATION	628.2004 CLASS I TYPE B SY	628.2008 URBAN CLASS I TYPE B SY	628.2023 CLASS II TYPE B SY
CAT 0010				
STAGE 1				
744'NAB'+00.00 - 755'NAB'+00.00	RT	370	57	--
743'SAB'+99.96 - 755'SAB'+04.19	LT	243	--	--
18'CTY'+14.05 - 21'CTY'+77.56	LT & RT	2,209	238	--
23'CTY'+45.71 - 31'CTY'+50.00	LT	4,959	20	--
10+13.38 - 13+82.72	RT	2,026	--	--
15+50.87 - 23+67.47	RT	5,612	--	--
STAGE 1 SUBTOTAL		15,419	315	--
STAGE 2				
9'CTY'+12.16 - 18'CTY'+14.05	LT & RT	1,451	98	76
16'GRV'+75.00 - 20'GRV'+45.58	LT & RT	313	--	--
20'GRV'+94.62 - 27'GRV'55.00	LT & RT	763	426	254
STAGE 2 SUBTOTAL		2,527	524	330
UNDISTRIBUTED				
		4,454	211	80
TOTAL		22,400	1,050	410

SOIL STABILIZER

STATION - STATION	LOCATION	628.6510 TYPE B ACRE
CAT 0010		
STAGE 1		
UNDISTRIBUTED	LT & RT	5.2
STAGE 1 SUBTOTAL		5.2
STAGE 2		
UNDISTRIBUTED	LT & RT	3.2
STAGE 2 SUBTOTAL		3.2
TOTAL		8.4

INLET PROTECTION ITEMS

LOCATION	628.7005 TYPE A EACH	628.7010 TYPE B EACH	628.7020 TYPE D EACH
CAT 0010			
STAGE 1			
EXISTING STRUCTURES	--	10	4
PROPOSED STRUCTURES	1	7	--
STAGE 1 SUBTOTALS	1	17	4
UNDISTRIBUTED			
	--	3	1
TOTALS	1	20	5

3

DITCH CHECK ITEMS

STATION	LOCATION	628.7504 TEMPORARY DITCH CHECKS LF	628.7570 ROCK BAGS EACH
CAT 0010			
STAGE 1			
744'SAB'+00	LT	10	--
751'SAB'+30	LT	10	--
752'NAB'+00	RT	10	--
20'CTY'+50	LT	10	--
744'NAB'+60	RT	--	15
748'NAB'+20	RT	--	15
27'CTY'+95	LT	--	15
28'CTY'+00	RT	--	15
STAGE 1 SUBTOTALS		40	60
STAGE 2			
10'CTY'+50		--	15
24'GRV'+00		10	--
24'GRV'+25		--	15
STAGE 2 SUBTOTALS		10	30
UNDISTRIBUTED			
		15	25
TOTAL		65	115

ASSUME 10 LF PER TEMPORARY DITCH CHECK
ASSUME 15 ROCK BAGS PER RELIEF POINT

TRACKING PAD

LOCATION	628.7560 EACH
CAT 0010	
STAGE 1	3
STAGE 2	4
TOTAL	7

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
CAT 0010		
STAGE 1		
748'NAB'+00	RT	2
23'CTY'+94	LT	10
24'CTY'+33	LT	10
28'CTY'+65	LT & RT	23
17+25	RT	2
STAGE 1 SUBTOTAL		47
STAGE 2		
16'CTY'+77	RT	3
19'GRV'+28	RT	3
21'GRV'+87	RT	7
27'GRV'+18	RT	2
STAGE 2 SUBTOTAL		15
UNDISTRIBUTED		18
TOTAL		80

DELINEATORS

STATION - STATION	LOCATION	633.0100 DELINEATOR POSTS STEEL EACH	633.0500 DELINEATOR REFLECTORS WHITE EACH	633.0500 DELINEATOR REFLECTORS YELLOW EACH	633.1000 DELINEATOR BRACKETS EACH
CAT 0010					
STAGE 1					
744'NAB'+00 - 755'NAB'+00	RT	2	4	--	2
744'NAB'+00 - 753'NAB'+62	MED	--	--	5	5
744'SAB'+00 - 755'SAB'+04	LT	2	4	--	2
744'SAB'+00 - 753'SAB'+62	MED	--	--	5	5
TOTALS		4	8	10	14
			18		

NOTE: DELINEATOR SPACING IS NOT IN ACCORDANCE WITH SDDS FOR CONCRETE BARRIER.
DELINEATORS ON MEDIAN BARRIER SHALL BE PLACED EVERY 200 FEET.

3

TYPE II SIGNS AND SUPPORTS

SIGN NO.	LOCATION	SIGN CODE	W X H	637.0202 SIGNS TYPE II SF	634.0614 POSTS WOOD 4x6x14 EACH	634.0616 POSTS WOOD 4x6x16 EACH	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH	SPV.0105.0002 REMOVING FLASHER ASSEMBLY LS	SIGN MOUNTED ON SAME POST AS	COMMENTS
CAT 0010													
1-1	CTH Y W. OF GREEN VALLEY ROAD	-	- X -	--	--	1	1	--	1	--	--		ADOPT-A-HIGHWAY SIGN
1-2	CTH Y W. OF GREEN VALLEY ROAD	R2-1	24" X 30"	5.00	1	--	--	1	1	--	--		45 MPH
1-3	CTH Y W. OF GREEN VALLEY ROAD	R1-1	30" X 30"	5.18	1	--	--	1	1	--	--		
1-4	CTH Y W. OF GREEN VALLEY ROAD	W4-4P	24" X 12"	2.00	--	--	--	1	--	--	--	1-3	
1-5	CTH Y E. OF GREEN VALLEY ROAD	R5-2	24" X 24"	4.00	--	1	--	1	--	--	--		
1-6	CTH Y E. OF GREEN VALLEY ROAD	R1-1	30" X 30"	5.18	--	1	--	1	1	--	--		
1-7	CTH Y E. OF GREEN VALLEY ROAD	W4-4P	24" X 12"	2.00	--	--	--	1	--	--	--	1-6	
1-8	CTH Y W. OF GREEN VALLEY ROAD	M1-95A	24" X 30"	5.00	--	1	--	1	1	--	--		WEST FRONTAGE ROAD
1-9	CTH Y W. OF GREEN VALLEY ROAD	M1-95A	24" X 30"	5.00	--	--	--	1	--	--	--	1-8	WEST FRONTAGE ROAD
1-10	CTH Y W. OF GREEN VALLEY ROAD	M6-4	21" X 21"	3.06	--	--	--	1	--	--	--	1-8	
1-11	CTH Y W. OF GREEN VALLEY ROAD	M6-4	21" X 21"	3.06	--	--	--	1	--	--	--	1-8	
1-12	CTH Y W. OF GREEN VALLEY ROAD		X	0.00	--	--	1	--	--	1	--		
1-13	CTH Y W. OF GREEN VALLEY ROAD	R12-55	48" X 18"	6.00	--	1	--	1	1	--	--		
2-1	CTH Y W. OF USH 41	W5-52L	12" X 36"	3.00	--	1	--	1	1	--	--		
2-3	CTH Y E. OF USH 41	R12-1	24" X 30"	5.00	--	1	--	1	1	--	--		
2-4	CTH Y E. OF USH 41	W5-52R	12" X 36"	3.00	--	1	--	1	1	--	--		
2-5	CTH Y E. OF USH 41	W2-1	30" X 30"	6.25	--	1	--	1	1	--	1		
2-6	CTH Y E. OF USH 41	W13-1	- X -	--	--	--	--	1	--	--	--		35 MPH
2-7	CTH Y E. OF USH 41	W5-52L	12" X 36"	3.00	1	--	--	1	1	--	--		
2-8	CTH Y W. OF USH 41	R12-1	24" X 30"	5.00	1	--	--	1	1	--	--		
2-9	CTH Y W. OF USH 41	W5-52R	12" X 36"	3.00	1	--	--	1	1	--	--		
2-10	USH 41 S. OF CTH Y	M1-94	- X -	--	--	--	1	--	--	1	--		HWY Y
2-11	USH 41 N. OF CTH Y	M1-94	- X -	--	--	--	1	--	--	1	--		HWY Y
2-13	CTH Y E. OF USH 41	R12-55	48" X 18"	6.00	1	--	--	1	1	--	--		
TOTALS				73.74	6	9	4	20	14	3	1		

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 7 DAYS	643.3000 DETOUR SIGNS DAYS	643.1050* TRAFFIC CONTROL SIGNS PCMS DAYS	REMARKS
	SB 41 DETOUR							
1	LT OF TYPE 1 (76-JACKSON ST-1 MILE; EXIT 124)	W20-2-F	48"x48"	1	7	49		
2	ACROSS FROM SIGN # 1 (MEDIAN SIDE)	W20-2-F	48"x48"	1	7	49		
3	LT OF D1-2 (HWY 76 - 1/2; HWY 45 - 3 1/2; HWY 21 - 5 1/4)	W20-2-G	48"x48"	1	7	49		
4	ACROSS FROM SIGN # 3 (MEDIAN SIDE)	W20-2-G	48"x48"	1	7	49		
5	LT OF E3-1 (DOWNTOWN OSHKOSH - EXIT 124)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
6	ACROSS FROM SIGN # 5 (MEDIAN SIDE)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
7	LT OF TYPE 1 (76-JACKSON ST-TILT RT; EXIT 124)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 6-2	30"x30"	1	7	49		RIGHT
8	ABOVE D1-1 (SUNNYVIEW EXPO CENTER-EXIT 124)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-L	21"x21"	1	7	49		
9	ABOVE R3-8-P (LT-ONLY; LT & THRU;RT-ONLY) (LT SIDE)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-L	21"x21"	1	7	49		
10	LT OF TRAFFIC SIGNAL (LT SIDE)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		LEFT
11	BACK SIDE OF R51-A (WRONG WAY)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
12	ABOVE R2-1 (SPEED LIMIT 45 MPH)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
13	LT OF J4-2 (S-76; ALT 41) @ CTH Y	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
14	ABOVE J 4-2 (S-76; ALT 41) @ SNELL RD	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
15	ABOVE J 4-2 (S-76; ALT 41) @ SMITH ST	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
16	LT OF J1-1 (END 76)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-R	21"x21"	1	7	49		

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 7 DAYS	643.3000 DETOUR SIGNS DAYS	643.1050* TRAFFIC CONTROL SIGNS PCMS DAYS	REMARKS
(CONTINUED)								
17	RT OF J2-2 (S-45-AH; N-45-AH RT)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		RIGHT
18	ABOVE D1-1 (45-NORTH, MURDOCK AVE, TILT RT) W SPLITTER ISLAND	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-2	21"x21"	1	7	49		RIGHT
19	ABOVE J 4-1 (N-45)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
20	75' W OF WISCONSIN ST INTERSECTION ON MURDOCK ST	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
21	50' W OF VINELAND ST INTERSECTION ON MURDOCK ST	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
22	50' E OF PLYMOUTH ST INTERSECTION ON MURDOCK ST	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-R	21"x21"	1	7	49		
23	ABOVE R3-8-F (LT-TURN, RT-TURN)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		RIGHT
24	100' N OF MURDOCK ST INTERSECTION ON ALGOMA AVE	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
25	200' S OF OVERHEAD SIGN SUPPORT @ FERNAU AVE (R-A-B)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
26	ABOVE D1-1 (TO-41; 45-TILT RT) IN THE USH 45 N SPLITTER ISLAND @ FERNAU AVE	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-2	21"x21"	1	7	49		RIGHT
52	SB ADVANCED WARNING			2	7	49	7	
	SUBTOTAL			**85**		**4,116**	**7**	

*ITEM SHOWN ON OTHER SHEETS

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 7 DAYS	643.3000 DETOUR SIGNS DAYS	643.1050* TRAFFIC CONTROL SIGNS PCMS DAYS	REMARKS
(CONTINUED)								
	NB USH 41 DETOUR							
27	1/2 MILE S 0F SIGN # 29	W20-2-F	48"x48"	1	7	49		
28	ACROSS FROM SIGN # 27 (MEDIAN SIDE)	W20-2-F	48"x48"	1	7	49		
29	LT OF TYPE 1 (45-TO W 10; NEW LONDON/ALGOMA BVLD; 1/2 MILE-EXIT ONLY)	W20-2-G	48"x48"	1	7	49		
30	ACROSS FROM SIGN # 29 (MEDIAN SIDE)	W20-2-G	48"x48"	1	7	49		
31	1/4 MILE N 0F SIGN # 29	MO 4-8	36"x18"	1	7	49		
	"	MO 3-1	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
32	ACROSS FROM SIGN # 31 (MEDIAN SIDE)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-1	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
33	LT OF TYPE 1 (45-TO W 10; NEW LONDON/ALGOMA BVLD; EXIT ONLY)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-1	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 6-2	30"x30"	1	7	49		RIGHT
34	RT SHOULDER OF TYPE 1 (45-SOUTH; ALGOMA BVLD; DOWN ARROW)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-1	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 6-2	30"x30"	1	7	49		RIGHT
35	LT OF J2-1 (S-45-AH RT)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-R	21"x21"	1	7	49		
36	ABOVE R6-2-R (ONE WAY RT)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		RIGHT
37	LT OF OVERHEAD SIGN SUPPORT @ FERNAU AVE (R-A-B)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
38	ABOVE D1-1 (S-45; ALGOMA BVLD; TILT RT) IN S SPLITTER ISLAND @ FERNAU AVE	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-2	21"x21"	1	7	49		RIGHT
39	ABOVE J4-2 (S-45; ALT 41)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
40	RT OF J2-2 (S-45-AH LT; W-21-AH)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-L	21"x21"	1	7	49		
41	50' N OF TRAFFIC SIGNAL @ ALGOMA BVLD & MURDOCK ST	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		LEFT

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 7 DAYS	643.3000 DETOUR SIGNS DAYS	643.1050* TRAFFIC CONTROL SIGNS PCMS DAYS	REMARKS
(CONTINUED)								
42	50' E OF ALGOMA BVLD INTERSECTION ON MURDOCK ST	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
43	50' E OF VINLAND ST INTERSECTION ON MURDOCK ST	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
44	300' W OF JACKSON ST INTERSECTION ON MURDOCK ST	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-L	21"x21"	1	7	49		
45	ABOVE J2-2 (N-76-AH LT; S-45-AH RT)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		LEFT
46	ABOVE D1-1 (N-76-JACKSON ST- TILT RT)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-2	21"x21"	1	7	49		RIGHT
47	ABOVE J4-2 (N-76, ALT 41) @ SMITH ST	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
48	ABOVE J4-2 (N-76, ALT 41) @ SNELL RD	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
49	ABOVE J4-2 (N-76, ALT 41) @ CTH Y	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
50	MODIFY J1-1 (JCT 41)	MO 4-8-A	24"x18"	1	7	49		
	"	M 1-4	EXISTING					
51	NB ADVANCED WARNING (LOCATION DETERMINED IN FIELD)			2	7	49	7	
	SUBTOTAL			**77**		**3,724**	**7**	
	PROJECT TOTAL			***162***		***7,840***	***14***	

*ITEM SHOWN ON OTHER SHEETS

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TRAFFIC CONTROL ITEMS

STAGE	DAYS	643.0300 DRUMS NO.	643.0300 DRUMS DAYS	643.0420 BARRICADES TYPE III NO.	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO.	643.0705 WARNING LIGHTS TYPE A DAYS	643.0715 WARNING LIGHTS TYPE C NO.	643.0715 WARNING LIGHTS TYPE C DAYS	643.0800 ARROW BOARDS NO.	643.0800 ARROW BOARDS DAYS	643.0900 SIGNS NO.	643.0900 SIGNS DAYS	643.1050* SIGNS PCMS NO.	643.1050* SIGNS PCMS DAYS
CAT 0010															
STAGE 1															
USH 41 NB	60	171	10,260	--	--	--	--	16	960	6	360	31	1,860	2	50
USH 41 SB	60	171	10,260	--	--	--	--	16	960	6	360	31	1,860	2	50
OFF-PEAK LANE CLOSURE	40	102	4,080	2	80	--	--	32	1,280	2	80	12	480	--	--
USH 41 NB TO USH 45 NB RAMP	5	70	350	4	20	4	20	--	--	--	--	12	60	--	--
CTH Y	60	--	--	22	1,320	24	1,440	--	--	--	--	24	1,440	2	70
WINN CO LIGHTING COVERS	30	8	240	--	--	--	--	--	--	1	30	6	180	--	--
STAGE 1 SUBTOTALS			25,190		1,420		1,460		3,200		830		5,880		170
STAGE 2															
CTH Y	27	--	--	19	513	24	648	--	--	--	--	22	594	2	54
GREEN VALLEY ROAD	27	--	--	13	351	20	540	--	--	--	--	20	540	--	--
STAGE 2 SUBTOTALS			--		864		1,188		--		--		1,134		54
UNDISTRIBUTED			2,519		228		265		320		83		701		22
TOTALS			27,709		2,512		2,913		3,520		913		7,715		246

*ITEM SHOWN ON OTHER SHEETS

PAVEMENT MARKING ITEMS

STATION - STATION	LOCATION	646.0106 EPOXY 4-INCH WHITE LF	646.0106 EPOXY 4-INCH YELLOW LF	646.0126 EPOXY 8-INCH WHITE LF	646.0841.S GROOVED WET REFLECTIVE CONTRAST TAPE WHITE LF
CAT 0010					
STAGE 1					
760'SAB'+00 - 767'SAB'+80	R/L	--	--	--	200
STAGE 1 SUBTOTALS		0	0	0	200
STAGE 2					
10'CTY'+50 - 18'CTY'+14	LT & RT	1,390	806	350	--
18'CTY'+14 - 31'CTY'+50	LT & RT	2,550	2,190	100	--
16'GRV'+75 - 27'GRV'+55	C/L	--	235	--	--
Green Valley Road Haul Route	C/L	--	1,500	--	--
STAGE 2 SUBTOTALS		3,940	4,730	450	--
TOTALS		3,940	4,730	450	200
		8,670			

REMOVING PAVEMENT MARKINGS

STATION - STATION	646.0600 REMOVING PAVEMENT MARKINGS LF
CAT 0010	
STAGE 1	
731'NAB'+20 - 739'NAB'+00	200
760'SAB'+00 - 767'SAB'+80	200
TOTAL	400

TEMPORARY PAVEMENT MARKING ITEMS

STATION - STATION	LOCATION	649.0400 REMOVABLE TAPE 4-INCH YELLOW LF
CAT 0010		
STAGE 1		
731'NAB'+20 - 739'NAB'+00	RT	780
760'SAB'+00 - 767'SAB'+80	RT	780
TOTALS		1,560

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	MISCELLANEOUS QUANTITIES	SHEET NO: 78	E

FILE NAME : N:\pds\design_id\ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _Dec. 2003 ORIGINATOR : DIST 4_ PLOT SCALE : 1:1

SAWING PAVEMENT ITEMS

STATION - STATION	LOCATION	690.0150 SAWING ASPHALT LF	COMMENTS
CAT 0010			
STAGE 1			
744'NAB'+00	LT & RT	13	
744'SAB'+00	LT & RT	13	
744'NAB'+80	LT	14	
744'SAB'+80	RT	14	
753'NAB'+52	LT	14	
753'SAB'+52	RT	14	
753'NAB'+62	LT	3	
753'SAB'+62	RT	3	
755'NAB'+00	RT	10	
755'SAB'+00	LT	10	
31'CTY'+50	LT & RT	24	
STAGE 1 SUBTOTAL		132	
STAGE 2			
9'CTY'+30 - 10'CTY'+50	LT	186	SHOULDER
10'CTY'+50	LT & RT	24	
16'GRV'+75	LT & RT	22	
26'GRV'+96	RT	28	DRIVEWAY
27'GRV'+55	LT & RT	22	
STAGE 2 SUBTOTAL		282	
UNDISTRIBUTED		41	
TOTALS		455	

SECTION SURVEY MONUMENTS, RECONSTRUCT PROJECT

LOCATION	SPV.0060.0001 SECTION SURVEY MONUMENTS, RECONSTRUCT PROJECT EACH	621.0100 LANDMARK REFERENCE MONUMENTS EACH
CAT 0010		
CTH Y - SEC 27, 26, 34, 35; T19N, R16E	1	4
TOTALS	1	4

TEMPORARY SLOPE DRAIN

	STATION	LOCATION	SPV.0060.0252 TEMPORARY SLOPE DRAIN EACH
CAT 0010			
STAGE 1			
B-70-284	21'CTY'+57	RT	1
B-70-284	21'CTY'+57	LT	1
TOTAL			2

TRUCK MOUNTED ATTENUATOR

PROJECT	SPV.0075.0301 TRUCK MOUNTED ATTENUATOR WITH OPERATOR HRS	SPV.0075.0302 TRUCK MOUNTED ATTENUATOR WITHOUT OPERATOR HRS
CAT 0010		
1120-09-76	300	300
TOTAL	300	300

SURVEY PROJECT

SPV.0105.0001
SURVEY PROJECT
1120-09-76/77/78/81

LOCATION	LS
CAT 0010	
1120-09-76/77/78/81	1
TOTAL	1

3

STREET LIGHTING BASES

LIGHT NUMBER	STATION	OFFSET	LOCATION	SPV.0060.0351 CONCRETE BASES TYPE 7 MEDIAN EACH	SPV.0060.0352 ANCHOR BOLT COVER SHROUD EACH
CATEGORY 0010					
1120-09-76					
LB15	744'NAB'+70	28.0'	LT	1	1
LB16	747'NAB'+60	29.5'	LT	1	1
LB17	750'NAB'+60	30.0'	LT	1	1
LB18	753'NAB'+42	30.0'	LT	1	1
	PROJECT ID 1120-10-80 LIMITS			--	51
	PROJECT ID 1120-10-73 LIMITS			--	53
	PROJECT ID 1120-11-75 LIMITS			--	16
	PROJECT ID 1120-11-83 LIMITS			--	8
	PROJECT ID 1120-09-71 LIMITS			--	131
TOTALS				4	263

LIGHTING PULLBOXES

PULLBOX NUMBER	STATION	OFFSET	LOCATION	653.0140 PULLBOXES STEEL 24X42-INCH EACH
CATEGORY 0010				
1120-09-76				
PB3	750'NAB'+25	30.0'	LT	1
TOTAL				1

LIGHTING CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF
CATEGORY 0010		
1120-09-76		
PB3X	LB15	114
LB15	LB16	290
LB16	PB3	265
PB3	LB17	35
LB17	LB18	285
LB18	PB4X	34
TOTALS		1,023

TRANSPORTATION PROJECT PLAT NO: 1120-09-21 - 4.18

BEING PART OF THE NE 1/4 OF THE NE 1/4 OF SECTION 34, PART OF THE SW 1/4 OF THE SW 1/4 OF SECTION 26 AND PART OF THE NW 1/4 OF THE NW 1/4 OF SECTION 35, TOWN OF OSHKOSH, ALSO PART OF THE SW 1/4 OF THE SW 1/4 AND THE SE 1/4 OF THE SW 1/4 OF SECTION 26, PART OF THE NW 1/4 OF THE NW 1/4 AND THE NE 1/4 OF THE NW 1/4 OF SECTION 35, CITY OF OSHKOSH, T19N-R16E, WINNEBAGO COUNTY, WISCONSIN.

RELOCATION ORDER USH 41 WINNEBAGO COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	*OWNER	INTEREST REQUIRED	R/W ACRES REQUIRED			P.L.E. ACRES	T.L.E. ACRES
			NEW	EXISTING	TOTAL		
4	WISCONSIN VOICE OF CHRISTIAN YOUTH, INC.	FEE	0.327		0.327		
5	TOWN OF OSHKOSH	FEE	0.458		0.458		
8	THOMAS RUSCH & RICHARD GABERT	FEE,TLE	0.370		0.370		0.024
24	WINNEBAGO CO.	FEE	0.139		0.139		

*OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

SCHEDULE OF UTILITIES & INTERESTS REQUIRED

UTILITY NUMBER	*OWNER	INTEREST REQUIRED
105	AMERICAN TRANSMISSION COMPANY	RELEASE OF RIGHTS

RESERVE FOR CLAUSES AND NOTE INFORMATION

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WINNEBAGO COUNTY COORDINATE SYSTEM, (ENGLISH), NAD 1983 (1991) ADJUSTMENT. ALL PLAT DISTANCES ARE GROUND LENGTHS.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS AND ARE REFERENCED TO THE US PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

EXISTING ACCESS CONTROL WAS ACQUIRED UNDER PROJECT(S): CA 03-2(5).

USH 41 IN WINNEBAGO COUNTY WAS DESIGNATED AS A FREEWAY UNDER SECTION 84.295 OF THE WISCONSIN STATUTES BY THE HIGHWAY COMMISSION ON JUNE 8, 1972.

EXISTING RIGHT OF WAY WAS REESTABLISHED UNDER PROJECT(S): TRANSPORTATION PROJECT PLAT NO. 1120-09-00-4.03, RECORDED IN FILE 1 OF TPP PAGE 42a, DOCUMENT NO. 1473538.

THE REFERENCE LINE SHOWN ON THIS PLAT MAY NOT BE THE SAME AS THE REFERENCE LINE SHOWN ON THE CONSTRUCTION PLAN

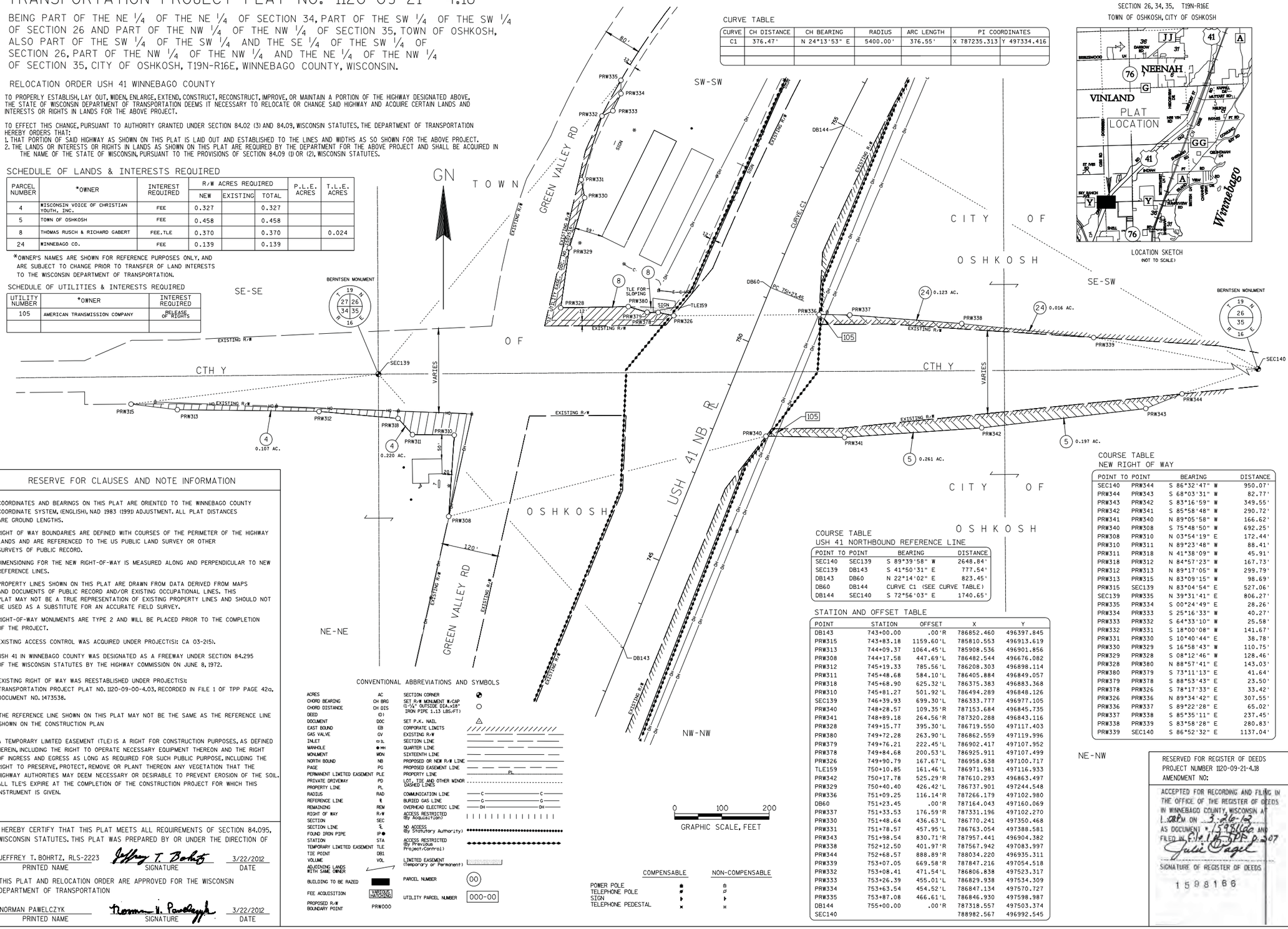
A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE TO PREVENT EROSION OF THE SOIL. ALL TLE'S EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

I HEREBY CERTIFY THAT THIS PLAT MEETS ALL REQUIREMENTS OF SECTION 84.095, WISCONSIN STATUTES. THIS PLAT WAS PREPARED BY OR UNDER THE DIRECTION OF

JEFFREY T. BOHRTZ, RLS-2223 — PRINTED NAME — Jeffrey T. Bohrtz — SIGNATURE — 3/22/2012 — DATE

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION

NORMAN PAWELCZYK — PRINTED NAME — Norman N. Pawelczyk — SIGNATURE — 3/22/2012 — DATE



CURVE TABLE

CURVE	CH DISTANCE	CH BEARING	RADIUS	ARC LENGTH	PI COORDINATES	
C1	376.47'	N 24°13'53" E	5400.00'	376.55'	X 787235.313	Y 497334.416

SECTION 26, 34, 35, T19N-R16E
TOWN OF OSHKOSH, CITY OF OSHKOSH

LOCATION SKETCH
(NOT TO SCALE)

COURSE TABLE
NEW RIGHT OF WAY

POINT TO POINT		BEARING	DISTANCE
SEC140	PRW344	S 86°32'47" W	950.07'
PRW344	PRW343	S 68°03'31" W	82.77'
PRW343	PRW342	S 83°16'59" W	349.55'
PRW342	PRW341	S 85°58'48" W	290.72'
PRW341	PRW340	N 89°05'58" W	166.62'
PRW340	PRW308	S 75°48'50" W	692.25'
PRW308	PRW310	N 03°54'19" E	172.44'
PRW310	PRW311	N 89°23'48" W	88.41'
PRW311	PRW318	N 41°38'09" W	45.91'
PRW318	PRW312	N 84°57'23" W	167.73'
PRW312	PRW313	N 89°17'05" W	299.79'
PRW313	PRW315	N 83°09'15" W	98.69'
PRW315	SEC139	N 83°04'54" E	527.06'
SEC139	PRW335	N 39°31'41" E	806.27'
PRW335	PRW334	S 00°24'49" E	28.26'
PRW334	PRW333	S 25°16'33" W	40.27'
PRW333	PRW332	S 64°33'10" W	25.58'
PRW332	PRW331	S 18°00'08" W	141.67'
PRW331	PRW330	S 10°40'44" E	38.78'
PRW330	PRW329	S 16°58'43" W	110.75'
PRW329	PRW328	S 08°12'46" W	128.46'
PRW328	PRW380	N 88°57'41" E	143.03'
PRW380	PRW379	S 73°11'13" E	41.64'
PRW379	PRW378	S 88°53'43" E	23.50'
PRW378	PRW326	S 78°17'33" E	33.42'
PRW326	PRW336	N 89°34'42" E	307.55'
PRW336	PRW337	S 89°22'28" E	65.02'
PRW337	PRW338	S 85°35'11" E	237.45'
PRW338	PRW339	S 83°58'28" E	280.83'
PRW339	SEC140	S 86°52'32" E	1137.04'

COURSE TABLE
USH 41 NORTHBOUND REFERENCE LINE

POINT TO POINT		BEARING	DISTANCE
SEC140	SEC139	S 89°39'58" W	2648.84'
SEC139	DB143	S 41°50'31" E	777.54'
DB143	DB60	N 22°14'02" E	823.45'
DB60	DB144	CURVE C1 (SEE CURVE TABLE)	
DB144	SEC140	S 72°56'03" E	1740.65'

STATION AND OFFSET TABLE

POINT	STATION	OFFSET	X	Y
DB143	743+00.00	.00'R	786852.460	496397.845
PRW315	743+83.18	1159.60'L	785810.553	496913.619
PRW313	744+09.37	1064.45'L	785908.536	496901.856
PRW308	744+17.58	447.69'L	786482.544	496676.082
PRW312	745+19.33	785.56'L	786208.303	496898.114
PRW311	745+48.68	584.10'L	786405.884	496849.057
PRW318	745+68.90	625.32'L	786375.383	496883.368
PRW310	745+81.27	501.92'L	786494.289	496848.126
SEC139	746+39.93	699.30'L	786333.777	496977.105
PRW340	748+28.57	109.35'R	787153.684	496845.735
PRW341	748+89.18	264.56'R	787320.288	496843.116
PRW328	749+15.77	395.30'L	786719.550	497117.403
PRW380	749+72.28	263.90'L	786862.559	497119.996
PRW379	749+76.21	222.45'L	786902.417	497107.952
PRW378	749+84.68	200.53'L	786925.911	497107.499
PRW326	749+90.79	167.67'L	786958.638	497100.717
TLE159	750+10.85	161.46'L	786971.981	497116.933
PRW342	750+17.78	525.29'R	787610.293	496863.497
PRW329	750+40.40	426.42'L	786737.901	497244.548
PRW336	751+09.25	116.14'R	787266.179	497102.980
DB60	751+23.45	.00'R	787164.043	497160.069
PRW337	751+33.53	176.59'R	787331.196	497102.270
PRW330	751+48.64	436.63'L	786770.241	497350.468
PRW331	751+78.57	457.95'L	786763.054	497388.581
PRW343	751+98.54	830.71'R	787957.441	496904.382
PRW338	752+12.50	401.97'R	787567.942	497083.997
PRW344	752+68.57	888.89'R	788034.220	496935.311
PRW339	753+07.05	669.58'R	787847.216	497054.518
PRW332	753+08.41	471.54'L	786806.838	497523.317
PRW333	753+26.39	455.01'L	786829.938	497534.309
PRW334	753+63.54	454.52'L	786847.134	497570.727
PRW335	753+87.08	466.61'L	786846.930	497598.987
DB144	755+00.00	.00'R	787318.557	497503.374
SEC140			788982.567	496992.545

CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACRES	AC
CHORD BEARING	CH BRG
CHORD DISTANCE	CH DIS
DEED	(D)
DOCUMENT	DOC
EAST BOUND	EB
GAS VALVE	GV
INLET	▭ IL
MANHOLE	● MH
MONUMENT	MON
NORTH BOUND	NB
PAGE	PG
PERMANENT LIMITED EASEMENT	PLE
PRIVATE DRIVEWAY	PD
PROPERTY LINE	PL
RADIUS	RAD
REFERENCE LINE	℄
REMAINING	REM
RIGHT OF WAY	R/W
SECTION	SEC
SECTION LINE	℄
FOUND IRON PIPE	IP●
STATION	STA
TEMPORARY LIMITED EASEMENT	TLE
TIE POINT	DB1
VOLUME	VOL
ADJOINING LANDS WITH SAME OWNER	
BUILDING TO BE RAZED	
FEE ACQUISITION	VARIOUS HATCHING
PROPOSED R/W BOUNDARY POINT	PRW000

SECTION CORNER	
SET R/W MONUMENT W/CAP (1-1/4" OUTSIDE DIA.x18" IRON PIPE 1.13 LBS/FT)	○
SET P.K. NAIL	△
CORPORATE LIMITS	
EXISTING R/W	
SECTION LINE	
QUARTER LINE	
SIXTEENTH LINE	
PROPOSED OR NEW R/W LINE	
PROPOSED EASEMENT LINE	
PROPERTY LINE	PL
LOT, TIE AND OTHER MINOR DASHED LINES	
COMMUNICATION LINE	C
BURIED GAS LINE	G
OVERHEAD ELECTRIC LINE	OH
ACCESS RESTRICTED (By Acquisition)	
NO ACCESS (By Statutory Authority)	
ACCESS RESTRICTED (By Previous Project/Control)	
LIMITED EASEMENT (Temporary or Permanent)	
PARCEL NUMBER	00
UTILITY PARCEL NUMBER	000-00

	COMPENSABLE	NON-COMPENSABLE
POWER POLE	●	○
TELEPHONE POLE	◆	◇
SIGN	▶	▷
TELEPHONE PEDESTAL	✖	✕

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 1120-09-21-4.18
AMENDMENT NO:

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN WINNEBAGO COUNTY, WISCONSIN AT 1:28PM ON 3-26-12 AS DOCUMENT # 1598186 AND FILED IN Vol 1 PPS p.207

Julie Paget
SIGNATURE OF REGISTER OF DEEDS

1598186

FILE NAME : F:\D3_11200921\040221_rw.dgn PLOT DATE : 21-MAR-2012 16:12 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : 100.000000:1.000000
APPRAISAL PLAT DATE :

TRANSPORTATION PROJECT PLAT NO: 1120-09-21-4.19

BEING PART OF LOT 1 AND LOT 2 OF CSM NO. 6268 AND UNPLATTED LANDS OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 24, PART OF LOT 1 OF CSM NO. 3751 AND LOT 2 OF CSM NO. 5770 LOCATED IN THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 13, T19N-R16E, ALSO, PART OF LOT 1 OF CSM NO. 6474 LOCATED IN THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 18, T19N-R17E, TOWN OF VINLAND, WINNEBAGO COUNTY, WISCONSIN.

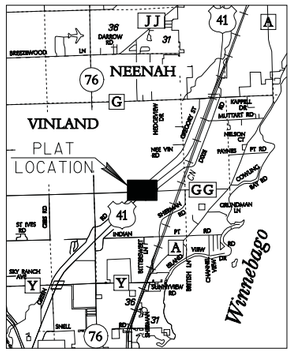
RELOCATION ORDER USH 41 WINNEBAGO COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SECTION 13,24 T19N-R16E
SECTION 18 T19N-R17E
TOWN OF VINLAND



LOCATION SKETCH
(NOT TO SCALE)

RESERVE FOR CLAUSES AND NOTE INFORMATION

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WINNEBAGO COUNTY COORDINATE SYSTEM, (ENGLISH), NAD 1983 (1991) ADJUSTMENT. ALL PLAT DISTANCES ARE GROUND LENGTHS.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS AND ARE REFERENCED TO THE US PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

EXISTING ACCESS CONTROL WAS ACQUIRED UNDER PROJECT(S): CA 03-210.

USH 41 IN WINNEBAGO COUNTY WAS DESIGNATED AS A FREEWAY UNDER SECTION 84.295 OF THE WISCONSIN STATUTES BY THE HIGHWAY COMMISSION ON JUNE 8, 1972.

EXISTING RIGHT OF WAY WAS REESTABLISHED UNDER PROJECT(S): TRANSPORTATION PROJECT PLAT NO. 1120-09-00-4.09, RECORDED IN FILE 1 OF TPP PAGE 48a, DOCUMENT NO. 1473544.

THE REFERENCE LINE SHOWN ON THIS PLAT MAY NOT BE THE SAME AS THE REFERENCE LINE SHOWN ON THE CONSTRUCTION PLAN

A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE TO PREVENT EROSION OF THE SOIL. ALL TLE'S EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

I HEREBY CERTIFY THAT THIS PLAT MEETS ALL REQUIREMENTS OF SECTION 84.095, WISCONSIN STATUTES. THIS PLAT WAS PREPARED BY OR UNDER THE DIRECTION OF

JEFFREY T. BOHRTZ, RLS-2223 — PRINTED NAME
Jeffrey T. Bohrtz — SIGNATURE
3/22/2012 — DATE

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION

NORMAN PAWELCZYK — PRINTED NAME
Norman W. Pawelczyk — SIGNATURE
3/22/2012 — DATE

CURVE TABLE

CURVE	CH DISTANCE	CH BEARING	RADIUS	ARC LENGTH	PI COORDINATES	
C1	717.35'	N 48°04'51" E	11500.00'	717.47'	X 797441.253	Y 507612.859
C2	352.39'	N 47°58'06" E	283.21'	380.33'	X 796566.238	Y 508078.352

COURSE TABLE
NEW RIGHT OF WAY

POINT TO POINT		BEARING	DISTANCE
SEC90	SEC79	N 89°28'39" E	2682.82'
SEC79	PRW355	S 80°52'43" W	221.27'
PRW355	PRW356	S 07°50'00" W	67.04'
PRW356	PRW345	S 80°05'40" W	114.36'
PRW345	PRW346	N 12°21'11" W	86.81'
PRW346	PRW347	N 83°35'50" W	649.87'
PRW347	PRW348	N 81°16'11" E	363.43'
PRW348	PRW349	N 77°25'13" E	213.00'
PRW349	PRW350	N 53°10'11" E	75.80'
PRW350	PRW351	CURVE C2 (SEE CURVE TABLE)	
PRW351	PRW354	N 85°58'01" E	228.96'
PRW354	PRW353	S 89°39'21" E	60.39'
PRW353	PRW352	S 33°14'37" E	13.04'
PRW352	SEC79	S 23°06'02" W	460.83'

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	*OWNER	INTEREST REQUIRED	R/W ACRES REQUIRED NEW	EXISTING	TOTAL	P.L.E. ACRES	T.L.E. ACRES
26	RICHARD BRANTMEIER, RITA COTTRELL, NANCY JEVECH, JEAN MELTZLOFF, RAYMOND JOHN OTTO FAMILY TRUST, LAURIE OTTO FAMILY TRUST, DORIS OTTO	FEE,TLE	0.018		0.018		0.060
27	MICHAEL AND HEIDE JOHNSON	TLE					0.011
28	THOMAS AND LANORE ZIOLKOWSKI	TLE					0.022
29	DAVID AND SHERI GRUNSKA	FEE	0.237		0.237		
31	VINLAND PROPERTIES, LLC	FEE	0.016		0.016		

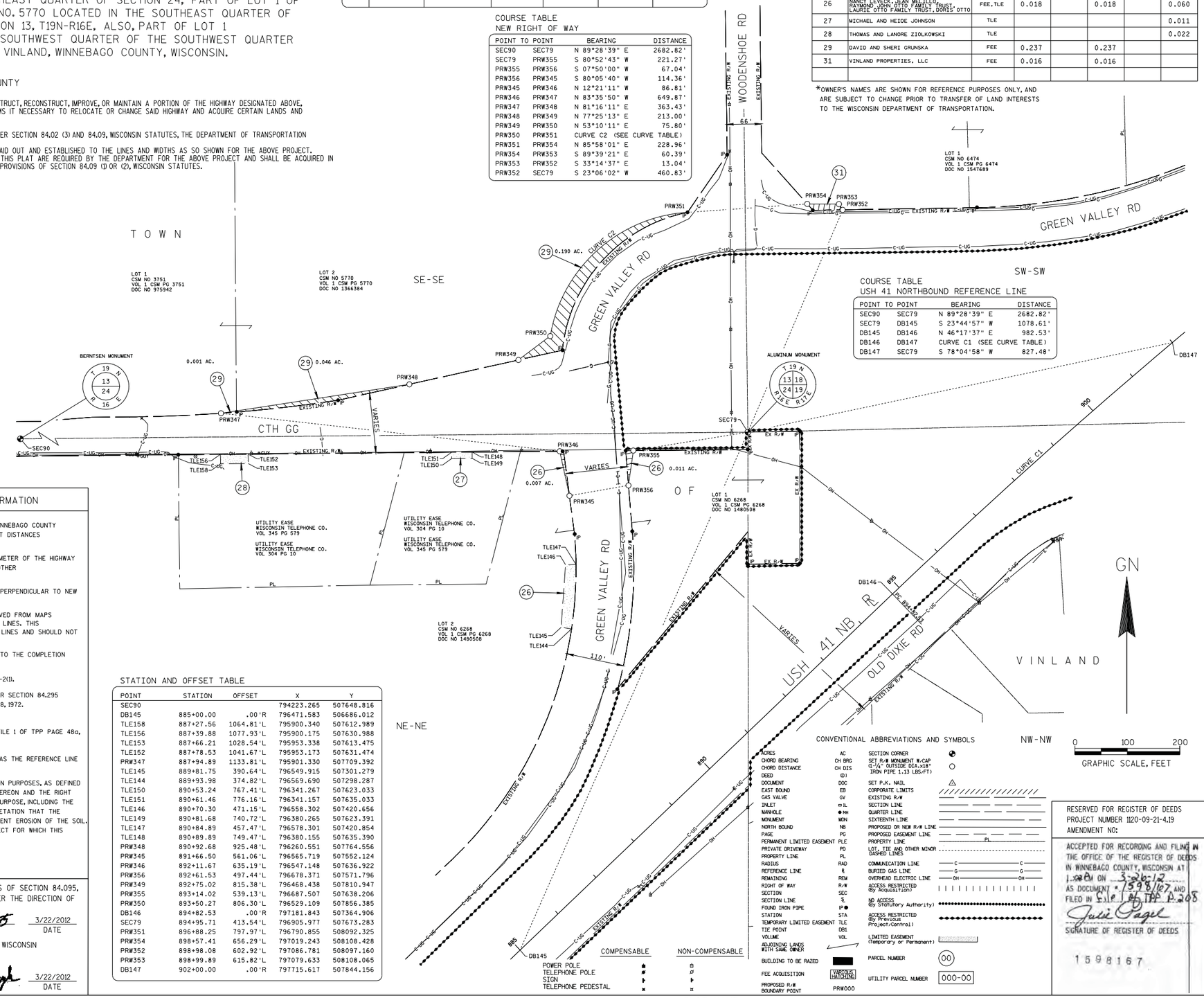
*OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

STATION AND OFFSET TABLE

POINT	STATION	OFFSET	X	Y
SEC90			794223.265	507648.816
DB145	885+00.00	.00'R	796471.583	506686.012
TLE158	887+27.56	1064.81'L	795900.340	507612.989
TLE156	887+39.88	1077.93'L	795900.175	507630.988
TLE153	887+66.21	1028.54'L	795953.338	507613.475
TLE152	887+78.53	1041.67'L	795953.173	507631.474
PRW347	887+94.89	1133.81'L	795901.330	507709.392
TLE145	889+81.75	390.64'L	796549.915	507301.279
TLE144	889+93.98	374.82'L	796569.690	507298.287
TLE150	890+53.24	767.41'L	796341.267	507623.033
TLE151	890+61.46	776.16'L	796341.157	507635.033
TLE146	890+70.30	471.15'L	796558.302	507420.656
TLE149	890+81.68	740.72'L	796380.265	507623.391
TLE147	890+84.89	457.47'L	796578.301	507420.854
TLE148	890+89.89	749.47'L	796380.155	507635.390
PRW348	890+92.68	925.48'L	796260.551	507764.556
PRW345	891+66.50	561.06'L	796565.719	507552.124
PRW346	892+11.67	635.19'L	796547.148	507636.922
PRW356	892+61.53	497.44'L	796678.371	507571.796
PRW349	892+75.02	815.38'L	796468.438	507810.947
PRW355	893+14.02	539.13'L	796687.507	507638.206
PRW350	893+50.27	806.30'L	796529.109	507856.385
DB146	894+82.53	.00'R	797181.843	507364.906
SEC79	894+95.71	413.54'L	796905.977	507673.283
PRW351	896+88.25	797.97'L	796790.855	508092.325
PRW354	898+57.41	656.29'L	797019.243	508108.428
PRW352	898+98.08	602.92'L	797086.781	508097.160
PRW353	898+99.89	615.82'L	797079.633	508108.065
DB147	902+00.00	.00'R	797715.617	507844.156

COURSE TABLE
USH 41 NORTHBOUND REFERENCE LINE

POINT TO POINT		BEARING	DISTANCE
SEC90	SEC79	N 89°28'39" E	2682.82'
SEC79	DB145	S 23°44'57" W	1078.61'
DB145	DB146	N 46°17'37" E	982.53'
DB146	DB147	CURVE C1 (SEE CURVE TABLE)	
DB147	SEC79	S 78°04'58" W	827.48'



CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACRES	AC	SECTION CORNER	
CHORD BEARING	CH BRG	SET R/W MONUMENT W/CAP (1-1/4" OUTSIDE DIA.x18" IRON PIPE 1.13 LBS/FT)	
CHORD DISTANCE	CH DIS		
DEED	(D)		
DOCUMENT	DOC	SET P.K. NAIL	
EAST BOUND	EB	CORPORATE LIMITS	
GAS VALVE	GV	EXISTING R/W	
INLET	IL	SECTION LINE	
MANHOLE	MH	QUARTER LINE	
MONUMENT	MON	SIXTEENTH LINE	
NORTH BOUND	NB	PROPOSED OR NEW R/W LINE	
PAGE	PG	PROPOSED EASEMENT LINE	
PERMANENT LIMITED EASEMENT	PLE	PROPERTY LINE	
PRIVATE DRIVEWAY	PD	LOT, TIE AND OTHER MINOR DASHED LINES	
PROPERTY LINE	PL		
RADIUS	RAD	COMMUNICATION LINE	C C
REFERENCE LINE	℄	BURIED GAS LINE	G G
REMAINING	REM	OVERHEAD ELECTRIC LINE	OH OH
RIGHT OF WAY	R/W	ACCESS RESTRICTED (By Acquisition)	
SECTION	SEC		
SECTION LINE	℄	NO ACCESS (By Statutory Authority)	
FOUND IRON PIPE	IP		
STATION	STA	ACCESS RESTRICTED (By Previous Project/Control)	
TEMPORARY LIMITED EASEMENT	TLE		
TIE POINT	DB1		
VOLUME	VOL	LIMITED EASEMENT (Temporary or Permanent)	
ADJOINING LANDS WITH SAME OWNER			
BUILDING TO BE RAZED		PARCEL NUMBER	(00)
FEE ACQUISITION	VARIOUS HATCHING	UTILITY PARCEL NUMBER	000-00
PROPOSED R/W BOUNDARY POINT	PRW000		

0 100 200
GRAPHIC SCALE, FEET

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 1120-09-21-4.19
AMENDMENT NO:

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN WINNEBAGO COUNTY, WISCONSIN AT 1:28 PM ON 3-26-12 AS DOCUMENT # 1598167 AND FILED IN VOL 1 OF TPP P. 208
Julie Gagel
SIGNATURE OF REGISTER OF DEEDS
1598167

FILE NAME : F:\D3_11200921\040222_rw.dgn
APPRAISAL PLAT DATE :
PLOT DATE : 21-MAR-2012 16:15
PLOT BY : $$...plotuser...$$
PLOT NAME :
PLOT SCALE : 100.000000:1.000000

TRANSPORTATION PROJECT PLAT NO: 1120-09-21-4.20

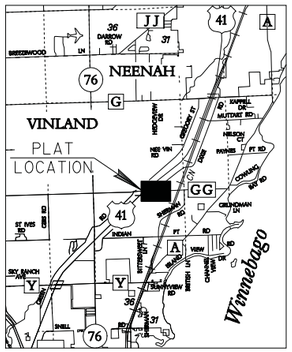
BEING PART OF LOT 1 OF CSM NO. 3294 AND LOT 1 OF CSM NO. 4019 LOCATED WITHIN THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 18, AND ALSO PART OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 19, T19N-R17E, TOWN OF VINLAND, WINNEBAGO COUNTY, WISCONSIN.

RELOCATION ORDER USH 41 WINNEBAGO COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SECTION 18, 19 T19N-R17E
TOWN OF VINLAND



LOCATION SKETCH
(NOT TO SCALE)

SCHEDULE OF UTILITIES & INTERESTS REQUIRED

UTILITY NUMBER	*OWNER	INTEREST REQUIRED
100	WISCONSIN PUBLIC SERVICE CORPORATION-ELEC.	RELEASE OF RIGHTS
101	AT&T WISCONSIN	RELEASE OF RIGHTS

COURSE TABLE
USH 41 NORTHBOUND REFERENCE LINE

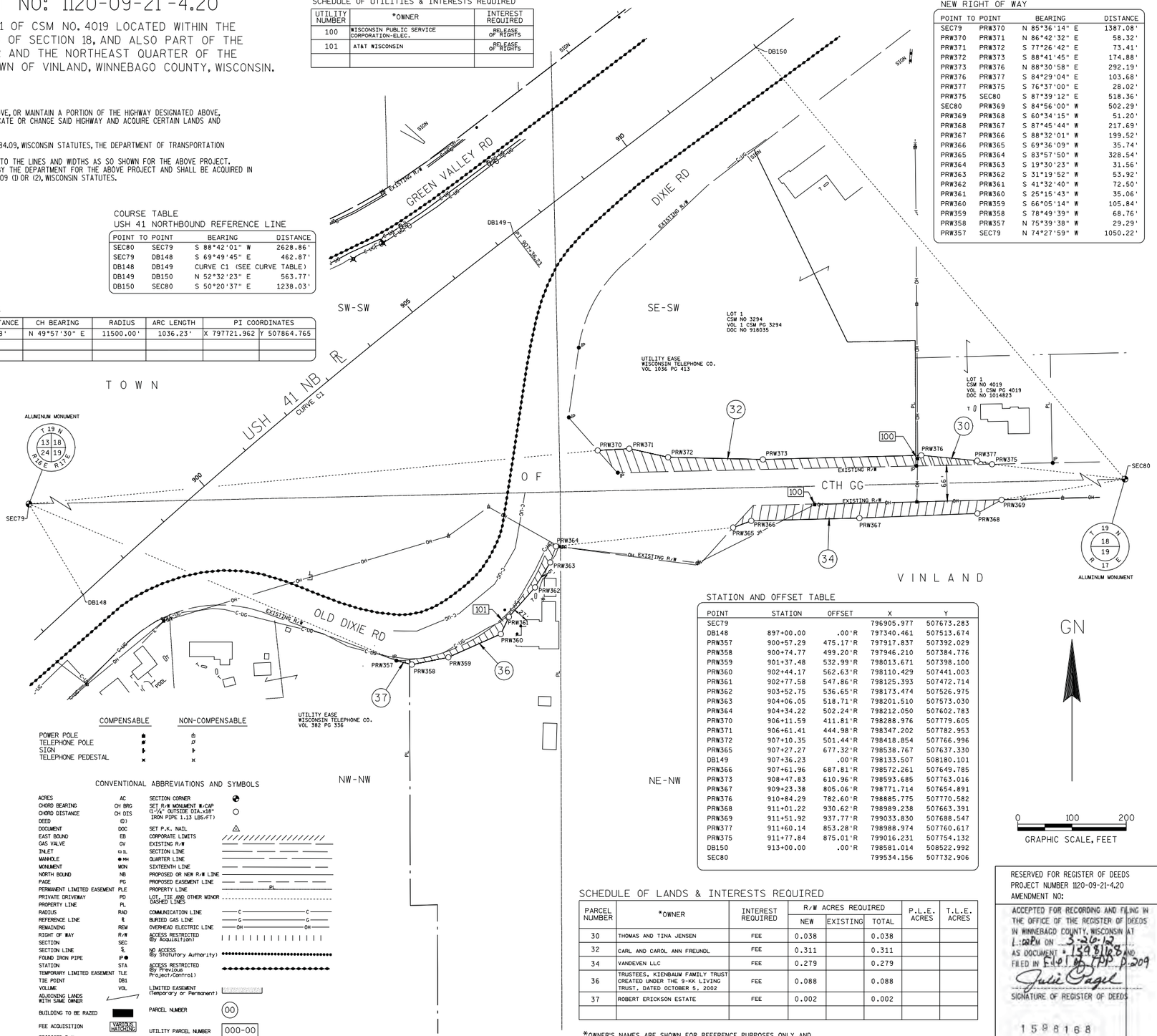
POINT TO POINT		BEARING	DISTANCE
SEC80	SEC79	S 88°42'01" W	2628.86'
SEC79	DB148	S 69°49'45" E	462.87'
DB148	DB149	CURVE C1 (SEE CURVE TABLE)	
DB149	DB150	N 52°32'23" E	563.77'
DB150	SEC80	S 50°20'37" E	1238.03'

CURVE TABLE

CURVE	CH DISTANCE	CH BEARING	RADIUS	ARC LENGTH	PI COORDINATES	
C1	1035.88'	N 49°57'30" E	11500.00'	1036.23'	X 797721.962	Y 507864.765

COURSE TABLE
NEW RIGHT OF WAY

POINT TO POINT		BEARING	DISTANCE
SEC79	PRW370	N 85°36'14" E	1387.08'
PRW370	PRW371	N 86°42'32" E	58.32'
PRW371	PRW372	S 77°26'42" E	73.41'
PRW372	PRW373	S 88°41'45" E	174.88'
PRW373	PRW376	N 88°30'58" E	292.19'
PRW376	PRW377	S 84°29'04" E	103.68'
PRW377	PRW375	S 76°37'00" E	28.02'
PRW375	SEC80	S 87°39'12" E	518.36'
SEC80	PRW369	S 84°56'00" W	502.29'
PRW369	PRW368	S 60°34'15" W	51.20'
PRW368	PRW367	S 87°45'44" W	217.69'
PRW367	PRW366	S 88°32'01" W	199.52'
PRW366	PRW365	S 69°36'09" W	35.74'
PRW365	PRW364	S 83°57'50" W	328.54'
PRW364	PRW363	S 19°30'23" W	31.56'
PRW363	PRW362	S 31°19'52" W	53.92'
PRW362	PRW361	S 41°32'40" W	72.50'
PRW361	PRW360	S 25°15'43" W	35.06'
PRW360	PRW359	S 66°05'14" W	105.84'
PRW359	PRW358	S 78°49'39" W	68.76'
PRW358	PRW357	N 75°39'38" W	29.29'
PRW357	SEC79	N 74°27'59" W	1050.22'



RESERVE FOR CLAUSES AND NOTE INFORMATION

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WINNEBAGO COUNTY COORDINATE SYSTEM, (ENGLISH), NAD 1983 (1991) ADJUSTMENT. ALL PLAT DISTANCES ARE GROUND LENGTHS.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS AND ARE REFERENCED TO THE US PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

EXISTING ACCESS CONTROL WAS ACQUIRED UNDER PROJECT(S): CA 03-2(1).

USH 41 IN WINNEBAGO COUNTY WAS DESIGNATED AS A FREEWAY UNDER SECTION 84.295 OF THE WISCONSIN STATUTES BY THE HIGHWAY COMMISSION ON JUNE 8, 1972.

EXISTING RIGHT OF WAY WAS REESTABLISHED UNDER PROJECT(S): TRANSPORTATION PROJECT PLAT NO. 1120-09-00-4.09, RECORDED IN FILE 1 OF TPP PAGE 48a, DOCUMENT NO. 1473544.

THE REFERENCE LINE SHOWN ON THIS PLAT MAY NOT BE THE SAME AS THE REFERENCE LINE SHOWN ON THE CONSTRUCTION PLAN

I HEREBY CERTIFY THAT THIS PLAT MEETS ALL REQUIREMENTS OF SECTION 84.095, WISCONSIN STATUTES. THIS PLAT WAS PREPARED BY OR UNDER THE DIRECTION OF

JEFFREY T. BOHRTZ, RLS-2223 — PRINTED NAME
Jeffrey T. Bohrtz — SIGNATURE
3/22/2012 — DATE

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION

NORMAN PAWELCZYK — PRINTED NAME
Norman K. Pawelczyk — SIGNATURE
3/22/2012 — DATE

	COMPENSABLE	NON-COMPENSABLE
POWER POLE	●	○
TELEPHONE POLE	■	□
SIGN	▶	▷
TELEPHONE PEDESTAL	✖	✕

CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACRES	AC	SECTION CORNER	
CHORD BEARING	CH BRG	SET R/W MONUMENT W/CAP (1-1/4" OUTSIDE DIA.x18" IRON PIPE 1.13 LBS/FT)	○
CHORD DISTANCE	CH DIS		
DEED	(D)	SET P.K. NAIL	△
DOCUMENT	DOC	CORPORATE LIMITS	
EAST BOUND	EB	EXISTING R/W	
GAS VALVE	GV	SECTION LINE	
INLET	▭ IL	QUARTER LINE	
MANHOLE	● MH	SIXTEENTH LINE	
MONUMENT	MON	PROPOSED OR NEW R/W LINE	
NORTH BOUND	NB	PROPOSED EASEMENT LINE	
PAGE	PG	PROPERTY LINE	PL
PERMANENT LIMITED EASEMENT	PLE	LOT, TIE AND OTHER MINOR DASHED LINES	
PRIVATE DRIVEWAY	PD		
PROPERTY LINE	PL	COMMUNICATION LINE	C C
RADIUS	RAD	BURIED GAS LINE	G G
REFERENCE LINE	℄	OVERHEAD ELECTRIC LINE	OH OH
REMAINING	REM	ACCESS RESTRICTED (By Acquisition)	
RIGHT OF WAY	R/W	NO ACCESS (By Statutory Authority)	
SECTION	SEC	ACCESS RESTRICTED (By Previous Project/Control)	
SECTION LINE	℄		
FOUND IRON PIPE	IP●	LIMITED EASEMENT (Temporary or Permanent)	
STATION	STA		
TEMPORARY LIMITED EASEMENT	TLE	PARCEL NUMBER	00
TIE POINT	DB1		
VOLUME	VOL	UTILITY PARCEL NUMBER	000-00
ADJOINING LANDS WITH SAME OWNER			
BUILDING TO BE RAZED			
FEE ACQUISITION	VARIOUS HATCHING		
PROPOSED R/W BOUNDARY POINT	PRW000		

STATION AND OFFSET TABLE

POINT	STATION	OFFSET	X	Y
SEC79			796905.977	507673.283
DB148	897+00.00	.00'R	797340.461	507513.674
PRW357	900+57.29	475.17'R	797917.837	507392.029
PRW358	900+74.77	499.20'R	797946.210	507384.776
PRW359	901+37.48	532.99'R	798013.671	507398.100
PRW360	902+44.17	562.63'R	798110.429	507441.003
PRW361	902+77.58	547.86'R	798125.393	507472.714
PRW362	903+52.75	536.65'R	798173.474	507526.975
PRW363	904+06.05	518.71'R	798201.510	507573.030
PRW364	904+34.22	502.24'R	798212.050	507602.783
PRW370	906+11.59	411.81'R	798288.976	507779.605
PRW371	906+61.41	444.98'R	798347.202	507782.953
PRW372	907+10.35	501.44'R	798418.854	507766.996
PRW365	907+27.27	677.32'R	798538.767	507637.330
DB149	907+36.23	.00'R	798133.507	508180.101
PRW366	907+61.96	687.81'R	798572.261	507649.785
PRW373	908+47.83	610.96'R	798593.685	507763.016
PRW367	909+23.38	805.06'R	798771.714	507654.891
PRW376	910+84.29	782.60'R	798885.775	507770.582
PRW368	911+01.22	930.62'R	798989.238	507663.391
PRW369	911+51.92	937.77'R	799033.830	507688.547
PRW377	911+60.14	853.28'R	798988.974	507760.617
PRW375	911+77.84	875.01'R	799016.231	507754.132
DB150	913+00.00	.00'R	798581.014	508522.992
SEC80			799534.156	507732.906

GN

0 100 200
GRAPHIC SCALE, FEET

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	*OWNER	INTEREST REQUIRED	R/W ACRES REQUIRED NEW	EXISTING	TOTAL	P.L.E. ACRES	T.L.E. ACRES
30	THOMAS AND TINA JENSEN	FEE	0.038		0.038		
32	CARL AND CAROL ANN FREUNDL	FEE	0.311		0.311		
34	VANDEVEN LLC	FEE	0.279		0.279		
36	TRUSTEES, KIENBAUM FAMILY TRUST CREATED UNDER THE 9-KK LIVING TRUST, DATED OCTOBER 5, 2002	FEE	0.088		0.088		
37	ROBERT ERICKSON ESTATE	FEE	0.002		0.002		

*OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 1120-09-21-4.20
AMENDMENT NO:

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN WINNEBAGO COUNTY, WISCONSIN AT 1:00PM ON 3-26-12 AS DOCUMENT # 1598168 AND FILED IN File1 OF TPP P.209

Julie Gagle
SIGNATURE OF REGISTER OF DEEDS

1598168

FILE NAME : F:\D3_11200921\040223_rw.dgn
APPRAISAL PLAT DATE :
PLOT DATE : 21-MAR-2012 16:17
PLOT BY : $$...plotuser...$$ PLOT NAME :
PLOT SCALE : 100.000000:1.000000

THOMAS RUSCH
RICHARD GABERT

R/L GREEN VALLEY ROAD
R/L CTH Y
R/L USH 41 SB
R/L USH 41 NB
R/L SHARED USE PATH

GREEN VALLEY ROAD
16'GRV' 18'GRV' 20'GRV' 22'GRV' 24'GRV' 26'GRV'
18'CTY' 20'CTY' 24'CTY' 26'CTY'
CTH Y
SHARED USE PATH
UTL EASE
R/W
SIGN
OH
SS

WINNEBAGO COUNTY RIGHT OF WAY

SLOPE INTERCEPT
+36.25
62.86'LT
MATCH RAILING
54-INCH
REMOVE FENCE
FENCE CHAIN
LINK 6-FT
LAW ENFORCEMENT PAD
(SEE CONSTRUCTION
DETAIL)
+19.54
87.30'LT
+66.98
87.30'LT
MATCH EXISTING
FENCE
BM 903
CONCRETE BARRIER
TYPE S42 THRIE
BEAM ANCHOR
+75.00
36.00'LT
+03.72
64.02'LT
RETAINING WALL
R-70-44 REQ'D
STA 747'SAB'+75
TO STA 749'SAB'+90
+90.60
87.30'LT
+47.42
87.30'LT
MATCH EXISTING
FENCE
CONCRETE BARRIER TYPE S42
THRIE BEAM ANCHOR
+50.00
36.00'LT
MGS GUARDRAIL TERMINAL
EAT AND THRIE BEAM TRANSITION
+89.75
36.00'LT
+39.43
38.00'LT
BASE AGGREGATE
DENSE ¾", 5-INCH
+59.30
36.00'LT
+67.00
12.00'RT
HMA PAVEMENT
TYPE E-0.3, 5-INCH
WPS
AT&T
SLOPE INTERCEPT
+95.00
12.00'RT
+16.00
24.00'RT
+55.00
24.00'LT
+72.00
12.00'LT
+77.00
24.00'RT
+90.00
12.00'LT
+05.00
24.00'LT
+49.98
36.00'RT
+19.98
36.00'RT
+60.00
36.00'RT
+70.02
38.00'RT
+60.00
36.00'RT
REMOVE ASPHALTIC
SURFACE
MGS GUARDRAIL TERMINAL
EAT AND THRIE BEAM
TRANSITION
CONCRETE
BARRIER
TYPE S42
+58.78
87.04'RT
MATCH EXISTING
FENCE
+90.00
87.04'RT
FENCE CHAIN
LINK 6-FT
REMOVE FENCE
+13.26
63.60'RT
MATCH RAILING
54-INCH
CONCRETE BARRIER
TYPE S56
HMA PAVEMENT
TYPE E-0.3, 5-INCH
BASE AGGREGATE
DENSE ¾", 5-INCH
+70.84
91.96'RT
MATCH EXISTING FENCE
LAW ENFORCEMENT PAD
(SEE CONSTRUCTION DETAIL)
+15.00
92.10'RT
+93.51
76.32'RT
REMOVE FENCE
+80.46
62.22'RT
FENCE CHAIN LINK 6-FT,
3' INSIDE OF ROW
SLOPE INTERCEPT
ATC

2'SAB' 744'SAB' 746'SAB' 748'SAB' 750'SAB' 752'SAB' 754'SAB' 756'SAB'
2'NAB' 744'NAB' 746'NAB' 748'NAB' 750'NAB' 752'NAB' 754'NAB' 756'NAB'

USH 41 SB
USH 41 NB

STA 22'CTY'+94
B-70-284
2-SPAN STEEL GIRDER SLAB DECK
40 FT CLEAR ROADWAY WIDTH
SKEW 22.5 LHF

RETAINING WALL
R-70-45 REQ'D
STA 748'NAB'+20
TO STA 750'NAB'+60

WINNEBAGO COUNTY

0 50 100
SCALE IN FEET

N

BEGIN CONSTRUCTION
STA 743'NAB'+55.00
Y= 496448.78
X= 786873.27
MATCH EXISTING
(PROJECT 1120-09-71)

END CONSTRUCTION
STA 755'NAB'+00.00
Y= 497503.37
X= 787318.56
MATCH EXISTING
(PROJECT 1120-09-71)

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
903	20'CTY'+99, RT	DISK ON THE SOUTHWEST PARAPET WALL STRUCTURE #B-70-65-74 @ CTH Y & USH 41.	777.18

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	PLAN USH 41	SHEET 85 E

FILE NAME : ch_0976_050101_pp.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 44

SOUTHBOUND USH 41

17'3" MIN. CLEARANCE

EXISTING PROFILE AT R/L

EXISTING PROFILE ELEVATIONS, SB

775 770 765 760 755 750 745 740

757.02 756.86 756.70 756.54 756.39 756.23 756.07 755.91 755.75 755.59 755.43 755.27 755.12 754.98 754.91 754.92 755.01 755.15 755.30 755.45 755.60 755.75 755.90 756.05 756.20 756.35 756.50 756.65 756.80 756.95 757.10

742'SAB'+00 744'SAB'+00 746'SAB'+00 748'SAB'+00 750'SAB'+00 752'SAB'+00 754'SAB'+00 756'SAB'+00

NORTHBOUND USH 41

18'1" MIN. CLEARANCE

EXISTING PROFILE AT R/L

EXISTING PROFILE ELEVATIONS, NB

775 770 765 760 755 750 745 740

757.08 756.93 756.78 756.63 756.48 756.33 756.18 756.03 755.88 755.73 755.58 755.43 755.28 755.13 755.03 755.00 755.04 755.15 755.30 755.45 755.60 755.75 755.90 756.05 756.20 756.35 756.50 756.65 756.80 756.95 757.10

742'NAB'+00 744'NAB'+00 746'NAB'+00 748'NAB'+00 750'NAB'+00 752'NAB'+00 754'NAB'+00 756'NAB'+00

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	PROFILE USH 41	SHEET 86	E

FILE NAME : ch_0976_050102_pp.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 100:1

N

0 50 100
SCALE IN FEET

DATA TABLE

POINT NO.	STATION	OFFSET	RADIUS
1	17'CTY'+33.64	64.00' RT	38.00'
2	17'CTY'+53.45	84.00' LT	58.00'
3	18'CTY'+88.07	69.00' LT	43.00'
4	18'CTY'+66.73	74.00' RT	48.00'

+34.21
541.83' RT
694.68' R

+30.80
374.54' RT
509.96' R

+74.82
29.10' LT
20.00' R

+59.13
22.00' LT

+83.65
12.00' LT

+09.13
20.00' LT

+33.64
12.00' RT

+83.64
24.00' RT

+53.45
26.00' LT

+70.77
35.16' LT

+99.87
59.56' LT

'GRV'+41.64
17.00' LT

+08.13
20.00' LT

+21.27
28.08' LT

+53.45
12.00' LT

+33.64
26.00' RT

'GRV'+89.79
26.00' LT

+85.99
24.00' LT

+88.07
26.00' LT

+66.73
12.00' RT

+13.40
20.00' RT

+72.27
20.00' RT

+92.27
22.00' RT

+66.73
26.00' RT

'GRV'+09.98
20.00' LT

'GRV'+51.69
17.00' RT

6'CTY' 8'CTY' 10'CTY' 12'CTY' 14'CTY' 16'CTY' 18'CTY' 20'CTY'

SEE SDD "STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERT". ADJUSTMENT MAY BE NEEDED

STEEL PLATE BEAM GUARD, CLASS "A" WITH TERMINAL EAT

STEEL PLATE BEAM GUARD SHORT RADIUS AND TERMINAL BEAM GUARD RADIUS +65.67 70.80' LT, 36.00' R

CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D

DRIVEWAY ENTRANCE CURB PAID FOR AS "CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D"

HMA PAVEMENT TYPE E-0.3, 4-INCH

SLOPE INTERCEPT

R/W

STEEL PLATE BEAM GUARD CLASS "A"

SALVAGE GUARDRAIL

HMA PAVEMENT TYPE E-1, 4-INCH

XX

CTH Y

R/L CTH Y

STA 8'CTY'+24
12.0' AGGREGATE FE
REMOVE EXISTING 24" CP
24" CPCS REQUIRED

HMA PAVEMENT TYPE E-0.3, 4-INCH

WPS

BASE AGGREGATE DENSE ¾", 3-INCH

STA 16'CTY'+44 RT
18.0' AGGREGATE PE
REMOVE EXISTING 24" CP
24" CPCS REQUIRED

ASPHALTIC FLUME (TYP)

BEGIN CONSTRUCTION
I.D. 1120-09-76
STA 10'CTY'+50.00
MATCH EXISTING
SAW CUT REQ'D

NOTE:
RADIUS DIMENSIONS ARE SHOWN TO THE FACE OF CURB.
X = CLEARING AND GRUBBING

GRUNDY ENTERPRISES

THOMAS RUSCH & RICHARD GABERT

WISCONSIN VOICE OF CHRISTIAN YOUTH, INC.

R/L GREEN VALLEY ROAD

GREEN VALLEY ROAD

THOMAS RUSCH & RICHARD GABERT

SLOPE INTERCEPT

UTL EASE

SALVAGE GUARDRAIL

MAATCH LINE STA 20'CTY'+00

MGS GUARDRAIL TERMINAL EAT

R/L SHARED USE PATH

WISCONSIN DEPARTMENT OF TRANSPORTATION

VCL = 250'
K = 109

VPI STA 10'CTY'+50.00
VPI EL 753.42

VPC STA 12'CTY'+25.00
VPC EL 754.20

VPT STA 14'CTY'+75.00
VPT EL 758.17

VPI STA 13'CTY'+50.00
VPI EL 754.75

FINISHED PROFILE

EXISTING PROFILE

0.44%
2.73%
-1.38%
-2.00%
0.41%
0.00%
0.38%
3.29%
7.32%
0.45%
0.56%

SPECIAL DITCH RT

SPECIAL DITCH LT

EXISTING PROFILE ELEVATIONS AT R/L
FINISHED PROFILE ELEVATIONS AT R/L

| | | |

THOMAS RUSCH &
RICHARD GABERT
R-70-44
R/L USH 41 SB
CONCRETE APPROACH SLAB
(REINFORCED THROUGH SHARED
USE PATH)
CONCRETE PAVEMENT 11-INCH
SLOPE
INTERCEPT
+69.84
20.00'LT
+57.63
20.00'LT
R/W
UTL EASE
R/W
CONCRETE CURB
AND GUTTER
30-INCH TYPE D
+79.86
22.00'LT
+34.23
12.00'LT
+29.82
20.00'LT
+59.69
20.00'LT
+35.40
20.00'LT
MATCH LINE STA 20'CTY'+00
BM 903
+95.00
20.00'RT
+42.23
20.00'RT
CONCRETE BARRIER
TYPE S42 THRIE
BEAM ANCHOR
+07.25
20.00'RT
SLOPE
INTERCEPT
R/W
WISCONSIN
DEPARTMENT OF
TRANSPORTATION
USH 41 SB
USH 41 NB
750'SAB'
750'NAB'
748'SAB'
748'NAB'
752'
R/W
R/L USH 41 NB
ATC
R-70-45
+70.20
118.76'LT
CONCRETE
PAVEMENT
11-INCH
MGS GUARDRAIL 3 WITH
TERMINAL EAT AND THRIE
BEAM TRANSITION
+84.97
22.00'LT
REMOVE FENCE
CONCRETE BARRIER
TYPE S42 THRIE
BEAM ANCHOR
+12.21
20.00'RT
+54.97
15.00'LT
+69.99
20.00'LT
+34.97
20.00'LT
HMA PAVEMENT TYPE
E-1, 4-INCH
HMA PAVEMENT TYPE
E-0.3, 4-INCH
R/L CTH Y
22'CTY'
24'CTY'
26'CTY'
28'CTY'
30'CTY'
32'CTY'
34'CTY'
CTH Y
5%
3%
12
12
3%
16
18
20
22
+00.00
20.00'RT
+40.00
20.00'RT
+89.98
22.00'RT
+59.98
15.00'RT
SALVAGE
GUARDRAIL
CONCRETE
BARRIER
TYPE S42
MGS GUARDRAIL TERMINAL
EAT AND THRIE BEAM TRANSITION
CONCRETE APPROACH SLAB
(REINFORCED THROUGH SHARED
USE PATH)
CONCRETE CURB
AND GUTTER
30-INCH TYPE D
B-70-284
MGS GUARDRAIL 3 WITH
TERMINAL EAT AND THRIE
BEAM TRANSITION
STA 23'CTY'+60
REMOVE EXISTING 48" CP
STA 23'CTY'+91
48" CPRC REQ'D
STA 22'CTY'+94
STRUCTURE B-70-284
2-SPAN STEEL GIRDER SLAB DECK
40.0 FT CLEAR ROADWAY WIDTH
SKEW 22.5° LHF
STATE OF WISCONSIN
FENCE CHAIN LINK 6-FT, 3' INSIDE OF ROW
SLOPE INTERCEPT
SLOPE INTERCEPT
BASE AGGREGATE
DENSE ¾", 3-INCH
R/L SHARED USE PATH
STA 28'CTY'+65
REMOVE EXISTING 5.5'x8' CP
68"x106" CPRCHE REQ'D
NOTE:
SEE SDD "CONCRETE BARRIER SINGLE SLOPE" FOR
BARRIER ON APPROACH SLAB. USE "ON BRIDGE" DETAIL.
INCIDENTAL TO CONCRETE BARRIER TYPE S42.
MATCH STRUCTURE SKEW.
SEE STRUCTURE PLANS.
END CONSTRUCTION
I.D. 1120-09-76
STA 31'CTY'+50.00
MATCH EXISTING
SAW CUT REQ'D
WINNEBAGO COUNTY

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
903	20'CTY'+99, RT	DISK ON THE SOUTHWEST PARAPET WALL STRUCTURE #B-70-65-74 @ CTH Y & USH 41.	777.18

N
0 50 100
SCALE IN FEET

5
5

VPI STA 24'CTY'+75.00
VPI EL 785.50
HP = 24'CTY'+08.82
EL 779.47
FINISHED PROFILE
EXISTING PROFILE
VPC STA 21'CTY'+00.00
VPC EL 775.25
17'-3" MIN VERTICAL
CLEARANCE
STA 22'CTY'+94
STRUCTURE B-70-284
2-SPAN STEEL GIRDER SLAB DECK
40.0 FT CLEAR ROADWAY WIDTH
SKEW 22.5° LHF
STA 22'CTY'+94
REMOVE STRUCTURE B-70-65
2-SPAN STEEL GIRDER
38' OVERALL WIDTH
223' OVERALL LENGTH
VCL = 750'
K = 113
VPT STA 28'CTY'+50.00
VPT EL 770.86
-3.90%
VPC STA 29'CTY'+50.00
VPC EL 766.95
VCL = 100'
K = 158
VPT STA 30'CTY'+50.00
VPT EL 763.36
-3.27%
VPI STA 31'CTY'+50.00
VPI EL 760.09
VPI STA 30'CTY'+00.00
VPI EL 765.00
SPECIAL
DITCH RT
0.45%
2.12%
6.78%
0.56%
SPECIAL DITCH LT
-1.55%
-0.26%
0.00%
SPECIAL DITCH RT
EXISTING PROFILE ELEVATIONS AT R/L
FINISHED PROFILE ELEVATIONS AT R/L

| | | |

NOTE:

ELEVATIONS AT FLANGE LINE.

VOICE OF WISCONSIN CHRISTIAN YOUTH, INC.

THOMAS RUSCH & RICHARD GABERT

N

0 50 100

SCALE IN FEET

X = CLEARING AND GRUBBING

BEGIN CONSTRUCTION
STA 16'GRV'+75.00
MATCH EXISTING
SAW CUT REQ'D

WISCONSIN DEPARTMENT OF TRANSPORTATION

GREEN VALLEY ROAD

R/L GREEN VALLEY ROAD

WPS

BASE AGGREGATE DENSE ¾", 3-INCH

HMA PAVEMENT TYPE E-1, 4-INCH

HMA PAVEMENT TYPE E-0.3, 4-INCH

BASE AGGREGATE DENSE ¾", 3-INCH

STEEL PLATE BEAM GUARD CLASS "A"

STEEL PLATE BEAM GUARD SHORT RADIUS AND TERMINAL

SLOPE INTERCEPT

STA 18'CTY'+14.05 = STA 20'GRV'+70.21

STA 19'GRV'+71.34 = STA 10+00.00

STA 19'GRV'+43
24" CPRC REQ'D
STA 20'GRV'+05
REMOVE EXISTING 24" CP

STA 21'GRV'+44
REMOVE EXISTING 36" CP
STA 21'GRV'+70
36" CPRC REQ'D

MATCH LINE STA 24'GRV'+00

+89.79 11.00'LT

+59.98 11.00'RT

+21.69 11.00'RT

+21.69 11.00'LT

+36.12 21.28'LT

+63.32 19.92'LT

APHALTIC FLUME (TYP)

R/L SHARED USE PATH

R/L CTH Y

CTH Y

16'CTY'

18'CTY'

20'CTY'

22'GRV'

24'GRV'

10'GRV'

12'GRV'

14'GRV'

16'GRV'

18'GRV'

20'GRV'

UTL EASE

R/W

VPI STA 16'GRV'+75.00
VPI EL 759.60

VPI STA 20'GRV'+45.61
VPI EL 766.80

VPI STA 20'GRV'+94.66
VPI EL 767.08

VPI STA 22'GRV'+00.00
VPI EL 764.65

VPT STA 22'GRV'+50.00
VPT EL 763.14

VPC STA 21'GRV'+50.00
VPC EL 765.80

VPC STA 23'GRV'+50.00
VPC EL 760.13

FINISHED PROFILE

EXISTING PROFILE

1.94%

-2.30%

-3.02%

R/L CTH Y

EXCEPTION TO VERTICAL PROFILE

VCL = 300'
K = 109

VCL = 100'
K = 140

SPECIAL DITCH LT

SPECIAL DITCH RT

-0.76%

-0.58%

-0.38%

0.14%

EXISTING PROFILE ELEVATIONS AT R/L
FINISHED PROFILE ELEVATIONS AT R/L

10'GRV'+00	755.36 / 760.09
12'GRV'+00	755.23 / 760.70
14'GRV'+00	755.11 / 761.06
16'GRV'+00	755.30 / 761.40
18'GRV'+00	755.36 / 762.03
20'GRV'+00	755.36 / 762.15
22'GRV'+00	755.53 / 763.00
24'GRV'+00	755.76 / 762.91
	755.99 / 763.97
	756.50 / 763.66
	757.00 / 764.95
	757.58 / 764.41
	758.25 / 765.92
	759.16 / 765.24
	759.99 / 766.92
	765.50
	766.95
	764.74
	765.80
	763.81
	764.56
	762.46
	763.14
	760.92
	761.63
	759.58
	760.13
	758.30
	758.73

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	PLAN AND PROFILE - GREEN VALLEY ROAD	SHEET 89	E

FILE NAME : ch_0976_050105_pp.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 100:1

WISDOT/CADDS SHEET 40

THOMAS RUSCH &
RICHARD GABERT

STEEL PLATE BEAM GUARD
CLASS "A" WITH TERMINAL EAT

BASE AGGREGATE
DENSE ¾", 3-INCH

SLOPE INTERCEPT
STA 27'GRV'+47 LT
14.4' AGGREGATE FE

+72.51
17.00' LT

+22.51
19.00' LT

+02.51
11.00' LT

HMA PAVEMENT
TYPE E-0.3, 4-INCH

26'GRV'

16'
11'
11'
16'

R/W

MATCH LINE STA 24'GRV'+00

R/W

SLOPE INTERCEPT

HMA PAVEMENT
TYPE E-0.3, 4-INCH

R/L GREEN VALLEY ROAD

STA 26'GRV'+96 RT
28' ASPHALTIC CE

GREEN VALLEY ROAD

UTL EASE

WPS

R/W

END CONSTRUCTION
STA 27'GRV'+55.00
MATCH EXISTING
SAW CUT REQ'D

THOMAS RUSCH &
RICHARD GABERT

THOMAS RUSCH &
RICHARD GABERT

N

0 50 100
SCALE IN FEET

R/W

UTL EASE

R/W

760'SAB'

762'SAB'

764

5

5

775
770
765
760
755
750
745
740

VCL = 300'
K = 109

VPT STA 26'GRV'+50.00
VPT EL 755.19

VPI STA 27'GRV'+55.00
VPI EL 754.90

FINISHED PROFILE

EXISTING PROFILE

-0.28%

VPI STA 25'GRV'+00.00
VPI EL 755.60

0.14%

SPECIAL DITCH RT

EXISTING PROFILE ELEVATIONS AT R/L
FINISHED PROFILE ELEVATIONS AT R/L

758.30	757.05	756.22	755.80	755.45	755.12	754.93	754.86
758.73	757.57	756.63	755.92	755.44	755.19	755.05	754.91

24'GRV'+00 26'GRV'+00 28'GRV'+00

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	PLAN AND PROFILE - GREEN VALLEY ROAD	SHEET 90 E

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
903	20'CTY'+99, RT	DISK ON THE SOUTHWEST PARAPET WALL STRUCTURE #B-70-65-74 @ CTH Y & USH 41.	777.18

X = CLEARING AND GRUBBING

WINNEBAGO COUNTY

N

0 50 100
SCALE IN FEET

THOMAS RUSCH & RICHARD GABERT
R/L GREEN VALLEY ROAD
SLOPE INTERCEPT
GREEN VALLEY ROAD
22'GRV'
R/W
THOMAS RUSCH & RICHARD GABERT
UTL EASE
R/L USH 41 SB
USH 41 SB
752'SAB'
752'NAB'
USH 41 NB
R/L USH 41 NB
SLOPE INTERCEPT
R/W
UTL EASE
R/L CTH Y
+62.63
10.00' RT
MATCH FENCE CHAIN LINK 6-FEET
750'SAB'
750'NAB'
ATC
SLOPE INTERCEPT
R/W
R/L CTH Y
CTH Y
18'CTY'
20'CTY'
22'CTY'
24'CTY'
26'CTY'
28'CTY'
30'CTY'
BM 903
+25.22
16.00' LT,
9.00' R
LIMESTONE SCREENINGS, 3-INCH
R/L SHARED USE PATH
LIMESTONE SCREENINGS, 3-INCH
WISCONSIN DEPARTMENT OF TRANSPORTATION
748'SAB'
748'NAB'
BEGIN CONSTRUCTION
STA 16+59.59
R/L SHARED USE PATH
LIMESTONE SCREENINGS, 3-INCH
LIMESTONE SCREENINGS, 3-INCH
R/W
STATE OF WISCONSIN
RAILING 54-INCH 3'OUTSIDE OF AGGREGATE SHOULDER
SLOPE INTERCEPT
R/W
SLOPE INTERCEPT
R/L GREEN VALLEY ROAD
GREEN VALLEY ROAD
20'GRV'
RAILING 54-INCH 3'OUTSIDE OF AGGREGATE SHOULDER
END CONSTRUCTION
STA 13+53.23
END CONSTRUCTION
STA 17+28.32
+16.16
10.00' RT
SLOPE INTERCEPT
+63.60
10.00' RT
MATCH FENCE CHAIN LINK 6-FEET
VPI STA 16+59.59
VPI EL 778.66
VPI STA 17+28.32
VPI EL 778.01
VPI STA 13+53.23
VPI EL 775.52
-0.94%
BEGIN CONSTRUCTION
STA 10+13.38
FINISHED PROFILE
VPI STA 10+13.38
VPI EL 765.31
3.00%
EXCEPTION TO VERTICAL PROFILE, SEE CTH Y PROFILE
EXISTING PROFILE
EXCEPTION TO VERTICAL PROFILE, SEE CTH Y PROFILE
EXISTING PROFILE ELEVATIONS AT R/L
FINISHED PROFILE ELEVATIONS AT R/L

785 780 775 770 765 760 755 750

763.98
753.03 766.41
751.50 767.91
750.51 769.42
755.38 770.92
760.72 772.42
766.93 773.92
763.45 775.42
754.20 776.63
754.61 777.52
755.01 778.19
752.35 778.63
754.65 778.79
773.70 778.68
771.82 778.28
770.59 777.74
769.44 777.13
768.20 776.25
766.63 775.15
765.14 773.83
763.72 772.29
762.33 770.52
760.96 768.58
759.31 766.63
758.01 764.71
757.23 762.94
755.69 761.30
754.02 759.67

10+00 12+00 14+00 16+00 18+00 20+00 22+00 24+00

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	PLAN AND PROFILE - SHARED USE PATH	SHEET 91	E

FILE NAME : ch_0976_050107_pp.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 100:1

WISDOT/CADDS SHEET 40

Standard Detail Drawing List

08A05-18B	INLET COVERS TYPE B, B-A, C, MS, MS-A, & WM
08A05-18C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08C08-01	INLETS MEDIAN 1 AND 2 GRATE
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F10-01	CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH
09B02-07	CONDUIT
09B04-10	PULL BOX
09C08-04	CONCRETE BASE, TYPE 7
12A03-10	NAME PLATE (STRUCTURES)
13A03-05	CONCRETE PAVEMENT SHOULDERS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B15-07A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B24-07A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B25-01	STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B32-01A	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B33-01G	CONCRETE BARRIER SINGLE SLOPE 42" THRIE BEAM ANCHOR
14B33-01H	CONCRETE BARRIER SINGLE SLOPE 42" THRIE BEAM ANCHOR
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A02-07	DELINEATOR POST, DELINEATOR BRACKET AND DELINEATOR
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A06-02	DELINEATOR LAYOUT
15B03-12A	CHAIN LINK FENCE
15B03-12B	CHAIN LINK FENCE
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES

6

Standard Detail Drawing List

15C02-04C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-01	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C08-15A	PAVEMENT MARKING (MAINLINE)
15C08-15B	PAVEMENT MARKING (INTERSECTIONS)
15D12-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
15D14-01	TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)
16A01-06	LANDMARK REFERENCE MONUMENTS AND COVERS

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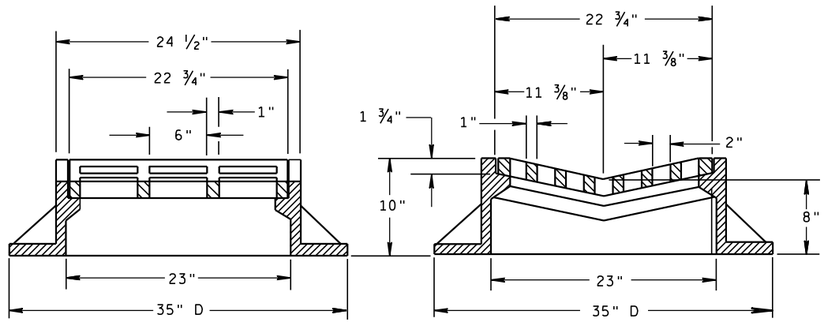
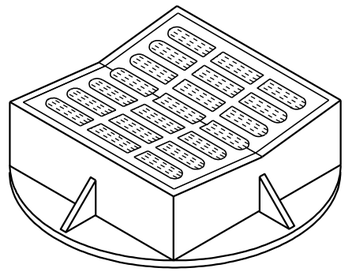
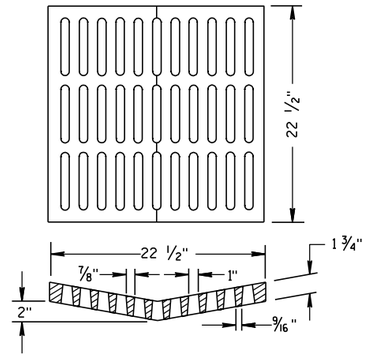




TYPE "B"

(APPROXIMATE WEIGHT 405 LBS.)

FRAME..... 294 LBS.
GRATE..... 111 LBS.

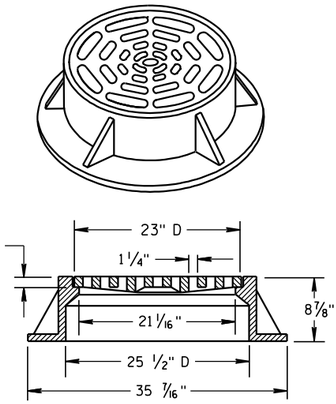


ALTERNATIVE GRATE FOR TYPE "B" COVER

(APPROXIMATE GRATE WEIGHT 134 LBS.)

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS POSSIBLE.

NOTED AS TYPE B-A ON THE DRAINAGE TABLE



TYPE "C"

(APPROXIMATE WEIGHT 259 LBS.)

FRAME..... 152 LBS.
GRATE..... 107 LBS.

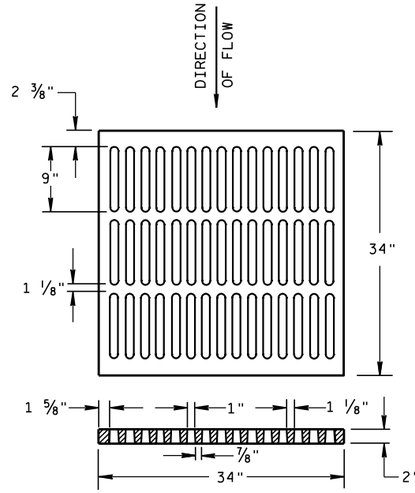
GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITH 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.

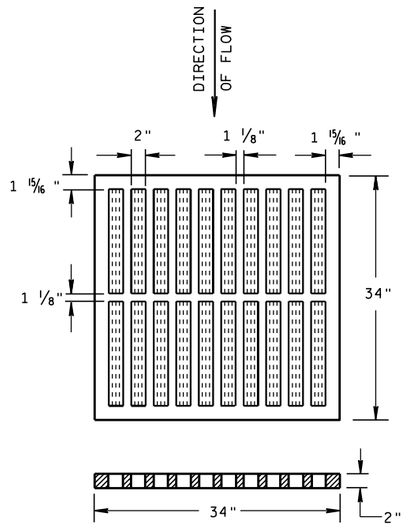


ALTERNATIVE TYPE "MS"

(APPROXIMATE GRATE WEIGHT 329 LBS.)

USE WHERE PEDESTRIAN OR BICYCLE TRAFFIC IS PERMITTED

NOTED AS TYPE MS-A ON THE DRAINAGE TABLE

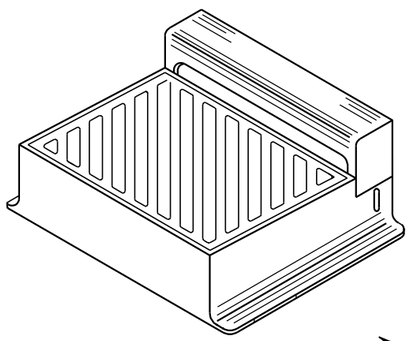


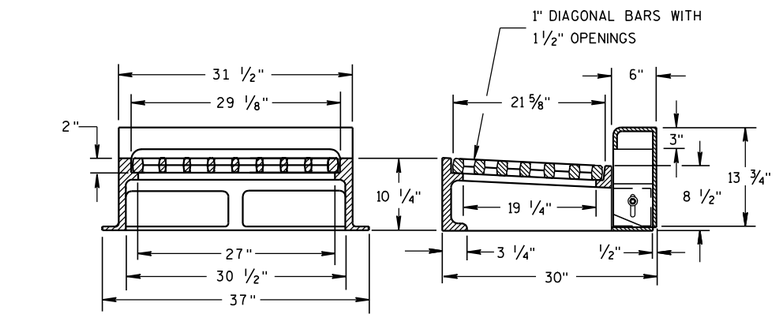
TYPE "MS"

(APPROXIMATE GRATE WEIGHT 268 LBS.)

USE ON FREEWAYS AND EXPRESSWAYS

NOTED AS TYPE MS ON DRAINAGE TABLE





NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

DIRECTION OF FLOW

DIAGONAL SLOTS, SHALL BE ORIENTED TO THE DIRECTION OF FLOW AS ILLUSTRATED. GRATES ARE MANUFACTURED TO BE REVERSIBLE.

TYPE "WM"

(APPROXIMATE WEIGHT 648 LBS.)

FRAME..... 355 LBS.
GRATE..... 156 LBS.
CURB BOX..... 137 LBS.

INLET COVERS
TYPE B, B-A, C, MS, MS-A, & WM

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012 DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

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FHWA

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S.D.D. 8 A 5-18b

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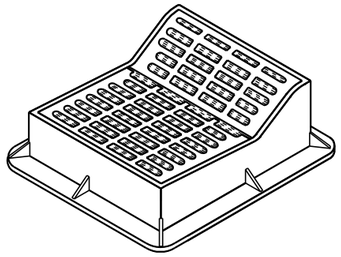
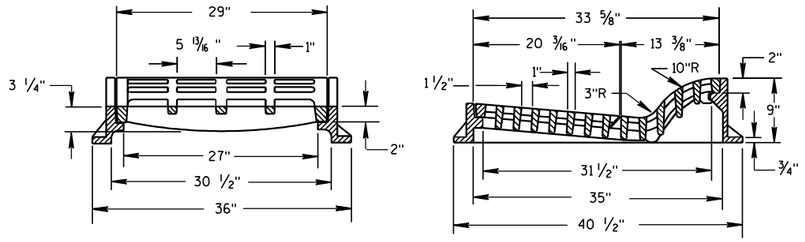
S.D.D. 8 A 5-18b



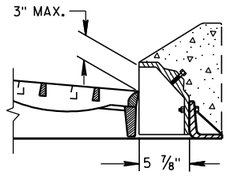


TYPE "F"

(APPROXIMATE WEIGHT 644 LBS.)

FRAME.....302 LBS.
GRATE.....160 LBS.
GRATE.....182 LBS.

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

(APPROXIMATE WEIGHT CURB BOX 68 LBS.)

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

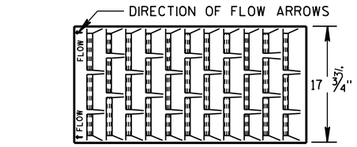
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

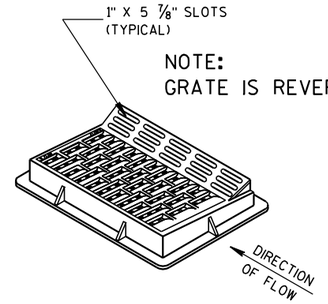
GENERAL NOTES

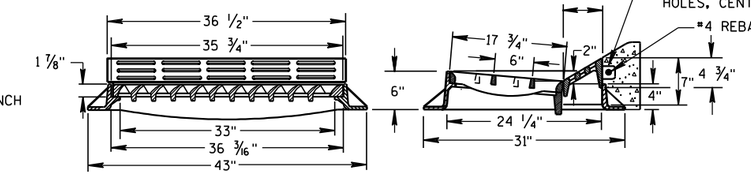
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





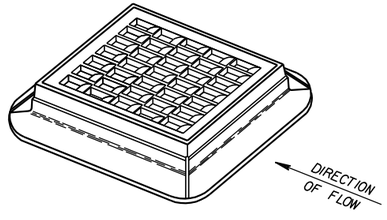


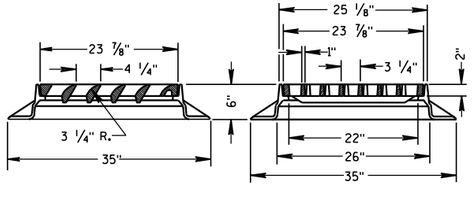
TYPE "HM"

(APPROXIMATE WEIGHT 414 LBS.)
FRAME..... 181 LBS.
GRATE..... 159 LBS.
CURB BOX..... 74 LBS.

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE

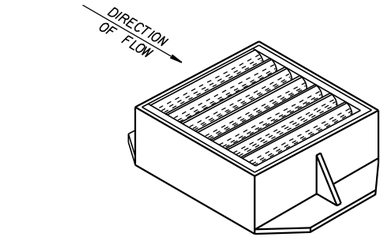


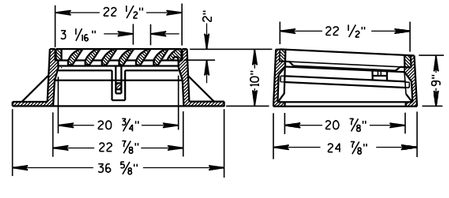


TYPE "S"

(APPROXIMATE WEIGHT 333 LBS.)

FRAME.....164 LBS.
GRATE..... 169 LBS.

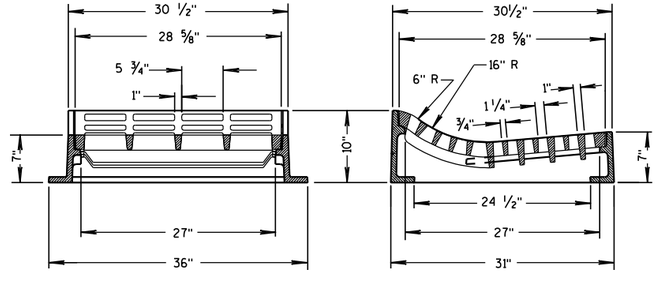




TYPE "V"

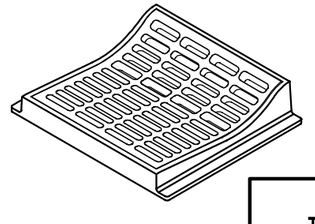
(APPROXIMATE WEIGHT 410 LBS.)

FRAME..... 269 LBS.
GRATE..... 136 LBS.
SAFETY BAR..... 5 LBS.



TYPE "T"

(APPROXIMATE WEIGHT 530 LBS.)
FRAME.....270 LBS.
GRATE.....260 LBS.
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 8 A 5-18c

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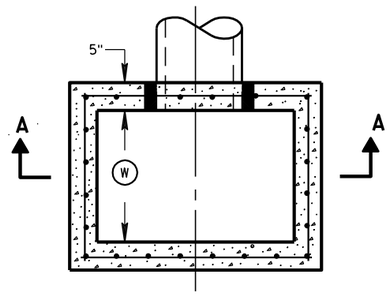
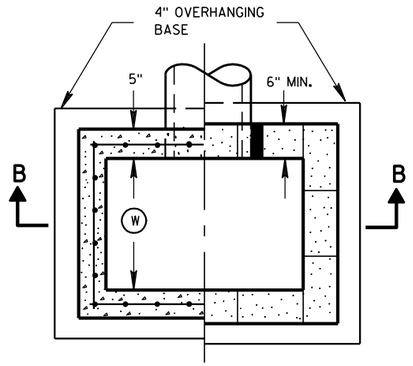
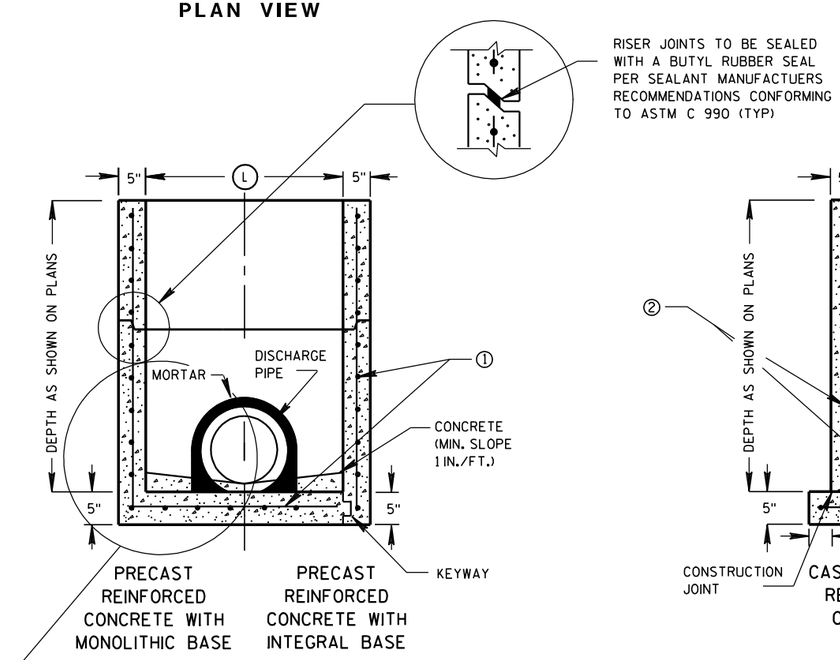
S.D.D. 8 A 5-18c



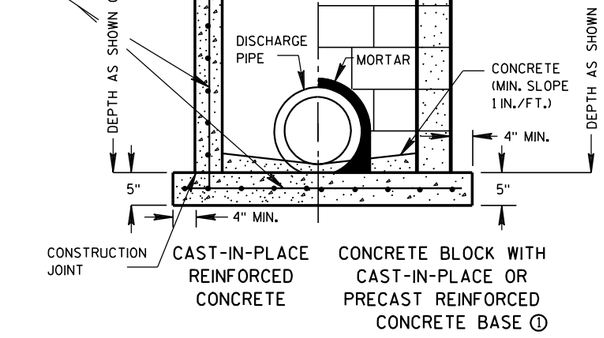
PLAN VIEW



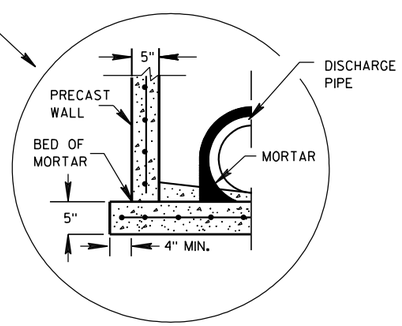
PLAN VIEW



SECTION A-A



SECTION B-B



SEPERATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPERATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

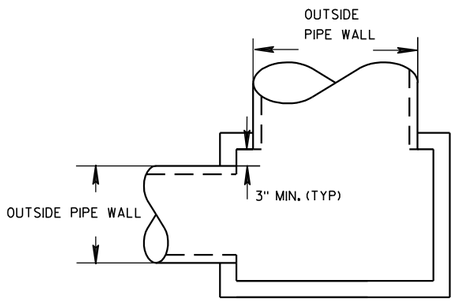
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
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6/5/2012 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS D 96 — ENGINEER
FHWA

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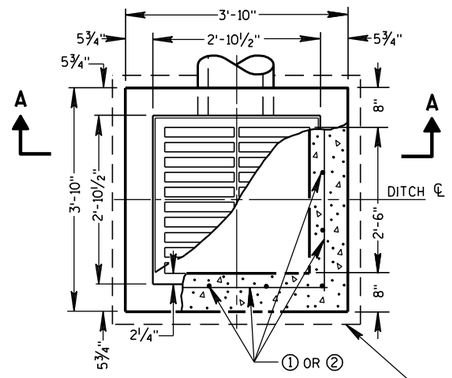
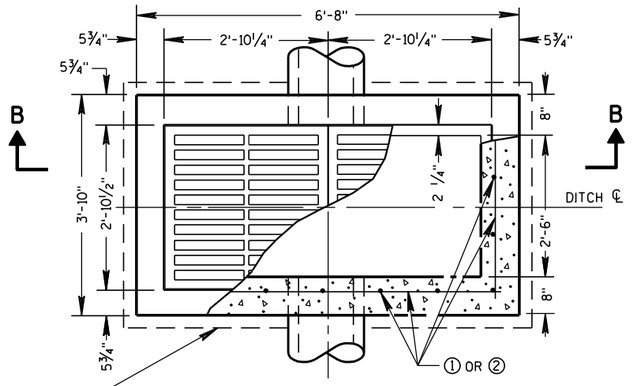
S.D.D. 8 C 7-1

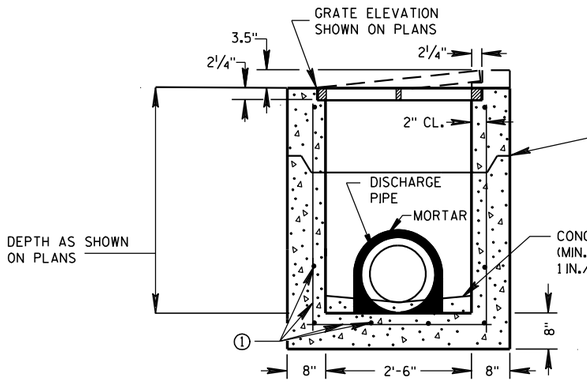


PLAN VIEW

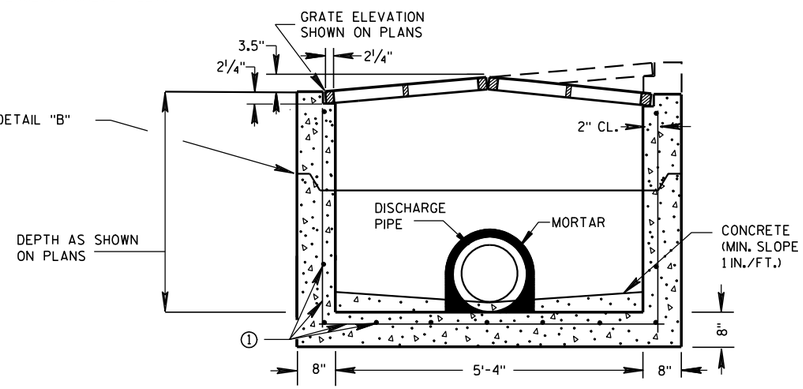


PLAN VIEW

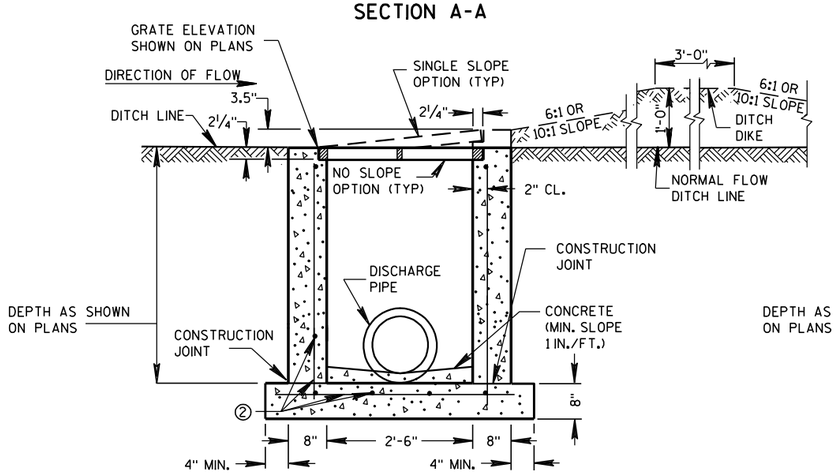
4" OVERHANGING BASE ON REINFORCED CAST-IN-PLACE CONCRETE INLETS



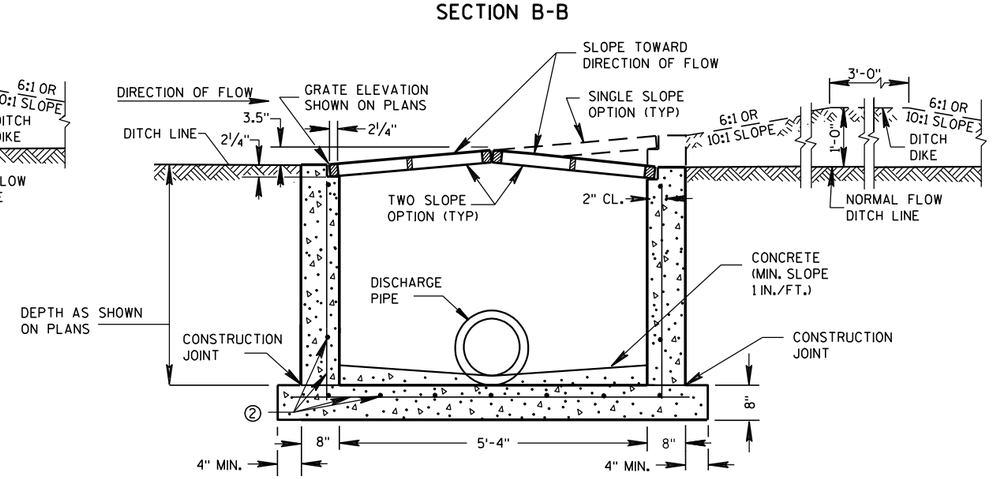
PRECAST REINFORCED CONCRETE SECTION A-A



PRECAST REINFORCED CONCRETE SECTION B-B



REINFORCED CAST-IN-PLACE CONCRETE SECTION A-A



REINFORCED CAST-IN-PLACE CONCRETE SECTION B-B

INLETS MEDIAN 1 GRATE

INLETS MEDIAN 2 GRATE

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLETS WHICH MAY INCLUDE PRECAST REINFORCED CONCRETE INLETS, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL MEDIAN INLETS ARE DESIGNATED ON THE PLANS AS "INLETS, 1G-MS", ETC. THE FIRST NUMBER AND LETTER DESIGNATE THE TYPE OF STRUCTURE, AND THE FOLLOWING LETTERS DESIGNATE THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

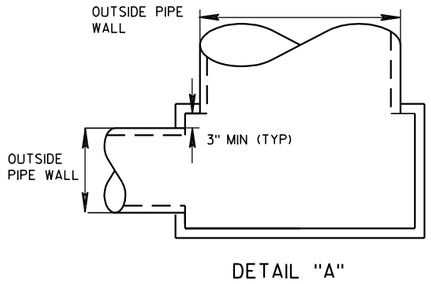
MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

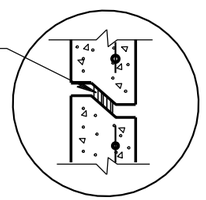
PIPE MATRIX

	MAXIMUM INSIDE PIPE DIAMETER	
INLET SIZE	WIDTH (IN)	LENGTH (IN)
1 GRATE	18	18
2 GRATE	18	42



DETAIL "A"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



DETAIL "B"

INLETS MEDIAN 1 AND 2 GRATE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

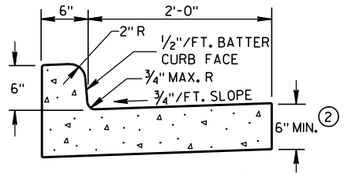
6/5/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

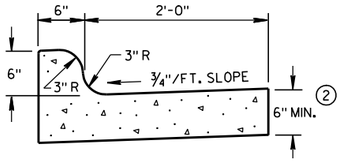
FHWA

6

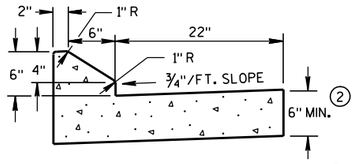
S.D.D. 8 C 8-1



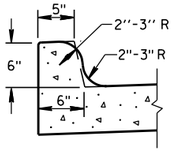
TYPES A & D (1)



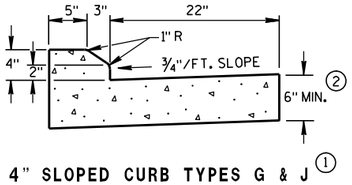
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

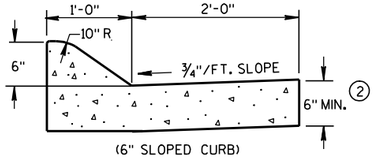


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

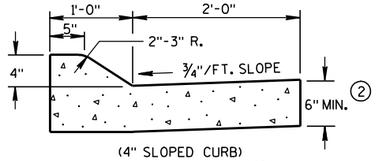


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

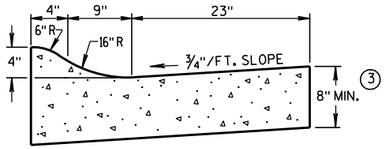


(6" SLOPED CURB)



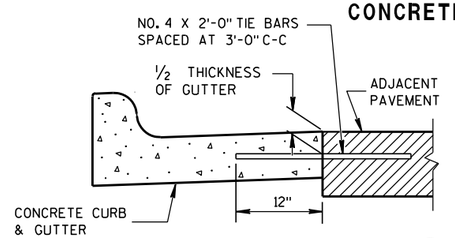
(4" SLOPED CURB)

TYPES A & D (1)

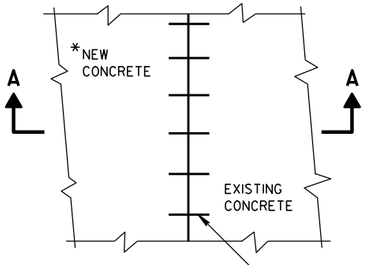


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"

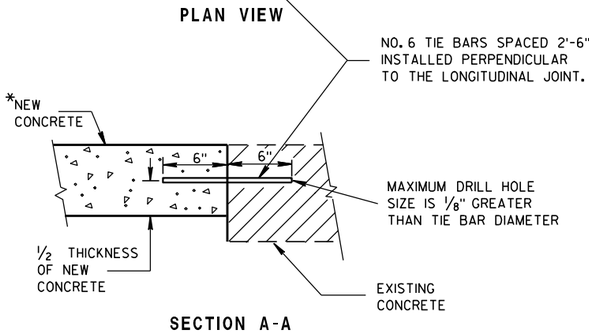


TYPICAL TIE BAR LOCATION (1)



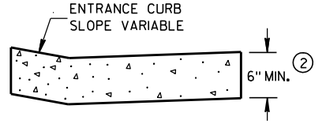
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW



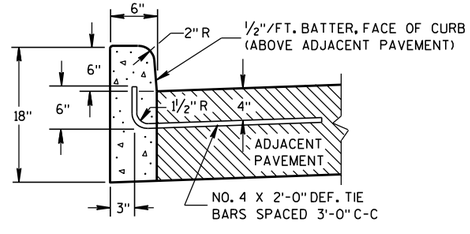
SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT

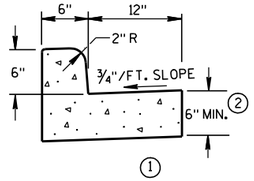


DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)

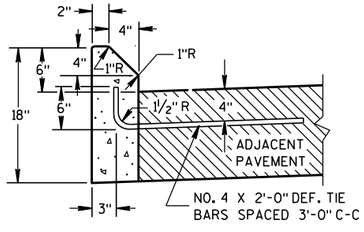


(1)
TYPES A & D



(1)
TYPES A & D

CONCRETE CURB & GUTTER 18"



(1)
TYPES G & J

CONCRETE CURB

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

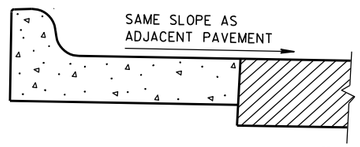
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

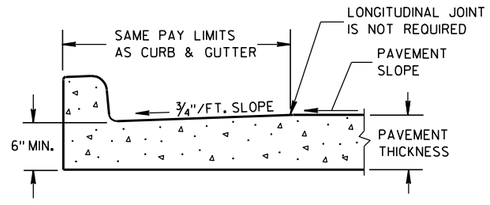
(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(5) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

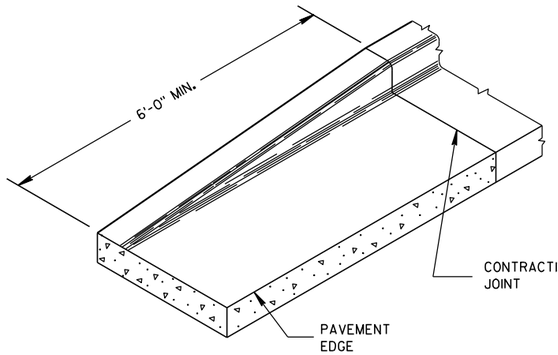


REVERSE SLOPE GUTTER (5)

(TYPICAL FOR ALL CURB & GUTTER TYPES)



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

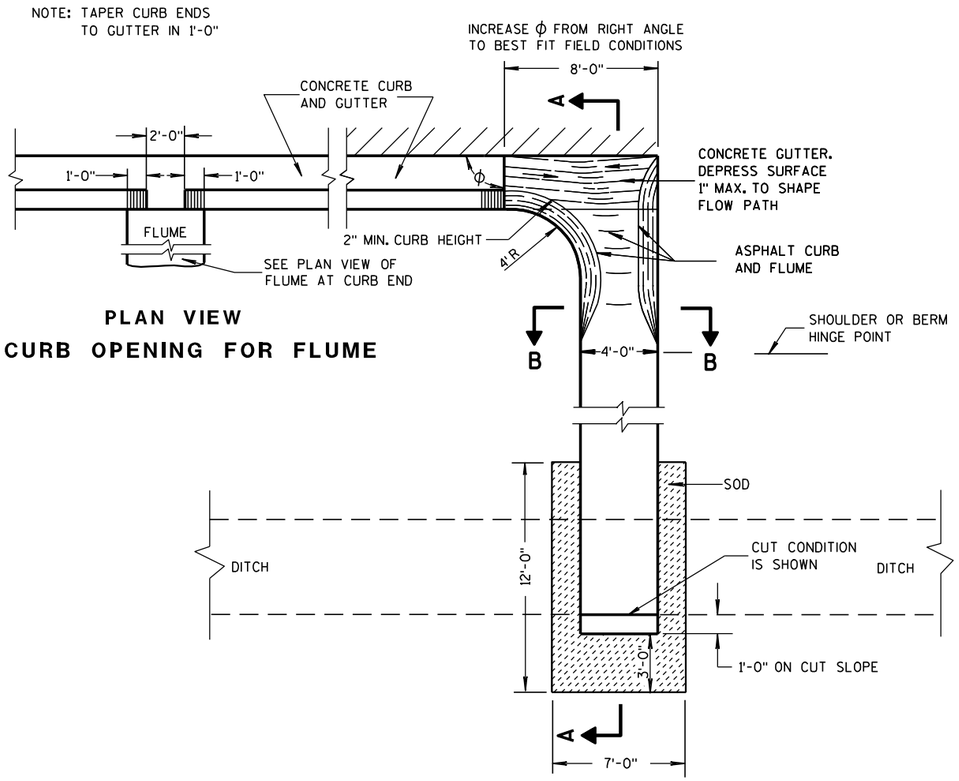
APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

6

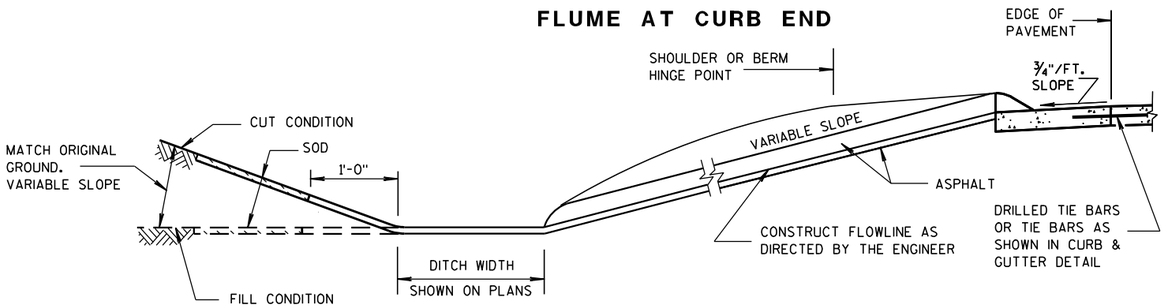
S.D.D. 8 D 1-17

ASPHALTIC FLUME

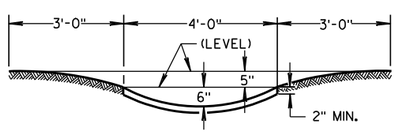


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

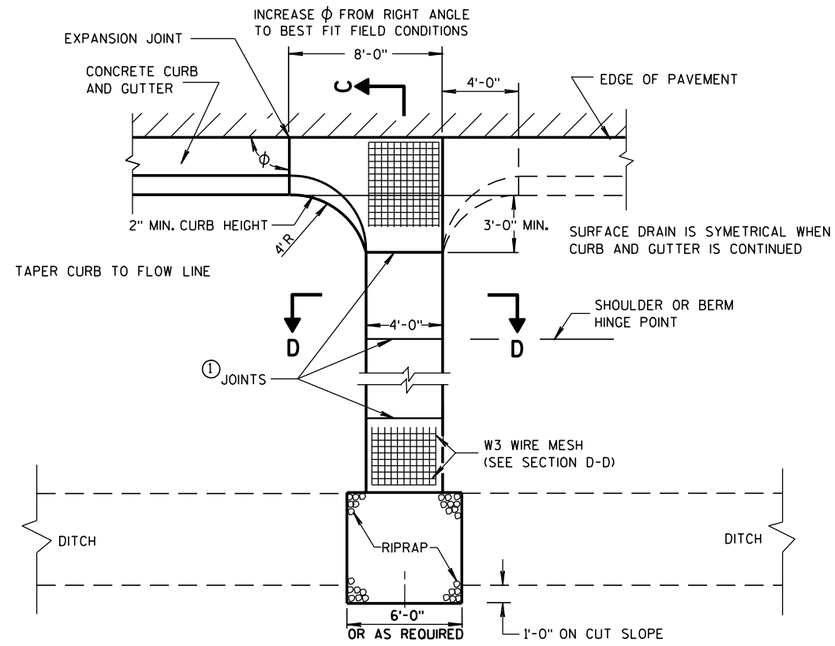
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

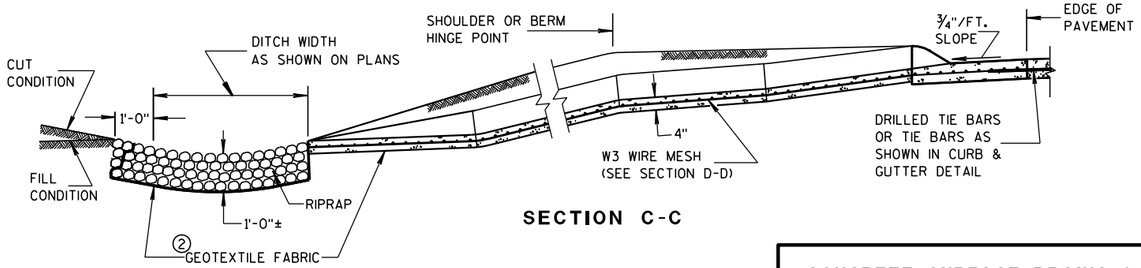
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

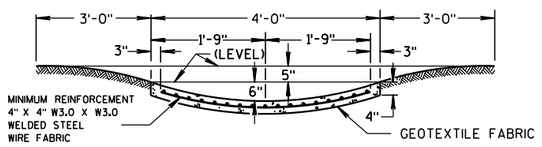
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



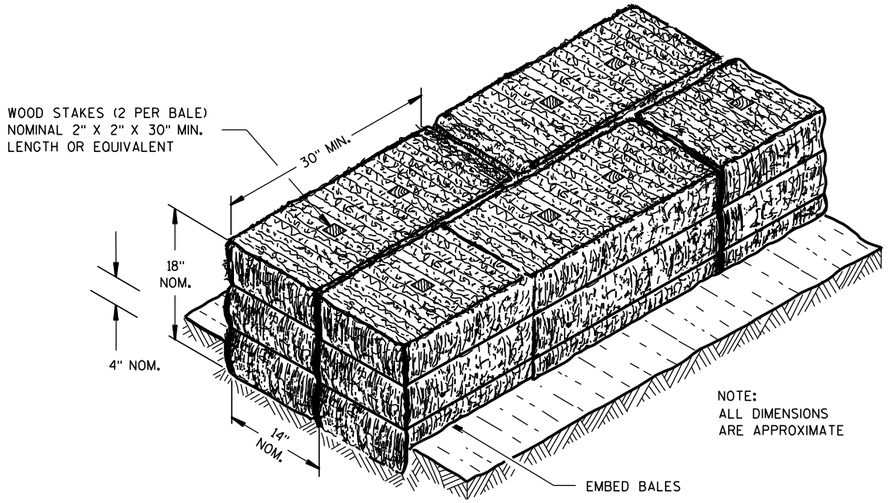
SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

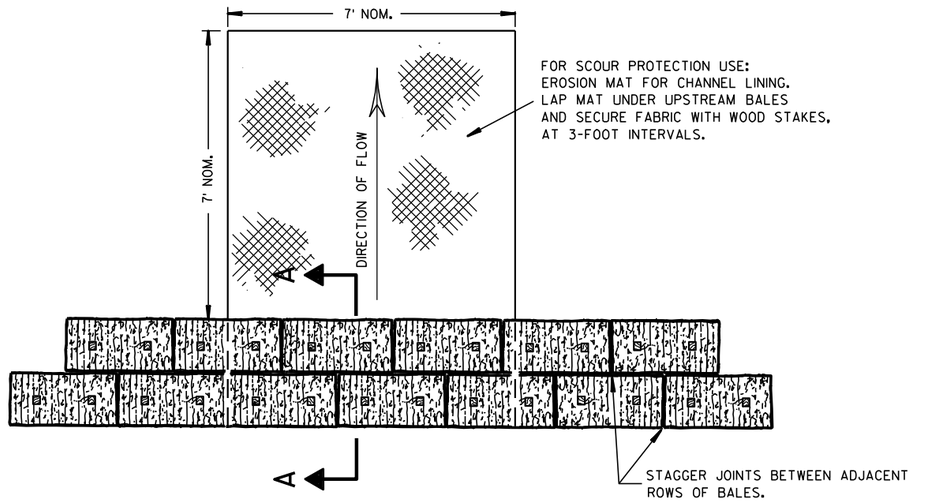
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT

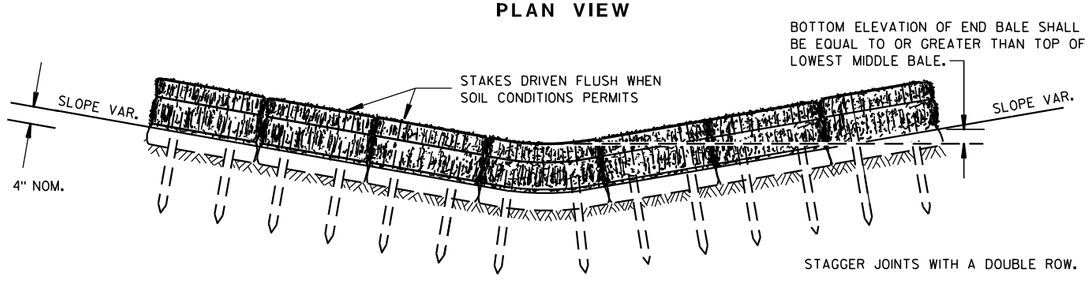
FHWA



SECTION A-A



PLAN VIEW



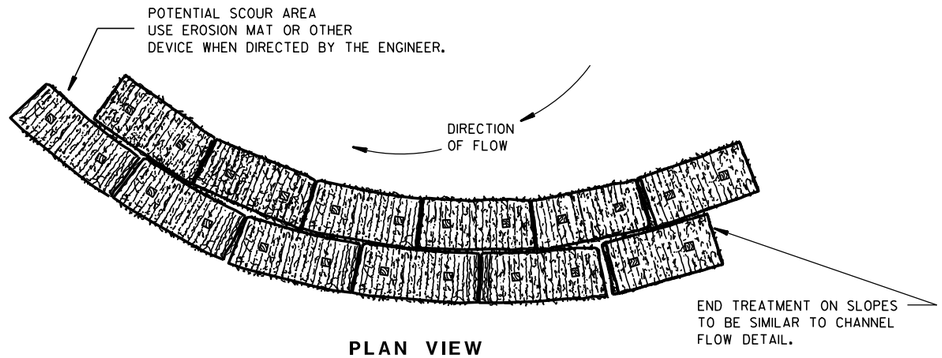
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

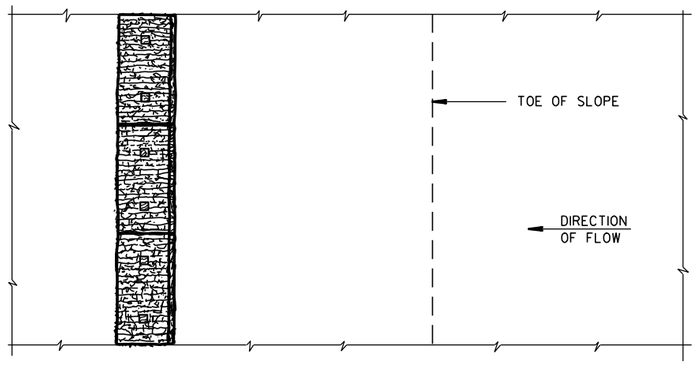
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

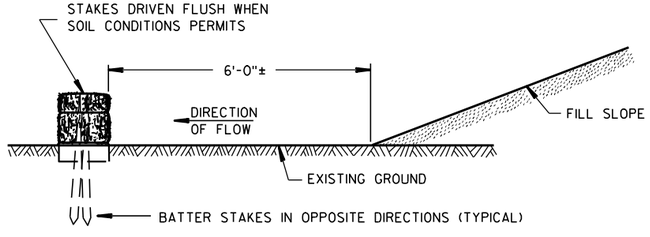


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

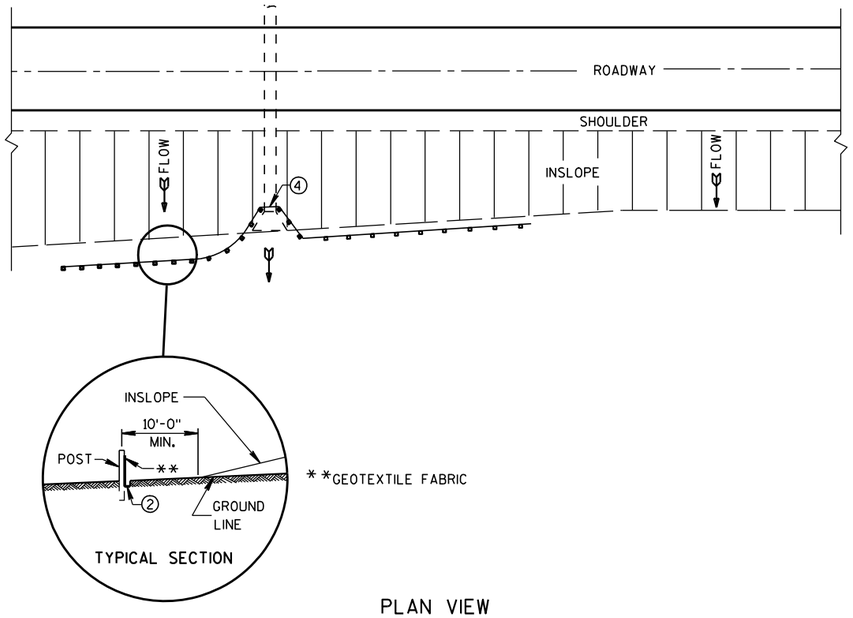
WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

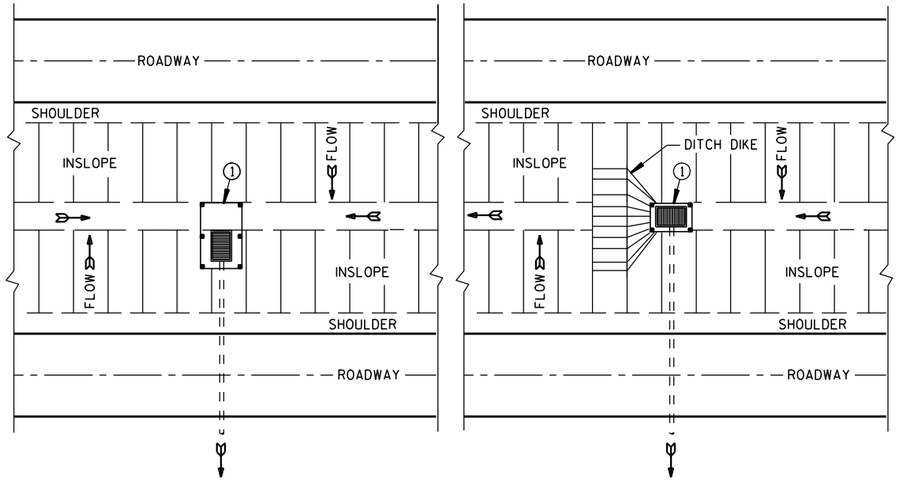
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



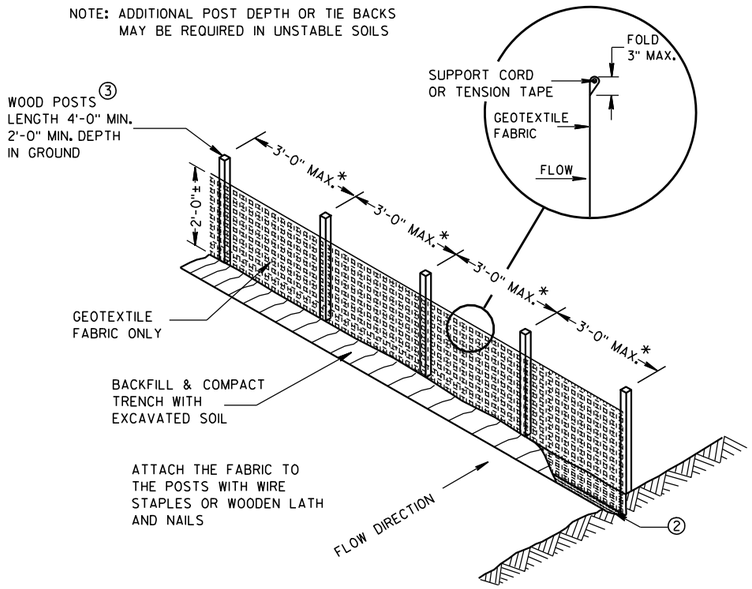
PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



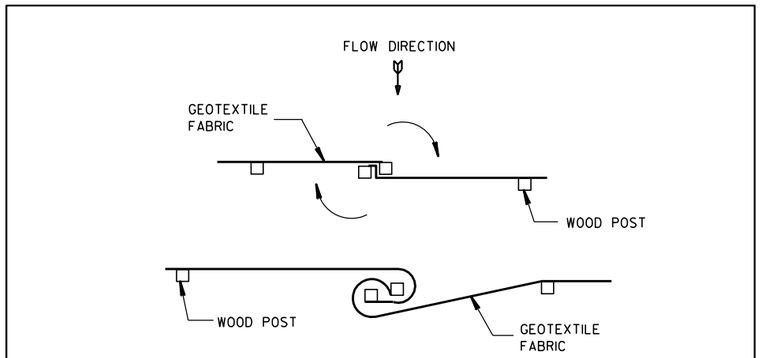
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS



*NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

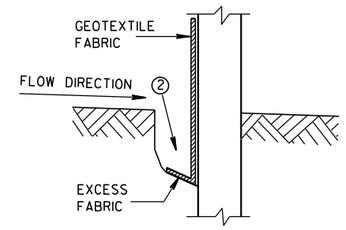


JOINING TWO LENGTHS OF SILT FENCE 5

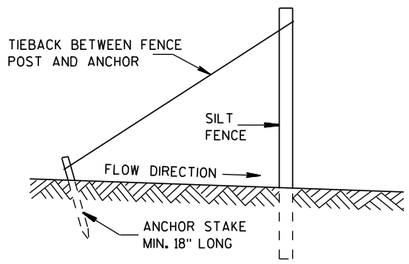
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



TRENCH DETAIL



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

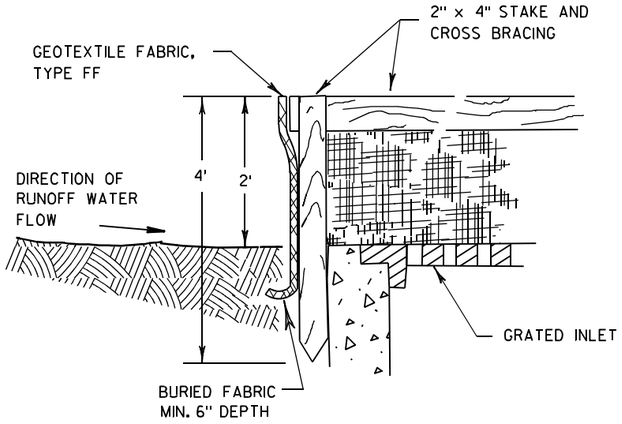
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

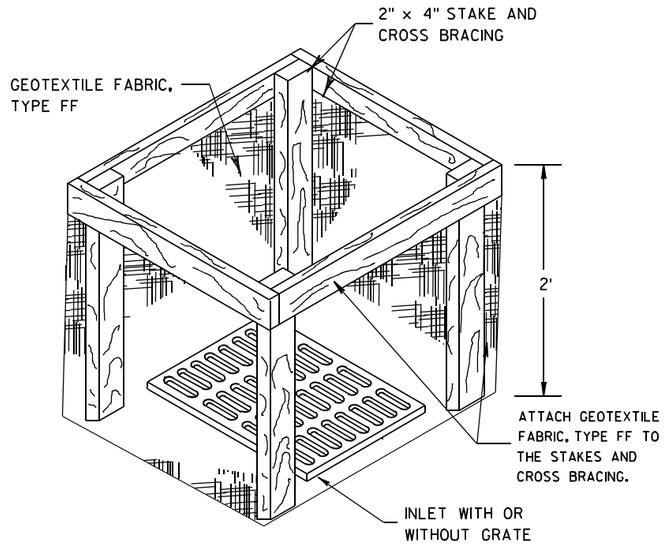
6

S.D.D. 8 E 9-6

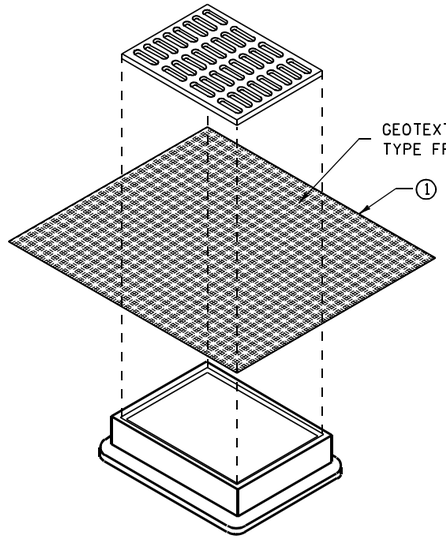
6

S.D.D. 8 E 9-6



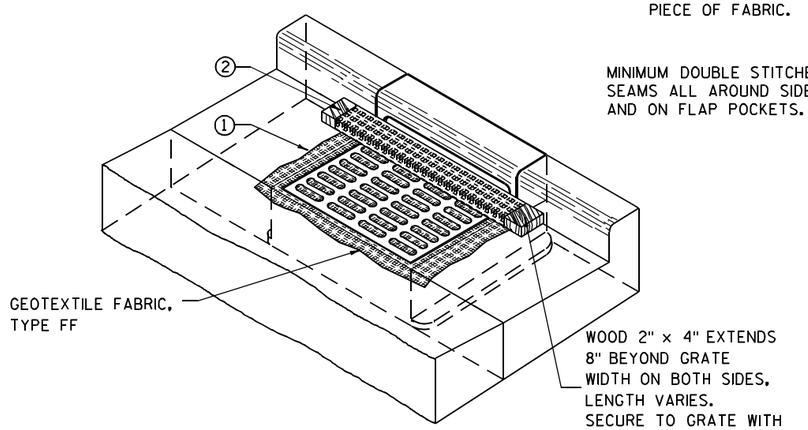


INLET PROTECTION, TYPE A

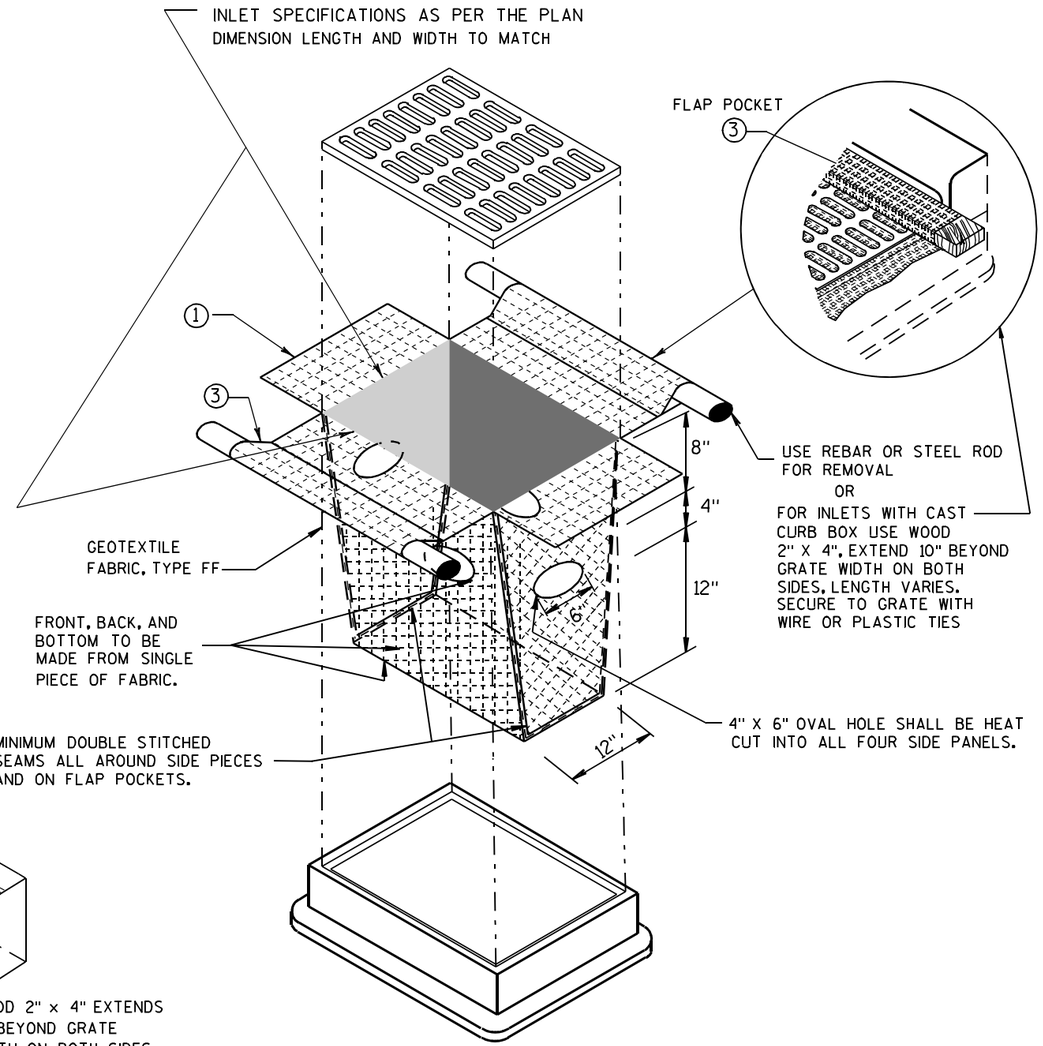


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH
OR WITHOUT A CURB BOX AS PER NOTE ②)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

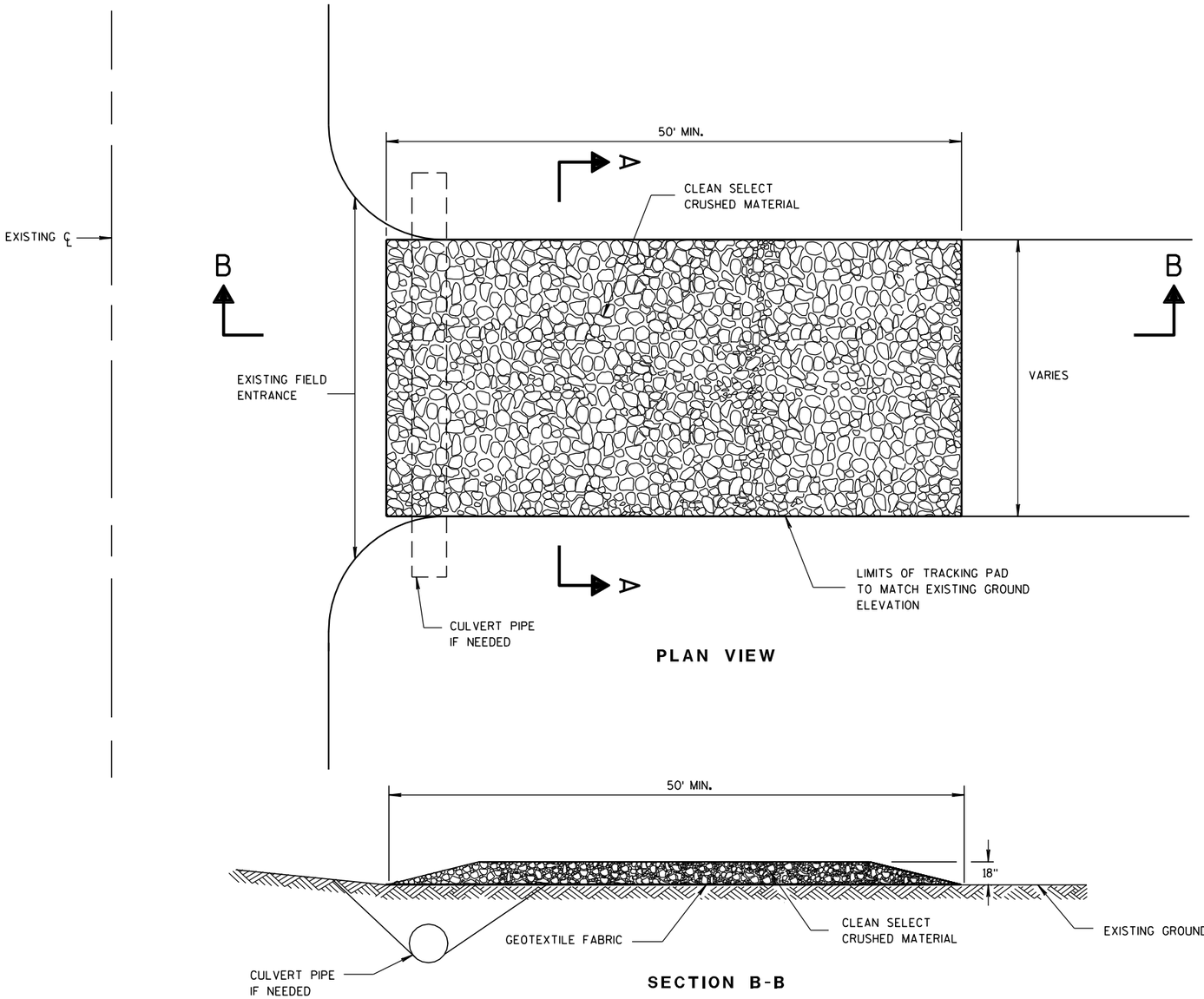
APPROVED

10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6
S.D.D. 8 E 10-2



PLAN VIEW

SECTION B-B

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

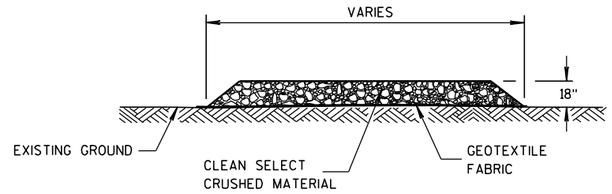
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A-A

TRACKING PAD

6

S.D.D. 8 E 14-1

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011
DATE

/S/ Jerry H. Zoda
ROADWAY STANDARDS ENGINEER

FHWA

ENT

6

S.D.D. 8 E 14-1

METAL APRON ENDWALLS

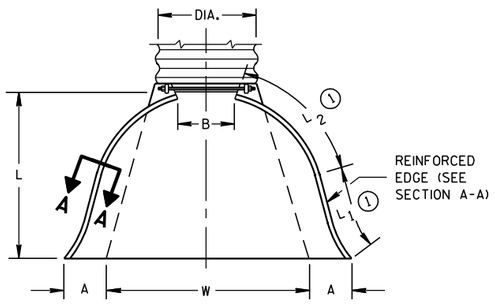
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

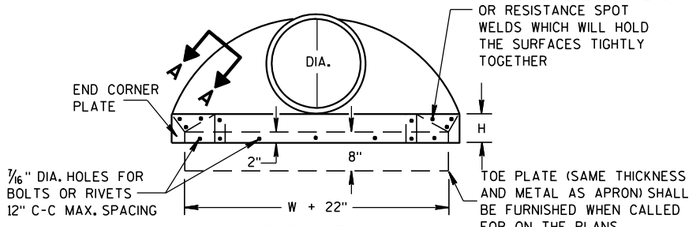
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

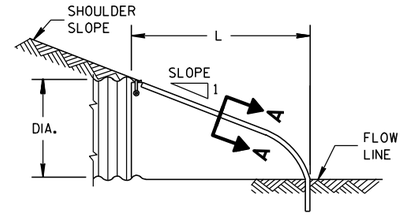
*MINIMUM
**MAXIMUM



PLAN VIEW

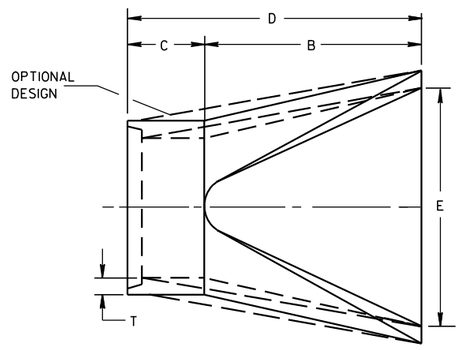


END VIEW

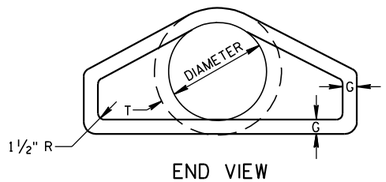


SIDE ELEVATION

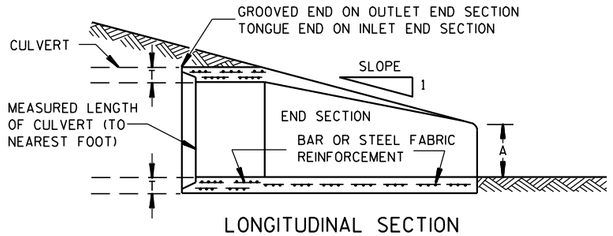
METAL ENDWALLS



PLAN

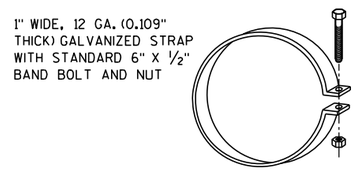


END VIEW



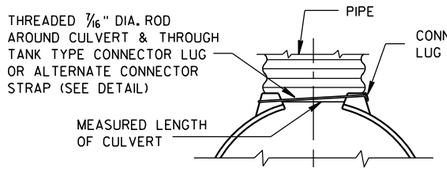
LONGITUDINAL SECTION

CONCRETE ENDWALLS

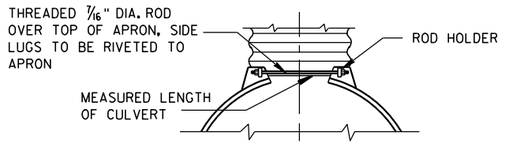


ALTERNATE FOR TYPE 1 CONNECTION

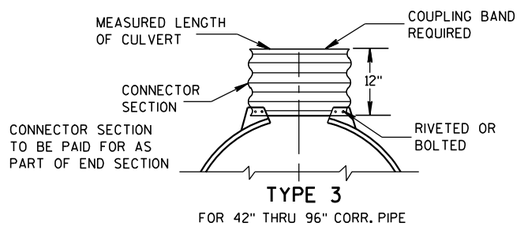
END SECTION CONNECTOR STRAP



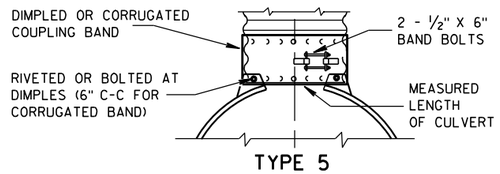
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

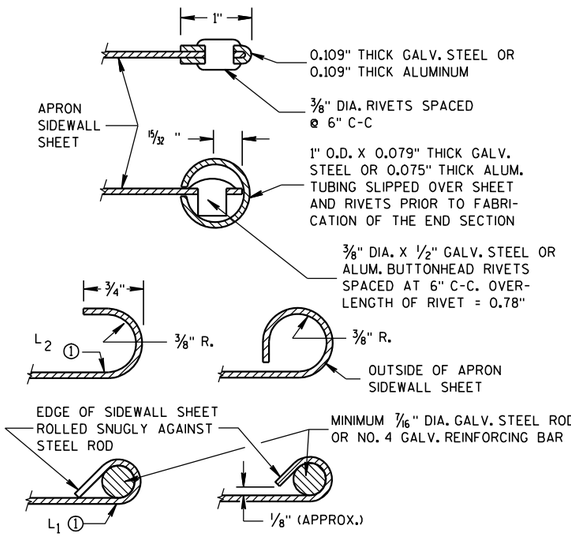
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

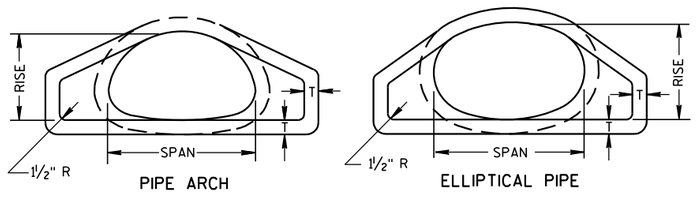
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

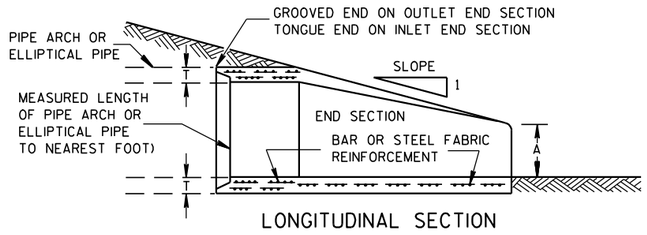
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

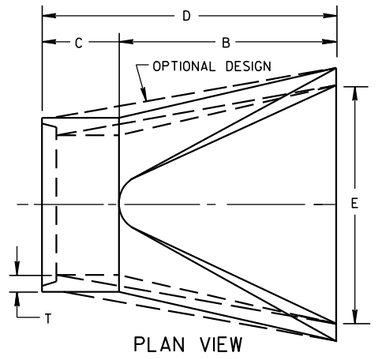
APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA



END VIEW

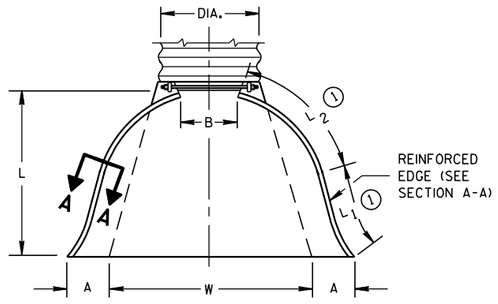


LONGITUDINAL SECTION

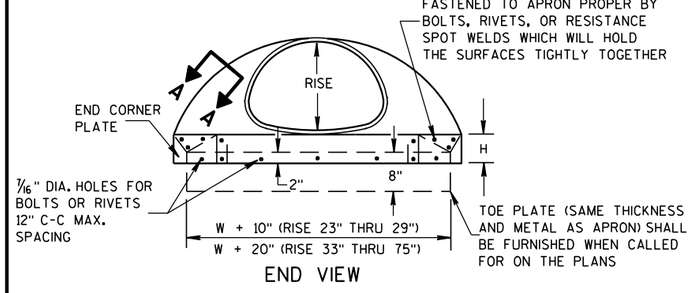


PLAN VIEW

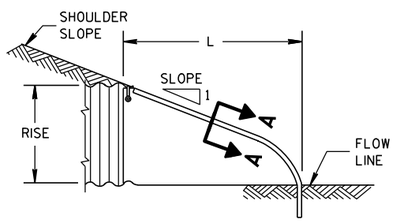
CONCRETE ENDWALLS



PLAN VIEW

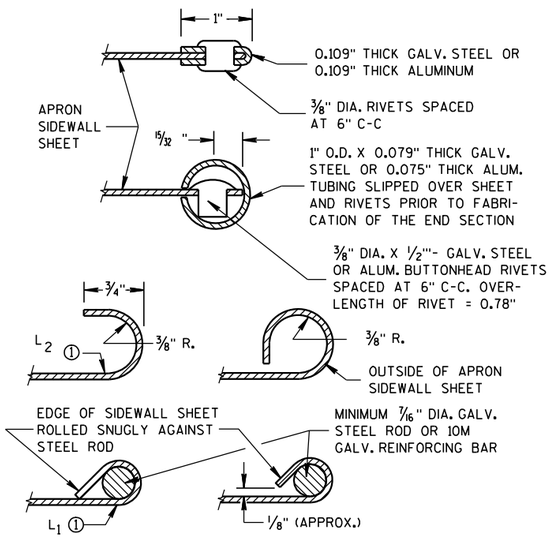


END VIEW



SIDE ELEVATION

METAL ENDWALLS



SECTION A-A

2- 2/3" X 1/2" CORRUGATIONS

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
15	17	13	.064	.060	7	9	6	19	14	16	30	2½ to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19⅜	36	2½ to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21¾	42	2½ to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27½	48	2½ to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37⅝	60	2½ to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45⅜	75	2½ to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54¾	85	2½ to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2½ to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72¾	102	2¼ to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82¼	114	2¼ to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82¼	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1½ to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1½ to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1½ to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1½ to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1½ to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1½ to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

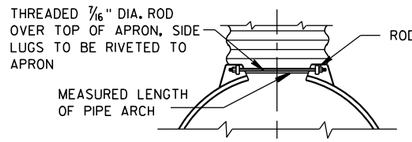
REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	29	18	3	8½	39	33	72	48	3 to 1
30	36	22	3½	9½	50	46	96	60	3 to 1
36	44	27	4	11⅛	60	36	96	72	3 to 1
42	51	31	4½	15 13/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5½	25½	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28½	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

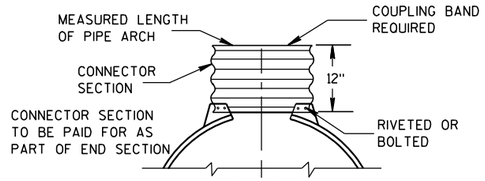
EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	30	19	3¼	8½	39	33	72	48	3 to 1
30	38	24	3¾	9½	54	18	72	60	3 to 1
36	45	29	4½	11⅛	60	24	84	72	2½ to 1
42	53	34	5	15¾	60	36	96	78	2½ to 1
48	60	38	5½	21	60	36	96	84	2½ to 1
54	68	43	6	25½	60	36	96	90	2½ to 1
60	76	48	6½	30	60	36	96	96	2½ to 1

**NOMINAL SIZE



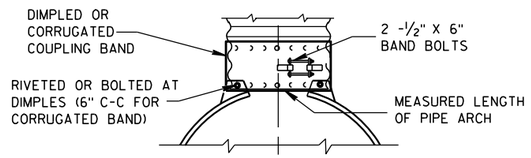
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:

ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94 — DATE

/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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S.D.D. 8 F 2-1

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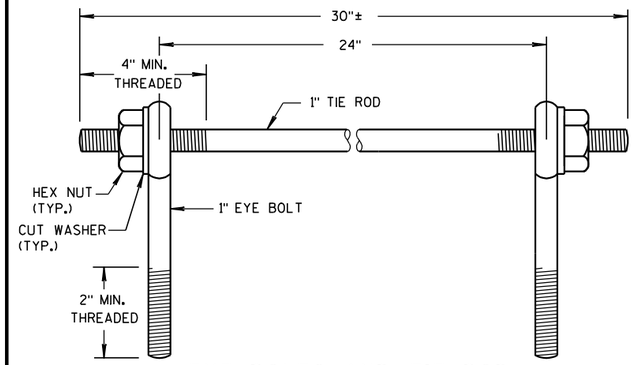
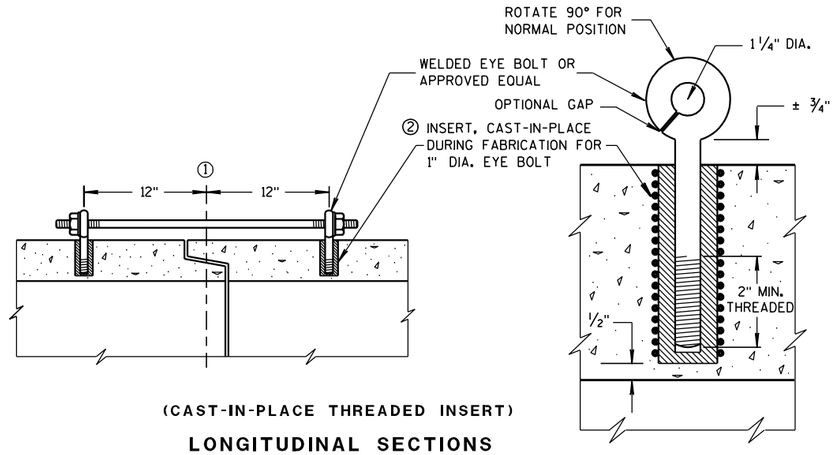
S.D.D. 8 F 2-1



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

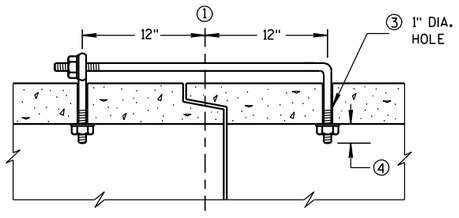
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

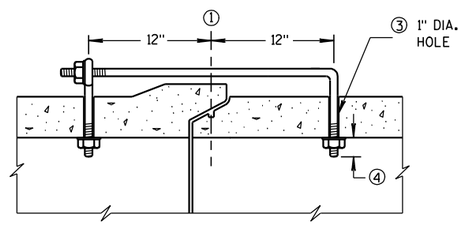
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

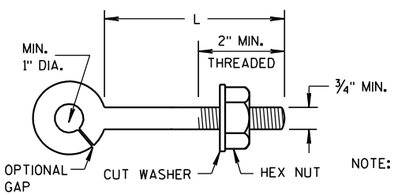


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

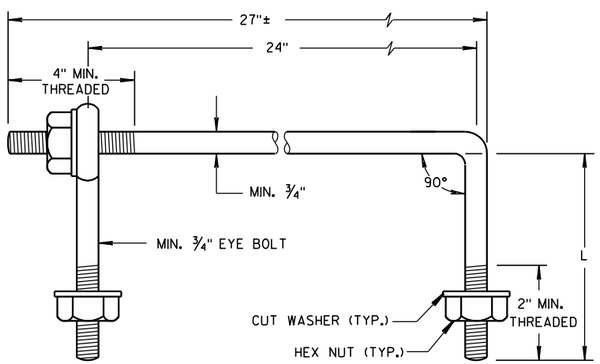
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

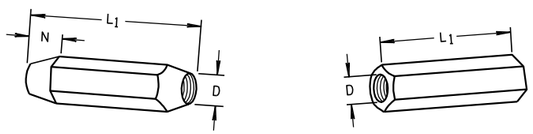
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

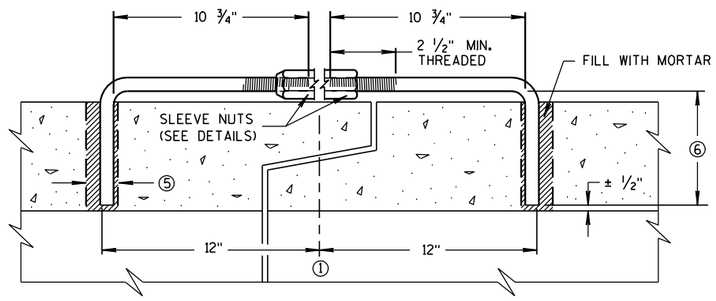
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

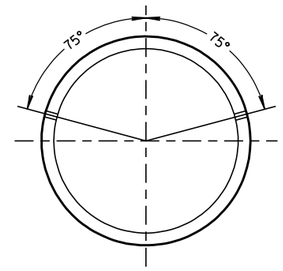
SLEEVE NUTS



LONGITUDINAL SECTION

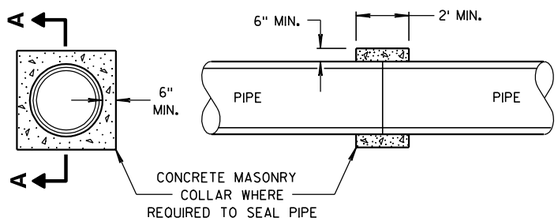
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 8 F 4-7

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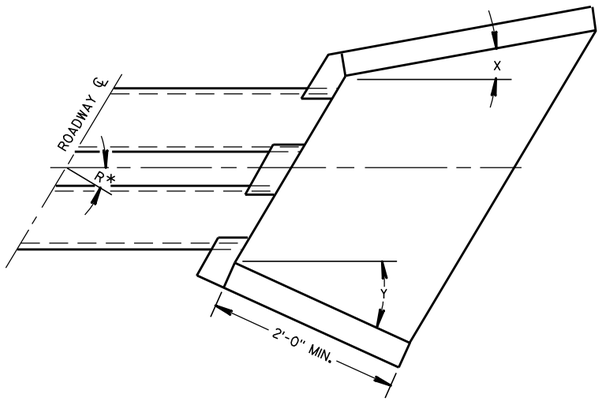
S.D.D. 8 F 4-7



WINGWALL ANGLE DETAILS

INLET			OUTLET		
R*	X	Y	R*	X	Y
0 - 7°	30°	30°	0 - 15°	15°	15°
8 - 22°	25°	"	16 - 45°	10°	"
23 - 37°	20°	"	46 - 75°	5°	"
38 - 52°	15°	"	OVER 75°	0°	"
53 - 67°	10°	"			
68 - 82°	5°	"			
OVER 82°	0°	"			

*R = NUMBER OF DEGREES RIGHT OR LEFT HAND FORWARD

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

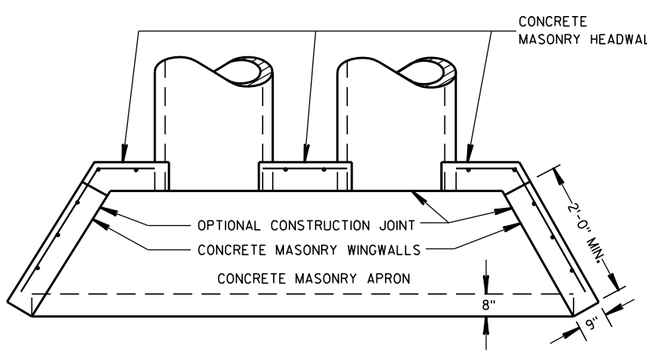
FILL SLOPES FLATTER THAN 2 ½:1 SHALL BE WARPED TO MEET THE TOP OF THE WINGWALLS.

ALL STEEL REINFORCEMENT AND WELDED STEEL WIRE FABRIC SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE NOTED.

(1) MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS SPACED 12" C-C IN BOTH DIRECTIONS.

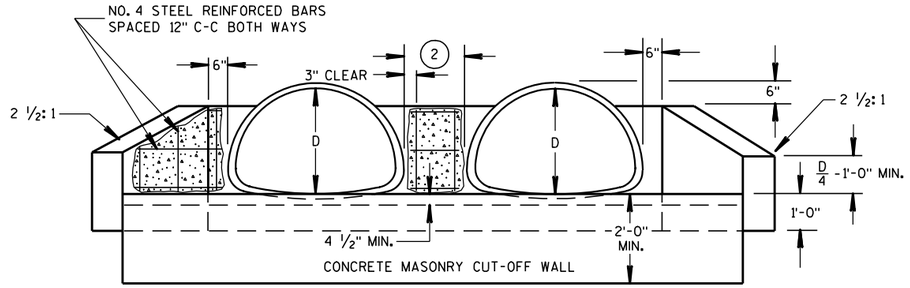
(2) THE SPACE BETWEEN PIPES SHALL BE AS FOLLOWS:

DIAMETER OR SPAN	SPACE
UP TO AND INCLUDING 48"	2'-0"
OVER 48" TO 72"	½ DIA. OR SPAN
OVER 72"	3'-0"



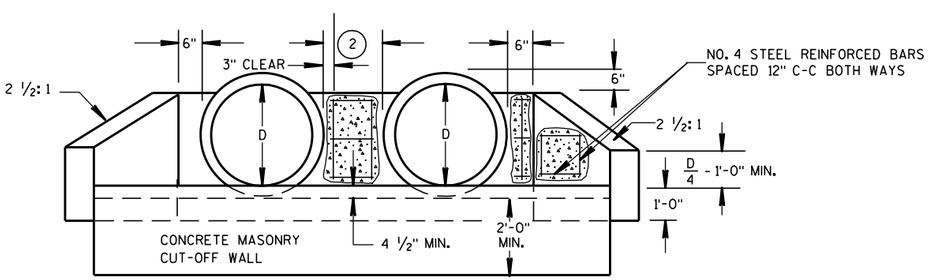
PLAN VIEW

CULVERT PIPE AND PIPE ARCH



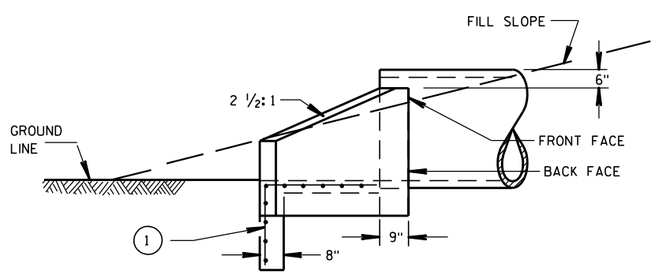
END ELEVATION

PIPE ARCH



END ELEVATION

CULVERT PIPE



SIDE ELEVATION

CULVERT PIPE AND PIPE ARCH

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/14/98 DATE

/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

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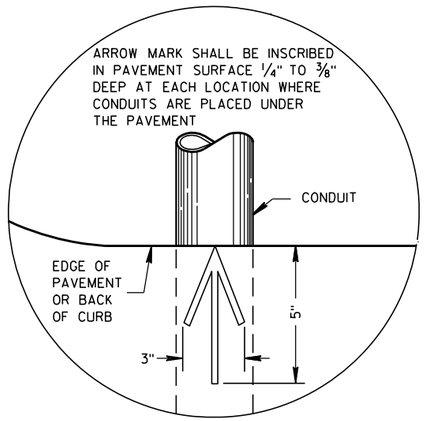
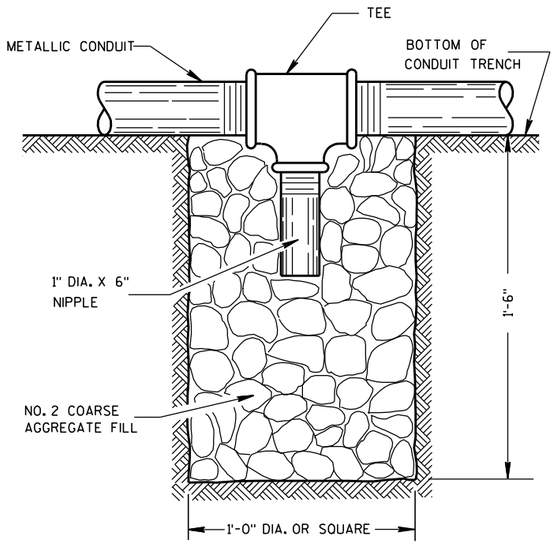
S.D.D. 8 F 10-1



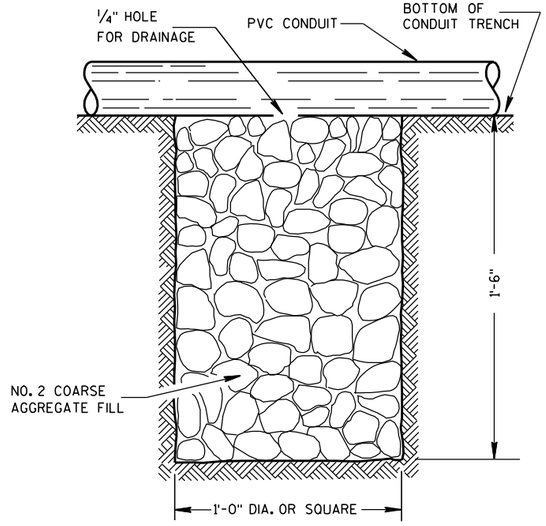
PLAN VIEW

ARROW MARK



NOTE: INSTALL AT LOCATIONS WHERE METALLIC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR METALLIC CONDUIT



NOTE: INSTALL AT LOCATIONS WHERE PVC CONDUITS CANNOT BE PITCHED TO DRAIN INTO A PULL BOX.

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

METALLIC (STANDARD SPECIFICATION 652.2.2) OR NONMETALLIC (STANDARD SPECIFICATION 652.2.3) CONDUIT SHALL BE FURNISHED AND PLACED AS SHOWN.

DEPTH OF CONDUIT INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES MINIMUM AND 36 INCHES MAXIMUM.

DEPTH OF CONDUIT INSTALLED THAT IS NOT BELOW THE TRAVELED WAY SHALL BE 18 INCHES MINIMUM AND 36 INCHES MAXIMUM.

ANY EXCEPTION TO THE MAXIMUM DEPTH SHALL BE ONLY WITH THE WRITTEN APPROVAL OF THE ENGINEER.

THE TRENCH SHALL NOT BE BACKFILLED PRIOR TO INSPECTION OF THE CONDUIT.

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

ALL METALLIC CONDUIT IN WHICH WIRE OR CABLE IS TO BE INSTALLED SHALL BE BUSHED WITH APPROVED THREADED BUSHINGS BEFORE INSTALLATION OF THE WIRE OR CABLE.

ALL METALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT TO BE INSTALLED SHALL BE CAPPED WITH THREADED PROTECTIVE CAPS, AS APPROVED BY THE ENGINEER.

ALL NONMETALLIC CONDUIT SHALL BE CAPPED OR PLUGGED IMMEDIATELY AFTER INSTALLATION AND SHALL REMAIN CAPPED OR PLUGGED UNTIL WIRE/CABLES ARE INSTALLED.

NONMETALLIC CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BENDING OF PVC ELECTRICAL CONDUIT SHALL BE ACCOMPLISHED BY USING A BLANKET OR EMERSION TYPE TANK DESIGNED FOR THE PURPOSE OF BENDING PVC ELECTRICAL CONDUIT.

ALL CUT ENDS SHALL BE TRIMMED INSIDE AND OUTSIDE TO REMOVE ALL ROUGH EDGES ON NONMETALLIC CONDUIT. (SEE NEC 347.5)

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY U.L. LISTED ADAPTER FITTINGS SHALL BE USED.

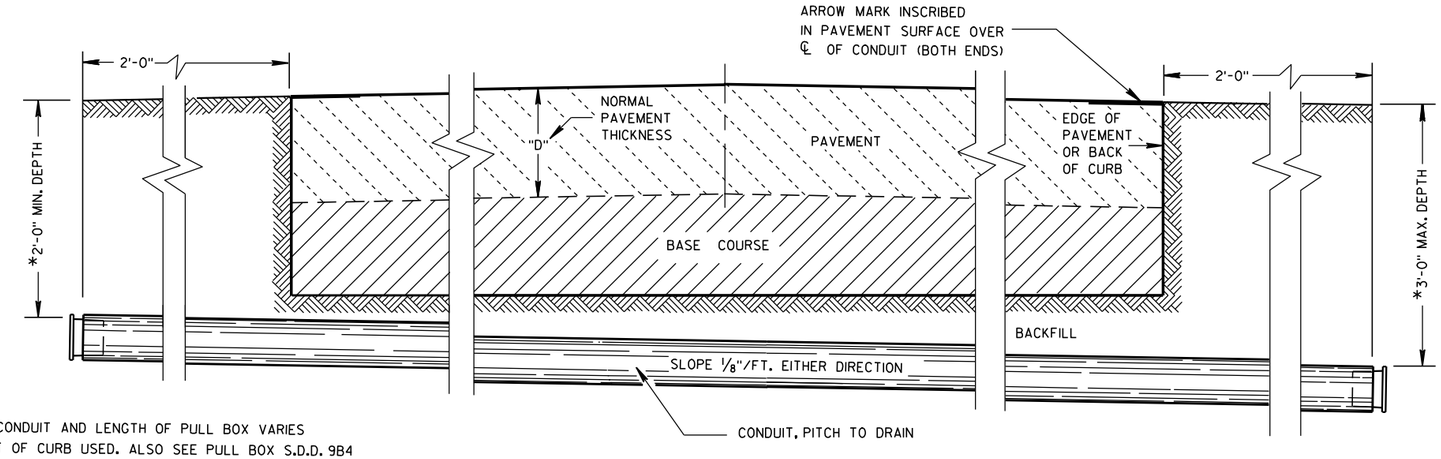
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

ALL CONDUIT BEING FURNISHED AND INSTALLED SHALL HAVE THE U.L. LABEL FIRMLY ATTACHED.

CONDUIT RUNS SHALL BE THE SAME SIZE OF CONDUIT FROM ONE END TO THE OTHER (FROM PULL BOX TO PULL BOX-OR-JUNCTION BOX TO JUNCTION BOX-OR-BASE TO BASE, ETC.).

POLY ROPE OR A PULL WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.



*DEPTH OF CONDUIT AND LENGTH OF PULL BOX VARIES WITH HEIGHT OF CURB USED. ALSO SEE PULL BOX S.D.D. 9B4

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/23/03 — DATE

/S/ Balu Ananthanarayanan — STATE ELECTRICAL ENGI

FHWA

HWYS

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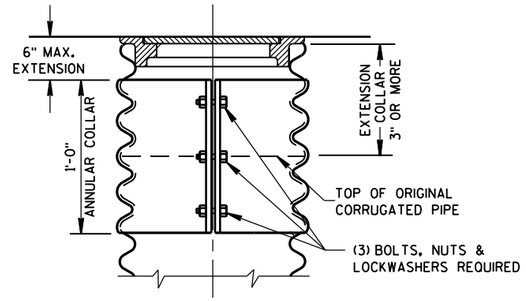
S.D.D. 9 B 2-7

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

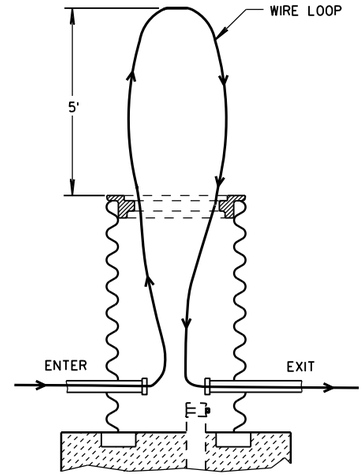
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2	26 1/2	26 1/2	26 1/2
FRAME	F	8 1/2	8 1/2	8 1/2	14 1/2	14 1/2	14 1/2	20 1/2	20 1/2	20 1/2
FRAME	G	11 1/2	11 1/2	11 1/2	17 1/2	17 1/2	17 1/2	23 1/2	23 1/2	23 1/2
WEIGHT IN POUNDS *										
FRAME AND COVER		60	60	60	110	110	110	155	155	155

* THE ACTUAL WEIGHT OF THE MANHOLE FRAME AND COVER MAY VARY WITHIN 5 PERCENT PLUS OR MINUS OF THE WEIGHTS SHOWN.

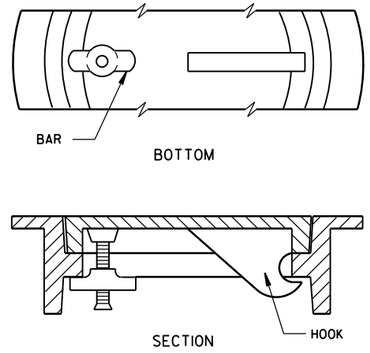
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

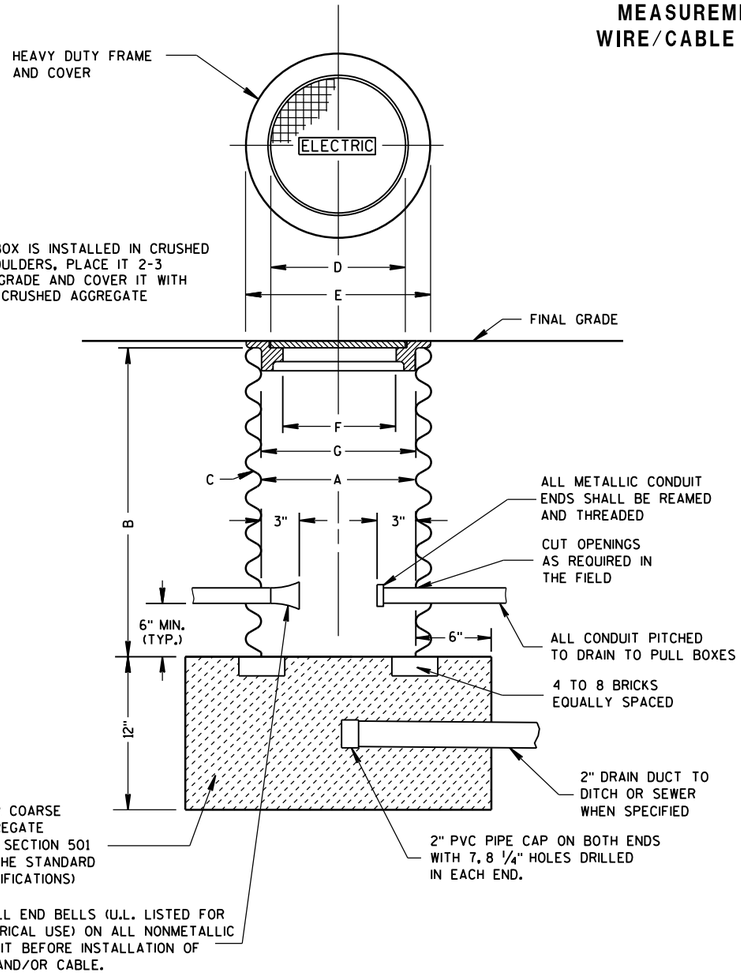


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



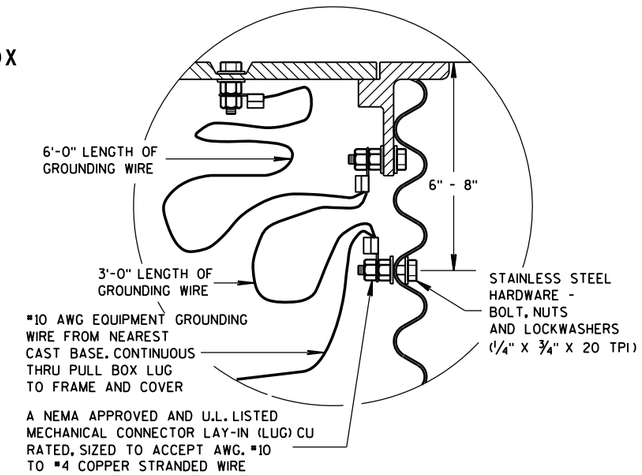
ALTERNATE COVER (LOCKING)

TIGHTENING BAR TYPE

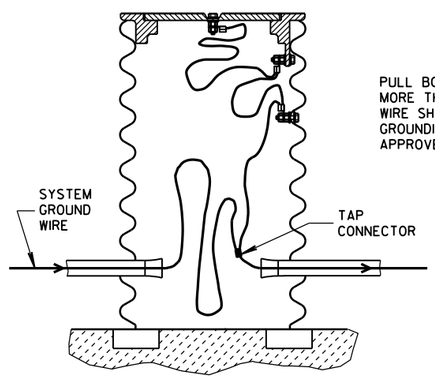


WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE

PULL BOX



EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES



PULL BOX TO NEAREST BASE DISTANCE MORE THAN 20 FEET. PULL BOX GROUND WIRE SHALL CONNECT AT SYSTEM GROUNDING WIRE. USE DEPARTMENT APPROVED TAP CONNECTOR.

EQUIPMENT GROUNDING LUG AND LOCATION IN STEEL PULL BOXES

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

ALL FRAMES AND COVERS SHALL BE HEAVY DUTY TYPE, SUITABLE FOR VEHICULAR TRAFFIC LOADS.

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

THE CONTRACTOR SHALL NOT INSTALL WIRE IN ANY PULL BOX UNTIL ITS INSTALLATION HAS BEEN INSPECTED AND ACCEPTED BY THE ENGINEER.

GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

GROUNDING LUGS ARE NOT REQUIRED IN PULL BOXES WHEN VOLTAGES OF LESS THAN 50 VOLTS AC ARE THE ONLY VOLTAGES ENCOUNTERED IN THE BOXES.

ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

S.D.D. 9B2, "CONDUIT", APPLIES TO THIS DRAWING.

WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.

PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
2-7-2013 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL
FHWA	

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S.D.D. 9 B 4-10

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

TOP SURFACES OF CONCRETE BASES SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

CONDUIT SIZES AND LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

THE FINAL OR TERMINATING CONCRETE BASE IN A CONDUIT RUN SHALL HAVE A 6" EXIT STUB INSTALLED FOR FUTURE CABLING USE. THE EXIT STUB SHALL BE SIZED AS USED THROUGHOUT THE CONDUIT RUN AS SHOWN AT THE ENTRANCE OF THE BASE.

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6 X THE DIAMETER.

CONDUIT HEIGHT ABOVE CONCRETE BASES SHALL BE 1 INCH. ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF CONCRETE BASES BEFORE INSTALLATION OF CABLE OR WIRE.

ENDS OF CONDUIT INSTALLED BELOW GRADE FOR FUTURE USE SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC.

WHEN REQUIRED TO CONNECT NONMETALLIC CONDUIT TO METALLIC CONDUIT, ONLY ADAPTER FITTINGS, U.L. LISTED FOR ELECTRICAL USE, SHALL BE USED.

IF A BASE REQUIRES A DEEP FORM BECAUSE OF LOOSE DIRT OR FILL, THE FORM SHALL BE REMOVED BEFORE BACKFILLING AROUND THE BASE. BACKFILL SHALL BE TAMPED TIGHT AGAINST THE BARE CONCRETE BASE IN LAYERS OF 1 FOOT OR LESS.

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD).

THE EQUIPMENT GROUNDING CONDUCTOR SHALL ENTER THE BASE THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

ANCHOR RODS SHALL BE 1" X 60".

ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD. ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS.

WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

WELDING OF THE ANCHOR RODS TO THE CAGE IS UNACCEPTABLE. TIE WIRES SHALL BE USED.

ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

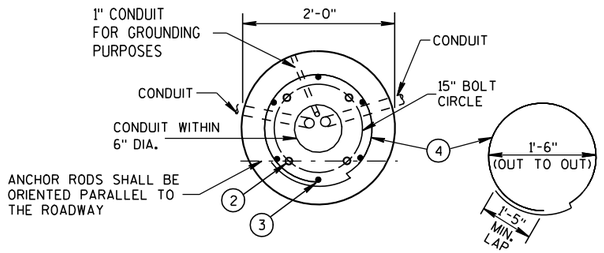
BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

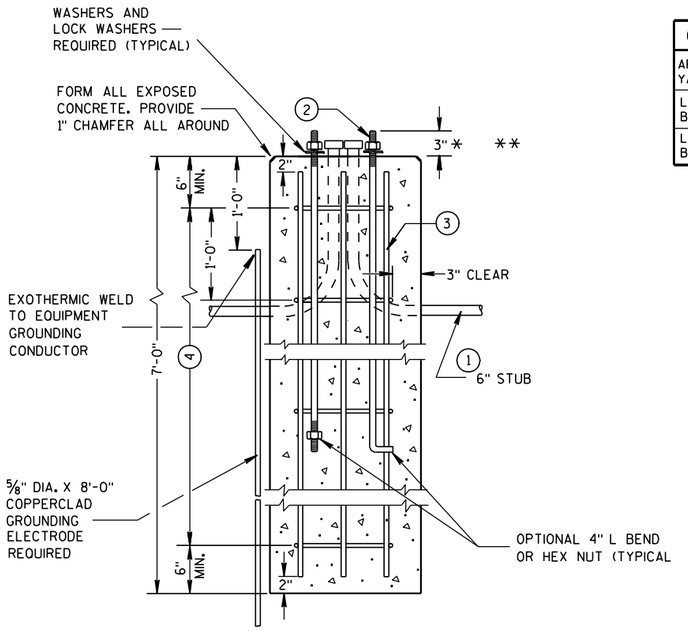
(1) THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL BY THE ENGINEER.

(2) (4) 1" DIA. X 5'-0" ANCHOR RODS

(3) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

(4) (7) NO. 4 X 6'-2" BAR STEEL REINFORCEMENT @ 1'-0" C-C.



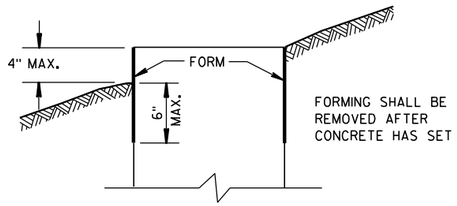


CONCRETE BASE, TYPE 7 (FOR 40' LIGHT POLES)

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2¾" OR LONGER THAN 3¼" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

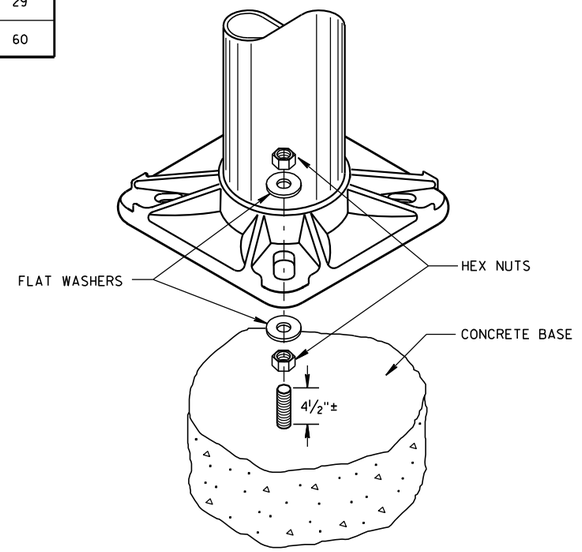
** FOR NONBREAKAWAY INSTALLATIONS, 4½" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

FORM DEPTH SHALL BE NO MORE THAN 6" BELOW GRADE ON THE LOWER SIDE OF BASE



FORMING DETAIL

QUANTITY REQUIREMENTS	
APPROX. CUBIC YARDS OF CONCRETE	0.8
LBS. OF HOOP BAR STEEL	29
LBS. OF VERTICAL BAR STEEL	60



NON-BREAKAWAY INSTALLATION (LEVELING NUT)

CONCRETE BASE, TYPE 7

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10 DATE

/S/ Joanna L. Rich
STATE ELECTRICAL ENGI

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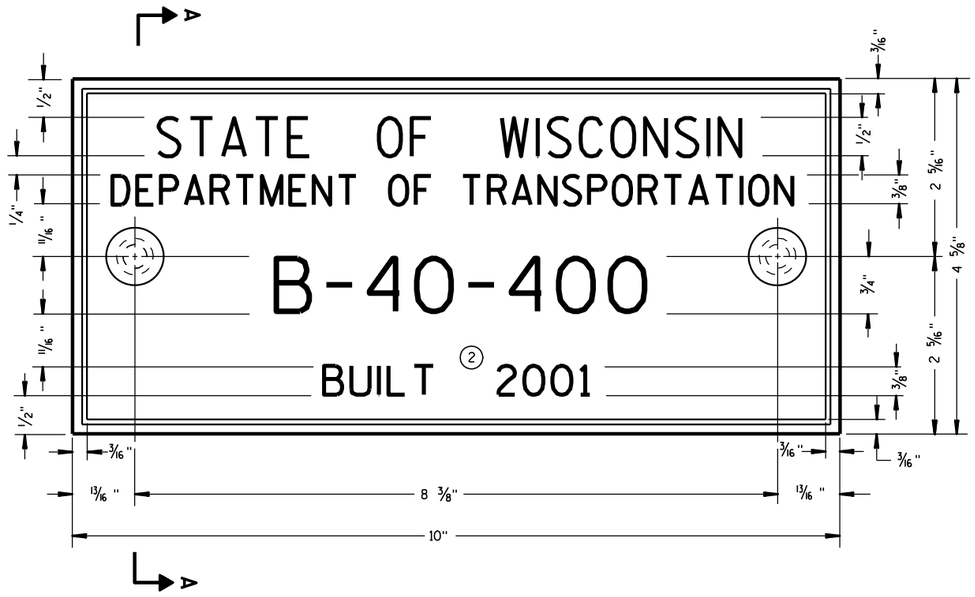
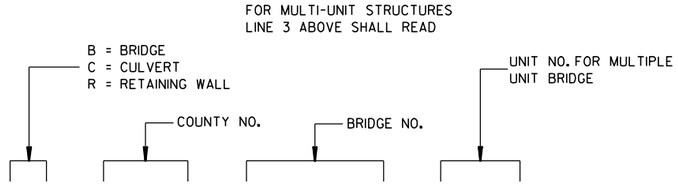


TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



NUMBERING DESIGNATION MULTI-UNIT STRUCTURES

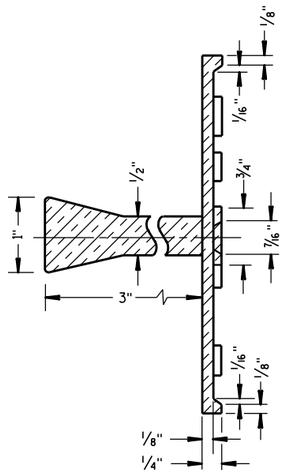
GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

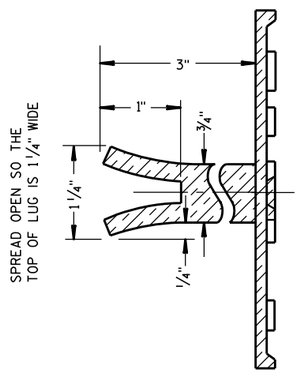
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

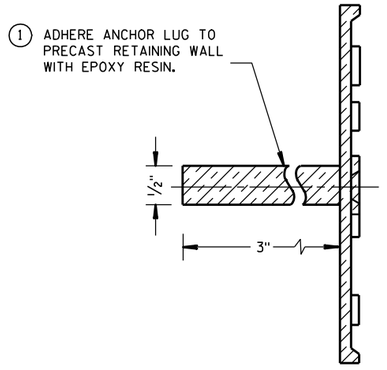
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOPMENT ENGINEER

FHWA

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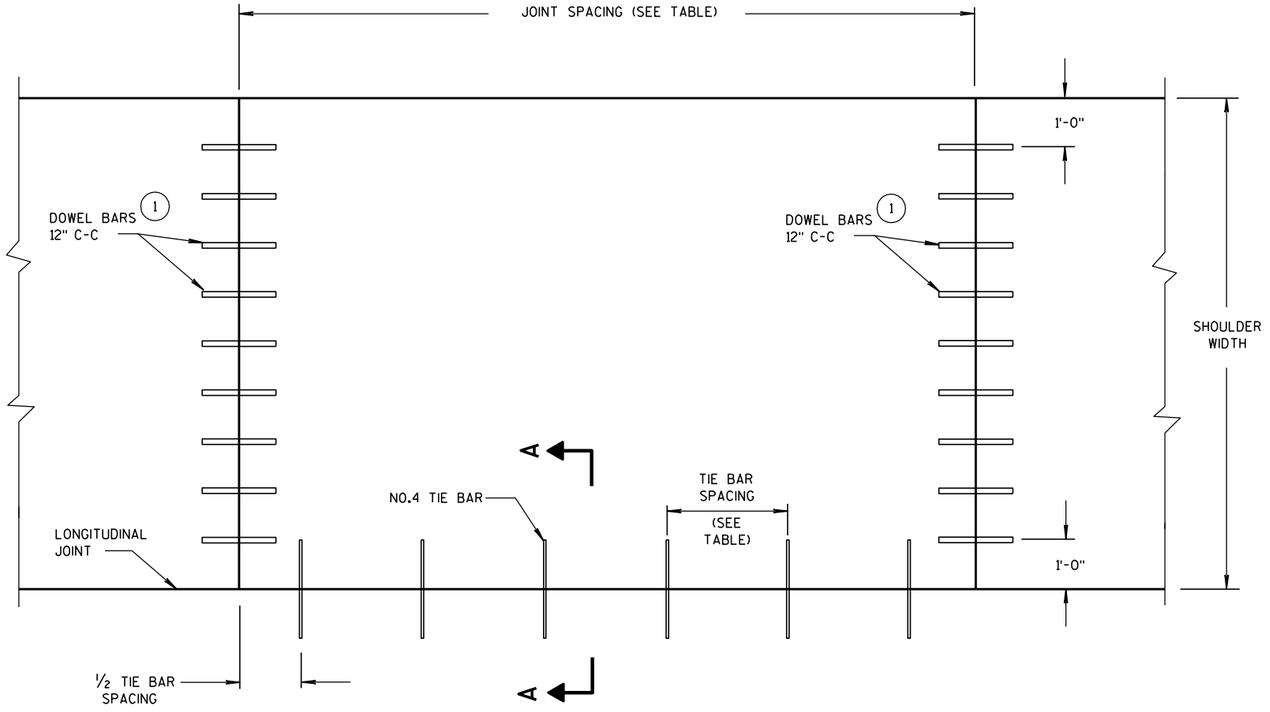


PLAN VIEW

CONCRETE PAVEMENT SHOULDER

PAVEMENT TYPE OF TRAFFIC LANES	TIE BAR SPACING	SHOULDER JOINT SPACING
NON-REINFORCED	30"	MATCH JOINT SPACING OF ADJACENT TRAFFIC LANE
CONTINUOUSLY REINFORCED	30"	15' FOR 6' TO 10' WIDE SHOULDERS
CONTINUOUSLY REINFORCED	36"	12' FOR 3' WIDE SHOULDERS

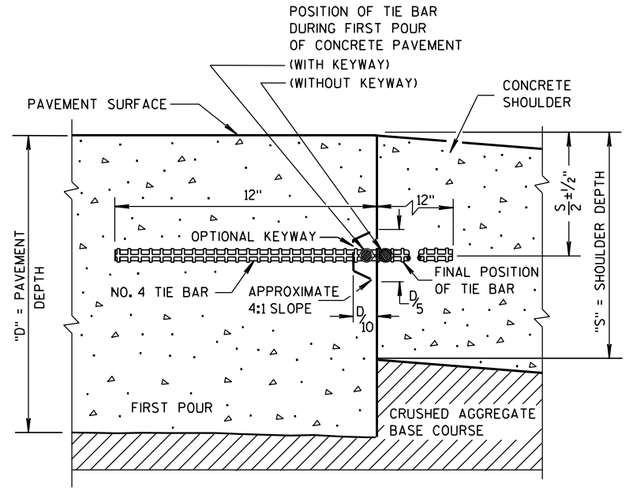
GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT

(1)

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/15/2011 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & D — INEER
FHWA

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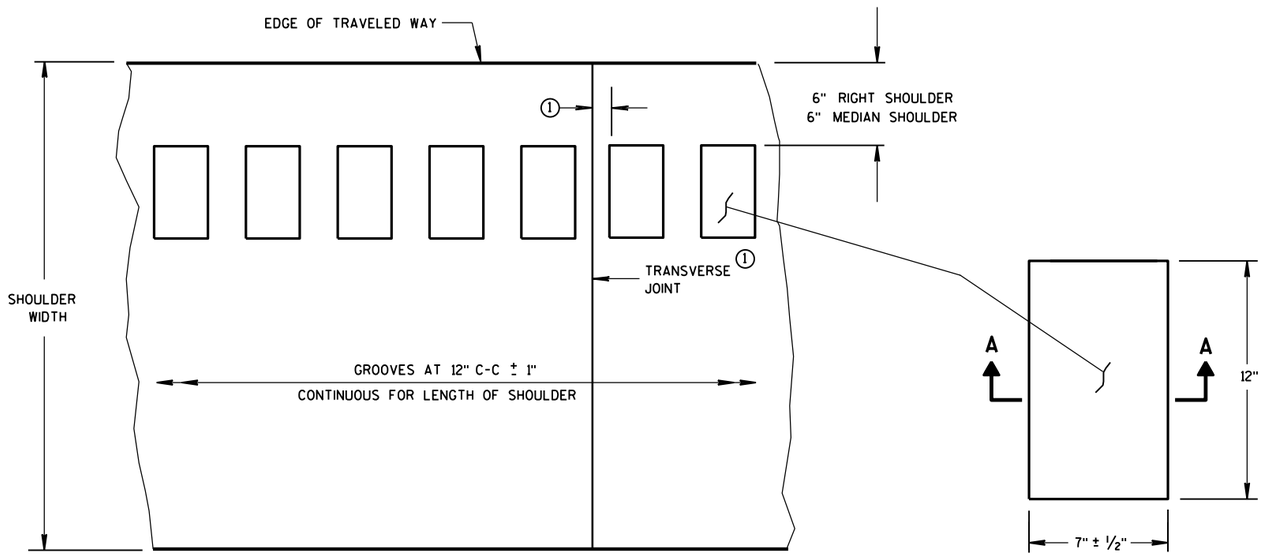
S.D.D. 13 A 3-5



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

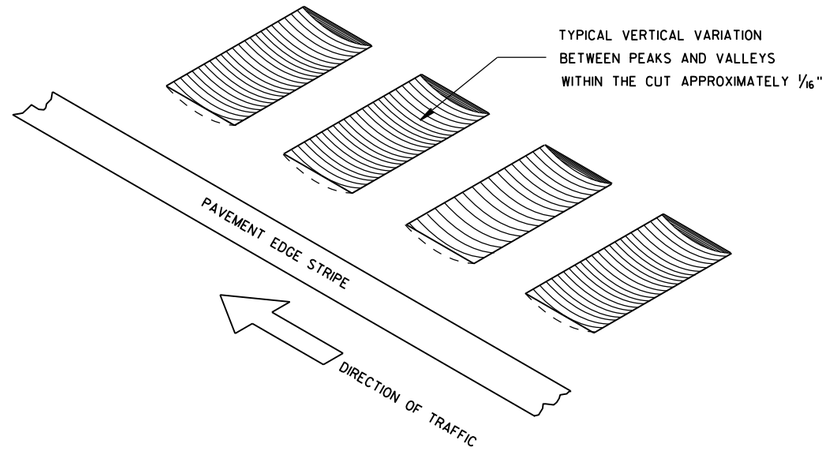
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



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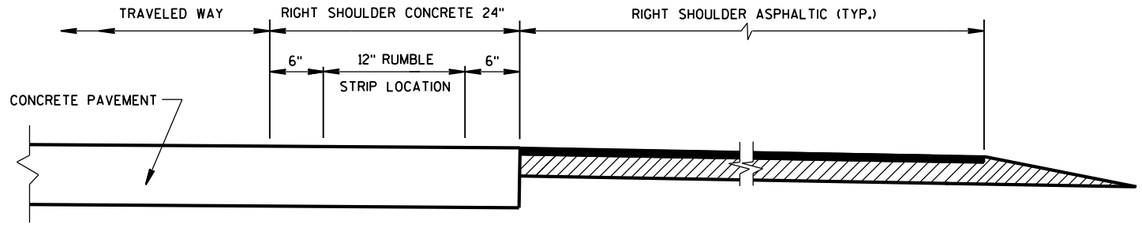
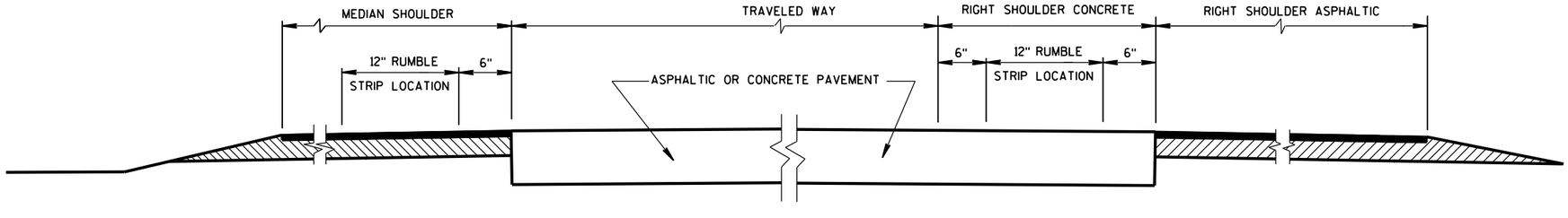


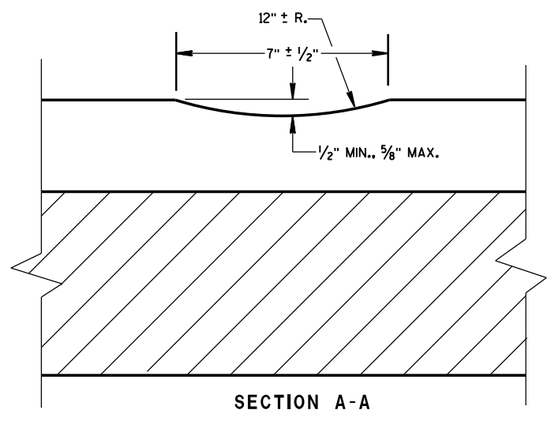
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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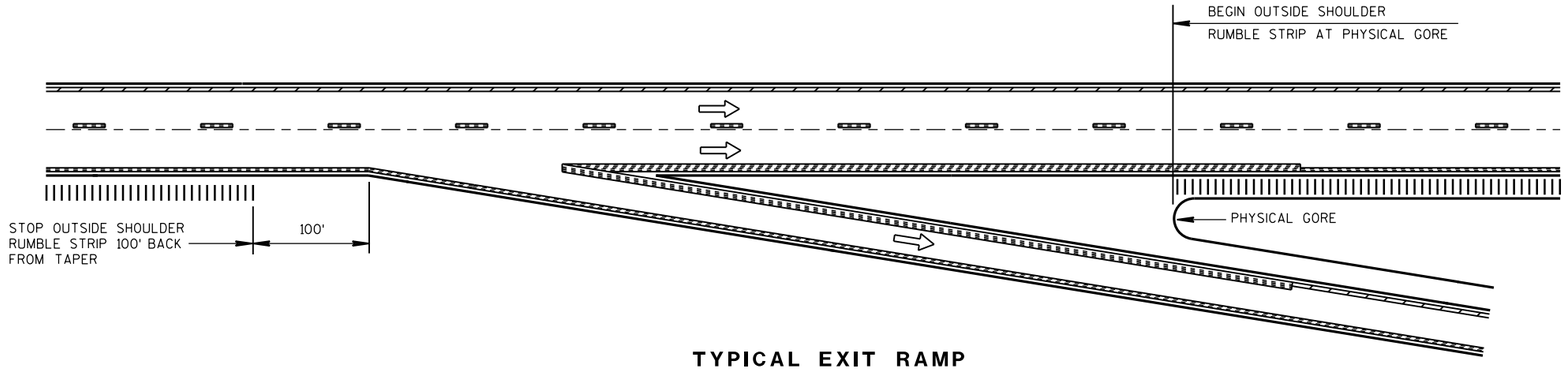
S.D.D. 13 A 5-5a



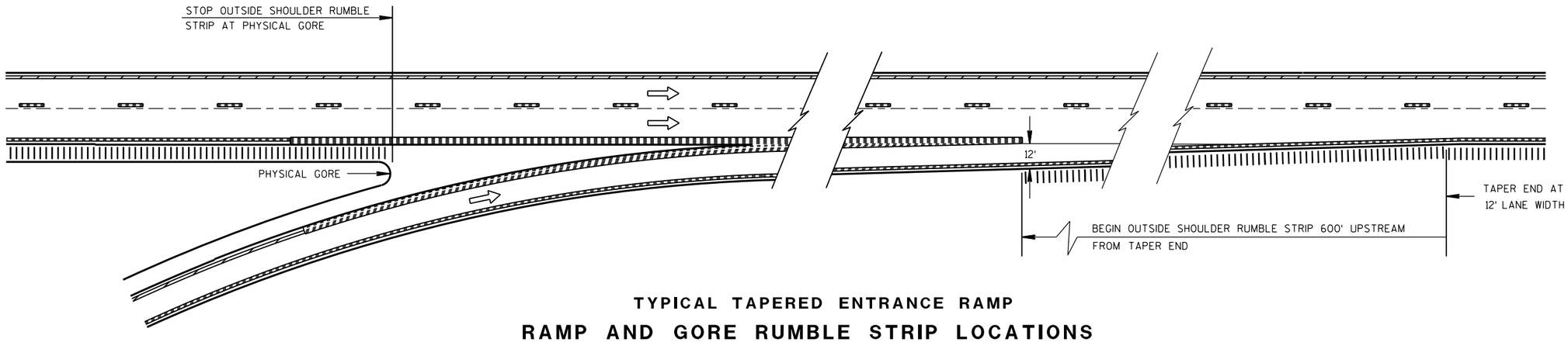
TYPICAL EXIT RAMP

NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

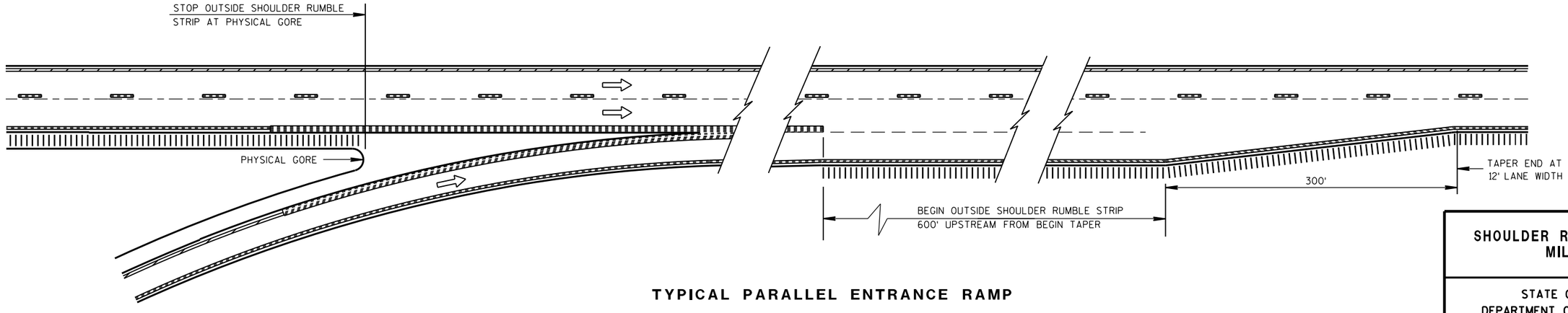
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

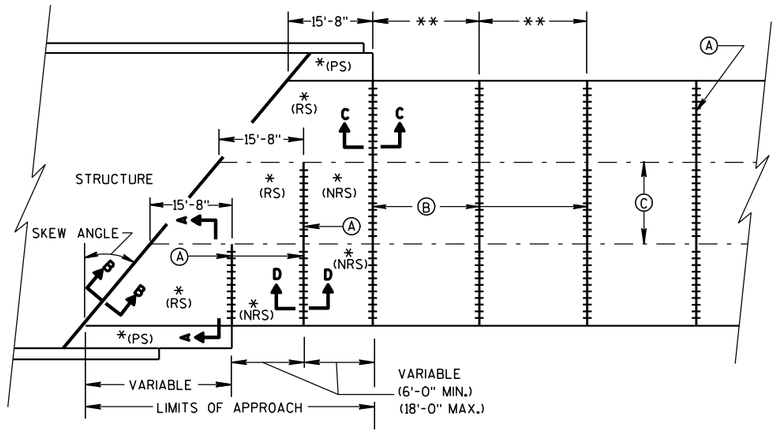
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

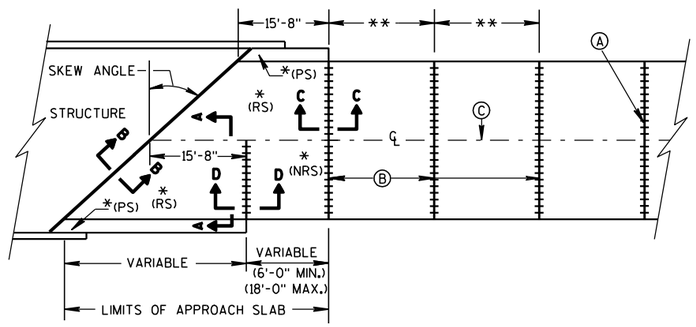
APPROVED
12/17/2012 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS ENGINEER
FHWA

6

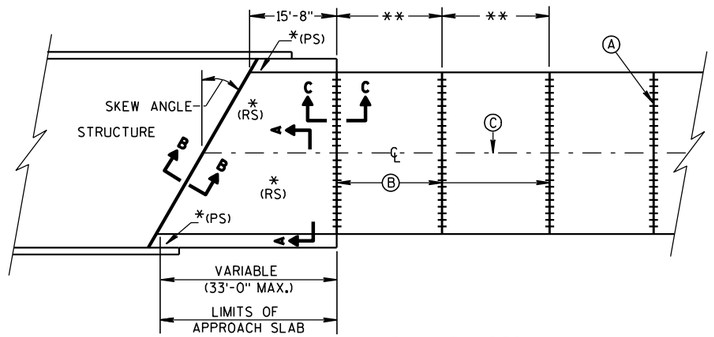
S.D.D. 13 A 5-5b



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



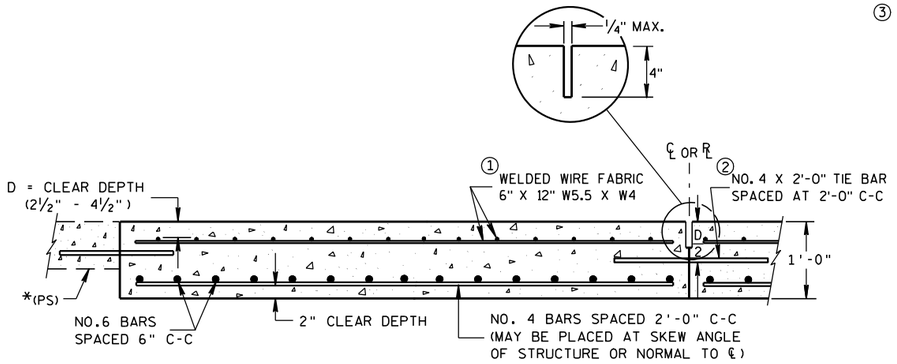
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

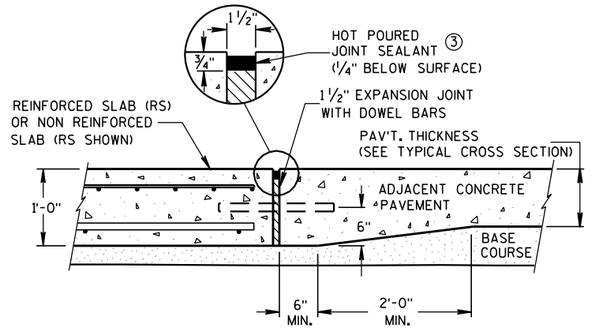
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING
(SEE SDD 13C4, SDD 13C11, & SDD 13C13)

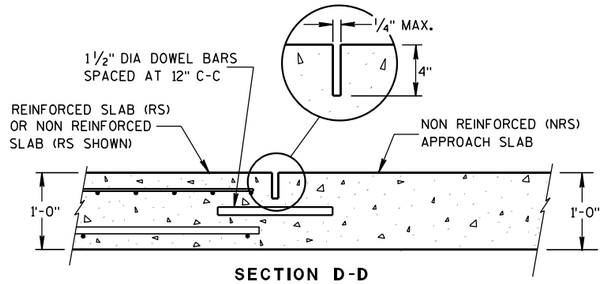
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
Ⓑ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
Ⓒ STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

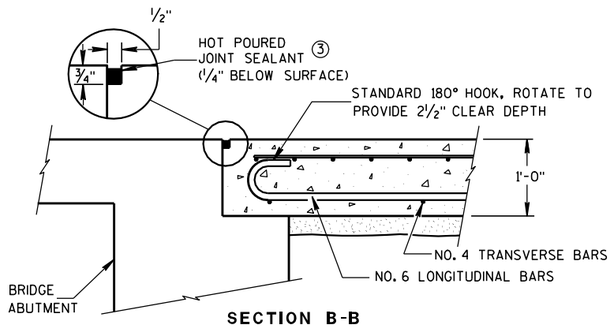
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

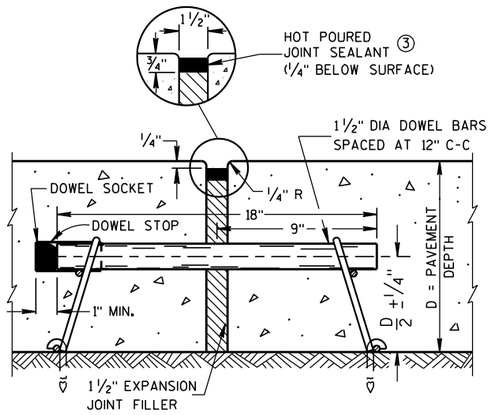
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

② THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

③ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



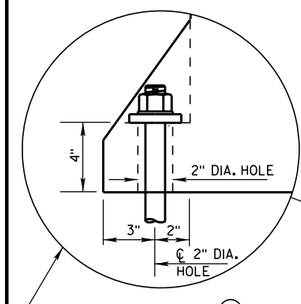
EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

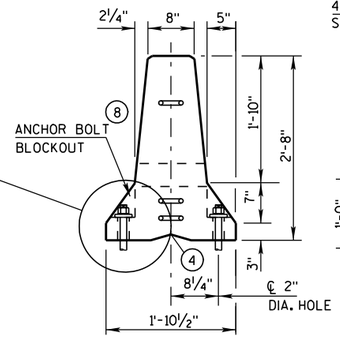
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE ... NEER
FHWA

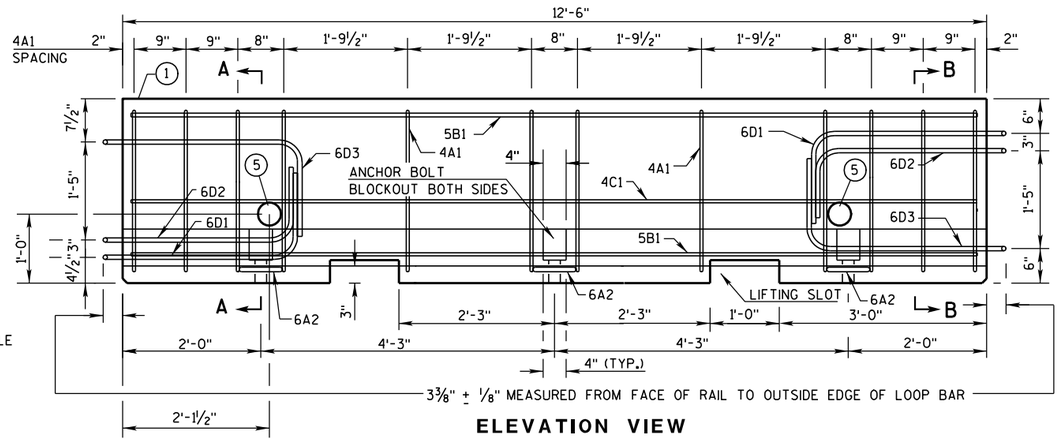
6
S.D.D. 13 B 2-6



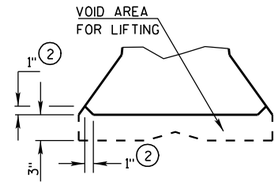
ANCHOR ON TRAFFIC SIDE (8) ONLY WHEN REQUIRED (SEE SHEET D FOR ADDITIONAL ANCHOR DETAIL)



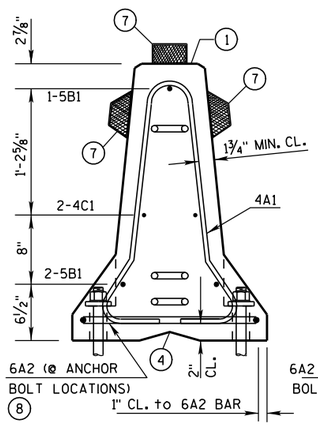
END VIEW



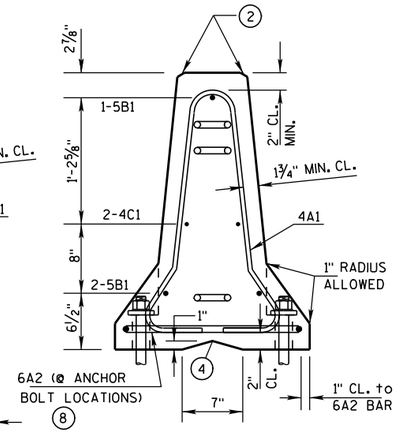
ELEVATION VIEW



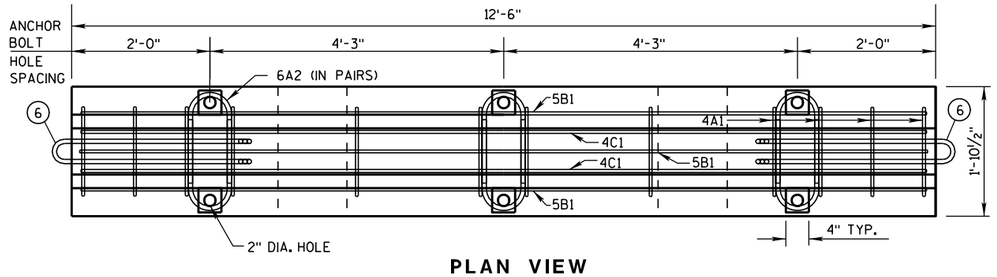
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

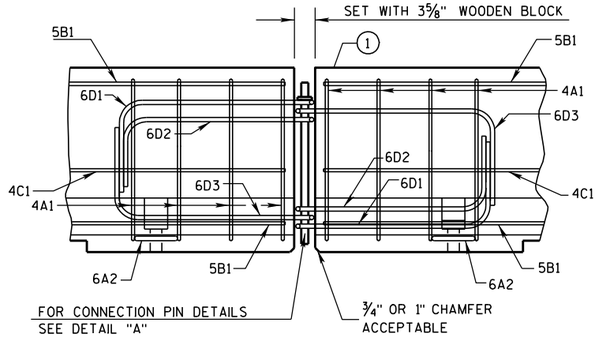


SECTION B-B
(STIRRUP PLACEMENT)

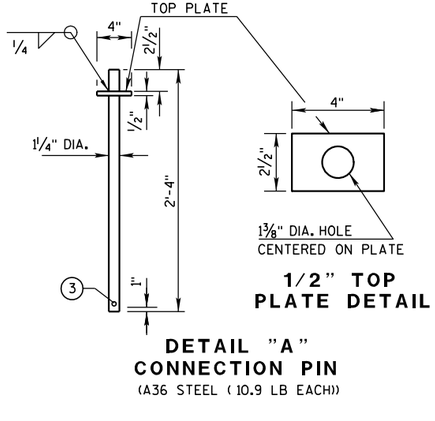


PLAN VIEW

DETAILS OF BARRIER SECTION

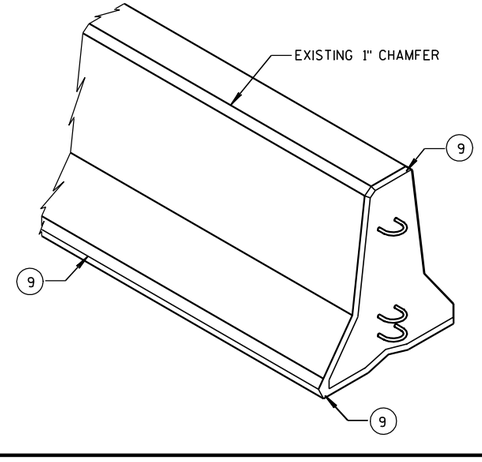


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-13(a) THRU 14B7-13(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR EPOXY ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
- a. TYPE: WICBTP
- b. MANUFACTURER
- c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

(6) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

(8) SEE SHEET D FOR ANCHORING CRITERIA.

(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO.....

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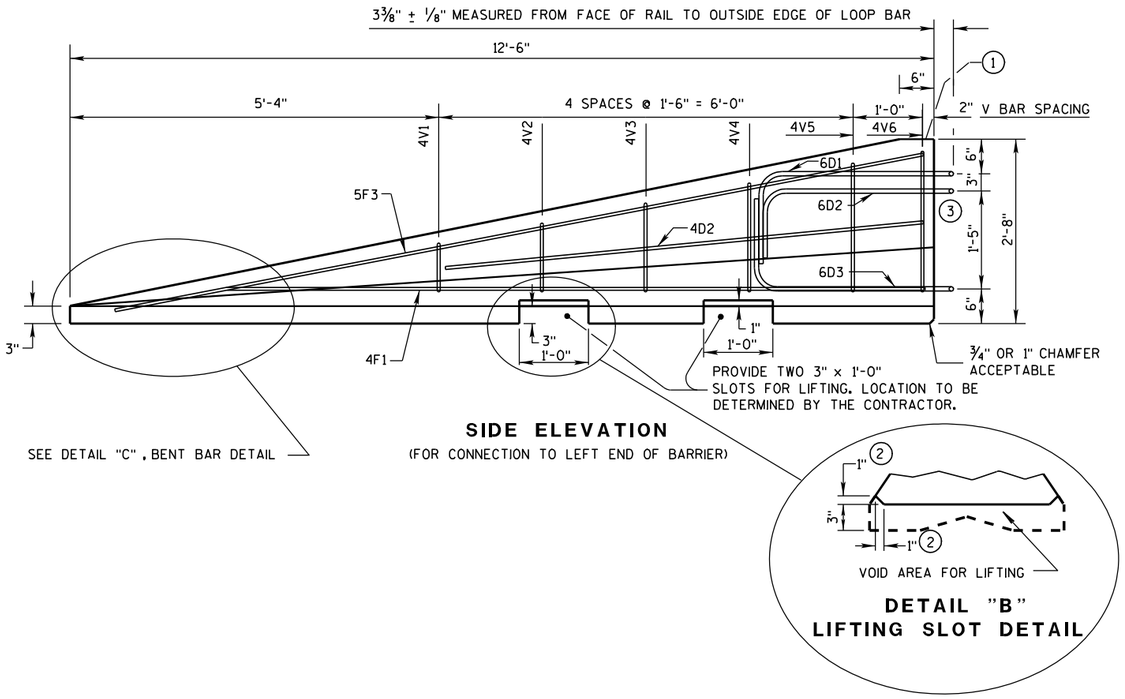
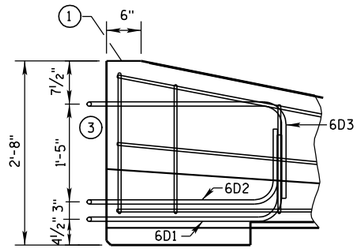
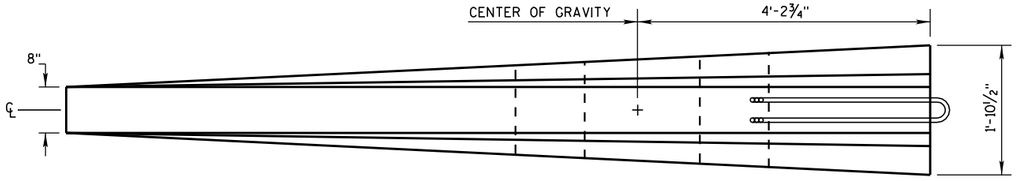
S.D.D. 14 B 7-13a

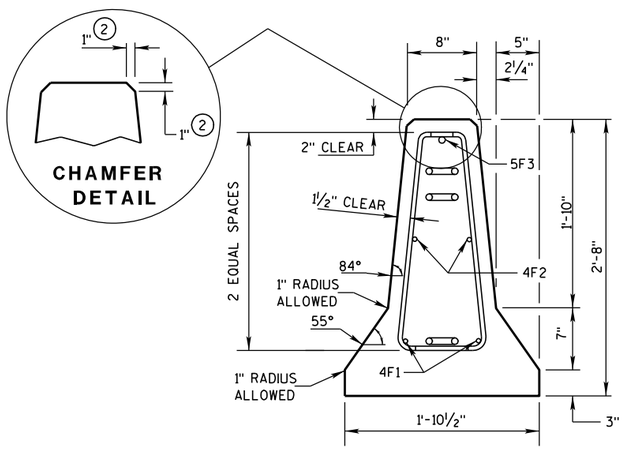


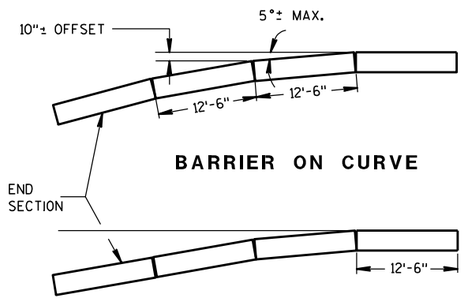


GENERAL NOTES

1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.







POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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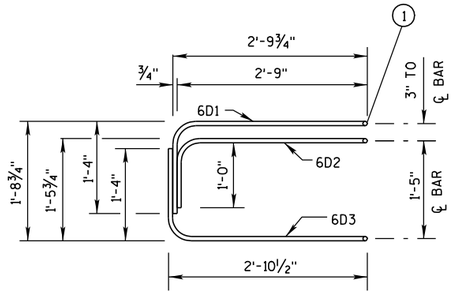
S.D.D. 14 B 7-13b

BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY

DETAIL "C"
BENT BAR DETAIL

BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

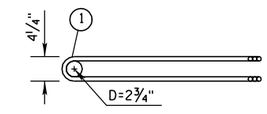
GENERAL NOTES

(1) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

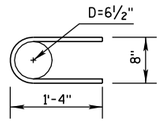
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

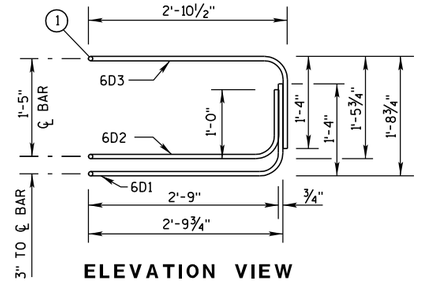
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



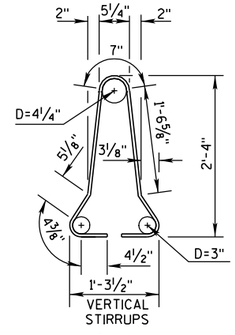
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



ELEVATION VIEW



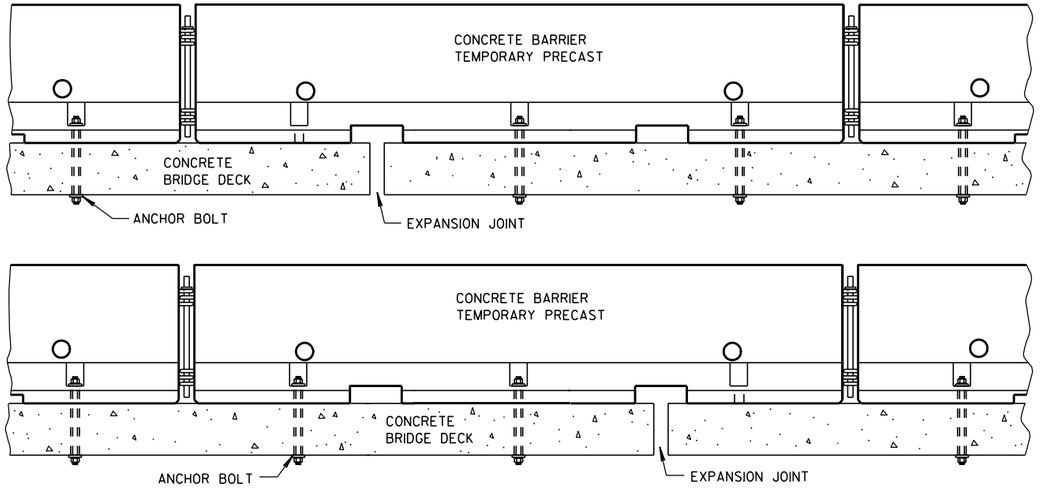
4A1

BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

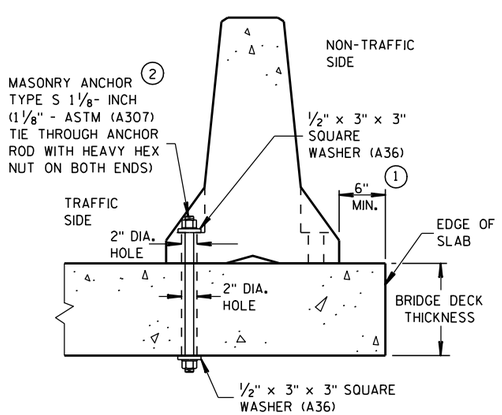
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 7-13c



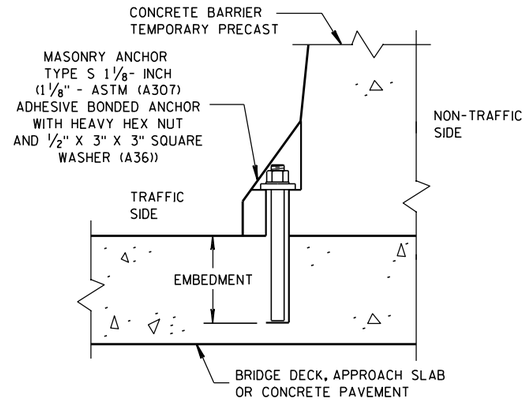
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

2

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

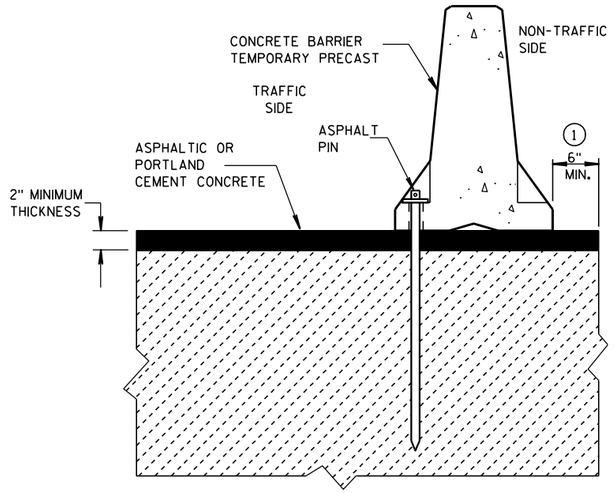
1. CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT. IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

2. ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

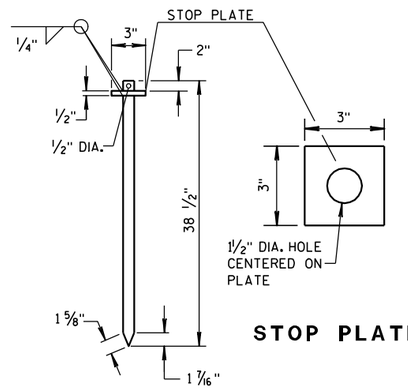
   WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

   UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALLANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR EPOXY MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

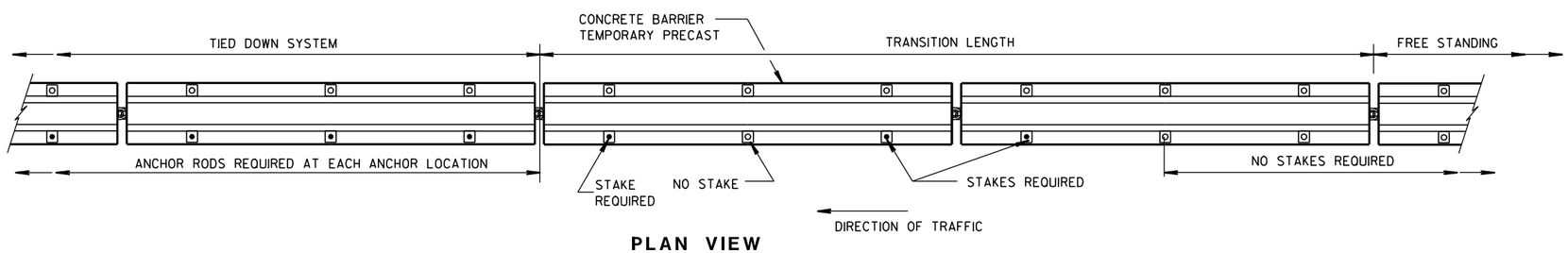
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

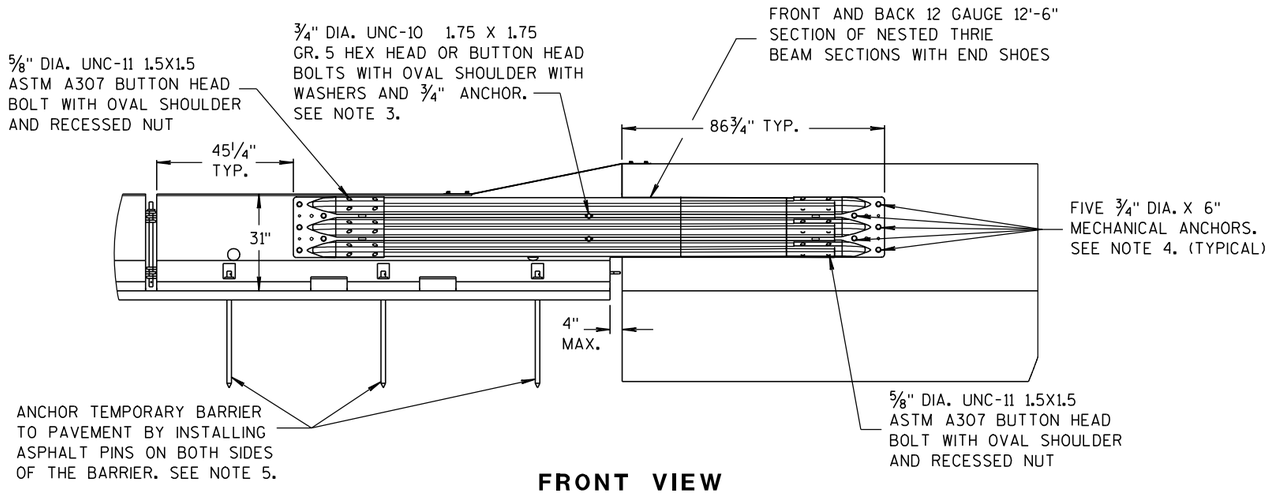
FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

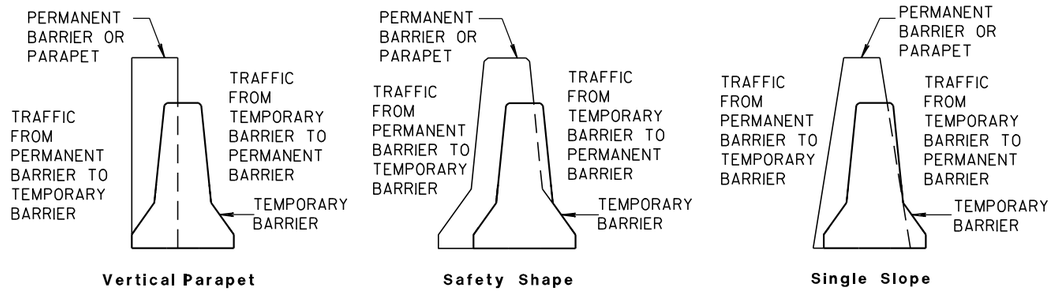
6
S.D.D. 14 B 7-13d



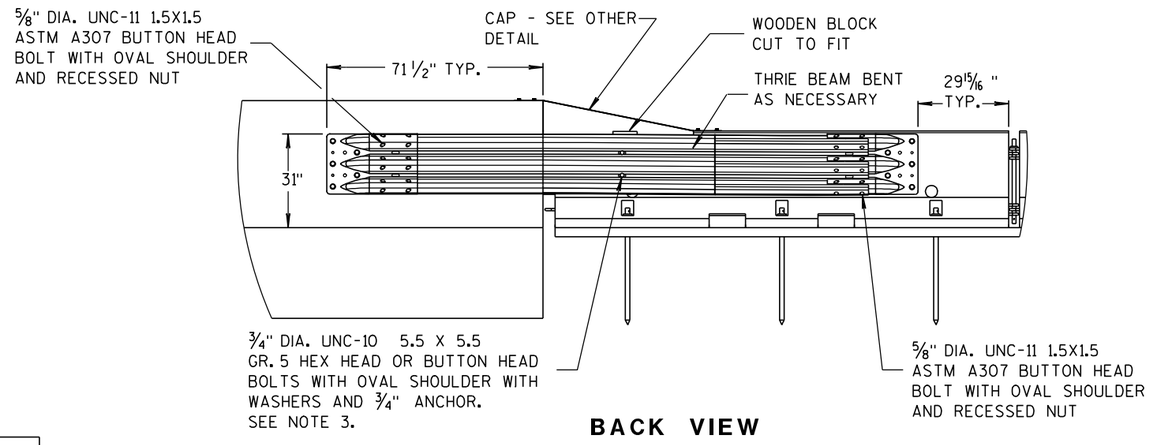
FRONT VIEW

NOTES

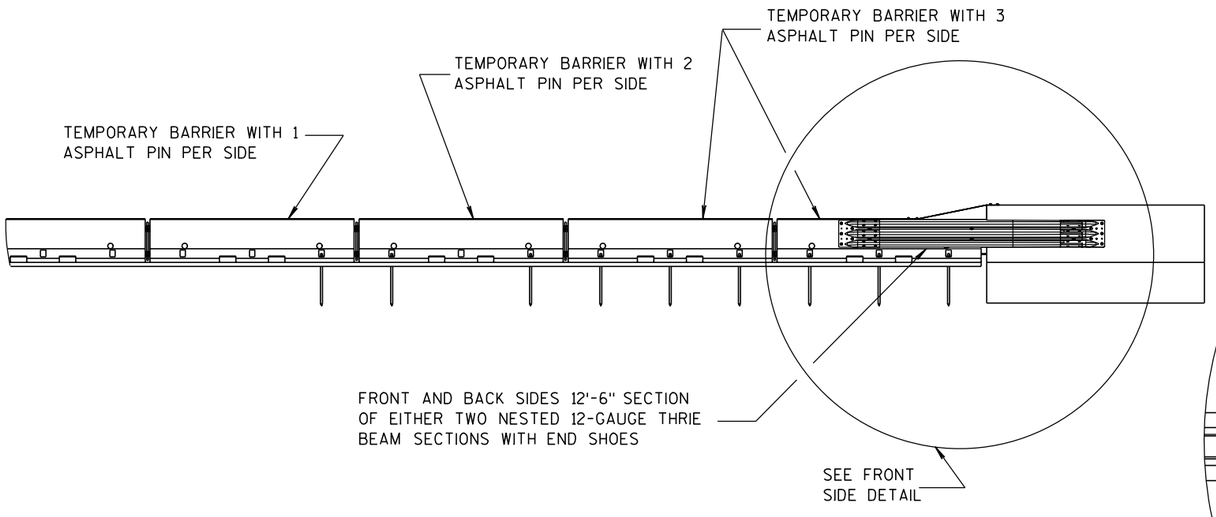
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



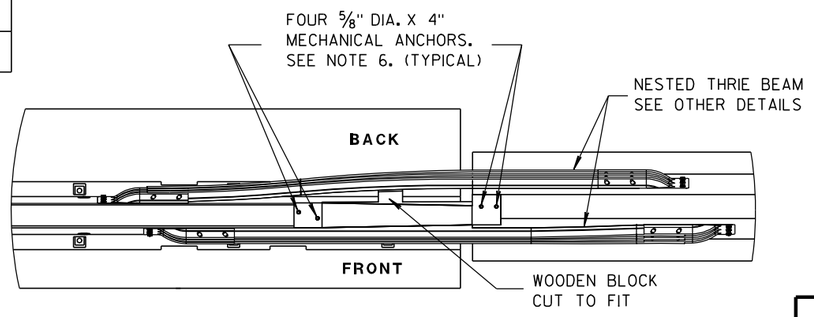
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



BACK VIEW



FRONT VIEW



PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 7-13e

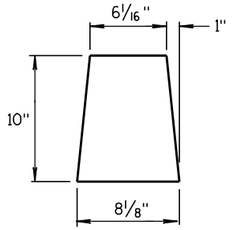
GUSSET 1

GUSSET 2

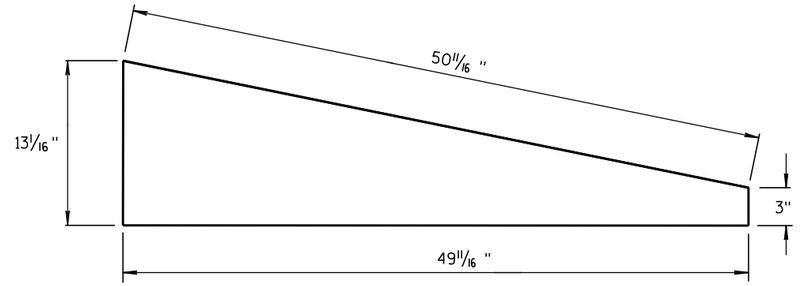
GUSSET 3

GUSSET 4

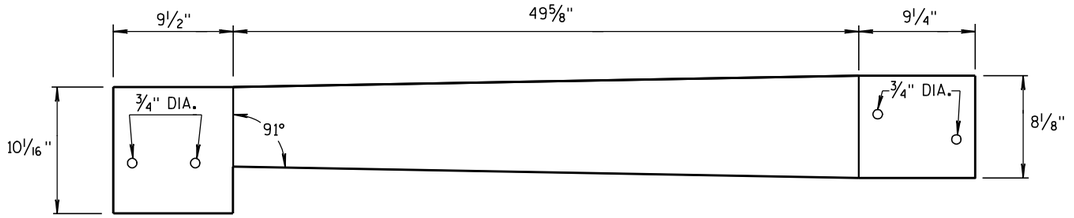
GUSSETS

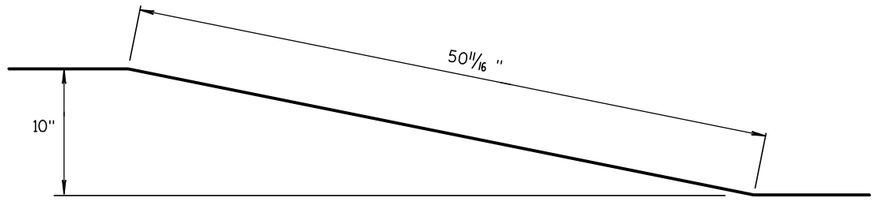


END PLATE

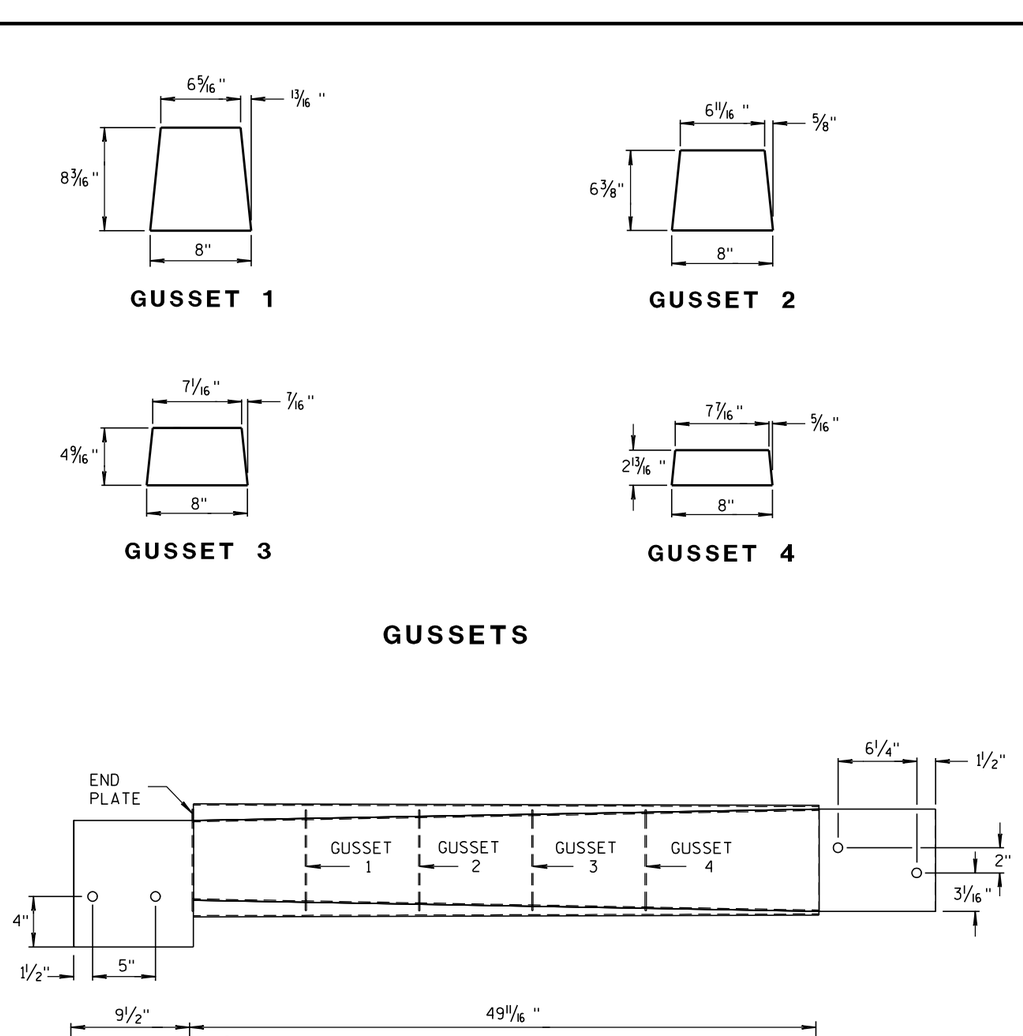


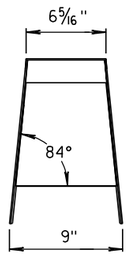
SIDE PLATE





TOP PLATE





SECTION C-C

SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

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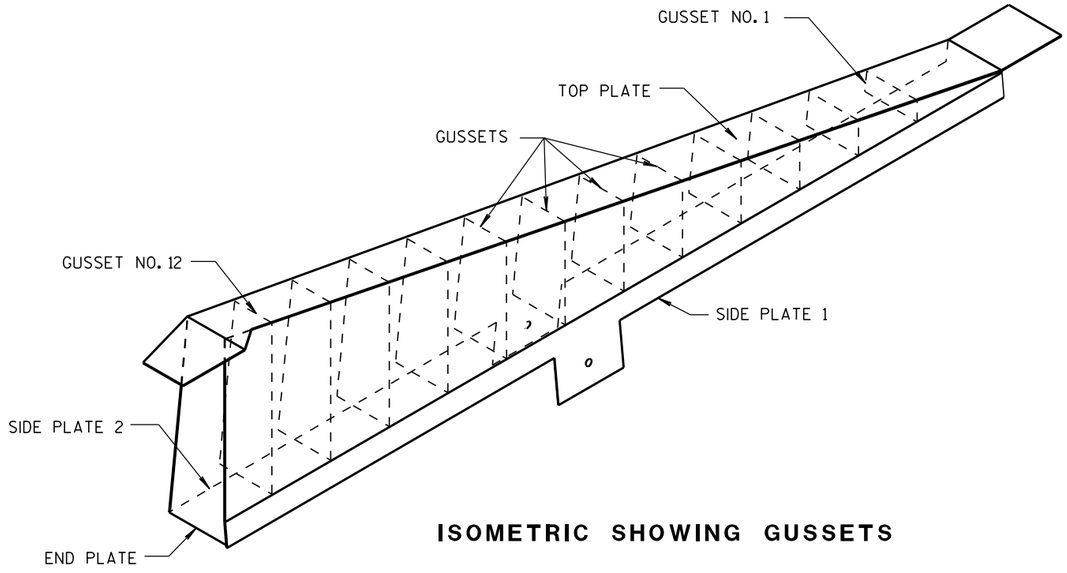
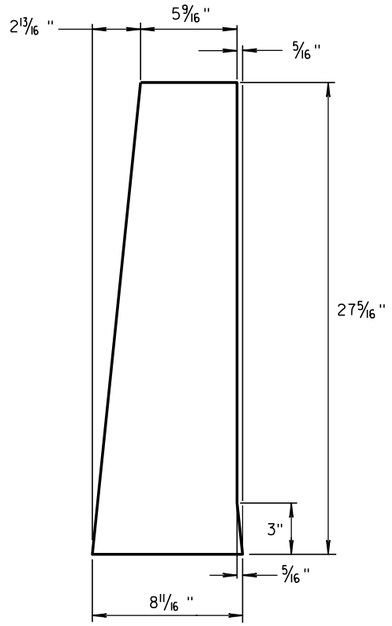
S.D.D. 14 B 7-13f

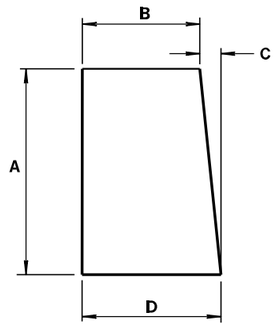


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



GUSSETS 1 - 12

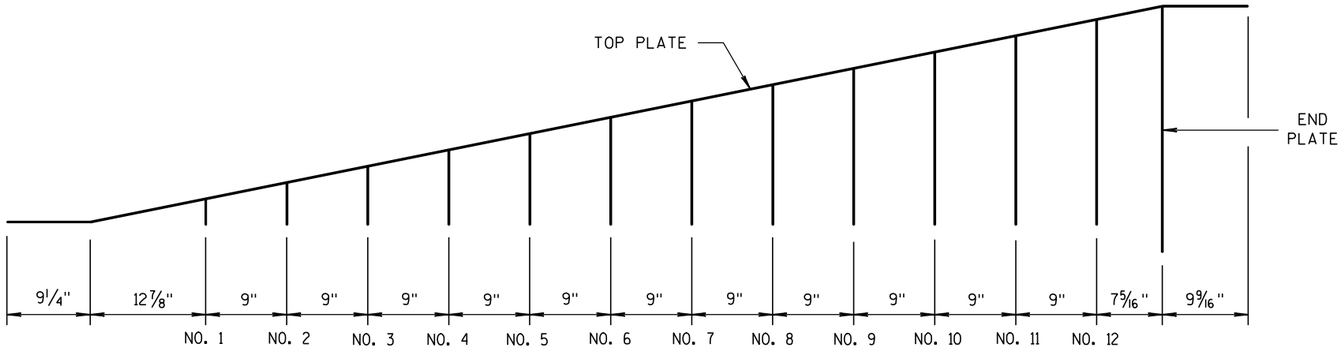
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS

GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 15/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



GUSSET LOCATION

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

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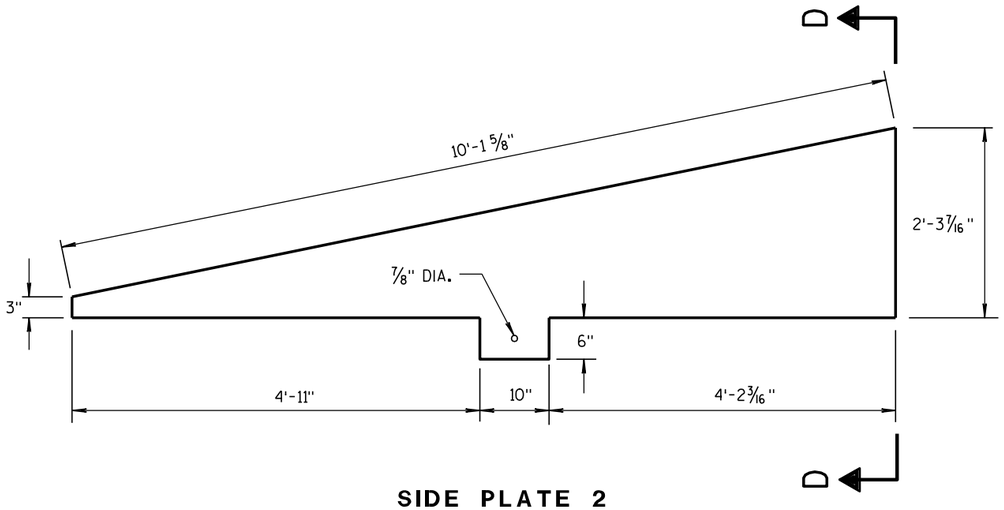
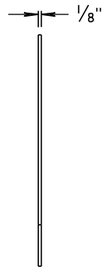
S.D.D. 14 B 7-13g

6

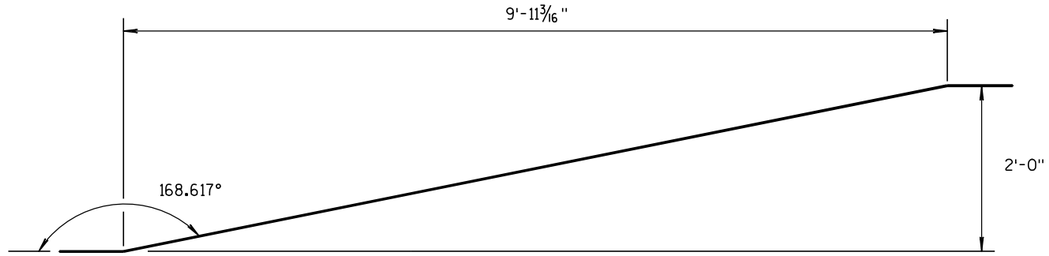
S.D.D. 14 B 7-13g



SIDE PLATE 2

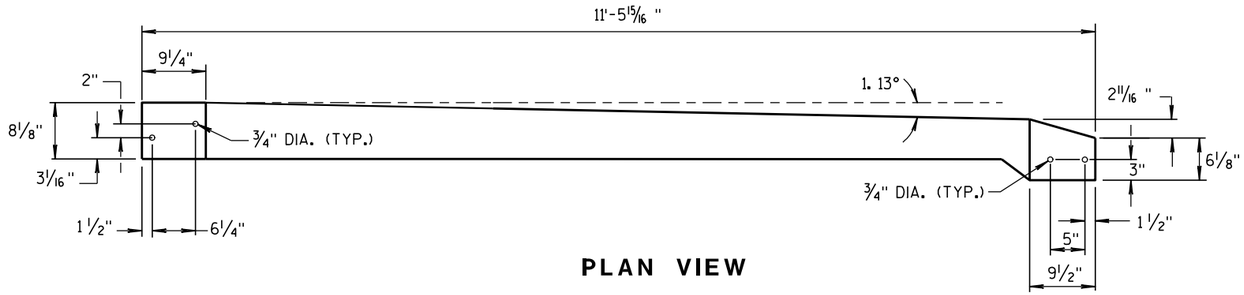


END VIEW



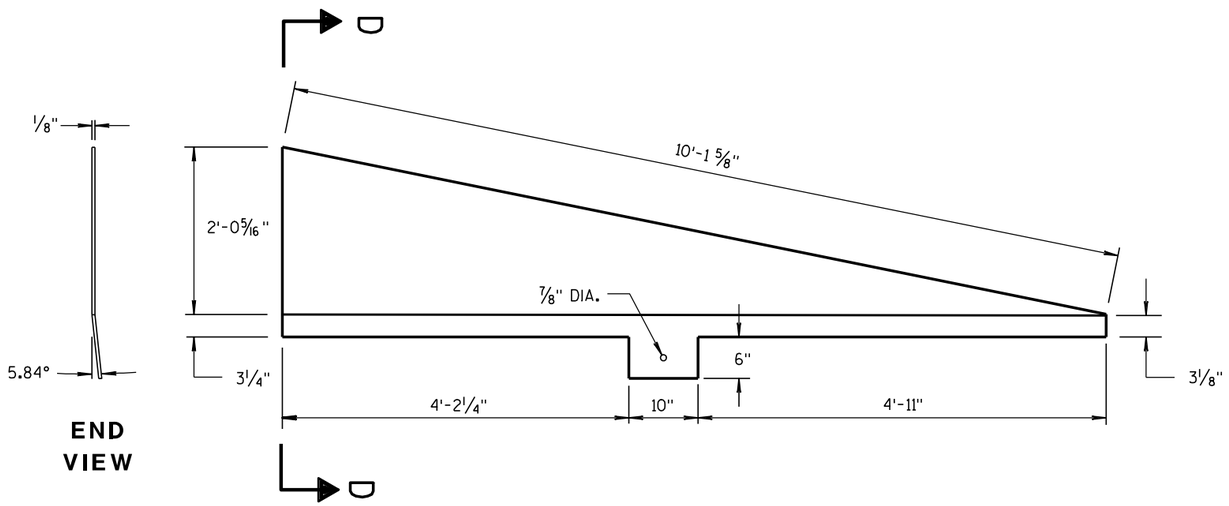
SIDE VIEW

TOP PLATE



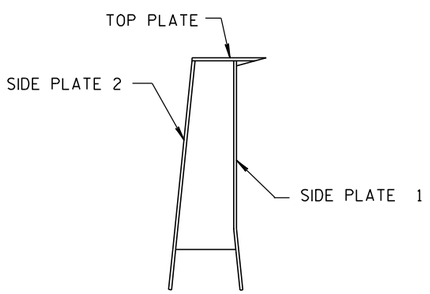
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE
/S/ Jerry H. ---- ROADWAY STANDARDS ENGINEER
ENT
FHWA

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S.D.D. 14 B 7-13h

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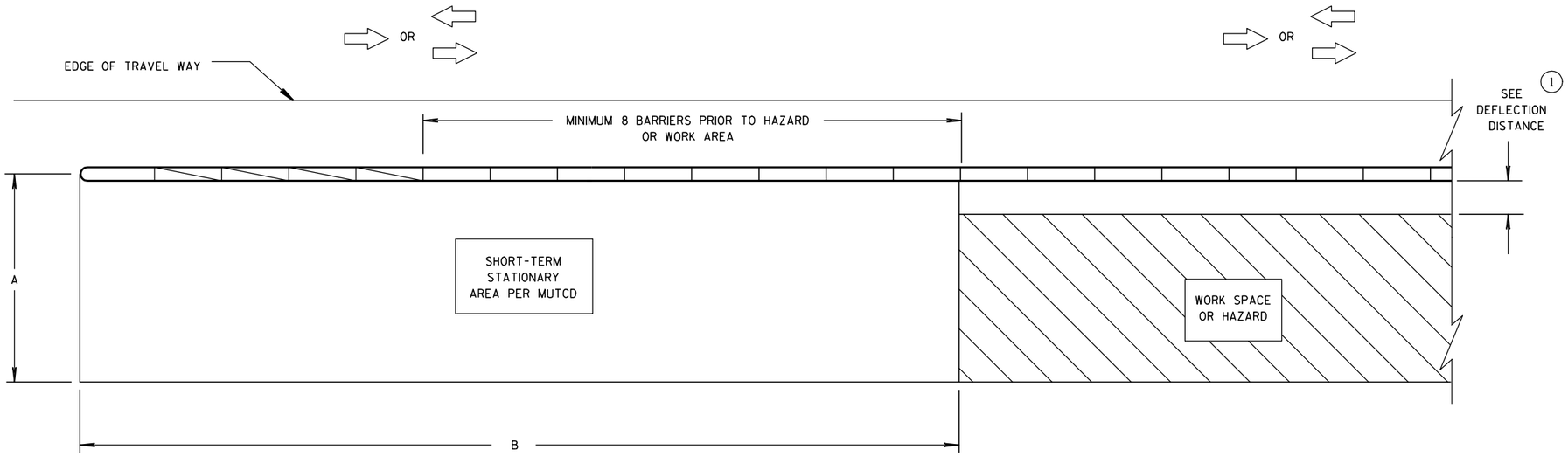
S.D.D. 14 B 7-13h



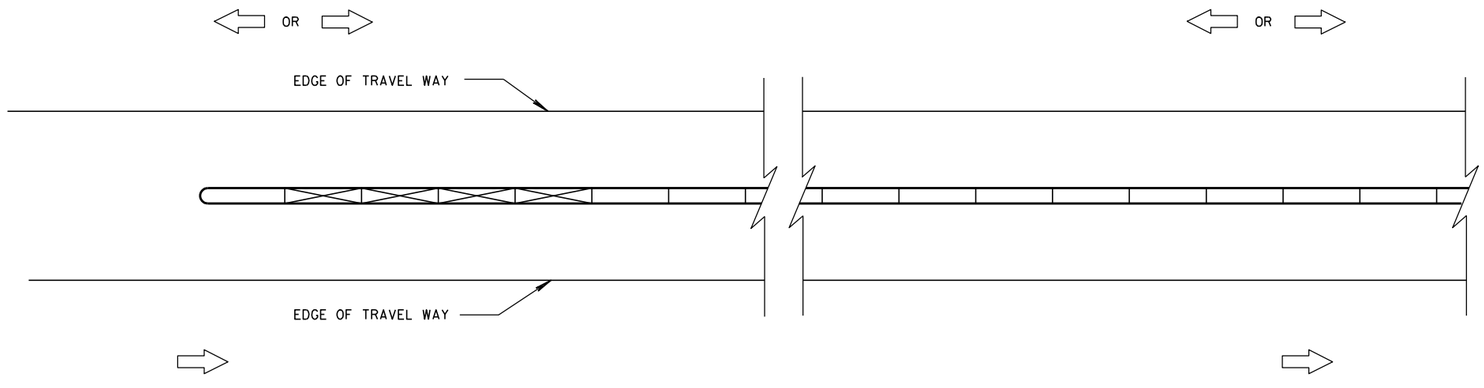
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE (2)

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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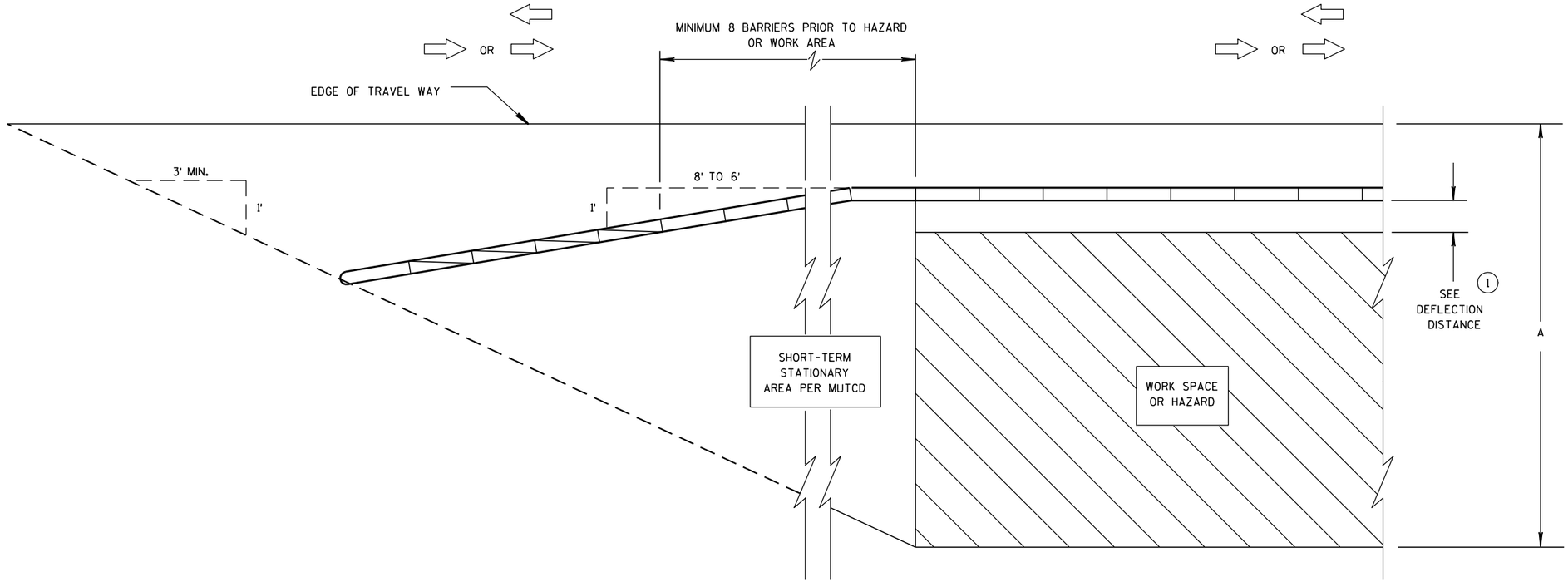
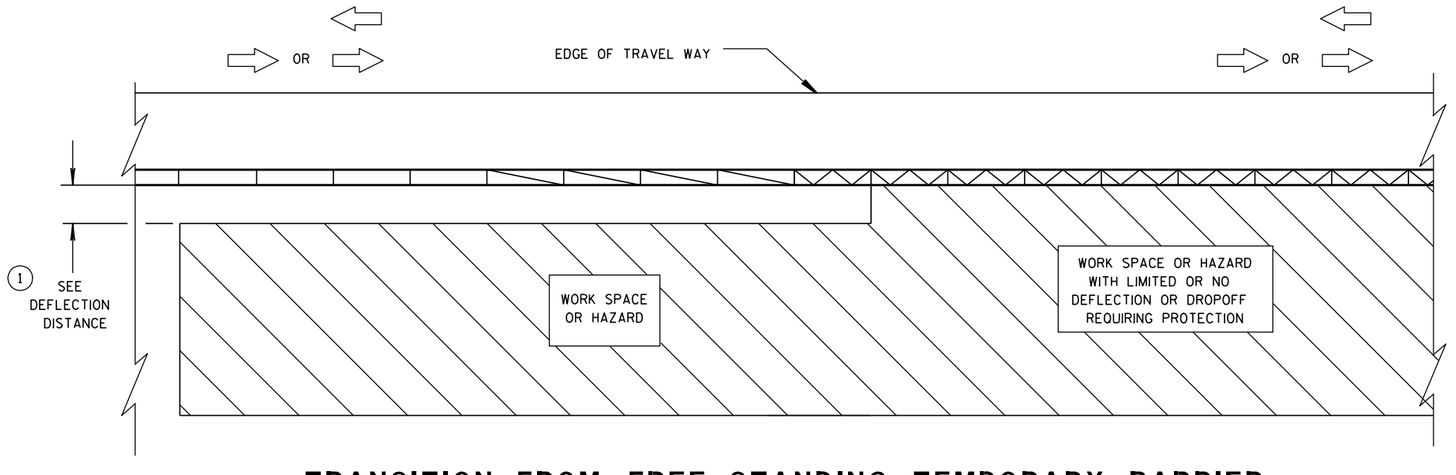
S.D.D. 14 B 8-1a



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

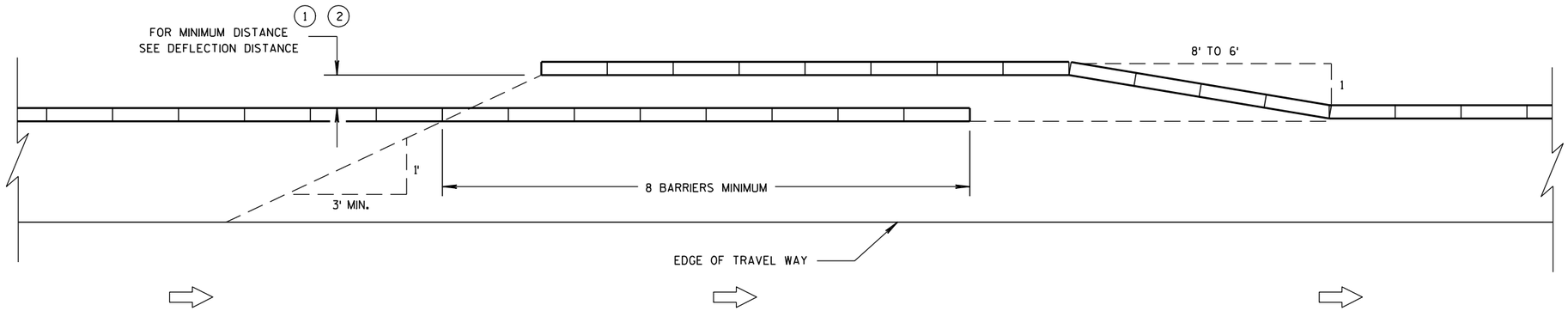
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

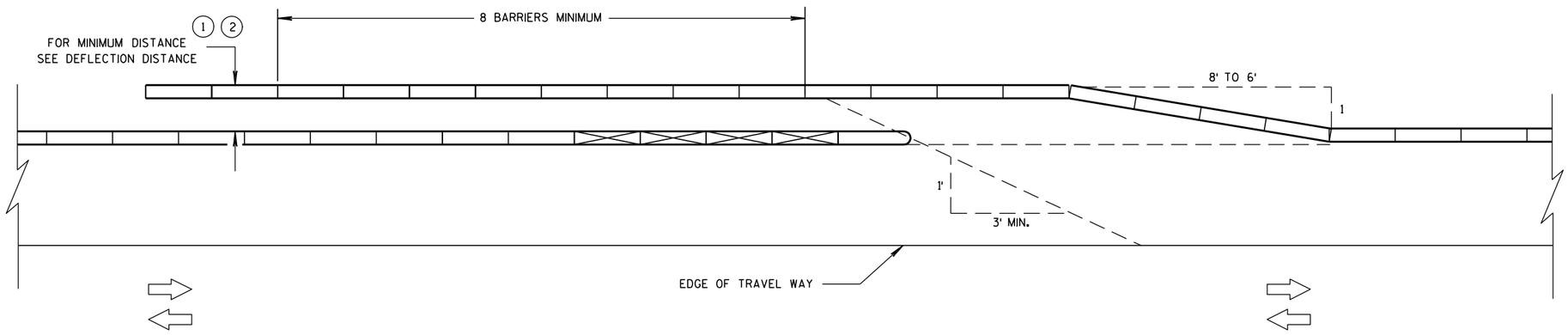
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

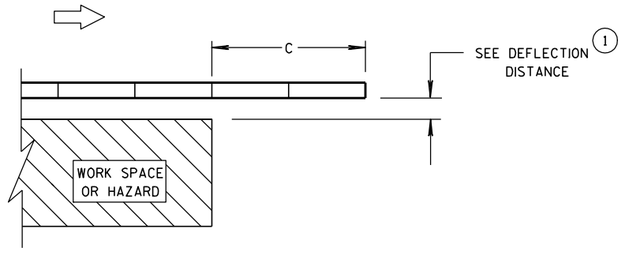
S.D.D. 14 B 8-1b



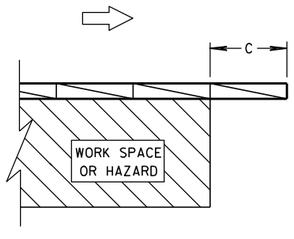
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

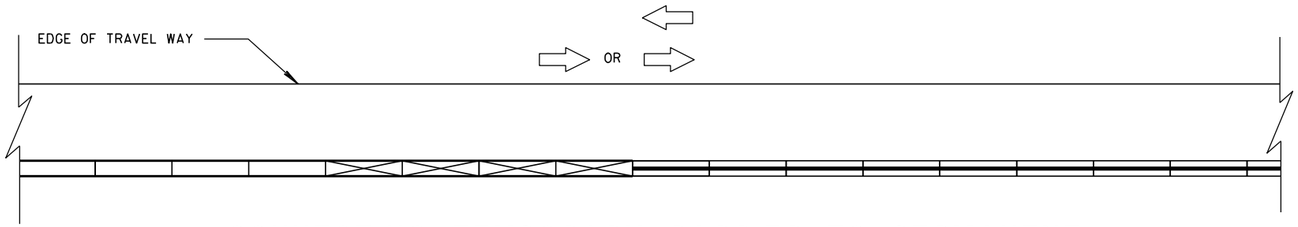
LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

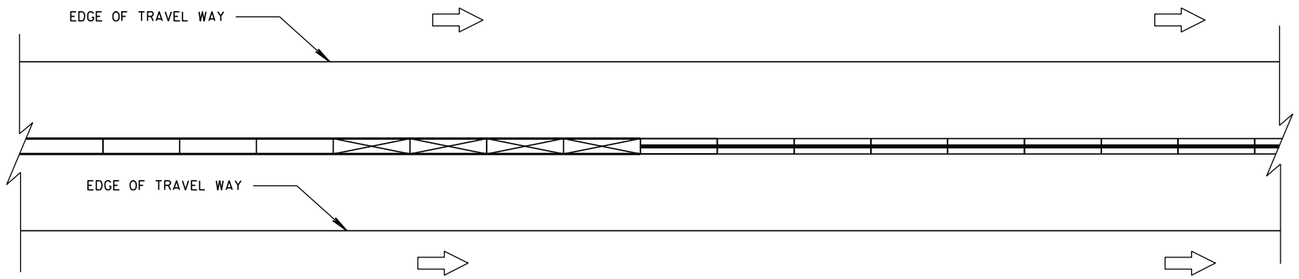
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 8-1c



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

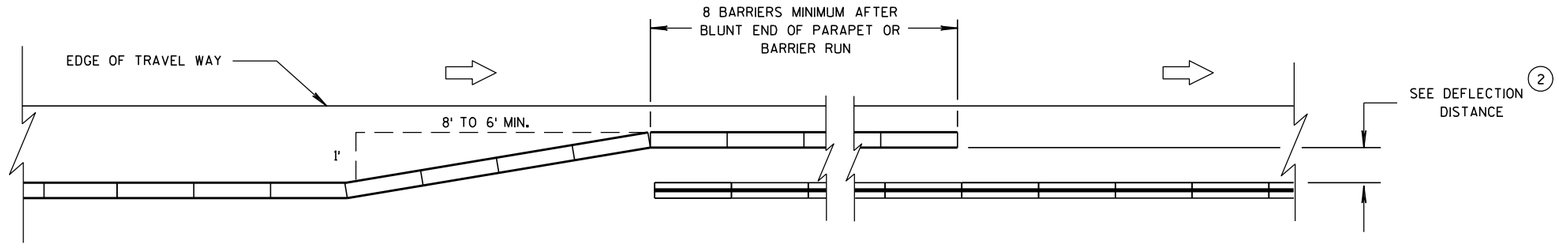
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

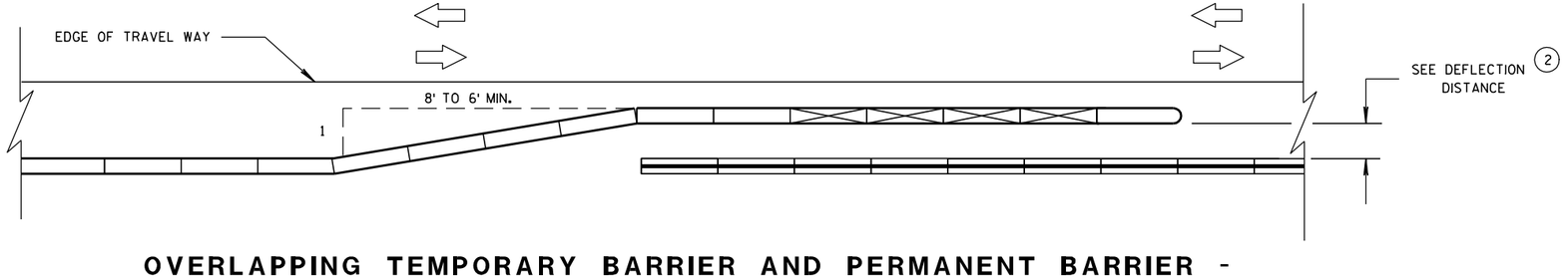
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

6
S.D.D. 14 B 8-1d

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

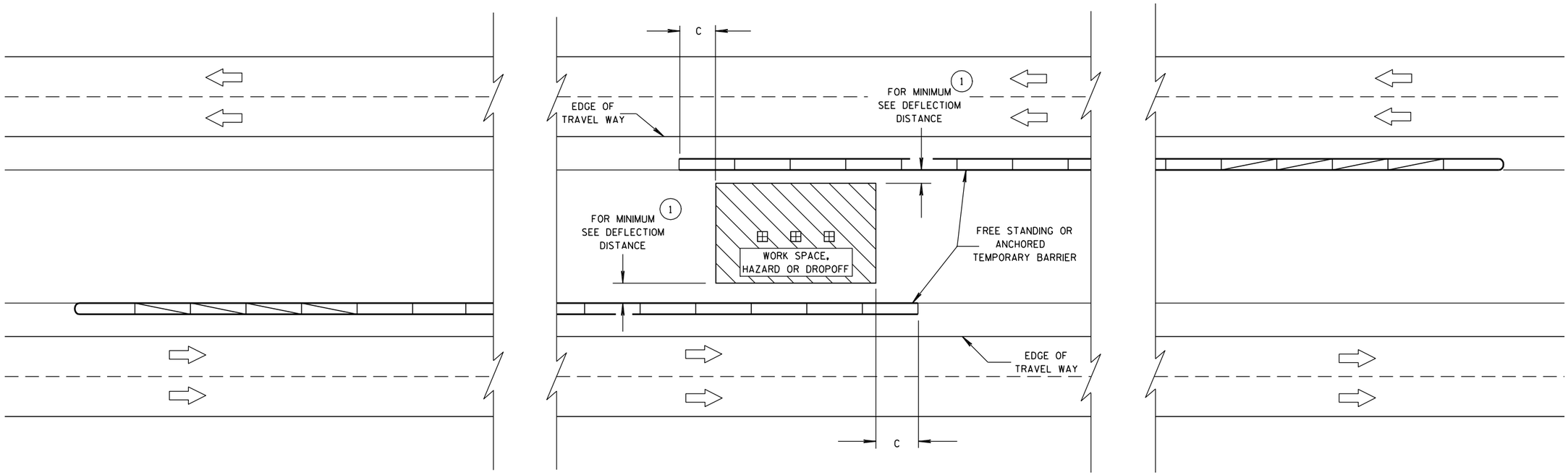
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER

FHWA

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S.D.D. 14 B 8-1e

6

S.D.D. 14 B 8-1e

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, AND THE APPLICABLE SPECIAL PROVISIONS.

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

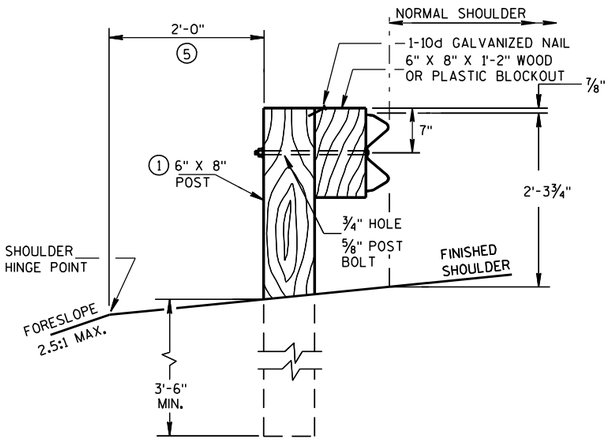
(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

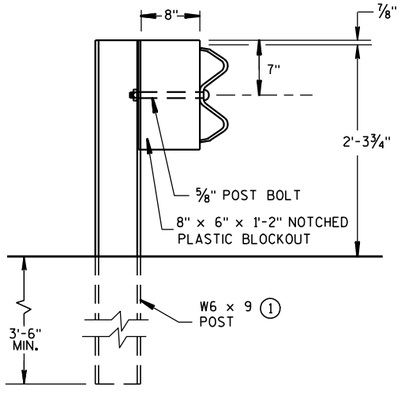
(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

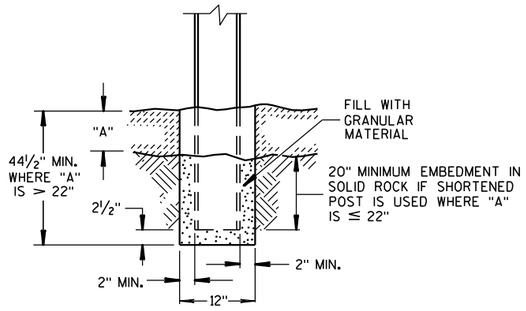
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



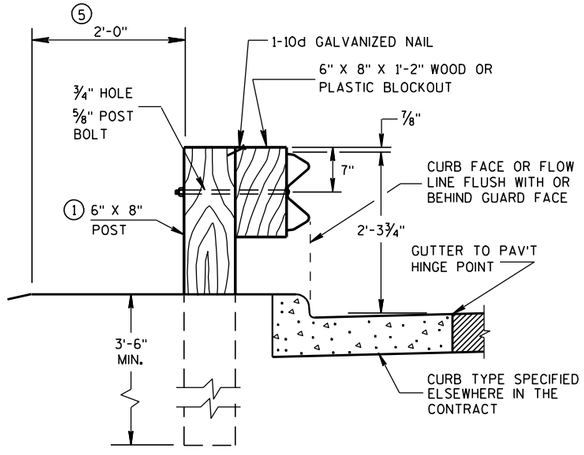
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



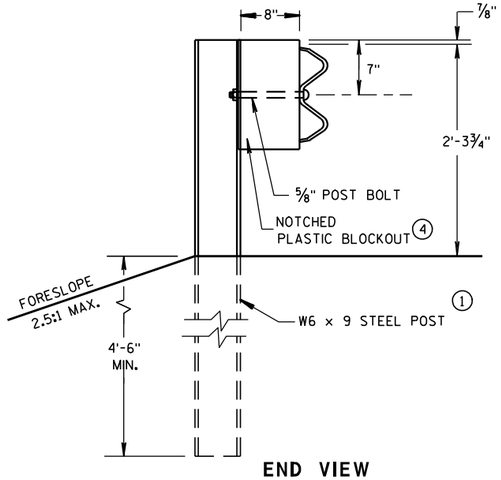
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



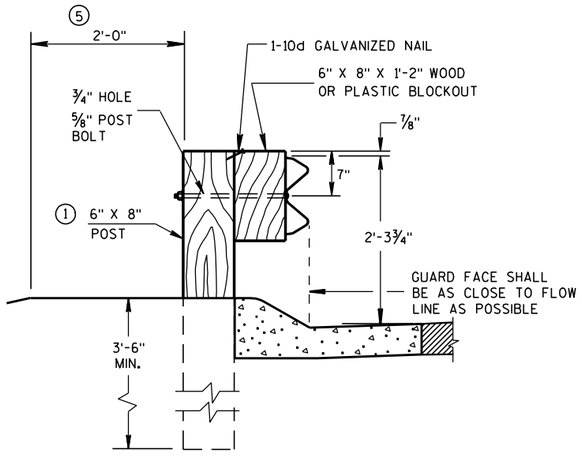
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



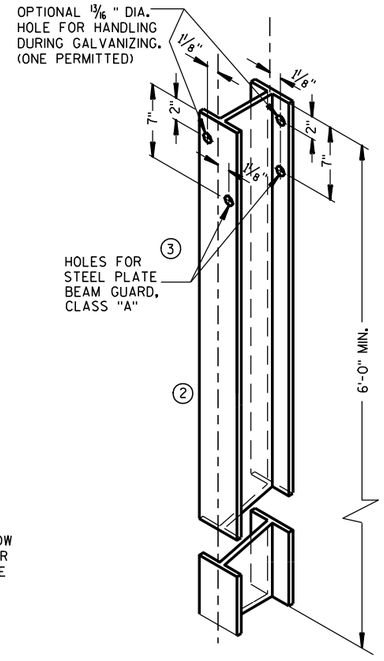
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

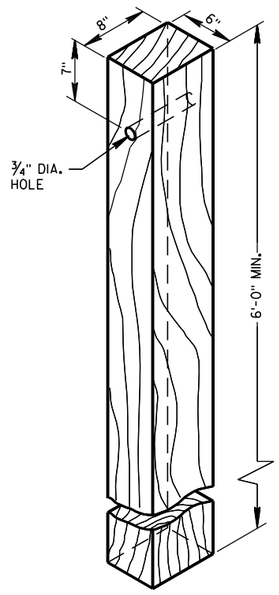


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

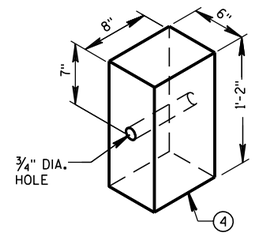


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

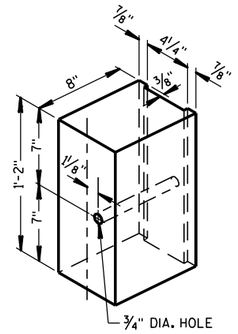
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



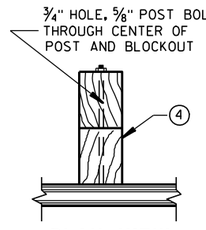
WOOD POST
(6"X8") NOMINAL



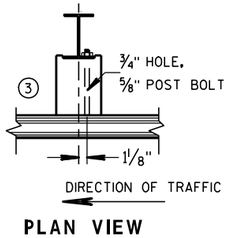
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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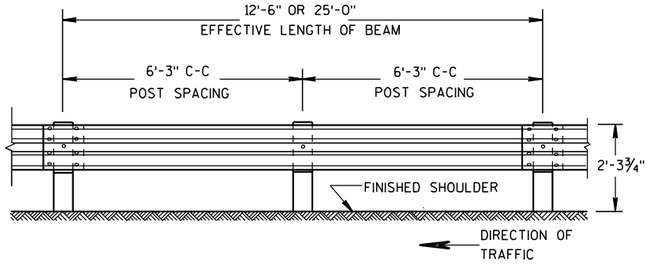
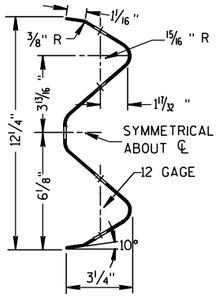
S.D.D. 14 B 15-7a

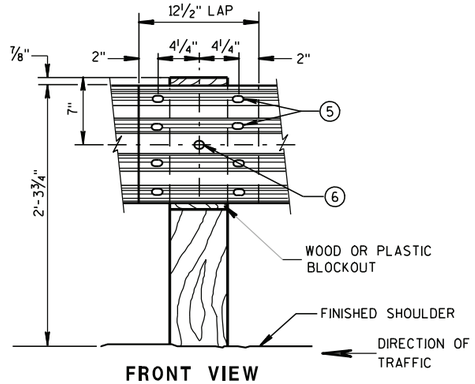


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM

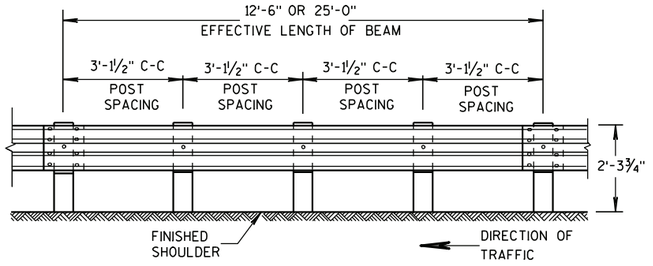


FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

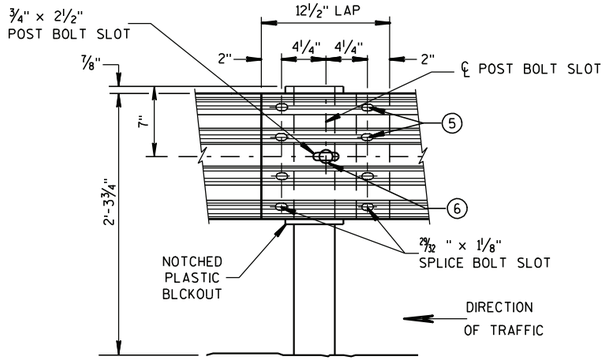
GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 8 - 5/8" ϕ X 2 " BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
6. 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.



FRONT VIEW

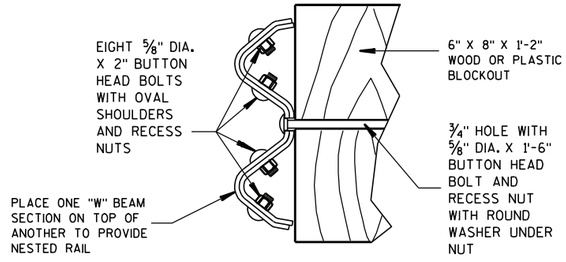
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

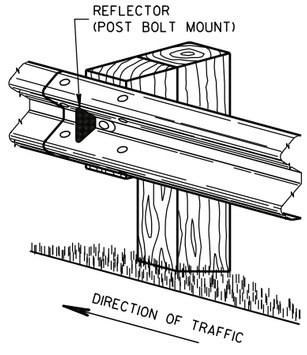


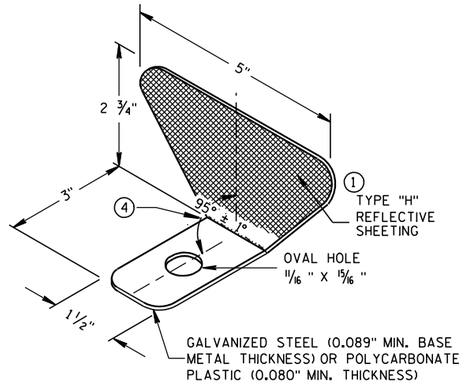
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING (2)

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (3)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 (4)	





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (1)

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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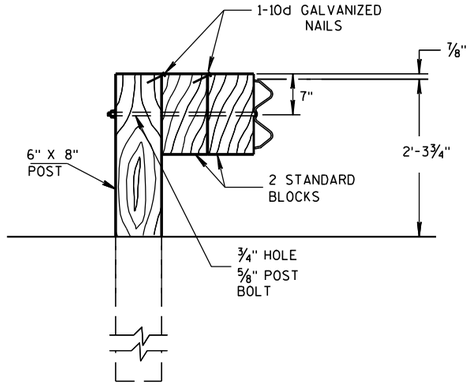
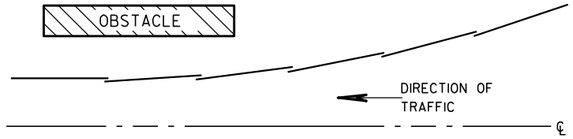
S.D.D. 14 B 15-7b

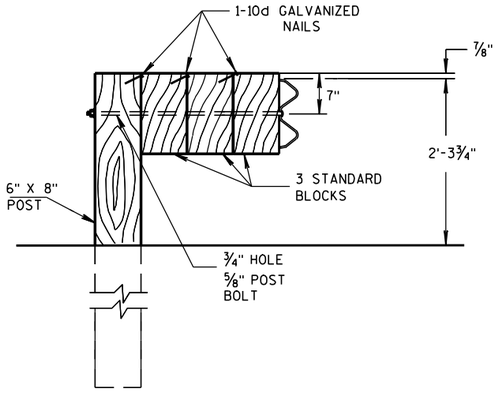


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

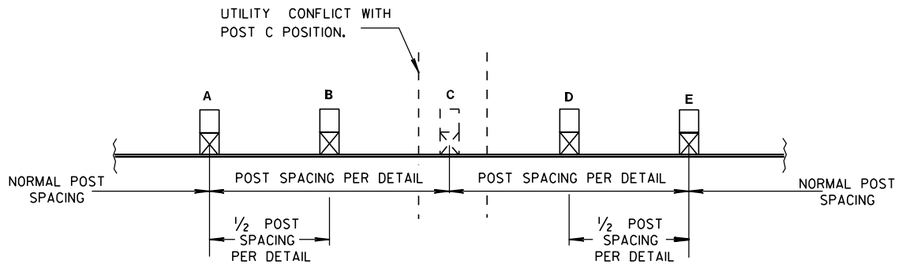


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/23/11
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

ENT

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S.D.D. 14 B 15-7c

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
(1)	4	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
(2)	**	STEEL TUBE: OPTION 1 - QUANITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
(3)	2	SOIL PLATE: 2'-0" X 1'-6" X ¼" **
(4)	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
(5)	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
(6)	1	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
(7)	1	BEARING PLATE
(8)	1	BCT CABLE ASSEMBLY
(9)	1	CABLE ANCHOR BOX
(10)	1	STRUT & YOKE
(11)	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6½" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
(12)	3	STEEL PLATE BEAM: 12 GA. 13'-6½"
(13)	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
(14)	1	REFLECTIVE SHEETING TYPE H: 18" X 18"
(15)	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL ⅝" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL),AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

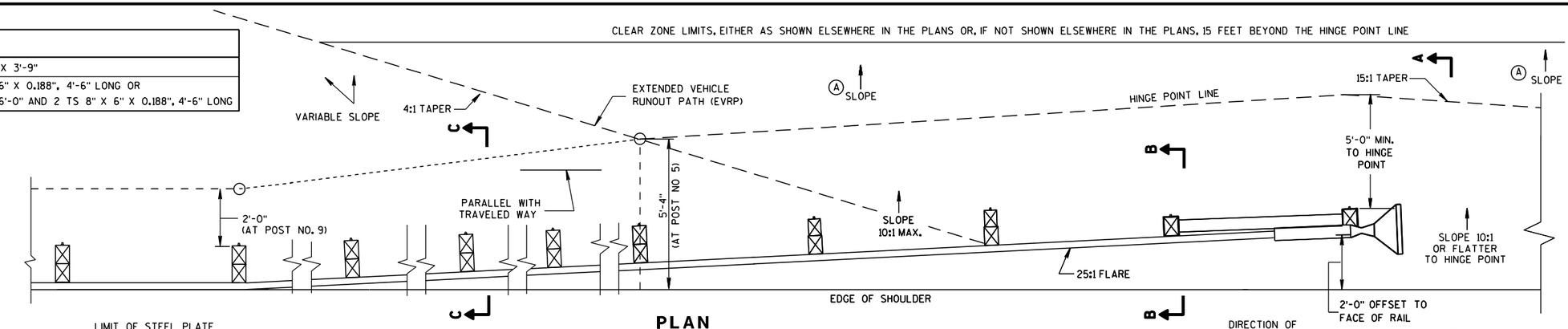
(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

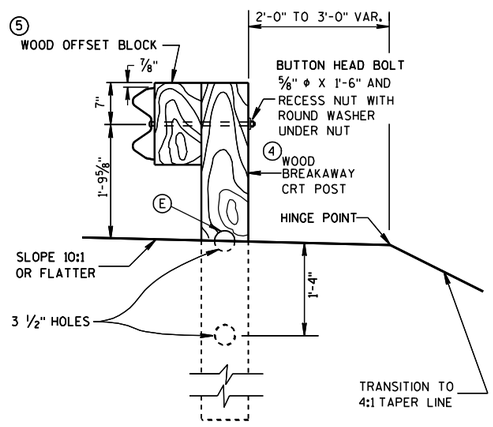
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

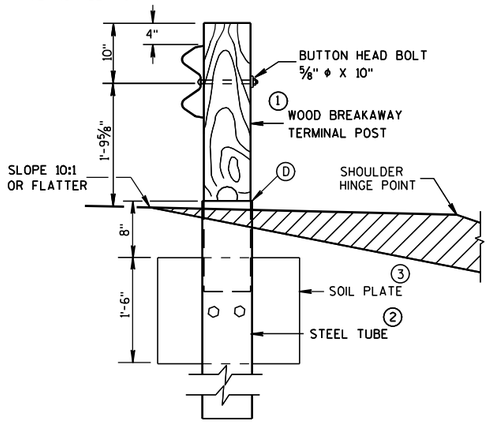
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.

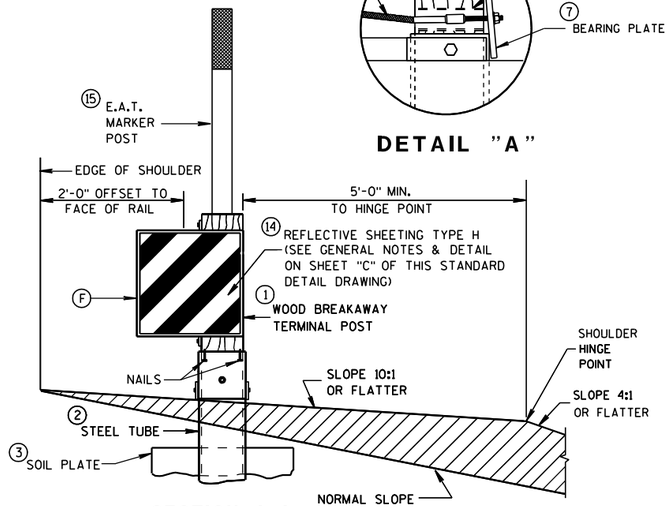




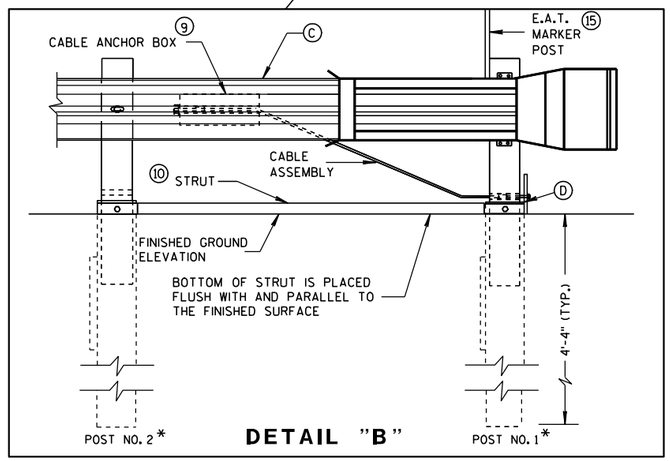
SECTION C-C
TYPICAL AT POST NOS. 6, 8



SECTION B-B
TYPICAL AT POST NO. 2*



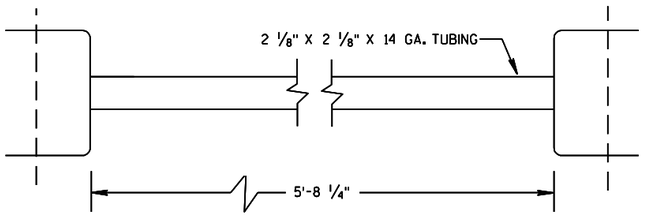
SECTION A-A
TYPICAL AT POST NO. 1*



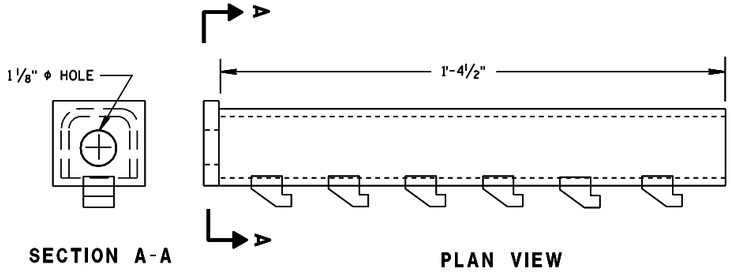
STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

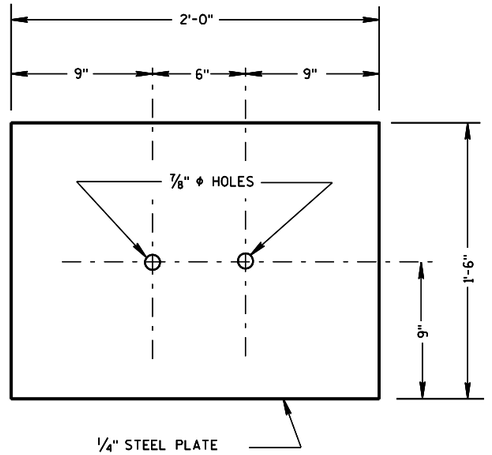
6
S.D.D. 14 B 24-7a



⑩ STRUT DETAIL (SKT-350)

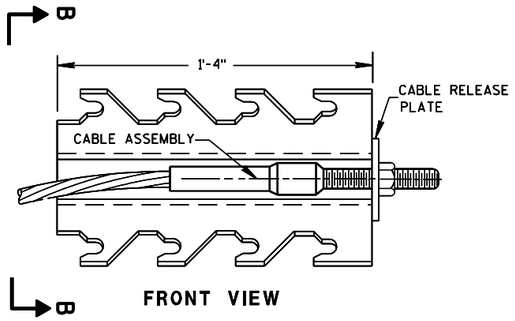


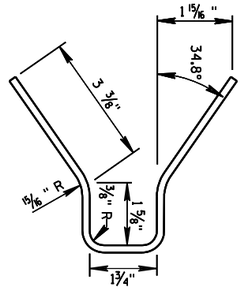
⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



③ SOIL PLATE

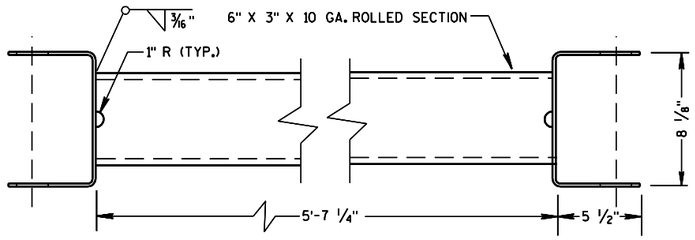
(SKT-350, ET-2000/ET-2000 PLUS)





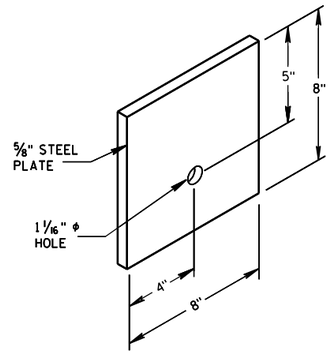
⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)



⑦ STEEL BEARING PLATE

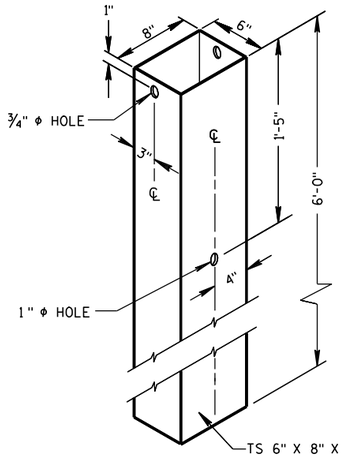
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

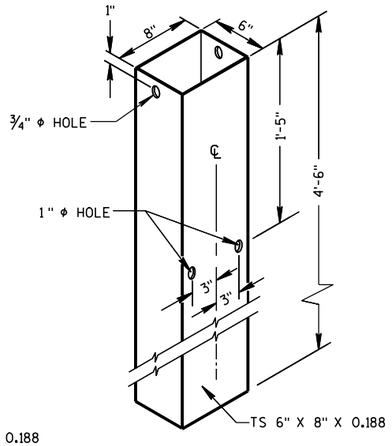
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

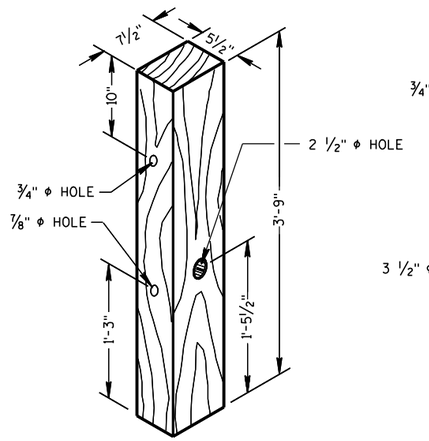
S.D.D. 14 B 24-7b



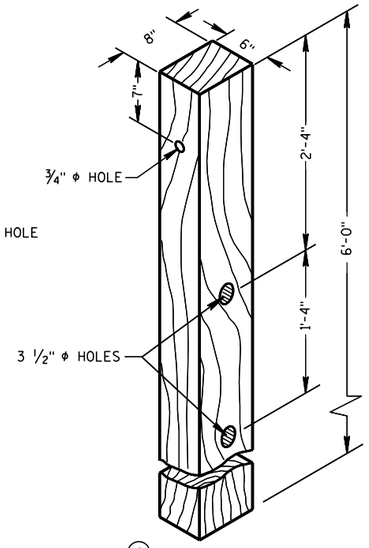
② 72" STEEL TUBE
(POSTS NO. 1-4



② 54" STEEL TUBE
(POSTS NO. 1-4



① TERMINAL POST
(POSTS NO. 1-4



④ CRT POST
(POSTS NO'S 5-8

WOOD BREAKAWAY POSTS

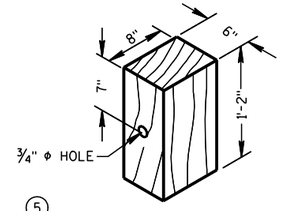
GENERAL NOTES

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

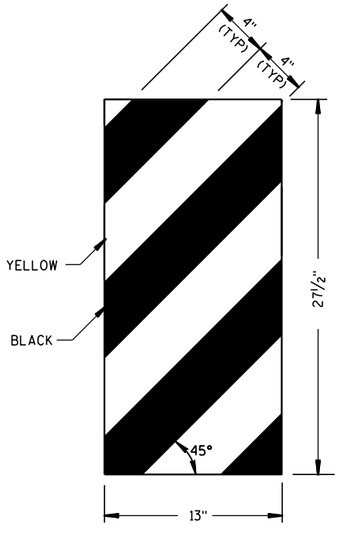
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

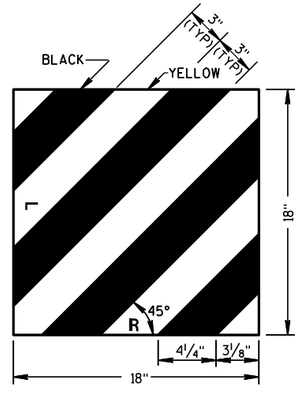
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.



⑤ WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

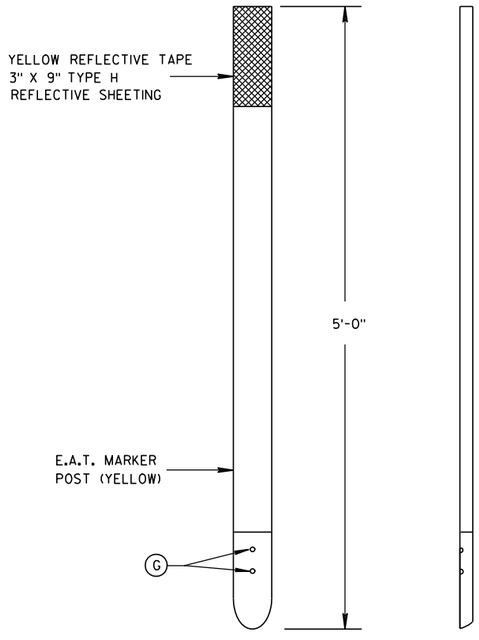


ET-2000 PLUS ONLY

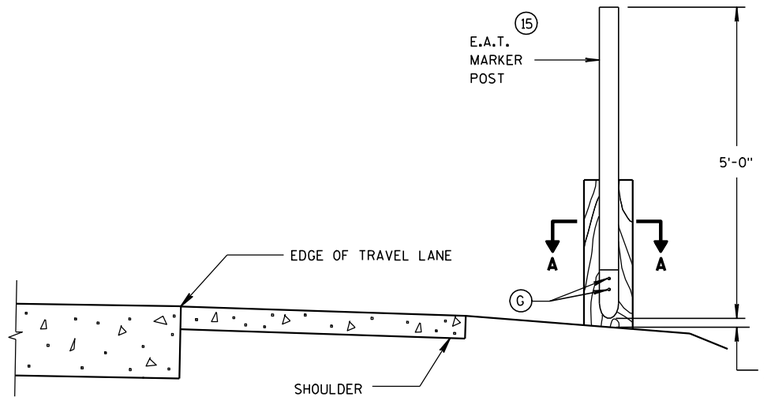


ET-2000 AND SKT-350

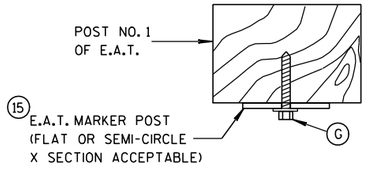
⑭ REFLECTIVE SHEETING DETAILS



⑮ E.A.T. MARKER POST



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

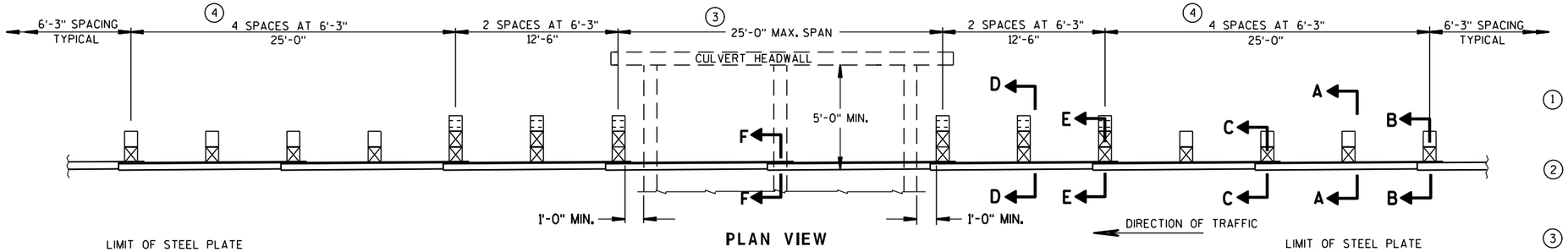
APPROVED
4-12-10
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

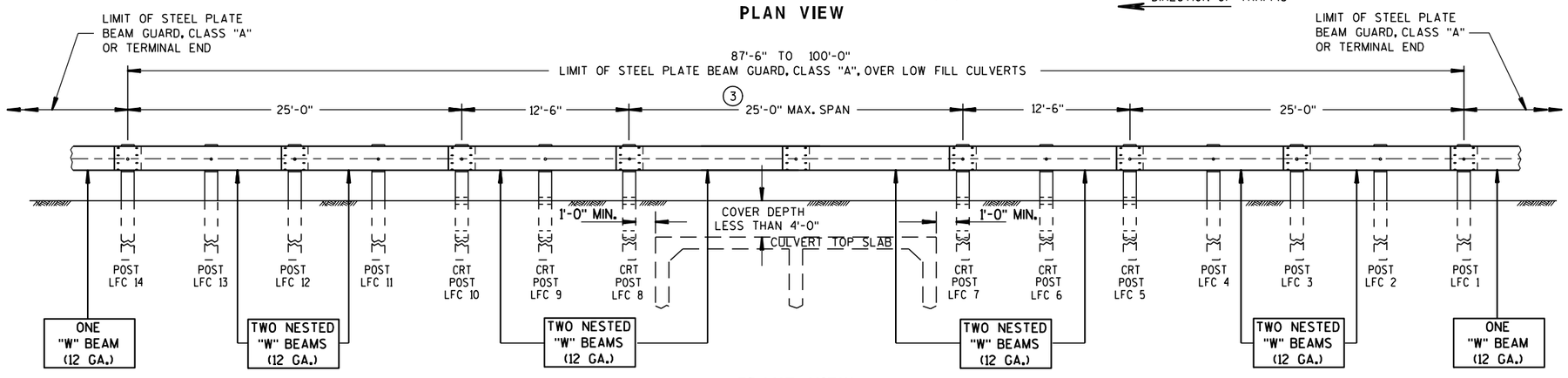
S.D.D. 14 B 24-7c

6

S.D.D. 14 B 24-7c



PLAN VIEW



FRONT VIEW

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD OVER LOW FILL CULVERTS

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

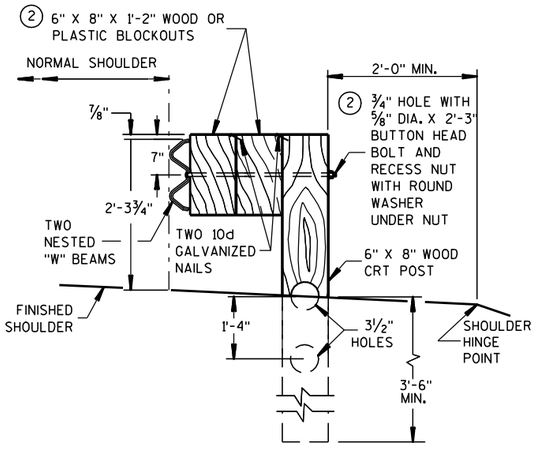
(1) MAINTAIN THE NESTING OF EACH NESTED PAIR OF "W" BEAM SECTIONS THROUGH SPLICES. ORIENTATE NESTED "W" BEAM SPLICES IN THE DIRECTION OF TRAFFIC AS THE PLAN VIEW SHOWS. SEE S.D.D. 14 B 15 FOR SPLICE INSTALLATION.

(2) THE CONTRACTOR MAY USE APPROVED PLASTIC BLOCKOUTS IN LIEU OF WOOD BLOCKOUTS. SEE S.D.D. 14 B 15 FOR TYPICAL BLOCKOUT, SPLICE AND REFLECTOR INSTALLATIONS. USE BOLT SIZES AND LENGTHS AS SHOWN ON THIS DETAIL.

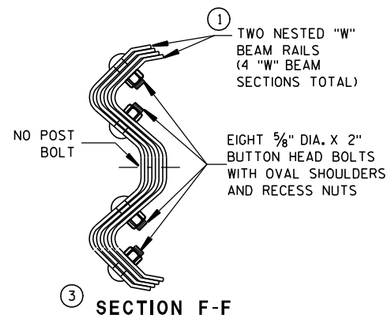
(3) PROVIDE 12'-6", 18'-9" AND 25'-0" SPANS ONLY. USE A MAXIMUM OF ONE SPLICE LOCATED ANYWHERE WITHIN THE SPAN SECTION. LOCATE ALL OTHER SPLICES AT BEAM GUARD POSTS.

(4) IN THE FIRST AND LAST 25 FOOT SECTIONS (POSTS LFC 1-4 & LFC 11-14), THE CONTRACTOR MAY USE W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS OR 6" X 8" WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS. DO NOT MIX STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS AND WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS IN THE SAME INSTALLATION.

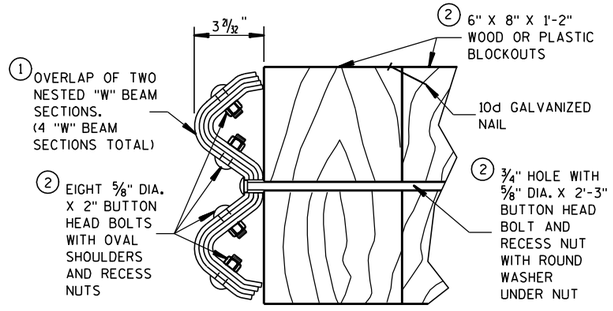
(5) WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK, THE PLAN TYPICAL SECTIONS OR DETAILS MAY SHOW, OR THE ENGINEER MAY ALLOW, THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. BUILD AS THE PLAN SHOWS OR ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST SOIL DEPTH TO 4'-6" OR MORE.



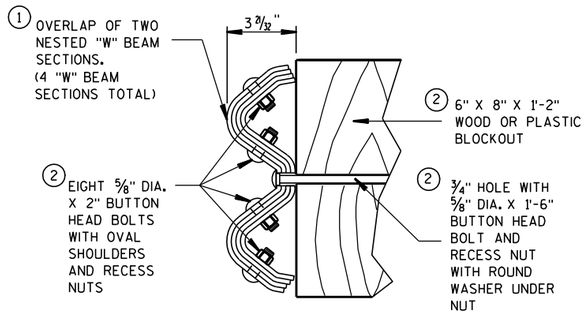
SECTION D-D
TYPICAL CRT POST LFC 6 AND 9



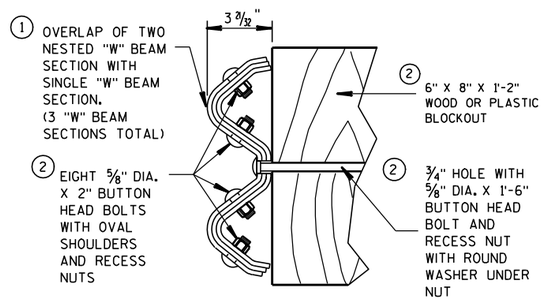
(3) SECTION F-F
BEAM SPLICE IN SPAN OVER CULVERT



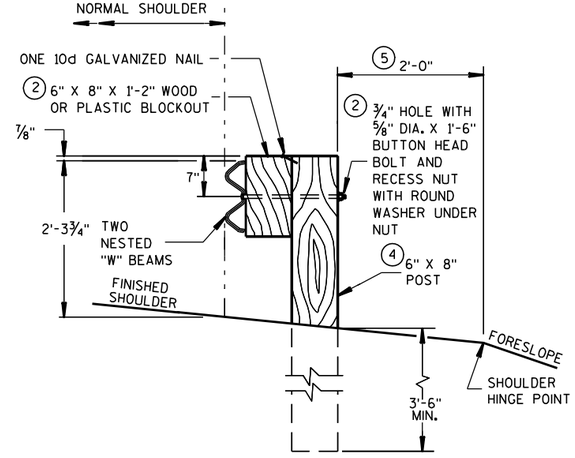
SECTION E-E
TYPICAL CRT POST LFC 5, 7, 8 AND 10



SECTION C-C
TYPICAL AT POSTS LFC 3 AND 12



SECTION B-B
TYPICAL AT POSTS LFC 1 AND 14



SECTION A-A
TYPICAL AT POST LFC 2,4,11,13

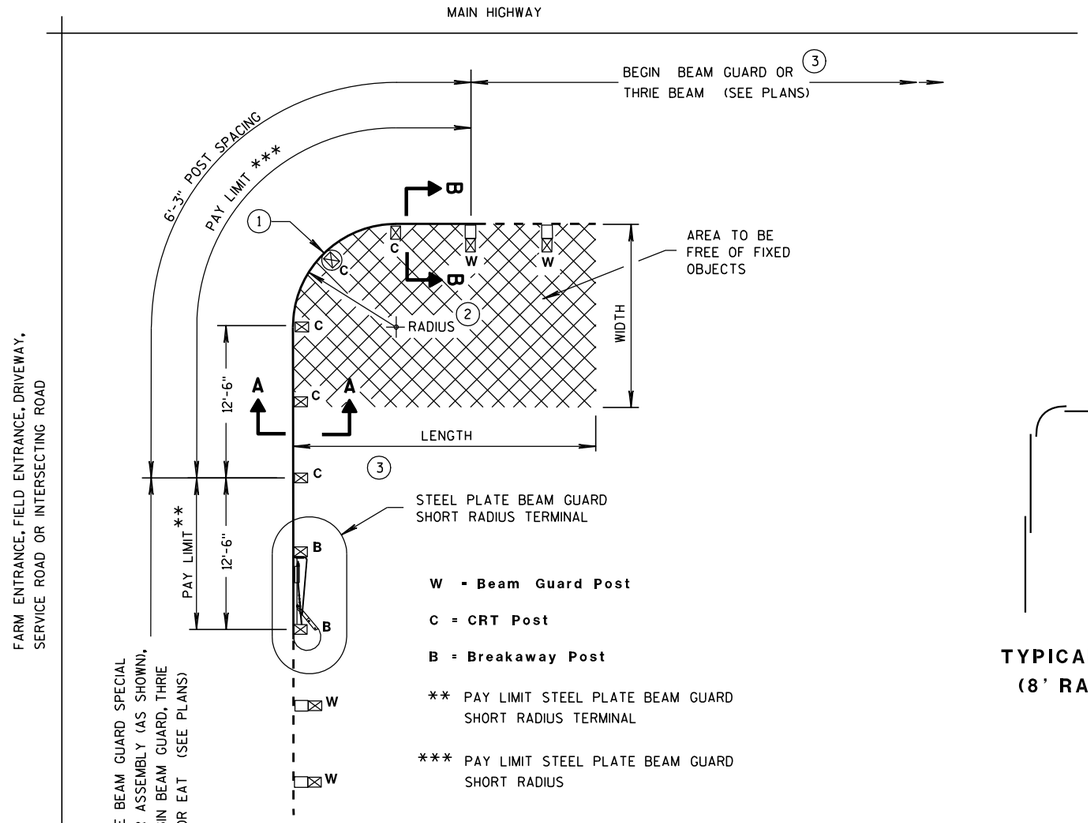
STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

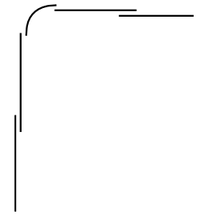
APPROVED
12/8/00 DATE
/S/ John Have... CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 25-1



TYPICAL LAYOUT
(8' RADIUS SHOWN)



TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2. UNLESS NOTED OTHERWISE.

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

(1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.

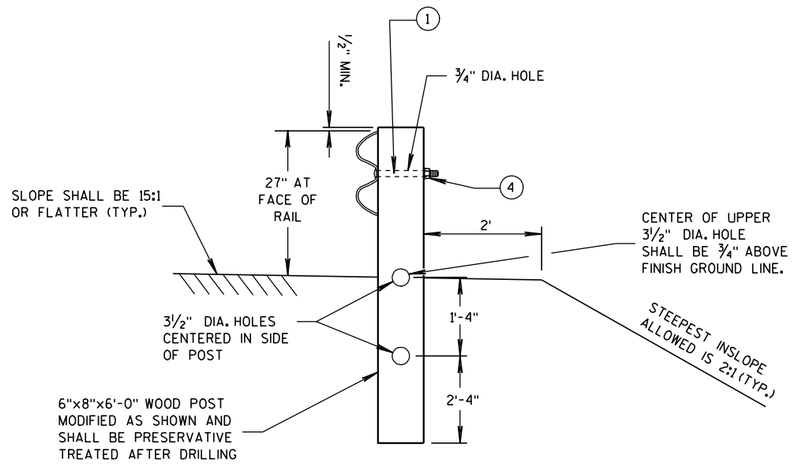
(2) RADIUS FROM 8' - 36'. SEE PLAN.

(3) HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.

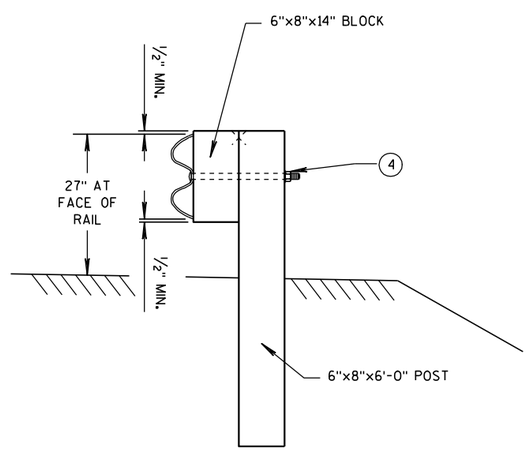
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION A-A
(CRT POST)



SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

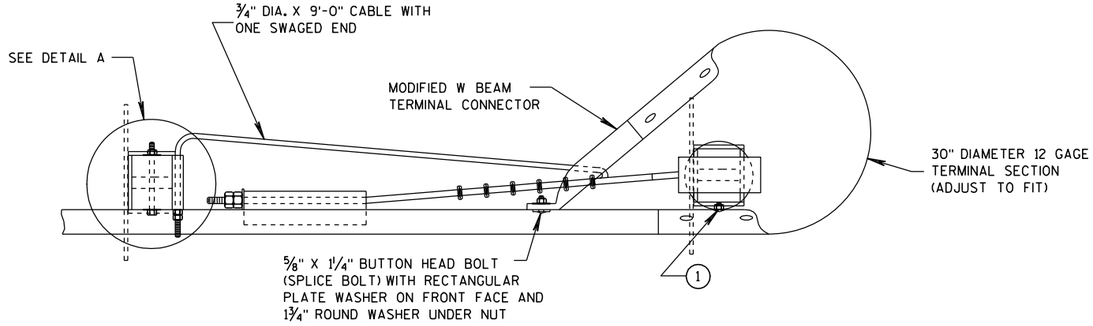
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

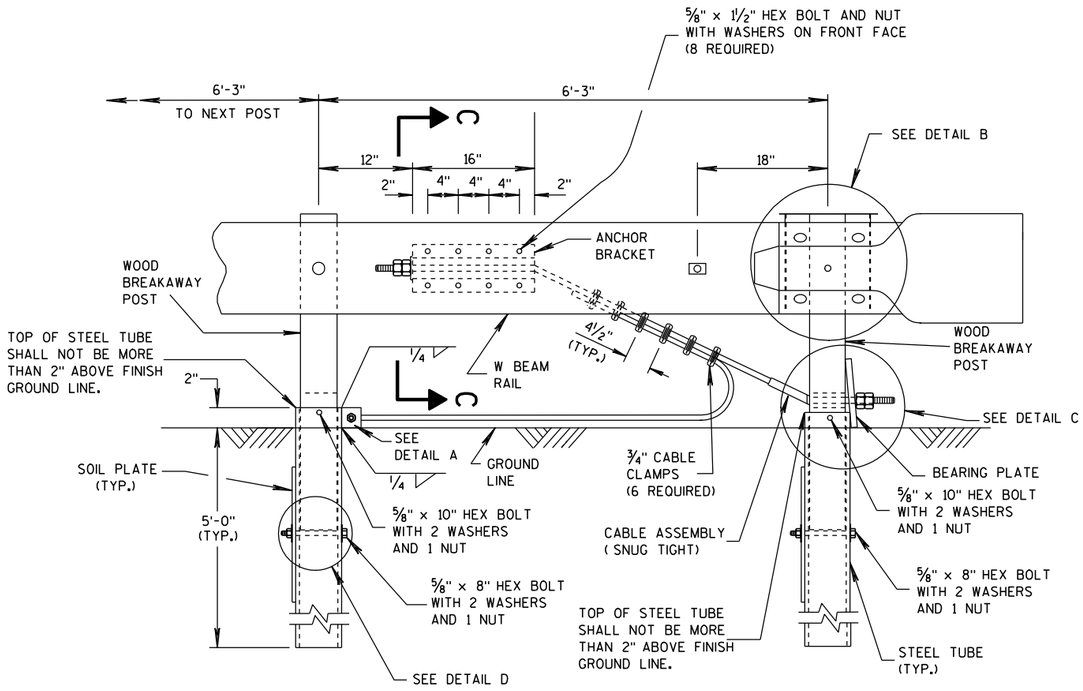
S.D.D. 14 B 27-1a

6

S.D.D. 14 B 27-1a



PLAN VIEW



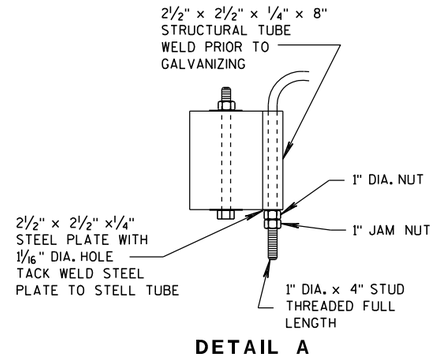
ELEVATION VIEW

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

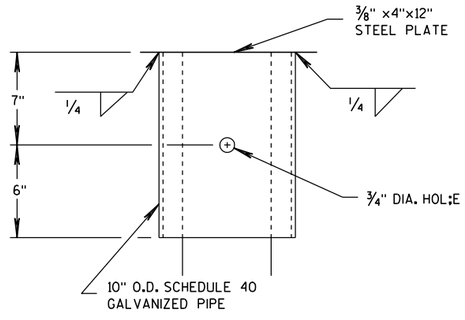
GENERAL NOTES

(1) ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A ⅝" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED ¾" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A



DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

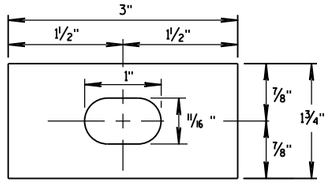
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

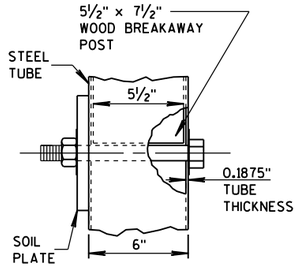
S.D.D. 14 B 27-1b

6

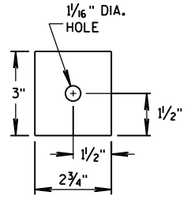
S.D.D. 14 B 27-1b



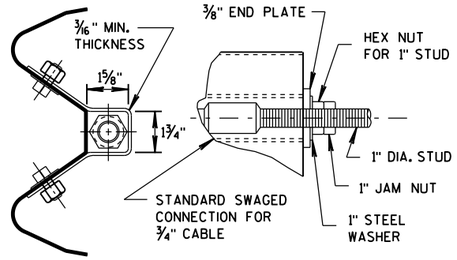
RECTANGULAR PLATE WASHER



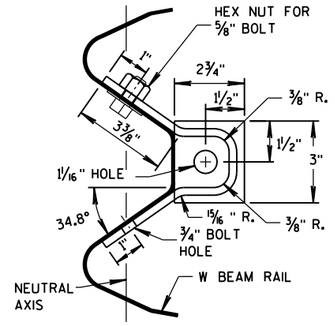
DETAIL D



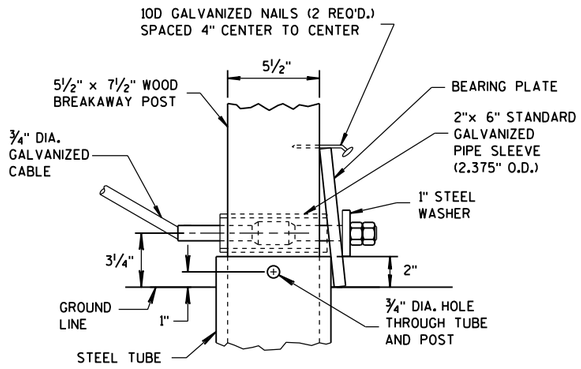
END PLATE



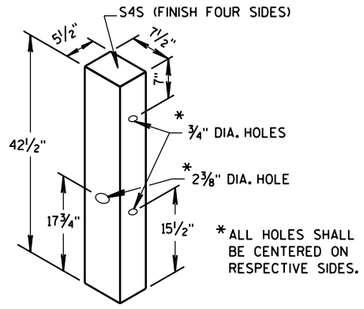
SECTION C-C
(END PLATE REMOVED)



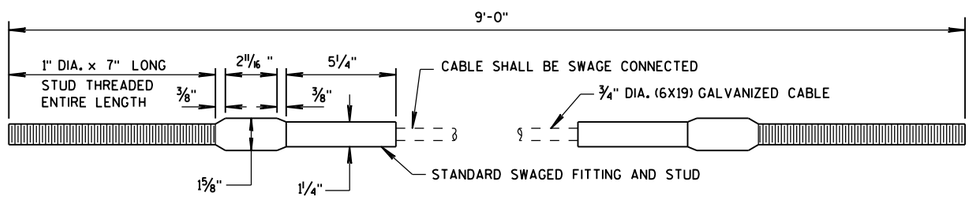
ANCHOR BRACKET



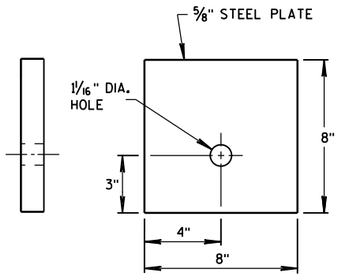
DETAIL C



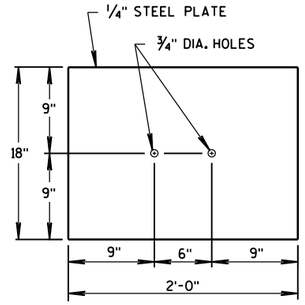
WOOD BREAKAWAY POST



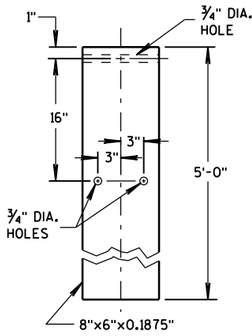
CABLE ASSEMBLY



BEARING PLATE



SOIL PLATE



STEEL TUBE

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

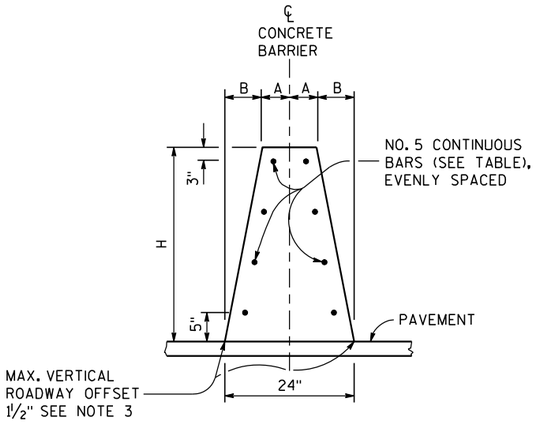
APPROVED
12/18/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

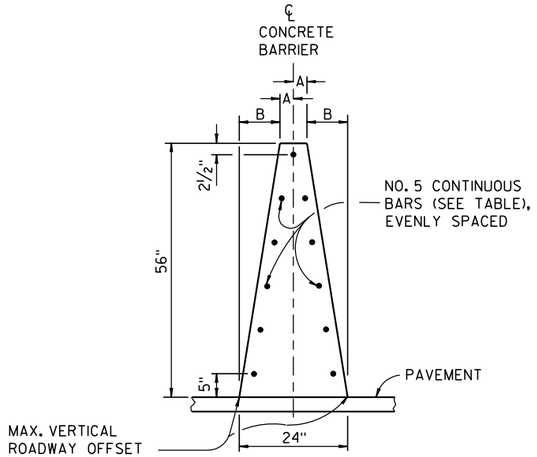
S.D.D. 14 B 27-1c

6

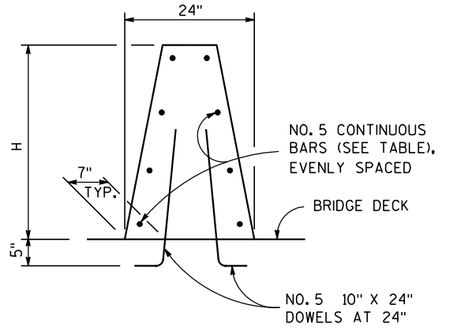
S.D.D. 14 B 27-1c



32-INCH, 36-INCH OR 42-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S32, TYPE S36, AND TYPE S42)



56-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S56)



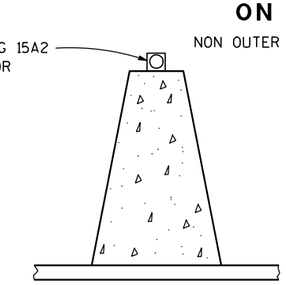
SINGLE SLOPE CONCRETE BARRIER ON BRIDGE

NON OUTER PARAPET APPLICATION

GENERAL NOTES

1. WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.
2. EXPANSION JOINTS IN CONCRETE BARRIER SHALL BE LOCATED AT ALL DECK, PAVEMENT AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL SHALL BE THE SAME SIZE AS JOINT OR ½" MINIMUM.
3. WHERE VERTICAL ROADWAY OFFSET IS GREATER THAN 1½", USE TYPE A
4. PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.
5. EXCEPT IN ANCHORS, VERTICAL REINFORCING STIRRUP NOT REQUIRED FOR ROADWAY OFFSETS LESS THAN 1'-0".
6. FOR TYPE S32, TYPE S36, TYPE S42, AND S56 MONOLITHIC FOOTING OR DOWELED FOOTING WITH 2-#8 x 8" @ 2'-0".
7. STAGGER LAPPING OF LONGITUDINAL STEEL. MINIMUM OVERLAP OF STEEL 2 FEET. BARS AT LAPS TO BE FIRMLY TIED OR CONNECTED.
8. 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATION 501.
9. WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.
10. USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
11. 2" CLEAR COVER TYPICAL.
12. COLD-JOINTS MAY BE USED BETWEEN ANCHOR INSTALLATIONS. WHEN A COLD JOINT IS NEEDED, 3 FEET OF LAP OF LONGITUDINAL STEEL IS REQUIRED. LAPS TO BE FIRMLY TIED
13. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 NO ADDITIONAL VERTICAL STEEL NEEDED. IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A REQUIRES VERTICAL STEEL. SEE OTHER DETAIL
14. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 DEPTH OF FOOTING 10". IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A MATCH TOTAL HEIGHT OF SINGLE SLOPE BARRIER RETAINING WALL.
15. FOR ALL BARRIER TYPES SHOWN, ANCHOR IS REQUIRED AT CONCRETE BARRIER ENDS AND AT INTERRUPTIONS IN CONCRETE BARRIER. ANCHOR MAY BE AS SHOWN ON DRAWING OR DETAILS SHOWN ON S.D.D. 14B33. ANCHORS INCIDENTAL TO CBSS.

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
32	7	5	8
36	6¼	5¾	8
42	5¼	6¾	10
56	3	9	11



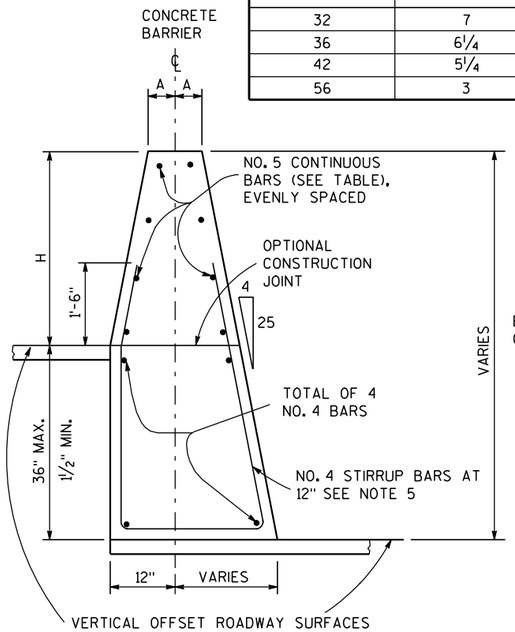
DELINEATION

DELINEATOR SPACING ON HORIZONTAL CURVES

RADIUS OF CURVE	APPROXIMATE SPACING ON CURVE
50 FEET	20 FEET
115 FEET	25 FEET
180 FEET	35 FEET
250 FEET	40 FEET
300 FEET	50 FEET
400 FEET	55 FEET
500 FEET	65 FEET
600 FEET	70 FEET
700 FEET	75 FEET
800 FEET	80 FEET
900 FEET	85 FEET
1000 FEET	90 FEET

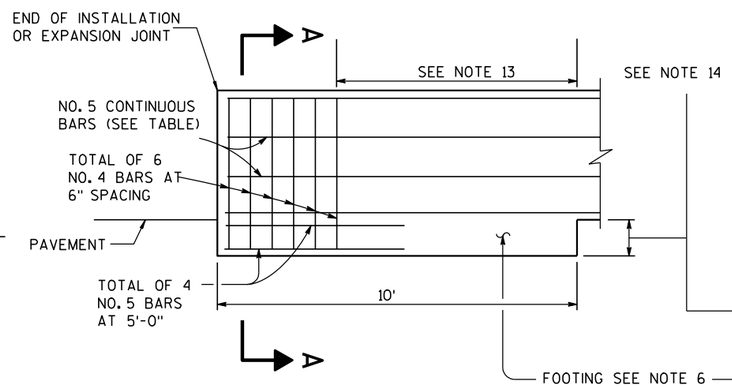
DELINEATOR SPACING ON RADIUS GREATER THAN 1000 FEET OR TANGENT SECTIONS

	LENGTH OF BARRIER	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 1	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2	3



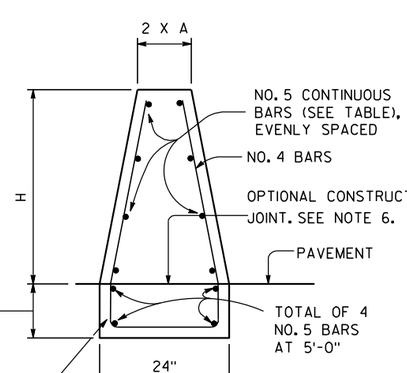
SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL (TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)

(BETWEEN ADJACENT ROADWAYS)



END ANCHOR SINGLE SLOPE CONCRETE BARRIER

AT CONSTRUCTION JOINT

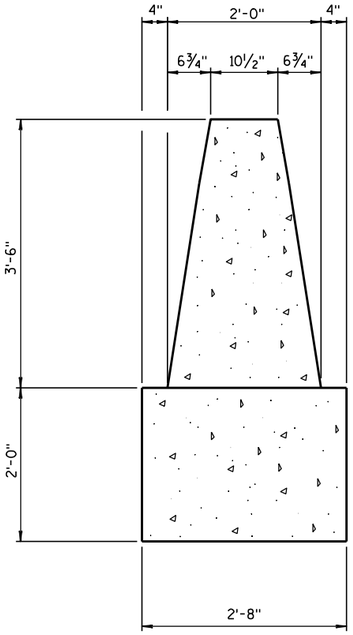


SECTION A-A

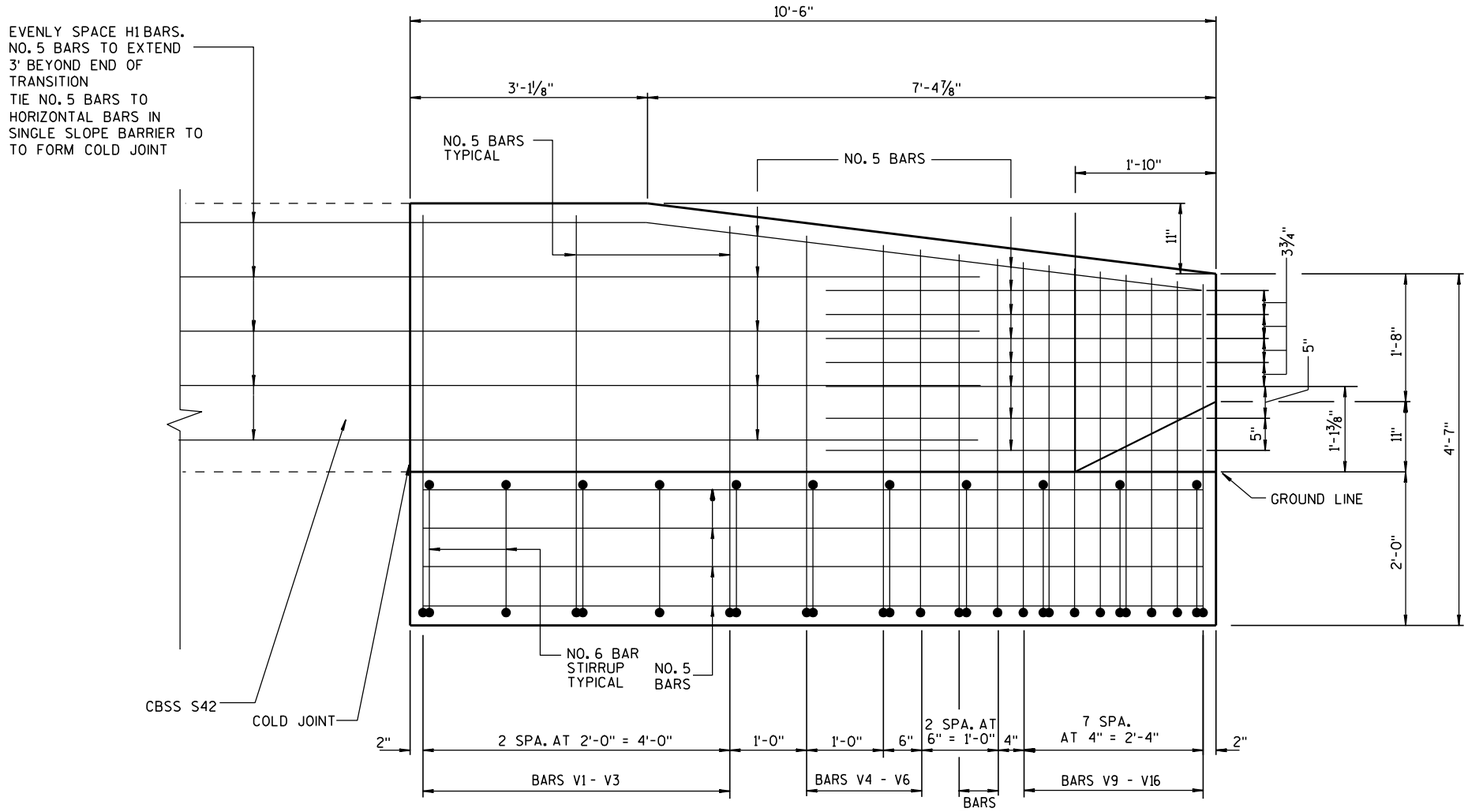
CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 32-1a

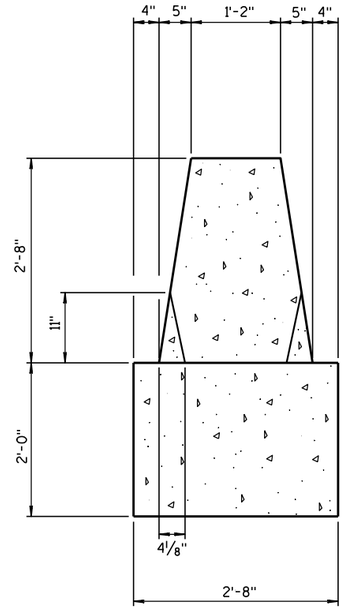


SECTION A-A

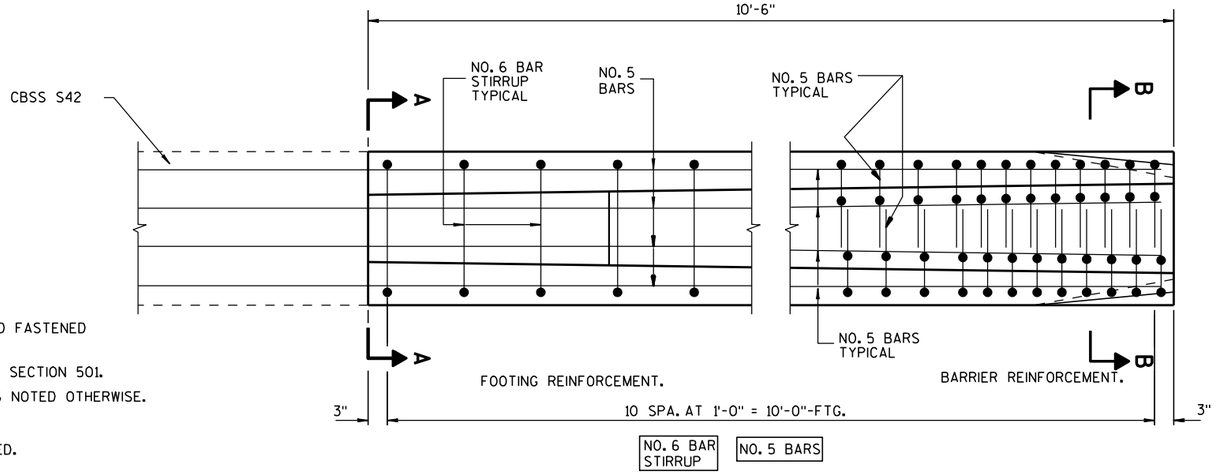


SEE SECTIONS ① THRU ⑯

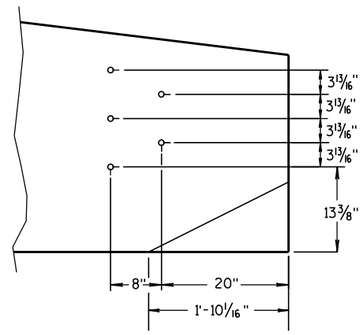
ELEVATION VIEW



SECTION B-B



PLAN VIEW



PVC PIPE LOCATIONS

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

THRIE BEAM ANCHOR INCIDENTAL TO CONCRETE BARRIER ITEM.

INSTALL SCHEDULE 40 PVC PIPE 1" DIAMETER AT LOCATIONS INDICATED.

EXTEND PVC PIPE COMPLETELY THROUGH BARRIER.

CUT ENDS OF PVC PIPE FLUSH WITH FINISHED FACE of BARRIER.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

CONCRETE BARRIER SINGLE SLOPE 42" THRIE BEAM ANCHOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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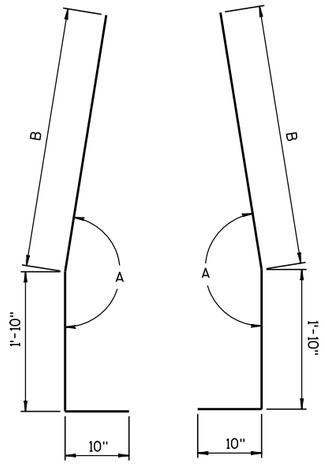
S.D.D. 14 B 33-1g

BAR CHART
SECTIONS V1 - V11

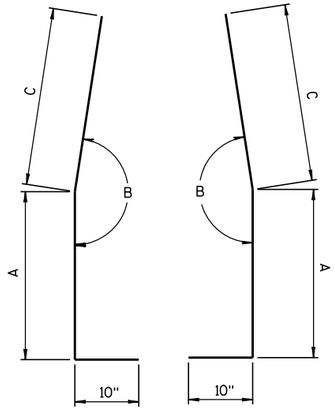
BAR	A	B
V1	170°-50'	3'-4½"
V2	171°-20'	3'-4½"
V3	171°-30'	3'-2½"
V4	171°-25'	3'-1½"
V5	171°-15'	3'-0"
V6	171°-15'	2'-11"
V7	171°-20'	2'-10½"
V8	171°-10'	2'-9½"
V9	171°-10'	2'-9"
V10	171°-05'	2'-8½"
V11	171°-10'	2'-8"



BAR BENDING DETAIL
FOR BARS V1 - V11

BAR CHART
SECTIONS V12 - V13

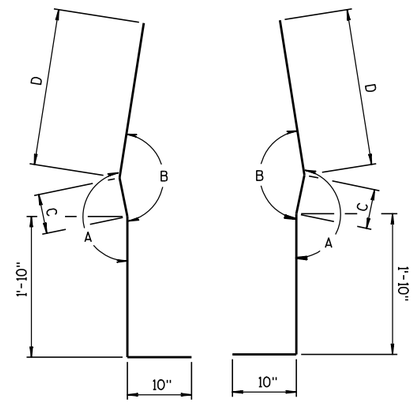
BAR	A	B	C
V12	2'-2"	171°-15'	2'-3½"
V13	2'-7"	171°-05'	1'-10"



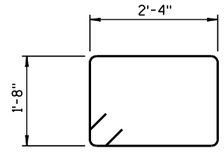
BAR BENDING DETAIL
FOR BARS V12 - V13

BAR CHART
SECTIONS V14 - V16

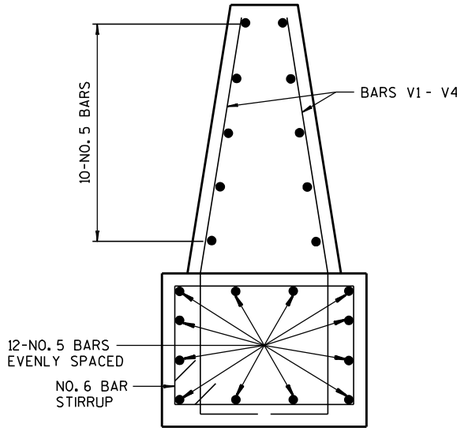
BAR	A	B	C	D
V14	168°-15'	159°-15'	6"	2'-0"
V15	169°-20'	161°-00'	8"	1'-10"
V16	168°-40'	160°-10'	10"	1'-8"



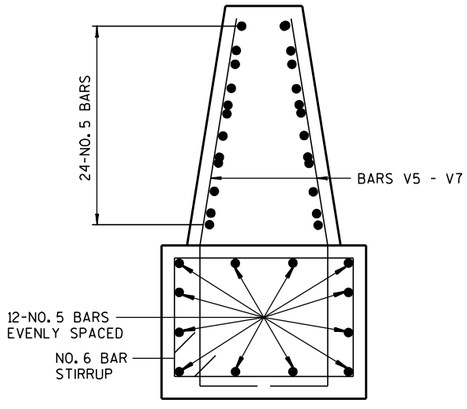
BAR BENDING DETAIL
FOR BARS V14 - V16



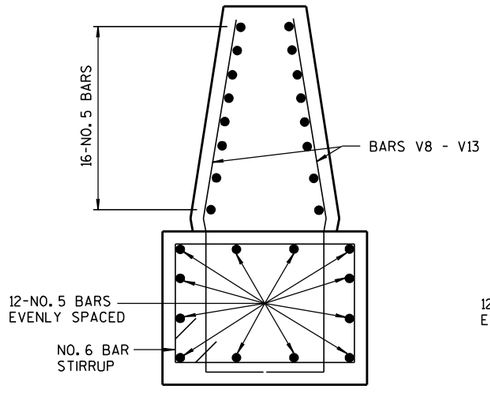
STIRRUP BAR
BENDING DETAIL



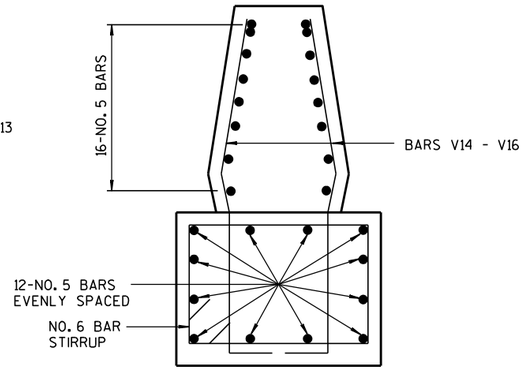
BAR DETAIL
SECTIONS V1 - V4



BAR DETAIL
SECTIONS V5 - V7



BAR DETAIL
SECTIONS V8 - V13



BAR DETAIL
SECTIONS V14 - V16

CONCRETE BARRIER
SINGLE SLOPE 42"
THRIE BEAM ANCHOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-3-2010 DATE
/S/ Jerry H. Z---
ROADWAY STANDARDS ENGINEER

FHWA

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S.D.D. 14 B 33-1h

GENERAL NOTES

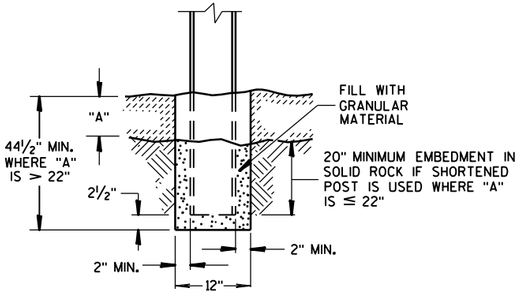
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

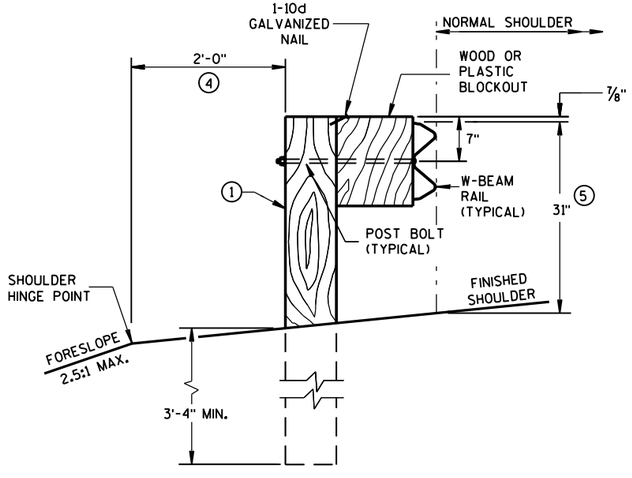
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

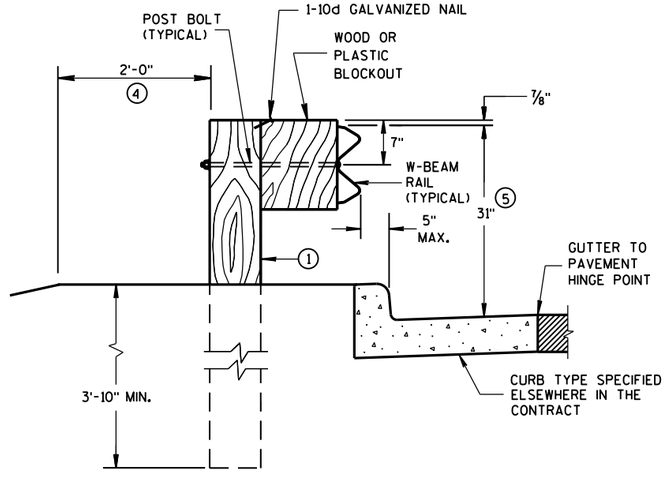


END VIEW
SETTING STEEL OR WOOD POST IN ROCK ③



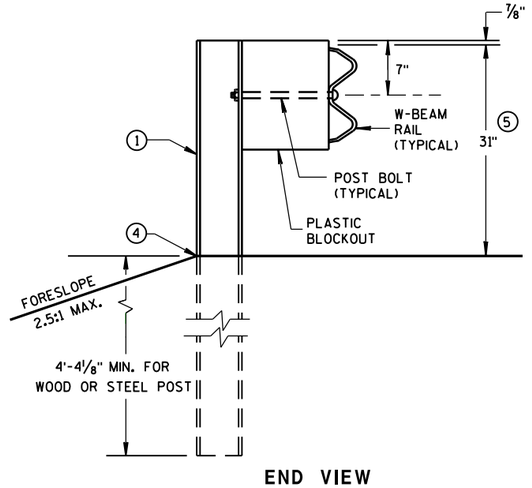
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



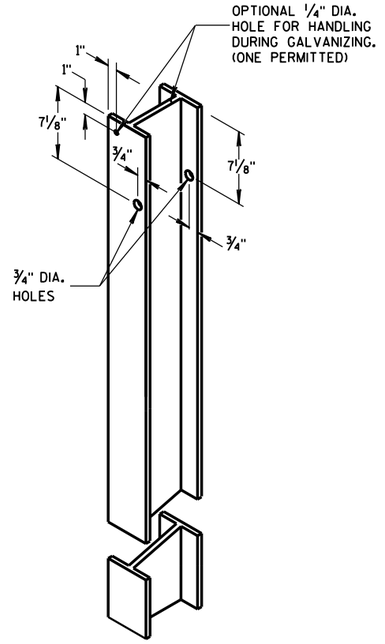
END VIEW

LOCATED ALONG A CURBED ROADWAY

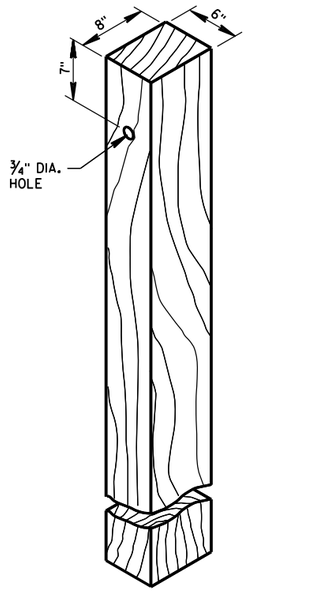


END VIEW

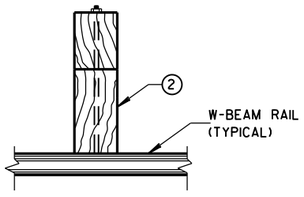
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



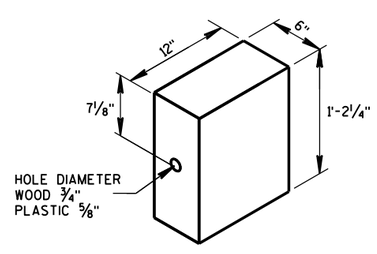
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



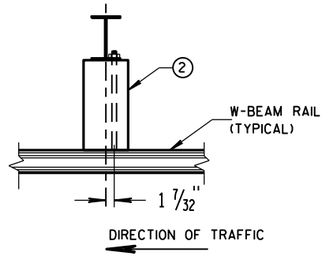
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②



PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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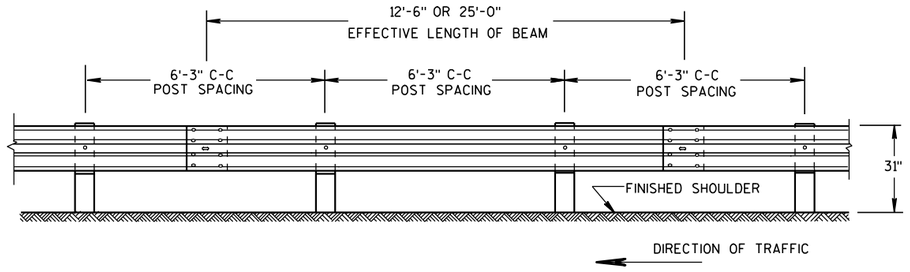
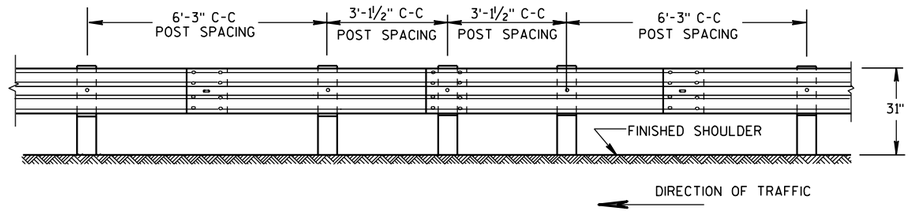
S.D.D. 14 B 42-2a



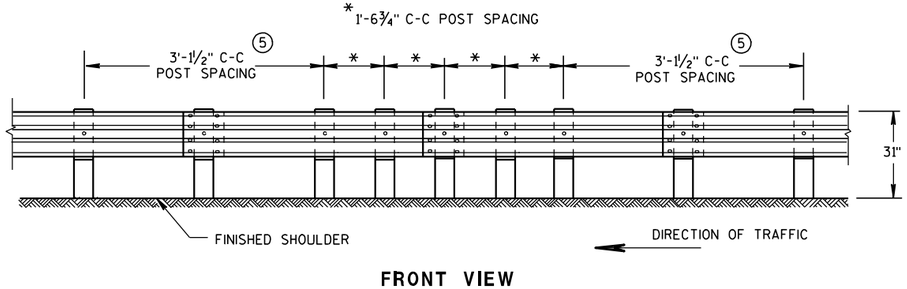
FRONT VIEW

POST SPACING STANDARD INSTALLATION



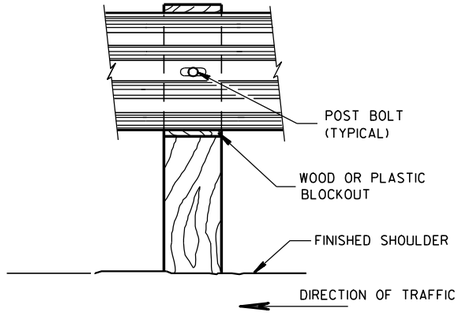
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

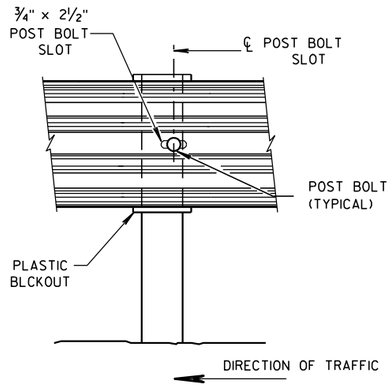


FRONT VIEW

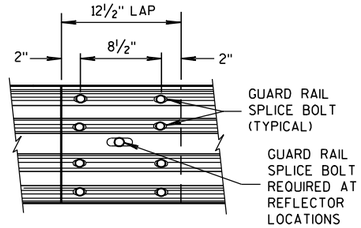
QUARTER POST SPACING (QS)



FRONT VIEW AT WOOD POST

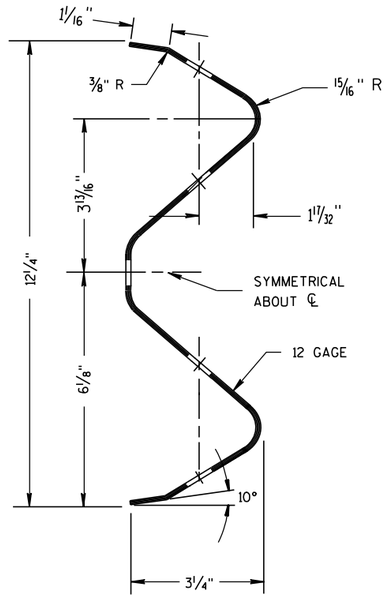


FRONT VIEW AT STEEL POST

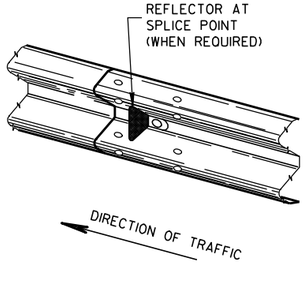


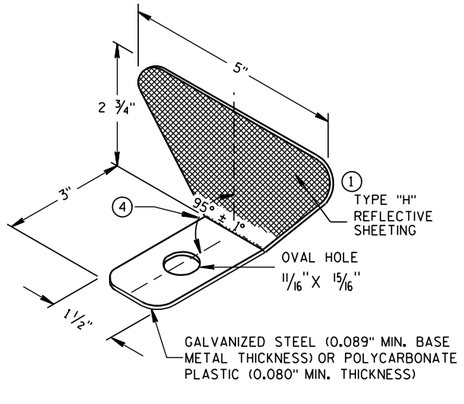
FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①

GENERAL NOTES

① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.

② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

④ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

⑤ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING ②

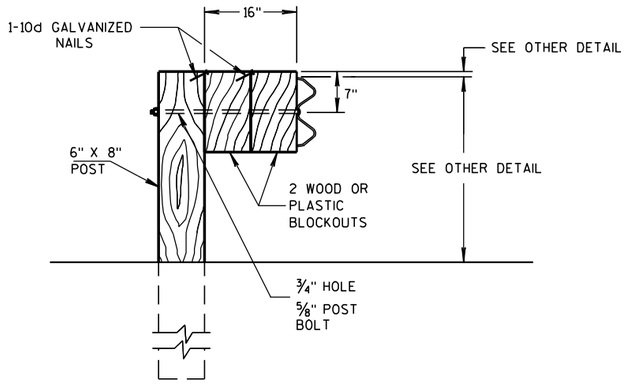
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 1 ③	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ④	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

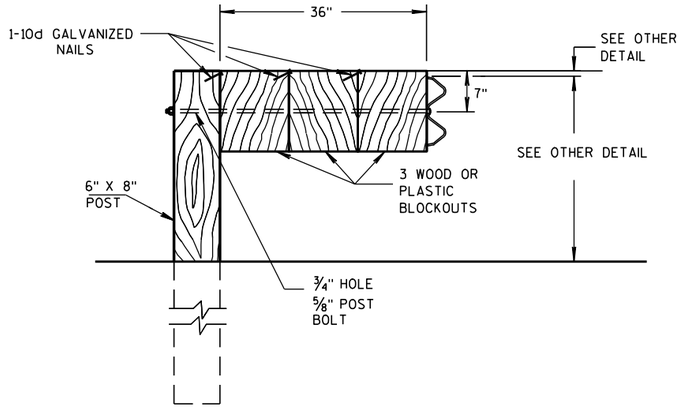
S.D.D. 14 B 42-2b

S.D.D. 14 B 42-2b



DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

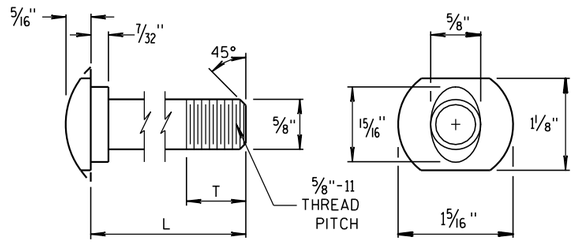


DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

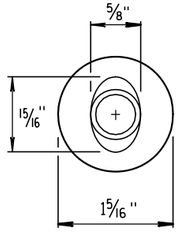
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

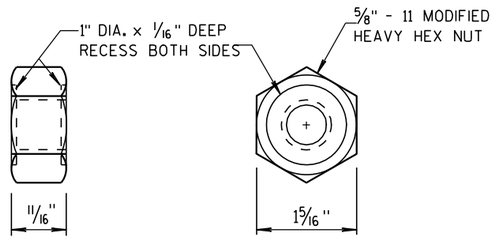


POST BOLT TABLE

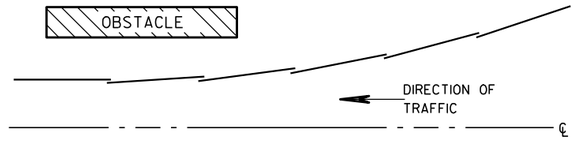
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

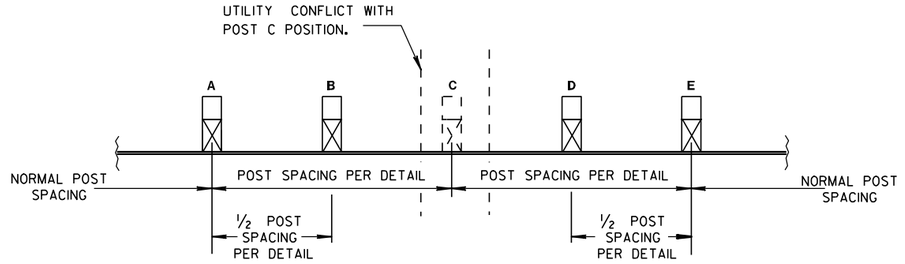


POST BOLT AND RECESS NUT

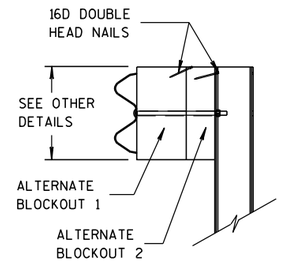


PLAN VIEW

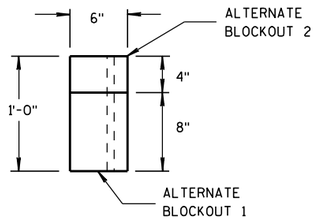
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

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S.D.D. 14 B 42-2c

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S.D.D. 14 B 42-2c

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL),AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

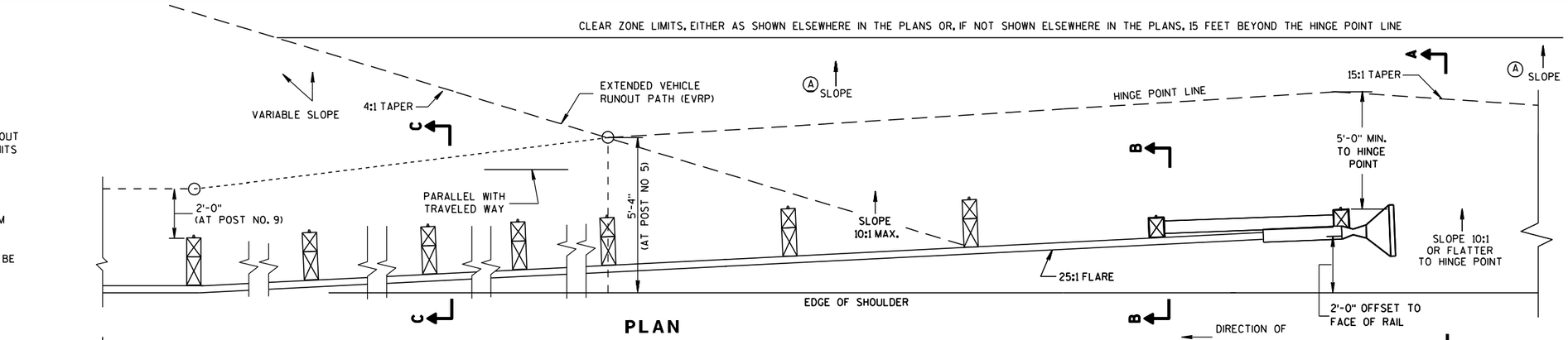
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

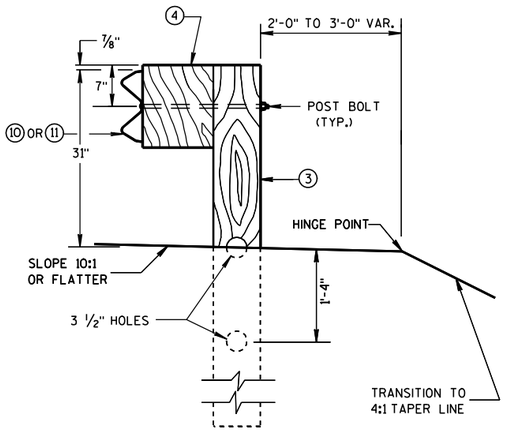
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

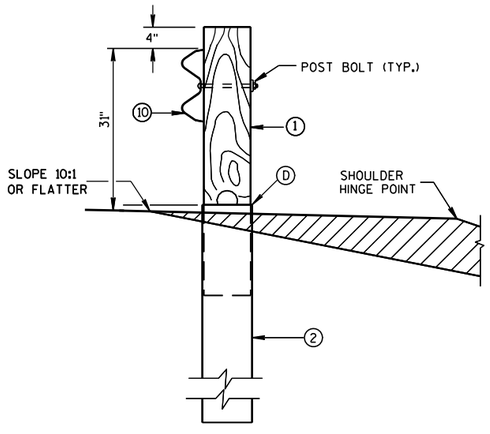
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

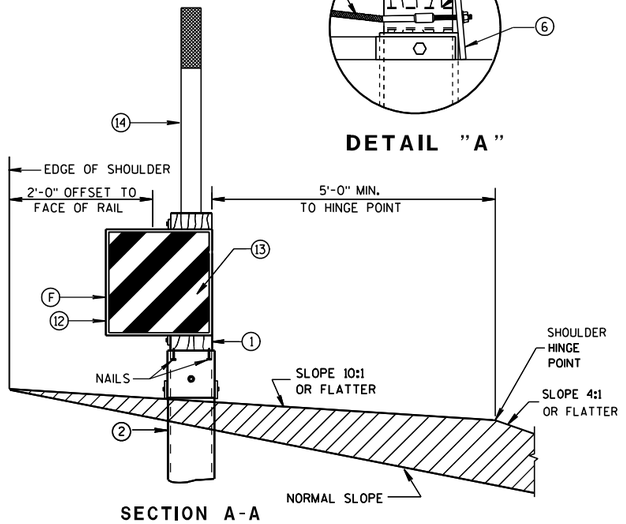




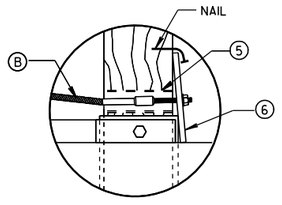
SECTION C-C
TYPICAL AT POST NOS. 3-9



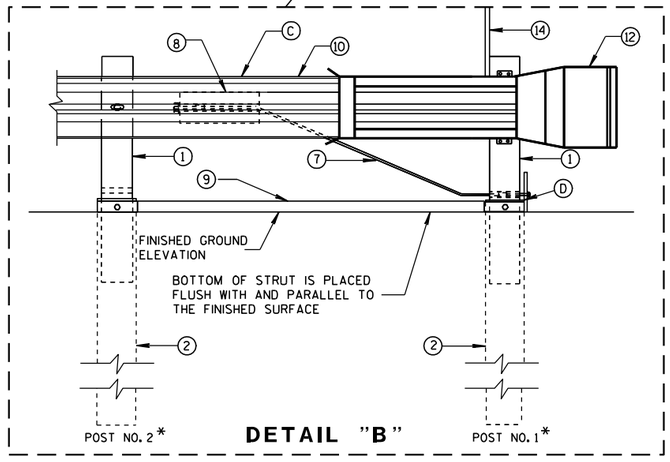
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 44-1a

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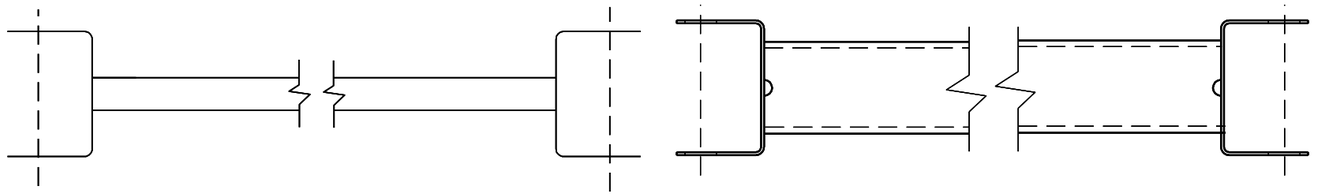
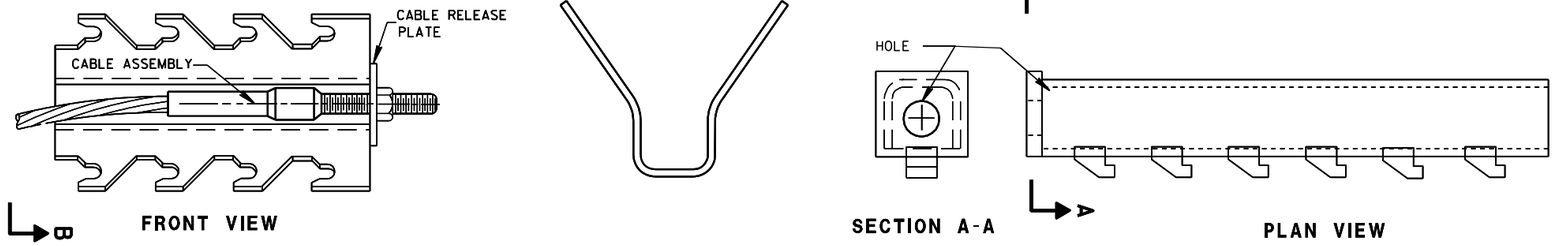


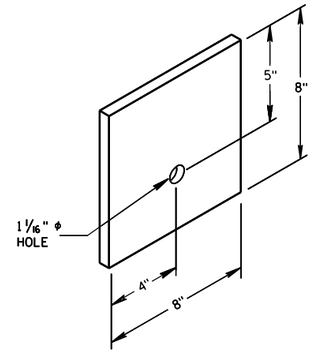
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



GENERIC ANCHOR CABLE BOX (8) (H)



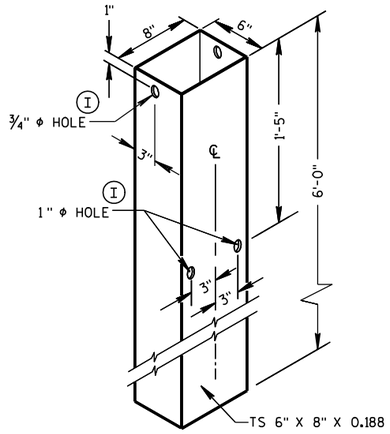
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

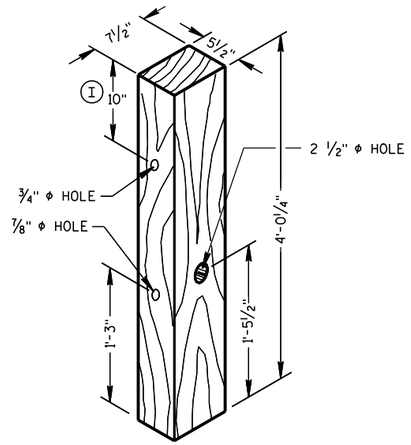
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

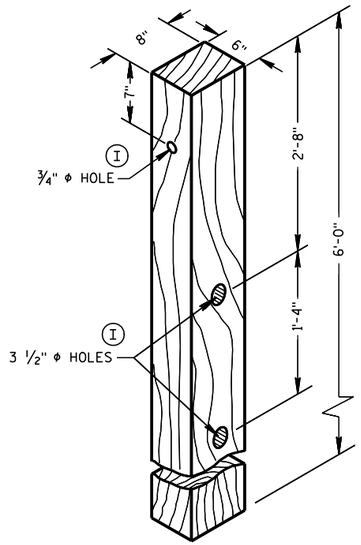


FOUNDATION TUBE (2)



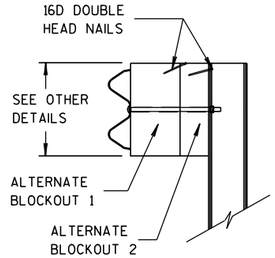
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

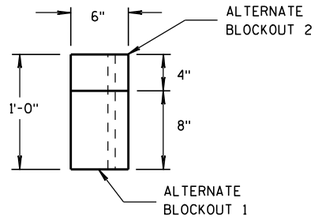


POSTS NUMBER 3-9

WOOD CRT POST (3)

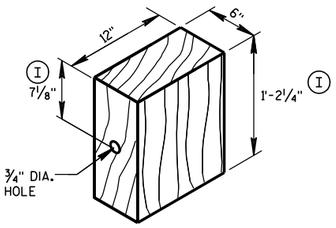


SIDE VIEW



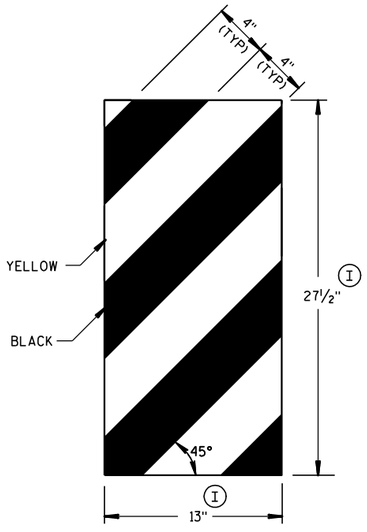
TOP VIEW

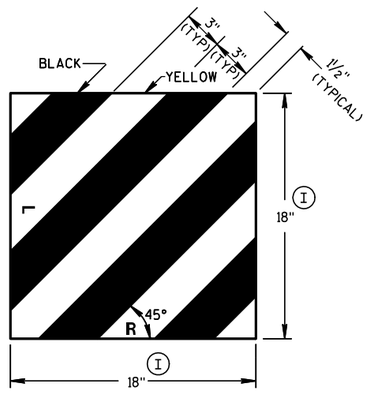
ALTERNATE WOOD BLOCKOUT DETAIL



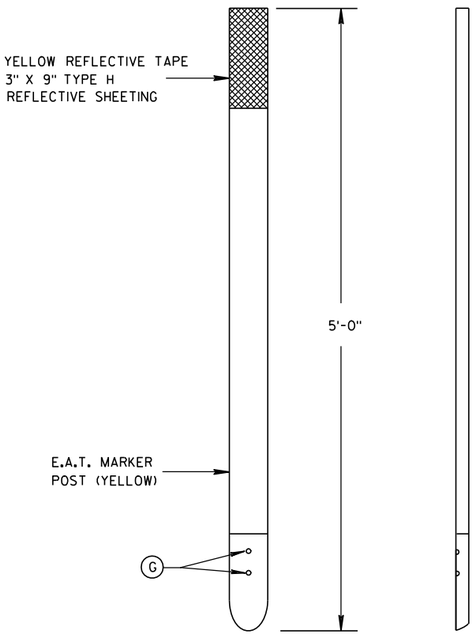
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





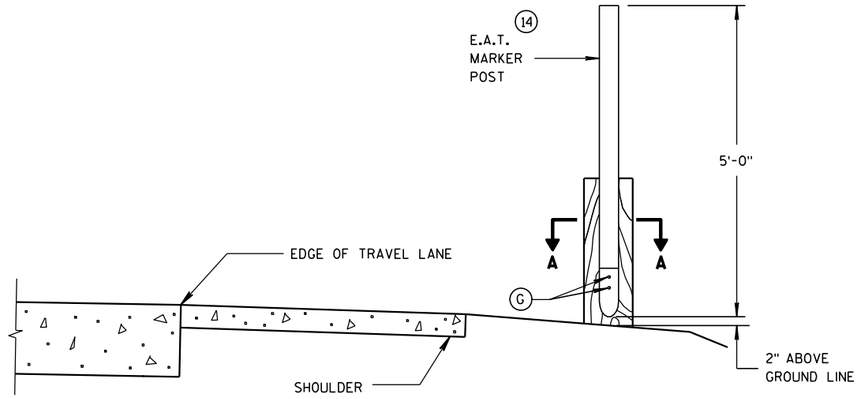
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

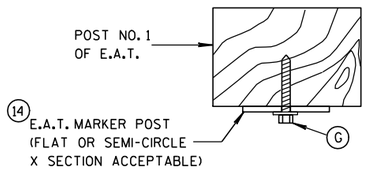
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

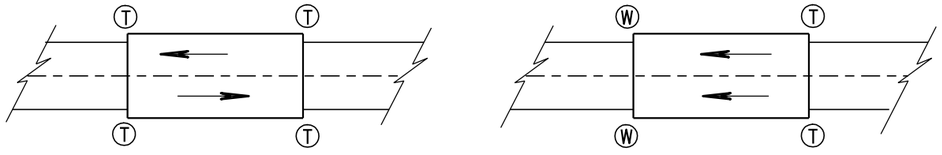
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-1c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

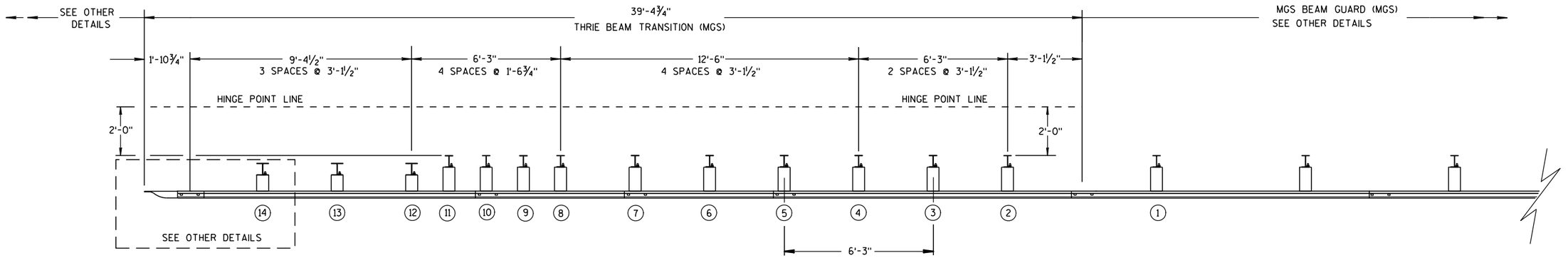
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

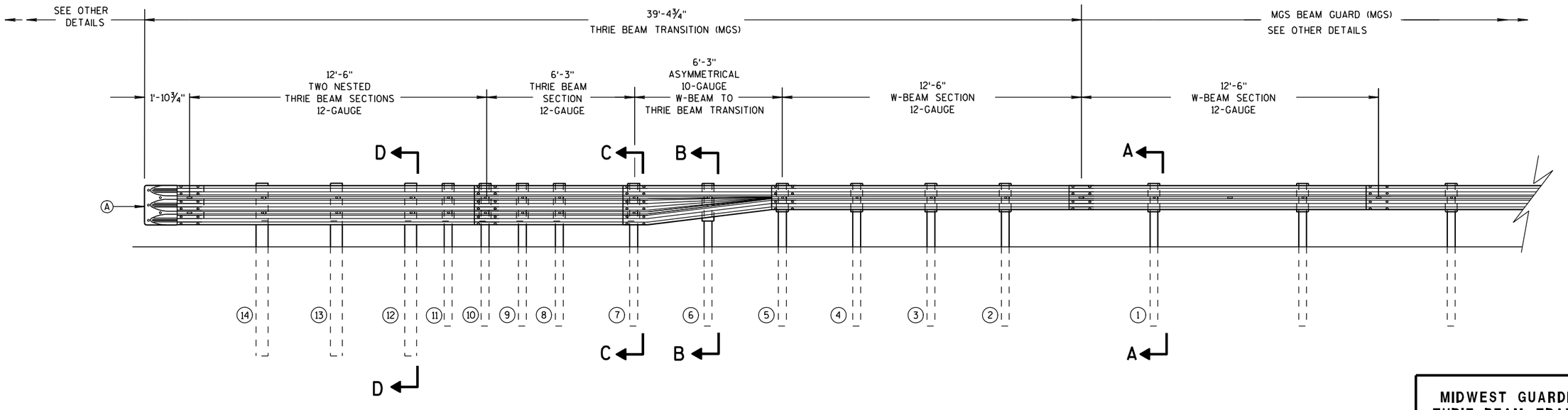
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

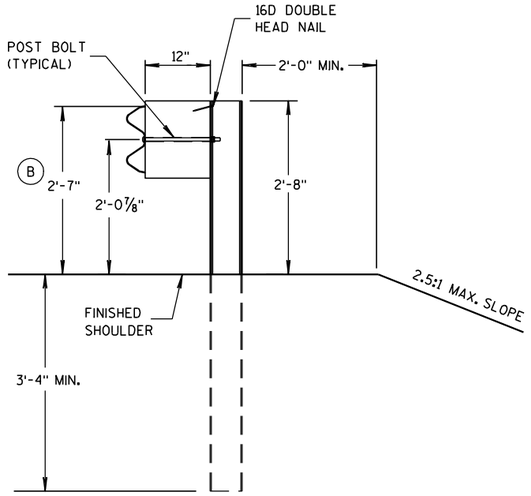
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3a

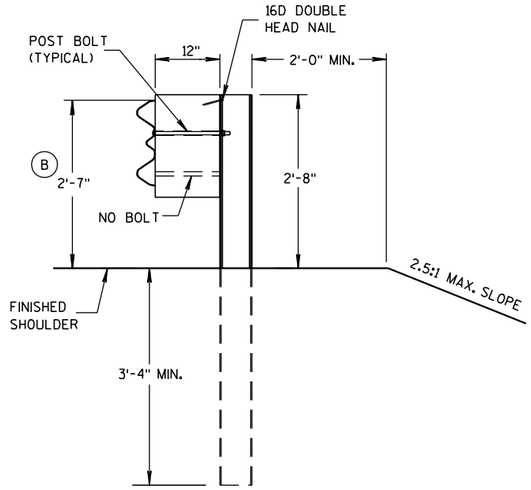
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



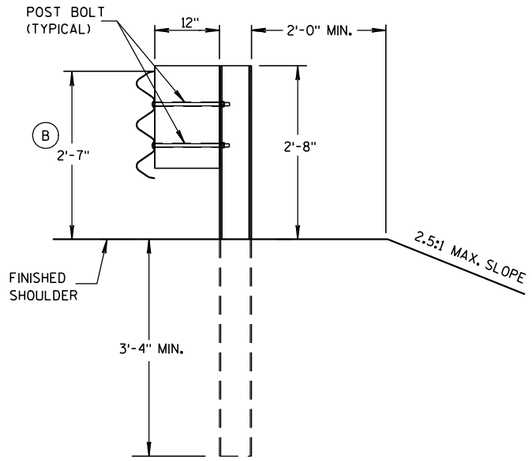
SECTION A-A

POSTS 1-5



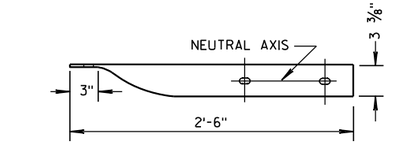
SECTION B-B

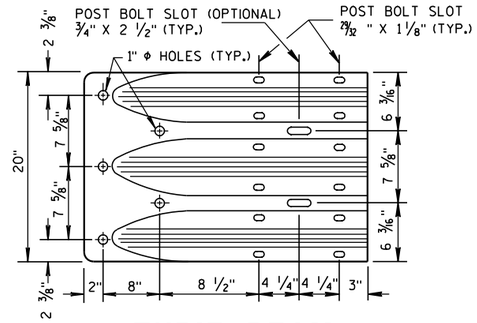
POST 6



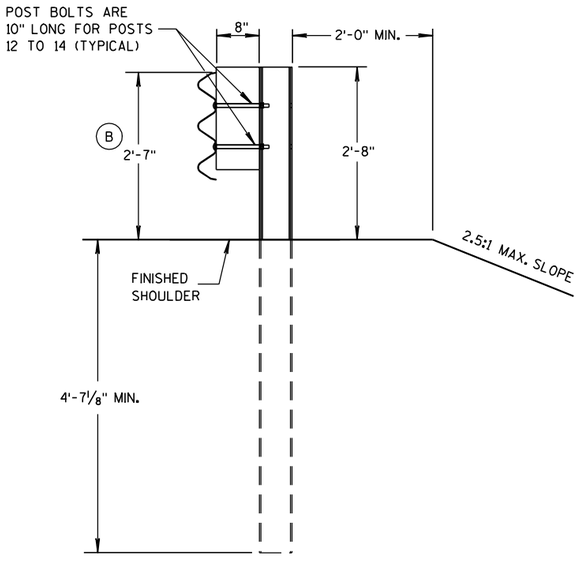
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

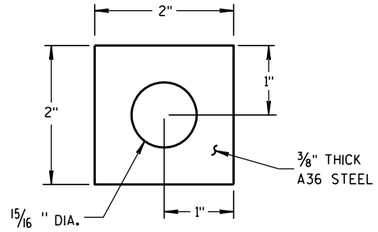
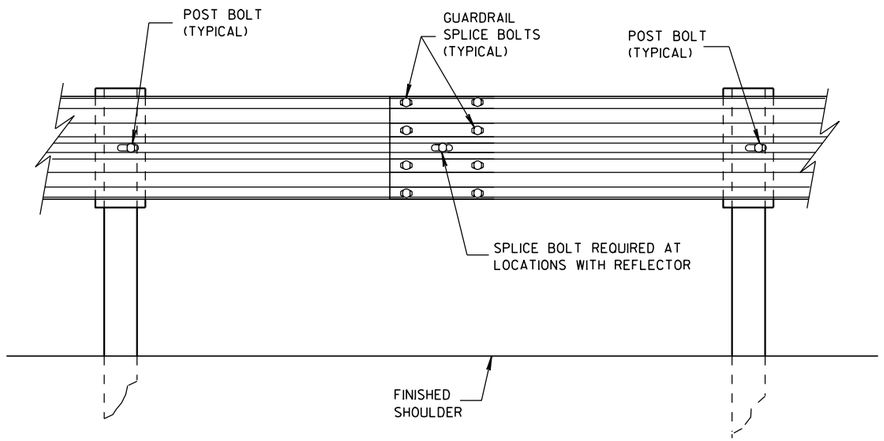
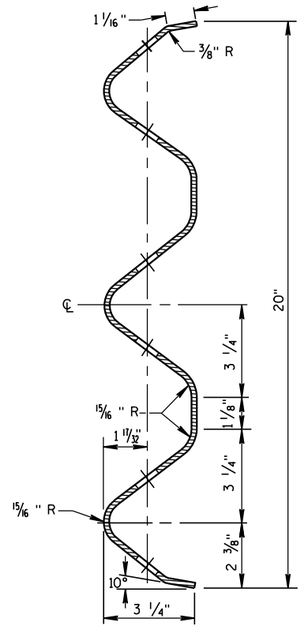


PLATE WASHER DETAIL



SPLICE DETAIL



SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

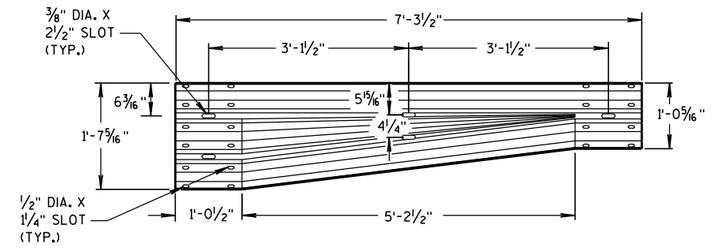
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

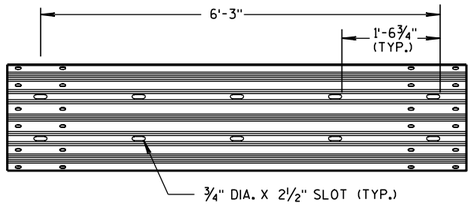
S.D.D. 14 B 45-3b

6

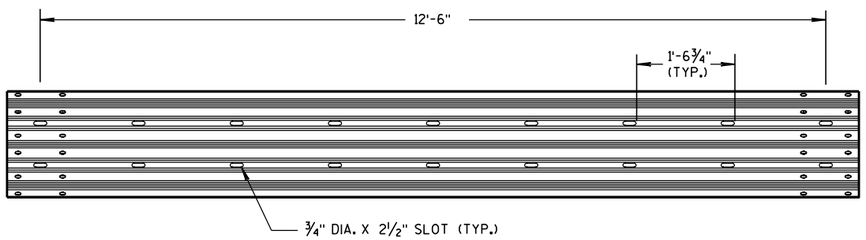
S.D.D. 14 B 45-3b



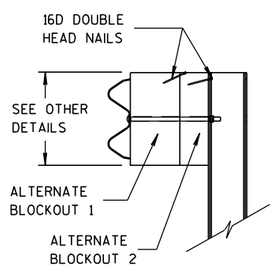
W-BEAM TO THRIE BEAM TRANSITION SECTION



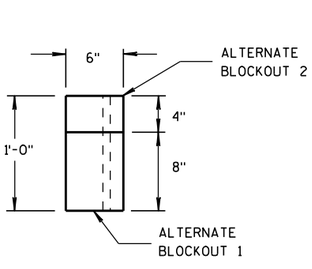
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

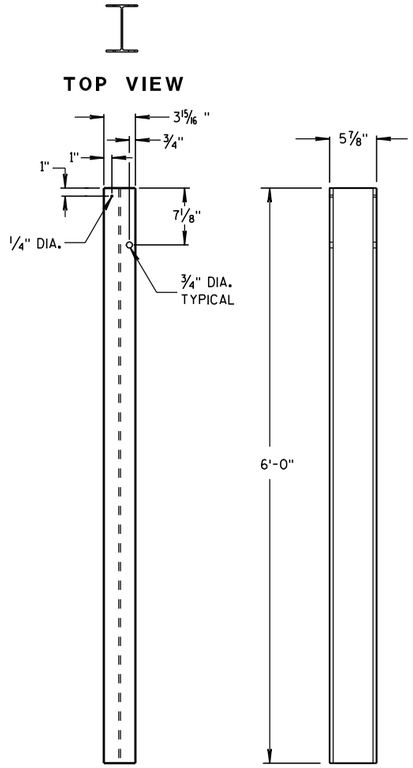


SIDE VIEW

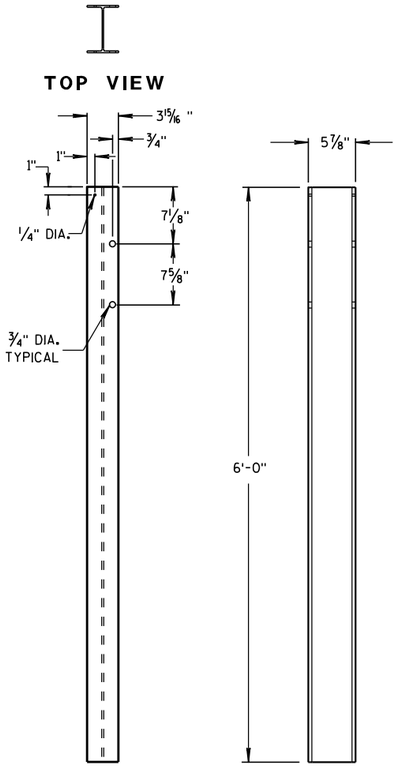


TOP VIEW

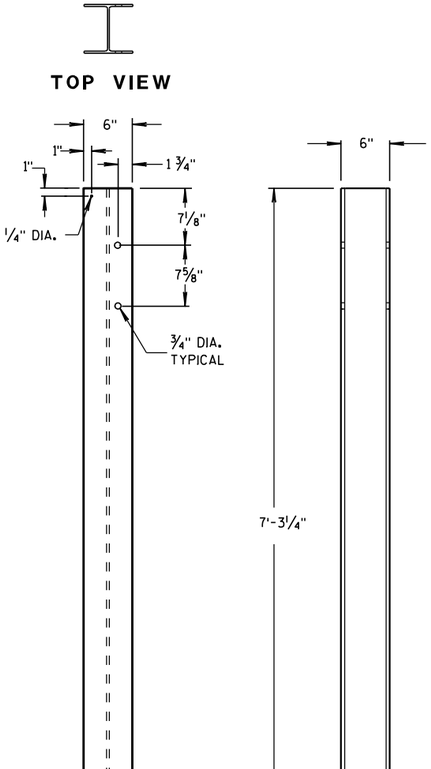
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

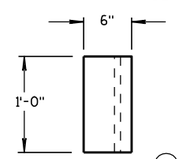


STEEL POSTS 6-11

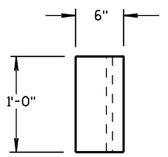


STEEL POSTS 12-14

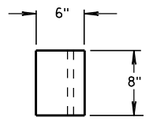
1 WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



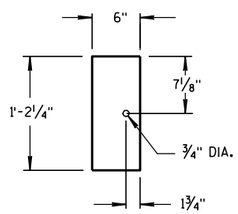
TOP VIEW (1)



TOP VIEW (1)

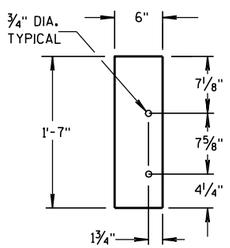


TOP VIEW



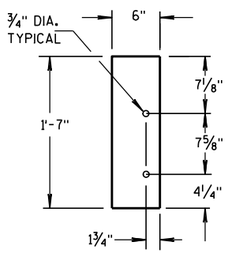
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 45-3c

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

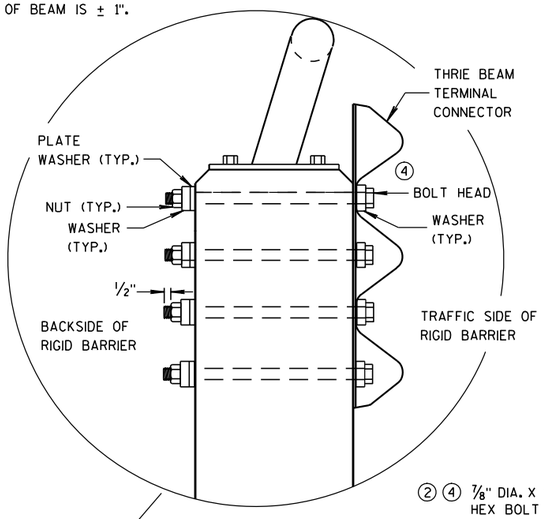
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

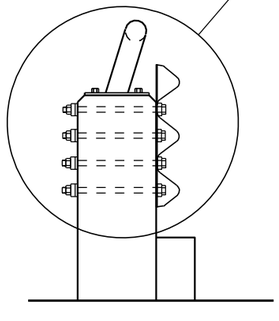
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2". BLOCK IS INCIDENTAL TO THE CONTRACT.

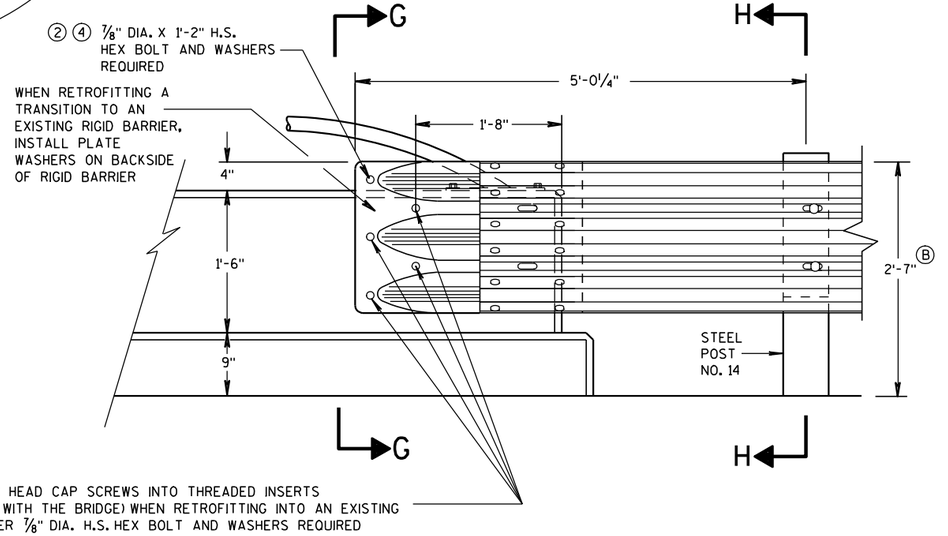
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

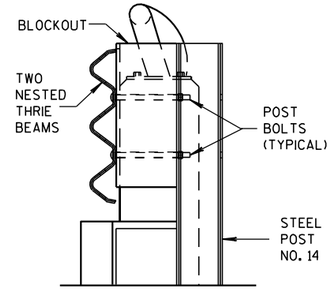




SECTION G-G

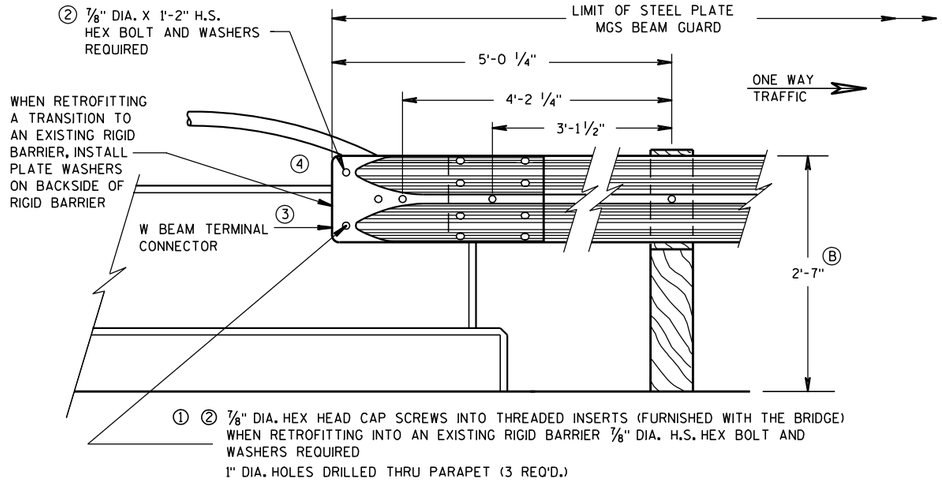


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

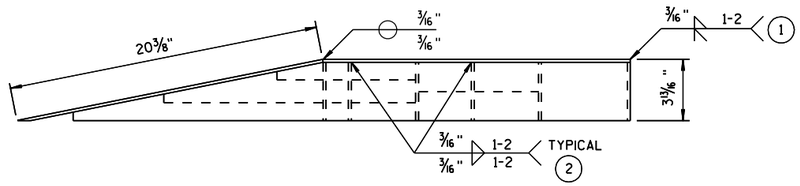
APPROVED

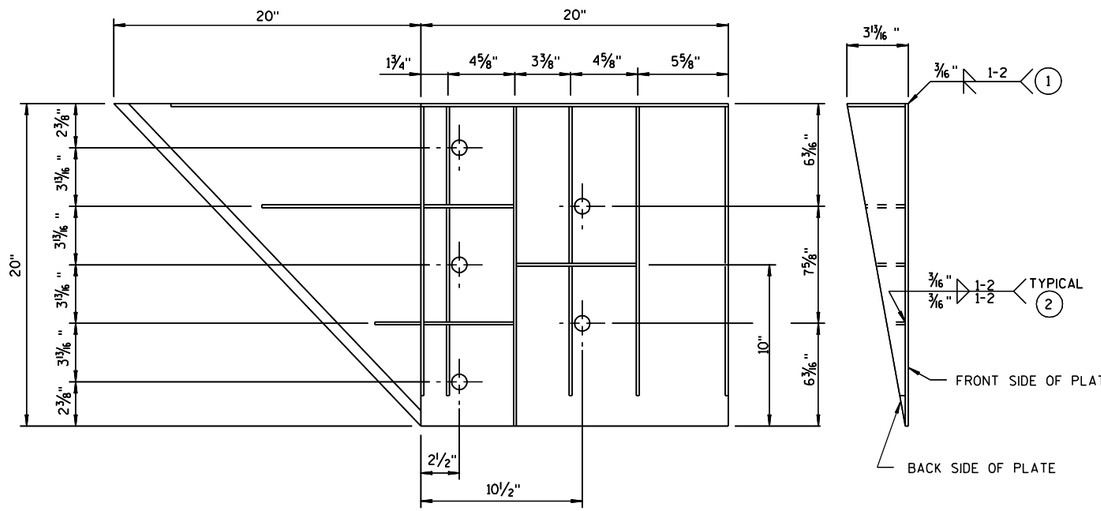
8-31-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

6
S.D.D. 14 B 45-3e





WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

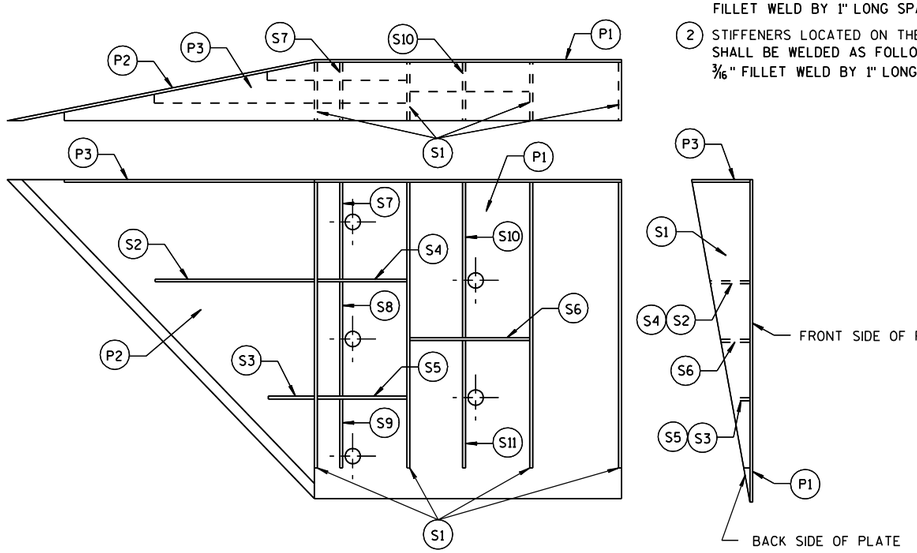


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
/S/ Jerry H ...
ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 45-3i

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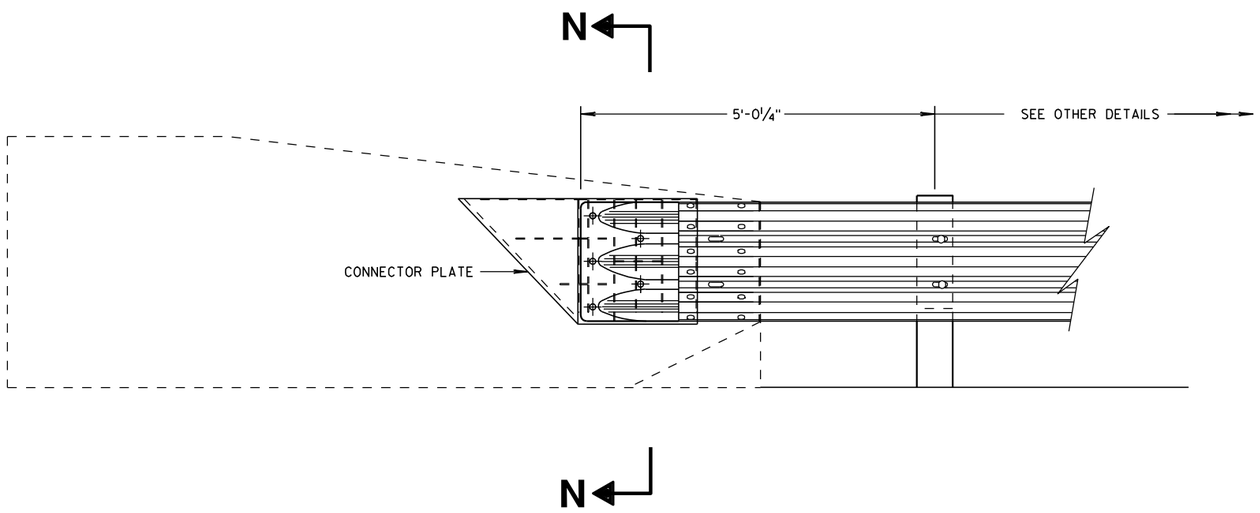
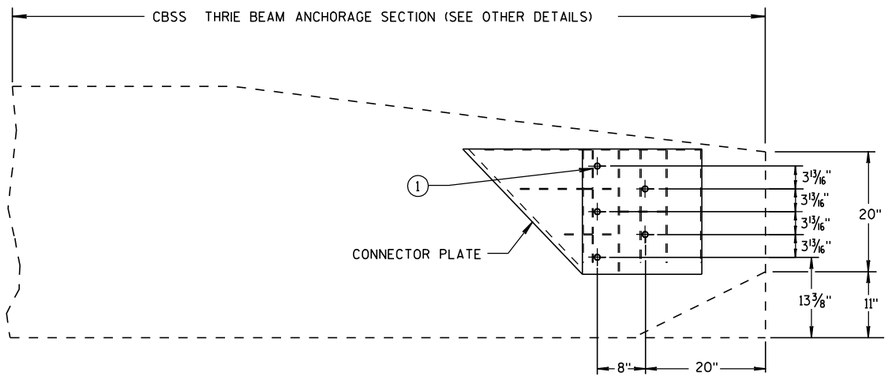
S.D.D. 14 B 45-3i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

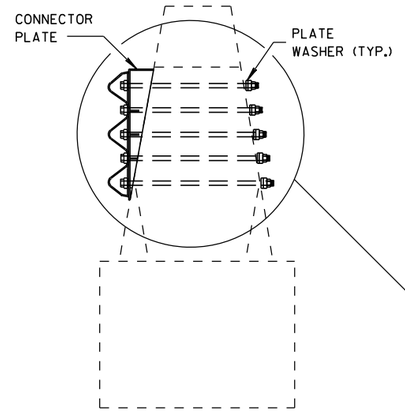


SINGLE SLOPE CONNECTION PLATE PLACEMENT

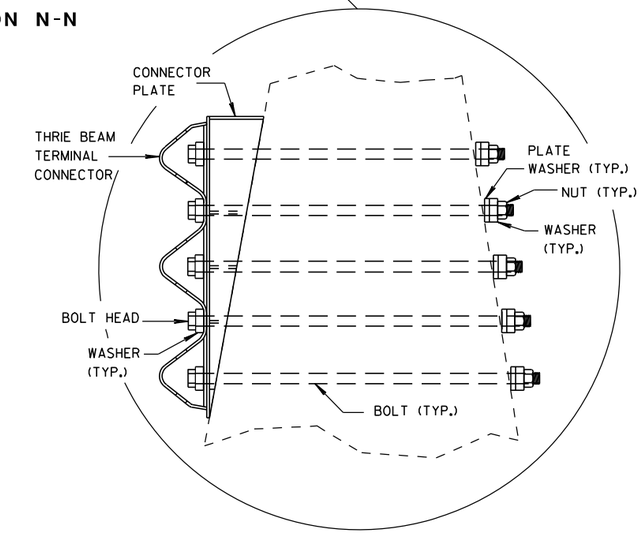
GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 45-3j

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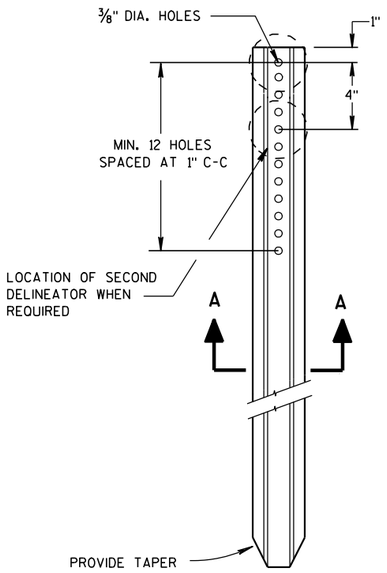
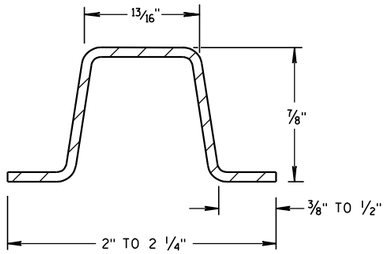
S.D.D. 14 B 45-3j

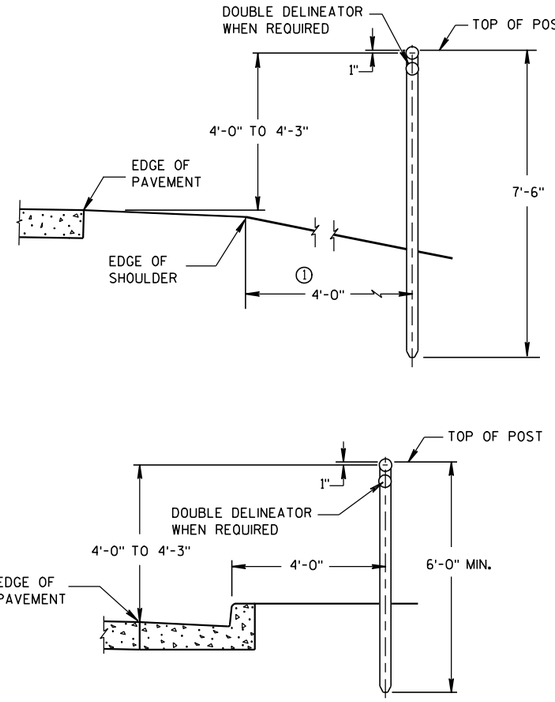


DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

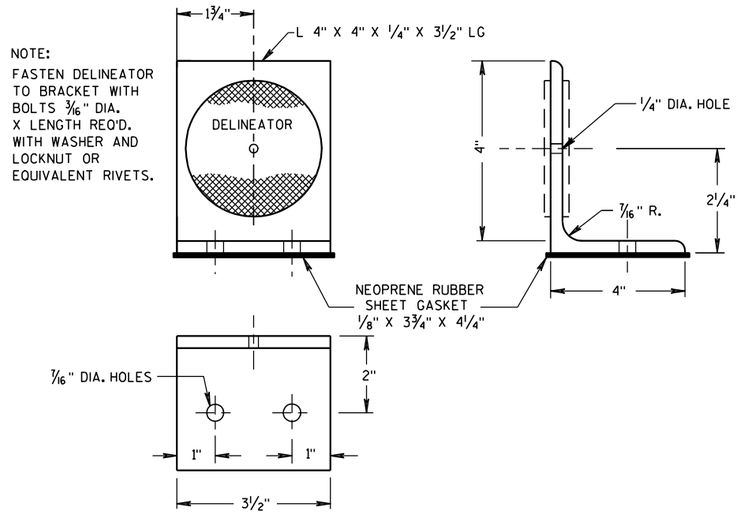


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

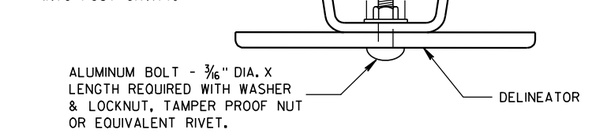
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

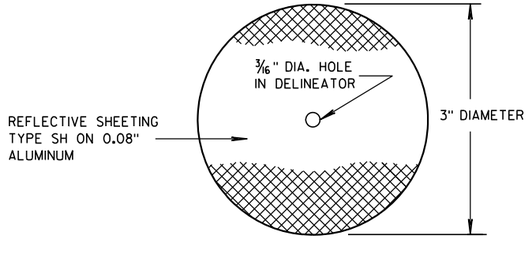
① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



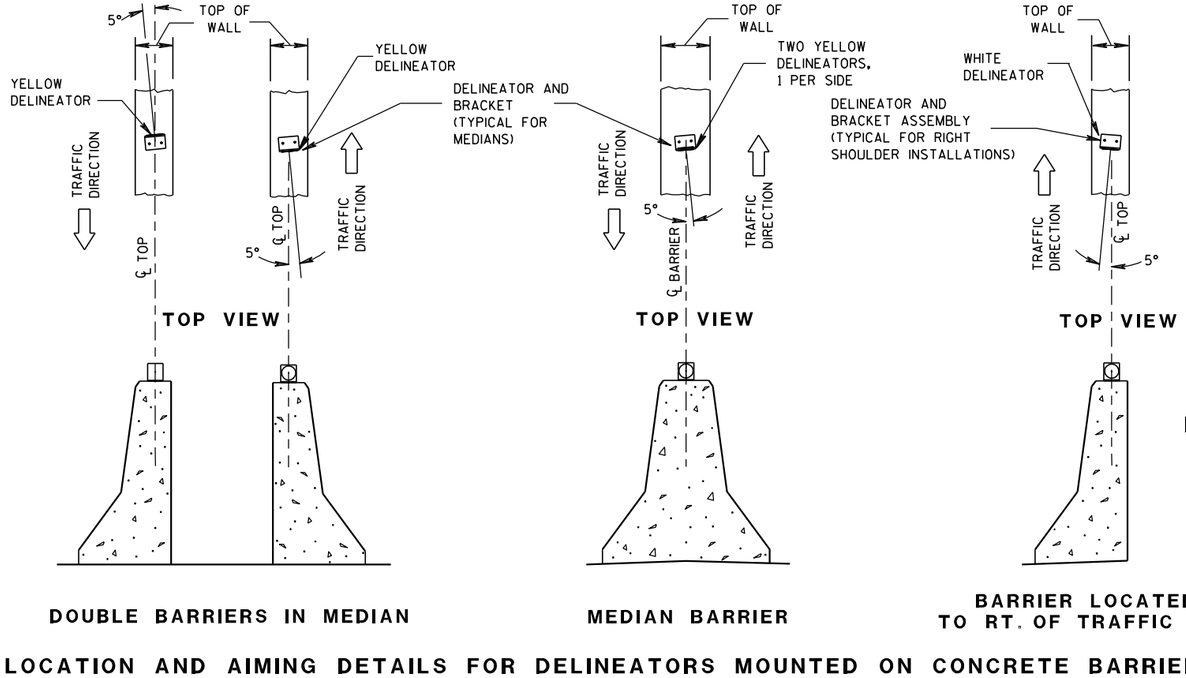
DELINEATOR BRACKET



MOUNTING DETAIL FOR DELINEATOR



DELINEATOR

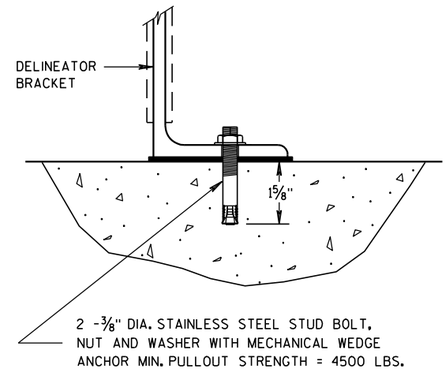


DOUBLE BARRIERS IN MEDIAN

MEDIAN BARRIER

BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATORS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR BRACKET AND DELINEATOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
1/25/2011 — DATE
/S/ Thomas N. Nothdurft — STATE TRAFFIC ENGINEER

FHWA

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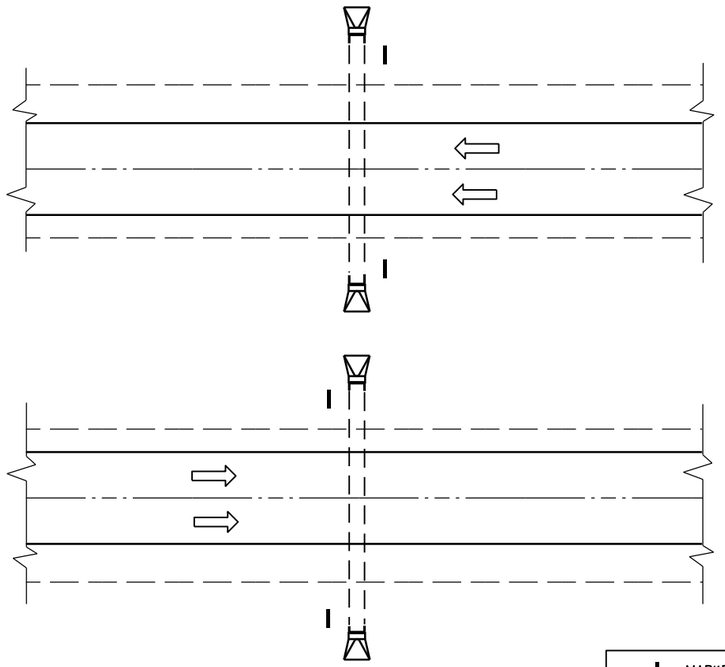
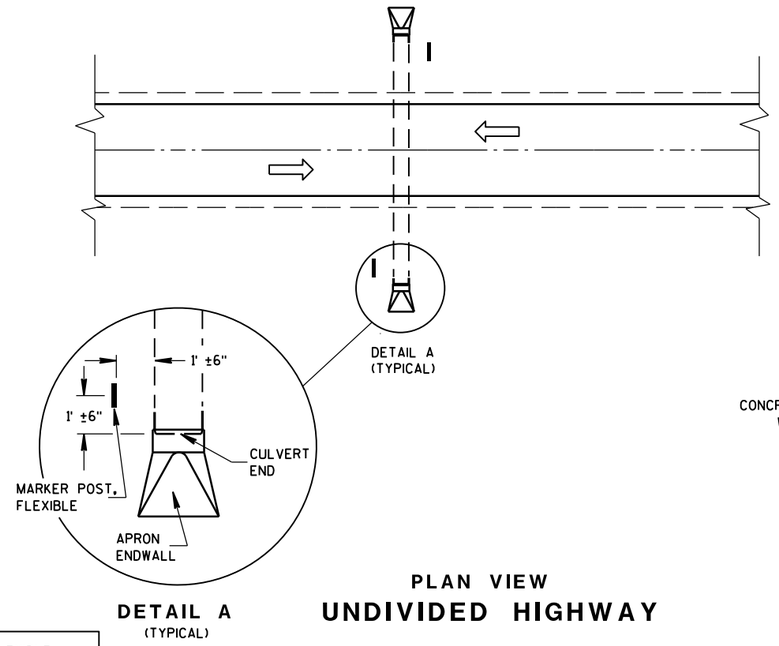
S.D.D. 15 A 2-7



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

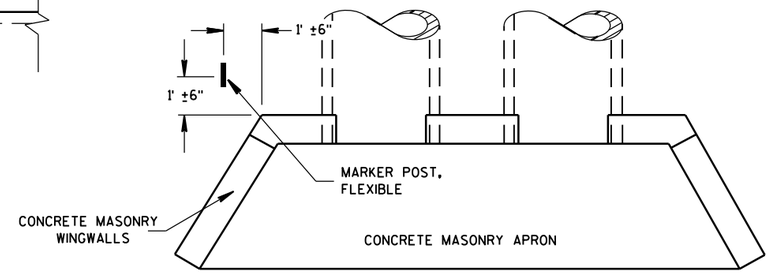
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

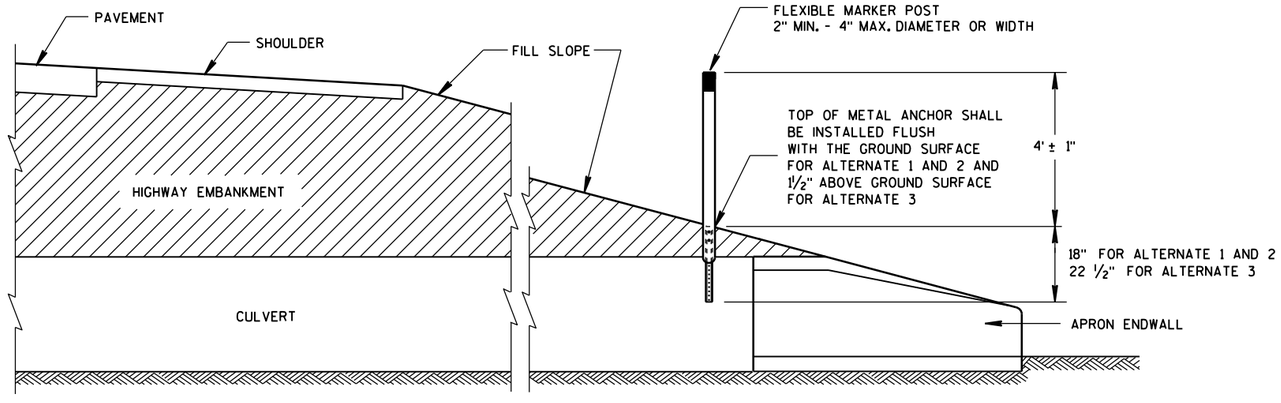
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 15 A 3-2a

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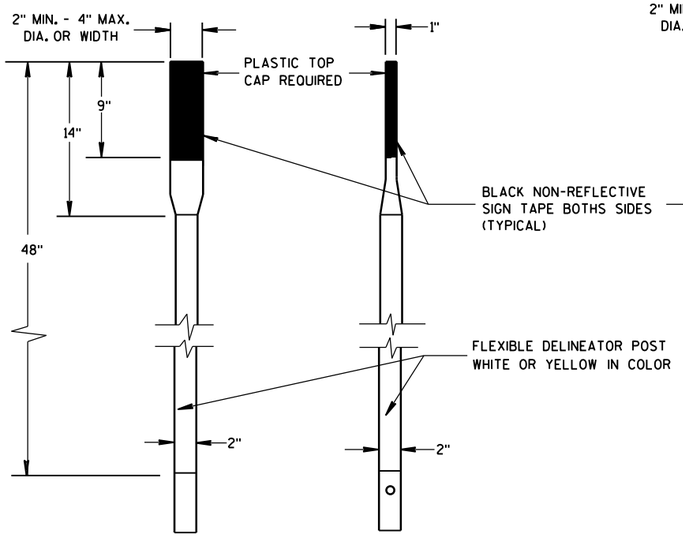
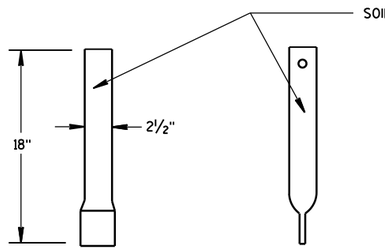
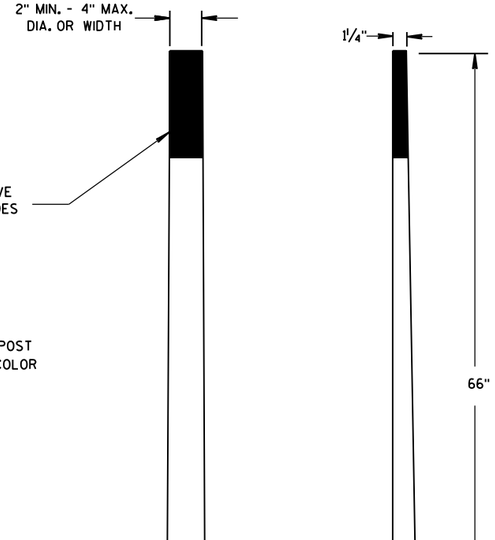
S.D.D. 15 A 3-2a





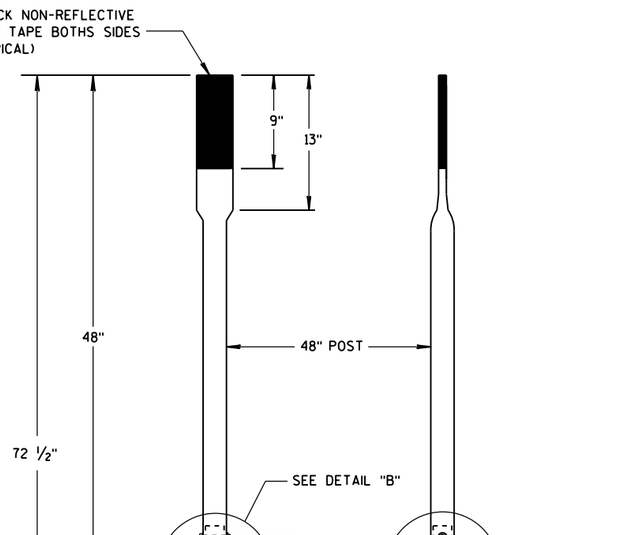
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

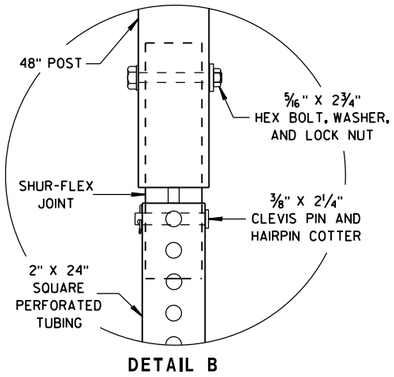
ALTERNATE 2



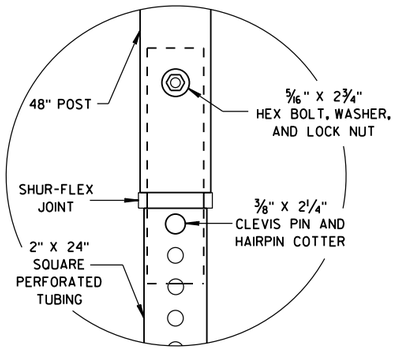
FRONT VIEW SIDE VIEW

ALTERNATE 3

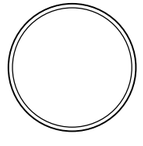
FLEXIBLE MARKER POSTS



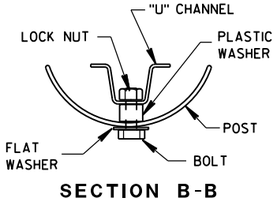
DETAIL B



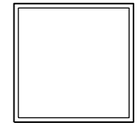
DETAIL C



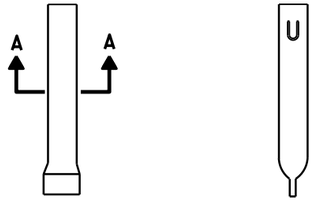
SECTION A-A



SECTION B-B

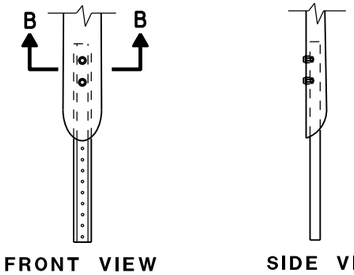


SECTION C-C



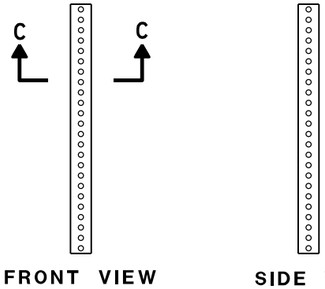
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2



FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

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S.D.D. 15 A 3-2b

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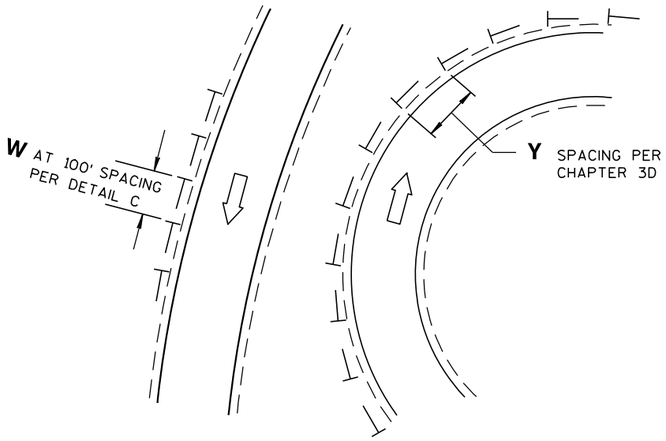
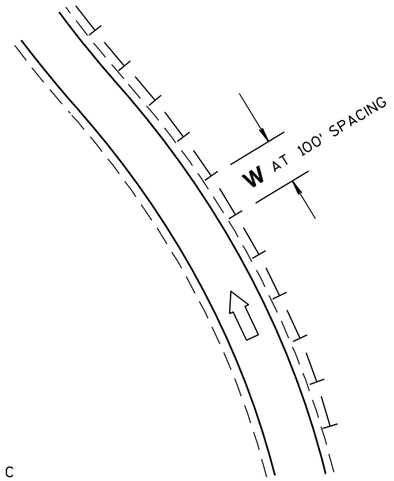
S.D.D. 15 A 3-2b

GENERAL NOTES

* USE DOUBLE DELINEATOR ALONG ACCELERATION-DECELERATION LANES AND TAPERS. USE SINGLE DELINEATOR WHEN RAMP PAVEMENT IS FULL WIDTH.



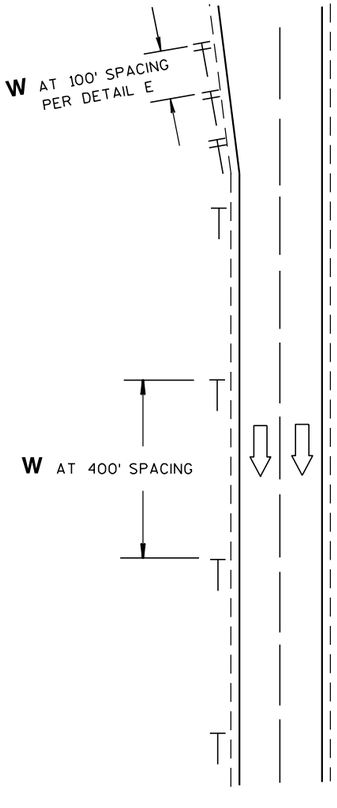
DETAIL A
DELINEATOR LAYOUT AT CURVED RAMP



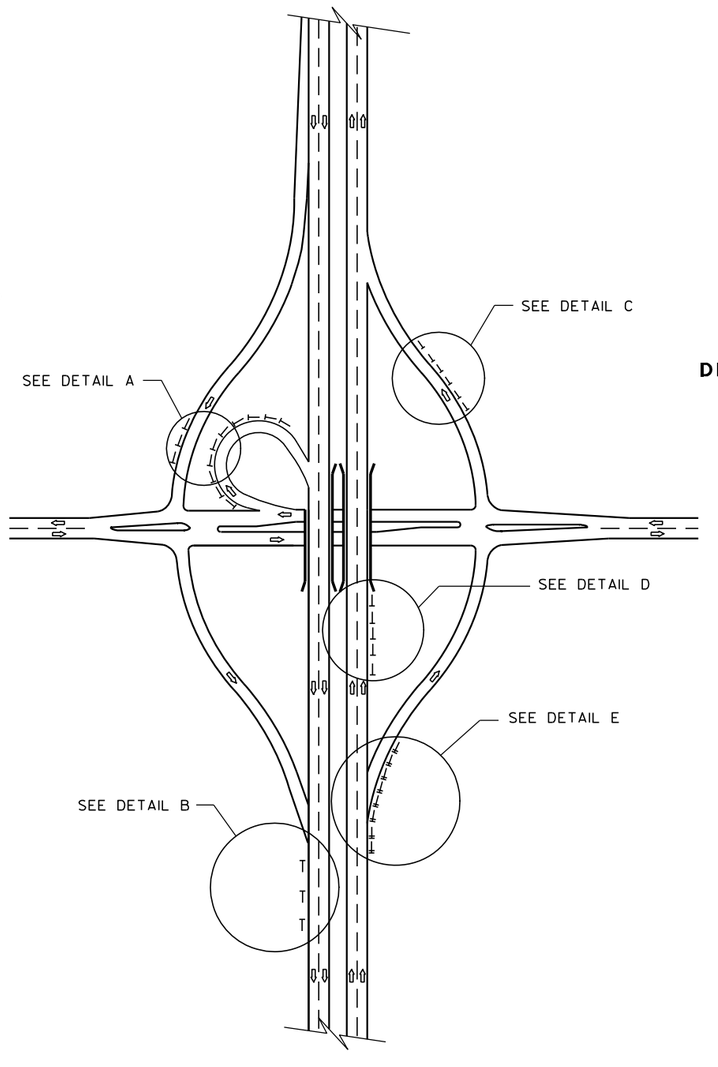
DETAIL C
DELINEATOR LAYOUT ALONG RAMP

LEGEND

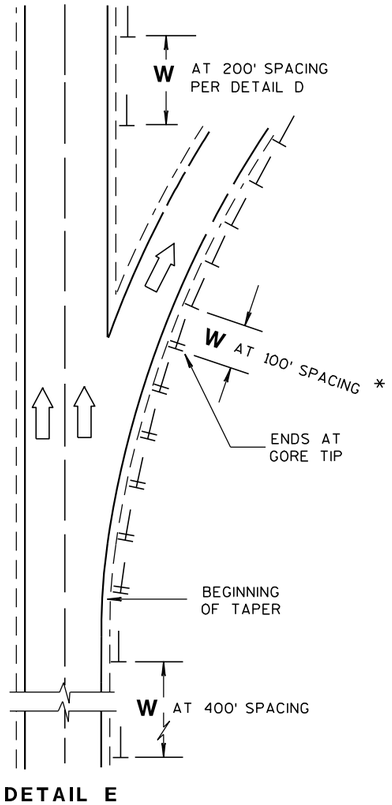
- DIRECTION OF TRAFFIC FLOW
- SINGLE DELINEATOR
- DOUBLE DELINEATOR
- W — WHITE
- Y — YELLOW



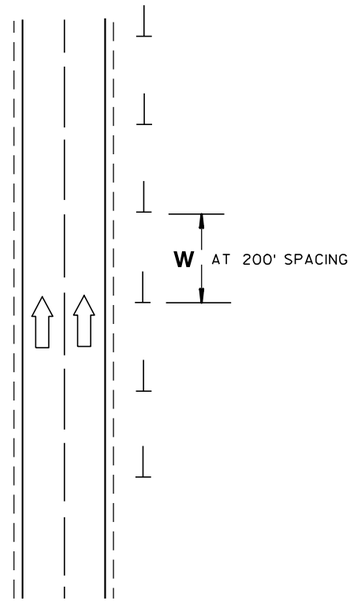
DETAIL B
DELINEATOR LAYOUT ALONG MAINLINE



DELINEATOR LAYOUT



DETAIL E
DELINEATOR LAYOUT FOR ACCELERATION - DECELERATION LANES AND TAPERS AT RAMPS



DETAIL D
DELINEATOR LAYOUT BETWEEN INTERCHANGE RAMPS

DELINEATOR LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/5/09 DATE
/S/ Thomas N. Nothdurft STATE TRAFFIC ENGINEER
FHWA

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S.D.D. 15 A 6-2

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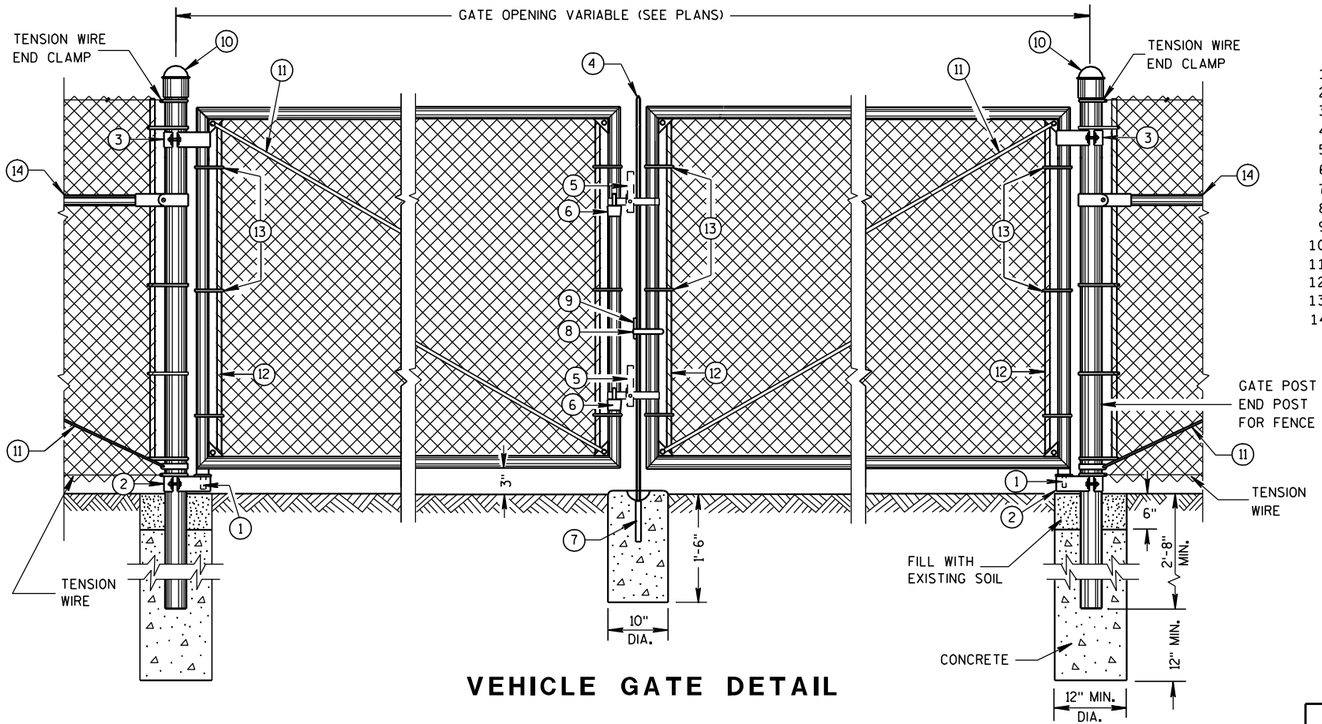
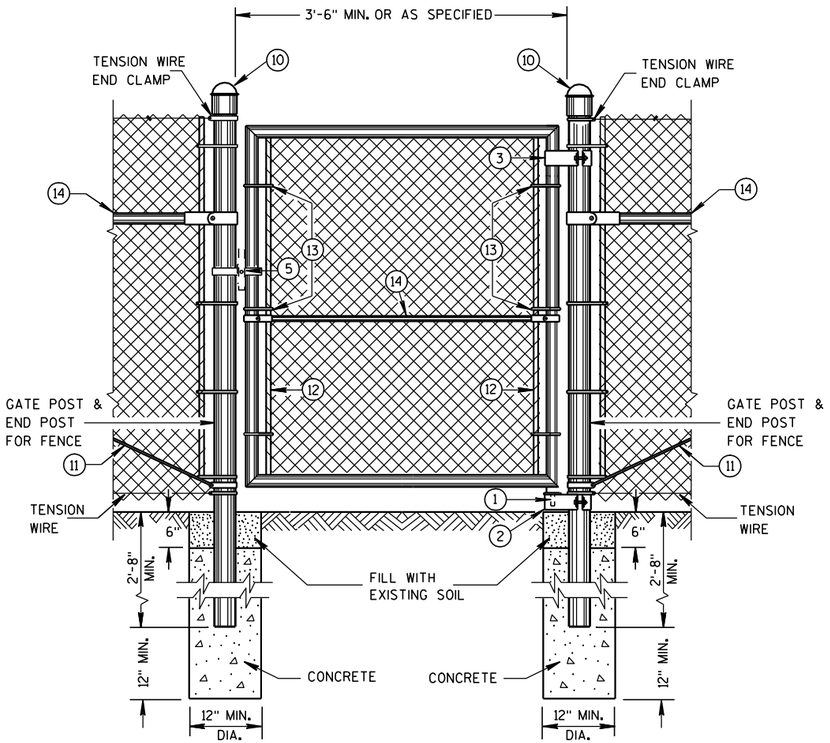


VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

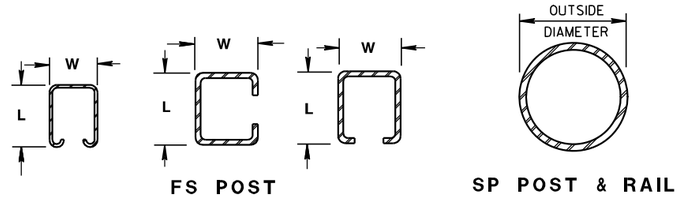
FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.



FS POST

SP POST & RAIL

CROSS SECTIONS OF POSTS AND RAILS

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

BRACE RAIL TYPES

USE		TYPE
BRACE RAIL		SP1 OR FS1

** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

SHAPE, SIZE AND WEIGHT REQUIREMENTS FOR FORMED STEEL FENCE POST

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

SHAPE, SIZE AND WEIGHT REQUIREMENTS FOR ROUND STEEL FENCE POST

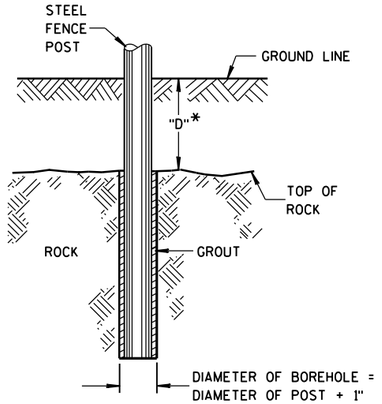
POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

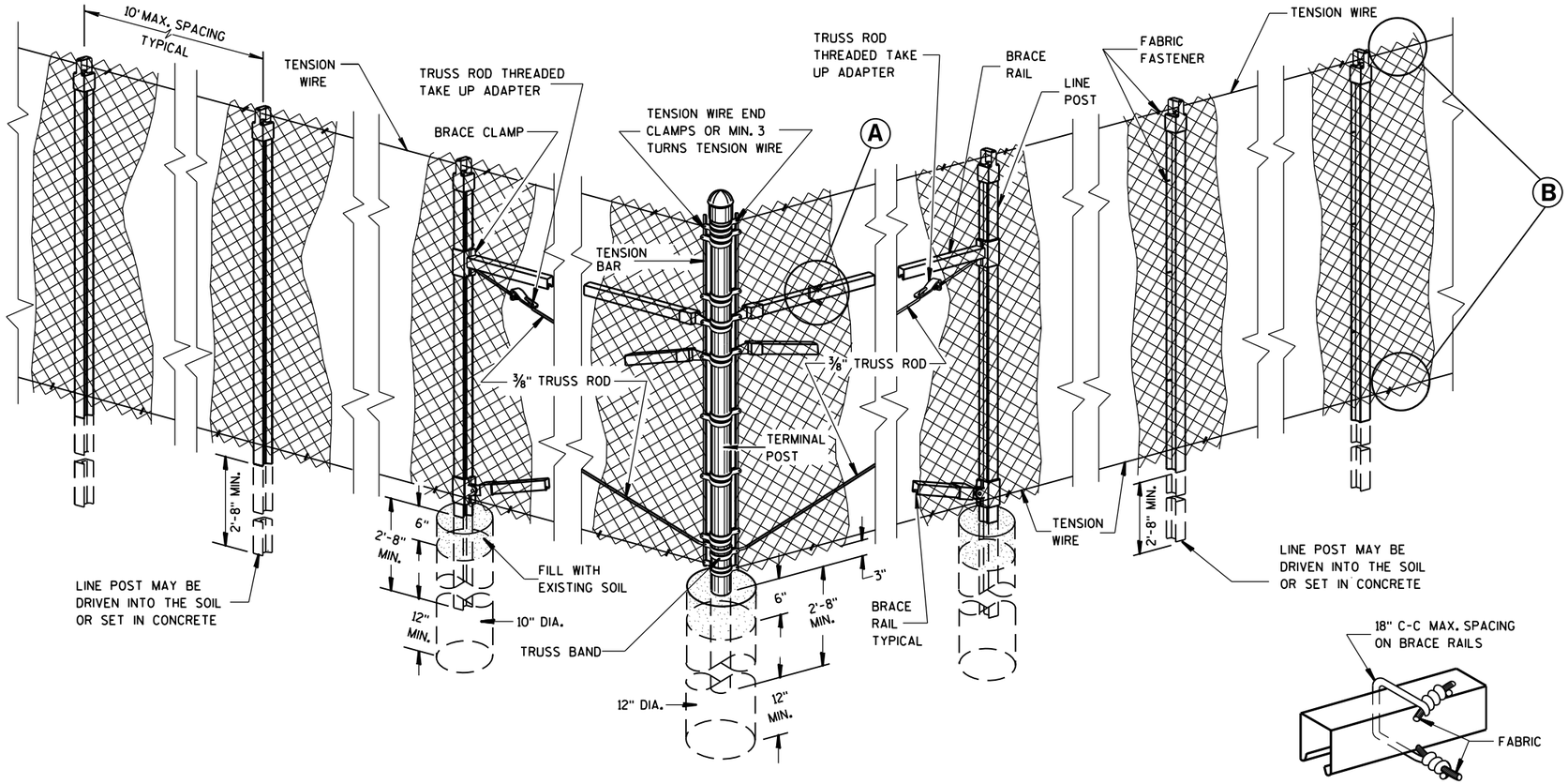
6

S.D.D. 15 B 3-12a

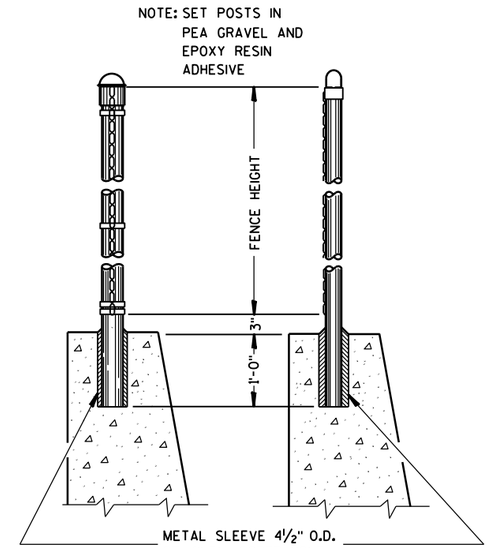


*IF "D" IS LESS THAN 2'-6", DRILL ROCK AND INSTALL GROUT

ROCK INSTALLATION OF LINE POST

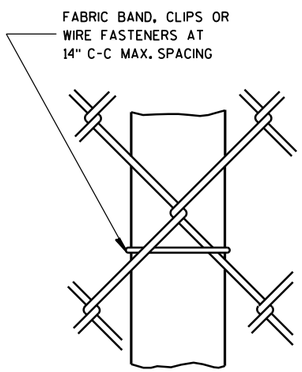


END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



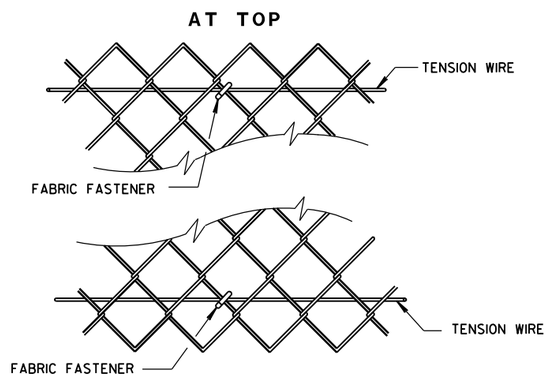
END POST & CORNER POST LINE POST

DETAILS OF FENCE ON WALL



LINE POST

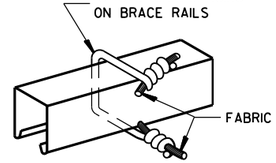
FABRIC FASTENER



AT BOTTOM

SELVAGES

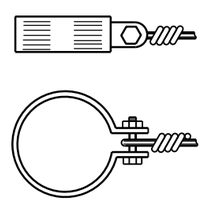
Ⓑ



BRACE RAIL

FABRIC FASTENER

Ⓐ



TENSION WIRE END CLAMP

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

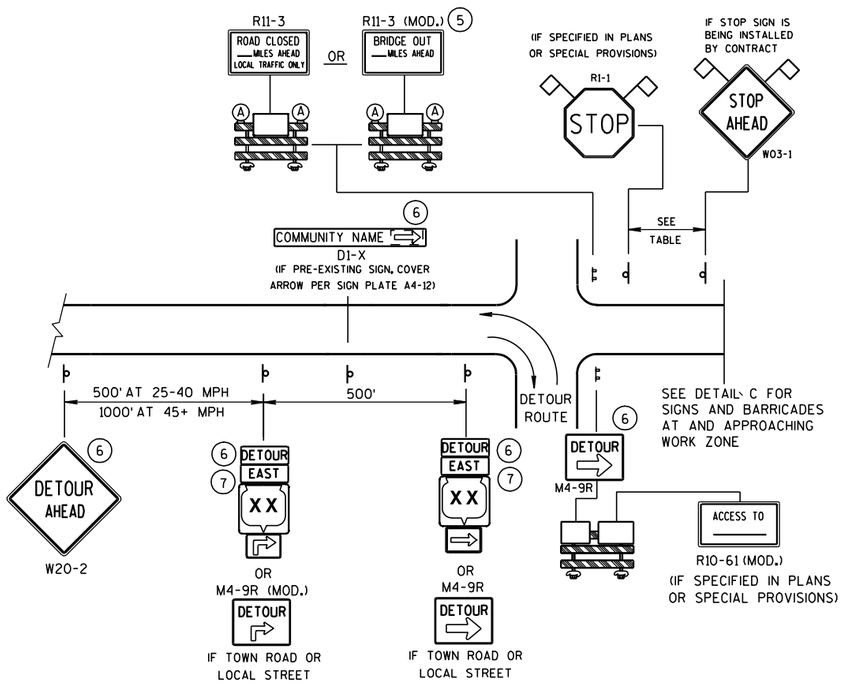
APPROVED
3/19/2010
DATE
/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 15 B 3-12b

6

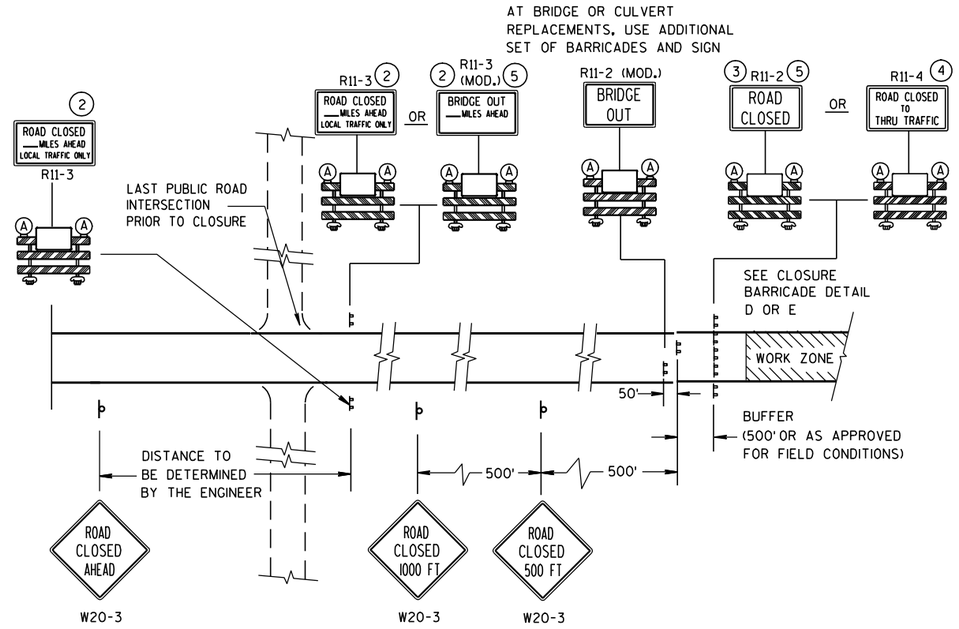
S.D.D. 15 B 3-12b



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

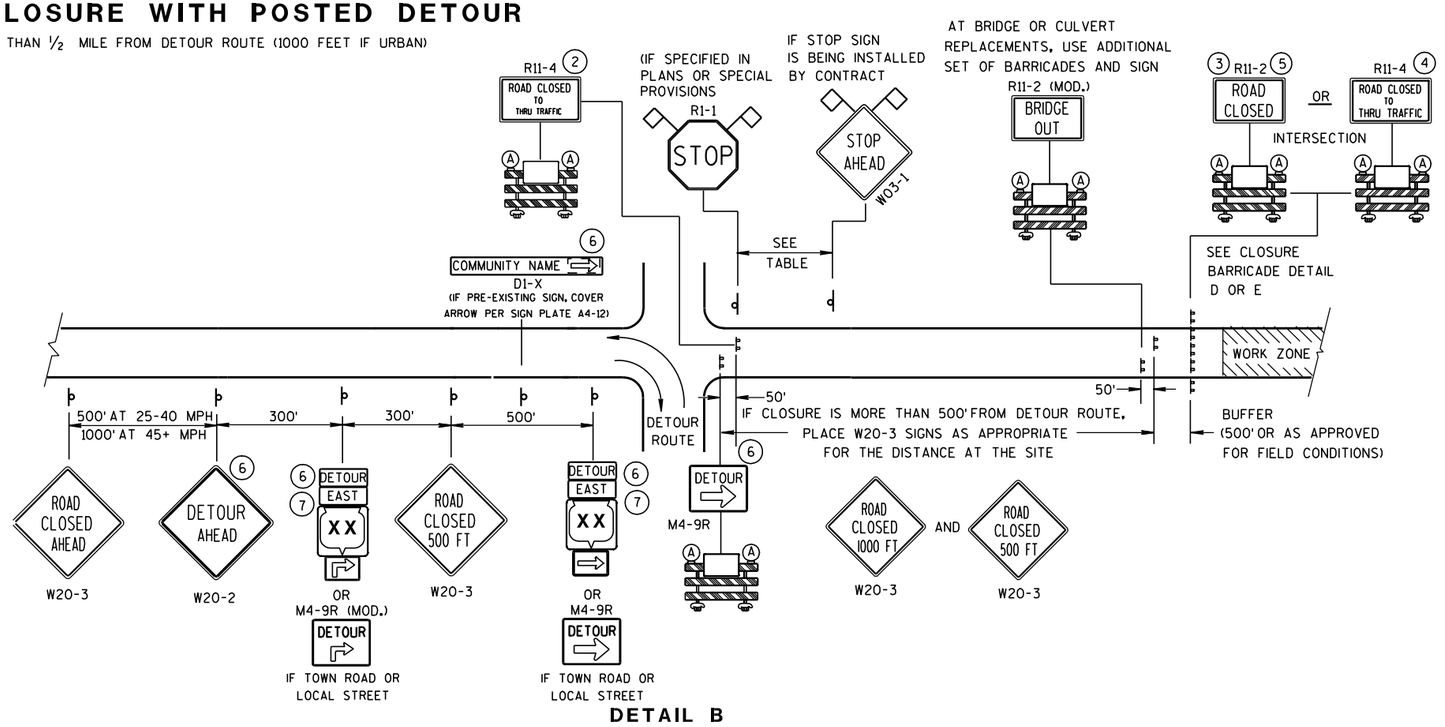


DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

SEE SDD 15C2-4b
FOR GENERAL NOTES
AND FOOTNOTES (1) THROUGH (7)



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

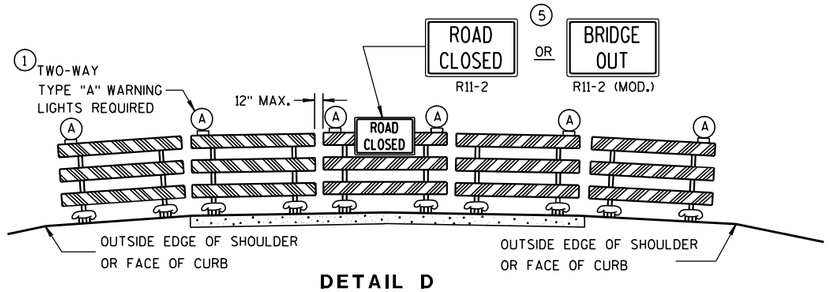
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

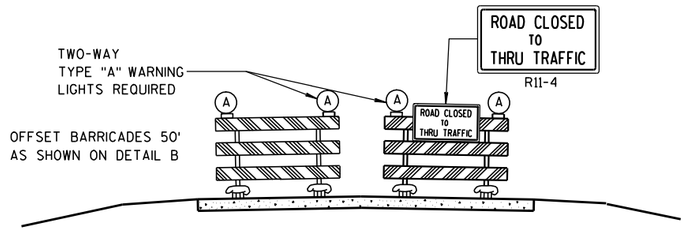
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/16/03
DATE

/S/ Thomas N. N[illegible]
CHIEF SIGNS AND MAR[illegible]INEER

FHWA

6

S.D.D. 15 C 2-4b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

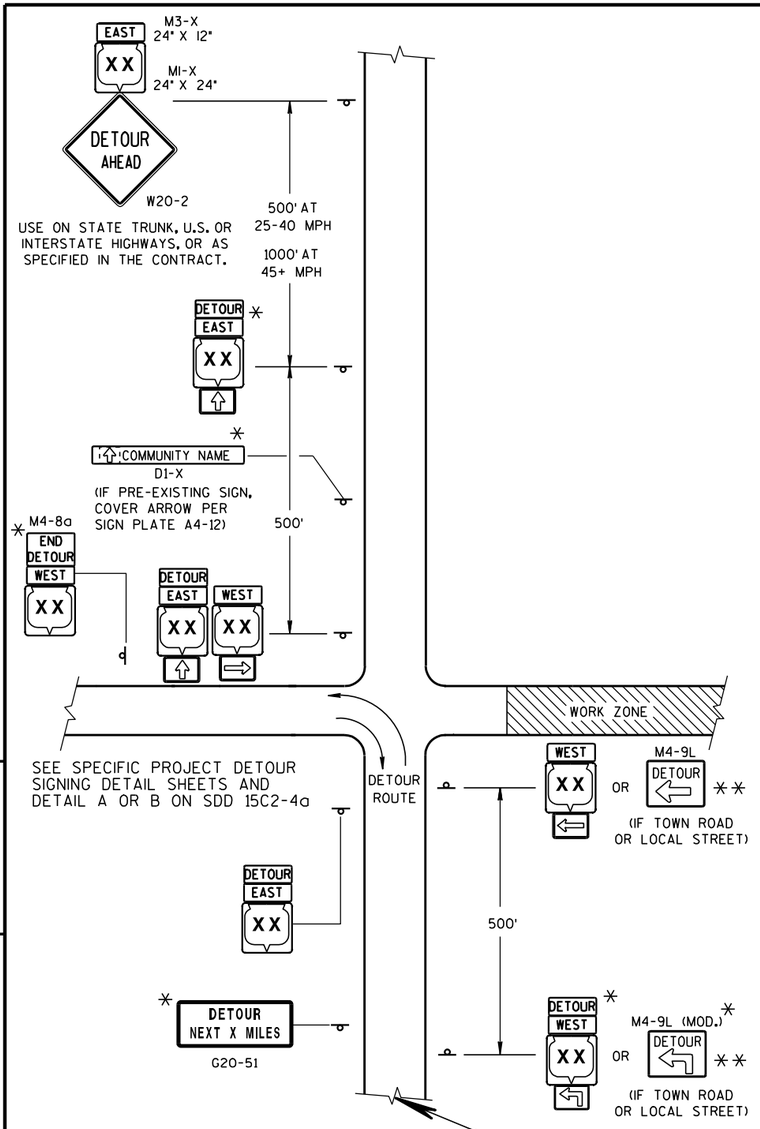
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

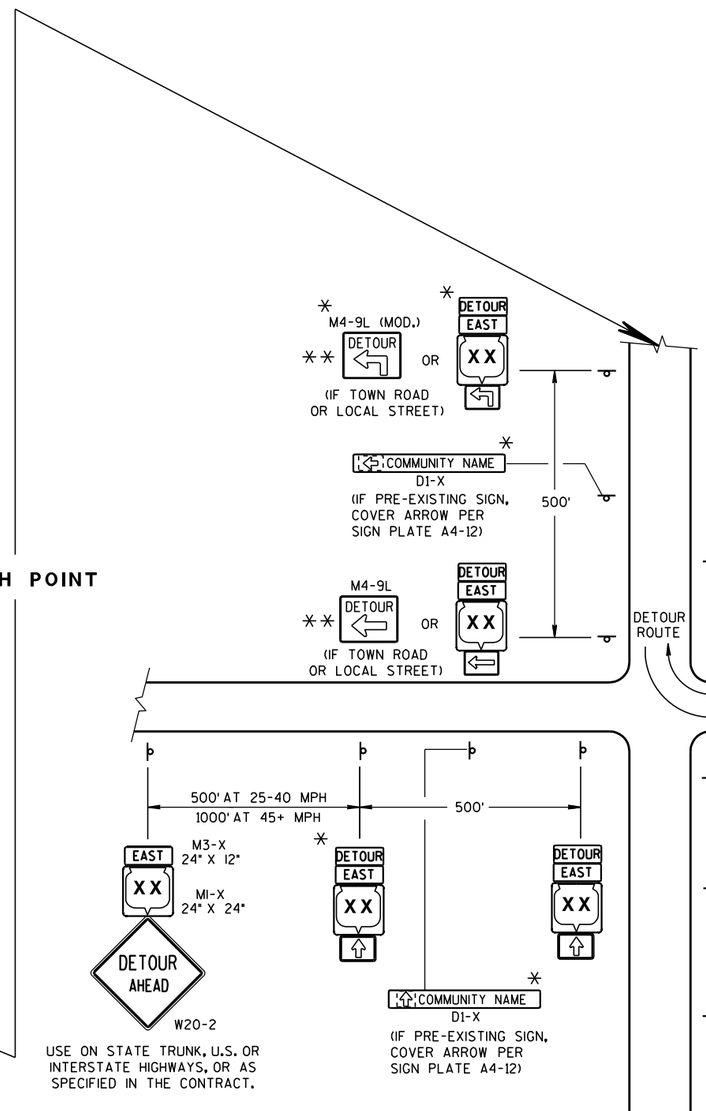
SIGN SIZES SHALL BE AS FOLLOWS:

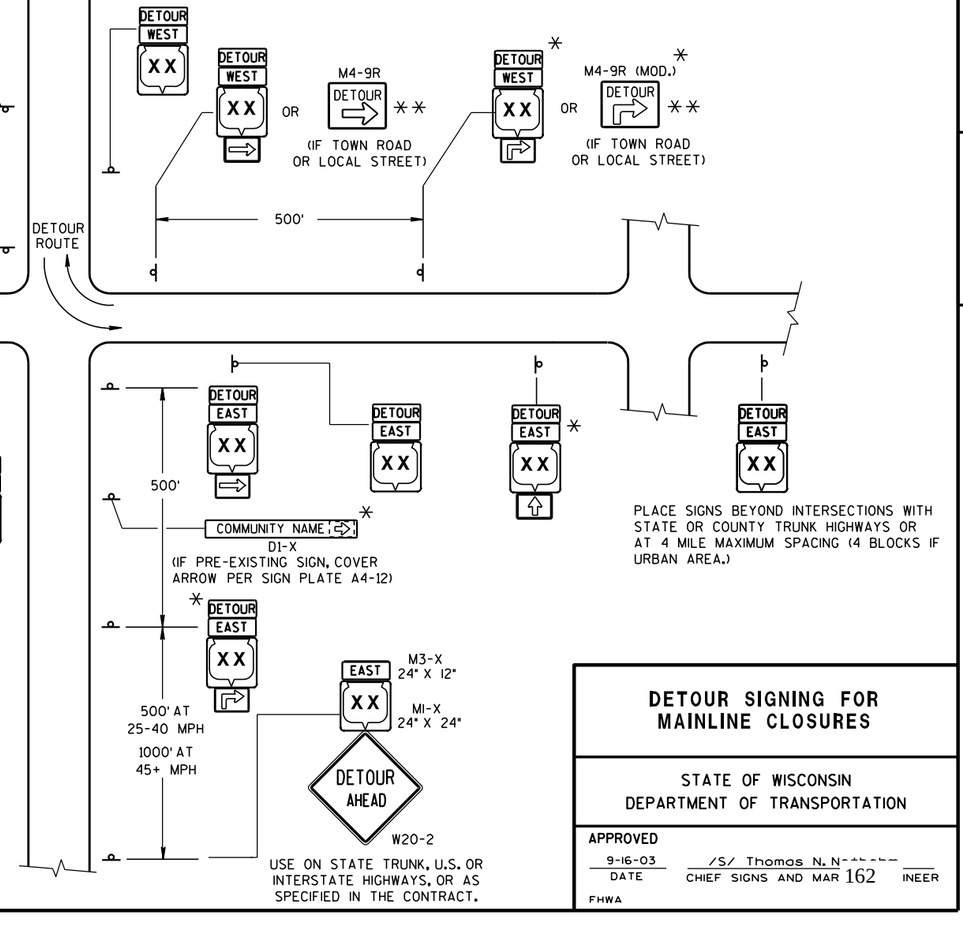
M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
M4-9 SHALL BE 30" X 24".
M4-8a SHALL BE 24" X 18".
G20-51 SHALL BE 60" X 24".
W20-2 SHALL BE 48" X 48".
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.







LEGEND

- POST MOUNTED SIGN
- WORK ZONE
- DETOUR EAST — M4-8 / M3-X
- XX — M1-4
- COUNTY XX — M1-5A
- XX — M1-6
- MO5-1
- MO6-1
- MO6-1

DETAIL F

DETOUR SIGNING

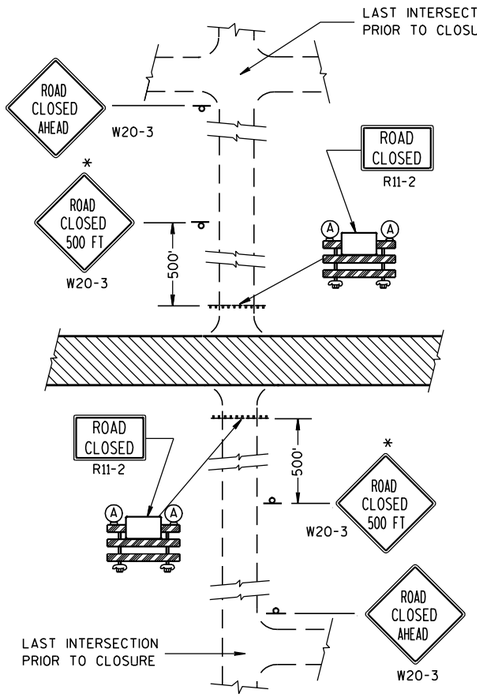
DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-16-03 DATE
/S/ Thomas N. [illegible] CHIEF SIGNS AND MAR INEER
FHWA

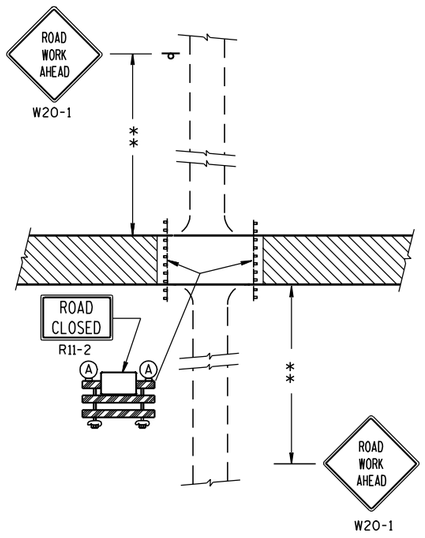
6

S.D.D. 15 C 2-4c



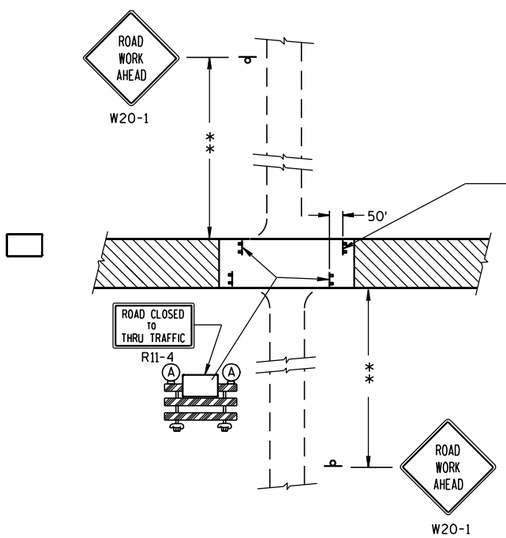
DETAIL 1

(NO ACCESS TO PROJECT)



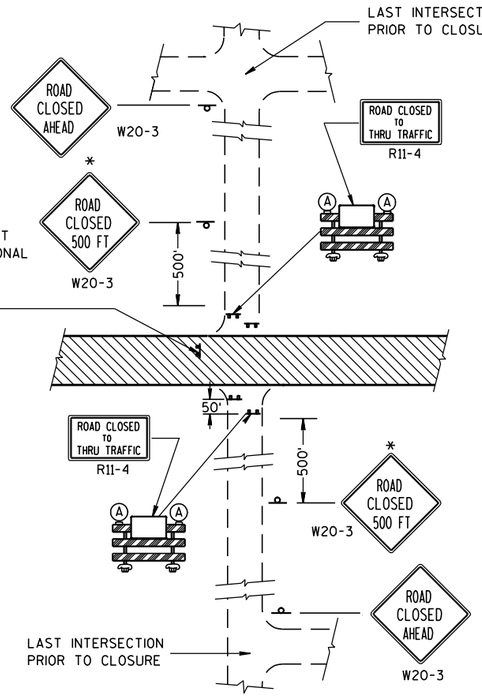
DETAIL 2

(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).



DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3 AND R11-4 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- POST MOUNTED WARNING SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-16-03
DATE

/S/ Thomas N. N[illegible]
CHIEF SIGNS AND MAR[illegible] INEER

FHWA

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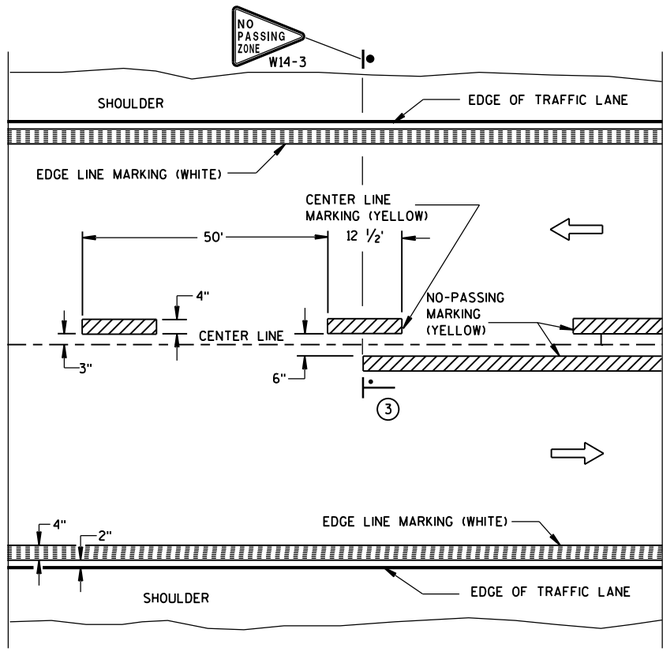
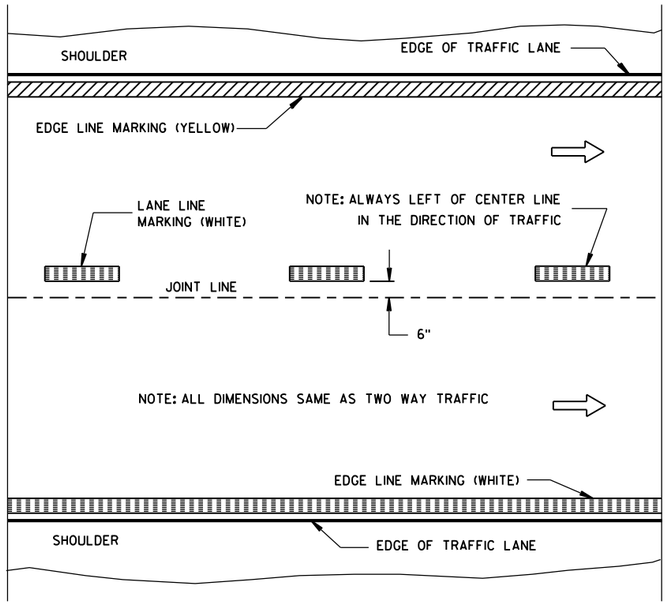
S.D.D. 15 C 3-1

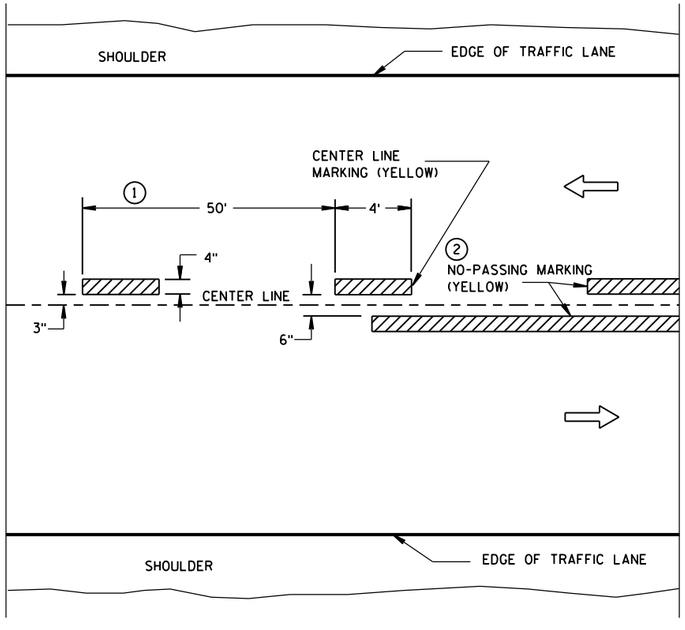


TWO WAY TRAFFIC

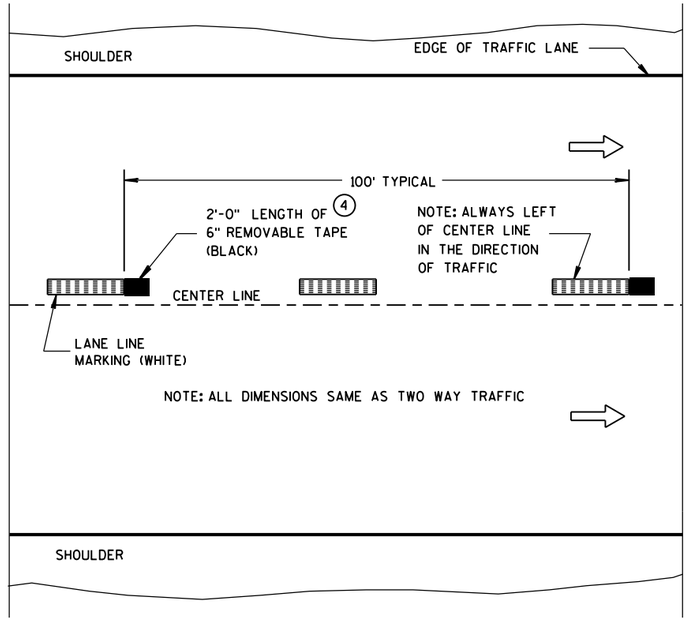


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

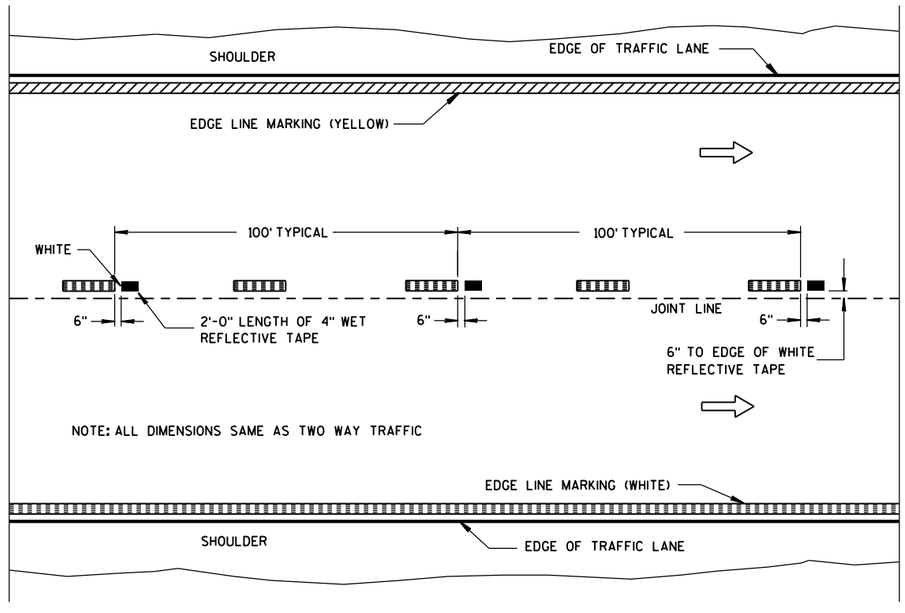
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

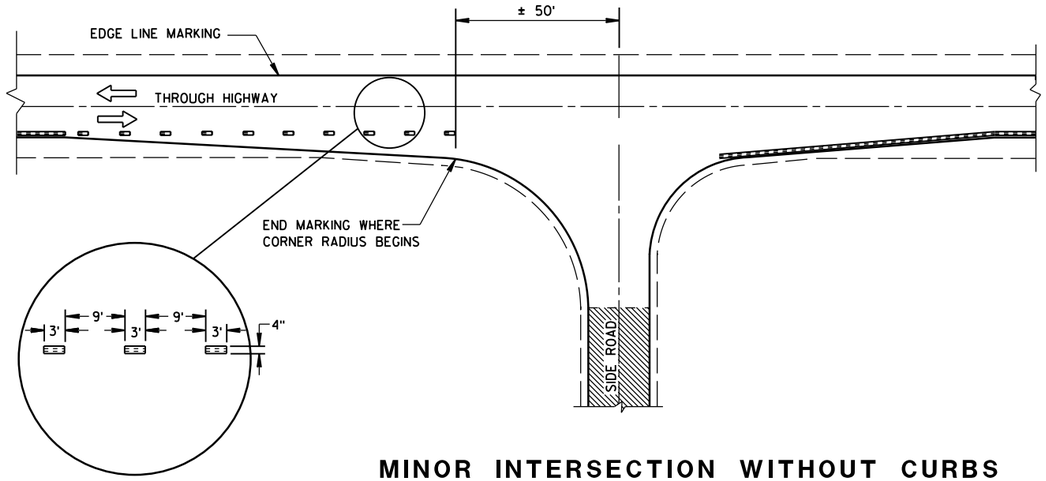
APPROVED
10-1-2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 C 8-15a

6

S.D.D. 15 C 8-15a



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

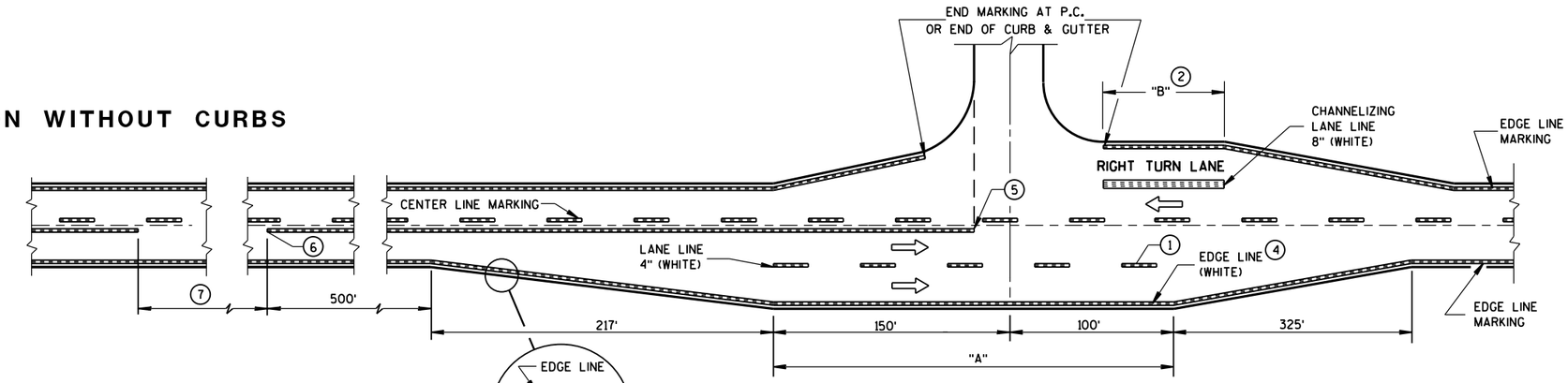
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

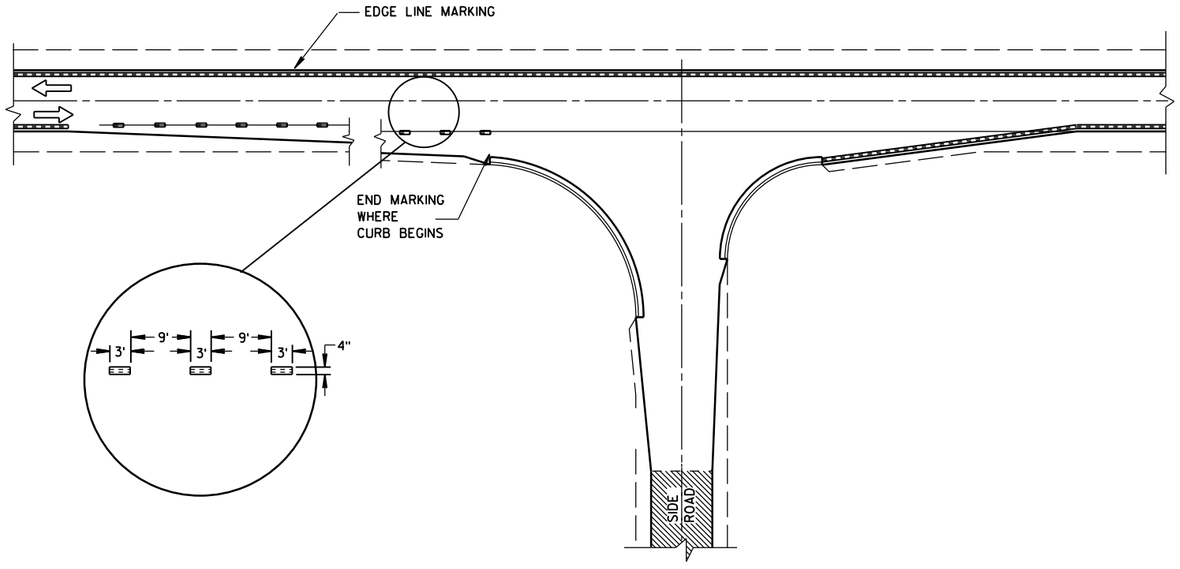
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



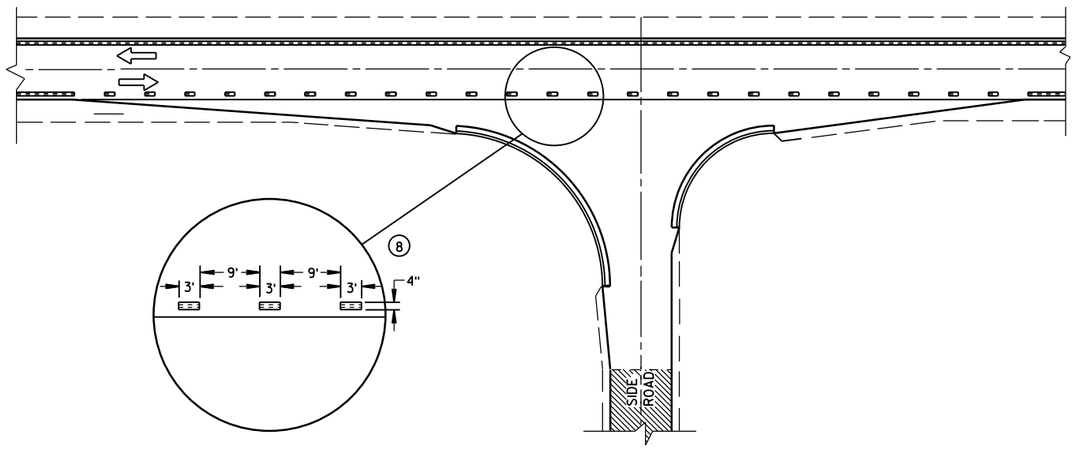
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 165

6

S.D.D. 15 C 8-15b

6

S.D.D. 15 C 8-15b

LEGEND

- POST WITH ATTACHED SIGN
- POST WITH ATTACHED SIGN IN DRUM
- DRUM WITH WARNING LIGHT (TYPE C)
- DRUM
- ARROW BOARD
- 8' TYPE III BARRICADE
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC

GENERAL NOTES :

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

(1) CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

GENERAL NOTES CONTINUED:

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 7 CONTINUOUS DAYS AND NIGHTS.

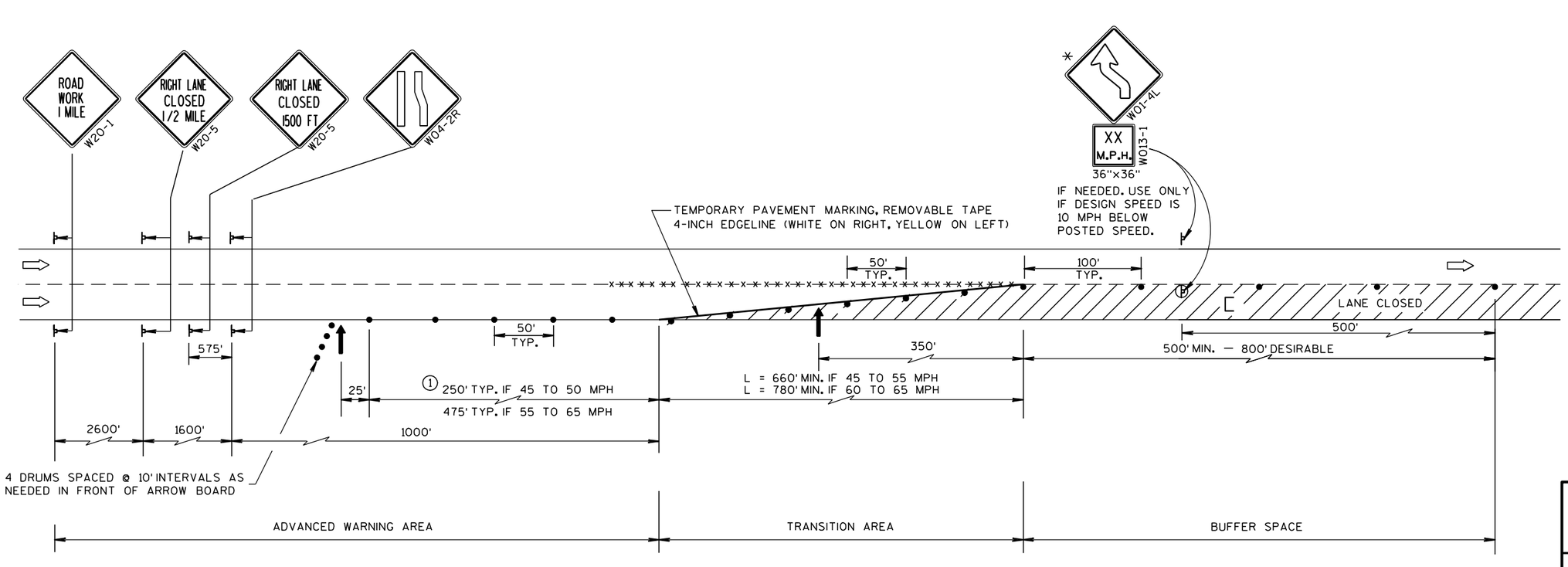
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

IF LANE CLOSURE IS MORE THAN 1 MILE, PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1/4 MILE ACROSS THE CLOSED LANE TO HELP ENFORCE THE DRUM LINE.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-7-95 DATE
/S/ Chester J. [illegible]
DIRECTOR, OFFICE O
FHWA

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S.D.D. 15 D 12-2

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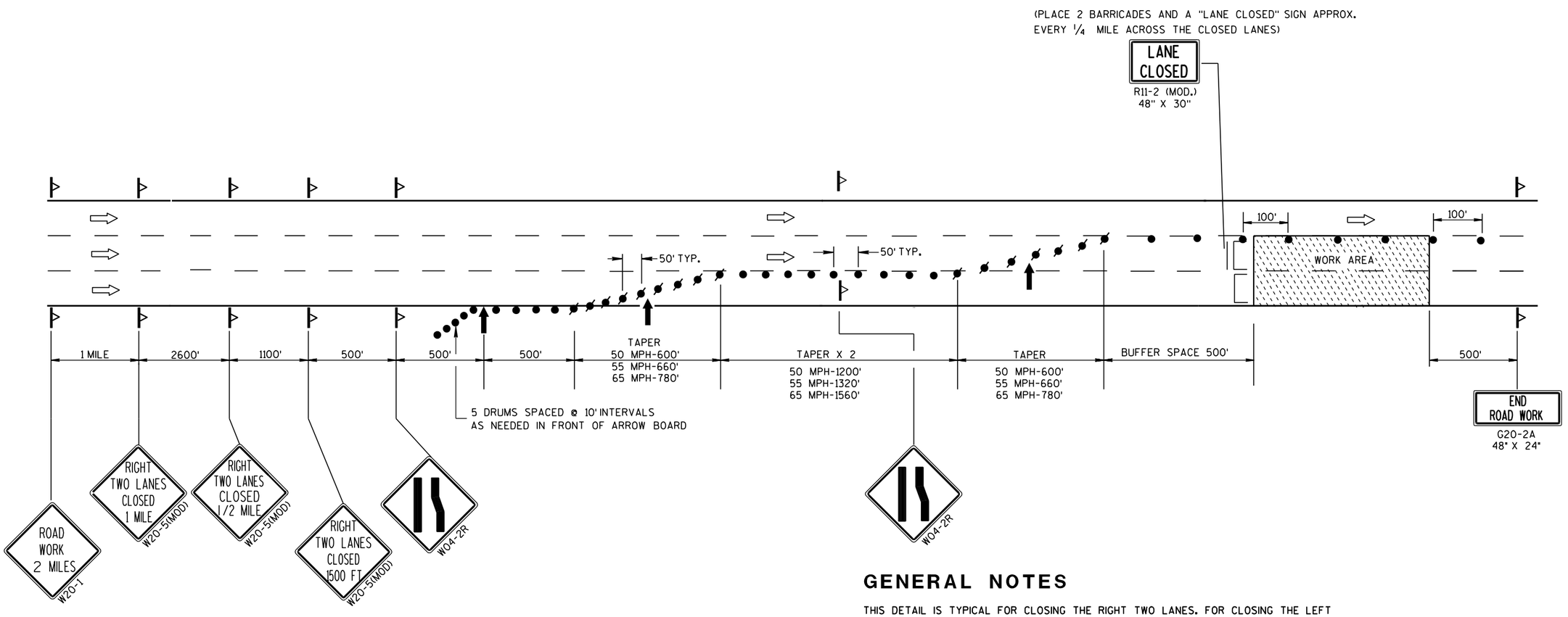
S.D.D. 15 D 12-2



LEGEND

- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY BURN)
- SIGN ON POST OR PORTABLE SUPPORT
- FLASHING ARROW BOARD
- TYPE III BARRICADE (8' EQUIVALENT) WITH/WITHOUT SIGN
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT TWO LANES. FOR CLOSING THE LEFT TWO LANES, REVERSE THE TRAFFIC CONTROL.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

WHEN A RAMP OR SIDE ROAD INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

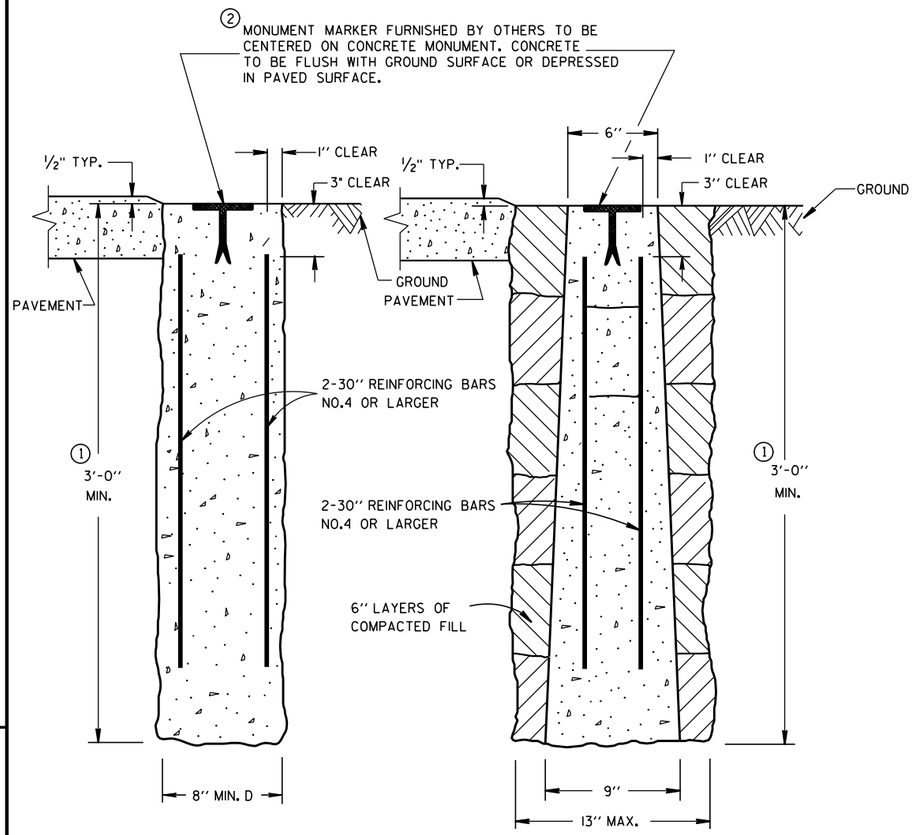
5/23/2000
DATE

/S/ Chester J. [illegible]
CHIEF SIGNS AND MARKINGS ENGINEER

FHWA

6

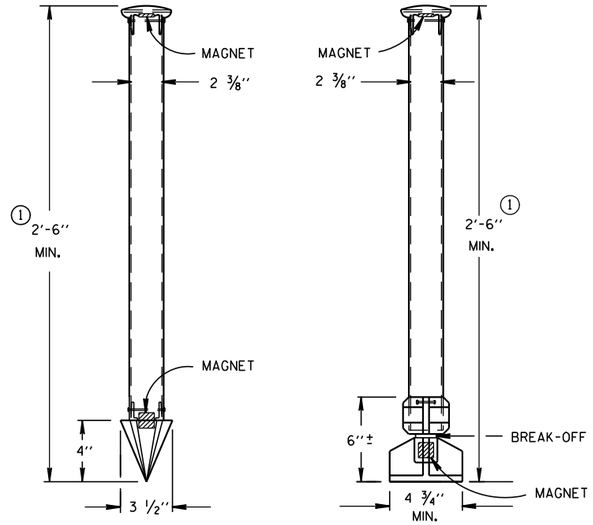
S.D.D. 15 D 14-1



CAST-IN-PLACE PRECAST

CONCRETE MONUMENTS

TYPE A



TYPE C TYPE D

DRIVE-IN MONUMENT BREAK-OFF MONUMENT

ALUMINUM MONUMENTS

(INCLUDES MARKER)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

INSTALLED METAL MONUMENTS MUST BE EASILY DETECTED WITH A DIP NEEDLE. INSERT PERMANENT MAGNETS SHALL BE ATTACHED NEAR THE TOP AND BOTTOM OF THOSE MONUMENTS CONSTRUCTED OF A METAL ALLOY WHICH IS NOT ATTRACTIVE TO A DIP NEEDLE.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

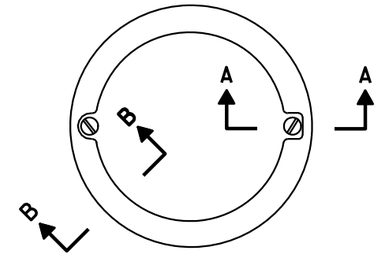
ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

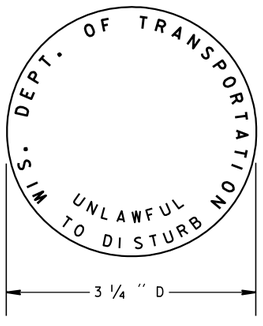
MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.

② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WIS DOT MARKER.

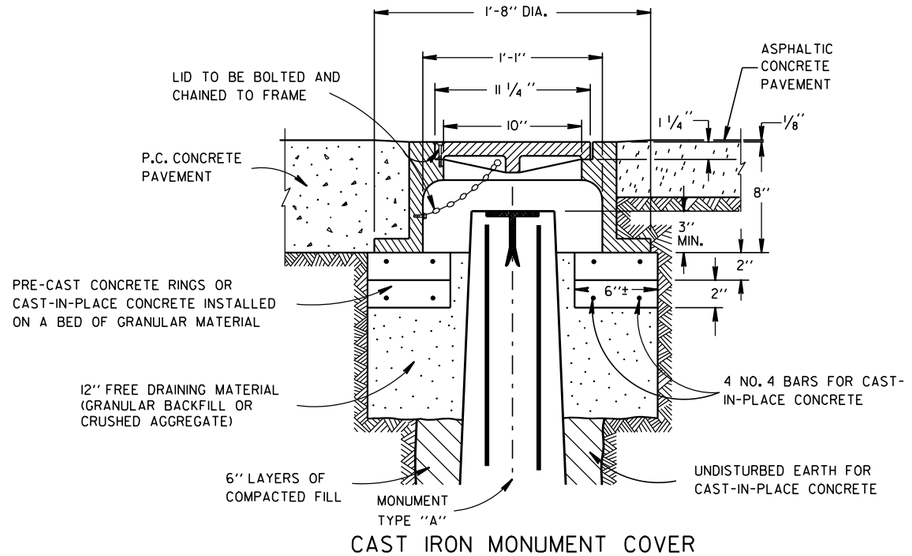


TOP VIEW



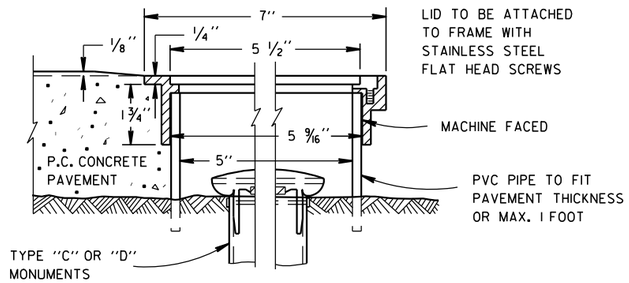
② WIS DOT MONUMENT MARKER LOGO

FOR TYPES "A", "C" & "D"



CAST IRON MONUMENT COVER

(APPROXIMATE WEIGHT - 95 LBS.)



SECTION B-B SECTION A-A

ALUMINUM MONUMENT COVER

(APPROXIMATE WEIGHT 2 LBS)

(FOR CONCRETE PAVEMENT ONLY)

LANDMARK REFERENCE MOUNMENTS AND COVERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/22/1999 DATE

/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER

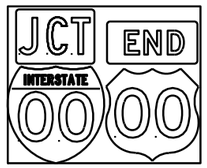
FHWA

6

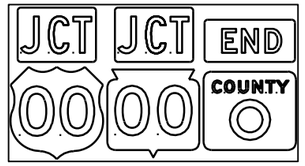
S.D.D. 16 A 1-6

TYPICAL ASSEMBLIES

J1-1

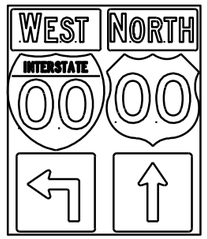


J1-2

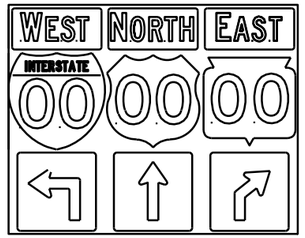


J1-3

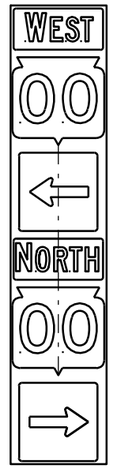
J2-1



J2-2

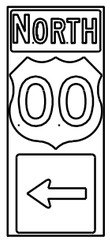


J2-3

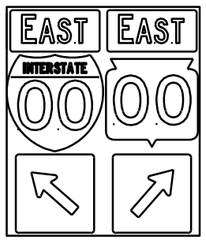


JV

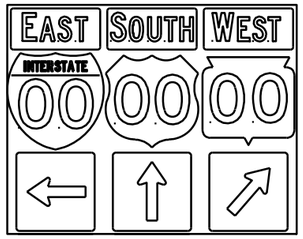
(Typical Vertical J-Assembly
See Note 10 and 11)



J3-1

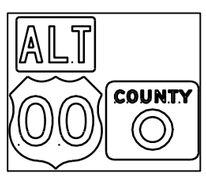


J3-2

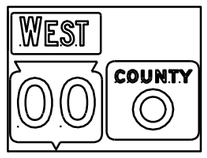


J3-3

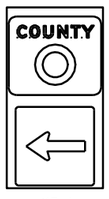
J4-1



J4-2



J4-2



J13-1

J12-1

J32-1

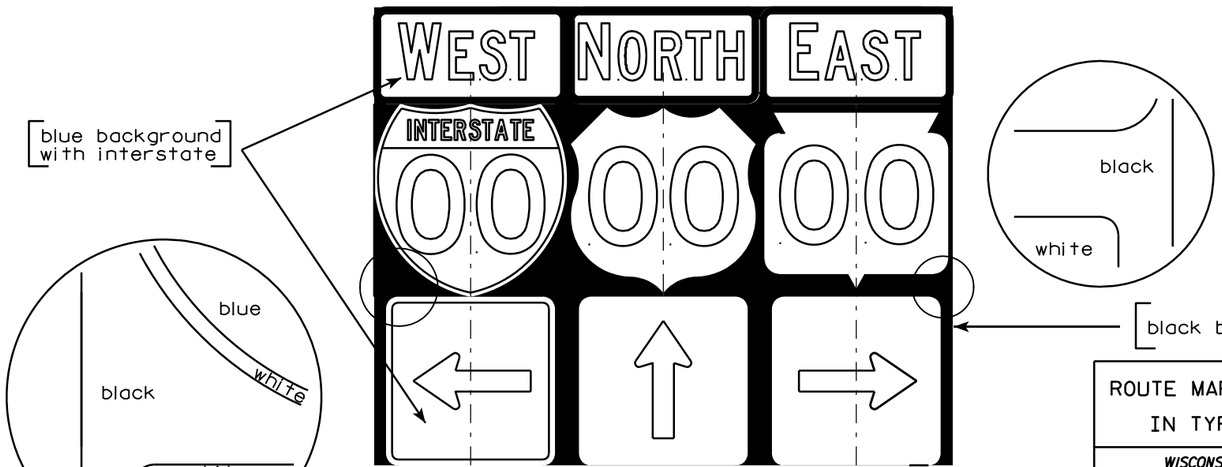
J33-1

J23-1

J22-1

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of interstate and non interstate shields, arrows and cardinals shall be white on blue.



ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/25/13 PLATE NO. A2-1S.7

PROJECT NO:

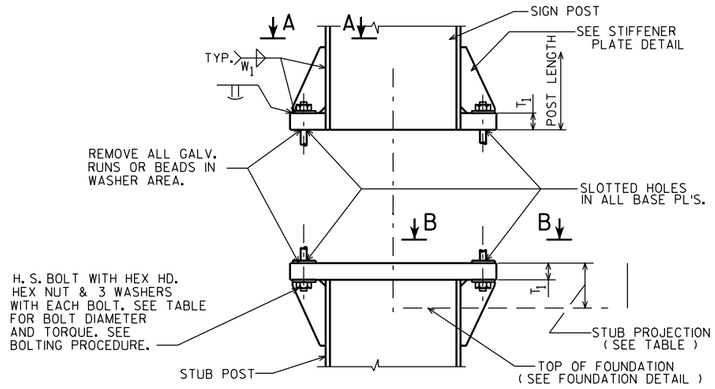
SHEET NO: 169 E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 25-MAR-2013 11:33 PLOT BY : mscsja PLOT NAME :

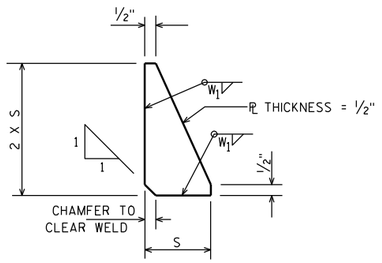
WISDOT/CADDS SHEET 42

7

7

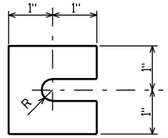


SIGN POST AND STUB POST ELEVATION



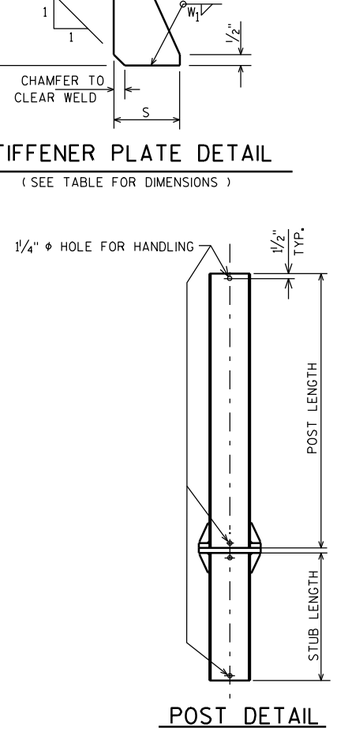
STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)



FURNISH 2 @ .012" ± THICK AND 2 @ .032" ± THICK SHIMS PER POST. SHIMS SHALL BE FABRICATED FROM BRASS SHIM STOCK OR STRIP CONFORMING TO A.S.T.M.- B36.

SHIM DETAIL



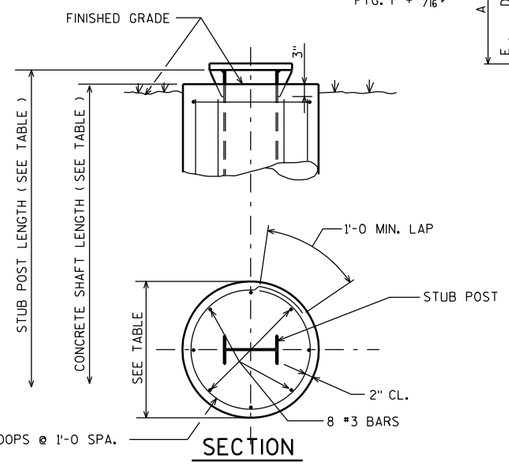
POST DETAIL

	QUANTITIES FOR 1 FOOTING	
	CONC. MASONRY C.Y.	REINF. STEEL LBS.
A	0.6	34
B	0.8	49
C	0.9	50
D	0.9	56
E	1.0	62

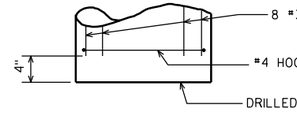
⑦

REINF.	TYPE	#3	#4
	A	8 @ 4'-5	5 @ 6'-3
	B	8 @ 6'-5	7 @ 6'-3
	C	8 @ 6'-11	7 @ 6'-3
	D	8 @ 7'-5	8 @ 6'-3
	E	8 @ 7'-11	9 @ 6'-3

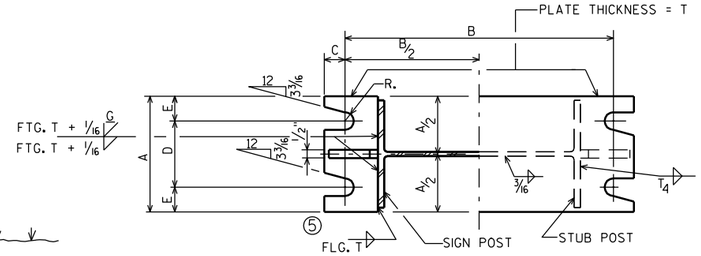
⑦



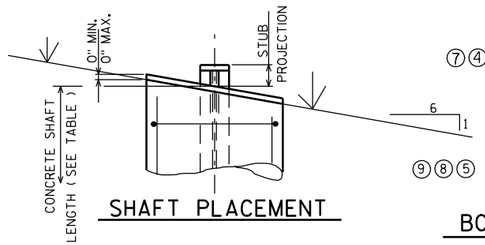
SECTION



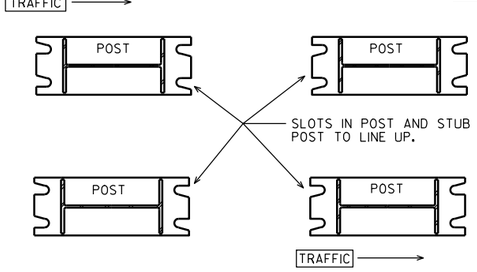
FOUNDATION DETAIL



SECTION A-A SECTION B-B



SHAFT PLACEMENT



POST SLOT ORIENTATION ⑦

DESIGN DATA

WIND PRESSURE = 75 M.P.H.
WIND COMPONENTS - NORMAL = 1.0 TRANSVERSE = 0.0
ICE LOAD = 3 P.S.F.

GROUP LOADS	PERCENT OF ALLOWABLE STRESS
1. DEAD	100
2. DEAD & WIND	140
3. DEAD, ICE & 1/2 WIND△	140 △25 P.S.F. MIN.

ALLOWABLE SOIL PRESSURE = 1½T / SQ. FT.
WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND TO THE SUPPORTING MEMBERS.
ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1985.
ALL POSTS, POST STUBS & ATTACHMENTS SHALL BE A.S.T.M. A709 GRADE 50.
⑨ THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.
H.S. BOLTS, WASHERS & NUTS SHALL BE A325 GALVANIZED WHEN POSTS, POST STUBS AND ATTACHMENTS ARE A709 GRADE 50 AND GALVANIZED.

BOLTING PROCEDURE - BASE CONNECTION

1. ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETW. PLATES.
2. SHIM AS REQ'D. TO PLUMB POST.
3. TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
4. BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE:
TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN.
DO NOT OVERTIGHTEN.

	TYPE	DIMENSION / POST SIZE	BASE CONNECTION DATA TABLE: BOLT SIZE & TORQUE	A	B	C	D	E	T_1	T_4	W_1	R	S	FOUNDATION DATA: STUB LENGTH	STUB PROJECTION	SHAFT DIAMETER	SHAFT LENGTH	② K
④	A	W10"X12.0 #/FT.	3/4" Φ @ 75#-FT.	5 1/4"	1'-0 3/8	7/8"	3 1/2"	7/8"	1"	3/16"	5/16"	13/32 "	2 1/8"	3'-6	3"	2'-0 Φ	5'-0	76.0# ④
④	B	W12"X16.0 #/FT.	7/8" Φ @ 85#-FT.	5 1/2"	1'-4 1/4	1"	3 1/2"	1"	1 1/4"	1/4"	5/16"	15/32 "	3"	5'-6	3"	2'-0 Φ	7'-0	146.5# ④
	C	W12"X19.0 #/FT.	7/8" Φ @ 85#-FT.	5 1/2"	1'-4 1/4	1"	3 1/2"	1"	1 1/2"	5/16"	5/16"	15/32 "	3"	6'-0	3"	2'-0 Φ	7'-6	182.1#
	D	W12"X22.0 #/FT.	7/8" Φ @ 85#-FT.	5 1/2"	1'-4 1/4	1"	3 1/2"	1"	1 1/2"	3/8"	5/16"	15/32 "	3"	6'-6	3"	2'-0 Φ	8'-0	210.5#
③	E	W12"X26.0 #/FT.	1" Φ @ 90#-FT.	7"	1'-4 1/4	1 1/4"	4"	1 1/2"	1 1/2"	3/8"	5/16"	17/32 "	3"	7'-0	3"	2'-0 Φ	8'-6	293.0# ③

① ⑥ ①

STRUCTURAL CARBON STEEL PAY WTS. (1 POST) = K+ (POST LENGTH X POST WT.)
" K " INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer
DATE 4/26/11 PLATE NO. A3-1.13

NO.	DATE	REVISION
⑨	4-26-11	REMOVE NON-GALVANIZED
⑧	10-30-96	NOT GALVANIZED/GALVANIZED
⑦	10-30-92	QUANT., A588 EXCEPT., ADD SLOT VIEW
⑥	8-24-87	BASE CONN. WELD
⑤	10-13-81	BASE CONN. WELD & FUSE PL WASHERS
④	10-19-79	POST A & B, A572 GR. 50, & K
②	11-28-78	"K" ③ 4-23-79 TYPE "E"
①	5-4-78	T_1 , T_2 & W_1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

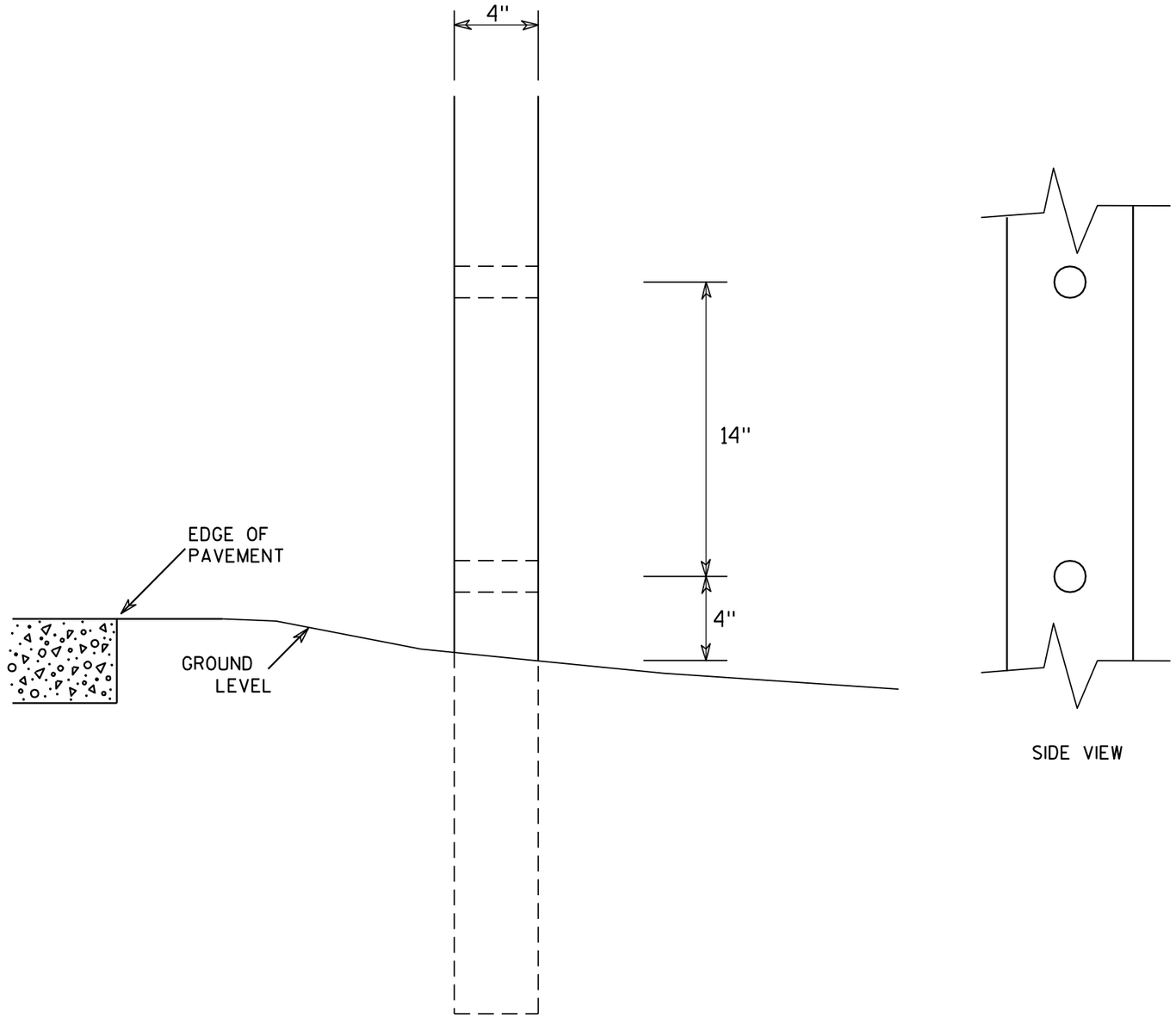
TYPE A, B, C, D, & E

CONST. SPEC. 2011	DRAWN BY JPH	PLANS CK'D.

FTG. & SIGN SUPPORT DETAILS GROUND MOUNT BREAK-AWAY SIGNS

SHEET

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 170	E



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS

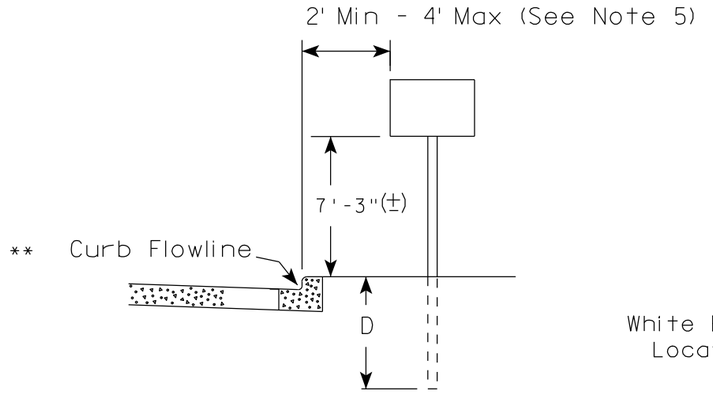
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

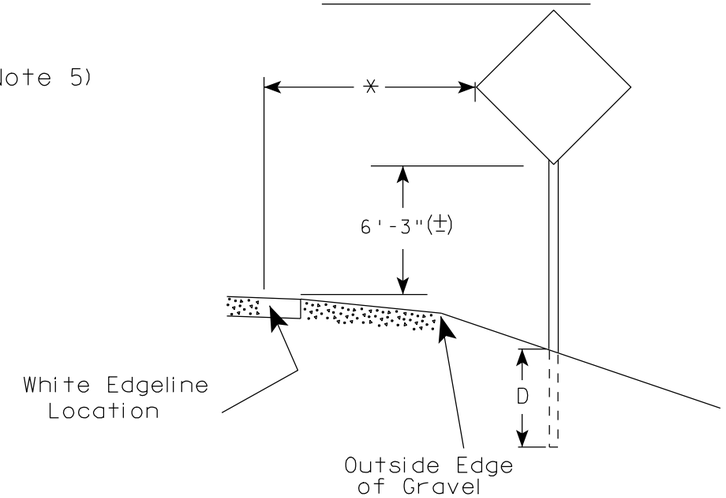
DATE 3/27/97 PLATE NO. A4-11.2

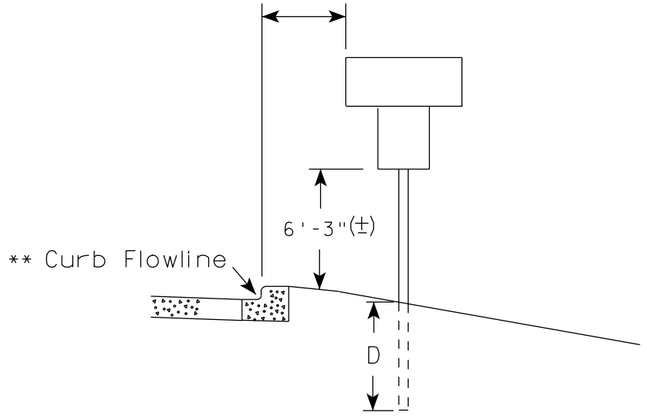
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 171	E

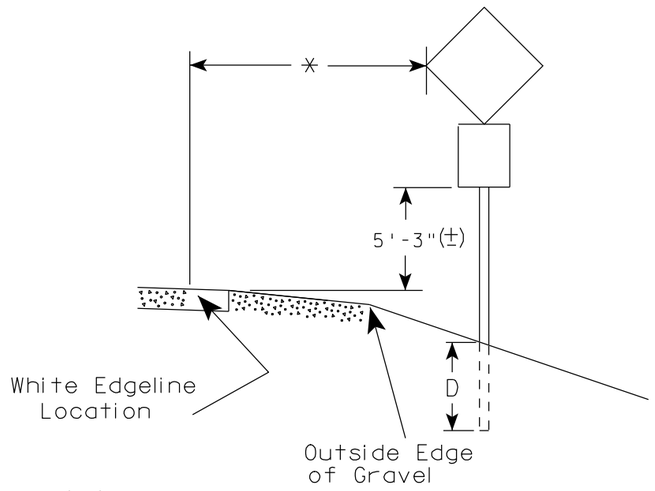
URBAN AREA



RURAL AREA (See Note 2)







** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

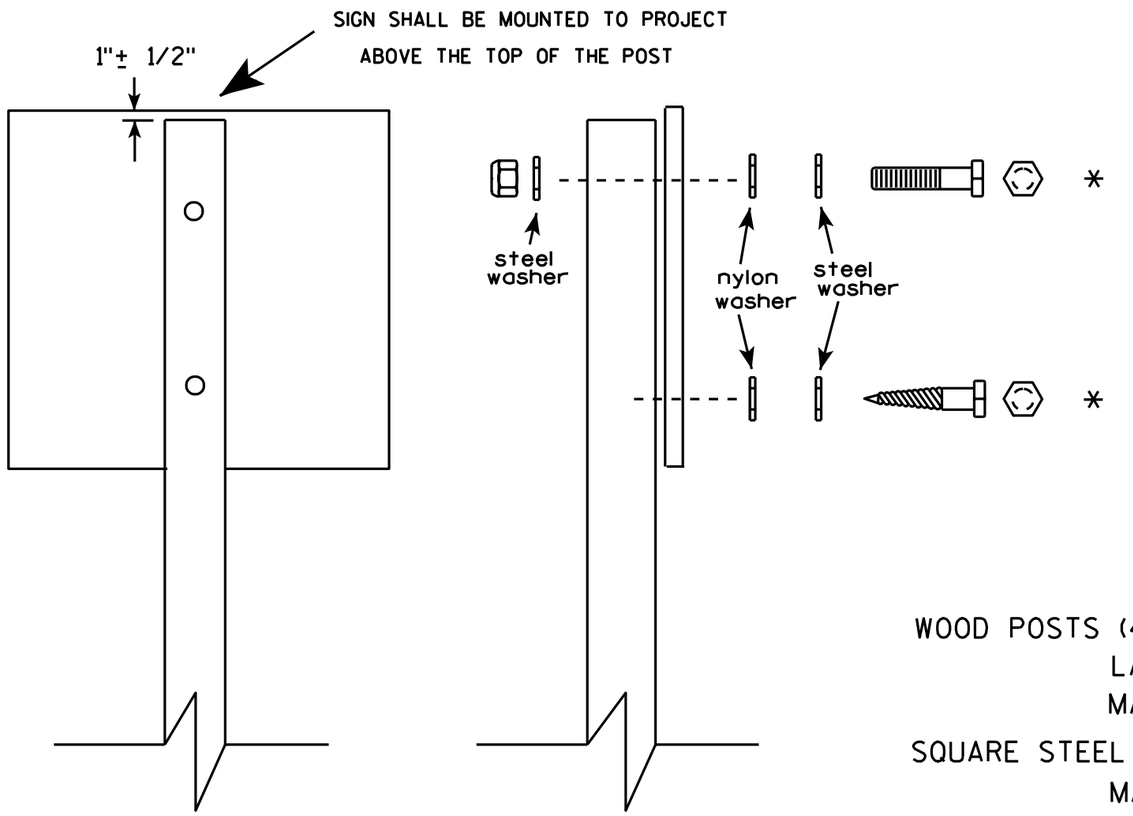
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-3.16

7

7

PROJECT NO: | HWY: | COUNTY: | | SHEET NO: 172 | E



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

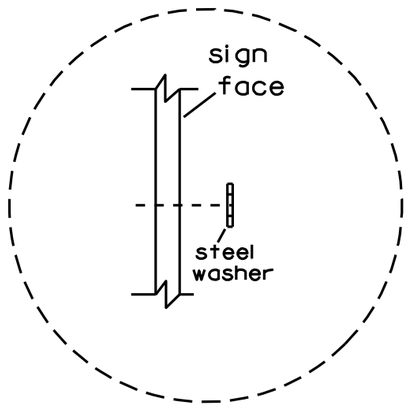
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

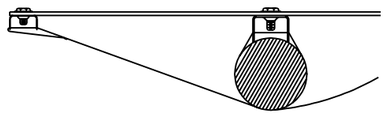
7

7

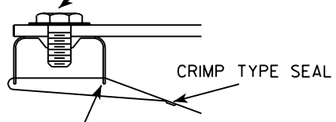
PROJECT NO:

SHEET NO: 173 E

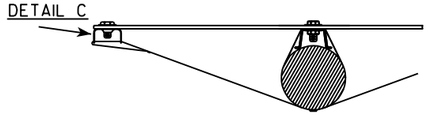
BRACE BANDING

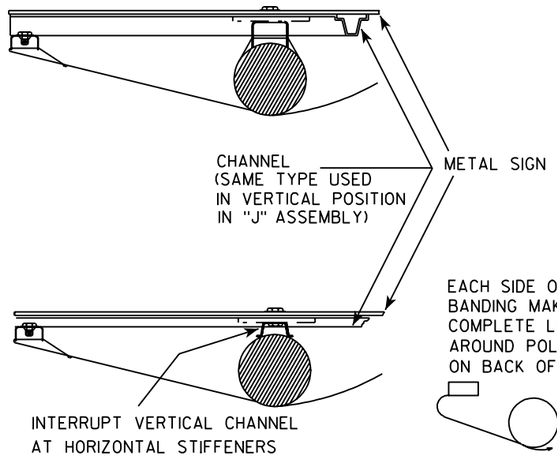


DETAIL C
CADMIUM PLATED STEEL BOLT
THROUGH BLACK BORDER



DETAIL C

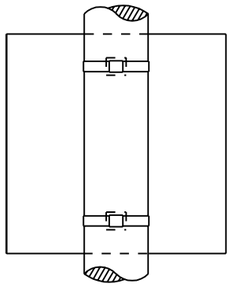


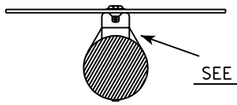


EACH SIDE OF BRACE
BANDING MAKES ONE
COMPLETE LOOP
AROUND POLE-SEAL
ON BACK OF POLE

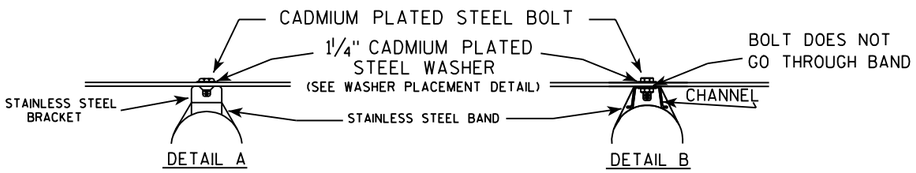
BRACKET BANDING

SINGLE SIGN





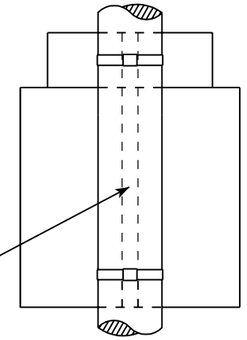
SEE DETAIL A



DETAIL A

DETAIL B

"J" ASSEMBLY

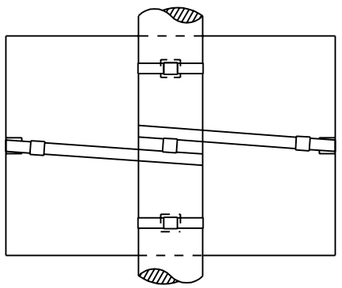


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

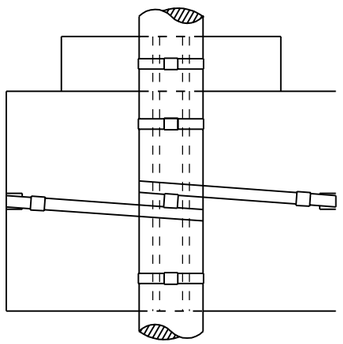
GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.

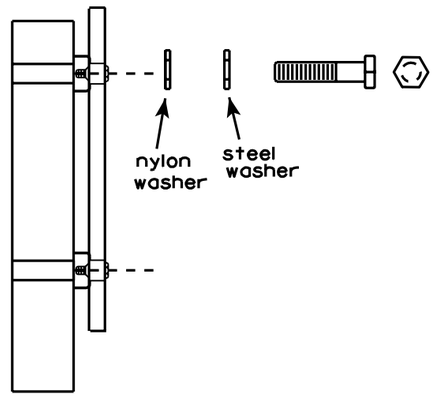


BRACE BANDING

BRACE BANDING SHALL BE TIGHTENED FIRMLY BUT NOT SO TIGHT AS TO APPRECIABLY CURVE FACE OF SIGN.



WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/08/05 PLATE NO. A5-9.2

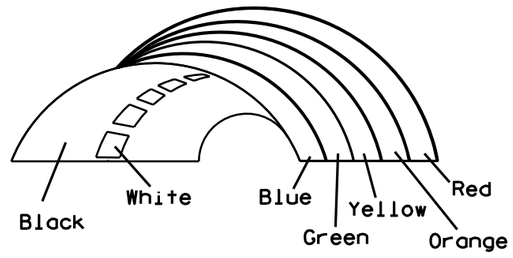
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 174	E

* VARIES

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - (See Note 5)
3. Message Series - (See Note 6)
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Border - Blue
   Line 1 - Red
   Line 2 - Black
   Line 3-5 - Blue
6. Line 1 - Dutch 8011L
   Line 2 - Series E
   Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

Background Colors of Symbol*



*1/4" Black Border between each color of rainbow and border of rainbow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

STANDARD SIGN
I55-56

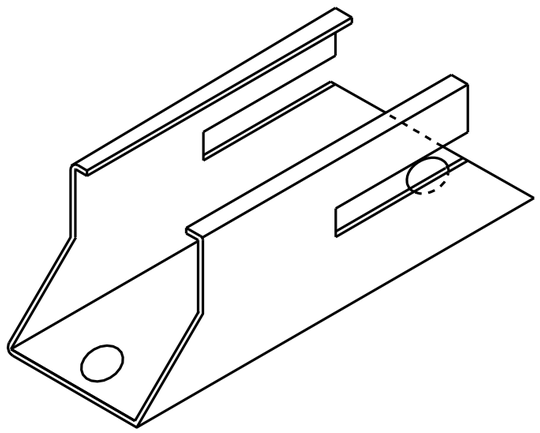
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/27/11 PLATE NO. 155-56.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 175

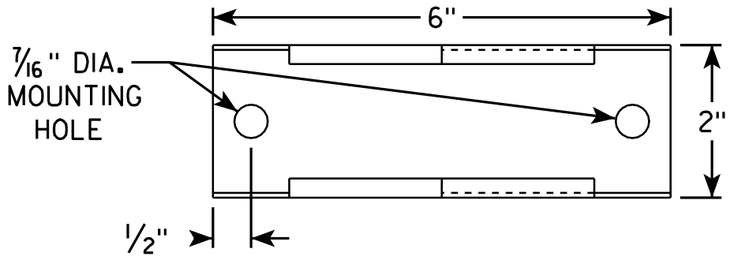
ISOMETRIC VIEW



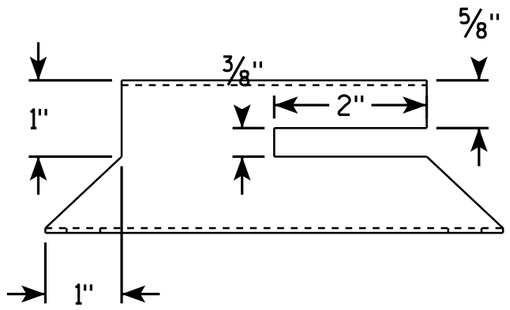
NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

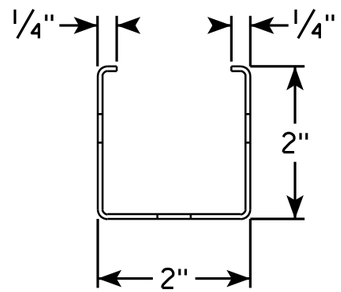
TOP VIEW



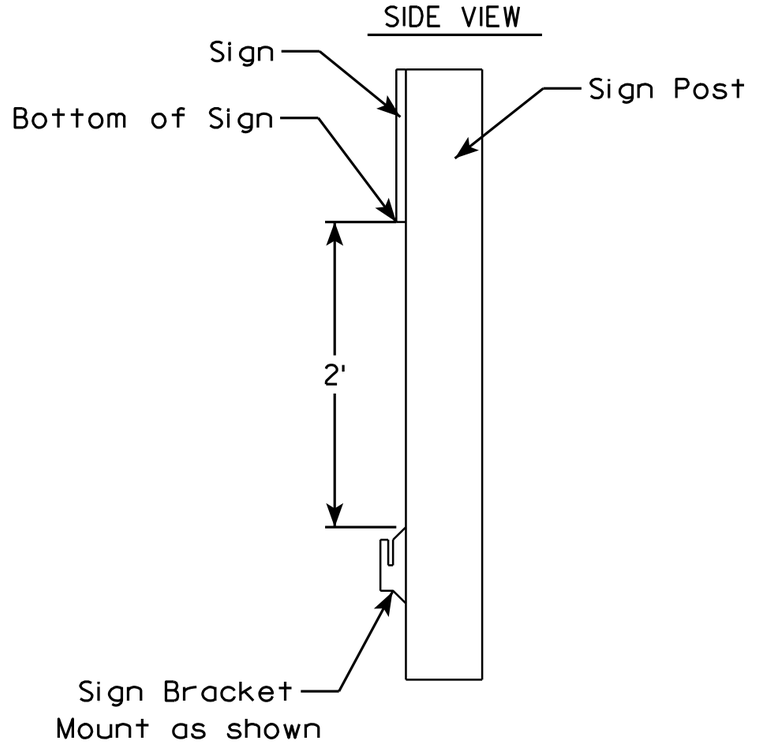
SIDE VIEW



END VIEW



SIDE VIEW



7

7

ROLLUP SIGN BRACKET
I55-56B

WISCONSIN DEPT OF TRANSPORTATION

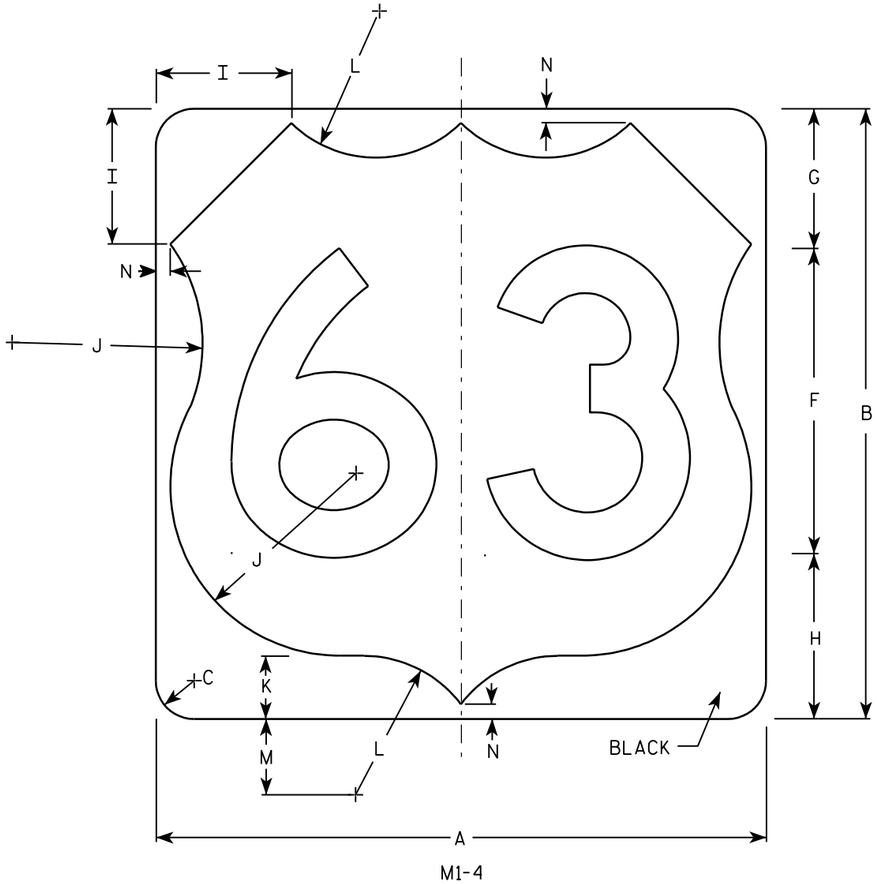
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/5/10 PLATE NO. I55-56B.1

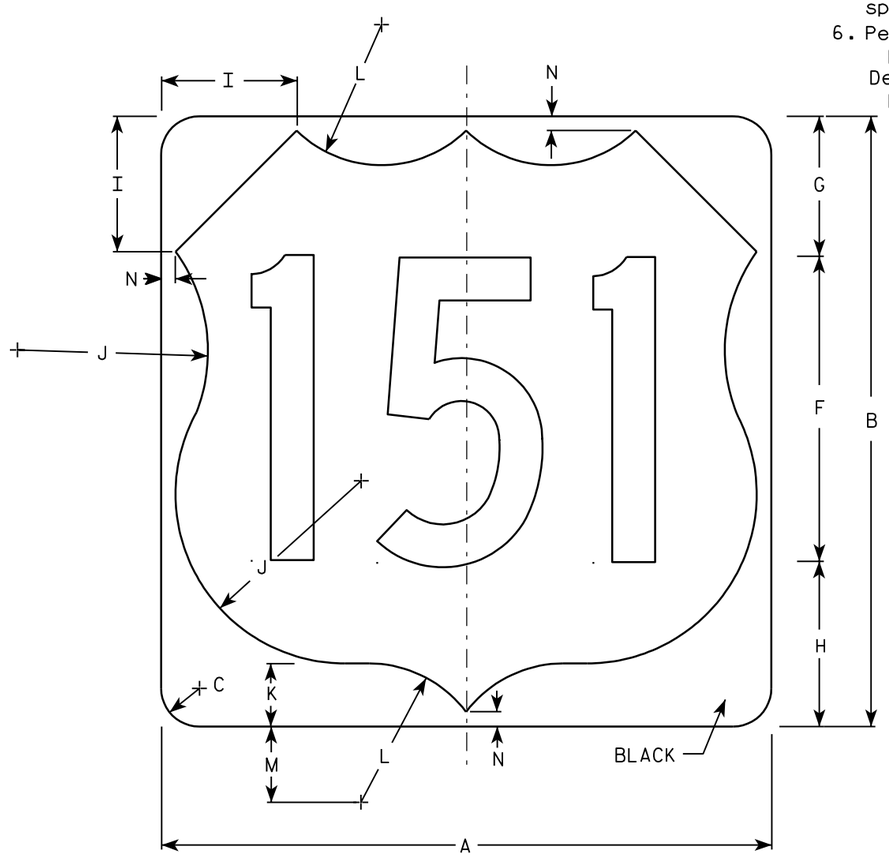
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 176	E

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary signs
   Background - Reflective



M1-4



M1-4

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24	24	1 ½			12	5 ½	6 ½	5	7 ½	2 ½	5 ½	3	½													4.0	.36
3	36	36	2 ¼			18	8 ¼	9 ¼	7 ¼	11 ¼	3 ¾	8 ¼	4 ½	¾													9.0	.81
4	36	36	2 ¼			18	8 ¼	9 ¼	7 ¼	11 ¼	3 ¾	8 ¼	4 ½	¾													9.0	.81
5	36	36	2 ¼			18	8 ¼	9 ¼	7 ¼	11 ¼	3 ¾	8 ¼	4 ½	¾													9.0	.81

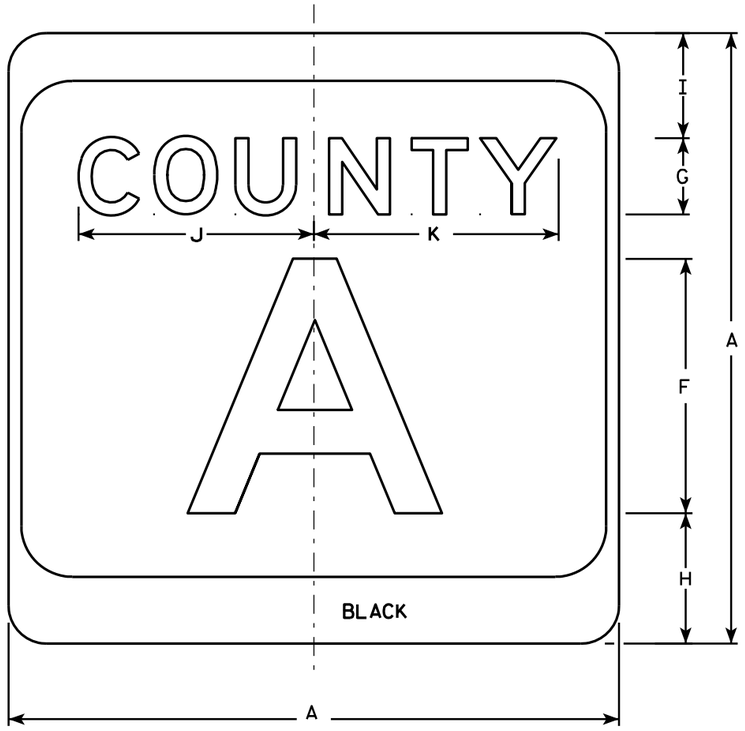
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

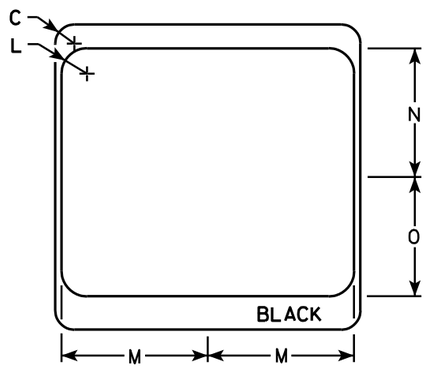
APPROVED Matthew R Rauch
for State Traffic Engineer

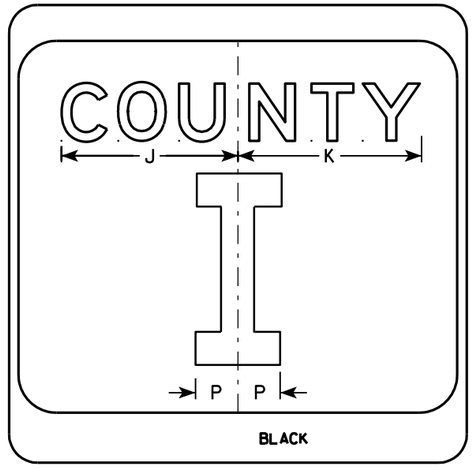
DATE 08/25/05 PLATE NO. M1-4.9

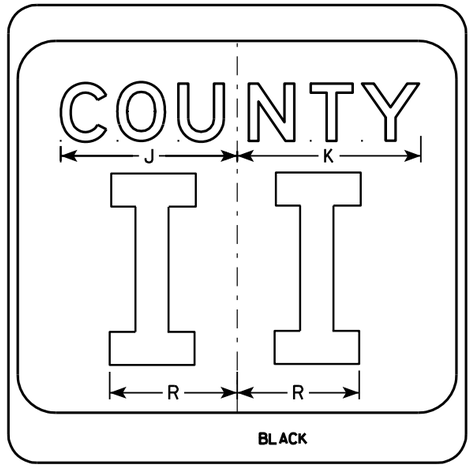
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 177 | E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

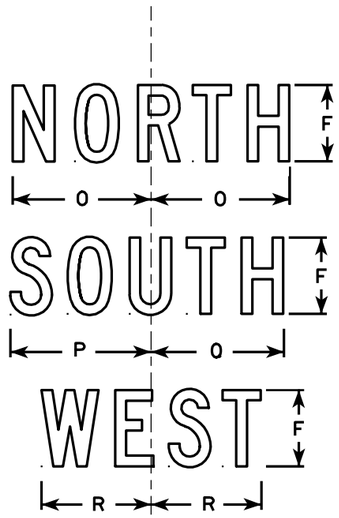
CTH MARKER
M1-5A FOR ASSEMBLIES

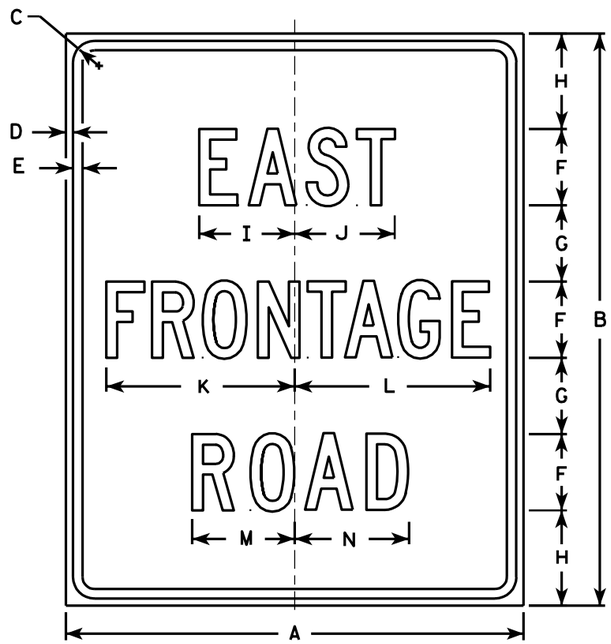
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 178 | E





NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate message as required.

7

7

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 750 mm
3	
4	900 mm X 1050 mm
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24	30	1 1/8	3/8	1/2	4	4	5	5	5 1/4	9 7/8	10 1/4	5 3/8	6	7 1/4	7 3/8	7	5 3/4									5.0	.45
3																												
4	36	42	1 3/8	5/8	5/8	6	5	7	7 1/2	7 7/8	14 3/4	15 3/8	8	9	10 7/8	11	10 1/2	8 5/8									10.5	.95
5																												

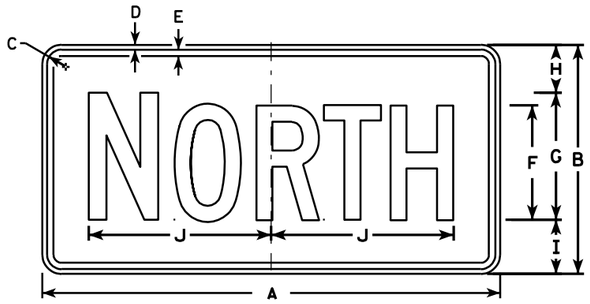
STANDARD SIGN
M1-95A

WISCONSIN DEPT OF TRANSPORTATION

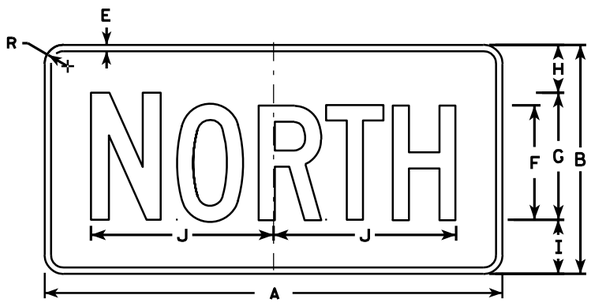
APPROVED Chester J Spang for State Traffic Engineer

DATE 1/30/02 PLATE NO. M1-95A.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 179	E

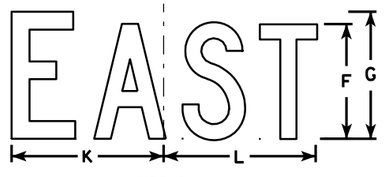


M3-1
MK3-1
MO3-1

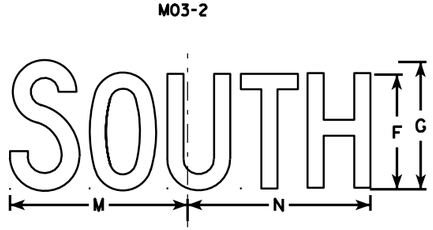


MB3-1
MG3-1
MM3-1
MN3-1

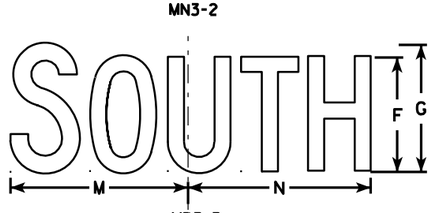
M3-2
MK3-2
MO3-2



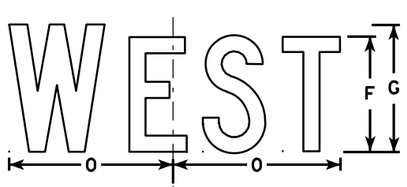
MB3-2
MG3-2
MM3-2
MN3-2



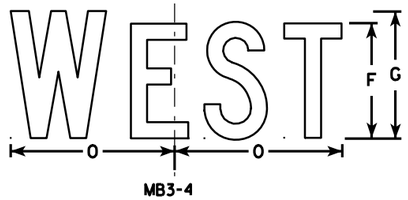
M3-3
MK3-3
MO3-3



MB3-3
MG3-3
MM3-3
MN3-3



M3-4
MK3-4
MO3-4



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White - Type H Reflective
   (Detour or temporary signs - Reflective)
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary signs - Reflective)
   MG3-1 thru MG3-4 Background - Green
   Message - White - Type H Reflective
   MK3-1 thru MK3-4 Background - Green
   Message - White - Type H Reflective
   MM3-1 thru MM3-4 Background - White - Type H Reflective
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White - Type H Reflective
   M03-1 thru M03-4 Background - Orange - Reflective
   Message - Black
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

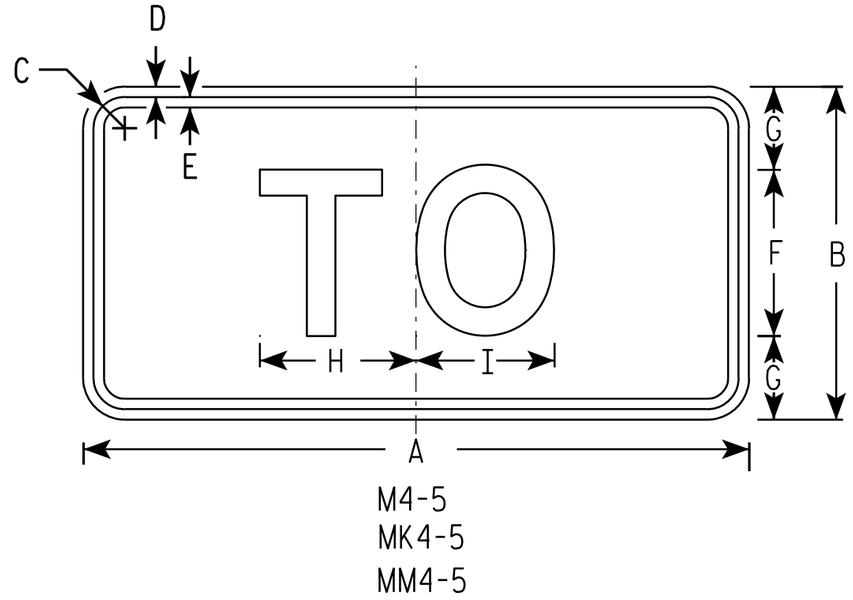
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

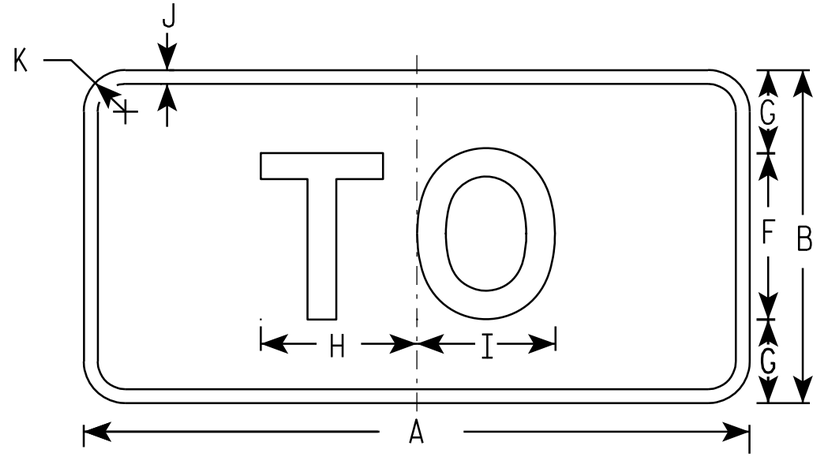
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 180	E



M4-5
MK4-5
MM4-5



MB4-5
MG4-5
MN4-5

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White - Type H Reflective (Detour or temporary Signs - Reflective)
   Message - Black
   MB4-5 Background - Blue
   Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG4-5 Background - Green
   Message - White - Type H Reflective
   MK4-5 Background - Green
   Message - White - Type H Reflective
   MM4-5 Background - White - Type H Reflective
   Message - Green
   MN4-5 Background - Brown
   Message - White - Type H Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	5 3/8	5 1/4	1/2	1 1/2																2.00
3	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
4	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
5	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5

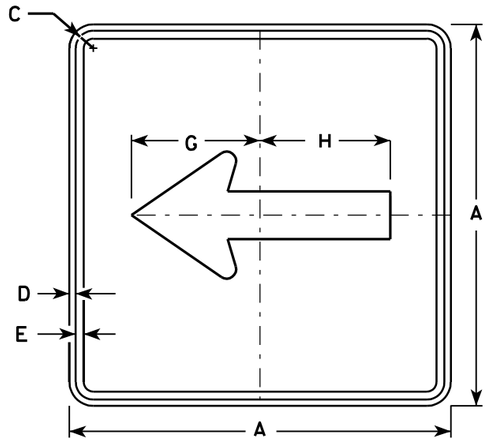
STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

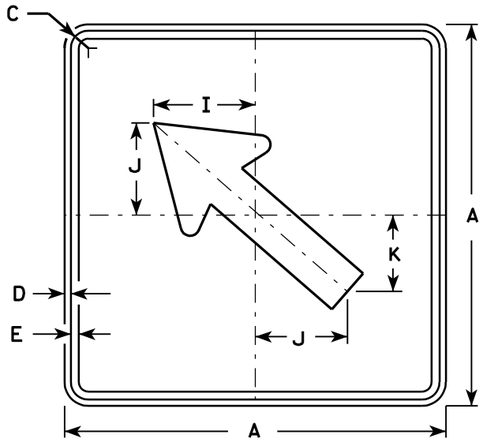
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-5.6

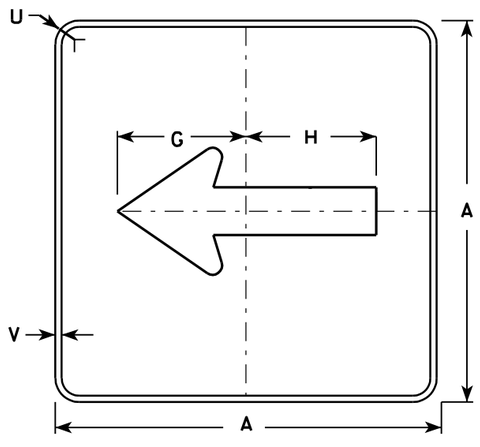
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 181 | E



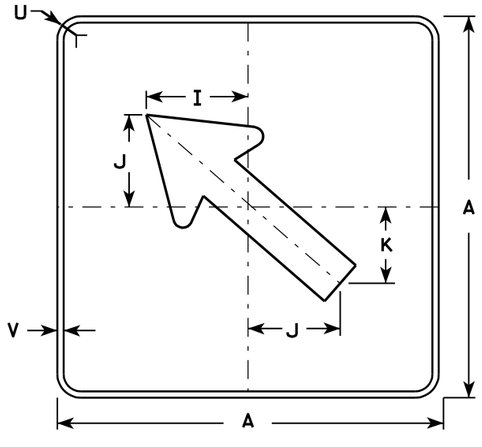
M6-1
MK6-1
MM6-1
MO6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MR6-2



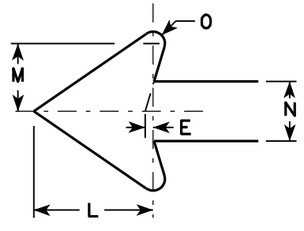
MB6-1
MG6-1
MN6-1



MB6-2
MG6-2
MN6-2

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG6-1 and MG6-2 Background - Green
   Message - White - Type H Reflective
   MK6-1 and MK6-2 Background - Green
   Message - White - Type H Reflective
   MM6-1 and MM6-2 Background - White - Type H Reflective
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White - Type H Reflective
   MO6-1 and MO6-2 Background - Orange - Reflective
   Message - Black
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow - Type H Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56

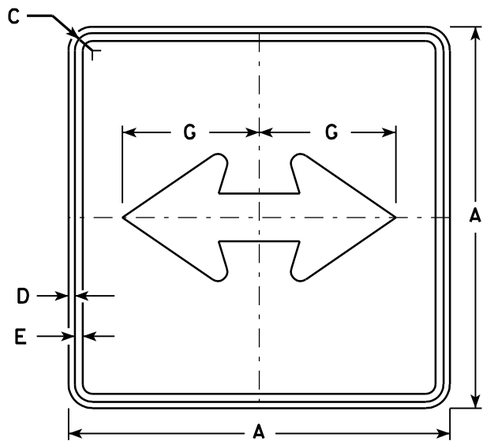
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

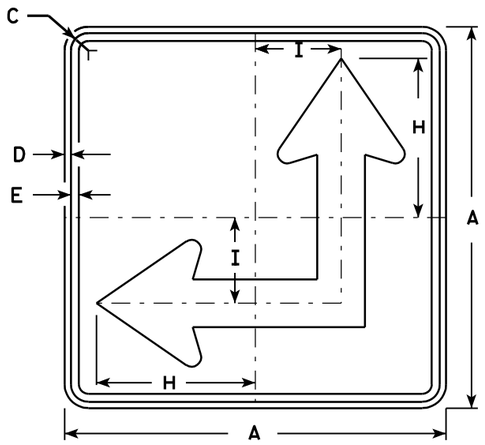
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-1.12

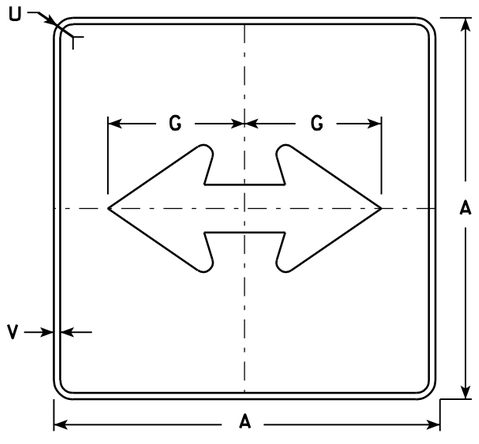
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 182	E



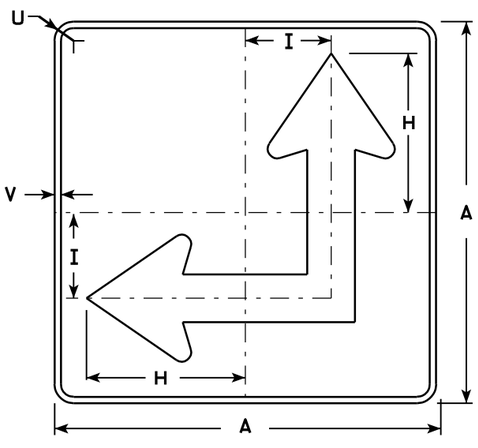
M6-4
MK6-4
MM6-4
MO6-4
MR6-4



M6-6
MK6-6
MM6-6
MO6-6
MR6-6



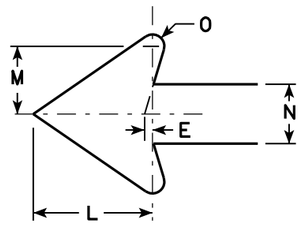
MB6-4
MG6-4
MN6-4



MB6-6
MG6-6
MN6-6

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See Note 4
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-4 and M6-6 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG6-4 and MG6-6 Background - Green
   Message - White - Type H Reflective
   MK6-4 and MK6-6 Background - Green
   Message - White - Type H Reflective
   MM6-4 and MM6-6 Background - White - Type H Reflective
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White - Type H Reflective
   MO6-4 and MO6-6 Background - Orange - Reflective
   Message - Black
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow - Type H Reflective
5. M6-6R same as M6-6L except arrow points ahead and right.



Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56

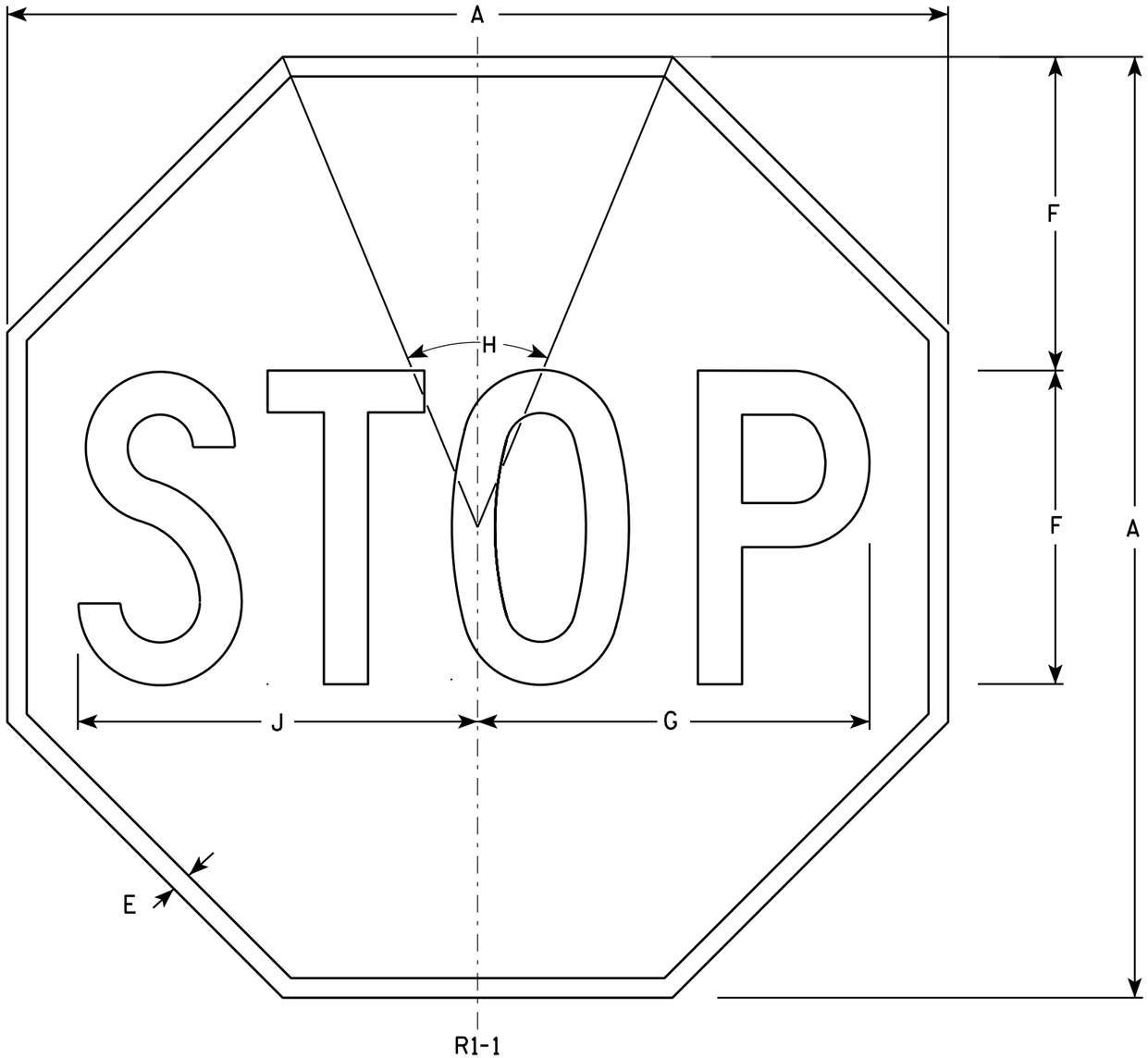
STANDARD SIGN M6-4 & M6-6 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-4.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 183	E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

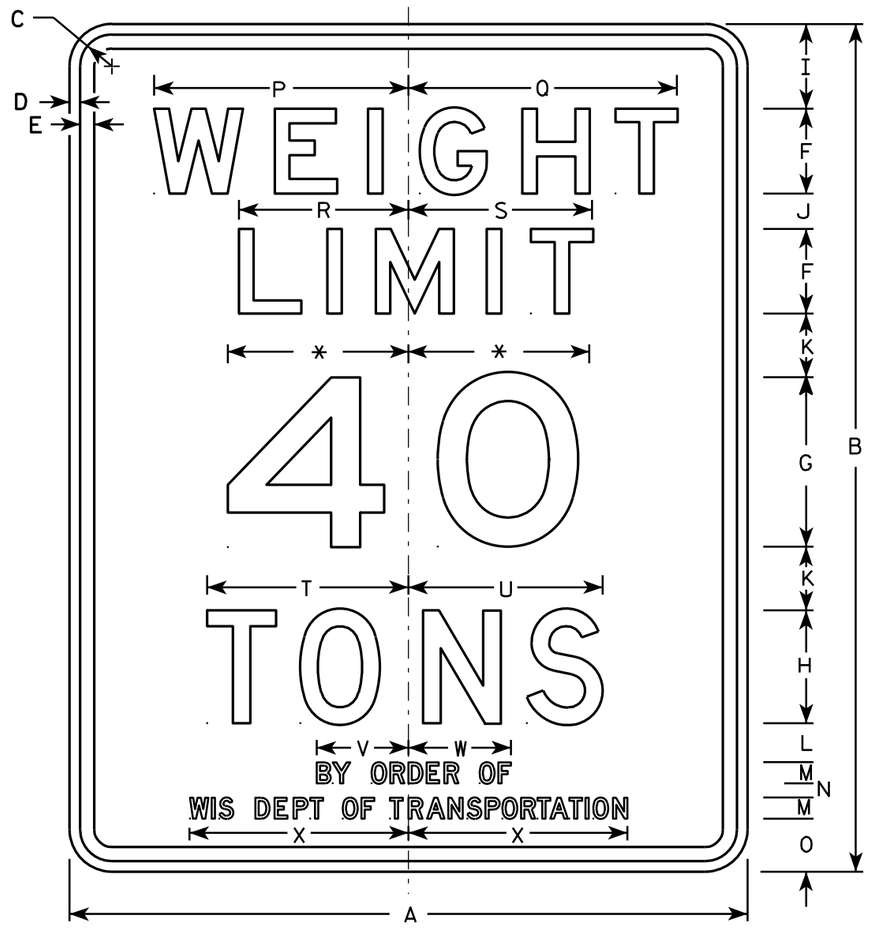
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 184	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R11.DGN PLOT DATE : 02-DEC-2010 15:09 PLOT BY : dotsja PLOT NAME : PLOT SCALE : 4.469282:1.000000

WISDOT/CADDS SHEET 42

7

7



R12-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 2 & 3 are series E
   Lines 4, 5, & 6 are series D.
6. Substitute appropriate numeral and optically adjust spacing to achieve proper balance.
7. Substitute name of county or town on County Trunk and Town Highways respectively. Community name on City or Village Streets including Connecting Highways is optional.

* Varies (see note 6)

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	30	1 1/8	3/8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 7/8	9	9 1/2	6	6 1/2	7 1/8	6 7/8	3 1/4	3 5/8	7 3/4			5.0
2S	24	30	1 1/8	3/8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 7/8	9	9 1/2	6	6 1/2	7 1/8	6 7/8	3 1/4	3 5/8	7 3/4			5.0
2M	24	30	1 1/8	3/8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 7/8	9	9 1/2	6	6 1/2	7 1/8	6 7/8	3 1/4	3 5/8	7 3/4			5.0
3	36	48	1 3/8	1/2	5/8	6	10	8	4 1/2	2 1/2	2 1/4	1 1/2	3/4	1/2	3	13 1/2	14 1/4	9	9 3/4	10 5/8	10 1/4	3 1/4	3 5/8	7 3/4			12.0
4	48	60	2 1/4	3/4	1	6	12	8	6	2 1/2	4 1/2	2 3/4	1 1/2	1	3 3/4	18	19	12	13	14 1/4	13 3/4	6 1/2	7 1/4	15 1/2			20.0
5																											

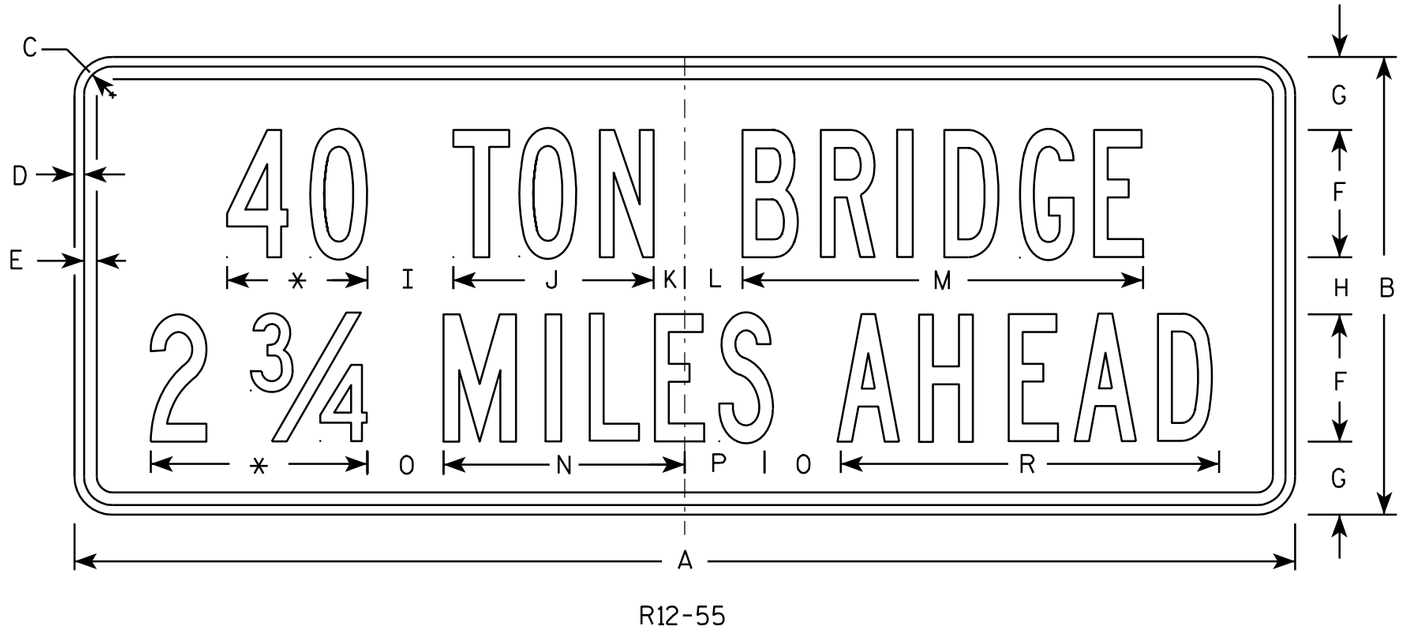
STANDARD SIGN
R12-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R12-1.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 185 | E



R12-55

* Varies

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - B for Size 2, Series D for Sizes 3 & 4
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.
6. For distances less than 5 miles, that figure should be expressed to the nearest 1/4 mile.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	18	1 1/8	3/8	1/2	5	2 7/8	2 1/4	3 3/8	7 7/8	1 1/4	2 1/4	15 3/4	9 1/2	3	3 1/8		14 7/8									6.0
2M	48	18	1 1/8	3/8	1/2	5	2 7/8	2 1/4	3 3/8	7 7/8	1 1/4	2 1/4	15 3/4	9 1/2	3	3 1/8		14 7/8									6.0
3	90	24	2 1/4	3/4	1	6	4	4	6	15 1/4	2 1/2	3 1/2	30 5/8	18 3/8	6	6 1/4		28 3/8									15.0
4	120	30	2 1/4	3/4	1	8	5 1/4	3 5/8	8	19 5/8	4	3	39 1/2	24 1/2	7	6 3/4		36 3/8									20.0
5	120	30	2 1/4	3/4	1	8	5 1/4	3 5/8	8	19 5/8	4	3	39 1/2	24 1/2	7	6 3/4		36 3/8									20.0

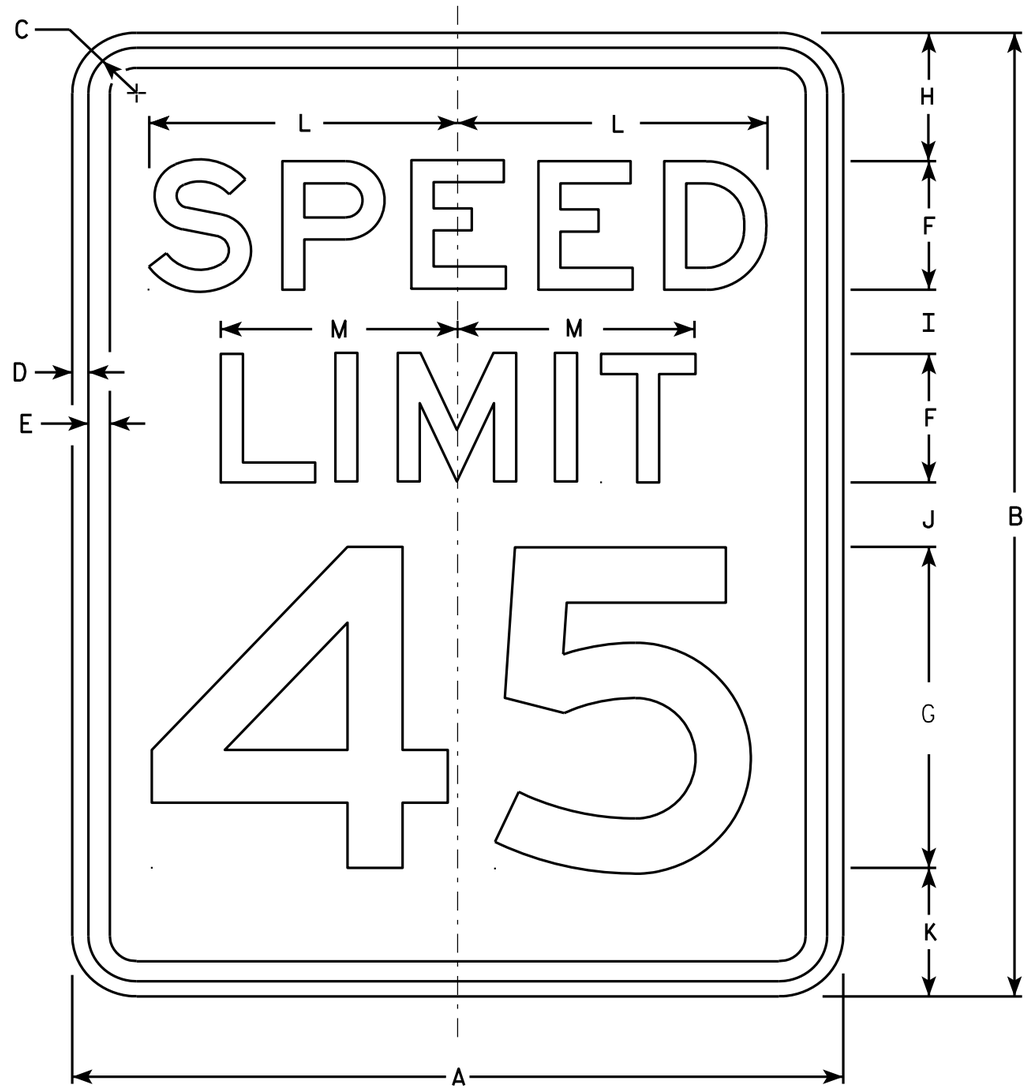
STANDARD SIGN
R12-55

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/23/11 PLATE NO. R12-55.5

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 186	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

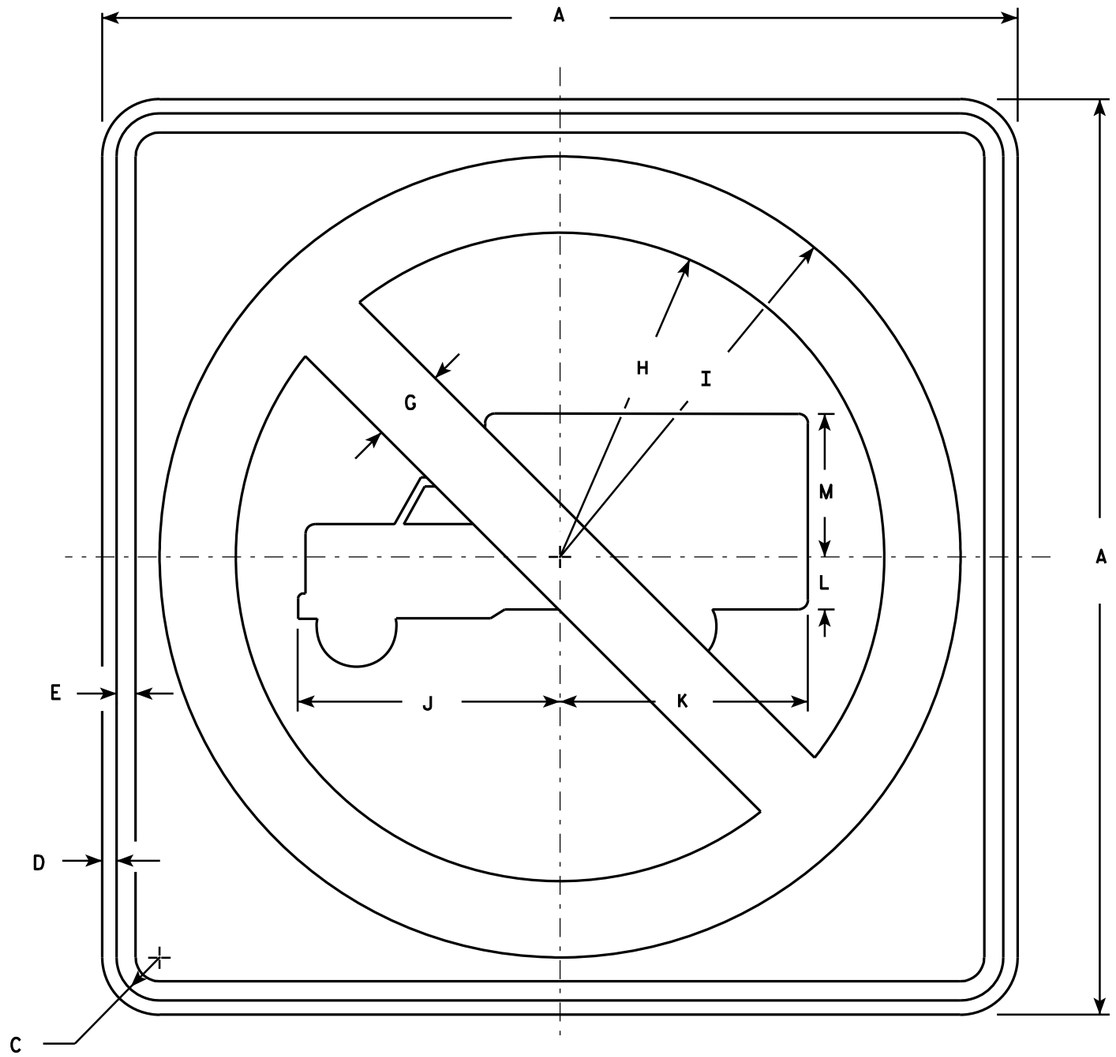
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 187	E



R5-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Circle & Diagonal - Reflective red.
   Truck Symbol & Border - Non-reflective black.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	3/8	1/2		2	8 1/2	10 1/2	6 7/8	6 1/2	1 3/8	3 3/4														4.0
2M	24		1 1/8	3/8	1/2		2	8 1/2	10 1/2	6 7/8	6 1/2	1 3/8	3 3/4														4.0
3	30		1 3/8	1/2	5/8		2 1/2	10 5/8	13 1/8	8 1/2	8 1/8	1 5/8	4 3/4														6.25
4	36		1 5/8	5/8	3/4		3	12 3/4	15 3/4	10 1/4	9 3/4	2	5 3/4														9.0
5	48		2 1/4	3/4	1		4	17	21	13 5/8	13	2 5/8	7 5/8														16.0

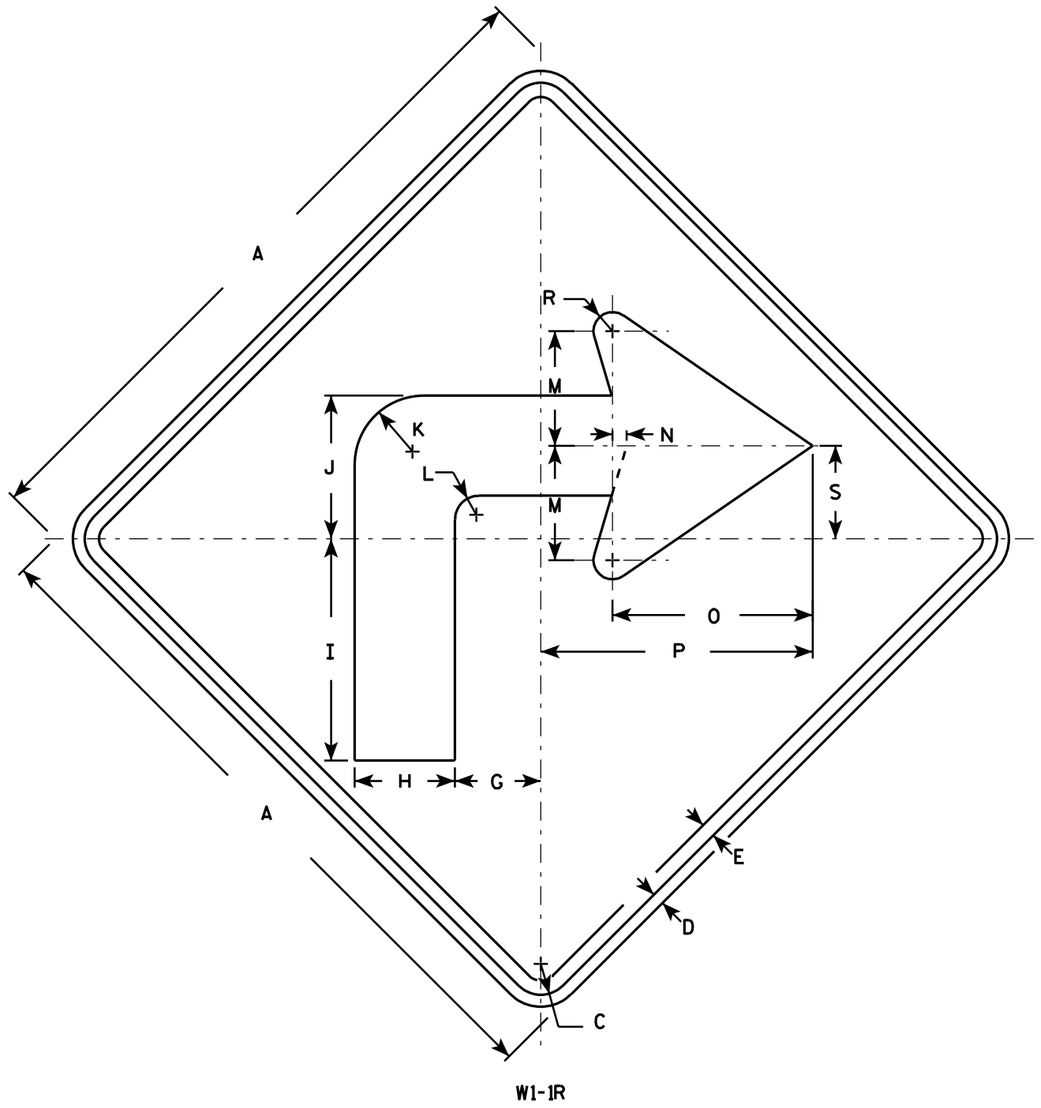
STANDARD SIGN
R5-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-2.6

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 188	E



W1-1R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-1L is the same as W1-1R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		3	3 1/2	7 3/4	5	2 1/2	7/8	4	1/2	7	9 1/2		5/8	3 1/4								4.0
2S	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
2M	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
3	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
4	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0
5	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0

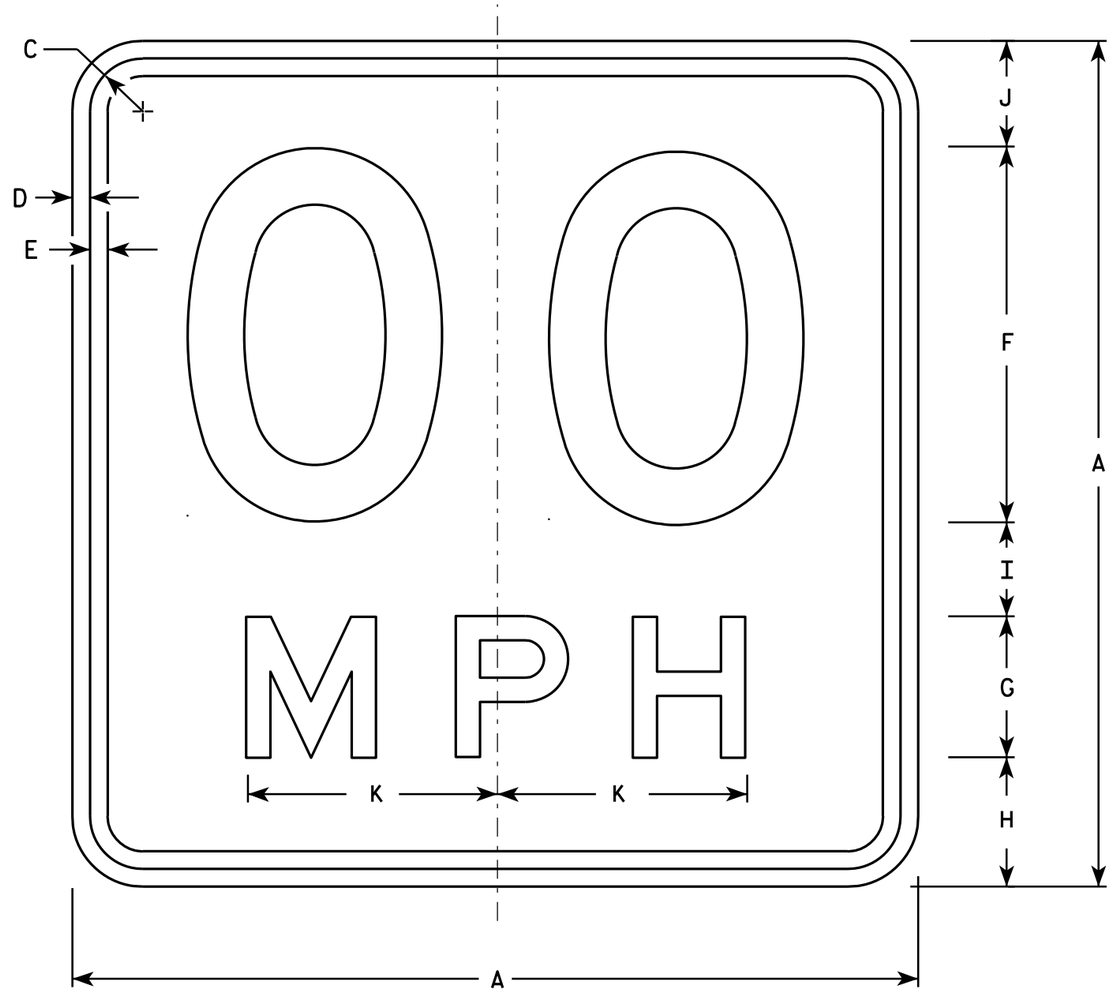
STANDARD SIGN
W1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 189 | E



W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
	1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
	3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

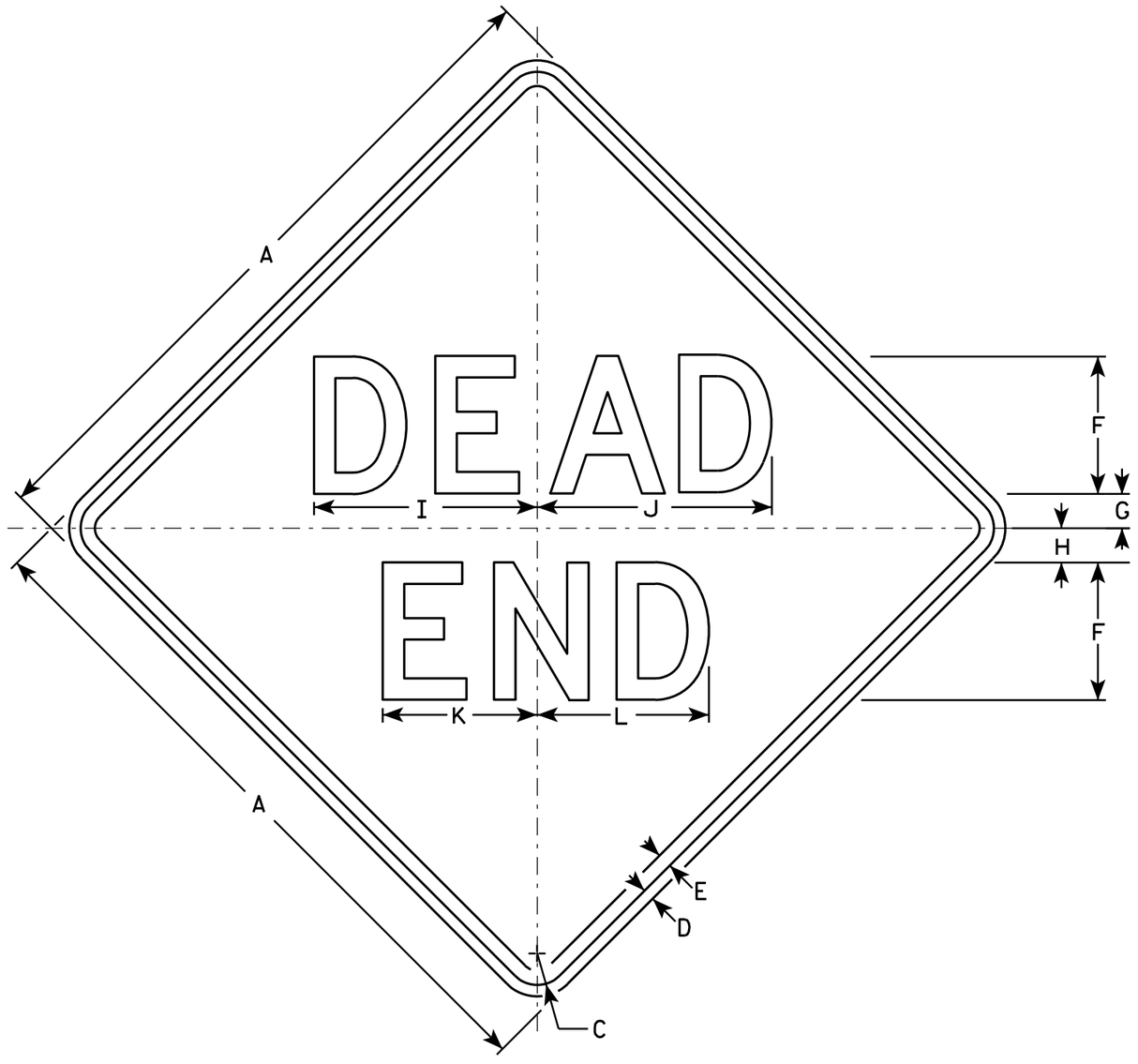
STANDARD SIGN
W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 190 | E



W14-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	5	1	2	8 1/4	8 5/8	5 5/8	6 1/4															4.0
2S	30		1 3/8	1/2	5/8	6	1 1/2	2 1/2	9 3/4	10 1/4	6 3/4	7 1/2															6.25
2M	30		1 3/8	1/2	5/8	6	1 1/2	2 1/2	9 3/4	10 1/4	6 3/4	7 1/2															6.25
3	36		1 5/8	5/8	3/4	7	2	3	11 3/8	12	7 7/8	8 3/4															9.0
4																											
5																											

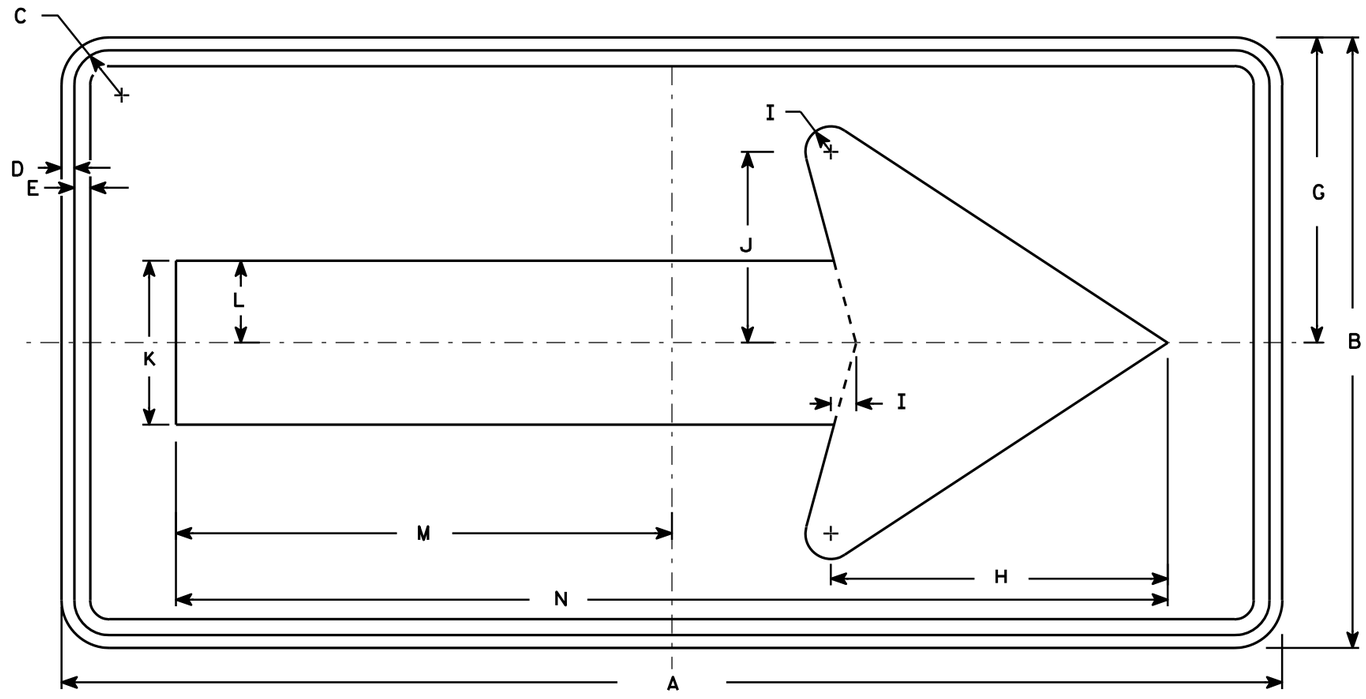
STANDARD SIGN
W14-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W14-1.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 191	E



W1-6

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	3/8		9	10	3/4	5 5/8	4 3/4	2 3/8	14 5/8	29 1/4													4.5
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	96	48	2 1/4	3/4	1		24	26 1/2	2	15	13	6 1/2	39	78													32.0

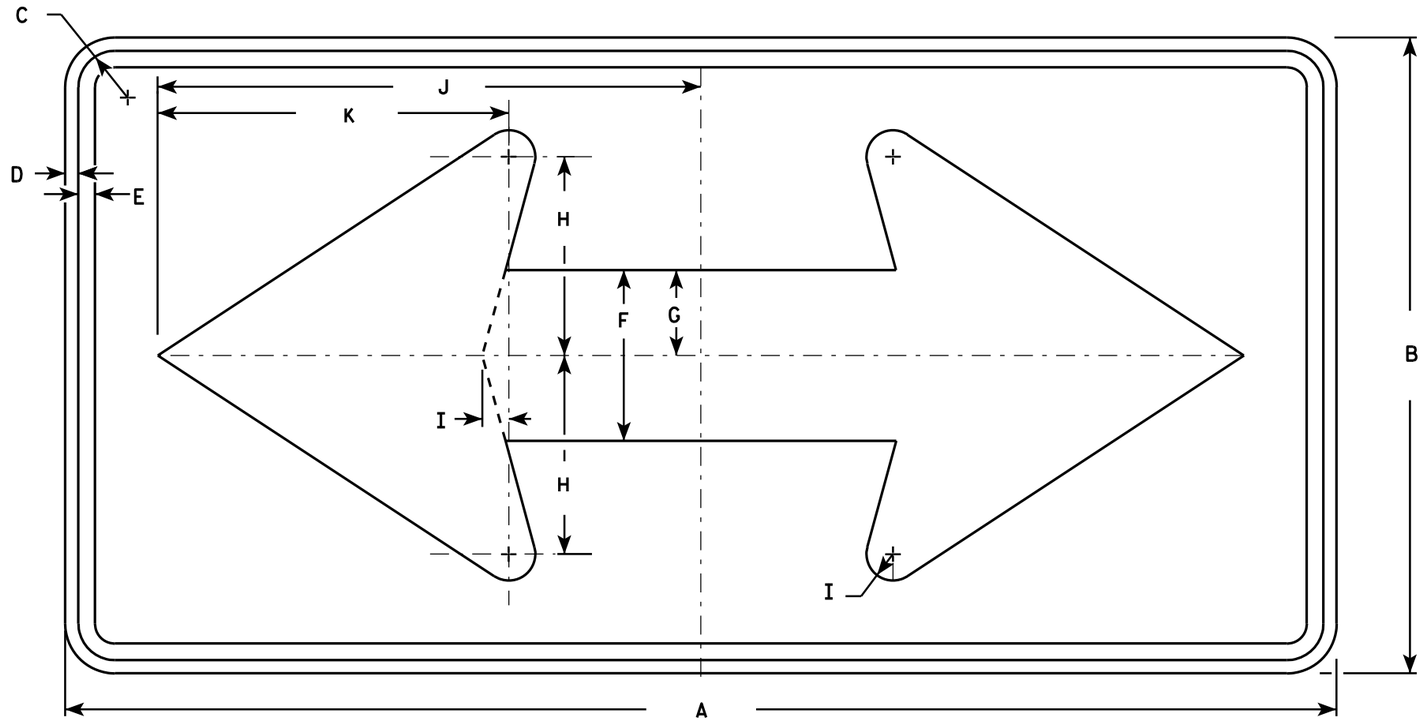
STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-6.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 192



W1-7

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

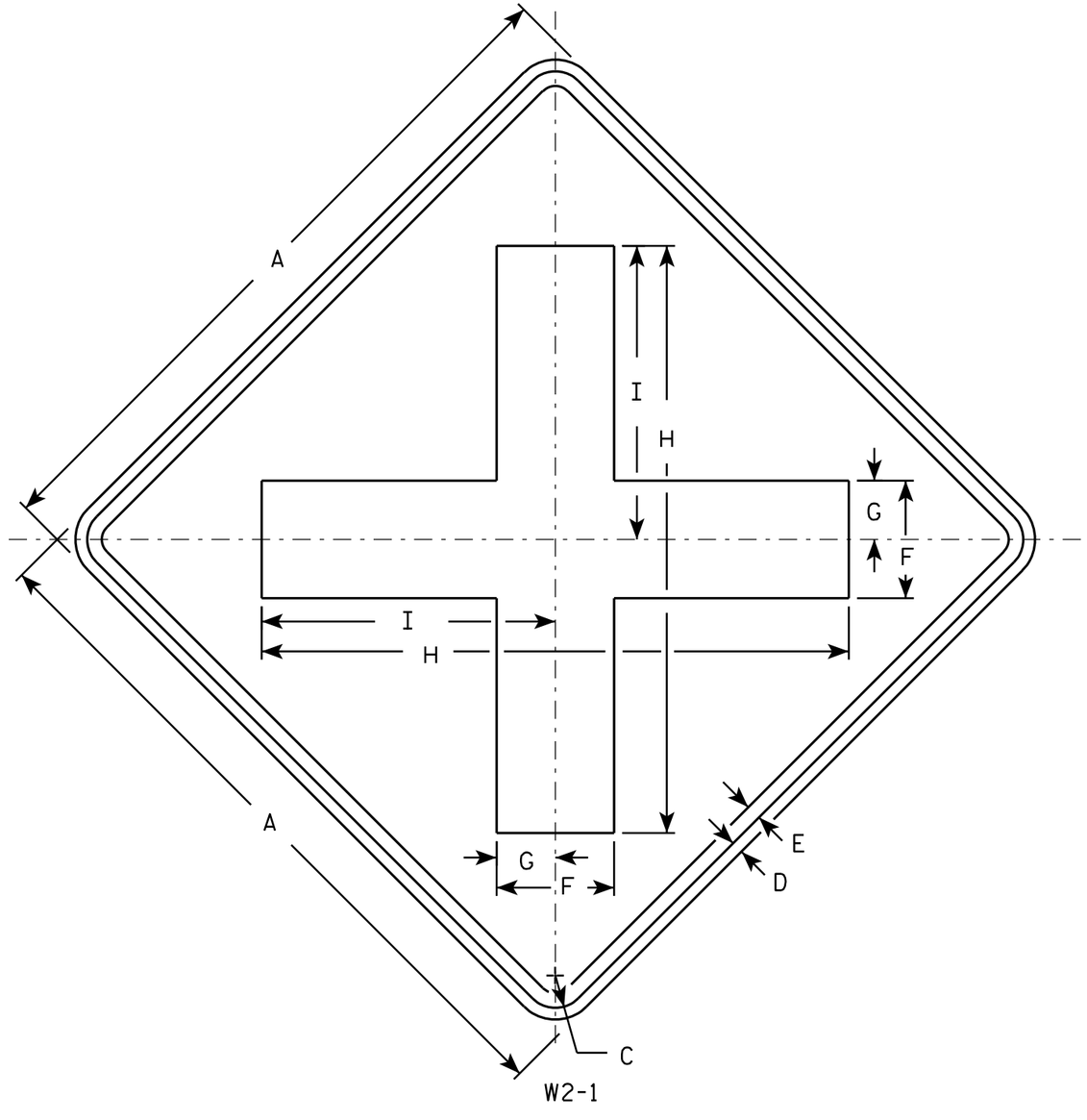
STANDARD SIGN
W1-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 193 | E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	4	2	20	10																		4.0
2S	30		1 3/8	1/2	5/8	5	2 1/2	25	12 1/2																		6.25
2M	30		1 3/8	1/2	5/8	5	2 1/2	25	12 1/2																		6.25
3	36		1 5/8	5/8	3/4	6	3	30	15																		9.0
4	48		2 1/4	3/4	1	8	4	40	20																		16.0
5																											

STANDARD SIGN
W2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W2-1.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 194	E

W4-4P

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	3	2 1/4	1 1/2	8	1 1/2	3/8	10	6 1/4	2 1/4	2 1/4	6 1/4											2.0
2M	24	12	1 1/8	3/8	3/8	3	2 1/4	1 1/2	8	1 1/2	3/8	10	6 1/4	2 1/4	2 1/4	6 1/4											2.0
3	36	15	1 1/8	3/8	1/2	4	2 5/8	1 3/4	10 3/4	2 3/8	3/8	13 1/2	8 3/8	3	3 1/8	8 3/8											3.75
4	42	18	1 1/8	3/8	1/2	5	3	2	13 3/8	3 1/8	3/8	16 7/8	10 1/2	3 5/8	3 7/8	10 3/8											5.25
5																											

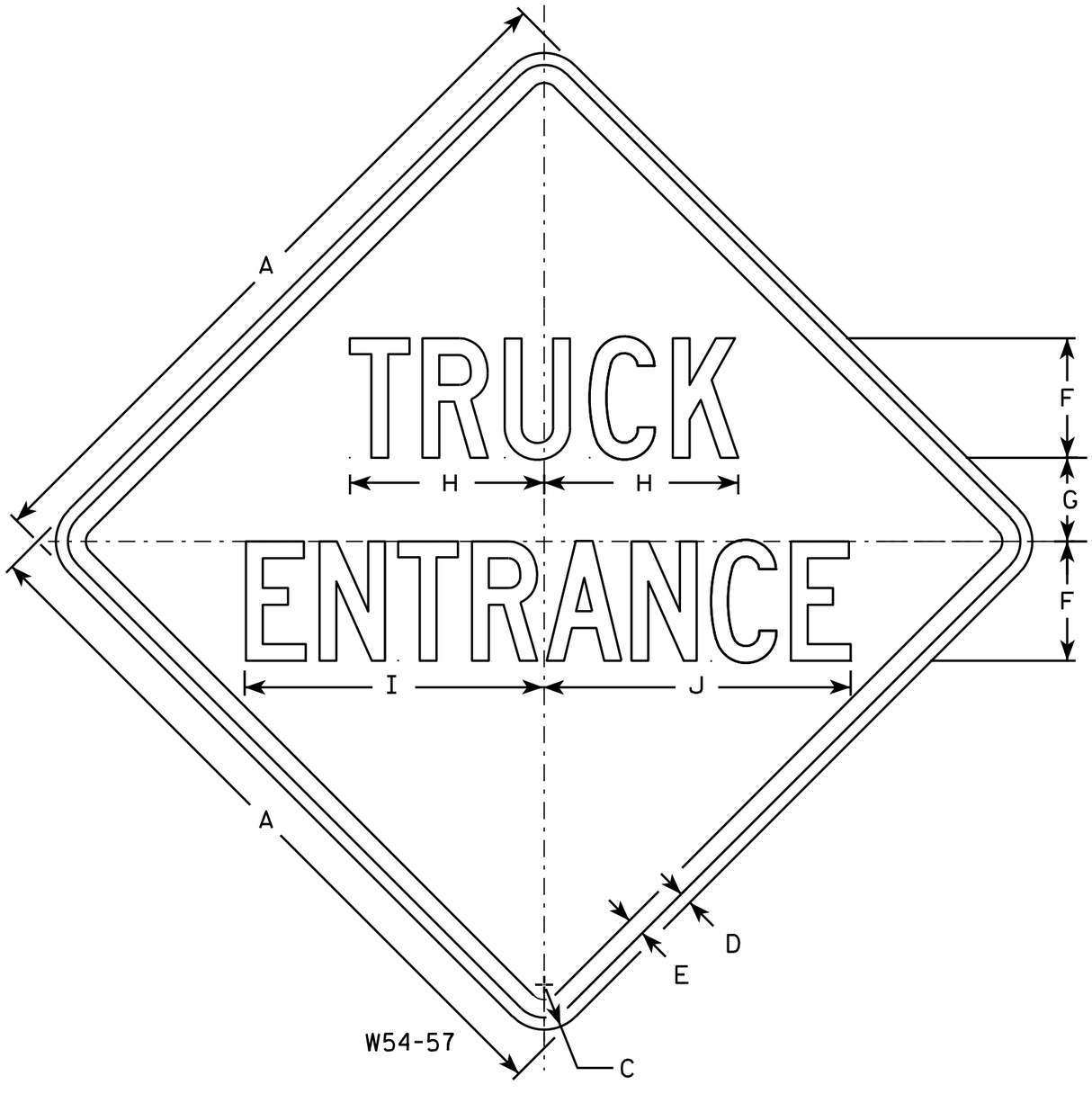
STANDARD SIGN
W4-4P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W4-4P.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 195 | E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 3/8	1/2	5/8	5	3 1/2	8 1/8	12 1/2	12 7/8																	6.25
2M	36		1 5/8	5/8	3/4	6	4 1/4	9 5/8	15	15 3/8																	9.00
3	36		1 5/8	5/8	3/4	6	4 1/4	9 5/8	15	15 3/8																	9.00
4																											
5																											

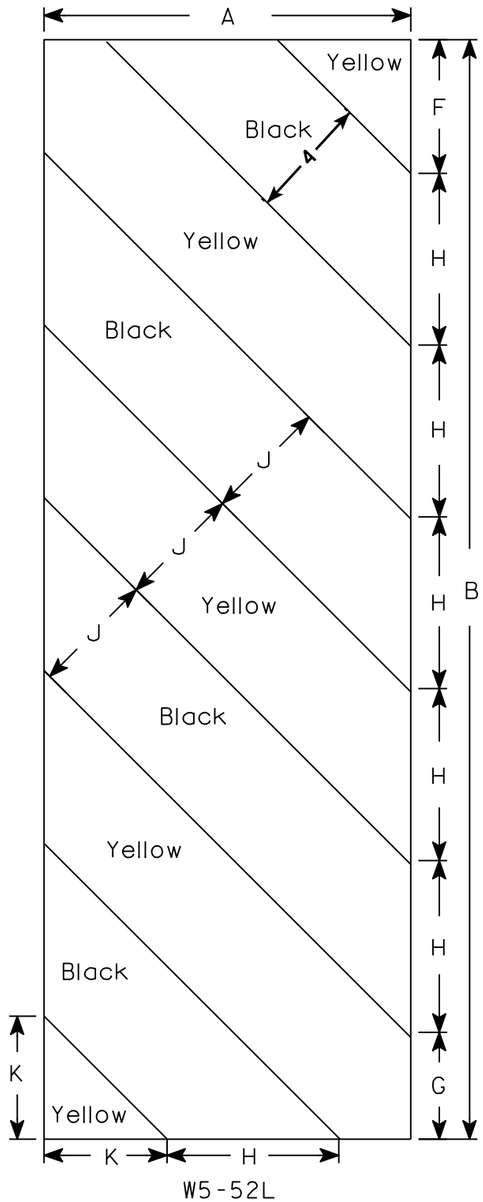
STANDARD SIGN
W54-57

WISCONSIN DEPT OF TRANSPORTATION

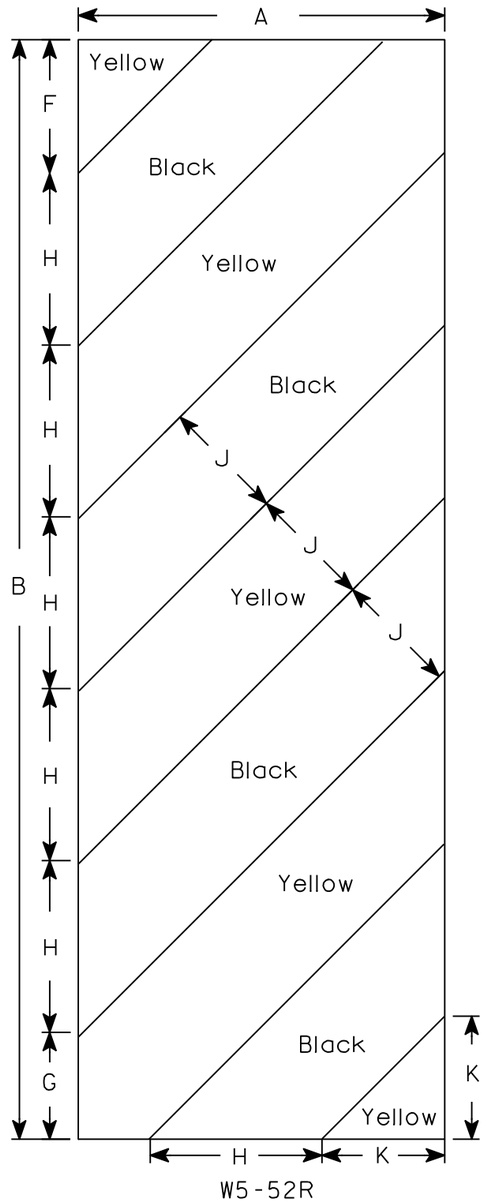
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W54-57.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 196	E



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

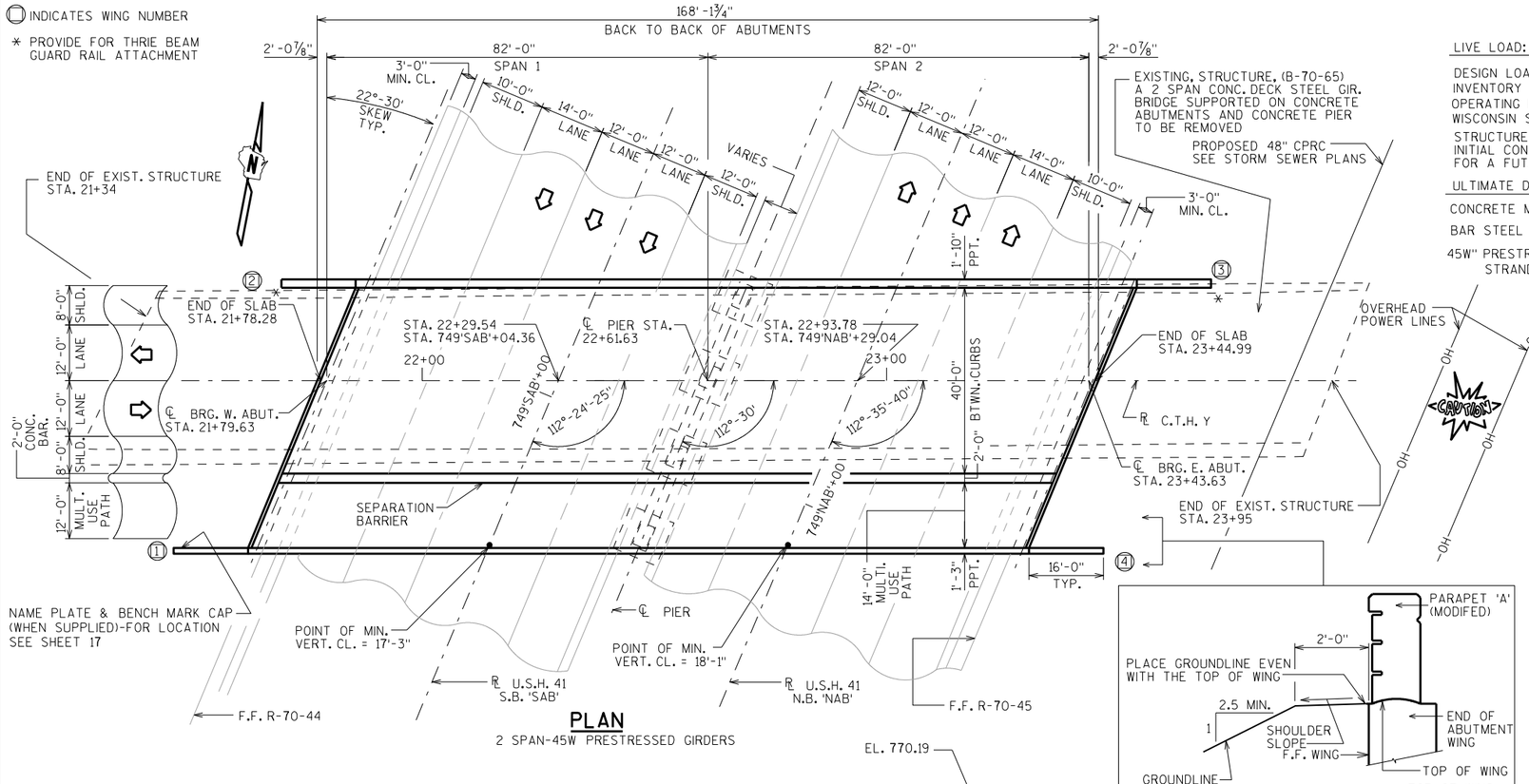
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 197 | E

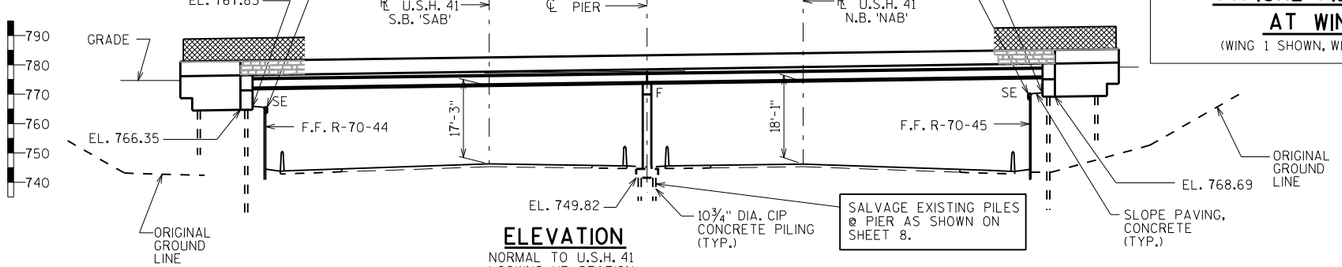
STATE PROJECT NUMBER

1120-09-76



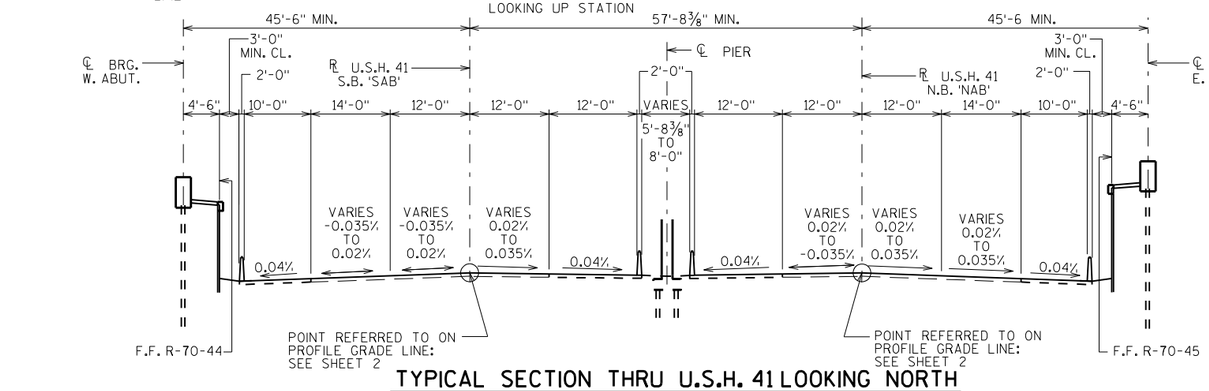
PLAN

2 SPAN-45W PRESTRESSED GIRDERS

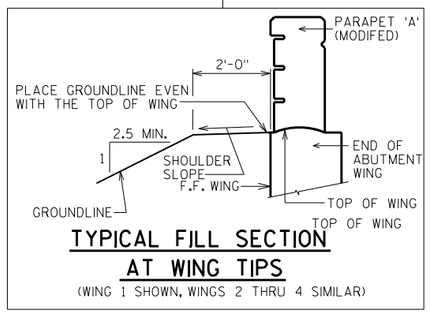


ELEVATION

NORMAL TO U.S.H. 41
LOOKING UP STATION



TYPICAL SECTION THRU U.S.H. 41 LOOKING NORTH



TYPICAL FILL SECTION AT WING TIPS

(WING 1 SHOWN, WINGS 2 THRU 4 SIMILAR)

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF=1.05
OPERATING RATING FACTOR: RF=1.37
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 240 (KIPS)

STRUCTURE IS DESIGNED FOR A 1½" SACRIFICIAL WEARING SURFACE PLACED AT INITIAL CONSTRUCTION INTEGRAL WITH THE DECK. NO ALLOWANCE HAS BEEN MADE FOR A FUTURE WEARING SURFACE LOAD.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB — f'c = 4,000 P.S.I. ALL OTHER — f'c = 3,500 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.
45W" PRESTRESSED GIRDERS, CONCRETE MASONRY — f'c = 8,000 P.S.I.
STRANDS- 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON 10¾" DIA. (0.365) CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 85'-0" LONG.

PIER TO BE SUPPORTED ON 10¾" DIA. (0.365) CIP CONCRETE PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 150 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 70'-0" LONG.

** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

C.T.H. Y	U.S.H. 41
A.D.T.=2,700 (2035)	A.D.T.=94,400 (2035)
R.D.S.=50 M.P.H.	R.D.S.=70 M.P.H.

CURVE DATA

℄ S.B. U.S.H. 41	℄ N.B. U.S.H. 41
P.I. = STA. 762+76.31	P.I. = STA. 762+72.07
Δ = 24°-12'-15.1"	Δ = 24°-00'-59.9"
D = 1°-2'-57.74"	D = 1°-3'-39.72"
T = 1170.73'	T = 1148.63'
L = 2306.54'	L = 2263.52'
R = 5460.00	R = 5400.00
S.E. = 3.50%	S.E. = 3.50%
P.C. = STA. 751+05.58	P.C. = STA. 751+23.45
P.T. = STA. 774+12.12	P.T. = STA. 773+86.96

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. PIER
9. PIER DETAILS
10. 45W" PRESTRESSED GIRDER DETAILS
11. 45W" PRESTRESSED GIRDER DETAILS
12. STEEL DIAPHRAGM
13. SUPERSTRUCTURE
14. SUPERSTRUCTURE DETAILS
15. RAIL POST SPACING DETAIL
16. MODIFIED SLOPED FACE PARAPET 'LF'
17. MODIFIED VERTICAL FACE PARAPET 'A'
18. SEPARATION BARRIER
19. ORNAMENTAL PROTECTIVE SCREENING
20. AESTHETIC DETAILS

STRUCTURE DESIGN CONTACT:
JAMES LUEBKE (608) 266-5098
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 4/17/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-70-284

C.T.H. Y OVER U.S.H. 41

COUNTY	TOWN/~~CITY/VILLAGE~~
WINNEBAGO	OSHKOSH

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JDL	CAD	WWR	DFD

GENERAL PLAN

SHEET 1 OF 20

198

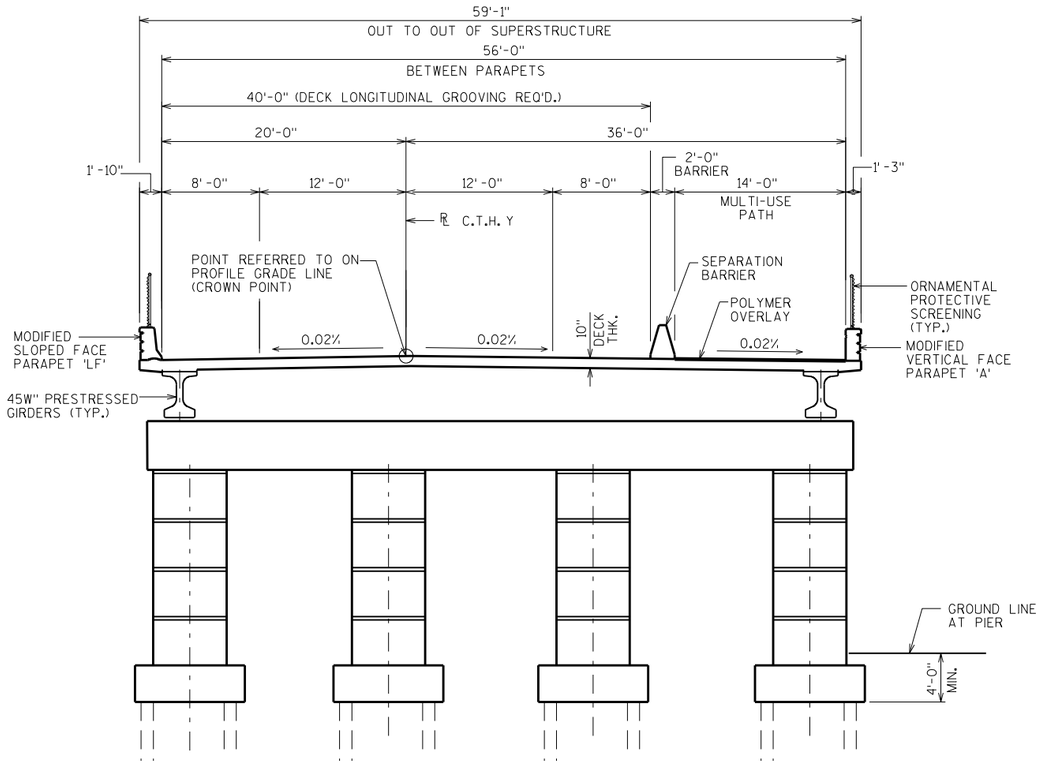
I.D. 1120-09-00

DATE: APRIL '13

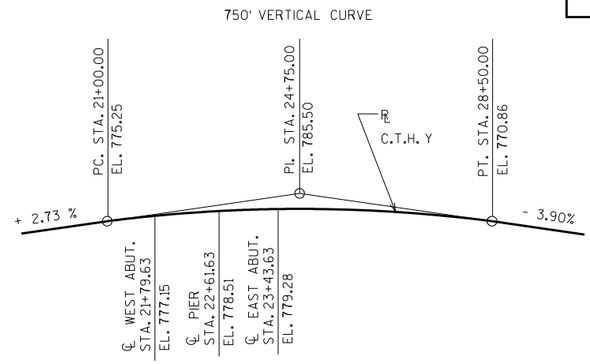
SCALE = 15

8

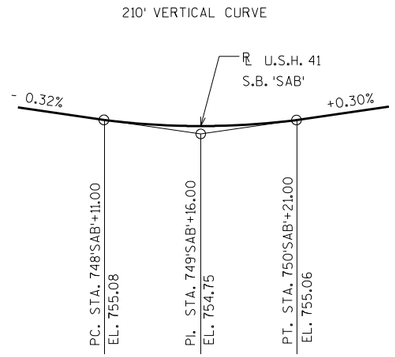
8



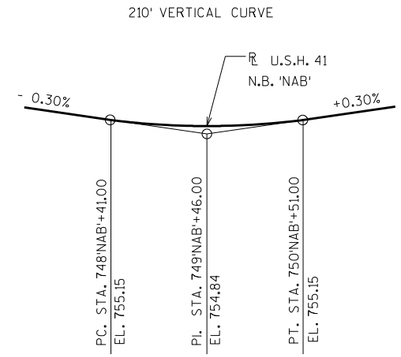
CROSS SECTION THRU ROADWAY LOOKING EAST



PROFILE GRADE LINE C.T.H. Y



PROFILE GRADE LINE U.S.H. 41 S.B.



PROFILE GRADE LINE U.S.H. 41 N.B.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	PIER	TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 22+65	LS	———	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-70-284	LS	———	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	———	270	265	———	535
502.3200	PROTECTIVE SURFACE TREATMENT	SY	1250	15	15	———	1280
503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	990	———	———	———	990
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	———	4370	4330	4340	13,040
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	81,120	2655	2635	20,160	106,570
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	24	———	———	———	24
506.4000	STEEL DIAPHRAGMS B-70-284	EACH	20	———	———	———	20
509.5100.S	POLYMER OVERLAY	SY	260	———	———	———	260
513.4090	RAILING TUBULAR SCREENING B-70-284	LS	———	———	———	———	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	16	16	———	32
517.1010.S	CONCRETE STAINING B-70-284	SF	2380	———	———	1610	3990
517.1015.S	CONCRETE STAINING MULTI-COLOR B-70-284	SF	725	385	380	———	1490
517.1050.S	ARCHITECTURAL SURFACE TREATMENT	SF	725	385	380	———	1490
550.2106	PILING CIP CONCRETE 10 3/4 X 0.365-INCH	LF	———	1190	1190	2100	4480
604.0400	SLOPE PAVING CONCRETE	SY	———	22	22	———	44
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	95	95	———	190
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EA	———	1	1	———	2
SPV.0035	HIGH PERFORMANCE (HPC) CONCRETE MASONRY STRUCTURES	CY	475	74	72	141	764
SPV.0165	LONGITUDINAL GROOVING BRIDGE DECK	SF	6670	———	———	———	6670
	NON-BID ITEMS						
	FILLER	SIZE	———	———	———	———	½" & ¾"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED. THE TOP LAYER OF BAR STEEL REINFORCEMENT IN THE DECK SHALL BE PLACED WITH 3½" OF CLEAR COVER."

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SLOPE PAVING MATERIAL TO THE EXTENT SHOWN ON SHEET 1 AND IN THE ABUTMENT DETAILS.

STATE PROJECT NUMBER

1120-09-76

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

CROSS SECTION & QUANTITIES

SHEET 2

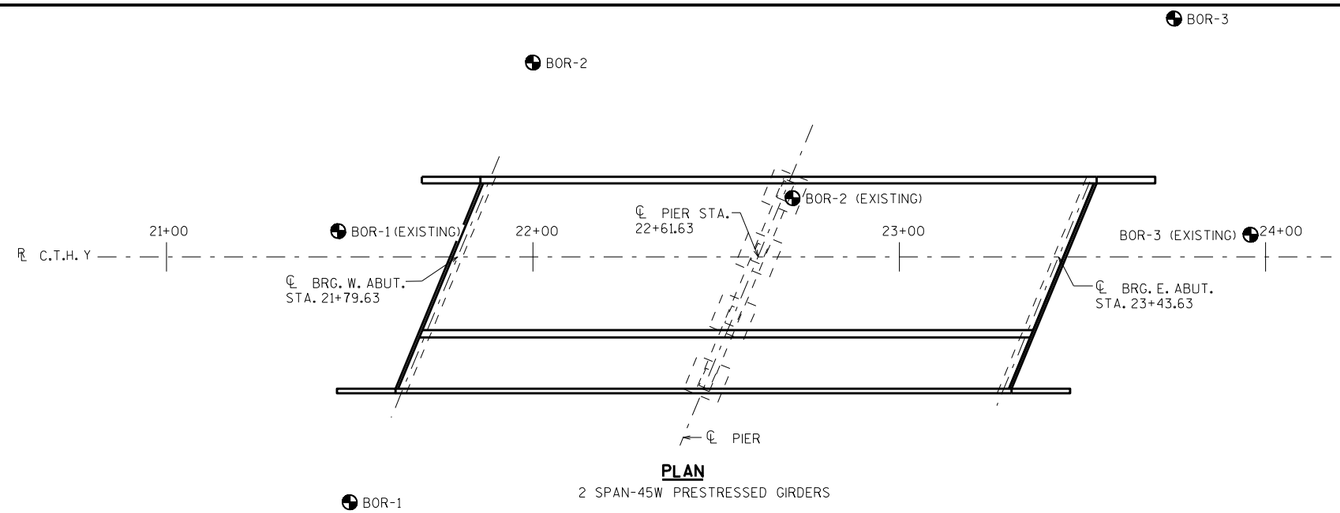
199

8

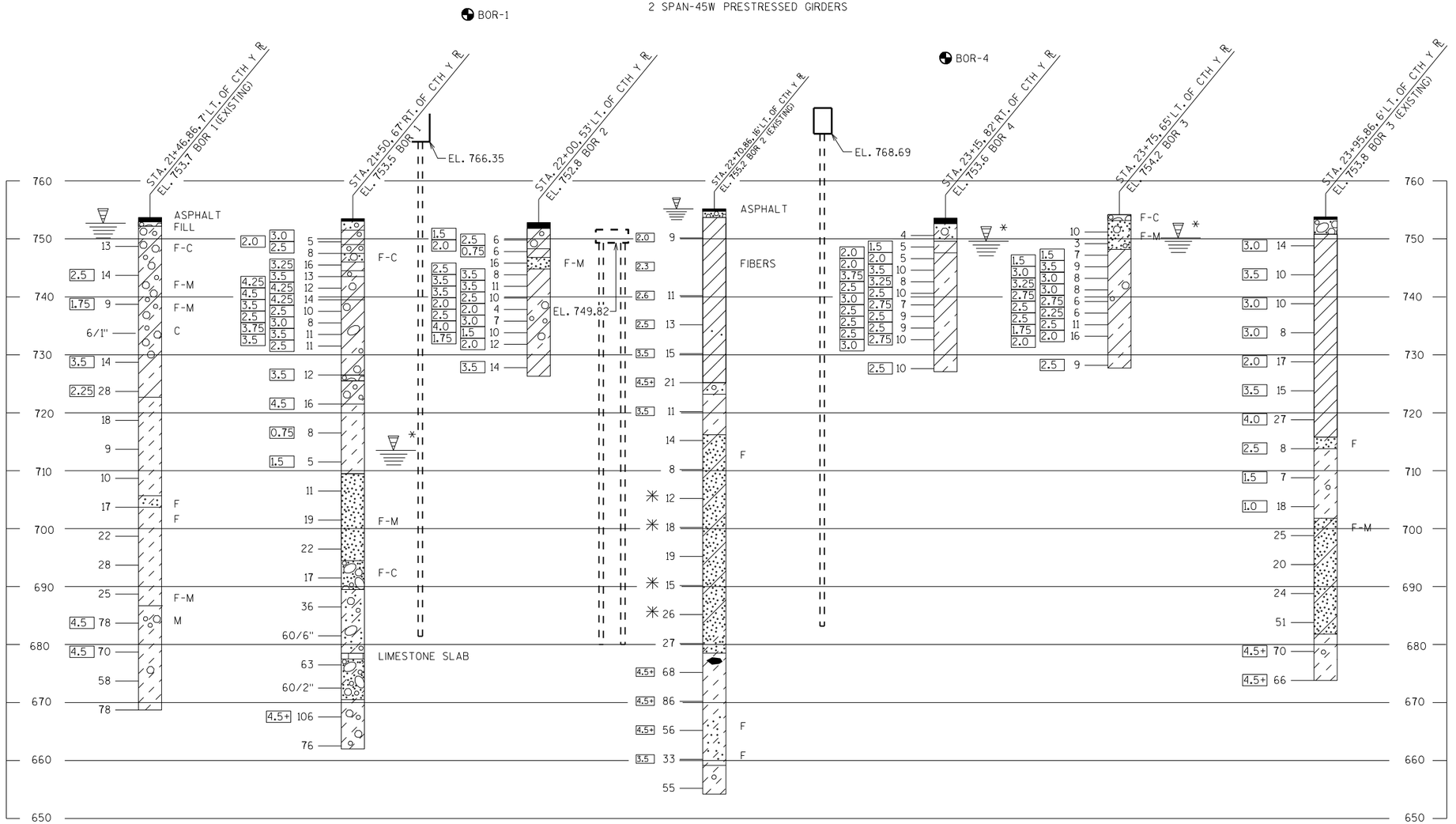
8

SCALE = 6

CTH Y OVER USH 41
STH 26 - BREEZEWOOD LANE
STH 45 - BREEZEWOOD LANE



PLAN
2 SPAN-45W PRESTRESSED GIRDERS



STATE PROJECT NUMBER

1120-09-76

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO.
ELEV.
STA.
UNCONFINED STRENGTH → 7.7 7
BLOWS PER FT. USING 140# WT. FALLING 30"
WASH SAMPLE
SHELBY TUBE — S.T.
GROUND WATER ELEVATION
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SANDY GRAVEL
F. BOULDERS OR COBBLES
SAND
SILTY CLAY
SO LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

SUBSURFACE EXPLORATION

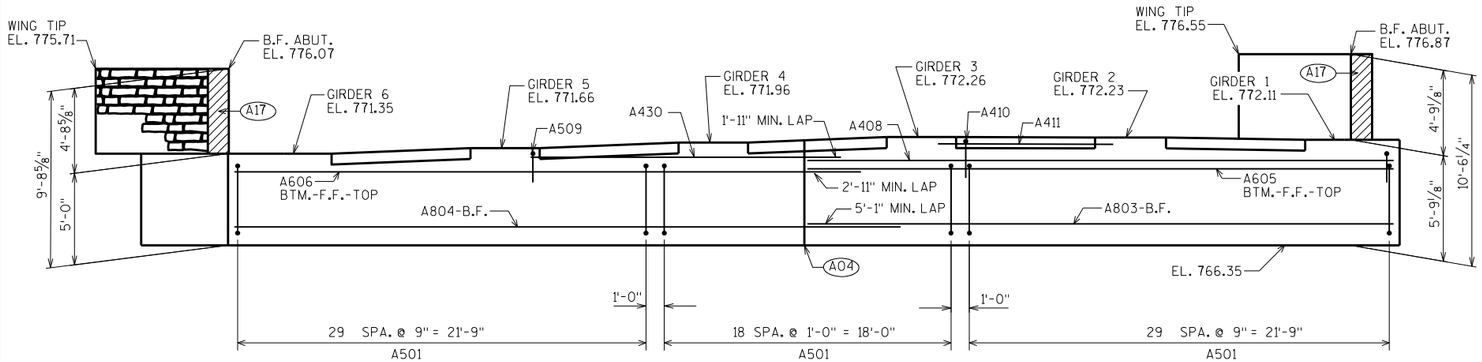
SHEET 3

200

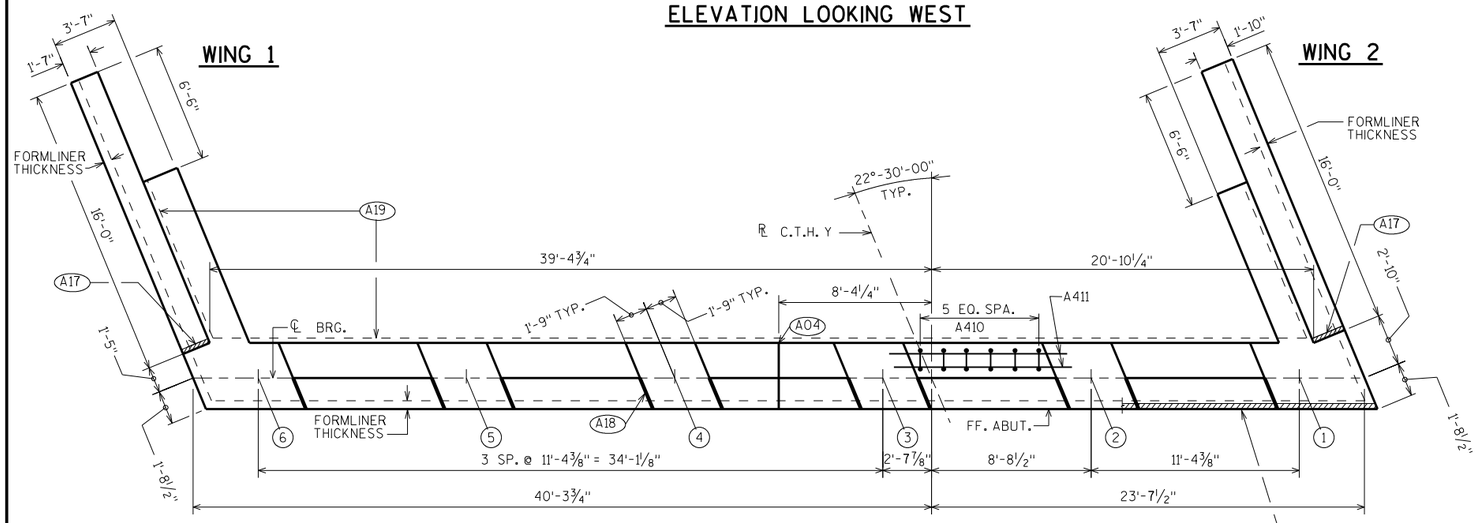
SCALE =

STATE PROJECT NUMBER

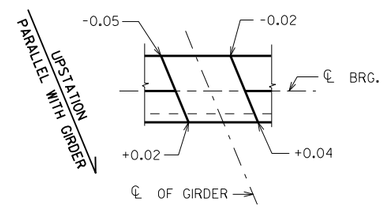
1120-09-76



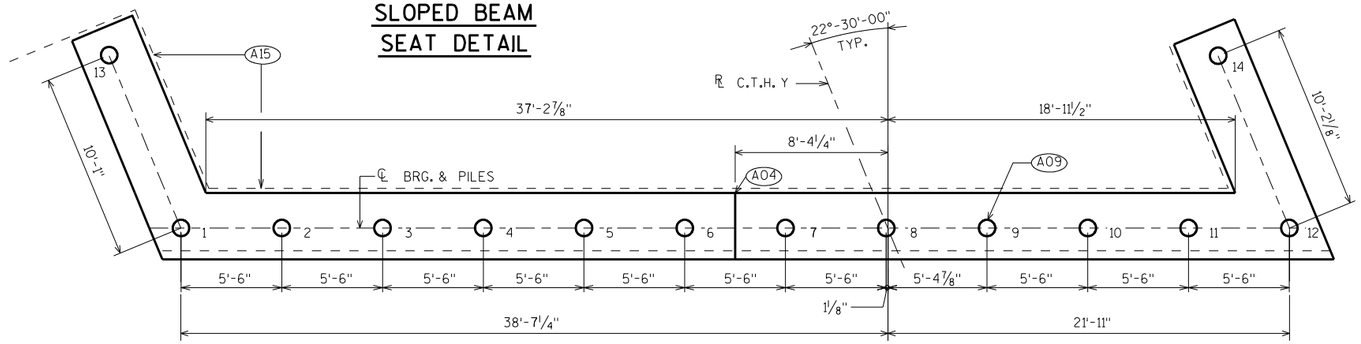
ELEVATION LOOKING WEST



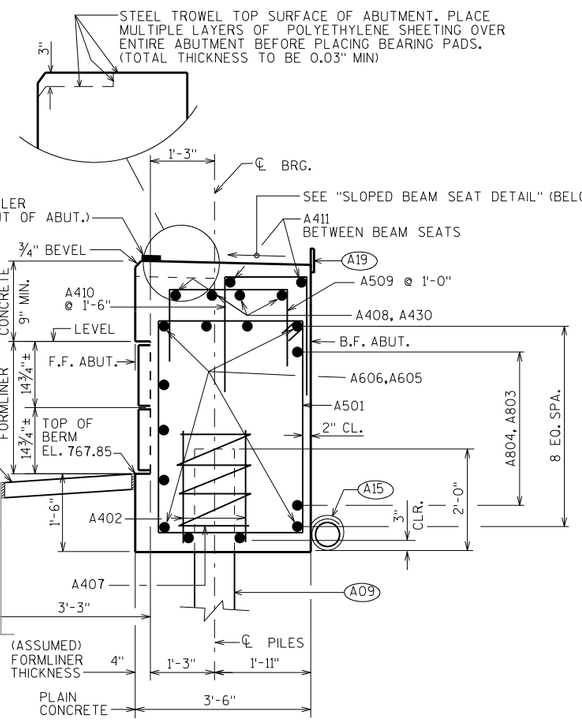
PLAN



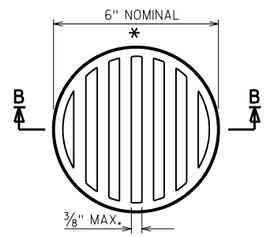
SLOPED BEAM SEAT DETAIL



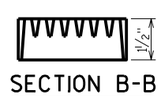
PILE PLAN



SECTION THRU BODY



RODENT SCREEN DETAIL



SECTION B-B

(A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 × 8. 3/4" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE.

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. CAST-IN-PLACE CONCRETE PILING, ESTIMATED 85'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

WEST ABUTMENT

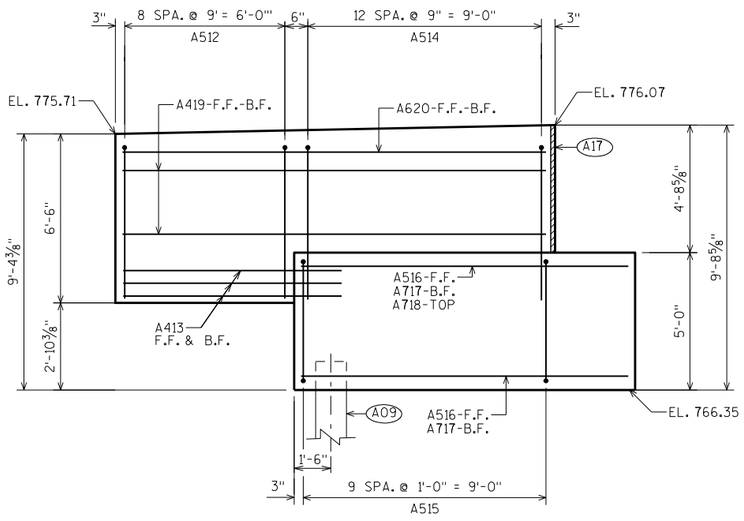
SHEET 4

201

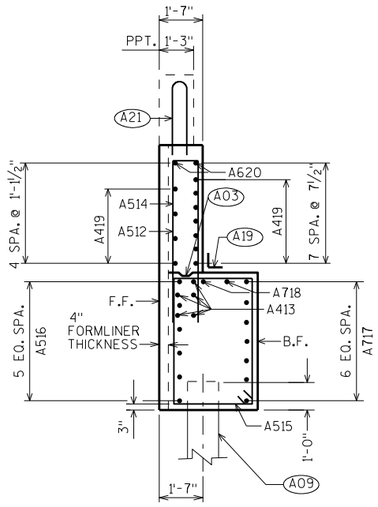
SCALE = 4.0

8

8



WING 1 ELEVATION



WING 1 SECTION

A03 OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

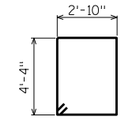
A09 SUPPORT ABUTMENT ON 10 3/4" DIA. CAST-IN-PLACE CONCRETE PILING, ESTIMATED 85'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

A17 1/2" FILLER (INCLUDED IN WING LENGTH); SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

A21 FOR PPT. BARS & DIMENSION SEE PARAPET SHT. VERTICAL FACE PARAPET A SHT. 17

A22 FOR PPT. BARS & DIMENSION SEE MODIFIED SLOPED FACE PARAPET LF SHT. 16



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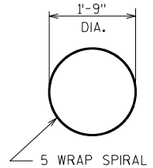

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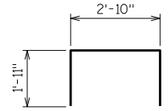
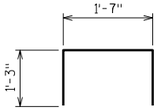


A509

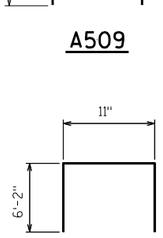


A410

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		79	15'-0"	X		BODY-STIRRUPS
A402		20	2'-3"			PILES-2 PER BODY PILE
A803		7	30'-10"			BODY-HORIZONTAL
A804		7	37'-6"			BODY-HORIZONTAL
A605		11	30'-10"			BODY-HORIZONTAL
A606		11	35'-4"			BODY-HORIZONTAL
A407		10	28'-0"	X		PILES-1 PER BODY PILE
A408		4	30'-11"			BODY-HORZ. OVER GIRS. 1-3
A509		48	6'-5"	X		BODY-TOP OVER GIRS. 1-5
A410		30	3'-11"	X		BODY-BETWEEN BEAM SEATS
A411		10	9'-7"			BODY-HORZ. EXT
A512	X	9	13'-0"	X		WING 1-VERTICAL
A413	X	5	7'-9"			WING 1-HORIZONTAL
A514	X	13	13'-10"	X		WING 1-VERTICAL
A515	X	10	15'-8"	X		WING 1-STIRRUP
A516	X	6	11'-6"			WING 1-HORIZONTAL
A717	X	7	13'-2"			WING 1-HORIZONTAL
A718	X	2	13'-2"			WING 1-HORIZONTAL
A419	X	11	15'-8"			WING 1-HORIZONTAL
A620	X	2	15'-8"			WING 1-HORIZONTAL
A521	X	9	13'-3"	X		WING 2-VERTICAL
A422	X	5	7'-9"			WING 2-HORIZONTAL
A523	X	13	14'-1"	X		WING 2-VERTICAL
A524	X	10	17'-2"	X		WING 2-STIRRUP
A525	X	7	13'-0"			WING 2-HORIZONTAL
A726	X	7	11'-8"			WING 2-HORIZONTAL
A727	X	2	11'-8"			WING 2-HORIZONTAL
A428	X	11	15'-8"			WING 2-HORIZONTAL
A629	X	2	15'-8"			WING 2-HORIZONTAL
A430	X	4	19'-4"			BODY-HORIZ. OVER GIR. 4



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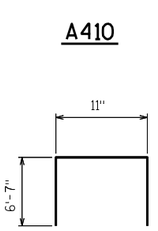

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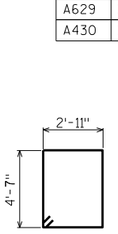

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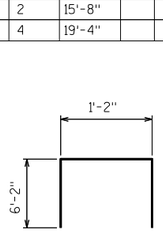

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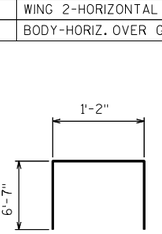

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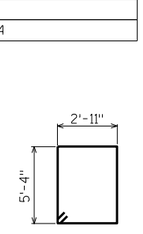

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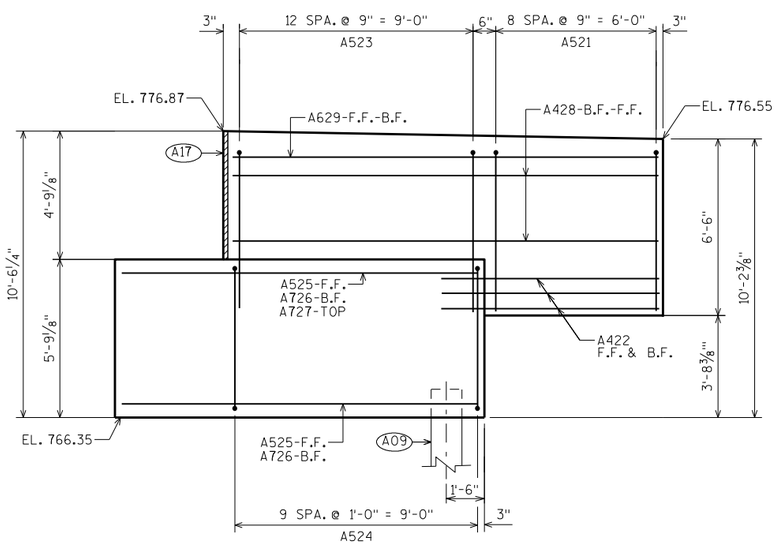
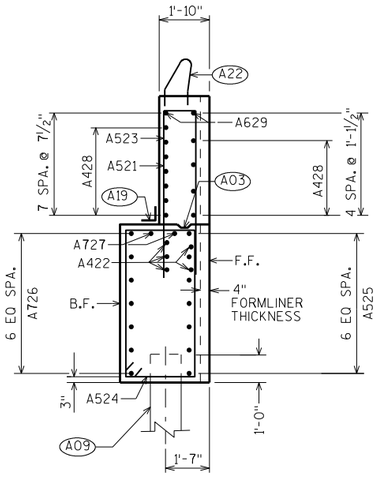
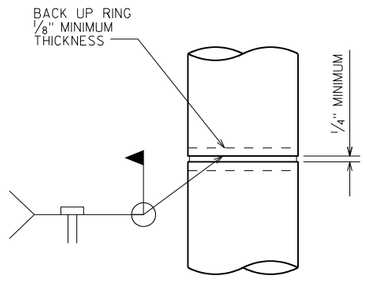


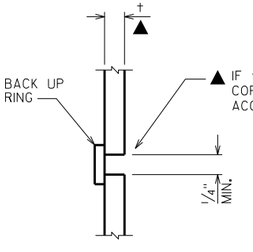
WING 2 ELEVATION



WING 2 SECTION



CAST-IN-PLACE 'PIPE PILE'



C.I.P. PILE WELD DETAIL

PILE DETAILS

STATE PROJECT NUMBER

1120-09-76

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

WEST ABUTMENT DETAILS

SHEET 5

202

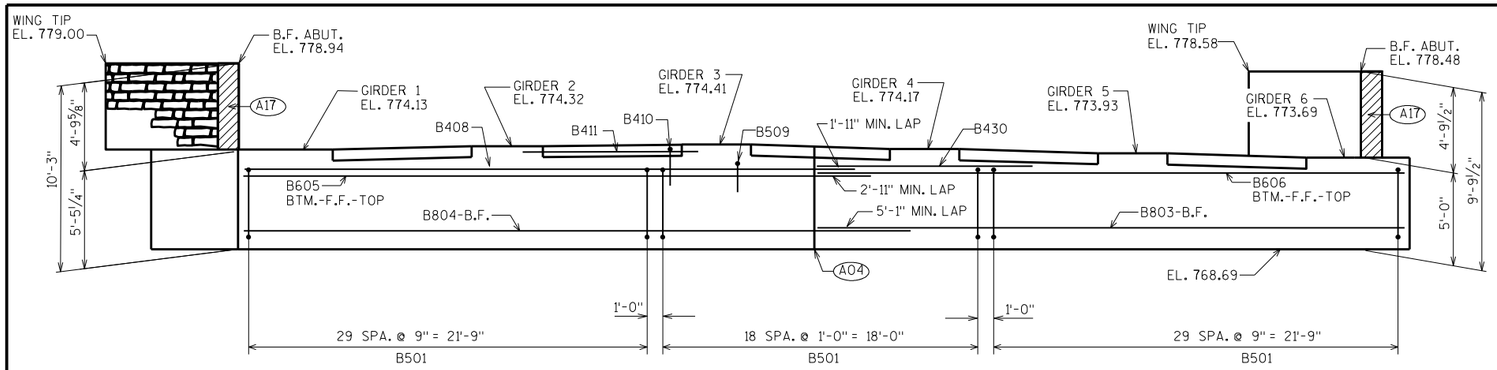
SCALE = 2.6667

8

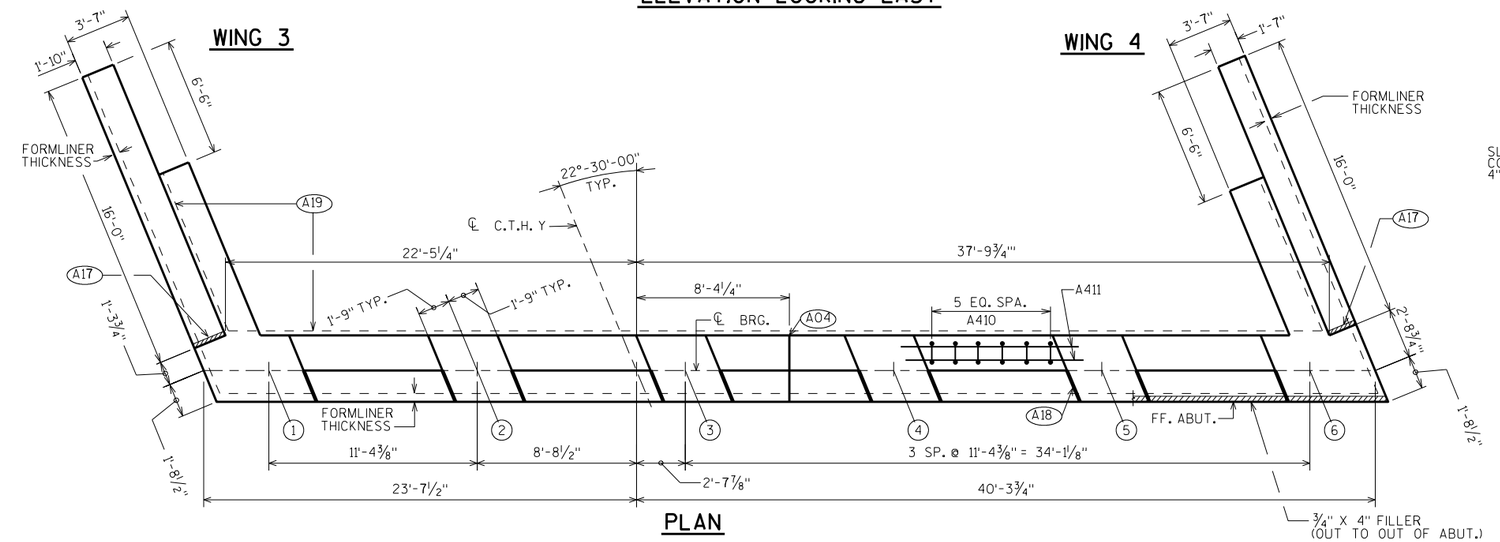
8

STATE PROJECT NUMBER

1120-09-76

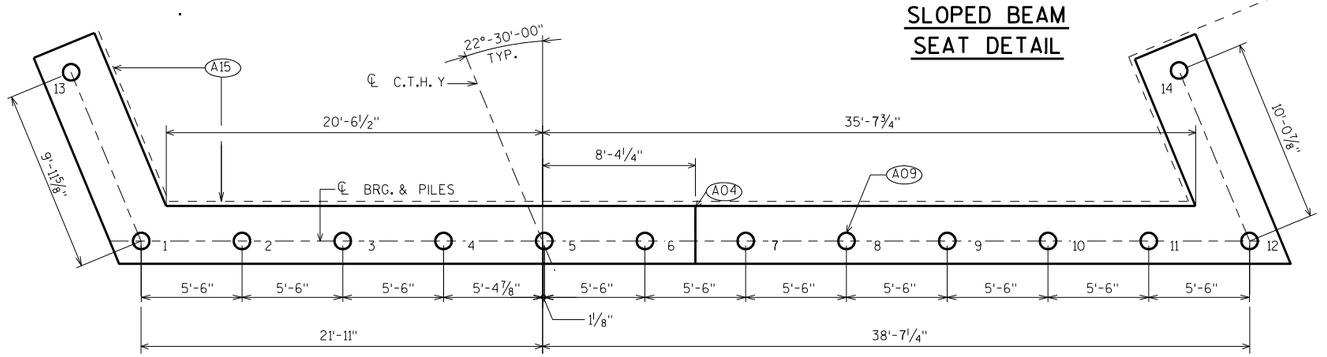


ELEVATION LOOKING EAST

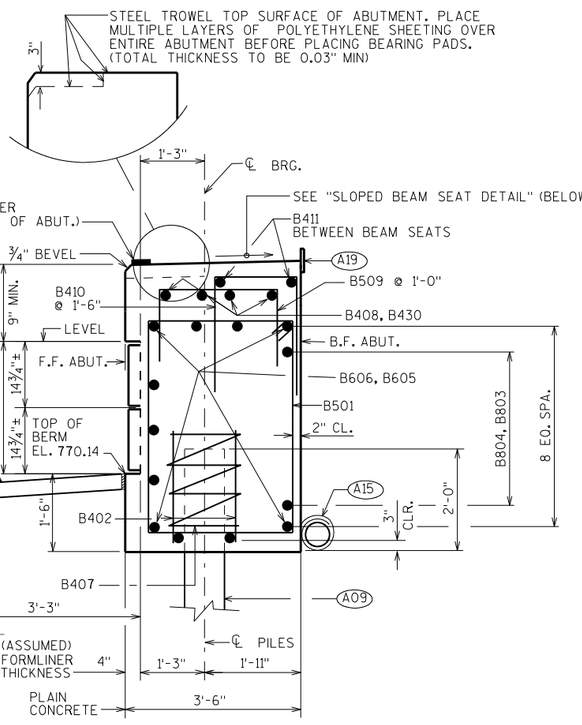


PLAN

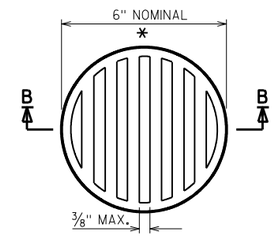
SLOPED BEAM SEAT DETAIL



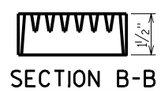
PILE PLAN



SECTION THRU BODY



RODENT SCREEN DETAIL



SECTION B-B

(A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 × 8. 3/4" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE.

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. CAST-IN-PLACE CONCRETE PILING, ESTIMATED 85'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

EAST ABUTMENT

SHEET 6

203

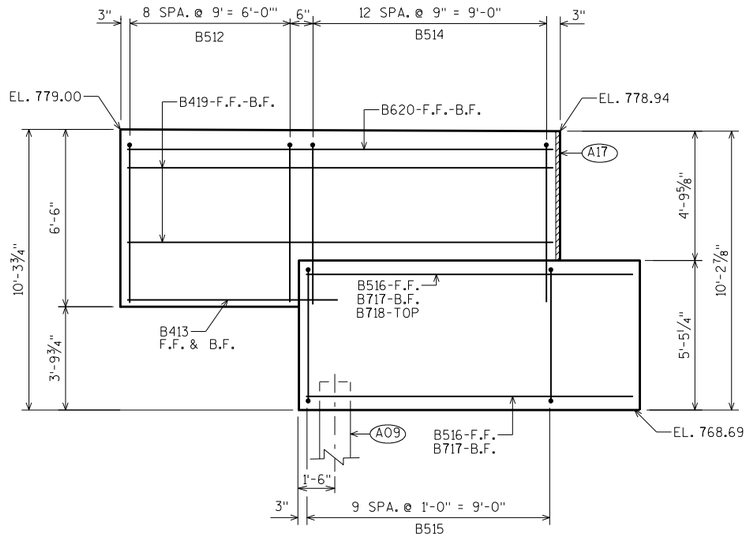
SCALE = 4.0

8

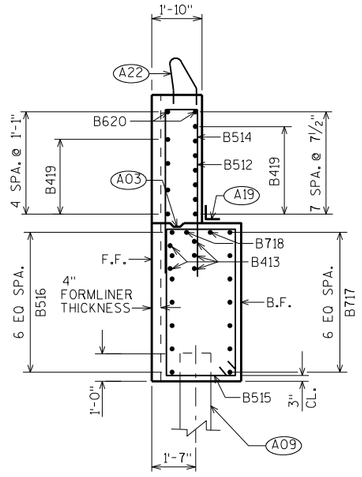
8

STATE PROJECT NUMBER

1120-09-76



WING 3 ELEVATION



WING 3 SECTION

A03 OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 × 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

A09 SUPPORT ABUTMENT ON 10 3/4" DIA. CAST-IN-PLACE CONCRETE PILING, ESTIMATED 85'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

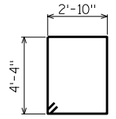
A21 FOR PPT. BARS & DIMENSION SEE PARAPET SHT. VERTICAL FACE PARAPET A SHT. 17

A22 FOR PPT. BARS & DIMENSION SEE MODIFIED SLOPED FACE PARAPET LF SHT. 16

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		79	15'-0"	X		BODY-STIRRUPS
B402		20	2'-3"			PILES-2 PER BODY PILE
B803		7	30'-10"			BODY-HORIZONTAL
B804		7	37'-6"			BODY-HORIZONTAL
B605		11	30'-10"			BODY-HORIZONTAL
B606		11	35'-4"			BODY-HORIZONTAL
B407		10	28'-0"	X		PILES-1 PER BODY PILE
B408		4	30'-11"			BODY-HORZ. OVER GIRS. 1-3
B509		44	6'-1"	X		BODY-TOP OVER GIRS. 1-4
B410		30	3'-11"	X		BODY-BETWEEN BEAM SEATS
B411		10	9'-7"			BODY-HORZ. EXT
B512	X	9	13'-3"	X		WING 3-VERTICAL
B413	X	5	7'-9"			WING 3-HORIZONTAL
B514	X	13	14'-3"	X		WING 3-VERTICAL
B515	X	10	16'-5"	X		WING 3-STIRRUP
B516	X	7	11'-6"			WING 3-HORIZONTAL
B717	X	7	13'-2"			WING 3-HORIZONTAL
B718	X	2	13'-2"			WING 3-HORIZONTAL
B419	X	11	15'-8"			WING 3-HORIZONTAL
B620	X	2	15'-8"			WING 3-HORIZONTAL
B521	X	9	13'-0"	X		WING 4-VERTICAL
B422	X	5	7'-9"			WING 4-HORIZONTAL
B523	X	13	13'-11"	X		WING 4-VERTICAL
B524	X	10	15'-8"	X		WING 4-STIRRUP
B525	X	6	13'-0"			WING 4-HORIZONTAL
B726	X	7	11'-8"			WING 4-HORIZONTAL
B727	X	2	11'-8"			WING 4-HORIZONTAL
B428	X	11	15'-8"			WING 4-HORIZONTAL
B629	X	2	15'-8"			WING 4-HORIZONTAL
B430	X	4	14'-6"			BODY-HORZ. OVER GIR. 4



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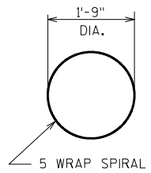

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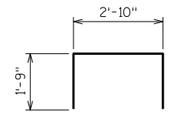

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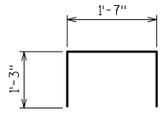

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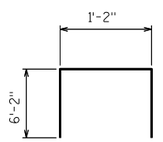

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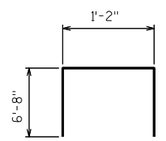

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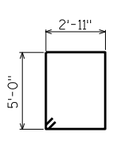

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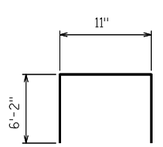

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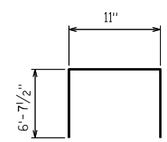

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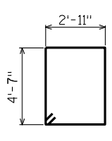

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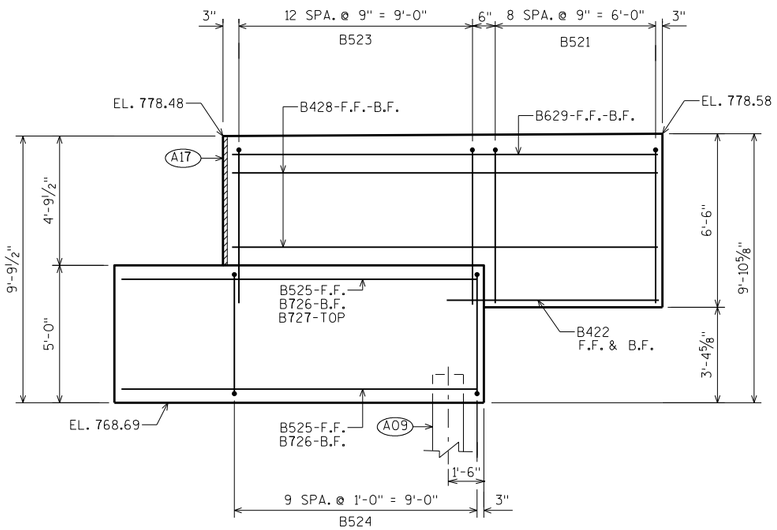
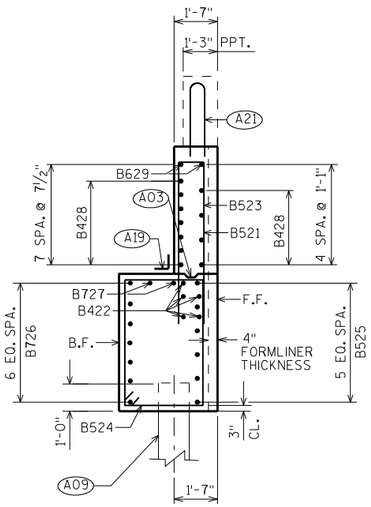
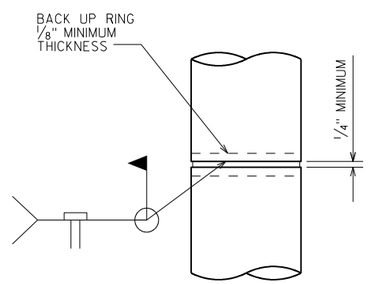


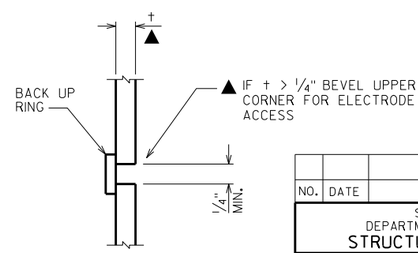
WING 4 ELEVATION



WING 4 SECTION



CAST-IN-PLACE 'PIPE PILE'



C.I.P. PILE WELD DETAIL

PILE DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

EAST ABUTMENT DETAILS

SHEET 7

204

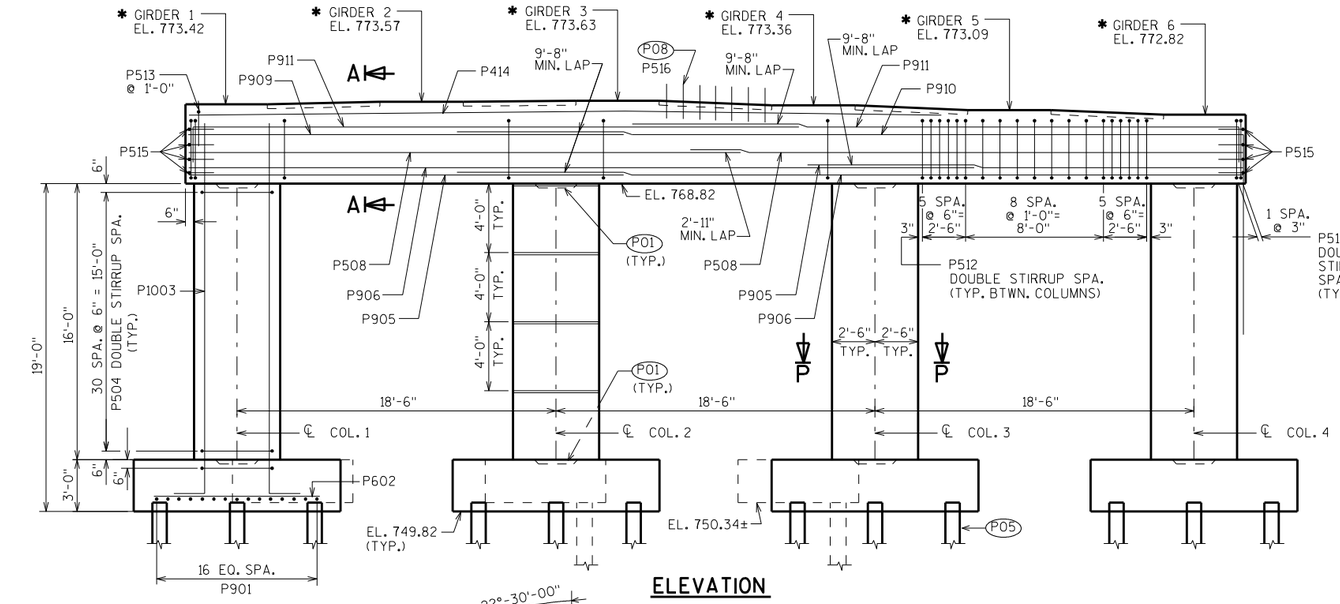
8

8

SCALE = 2.66667

STATE PROJECT NUMBER

1120-09-76



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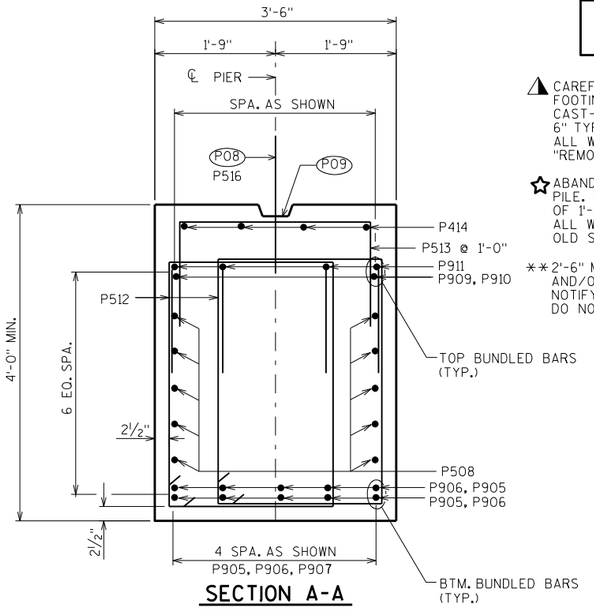
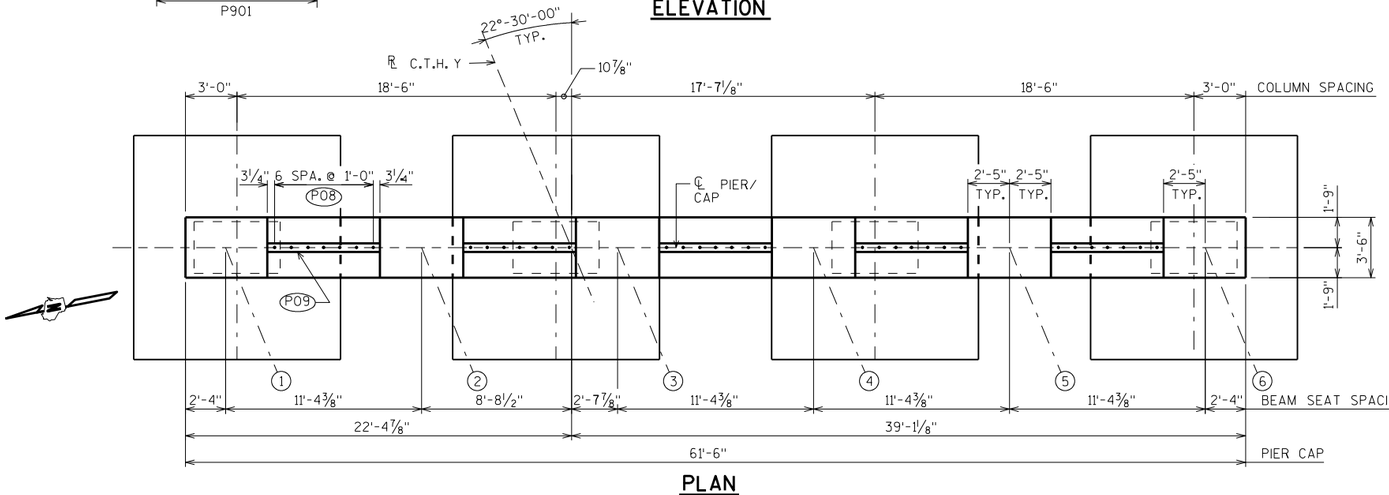


SECTION A-A

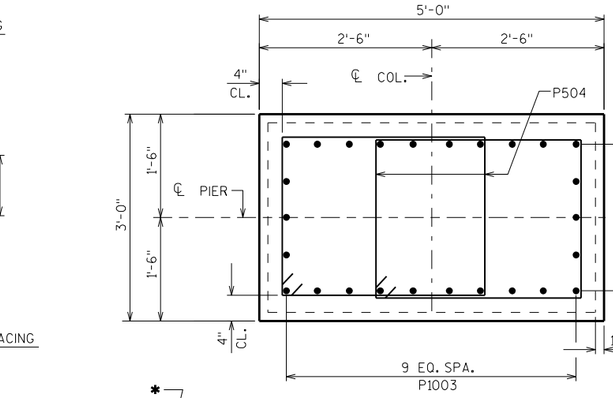
▲ CAREFULLY REMOVE EXISTING CONCRETE FOOTING AND SALVAGE EXISTING 10¾" DIA. CAST-IN-PLACE PILE. CUT EXISTING PILE FOR 6" TYP. EMBEDMENT INTO NEW PIER FOOTING. ALL WORK SHALL BE INCIDENTAL TO "REMOVING OLD STRUCTURE STA. 22+65."

☆ ABANDON EXISTING 10¾" DIA. CAST-IN-PLACE PILE. REMOVE EXISTING PILE TO A MIN. DEPTH OF 1'-0" BELOW THE NEW PIER FOOTING. ALL WORK SHALL BE INCIDENTAL TO "REMOVING OLD STRUCTURE STA. 22+65."

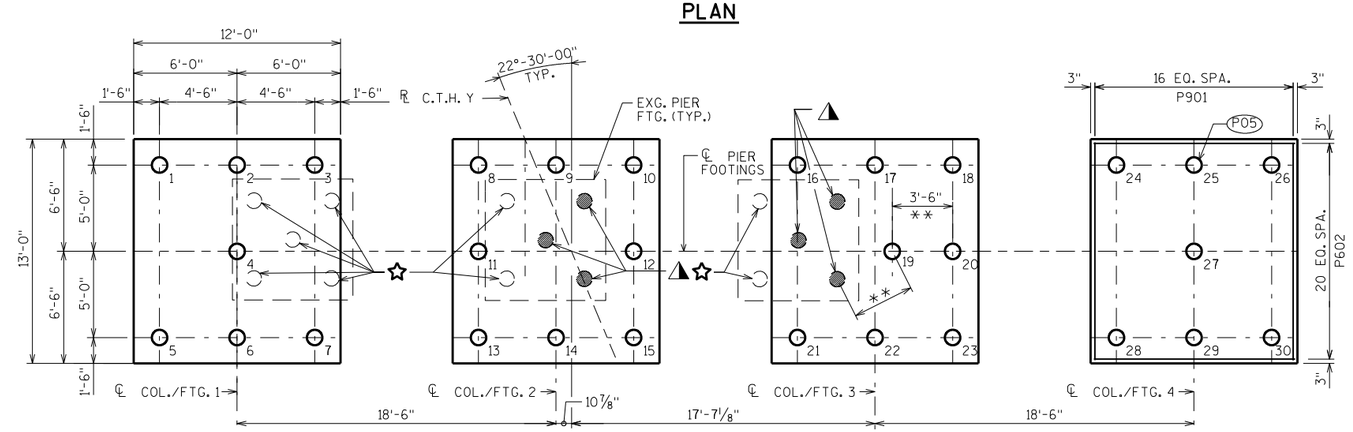
** 2'-6" MIN. PILE SPACING BETWEEN NEW PILES AND/OR NEW PILE AND SALVAGED EXISTING PILE. NOTIFY ENGINEER IF PILE CONFIGURATIONS DO NOT MEET THESE REQUIREMENTS.



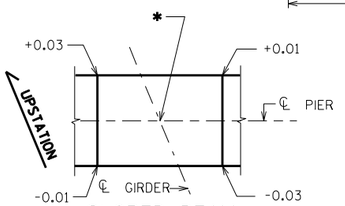
PLAN



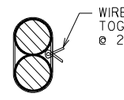
SECTION P-P



FOOTING PLAN



SLOPED BEAM SEAT DETAIL



BUNDLING DETAIL

— SPLICE BUNDLE BARS PRIOR TO BUNDLING W/ WIRE.

— LAP SPLICES OF INDIVIDUAL BUNDLE BARS SHALL NOT BE ADJACENT TO ONE ANOTHER.

(P01) 1'-3" X 1'-3" X 2" CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.

(P05) SUPPORT PIER ON 10 3/4" DIA. CAST-IN-PLACE CONCRETE PILING, ESTIMATED 70'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 150 TONS PER PILE.

(P08) P516 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

(P09) KEYED CONSTRUCTION JOINT-FORMED BY BEVELED 2 x 6 BETWEEN BEAM SEATS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

PIER

SHEET 8

205

SCALE = 4.25

8

8

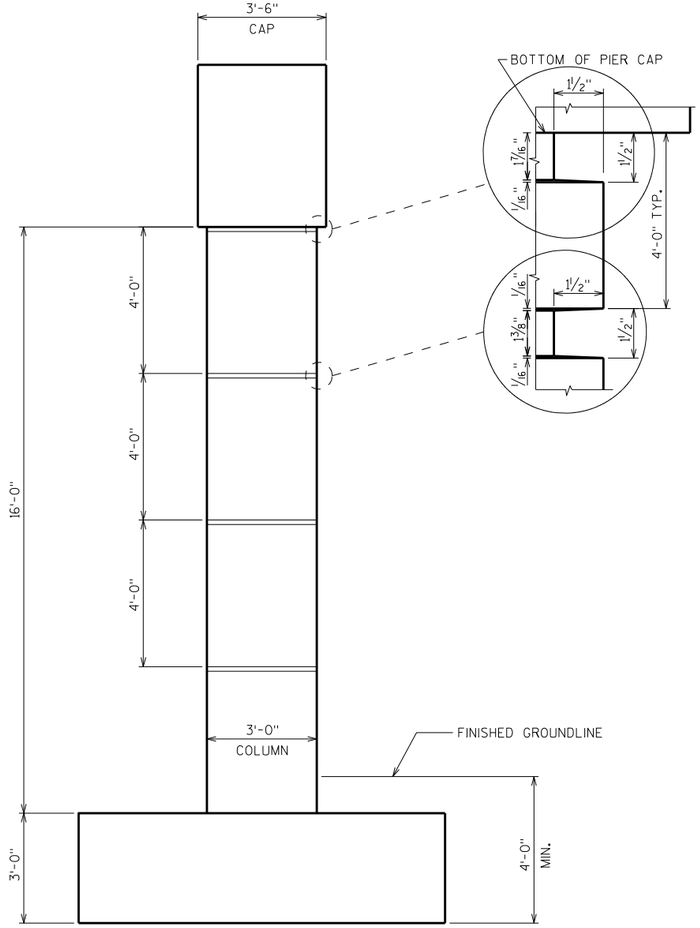
STATE PROJECT NUMBER

1120-09-76

BILL OF BARS

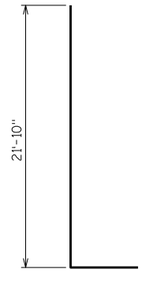
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P901		68	12'-6"			FOOTING-HORIZ.
P602		84	11'-6"			FOOTING-HORIZ.
P1003	X	104	23'-4"	X		FOOTING/COLUMN-VERT.
P504	X	256	11'-4"	X		COLUMN-STIRRUPS-HORIZ.
P905	X	10	25'-4"			CAP-BOTTOM-HORIZ.
P906	X	10	45'-7"			CAP-BOTTOM-HORIZ.
		NOT	USED			
P508	X	20	32'-1"			CAP-MIDDLE-HORIZ.
P909	X	2	25'-4"			CAP-TOP-HORIZ.
P910	X	2	45'-7"			CAP-TOP-HORIZ.
P911	X	8	36'-9"	X		CAP-TOP-HORIZ.
P512	X	122	12'-6"	X		CAP-STIRRUPS-VERT.
P513	X	45	6'-6"	X		CAP-TOP-VERT. U-BAR
P414	X	4	44'-3"			CAP-TOP-HORIZ.
P515	X	8	5'-3"	X		CAP-END U-BAR
P516	X	35	2'-0"			CAP-TOP-VERT. DOWEL

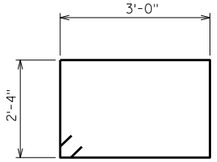


RUSTICATION DETAIL
LAYOUT END VIEW

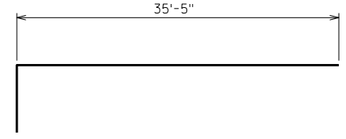
NOTE: RUSTICATION GROOVES ARE ON ALL 4 SIDES OF COL.



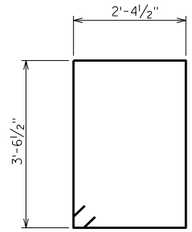
P1003



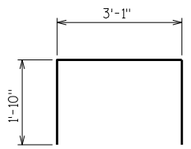
P504



P911



P512



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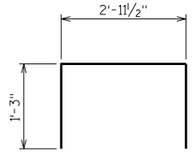

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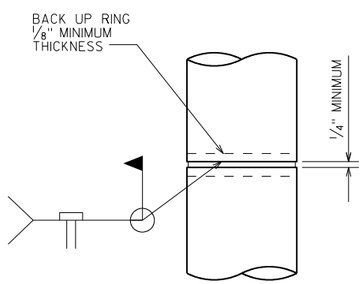
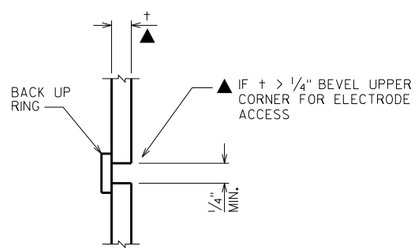


CAST-IN-PLACE 'PIPE PILE'



C.I.P. PILE WELD DETAIL

PILE DETAILS

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

PIER DETAILS

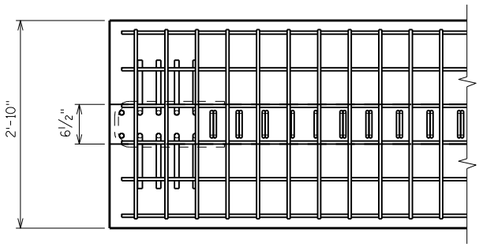
SHEET 9

206

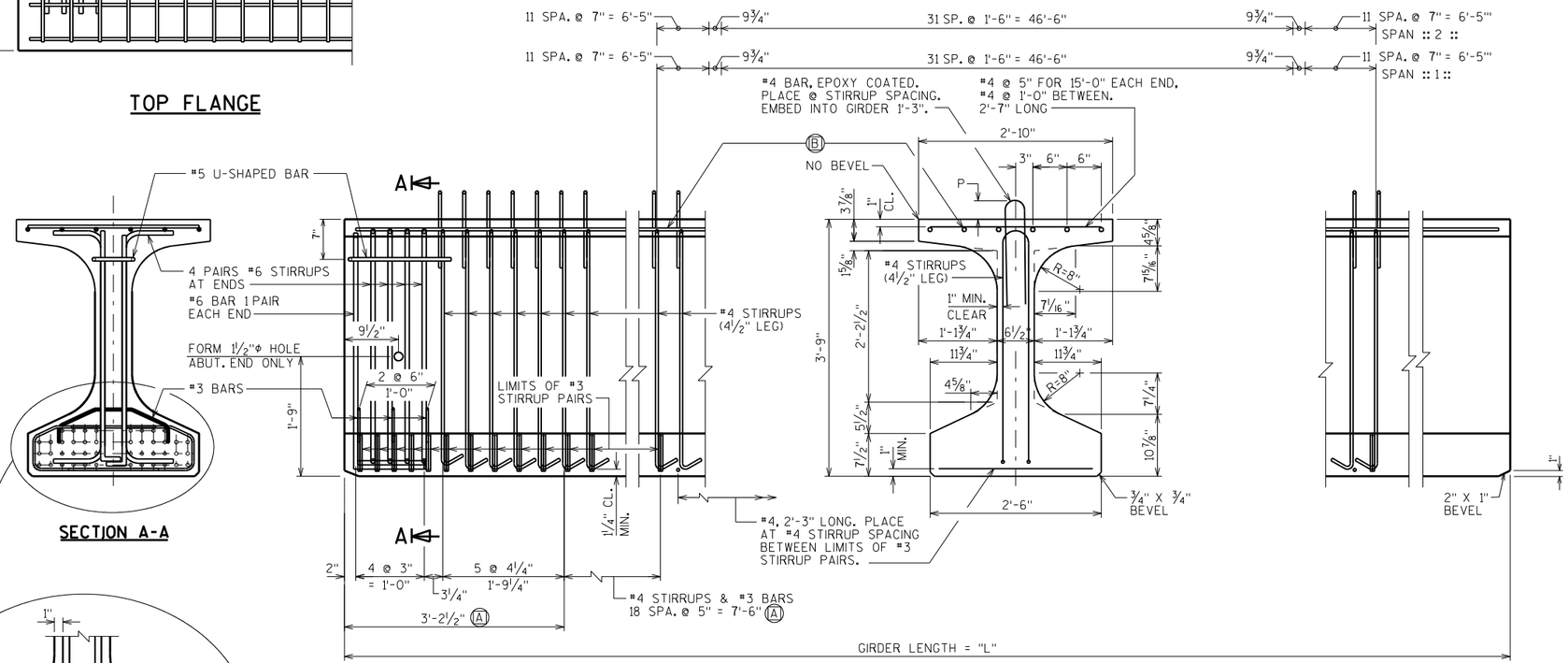
SCALE = 2.0

STATE PROJECT NUMBER

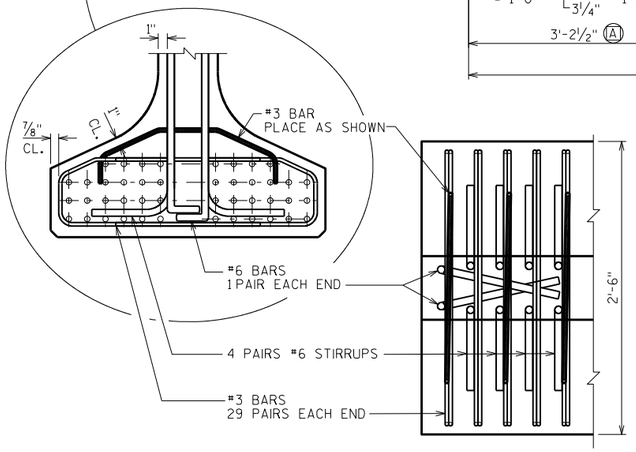
1120-09-76



TOP FLANGE



SECTION A-A



BOTTOM FLANGE

SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ (6) #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 0.6"Φ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO APPLICATION OF THE SEALER.

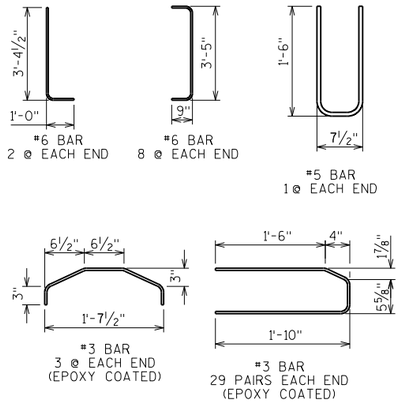
FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, 1 OPTION IS AVAILABLE:

USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT CHIEF, (608)266-5161.



✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.)									CONC. STRGTH. f'c (p.s.i.)	"P" 1ST ⅓ OF GIRDER (IN.)	"P" MID ⅓ OF GIRDER (IN.)	"P" END ⅓ OF GIRDER (IN.)	DIA. OF STRAND (IN.)	DRAPED PATTERN						UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10						TOTAL NO. OF STRANDS	f'ci (P.S.I.)	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	TOTAL NO. OF STRANDS	f'ci (P.S.I.)
1	ALL	82.38	0.4	0.8	1.1	1.3	1.3	1.3	1.1	0.8	0.4	8000	7	7	7	0.60	26	6400	41	13.25	16.25	4	——	——
2	ALL	82.38	0.4	0.8	1.1	1.3	1.3	1.3	1.1	0.8	0.4	8000	7	7	7	0.60	26	6400	41	13.25	16.25	4	——	——

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

45W" PRESTRESSED GIRDER DETAILS

SHEET 10

207

SCALE = 1.0

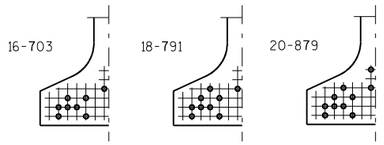
1-11
G45W

8

8

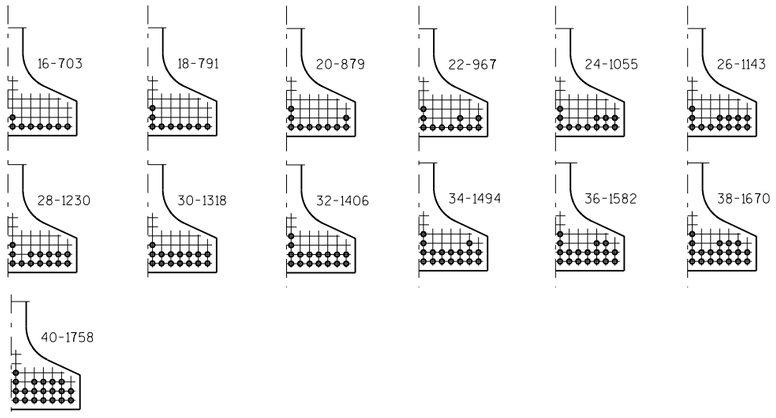
STATE PROJECT NUMBER

1120-09-76



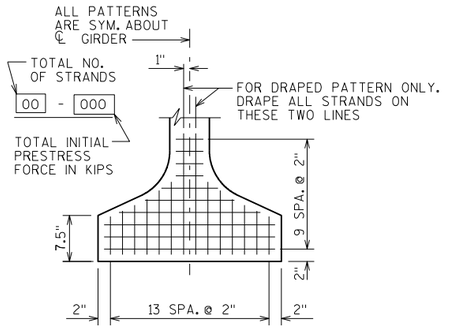
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6"Φ STRANDS

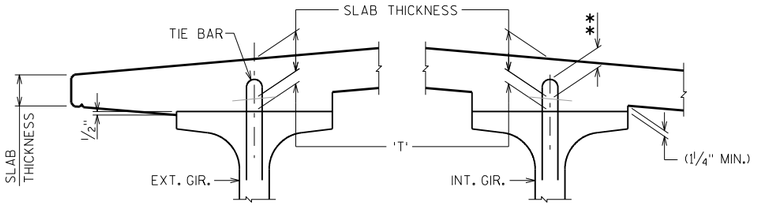


ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"Φ STRANDS



TYP. STRAND PATTERN



SLAB HAUNCH DETAIL

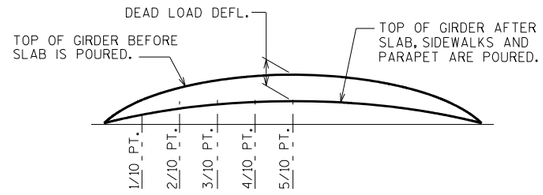
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

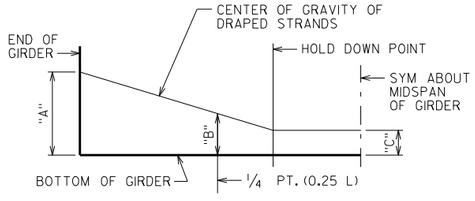
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2½" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

*THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	2.1
2	2.1

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

45W" PRESTRESSED GIRDER DETAILS

SHEET 11

208

G45W
1-11

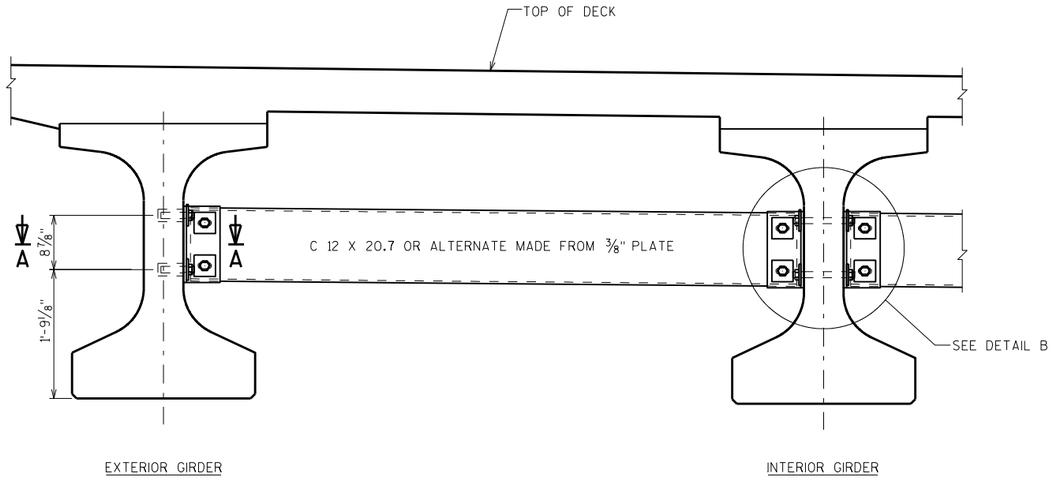
SCALE = 1.0

8

8

STATE PROJECT NUMBER

1120-09-76



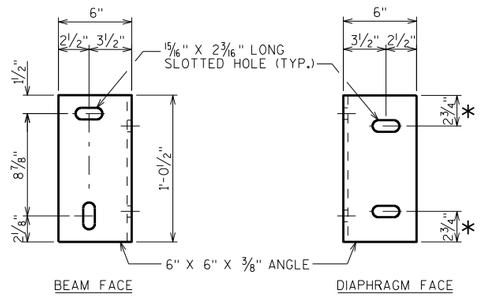
PART TRANSVERSE SECTION AT DIAPHRAGM

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-70-284", EACH.

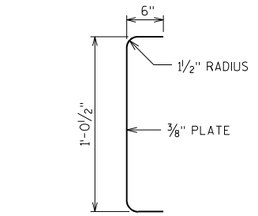
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT. ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

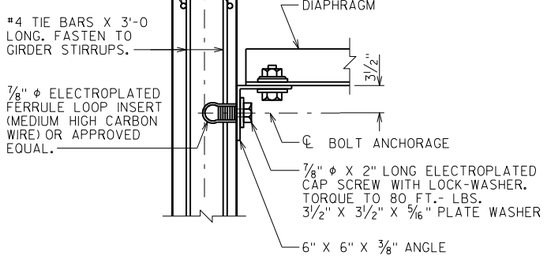


DIAPHRAGM SUPPORT

* 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM

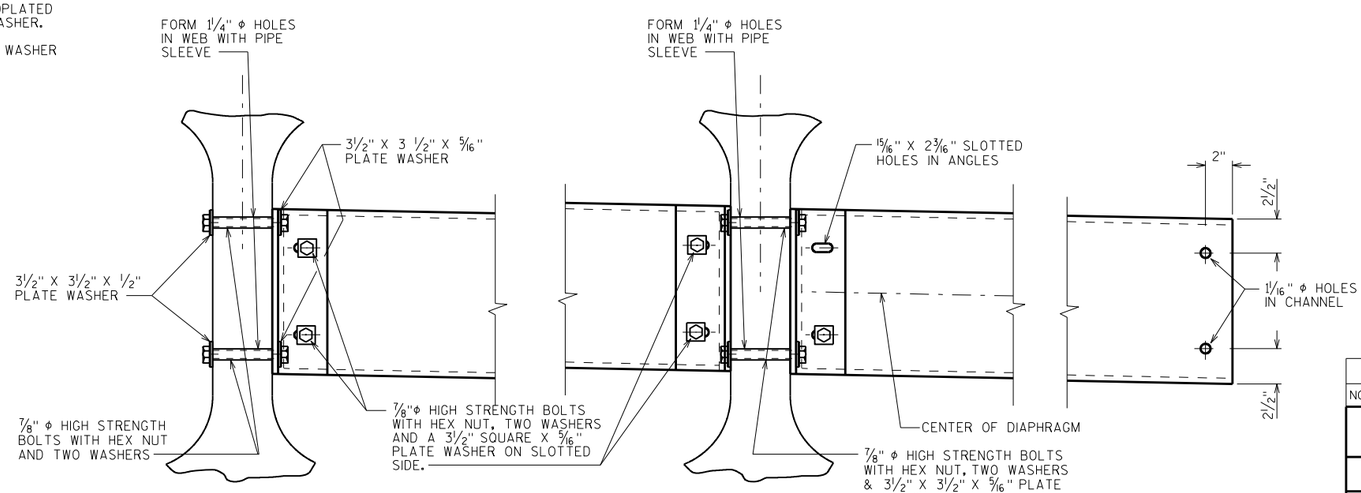


SECTION THRU ALTERNATE DIAPHRAGM



SECTION A-A

(FOR EXTERIOR ATTACHMENT)



(FOR STAGGERED DIAPHRAGM)

(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

STEEL DIAPHRAGM

SHEET 12

209

GSTDIA
7-09

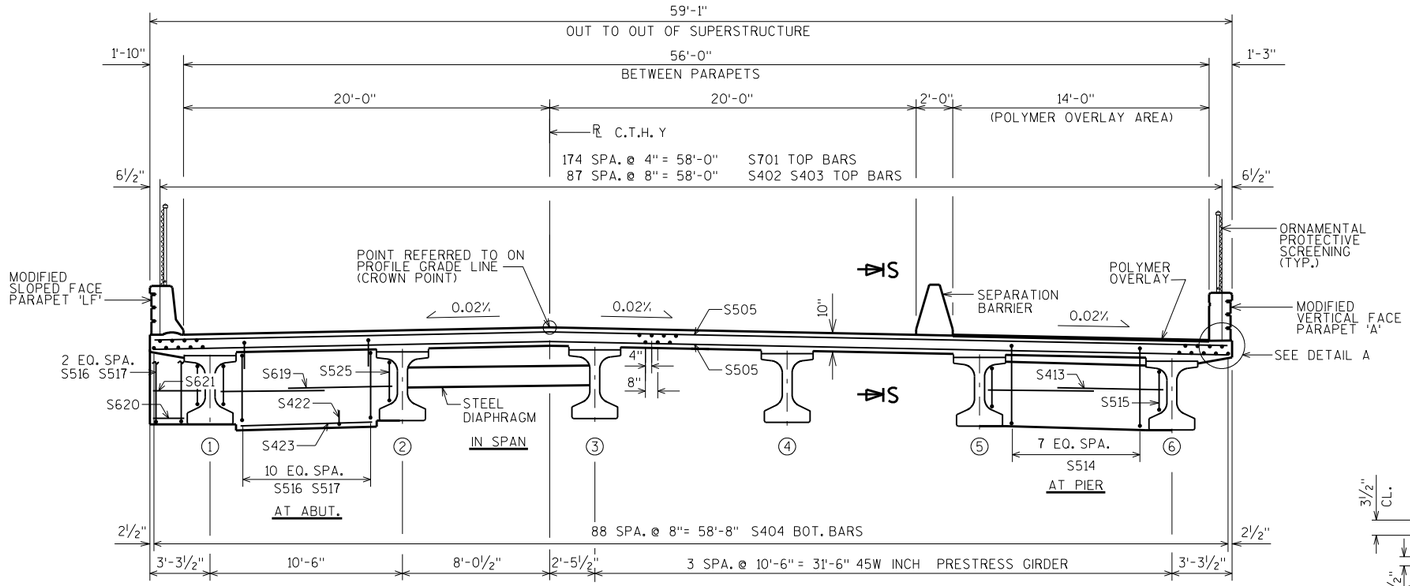
SCALE = 1.0

8

8

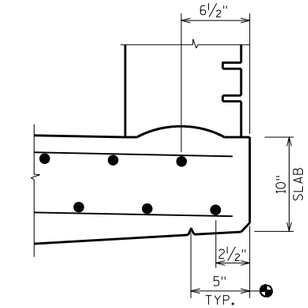
STATE PROJECT NUMBER

1120-09-76



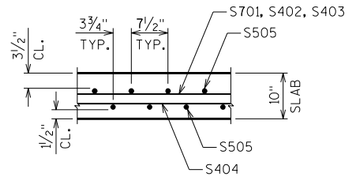
CROSS SECTION THRU ROADWAY

(LOOKING EAST)



DETAIL A

● ¾" V-GROOVE. EXTEND V-GROOVE TO THE FILLET ADJACENT TO THE ABUTMENTS. V-GROOVES ARE REQUIRED.



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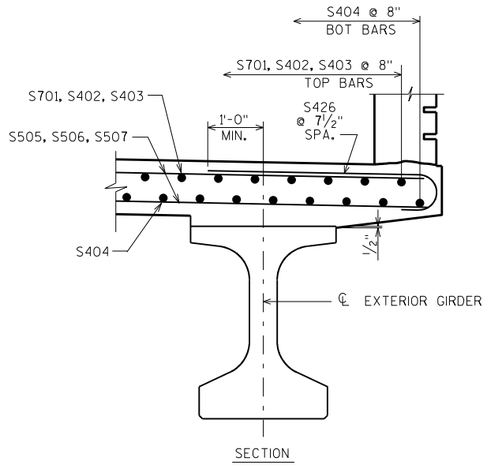

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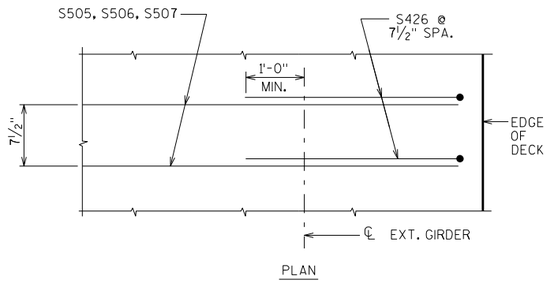
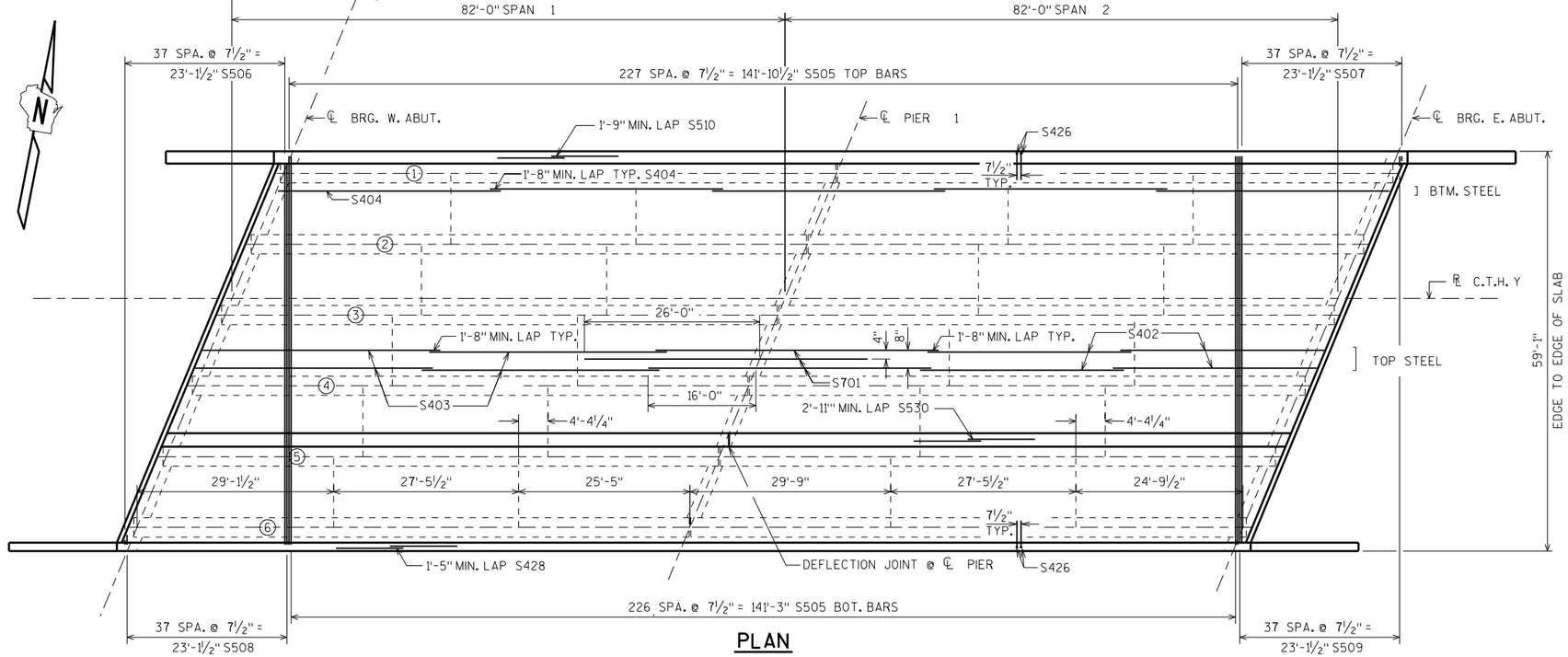


PLAN

ADDITIONAL REINF. DETAIL



PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

SUPERSTRUCTURE

SHEET 13

210

SCALE = 10

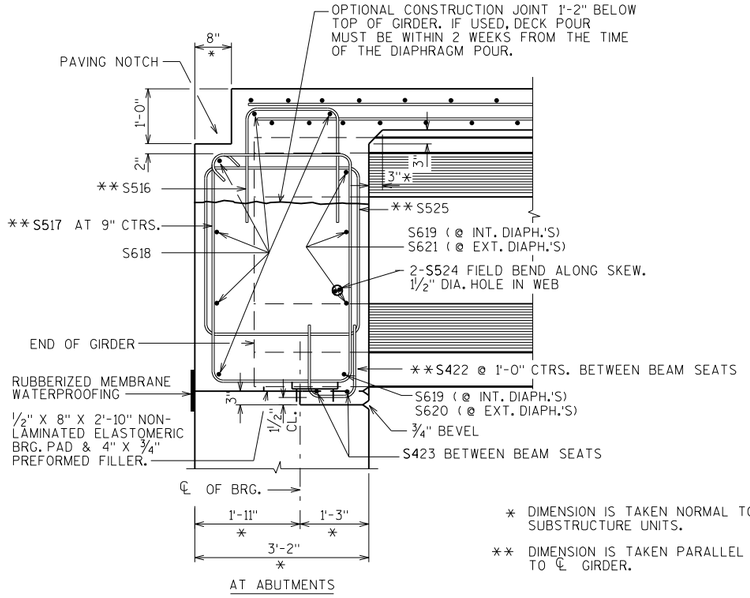
FRI JUN 03 11:32:27 2011

8

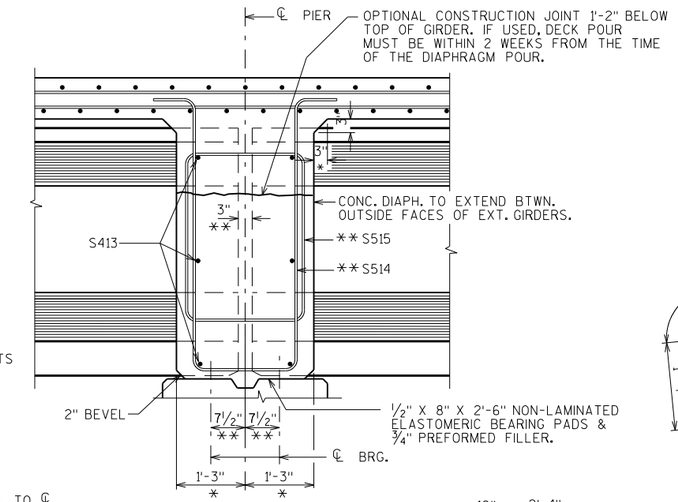
8

STATE PROJECT NUMBER

1120-09-76



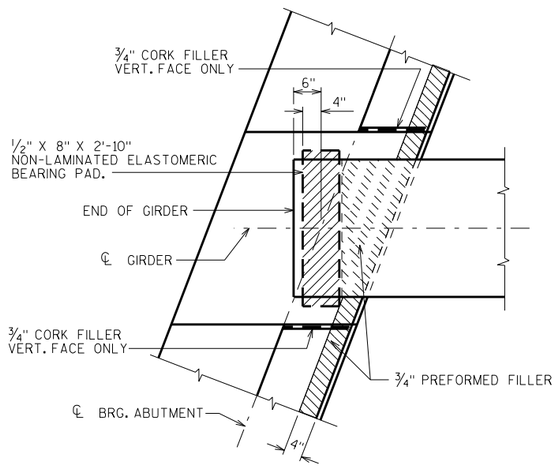
PART LONGIT. SECTION



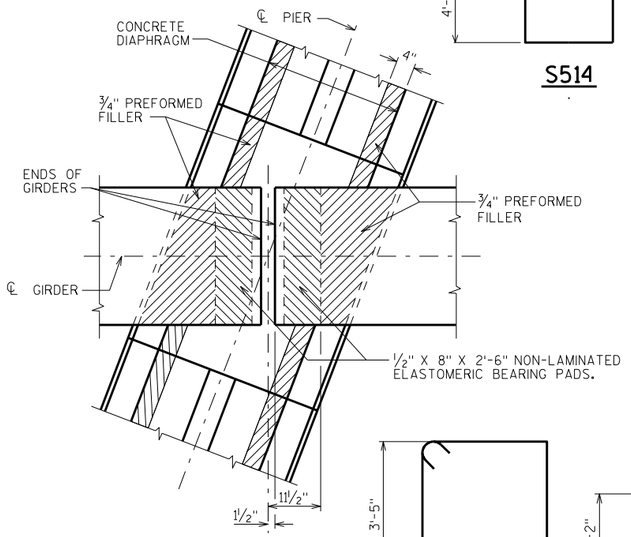
AT PIER DIAPHRAGM

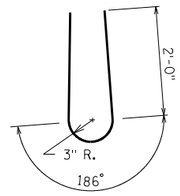
* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.



BEARING PAD DETAIL





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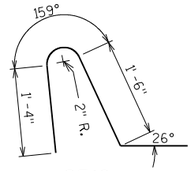

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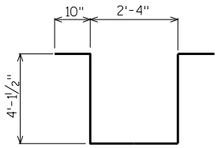

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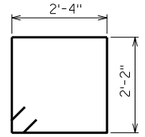

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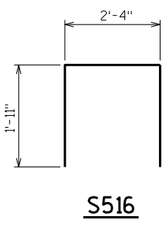

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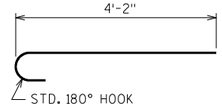

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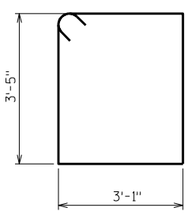

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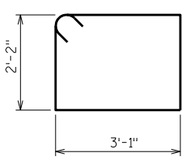

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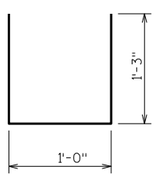

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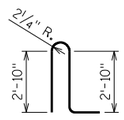

S527

S529

S431

BILL OF BARS

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S701	X	175	42'-0"			LONGITUDINAL CONTINUITY
S402	X	176	30'-3"			LONGITUDINAL TOP
S403	X	176	35'-3"			LONGITUDINAL TOP
S404	X	445	34'-7"			LONGITUDINAL BOTTOM
S505	X	455	58'-9"			TRANSVERSE TOP AND BOTTOM
S506	X	38	29'-6"		▲	TRANSVERSE TOP CUT WEST
S507	X	38	29'-6"		▲	TRANSVERSE TOP CUT EAST
S508	X	38	30'-3"		▲	TRANSVERSE BOT CUT WEST
S509	X	38	30'-3"		▲	TRANSVERSE BOT CUT EAST
S510	X	25	35'-0"			PARAPET LF
S511	X	252	4'-10"	X		PARAPET LF
S512	X	252	4'-2"	X		PARAPET LF
S413	X	60	5'-11"			PIER DIAPHRAGM
S514	X	40	11'-9"	X		PIER DIAPHRAGM
S515	X	10	9'-8"	X		PIER DIAPHRAGM
S516	X	122	5'-11"	X		ABUT. DIAPHRAGM
S517	X	122	13'-8"	X		ABUT. DIAPHRAGM
S618	X	24	33'-4"			ABUT. DIAPHRAGM
S619	X	80	6'-3"			ABUT. DIAPHRAGM
S620	X	4	1'-10"			ABUT. DIAPHRAGM
S621	X	12	2'-11"			ABUT. DIAPHRAGM
S422	X	90	3'-4"	X		ABUT. DIAPHRAGM
S423	X	20	7'-3"			ABUT. DIAPHRAGM
S524	X	24	6'-0"			ABUT. DIAPHRAGM
S525	X	24	11'-2"	X		ABUT. DIAPHRAGM
S426	X	534	4'-8"	X		TRANSVERSE TOP
S527	X	169	7'-0"	X		PARAPET A
S428	X	30	34'-9"			PARAPET A
S529	X	170	3'-5"	X		SEPARATION BARRIER-DOWEL
S530	X	40	43'-2"			SEPARATION BARRIER
S431	X	50	4'-7"	X		SEPARATION BARRIER-DOWEL

BAR SERIES TABLE

BUNDLE AND TAG EACH SERIES SEPARATELY

MARK	NO. REQD.	LENGTH
S506	1 SERIES OF 38	1'-7" TO 57'-5"
S507	1 SERIES OF 38	1'-7" TO 57'-5"
S508	1 SERIES OF 38	2'-4" TO 58'-2"
S509	1 SERIES OF 38	2'-4" TO 58'-2"

TOP OF DECK ELEVATIONS

	W. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	E. ABUT.
EOD	776.93	777.09	777.24	777.38	777.52	777.65	777.77	777.90	778.01	778.12	778.23	778.32	778.41	778.50	778.58	778.65	778.72	778.78	778.84	778.89	778.93
GIR. 1	776.93	777.09	777.24	777.38	777.52	777.66	777.79	777.91	778.02	778.13	778.24	778.34	778.43	778.52	778.60	778.67	778.74	778.80	778.86	778.91	778.95
GIR. 2	777.05	777.21	777.37	777.52	777.66	777.80	777.93	778.05	778.17	778.29	778.40	778.50	778.59	778.68	778.77	778.84	778.91	778.98	779.04	779.09	779.14
GIR. 3	777.08	777.24	777.40	777.55	777.70	777.84	777.97	778.10	778.22	778.34	778.45	778.56	778.65	778.75	778.83	778.91	778.99	779.06	779.12	779.18	779.23
GIR. 4	776.78	776.94	777.11	777.26	777.41	777.55	777.69	777.82	777.95	778.07	778.18	778.29	778.39	778.49	778.58	778.66	778.74	778.81	778.88	778.94	778.99
GIR. 5	776.48	776.65	776.81	776.97	777.12	777.27	777.41	777.54	777.67	777.80	777.91	778.02	778.13	778.23	778.32	778.41	778.49	778.56	778.63	778.70	778.75
GIR. 6	776.17	776.35	776.51	776.68	776.83	776.98	777.13	777.26	777.39	777.52	777.64	777.76	777.86	777.97	778.06	778.15	778.24	778.32	778.39	778.45	778.51
EOD	776.11	776.28	776.45	776.61	776.77	776.92	777.06	777.20	777.33	777.46	777.58	777.70	777.81	777.91	778.01	778.10	778.18	778.26	778.33	778.40	778.46

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

SUPERSTRUCTURE DETAILS

SHEET 14

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SCALE = 1.3333

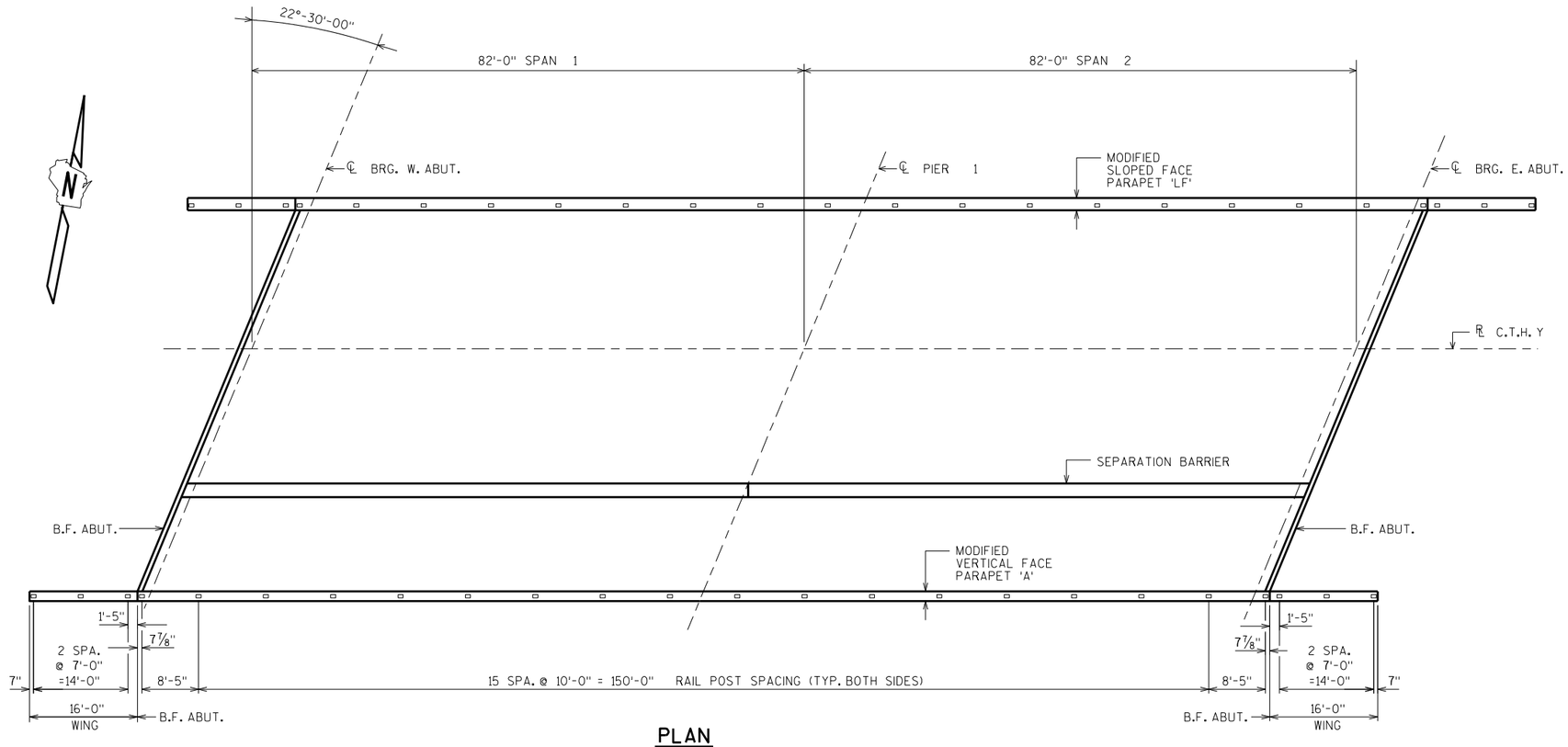
FRI JUN 03 11:32:23 2011* G45WDET 3-10

8

8

STATE PROJECT NUMBER

1120-09-76



PLAN

8

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NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

RAIL POST SPACING DETAIL

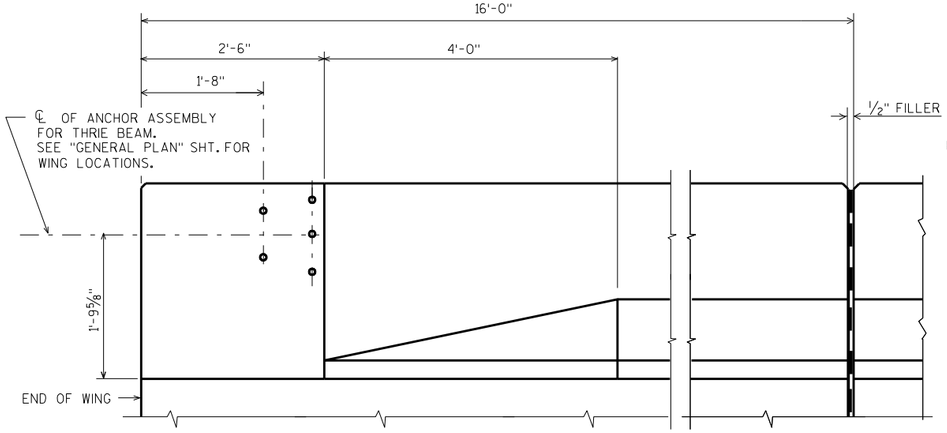
SHEET 15

212

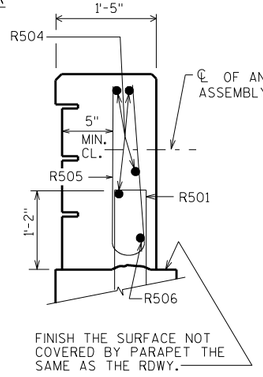
SCALE = 10

STATE PROJECT NUMBER

1120-09-76

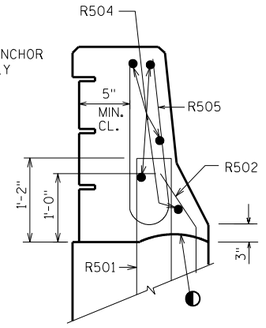


INSIDE ELEVATION

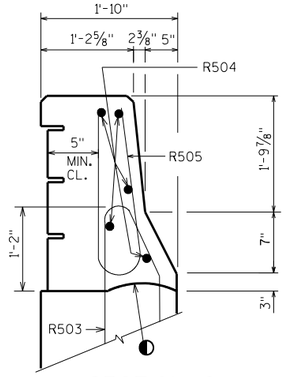


FINISH THE SURFACE NOT COVERED BY PARAPET THE SAME AS THE RDWY.

SECTION A



SECTION B

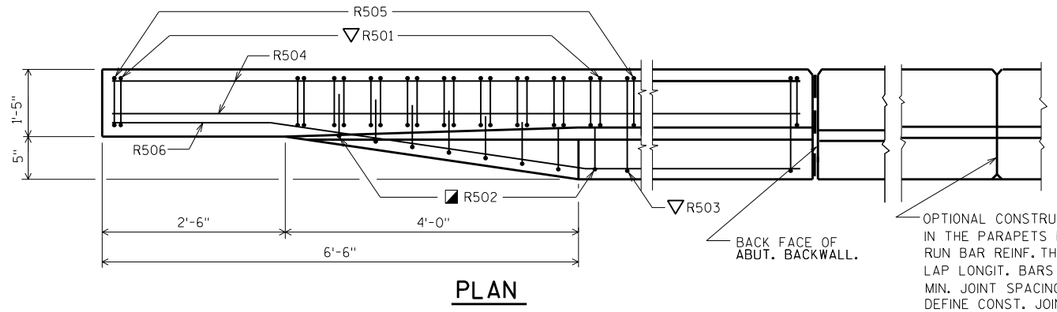


SECTION C

BILL OF BARS

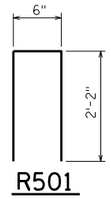
FOR ABUTMENT PARAPETS

BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	14	14	4-7	X		PARAPET VERT.
R502	X	8	8	2-4	X		PARAPET VERT.
R503	X	14	14	4-7	X		PARAPET VERT.
R504	X	4	4	15'-7"			PARAPET HORIZ.
R505	X	28	28	4-10	X		PARAPET VERT.
R506	X	1	1	15'-7"	X		PARAPET HORIZ.

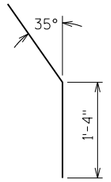


PLAN

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" 'V' GROOVE.



R501



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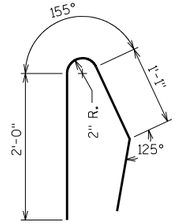

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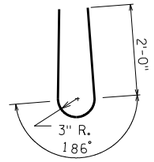

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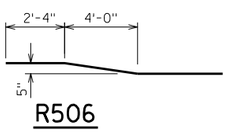

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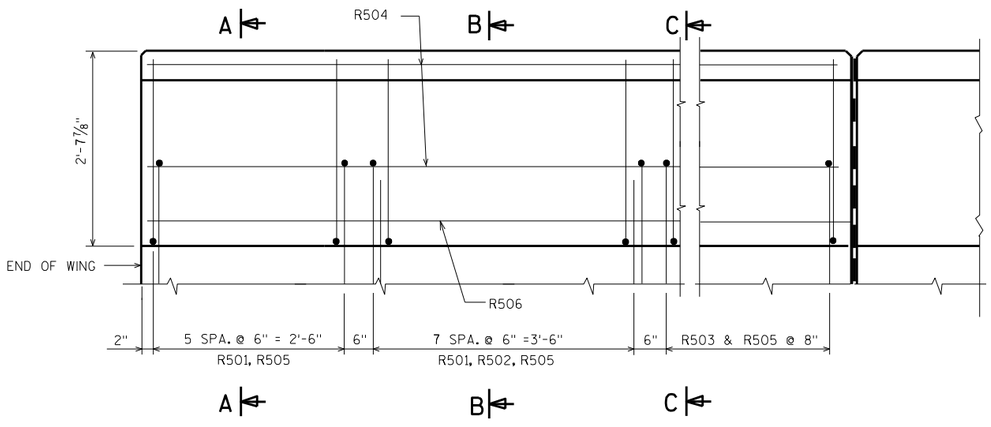
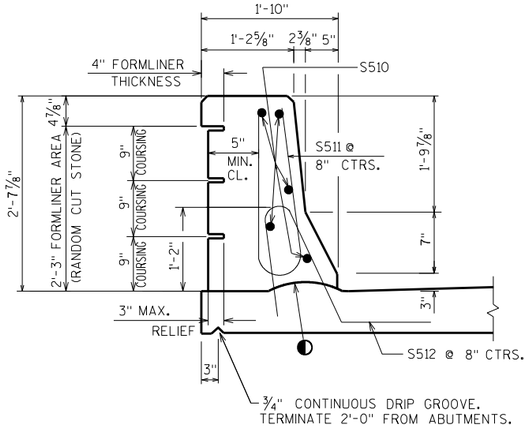
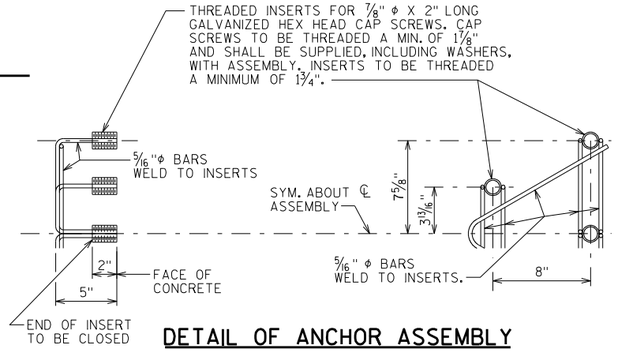


OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ R502 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R502 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R503 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

MODIFIED SLOPED FACE PARAPET 'LF'

SHEET 16

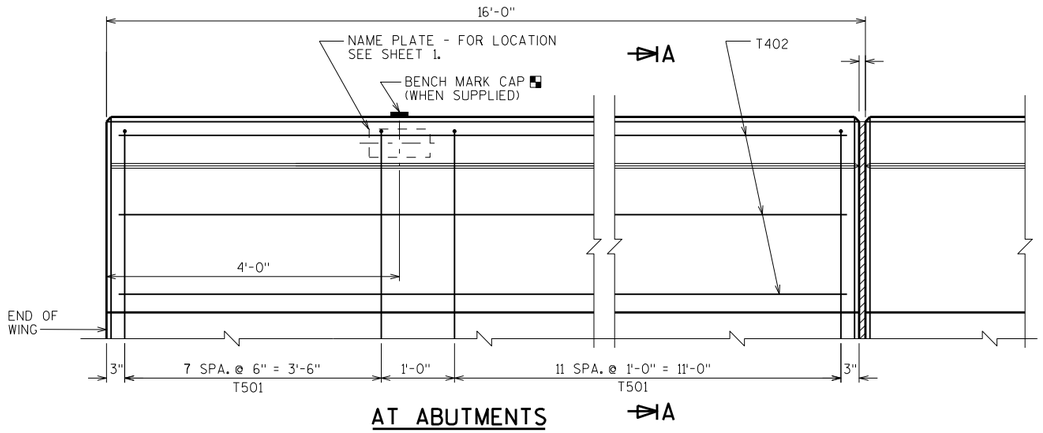
213

SCALE =

FRI JUN 03 11:32:23 2011 FWIN

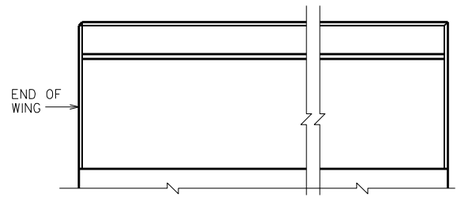
STATE PROJECT NUMBER
1120-09-76

■ AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.



AT ABUTMENTS

ELEVATION OF PARAPET

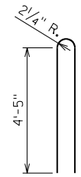


FRONT FACE OF PARAPET

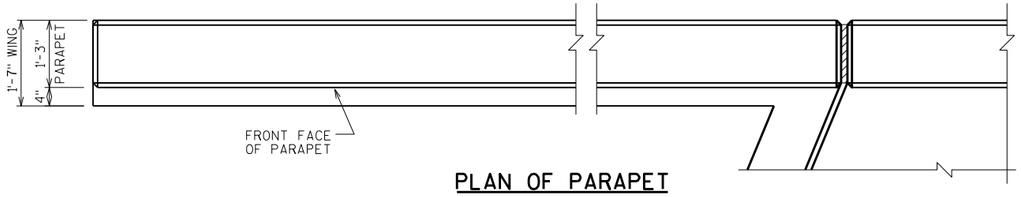
BILL OF BARS

FOR ABUTMENT PARAPETS

BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
T501	X	20	20	9'-5"	X		PARAPET VERT.
T402	X	6	6	15'-8"			PARAPET HORIZ.

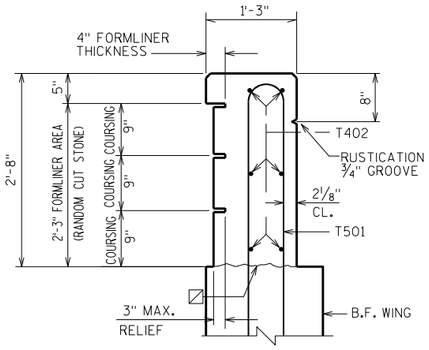


T501

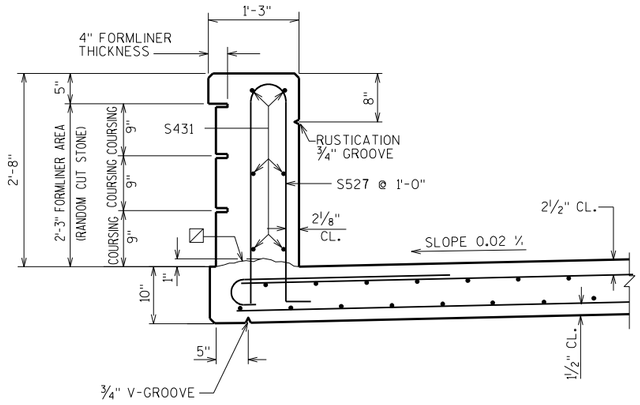


PLAN OF PARAPET

■ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.



SECTION A-A



AT DECK

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

MODIFIED VERTICAL FACE PARAPET "A"

SHEET 17

214

8

8

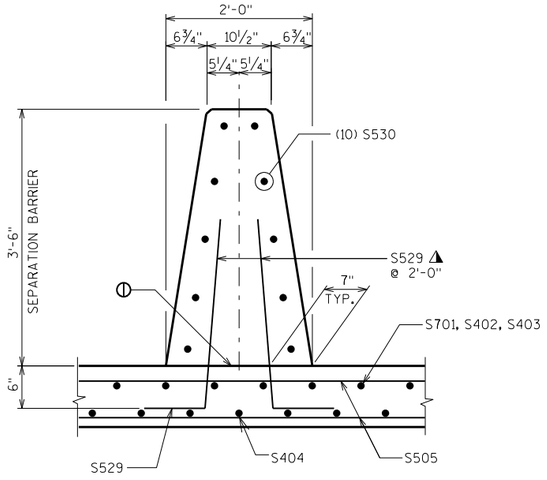
SCALE = 1.0

PPTA 7-11

STATE PROJECT NUMBER

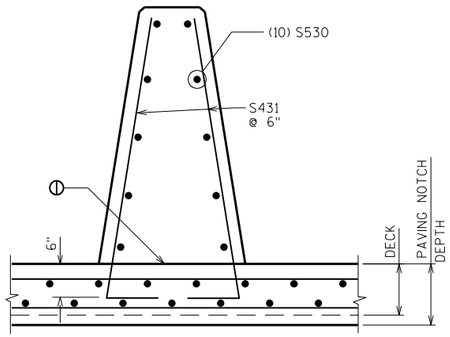
1120-09-76

⚠ CONTRACTOR MAY SUBSTITUTE CONC. MASONRY ANCHORS FOR S529 BARS. PAYMENT SHALL BE BASED ON S532 BARS DETAILED. USE ⅝" DIA. CONC. MASONRY ANCHORS, TYPE S (EPOXY ANCHORED). MIN. PULLOUT CAPACITY OF 19 KIPS. EMBED 6" INTO CONCRETE DECK.

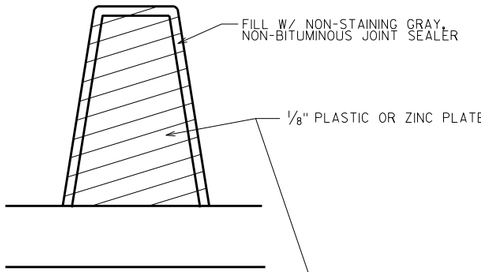


SECTION G-G

Ⓘ ROUGH FLOAT SURFACE OR SAME FINISH AS EXPOSED DECK. DO NOT APPLY PROTECTIVE SURFACE TREATMENT TO THIS AREA.

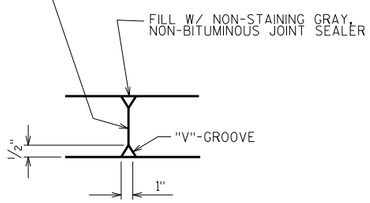


SECTION E-E

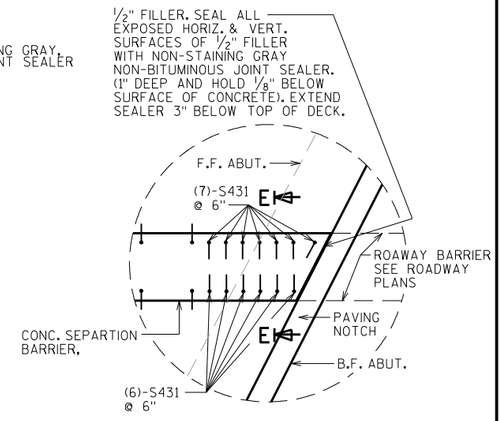


SECTION H-H

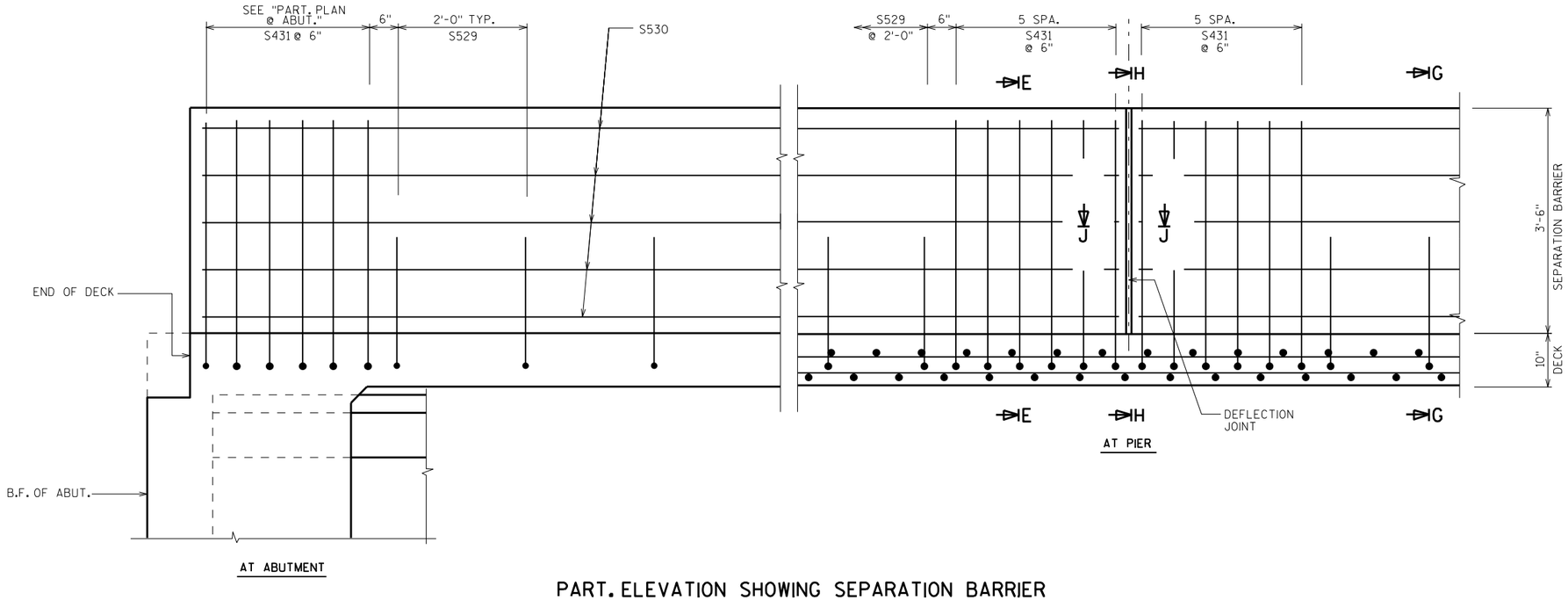
(SHOWING DEFLECTION JOINT IN SEPARATION BARRIER)



SECTION J-J



PART. PLAN @ ABUT.



PART. ELEVATION SHOWING SEPARATION BARRIER

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

SEPARATION BARRIER

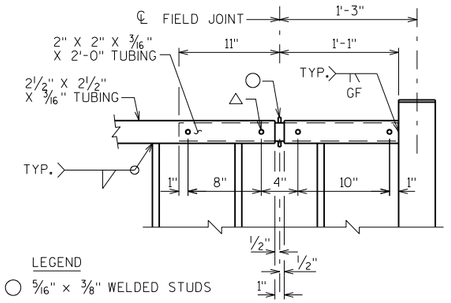
SHEET 18

215

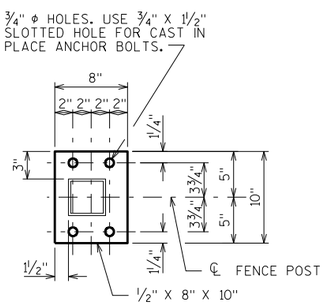
SCALE = 1.0

8

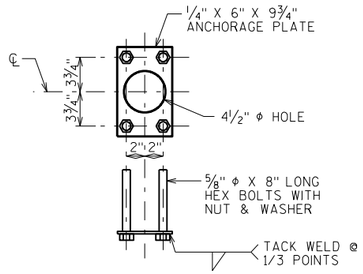
8



RAILING EXPANSION JOINT DETAIL

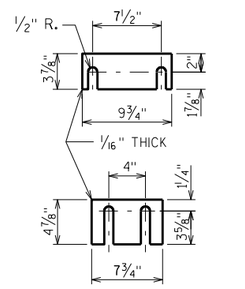


BASE PLATE



ANCHORAGE DETAIL

⅝" ϕ CONCRETE MASONRY ANCHOR, TYPE S EPOXY, 7" MINIMUM EMBEDMENT WITH A MINIMUM PULLOUT OF 20 KIPS MAY BE SUBSTITUTED FOR ⅝" CAST IN PLACE ANCHOR BOLTS. ANCHORAGE PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.



SHIM PLATE DETAILS

TWO SHIMS OF EACH SIZE REQUIRED PER POST

STATE PROJECT NUMBER

1120-09-76

NOTES

BID ITEM SHALL BE "RAILING TUBULAR SCREENING B-70-284" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

RAILS AND POSTS TO BE ASTM A500, GRADE B. BASE PLATES AND SHIMS TO BE ASTM A709, GRADE 36. ALL GALVANIZED AFTER FABRICATION.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPA. ARE TAKEN HORIZ. ALONG CENTER LINE OF RAILING AT BASE OF POST.

SHIMS SHALL BE USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

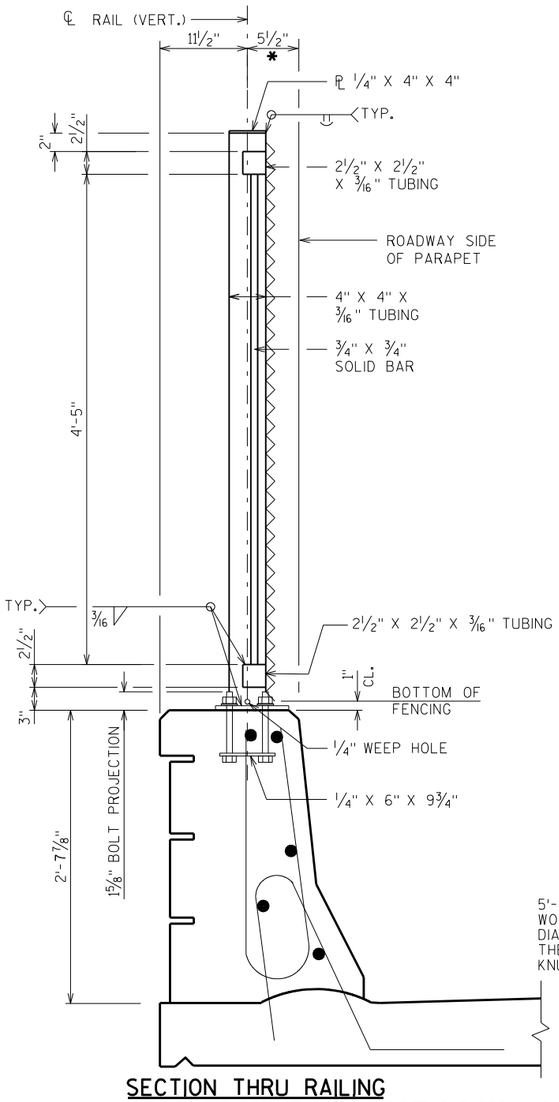
RAILING TO BE PAINTED AND FENCE FABRIC AND TIES TO BE VINYL COATED, BLACK, FEDERAL COLOR NO. 27038.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

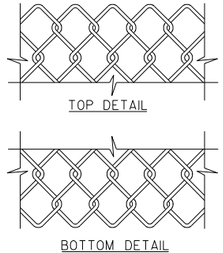
VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A #6 BLAST CLEANING BY SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.



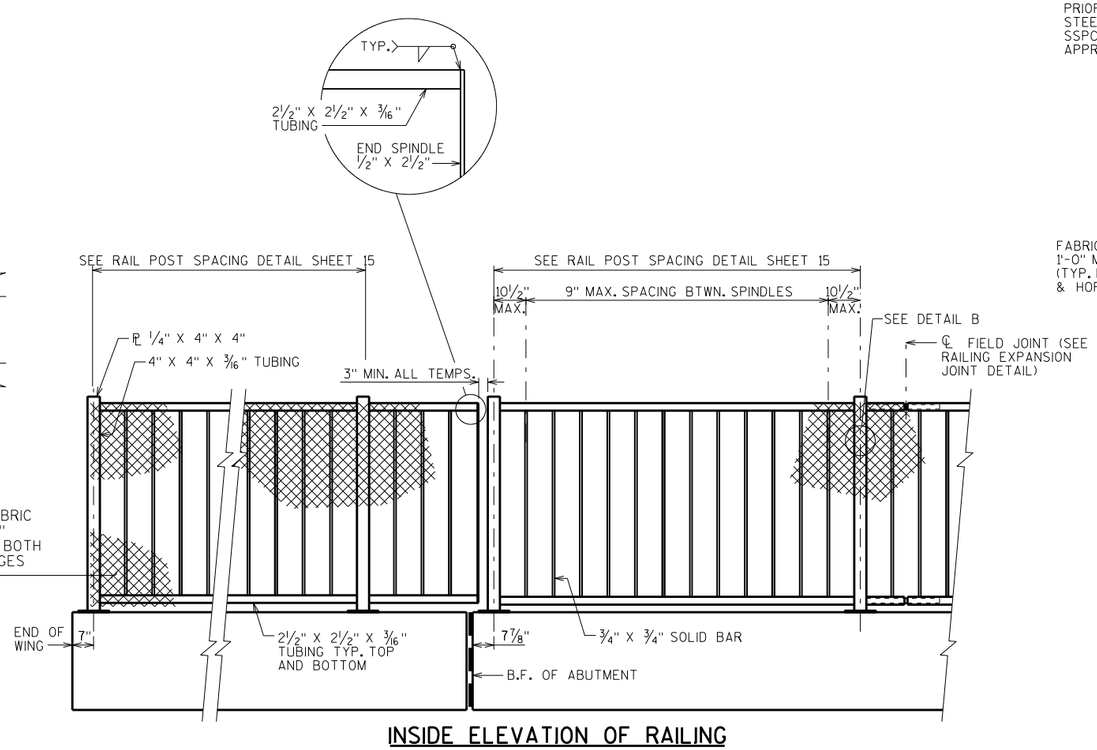
SECTION THRU RAILING

MODIFIED PARAPET 'LF' SHOWN. MODIFIED PARAPET 'A' SIMILAR.
(* HOLD 5½" DIM. FOR MODIFIED PARAPET 'A', AS WELL.)

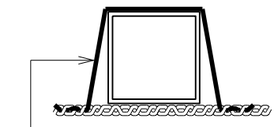


FENCE FABRIC

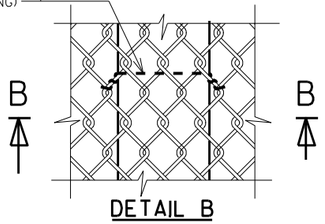
5'-0" VINYL COATED FENCE FABRIC WOVEN OF 9-GAUGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.



INSIDE ELEVATION OF RAILING



SECTION B-B



DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

ORNAMENTAL PROTECTIVE SCREENING

SHEET 19

216

SCALE = 1.0

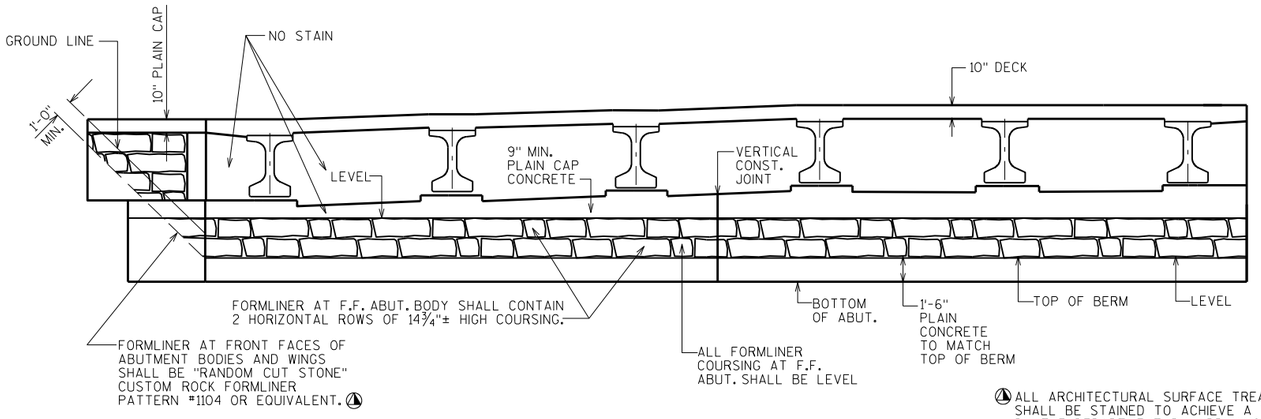
8

8

SCREENING
7-11

STATE PROJECT NUMBER

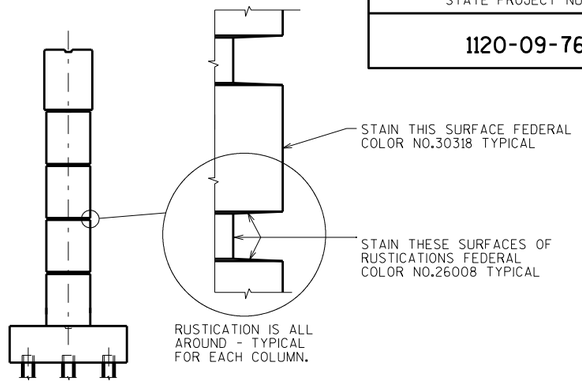
1120-09-76



ABUTMENT ELEVATION LOOKING AT F.F.

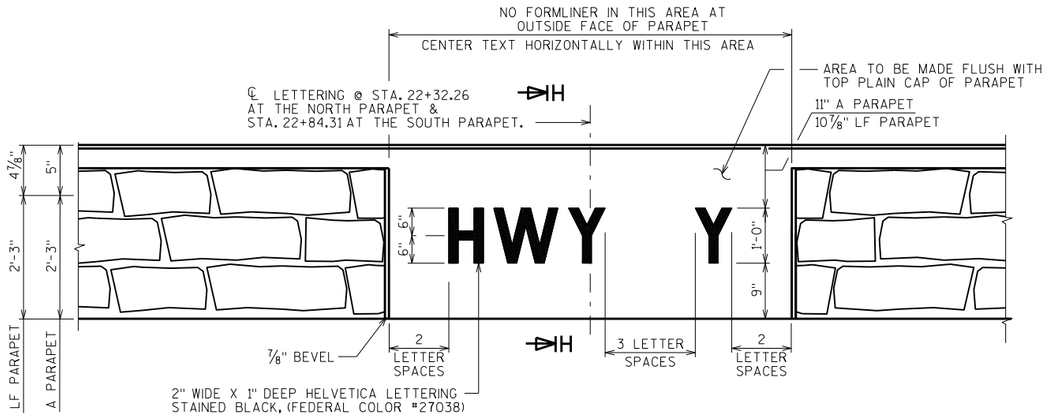
(TYPICAL AT BOTH ABUTMENTS)

⚠ ALL ARCHITECTURAL SURFACE TREATMENT FORMLINER AREAS SHALL BE STAINED TO ACHIEVE A TEXTURED LOOK AS DIRECTED BY THE DEPARTMENT BY APPLYING A MULTI-COLOR STAIN USING FEDERAL COLOR NO. 30318 AS THE BASE COLOR AND FEDERAL COLOR NO. 37780, OR SIMILAR, AS THE ACCENT COLOR. TO BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING MULTI-COLOR B-70-284".



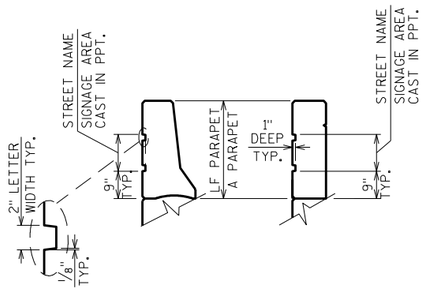
PIER STAINING DETAILS

ALL SURFACES OF PIER EXCEPT TOP OF CAP TO BE STAINED TO 1'-0" BELOW FINISHED GRADE LINE. STAIN PIER SURFACES WITH FEDERAL COLOR NO. 30318 EXCEPT FOR RUSTICATIONS IN COLUMNS AS SHOWN WHICH SHALL BE STAINED FEDERAL COLOR NO. 26008



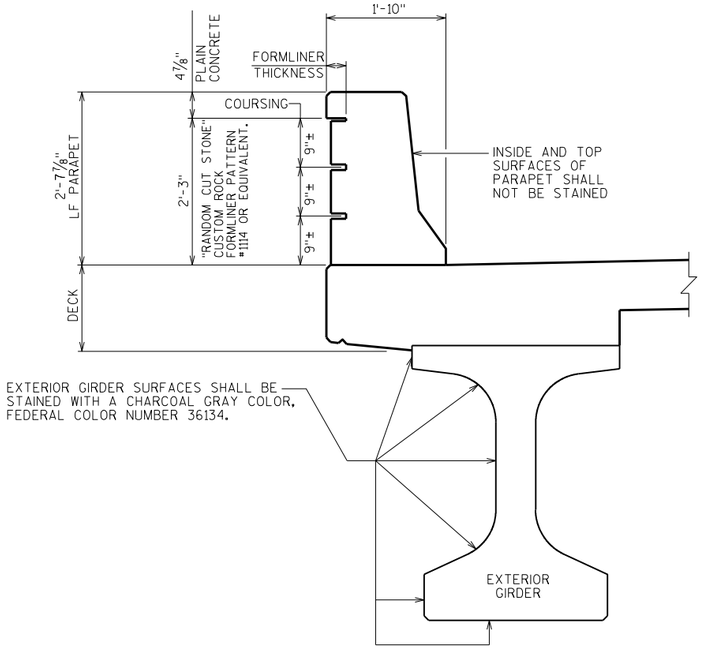
PARTIAL OUTSIDE ELEVATION OF PARAPET

(TYP. AT BOTH SIDES)



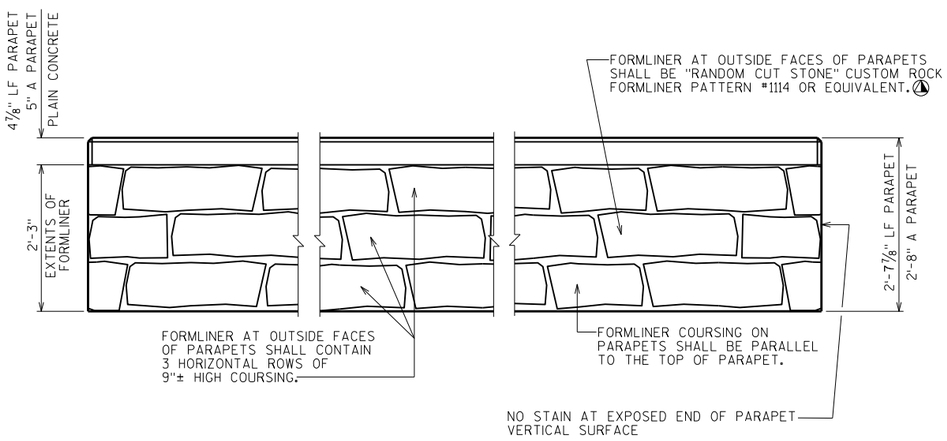
SECTION H-H

(SHOWING LETTERING DIMENSIONS)



PARTIAL CROSS SECTION AT EDGE OF DECK

(GIR 1 SHOWN, SIMILAR AT BOTH EXTERIOR GIRDERS)



PARTIAL OUTSIDE ELEVATION OF BOTH PARAPETS

(TYPICAL AT BOTH SIDES)

NOTES:

STAINING & LETTERING WORK SHALL BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING B-70-284".

LETTERING SHALL ONLY BE PLACED AT THE OUTSIDE FACES OF PARAPETS.

LETTERING FONT TYPE SHALL BE "HELVETICA" WITH 1'-0" HIGH UPPER CASE.

IF TOUCH UP PAINTING IS REQUIRED, IT SHALL BE DONE TO THE SATISFACTION OF THE FIELD ENGINEER AT NO ADDITIONAL COST.

ALL FORMLINER WORK SHALL BE COVERED UNDER THE BID ITEM "ARCHITECTURAL SURFACE TREATMENT".

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

STAINING OF NON-ARCHITECTURAL SURFACE TREATMENT AREAS SHALL BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING B-70-284".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-284

DRAWN BY WWR | PLANS CK'D. DFD

AESTHETIC DETAILS

SHEET 20

217

SCALE = 4.5

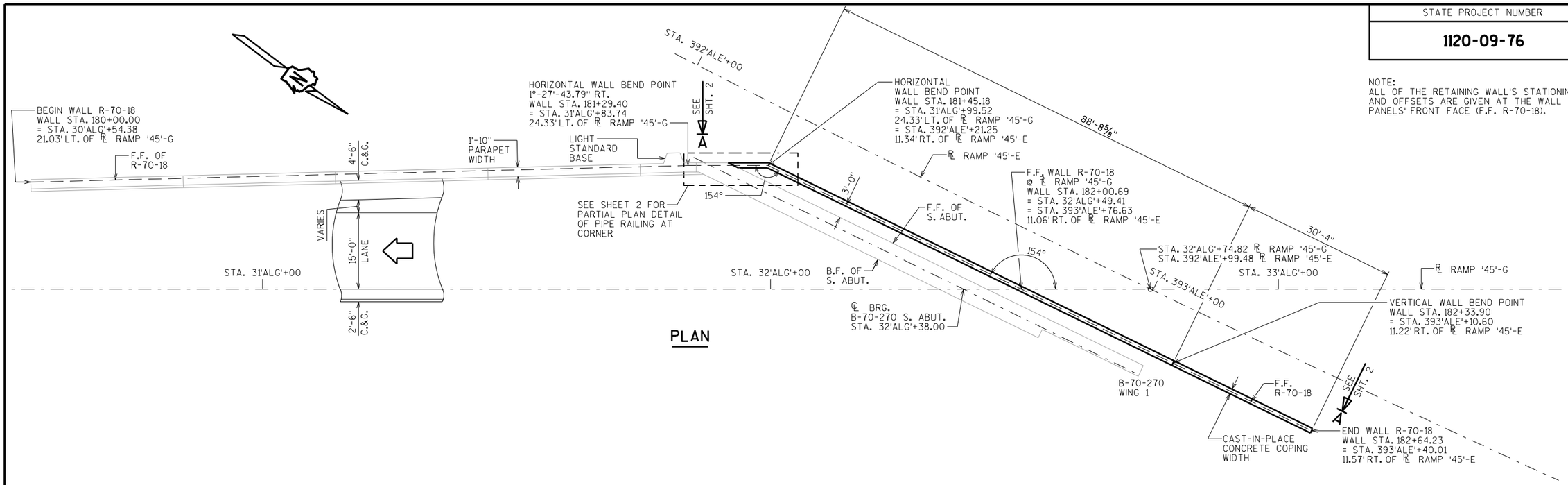
8

8

STATE PROJECT NUMBER

1120-09-76

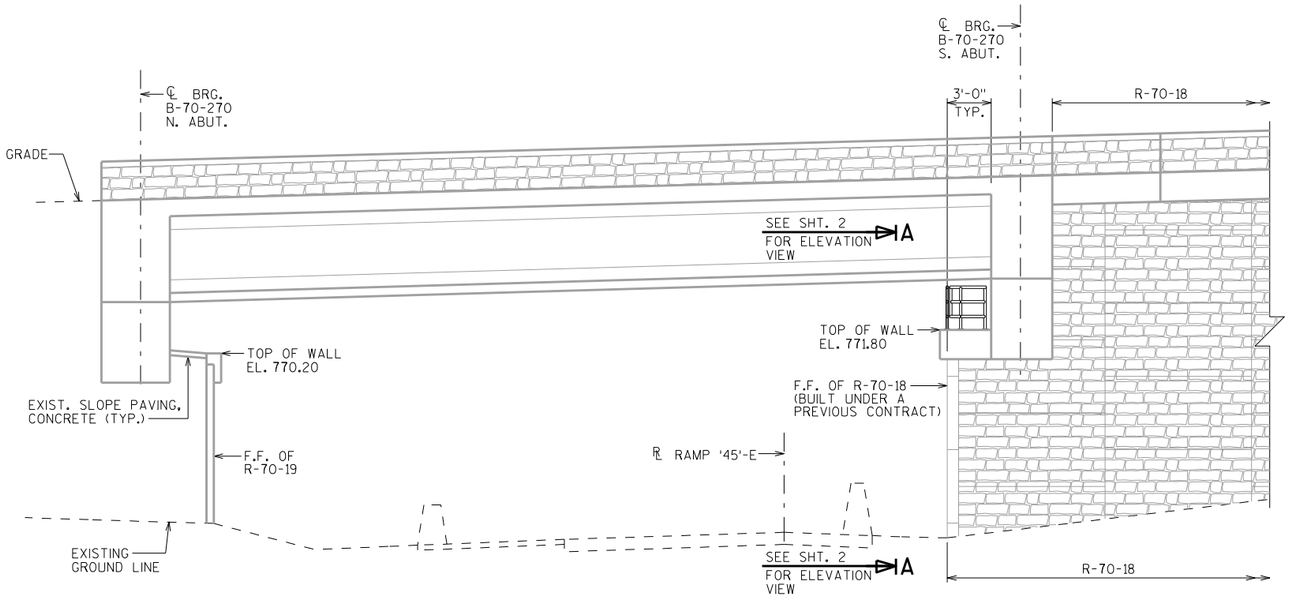
NOTE:
ALL OF THE RETAINING WALL'S STATIONING AND OFFSETS ARE GIVEN AT THE WALL PANELS' FRONT FACE (F.F. R-70-18).



PLAN

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	QUANTITY
SPV.0090	FENCE CHAIN LINK POLYMER-COATED 6-FT	LF	54
SPV.0105	RAILING PIPE GALVANIZED R-70-18	LS	1
	NON-BID ITEMS		
	NON-BITUMINOUS JOINT SEALER	SIZE	3/4"



ELEVATION

NORMAL TO RAMP '45'-E - LOOKING NORTH (UPSTATION)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE FENCE & RAILING SYSTEM IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE FENCE & RAIL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE FENCE & RAILING SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE FENCE & RAILING SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

DIMENSIONS, WALL ELEVATIONS, GIVEN ON THIS PLAN, ARE BASED ON EXISTING ORIGINAL CONSTRUCTION PLANS & FIELD SURVEY. CONTRACTOR TO VERIFY LOCATIONS OF EXPANSION & CONTRACTION JOINTS.

LIST OF DRAWINGS

1. GENERAL PLAN
2. ELEVATION & DETAILS
3. CHAIN LINK FENCE DETAILS
4. PIPE RAILING DETAILS

STRUCTURE DESIGN CONTACTS:

ALEXANDER CRABTREE (608) 266-3686
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 4/17/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE R-70-18

ADDITION OF FENCE & RAILING TO WALL R-70-18

COUNTY WINNEBAGO | ~~TOWN~~ CITY/~~VILLAGE~~ OSHKOSH

DESIGN SPEC. AASHTO LRFD DESIGN SPEC.

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ARC	JDL	ARC	JDL

GENERAL PLAN

SHEET 1 OF 4

218

I.D. 1120-09-00

DATE: **APRIL 2013**

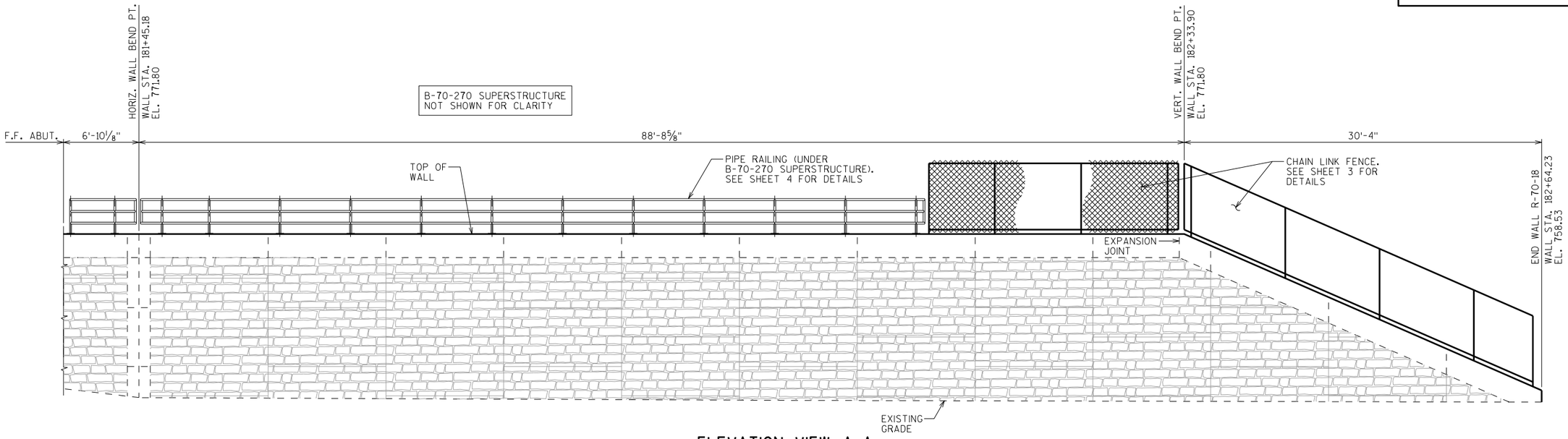
SCALE = 10

8

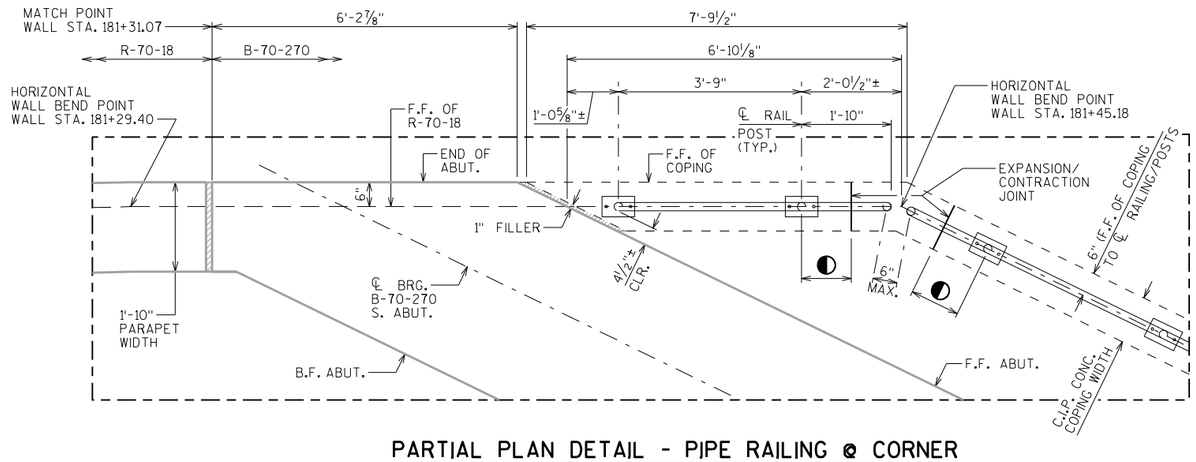
8

STATE PROJECT NUMBER

1120-09-76



ELEVATION VIEW A-A



PARTIAL PLAN DETAIL - PIPE RAILING @ CORNER

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION & CONTRACTION JOINTS) AND THE ℄ OF RAIL POSTS. SEE SHEET 4 FOR PIPE RAILING DETAILS.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-18

DRAWN BY ARC | PLANS CK'D. JDL

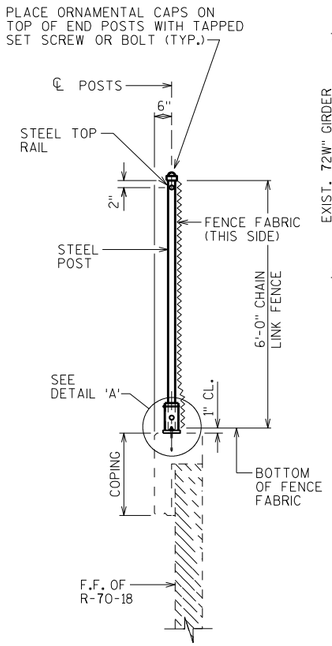
ELEVATION & DETAILS

SHEET 2

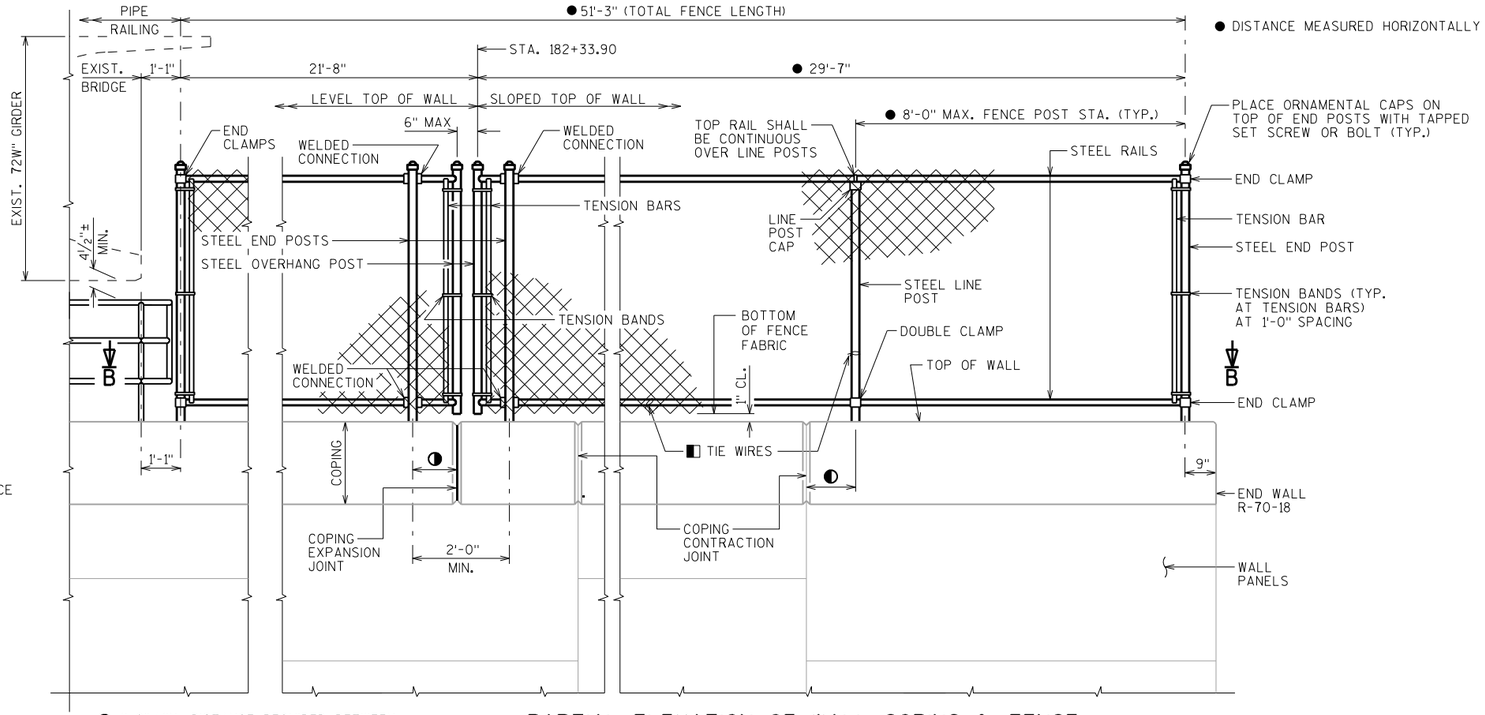
219

SCALE = 4.5

STATE PROJECT NUMBER
1120-09-76



SECTION THRU FENCE



PARTIAL ELEVATION OF WALL COPING & FENCE

LOOKING EAST AT F.F. WALL

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF FENCE POSTS.

NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH A COLORED POLYMER-COATING ON THE OUTSIDE.

FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626. SEE THE "BRIDGE SPECIAL PROVISIONS" FOR ADDITIONAL DETAILS.

THE COLOR OF POLYMER-COATING FOR THIS STRUCTURE SHALL BE BLACK, FEDERAL COLOR #27038, IN ACCORDANCE WITH ASTM F934.

THE BID ITEM SHALL BE "FENCE CHAIN LINK POLYMER-COATED 6-FT.", LF.

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

◘ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT & SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

☆ ½" DIA. CONCRETE MASONRY ANCHOR, TYPE "S", 6" MIN. EMBEDMENT (EPOXY ANCHORED) INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS. ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.

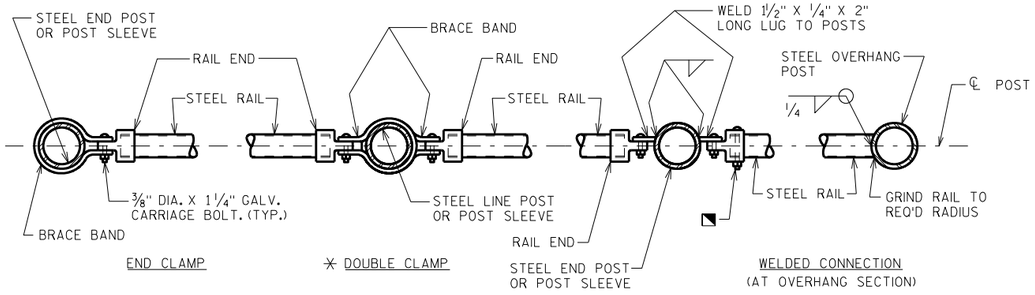
◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◥ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR ¼ POINT OF POST SPACING.

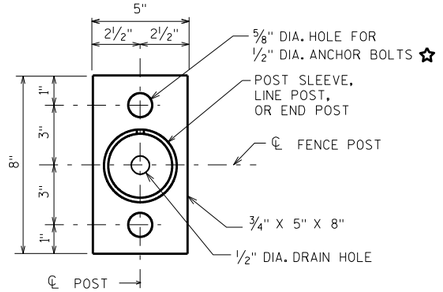
FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12

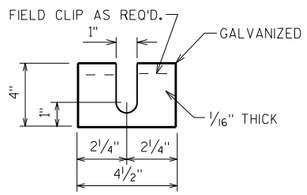


SECTION B-B

NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS

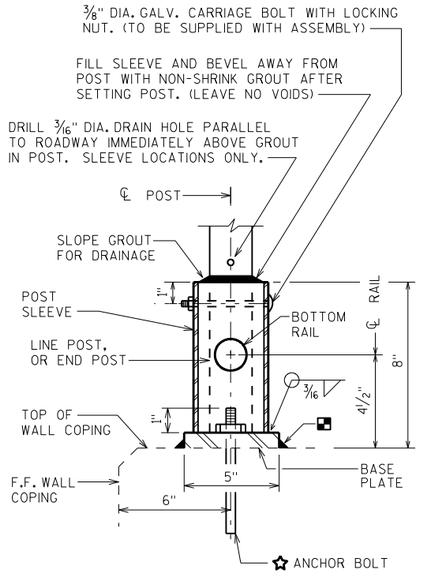


BASE PLATE



POST SHIM DETAILS

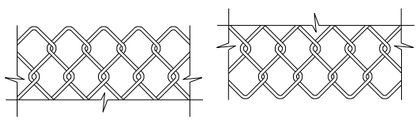
SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.



TOP DETAIL BOTTOM DETAIL

FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-18

DRAWN BY ARC | PLANS CK'D. JDL

CHAIN LINK FENCE DETAILS

SHEET 3

220

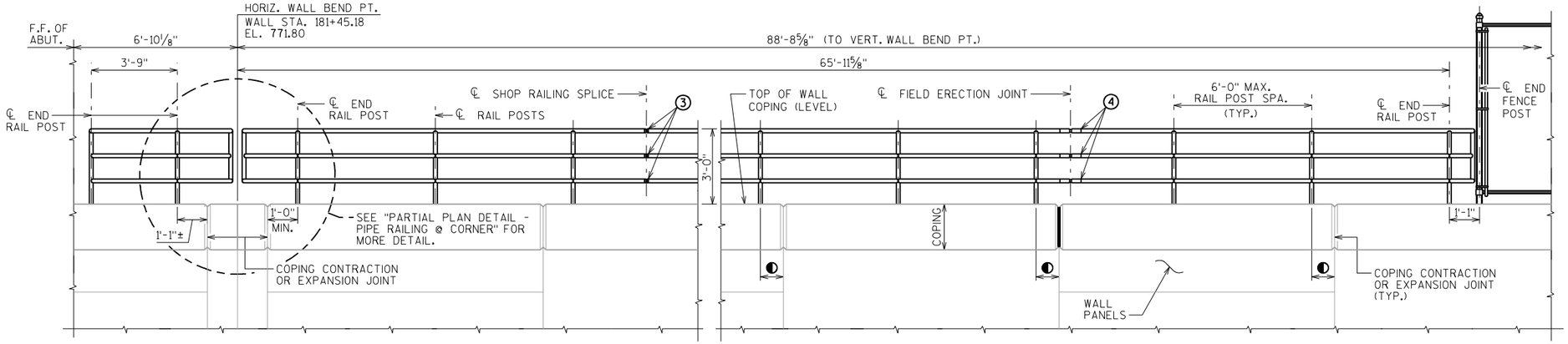
8

8

SCALE = 5.33333333

STATE PROJECT NUMBER

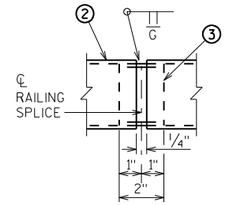
1120-09-76



PARTIAL ELEVATION OF WALL COPING & RAILING

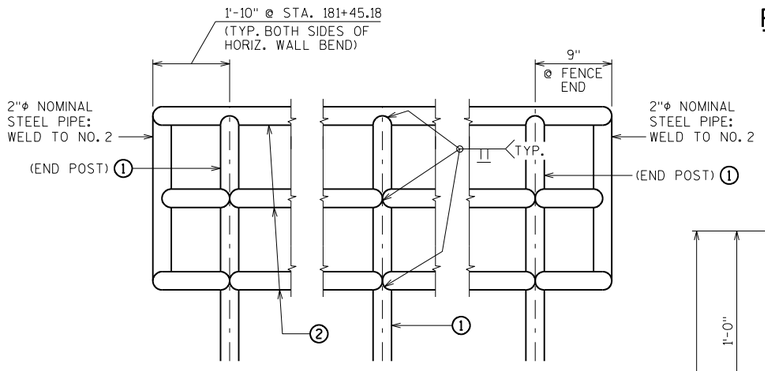
LOOKING EAST AT F.F. OF WALL

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF RAIL POSTS.



SHOP RAILING SPLICE DETAIL

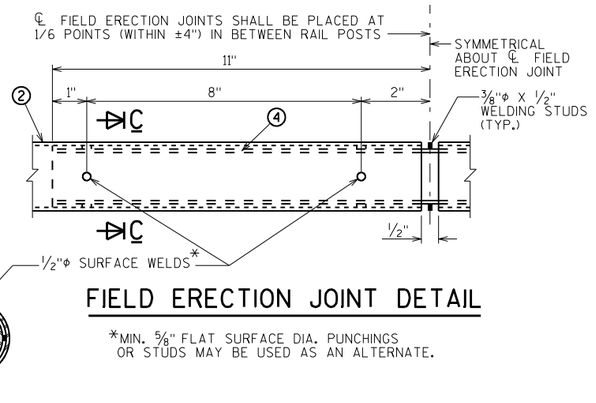
(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



PART ELEVATION OF RAILING

LEGEND

1. 2"℄ NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. POSTS ARE TO BE SET VERTICAL.
2. 2"℄ NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1
3. 1½"℄ PIPE SLEEVE FOR NO. 2. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 2 1/16".
4. 1½"℄ PIPE SLEEVE X 1'-10" LONG FOR NO. 2. PROVIDE ½"℄ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE ⅜"℄ X ½" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.
5. PLATE ¾" X 5" X 8", WITH ⅝"℄ HOLE FOR ANCHOR BOLTS NO. 6. WELD TO NO. 1. OR PIPE SLEEVE AS SHOWN.
6. ½" CONCRETE MASONRY ANCHOR, TYPE "S" 6" MIN. EMBEDMENT (EPOXY ANCHORED MIN. PULLOUT OF 10 KIPS. ANCHOR, WASHER, AND NUT SHALL BE GALVANIZED.



FIELD ERECTION JOINT DETAIL

*MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

SECTION C-C

NOTES

BID ITEM SHALL BE "RAILING PIPE GALVANIZED R-70-18", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE "BRIDGE SPECIAL PROVISIONS". THE RAILING SHALL BE PAINTED BLACK (FEDERAL COLOR NO. 27038).

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQ'D FOR ALIGNMENT, AND SHALL BE GALVANIZED.

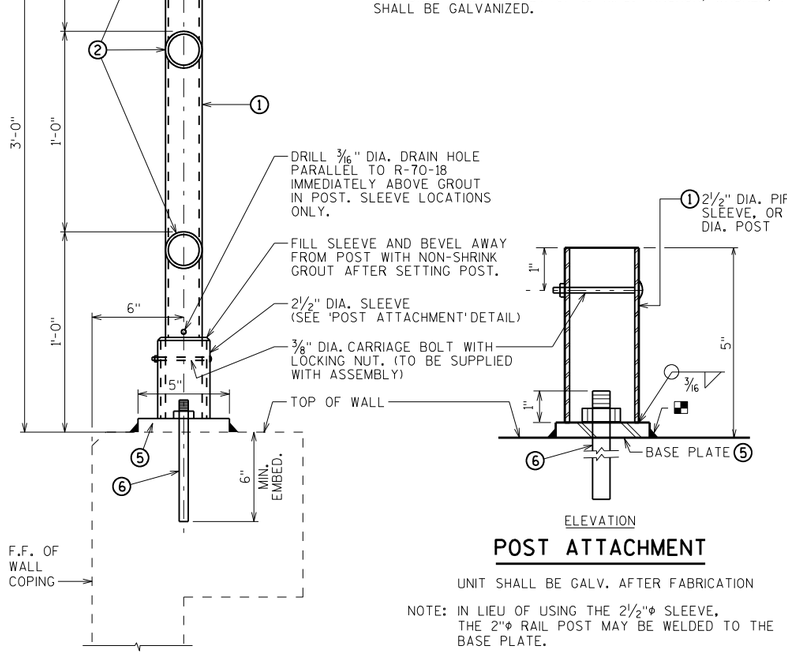
ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF POSTS.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

◪ CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS IN POST SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.



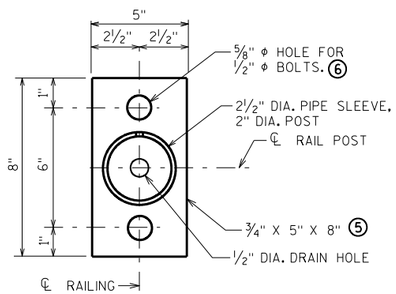
SECTION THRU RAILING

ELEVATION

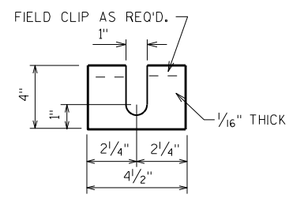
POST ATTACHMENT

UNIT SHALL BE GALV. AFTER FABRICATION

NOTE: IN LIEU OF USING THE 2½"℄ SLEEVE, THE 2"℄ RAIL POST MAY BE WELDED TO THE BASE PLATE.



BASE PLATE



POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-18

DRAWN BY ARC | PLANS CK'D. JDL

PIPE RAILING DETAILS

SHEET 4

221

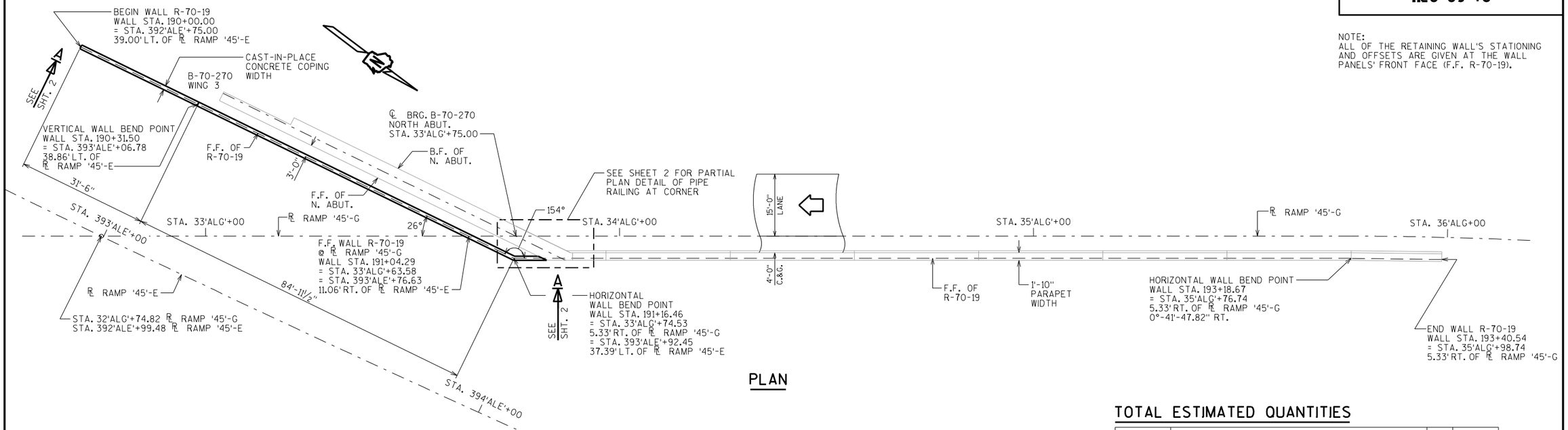
8

8

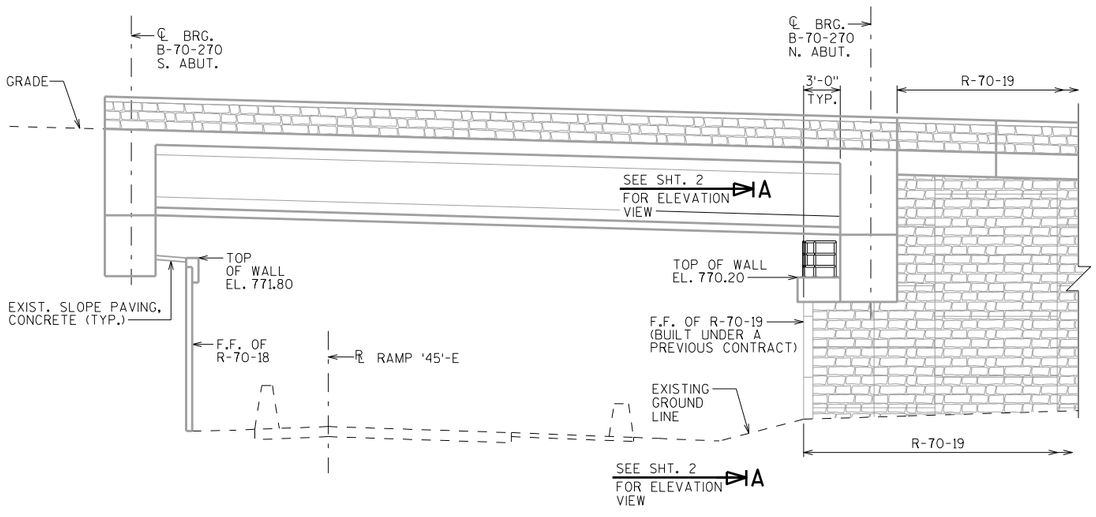
SCALE = 5.33333333

STATE PROJECT NUMBER
1120-09-76

NOTE:
ALL OF THE RETAINING WALL'S STATIONING AND OFFSETS ARE GIVEN AT THE WALL PANELS' FRONT FACE (F.F. R-70-19).



PLAN



ELEVATION

NORMAL TO RAMP '45'-E - LOOKING SOUTH (DOWNSTATION)

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	QUANTITY
SPV.0090	FENCE CHAIN LINK POLYMER-COATED 6-FT	LF	53
SPV.0105	RAILING PIPE GALVANIZED R-70-18	LS	1
	NON-BID ITEMS		
	NON-BITUMINOUS JOINT SEALER	SIZE	3/4"

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND SHOP DRAWINGS FOR THE FENCE & RAILING SYSTEM IN ACCORDANCE WITH THE SPECIAL PROVISIONS.

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE FENCE & RAIL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE FENCE & RAILING SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE FENCE & RAILING SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

DIMENSIONS, WALL ELEVATIONS, GIVEN ON THIS PLAN, ARE BASED ON EXISTING ORIGINAL CONSTRUCTION PLANS & FIELD SURVEY. CONTRACTOR TO VERIFY LOCATIONS OF EXPANSION & CONTRACTION JOINTS.

LIST OF DRAWINGS

1. GENERAL PLAN
2. ELEVATION & DETAILS
3. CHAIN LINK FENCE DETAILS
4. PIPE RAILING DETAILS

STRUCTURE DESIGN CONTACTS:

ALEXANDER CRABTREE (608) 266-3686
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 4/17/13
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE R-70-19

ADDITION OF FENCE & RAILING TO WALL R-70-19

COUNTY WINNEBAGO
~~TOWN~~/CITY/~~VILLAGE~~ OSHKOSH

DESIGN SPEC. AASHTO LRFD DESIGN SPEC.

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ARC	JDL	ARC	JDL

GENERAL PLAN

SHEET 1 OF 4

222

8

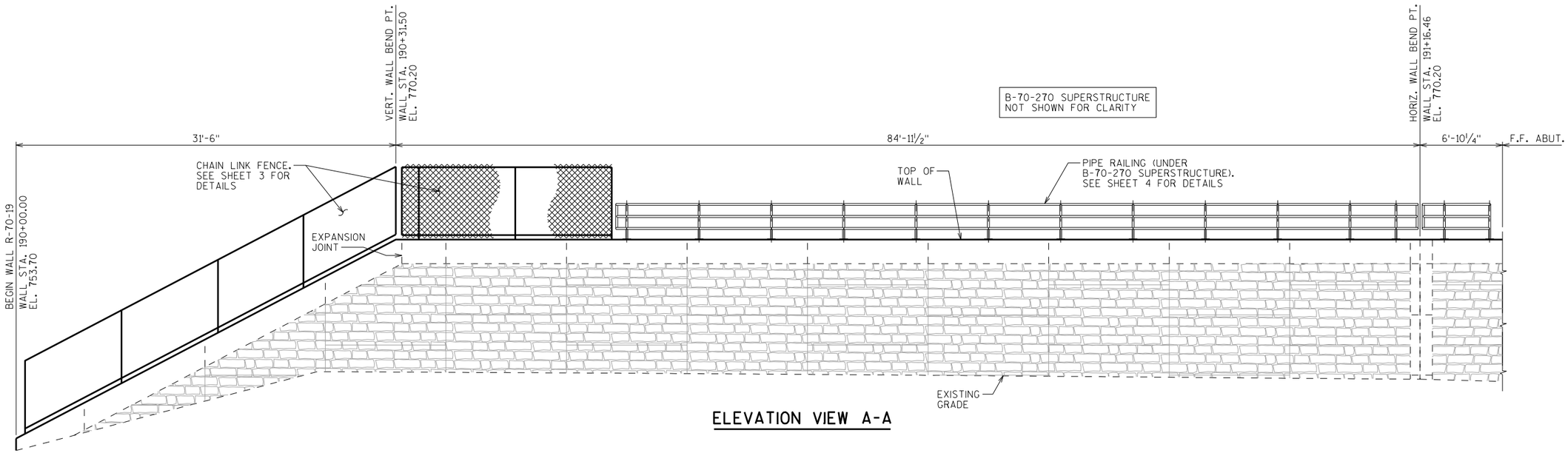
8

SCALE = 12

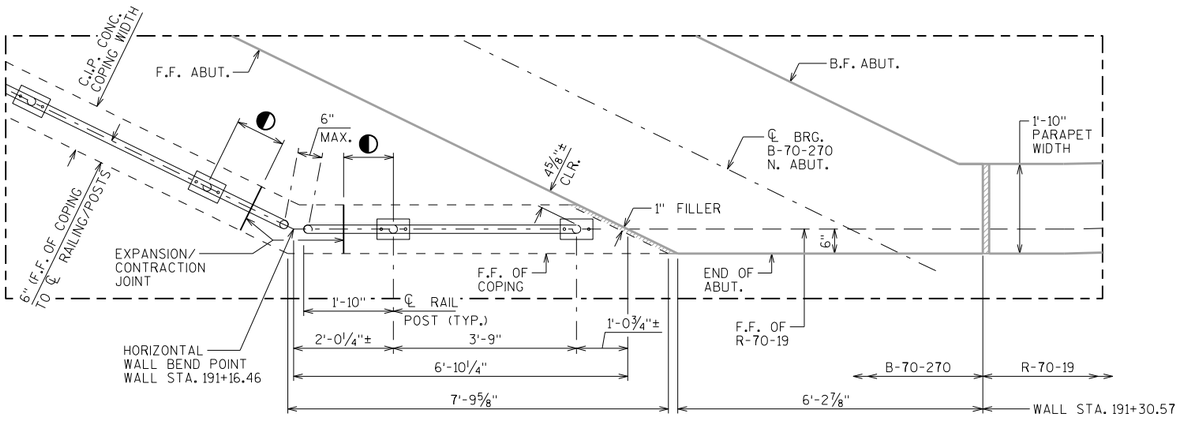
I.D. 1120-09-00

DATE: APRIL 2013

STATE PROJECT NUMBER
1120-09-76



ELEVATION VIEW A-A



PARTIAL PLAN DETAIL - PIPE RAILING @ CORNER

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION & CONTRACTION JOINTS) AND THE ℄ OF RAIL POSTS. SEE SHEET 4 FOR PIPE RAILING DETAILS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-19

DRAWN BY ARC | PLANS CK'D. JDL

ELEVATION & DETAILS

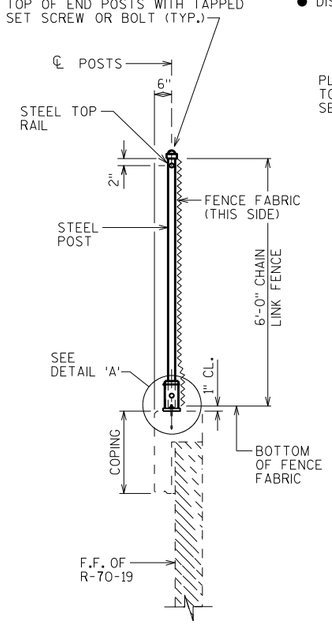
SHEET 2

223

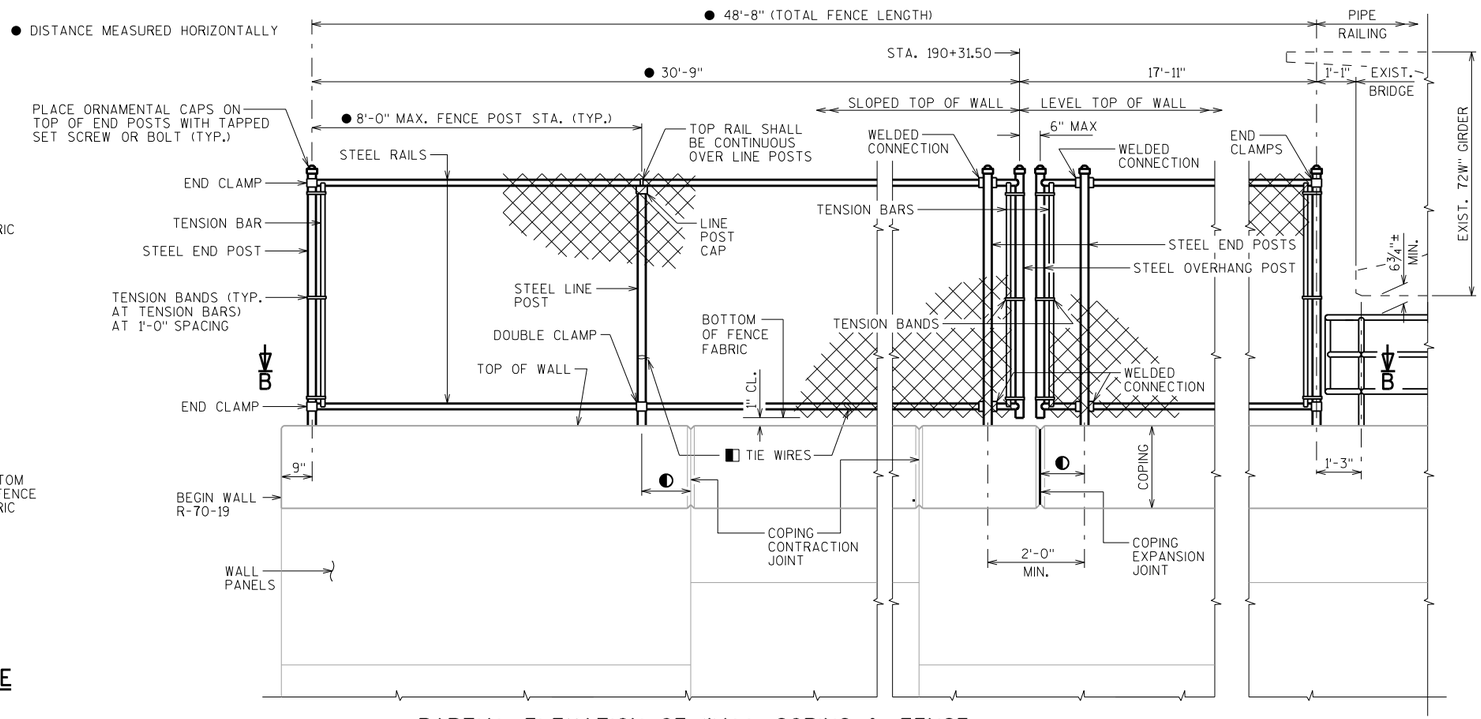
SCALE = 4.5

8

8



SECTION THRU FENCE



PARTIAL ELEVATION OF WALL COPING & FENCE

LOOKING WEST AT F.F. WALL

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF FENCE POSTS.

FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
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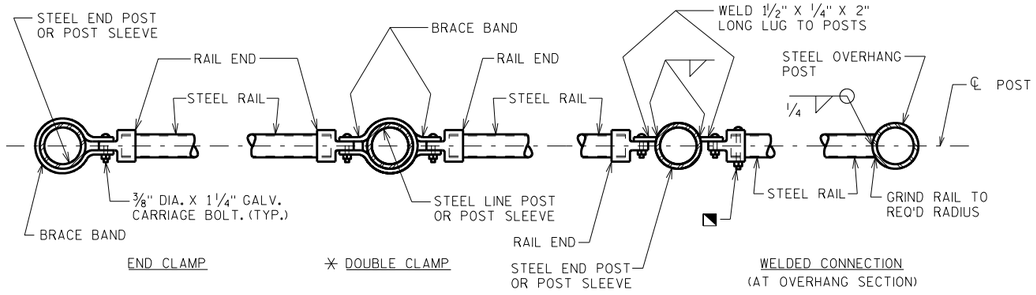
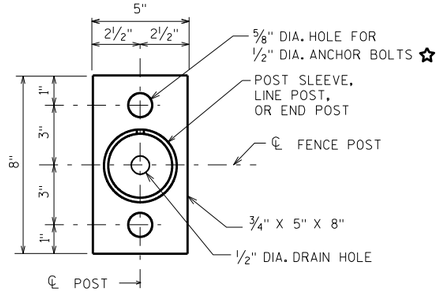
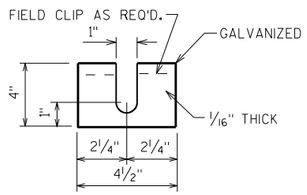


SECTION B-B

NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS

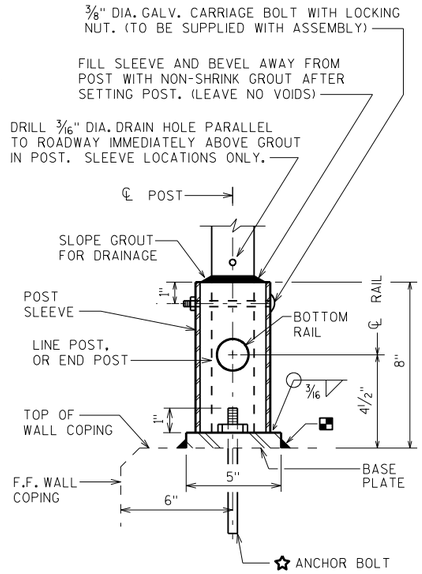


BASE PLATE



POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.

STATE PROJECT NUMBER

1120-09-76

NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH A COLORED POLYMER-COATING ON THE OUTSIDE.

FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626. SEE THE "BRIDGE SPECIAL PROVISIONS" FOR ADDITIONAL DETAILS.

THE COLOR OF POLYMER-COATING FOR THIS STRUCTURE SHALL BE BLACK, FEDERAL COLOR #27038, IN ACCORDANCE WITH ASTM F934.

THE BID ITEM SHALL BE "FENCE CHAIN LINK POLYMER-COATED 6-FT.", LF.

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

◘ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT & SHIM WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

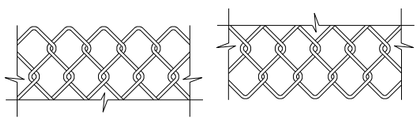
✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

☆ ½" DIA. CONCRETE MASONRY ANCHOR, TYPE "S", 6" MIN. EMBEDMENT (EPOXY ANCHORED) INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS. ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.

◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◥ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR ¼ POINT OF POST SPACING.



TOP DETAIL BOTTOM DETAIL

FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-19

DRAWN BY ARC | PLANS CK'D. JDL

CHAIN LINK FENCE DETAILS

SHEET 3

224

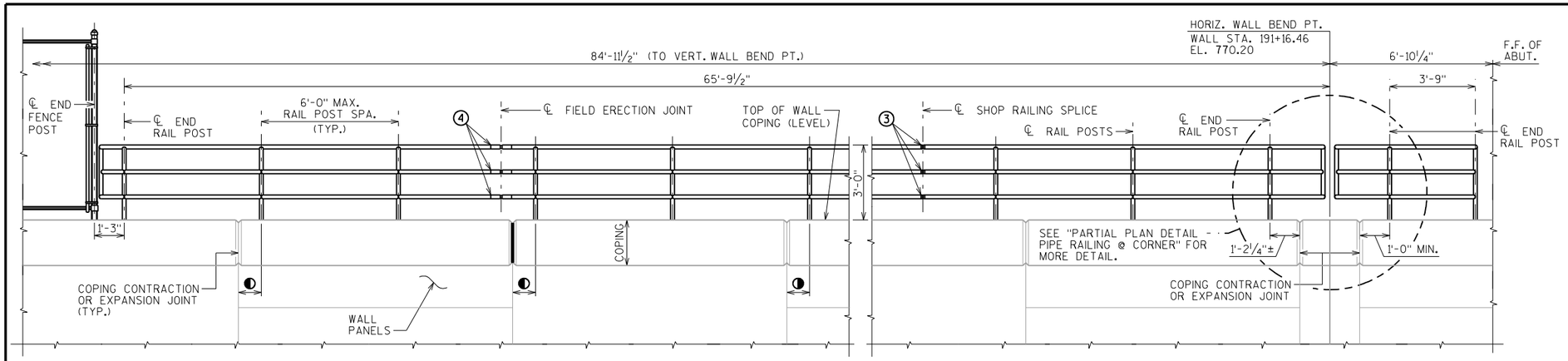
SCALE = 5.33333333

8

8

STATE PROJECT NUMBER

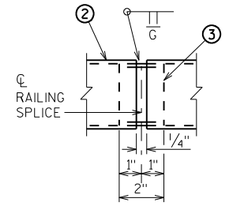
1120-09-76



PARTIAL ELEVATION OF WALL COPING & RAILING

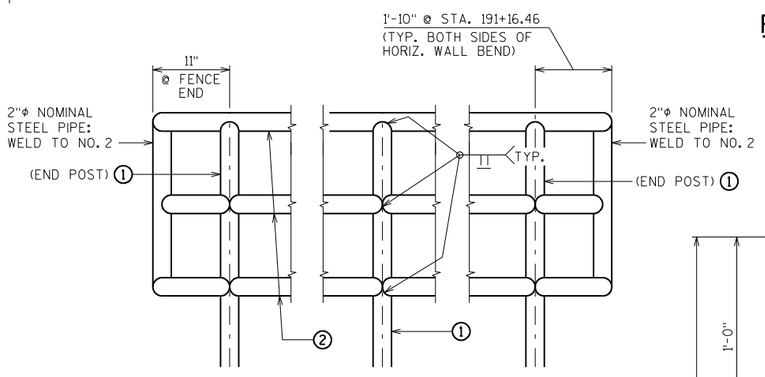
LOOKING WEST AT F.F. OF WALL

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF RAIL POSTS.



SHOP RAILING SPLICE DETAIL

(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



PART ELEVATION OF RAILING

LEGEND

① 2"Φ NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. POSTS ARE TO BE SET VERTICAL.

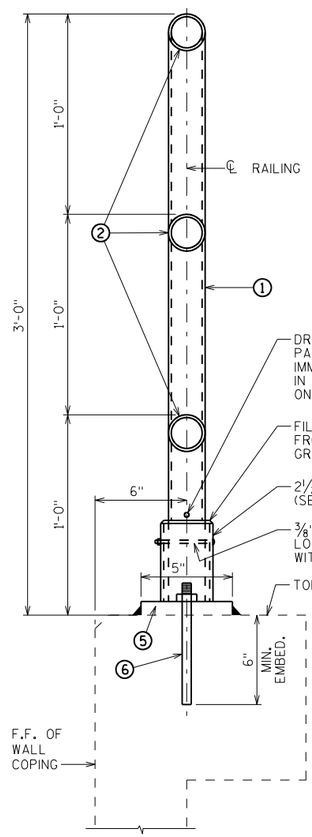
② 2"Φ NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1

③ 1½"Φ PIPE SLEEVE FOR NO. 2. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 2 1/16".

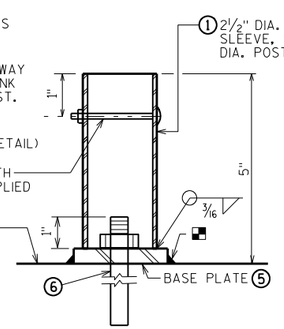
④ 1½"Φ PIPE SLEEVE X 1'-10" LONG FOR NO. 2. PROVIDE ½"Φ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE ⅜"Φ X ½" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

⑤ PLATE ¾" X 5" X 8", WITH ⅝"Φ HOLE FOR ANCHOR BOLTS NO. 6. WELD TO NO. 1 OR PIPE SLEEVE AS SHOWN.

⑥ ½" CONCRETE MASONRY ANCHOR, TYPE "S" 6" MIN. EMBEDMENT (EPOXY ANCHORED MIN. PULLOUT OF 10 KIPS. ANCHOR, WASHER, AND NUT SHALL BE GALVANIZED.



SECTION THRU RAILING

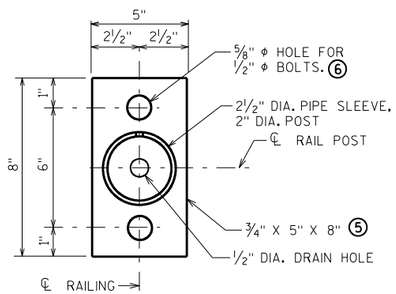


ELEVATION

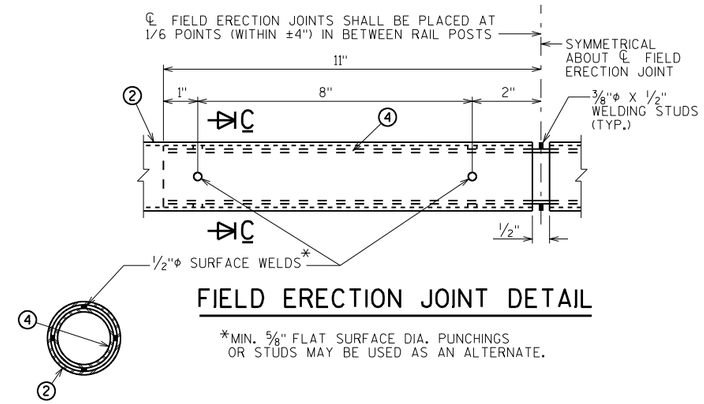
POST ATTACHMENT

UNIT SHALL BE GALV. AFTER FABRICATION

NOTE: IN LIEU OF USING THE 2½"Φ SLEEVE, THE 2"Φ RAIL POST MAY BE WELDED TO THE BASE PLATE.



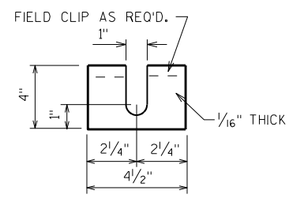
BASE PLATE



FIELD ERECTION JOINT DETAIL

*MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

SECTION C-C



POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST.

NOTES

BID ITEM SHALL BE "RAILING PIPE GALVANIZED R-70-19", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS. PAINT OVER GALVANIZING WITH AN APPROVED TIE COAT AND TOP COAT AS SPECIFIED IN THE "BRIDGE SPECIAL PROVISIONS". THE RAILING SHALL BE PAINTED BLACK (FEDERAL COLOR NO. 27038).

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQ'D FOR ALIGNMENT, AND SHALL BE GALVANIZED.

ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF POSTS.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

■ CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS IN POST SHIMS AND BASE PLATES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-19

DRAWN BY ARC | PLANS CK'D. JDL

PIPE RAILING DETAILS

SHEET 4

225

SCALE = 5.33333333

8

8

STATE PROJECT NUMBER

1120-09-76

(⬭) INDICATES WING NUMBER

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED. SEE SHEET 3.

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD."

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWING ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL SHALL BE DESIGNED USING THE ELEVATIONS GIVEN ON SHEET 2.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE LOAD OF 240 PSF.

DESIGN THE MSE WALL IN FRONT OF THE ABUTMENT BODY TO RESIST THE FORCE FROM ALL HORIZONTAL EARTH PRESSURE ACTING ON THE BACK OF THE ABUTMENT BELOW THE BEAM SEATS AND A LIVE LOAD SURCHARGE OF 240 PSF.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

ALLOWABLE WALL SYSTEMS

WALL CONCRETE PANEL M.S.E. LRFD

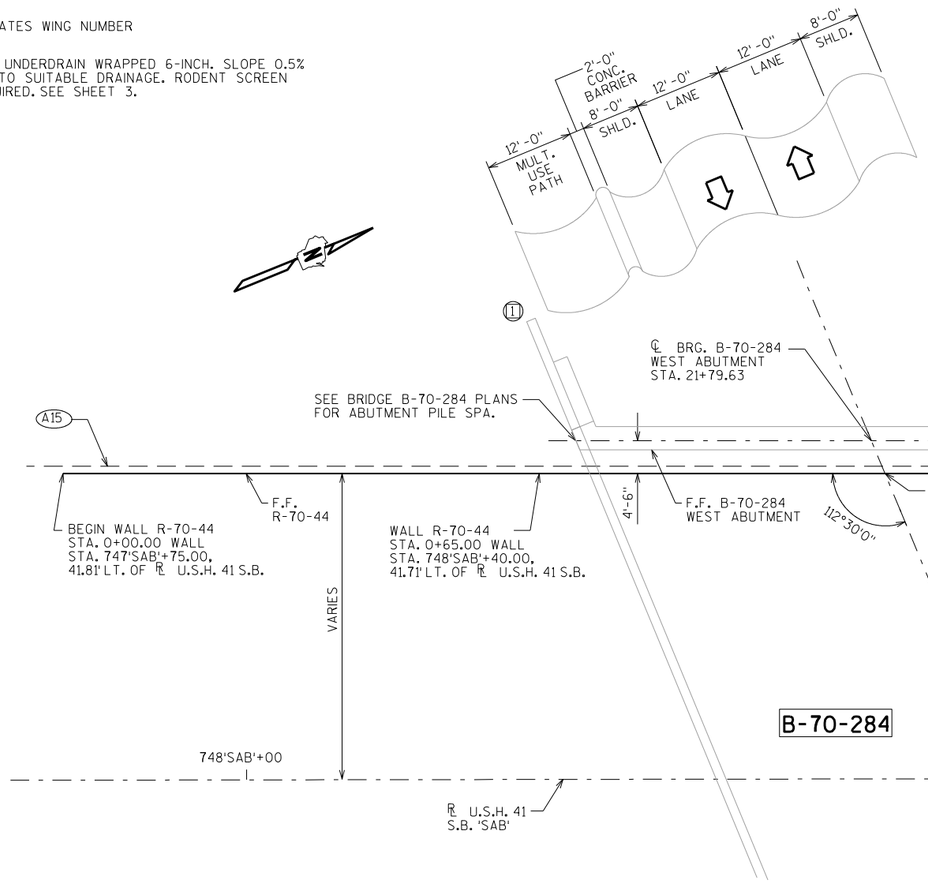
ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY CAST-IN-PLACE COPING —— f'c = 3,500 P.S.I.

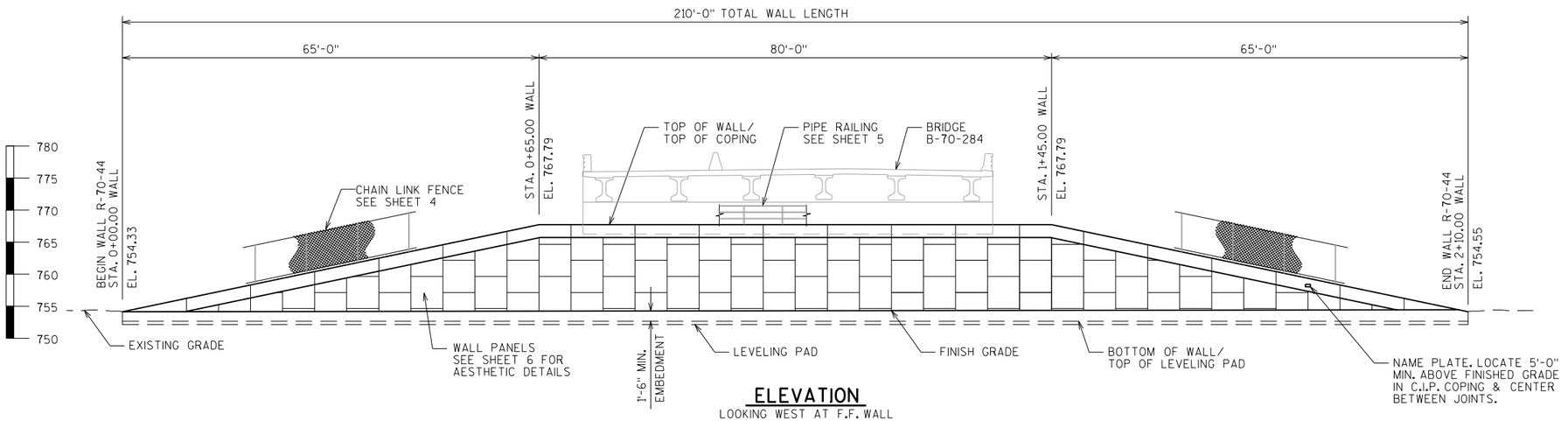
BAR STEEL REINFORCEMENT, GRADE 60 —— fy = 60,000 P.S.I.

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. NOTES & QUANTITIES
3. WALL DETAILS
4. CHAIN LINK FENCE DETAILS
5. PIPE RAILING DETAILS
6. AESTHETIC DETAILS
7. SUBSURFACE EXPLORATION



PLAN
M.S.E. RETAINING WALL



ELEVATION
LOOKING WEST AT F.F. WALL

STRUCTURE DESIGN CONTACT:

JAMES LUEBKE (608) 266-5098
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 4/17/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE R-70-44

RETAINING WALL FOR C.T.H. Y OVER U.S.H. 41 S.B.

COUNTY	TOWN/~~CITY/VILLAGE~~
WINNEBAGO	OSHKOSH

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	JDL	DESIGN CK'D.	CAD	DRAWN BY	JDL	PLANS CK'D.	CAD

GENERAL PLAN & ELEVATION

SHEET 1 OF 7

226

I.D. 1120-09-00B

DATE: MAY '12

SCALE = 15

8

8

STATE PROJECT NUMBER

1120-09-76

SOIL PARAMETERS

SOIL DESCRIPTION	FRICTION ANGLE (DEGREES)	COHESION (PSF)	UNIT WEIGHT (PCF)
GRANULAR BACKFILL WITHIN THE WALL IN THE REINFORING ZONE	30	0	120
FILL BEHIND AND BELOW THE REINFORCING ZONE	31	0	120
B-1, 21+50			
CLAY AND SILT, BROWN/GRAY, TR. SAND AND GRAVEL (ELEVATION 752.7 FT - 747.5 FT)	0	2,000	120
SAND AND GRAVEL, GRAY, FINE TO COURSE, TRACE SILT (ELEVATION 747.5 FT - 746.0 FT)	34	0	135
CLAY AND SILT, BROWN, TRACE GRAVEL (ELEVATION 746.0 FT - 739.5 FT)	0	3,500	130
CLAY, BROWN, LITTLE GRAVEL, TRACE SILT (ELEVATION 739.5 FT - 721.5 FT)	0	3,000	125
SILT, GRAY (ELEVATION 721.5 FT - 709.5 FT)	0	1,000	115
SAND, GRAY, SOME GRAVEL, FINE TO MEDIUM (ELEVATION 709.5 FT - 689.5 FT)	30	0	115
SILT, GRAY, SOME SAND, SOME GRAVEL (ELEVATION 689.5 FT - 662.0 FT)	40	0	135
B-1 EXG, 21+47			
SILT AND CLAY, SOME SAND (ELEVATION 752.6 FT - 729.7 FT)	0	2,000	120
CLAY AND SILT, SOME GRAVEL (ELEVATION 729.7 FT - 713.7 FT)	0	2,500	125
SILT, SOME SAND (ELEVATION 713.7 FT - 703.7 FT)	31	0	120
SILT, SOME SAND (ELEVATION 703.7 FT - 683.7 FT)	32	0	120
SILT, SOME SAND AND GRAVEL (ELEVATION 683.7 FT - 668.7 FT)	40	0	135
B-2, 22+00			
CLAY, BROWN, LITTLE GRAVEL (ELEVATION 752.8 FT - 746.8 FT)	0	2,000	120
SAND, BROWN, FINE TO MEDIUM, SOME SILT (ELEVATION 746.8 FT - 745.8 FT)	34	0	130
CLAY, BROWN, LITTLE SILT (ELEVATION 745.8 FT - 737.8 FT)	0	3,000	130
CLAY, BROWN, LITTLE GRAVEL (ELEVATION 737.8 FT - 733.8 FT)	0	2,500	125
CLAY, BROWN (ELEVATION 733.8 FT - 726.3 FT)	0	2,000	120

1. THE MSE WALL WITH PRECAST CONCRETE PANELS WILL ACHIEVE THE EXTERNAL STABILITY FACTORS OF SAFETY IF THE SLIDING AND BEARING RESISTANCE REQUIREMENTS ARE MET. THE EXTERNAL STABILITY EVALUATION TABLE PRESENTS THE MINIMUM LENGTH OF THE REINFORCEMENT. IN THE AREA OF THE WALL THAT SUPPORTS THE ABUTMENT, THE RATIO OF LENGTH OF REINFORCEMENT TO TOTAL HEIGHT OF WALL SHOULD BE INCREASED FROM 0.70 TO 1.04.
2. THE CONTRACTOR SHOULD REMOVE 12-INCHES OF SILT AND CLAY BELOW THE REINFORCING ZONE AND REPLACE WITH GRANULAR FILL IN THE AREAS THAT THE SILT AND CLAY ARE ENCOUNTERED.
3. THE BACKFILL BEHIND THE MSE WALL WITH PRECAST CONCRETE FACING SHOULD BE GRANULAR AND FREE DRAINING.
4. THE NORTHEAST REGION SOILS ENGINEER SHOULD REVIEW THE FILL SUBSURFACE CONDITIONS PRIOR TO CONSTRUCTION OF THE WALL.

NOTES:

THE TYPICAL WALL SECTION USED IN THE ANALYSES HAD AN EXPOSED HEIGHT THAT VARIES FROM 7.4 FEET TO 13.7 FEET. THE FOLLOWING ASSUMPTIONS ARE ALSO INCLUDED IN THE ANALYSES:

1. THE SLOPE IN FRONT AND BEHIND THE WALL IS HORIZONTAL.
2. GROUNDWATER LEVEL WAS ASSUMED TO BE A PERCHED IN THE EXISTING BORING.
3. THE GRANULAR BACKFILL IS FREE DRAINING AND WILL NOT BECOME SATURATED.
4. THE MINIMUM EMBEDMENT DEPTH IS 1.5 FEET.
5. A SURCHARGE LOAD OF 240 PSF IS INCLUDED TO MODEL PEDESTRIAN AND LIGHTWEIGHT CONSTRUCTION EQUIPMENT.
6. AN ADDITIONAL SURCHARGE LOAD EQUIVALENT TO THE WEIGHT OF THE SOIL BEHIND THE ABUTMENT IS ALSO INCLUDED IN THE DESIGN.
7. GLOBAL STABILITY FACTOR OF SAFETY WAS DETERMINED BY THE COMPUTER PROGRAM XSTABL
8. BEARING RESISTANCE IS DETERMINED BY TERZAGHI'S BEARING CAPACITY EQUATION.
9. SETTLEMENT OF THE FOUNDATION ON COHESIONLESS AND COHESIVE SOIL IS BASED UPON METHODS DESCRIBED IN THE FHWA SOILS AND FOUNDATIONS MANUAL.

WALL EXTERNAL STABILITY EVALUATION

DIMENSIONS				
WALL HEIGHT (FEET)[1]	12.0	15.2	14.1	8.9
EXPOSED WALL HEIGHT (FEET)	10.5	13.7	12.6	7.4
LENGTH OF REINFORCEMENT (FEET)[3]	8.4	15.8	9.9	8.0
LENGTH OF REIN./WALL HEIGHT	0.70	1.04	0.70	NA
WALL STATION	0+50	1+25	1+50	1+75
BORING USED	B-1	B-1 EXG	B-1 EXG	B-2
CAPACITY TO DEMAND RATIO (CDR)[4]				
SLIDING (CDR > 1.0)	1.3	1.0	1.3	1.5
ECCENTRICITY (CDR > 1.0)	1.2	1.1	1.2	1.9
GLOBAL STABILITY (CDR > 1.0)	NA	1.7	NA	NA
BEARING RESISTANCE (CDR > 1.0)	2.1	1.3	1.8	3.1
REQUIRED BEARING RESISTACE (PSF)	7,100	6,900	7,000	7,000

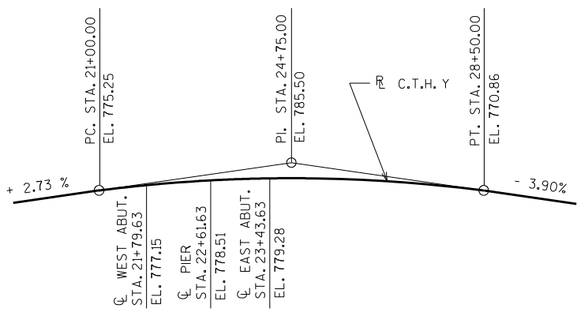
1. THE WALL HEIGHT INCLUDES AN EMBEDMENT OF 1.5 FEET.
2. THE WALL STABILITY EVALUATION INCLUDED A SURCHARGE LOAD THAT WAS EQUAL TO THE WEIGHT OF THE SOIL BEHIND THE ABUTMENT.
3. THE LENGTH OF REINFORCEMENT IS THE MINIMUM REQUIRED LENGTH.
4. CDR REQUIREMENTS AND LOAD AND RESISTANCE FACTORS ARE PRESENTED IN CHAPTER 14 OF THE BRIDGE MANUAL.
5. NA NOT APPLICABLE, GLOBAL SLOPE STABILITY WAS EVALUATED AT THE CRITICAL WALL LOCATION.

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
	517.1015.S	CONCRETE STAINING MULTI-COLOR R-70-44	SF	1590
	517.1050.S	ARCHITECTURAL SURFACE TREATMENT R-70-44	SF	1590
	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	230
	SPV.0090	FENCE CHAIN LINK POLYMER-COATED 6-FT	LF	146
	SPV.0105	RAILING PIPE GALVANIZED R-70-44	LS	1
	SPV.0165	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD	SF	2300
		NON-BID ITEMS		
		PRE-FORMED JOINT FILLER	SIZE	¾"
		POLYSTYRENE	SIZE	1"
		NON-BITUMINOUS JOINT SEALER	—	—
★		BACKFILL STRUCTURES	CY	1400

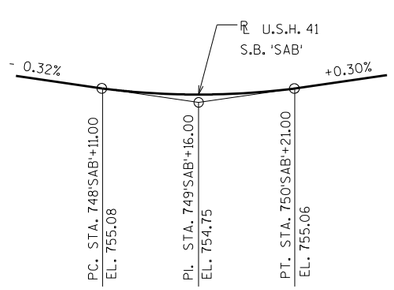
★ "BACKFILL STRUCTURE" QUANTITY IS FOR INFORMATIONAL PURPOSES ONLY. QUANTITY IS INCLUDED IN "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD."

750' VERTICAL CURVE



PROFILE GRADE LINE C.T.H. Y

210' VERTICAL CURVE



PROFILE GRADE LINE U.S.H. 41 S.B.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS OTHERWISE SHOWN OR NOTED.

ALL WALL STATIONING AND OFFSETS ARE GIVEN AT THE FRONT FACE OF THE WALL (R-70-44).

COORDINATE THE CONSTRUCTION OF RETAINING WALL R-70-44 WITH THE ABUTMENT OF BRIDGE B-70-284.

THE EXISTING STRUCTURE IS NOT SHOWN. THE REMOVAL OF THE STRUCTURE IS INCLUDED IN A LUMP SUM PAY ITEM FOR BRIDGE B-70-284.

ALL BAR STEEL REINFORCEMENT IN CAST-IN-PLACE CONCRETE IS TO BE EPOXY COATED.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF WALL TO THE TOP OF LEVELING PAD, SET A CONSTANT DEPTH OF 1'-6" BELOW FINISHED GRADE.

SEE SPECIAL PROVISIONS FOR AESTHETIC TREATMENT TO WALL.

GEOMETRY TABLE

WALL STATION	℄ U.S.H. 41 S.B. 'SAB' STATION	℄ OFFSET TO F.F. WALL	TOP OF WALL ELEV.	FINISH GRADE ELEV. @ F.F. WALL
0+00.00	747+75.00	41.81'LT	754.33	754.33
0+25.00	748+00.00	41.77'LT	759.51	754.25
0+50.00	748+25.00	41.73'LT	764.68	754.18
0+65.00	748+40.00	41.71'LT	767.79	754.14
0+75.00	748+50.00	41.69'LT	767.79	754.12
1+00.00	748+75.00	41.65'LT	767.79	754.08
1+25.00	749+00.00	41.61'LT	767.79	754.05
1+45.00	749+20.00	41.58'LT	767.79	754.11
1+50.00	749+25.00	41.57'LT	766.77	754.14
1+75.00	749+50.00	41.53'LT	761.68	754.29
2+00.00	749+75.00	41.49'LT	756.58	754.47
2+10.00	749+85.00	41.47'LT	754.55	754.55

NOTE: ALL WALL STATIONING & OFFSETS ARE GIVEN AT THE FRONT FACE OF THE WALL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-44

DRAWN BY JDL | PLANS CK'D. CAD

NOTES & QUANTITIES

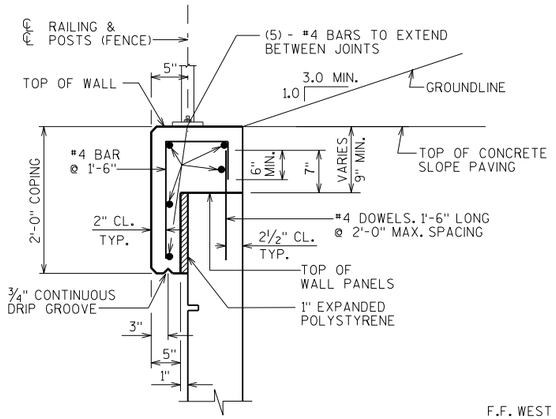
SHEET 2

227

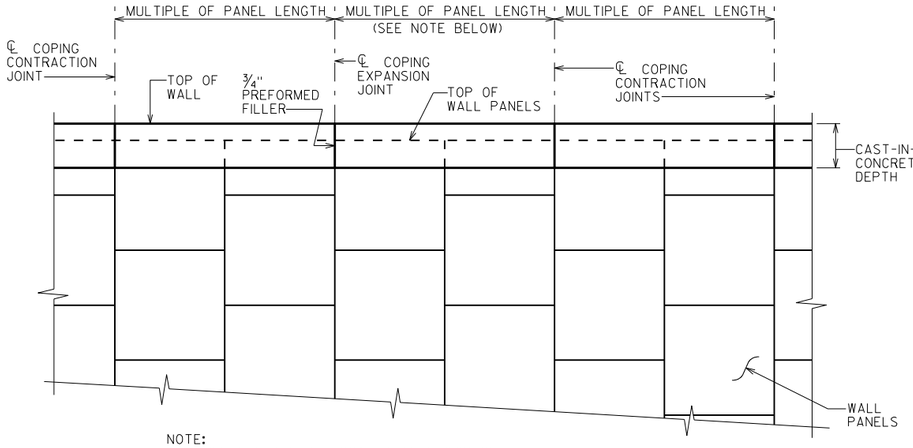
SCALE = 6

STATE PROJECT NUMBER

1120-09-76



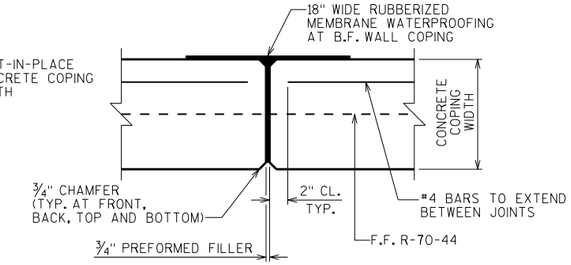
CAST-IN-PLACE CONCRETE COPING DETAIL



NOTE:
ALL JOINTS SHALL BE LOCATED AS SHOWN ON WALL ELEVATIONS AND MUST COINCIDE WITH PANEL JOINTS ON FRONT FACE.

CAST-IN-PLACE COPING PARTIAL ELEVATION

LOOKING AT F.F. WALL



COPING EXPANSION JOINT

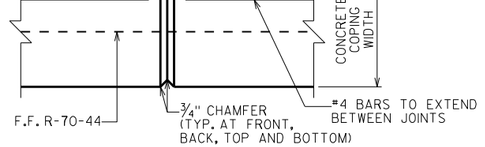
DO NOT RUN BAR STEEL THRU JOINT

MAXIMUM SPACING OF JOINTS SHALL BE 50'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH A NON-STAINING LIGHT TAN NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)

RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF WALL PANELS.

ALL EXPANSION JOINTS TO EXTEND THE FULL DEPTH OF COPING.

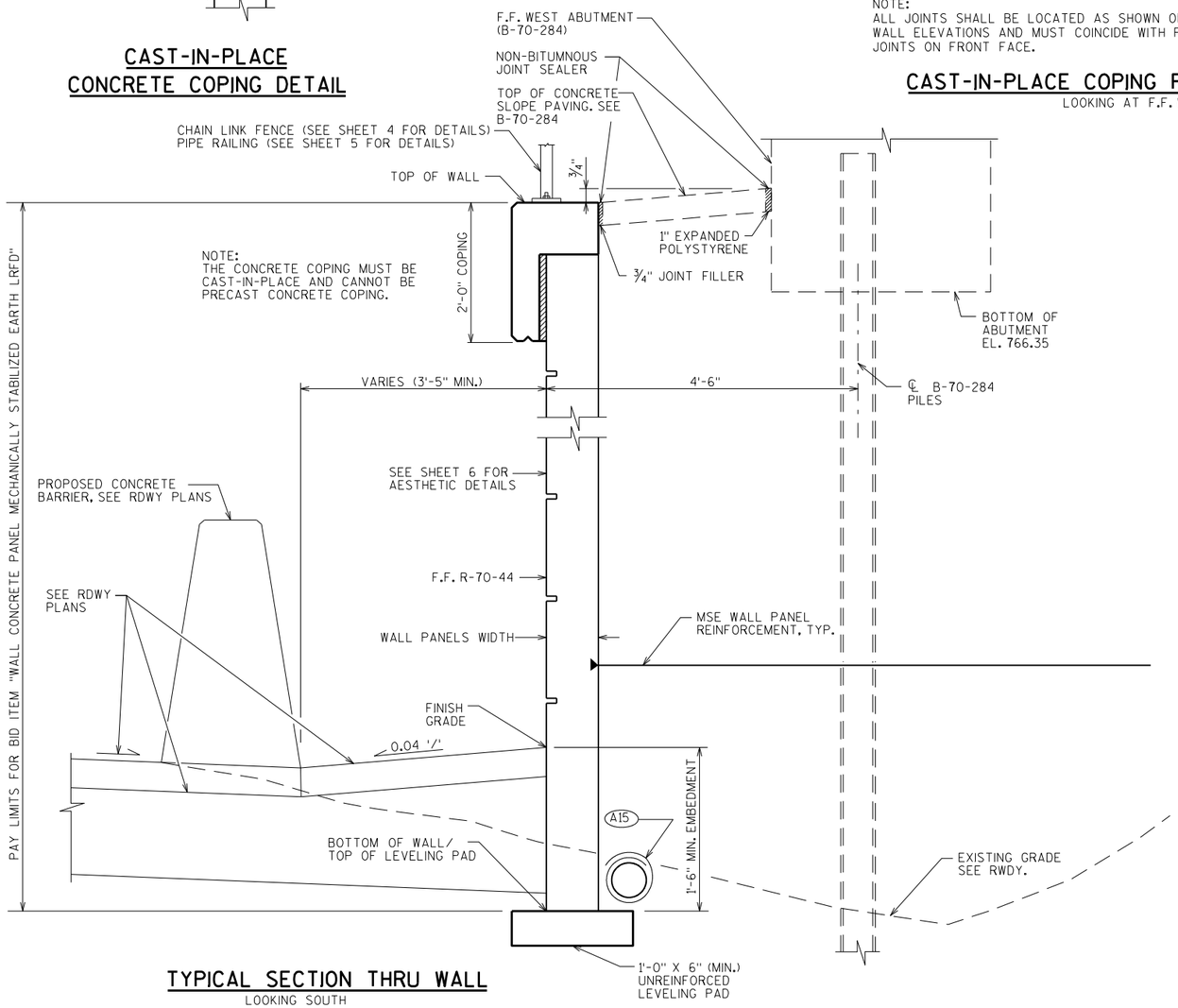


COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT

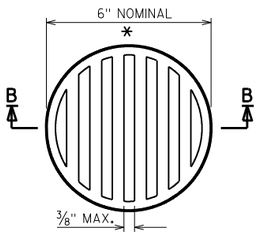
MAXIMUM SPACING OF JOINTS SHALL BE 12'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

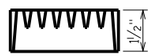
ALL CONTRACTION JOINTS TO EXTEND THE FULL DEPTH OF COPING



TYPICAL SECTION THRU WALL

LOOKING SOUTH





SECTION B-B

RODENT SCREEN DETAIL

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-44

DRAWN BY JDL | PLANS CK'D. CAD

WALL DETAILS

SHEET 3

228

SCALE = 6

8

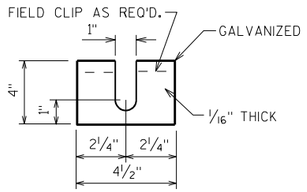
8

STATE PROJECT NUMBER

1120-09-76

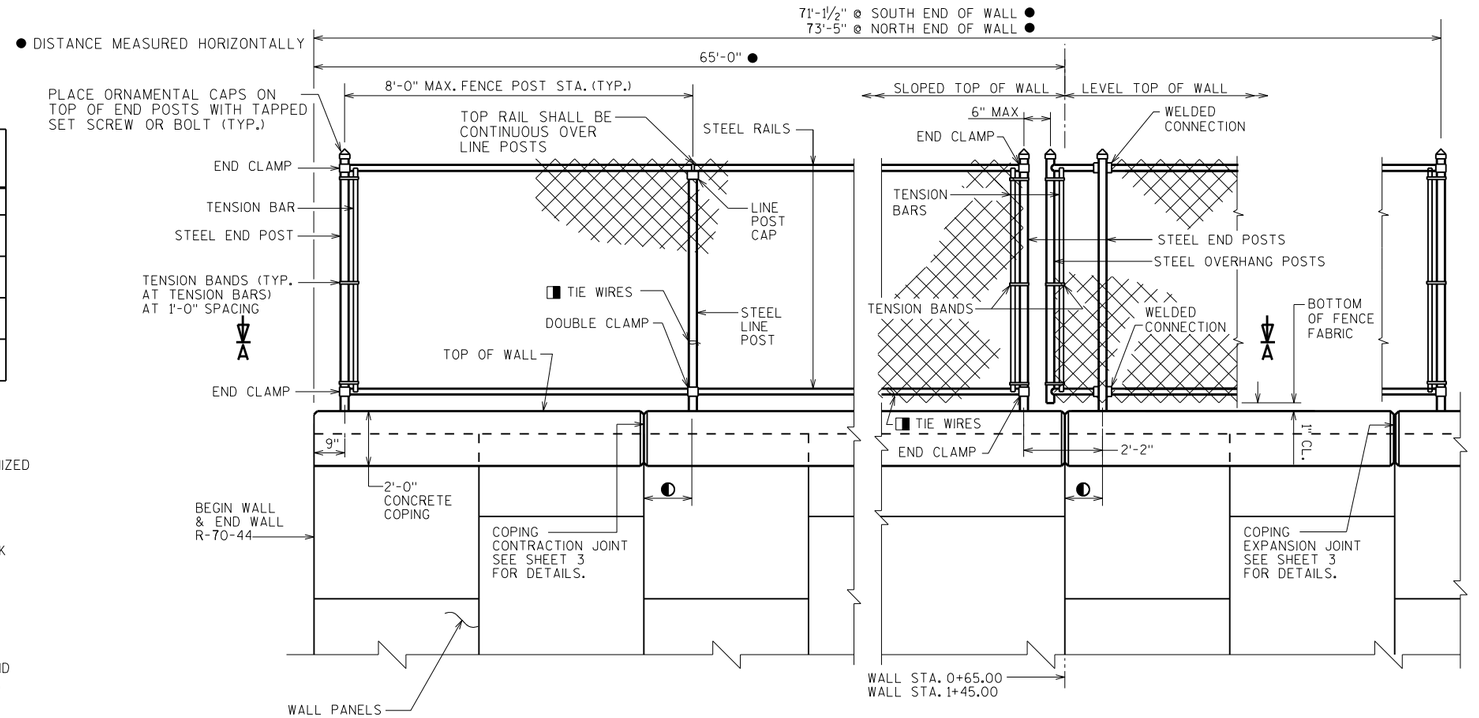
FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12



POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.



PARTIAL ELEVATION OF WALL COPING & FENCE

LOOKING WEST AT F.F. WALL

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF FENCE POSTS

NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH A COLORED POLYMER-COATING ON THE OUTSIDE.

FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626. SEE THE "BRIDGE SPECIAL PROVISIONS" FOR ADDITIONAL DETAILS.

THE COLOR OF POLYMER-COATING FOR THIS STRUCTURE SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE BID ITEM SHALL BE "FENCE CHAIN LINK POLYMER-COATED 6-FT.", LF.

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

◪ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING TAN NON-BITUMINOUS JOINT SEALER.

✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

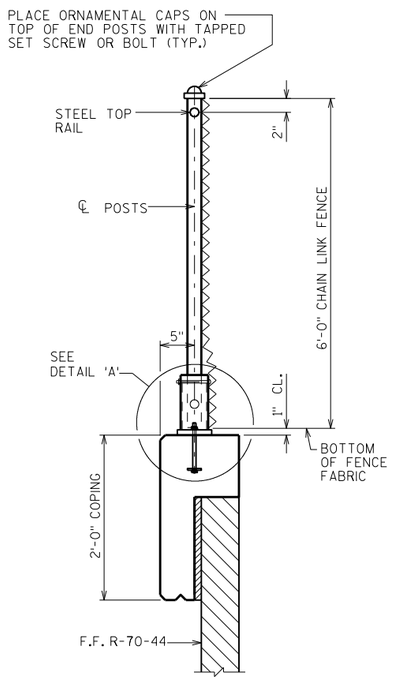
◭ 1/2" DIA. X 6 7/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE "S", 1/2" DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR 1/2" DIA. BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE "S" ANCHORS ARE USED. SEE ☆

☆ 1/2" DIA. CONCRETE MASONRY ANCHOR, TYPE "S", 6" MIN. EMBEDMENT (EPOXY ANCHORED) INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS. ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.

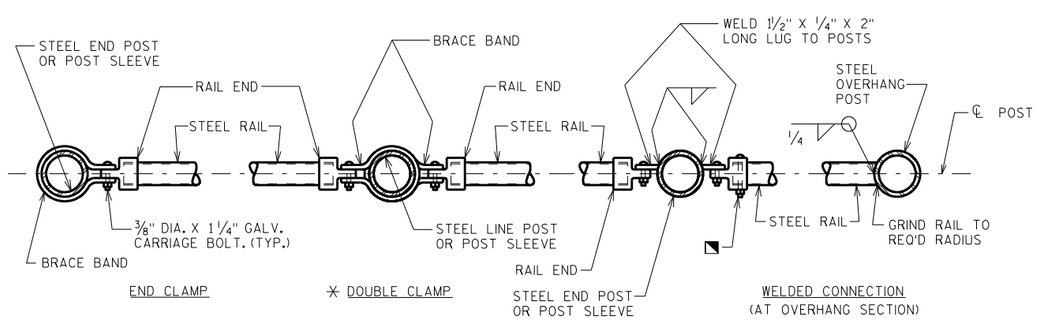
◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◹ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.

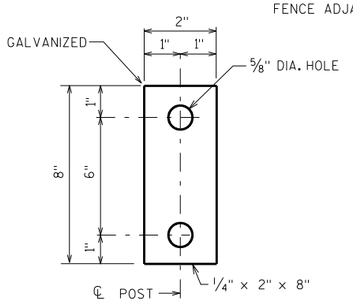


SECTION THRU FENCE

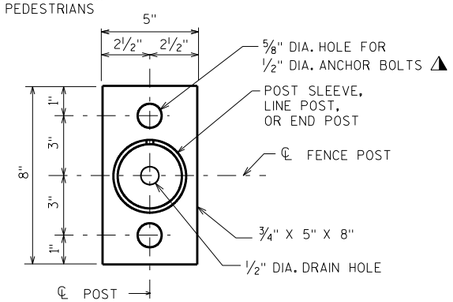


SECTION A-A

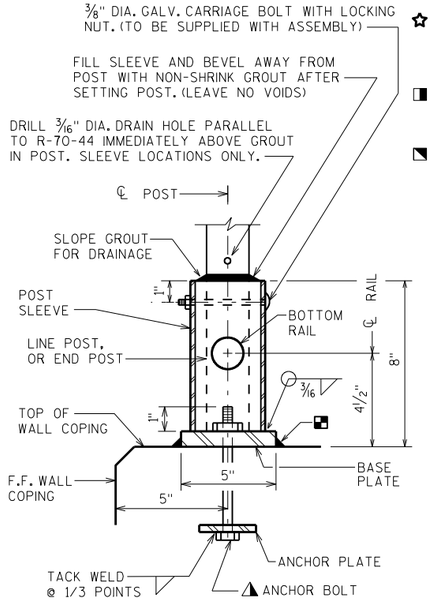
NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS



ANCHOR PLATE



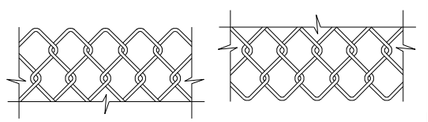
BASE PLATE



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.



FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-44

DRAWN BY JDL | PLANS CK'D. CAD

CHAIN LINK FENCE DETAILS

SHEET 4

229

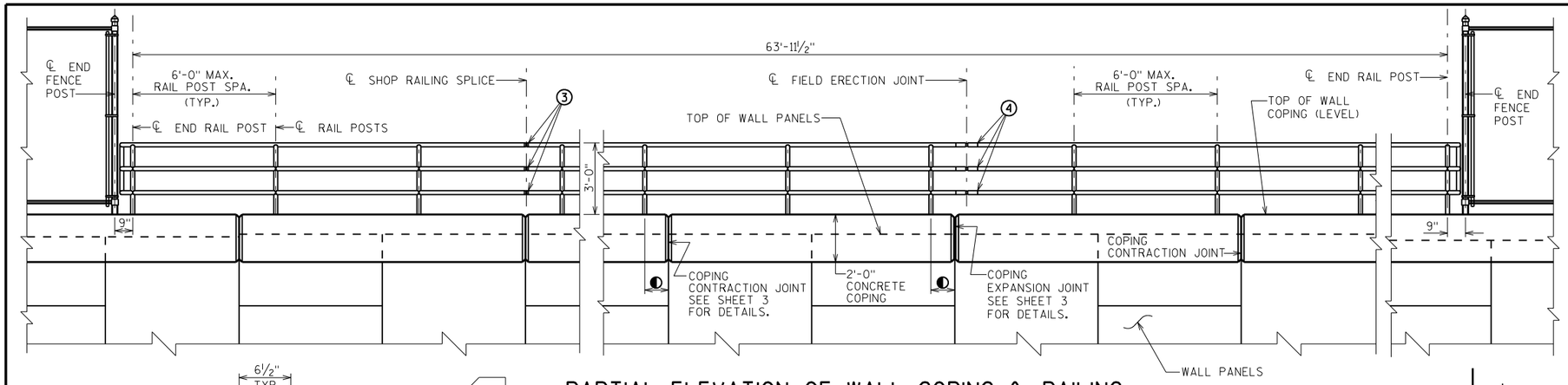
SCALE = 5.33333

8

8

STATE PROJECT NUMBER

1120-09-76



PARTIAL ELEVATION OF WALL COPING & RAILING

LOOKING WEST AT F.F. WALL

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF RAIL POSTS

LEGEND

① 2"Φ NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. POSTS ARE TO BE SET VERTICAL.

② 2"Φ NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1

③ 1½"Φ PIPE SLEEVE FOR NO. 2. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 2/16".

④ 1½"Φ PIPE SLEEVE x 1'-10" LONG FOR NO. 2. PROVIDE ½"Φ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE ⅜"Φ x ½" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

⑤ PLATE ¾" x 5" x 8", WITH ⅝"Φ HOLE FOR ANCHOR BOLTS NO. 6. WELD TO NO. 1. OR PIPE SLEEVE AS SHOWN.

⑥ ½" DIA. X 6⅜" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE "S", ½" DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR ½" DIA. BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE "S" ANCHORS ARE USED. SEE ☆

☆ ½" DIA. CONCRETE MASONRY ANCHOR, TYPE "S", 6" MIN. EMBEDMENT (EPOXY ANCHORED) INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS. ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.

⑦ ¼" x 2" x 8" FLAT BAR, WITH ⅝"Φ HOLES FOR ANCHOR BOLTS NO. 6.

NOTES

BID ITEM SHALL BE "RAILING PIPE GALVANIZED R-70-44", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 7) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

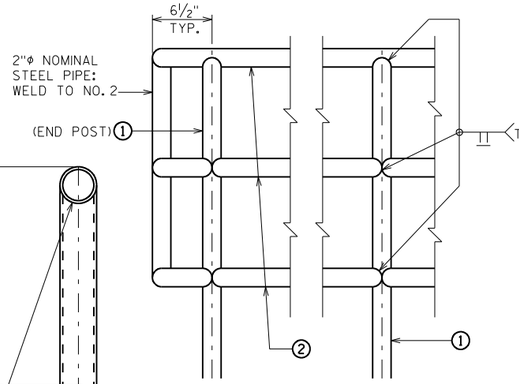
ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF POSTS.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

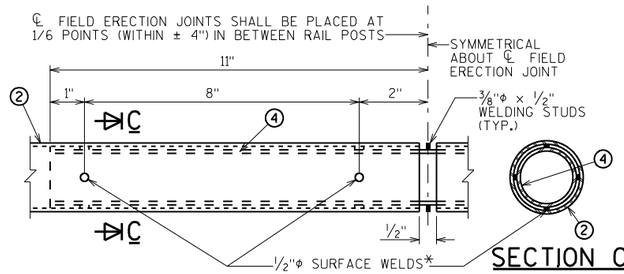
◪ CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS IN POST SHIMS AND BASE PLATES WITH NON-STAINING, TAN, NON-BITUMINOUS JOINT SEALER.

ALL RAILINGS, POSTS, AND ASSOCIATED HARDWARE SHALL BE PAINTED BLACK (FEDERAL COLOR NO. 27038).



PART ELEVATION OF RAILING

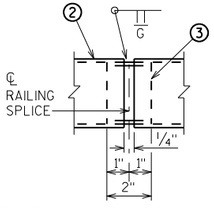
SECTION THRU RAILING



◪ FIELD ERECTION JOINT DETAIL

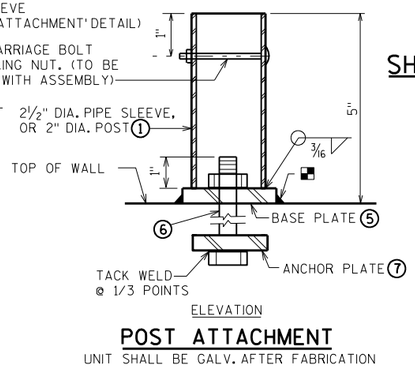
*MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

SECTION C-C



SHOP RAILING SPLICE DETAIL

(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)

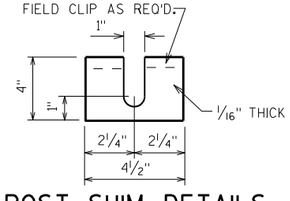


ELEVATION

POST ATTACHMENT

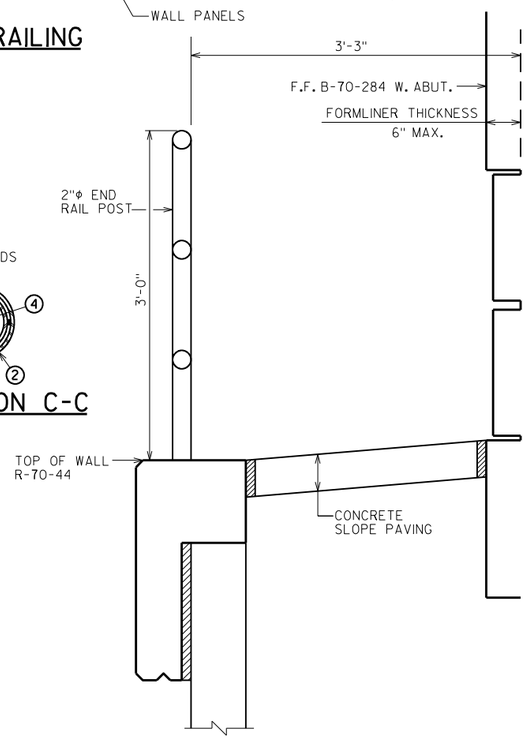
UNIT SHALL BE GALV. AFTER FABRICATION

NOTE:
IN LIEU OF USING THE 2½"Φ SLEEVE, THE 2"Φ RAIL POST MAY BE WELDED TO THE BASE PLATE.

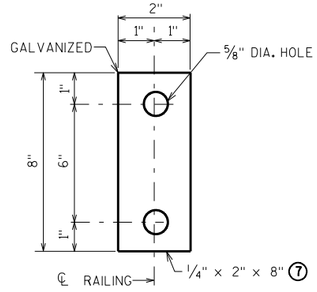


POST SHIM DETAILS

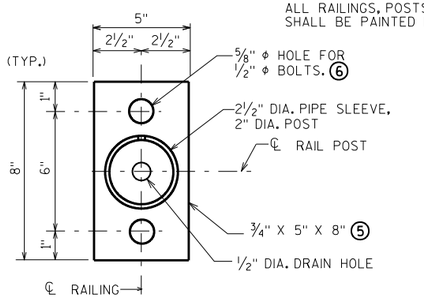
SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST.



SECTION THRU WALL AT ABUT.



ANCHOR PLATE



BASE PLATE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-44

DRAWN BY JDL | PLANS CK'D. CAD

PIPE RAILING DETAILS

SHEET 5

230

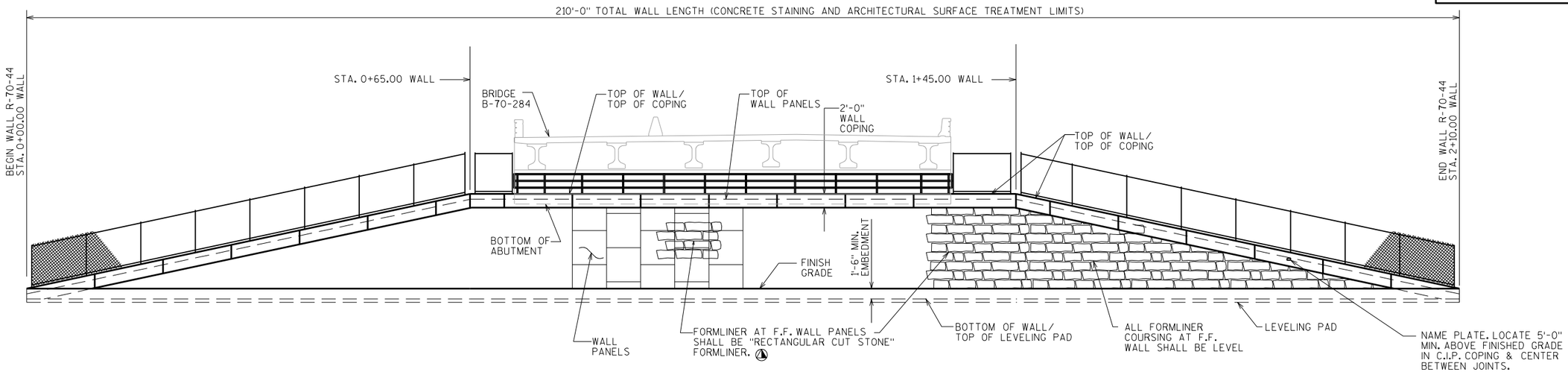
SCALE =

8

8

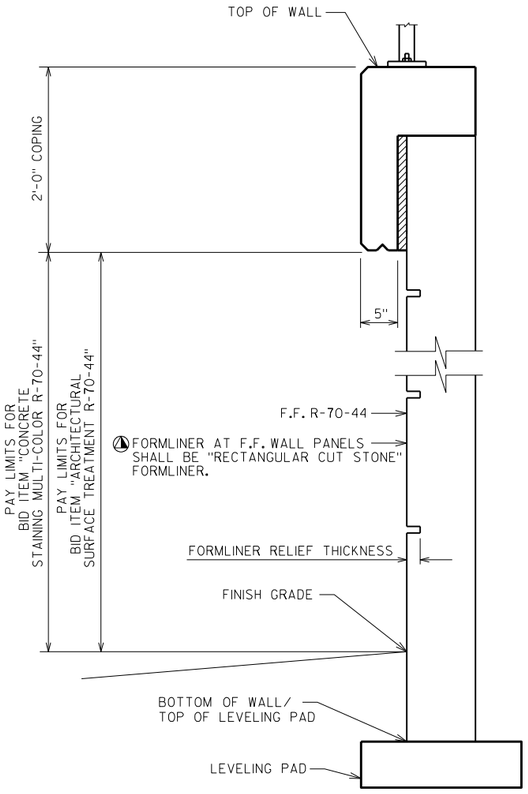
STATE PROJECT NUMBER

1120-09-76



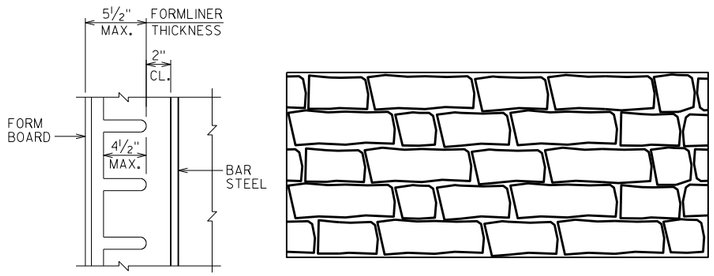
ELEVATION LOOKING WEST AT F.F. WALL

(SHOWING AESTHETIC DETAILS)



SECTION THRU WALL

(SHOWING AESTHETIC DETAILS)



FORMLINER DETAILS

NOTES

FORMLINER COURSING SHALL BE LEVEL.

ALL FORMLINER WORK SHALL BE COVERED UNDER THE BID ITEM "ARCHITECTURAL SURFACE TREATMENT".

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

WALL COPING SURFACES SHALL BE PLAIN CONCRETE.

STAINING OF NON-ARCHITECTURAL SURFACE TREATMENT AREAS SHALL BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING R-70-44".

IF TOUCH UP PAINTING IS REQUIRED, IT SHALL BE DONE TO THE SATISFACTION OF THE FIELD ENGINEER AT NO ADDITIONAL COST.

1 ALL EXPOSED ARCHITECTURAL SURFACE TREATMENT FORMLINER AREAS SHALL BE STAINED TO ACHIEVE A TEXTURED LOOK AS DIRECTED BY THE DEPARTMENT BY APPLYING A MULTI-COLOR STAIN USING FEDERAL COLOR NO. 37780 AS THE BASE COLOR AND FEDERAL COLOR NO. 30318, OR SIMILAR, AS THE ACCENT COLOR. TO BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING MULTI-COLOR R-70-44".

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-44

DRAWN BY JDL | PLANS CK'D. CAD

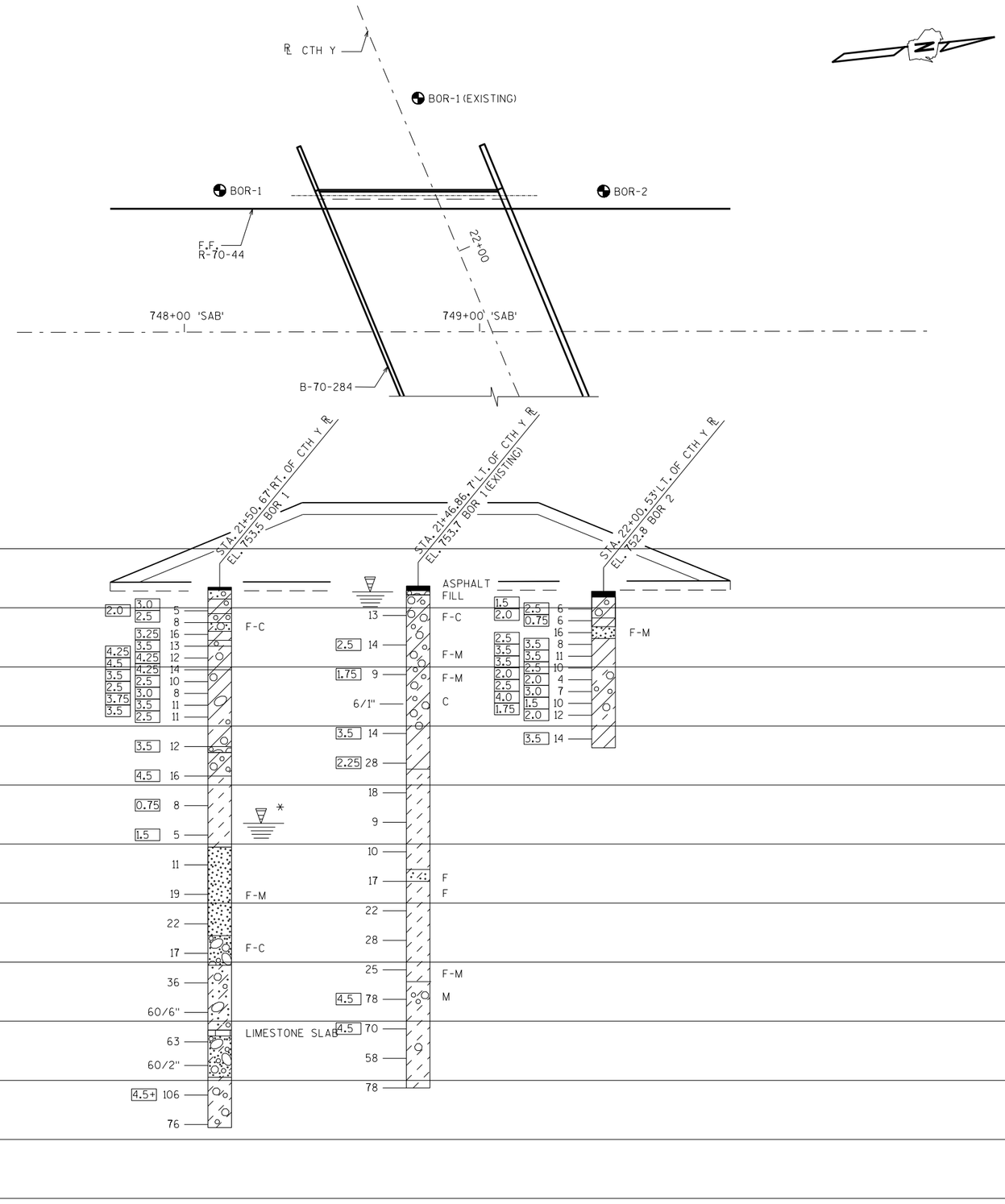
AESTHETIC DETAILS

SHEET 6

231

SCALE =

CTH Y OVER USH 41
STH 26 - BREEZEWOOD LANE
STH 45 - BREEZEWOOD LANE



STATE PROJECT NUMBER

1120-09-76

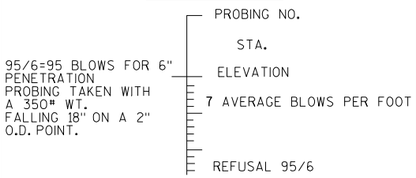
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

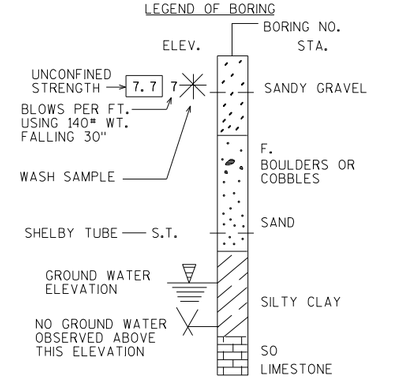
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-44

DRAWN BY JDL | PLANS CK'D. CAD

SUBSURFACE EXPLORATION

SHEET 7

232

8

8

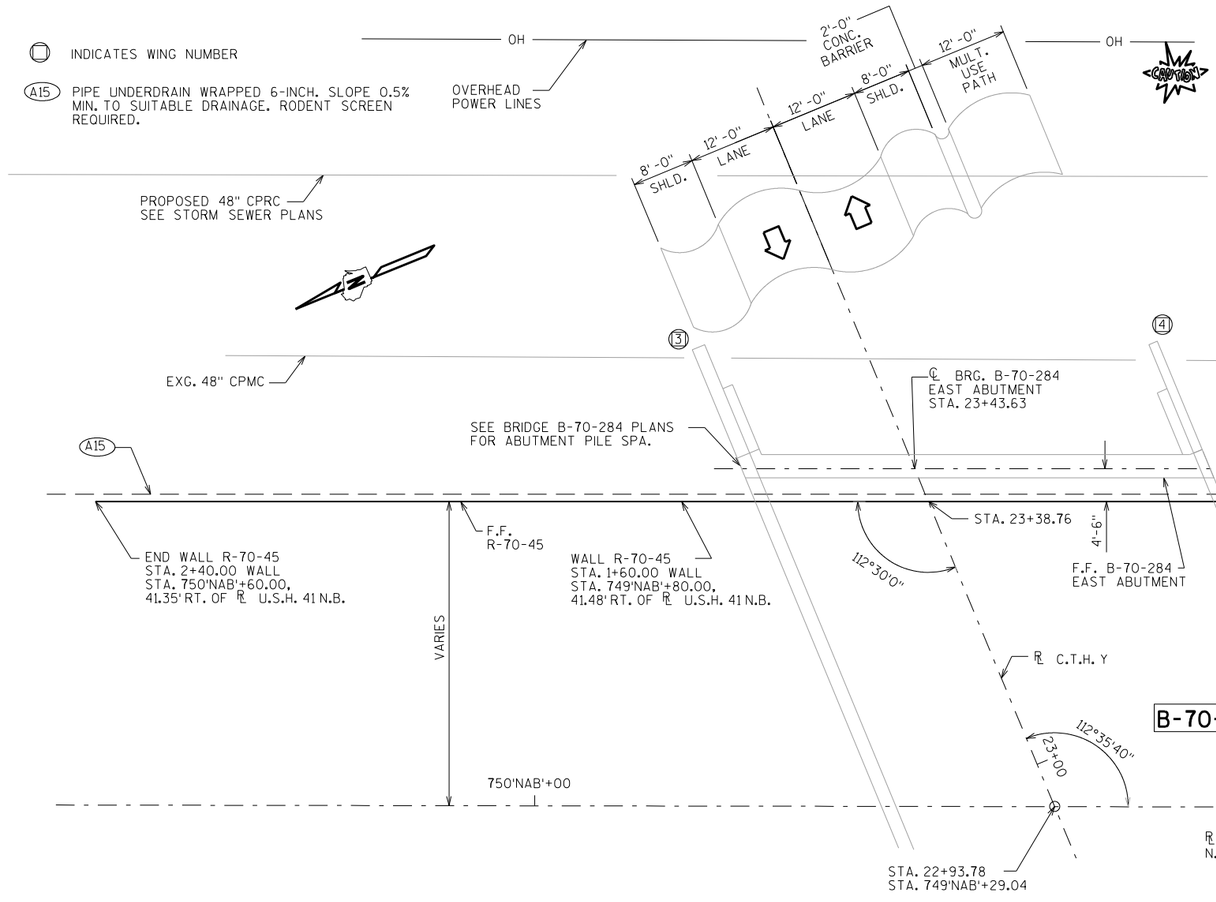
SCALE =

STATE PROJECT NUMBER

1120-09-76

INDICATES WING NUMBER

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.



PLAN
M.S.E. RETAINING WALL

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD."

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWING ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL SHALL BE DESIGNED USING THE ELEVATIONS GIVEN ON SHEET 2.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE LOAD OF 240 PSF.

DESIGN THE MSE WALL IN FRONT OF THE ABUTMENT BODY TO RESIST THE FORCE FROM ALL HORIZONTAL EARTH PRESSURE ACTING ON THE BACK OF THE ABUTMENT BELOW THE BEAM SEATS AND A LIVE LOAD SURCHARGE OF 240 PSF.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

ALLOWABLE WALL SYSTEMS

WALL CONCRETE PANEL M.S.E. LRFD

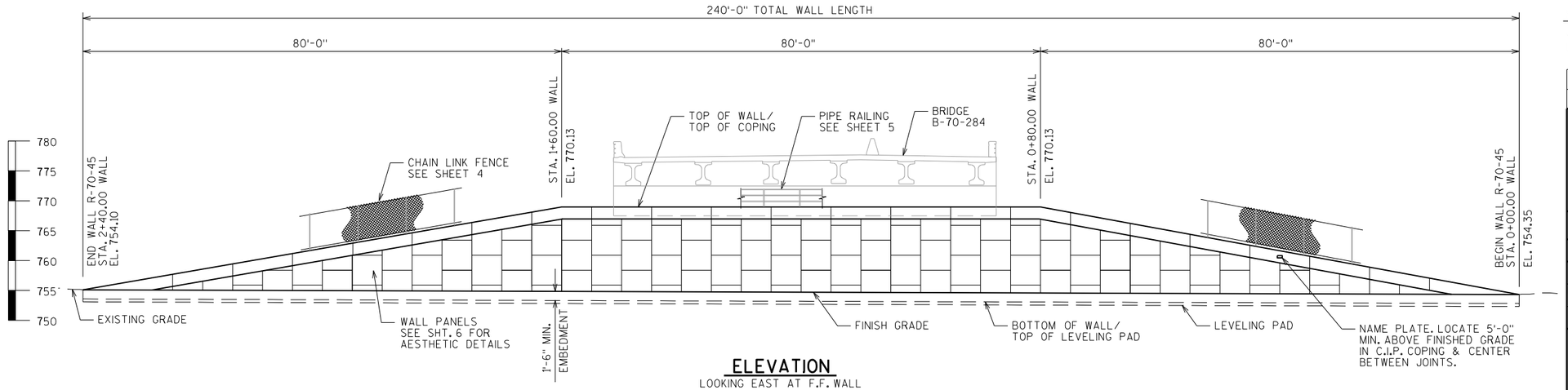
ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY CAST-IN-PLACE COPING —— f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 —— fy = 60,000 P.S.I.

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. NOTES & QUANTITIES
3. WALL DETAILS
4. CHAIN LINK FENCE DETAILS
5. PIPE RAILING DETAILS
6. AESTHETIC DETAILS
7. SUBSURFACE EXPLORATION



ELEVATION
LOOKING EAST AT F.F. WALL

STRUCTURE DESIGN CONTACT:

JAMES LUEBKE (608) 266-5098

LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS — CHIEF STRUCTURES DESIGN ENGINEER — 4/17/13 DATE

STRUCTURE R-70-45

RETAINING WALL FOR C.T.H. Y OVER U.S.H. 41 N.B.

COUNTY	TOWN/~~CITY/VILLAGE~~
WINNEBAGO	OSHKOSH

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
JDL	CAD	JDL	CAD

GENERAL PLAN & ELEVATION

SHEET 1 OF 7

233

I.D. 1120-09-00C

DATE: MAY '12

SCALE = 15

8

8

STATE PROJECT NUMBER

1120-09-76

SOIL PARAMETERS

SOIL DESCRIPTION	FRICTION ANGLE (DEGREES)	COHESION (PSF)	UNIT WEIGHT (PCF)
GRANULAR BACKFILL WITHIN THE WALL IN THE REINFORING ZONE	30	0	120
FILL BEHIND AND BELOW THE REINFORCING ZONE	32	0	120
B-4, 23+15			
SILT, BROWN, SOME SAND AND GRAVEL (ELEVATION 752.7 FT - 749.6 FT)	30	0	120
SILT, DARK BROWN, SOME CLAY (ELEVATION 749.6 FT - 747.6 FT)	0	2,000	120
CLAY, GRAY TO BROWN, LITTLE SILT, TRACE GRAVEL (ELEVATION 747.6 FT - 727.1 FT)	0	2,500	125
B-3 EXG, 23+96			
GRANULAR FILL (ELEVATION 752.6 FT - 751.8 FT)	30	0	120
CLAY, TRACE SILT, SOME GRAVEL (ELEVATION 751.8 FT - 715.8 FT)	0	2,500	125
SILT, SOME GRAVEL (ELEVATION 715.8 FT - 713.8 FT)	0	2,000	120
SILT, SOME SAND (ELEVATION 713.8 FT - 700.8 FT)	0	1,500	115
SAND, LITTLE SILT (ELEVATION 700.8 FT - 681.8 FT)	30	0	120
SILT, SOME GRAVEL (ELEVATION 681.8 FT - 673.8 FT)	34	0	135
B-3, 23+75			
SAND, BROWN, FINE TO MEDIUM, LITTLE SILT (ELEVATION 752.6 FT - 748.2 FT)	30	0	120
CLAY, GRAY TO BROWN, LITTLE SILT, TRACE GRAVEL (ELEVATION 748.2 FT - 727.7 FT)	0	2,000	120

1. THE MSE WALL WITH PRECAST CONCRETE PANELS WILL ACHIEVE THE EXTERNAL STABILITY FACTORS OF SAFETY IF THE SLIDING AND BEARING RESISTANCE REQUIREMENTS ARE MET. THE WALL EXTERNAL STABILITY EVALUATION TABLE PRESENTS THE MINIMUM LENGTH OF THE REINFORCEMENT. IN THE AREA OF THE WALL THAT SUPPORTS THE ABUTMENT, THE RATIO OF LENGTH OF REINFORCEMENT TO TOTAL HEIGHT OF WALL SHOULD BE INCREASED FROM 0.70 TO 0.94.
2. THE CONTRACTOR SHOULD REMOVE 12-INCHES OF SILT AND CLAY BELOW THE REINFORCING ZONE AND REPLACE WITH GRANULAR FILL IN THE AREAS THAT THE SILT AND CLAY ARE ENCOUNTERED.
3. THE BACKFILL BEHIND THE MSE WALL WITH PRECAST CONCRETE FACING SHOULD BE GRANULAR AND FREE DRAINING.
4. THE NORTHEAST REGION SOILS ENGINEER SHOULD REVIEW THE FILL SUBSURFACE CONDITIONS PRIOR TO CONSTRUCTION OF THE WALL.

NOTES:

THE TYPICAL WALL SECTION USED IN THE ANALYSES HAD AN EXPOSED HEIGHT THAT VARIES FROM 7.1 FEET TO 16.1 FEET. THE FOLLOWING ASSUMPTIONS ARE ALSO INCLUDED IN THE ANALYSES:

1. THE SLOPE IN FRONT AND BEHIND THE WALL IS HORIZONTAL.
2. GROUNDWATER LEVEL WAS ASSUMED TO BE A PERCHED IN THE NEW BORINGS.
3. THE GRANULAR BACKFILL IS FREE DRAINING AND WILL NOT BECOME SATURATED.
4. THE MINIMUM EMBEDMENT DEPTH IS 1.5 FEET.
5. A SURCHARGE LOAD OF 240 PSF IS INCLUDED TO MODEL PEDESTRIAN AND LIGHTWEIGHT CONSTRUCTION EQUIPMENT.
6. AN ADDITIONAL SURCHARGE LOAD EQUIVALENT TO THE WEIGHT OF THE SOIL BEHIND THE ABUTMENT IS ALSO INCLUDED IN THE DESIGN.
7. GLOBAL STABILITY FACTOR OF SAFETY WAS DETERMINED BY THE COMPUTER PROGRAM XSTABL
8. BEARING CAPACITY IS DETERMINED BY TERZAGHI$^{3}/_{10}$S BEARING CAPACITY EQUATION.
9. SETTLEMENT OF THE FOUNDATION ON COHESIONLESS AND COHESIVE SOIL IS BASED UPON METHODS DESCRIBED IN THE FHWA SOILS AND FOUNDATIONS MANUAL.

WALL EXTERNAL STABILITY EVALUATION

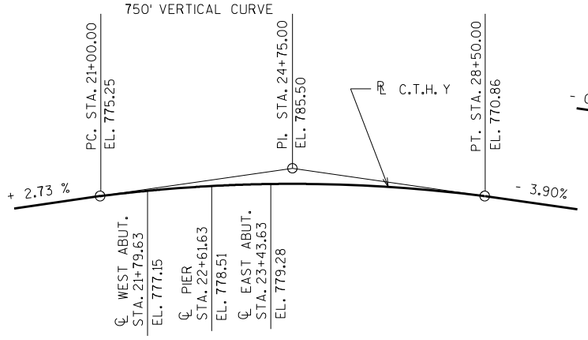
DIMENSIONS				
WALL HEIGHT (FEET)[1]	11.5	17.6	13.6	8.6
EXPOSED WALL HEIGHT (FEET)	10.0	16.1	12.1	7.1
LENGTH OF REINFORCEMENT (FEET)[3]	8.1	16.5	9.5	8.0
LENGTH OF REIN./WALL HEIGHT	0.70	0.94	0.70	NA
WALL STATION	0+50	1+55	1+80	2+05
BORING USED	B-4	B-3 EXG	B-3 EXG	B-3
CAPACITY TO DEMAND RATIO (CDR)[4]				
SLIDING (CDR > 1.0)	1.3	1.0	1.3	1.5
ECCENTRICITY (CDR > 1.0)	1.0	1.1	1.2	2.0
GLOBAL STABILITY (CDR > 1.0)	NA	1.4	NA	NA
BEARING RESISTANCE (CDR > 1.0)	1.8	1.2	1.7	3.1
REQUIRED BEARING RESISTACE (PSF)	5,900	7,000	6,500	6,600

1. THE WALL HEIGHT INCLUDES AN EMBEDMENT OF 1.5 FEET.
2. THE WALL STABILITY EVALUATION INCLUDED A SURCHARGE LOAD THAT WAS EQUAL TO THE WEIGHT OF THE SOIL BEHIND THE ABUTMENT.
3. THE LENGTH OF REINFORCEMENT IS THE MINIMUM REQUIRED LENGTH.
4. CDR REQUIREMENTS AND LOAD AND RESISTANCE FACTORS ARE PRESENTED IN CHAPTER 14 OF THE BRIDGE MANUAL.
5. NA NOT APPLICABLE, GLOBAL SLOPE STABILITY WAS EVALUATED AT THE CRITICAL WALL LOCATION.

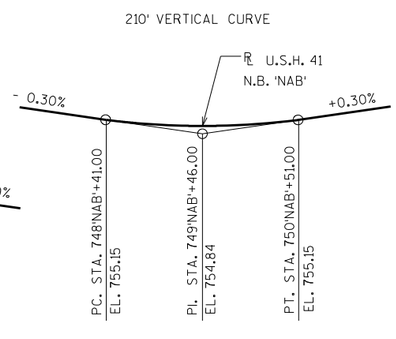
TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
	517.1015.S	CONCRETE STAINING MULTI-COLOR R-70-45	SF	2110
	517.1050.S	ARCHITECTURAL SURFACE TREATMENT R-70-45	SF	2110
	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	260
	SPV.0090	FENCE CHAIN LINK POLYMER-COATED 6-FT	LF	176
	SPV.0105	RAILING PIPE GALVANIZED R-70-45	LS	1
	SPV.0165	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD	SF	2950
		NON-BID ITEMS		
★		BACKFILL STRUCTURES	CY	1800
		POLYSTYRENE	SIZE	1"
		NON-BITUMINOUS JOINT SEALER	——	——
		PRE-FORMED JOINT FILLER	SIZE	¾"

★ "BACKFILL STRUCTURE" QUANTITY IS FOR INFORMATIONAL PURPOSES ONLY. QUANTITY IS INCLUDED IN "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD."



PROFILE GRADE LINE C.T.H. Y



PROFILE GRADE LINE U.S.H. 41 N.B.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS OTHERWISE SHOWN OR NOTED.

ALL WALL STATIONING AND OFFSETS ARE GIVEN AT THE FRONT FACE OF THE WALL (R-70-45).

COORDINATE THE CONSTRUCTION OF RETAINING WALL R-70-45 WITH THE CONSTRUCTION OF THE EAST ABUTMENT OF BRIDGE B-70-284.

THE EXISTING STRUCTURE IS NOT SHOWN. THE REMOVAL OF THE STRUCTURE IS INCLUDED IN A LUMP SUM PAY ITEM FOR BRIDGE B-70-284.

ALL BAR STEEL REINFORCEMENT IN CAST-IN-PLACE CONCRETE IS TO BE EPOXY COATED.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF WALL TO THE TOP OF LEVELING PAD, SET AT CONSTANT DEPTH OF 1'-6" BELOW FINISHED GRADE.

SEE SPECIAL PROVISIONS FOR AESTHETIC TREATMENT TO WALL.

GEOMETRY TABLE

WALL STATION	℄ U.S.H. 41 N.B. 'NAB' STATION	℄ OFFSET TO F.F. WALL	TOP OF WALL ELEV.	FINISH GRADE ELEV. @ F.F. WALL
0+00.00	748+20.00	41.74' RT	754.35	754.35
0+25.00	748+45.00	41.70' RT	759.28	754.27
0+50.00	748+70.00	41.66' RT	764.21	754.21
0+80.00	749+00.00	41.61' RT	770.13	754.16
1+05.00	749+25.00	41.57' RT	770.13	754.13
1+30.00	749+50.00	41.53' RT	770.13	754.09
1+55.00	749+75.00	41.49' RT	770.13	754.06
1+60.00	749+80.00	41.48' RT	770.13	754.06
1+80.00	750+00.00	41.45' RT	766.12	754.05
2+05.00	750+25.00	41.41' RT	761.11	754.06
2+30.00	750+50.00	41.37' RT	756.11	754.09
2+40.00	750+60.00	41.35' RT	754.10	754.10

NOTE: ALL WALL STATIONING & OFFSETS ARE GIVEN AT THE FRONT FACE OF THE WALL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-45

DRAWN BY JDL | PLANS CK'D. CAD

NOTES & QUANTITIES

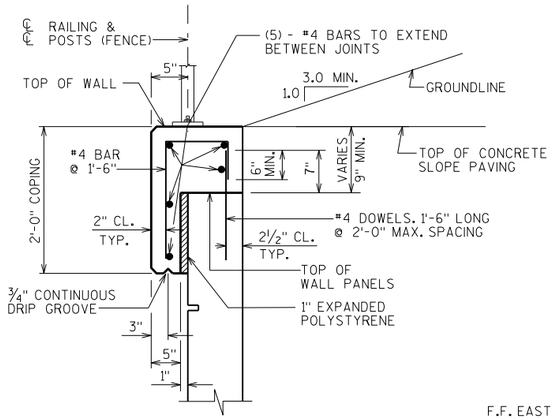
SHEET 2

234

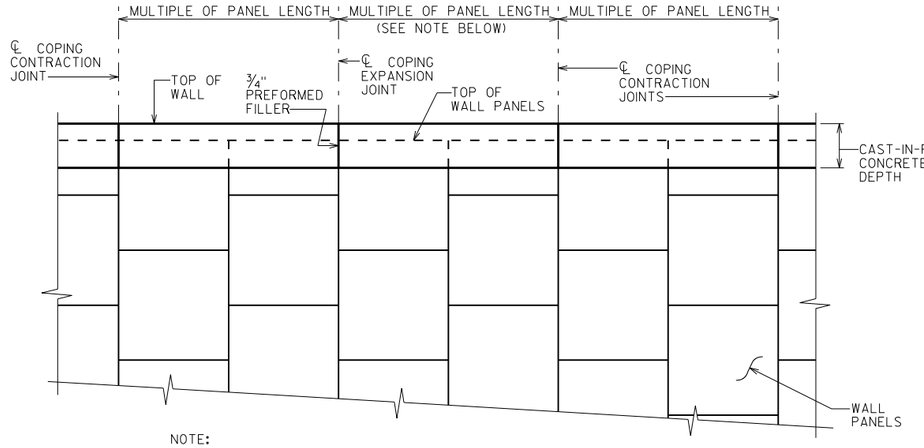
SCALE = 6

STATE PROJECT NUMBER

1120-09-76



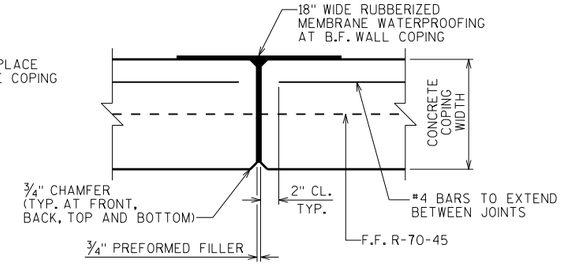
CAST-IN-PLACE CONCRETE COPING DETAIL



NOTE:
ALL JOINTS SHALL BE LOCATED AS SHOWN ON WALL ELEVATIONS AND MUST COINCIDE WITH PANEL JOINTS ON FRONT FACE.

CAST-IN-PLACE COPING PARTIAL ELEVATION

LOOKING AT F.F. WALL



COPING EXPANSION JOINT

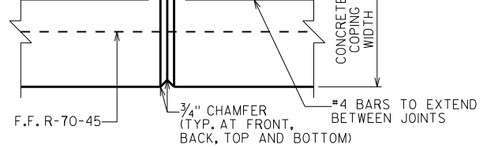
DO NOT RUN BAR STEEL THRU JOINT

MAXIMUM SPACING OF JOINTS SHALL BE 50'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

SEAL ALL EXPOSED HORIZ. AND VERT. SURFACES OF FILLER WITH A NON-STAINING LIGHT TAN NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)

RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF WALL PANELS.

ALL EXPANSION JOINTS TO EXTEND THE FULL DEPTH OF COPING.

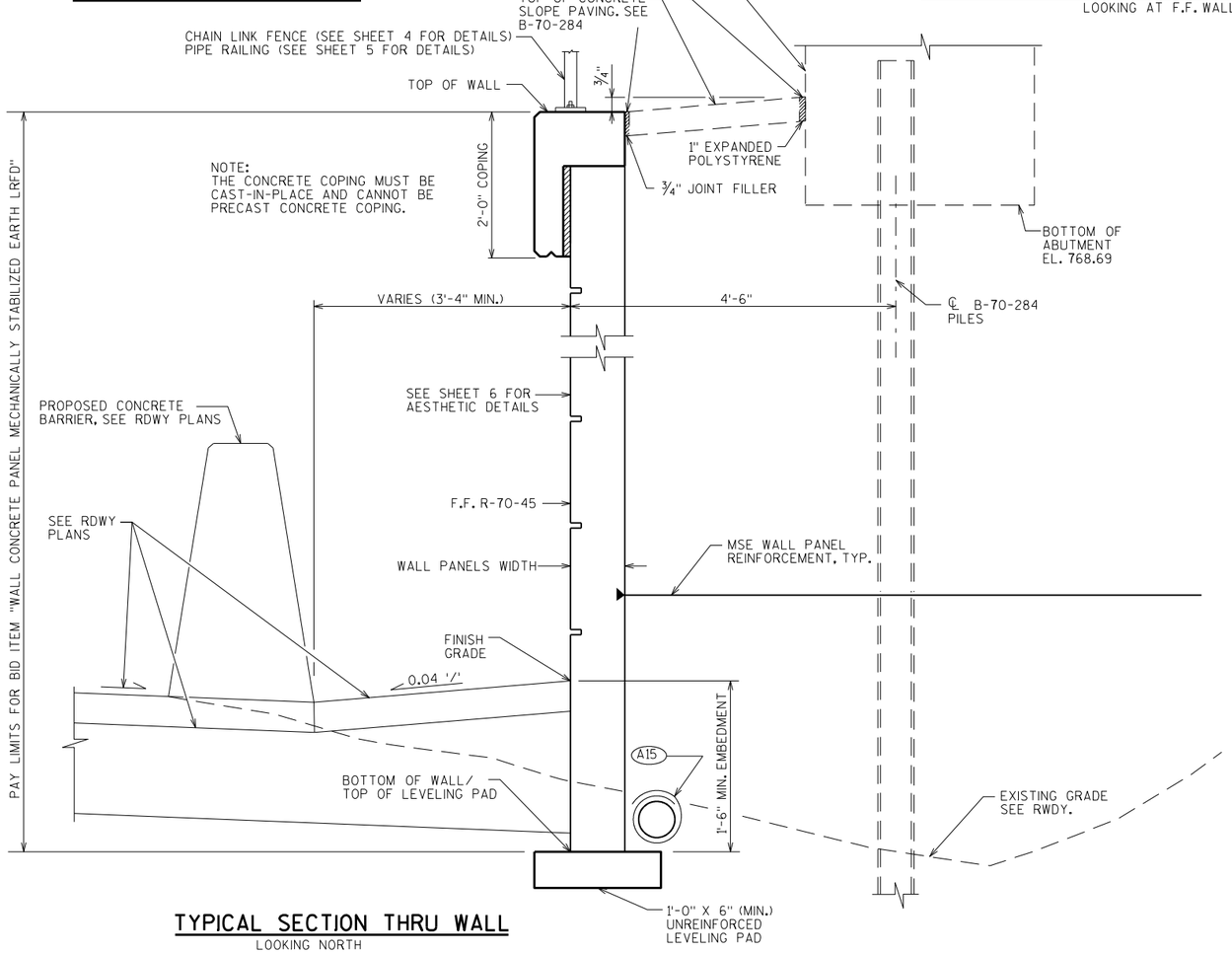


COPING CONTRACTION JOINT

DO NOT RUN BAR STEEL THRU JOINT

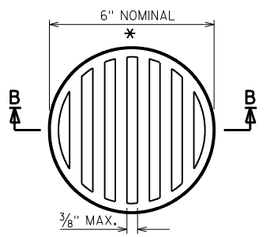
MAXIMUM SPACING OF JOINTS SHALL BE 12'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

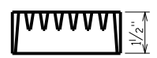
ALL CONTRACTION JOINTS TO EXTEND THE FULL DEPTH OF COPING



TYPICAL SECTION THRU WALL

LOOKING NORTH





SECTION B-B

RODENT SCREEN DETAIL

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-45

DRAWN BY JDL | PLANS CK'D. CAD

WALL DETAILS

SHEET 3

235

SCALE = 6

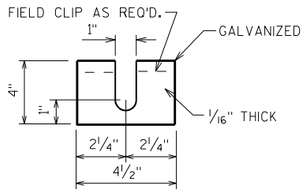
8

8

STATE PROJECT NUMBER
1120-09-76

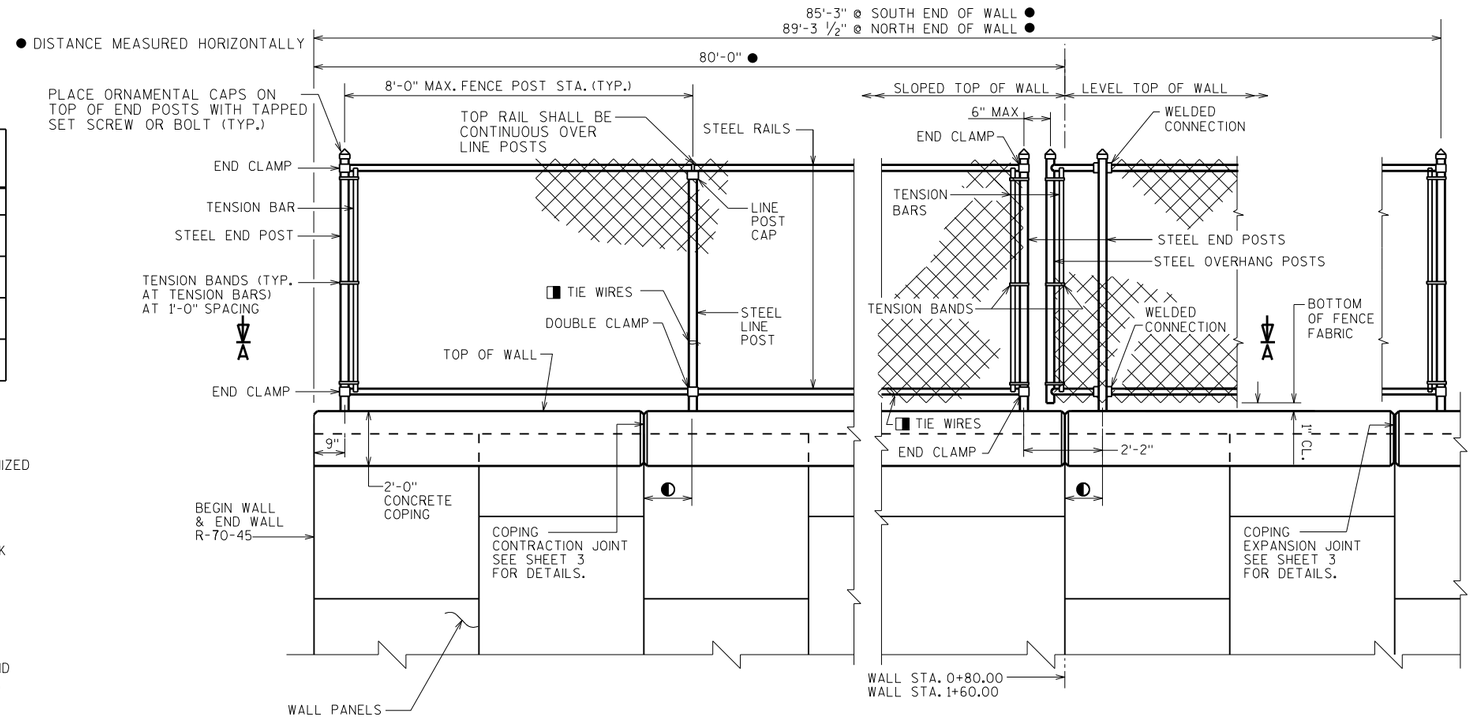
FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12



POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.



◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF FENCE POSTS

PARTIAL ELEVATION OF WALL COPING & FENCE

LOOKING EAST AT F.F. WALL

NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH A COLORED POLYMER-COATING ON THE OUTSIDE.

FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626. SEE THE "BRIDGE SPECIAL PROVISIONS" FOR ADDITIONAL DETAILS.

THE COLOR OF POLYMER-COATING FOR THIS STRUCTURE SHALL BE BLACK IN ACCORDANCE WITH ASTM F934.

THE BID ITEM SHALL BE "FENCE CHAIN LINK POLYMER-COATED 6-FT.", LF.

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

◪ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING TAN NON-BITUMINOUS JOINT SEALER.

✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

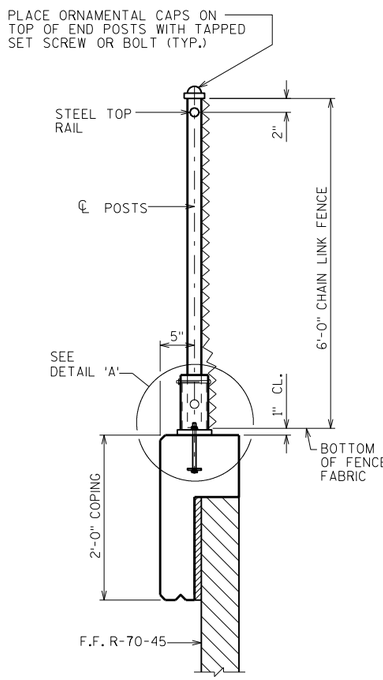
◭ 1/2" DIA. X 6 7/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE "S", 1/2" DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR 1/2" DIA. BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE "S" ANCHORS ARE USED. SEE ☆

☆ 1/2" DIA. CONCRETE MASONRY ANCHOR, TYPE "S", 6" MIN. EMBEDMENT (EPOXY ANCHORED) INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS. ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.

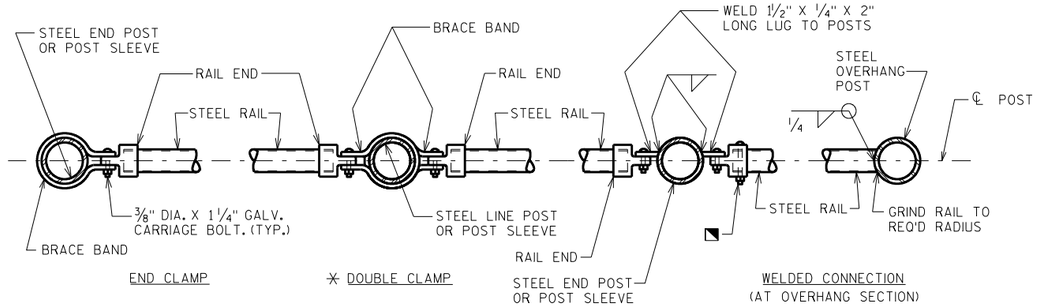
◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◹ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR 1/4 POINT OF POST SPACING.

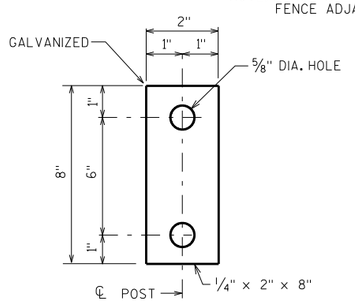


SECTION THRU FENCE

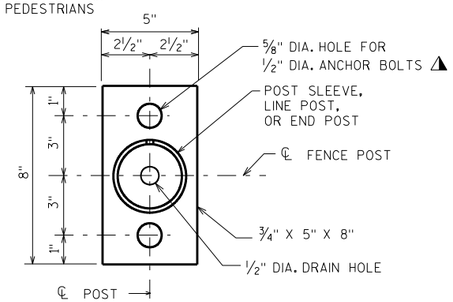


SECTION A-A

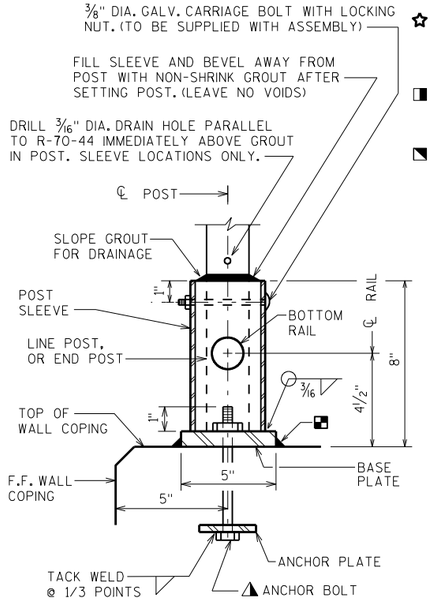
NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS



ANCHOR PLATE



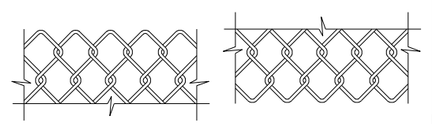
BASE PLATE



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.



FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-45

DRAWN BY JDL | PLANS CK'D. CAD

CHAIN LINK FENCE DETAILS

SHEET 4

236

SCALE = 5.33333

8

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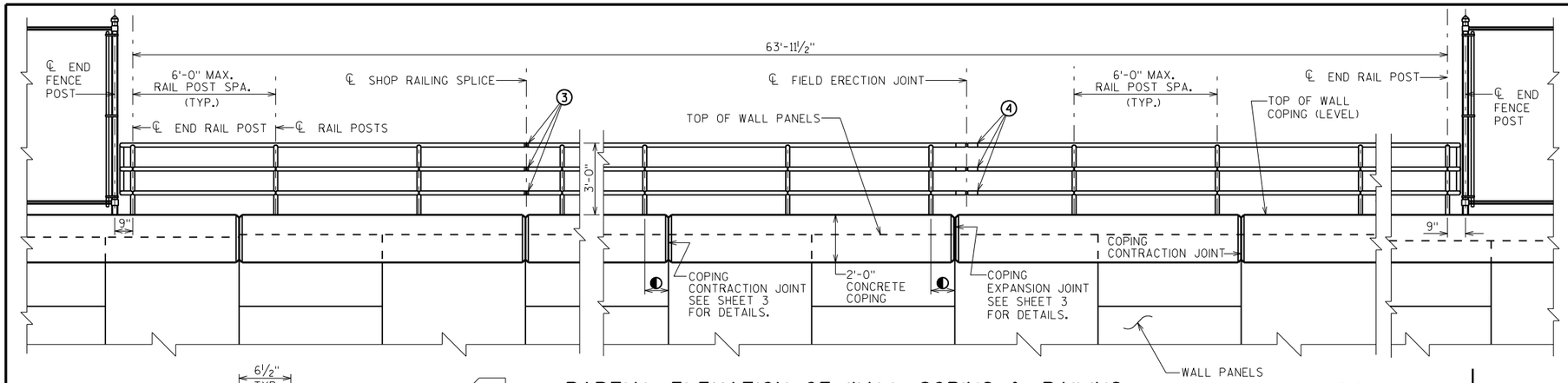
STATE PROJECT NUMBER

1120-09-76



PARTIAL ELEVATION OF WALL COPING & RAILING

LOOKING EAST AT F.F. WALL

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF RAIL POSTS

LEGEND

① 2"Φ NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. POSTS ARE TO BE SET VERTICAL.

② 2"Φ NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1

③ 1½"Φ PIPE SLEEVE FOR NO. 2. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 2/16".

④ 1½"Φ PIPE SLEEVE x 1'-10" LONG FOR NO. 2. PROVIDE ½"Φ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE ⅜"Φ x ½" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

⑤ PLATE ¾" x 5" x 8", WITH ⅝"Φ HOLE FOR ANCHOR BOLTS NO. 6. WELD TO NO. 1. OR PIPE SLEEVE AS SHOWN.

⑥ ½" DIA. X 6⅞" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE "S", ½" DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR ½" DIA. BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE "S" ANCHORS ARE USED. SEE ☆

☆ ½" DIA. CONCRETE MASONRY ANCHOR, TYPE "S", 6" MIN. EMBEDMENT (EPOXY ANCHORED) INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS. ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.

⑦ ¼" x 2" x 8" FLAT BAR, WITH ⅝"Φ HOLES FOR ANCHOR BOLTS NO. 6.

NOTES

BID ITEM SHALL BE "RAILING PIPE GALVANIZED R-70-45", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 7) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

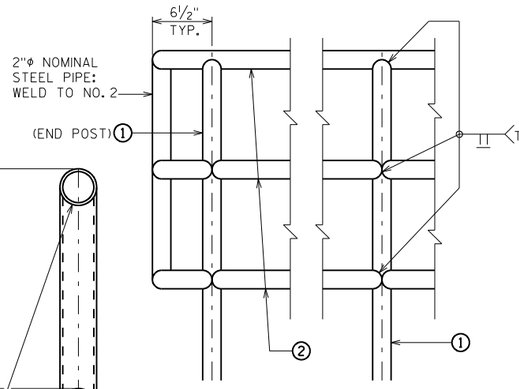
ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF POSTS.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

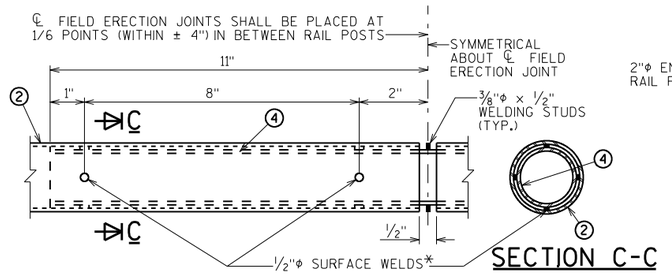
■ CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS IN POST SHIMS AND BASE PLATES WITH NON-STAINING, TAN, NON-BITUMINOUS JOINT SEALER.

ALL RAILINGS, POSTS, AND ASSOCIATED HARDWARE SHALL BE PAINTED BLACK (FEDERAL COLOR NO. 27038).



PART ELEVATION OF RAILING

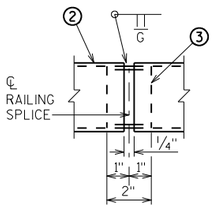
SECTION THRU RAILING



FIELD ERECTION JOINT DETAIL

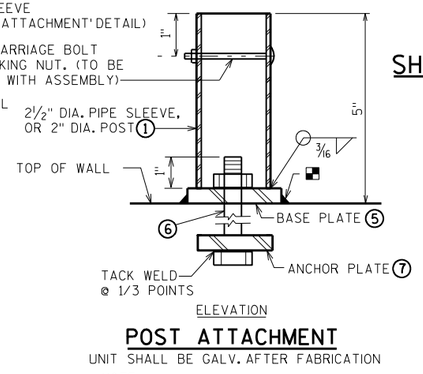
*MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

SECTION C-C



SHOP RAILING SPLICE DETAIL

(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)

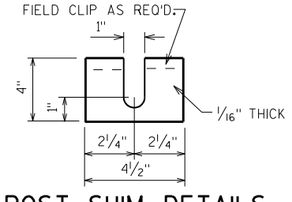


ELEVATION

POST ATTACHMENT

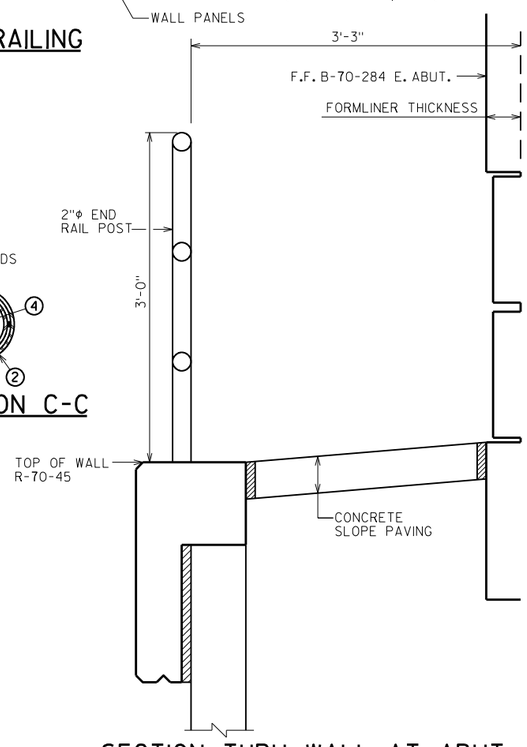
UNIT SHALL BE GALV. AFTER FABRICATION

NOTE:
IN LIEU OF USING THE 2½"Φ SLEEVE, THE 2"Φ RAIL POST MAY BE WELDED TO THE BASE PLATE.

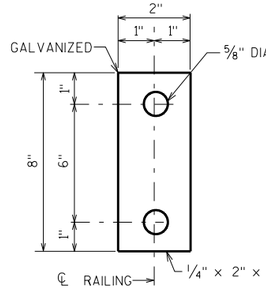


POST SHIM DETAILS

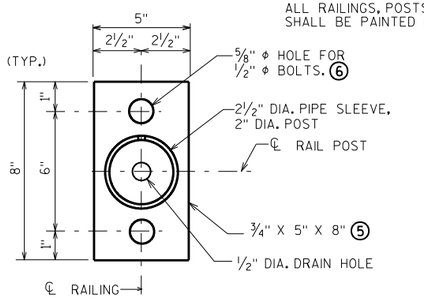
SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST.



SECTION THRU WALL AT ABUT.



ANCHOR PLATE



BASE PLATE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-45

DRAWN BY JDL | PLANS CK'D. CAD

PIPE RAILING DETAILS

SHEET 5

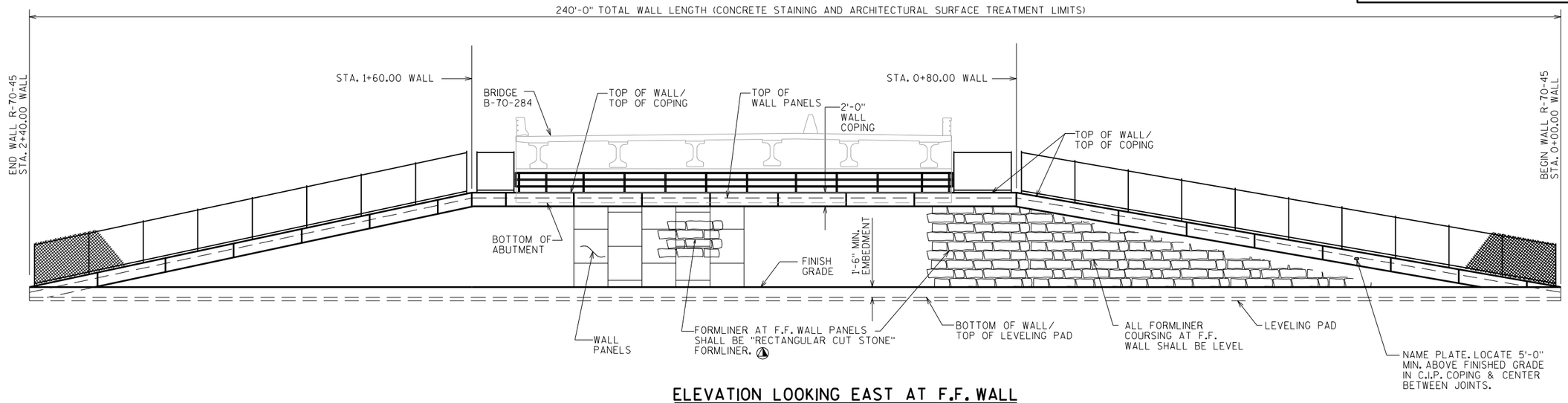
237

SCALE =

8

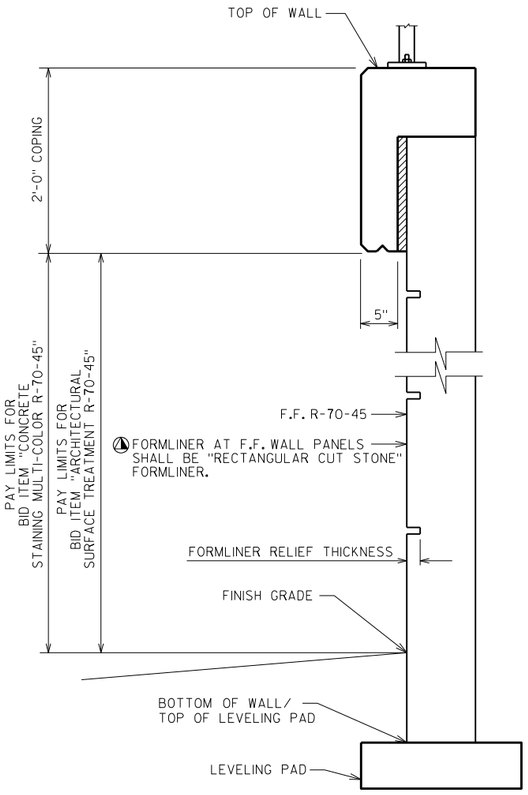
8

STATE PROJECT NUMBER
1120-09-76



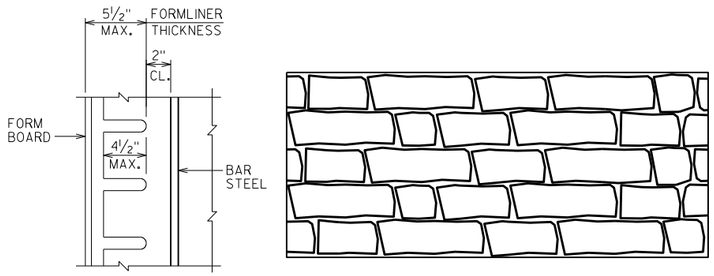
ELEVATION LOOKING EAST AT F.F. WALL

(SHOWING AESTHETIC DETAILS)



SECTION THRU WALL

(SHOWING AESTHETIC DETAILS)



FORMLINER DETAILS

NOTES

FORMLINER COURSING SHALL BE LEVEL.

ALL FORMLINER WORK SHALL BE COVERED UNDER THE BID ITEM "ARCHITECTURAL SURFACE TREATMENT".

WALL COPING SURFACES SHALL BE PLAIN CONCRETE.

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

IF TOUCH UP PAINTING IS REQUIRED, IT SHALL BE DONE TO THE SATISFACTION OF THE FIELD ENGINEER AT NO ADDITIONAL COST.

A ALL EXPOSED ARCHITECTURAL SURFACE TREATMENT FORMLINER AREAS SHALL BE STAINED TO ACHIEVE A TEXTURED LOOK AS DIRECTED BY THE DEPARTMENT BY APPLYING A MULTI-COLOR STAIN USING FEDERAL COLOR NO. 37780 AS THE BASE COLOR AND FEDERAL COLOR NO. 30318, OR SIMILAR, AS THE ACCENT COLOR. TO BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING MULTI-COLOR R-70-45".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-45

DRAWN BY JDL | PLANS CK'D. CAD

AESTHETIC DETAILS

SHEET 6

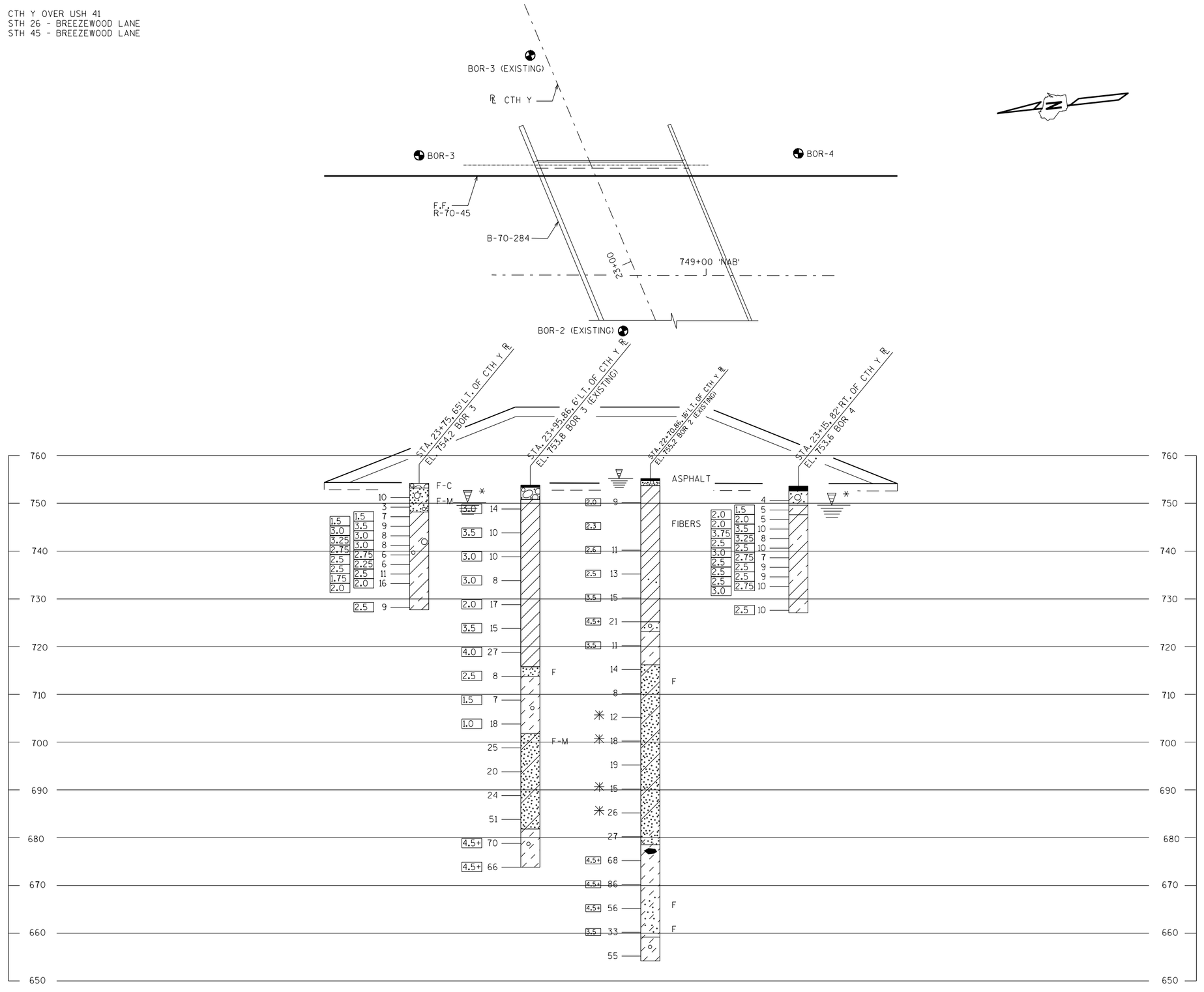
238

SCALE =

8

8

CTH Y OVER USH 41
STH 26 - BREEZEWOOD LANE
STH 45 - BREEZEWOOD LANE



STATE PROJECT NUMBER

1120-09-76

ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING

PROBING NO.
STA.
ELEVATION
7 AVERAGE BLOWS PER FOOT
REFUSAL 95/6

95/6=95 BLOWS FOR 6" PENETRATION
PROBING TAKEN WITH A 350# WT. FALLING 18" ON A 2" O.D. POINT.

LEGEND OF BORING

BORING NO.
ELEV.
STA.
UNCONFINED STRENGTH
BLOWS PER FT. USING 140# WT. FALLING 30"
SANDY GRAVEL
WASH SAMPLE
F. BOULDERS OR COBBLES
SHELBY TUBE — S.T.
SAND
GROUND WATER ELEVATION
SILTY CLAY
NO GROUND WATER OBSERVED ABOVE THIS ELEVATION
SO LIMESTONE

UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-45

DRAWN BY JDL | PLANS CK'D. CAD

SUBSURFACE EXPLORATION

SHEET 7

239

SCALE =

8

8

DIVSION 1 - CTH Y

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
18+00	1800		8.3	0.0	0	0	0	0	0
19+00	1900	100	12.9	1426.3	39	2641	39	3302	-3263
20+00	2000	100	46.4	1310.8	110	5069	149	9638	-9489
21+00	2100	100	120.5	952.7	309	4192	458	14877	-14419
22+00	2200	100	0.0	0.0	223	1764	681	17083	-16401
				COLUMN TOTALS	681	13666			

DIVSION 1 - CTH Y (CONTINUED)

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
23+91	2391		0.0	2862.5	0	0	0	0	0
24+00	2400	9	1.5	2383.5	0	874	0	1093	-1093
25+00	2500	100	19.0	1345.5	38	6906	38	9725	-9687
26+00	2600	100	0.9	1272.6	37	4848	75	15785	-15710
27+00	2700	100	0.0	1210.1	2	4597	77	21532	-21455
28+00	2800	100	0.0	1020.1	0	4130	77	26694	-26618
28+65	2865	65	3.9	853.7	5	2255	81	29513	-29432
29+00	2900	35	17.1	695.1	14	1004	95	30768	-30673
30+00	3000	100	49.1	444.9	123	2111	218	33407	-33189
31+00	3100	100	75.7	290.6	231	1362	449	35109	-34661
31+50	3150	50	79.5	215.2	144	468	592	35695	-35102
				COLUMN TOTALS	592	28556			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

DIVSION 1 - USH 41 NB

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
743+72	74372				0	0	0	0	0
744+00	74400	28	0.0	4.6	0	5	0	6	-6
745+00	74500	100	0.0	10.2	0	27	0	40	-40
746+00	74600	100	0.0	15.0	0	47	0	99	-99
747+00	74700	100	0.0	16.6	0	59	0	172	-172
747+25	74725	25	0.0	17.0	0	16	0	191	-191
748+00	74800	75	0.0	19.4	0	51	0	255	-255
749+00	74900	100	0.0	0.4	0	37	0	300	-300
750+00	75000	100	0.0	0.3	0	1	0	302	-302
751+00	75100	100	48.6	60.6	90	113	90	443	-353
752+00	75200	100	0.0	0.0	90	112	180	583	-403
753+00	75300	100	0.0	0.0	0	0	180	583	-403
754+00	75400	100	0.0	0.0					
755+00	75500	100	0.0	0.0					
			COLUMN TOTALS		180	466			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

9

9

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	EARTHWORK	SHEET:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

DIVSION 1 - USH 41 SB

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
744+00	74400		0	0	0	0	0	0	0
744+00	74400	0	0.0	0.0	0	0	0	0	0
745+00	74500	100	0.0	0.0	0	0	0	0	0
746+00	74600	100	0.0	0.0	0	0	0	0	0
747+00	74700	100	0.0	0.0	0	0	0	0	0
747+25	74725	25	66.2	37.5	31	17	31	22	9
748+00	74800	75	0.0	0.7	92	53	123	88	35
749+00	74900	100	0.0	0.0	0	1	123	89	33
750+00	75000	100	0.0	2.2	0	4	123	95	28
751+00	75100	100	0.0	2.2	0	8	123	105	18
752+00	75200	100	0.0	12.6	0	27	123	139	-16
753+00	75300	100	0.0	8.4	0	39	123	187	-65
754+00	75400	100	0.0	0.0					
755+00	75500	100	0.0	0.0					
			COLUMN TOTALS		123	150			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

9

9

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	EARTHWORK	SHEET:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

DIVSION 2 - CTH Y

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
8+55	855		13.0	26.8	0	0	0	0	0
9+00	900	45	59.1	0.0	60	22	60	28	32
9+80	980	80	17.5	81.5	113	121	174	179	-5
10+00	1000	20	18.2	62.3	13	53	187	245	-59
10+50	1050	50	90.1	69.7	100	122	287	398	-111
11+00	1100	50	82.7	51.7	160	112	447	538	-91
12+00	1200	100	50.2	38.4	246	167	693	747	-54
13+00	1300	100	40.2	54.3	167	172	860	962	-101
14+00	1400	100	24.8	134.8	120	350	981	1399	-419
15+00	1500	100	53.9	269.4	146	748	1126	2335	-1208
16+00	1600	100	51.8	398.2	196	1236	1322	3880	-2558
16+44	1644	44	102.6	315.7	126	582	1448	4607	-3159
17+00	1700	56	54.3	598.0	163	947	1610	5791	-4181
18+00	1800	100	8.3	0.0	116	1107	1726	7176	-5449
			COLUMN TOTALS		1726	5741			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

9

9

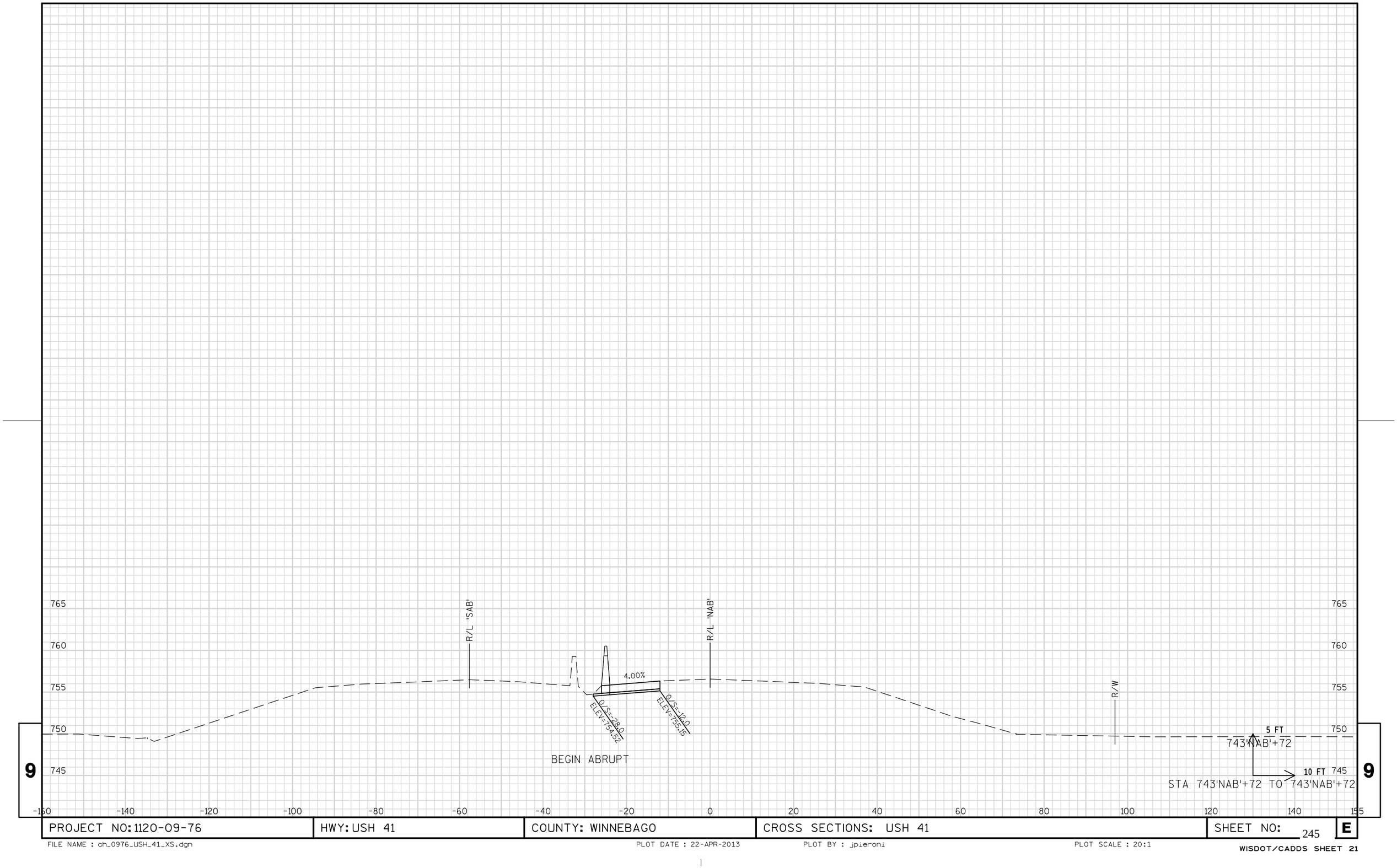
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	EARTHWORK	SHEET:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

DIVISION 2 - GREEN VALLEY ROAD

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE Note 3
16+75	1675		74.0	3.0	0	0	0	0	0
17+00	1700	25	69.7	13.5	67	8	67	10	57
18+00	1800	100	49.3	88.0	220	188	287	244	43
19+00	1900	100	32.7	181.0	152	498	439	867	-428
19+43	1943	43	28.8	282.8	49	369	488	1329	-841
20+00	2000	57	11.0	731.7	42	1071	530	2667	-2137
21+00	2100	100	10.2	178.2	39	1685	569	4774	-4204
21+70	2170	70	44.1	214.1	70	509	640	5409	-4770
22+00	2200	30	65.1	133.3	61	193	700	5651	-4950
23+00	2300	100	47.9	73.2	209	382	910	6128	-5219
24+00	2400	100	62.8	31.7	205	194	1115	6371	-5257
25+00	2500	100	61.0	41.9	229	136	1344	6541	-5198
26+00	2600	100	68.5	6.0	240	89	1584	6652	-5069
26+96	2696	96	121.2	0.0	337	11	1921	6666	-4745
27+00	2700	4	121.6	0.0	18	0	1939	6666	-4727
27+47	2747	47	84.9	2.1	180	2	2119	6668	-4549
27+55	2755	8	84.3	1.6	25	1	2144	6668	-4525
				COLUMN TOTALS	2144	5335			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

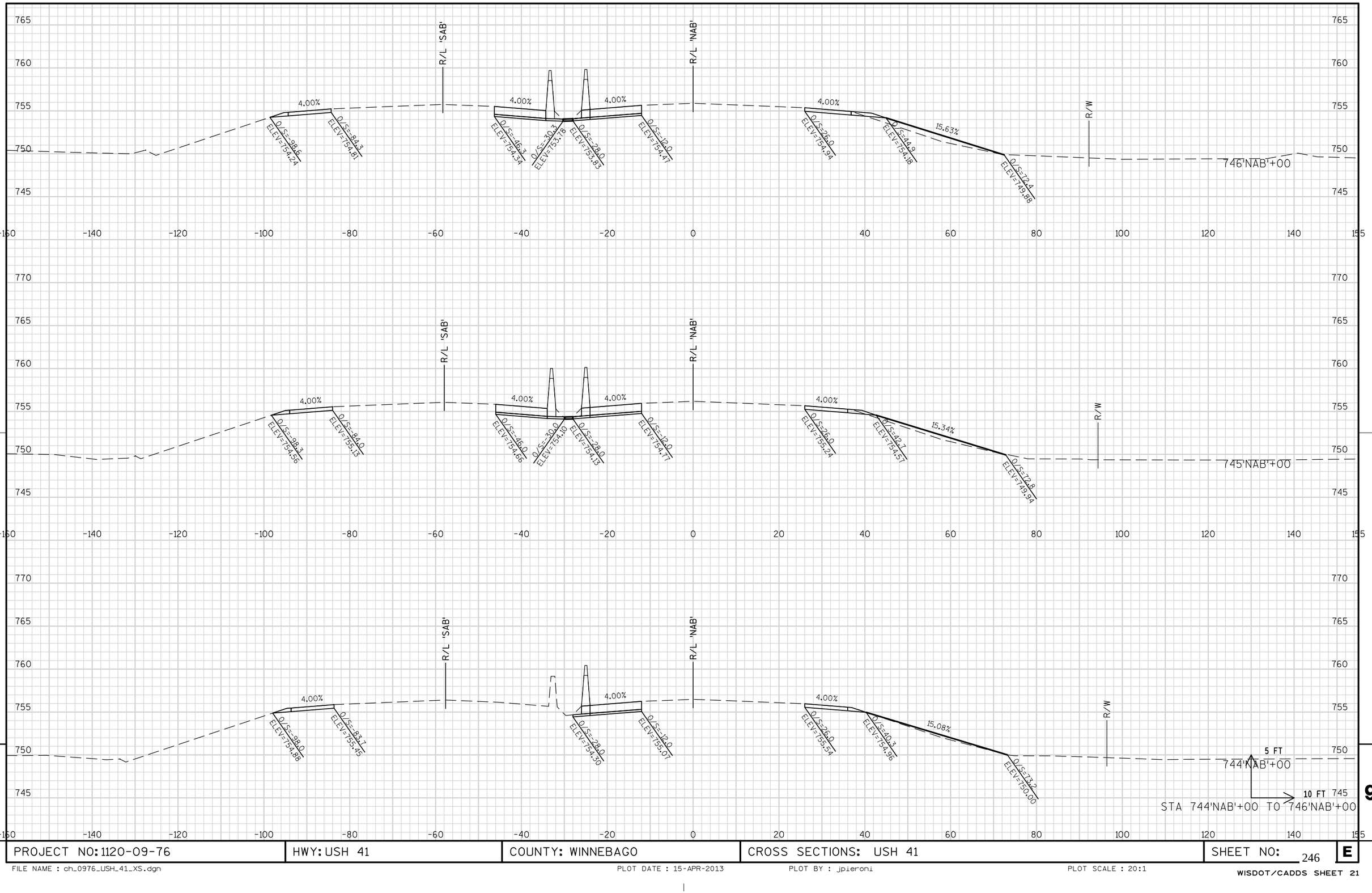


9 9

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 245 E

FILE NAME : ch_0976_USH_41_XS.dgn PLOT DATE : 22-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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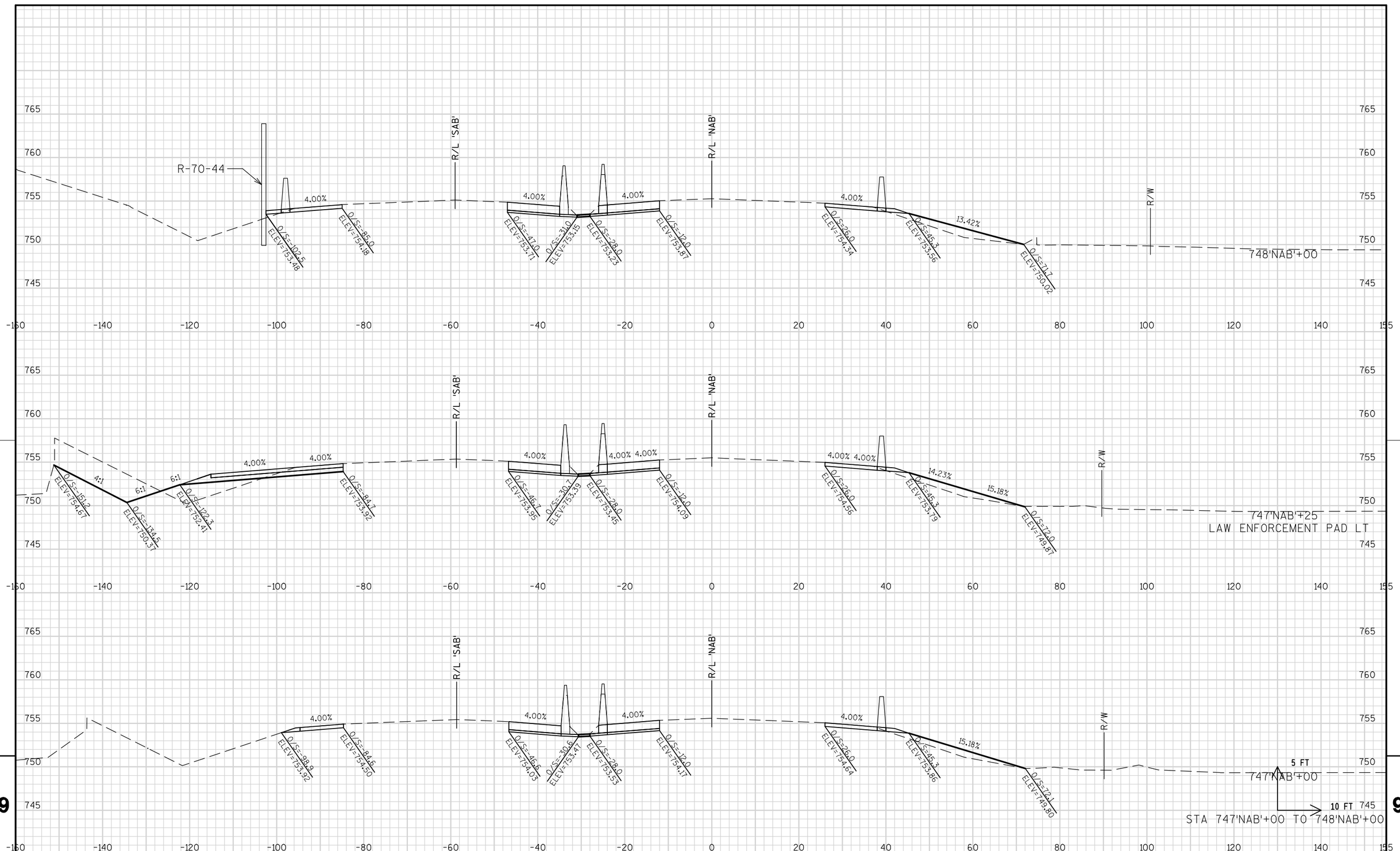
9

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 246	E

FILE NAME : ch_0976_USH_41_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

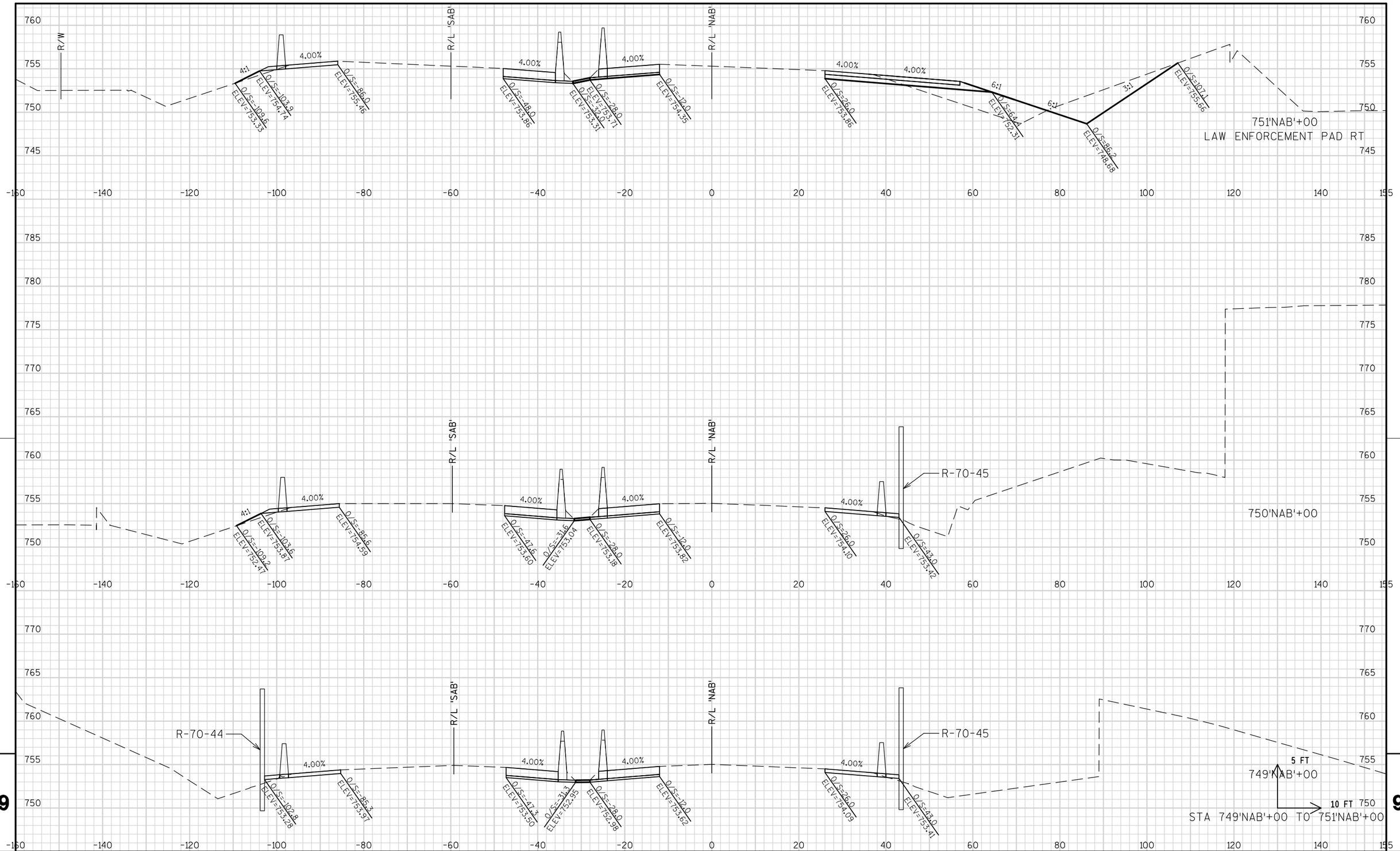
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 247	E

FILE NAME : ch_0976_USH_41_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

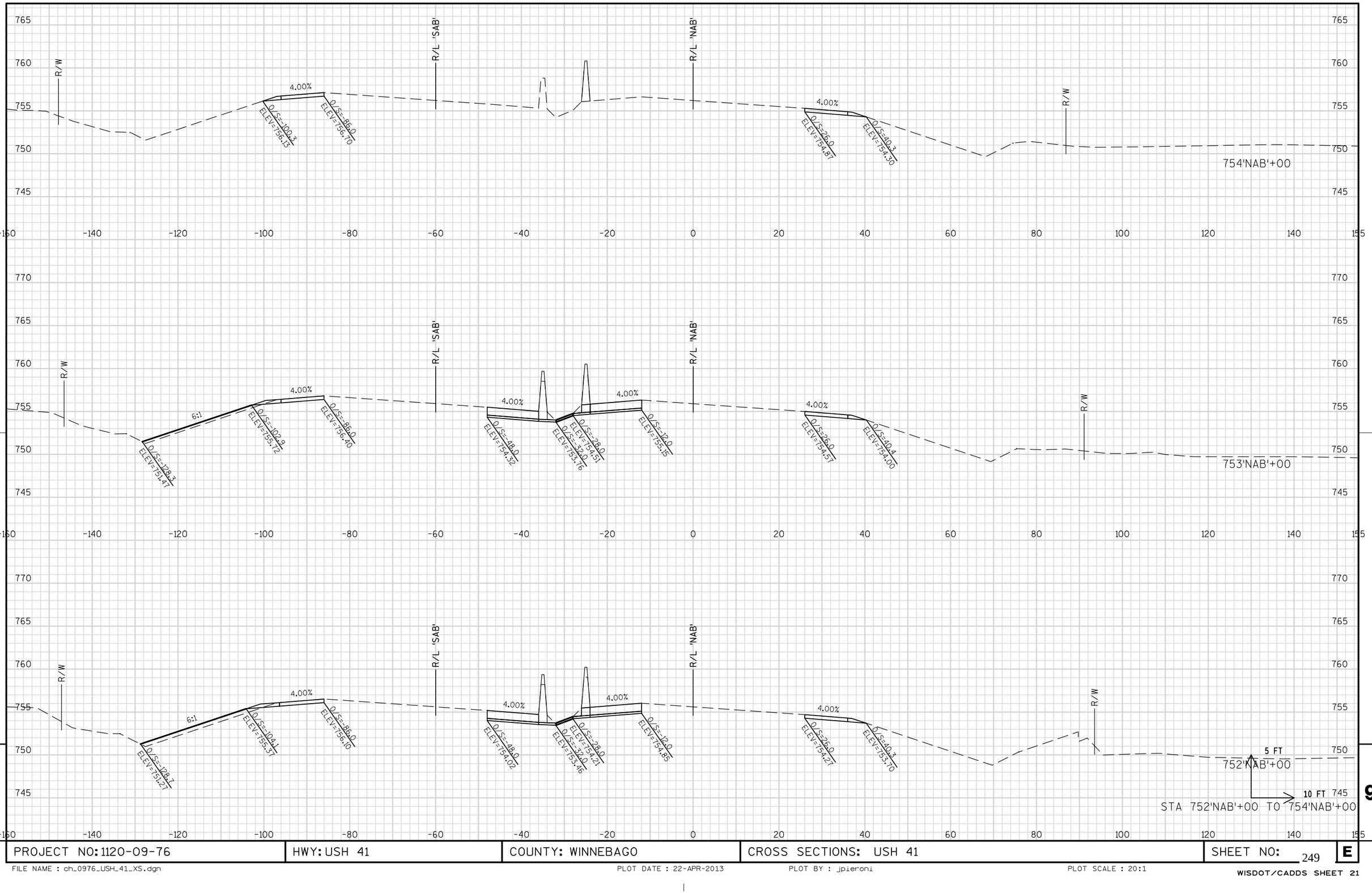
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 248	E

FILE NAME : ch_0976_USH_41_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

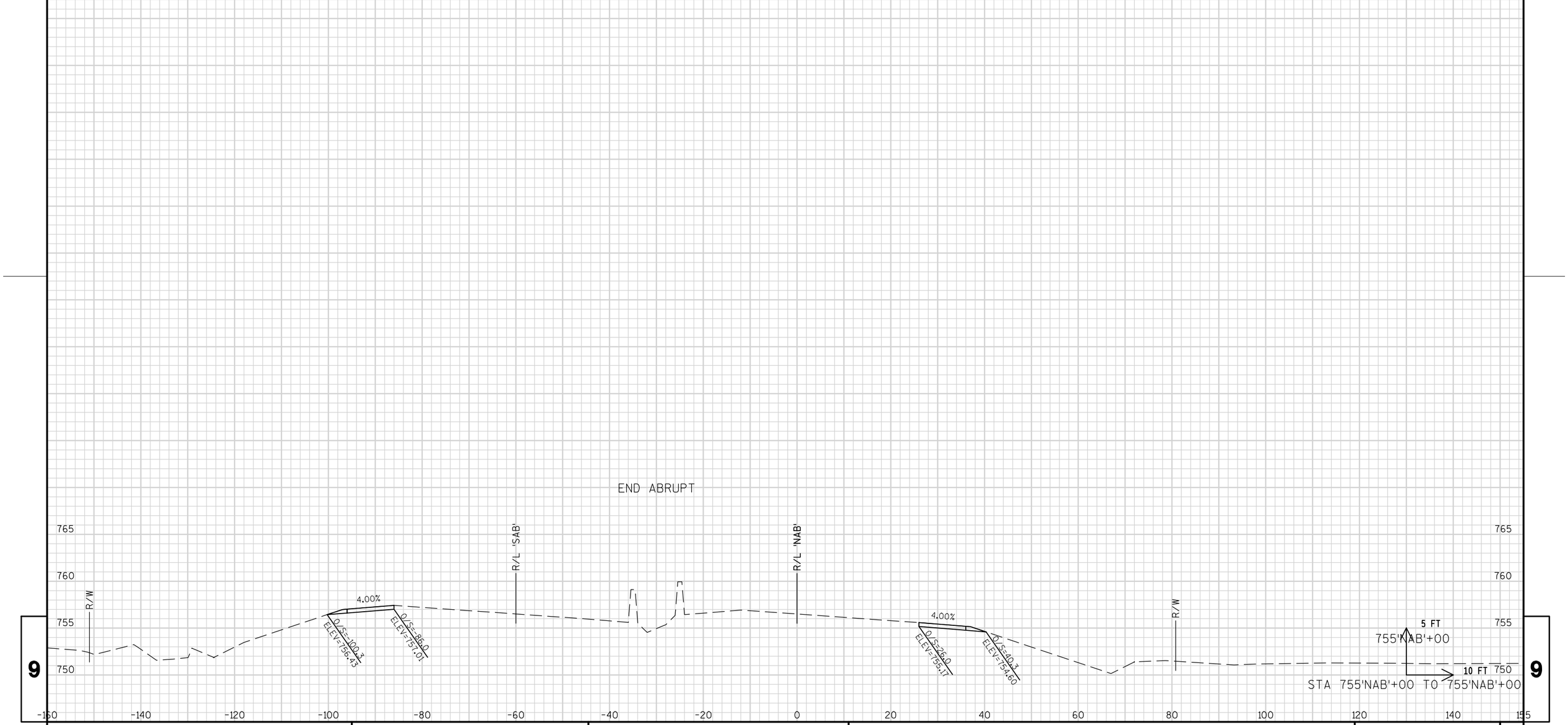


PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 249 E

FILE NAME : ch_0976_USH_41_XS.dgn PLOT DATE : 22-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

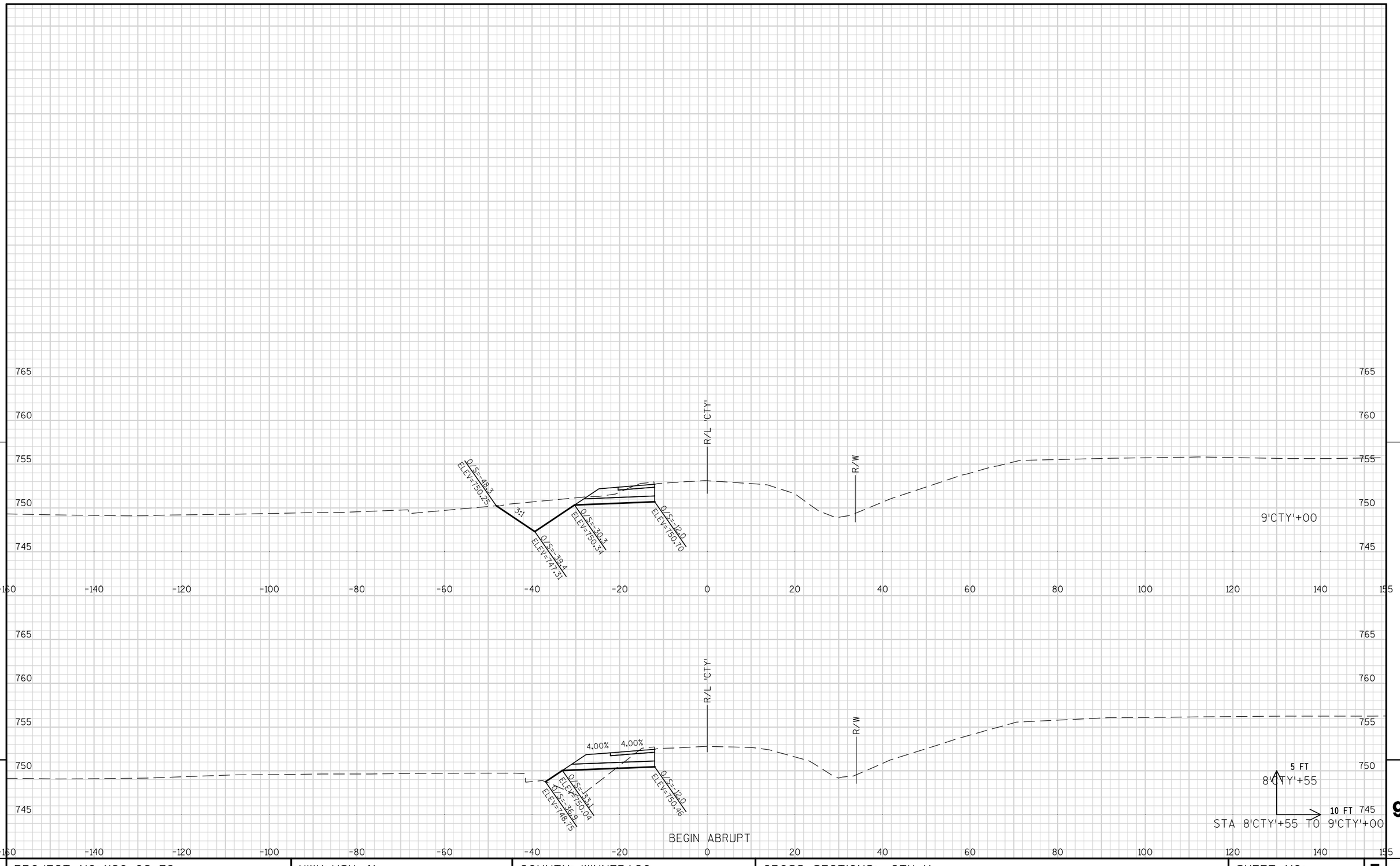
END ABRUPT



PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 250 E

FILE NAME : ch_0976_USH_41_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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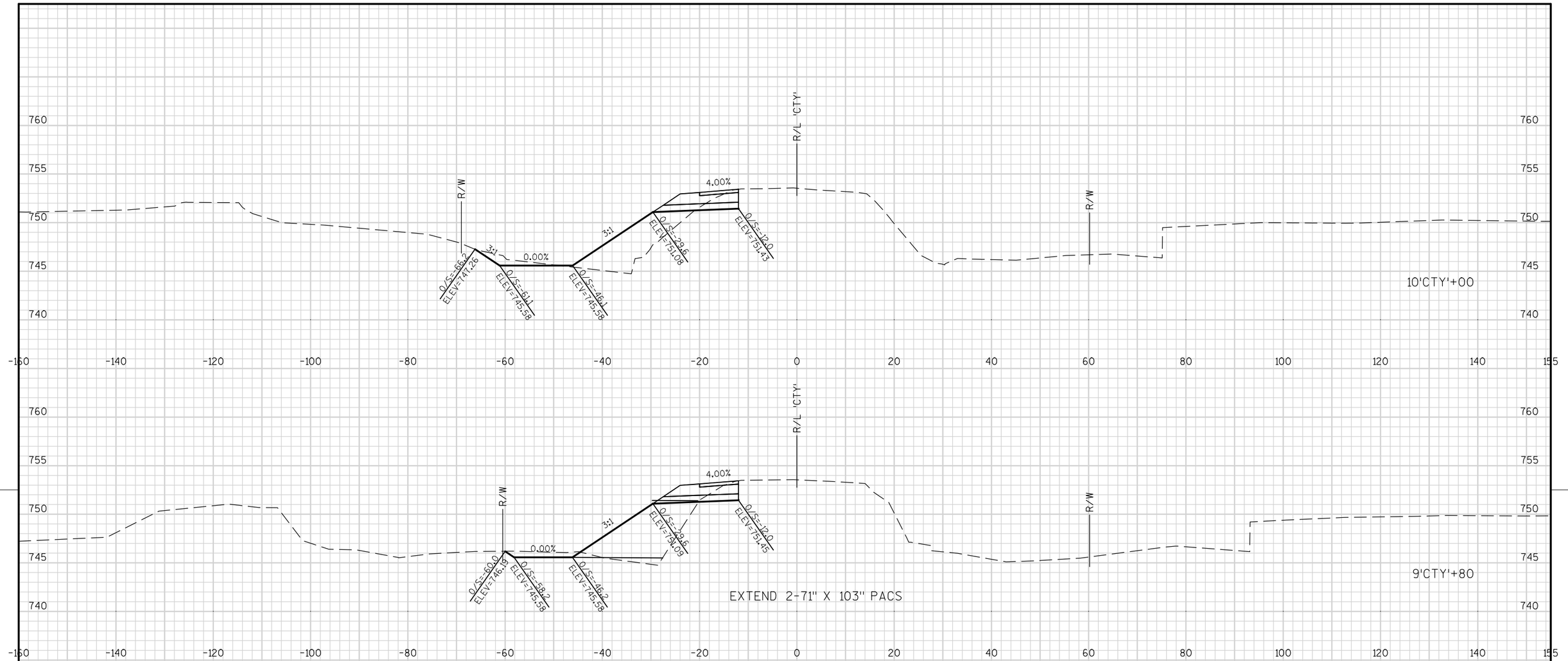
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 251	E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



5 FT

10 FT

STA 9'CTY'+80 TO 10'CTY'+00

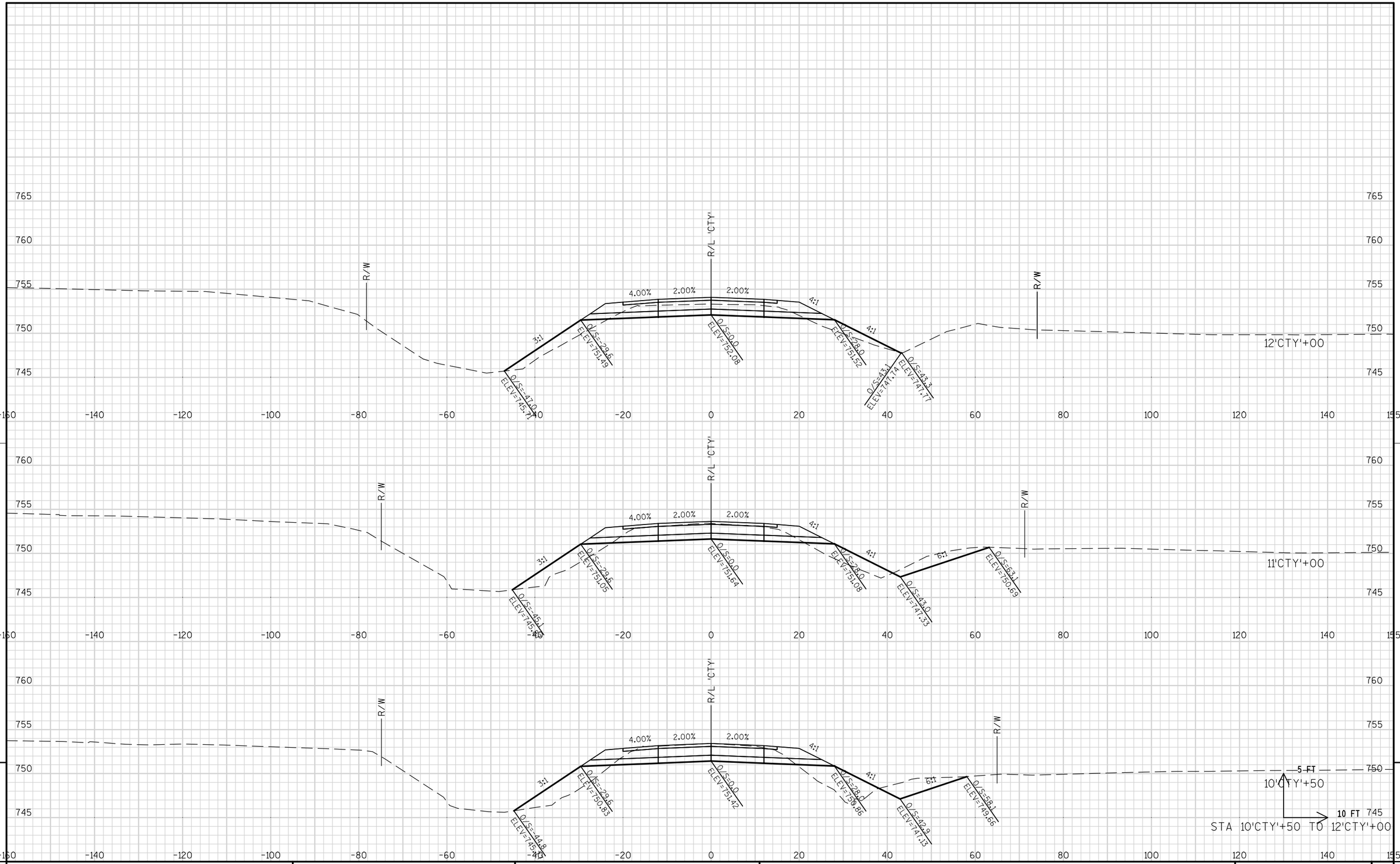
9

9

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 252	E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 253	E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

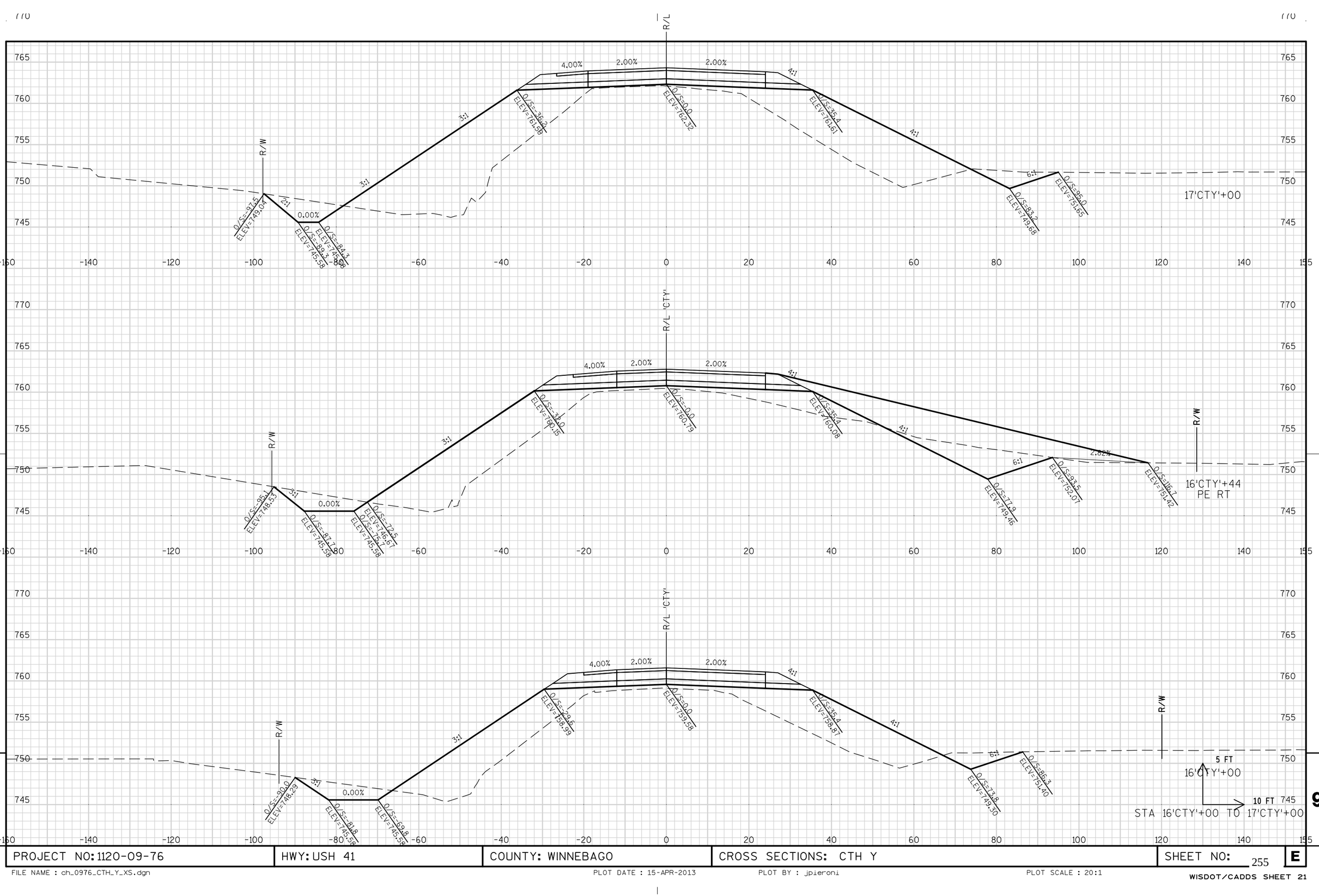
WISDOT/CADDS SHEET 21

9

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 254	E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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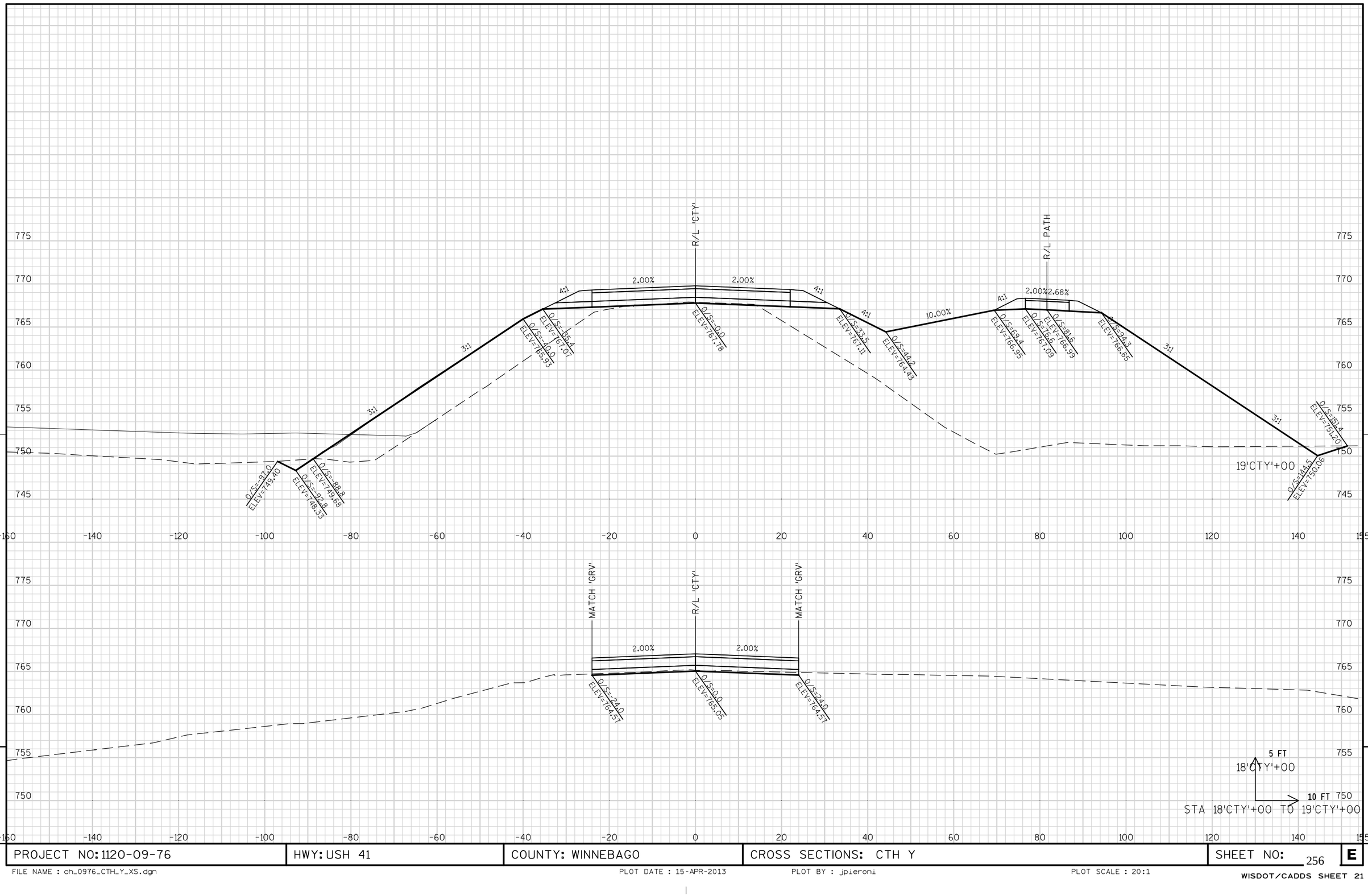
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 255	E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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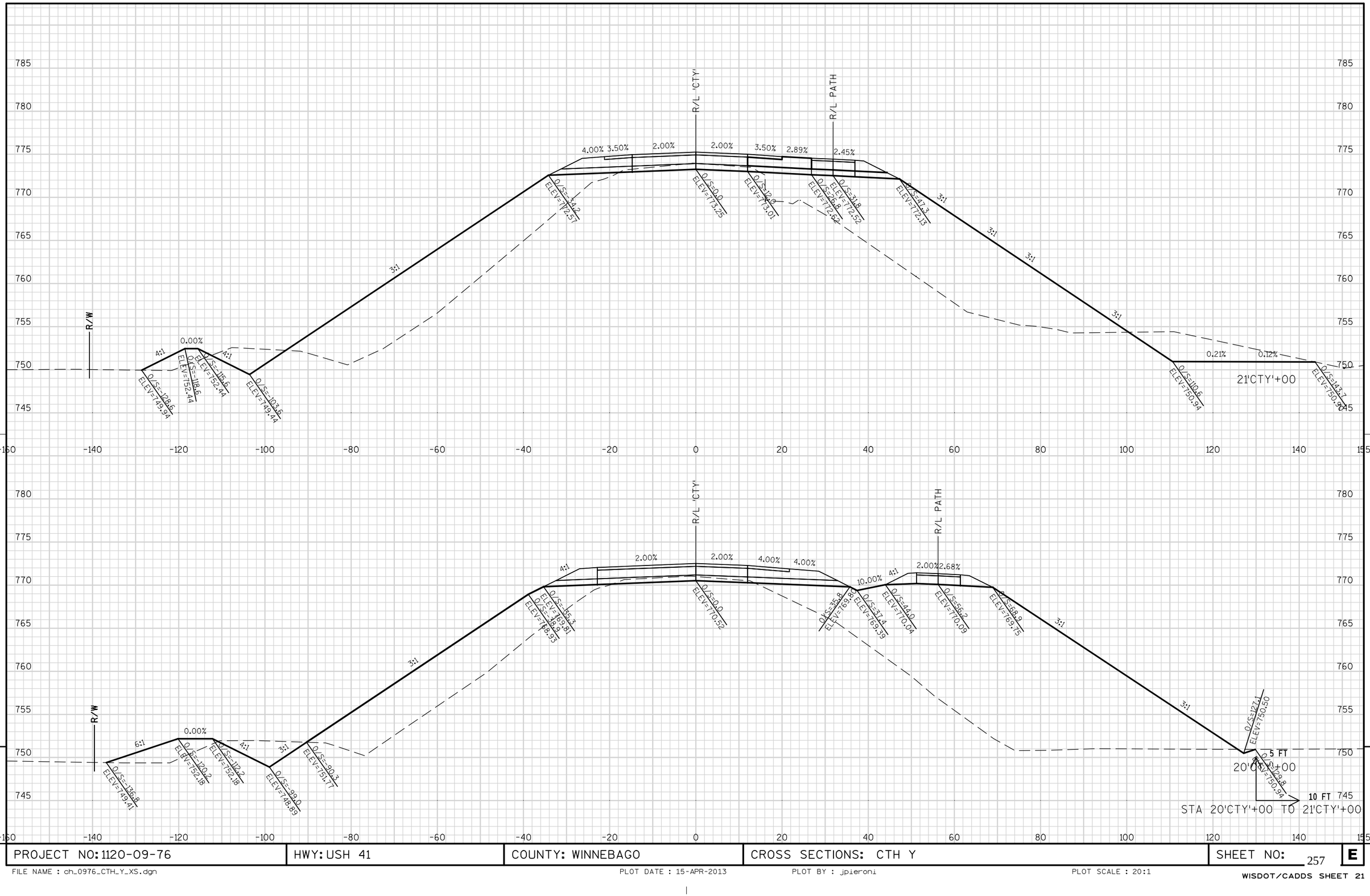
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 256	E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

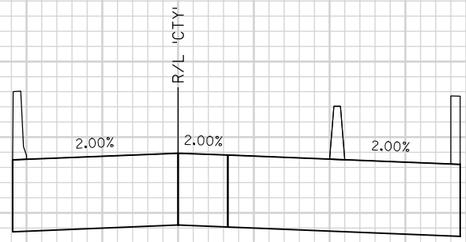


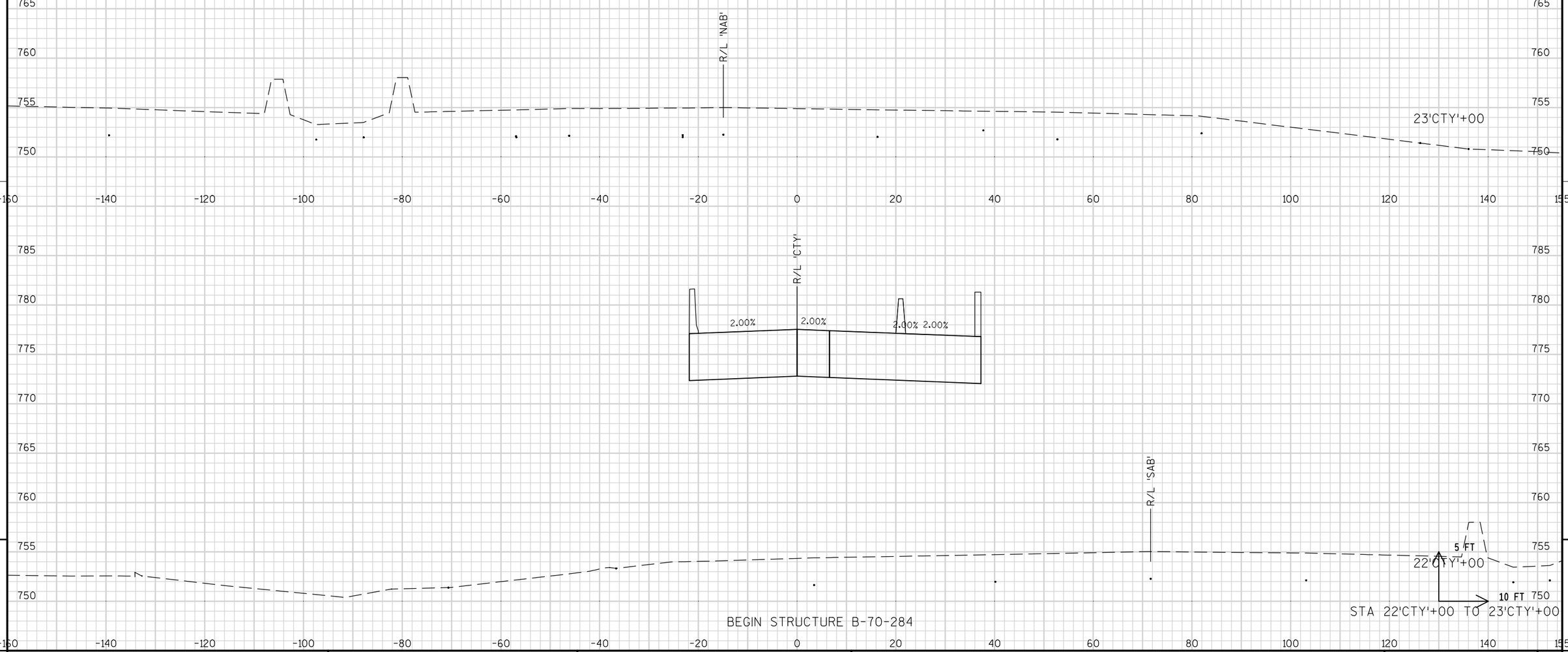
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 257 E

FILE NAME : ch_0976_CTH_Y_XS.dgn | PLOT DATE : 15-APR-2013 | PLOT BY : jpieroni | PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

END STRUCTURE B-70-284



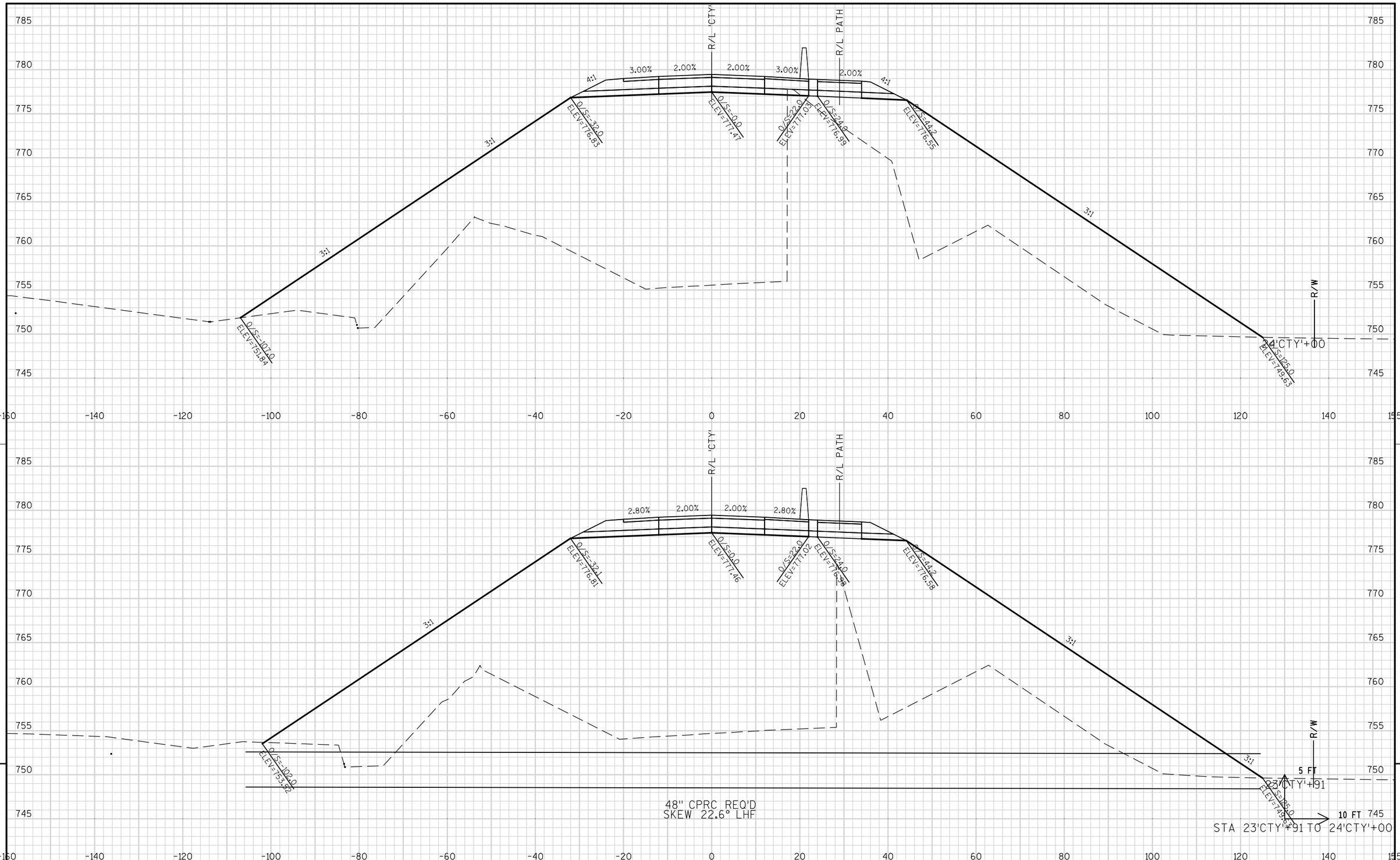


BEGIN STRUCTURE B-70-284

PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 258	E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

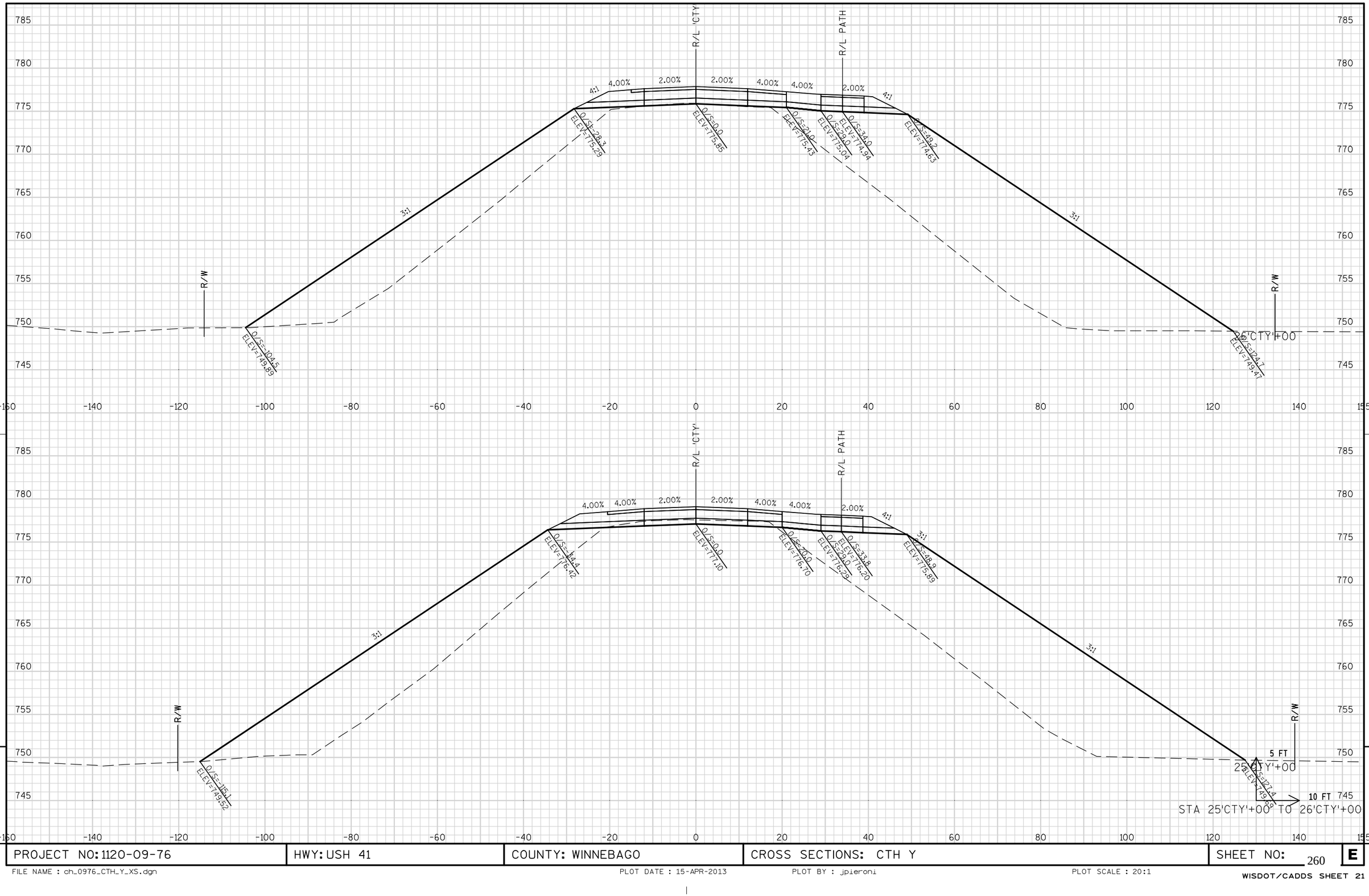
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 259	E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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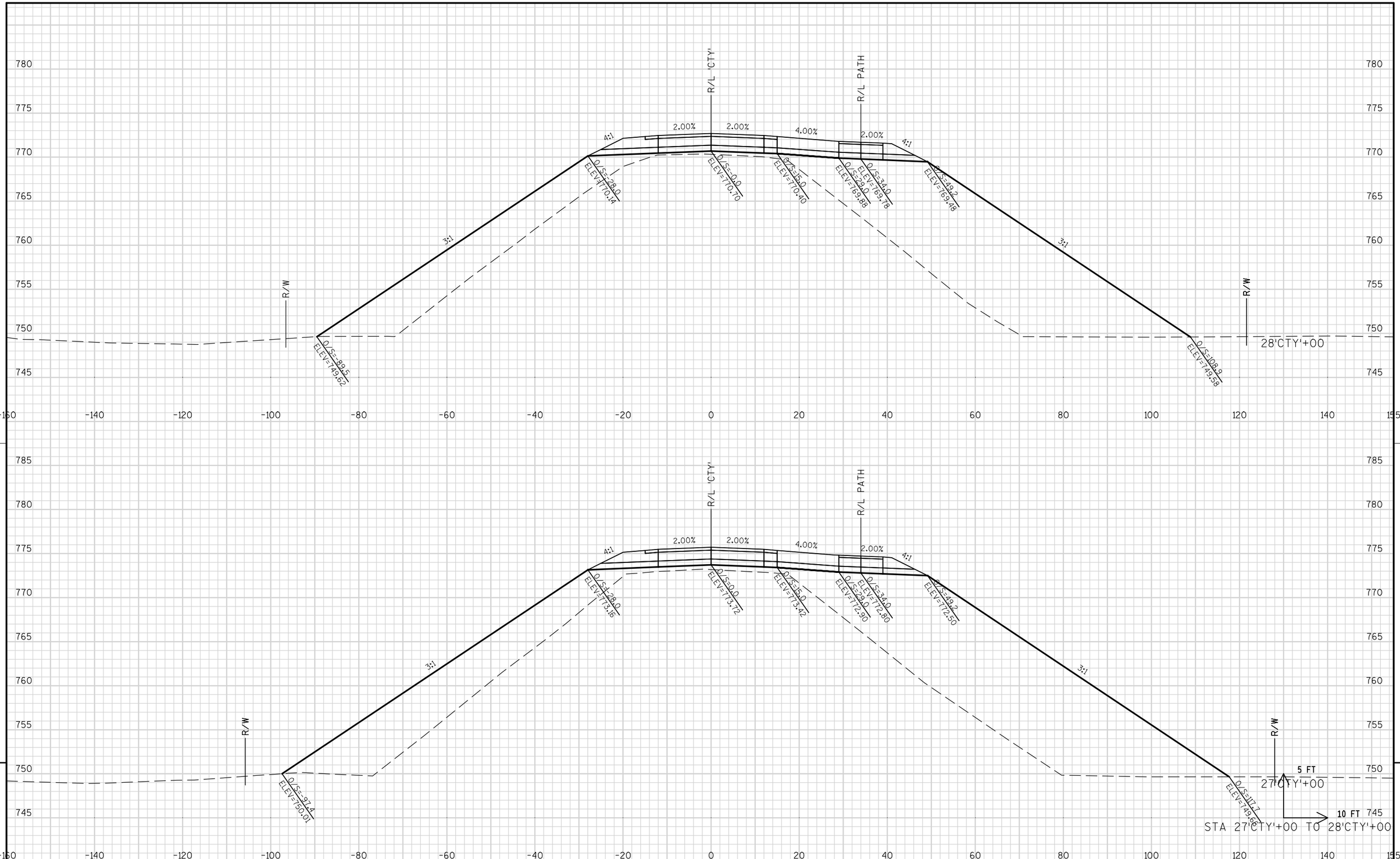
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 260 E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

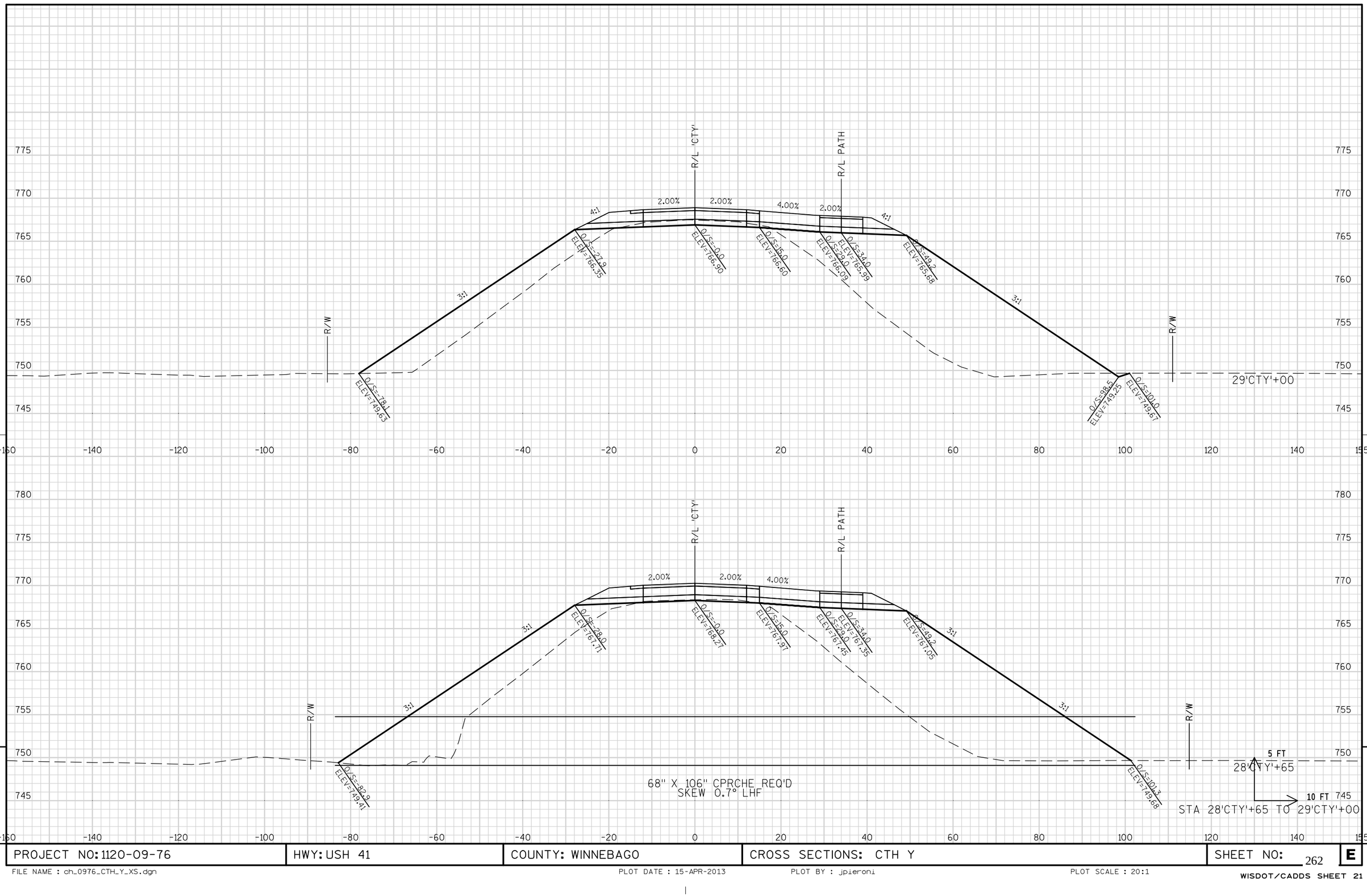
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 261	E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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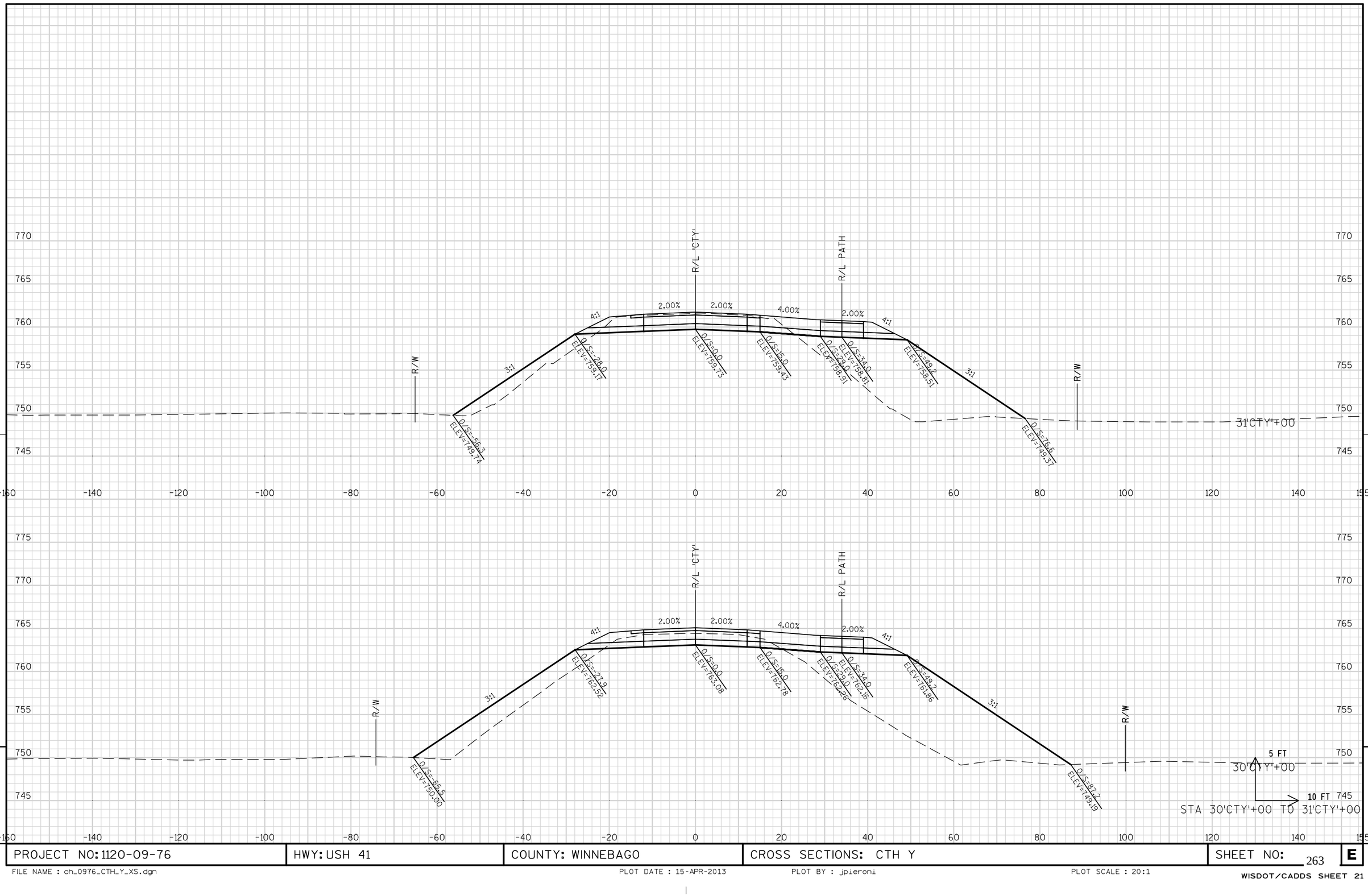
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 262 E



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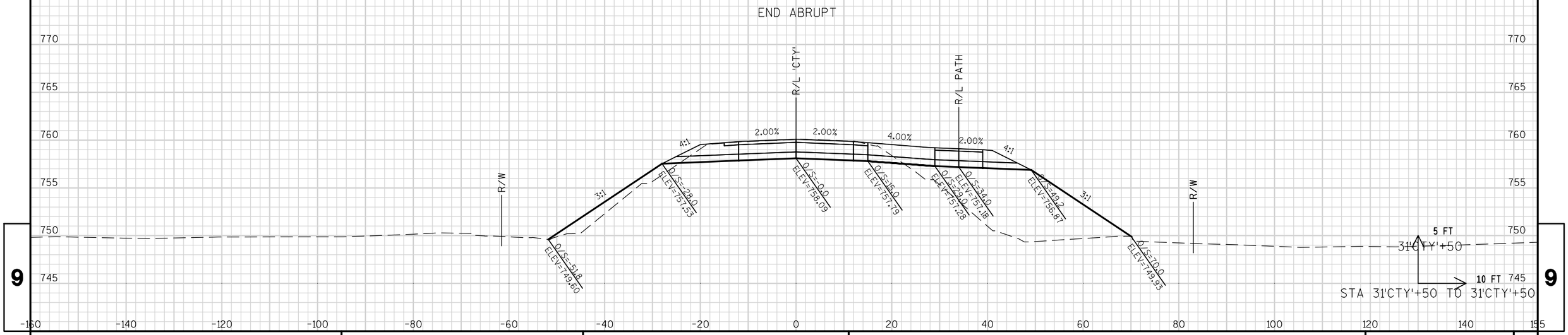
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 263	E

FILE NAME : ch_0976_CTH_Y_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

END ABRUPT



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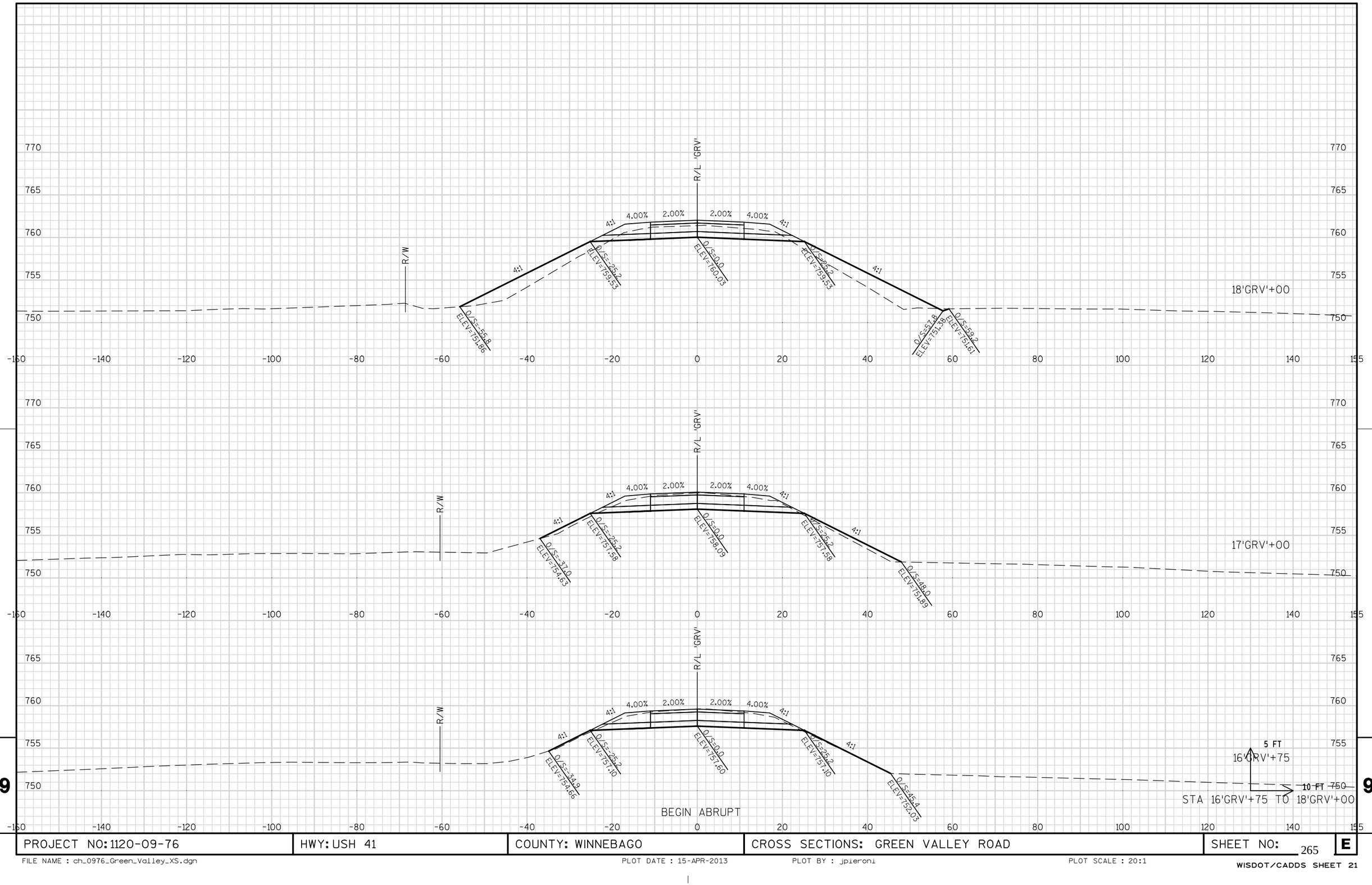
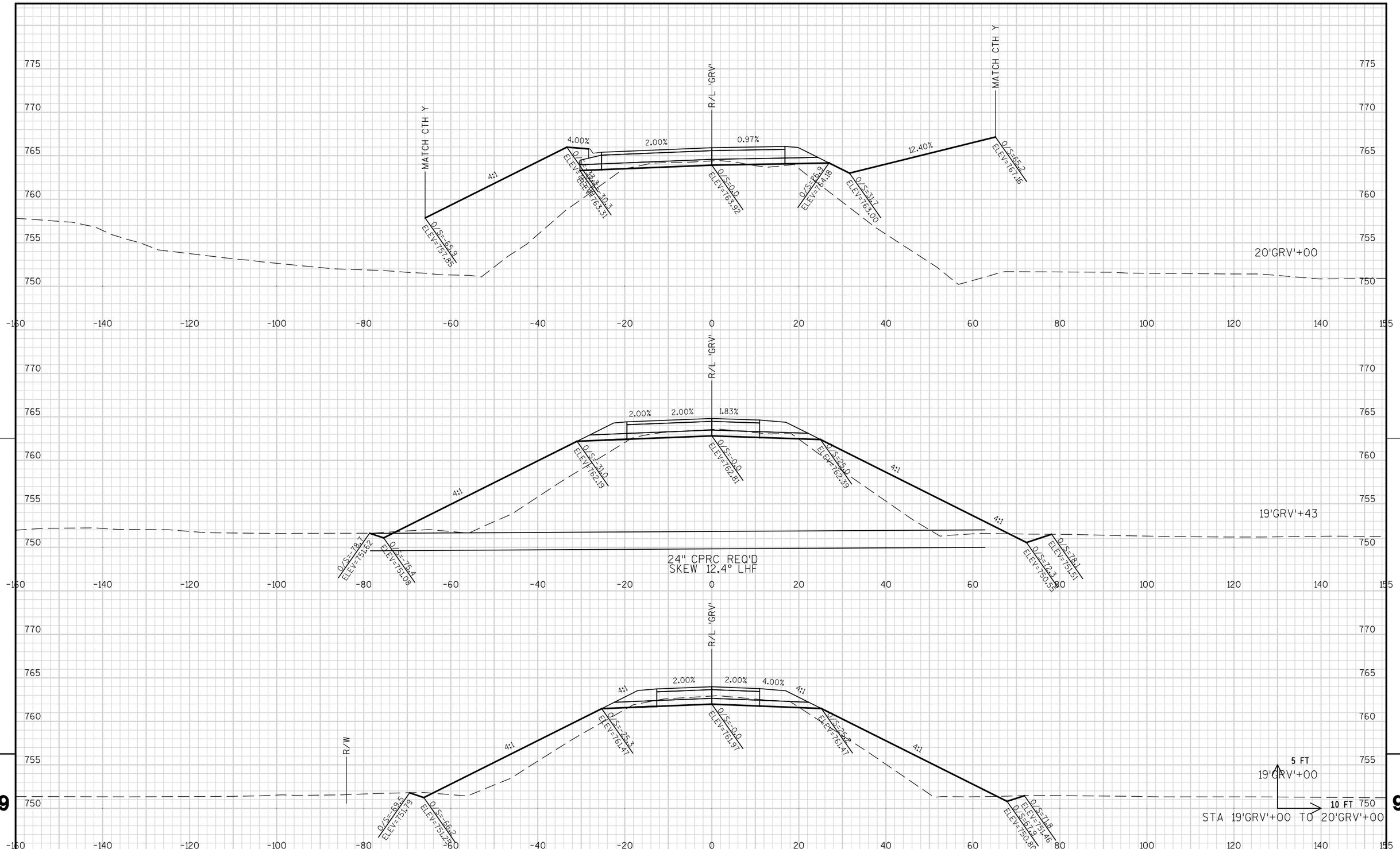
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH Y	SHEET NO: 264 E



PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 265	E

FILE NAME : ch_0976_Green_Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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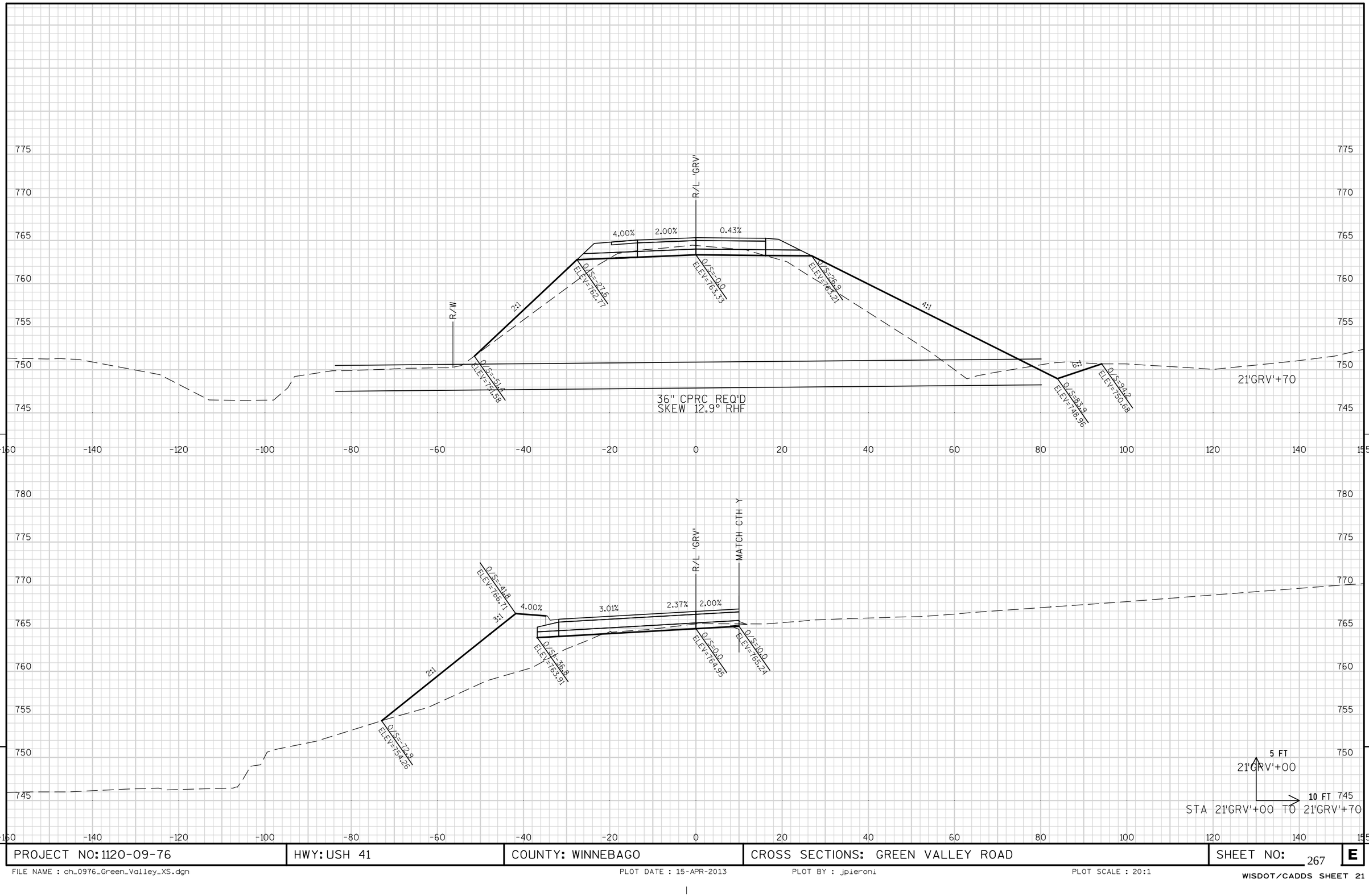
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 266	E

FILE NAME : ch_0976_Green_Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

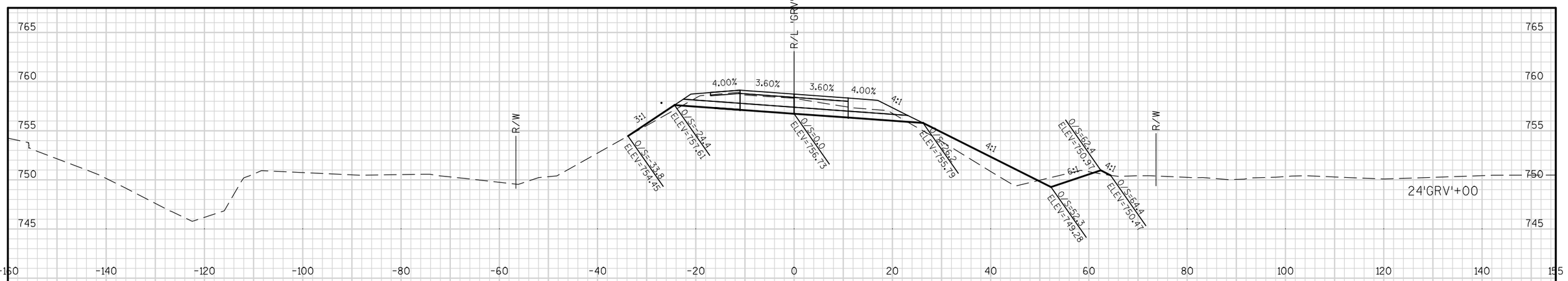
WISDOT/CADDS SHEET 21

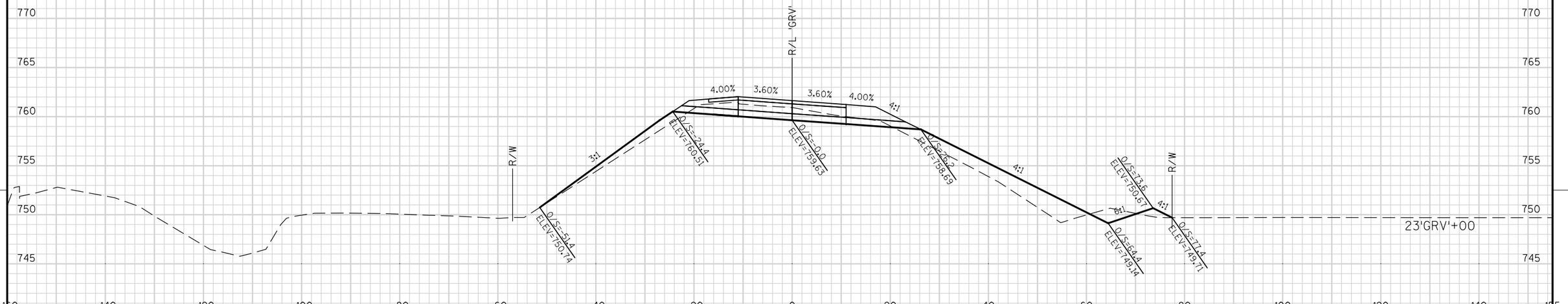


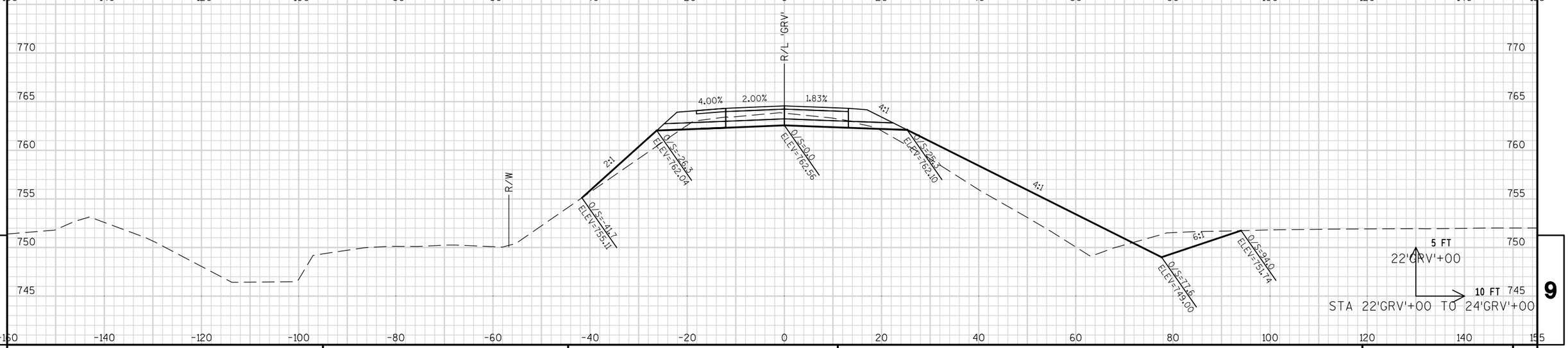
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 267	E

FILE NAME : ch_0976_Green_Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



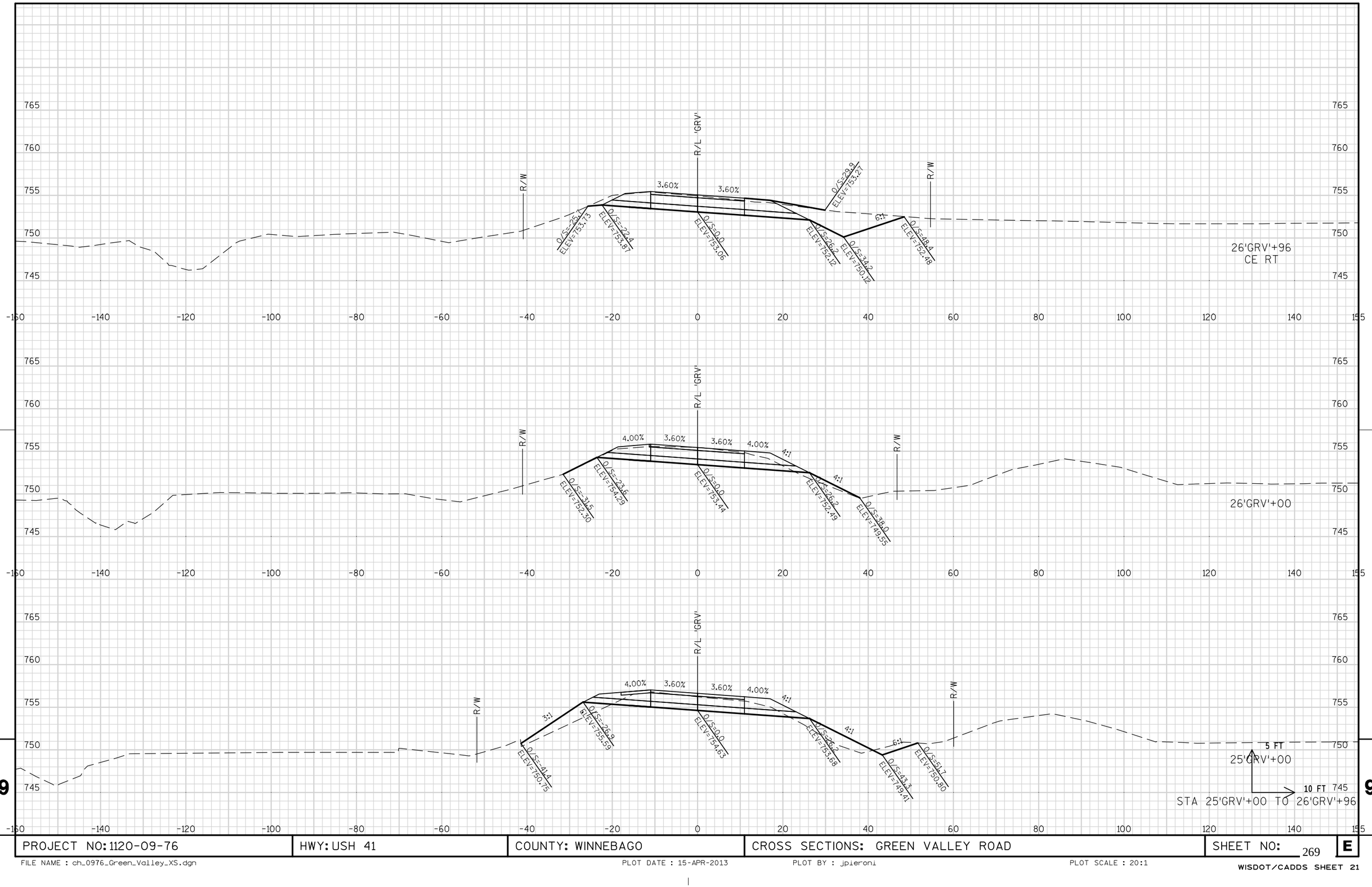




PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 268 E

FILE NAME : ch_0976_Green_Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

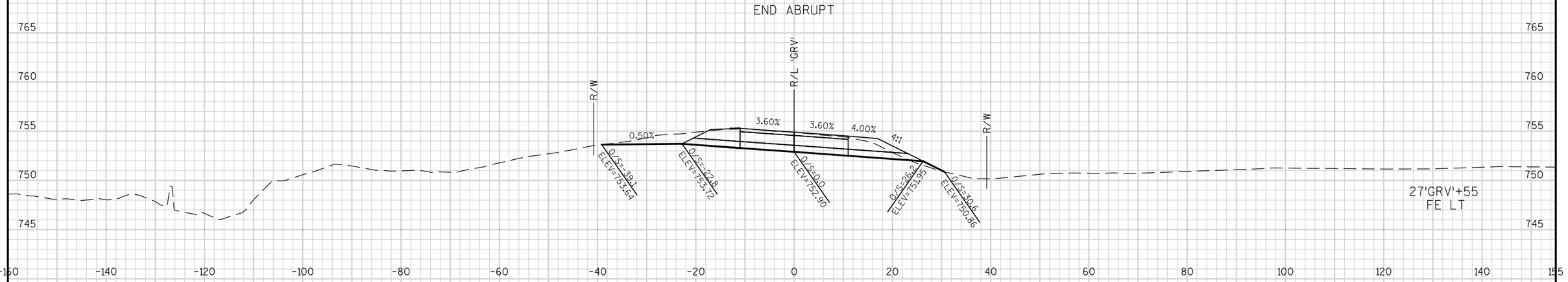


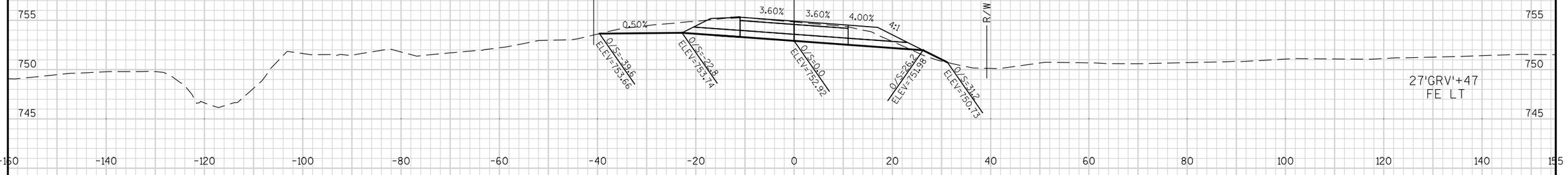
PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 269	E

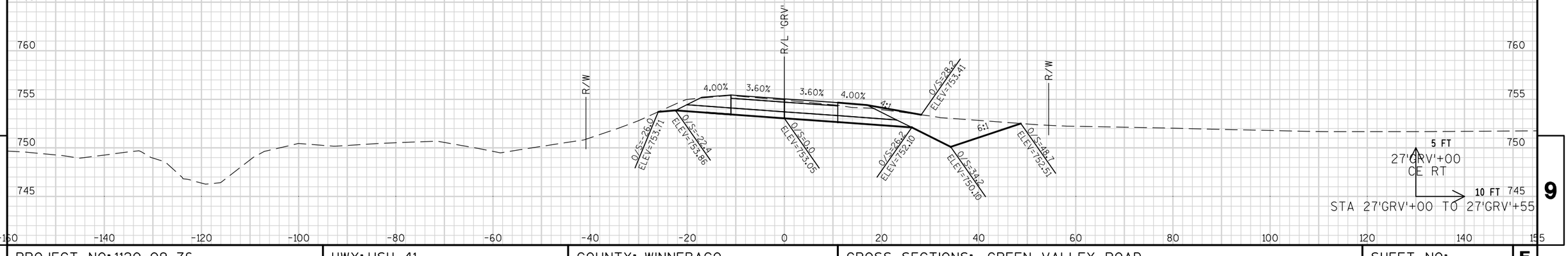
FILE NAME : ch_0976_Green_Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

END ABRUPT







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PROJECT NO: 1120-09-76	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 270	E

FILE NAME : ch_0976_Green_Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

Notes

Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

http://www.dot.wisconsin.gov

GRE JUN 2013

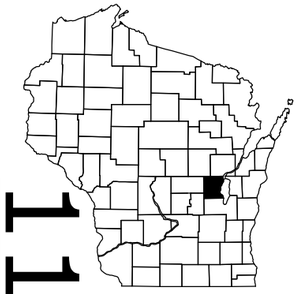
PROJECT ID: 1120-09-77/78/81
WITH: N/A

COUNTY: WINNEBAGO

ORDER OF SHEETS

Section No.	1	Title
Section No.	2	Typical Sections and Details
Section No.	3	Estimate of Quantities
Section No.	3	Miscellaneous Quantities
Section No.	4	Right of Way Plat
Section No.	5	Plan and Profile
Section No.	6	Standard Detail Drawings
Section No.	7	Sign Plates
Section No.	8	Structure Plans
Section No.	9	Computer Earthwork Data
Section No.	9	Cross Sections

TOTAL SHEETS = 326



11

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DESIGN DESIGNATION

			CTH GG	CTH G
A.D.T.	2004	=	870	1,400
A.D.T.	2035	=	1,490	2,400
D.H.V.		=	150	250
D.D.		=	50-50	50-50
T.		=	N/A	N/A
DESIGN SPEED		=	60 MPH	50 MPH
ESALS		=	N/A	N/A

CONVENTIONAL SYMBOLS

PLAN

- CORPORATE LIMITS
- PROPERTY LINE
- LOT LINE
- LIMITED HIGHWAY EASEMENT
- EXISTING RIGHT OF WAY
- PROPOSED OR NEW R/W LINE
- SLOPE INTERCEPT
- REFERENCE LINE
- EXISTING CULVERT
- PROPOSED CULVERT (Box or Pipe)
- COMBUSTIBLE FLUIDS (CAUTION)
- MARSH AREA
- RETAINING WALL
- WOODED OR SHRUB AREA
- DITCH FLOW LINE

PROFILE

- GRADE LINE
- ORIGINAL GROUND
- MARSH OR ROCK PROFILE (To be noted as such) (ROCK)
- SPECIAL DITCH (LABEL)
- GRADE ELEVATION (95.36)
- CULVERT (Profile View)

UTILITIES

- OVERHEAD COMMUNICATIONS (C-OH)
- UNDERGROUND COMMUNICATIONS (C-UG)
- OVERHEAD ELECTRIC (OH)
- UNDERGROUND ELECTRIC (E)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STH 26 - BREEZEWOOD LANE

USH 45 - BREEZEWOOD LANE

CTH GG
WINNEBAGO COUNTY
CTH GG OVERPASS
B-70-287
STATE PROJECT NUMBER
1120-09-77

CTH G
WINNEBAGO COUNTY
CTH G OVERPASS
B-70-67 PAINTING
STATE PROJECT NUMBER
1120-09-78

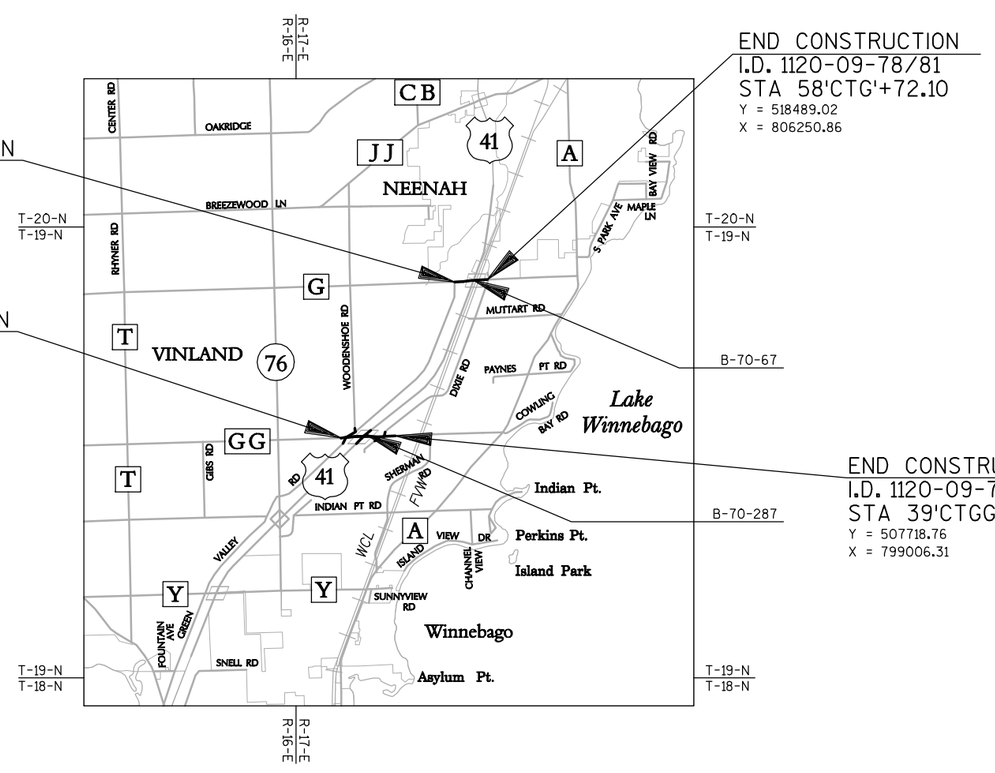
CTH G
WINNEBAGO COUNTY
CTH G OVERPASS
B-70-67 REDECKING
STATE PROJECT NUMBER
1120-09-81

BEGIN CONSTRUCTION
I.D. 1120-09-78/81
STA 46'CTG'+26.15
Y = 518469.41
X = 805005.80

BEGIN CONSTRUCTION
I.D. 1120-09-77
STA 8'CTGG'+58.05
Y = 507670.14
X = 795930.25

END CONSTRUCTION
I.D. 1120-09-78/81
STA 58'CTG'+72.10
Y = 518489.02
X = 806250.86

END CONSTRUCTION
I.D. 1120-09-77
STA 39'CTGG'+47.19
Y = 507718.76
X = 799006.31



LAYOUT
SCALE 0 1 MI.

TOTAL NET LENGTH OF CENTERLINE (1120-09-77) = 0.59 MILE
TOTAL NET LENGTH OF CENTERLINE (1120-09-78) = 0.00 MILE
TOTAL NET LENGTH OF CENTERLINE (1120-09-81) = 0.15 MILE

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, (WCCS), WINNEBAGO COUNTY HORIZONTAL DATUM NAD 83 (91). ALL DISTANCES ARE GROUND. ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO VERTICAL DATUM 1929 ADJUSTMENT(NGVD 29).

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1120-09-77	WISC 2013352	1
1120-09-78	WISC 2013353	1
1120-09-81	WISC 2013354	1

ORIGINAL PLANS PREPARED BY
GREMMER & ASSOCIATES, INC.
CONSULTING ENGINEERS
Stevens Point · Fond du Lac

WISCONSIN
BENJAMIN L. OITZINGER
E-36149
NEENAH, WI
PROFESSIONAL ENGINEER

4/12/2013 (Date)
(Signature)

ORIGINAL PLANS PREPARED BY
CH2MHILL
MILWAUKEE, WISCONSIN

WISCONSIN
KRISTIN C. ATKINS
41708
MENDOTA HEIGHTS, MN
PROFESSIONAL ENGINEER

4/12/13 (Date)
(Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WisDOT NER
Designer	CH2M HILL / GREMMER
Project Manager	TOM BUCHHOLZ
Regional Examiner	MARC ROESLER
Regional Supervisor	CHAD DEGRAVE
C.O. Examiner	

APPROVED FOR DISTRICT OFFICE
DATE: 4/12/13 (Signature)

E

2

GENERAL NOTES

CONSTRUCTION I.D. 1120-09-78 CONSISTS OF THE PAINTING OF B-70-67, CTH G OVER USH 41.

CONSTRUCTION I.D. 1120-09-81 CONSISTS OF ALL OTHER WORK ON CTH G INCLUDING REDECKING OF B-70-67.

ALL REMAINING WORK IS UNDER CONSTRUCTION I.D. 1120-09-77.

NO TREES OR SHRUBS SHALL BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK. ANY UTILITY WHICH IS NOT A MEMBER OF THE DIGGERS HOTLINE MUST BE CONTACTED SEPARATELY.

PRIOR TO ORDERING DRAINAGE PIPES AND STRUCTURES, THE CONTRACTOR SHALL FIELD VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN.

INLET AND DISCHARGE ELEVATIONS FOR DRAINAGE STRUCTURES SHOWN ON THE PLAN MAY BE ADJUSTED BY THE ENGINEER TO FIT FIELD CONDITIONS.

CURB HEIGHTS AT THE END OF CURB AND GUTTER SHALL TAPER FROM 0 TO 4 INCHES OR 0 TO 6 INCHES IN 10 FEET.

EXISTING DRIVEWAYS AND FIELD ENTRANCES SHALL BE RESTORED IN KIND AS DIRECTED BY THE ENGINEER IN THE FIELD AND AT THE LOCATION DETERMINED BY THE ENGINEER.

TEMPORARY STORAGE OF ANY EXCAVATED MATERIAL WILL NOT BE PERMITTED IN WETLANDS.

BROKEN CONCRETE CONTAINING RE-BAR SHALL NOT BE USED AS RIPRAP OR RIPRAP HEAVY.

CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF SALVAGED TOPSOIL OR TOPSOIL WHERE REQUIRED.

A SAWED JOINT IS REQUIRED WHERE NEW HMA OR CONCRETE PAVEMENT SURFACE MEETS EXISTING HMA OR CONCRETE PAVEMENT SURFACE.

TRAFFIC CONTROL DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

THE EROSION CONTROL ITEMS SHOWN ON THE PLANS ARE AT SUGGESTED LOCATIONS. THE ENGINEER MAY MODIFY LOCATIONS AS NEEDED. ALL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL SUCH TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY.

EXISTING ELEVATIONS SHALL BE VERIFIED IN THE FIELD.

BENCHMARKS ARE LOCATED BY HAND HELD GPS AND ARE WITHIN APPROXIMATELY 20' HORIZONTALLY OF WHERE SHOWN ON THE PLAN.

DESIGNER NOTES

DESIGN PLANS, SPECIFICATIONS, AND ESTIMATE FOR STRUCTURES B-70-287, R-70-46, AND R-70-47 PROVIDED BY WISDOT.

DESIGN PLANS, SPECIFICATIONS, AND ESTIMATE FOR EROSION CONTROL AND DRAINAGE PIPES PROVIDED BY GREMMER & ASSOCIATES.

UTILITY COORDINATION AND UTILITY SPECIFICATIONS BY BECHER HOPPE ASSOCIATES.

DESIGN, PLANS, SPECIFICATIONS, AND ESTIMATE FOR ALL REMAINING ITEMS PROVIDED BY CH2M HILL, INC.

REFERENCE LINE CALL OUTS

'BRA'	USH 41 SOUTHBOUND ENTRANCE RAMP
'BRB'	USH 41 SOUTHBOUND EXIT RAMP
'BRC'	USH 41 NORTHBOUND ENTRANCE RAMP
'BRD'	USH 41 NORTHBOUND EXIT RAMP
'BRE'	BREEZEWOOD LANE EASTBOUND
'BRW'	BREEZEWOOD LANE WESTBOUND
'CTG'	CTH G
'CTGG'	CTH GG
'CTY'	CTH Y
'DIX'	DIXIE ROAD/OLD DIXIE ROAD
'GRV'	GREEN VALLEY ROAD
'JSA'	USH 41 SOUTHBOUND ENTRANCE RAMP
'JSB'	USH 41 SOUTHBOUND EXIT RAMP
'JSC'	USH 41 NORTHBOUND ENTRANCE RAMP
'JSD'	USH 41 NORTHBOUND EXIT RAMP
'JSN'	STH 76 NORTHBOUND
'JSS'	STH 76 SOUTHBOUND
'NAB'	USH 41 NORTHBOUND
'SAB'	USH 41 SOUTHBOUND
'WSR'	WOODENSHOE ROAD

STANDARD ABBREVATIONS

AEW	APRON END WALL
AGG	AGGREGATE
AH	AHEAD
BAD	BASE AGGREGATE DENSE
BK	BACK
BM	BENCH MARK
BT	BEGIN TRANSITION
CE	COMMERCIAL ENTRANCE
C&G	CURB AND GUTTER
C/L OR ℄	CENTER OR CONSTRUCTION LINE
CONC	CONCRETE
CP	CULVERT PIPE
CPCM	CULVERT PIPE CORRUGATED METAL
CPCS	CULVERT PIPE CORRUGATED STEEL
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPRCHE	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
EOP	EDGE OF PAVEMENT
ET	END TRANSITION
FE	FIELD ENTRANCE
FS	FULL SUPERELEVATION
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MAX	MAXIMUM
MIN	MINIMUM
M/L	MATCH LINE
NB	NORTHBOUND
NC	NORMAL CROWN
NORM	NORMAL
OFF	OFFSET
PACS	PIPE ARCH CORRUGATED STEEL
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASEMENT
POB	POINT OF BEGINNING
POE	POINT OF END
PT	POINT OF TANGENT
PUU	PIPE UNDERDRAIN UNPERFORATED
R	RADIUS OF CURVE
RAB	ROUNDABOUT
R/L	REFERENCE LINE
R/W	RIGHT OF WAY
RC	REVERSE CROWN
RCAEW	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
REQD	REQUIRED
RHF	RIGHT HAND FORWARD
RO	RUN OFF LENGTH
RT	RIGHT
SALV	SALVAGED
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWING
SE	SUPERELEVATION
SF	SQUARE FOOT
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
TYP	TYPICAL
VD	DRAIN SLOTTED VANE
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT

HMA PAVEMENT LAYERS

2" HMA PAVEMENT TYPE E-10
- 2" UPPER LAYER - 12.5mm

3.5" HMA PAVEMENT TYPE E-10
- 3.5" UPPER LAYER - 12.5mm

3.5" HMA PAVEMENT TYPE E-1
- 3.5" UPPER LAYER - 12.5mm

5" HMA PAVEMENT TYPE E-0.3
- 2" UPPER LAYER - 12.5mm
- 3" LOWER LAYER - 19.0mm

6" HMA PAVEMENT TYPE E-1
- 2.5" UPPER LAYER - 12.5mm
- 3.5" LOWER LAYER - 19.0mm

ORDER OF SECTION 2 SHEETS

PROJECT OVERVIEW
WETLAND OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
EROSION CONTROL
STORM SEWER
SIGNING/PAVEMENT MARKING
LIGHTING PLANS
TRAFFIC CONTROL
DETOUR SIGNING
ALIGNMENT PLAN

UTILITIES

CITY OF NEENAH PUBLIC WORKS & UTILITIES
(LIGHTS, SANITARY SEWER AND WATER)
GERRY KAISER
211 WALNUT STREET
P.O. BOX 426
NEENAH, WI 54956
OFFICE: (920) 886-6241
MOBLE: (920) 209-9456
gkaiser@ci.neenah.wi.us

KDL
(COMMUNICATION)
JIM KOSTUCH
13935 BISHOPS DRIVE
BROOKFIELD, WI 53005
OFFICE: (262) 792-7238
James.kostuch@kdlinc.com

SPRINT
(COMMUNICATION)
JAMES BURTON
400 W. GRAND AVENUE
ELMHURST, IL 60126
(708) 955-6659
James.burton@ericsson.com

TIME WARNER CABLE
(COMMUNICATION)
VINCE ALBIN
CONSTRUCTION ADMINISTRATOR
3520 DESTINATION DRIVE
APPLETON, WI 54915
OFFICE: (920) 831-9249
MOBILE: (920) 378-0444
vince.albin@twcable.com

US SIGNAL
(COMMUNICATION)
DAN MEYER
C/O MEYER SERVICES
4520 N. GREENVILLE DRIVE
APPLETON, WI 54913-8801
OFFICE: (920) 734-0081 ext. 12
MOBILE: (920) 209-9030
dan@meyer-usa.com

AMERICAN TRANSMISSION CO. LLC
(ELECTRIC TRANSMISSION)
MIKE OLSEN
SENIOR SURVEYING SPECIALIST
801 O'KEEFE ROAD
P.O. BOX 6113
DE PERE, WI 54115-6113
OFFICE: (920) 338-6582
MOBILE: (920) 660-2390
molsen@atcllc.com

AT&T LEGACY
(LONG DISTANCE COMMUNICATION)
WILLIAM KOENIG
C/O JMC ENGINEERS & ASSOCIATES, INC.
16100 S. REDWOOD ROAD
CALVIN, IN 46511
OFFICE: (574) 842-8830
MOBILE: (608) 628-0575
jmc140@verizon.net

AT&T WISCONSIN
(LOCAL COMMUNICATION)
(FOR FACILITIES SOUTH OF STATION 904'SAB/NAB'+80)
CHARLES BARTELT
70 E. DIVISION STREET
FOND DU LAC, WI 54935
OFFICE: (920) 929-1013
MOBILE: (920) 410-5104
cb1461@att.com

(LOCAL COMMUNICATION)
(FOR FACILITIES NORTH OF STATION 904'SAB/NAB'+80)
CHRIS SABOURIN
221 W. WASHINGTON ST, 4TH FLOOR
APPLETON, WI 54911
OFFICE: (920) 735-3252
MOBILE: (920) 556-2819
cs2719@att.com

WE ENERGIES
(ELECTRIC AND GAS DISTRIBUTION)
(SEND ALL CORRESPONDENCE TO)
DAN SANDE
333 W. EVERETT STREET -A299
MILWAUKEE WI 53203
OFFICE: (414) 221-4578

(ELECTRIC DISTRIBUTION CONSTRUCTION FIELD CONTACT)
JIM QUINN
P.O. BOX 1699
APPLETON, WI 54912
OFFICE: (920) 380-3401
MOBILE: (920) 450-9430
Jim.quinn@we-energies.com

(GAS DISTRIBUTION CONSTRUCTION FIELD CONTACT)
CODY BECKMAN
P.O. BOX 1699
APPLETON, WI 54912
OFFICE: (920) 380-3422
MOBILE: (920) 428-1038
cody.beckman@we-energies.com

WISCONSIN PUBLIC SERVICE CORPORATION
(ELECTRIC DISTRIBUTION)
DAVE PETERSEN
ELECTRIC ENGINEER
3300 N. MAIN STREET
OSHKOSH, WI 54901
OFFICE: (920) 236-5910
MOBILE: (920) 680-2036
dtpetersen@wisconsinpublicservice.com

(GAS DISTRIBUTION)
PAUL SPANGLER
3300 N. MAIN STREET
OSHKOSH WI 54901
OFFICE: (920) 236-5908
MOBILE: (920) 660-3150
paspangler@wisconsinpublicservice.com

DIGGERS HOTLINE

Call 811 3 Work Days Before You Dig
or Toll Free (800) 242-8511
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 542-2289
www.DiggersHotline.com

OTHER CONTACTS

CANADIAN NATIONAL RAILWAY
(RAILROAD FLAGGING)
DARYL LANG
2800 LIVERNOIS, SUITE 330
TROY, MI 48083
PHONE: (248) 740-6227
FAX: (248) 740-6031
daryl.lang@cn.ca

(MAIN RAILROAD)
JACKIE MACEWICZ
MANAGER PUBLIC WORKS
1625 DEPOT STREET
STEVENS POINT, WI 54481
PHONE: (715) 345-2503
CELL: (715) 572-7803
FAX: (715) 345-2534
jackie.macewicz@cn.ca

24 HOUR EMERGENCY
RAILROAD SIGNAL CONTACT
(800) 616-3432

CALL BEFORE YOU DIG:
CANADIAN NATIONAL RAILWAY IS NOT PART OF THE DIGGERS HOTLINE SYSTEM
CALL CHRISTINE GRZESIAK
(715) 345-2506
WHEN DIGGING ON RAILROAD R/W

CITY OF NEENAH PUBLIC WORKS
LARRY WETTERING
211 WALNUT STREET
P.O. BOX 426
NEENAH, WI 54957-0426
PHONE: (920) 751-4625

DNR LIAISON
BOBBIJO FISCHER
427 EAST TOWER DRIVE
SUITE 100
WAUTOMA, WI 54982
PHONE: (920) 787-4686 EXT 3007

TOWN OF NEENAH
BOB SCHMEICHEL
TOWN CHAIRMAN
215 MANDELLA COURT
NEENAH, WI 54956
(920) 729-5995

WINNEBAGO COUNTY HIGHWAY DEPARTMENT
901 WEST COUNTY ROAD Y
ERNEST WINTERS
OSHKOSH, WI 54901
PHONE: (920) 232-1700

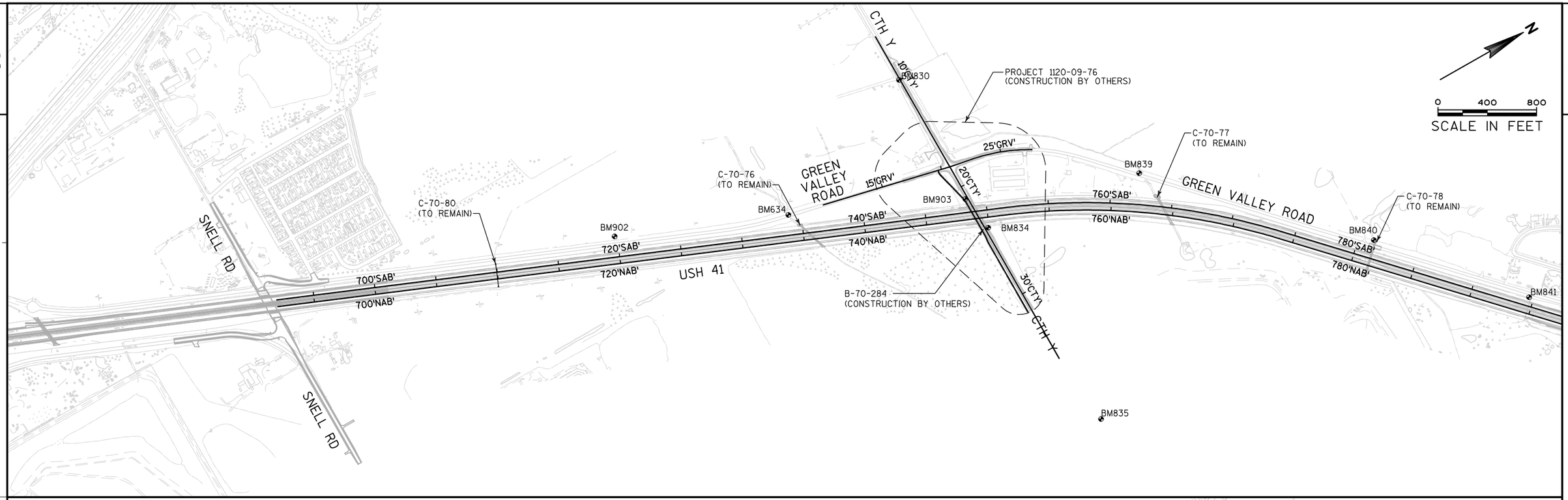
TOWN OF OSHKOSH
GERALD FREY
TOWN CHAIRMAN
4804 ISLAND VIEW DRIVE
OSHKOSH, WI 54901
PHONE: (920) 233-2391

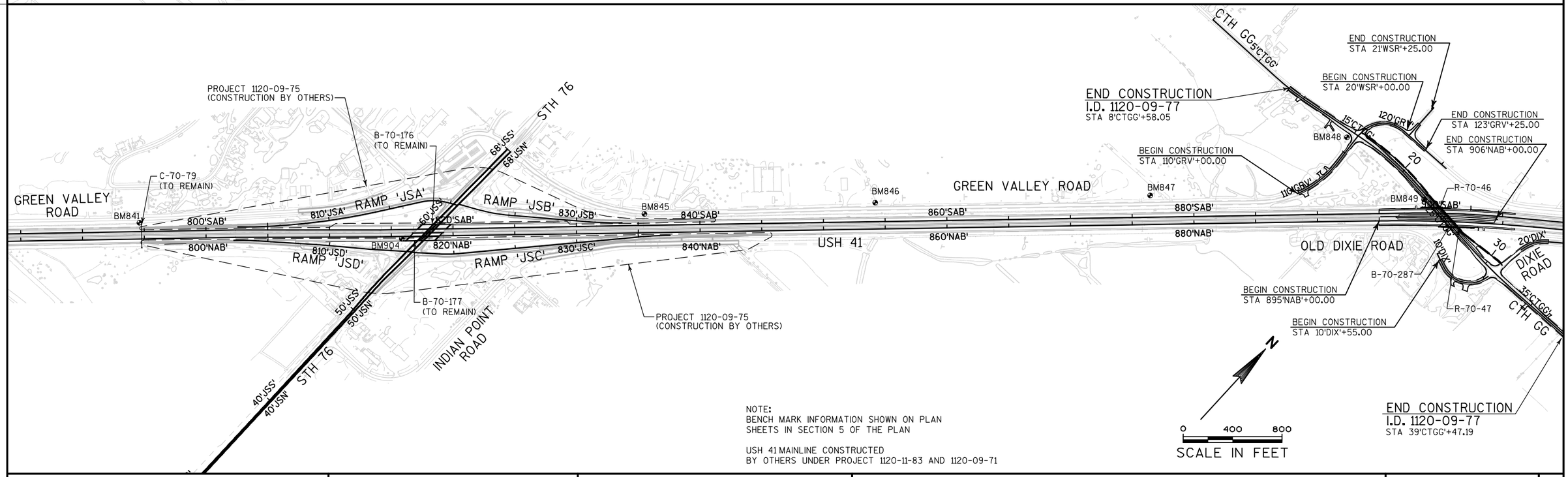
TOWN OF VINLAND
RAYMOND BATLEY
TOWN CHAIRMAN
1519 COWLING ROAD
NEEHAH, WI 54956
(920) 729-1966

WINNEBAGO COUNTY SURVEYOR
JERRY BOUGIE
WINNEBAGO COUNTY COURT HOUSE
448 ALGOMA BLVD
OHSHKOSH, WI 54903-2808
PHONE: (920) 236-4839

WISCONSIN HIGHWAY BUSINESS SIGNS/ DIVISION OF DERSE, INC.
MARK ROGNSVOOG
3800 W. CANAL STREET
MILWAUKEE, WI 53208
PHONE: (414) 257-2000

WISCONSIN STATE PATROL
SGT. NELSON
851 S. ROLLING MEADOWS DRIVE
P.O. BOX 984
FOND DU LAC, WI 54936-0894
PHONE: (920) 929-3700 EXT. 3006





NOTE:
BENCH MARK INFORMATION SHOWN ON PLAN SHEETS IN SECTION 5 OF THE PLAN

USH 41 MAINLINE CONSTRUCTED BY OTHERS UNDER PROJECT 1120-11-83 AND 1120-09-71

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PROJECT OVERVIEW	SHEET 3	E

END CONSTRUCTION
STA 123'GRV'+25.00

B-70-287

R-70-46

R-70-47

BM849

GREEN VALLEY ROAD

920'SAB'

920'NAB'

BM851

940'SAB'

940'NAB'

BM852

960'SAB'

960'NAB'

NEEVIN ROAD

BM853

980'SAB'

980'NAB'

BM855

1000'SAB'

1000'NAB'

BM856

1020'SAB'

1020'NAB'

WISCONSIN CENTRAL LIMITED RAILROAD

DIXIE ROAD

USH 41

C-70-1273
(TO REMAIN)

OLD DIXIE ROAD

10'DIX'

30

20'DIX'

35'CTGG'

END CONSTRUCTION
STA 21'DIX'+18.04

END CONSTRUCTION
STA 906'NAB'+00.00

BEGIN CONSTRUCTION
STA 10'DIX'+55.00

END CONSTRUCTION
I.D. 1120-09-77
STA 39'CTGG'+47.19

CTH GG

DIXIE ROAD

N

0 400 800
SCALE IN FEET

2

CTH G

NOTE:
BENCH MARK INFORMATION SHOWN ON PLAN
SHEETS IN SECTION 5 OF THE PLAN

USH 41 MAINLINE CONSTRUCTED
BY OTHERS UNDER PROJECT 1120-11-83 AND 1120-09-71

BREEZEWOOD LANE

90'BRE'

95'BRE'

BM869

100'BRW'

85'BRE'

RAMP 'BRA'

105'BRE'

105'BRW'

RAMP 'BRB'

1100'NAB'

GILLINGHAM ROAD

1120'SAB'

1120'NAB'

1130'SAB'

1130'NAB'

JEWELERS PARK DRIVE

BM870

1040'SAB'

1040'NAB'

BERGSTROM ROAD

1060'SAB'

1060'NAB'

1080'NAB'

RAMP 'BRD'

110'BRE'

110'BRW'

RAMP 'BRC'

115'BRE'

115'BRW'

HARRISON STREET

120'BRE'

BELL STREET

125'

BEGIN CONSTRUCTION
I.D. 1120-09-78/81
STA 46'CTG'+26.15

45'CTG'

B-70-67
(TO REMAIN)

B-70-72
(TO REMAIN)

B-70-71
(TO REMAIN)

GREEN VALLEY ROAD

1020'SAB'

BM856

1020'NAB'

USH 41

ACCO AVENUE

SCHULTZ DRIVE

DIXIE ROAD

60'CTG'

END CONSTRUCTION
I.D. 1120-09-78/81
STA 58'CTG'+72.10

BM859

N

0 400 800
SCALE IN FEET

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PROJECT OVERVIEW	SHEET 4	E

2

BEGIN CONSTRUCTION
I.D. 1120-09-77
STA 8'CTGG'+58.05

CTH GG 15'CTGG'
120'GVR'
W-162
W-76
20
W-160
W-159
W-158
W-161
W-78
W-79
110'GVR'
W-77
W-80
W-83
R/L USH 41 SB
GREEN VALLEY ROAD
840'SAB'
860'SAB'
880'SAB'
900'SAB'
USH 41
840'NAB'
860'NAB'
880'NAB'
900'NAB'
25'CTGG'
OLD DIXIE ROAD
10'DIX'
R/L USH 41 NB
W-85
W-84
W-82
W-81

N
0 200 400
SCALE IN FEET

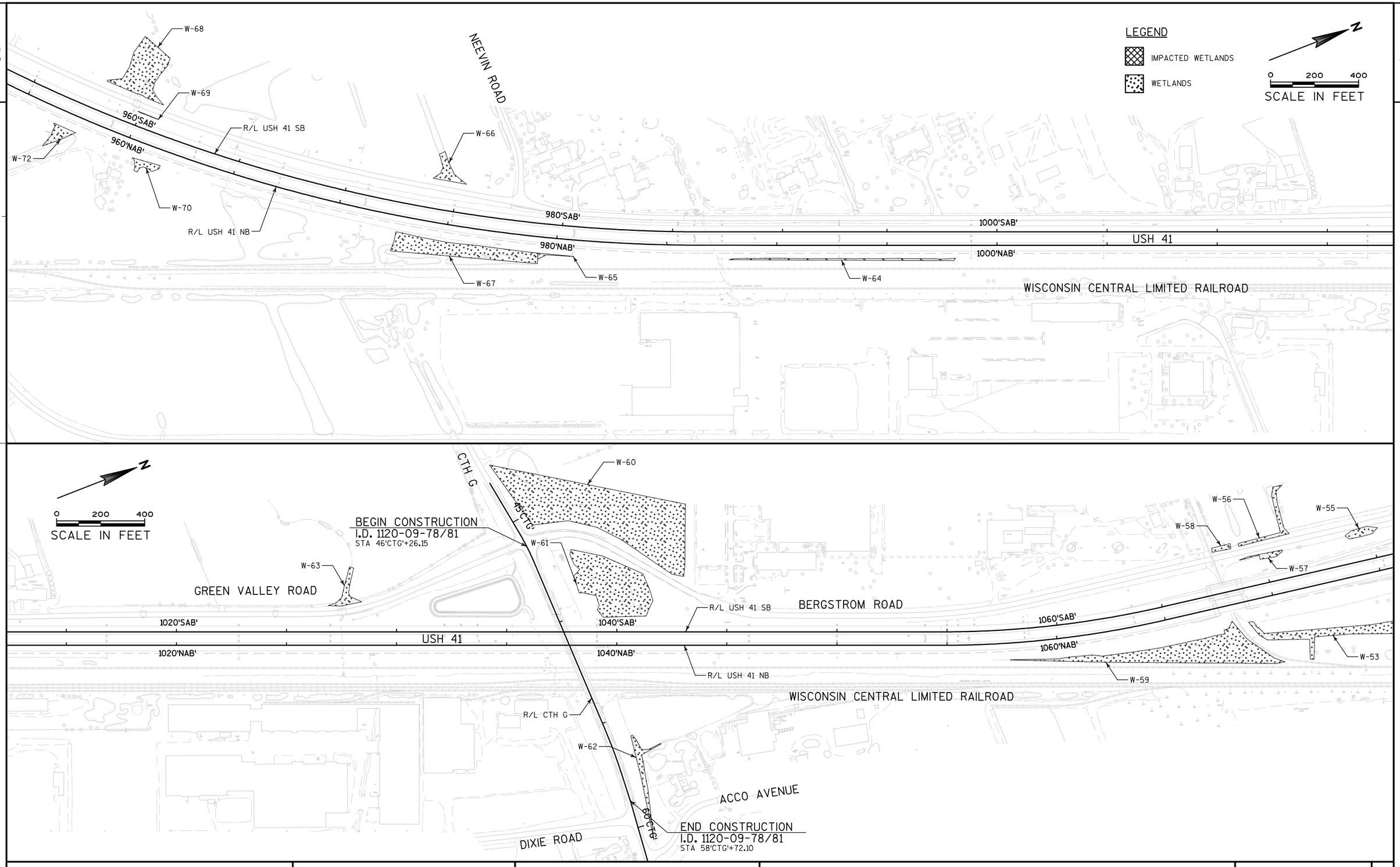
LEGEND
IMPACTED WETLANDS
WETLANDS

R/L WOODENSHOE ROAD
W-162
R/L GREEN VALLEY ROAD
20
W-76
W-77
900'SAB'
25'CTGG'
900'NAB'
R/L CTH GG
30
20'DIX'
10'DIX'
R/L USH 41 SB
GREEN VALLEY ROAD
920'SAB'
940'SAB'
USH 41
920'NAB'
940'NAB'
DIXIE ROAD
R/L USH 41 NB
W-165
W-163
W-164
OLD DIXIE ROAD
35'CTGG'
CTH GG
END CONSTRUCTION
I.D. 1120-09-77
STA 39'CTGG'+47.19
W-75
W-74
W-73
W-68
W-72
W-71

N
0 200 400
SCALE IN FEET

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	WETLAND OVERVIEW	SHEET 5	E

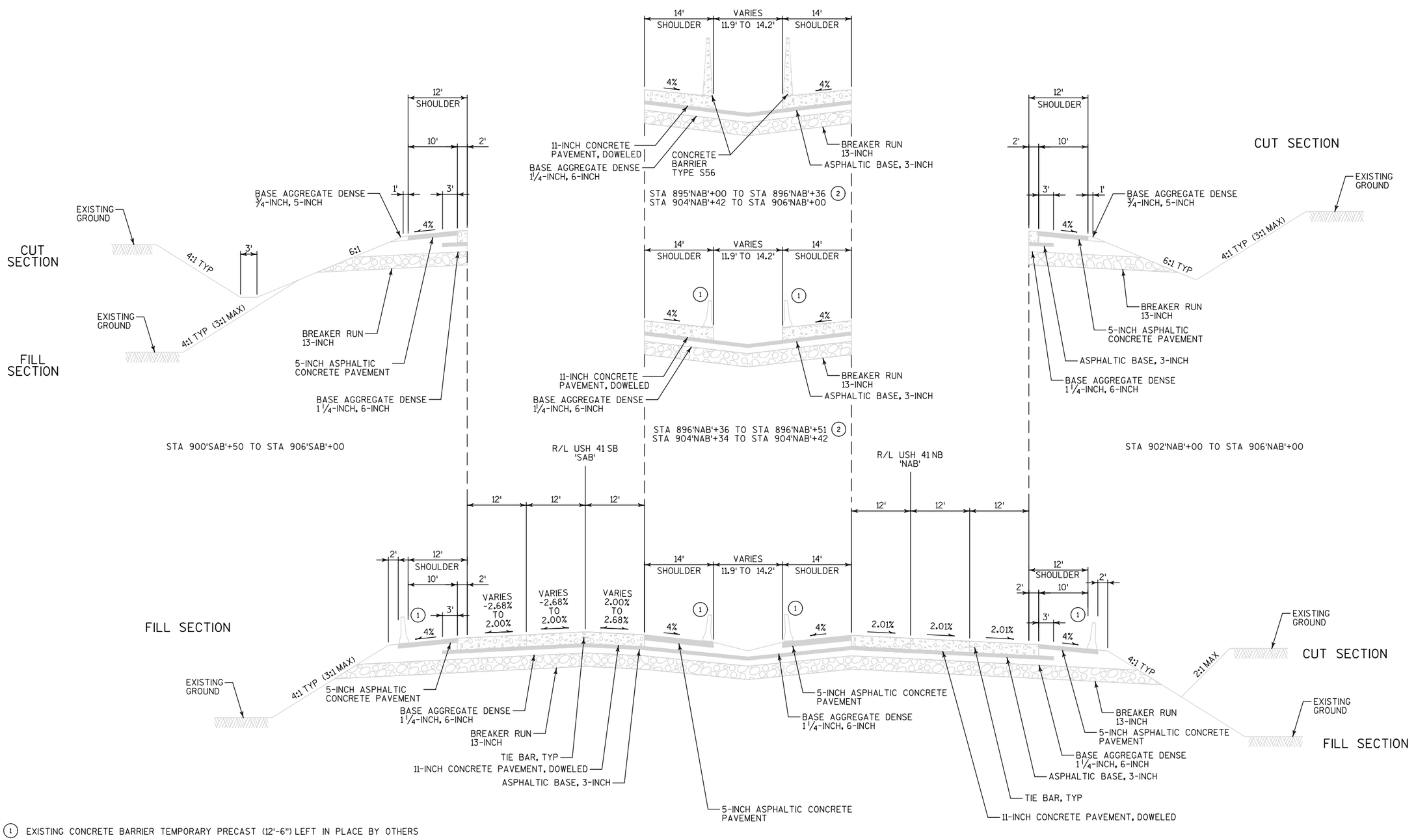
FILE NAME : CH_0977-78-81_020203_wo.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 400:1
WISDOT/CADDS SHEET 42



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	WETLAND OVERVIEW	SHEET 6	E

FILE NAME : CH_0977-78-81_020204_wo.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 400:1

2



(1) EXISTING CONCRETE BARRIER TEMPORARY PRECAST (12'-6") LEFT IN PLACE BY OTHERS

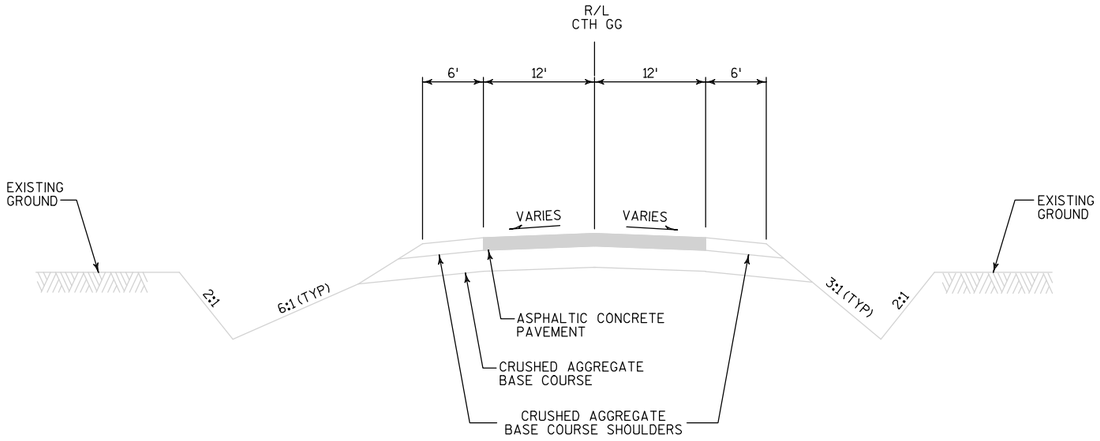
(2) SEE PLAN SHEET FOR SOUTHBOUND LIMITS

EXISTING TYPICAL SECTION
USH 41

STA 895'NAB'+00 TO STA 906'NAB'+00
CTH "GG" (B-70-66)

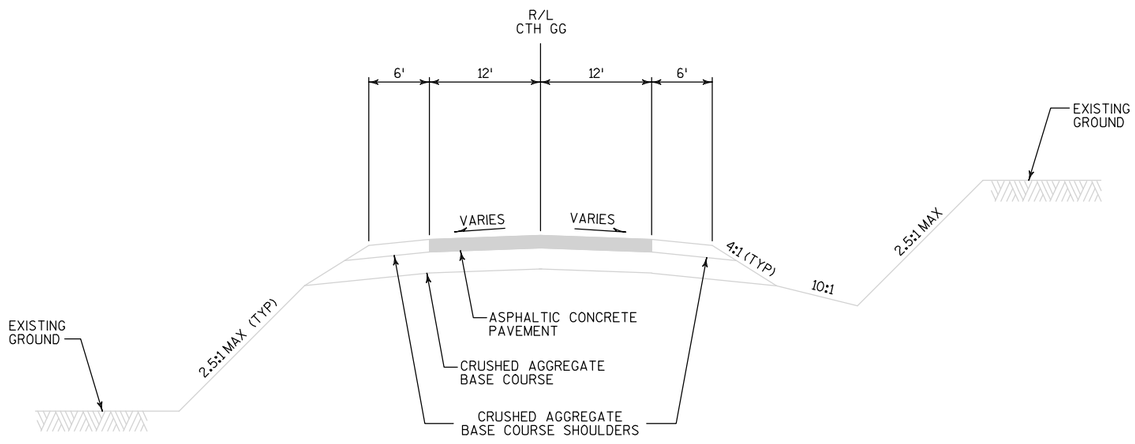
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - USH 41	SHEET 7	E

2



EXISTING TYPICAL SECTION
CTH GG

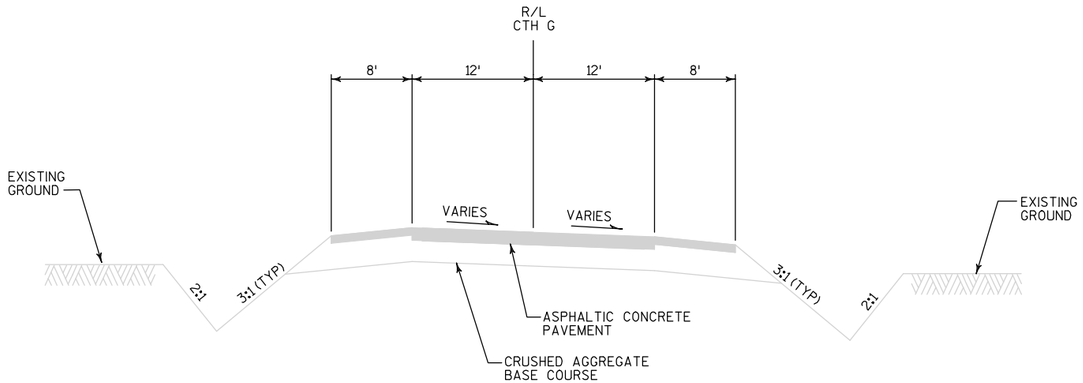
STA 17'CTGG'+91 TO STA 23'CTGG'+43
STA 26'CTGG'+40 TO STA 28'CTGG'+80



EXISTING TYPICAL SECTION
CTH GG

STA 8'CTGG'+58 TO STA 17'CTGG'+91
STA 28'CTGG'+80 TO STA 39'CTGG'+47

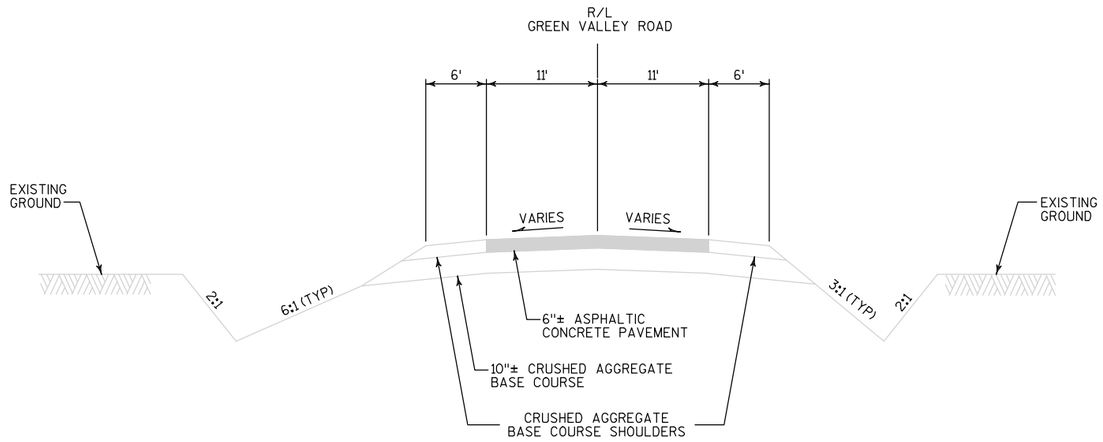
2



EXISTING TYPICAL SECTION
CTH G

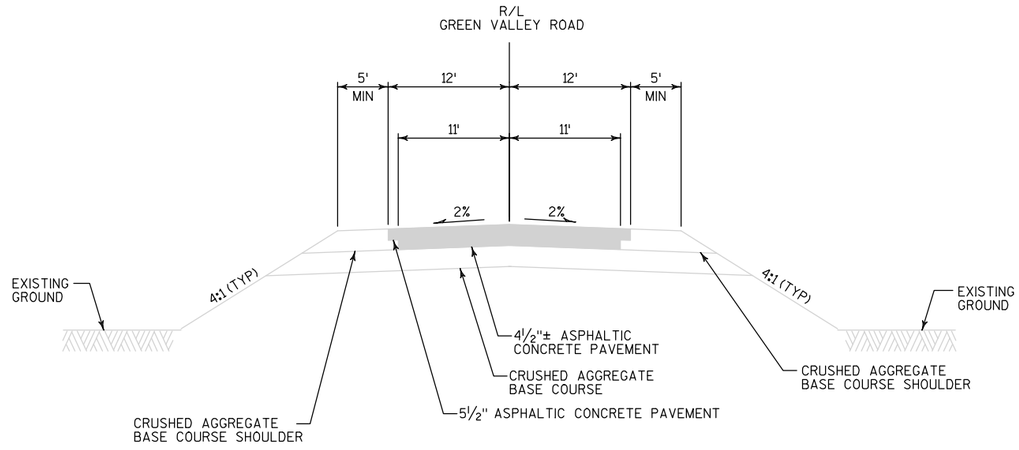
STA 46'CTG'+26 TO STA 58'CTG'+73

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - CTH G	SHEET 9	E



EXISTING TYPICAL SECTION
GREEN VALLEY ROAD

STA 116'GRV'+27 TO STA 123'GRV'+25

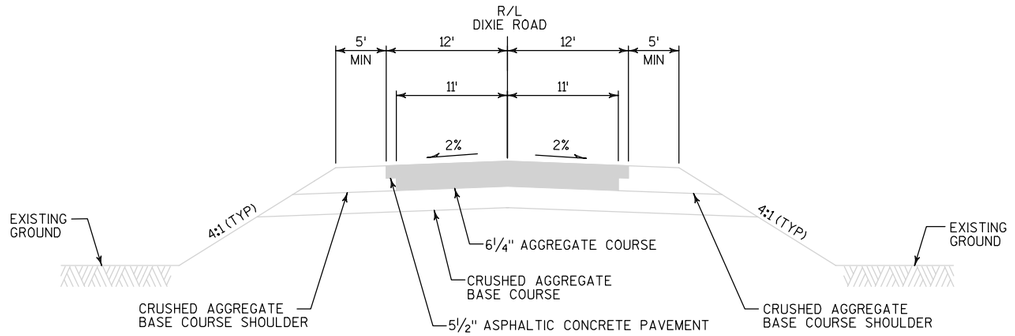


EXISTING TYPICAL SECTION
GREEN VALLEY ROAD

STA 110'GRV'+00 TO STA 116'GRV'+27

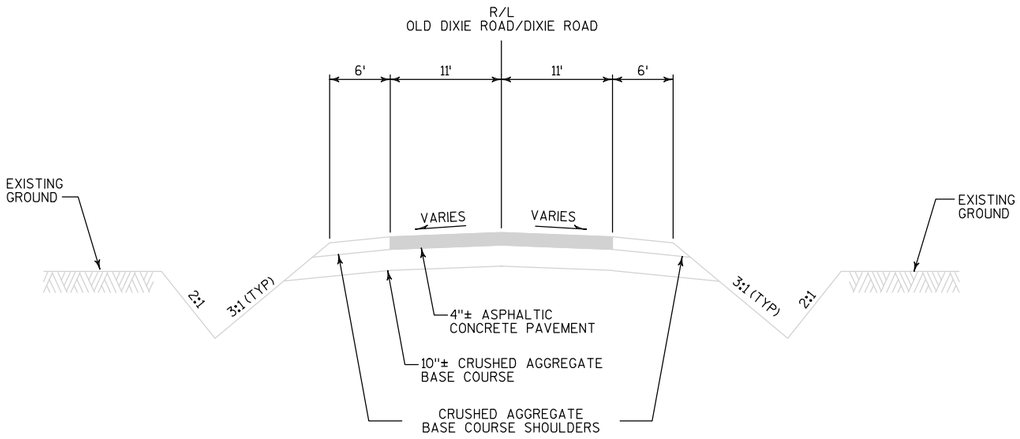
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - GREEN VALLEY ROAD	SHEET 10	E

2



EXISTING TYPICAL SECTION
DIXIE ROAD

STA 16'DIX'+75 TO STA 21'DIX'+18

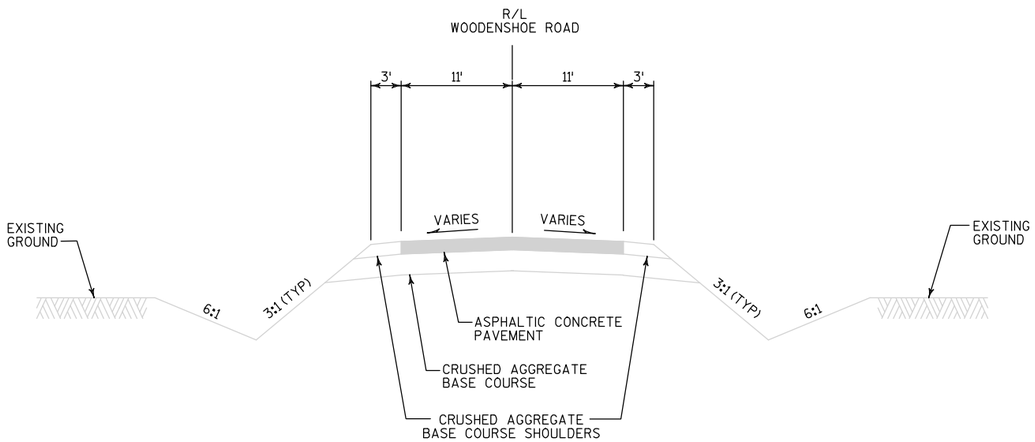


EXISTING TYPICAL SECTION
OLD DIXIE ROAD/DIXIE ROAD

STA 10'DIX'+55 TO STA 16'DIX'+75

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - OLD DIXIE ROAD/DIXIE ROAD	SHEET 11	E

2

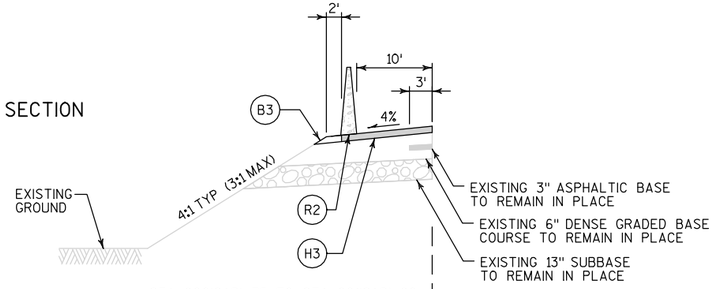


EXISTING TYPICAL SECTION
WOODENSHOE ROAD

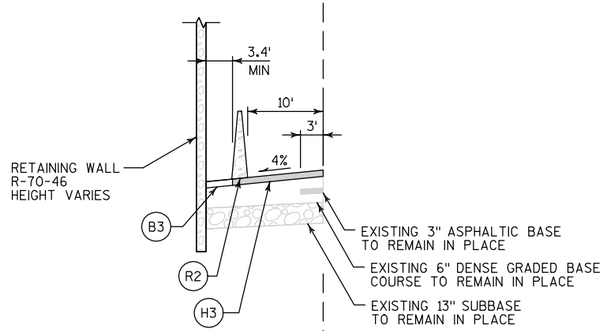
STA 20'WSR'+16 TO STA 21'WSR'+25

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - WOODENSHOE ROAD	SHEET 12	E

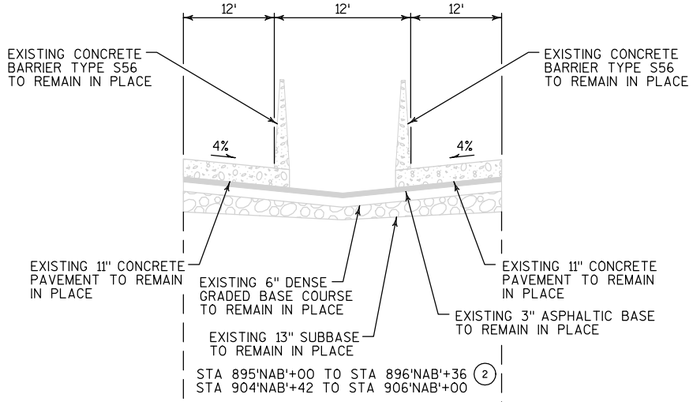
FILL SECTION



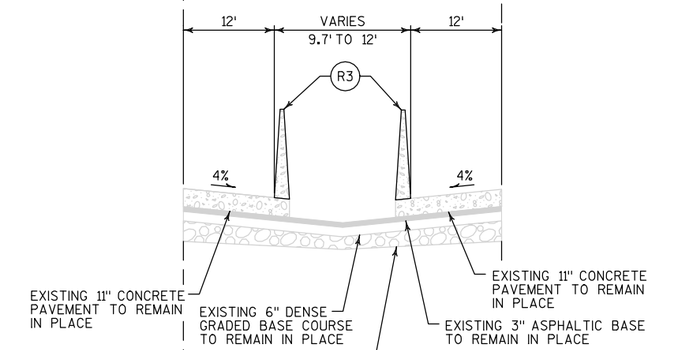
STA 900'SAB'+75 TO STA 901'SAB'+20



STA 898'SAB'+35 TO STA 900'SAB'+75



STA 895'NAB'+00 TO STA 896'NAB'+36 (2)
STA 904'NAB'+42 TO STA 906'NAB'+00

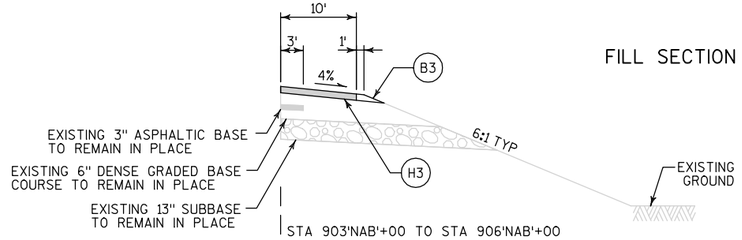


STA 896'NAB'+36 TO STA 896'NAB'+51 (2)
STA 904'NAB'+34 TO STA 904'NAB'+42

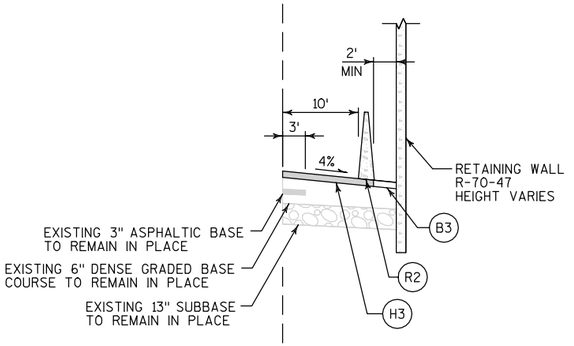
R/L USH 41 SB 'SAB'

R/L USH 41 NB 'NAB'

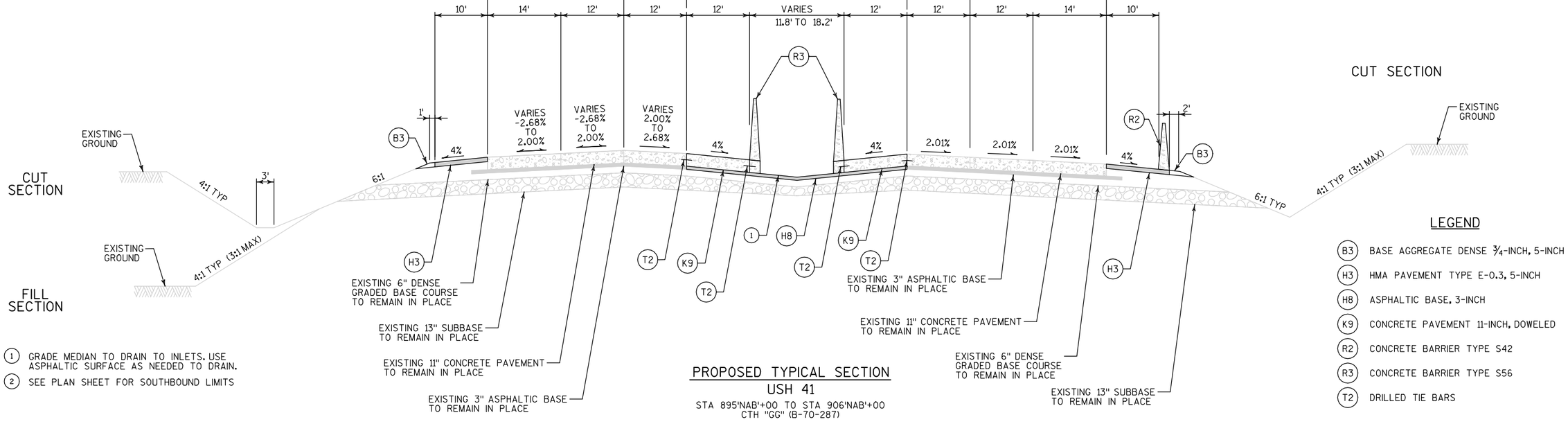
FILL SECTION



STA 903'NAB'+00 TO STA 906'NAB'+00



STA 899'NAB'+82 TO STA 902'NAB'+73



(1) GRADE MEDIAN TO DRAIN TO INLETS. USE ASPHALTIC SURFACE AS NEEDED TO DRAIN.
(2) SEE PLAN SHEET FOR SOUTHBOUND LIMITS

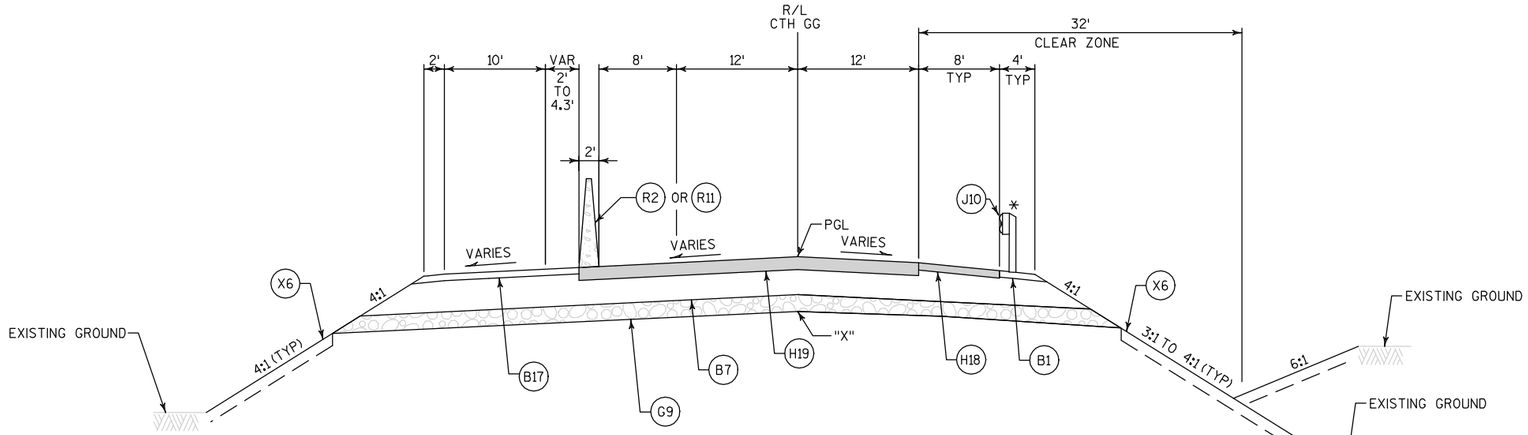
PROPOSED TYPICAL SECTION
USH 41
STA 895'NAB'+00 TO STA 906'NAB'+00
CTH "GG" (B-70-287)

CUT SECTION

LEGEND

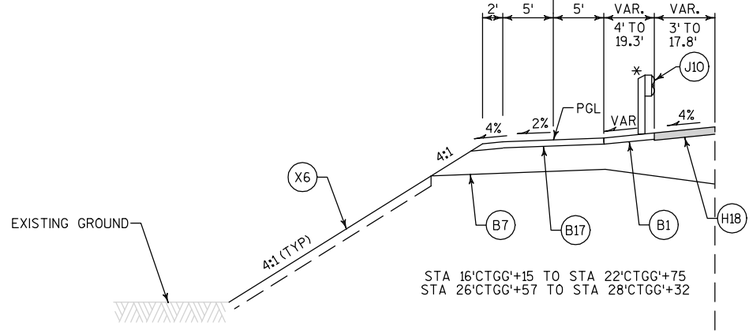
- (B3) BASE AGGREGATE DENSE 3/4-INCH, 5-INCH
- (H3) HMA PAVEMENT TYPE E-0.3, 5-INCH
- (H8) ASPHALTIC BASE, 3-INCH
- (K9) CONCRETE PAVEMENT 11-INCH, DOWELED
- (R2) CONCRETE BARRIER TYPE S42
- (R3) CONCRETE BARRIER TYPE S56
- (T2) DRILLED TIE BARS

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - USH 41	SHEET 13	E

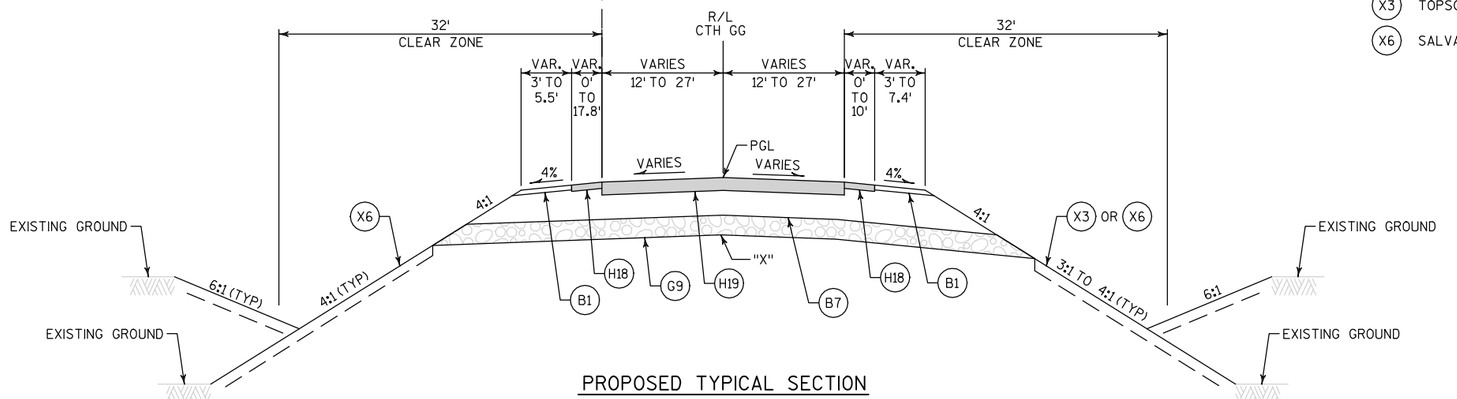


PROPOSED TYPICAL SECTION
CTH GG

STA 22'CTGG'+75 TO STA 23'CTGG'+86
STA 26'CTGG'+07 TO STA 26'CTGG'+57



STA 16'CTGG'+15 TO STA 22'CTGG'+75
STA 26'CTGG'+57 TO STA 28'CTGG'+32



PROPOSED TYPICAL SECTION
CTH GG

STA 8'CTGG'+58 TO STA 22'CTGG'+75
STA 26'CTGG'+57 TO STA 39'CTGG'+47

LEGEND

- (B1) BASE AGGREGATE DENSE 3/4-INCH, 3-INCH
- (B7) BASE AGGREGATE DENSE 1 1/4-INCH, 12-INCH
- (B17) LIMESTONE SCREENINGS, 3-INCH
- (G9) BREAKER RUN 8-INCH
- (H18) HMA PAVEMENT TYPE E-0.3, 3 1/2-INCH
- (H19) HMA PAVEMENT TYPE E-1, 6-INCH
- (J10) MGS GUARDRAIL TYPE 3
- (R2) CONCRETE BARRIER TYPE S42
- (R11) CONCRETE BARRIER TYPE S42B
- (X3) TOPSOIL, SEED, MULCH OR E-MAT AND FERTILIZER
- (X6) SALVAGED TOPSOIL, SEED, MULCH OR E-MAT AND FERTILIZER

"X" = POINT REFERENCED TO ON CROSS SECTIONS

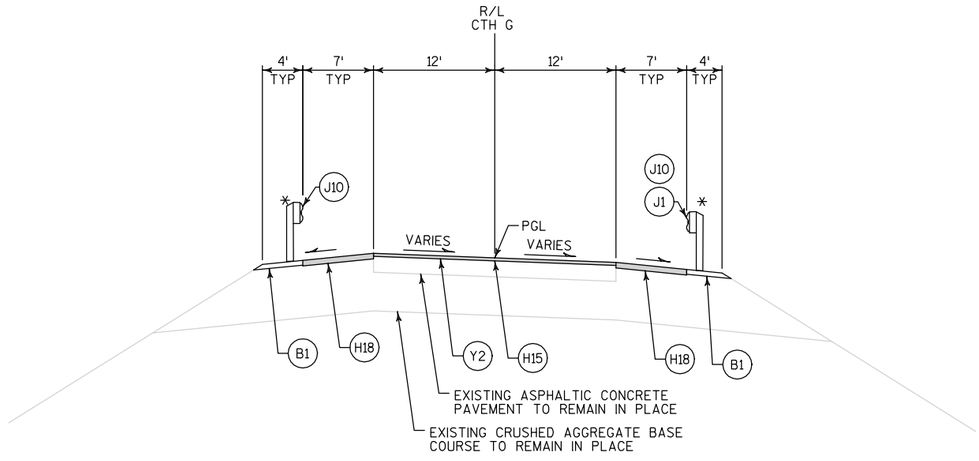
* SEE PLAN FOR LOCATIONS

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - CTH GG	SHEET 14	E

2

LEGEND

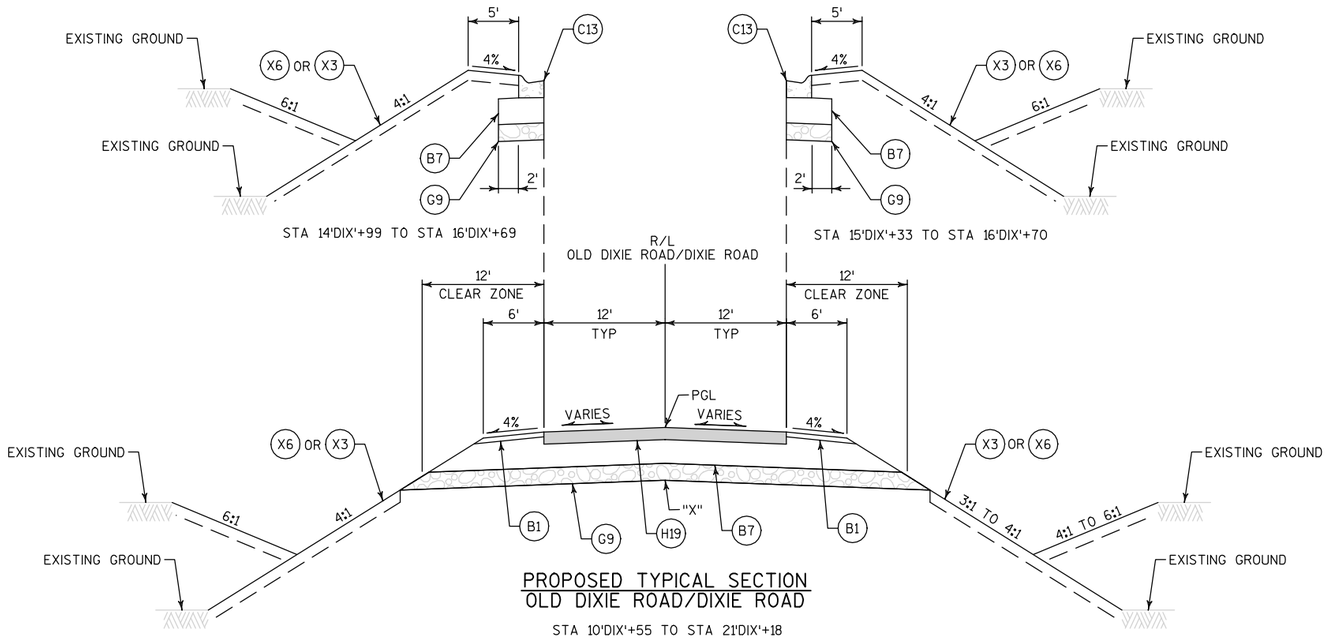
- (B1) BASE AGGREGATE DENSE 3/4-INCH, 3-INCH
- (H15) HMA PAVEMENT TYPE E-10, 2-INCH
- (H18) HMA PAVEMENT TYPE E-0.3, 3 1/2-INCH
- (J1) STEEL PLATE BEAM GUARD CLASS A
- (J10) MGS GUARDRAIL TYPE 3
- (Y2) REMOVING ASPHALTIC SURFACE MILLING 2-INCH



PROPOSED TYPICAL SECTION
CTH G

STA 46'CTG'+26 TO STA 49'CTG'+38
STA 54'CTG'+21 TO STA 58'CTG'+73

* SEE PLAN FOR LOCATIONS

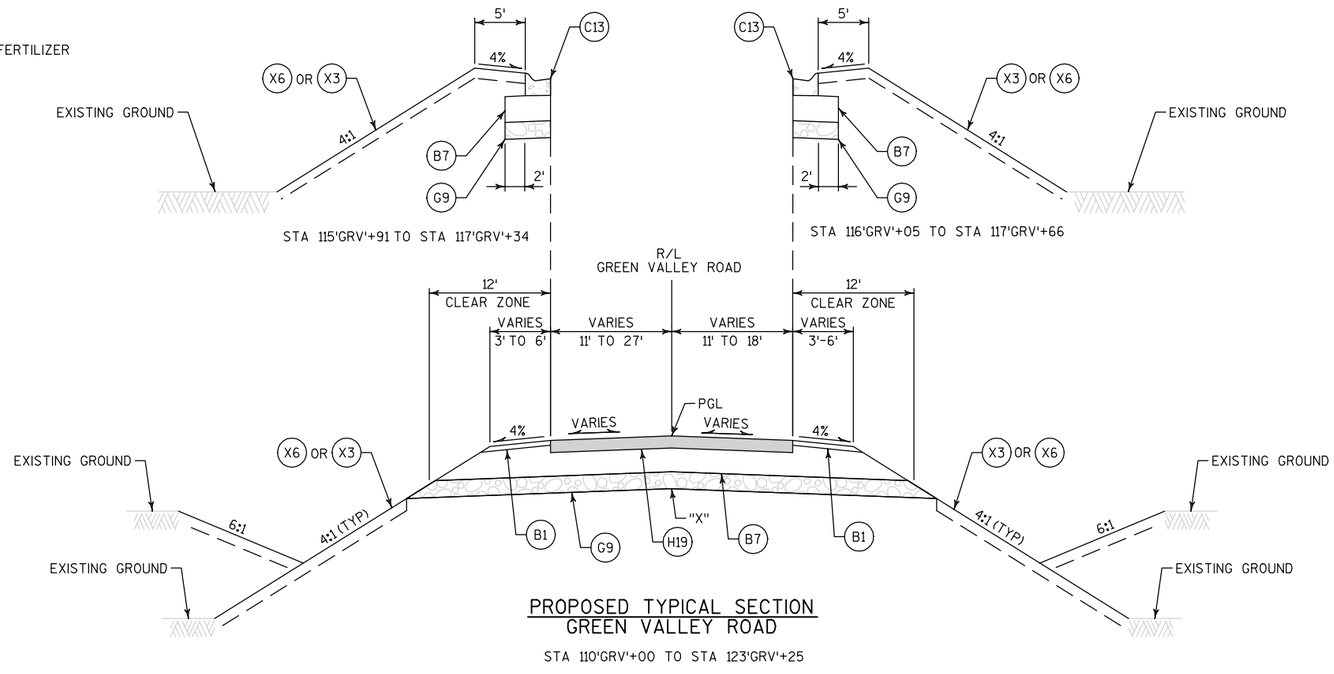


PROPOSED TYPICAL SECTION
OLD DIXIE ROAD/DIXIE ROAD

STA 10'DIX'+55 TO STA 21'DIX'+18

LEGEND

- (B1) BASE AGGREGATE DENSE ¾-INCH, 3-INCH
- (B7) BASE AGGREGATE DENSE 1¼-INCH, 12-INCH
- (C13) CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D
- (G9) BREAKER RUN 8-INCH
- (H19) HMA PAVEMENT TYPE E-1, 6-INCH
- (X3) TOPSOIL, SEED, MULCH OR E-MAT AND FERTILIZER
- (X6) SALVAGED TOPSOIL, SEED, MULCH OR E-MAT AND FERTILIZER

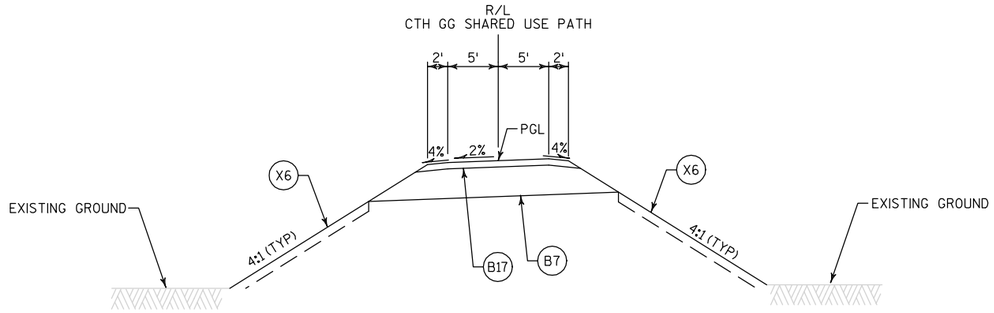


PROPOSED TYPICAL SECTION
GREEN VALLEY ROAD

STA 110'GRV'+00 TO STA 123'GRV'+25

"X" = POINT REFERENCED TO ON CROSS SECTIONS

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - SIDE ROADS	SHEET 16	E

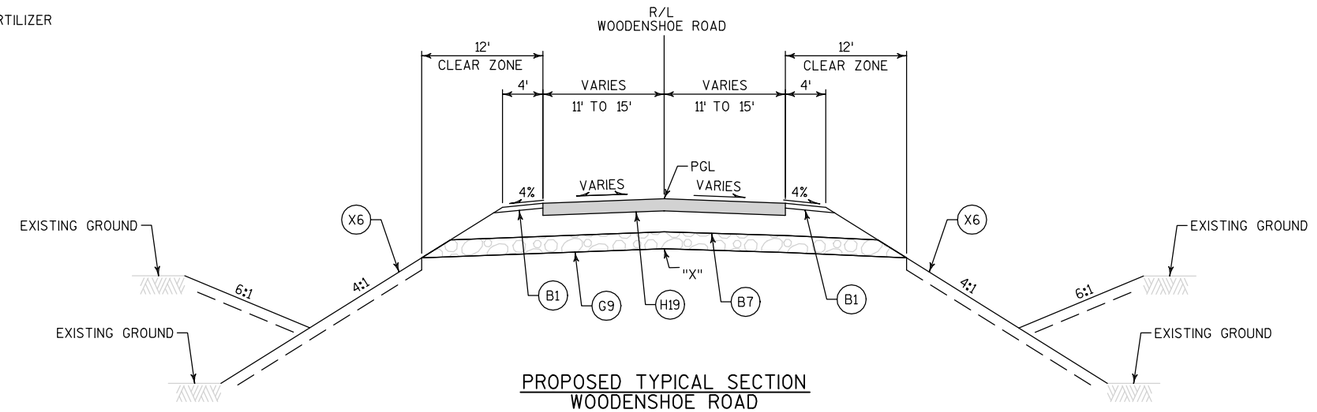


PROPOSED TYPICAL SECTION
CTH GG NORTH PATH

STA 28+20 TO STA 31+00

LEGEND

- (B1) BASE AGGREGATE DENSE 3/4-INCH, 3-INCH
- (B7) BASE AGGREGATE DENSE 1 1/4-INCH, 12-INCH
- (B17) LIMESTONE SCREENINGS, 3-INCH
- (C11) CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE D
- (G9) BREAKER RUN 8-INCH
- (H19) HMA PAVEMENT TYPE E-1, 6-INCH
- (X6) SALVAGED TOPSOIL, SEED, MULCH OR E-MAT AND FERTILIZER

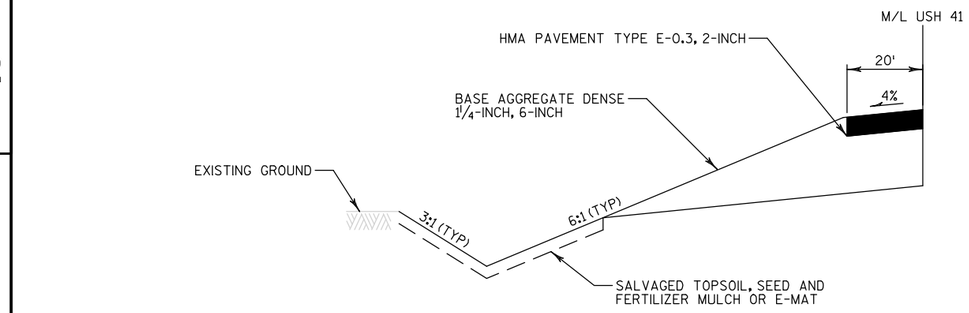


PROPOSED TYPICAL SECTION
WOODENSHOE ROAD

STA 20'WSR'+16 TO STA 21'WSR'+25

"X" = POINT REFERENCED TO ON CROSS SECTIONS

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TYPICAL SECTIONS - WOODENSHOE ROAD AND SHARED USE PATH	SHEET 17	E



TYPICAL LAW ENFORCEMENT PAD CROSS SECTION

2

N

0 20 40
SCALE IN FEET

CTH GG

23'CTGG'

23

24

24'CTGG'

25

25'CTGG'

12'

HMA PAVEMENT
TYPE E-0.3, 2-INCH

20'

4%

+94.03
36.00' LT

USH 41 SB

895'SAB' 896'SAB' 897'SAB' 898'SAB' 899'SAB' 900'SAB'

895'NAB' 896'NAB' 897'NAB' 898'NAB' 899'NAB' 900'NAB'

USH 41 NB

OH

C-UG

LAW ENFORCEMENT PAD

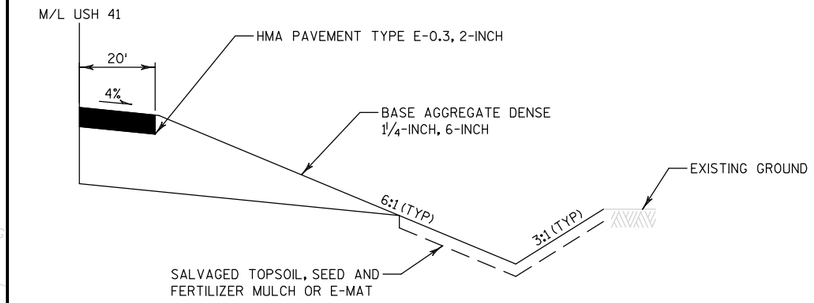
STA 898'SAB'+00

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CONSTRUCTION DETAILS	SHEET 18	E

2

N

0 20 40
SCALE IN FEET



TYPICAL LAW ENFORCEMENT PAD CROSS SECTION

USH 41 SB

901'SAB' 902'SAB' 903'SAB' 904'SAB' 905'SAB' 906'SAB'

25'CTGG'

901'NAB' 902'NAB' 903'NAB' 904'NAB' 905'NAB' 906'NAB'

USH 41 NB

26'CTGG'

27'CTGG' CTH GG

+43.98
36.00' RT

4%
20'
12'

HMA PAVEMENT
TYPE E-0.3, 2-INCH

LAW ENFORCEMENT PAD

STA 903'NAB'+50

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CONSTRUCTION DETAILS	SHEET 19	E

2

N

0 20 40
SCALE IN FEET

49'CTG'
CTH G
50'CTG'
51'CTG'
52'CTG'
CTH G
53'CTG'

1037'SAB' 1038'SAB' 1039'SAB' 1040'SAB' 1041'SAB' 1042'SAB' 1043'SAB'

USH 41 SB

1037'NAB' 1038'NAB' 1039'NAB' 1040'NAB' 1041'NAB' 1042'NAB' 1043'NAB'

USH 41 NB

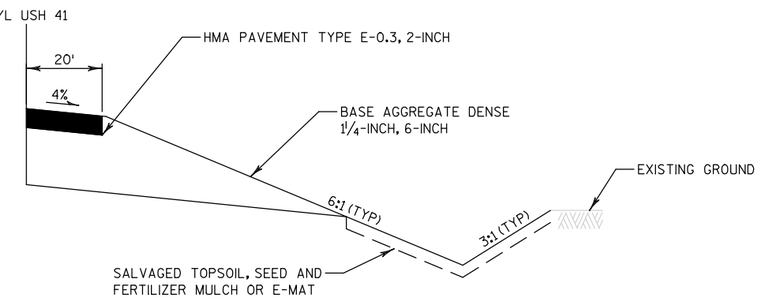
+94.00
36.00' RT

4%
20'
12'
HMA PAVEMENT
TYPE E-0.3, 2-INCH

LAW ENFORCEMENT PAD

STA 1039'NAB'+00

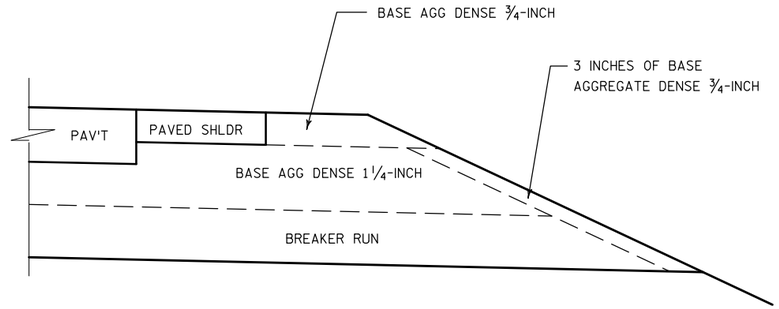
M/L USH 41



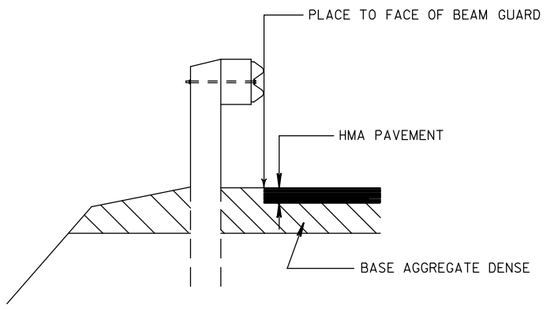
TYPICAL LAW ENFORCEMENT PAD CROSS SECTION

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CONSTRUCTION DETAILS	SHEET 20	E

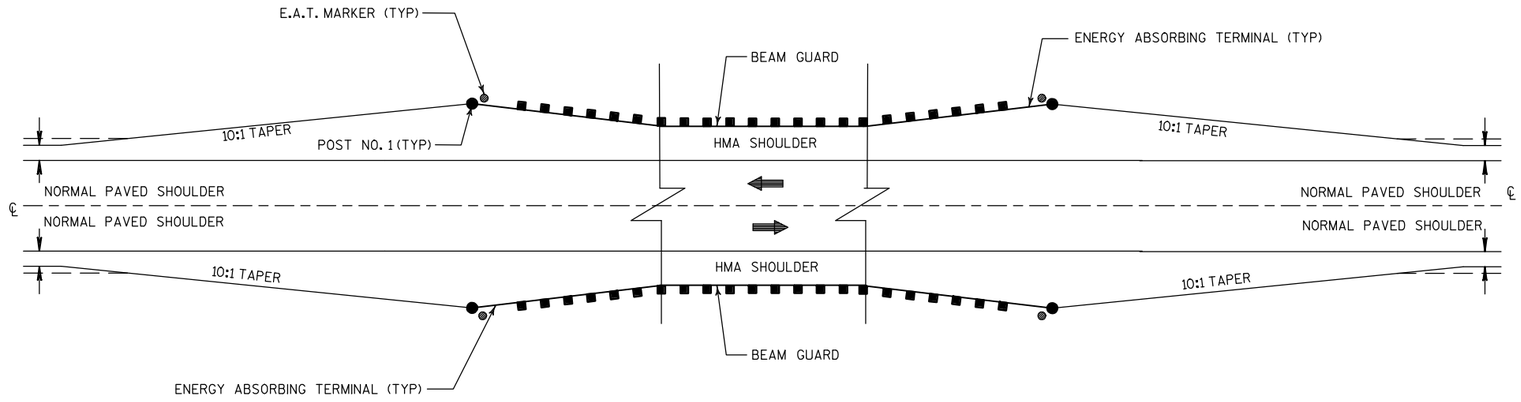
2



BASE AGGREGATE DENSE DETAIL



NOTE: SEE SDDS FOR BEAM GUARD ITEMS FOR ADDITIONAL DETAILS

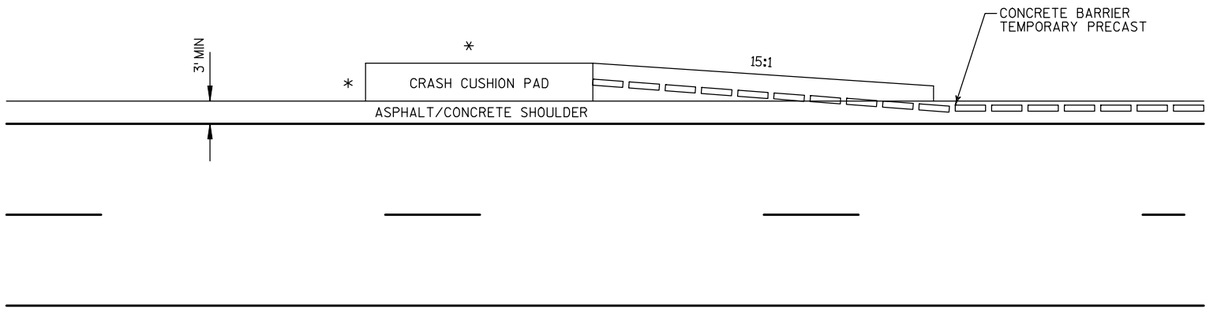


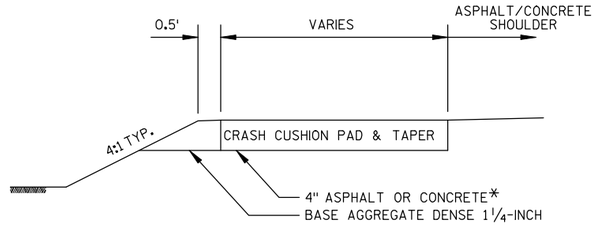
DETAIL FOR HMA SHOULDER AT BEAM GUARD

2

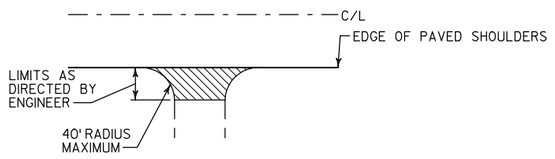
2

* CRASH CUSHION PAD DIMENSIONS
AS SPECIFIED BY MANUFACTURER.
(INCIDENTAL TO TEMPORARY CRASH CUSHION)



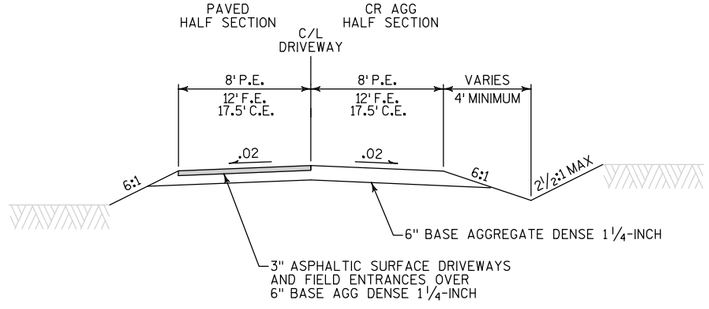


TEMPORARY CRASH CUSHION PAD DETAIL



RURAL DRIVEWAY DETAIL

NOTE:
ADD TOPSOIL, FERTILIZER AND SEED AS NEEDED TO
RESTORE DRIVEWAY TO ORIGINAL CONDITION.

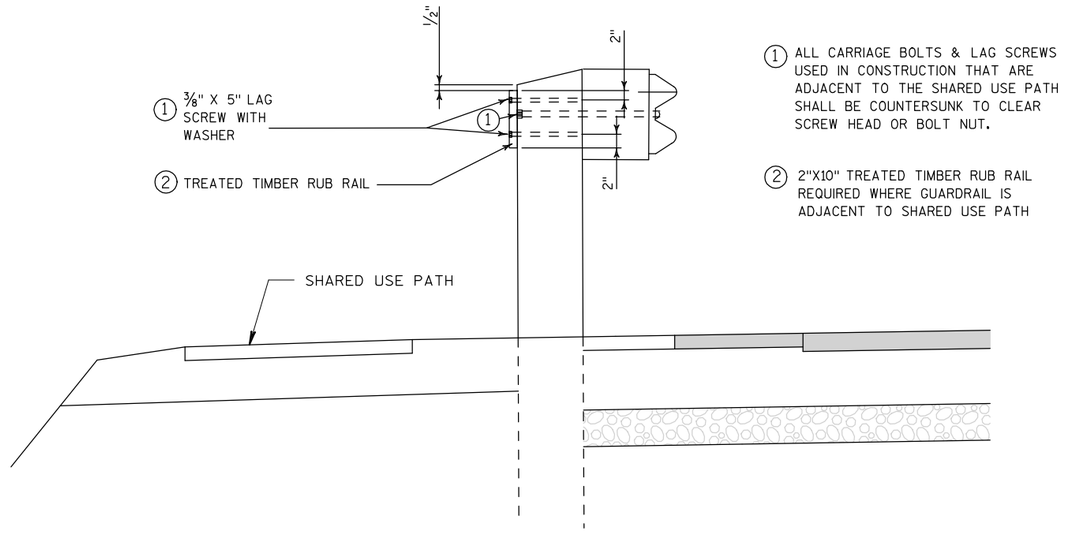


TYPICAL SECTION
FOR RURAL DRIVEWAY

NOTE:
DRIVEWAY PROFILES NOT EXPECTED TO EXCEED 10%.
PLACE LOW POINT OF DRIVEWAY PROFILE OVER DITCH FLOW LINE.

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CONSTRUCTION DETAILS	SHEET 22	E

2

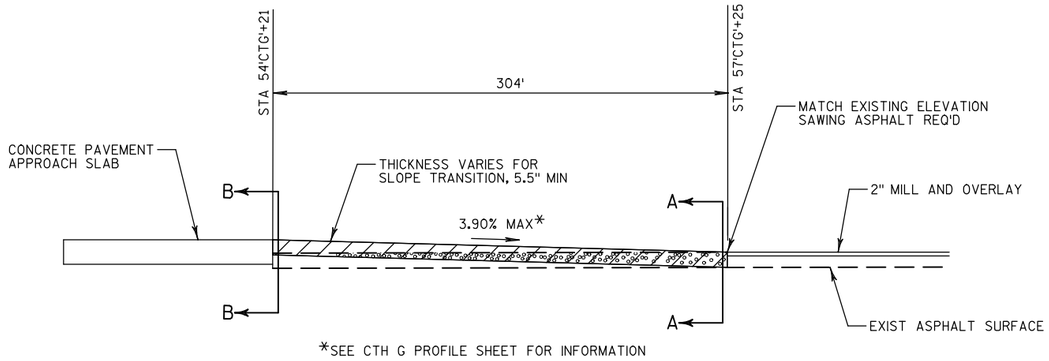


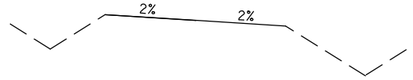
1. ALL CARRIAGE BOLTS & LAG SCREWS USED IN CONSTRUCTION THAT ARE ADJACENT TO THE SHARED USE PATH SHALL BE COUNTERSUNK TO CLEAR SCREW HEAD OR BOLT NUT.

2. 2"X10" TREATED TIMBER RUB RAIL REQUIRED WHERE GUARDRAIL IS ADJACENT TO SHARED USE PATH

TREATED TIMBER RUB RAIL DETAIL

STA 16'CTGG'+14 TO STA 22'CTGG'+75 LT
STA 26'CTGG'+57 TO STA 28'CTGG'+22 LT





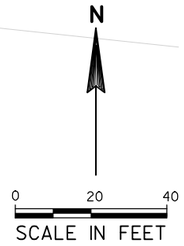
SECTION A-A
NTS

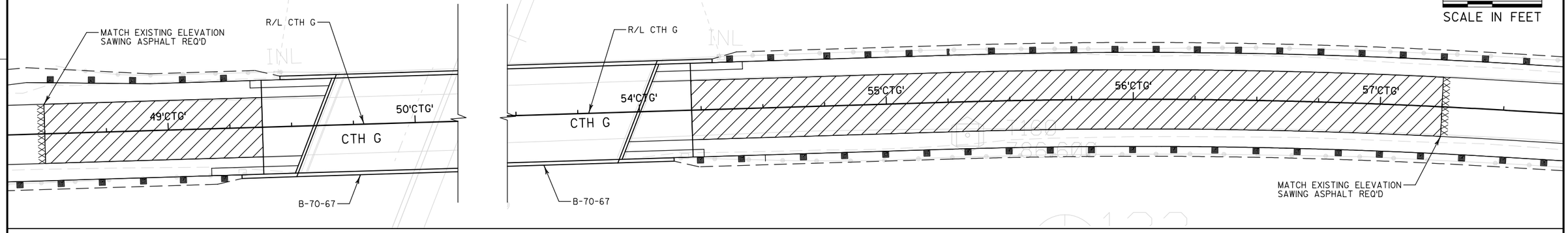
SECTION B-B
NTS

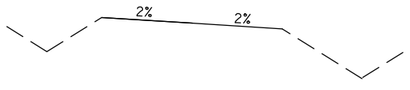
LEGEND

REMOVING ASPHALTIC SURFACE BUTT JOINTS

PLACE HMA PAVEMENT TYPE E-10

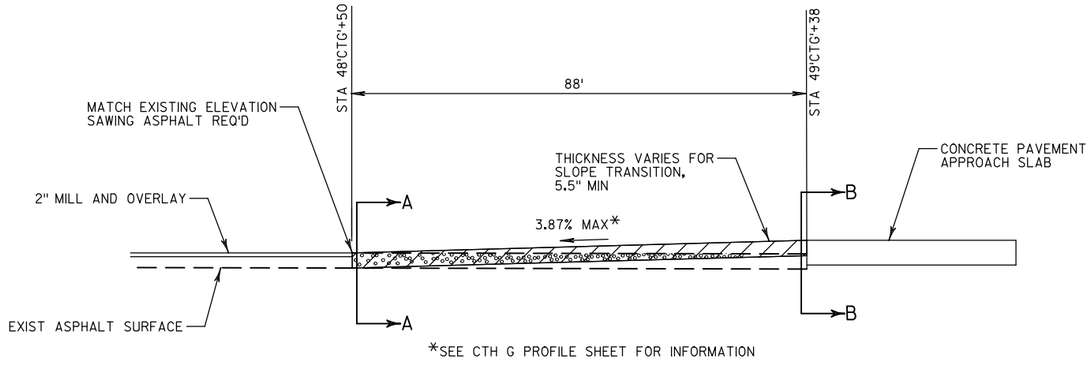




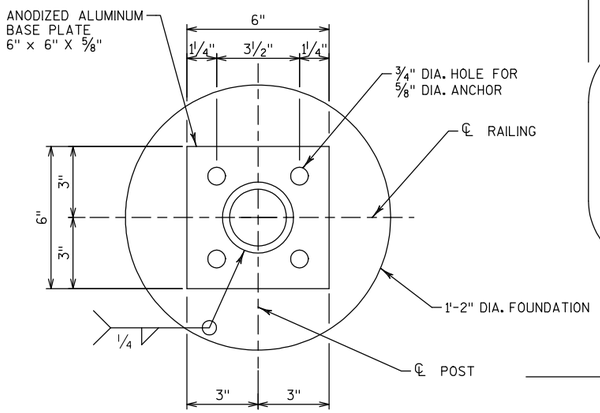


SECTION A-A
NTS

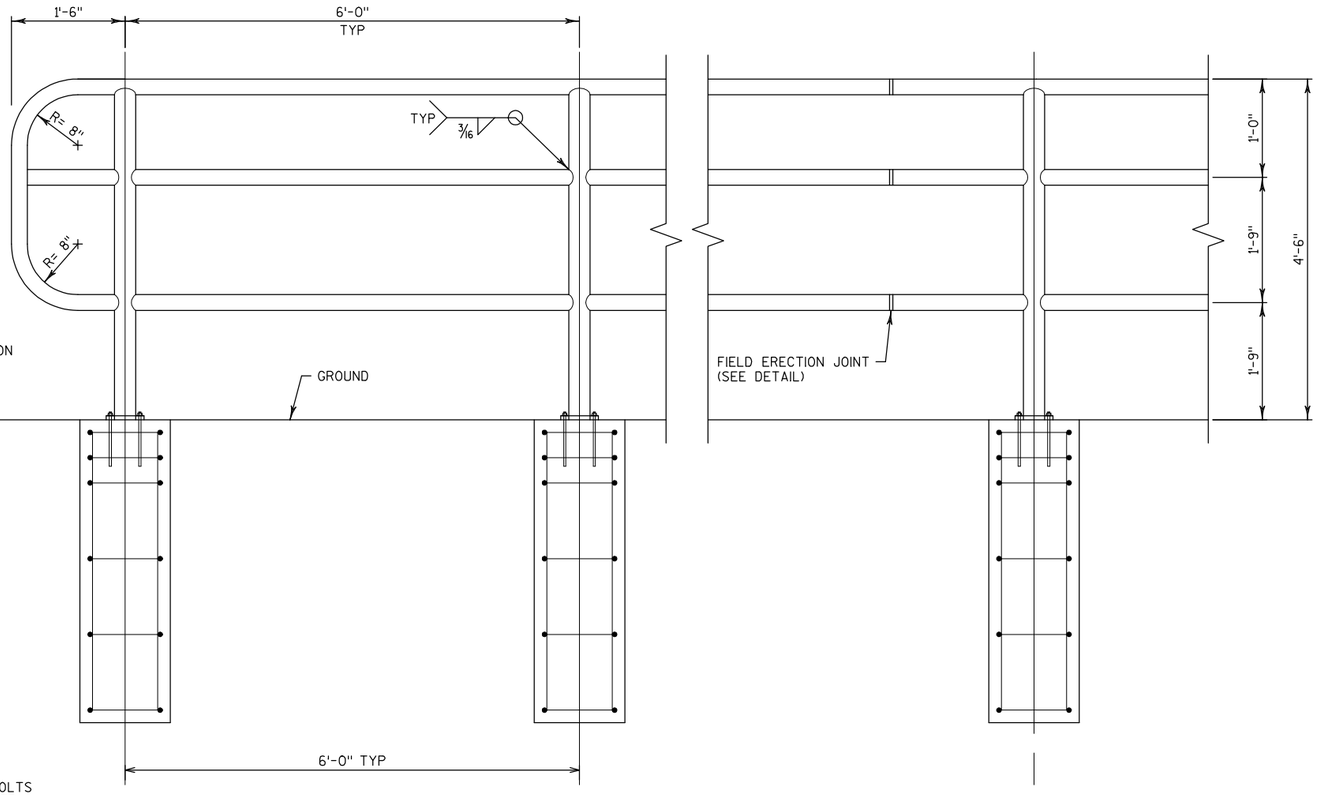
SECTION B-B
NTS



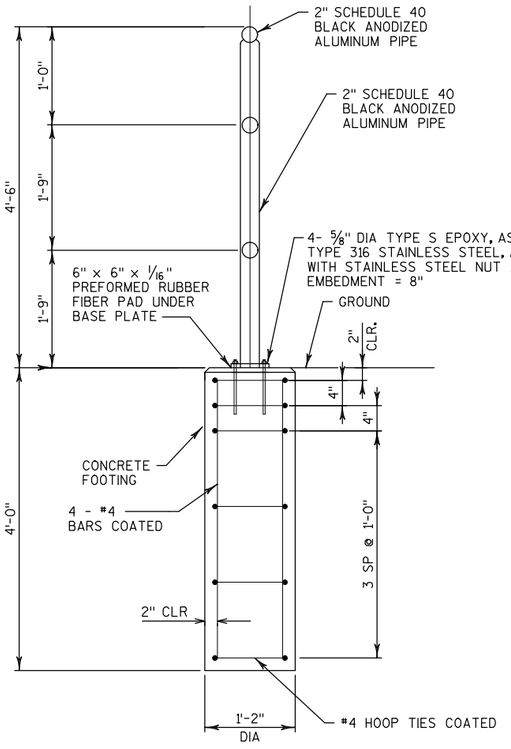
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CONSTRUCTION DETAILS	SHEET 24	E



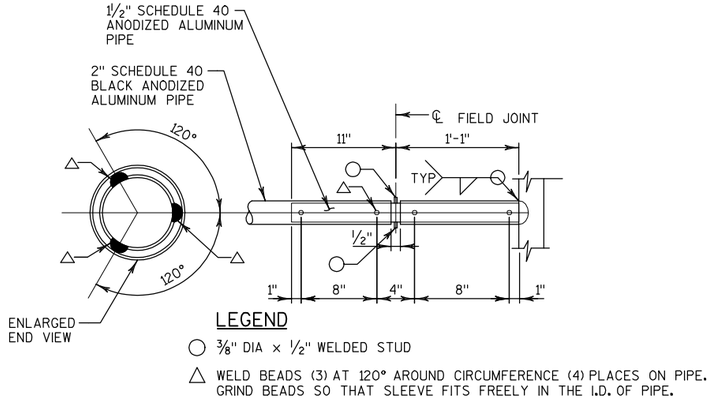
BASE PLATE PLAN
RAILING 54-INCH



ELEVATION VIEW
RAILING 54-INCH



TYPICAL SECTION
RAILING 54-INCH

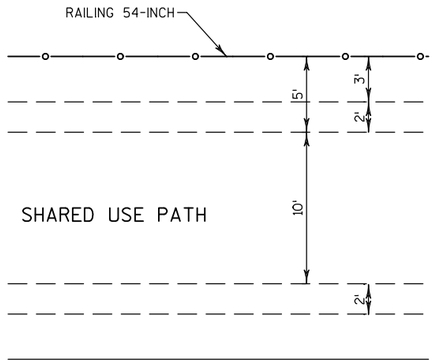


LEGEND

○ 3/8" DIA x 1/2" WELDED STUD

△ WELD BEADS (3) AT 120° AROUND CIRCUMFERENCE (4) PLACES ON PIPE. GRIND BEADS SO THAT SLEEVE FITS FREELY IN THE I.D. OF PIPE.

FIELD ERECTION JOINT DETAIL
RAILING 54-INCH



CTH GG

PLAN
RAILING 54-INCH

NOTES

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE STANDARD SPECIFICATIONS.

ALL POST SPA. ARE TAKEN HORIZ. ALONG CENTER LINE OF RAILING AT BASE OF POST.

THE BID ITEM SHALL BE "RAILING 54-INCH" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE MINIMUM OF 4 POSTS.

ALL MATERIAL SHALL BE ANODIZED AFTER FABRICATION.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

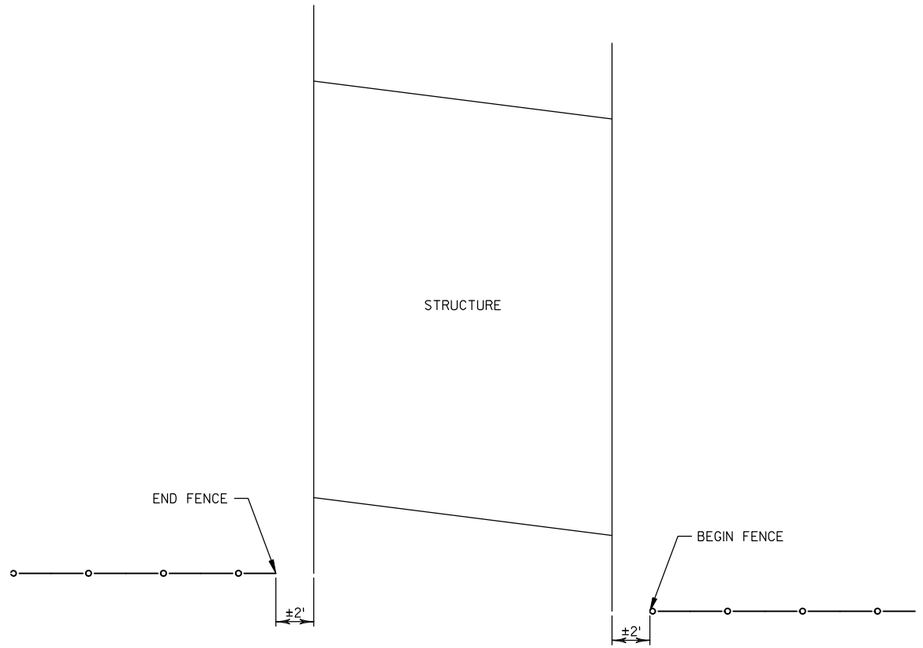
CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STAINLESS STEEL SHIMS SHALL BE PROVIDED AND USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

CAULK AROUND PERIMETER OF BASE PLATE WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL JOINTS TO BE WELDED, SEE SPECIAL PROVISIONS, SHOP DRAWINGS REQUIREMENT

2



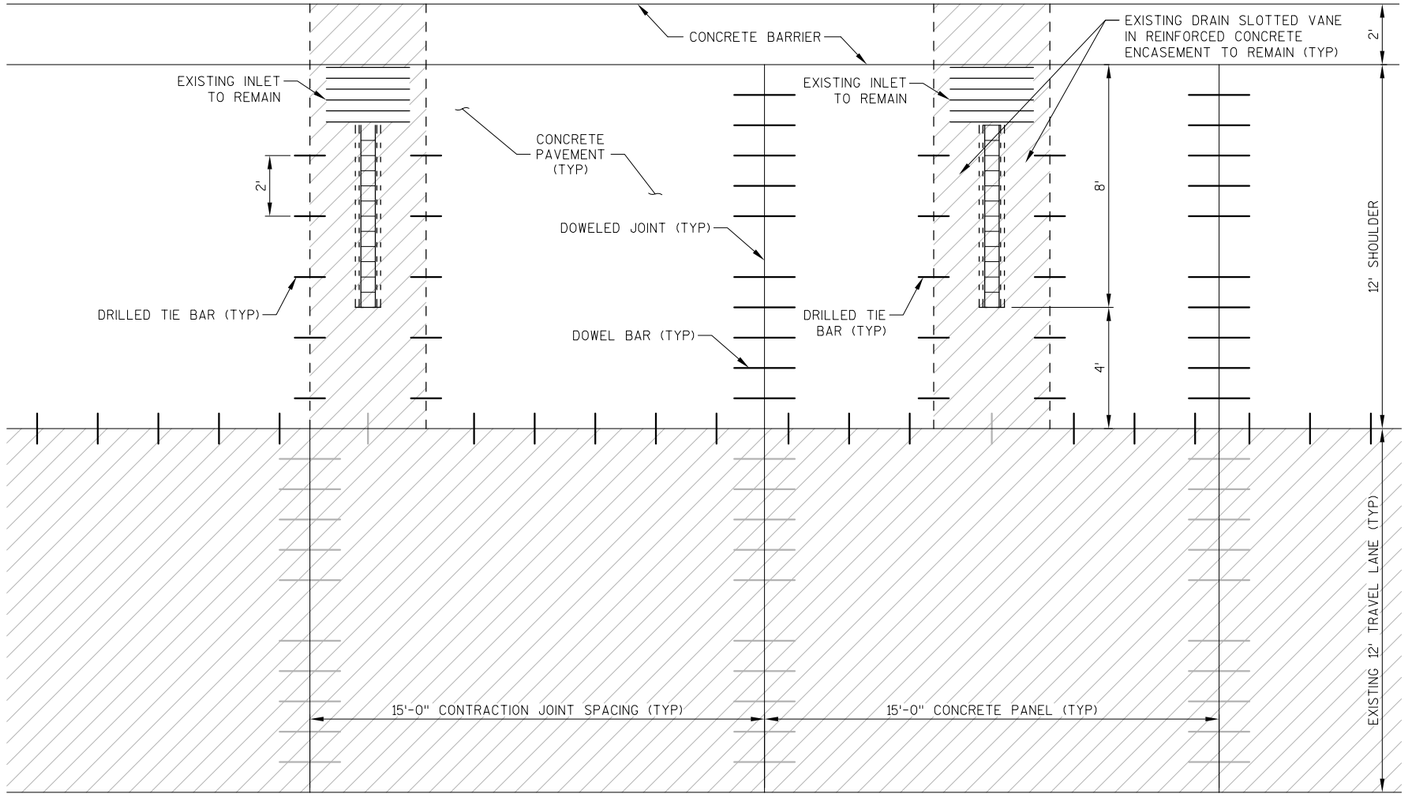
PLAN VIEW

FENCE DETAIL AT STRUCTURES

NOT TO SCALE

2

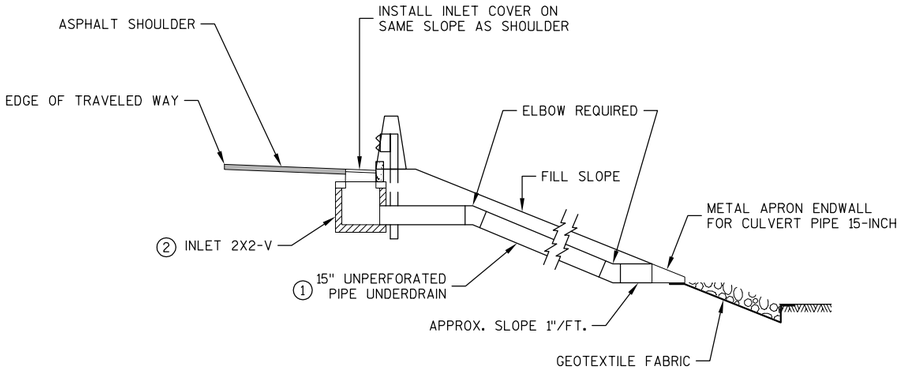
EXISTING CONCRETE



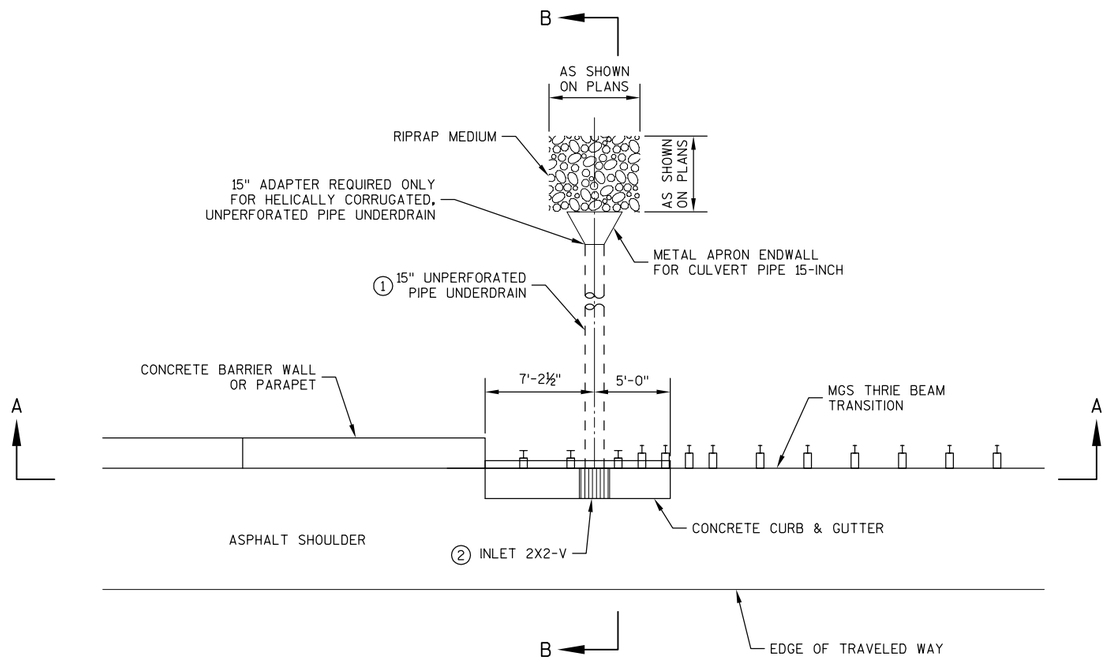
DRAIN SLOTTED VANE AT DOWELED JOINT

DRAIN SLOTTED VANE IN CENTER OF CONCRETE PANEL

CONCRETE PAVEMENT SHOULDER AT EXISTING DRAIN SLOTTED VANE LOCATIONS



SECTION B-B



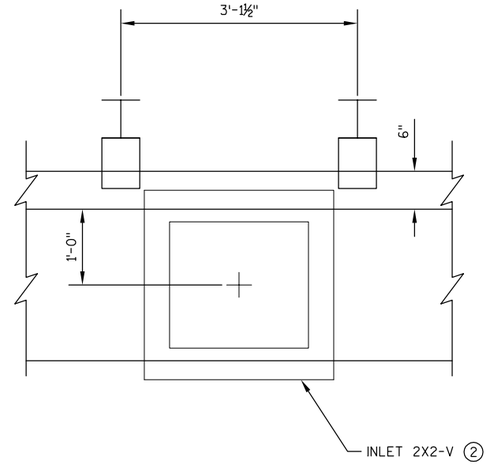
PLAN VIEW

GENERAL NOTES:

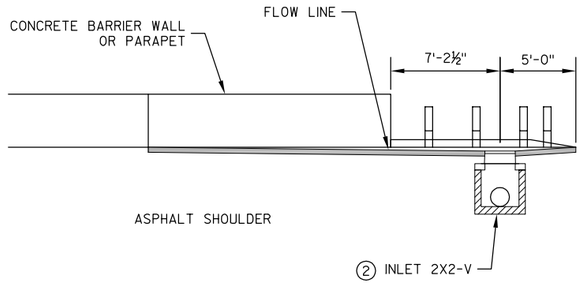
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① THE PIPE UNDERDRAIN MAY BE ANY ONE OF THE SIX MATERIALS LISTED IN THE STANDARD SPECIFICATIONS SECTION 612.2 EXCEPT DRAIN TILE.

② SEE CURRENT STANDARD DETAIL DRAWINGS 8A5 AND 8C7 FOR DETAILS.



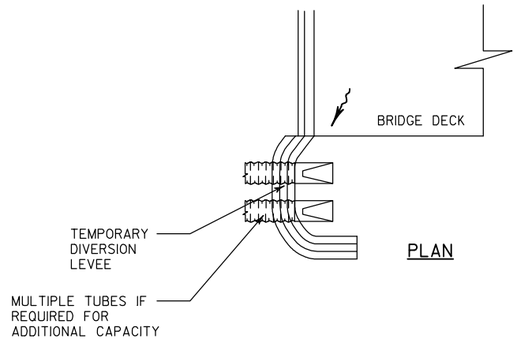
PLAN VIEW

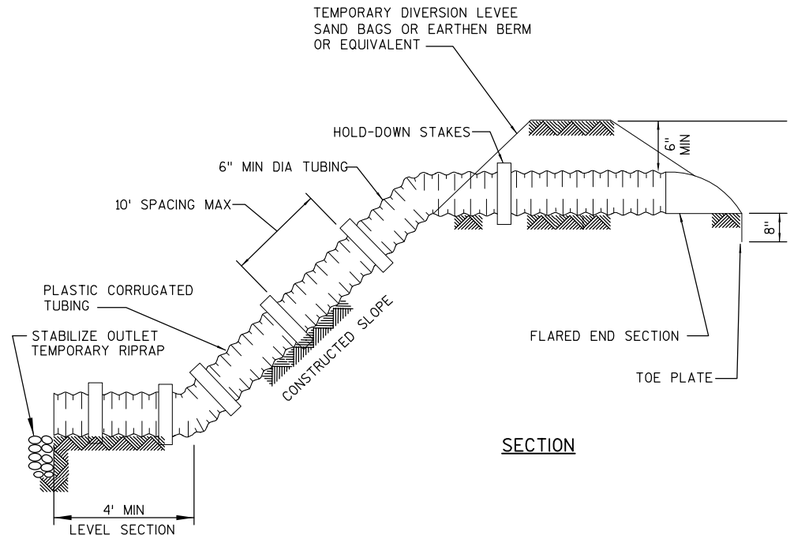


SECTION A-A

DRAIN DROP INLETS AT STRUCTURE DETAIL

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CONSTRUCTION DETAILS	SHEET 28	E

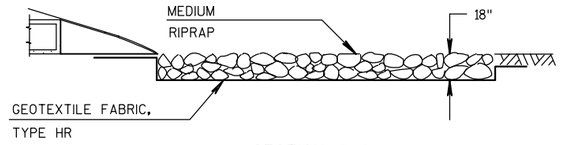


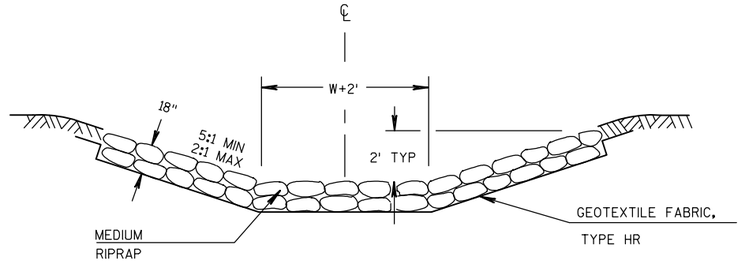


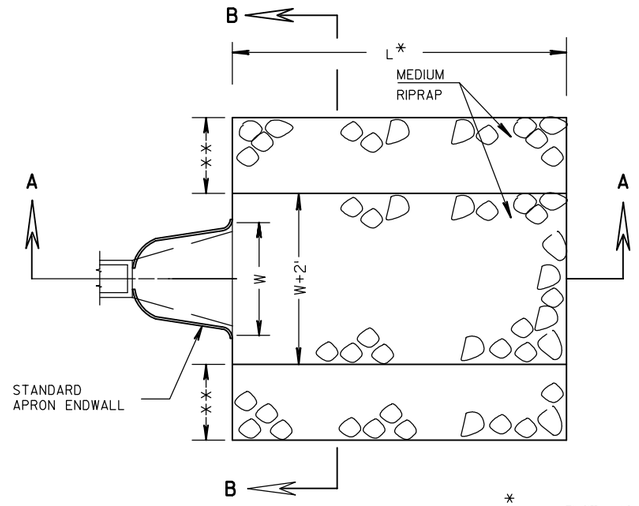
NOTES:

1. TEMPORARY LEVEE SHALL BE CONSTRUCTED FROM EARTHEN BERM, SAND BAGS, OR OTHER EQUIVALENT MATERIAL TO TEMPORARILY DIVERT WATER ALONG THE TOP OF SLOPE.
2. ADD MULTIPLE CONDUITS DOWN THE SLOPE AS REQUIRED FOR DISCHARGE CAPACITY.
3. CONDUIT MATERIAL SHALL BE HEAVY DUTY FLEXIBLE MATERIAL SUCH AS NON-PERFORATED CORRUGATED PLASTIC TUBING OR SPECIALLY DESIGNED FLEXIBLE TUBING.
4. THE FLARED END SECTION AT THE INLET SHALL BE WATER-TIGHT WITH HAND COMPACTED MATERIAL AROUND THE PIPE AND END SECTION.
5. THE SOIL MATERIAL AROUND THE PIPE SHALL BE HAND COMPACTED IN 6" LIFTS TO FILL ALL VOIDS IN THE TUBING CORRUGATIONS.
6. REMOVE TEMPORARY DRAINS AND TEMPORARY LEVEES AFTER SLOPE IS FULLY STABILIZED WITH VEGETATION AND EROSION CONTROL FEATURES.
7. TEMPORARY OUTLET STABILIZATION SUCH AS RIPRAP OR OTHER APPROVED METHOD IS INCIDENTAL TO THE TEMPORARY SLOPE DRAIN ITEM.

TEMPORARY SLOPE DRAIN DETAIL







* L = LENGTH AS SHOWN ON PLANS

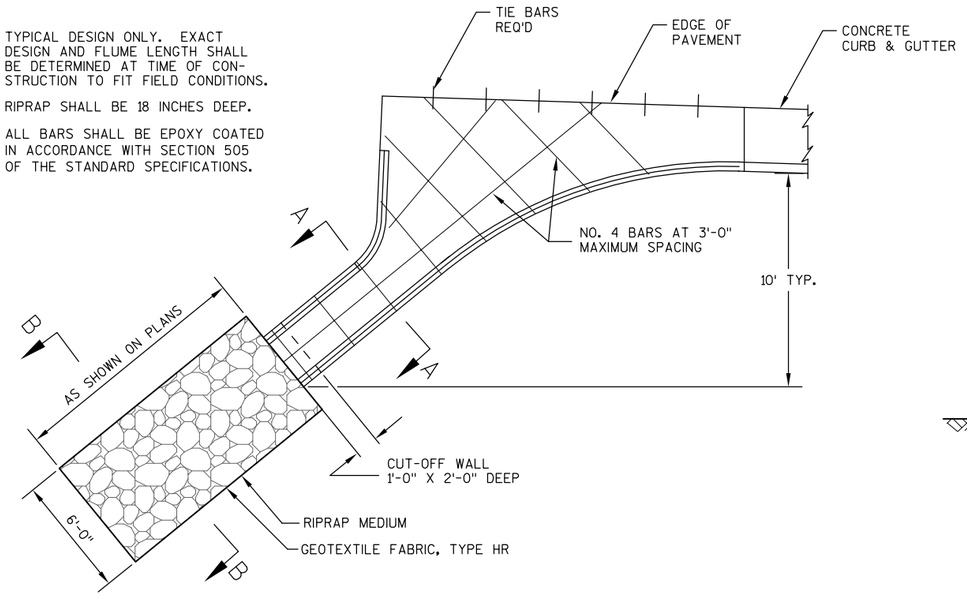
** ADDITIONAL WIDTH TO MATCH TOP OF SLOPE

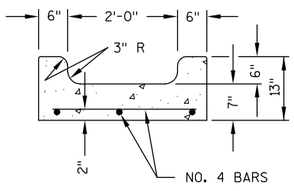
MEDIUM RIPRAP AND GEOTEXTILE FABRIC DETAIL AT APRON ENDWALLS

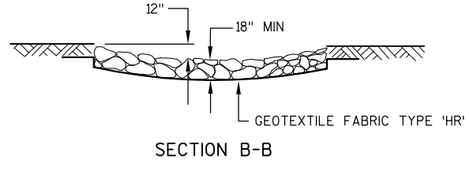
NOTE: TYPICAL DESIGN ONLY. EXACT DESIGN AND FLUME LENGTH SHALL BE DETERMINED AT TIME OF CONSTRUCTION TO FIT FIELD CONDITIONS.

RIPRAP SHALL BE 18 INCHES DEEP.

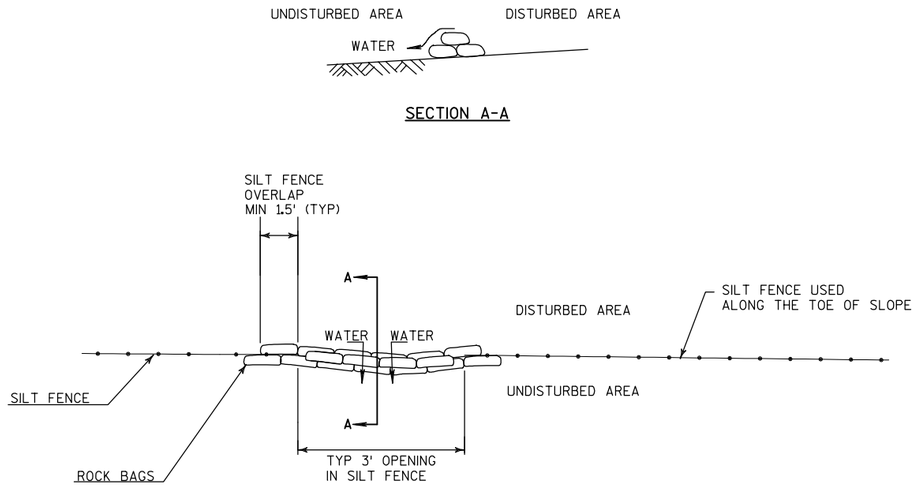
ALL BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS.



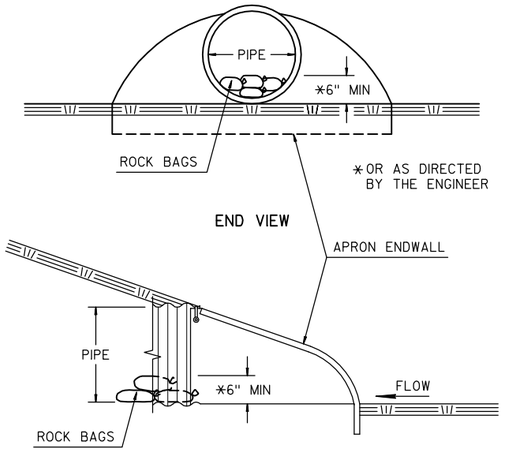




CONCRETE SURFACE DRAIN FLUME TYPE

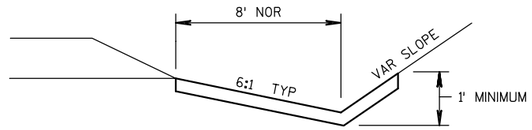


ROCK BAGS USED FOR SILT FENCE RELIEF DETAIL



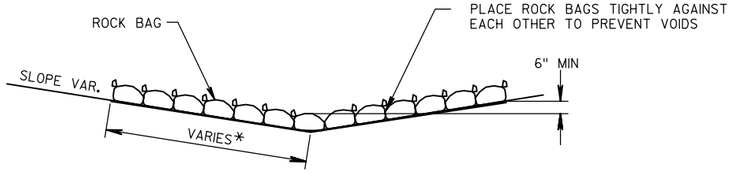
CULVERT PIPE CHECKS DETAIL

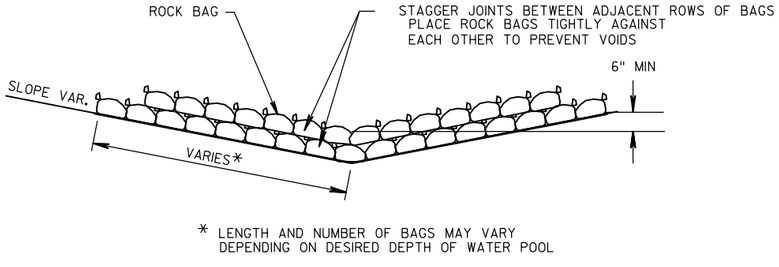
FLAT BOTTOM DITCHES



V-DITCHES

EROSION MAT DETAILS FOR DITCHES





ROCK BAGS USED FOR DITCH CHECKS DETAIL

ROCK BAGS DETAIL

RUNOFF COEFFICIENT TABLE

	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33 .50	.19 .34	.28 .41	.38 .56
MEDIAN STRIP- TURF	.19 .24	.20 .26	.24 .30	.19 .25	.22 .28	.26 .33	.20 .26	.23 .30	.30 .37	.20 .27	.25 .32	.30 .40
SIDE SLOPE- TURF			.25 .32			.27 .34			.28 .36			.30 .38
PAVEMENT:												
ASPHALT	.70 - .95											
CONCRETE	.80 - .95											
BRICK	.70 - .80											
DRIVES, WALKS	.75 - .85											
ROOFS	.75 - .95											
GRAVEL ROADS, SHOULDERS	.40 - .60											

TOTAL PROJECT AREA = 31.3 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 15.3 ACRES

2

2'CTGG'
4'CTGG'
6'CTGG'
CTH GG
8'CTGG'
10'CTGG'
12'CTGG'
14'CTGG'
16'CTGG'
MATCH LINE 118'GRV'+00
MATCH LINE 17'CTGG'+00
MATCH LINE 114'GRV'+00
18" CPRC
15" CPCM
18" CPCM
15" CPCS
24" CPRC
GREEN VALLEY RD
WETLAND LIMITS, TYP
ANT.

N

0 50 100
SCALE IN FEET

LEGEND

- SILT FENCE
- SLOPE INTERCEPT
- INLET PROTECTION*
- TSD TEMPORARY SLOPE DRAIN AT BRIDGES
- CULVERT PIPE CHECKS
- ROCK BAGS
- ROCK BAGS (SILT FENCE RELIEF)
- TEMPORARY DITCH CHECK
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING

* INLET PROTECTION SHALL BE TYPE B UNLESS OTHERWISE NOTED IN THE PLANS.

ALL EXISTING INLETS WITHIN THE PROJECT LIMITS SHALL RECEIVE INLET PROTECTION.

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

NOTE:
TEMPORARY EROSION CONTROL ITEMS ARE SHOWN FOR ALL STAGES OF WORK ON THIS SHEET. SEE THE MISCELLANEOUS QUANTITIES SHEETS FOR ADDITIONAL INFORMATION.

MATCH LINE 18'DIX'+50
MATCH LINE 32'CTGG'+00
MATCH LINE 14'DIX'+00
902'SAB'
902'NAB'
904'NAB'
900'SAB'
900'NAB'
898'SAB'
898'NAB'
USH 41 SB
USH 41 NB
CTH GG
TYPE D
TSD
PUU
SIGN
18'DIX'
16'DIX'
DIXIE ROAD
OLD DIXIE ROAD
18'CTGG'
20'CTGG'
22'CTGG'
24'CTGG'
26'CTGG'
28'CTGG'
30'CTGG'
32'CTGG'
24" CPRC
15" PUU
24" CPCM
WETLAND LIMITS, TYP

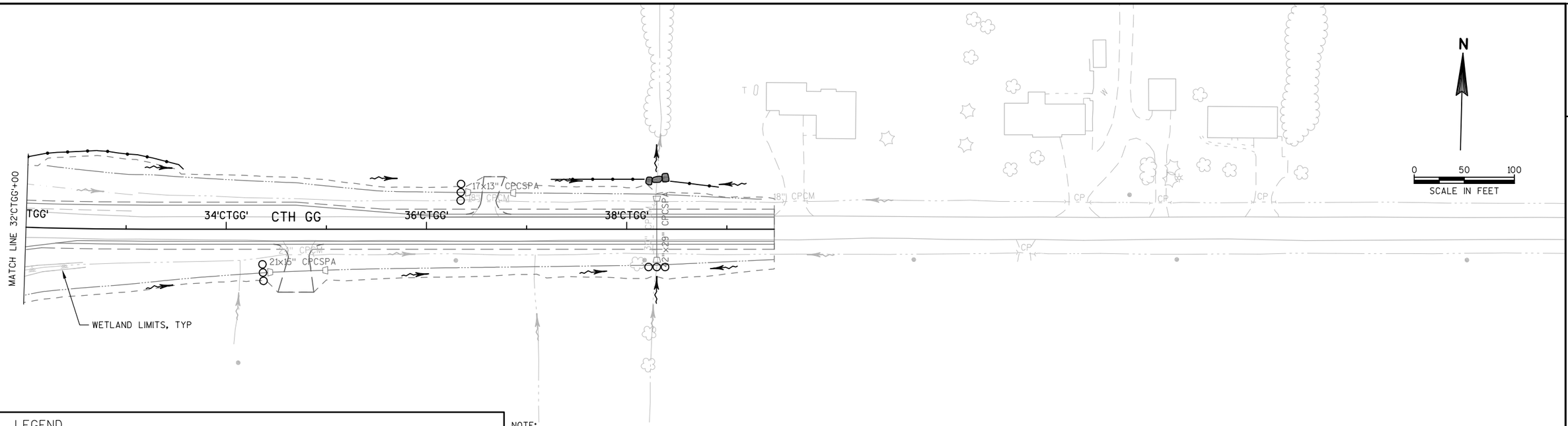
N

0 50 100
SCALE IN FEET

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL TEMPORARY - CTH GG	SHEET 31	E

FILE NAME : GR_0977-78-81_022001_ECT PLOT DATE : 12 APR 2013 15:24:00 PLOT BY : GABLO PLOT NAME : PLOT SCALE : 1:2

2



LEGEND

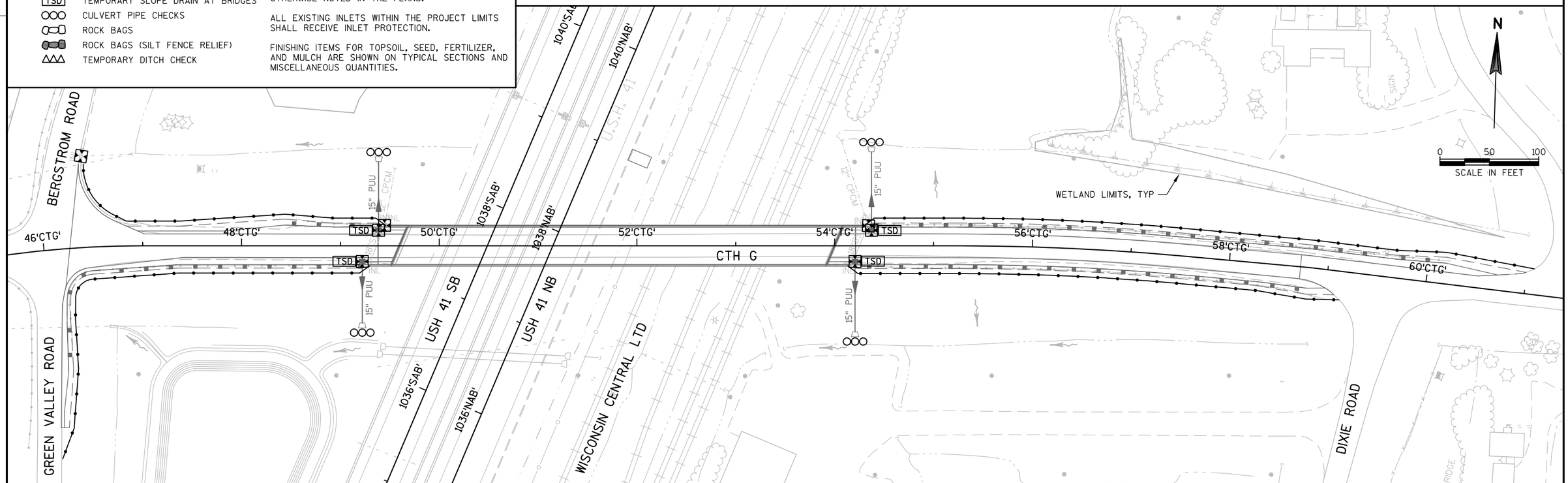
- SILT FENCE
- SLOPE INTERCEPT
- INLET PROTECTION*
- TSD — TEMPORARY SLOPE DRAIN AT BRIDGES
- CULVERT PIPE CHECKS
- ROCK BAGS
- ROCK BAGS (SILT FENCE RELIEF)
- TEMPORARY DITCH CHECK
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING

* INLET PROTECTION SHALL BE TYPE B UNLESS OTHERWISE NOTED IN THE PLANS.

ALL EXISTING INLETS WITHIN THE PROJECT LIMITS SHALL RECEIVE INLET PROTECTION.

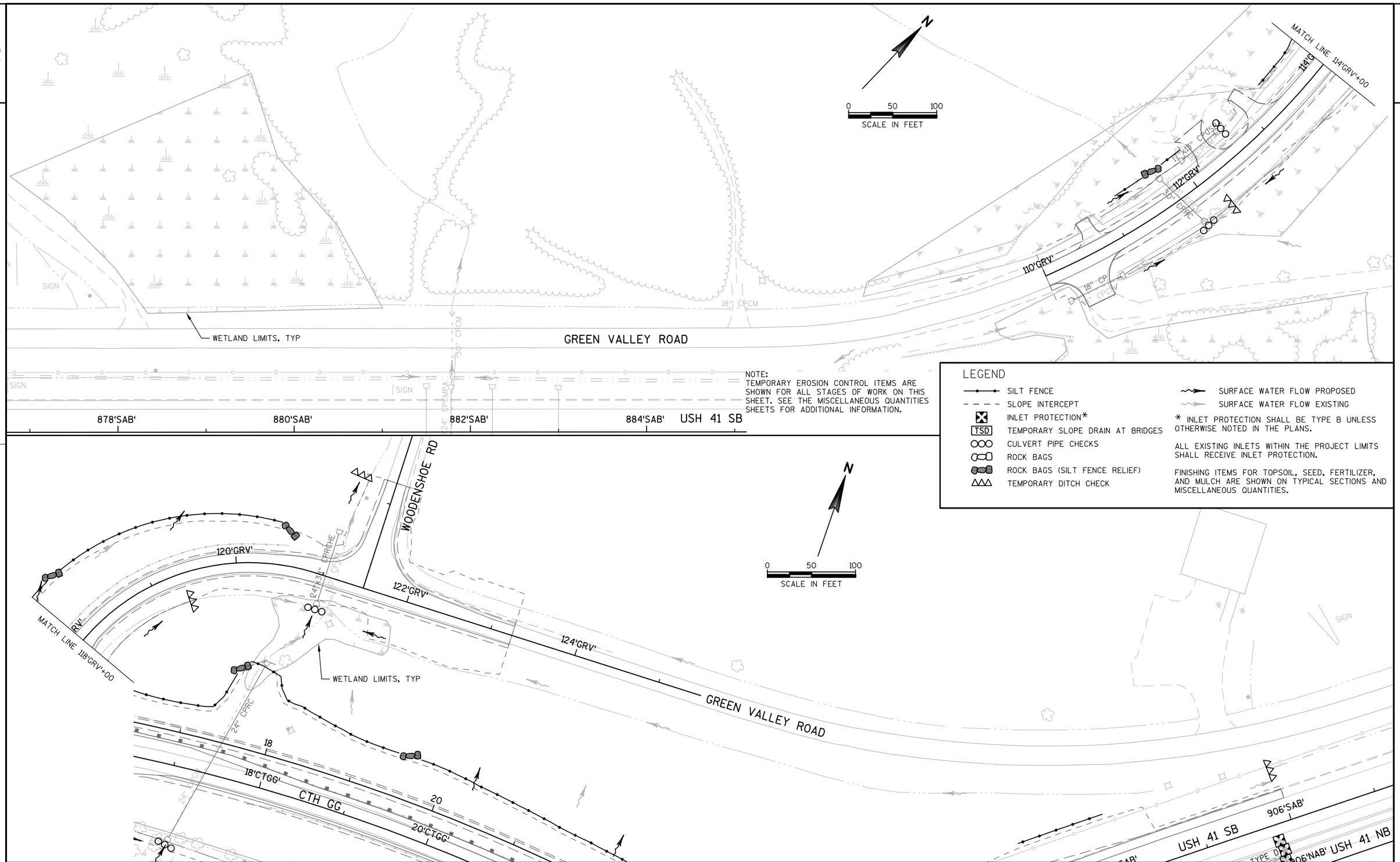
FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

NOTE:
TEMPORARY EROSION CONTROL ITEMS ARE SHOWN FOR ALL STAGES OF WORK ON THIS SHEET. SEE THE MISCELLANEOUS QUANTITIES SHEETS FOR ADDITIONAL INFORMATION.



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL TEMPORARY - CTH GG/G	SHEET 32	E

2



NOTE:
TEMPORARY EROSION CONTROL ITEMS ARE SHOWN FOR ALL STAGES OF WORK ON THIS SHEET. SEE THE MISCELLANEOUS QUANTITIES SHEETS FOR ADDITIONAL INFORMATION.

LEGEND

- SILT FENCE
- SLOPE INTERCEPT
- INLET PROTECTION*
- TSD TEMPORARY SLOPE DRAIN AT BRIDGES
- CULVERT PIPE CHECKS
- ROCK BAGS
- ROCK BAGS (SILT FENCE RELIEF)
- TEMPORARY DITCH CHECK
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING

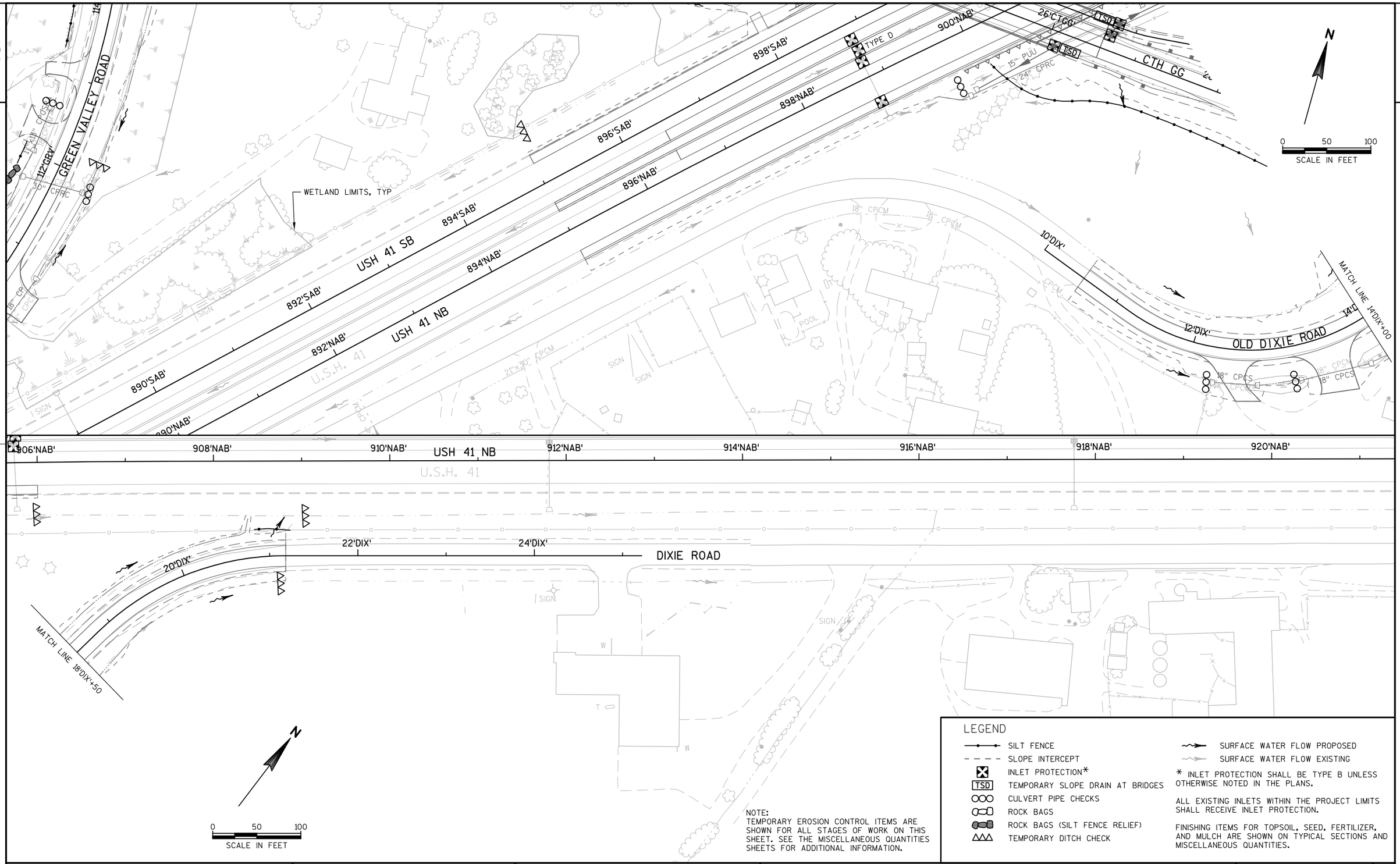
* INLET PROTECTION SHALL BE TYPE B UNLESS OTHERWISE NOTED IN THE PLANS.

ALL EXISTING INLETS WITHIN THE PROJECT LIMITS SHALL RECEIVE INLET PROTECTION.

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL TEMPORARY - GREEN VALLEY ROAD	SHEET 33	E

2



NOTE:
TEMPORARY EROSION CONTROL ITEMS ARE SHOWN FOR ALL STAGES OF WORK ON THIS SHEET. SEE THE MISCELLANEOUS QUANTITIES SHEETS FOR ADDITIONAL INFORMATION.

LEGEND

- SILT FENCE
- SLOPE INTERCEPT
- INLET PROTECTION*
- TSD — TEMPORARY SLOPE DRAIN AT BRIDGES
- CULVERT PIPE CHECKS
- ROCK BAGS
- ROCK BAGS (SILT FENCE RELIEF)
- TEMPORARY DITCH CHECK
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING

* INLET PROTECTION SHALL BE TYPE B UNLESS OTHERWISE NOTED IN THE PLANS.

ALL EXISTING INLETS WITHIN THE PROJECT LIMITS SHALL RECEIVE INLET PROTECTION.

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL TEMPORARY - OLD DIXIE/ DIXIE ROAD	SHEET 34	E

2

2'CTGG'
4'CTGG'
6'CTGG'
CTH GG
8'CTGG'
10'CTGG'
12'CTGG'
14'CTGG'
16'CTGG'
MATCH LINE 118'GRV'+00
MATCH LINE 17'CTGG'+00
MATCH LINE 114'GRV'+00
GREEN VALLEY RD
WETLAND LIMITS, TYP
18" CPCM
15" CPCM
15" CPCS
ANT.

N

0 50 100
SCALE IN FEET

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT CLASS II TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- SLOPE INTERCEPT
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING
- RIPRAP MEDIUM

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

124'GRV'
WETLAND LIMITS, TYP
24" CPRC
MATCH LINE 17'CTGG'+00
18'CTGG'
20'CTGG'
22'CTGG'
24'CTGG'
26'CTGG'
28'CTGG'
30'CTGG'
CTH GG
900'SAB'
900'NAB'
902'SAB'
902'NAB'
904'NAB'
898'SAB'
898'NAB'
USH 41 SB
USH 41 NB
MATCH LINE 18'DIX'+50
18'DIX'
DIXIE ROAD
16'DIX'
OLD DIXIE ROAD
MATCH LINE 14'DIX'+00
MATCH LINE 32'CTGG'+00
SIGN
30" CP

N

0 50 100
SCALE IN FEET

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL PERMANENT - CTH GG	SHEET 35	E

2

2

MATCH LINE 32'CTGG'+00

TGG'

34'CTGG'

CTH GG

36'CTGG'

38'CTGG'

17x13" CPCSPA

18" CPCM

21x15" CPCSPA

WETLAND LIMITS, TYP

N

0 50 100

SCALE IN FEET

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT CLASS II TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- SLOPE INTERCEPT
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING
- RIPRAP MEDIUM

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

1040'SAB'

1040'NAB'

U.S.H. 41

BERGSTROM ROAD

46'CTG'

48'CTG'

50'CTG'

52'CTG'

54'CTG'

56'CTG'

58'CTG'

60'CTG'

CTH G

15" PUU

12" CPCM

1038'SAB'

1038'NAB'

USH 41 SB

USH 41 NB

1036'SAB'

1036'NAB'

WISCONSIN CENTRAL LTD

GREEN VALLEY ROAD

DIXIE ROAD

WETLAND LIMITS, TYP

N

0 50 100

SCALE IN FEET

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL PERMANENT - CTH GG/G	SHEET 36	E

FILE NAME : GR_0977-78-81_022102_ECP PLOT DATE : 12 APR 2013 15:26:14 PLOT BY : GABLO PLOT NAME : PLOT SCALE : 1:2

WISDOT/CADDS SHEET 42

2

N

0 50 100
SCALE IN FEET

MATCH LINE 114'GRV'+00

114'G

12" CPCSPA

112'GRV'

6" CPRC

110'GRV'

18" CP

CPCMV

WETLAND LIMITS, TYP

GREEN VALLEY ROAD

18" CPCM

30" CPCM

24" CPCMPA

SIGN

878'SAB' 880'SAB' 882'SAB' 884'SAB' USH 41 SB 886'SAB' 888'SAB'

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT CLASS II TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- SLOPE INTERCEPT
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING
- RIPRAP MEDIUM

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

N

0 50 100
SCALE IN FEET

WOODENSHOE RD

120'GRV'

RV'

MATCH LINE 118'GRV'+00

24" CPRCHE

CPRCM

122'GRV'

124'GRV'

GREEN VALLEY ROAD

WETLAND LIMITS, TYP

24" CPRC

18

18'CTGG'

CTH GG

20

20'CTGG'

W

W

SIGN

906'SAB'

USH 41 SB

USH 41 NB

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL PERMANENT - GREEN VALLEY ROAD	SHEET 37	E

2

2

GREEN VALLEY ROAD

112'GRV'

WETLAND LIMITS, TYP

USH 41 SB

USH 41 NB

U.S.H. 41

890'SAB'

892'SAB'

894'SAB'

896'SAB'

898'SAB'

890'NAB'

892'NAB'

894'NAB'

896'NAB'

898'NAB'

900'NAB'

906'NAB'

908'NAB'

910'NAB'

912'NAB'

914'NAB'

916'NAB'

918'NAB'

920'NAB'

26'CTGG'

CTH GG

10'DIX'

12'DIX'

14'DIX'

OLD DIXIE ROAD

MATCH LINE 14'DIX'+00

22'DIX'

24'DIX'

20'DIX'

DIXIE ROAD

MATCH LINE 18'DIX'+50

N

0 50 100

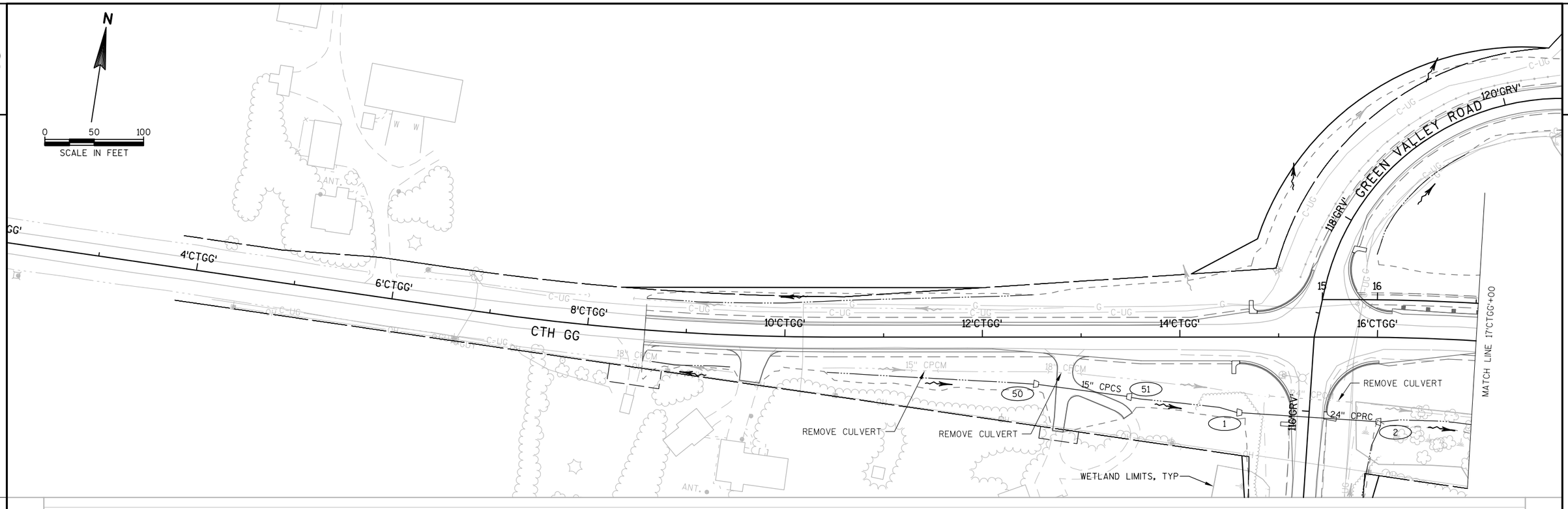
SCALE IN FEET

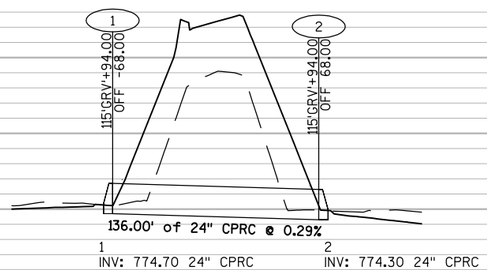
LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT CLASS II TYPE B
- EROSION MAT URBAN CLASS I TYPE B
- SLOPE INTERCEPT
- SURFACE WATER FLOW PROPOSED
- SURFACE WATER FLOW EXISTING
- RIPRAP MEDIUM

FINISHING ITEMS FOR TOPSOIL, SEED, FERTILIZER, AND MULCH ARE SHOWN ON TYPICAL SECTIONS AND MISCELLANEOUS QUANTITIES.

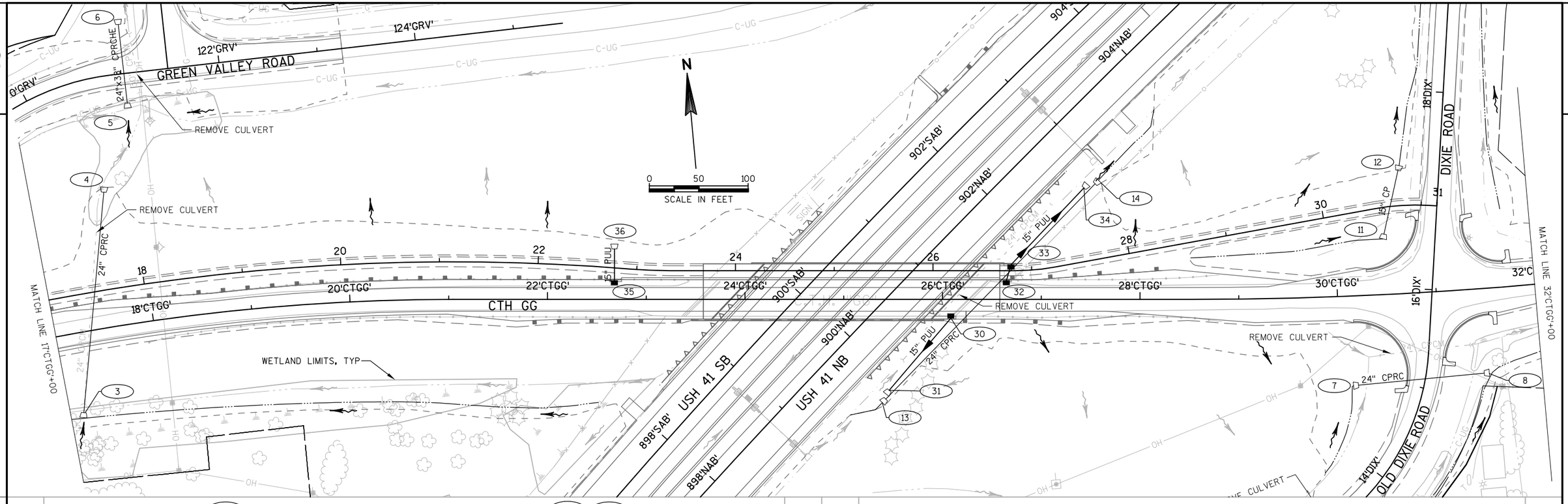
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	EROSION CONTROL PERMANENT - OLD DIXIE/ DIXIE ROAD	SHEET 38	E

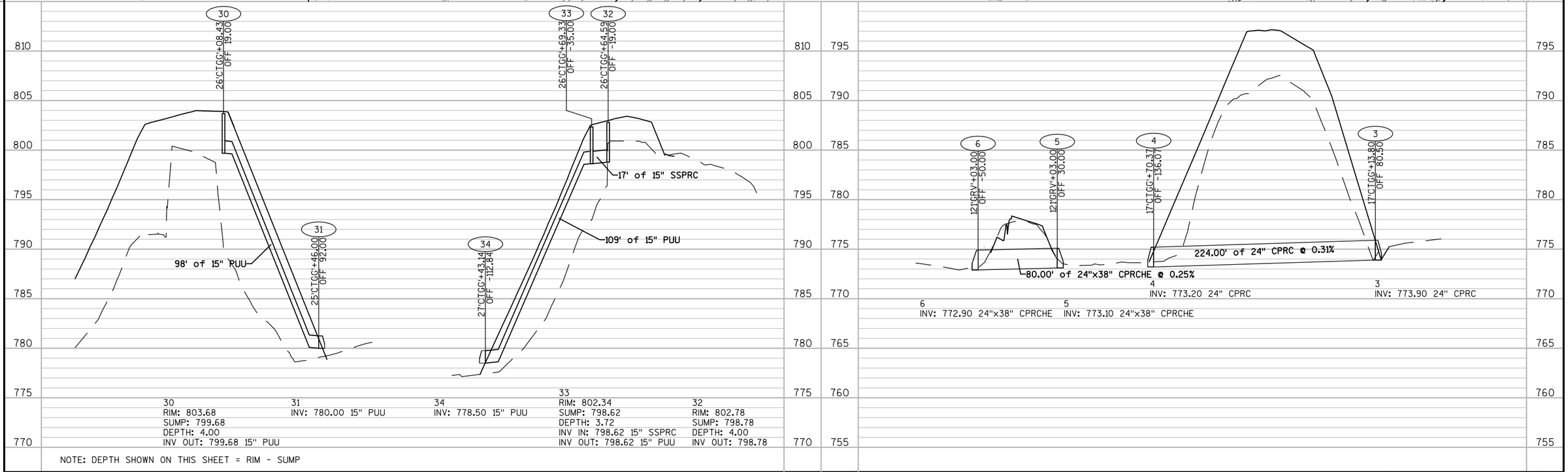




NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - CTH GG	SHEET 39	E



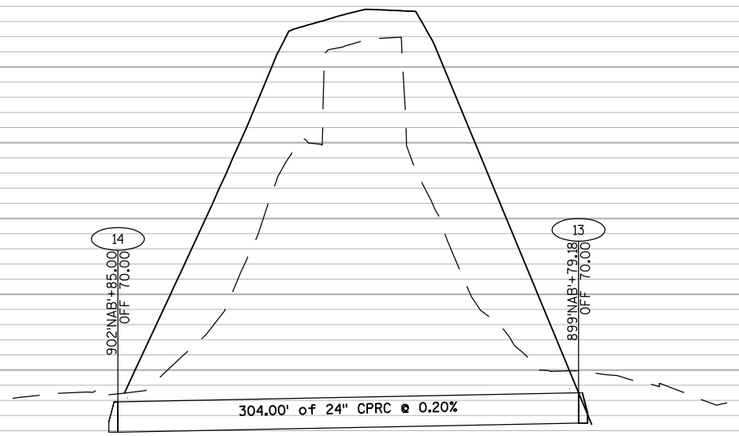


NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - CTH GG	SHEET 40	E

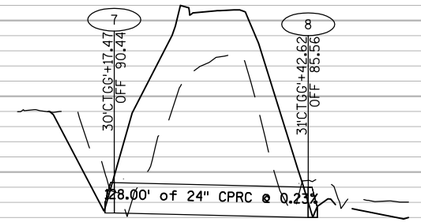
FILE NAME : GR_0977-78-81_022502_SS PLOT DATE : 12 APR 2013 15:27:46 PLOT BY : GABLO PLOT NAME : PLOT SCALE : 1:2

WISDOT/CADDS SHEET 41



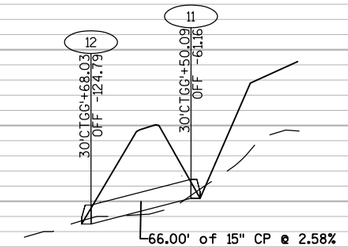
14
INV: 775.90 24" CPRC

13
INV: 776.50 24" CPRC



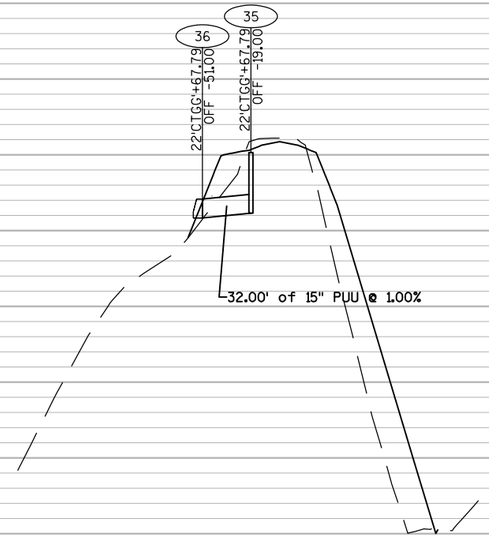
7
INV: 777.30 24" CPRC

8
INV: 777.00 24" CPRC



12
INV: 783.50 15" CP

11
INV: 785.20 15" CP



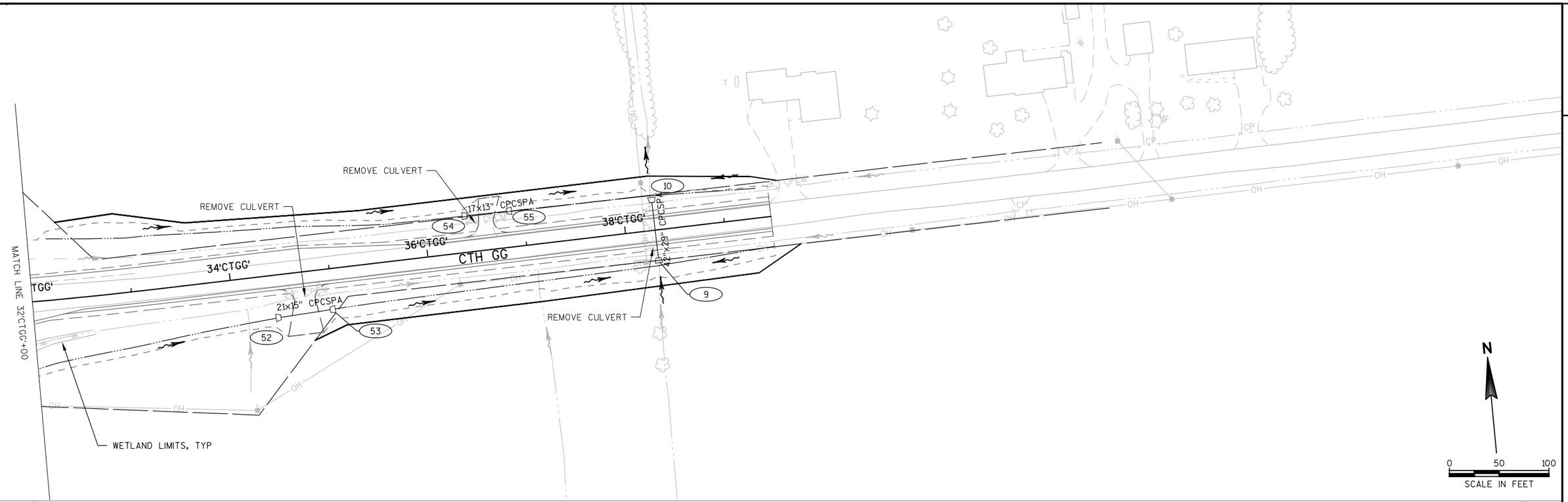
36
INV: 800.83 15" PUU

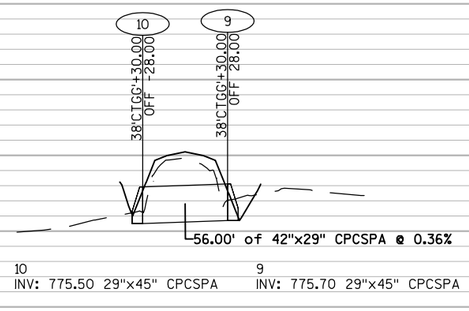
35
RIM: 805.15
SUMP: 801.15
DEPTH: 4.00
INV OUT: 801.15 15" PUU

NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - CTH GG	SHEET 41	E

2

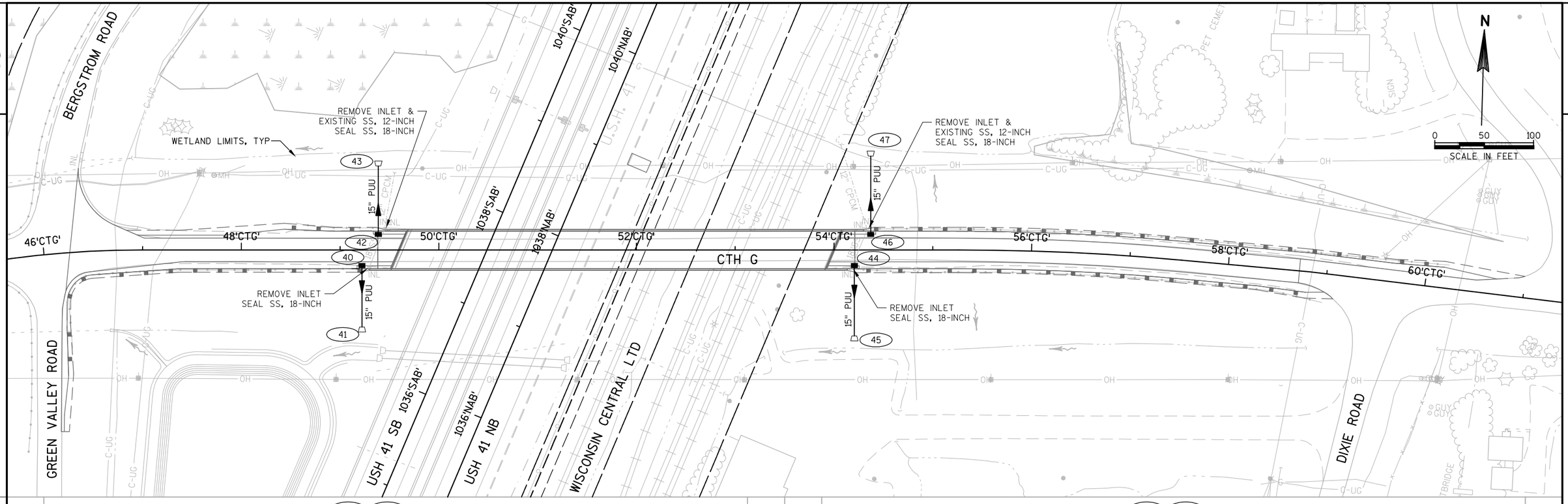


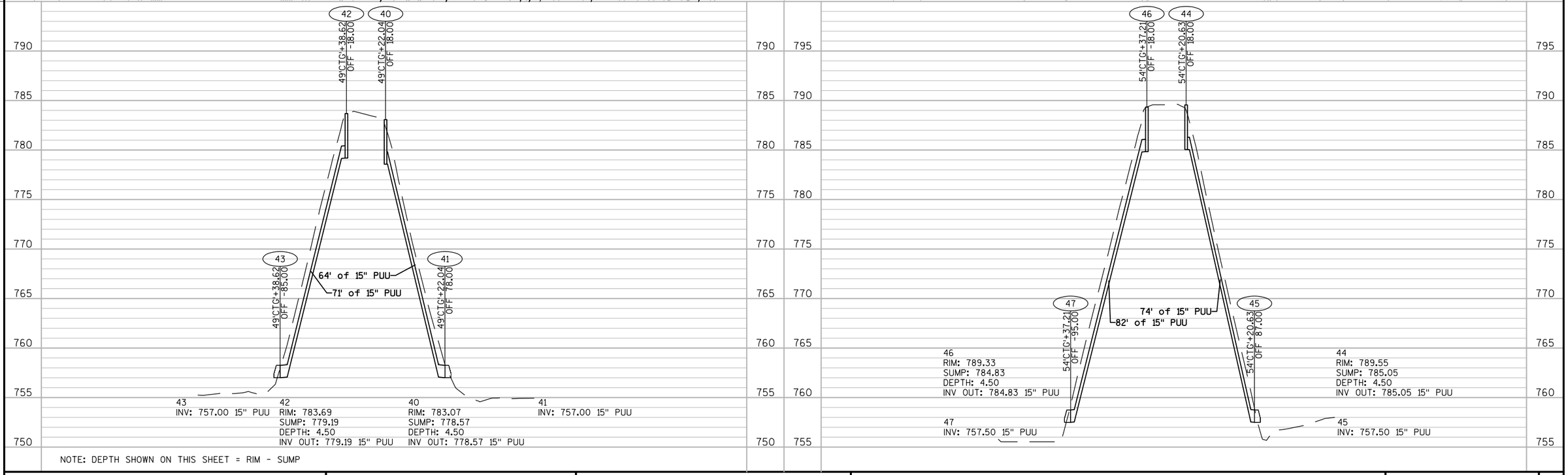


795 790 785 780 775 770 765 760 755

NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - CTH GG	SHEET 42	E

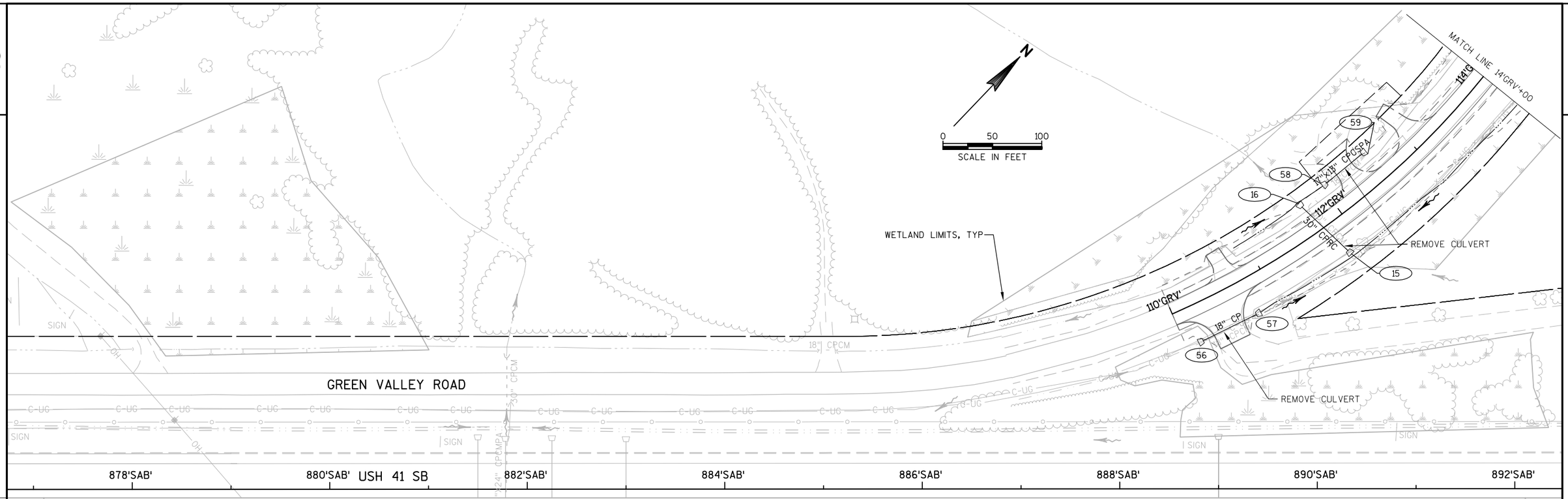


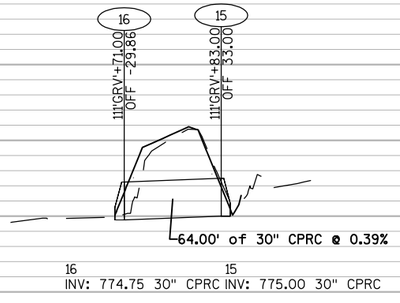


NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - CTH G	SHEET 43	E

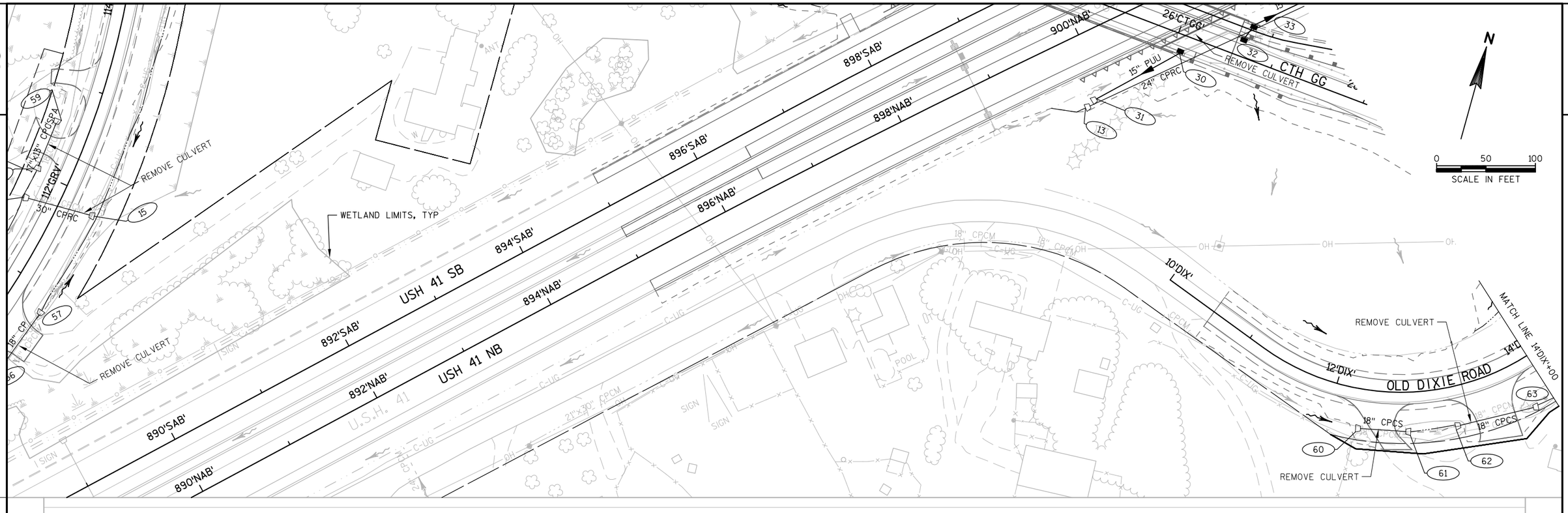
2





NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - GREEN VALLEY ROAD	SHEET 44	E



NOTE: DEPTH SHOWN ON THIS SHEET = RIM - SUMP

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	STORM SEWER LAYOUT - OLD DIXIE ROAD	SHEET 45	E

STRUCTURE										DISCHARGE PIPE						
NO.	STATION	(8) LOCATION (FT)	STRUCTURE	COVER TYPE	(1) RIM/GRATE ELEV	(2) TOP OF STRUCT ELEV	DISCHARGED PIPE UPSTREAM ELEV	(3) STRUCTURE DEPTH (FT)	REMARKS	SIZE (INCHES)	DISTANCE (FT)	SLOPE (%)	PIPE TYPE	PIPE CLASS	DRAINS TO	DISCHARGE PIPE DOWNSTREAM ELEV
1	115'GRV'+94.00	-68.00	Endwall RC	---	---	---	774.70	---		24	136.00	0.29%	CPRC	IV	2	774.30
2	115'GRV'+94.00	68.00	Endwall RC	---	---	---	774.30	---		24	---	---	---	---	---	---
3	17'CTGG'+13.80	80.50	Endwall RC	---	---	---	773.90	---		24	224.00	0.31%	CPRC	IV	4	773.20
4	17'CTGG'+70.37	-136.07	Endwall RC	---	---	---	773.20	---		24	---	---	---	---	---	---
5	121'GRV'+03.00	30.00	Endwall RCHE	---	---	---	773.10	---		24x38	80.00	0.25%	CPRCHE	HE-IV	6	772.90
6	121'GRV'+03.00	-50.00	Endwall RCHE	---	---	---	772.90	---		24x38	---	---	---	---	---	---
7	30'CTGG'+17.47	90.44	Endwall RC	---	---	---	777.30	---		24	128.00	0.23%	CPRC	IV	8	777.00
8	31'CTGG'+42.62	85.56	Endwall RC	---	---	---	777.00	---		24	---	---	---	---	---	---
9	38'CTGG'+30.00	28.00	Endwall Sloped Cross Drains Steel 4:1	---	---	---	775.70	---		42x29	56.00	0.36%	PACS	---	10	775.50
10	38'CTGG'+30.00	-28.00	Endwall Sloped Cross Drains Steel 4:1	---	---	---	775.50	---		42x29	---	---	---	---	---	---
11	30'CTGG'+50.09	-61.16	Endwall	---	---	---	785.20	---		15	66.00	2.58%	CP	III	12	783.50
12	30'CTGG'+68.03	-124.79	Endwall	---	---	---	783.50	---		15	---	---	---	---	---	---
13	899'NAB'+79.18	70.00	Endwall RC	---	---	---	776.50	---		24	304.00	0.20%	CPRC	IV	14	775.90
14	902'NAB'+85.00	70.00	Endwall RC	---	---	---	775.90	---		24	---	---	---	---	---	---
15	111'GRV'+83.00	33.00	Endwall RC	---	---	---	775.00	---		30	64.00	0.39%	CPRC	IV	16	774.75
16	111'GRV'+71.00	-29.86	Endwall RC	---	---	---	774.75	---		30	---	---	---	---	---	---
30	26'CTGG'+08.43	19.00	Inlets 2x2-Ft	V	803.68	802.51	799.68	2.83		15	98.00	---	PUU	---	31	780.00
31	25'CTGG'+46.00	92.00	Endwall Steel	---	---	---	780.00	---		15	---	---	---	---	---	---
32	26'CTGG'+64.59	-19.00	Inlets 2x2-Ft	V	802.78	801.61	798.78	2.83		15	17.00	1.00%	SSPRC	III	33	798.62
33	26'CTGG'+69.33	-35.00	Inlets 2x2-Ft	S	802.34	801.42	798.62	2.81		15	109.00	---	PUU	---	34	778.50
34	27'CTGG'+43.14	-112.84	Endwall Steel	---	---	---	778.50	---		15	---	---	---	---	---	---
35	22'CTGG'+67.79	-19.00	Inlets 2x2-Ft	V	805.15	803.98	801.15	2.84		15	32.00	1.00%	PUU	---	36	800.83
36	22'CTGG'+67.79	-51.00	Endwall Steel	---	---	---	800.83	---		15	---	---	---	---	---	---
40	49'CTG'+22.04	18.00	Inlets 2x2-Ft	V	783.07	781.90	778.57	3.33		15	64.00	---	PUU	---	41	757.00
41	49'CTG'+22.04	78.00	Endwall Steel	---	---	---	757.00	---		15	---	---	---	---	---	---
42	49'CTG'+38.62	-18.00	Inlets 2x2-Ft	V	783.69	782.52	779.19	3.33		15	71.00	---	PUU	---	43	757.00
43	49'CTG'+38.62	-85.00	Endwall Steel	---	---	---	757.00	---		15	---	---	---	---	---	---
44	54'CTG'+20.63	18.00	Inlets 2x2-Ft	V	789.55	788.38	785.05	3.33		15	74.00	---	PUU	---	45	757.50
45	54'CTG'+20.63	87.00	Endwall Steel	---	---	---	757.50	---		15	---	---	---	---	---	---
46	54'CTG'+37.21	-18.00	Inlets 2x2-Ft	V	789.33	788.16	784.83	3.33		15	82.00	---	PUU	---	47	757.50
47	54'CTG'+37.21	-95.00	Endwall Steel	---	---	---	757.50	---		15	---	---	---	---	---	---
50	12'CTGG'+56.89	47.90	Endwall Steel	---	---	---	775.30	---		15	90.00	0.33%	CPCS	---	51	775.00
51	13'CTGG'+46.08	59.98	Endwall Steel	---	---	---	775.00	---		15	---	---	---	---	---	---
52	34'CTGG'+46.40	42.84	Endwall Steel	---	---	---	776.45	---		21x15	50.00	0.20%	PACS	---	53	776.35
53	34'CTGG'+96.37	41.10	Endwall Steel	---	---	---	776.35	---		21x15	---	---	---	---	---	---
54	36'CTGG'+44.00	-36.67	Endwall Sloped Side Drains Steel 6:1	---	---	---	776.50	---		17x13	40.00	0.38%	PACS	---	55	776.35
55	36'CTGG'+84.00	-36.33	Endwall Sloped Side Drains Steel 6:1	---	---	---	776.35	---		17x13	---	---	---	---	---	---
56	110'GRV'+17.19	37.42	Endwall	---	---	---	776.40	---		18	60.00	0.67%	CP	III	57	776.00
57	110'GRV'+74.59	38.02	Endwall	---	---	---	776.00	---		18	---	---	---	---	---	---
58	112'GRV'+54.80	-34.57	Endwall Steel	---	---	---	775.60	---		17x13	46.00	0.87%	PACS	---	59	775.20
59	112'GRV'+06.80	-34.57	Endwall Steel	---	---	---	775.20	---		17x13	---	---	---	---	---	---
60	12'DIX'+30.28	39.76	Endwall Steel	---	---	---	777.85	---		18	46.00	0.22%	CPCS	---	61	777.75
61	12'DIX'+69.72	39.76	Endwall Steel	---	---	---	777.75	---		18	---	---	---	---	---	---
62	13'DIX'+17.42	39.90	Endwall Steel	---	---	---	777.70	---		18	76.00	0.33%	CPCS	---	63	777.45
63	13'DIX'+81.19	48.86	Endwall Steel	---	---	---	777.45	---		18	---	---	---	---	---	---

1) GRATE ELEVATIONS SHOWN FOR TYPE V & S COVERS ARE DEPRESSED 0.08' FROM NORMAL GUTTER FLOWLINE ELEVATION.
2) TOP OF STRUCTURE ELEVATION = RIM/GRATE ELEVATION - CASTING DEPTH - 6" ADJUSTMENT
3) STRUCTURE DEPTH = TOP OF STRUCTURE ELEVATION - INVERT ELEVATION.
4) JOINT TIES ARE REQUIRED AT REINFORCED CONCRETE APRON ENDWALLS AND ADJOINING 2 SECTIONS OF STORM SEWER PIPE. JOINT TIES ARE INCIDENTAL TO REINFORCED CONCRETE PIPE, STORM SEWER.
5) MANHOLES SHALL BE CONSTRUCTED IN A WAY THAT WILL ALLOW THE CASTING TO BE ALIGNED IN THE MIDDLE OF A LANE OR ON A LANE LINE.
6) CONTRACTOR SHALL VERIFY EXISTING PIPE SIZES, MATERIALS AND INVERT ELEVATION WHEN CONNECTING NEW STORM SEWER INTO EXISTING PIPES PRIOR TO MANUFACTURING STRUCTURES.
7) STATION/ OFFSET OF CONCRETE APRON ENDWALLS ARE TO PIPE END.
8) LOCATION OFFSET: NEGATIVE DISTANCE EQUALS LEFT OF REFERENCE LINE, POSITIVE DISTANCE EQUALS RIGHT OF REFERENCE LINE.
9) DRAIN SLOTTED VANE NOTED IN STRUCTURE DATA TABLES AS VD.

2

2

N

0 50 100

SCALE IN FEET

CTH GG

R/L CTH GG

2-21

Hwy GG

M1-94
60" X 21"

R/L USH 41 SB

894'SAB' 896'SAB' 898'SAB' 900'SAB' 902'SAB' 904'SAB' 906'SAB' 908'SAB'

USH 41 SB

894'NAB' 896'NAB' 898'NAB' 900'NAB' 902'NAB' 904'NAB' 906'NAB' 908'NAB'

USH 41 NB

R/L USH 41 NB

2-20

Hwy GG

M1-94
60" X 21"

OLD DIXIE ROAD

SIGN

POOL

ANT.

SIGN

LEGEND

WOOD POSTS

SIGN-MOVE

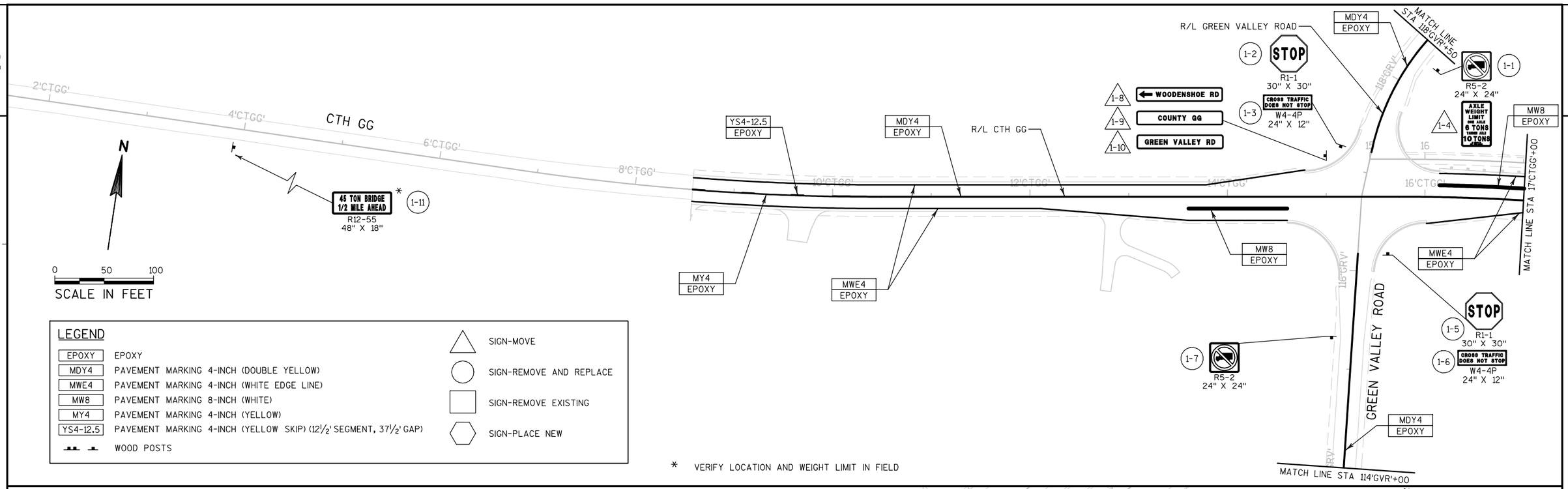
T SINGLE DELINEATOR STEEL POST

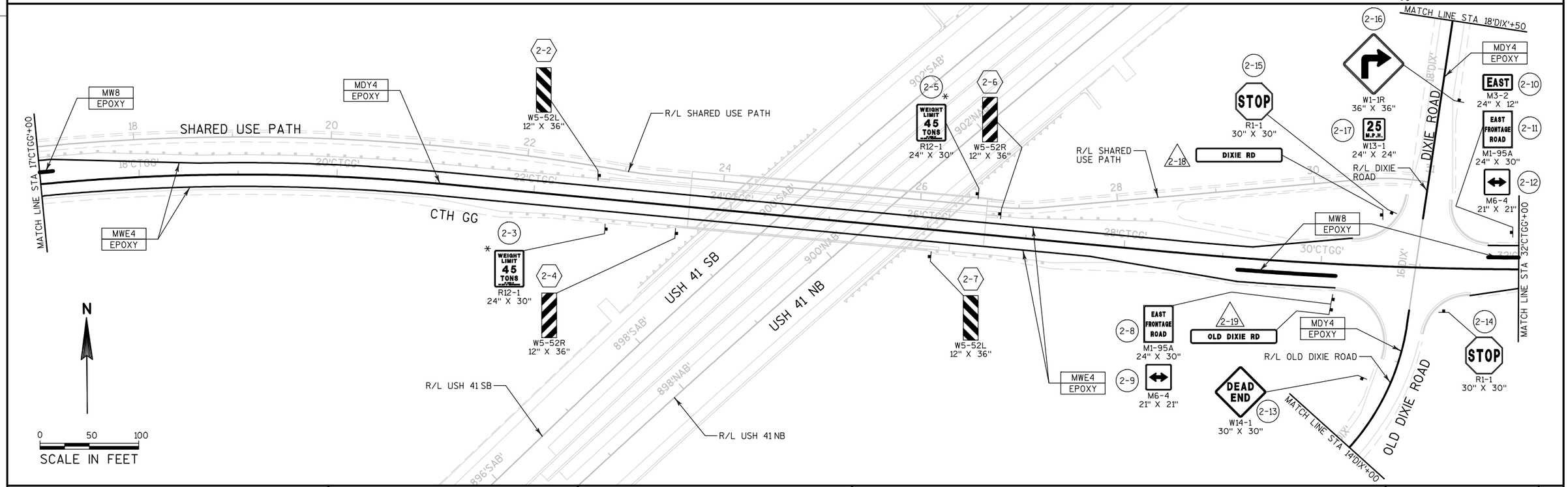
DELINEATOR AND DELINEATOR BRACKET

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PAVEMENT MARKING/SIGNING - USH 41	SHEET 47	E

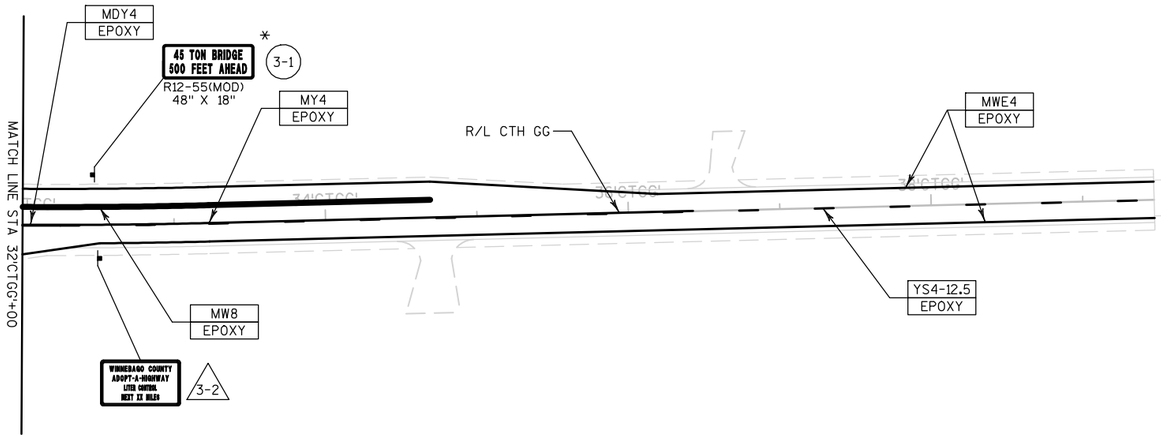
FILE NAME : ch_0977-78-81_024501_pm.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 100:1

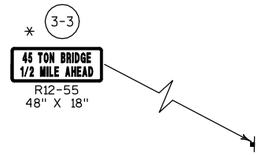
WISDOT/CADDS SHEET 42

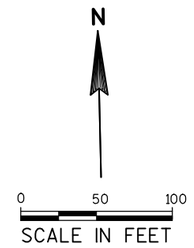




PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PAVEMENT MARKING/SIGNING-CTH GG, GVR & OLD DIXIE RD/DIXIE RD	SHEET 48	E





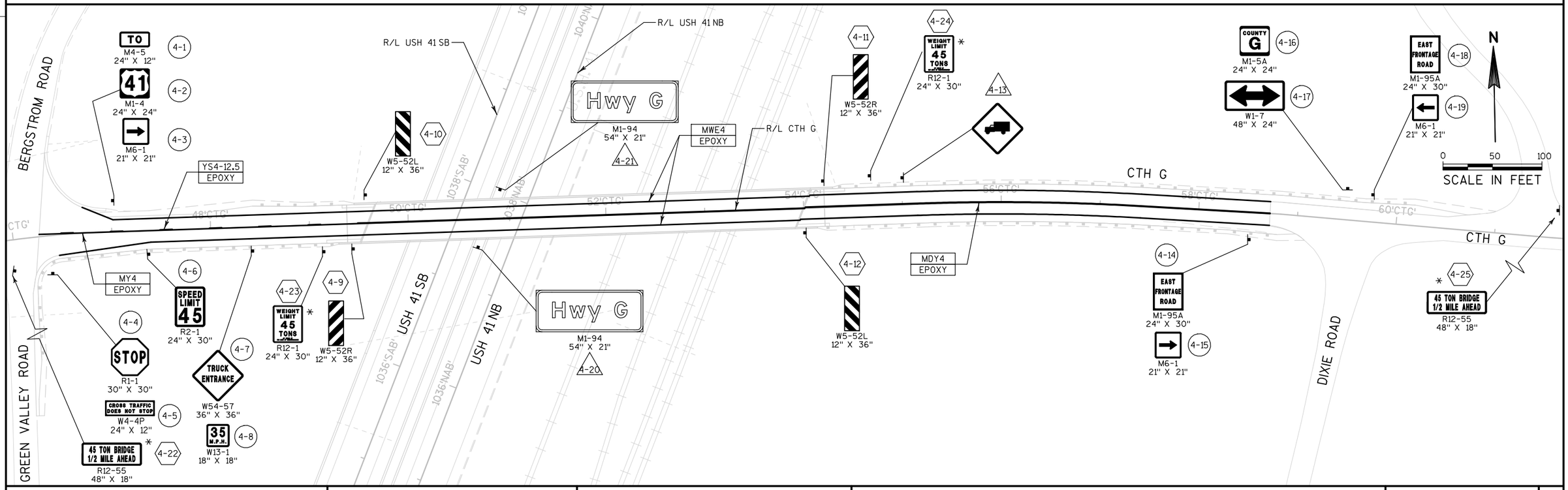


LEGEND

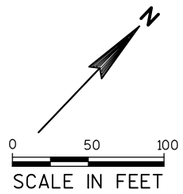
EPOXY	EPOXY
MDY4	PAVEMENT MARKING 4-INCH (DOUBLE YELLOW)
MWE4	PAVEMENT MARKING 4-INCH (WHITE EDGE LINE)
MW8	PAVEMENT MARKING 8-INCH (WHITE)
MY4	PAVEMENT MARKING 4-INCH (YELLOW)
YS4-12.5	PAVEMENT MARKING 4-INCH (YELLOW SKIP) (12½' SEGMENT, 37½' GAP)
	WOOD POSTS

SIGN-MOVE
SIGN-REMOVE AND REPLACE
SIGN-REMOVE EXISTING
SIGN-PLACE NEW

* VERIFY LOCATION AND WEIGHT LIMIT IN FIELD



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PAVEMENT MARKING/SIGNING - CTH GG AND CTH G	SHEET 49	E



LEGEND

EPOXY	EPOXY
MDY4	PAVEMENT MARKING 4-INCH (DOUBLE YELLOW)
MWE4	PAVEMENT MARKING 4-INCH (WHITE EDGE LINE)
MW8	PAVEMENT MARKING 8-INCH (WHITE)
	WOOD POSTS
	SIGN-MOVE
	SIGN-REMOVE AND REPLACE

MATCH LINE STA 114'GVR'+00

MDY4
EPOXY

R/L GREEN VALLEY ROAD

114'GRV'
112'GRV'
110'GRV'

GREEN VALLEY ROAD

878'SAB' 880'SAB' 882'SAB' USH 41 SB 884'SAB' 886'SAB' 888'SAB' 890'SAB' 892'SAB'

5-1
W1-6
48" X 24"

5-2
STOP
R1-1
30" X 30"

R/L WOODENSHOE ROAD

WOODENSHOE ROAD

5-3
WOODENSHOE RD

120'GRV'

MATCH LINE STA 118'GVR'+50

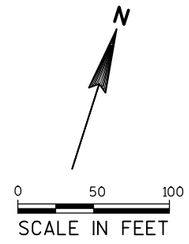
122'GRV'

R/L GREEN VALLEY ROAD

MDY4
EPOXY

124'GRV'

GREEN VALLEY ROAD



R/L SHARED USE PATH

18
18'GRV'
20
20'GRV'

CTH GG

SHARED USE PATH

R/L CTH GG

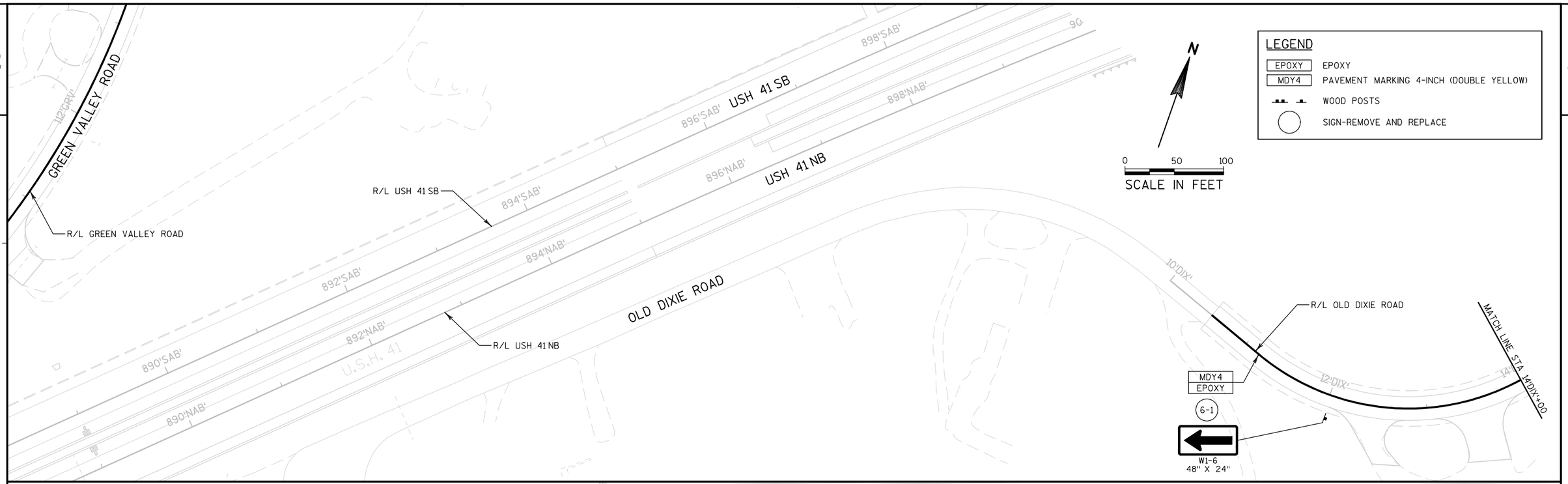
R/L USH 41 SB

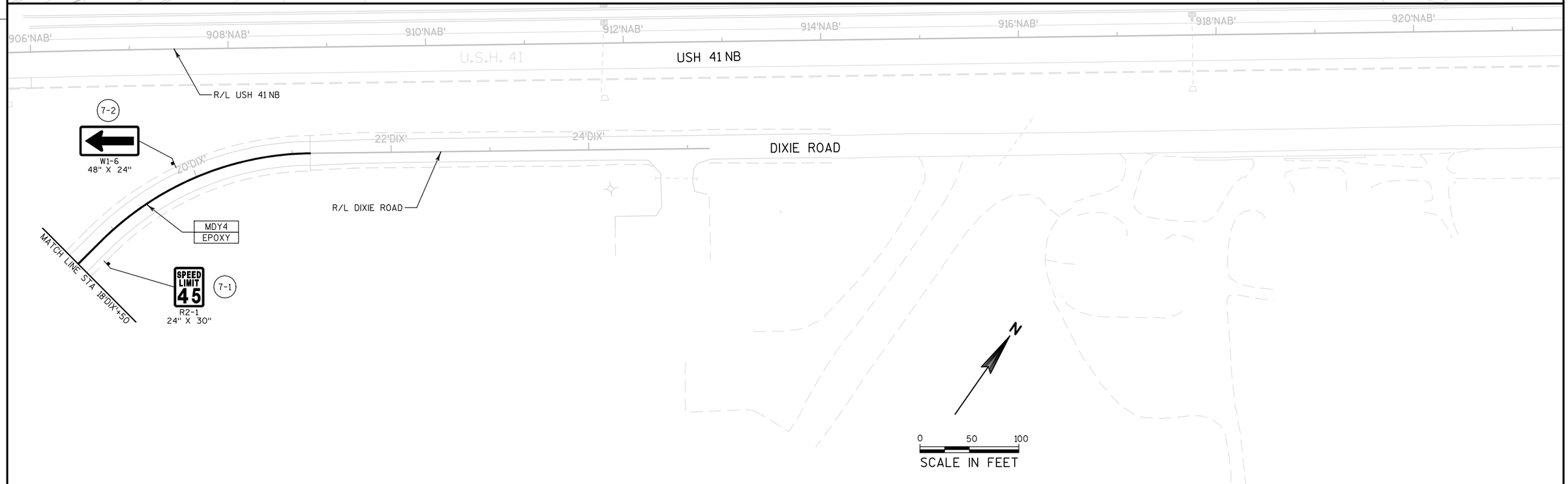
906'SAB'

R/L USH 41 NB

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PAVEMENT MARKING/SIGNING - GREEN VALLEY ROAD	SHEET 50 E

2





PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PAVEMENT MARKING/SIGNING - OLD DIXIE ROAD/DIXIE ROAD	SHEET 51	E

2

STREET LIGHTING PLANS PREPARED BY

WISCONSIN
MIKE D.
SCARMON
E-37613
EVANSVILLE,
WI
PROFESSIONAL ENGINEER

4/15/2013
(DATE)

(SIGNATURE)

LIGHTING PLAN LEGEND

180+25'NAB' - 33'LT - LB6
- STATION
- OFFSET
- LIGHT UNIT NUMBER

- CONCRETE BASE TYPE 7 MEDIAN
- PULL BOX (24" X 42" STEEL)
- CONDUIT RIGID NONMETALLIC (2-INCH SCHEDULE 40 UNLESS NOTED OTHERWISE)

GENERAL NOTES:

1) WISCONSIN DOT NORTHEAST REGION ELECTRICAL UNIT SHALL APPROVE THE FINAL LOCATION FOR ALL CONCRETE BASES IN THE FIELD PRIOR TO CONSTRUCTION. CONTACT THEM 3 DAYS IN ADVANCE AT (920) 492-5654 OR (920) 492-5628.

2) THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

3) LIGHTING INSTALLATION WORK WILL TAKE PLACE UNDER TRAFFIC IN THE USH 41 MEDIAN. REFER TO THE PROJECT SPECIAL PROVISIONS TO IDENTIFY WORKING RESTRICTIONS AND REQUIREMENTS.

NOTES:

1) TOP OF CONCRETE BASE TO BE 1-FOOT BELOW THE TOP OF THE LOWEST BARRIER.

2) ROUTE CONDUIT ALONG SIDE MEDIAN INLETS, SIGN FOOTINGS & BRIDGE PIERS.

3) CONDUIT DEPTH TO BE 6" BELOW BOTTOM OF BREAKER RUN. DEPTH WILL VARY.

4) DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF SECTION 654 OF THE STANDARD SPECIFICATIONS.

5) THE BASES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD DETAIL DRAWING FOR CONCRETE BASE, TYPE 7, EXCEPT FOR THE DETAILS AND OTHER INFORMATION AS SPECIFICALLY SHOWN. PROVIDE REINFORCEMENT AS SHOWN IN THE SDD AND ACCOUNT FOR THE ADDITIONAL BASE HEIGHT.

6) ALL CONDUIT ENDS SHALL PROJECT 4" ABOVE THE CONCRETE BASE PRIOR TO INSTALLATION OF THE PVC CAPS AND SHALL BE LOCATED WITHIN A 6" DIA. CIRCLE ABOUT CENTER OF BASE.

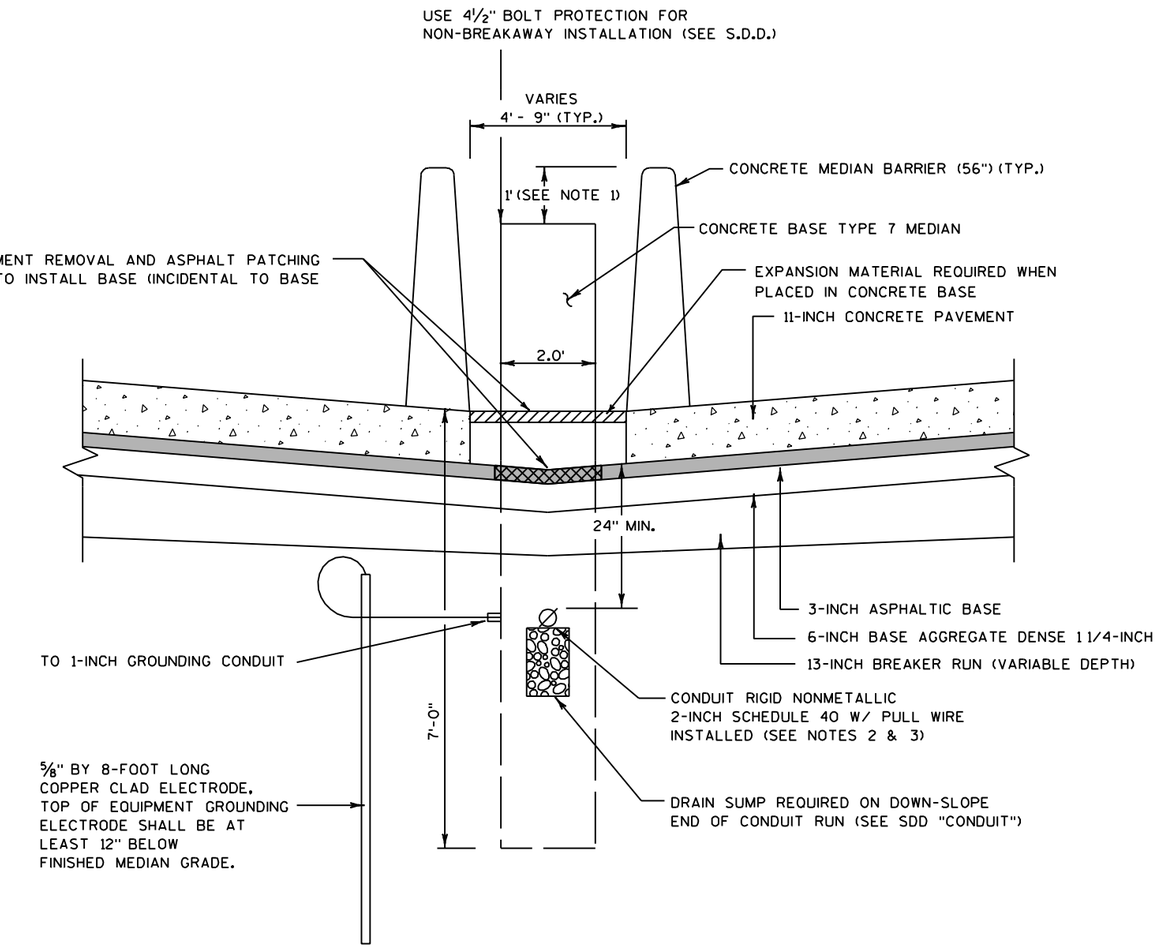
ESTIMATED QUANITIES PER BASE (APPROX.)

APPROX. CUBIC YARDS OF CONCRETE	1.24
LBS. OF HOOP BAR STEEL	44
LBS. OF VERTICAL BAR STEEL	92
1" DIA. X 7.5' ANCHOR RODS	4

NOTES:

ALL QUANTITIES INCIDENTAL TO "CONCRETE BASE TYPE 7 MEDIAN" BID ITEM SPV.0060.351

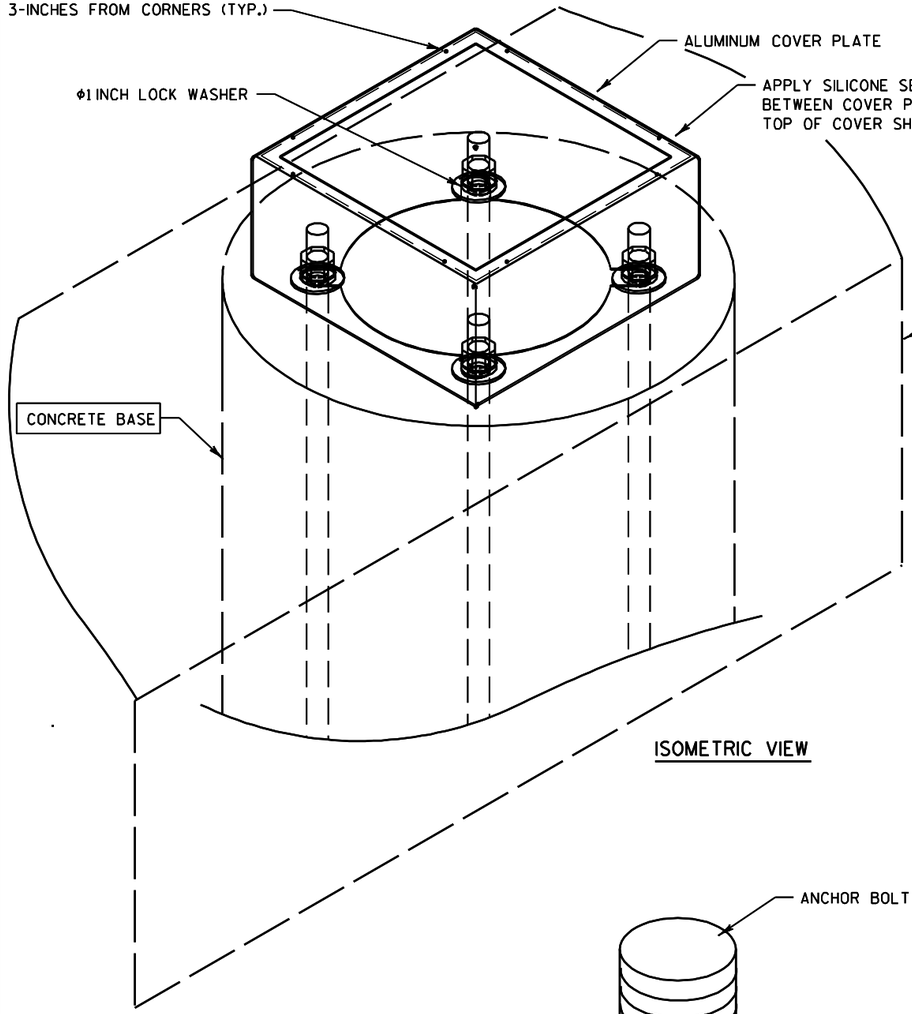
QUANTITIES ARE APPROXIMATE AND MAY VARY IN SECTIONS WITH GRADE SEPARATION.



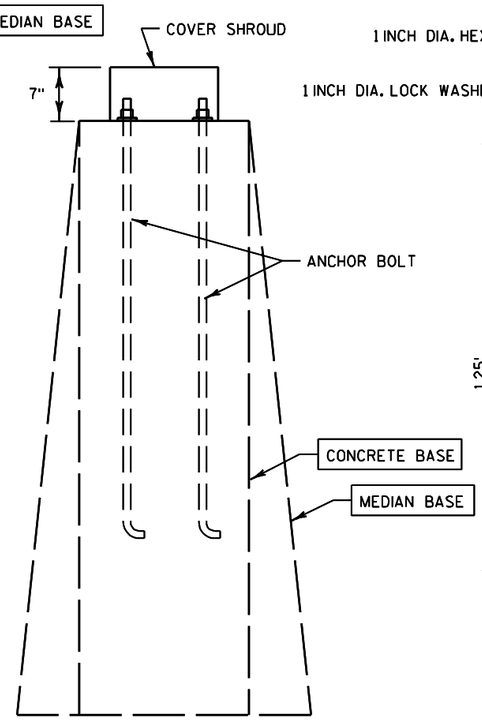
CONCRETE BASE TYPE 7 MEDIAN

NO SCALE

SHEET 1 OF 5



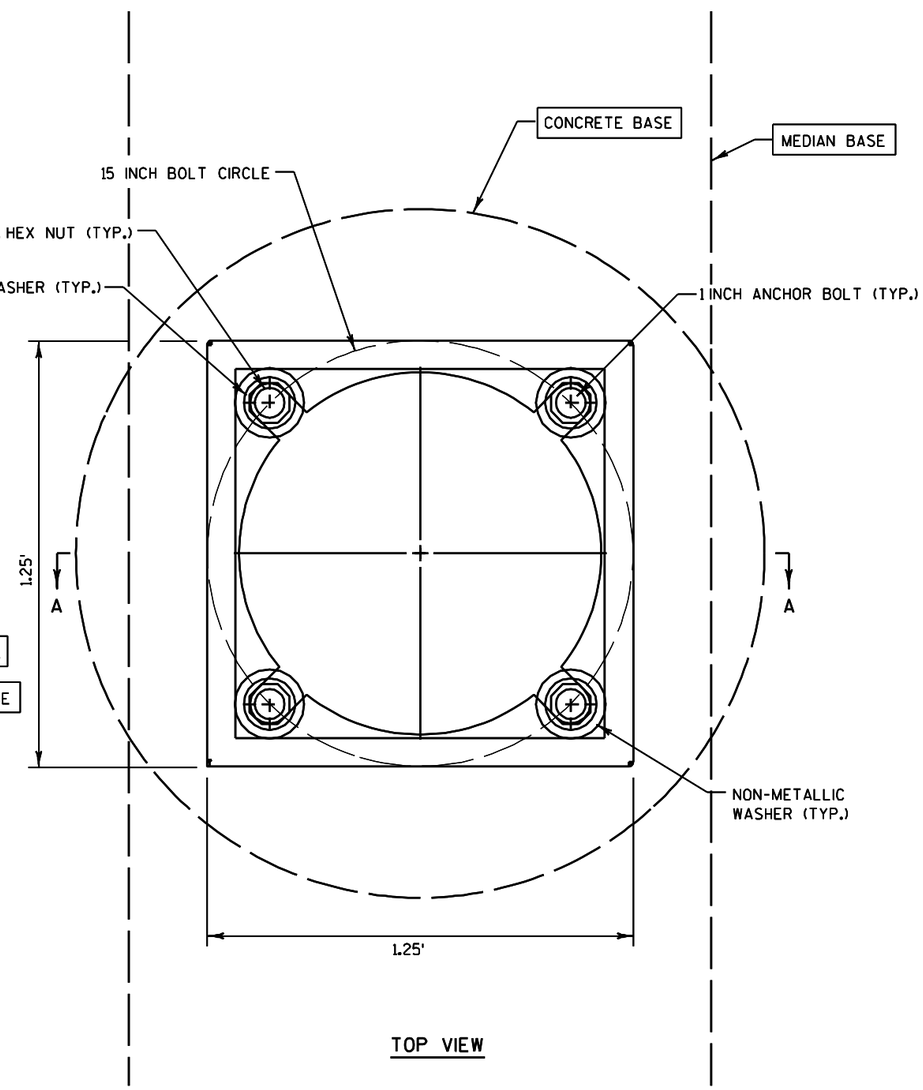
ISOMETRIC VIEW



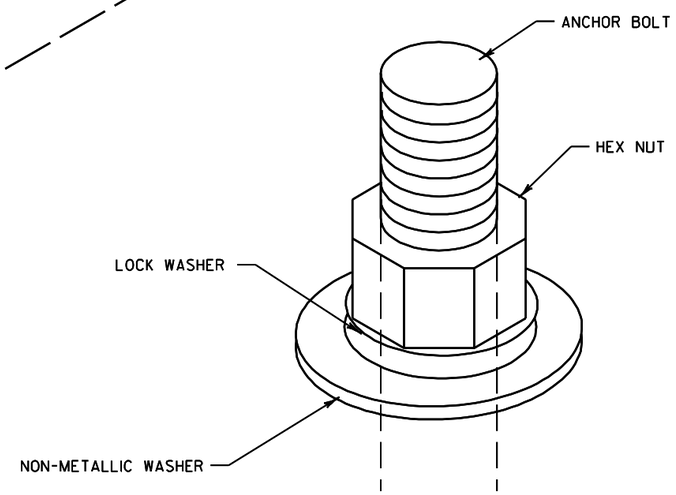
SECTION A-A

NOTE:

ANCHOR BOLTS/NUTS NOT INCLUDED WITH COVER SHROUD ITEM.



TOP VIEW



ANCHOR BOLT DETAIL

ANCHOR BOLT COVER SHROUD

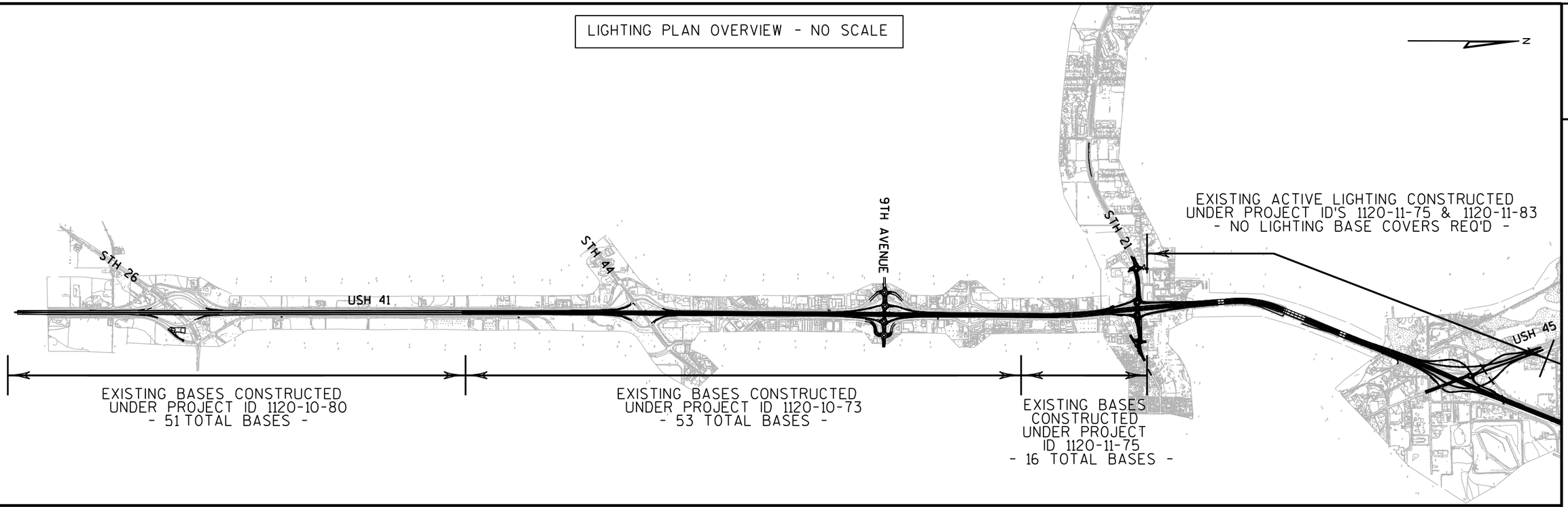
NO SCALE

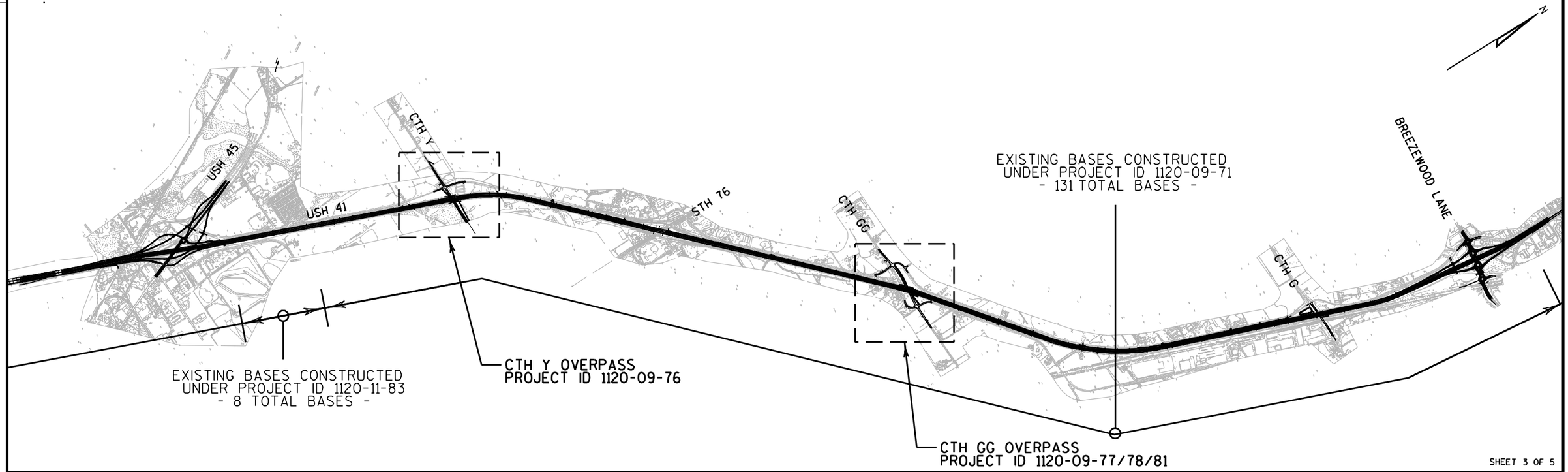
PROJECT NO: 1120-09-76/77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	LIGHTING PLANS	SHEET 53	E

FILE NAME : g:\wdotne\wne30-0739\winnebago county - 01\1120-09-76 overpass structures & light bases\dgn\plan sheets\023501_lp.dgn PLOT DATE : 4/15/2013 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

WISDOT/CADDS SHEET 42

LIGHTING PLAN OVERVIEW - NO SCALE





SHEET 3 OF 5

PROJECT NO: 1120-09-76/77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	LIGHTING PLANS	SHEET 54 E

2

GREEN VALLEY ROAD

R/W

CTH GG

USH 41 SB

USH 41 NB

CONNECT CONDUIT TO EXISTING PULLBOX

CONNECT CONDUIT TO EXISTING PULLBOX

PB10X - EXISTING

PB10 - EXISTING

PB9 - EXISTING

LB65 - EXISTING

LB68 - EXISTING

LB69 - EXISTING

STA. 898'NAB'+45 - 32.2'LT - LB66

STA. 901'NAB'+45 - 33.1'LT - LB67

905'SAB'

900'SAB'

895'SAB'

905'NAB'

900'NAB'

895'NAB'

C-UG

OH

HO

W

SIGN

POOL

ANT

N

SHEET 5 OF 5

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	LIGHTING PLANS	SHEET	E

FILE NAME : g:\wdotne\wne30-0739\winnebago county - 01\1120-09-76 overpass structures & light bases\dgn\plan sheets\023510_lp.dgn PLOT DATE : 4/15/2013 PLOT BY : KL Engineering PLOT NAME : PLOT SCALE :

2

GENERAL NOTES FOR TRAFFIC CONTROL

1) THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS DIRECTED BY THE ENGINEER.

2) CONFLICTING TRAFFIC SIGNS SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER. (INCIDENTAL TO WORK)

3) A FLAGGER MAY BE REQUIRED WHERE CONSTRUCTION VEHICLES ENTER OR LEAVE WORK AREAS IF WARRANTED BY CONDITIONS OR AS DIRECTED BY THE ENGINEER. HOWEVER, CONTRACTOR SHALL NOT USE FLAG PERSONS TO DIRECT, STOP OR CONTROL TRAFFIC ON USH 41 AT ANY TIME. (INCIDENTAL TO WORK)

4) ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

5) "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

6) FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A TYPE C WARNING LIGHT.

7) ALL TYPE III BARRICADES SHALL BE 8' WIDE, UNLESS OTHERWISE NOTED, AND EQUIPPED WITH TWO TYPE "A" (LOW INTENSITY FLASHING) LIGHTS.

8) DIMENSIONS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE FACE OF BARRIER ADJACENT TO TRAFFIC. STATION CALL-OUTS TO CONCRETE BARRIER TEMPORARY PRECAST ARE TO THE CENTER OF THE BARRIER.

9) CONCRETE BARRIER TEMPORARY PRECAST THAT IS SHOWN AS MATCHING PERMANENT CONCRETE BARRIER SHALL BE TIED TO THE PERMANENT BARRIER VIA A TEMPORARY THRIE BEAM CONNECTION. SEE DETAIL.

10) STAGING LIMITS BETWEEN PROPOSED ROADWAY EMBANKMENTS AND EXISTING ROADWAYS OPEN TO TRAFFIC ASSUME A MAXIMUM 2:1 SLOPE.

11) PORTABLE MESSAGE BOARDS (PCMS) TO BE MAINTAINED FOR NB AND SB USH 41. PORTABLE MESSAGE BOARD SHOULD BE CHANGED AS APPROPRIATE OR AS DIRECTED BY THE ENGINEER. (PAID AT BID UNIT PRICE)

12) ANCHOR CONCRETE BARRIER TEMPORARY PRECAST PER SDD "CONCRETE BARRIER TEMPORARY PRECAST 12'-6" AND IN TAPER LOCATION.

13) ALWAYS PROVIDE A MINIMUM 1' CLEAR FROM EDGE OF TRAVEL LANE TO THE TOE OF THE CONCRETE BARRIER TEMPORARY.

14) COORDINATE WITH ADJACENT PROJECTS PRIOR TO INSTALLATION OF G20-1 SIGNS.

STANDARD WISDOT
WORK ZONE TRAFFIC CONTROL SYMBOLS

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- CONCRETE BARRIER TEMPORARY PRECAST
- WORK ZONE
- DIRECTION OF TRAFFIC

NON-STANDARD
WORK ZONE TRAFFIC CONTROL SYMBOLS

- CRASH CUSHIONS TEMPORARY

2

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TRAFFIC CONTROL GENERAL NOTES	SHEET 56	E

2

LEGEND

- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- TEMPORARY PRECAST CONCRETE BARRIER
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, 500 FEET DESIRABLE, DISTANCE TO EXISTING SIGNS.

THIS SHOULDER CLOSURE IS TYPICAL FOR CLOSING RIGHT SHOULDER - REVERSE FOR CLOSING LEFT SHOULDER.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS, TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

FOR A SHOULDER CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

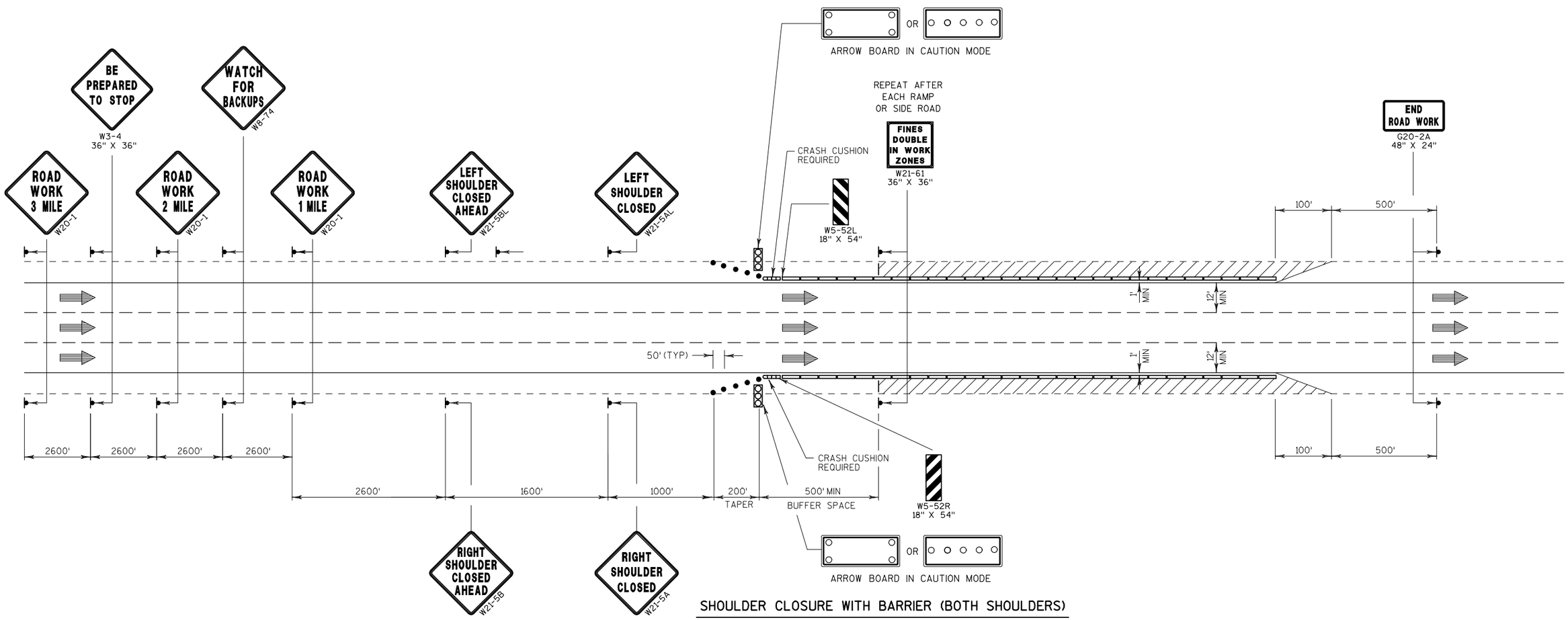
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE SHOULDER CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE SHOULDER CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ½ THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND SHOULDER CLOSURE DRUMS FOR A MINIMUM OF 1500 FEET IN FRONT OF THE DRUMS.

TRAFFIC CONTROL DEVICES NOT IN USE SHALL BE LAID DOWN OR REMOVED, TURNING OF DEVICES TO OBSCURED THE MESSAGE WILL NOT BE ALLOWED.

PLACE SHOULDER CLOSURE SIGNS AS APPROPRIATE THROUGHOUT ALL STAGES.



SHOULDER CLOSURE WITH BARRIER (BOTH SHOULDERS)

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TRAFFIC CONTROL DETAIL	SHEET 57	E

FILE NAME : ch_0977-78-81_026001_tc.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 200:1

WISDOT/CADDS SHEET 42

2

LEGEND

- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- SIGN ON PERMANENT SUPPORT
- TEMPORARY PRECAST CONCRETE BARRIER
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, 500 FEET DESIRABLE, DISTANCE TO EXISTING SIGNS.

THIS SHOULDER CLOSURE IS TYPICAL FOR CLOSING RIGHT SHOULDER - REVERSE FOR CLOSING LEFT SHOULDER.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS, TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

FOR A SHOULDER CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

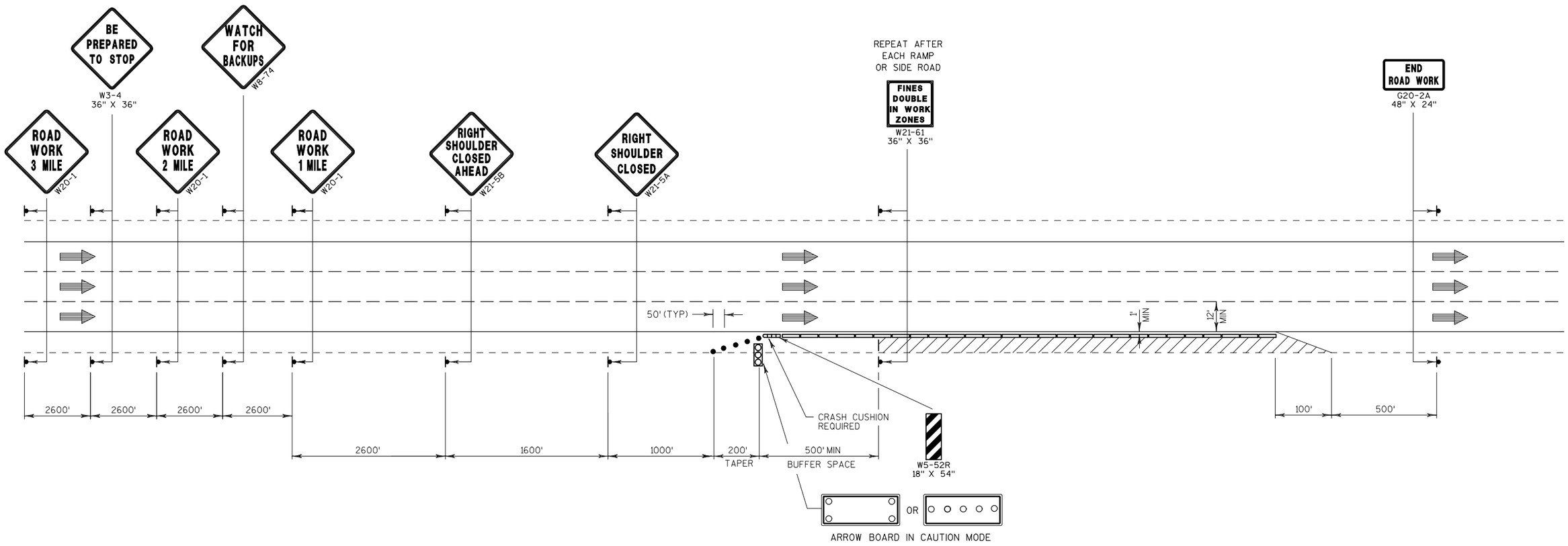
IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE SHOULDER CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE SHOULDER CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ½ THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND SHOULDER CLOSURE DRUMS FOR A MINIMUM OF 1500 FEET IN FRONT OF THE DRUMS.

TRAFFIC CONTROL DEVICES NOT IN USE SHALL BE LAID DOWN OR REMOVED, TURNING OF DEVICES TO OBSCURED THE MESSAGE WILL NOT BE ALLOWED.

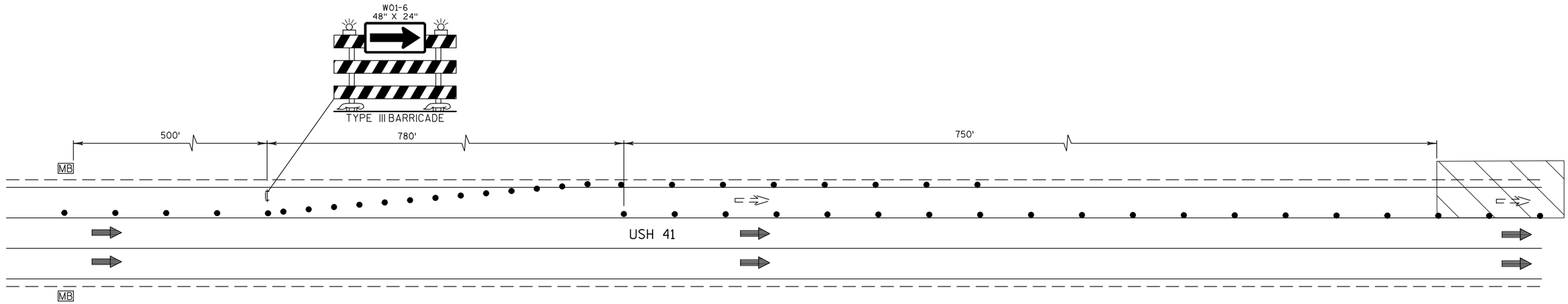
PLACE SHOULDER CLOSURE SIGNS AS APPROPRIATE THROUGHOUT ALL STAGES.



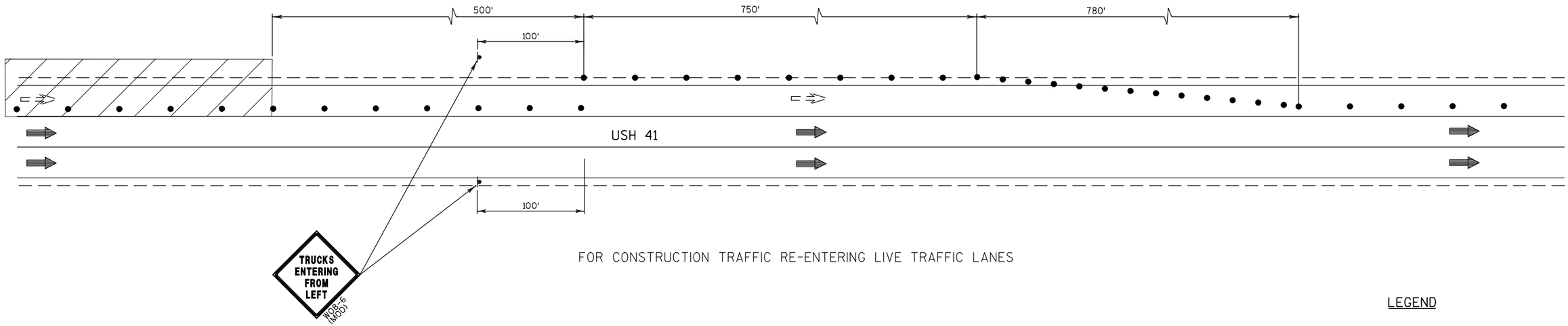
SHOULDER CLOSURE WITH BARRIER (OUTSIDE SHOULDER)

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TRAFFIC CONTROL DETAIL	SHEET 58	E

2



FOR CONSTRUCTION TRAFFIC EXITING LIVE TRAFFIC LANES



FOR CONSTRUCTION TRAFFIC RE-ENTERING LIVE TRAFFIC LANES

NOTE:
SPACING AND LOCATIONS OF DEVICES IN THE FIELD SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER

ADJUST LANE CLOSURE AND SIGNING BASED ON SIDE ROAD BEING ACCESSED.

SEE OTHER TRAFFIC CONTROL DETAILS AND STANDARD DETAIL DRAWINGS FOR LANE CLOSURE DETAILS

PORTABLE MESSAGE SIGN MESSAGES SHOULD READ:

FRAME 1	FRAME 2
TRUCKS EXITING LEFT	TRAFFIC STAY LEFT

TRAFFIC CONTROL DETAIL FOR CONSTRUCTION ACCESS TO USH 41

LEGEND

- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL SIGN
- USH 41 TRAFFIC
- CONSTRUCTION TRAFFIC
- WORK ZONE
- MB — PORTABLE CHANGEABLE MESSAGE BOARD

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	TRAFFIC CONTROL DETAIL	SHEET 59	E

2

2

LEGEND

WORK ZONE

BERGSTROM ROAD

STA 1044'SAB'+00
CRASH CUSHION TEMPORARY

W5-52R
12" X 36"
STA 1043'SAB'+50

1042'SAB'

1042'NAB'

STA 1042'NAB'+00

N

0 50 100
SCALE IN FEET

CONSTRUCTION

CONSTRUCT CTH G.
CONSTRUCT STRUCTURE B-70-67.

TRAFFIC

CTH G CLOSED TO TRAFFIC OVER USH 41.
FRONTAGE ROADS OPEN TO TRAFFIC.

NOTE:
SEE "SHOULDER CLOSURE WITH BARRIER (OUTSIDE SHOULDER)" DETAIL FOR ADVANCED SIGNING

R11-2B
48" X 30"
BRIDGE OUT
TYPE III BARRICADE

1040'SAB'

1040'NAB'

R3-2
24" X 24"

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL D

R/L CTH G

46'CTG'

48'CTG'

50'CTG'

1038'SAB'

1038'NAB'

52'CTG'

54'CTG'

CTH G

56'CTG'

58'CTG'

60'CTG'

R11-2B
48" X 30"
BRIDGE OUT
TYPE III BARRICADE

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL C AND D

R3-1
24" X 24"

R11-2B
48" X 30"
BRIDGE OUT
TYPE III BARRICADE

GREEN VALLEY ROAD

R/L USH 41 SB

STA 1034'SA'B+00

USH 41 SB 1036'SAB'

USH 41 NB 1036'NAB'

1034'SAB'

1034'NAB'

R/L USH 41 NB

W5-52R
12" X 36"
STA 1032'NAB'+50

STA 1032'NAB'+00
CRASH CUSHION TEMPORARY

32'SAB'

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL D

R11-2B
48" X 30"
BRIDGE OUT
TYPE III BARRICADE

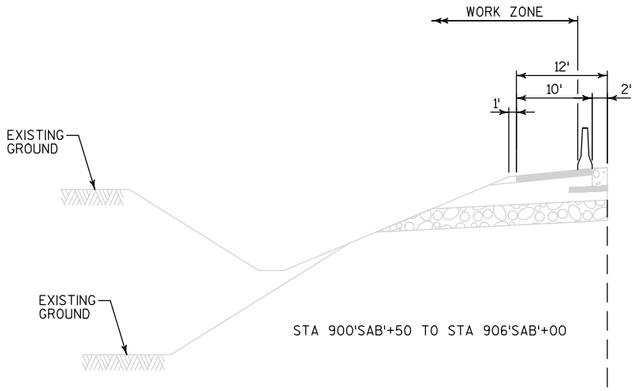
R3-2
24" X 24"

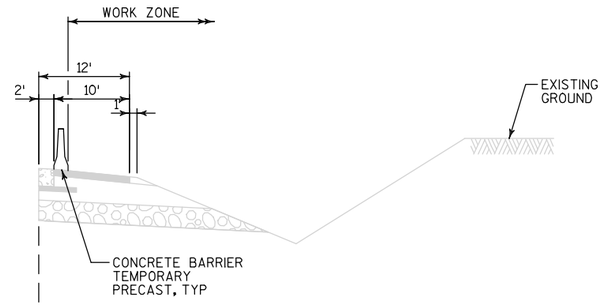
SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL C AND D

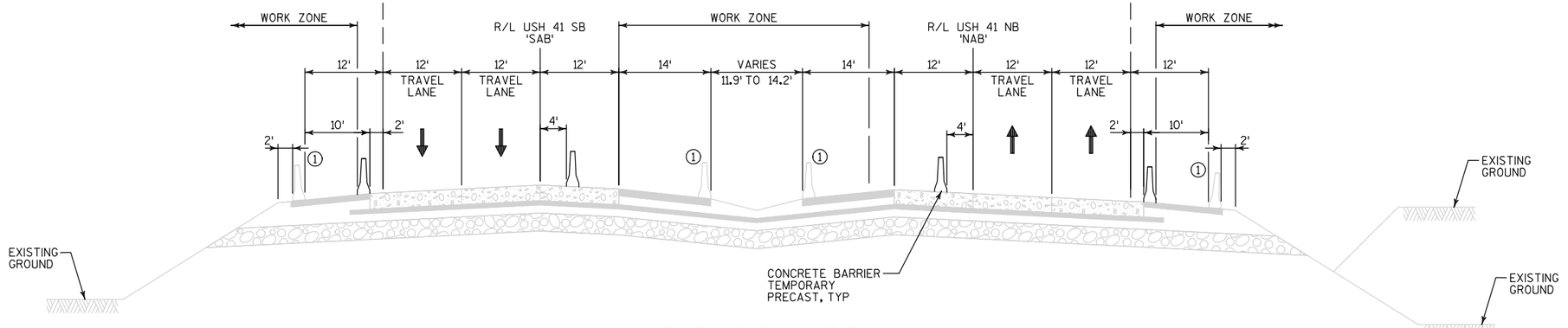
DIXIE ROAD

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CTH G TRAFFIC CONTROL STAGE 1	SHEET 60	E

2





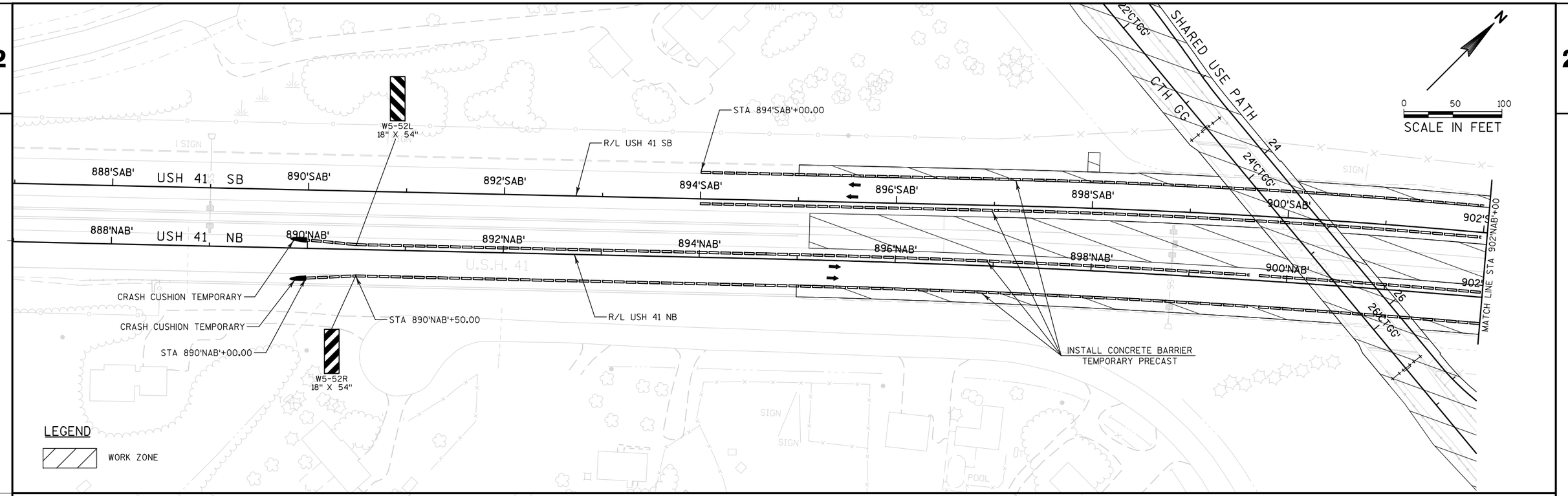


STAGE 2 TYPICAL SECTION
USH 41

① REMOVE EXISTING CONCRETE BARRIER TEMPORARY PRECAST (12'-6") LEFT IN PLACE BY OTHERS

NOTE: SEE TRAFFIC CONTROL PLAN SHEETS FOR CONCRETE BARRIER TEMPORARY PRECAST LIMITS.

2



CONSTRUCTION

CONSTRUCT USH 41.
CONSTRUCT STRUCTURE B-70-287.

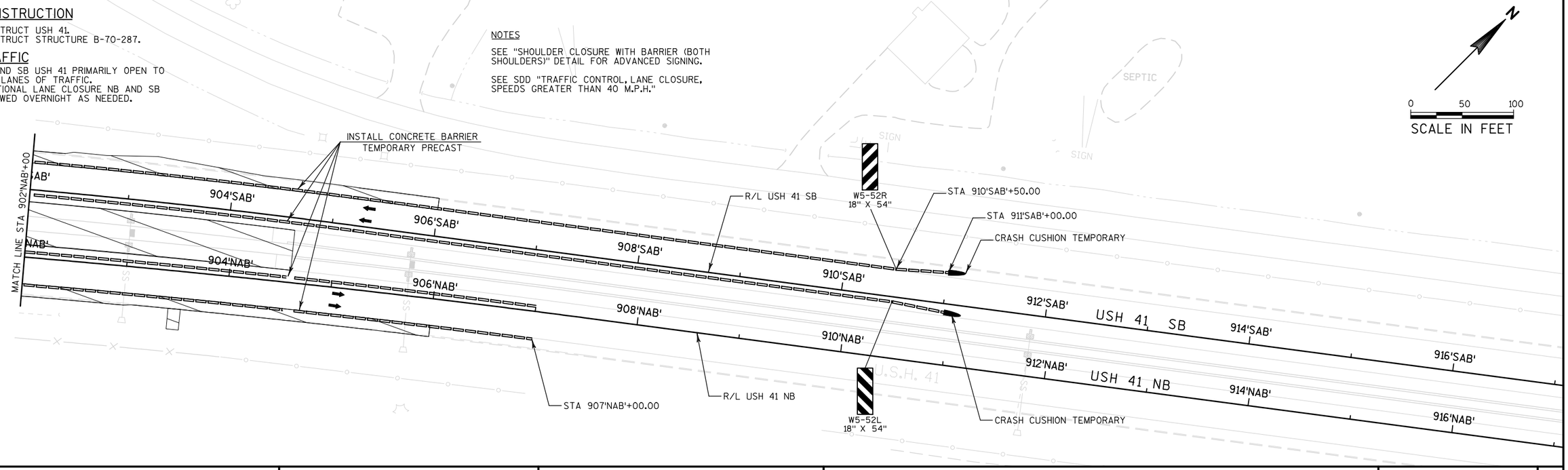
TRAFFIC

NB AND SB USH 41 PRIMARILY OPEN TO TWO LANES OF TRAFFIC.
ADDITIONAL LANE CLOSURE NB AND SB ALLOWED OVERNIGHT AS NEEDED.

NOTES

SEE "SHOULDER CLOSURE WITH BARRIER (BOTH SHOULDERS)" DETAIL FOR ADVANCED SIGNING.

SEE SDD "TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H."



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	USH 41 TRAFFIC CONTROL STAGE 2	SHEET 62	E

CONSTRUCTION

CONSTRUCT CTH GG BETWEEN GREEN VALLEY ROAD AND DIXIE ROAD.
CONSTRUCT STRUCTURE B-70-287.

TRAFFIC

CTH GG CLOSED TO TRAFFIC OVER USH 41.
FRONTAGE ROADS OPEN TO TRAFFIC.

LEGEND

WORK ZONE

N

0 50 100
SCALE IN FEET

R3-2
24" X 24"

R3-1
24" X 24"

R11-2B
48" X 30"

BRIDGE OUT

TYPE III BARRICADE

2'CTGG'
4'CTGG'
6'CTGG'
8'CTGG'
10'CTGG'
12'CTGG'
14'CTGG'
16'CTGG'
18'CTGG'
20'CTGG'
22'CTGG'
24'CTGG'
26'CTGG'
28'CTGG'
30'CTGG'
32'CTGG'

CTH GG

R/L CTH GG

R/L SHARED USE PATH

R/L USH 41 SB

R/L USH 41 NB

R/L GREEN VALLEY ROAD

R/L DIXIE ROAD

118'GRV'
116'GRV'
114'GRV'
GREEN VALLEY ROAD

18'DIX'
16'DIX'
DIXIE ROAD

OLD DIXIE ROAD

MATCH LINE STA 17'CTGG+00

902'SAB'
902'NAB'
900'SAB'
900'NAB'
898'SAB'
898'NAB'

USH 41 SB
USH 41 NB

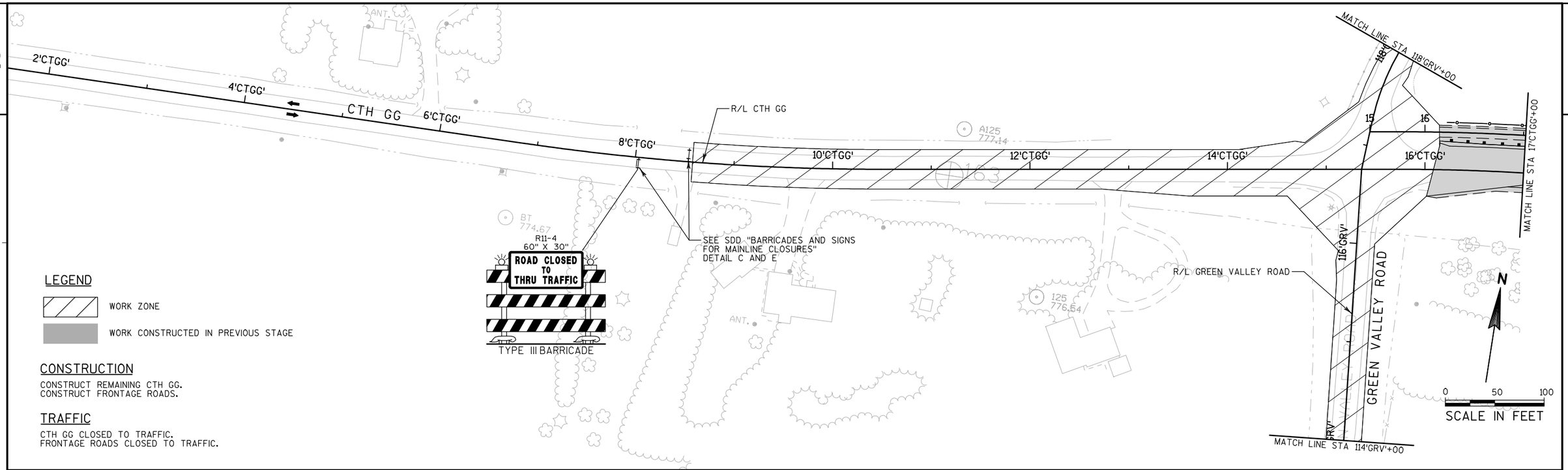
SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL C AND D

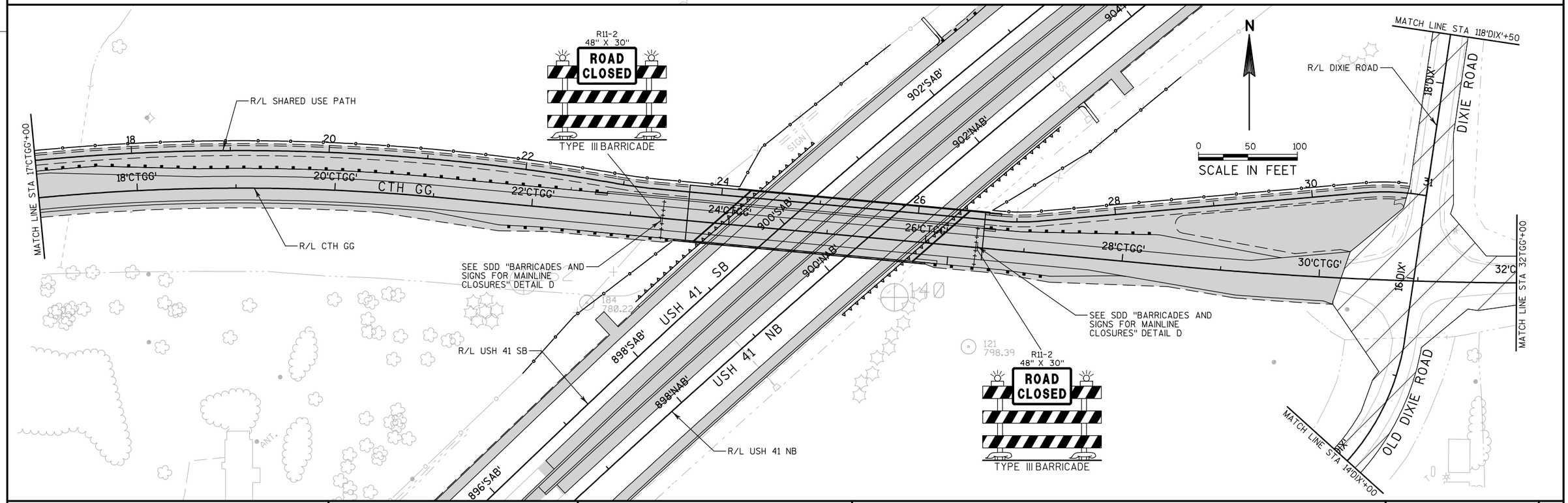
SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL D

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CTH GG TRAFFIC CONTROL STAGE 2	SHEET 63 E

FILE NAME : ch_0977-78-81_026203_s2.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42





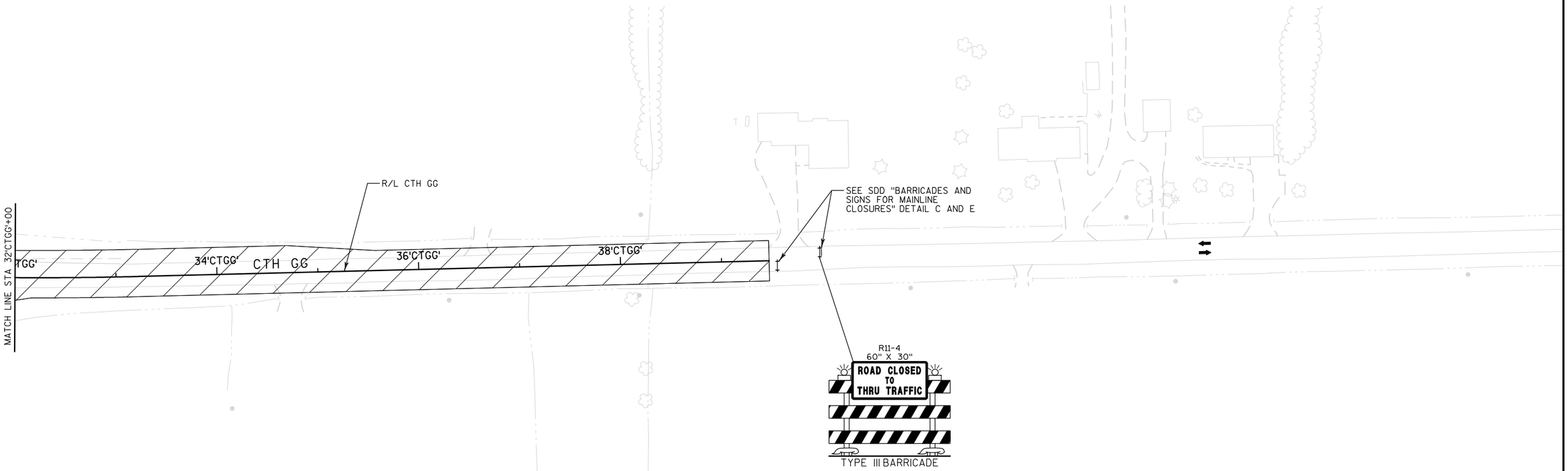
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CTH GG TRAFFIC CONTROL STAGE 3	SHEET 64	E

2

N

0 50 100

SCALE IN FEET



LEGEND

WORK ZONE

CONSTRUCTION

CONSTRUCT REMAINING CTH GG.
CONSTRUCT FRONTAGE ROADS.

TRAFFIC

CTH GG CLOSED TO TRAFFIC.
FRONTAGE ROADS CLOSED TO TRAFFIC.

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CTH GG TRAFFIC CONTROL STAGE 3	SHEET 65	E

2

N

0 50 100

SCALE IN FEET

MATCH LINE STA 114'GRV'+00

114'GRV'

GREEN VALLEY ROAD

112'GRV'

110'GRV'

R/L GREEN VALLEY ROAD

R11-4
60" X 30"
ROAD CLOSED TO THRU TRAFFIC

TYPE III BARRICADE

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL C AND E

R/L USH 41 SB

878'SAB' 880'SAB' 882'SAB' 884'SAB' 886'SAB' USH 41 SB 888'SAB' 890'SAB' 892'SAB'

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL C AND D

WOODENSHOE RD

R/L GREEN VALLEY ROAD

120'GRV'

MATCH LINE STA 118'GRV'+50

122'GRV'

SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL C AND D

124'GRV'

R11-2
48" X 30"
ROAD CLOSED

TYPE III BARRICADE

R/L WOODENSHOE ROAD

GREEN VALLEY ROAD

R11-2
48" X 30"
ROAD CLOSED

TYPE III BARRICADE

R/L CTH GG

R/L SHARED USE PATH

18

18'CTGG'

20

CTH GG

20'CTGG'

LEGEND

WORK ZONE

WORK CONSTRUCTED IN PREVIOUS STAGE

CONSTRUCTION

CONSTRUCT REMAINING CTH GG.
CONSTRUCT FRONTAGE ROADS.

TRAFFIC

CTH GG CLOSED TO TRAFFIC.
FRONTAGE ROADS CLOSED TO TRAFFIC.

N

0 50 100

SCALE IN FEET

R/L USH 41 NB

R/L USH 41 SB

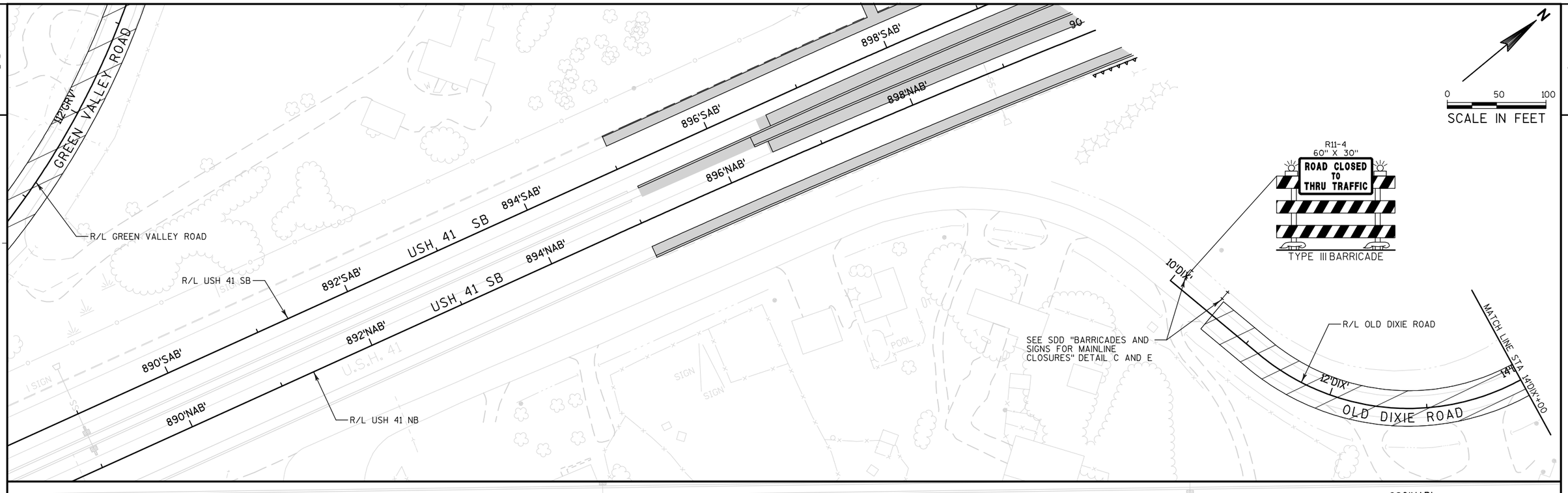
906'SAB'

USH 41 SB

USH 41 NB

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	GREEN VALLEY ROAD TRAFFIC CONTROL STAGE 3	SHEET 66	E

2



CONSTRUCTION

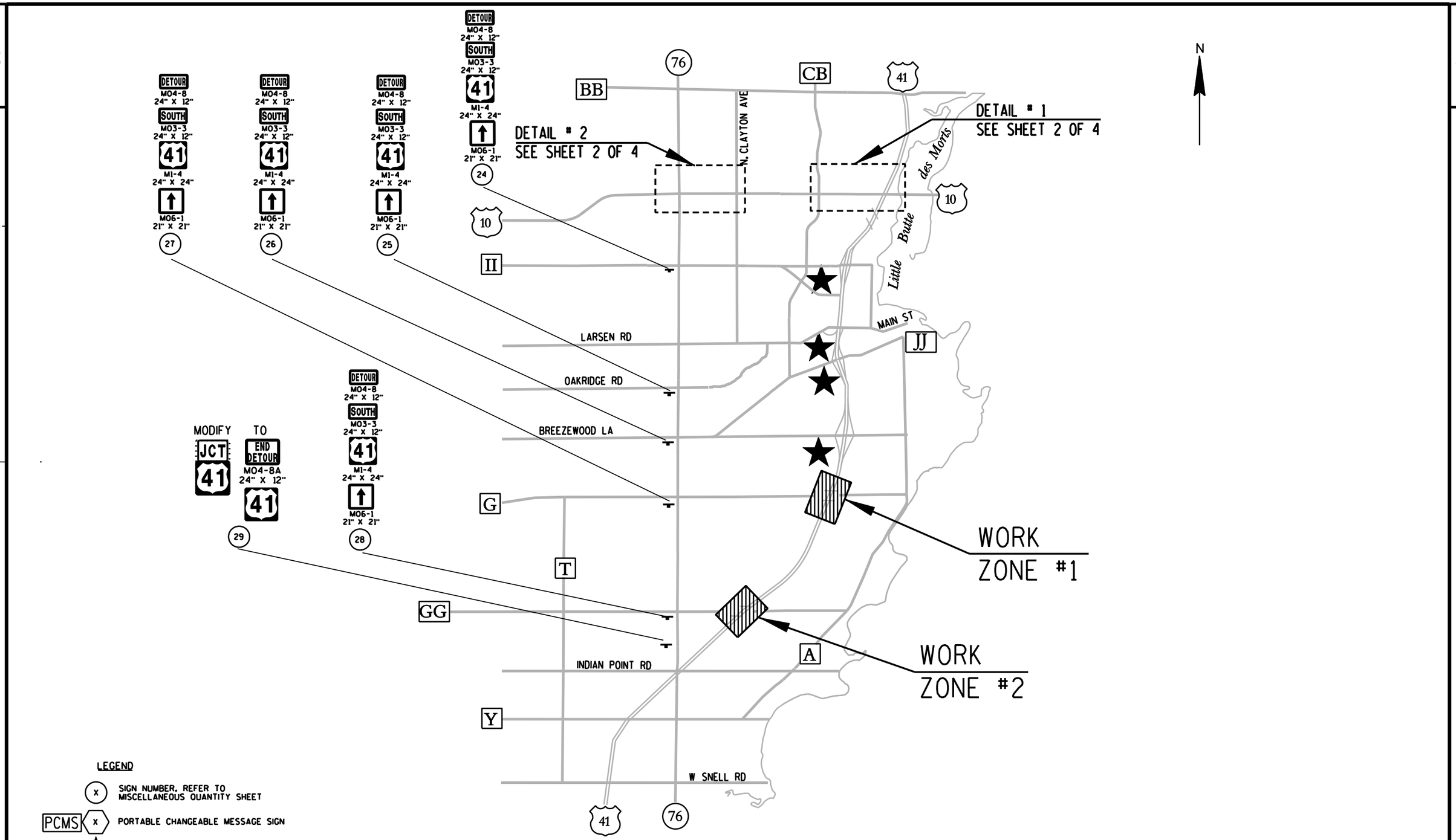
CONSTRUCT REMAINING CTH GG.
CONSTRUCT FRONTAGE ROADS.

TRAFFIC

CTH GG CLOSED TO TRAFFIC.
FRONTAGE ROADS CLOSED TO TRAFFIC.

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	OLD DIXIE/DIXIE ROAD TRAFFIC CONTROL STAGE 3	SHEET 67	E

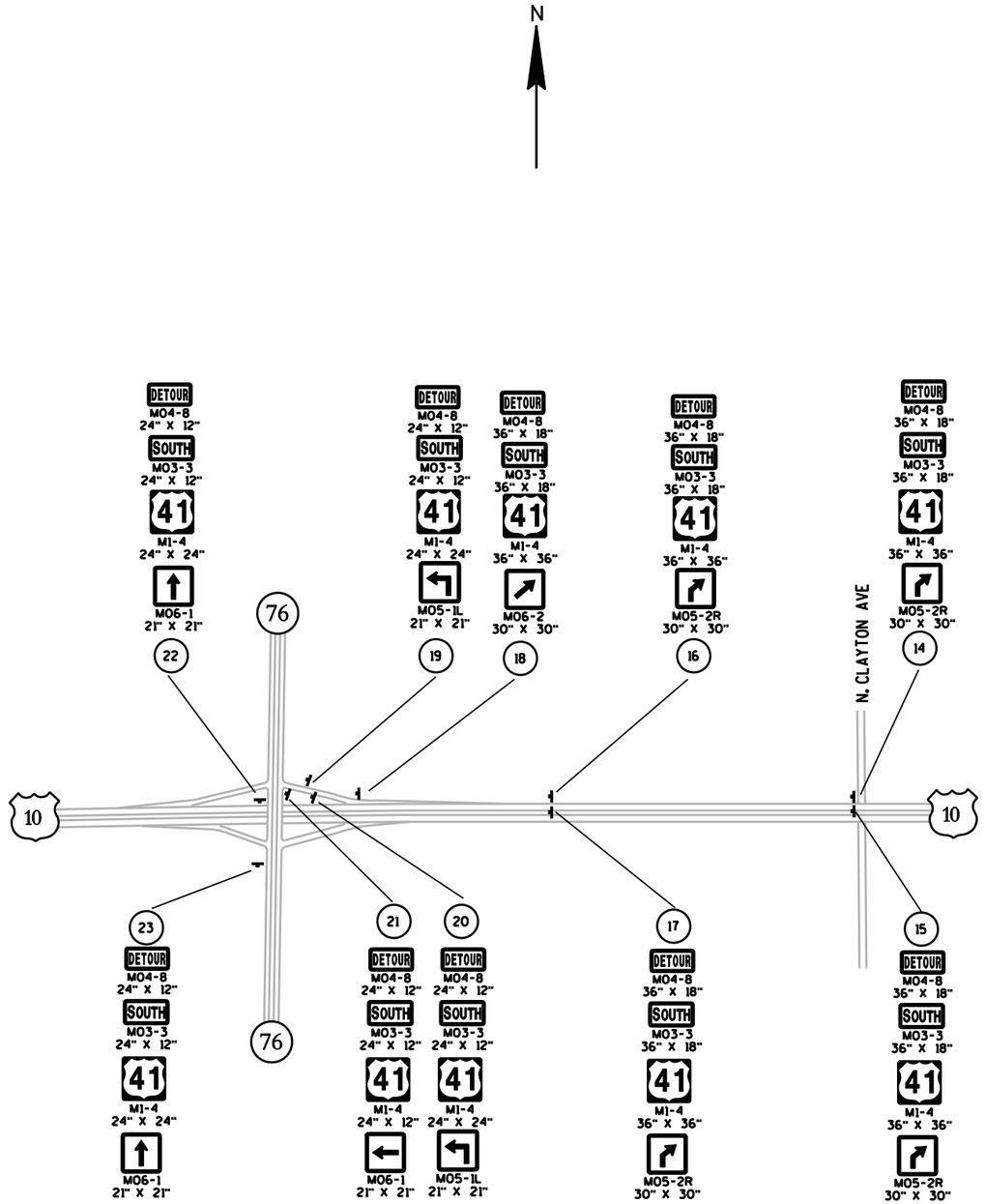
2

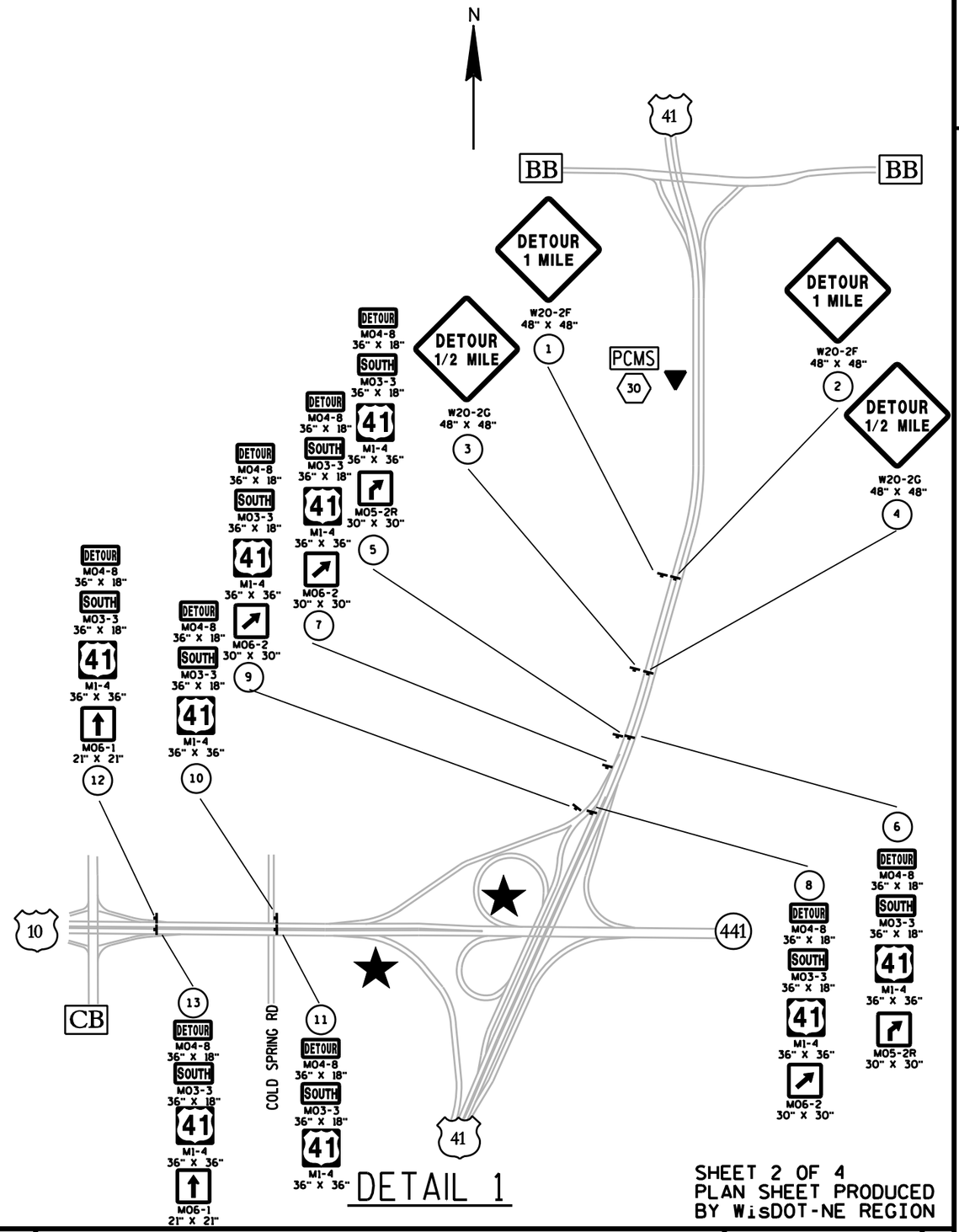


SHEET 1 OF 4
PLAN SHEET PRODUCED
BY WisDOT-NE REGION

PROJECT NO: 1120-09-77,78/81	HWY: USH 41	COUNTY: WINNEBAGO	DETOUR SIGNING DETAIL-CTH GG AND CTH G-SOUTHBOUND DETOUR	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42





SHEET 2 OF 4
PLAN SHEET PRODUCED
BY WisDOT-NE REGION

PROJECT NO: 1120-09-77,78/81	HWY: USH 41	COUNTY: WINNEBAGO	DETOUR SIGNING DETAIL-CTH GG AND CTH G-SOUTHBOUND DETOUR	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

2

N

MATCH LINE

76

BREEZEWOOD LA

41

SEE SHEET 4 OF 4

WORK ZONE #1

WORK ZONE #2

G

T

GG

A

INDIAN POINT RD

Y

W SNELL RD

PCMS 73

41

76

62
DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M06-1 21" X 21"

61
DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M06-1 21" X 21"

55
DETOUR M04-8 36" X 18"
NORTH M03-1 36" X 18"
41 M1-4 36" X 36"
M05-2R 30" X 30"

53
DETOUR 1/2 MILE
W20-2G 48" X 48"

51
DETOUR 1 MILE
W20-2F 48" X 48"

50
DETOUR 1 MILE
W20-2F 48" X 48"

52
DETOUR 1/2 MILE
W20-2G 48" X 48"

54
DETOUR M04-8 36" X 18"
NORTH M03-1 36" X 18"
41 M1-4 36" X 36"
M05-2R 30" X 30"

56
DETOUR M04-8 36" X 18"
NORTH M03-1 36" X 18"
41 M1-4 36" X 36"
M06-2 30" X 30"

57
DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M05-1L 21" X 21"

58
DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M06-1 21" X 21"

59
DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M06-1 21" X 21"

60
DETOUR M04-8 24" X 12"
NORTH M03-1 24" X 12"
41 M1-4 24" X 24"
M06-1 21" X 21"

LEGEND

(X) SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET

PCMS (X) PORTABLE CHANGEABLE MESSAGE SIGN

ON RAMP CLOSURE

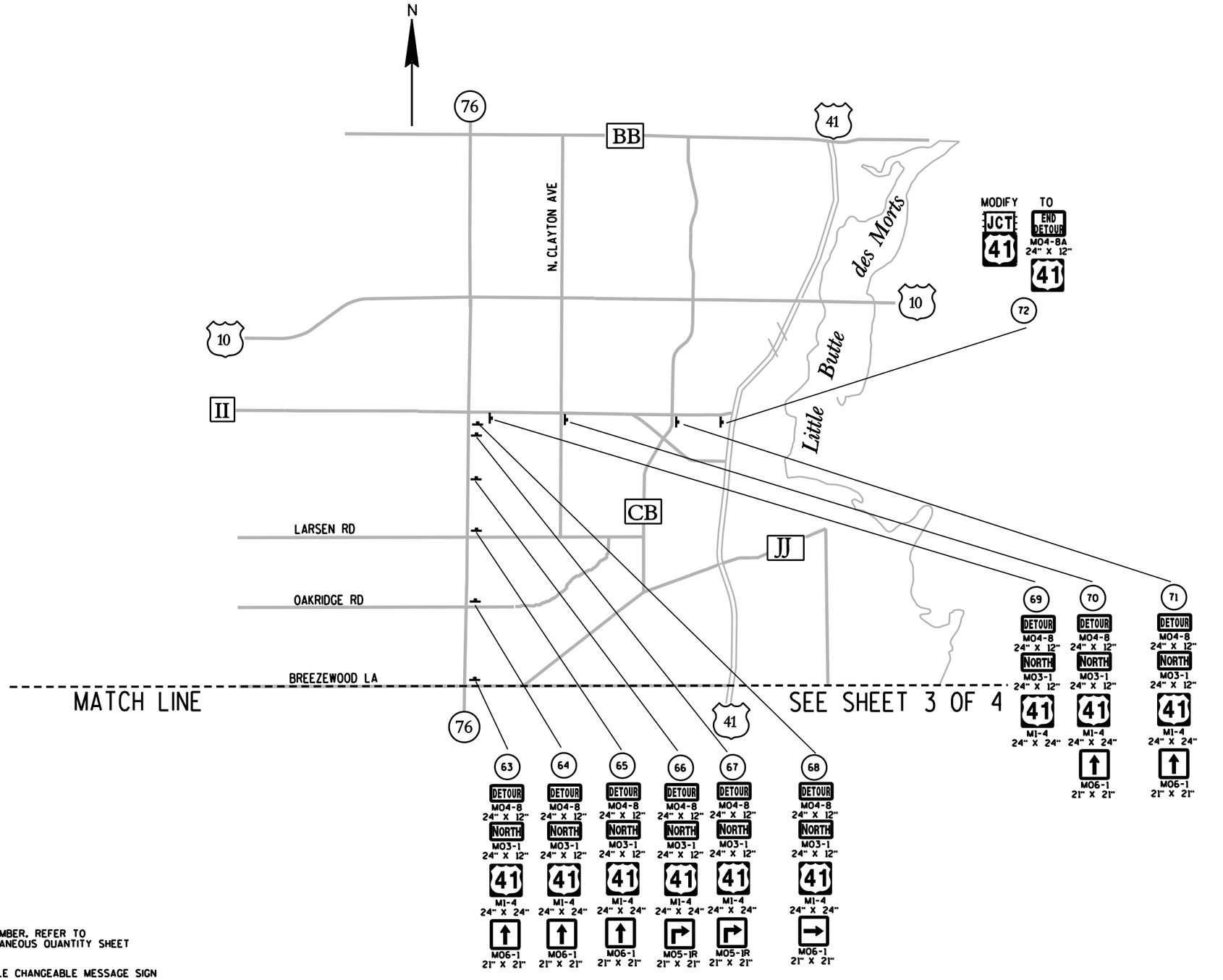
POST MOUNTED SIGN

SHEET 3 OF 4
PLAN SHEET PRODUCED BY WisDOT-NE REGION

PROJECT NO: 1120-09-77,78/81	HWY: USH 41	COUNTY: WINNEBAGO	DETOUR SIGNING DETAIL-CTH GG AND CTH G-NORTHBOUND DETOUR	SHEET	E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$ WISDOT/CADDS SHEET 42

2



LEGEND

- (X) SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET
- PCMS (X) PORTABLE CHANGEABLE MESSAGE SIGN
- ★ ON RAMP CLOSURE
- ⊥ POST MOUNTED SIGN

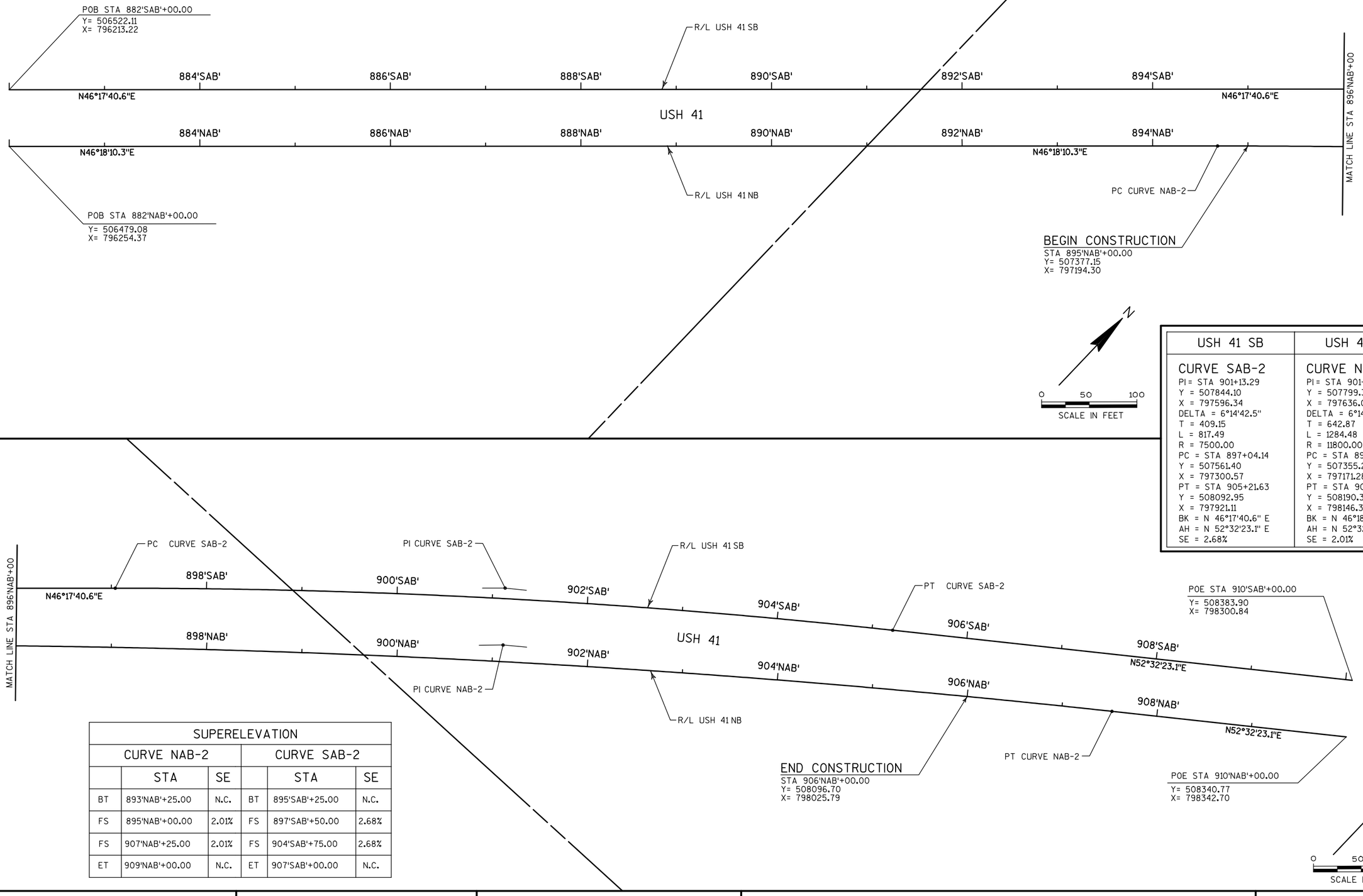
SHEET 4 OF 4
PLAN SHEET PRODUCED BY WisDOT-NE REGION

PROJECT NO: 1120-09-77,78/81	HWY: USH 41	COUNTY: WINNEBAGO	DETOUR SIGNING DETAIL-CTH GG AND CTH G-NORTHBOUND DETOUR	SHEET E

FILE NAME : $$....designfile....$$ PLOT DATE : $$...plottingdate...$$ PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : $$.....plotscale.....$$

WISDOT/CADDS SHEET 42

2

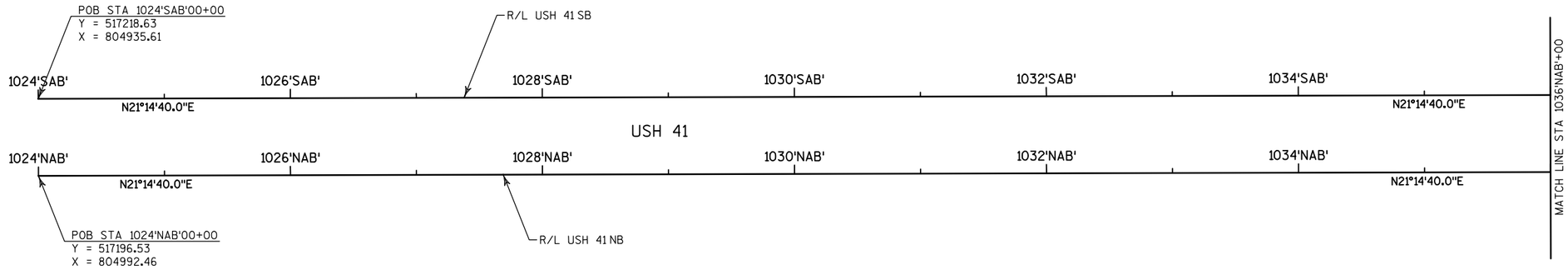


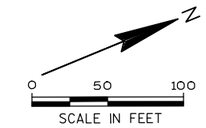
USH 41 SB	USH 41 NB
CURVE SAB-2	CURVE NAB-2
PI= STA 901+13.29	PI= STA 901+11.08
Y = 507844.10	Y = 507799.34
X = 797596.34	X = 797636.08
DELTA = 6°14'42.5"	DELTA = 6°14'12.8"
T = 409.15	T = 642.87
L = 817.49	L = 1284.48
R = 7500.00	R = 11800.00
PC = STA 897+04.14	PC = STA 894+68.20
Y = 507561.40	Y = 507355.21
X = 797300.57	X = 797171.28
PT = STA 905+21.63	PT = STA 907+52.68
Y = 508092.95	Y = 508190.34
X = 797921.11	X = 798146.38
BK = N 46°17'40.6" E	BK = N 46°18'10.3" E
AH = N 52°32'23.1" E	AH = N 52°32'23.1" E
SE = 2.68%	SE = 2.01%

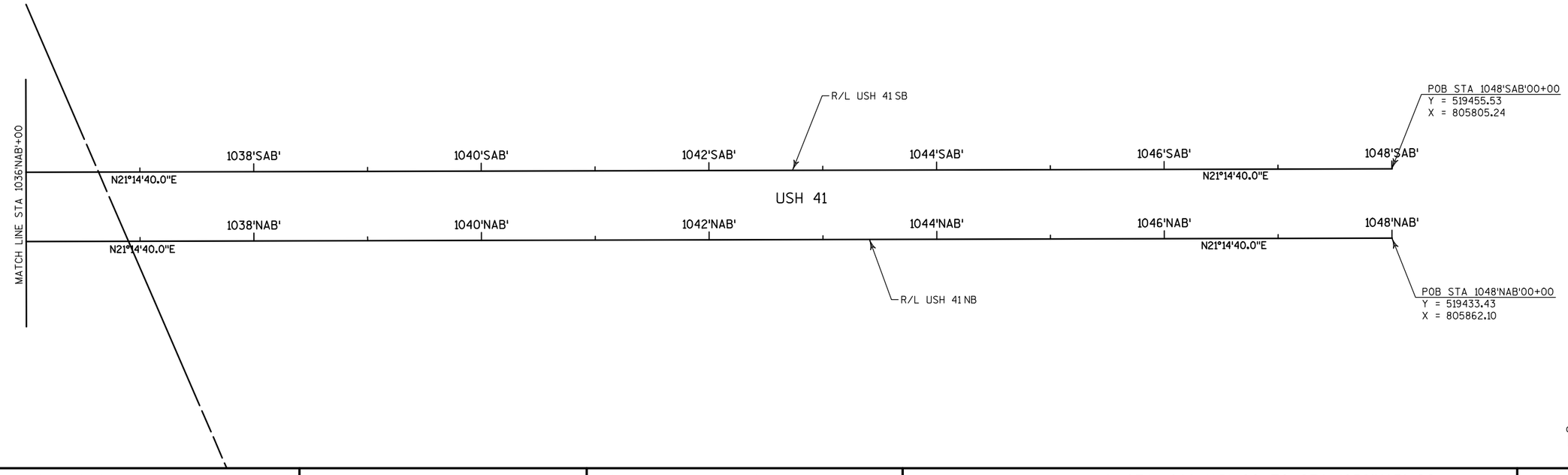
SUPERELEVATION					
CURVE NAB-2			CURVE SAB-2		
	STA	SE		STA	SE
BT	893'NAB'+25.00	N.C.	BT	895'SAB'+25.00	N.C.
FS	895'NAB'+00.00	2.01%	FS	897'SAB'+50.00	2.68%
FS	907'NAB'+25.00	2.01%	FS	904'SAB'+75.00	2.68%
ET	909'NAB'+00.00	N.C.	ET	907'SAB'+00.00	N.C.

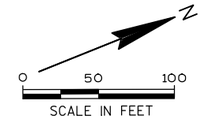
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	ALIGNMENT PLAN - USH 41 STA 882'NAB'+00 TO STA 910'NAB'+00	SHEET 72	E

2









PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	ALIGNMENT PLAN - USH 41 STA 1022'NAB'+00 TO STA 1050'NAB'+00	SHEET 73	E

SUPERELEVATION		
CURVE CTGG-1		
	STA	SE
BT	5'CTGG'+50.00	N.C.
FS	7'CTGG'+25.00	4.90%
FS	10'CTGG'+00.00	4.90%
ET	12'CTGG'+00.00	N.C.

*8% MAX SHOULDER ROLLOVER. SHOULDER TRANSITION BEGINS AT 4% SE

CTH GG
CURVE CTGG-1
PI= STA 8'CTGG'+68.44
Y = 507664.38
X = 795940.82
DELTA = 8°18'17.8"
T = 181.50'
L = 362.37'
R = 2500.00'
PC = STA 6'CTGG'+86.94
Y = 507662.77
X = 795759.33
PT = 10'CTGG'+49.31
Y = 507692.20
X = 796120.18
BK = N 89°29'24.6" E
AH = N 81°11'06.7" E
SE = 4.90%

N

0 50 100

SCALE IN FEET

GREEN VALLEY ROAD 120'GRV'

R/L GREEN VALLEY ROAD

118'GRV'

R/L SHARED USE PATH

SHARED USE PATH

15 16

N3°36'12.4"E N81°11'06.8"E

16'CTGG'

MATCH LINE STA 17'CTGG+00

116'GRV'

N8°01'34.5"W

PC CURVE CTGG-2

4'CTGG'

N 89°29'24.6" E

6'CTGG'

PC CURVE CTGG-1

8'CTGG'

CTH GG

10'CTGG'

PT CURVE CTGG-1

R/L CTH GG

12'CTGG'

14'CTGG'

N 81°11'06.7" E

BEGIN CONSTRUCTION
I.D. 1120-09-77
STA 8'CTGG'+58.05
Y= 507670.14
X= 795930.25

PI CURVE CTGG-1

N

0 50 100

SCALE IN FEET

904'NAB'

902'SAB'

USH 41

902'NAB'

R/L USH 41 SB

R/L USH 41 NB

R/L SHARED USE PATH

MATCH LINE STA 17'CTGG+00

18 20 22 24 26 28 30

SHARED USE PATH

PI CURVE CTGG-2

18'CTGG'

20'CTGG'

22'CTGG'

24'CTGG'

26'CTGG'

28'CTGG'

30'CTGG'

PT CURVE CTGG-2

N79°58'44.1"W

900'SAB'

N84°40' 07.9"W

N 84°40'07.9" W

900'NAB'

N84°59'03.0"E

PC CURVE CTGG-3

R/L CTH GG

CTH GG

898'SAB'

898'NAB'

N81°27' 02.3"W

R/L DIXIE ROAD

DIXIE ROAD 18'DIX'

N 8°32'57.6" E

PI CURVE CTGG-3

16'DIX'

OLD DIXIE ROAD

32'C

MATCH LINE STA 32'CTGG+00

CTH GG	CTH GG
CURVE CTGG-2	CURVE CTGG-3
PI= STA 18'CTGG'+40.68	PI= STA 30'CTGG'+87.56
Y = 507813.47	Y = 507697.37
X = 796902.21	X = 798146.40
DELTA = 14°08'45.4"	DELTA = 6°45'22.0"
T = 266.77'	T = 236.11'
L = 530.82'	L = 471.67'
R = 2150.00'	R = 4000.00'
PC = STA 15'CTGG'+73.91	PC = STA 28'CTGG'+51.46
Y = 507772.59	Y = 507719.30
X = 796638.59	X = 797911.31
PT = STA 21'CTGG'+04.73	PT = 33'CTGG'+23.12
Y = 507788.68	Y = 507703.24
X = 797167.82	X = 798382.43
BK = N 81°11'06.7" E	BK = N 84°40'07.9" W
AH = N 84°40'07.9" W	AH = N 88°34'30.1" E
SE = 5.30%	SE = 3.60%

T 19 N
13 18
24 19
R16 E R17 E

ALUMINUM MONUMENT
DO NOT DISTURB

SUPERELEVATION					
CURVE CTGG-2			CURVE CTGG-3		
	STA	SE		STA	SE
BT	14'CTGG'+25.00	N.C.	BT	27'CTGG'+25.00	N.C.
FS	16'CTGG'+25.00	5.30%	ET	28'CTGG'+75.00	3.60%
FS	20'CTGG'+50.00	5.30%	FS	33'CTGG'+00.00	3.60%
ET	22'CTGG'+50.00	N.C.	ET	34'CTGG'+50.00	N.C.

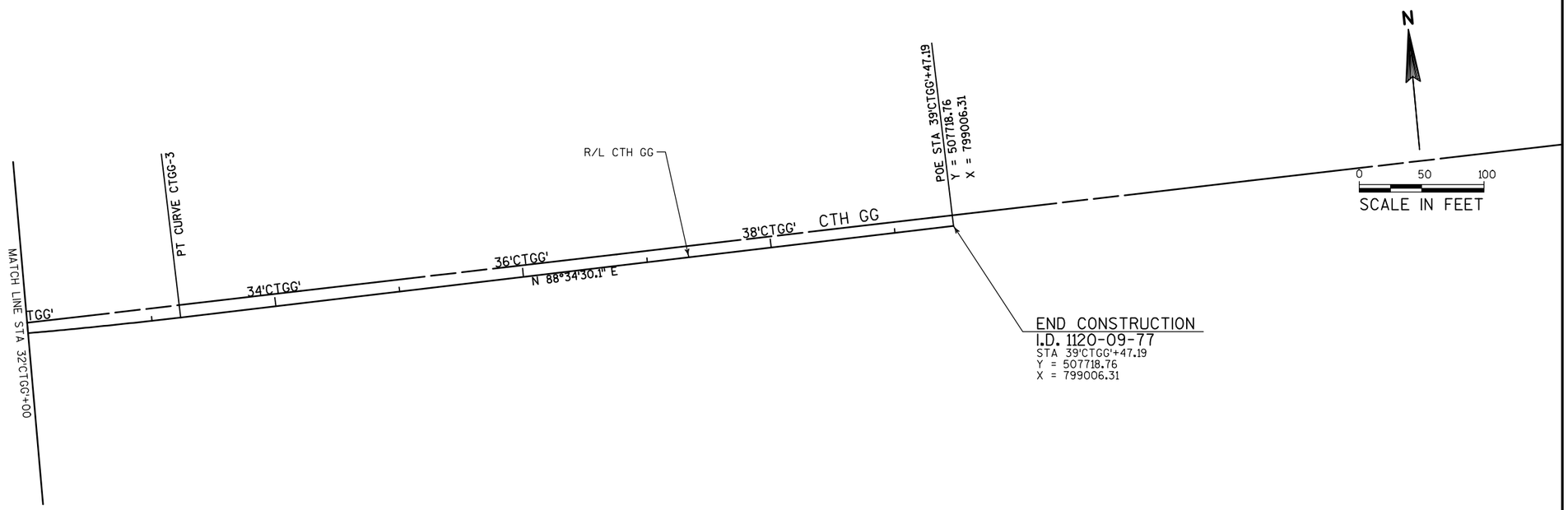
*8% MAX SHOULDER ROLLOVER. SHOULDER TRANSITION BEGINS AT 4% SE

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	ALIGNMENT PLAN - CTH GG	SHEET 74	E

SUPERELEVATION		
CURVE CTGG-3		
	STA	SE
BT	27'CTGG'+25.00	N.C.
ET	28'CTGG'+75.00	3.60%
FS	33'CTGG'+00.00	3.60%
ET	34'CTGG'+50.00	N.C.

CTH GG

CURVE CTGG-3
PI = STA 30'CTGG'+87.56
Y = 507697.37
X = 798146.40
DELTA = 6°45'22.0"
T = 236.11'
L = 471.67'
R = 4000.00'
PC = STA 28'CTGG'+51.46
Y = 507719.30
X = 797911.31
PT = 33'CTGG'+23.12
Y = 507703.24
X = 798382.43
BK = N 84°40'07.96" W
AH = N 88°34'30.1" E
SE = 3.60%



2

BEGIN CONSTRUCTION
I.D. 1120-09-78/81
STA 46'CTG'+26.15
Y = 518469.41
X = 805005.80

POB STA 42'CTG'+93.44
Y = 518417.33
X = 804677.22

N80°41'18.9"E

PI CURVE CTG-1

PC CURVE CTG-1

PT CURVE CTG-1

44'CTG'

46'CTG'

48'CTG'

50'CTG'

52'CTG'

54'CTG'

56'CTG'

PI CURVE CTG-2

PC CURVE CTG-2

PT CURVE CTG-2

MATCH LINE STA 65'CTG'+00

1038'SAB'

1038'NAB'

N88°14'43.0"E

1036'SAB'

1036'NAB'

N21°14'40.0"E

1034'SAB'

1034'NAB'

N21°14'40.0"E

T 19 N
5
8
R 17 E

BERNTSEN MONUMENT
DO NOT DISTURB

CTH G	CTH G
CURVE CTG-1	CURVE CTG-2
PI = STA 46+32.74	PI = STA 56+39.35
Y = 518472.23	Y = 518503.06
X = 805012.05	X = 806018.39
DELTA = 7°33'24.1"	DELTA = 5°12'39.5"
T = 66.04	T = 113.22
L = 131.89	L = 226.28
R = 1000.00	R = 2488.00
PC = STA 45+66.70	PC = STA 55+23.13
Y = 518461.54	Y = 518499.59
X = 804946.88	X = 805905.22
PT = STA 46+98.59	PT = STA 57+52.41
Y = 518474.25	Y = 518496.23
X = 805078.06	X = 806131.40
BK = N 80°41'18.9" E	BK = N 88°14'43.0" E
AH = N 88°14'43.0" E	AH = N 86°32'37.5" W
SE = N/A	SE = N/A

N

0 50 100
SCALE IN FEET

N

0 50 100
SCALE IN FEET

END CONSTRUCTION
I.D. 1120-09-78/81
STA 58'CTG'+72.10
Y = 518489.02
X = 806250.86

MATCH LINE STA 95'CTG'+00

'CTG'

60'CTG'

62'CTG'

PI STA 61'CTG'+55.79
Y = 518463.74
X = 806533.43

POE STA 62'CTG'+68.44
Y = 518455.95
X = 806645.80

PI STA 58'CTG'+83.04
Y = 518468.35
X = 806261.79

T 19 N
5 4
8 9
R 17 E

BERNTSEN MONUMENT
DO NOT DISTURB

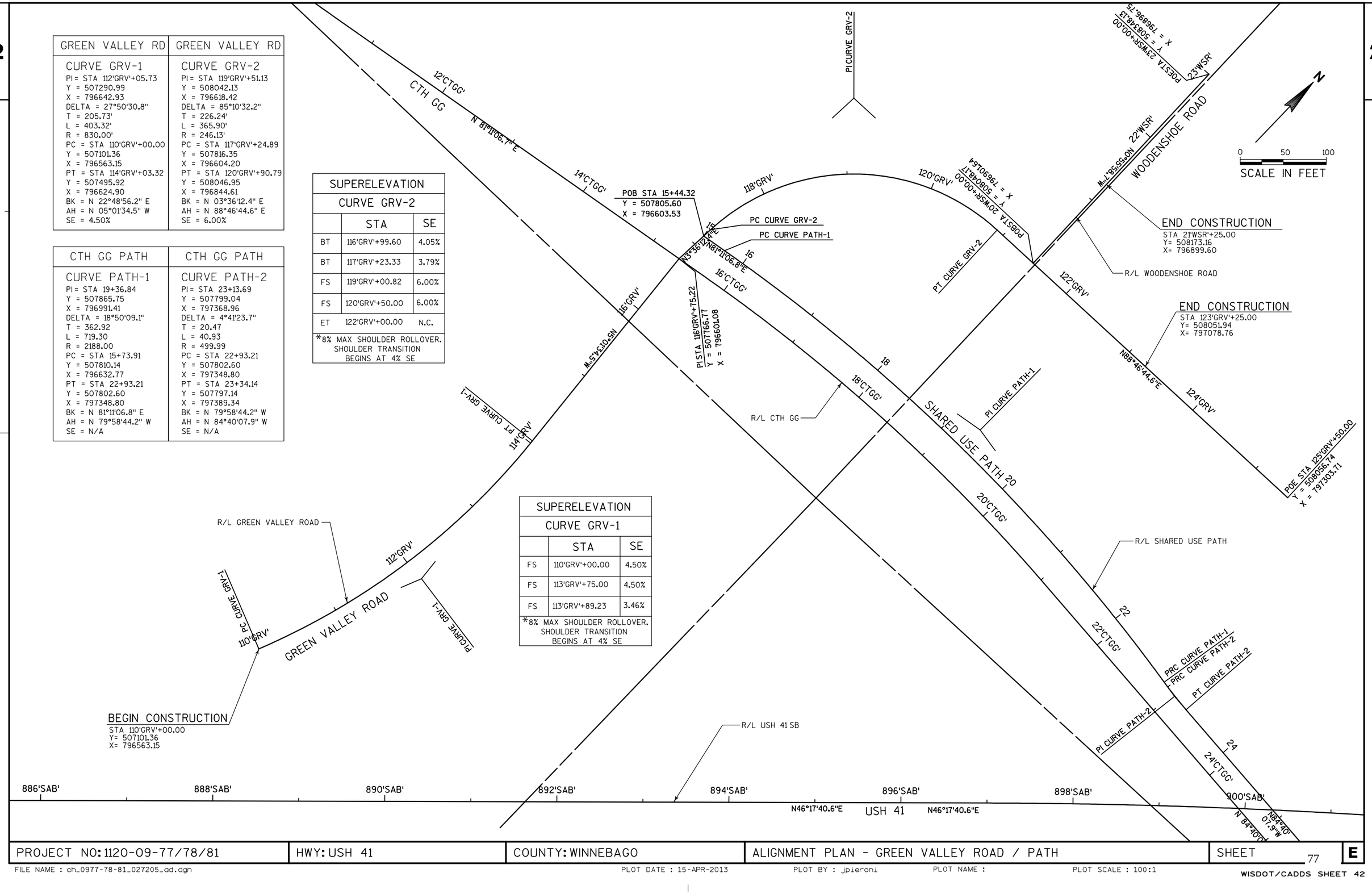
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	ALIGNMENT PLAN - CTH G	SHEET 76	E

GREEN VALLEY RD	GREEN VALLEY RD
CURVE GRV-1	CURVE GRV-2
PI= STA 112'GRV'+05.73	PI= STA 119'GRV'+51.13
Y = 507290.99	Y = 508042.13
X = 796642.93	X = 796618.42
DELTA = 27°50'30.8"	DELTA = 85°10'32.2"
T = 205.73'	T = 226.24'
L = 403.32'	L = 365.90'
R = 830.00'	R = 246.13'
PC = STA 110'GRV'+00.00	PC = STA 117'GRV'+24.89
Y = 507101.36	Y = 507816.35
X = 796563.15	X = 796604.20
PT = STA 114'GRV'+03.32	PT = STA 120'GRV'+90.79
Y = 507495.92	Y = 508046.95
X = 796624.90	X = 796844.61
BK = N 22°48'56.2" E	BK = N 03°36'12.4" E
AH = N 05°01'34.5" W	AH = N 88°46'44.6" E
SE = 4.50%	SE = 6.00%

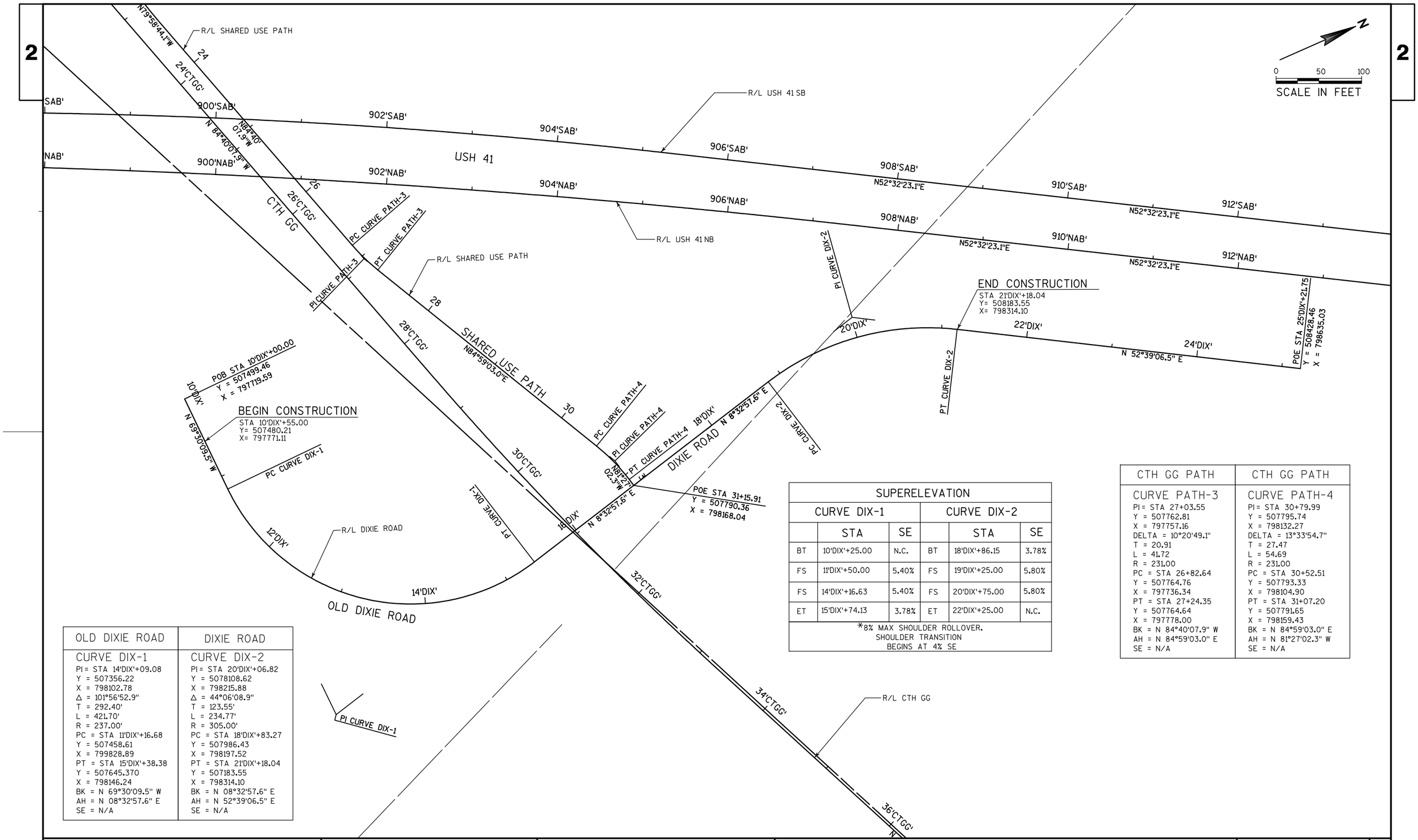
CTH GG PATH	CTH GG PATH
CURVE PATH-1	CURVE PATH-2
PI= STA 19+36.84	PI= STA 23+13.69
Y = 507865.75	Y = 507799.04
X = 796991.41	X = 797368.96
DELTA = 18°50'09.1"	DELTA = 4°41'23.7"
T = 362.92	T = 20.47
L = 719.30	L = 40.93
R = 2188.00	R = 499.99
PC = STA 15+73.91	PC = STA 22+93.21
Y = 507810.14	Y = 507802.60
X = 796632.77	X = 797348.80
PT = STA 22+93.21	PT = STA 23+34.14
Y = 507802.60	Y = 507797.14
X = 797348.80	X = 797389.34
BK = N 81°11'06.8" E	BK = N 79°58'44.2" W
AH = N 79°58'44.2" W	AH = N 84°40'07.9" W
SE = N/A	SE = N/A

SUPERELEVATION		
CURVE GRV-2		
	STA	SE
BT	116'GRV'+99.60	4.05%
BT	117'GRV'+23.33	3.79%
FS	119'GRV'+00.82	6.00%
FS	120'GRV'+50.00	6.00%
ET	122'GRV'+00.00	N.C.
*8% MAX SHOULDER ROLLOVER. SHOULDER TRANSITION BEGINS AT 4% SE		

SUPERELEVATION		
CURVE GRV-1		
	STA	SE
FS	110'GRV'+00.00	4.50%
FS	113'GRV'+75.00	4.50%
FS	113'GRV'+89.23	3.46%
*8% MAX SHOULDER ROLLOVER. SHOULDER TRANSITION BEGINS AT 4% SE		



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	ALIGNMENT PLAN - GREEN VALLEY ROAD / PATH	SHEET 77	E



SUPERELEVATION					
CURVE DIX-1			CURVE DIX-2		
	STA	SE		STA	SE
BT	10'DIX'+25.00	N.C.	BT	18'DIX'+86.15	3.78%
FS	11'DIX'+50.00	5.40%	FS	19'DIX'+25.00	5.80%
FS	14'DIX'+16.63	5.40%	FS	20'DIX'+75.00	5.80%
ET	15'DIX'+74.13	3.78%	ET	22'DIX'+25.00	N.C.

*8% MAX SHOULDER ROLLOVER.
SHOULDER TRANSITION
BEGINS AT 4% SE

CTH GG PATH	CTH GG PATH
CURVE PATH-3	CURVE PATH-4
PI= STA 27+03.55	PI= STA 30+79.99
Y = 507762.81	Y = 507795.74
X = 797757.16	X = 798132.27
DELTA = 10°20'49.1"	DELTA = 13°33'54.7"
T = 20.91	T = 27.47
L = 41.72	L = 54.69
R = 231.00	R = 231.00
PC = STA 26+82.64	PC = STA 30+52.51
Y = 507764.76	Y = 507793.33
X = 797736.34	X = 798104.90
PT = STA 27+24.35	PT = STA 31+07.20
Y = 507764.64	Y = 507791.65
X = 797778.00	X = 798159.43
BK = N 84°40'07.9" W	BK = N 84°59'03.0" E
AH = N 84°59'03.0" E	AH = N 81°27'02.3" W
SE = N/A	SE = N/A

OLD DIXIE ROAD	DIXIE ROAD
CURVE DIX-1	CURVE DIX-2
PI= STA 14'DIX'+09.08	PI= STA 20'DIX'+06.82
Y = 507356.22	Y = 5078108.62
X = 798102.78	X = 798215.88
Δ = 101°56'52.9"	Δ = 44°06'08.9"
T = 292.40'	T = 123.55'
L = 421.70'	L = 234.77'
R = 237.00'	R = 305.00'
PC = STA 11'DIX'+16.68	PC = STA 18'DIX'+83.27
Y = 507458.61	Y = 507986.43
X = 799828.89	X = 798197.52
PT = STA 15'DIX'+38.38	PT = STA 21'DIX'+18.04
Y = 507645.370	Y = 507183.55
X = 798146.24	X = 798314.10
BK = N 69°30'09.5" W	BK = N 08°32'57.6" E
AH = N 08°32'57.6" E	AH = N 52°39'06.5" E
SE = N/A	SE = N/A

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	ALIGNMENT PLAN - OLD DIXIE ROAD / DIXIE ROAD / PATH	SHEET 78	E

DATE 24APR13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1120-09-77 QUANTITY	1120-09-78 QUANTITY	1120-09-81 QUANTITY
0020	201.0105	CLEARING **P**	STA	9.000	9.000		
0030	201.0120	CLEARING **P**	ID	7.000	7.000		
0040	201.0205	GRUBBING **P**	STA	9.000	9.000		
0050	201.0220	GRUBBING **P**	ID	7.000	7.000		
0060	203.0100	REMOVING SMALL PIPE CULVERTS	EACH	15.000	15.000		
0110	203.0200	REMOVING OLD STRUCTURE (STATION) 05. STA. 24+97.70	LS	1.000	1.000		
0120	203.0200	REMOVING OLD STRUCTURE (STATION) 06. STA 49+61.13	LS	1.000			1.000
0130	203.0225.S	DEBRIS CONTAINMENT (STRUCTURE) 01. B-70-67	LS	1.000			1.000
0140	204.0100	REMOVING PAVEMENT	SY	110.000			110.000
0150	204.0110	REMOVING ASPHALTIC SURFACE **P**	SY	7,000.000	6,235.000		765.000
0160	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	1,050.000			1,050.000
0170	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	1,250.000			1,250.000
0180	204.0170	REMOVING FENCE **P**	LF	1,030.000	1,030.000		
0190	204.0180	REMOVING DELINEATORS AND MARKERS	EACH	4.000	4.000		
0200	204.0190	REMOVING SURFACE DRAINS	EACH	4.000			4.000
0210	204.0220	REMOVING INLETS	EACH	4.000			4.000
0220	204.0245	REMOVING STORM SEWER (SIZE) 01. 12-INCH	LF	150.000			150.000
0230	204.0280	SEALING PIPES	EACH	4.000			4.000
0240	205.0100	EXCAVATION COMMON **P**	CY	8,581.000	8,581.000		
0260	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 02. B-70-287	LS	1.000	1.000		
0270	206.1000	EXCAVATION FOR STRUCTURES BRIDGES (STRUCTURE) 03. B-70-67	LS	1.000			1.000
0330	208.0100	BORROW **P**	CY	36,199.000	36,199.000		
0340	210.0100	BACKFILL STRUCTURE **P**	CY	683.000	671.000		12.000
0360	211.0100	PREPARE FOUNDATION FOR ASPHALTIC PAVING (PROJECT) 02. ID 1120-09-77	LS	1.000	1.000		
0380	211.0200	PREPARE FOUNDATION FOR CONCRETE PAVEMENT (PROJECT) 02. ID 1120-09-77	LS	1.000	1.000		
0400	213.0100	FINISHING ROADWAY (PROJECT) 02. ID 1120-09-77	EACH	1.000	1.000		
0410	213.0100	FINISHING ROADWAY (PROJECT) 03. ID 1120-09-81	EACH	1.000			1.000
0420	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	3,120.000	2,750.000		370.000
0430	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	24,700.000	24,700.000		
0440	311.0110	BREAKER RUN	TON	13,500.000	13,500.000		
0450	315.0100	ASPHALTIC BASE	TON	635.000	635.000		
0460	415.0110	CONCRETE PAVEMENT 11-INCH	SY	2,580.000	2,516.000		64.000
0470	415.0410	CONCRETE PAVEMENT APPROACH SLAB **P**	SY	511.000	401.000		110.000
0480	416.0610	DRILLED TIE BARS	EACH	690.000	690.000		
0490	416.0620	DRILLED DOWEL BARS	EACH	80.000	40.000		40.000
0500	416.1010	CONCRETE SURFACE DRAINS	CY	9.000	1.000		8.000
0510	416.1110	CONCRETE RUMBLE STRIPS SHOULDER **P**	LF	1,590.000	1,590.000		
0520	455.0105	ASPHALTIC MATERIAL PG58-28	TON	415.000	376.000		39.000
0530	455.0605	TACK COAT	GAL	645.000	554.000		91.000
0540	460.1100	HMA PAVEMENT TYPE E-0.3	TON	1,160.000	1,160.000		
0550	460.1101	HMA PAVEMENT TYPE E-1	TON	5,690.000	5,690.000		
0560	460.1110	HMA PAVEMENT TYPE E-10	TON	710.000			710.000
0570	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	4,830.000	4,377.000		453.000
0580	465.0105	ASPHALTIC SURFACE	TON	215.000	215.000		
0590	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	155.000	155.000		

3

DATE 24APR13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1120-09-77 QUANTITY	1120-09-78 QUANTITY	1120-09-81 QUANTITY
0600	465.0315	ASPHALTIC FLUMES	SY	22.000	22.000		
0610	465.0400	ASPHALTIC SHOULDER RUMBLE STRIP **P**	LF	2,200.000	2,200.000		
0620	502.3100	EXPANSION DEVICE (STRUCTURE) 01. B-70-67	LS	1.000			1.000
0630	502.3200	PROTECTIVE SURFACE TREATMENT **P**	SY	3,627.000	1,383.000		2,244.000
0640	502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS **P**	EACH	348.000			348.000
0650	502.6110	MASONRY ANCHORS TYPE S 3/4-INCH **P**	EACH	5.000			5.000
0660	503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH **P**	LF	1,750.000	1,750.000		
0680	505.0405	BAR STEEL REINFORCEMENT HS BRIDGES **P**	LB	24,640.000	24,640.000		
0690	505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES **P**	LB	276,495.000	140,210.000		136,285.000
0700	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	32.000	32.000		
0720	506.4000	STEEL DIAPHRAGMS (STRUCTURE) 02. B-70-287	EACH	28.000	28.000		
0730	509.1500	CONCRETE SURFACE REPAIR	SF	70.000			70.000
0740	509.5100.S	POLYMER OVERLAY **P**	SY	345.000	345.000		
0760	513.4090	RAILING TUBULAR SCREENING (STRUCTURE) 02. B-70-287	LS	1.000	1.000		
0770	513.4090	RAILING TUBULAR SCREENING (STRUCTURE) 03. B-70-67	LS	1.000			1.000
0780	516.0500	RUBBERIZED MEMBRANE WATERPROOFING **P**	SY	68.000	38.000		30.000
0790	517.0900.S	PREPARATION AND COATING OF TOP FLANGES (STRUCTURE) 01. B-70-67	LS	1.000		1.000	
0810	517.1010.S	CONCRETE STAINING (STRUCTURE) 02. B-70-287 **P**	SF	9,160.000	9,160.000		
0820	517.1010.S	CONCRETE STAINING (STRUCTURE) 03. R-70-46 **P**	SF	3,140.000	3,140.000		
0830	517.1010.S	CONCRETE STAINING (STRUCTURE) 04. R-70-47 **P**	SF	3,800.000	3,800.000		
0840	517.1010.S	CONCRETE STAINING (STRUCTURE) 05. B-70-67 **P**	SF	9,345.000			9,345.000
0910	517.1050.S	ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 04. R-70-46 **P**	SF	2,560.000	2,560.000		
0920	517.1050.S	ARCHITECTURAL SURFACE TREATMENT (STRUCTURE) 05. R-70-47 **P**	SF	3,100.000	3,100.000		
0930	517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE (STRUCTURE) 01. B-70-67	LS	1.000		1.000	
0940	517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS (STRUCTURE) 01. B-70-67	LS	1.000		1.000	
0950	517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1.000		1.000	
0960	520.0115	CULVERT PIPE CLASS III 15-INCH	LF	66.000	66.000		
0970	520.0118	CULVERT PIPE CLASS III 18-INCH	LF	60.000	60.000		
0990	520.1015	APRON ENDWALLS FOR CULVERT PIPE 15-INCH	EACH	2.000	2.000		
1000	520.1018	APRON ENDWALLS FOR CULVERT PIPE 18-INCH	EACH	2.000	2.000		
1020	521.0115	CULVERT PIPE CORRUGATED STEEL 15-INCH	LF	90.000	90.000		
1030	521.0118	CULVERT PIPE CORRUGATED STEEL 18-INCH	LF	122.000	122.000		
1040	521.0542	APRON ENDWALLS FOR PIPE ARCH SLOPED CROSS DRAINS STEEL 42X29-INCH 4 TO 1	EACH	2.000	2.000		
1050	521.0717	PIPE ARCH CORRUGATED STEEL 17X13-INCH	LF	86.000	86.000		
1060	521.0721	PIPE ARCH CORRUGATED STEEL 21X15-INCH	LF	50.000	50.000		
1070	521.0742	PIPE ARCH CORRUGATED STEEL 42X29-INCH	LF	56.000	56.000		
1080	521.1015	APRON ENDWALLS FOR CULVERT PIPE STEEL 15-INCH	EACH	9.000	5.000		4.000
1090	521.1018	APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH	EACH	4.000	4.000		
1100	521.1217	APRON ENDWALLS FOR PIPE ARCH STEEL 17X13-INCH	EACH	2.000	2.000		

3

DATE 24APR13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1120-09-77 QUANTITY	1120-09-78 QUANTITY	1120-09-81 QUANTITY
1110	521.1221	APRON ENDWALLS FOR PIPE ARCH STEEL 21X15-INCH	EACH	2.000	2.000		
1120	521.1717	APRON ENDWALLS FOR PIPE ARCH SLOPED SIDE DRAINS STEEL 17X13-INCH 6 TO 1	EACH	2.000	2.000		
1130	522.0324	CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH	LF	792.000	792.000		
1140	522.0330	CULVERT PIPE REINFORCED CONCRETE CLASS IV 30-INCH	LF	64.000	64.000		
1180	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	8.000	8.000		
1190	522.1030	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH	EACH	2.000	2.000		
1220	523.0424	CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 24X38-INCH	LF	80.000	80.000		
1230	523.0524	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 24X38-INCH	EACH	2.000	2.000		
1240	550.2106	PILING CIP CONCRETE 10 3/4 X 0.365-INCH	LF	5,335.000	5,335.000		
1250	601.0411	CONCRETE CURB & GUTTER 30-INCH TYPE D	LF	36.000	36.000		
1260	601.0557	CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D	LF	635.000	635.000		
1270	603.1142	CONCRETE BARRIER TYPE S42 **P**	LF	1,330.000	1,330.000		
1280	603.1156	CONCRETE BARRIER TYPE S56 **P**	LF	1,755.000	1,755.000		
1290	603.1342	CONCRETE BARRIER TYPE S42B **P**	LF	31.000	31.000		
1300	603.8000	CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	LF	8,710.000	6,810.000		1,900.000
1310	603.8125	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	LF	8,710.000	6,810.000		1,900.000
1320	604.0400	SLOPE PAVING CONCRETE **P**	SY	50.000	50.000		
1330	606.0200	RIPRAP MEDIUM	CY	275.000	240.000		35.000
1340	608.0315	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 15-INCH	LF	17.000	17.000		
1370	611.0651	INLET COVERS TYPE S	EACH	1.000	1.000		
1380	611.0654	INLET COVERS TYPE V	EACH	7.000	3.000		4.000
1390	611.3220	INLETS 2X2-FT	EACH	8.000	4.000		4.000
1410	612.0215	PIPE UNDERDRAIN UNPERFORATED 15-INCH	LF	530.000	239.000		291.000
1420	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	840.000	840.000		
1430	614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	6.000	2.000		4.000
1440	614.0200	STEEL THRIE BEAM STRUCTURE APPROACH **P**	LF	21.000			21.000
1450	614.0305	STEEL PLATE BEAM GUARD CLASS A **P**	LF	250.000			250.000
1470	614.0345	STEEL PLATE BEAM GUARD SHORT RADIUS **P**	LF	53.000			53.000
1480	614.0370	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL	EACH	1.000			1.000
1490	614.0390	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL	EACH	1.000			1.000
1500	614.0905	CRASH CUSHIONS TEMPORARY	EACH	6.000	4.000		2.000
1510	614.0920	SALVAGED RAIL **P**	LF	2,720.000	1,465.000		1,255.000
1520	614.0925	SALVAGED GUARDRAIL END TREATMENTS	EACH	22.000	14.000		8.000
1530	614.0930	SALVAGED CRASH CUSHIONS	EACH	1.000	1.000		
1540	614.2300	MGS GUARDRAIL 3 **P**	LF	1,662.500	787.500		875.000
1550	614.2500	MGS THRIE BEAM TRANSITION **P**	LF	312.000	195.000		117.000
1560	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	8.000	5.000		3.000

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DATE 24APR13 — E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1120-09-77 QUANTITY	1120-09-78 QUANTITY	1120-09-81 QUANTITY
1570	616.0206	FENCE CHAIN LINK 6-FT **P**	LF	660.000	660.000		
1580	616.0406	FENCE CHAIN LINK SALVAGED 6-FT	LF	250.000			250.000
1600	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 02. ID 1120-09-77	EACH	1.000	1.000		
1610	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 03. ID 1120-09-81	EACH	1.000			1.000
1620	619.1000	MOBILIZATION	EACH	0.650	0.450	0.050	0.150
1640	624.0100	WATER	MGAL	420.000	417.000		3.000
1650	625.0100	TOPSOIL	SY	17,130.000	15,501.000		1,629.000
1660	625.0500	SALVAGED TOPSOIL **P**	SY	34,600.000	34,600.000		
1670	627.0200	MULCHING **P**	SY	37,000.000	35,371.000		1,629.000
1680	628.1504	SILT FENCE	LF	6,700.000	4,210.000		2,490.000
1690	628.1520	SILT FENCE MAINTENANCE	LF	3,350.000	2,105.000		1,245.000
1700	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	12.000	8.000		4.000
1710	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	6.000	4.000		2.000
1720	628.2004	EROSION MAT CLASS I TYPE B	SY	13,400.000	13,400.000		
1730	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	1,400.000	1,400.000		
1750	628.6510	SOIL STABILIZER TYPE B	ACRE	8.800	8.800		
1770	628.7010	INLET PROTECTION TYPE B	EACH	25.000	15.000		10.000
1780	628.7020	INLET PROTECTION TYPE D	EACH	4.000	4.000		
1790	628.7504	TEMPORARY DITCH CHECKS	LF	125.000	125.000		
1800	628.7555	CULVERT PIPE CHECKS	EACH	75.000	65.000		10.000
1810	628.7560	TRACKING PADS	EACH	10.000	8.000		2.000
1820	628.7570	ROCK BAGS	EACH	150.000	150.000		
1830	629.0210	FERTILIZER TYPE B	CWT	33.000	32.000		1.000
1840	630.0120	SEEDING MIXTURE NO. 20	LB	760.000	760.000		
1850	630.0130	SEEDING MIXTURE NO. 30	LB	450.000	419.000		31.000
1860	630.0200	SEEDING TEMPORARY	LB	710.000	686.000		24.000
1870	633.0100	DELINEATOR POSTS STEEL	EACH	2.000	2.000		
1880	633.0500	DELINEATOR REFLECTORS	EACH	18.000	18.000		
1890	633.1000	DELINEATOR BRACKETS	EACH	16.000	16.000		
1900	633.5200	MARKERS CULVERT END	EACH	23.000	19.000		4.000
1910	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	17.000	15.000		2.000
1920	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	20.000	7.000		13.000
1930	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	4.000	4.000		
1940	637.0202	SIGNS REFLECTIVE TYPE II **P**	SF	233.260	138.640		94.620
1950	638.2102	MOVING SIGNS TYPE II	EACH	14.000	11.000		3.000
1960	638.2602	REMOVING SIGNS TYPE II	EACH	40.000	26.000		14.000
1970	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	27.000	20.000		7.000
1980	638.4000	MOVING SMALL SIGN SUPPORTS	EACH	8.000	5.000		3.000
2010	643.0100	TRAFFIC CONTROL (PROJECT) 02. ID 1120-09-77	EACH	1.000	1.000		
2020	643.0100	TRAFFIC CONTROL (PROJECT) 03. ID 1120-09-81	EACH	1.000			1.000
2030	643.0300	TRAFFIC CONTROL DRUMS	DAY	30,650.000	28,116.000		2,534.000
2040	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	4,331.000	3,645.000		686.000
2050	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	4,738.000	4,316.000		422.000
2060	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	3,098.000	2,253.000		845.000
2070	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	682.000	524.000		158.000
2080	643.0900	TRAFFIC CONTROL SIGNS	DAY	11,695.000	9,557.000		2,138.000
2090	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	252.000	199.000		53.000
2110	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 02. ID 1120-09-77	EACH	1.000	1.000		
2120	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	8,673.000	8,673.000		

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DATE 24APR13 E S T I M A T E O F Q U A N T I T I E S

LINE NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	1120-09-77 QUANTITY	1120-09-78 QUANTITY	1120-09-81 QUANTITY
2130	645.0120	GEOTEXTILE FABRIC TYPE HR	SY	555.000	480.000		75.000
2140	646.0106	PAVEMENT MARKING EPOXY 4-INCH **P**	LF	19,951.000	15,272.000		4,679.000
2150	646.0126	PAVEMENT MARKING EPOXY 8-INCH **P**	LF	600.000	600.000		
2160	646.0600	REMOVING PAVEMENT MARKINGS	LF	400.000	400.000		
2170	646.0841.S	PAVEMENT MARKING GROOVED WET REFLECTIVE CONTRAST TAPE 4-INCH **P**	LF	200.000	200.000		
2180	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	1,560.000	1,560.000		
2190	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	665.000	665.000		
2210	690.0150	SAWING ASPHALT	LF	940.000	474.000		466.000
2220	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	930.000	876.000		54.000
2250	SPV.0035	SPECIAL 0601. HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES **P**	CY	1,552.000	933.000		619.000
2300	SPV.0060	SPECIAL 0252. TEMPORARY SLOPE DRAIN	EACH	6.000	2.000		4.000
2310	SPV.0060	SPECIAL 0301. REMOVING CONCRETE BARRIER TEMPORARY TRANSITION TYPE 32 TO 56	EACH	2.000	2.000		
2320	SPV.0060	SPECIAL 0351. CONCRETE BASES TYPE 7 MEDIAN	EACH	2.000	2.000		
2330	SPV.0060	SPECIAL 0352. ANCHOR BOLT COVER SHROUD	EACH	2.000	2.000		
2340	SPV.0060	SPECIAL 0601. CLEANING AND PAINTING BEARINGS	EACH	25.000		25.000	
2350	SPV.0075	SPECIAL 0301. TRUCK MOUNTED ATTENUATOR WITH OPERATOR	HRS	80.000	80.000		
2360	SPV.0075	SPECIAL 0302. TRUCK MOUNTED ATTENUATOR WITHOUT OPERATOR	HRS	80.000	80.000		
2390	SPV.0090	SPECIAL 0301. TREATED TIMBER RUB RAIL **P**	LF	835.000	835.000		
2400	SPV.0090	SPECIAL 0302. REMOVING CONCRETE BARRIER TEMP PRECAST LEFT IN PLACE BY OTHERS	LF	2,840.000	2,840.000		
2410	SPV.0090	SPECIAL 0601. FENCE CHAIN LINK POLYMER-COATED 6-FT **P**	LF	371.000	371.000		
2460	SPV.0105	SPECIAL 0603. RAILING PIPE GALVANIZED R-70-46	LS	1.000	1.000		
2470	SPV.0105	SPECIAL 0604. RAILING PIPE GALVANIZED R-70-47	LS	1.000	1.000		
2510	SPV.0165	SPECIAL 0601. WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD **P**	SF	6,320.000	6,320.000		
2520	SPV.0165	SPECIAL 0602. LONGITUDINAL GROOVING BRIDGE DECK **P**	SF	8,860.000	8,860.000		
2530	SPV.0195	SPECIAL 0001. LIMESTONE SCREENINGS	TON	330.000	330.000		

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CLEARING AND GRUBBING ITEMS

ID	STATION - STATION	LOCATION	201.0105 CLEARING STA	201.0120 CLEARING ID	201.0205 GRUBBING STA	201.0220 GRUBBING ID
CAT 0010						
1120-09-77						
STAGE 2						
	14'CTGG'+00 - 15'CTGG'+00	RT	1	--	1	--
	16'CTGG'+00 - 19'CTGG'+00	RT	3	--	3	--
	20'CTHGG'+00 - 22'CTGG'+00	RT	2	--	2	--
	31'CTHGG'+00 - 32'CTGG'+00	RT	1	--	1	--
	25'CTGG'+89	RT	--	4	--	4
	26'CTGG'+00	RT	--	3	--	3
	114'GVR'+00 - 116'GVR'+00	RT & LT	2	--	2	--
TOTALS			9	7	9	7

REMOVING SMALL PIPE CULVERTS

STATION	LOCATION	203.0100 EACH	COMMENTS
CAT 0010			
PROJECT 1120-09-77			
STAGE 2			
17'CTGG'+34	LT & RT	1	REMOVE 183 LF OF CPCM 24-INCH
26'CTGG'+12	LT & RT	1	REMOVE 214 LF OF CPCM 24-INCH
STAGE 2 SUBTOTAL		2	
STAGE 3			
11'CTGG'+42	RT	1	REMOVE 26 LF OF CPCM 15-INCH
12'CTGG'+83	RT	1	REMOVE 32 LF OF CPCM 18-INCH
34'CTGG'+73	RT	1	REMOVE 28 LF OF CPCM 24-INCH
36'CTGG'+62	LT	1	REMOVE 41 LF OF CPCM 18-INCH
38'CTGG'+26	LT & RT	1	REMOVE 42 LF OF CPCM 30-INCH
110'GRV'+46	RT	1	REMOVE 44 LF OF CPCM 18-INCH
111'GRV'+78	LT & RT	1	REMOVE 53 LF OF CPCM 30-INCH
112'GRV'+28	LT	1	REMOVE 30 LF OF CPCM 18-INCH
116'GRV'+12	LT & RT	1	REMOVE 83 LF OF CPCM 24-INCH
121'GRV'+16	LT & RT	1	REMOVE 58 LF OF CPCM 30-INCH
12'DIX'+47	RT	1	REMOVE 41 LF OF CPCM 18-INCH
13'DIX'+50	RT	1	REMOVE 60 LF OF CPCM 18-INCH
15'DIX'+39	LT & RT	1	REMOVE 92 LF OF CPCM 24-INCH
STAGE 3 SUBTOTAL		13	
PROJECT 1120-09-77 TOTAL		15	

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REMOVING PAVEMENT ITEMS

ID	STATION - STATION	LOCATION	204.0100 REMOVING PAVEMENT SY	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY
CAT 0010						
1120-09-81						
STAGE 1						
	46'CTG'+26 - 49'CTG'+61	RT & LT	60	238	240	855
	53'CTG'+99 - 59'CTG'+43	RT & LT	50	527	810	395
1120-09-81 SUBTOTALS			110	765	1,050	1,250
1120-09-77						
STAGE 2						
	895'NAB'+00 - 906'NAB'+00	RT & LT	--	3,166	--	--
	895'SAB'+00 - 906'SAB'+00	RT & LT	--	3,069	--	--
1120-09-77 SUBTOTALS			--	6,235	--	--
TOTALS			110	7,000	1,050	1,250

REMOVING FENCE

ID	STATION - STATION	LOCATION	204.0170 REMOVING FENCE LF
CAT 0010			
1120-09-77			
STAGE 2			
	901'NAB'+56 - 904'NAB'+00	RT	243
	897'SAB'+04 - 898'SAB'+88	LT	186
	899'SAB'+47 - 902'SAB'+00	LT	256
STAGE 2 SUBTOTAL			685
STAGE 3			
	111'GRV'+25 - 114'GRV'+54	RT	345
STAGE 3 SUBTOTAL			345
TOTAL			1,030

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REMOVING DELINEATORS AND MARKERS

ID	STATION - STATION	LOCATION	204.0180 REMOVING DELINEATORS AND MARKERS EACH	COMMENTS
CAT 0010				
1120-09-77				
STAGE 2				
	895'SAB'+00 - 906'SAB'+00	LT	2	DELINEATORS
STAGE 3				
	38'CTGG'+26	RT & LT	2	CULVERT MARKER POSTS
TOTAL			4	

REMOVING SURFACE DRAINS & INLETS ITEMS

STATION	LOCATION	204.0190 REMOVING SURFACE DRAINS EACH	204.0220 REMOVING INLETS EACH
CAT 0010			
PROJECT 1120-09-81			
STAGE 1			
48'CTG'+30	RT	1	1
48'CTG'+45	LT	1	1
54'CTG'+18	LT	1	1
54'CTG'+34	LT	1	1
PROJECT 1120-09-81 TOTALS		4	4

REMOVING STORM SEWER ITEMS

STATION - STATION	LOCATION	EXISTING PIPE MATERIAL	204.0245.01 12-INCH LF
CATEGORY CODE 0010			
PROJECT 1120-09-81			
STAGE 1			
49'CTG'+45 - 49'CTG'+55	LT	CPCM	59
54'CTG'+07 - 54'CTG'+34	LT	CPCM	91
PROJECT 1120-09-81 TOTALS			150

SEALING PIPES

STATION	LOCATION	204.0280 SEALING PIPES EACH
CAT 0010		
PROJECT 1120-09-81		
STAGE 1		
48'CTG'+30	RT	1
48'CTG'+45	LT	1
54'CTG'+18	LT	1
54'CTG'+34	LT	1
PROJECT 1120-09-81 TOTALS		4

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EARTHWORK SUMMARY

DIVISION	FROM/TO STATION	LOCATION	EXCAVATION COMMON (NOTE 1) (ITEM #205.0100) CUT (NOTE 2)	SALVAGED / UNUSABLE PAVEMENT MATERIAL (NOTE 3)	AVAILABLE MATERIAL (NOTE 4)	UNEXPANDED FILL	EXPANDED FILL (NOTE 5) FACTOR 1.25	MASS ORDINATE +/- (NOTE 6)	WASTE	BORROW (ITEM #208.0100) (NOTE 7) FACTOR 1.15	COMMENTS
1	15'CTGG'+36 - 23'CTGG'+86	CTH GG	1,073	0	1,073	15,276	19,095	-18,021			
	26'CTGG'+07 - 30'CTGG'+96	CTH GG	8	0	8	8,547	10,684	-10,676			
	895'NAB'+00 - 906'NAB'+00	USH 41 NORTHBOUND	62	0	62	176	220	-158			
	895'SAB'+00 - 906'SAB'+00	USH 41 SOUTHBOUND	8	0	8	194	242	-234			
DIVISION 1 SUBTOTAL			1,151	0	1,151	24,192	30,241	-29,089	0	26,762	
2	8'CTGG'+58 - 15'CTGG'+36	CTH GG	657	0	657	3,169	3,962	-3,305			
	30'CTGG'+96 - 39'CTGG'+47	CTH GG	1,069	0	1,069	3,005	3,756	-2,687			
	110'GRV'+00 - 123'GRV'+25	GREEN VALLEY ROAD	2,388	0	2,388	5,458	6,822	-4,435			
	10'DIX'+55 - 21'DIX'+18	DIXIE ROAD	2,780	0	2,780	2,515	3,143	-364			
	20'WSR'+16 - 21'WSR'+25	WOODENSHOE ROAD	536	0	536	2	3	534			
DIVISION 2 SUBTOTAL			7,429	0	7,429	14,149	17,686	-10,257	0	9,437	
GRAND TOTAL			8,581	0	8,581	38,342	47,927	-39,346	0	36,199	
		TOTAL EXCAVATION COMM	8,581								

1) NO EBS IS ANTICIPATED. IF EBS IS REQUIRED IT WILL BE PAID AS EXCAVATION COMMON. ITEM NUMBER 205.0100.
2) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
3) SALVAGED/UNUSABLE PAVEMENT MATERIAL = LENGTH * TYPICAL WIDTH * TYPICAL DEPTH
4) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSABLE PAVEMENT MATERIAL
5) EXPANDED FILL. FACTOR = 1.25. EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR
6) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
7) BORROW = MASS ORDINATE / FILL FACTOR * BORROW FACTOR

PREPARE FOUNDATION ITEMS

ID	LOCATION	211.0100 PREPARE FOUNDATION FOR ASPHALTIC PAVING 1120-09-77 LS	211.0200 PREPARE FOUNDATION FOR CONCRETE PAVEMENT 1120-09-77 LS
CAT 0010			
1120-09-77			
STAGE 2			
		1	1
TOTALS		1	1

BASE AGGREGATE DENSE AND BREAKER RUN ITEMS

ID	STATION - STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	311.0110 BREAKER RUN TON	SPV.0195.0001 LIMESTONE SCREENINGS TON
CAT 0010						
1120-09-81						
STAGE 1						
	46'CTG'+26 - 49'CTG'+58	RT & LT	102	--	--	--
	54'CTG'+00 - 61'CTG'+00	RT & LT	231	--	--	--
	UNDISTRIBUTED		37	--	--	--
1120-09-81 SUBTOTAL			370	--	--	--
1120-09-77						
STAGE 2						
	895'NAB'+00 - 906'NAB'+00	RT	113	--	--	--
	895'SAB'+00 - 906'SAB'+00	LT	195	66	74	--
	15'CTGG'+36 - 23'CTGG'+85	RT & LT	310	3,735	1,778	--
	26'CTGG'+08 - 30'CTGG'+96	RT & LT	187	2,159	1,172	--
	15+82 - 24+13	RT & LT	71	1,053	--	185
	26+35 - 31+00	RT & LT	59	635	--	110
STAGE 2 SUBTOTALS			936	7,648	3,023	295
STAGE 3						
	8'CTGG'+58 - 15'CTGG'+36	RT & LT	279	2,712	1,672	--
	30'CTGG'+96 - 39'CGG'+47	RT & LT	364	3,420	2,160	--
	110'GVR'+00 - 116'GVR'+51	RT & LT	234	2,425	1,490	--
	117'GVR'+00 - 123'GVR'+25	RT & LT	249	1,938	1,269	--
	10'DIX'+55 - 15'DIX'+74	RT & LT	180	1,981	1,182	--
	16'DIX'+22 - 21'DIX'+18	RT & LT	195	1,815	1,155	--
	20'WSR'+16 - 21'WSR'+25	RT & LT	42	471	302	--
STAGE 3 SUBTOTALS			1,543	14,764	9,230	--
	UNDISTRIBUTED		271	2,287	1,247	35
1120-09-77 SUBTOTAL			2,750	24,700	13,500	330
TOTALS			3,120	24,700	13,500	330

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CONCRETE PAVEMENT ITEMS

ID	STATION - STATION	LOCATION	415.0110 CONCRETE PAVEMENT 11-INCH SY	715.0415 INCENTIVE STRENGTH CONCRETE PAVEMENT DOL	416.0410 CONCRETE PAVEMENT APPROACH SLAB SY	416.0610 DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	416.1010 CONCRETE SURFACE DRAINS CY	416.1110 CONCRETE RUMBLE STRIPS SHOULDER LF	COMMENTS
CAT 0010										
1120-09-81										
STAGE 1										
	49'CTG'+17 - 49'CTG'+59	RT & LT	32	27	55	--	20	4	--	
	54'CTG'+00 - 54'CTG'+42	RT & LT	32	27	55	--	20	4	--	
1120-09-81 SUBTOTALS			64	54	110	--	40	8	--	
1120-09-77										
STAGE 2										
	896'NAB'+49 - 904'NAB'+44	LT	1,240	373	--	320	20	--	796	
	896'SAB'+49 - 904'SAB'+44	RT	1,235	371	--	320	20	--	794	
	898'SAB'+84	RT	--	--	--	10	--	--	--	FOR EXISTING INLET
	903'SAB'+05	RT	--	--	--	10	--	--	--	FOR EXISTING INLET
	898'NAB'+82	LT	--	--	--	10	--	--	--	FOR EXISTING INLET
	898'NAB'+82	RT	--	--	--	10	--	--	--	FOR EXISTING INLET
	903'NAB'+00	LT	--	--	--	10	--	--	--	FOR EXISTING INLET
	23'CTGG'+58 - 23'CTGG'+85	RT & LT	12	65	205	--	--	--	--	
	26'CTGG'+08 - 26'CTGG'+35	RT & LT	29	67	195	--	--	1	--	
1120-09-77 SUBTOTALS			2,516	876	401	690	40	1	1,590	
TOTALS			2,580	930	510	690	80	9	1,590	

3

HMA & ASPHALTIC ITEMS

ID	STATION - STATION	LOCATION	315.0100 ASPHALTIC BASE TON	455.0105 ASPHALTIC MATERIAL PG58-28 TON	455.0605 TACK COAT GAL	460.1100 HMA PAVEMENT TYPE E-0.3 TON	460.1101 HMA PAVEMENT TYPE E-1 TON	460.1110 HMA PAVEMENT TYPE E-10 TON	460.2000 INCENTIVE DENSITY HMA PAVEMENT DOL	465.0105 ASPHALTIC SURFACE TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	465.0315 ASPHALTIC FLUMES SY	465.0400 ASPHALTIC SHOULDER RUMBLE STRIP LF
CAT 0010													
1120-09-81													
STAGE 1													
	46'CTG'+26 - 49'CTG'+38	RT & LT	--	23	54	--	--	425	272	--	--	--	--
	54'CTG'+21 - 60'CTG'+72	RT & LT	--	16	38	--	--	285	181	--	--	--	--
1120-09-81 SUBTOTALS			--	39	91	--	--	710	453	--	--	--	--
1120-09-77													
STAGE 2													
	895'NAB'+00 - 906'NAB'+00	RT & LT	317	21	35	386	--	--	246	108	--	--	1,097
	895'SAB'+00 - 906'SAB'+00	RT & LT	317	20	33	366	--	--	233	107	--	--	1,103
	902'SAB'+41	LT	--	--	--	--	--	--	--	--	--	12	--
	903'NAB'+05	RT	--	--	--	--	--	--	--	--	--	10	--
	15'CTGG'+36 - 23'CTGG'+58	RT & LT	--	58	90	169	888	--	675	--	--	--	--
	26'CTGG'+35 - 30'CTGG'+96	RT & LT	--	37	57	112	555	--	426	--	--	--	--
STAGE 2 SUBTOTALS			635	136	215	1,033	1,443	--	1,580	215	--	22	2,200
STAGE 3													
	8'CTGG'+58 - 15'CTGG'+36	RT & LT	--	45	65	58	764	--	525	--	50	--	--
	30'CTGG'+96 - 39'CGG'+47	RT & LT	--	59	85	68	1,000	--	683	--	--	--	--
	110'GVR'+00 - 116'GVR'+51	RT & LT	--	35	49	--	645	--	413	--	32	--	--
	117'GVR'+00 - 123'GVR'+25	RT & LT	--	34	47	--	615	--	394	--	--	--	--
	10'DIX'+55 - 15'DIX'+74	RT & LT	--	29	41	--	536	--	343	--	73	--	--
	16'DIX'+22 - 21'DIX'+18	RT & LT	--	29	41	--	535	--	342	--	--	--	--
	20'WSR'+16 - 21'WSR'+25	RT & LT	--	8	11	--	152	--	97	--	--	--	--
STAGE 3 SUBTOTALS			--	240	339	126	4,247	--	2,797	--	155	--	--
1120-09-77 SUBTOTALS			635	376	554	1,160	5,690	--	4,377	215	155	22	2,200
TOTALS			635	415	645	1,160	5,690	710	4,830	215	155	22	2,200

NOTE: ASPHALTIC SURFACE CALCULATED USING 3 INCHES OF DEPTH FOR LENGTH OF PROJECT BETWEEN USH 41 MEDIAN BARRIER. FIELD FIT AS NEEDED.

3

CULVERT PIPE ITEMS

STATION	LOCATION	STEEL PIPE THICKNESS INCHES	520.0115 CULVERT PIPE CLASS III 15-INCH LF	520.0118 CULVERT PIPE CLASS III 18-INCH LF	521.0115 CULVERT PIPE CORRUGATED STEEL 15-INCH LF	521.0118 CULVERT PIPE CORRUGATED STEEL 18-INCH LF	521.0717 PIPE ARCH CORRUGATED STEEL 17X13-INCH LF	521.0721 PIPE ARCH CORRUGATED STEEL 21X15-INCH LF	521.0742 PIPE ARCH CORRUGATED STEEL 42X29-INCH LF	522.0324 CULVERT PIPE REINFORCED CONCRETE CLASS IV 24-INCH LF	522.0330 CULVERT PIPE REINFORCED CONCRETE CLASS IV 30-INCH LF	523.0424 CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 24X38-INCH LF
CAT 0100												
PROJECT 1120-09-77												
STAGE 2												
17'CTGG'+43	C/L	--	--	--	--	--	--	--	--	224	--	--
26'CTGG'+41	C/L	--	--	--	--	--	--	--	--	304	--	--
30+69 (PATH)	C/L	0.064	66	--	--	--	--	--	--	--	--	--
STAGE 2 SUBTOTALS			66	--	--	--	--	--	--	528	--	--
STAGE 3												
13'CTGG'+01	RT	0.064	--	--	90	--	--	--	--	--	--	--
34'CTGG'+72	RT	0.064	--	--	--	--	--	50	--	--	--	--
36'CTGG'+64	LT	0.064	--	--	--	--	40	--	--	--	--	--
38'CTGG'+30	C/L	0.079	--	--	--	--	--	--	56	--	--	--
110'GRV'+46	RT	0.064	--	60	--	--	--	--	--	--	--	--
111'GRV'+77	C/L	--	--	--	--	--	--	--	--	--	64	--
112'GRV'+31	LT	0.064	--	--	--	--	46	--	--	--	--	--
115'GRV'+94	C/L	--	--	--	--	--	--	--	--	136	--	--
121'GRV'+03	C/L	--	--	--	--	--	--	--	--	--	--	80
12'DIX'+50	RT	0.064	--	--	--	46	--	--	--	--	--	--
13'DIX'+49	RT	0.064	--	--	--	76	--	--	--	--	--	--
15'DIX'+10	C/L	--	--	--	--	--	--	--	--	128	--	--
STAGE 3 SUBTOTALS			--	60	90	122	86	50	56	264	64	80
PROJECT 1120-09-77 TOTALS			66	60	90	122	86	50	56	792	64	80

3

APRON ENDWALL ITEMS

STATION	LOCATION	STEEL PIPE THICKNESS INCHES	520.1015 APRON ENDWALLS FOR CULVERT PIPE 15-INCH EACH	520.1018 APRON ENDWALLS FOR CULVERT PIPE 18-INCH EACH	521.0542 APRON ENDWALLS FOR PIPE ARCH SLOPED CROSS DRAINS STEEL 42X29-INCH EACH	521.1015* APRON ENDWALLS FOR CULVERT PIPE STEEL 15-INCH EACH	521.1018 APRON ENDWALLS FOR CULVERT PIPE STEEL 18-INCH EACH	521.1217 APRON ENDWALLS FOR PIPE ARCH STEEL 17X13-INCH EACH	521.1221 APRON ENDWALLS FOR PIPE ARCH STEEL 21X15-INCH EACH	521.1717 APRON ENDWALLS FOR PIPE ARCH SLOPED SIDE DRAINS STEEL 17X13-INCH 6 TO 1 EACH	522.1024 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH EACH	522.1030 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 30-INCH EACH	523.0524 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 24X38-INCH EACH	633.5200* MARKERS CULVERT END EACH
CAT 0100														
PROJECT 1120-09-77														
STAGE 2														
17'CTGG'+43	C/L	--	--	--	--	--	--	--	--	--	2	--	--	2
26'CTGG'+41	C/L	--	--	--	--	--	--	--	--	--	2	--	--	2
30+69 (PATH)	C/L	0.064	2	--	--	--	--	--	--	--	--	--	--	2
STAGE 2 SUBTOTALS			2	--	--	--	--	--	--	--	4	--	--	6
STAGE 3														
13'CTGG'+01	RT	0.064	--	--	--	2	--	--	--	--	--	--	--	--
34'CTGG'+72	RT	0.064	--	--	--	--	--	--	2	--	--	--	--	--
36'CTGG'+64	LT	0.064	--	--	--	--	--	--	--	2	--	--	--	--
38'CTGG'+30	C/L	0.079	--	--	2	--	--	--	--	--	--	--	--	2
110'GRV'+46	RT	0.064	--	2	--	--	--	--	--	--	--	--	--	--
111'GRV'+77	C/L	--	--	--	--	--	--	--	--	--	--	2	--	2
112'GRV'+31	LT	0.064	--	--	--	--	--	2	--	--	--	--	--	--
115'GRV'+94	C/L	--	--	--	--	--	--	--	--	--	2	--	--	2
121'GRV'+03	C/L	--	--	--	--	--	--	--	--	--	--	--	2	2
12'DIX'+50	RT	0.064	--	--	--	--	2	--	--	--	--	--	--	--
13'DIX'+49	RT	0.064	--	--	--	--	2	--	--	--	--	--	--	--
15'DIX'+10	C/L	--	--	--	--	--	--	--	--	--	2	--	--	2
STAGE 3 SUBTOTALS			--	2	2	2	4	2	2	2	4	2	2	10
PROJECT 1120-09-77 TOTALS			2	2	2	2	4	2	2	2	8	2	2	16

* ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLANS

CONCRETE CURB AND CURB AND GUTTER

ID	STATION - STATION	LOCATION	601.0411 CONCRETE CURB & GUTTER 30-INCH TYPE D LF	601.0557 CONCRETE CURB & GUTTER 6-INCH SLOPED 36-INCH TYPE D LF
CAT 0010				
1120-09-77				
STAGE 2				
	22'CTGG'+63 - 22'CTGG'+75	LT	12	--
	25'CTGG'+57 - 26'CTGG'+69	LT	12	--
	26'CTGG'+62 - 26'CTGG'+74	LT	12	--
STAGE 2 SUBTOTALS			36	--
STAGE 3				
	115'GVR'+91 - 116'GVR'44	LT	--	87
	116'GVR'+00 - 116'GVR'+53	RT	--	80
	116'GVR'+88 - 117'GVR'+40	LT	--	75
	117'GVR'+17 - 117'GVR'+71	RT	--	85
	14'DIX'+98 - 15'DIX'+65	LT	--	97
	15'DIX'+32 - 15'DIX'+79	RT	--	68
	16'DIX'+16 - 16'DIX'+69	LT	--	78
	16'DIX'+32 - 16'DIX'+70	RT	--	65
STAGE 3 SUBTOTALS			--	635
TOTALS			36	635

CONCRETE BARRIER ITEMS

ID	STATION - STATION	LOCATION	603.1142 CONCRETE BARRIER TYPE S42 LF	603.1156 CONCRETE BARRIER TYPE S56 LF	603.1342 CONCRETE BARRIER TYPE S42B LF
CAT 0010					
1120-09-77					
STAGE 2					
	896'NAB'+36 - 904'NAB'+42	LT	--	808	--
	895'NAB'+00 - 903'NAB'+00	RT	799	--	--
	895'SAB'+12 - 904'SAB'+61	RT	--	947	--
	898'SAB'+35 - 902'SAB'+35	LT	402	--	--
	21'CTGG'+14 - 24'CTGG'+06	LT	129	--	--
	26'CTGG'+26 - 27'CTGG'+75	LT	--	--	31
TOTALS			1,330	1,755	31

3

CONCRETE BARRIER TEMPORARY PRECAST

ID	STATION - STATION	LOCATION	603.8000 CONCRETE BARRIER TEMPORARY PRECAST DELIVERED LF	603.8125 CONCRETE BARRIER TEMPORARY PRECAST INSTALLED LF	SPV.0090.0302 REMOVING CONCRETE BARRIER TEMPORARY PRECAST LEFT IN PLACE BY OTHERS LF	SPV.0060.0301 REMOVING CONCRETE BARRIER TEMPORARY TRANSITION TYPE 32 TO 56 EACH
CAT 0010						
1120-09-81						
STAGE 1						
	1032'NAB'+00 - 1042'NAB'+00	LT	1,000	1,000	--	--
	1034'SAB'+00 - 1043'SAB'+00	LT	900	900	--	--
1120-09-81 SUBTOTALS			1,900	1,900	--	--
1120-09-77						
STAGE 2						
	890'NAB'+00 - 907'NAB'+00	LT	1,704	1,704	965	1
	890'NAB'+00 - 907'NAB'+00	RT	1,699	1,699	700	--
	894'SAB'+00 - 911'SAB'+00	LT	1,705	1,705	219	--
	894'SAB'+00 - 911'SAB'+00	RT	1,702	1,702	956	1
1120-09-77 SUBTOTALS			6,810	6,810	2,840	2
TOTALS			8,710	8,710	2,840	2

RIPRAP AND GEOTEXTILE FABRIC ITEMS

STATION	LOCATION	606.0200 RIPRAP MEDIUM CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY
CAT 0010			
PROJECT 1120-09-81			
STAGE 1			
49'CTG'+17 - 49'CTG'+27	RT	10	19
49'CTG'+34 - 49'CTG'+44	LT	7	14
54'CTG'+16 - 54'CTG'+26	RT	7	14
54'CTG'+32 - 54'CTG'+42	LT	5	11
STAGE 1 SUBTOTALS		29	58
UNDISTRIBUTED			
		6	17
PROJECT 1120-09-81 TOTALS		35	75
PROJECT 1120-09-77			
STAGE 2			
899'NAB'+60 - 899'NAB'+82	RT	24	47
902'NAB'+72 - 902'NAB'95	RT	21	43
22'CTGG'+63 - 22'CTGG'+73	LT	4	8
STAGE 2 SUBTOTALS		49	98
STAGE 3			
14'CTGG'+54	RT	13	26
14'CTGG'+72	LT	12	23
31'CTGG'+58	RT	14	28
31'CTGG'+74	LT	15	30
115'GRV'+86	LT	12	24
115'GRV'+94	RT	15	30
117'GRV'+79	RT	4	8
14'DIX'+90	LT	14	29
15'DIX'+27	RT	14	28
16'DIX'+73	LT	12	24
16'DIX'+78	RT	9	18
20'DIX'+71 - 20'DIX'+84	LT	9	17
STAGE 3 SUBTOTALS		143	285
UNDISTRIBUTED			
		48	97
PROJECT 1120-09-77 TOTALS		240	480
TOTALS		275	555

STORM SEWER ITEMS

LOCATION	521.1015* APRON ENDWALLS FOR CULVERT PIPE STEEL 15-INCH EACH	608.0315 SSPRC CLASS III 15-INCH LF	611.3220 INLETS 2X2-FT EACH	611.0651 INLET COVERS TYPE S EACH	611.0654 INLET COVERS TYPE V EACH	612.0215 PIPE UNDERDRAIN UNPERFORATED 15-INCH LF	633.5200* MARKERS CULVERT END EACH
CAT 0100							
PROJECT 1120-09-81							
STAGE 1							
CTH G	4	--	4	--	4	291	4
PROJECT 1120-09-81 TOTALS	4	--	4	--	4	291	4
PROJECT 1120-09-77							
STAGE 2							
CTH GG	3	17	4	1	3	239	3
PROJECT 1120-09-77 TOTALS	3	17	4	1	3	239	3
TOTALS	7	17	8	1	7	530	7

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE IN PLAN

3

BEAM GUARD ITEMS

ID	STATION	-	STATION	LOCATION	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0305 STEEL PLATE BEAM GUARD CLASS A LF	614.0345 STEEL PLATE BEAM GUARD SHORT RADIUS LF	614.0370 STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL EACH	614.0390 STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL EACH	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	SPV.0090.0301 TREATED TIMBER RUB RAIL LF	COMMENTS
CAT 0010														
1120-09-81														
STAGE 1														
	46'CTG'+14	-	49'CTG'+32	RT	21	250.0	53	1	1	--	--	--	--	R=27', #CRT POSTS=5
	48'CTG'+843	-	49'CTG'+48	LT	--	--	--	--	--	--	39	1	--	
	54'CTG'+11	-	58'CTG'+80	RT	--	--	--	--	--	375.0	39	1	--	
	54'CTG'+27	-	60'CTG'+18	LT	--	--	--	--	--	500.0	39	1	--	
1120-09-81 SUBTOTALS					21	250.0	53	1	1	875.0	117	3	--	
1120-09-77														
STAGE 2														
	902'SAB'+32	-	903'SAB'+24	LT	--	--	--	--	--	--	39	1	--	
	16'CTGG'+15	-	22'CTGG'+78	LT	--	--	--	--	--	575.0	39	1	668	
	21'CTGG'+70	-	23'CTGG'+48	RT	--	--	--	--	--	87.5	39	1	--	
	25'CTGG'+99	-	27'CTGG'+28	RT	--	--	--	--	--	37.5	39	1	--	
	26'CTGG'+55	-	28'CTGG'+33	LT	--	--	--	--	--	87.5	39	1	167	
1120-09-77 SUBTOTALS					--	--	--	--	--	787.5	195	5	835	
TOTALS					21	250.0	53	1	1	1,662.5	312	8	835	

CRASH CUSHIONS TEMPORARY

ID	STATION	LOCATION	614.0905 EACH	CRASH TEST CONDITION	OBJECT MARKING PATTERN	WIDTH REQUIREMENT FT
CAT 0010						
1120-09-81						
STAGE 1						
	1032'NAB'+00	RT	1	TL-3	OM-3R	2
	1044'SAB'+00	LT	1	TL-3	OM-3L	2
1120-09-81 SUBTOTALS			2			
1120-09-77						
STAGE 2						
	890'NAB'+00	RT	1	TL-3	OM-3R	2
	890'NAB'+00	LT	1	TL-3	OM-3L	2
	911'SAB'+00	RT	1	TL-3	OM-3R	2
	911'SAB'+00	LT	1	TL-3	OM-3L	2
1120-09-77 SUBTOTALS			4			
TOTAL			6			

SALVAGED RAIL AND CRASH CUSHIONS

ID	STATION - STATION	LOCATION	614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARDRAIL END TREATMENTS EACH	614.0930 SALVAGED CRASH CUSHIONS EACH	COMMENTS
CAT 0010						
1120-09-81						
STAGE 1						
	46'CTG'+22 - 49'CTG'+72	RT & LT	329	4	--	
	53'CTG'+93 - 60'CTG'+22	RT & LT	926	4	--	
1120-09-81 SUBTOTALS			1,255	8	--	
1120-09-77						
STAGE 2						
	895'NAB'+00	LT	--	1	--	TEMP THRIE LIP
	895'SAB'+00	RT	--	1	--	TEMP THRIE LIP
	900'SAB'+86	LT	--	--	1	TEMP CC LIP
	904'NAB'+59	LT	--	1	--	TEMP THRIE LIP
	904'SAB'+59	RT	--	1	--	TEMP THRIE LIP
	17'CTGG'+91 - 23'CTGG'+43	RT & LT	918	4	--	
	26'CTGG'+40 - 28'CTGG'+82	RT & LT	284	4	--	
STAGE 2 SUBTOTALS			1,202	12	1	
STAGE 3						
	117'GVR'+30 - 120'GVR'+56	LT	263	2	--	
STAGE 3 SUBTOTALS			263	2	--	
1120-09-77SUBTOTALS			1,465	14	1	
TOTALS			2,720	22	1	

FENCE CHAIN LINK

ID	STATION - STATION	LOCATION	616.0206 FENCE CHAIN LINK 6-FT LF	616.0406 FENCE CHAIN LINK SALVAGED 6-FT LF
CAT 0010				
1120-09-81				
STAGE 1				
	CTH G	LT	--	250
1120-09-81 SUBTOTALS			--	250
1120-09-77				
STAGE 2				
	901'NAB'+62 - 904'NAB'+00	RT	238	--
	897'SAB'+04 - 899'SAB'+06	LT	205	--
	899'SAB'+89 - 902'SAB'+00	LT	217	
1120-09-77 SUBTOTALS			660	--
TOTALS			660	--

3

WATER

ID	STATION - STATION	LOCATION	624.0100 WATER MGAL
CAT 0010			
1120-09-81			
STAGE 1 SUBTOTALS			
	46'CTG'+26 - 49'CTG'+58	RT & LT	1
	54'CTG'+00 - 61'CTG'+00	RT & LT	2
1120-09-81 SUBTOTALS			3
1120-09-77			
STAGE 2 SUBTOTALS			
	895'NAB'+00 - 906'NAB'+00	RT	1
	895'SAB'+00 - 906'SAB'+00	LT	3
	15'CTGG'+36 - 23'CTGG'+85	RT & LT	60
	26'CTGG'+08 - 30'CTGG'+96	RT & LT	36
	15+82 - 24+13	RT & LT	13
	26+35 - 31+00	RT & LT	8
STAGE 2 SUBTOTALS			121
STAGE 3			
	8'CTGG'+58 - 15'CTGG'+36	RT & LT	47
	30'CTGG'+96 - 39'CGG'+47	RT & LT	60
	110'GVR'+00 - 116'GVR'+51	RT & LT	41
	117'GVR'+00 - 123'GVR'+25	RT & LT	35
	10'DIX'+55 - 15'DIX'+74	RT & LT	33
	16'DIX'+22 - 21'DIX'+18	RT & LT	32
	20'WSR'+16 - 21'WSR'+25	RT & LT	8
STAGE 3 SUBTOTALS			256
UNDISTRIBUTED			40
1120-09-77 SUBTOTALS			417
TOTAL			420

WATER PROVIDED FOR COMPACTION OF SUBGRADE, BASE, PREPARATION OF FOUNDATION AND DUST ABATEMENT

LANDSCAPING ITEMS

ID	STATION - STATION	LOCATION	625.0100 TOPSOIL SY	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB	COMMENTS
CAT 0010										
1120-09-81										
STAGE 1 SUBTOTALS										
	46'CTG'+26 - 49'CTG'+38	RT & LT	525	--	525	0	--	10	8	
	54'CTG'+21 - 60'CTG'+72	RT & LT	778	--	778	1	--	15	11	
UNDISTRIBUTED			326	--	326	0	--	6	5	
1120-09-81 SUBTOTALS			1,629	--	1,629	1	--	31	24	
1120-09-77										
STAGE 2 SUBTOTALS										
	895'NAB'+00 - 906'NAB'+00	RT & LT	--	1,128	941	1	2	19	16	
	895'SAB'+00 - 906'SAB'+00	RT & LT	--	1,147	1,078	1	10	15	16	
	15'CTGG'+36 - 23'CTGG'+58	RT & LT	--	10,221	5,183	7	202	50	138	
	26'CTGG'+35 - 30'CTGG'+96	RT & LT	--	4,417	3,066	3	76	30	60	
STAGE 2 SUBTOTALS			--	16,912	10,268	11	290	114	230	
STAGE 3										
	8'CTGG'+58 - 15'CTGG'+36	RT & LT	--	1,999	1,238	1	25	20	27	
	8'CTGG'+58 - 15'CTGG'+36	RT & LT	2,183	--	2,183	1	32	19	30	NEW TOPSOIL NEAR DWYS
	30'CTGG'+96 - 39'CGG'+47	RT & LT	6,324	--	4,852	4	100	48	86	NEW TOPSOIL NEAR DWYS
	110'GVR'+00 - 116'GVR'+51	RT & LT	2,311	--	1,600	2	25	26	32	NEW TOPSOIL NEAR DWYS
	110'GVR'+00 - 116'GVR'+51	RT & LT	--	1,324	1,324	1	21	11	18	
	117'GVR'+00 - 123'GVR'+25	RT & LT	--	3,880	3,696	3	55	34	53	
	10'DIX'+55 - 15'DIX'+74	RT & LT	--	1,360	--	1	19	13	19	
	10'DIX'+55 - 15'DIX'+74	RT & LT	1,584	--	1,584	1	23	14	22	NEW TOPSOIL NEAR DWYS
	16'DIX'+22 - 21'DIX'+18	RT & LT	--	1,812	1,209	1	12	26	25	
	20'WSR'+16 - 21'WSR'+25	RT & LT	--	317	317	0	--	6	5	
STAGE 3 SUBTOTALS			12,401	10,692	18,003	15	312	217	317	
UNDISTRIBUTED			3,100	6,996	7,100	6	158	88	139	
1120-09-77 SUBTOTALS			15,501	34,600	35,371	32	760	419	686	
TOTALS			17,130	34,600	37,000	33	760	450	710	

3

3

SILT FENCE ITEMS

STATION - STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 MAINTENANCE LF
CAT 0010			
PROJECT 1120-09-81			
STAGE 1			
45'CTG'+98 - 49'CTG'+29	RT	475	238
46'CTG'+44 - 49'CTG'+46	LT	343	172
54'CTG'+13 - 59'CTG'+15	RT	501	251
54'CTG'+30 - 61'CTG'+07	LT	671	336
STAGE 1 SUBTOTALS		1,990	995
UNDISTRIBUTED			
		500	250
PROJECT 1120-09-81 TOTALS		2,490	1,245
PROJECT 1120-09-77			
STAGE 2			
903'SAB'+00 - 904'SAB'+00	LT	101	51
16'CTGG'+00 - 24'CTGG'+52	LT	948	474
25'CTGG'+49 - 29'CTGG'+70	RT	440	220
27'CTGG'+59 - 30'CTGG'+65	LT	310	155
STAGE 2 SUBTOTALS		1,799	900
STAGE 3			
9'CTGG'+80 - 10'CTGG'+49	RT	75	38
12'CTGG'+50 - 14'CTGG'+81	LT	240	120
31'CTGG'+91 - 33'CTGG'+57	LT	168	84
37'CTGG'+24 - 38'CTGG'+92	LT	164	82
111'GRC'+14 - 112'GRV'+11	LT	86	43
113'GRV'+32 - 115'GRV'+89	LT	255	128
117'GRV'+51 - 120'GRV'+47	LT	378	189
16'DIX'+78 - 17'DIX'+51	RT	84	42
17'DIX'+30 - 18'DIX'+49	LT	121	61
STAGE 3 SUBTOTALS		1,571	786
UNDISTRIBUTED			
		840	420
PROJECT 1120-09-77 TOTALS		4,210	2,105
TOTALS		6,700	3,350

EROSION CONTROL MOBILIZATIONS ITEMS

LOCATION	628.1905 EROSION CONTROL EACH	628.1910 EMERGENCY EROSION CONTROL EACH
CAT 0010		
PROJECT 1120-09-81		
STAGE 1	4	2
PROJECT 1120-09-81 TOTALS	4	2
PROJECT 1120-09-77		
STAGE 2	4	2
STAGE 3	4	2
PROJECT 1120-09-77 TOTALS	8	4
TOTALS	12	6

EROSION MAT ITEMS

STATION - STATION	LOCATION	628.2004 CLASS I TYPE B SY	628.2008 URBAN CLASS I TYPE B SY
CAT 0010			
PROJECT 1120-09-77			
STAGE 2			
895'NAB'+00 - 906'NAB'+00	LT & RT	187	--
895'SAB'+00 - 906'SAB'+00	LT & RT	69	--
15'CTGG'+36 - 23'CTGG'+58	LT & RT	4,484	554
26'CTGG'+35 - 30'CTGG'+96	LT & RT	1,351	--
STAGE 2 SUBTOTAL		6,091	554
STAGE 3			
8'CTGG'+58 - 15'CTGG'+36	LT & RT	761	--
30'CTGG'+96 - 39'CGG'+47	LT & RT	1,472	--
110'GVR'+00 - 116'GVR'+51	LT & RT	160	551
117'GVR'+00 - 123'GVR'+25	LT & RT	184	--
10'DIX'+55 - 15'DIX'+74	LT & RT	1,436	--
16'DIX'+22 - 21'DIX'+18	LT & RT	603	--
STAGE 3 SUBTOTAL		4,616	551
UNDISTRIBUTED			
		2,693	295
PROJECT 1120-09-77 TOTAL		13,400	1,400

SOIL STABILIZER

STATION - STATION	LOCATION	628.6510 TYPE B ACRE
CAT 0010		
PROJECT 1120-09-77		
STAGE 2		
UNDISTRIBUTED	LT & RT	3.7
STAGE 2 SUBTOTAL		3.7
STAGE 3		
UNDISTRIBUTED	LT & RT	5.1
STAGE 2 SUBTOTAL		5.1
PROJECT 1120-09-77 TOTAL		8.8
TOTAL		8.8

INLET PROTECTION ITEMS

LOCATION	628.7010 TYPE B EACH	628.7020 TYPE D EACH
CAT 0010		
PROJECT 1120-09-81		
STAGE 1		
EXISTING STRUCTURES	5	--
PROPOSED STRUCTURES	4	--
STAGE 1 SUBTOTALS	9	--
UNDISTRIBUTED		
	1	--
PROJECT 1120-09-81 TOTALS	10	--
PROJECT 1120-09-77		
STAGE 2		
EXISTING STRUCTURES	7	3
PROPOSED STRUCTURES	4	--
STAGE 2 SUBTOTALS	11	3
UNDISTRIBUTED		
	4	1
PROJECT 1120-09-77 TOTALS	15	4
TOTALS	25	4

DITCH CHECK ITEMS

STATION	LOCATION	628.7504 TEMPORARY DITCH CHECKS LF	628.7570 ROCK BAGS EACH
CAT 0010			
PROJECT 1120-09-77			
STAGE 2			
895'SAB'+00	LT	10	--
903'NAB'+86	RT	10	--
906'NAB'+00	RT	10	--
906'SAB'+00	LT	10	--
17'CTGG'+46	LT	--	15
19'CTGG'+49	LT	--	15
23'CTGG'+26	LT	--	15
17'DIX'+33	LT	--	15
0	0	--	--
0	0	--	--
STAGE 2 SUBTOTALS		40	60
STAGE 3			
909'NAB'+05	RT	10	--
8'CTGG'+55	LT	10	--
38'CTGG'+30	LT	--	15
111'GRV'+68	LT	--	15
112'GRV'+17	RT	10	--
118'GRV'+25	LT	--	15
119'GRV'+40	RT	10	--
120'GRV'+47	LT	--	15
21'DIX'+11	RT	10	--
21'WSR'+23	LT	10	--
STAGE 3 SUBTOTALS		60	60
UNDISTRIBUTED			
		25	30
PROJECT 1120-09-77 TOTALS		125	150

ASSUME 10 LF PER TEMPORARY DITCH CHECK
ASSUME 15 ROCK BAGS PER RELIEF POINT

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
CAT 0010		
PROJECT 1120-09-81		
STAGE 1		
49'CTG'+22	RT	2
49'CTG'+39	LT	2
54'CTG'+21	RT	2
54'CTG'+37	LT	2
STAGE 1 SUBTOTAL		8
UNDISTRIBUTED		
		2
PROJECT 1120-09-81 TOTAL		10
PROJECT 1120-09-77		
STAGE 2		
899'NAB'+80	RT	3
17'CTGG'+14	RT	3
30+58	RT	2
STAGE 2 SUBTOTAL		8
STAGE 3		
8'CTGG'+65	RT	2
12'CTGG'+57	RT	2
34'CTGG'+46	RT	3
36'CTGG'+44	LT	2
38'CTGG'+30	RT	10
110'GRV'+18	RT	2
111'GRV'+83	RT	5
112'GRV'+55	LT	2
115'GRV'+94	LT	3
121'GRV'+03	RT	7
12'DIX'+30	RT	2
13'DIX'+17	RT	2
14'DIX'+84	LT	3
STAGE 3 SUBTOTAL		45
UNDISTRIBUTED		
		12
PROJECT 1120-09-77 TOTAL		65
TOTAL		75

TRACKING PAD

LOCATION	628.7560 EACH
CAT 0010	
PROJECT 1120-09-81	
STAGE 1	2
PROJECT 1120-09-81 TOTAL	2
PROJECT 1120-09-77	
STAGE 2	2
STAGE 3	6
PROJECT 1120-09-77 TOTAL	8
TOTAL	10

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TYPE II SIGNS AND SUPPORTS

ID	SIGN NO.	LOCATION	SIGN CODE	W X H	637.0202 SIGNS TYPE II SF	634.0614 POSTS WOOD 4x6x14 EACH	634.0616 POSTS WOOD 4x6x16 EACH	634.0618 POSTS WOOD 4X6X18 EACH	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH	SIGN MOUNTED ON SAME POST AS	COMMENTS
CAT 0010														
1120-09-77														
	1-1	GREEN VALLEY ROAD N. OF CTH GG	R5-2	24" X 24"	4.00	--	--	1	--	1	1	--		
	1-2	GREEN VALLEY ROAD N. OF CTH GG	R1-1	30" X 30"	5.18	1	--	--	--	1	1	--		
	1-3	GREEN VALLEY ROAD N. OF CTH GG	W4-4P	24" X 12"	2.00	--	--	--	--	1	--	--	1-2	
	1-4	GREEN VALLEY ROAD N. OF CTH GG	-	- X -	--	--	--	--	1	--	--	--	1-1	AXEL WT LIMIT
	1-5	GREEN VALLEY ROAD S. OF CTH GG	R1-1	30" X 30"	5.18	1	--	--	--	1	1	--		
	1-6	GREEN VALLEY ROAD S. OF CTH GG	W4-4P	24" X 12"	2.00	--	--	--	--	1	--	--	1-5	
	1-7	GREEN VALLEY ROAD S. OF CTH GG	R5-2	24" X 24"	4.00	1	--	--	--	1	1	--		
	1-8	GREEN VALLEY ROAD N. OF CTH GG	-	- X -	--	--	--	--	1	--	--	1		WOODENSHOE RD
	1-9	GREEN VALLEY ROAD N. OF CTH GG	-	- X -	--	--	--	--	1	--	--	--	1-8	COUNTY GG
	1-10	GREEN VALLEY ROAD N. OF CTH GG	-	- X -	--	--	--	--	1	--	--	--	1-8	GREEN VALLEY RD
	1-11	CTH GG W. OF GREEN VALLEY ROAD	R12-55	48" X 18"	6.00	1	--	--	--	1	1	--		
	2-2	CTH GG E. OF GREEN VALLEY ROAD	W5-52L	12" X 36"	3.00	1	--	--	--	--	--	--		
	2-3	CTH GG E. OF GREEN VALLEY ROAD	R12-1	24" X 30"	5.00	--	1	--	--	1	1	--		45 TONS
	2-4	CTH GG E. OF GREEN VALLEY ROAD	W5-52R	12" X 36"	3.00	--	1	--	--	--	--	--		
	2-5	CTH GG W. OF DIXIE ROAD	R12-1	24" X 30"	5.00	--	1	--	--	1	1	--		45 TONS
	2-6	CTH GG W. OF DIXIE ROAD	W5-52R	12" X 36"	3.00	1	--	--	--	--	--	--		
	2-7	CTH GG W. OF DIXIE ROAD	W5-52L	12" X 36"	3.00	--	1	--	--	--	--	--		
	2-8	CTH GG W. OF DIXIE ROAD	M1-95A	24" X 30"	5.00	--	1	--	--	1	1	--		
	2-9	CTH GG W. OF DIXIE ROAD	M6-4	21" X 21"	3.06	--	--	--	--	1	--	--	2-9	
	2-10	CTH GG E. OF DIXIE ROAD	M3-2	24" X 12"	2.00	--	--	1	--	1	1	--		
	2-11	CTH GG E. OF DIXIE ROAD	M1-95A	24" X 30"	5.00	--	--	--	--	1	--	--	2-10	
	2-12	CTH GG E. OF DIXIE ROAD	M6-4	21" X 21"	3.06	--	--	--	--	1	--	--	2-10	
	2-13	OLD DIXIE ROAD S. OF CTH GG	W14-1	30" X 30"	6.25	--	--	1	--	1	1	--		
	2-14	OLD DIXIE ROAD S. OF CTH GG	R1-1	30" X 30"	5.18	1	--	--	--	1	1	--		
	2-15	DIXIE ROAD N. OF CTH GG	R1-1	30" X 30"	5.18	1	--	--	--	1	1	--		
	2-16	DIXIE ROAD N. OF CTH GG	W1-1R	36" X 36"	9.00	--	--	1	--	1	1	--		
	2-17	DIXIE ROAD N. OF CTH GG	W13-1	24" X 24"	4.00	--	--	--	--	1	--	--	2-16	
	2-18	DIXIE ROAD N. OF CTH GG	-	- X -	--	--	--	--	1	--	--	1		DIXIE RD
	2-19	OLD DIXIE ROAD S. OF CTH GG	-	- X -	--	1	--	--	1	--	--	--		OLD DIXIE RD
	2-20	USH 41 S. OF CTH GG	M1-94	- X -	--	--	--	--	1	--	--	1		HWY GG
	2-21	USH 41 N. OF CTH GG	M1-94	- X -	--	--	--	--	1	--	--	1		HWY GG
	3-1	CTH GG E. OF DIXIE ROAD	R12-55(MOD)	48" X 18"	6.00	1	--	--	--	1	1	--		45 TON BRIDGE AHEAD
	3-2	CTH GG E. OF DIXIE ROAD	-	- X -	--	1	--	--	1	--	1	--		ADOPT A HIGHWAY
	3-3	CTH GG E. OF DIXIE ROAD	W12-55	48" X 18"	6.00	1	--	--	1	1	--	--		ADOPT A HIGHWAY
	5-1	GREEN VALLEY RD W. OF WOODEN SHOE RD	W1-6	48" X 24"	8.00	--	1	--	--	1	1	--		
	5-2	WOODENSHOE RD N. OF GREEN VALLEY RD	R1-1	30" X 30"	5.18	--	1	--	--	1	1	--		
	5-3	GREEN VALLEY RD E. OF WOODEN SHOE RD	-	- X -	--	--	--	--	1	--	--	1		WOODENSHOE RD
	6-1	OLD DIXIE ROAD S. OF CTH GG	W1-6	48" 24"	5.18	1	--	--	--	1	1	--		
	7-1	DIXIE ROAD N. OF CTH GG	R2-1	24" X 30"	5.00	1	--	--	--	1	1	--		45 MPH
	7-2	DIXIE ROAD N. OF CTH GG	W1-6	48" 24"	5.18	1	--	--	--	1	1	--		
1120-09-77 SUBTOTALS					138.64	15	7	4	11	26	20	5		

TYPE II SIGNS AND SUPPORTS

ID	SIGN NO.	LOCATION	SIGN CODE	W X H	637.0202 SIGNS TYPE II SF	634.0614 POSTS WOOD 4x6x14 EACH	634.0616 POSTS WOOD 4x6x16 EACH	634.0618 POSTS WOOD 4X6X18 EACH	638.2102 MOVING SIGNS TYPE II EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	638.4000 MOVING SMALL SIGN SUPPORTS EACH	SIGN MOUNTED ON SAME POST AS	COMMENTS
CAT 0010														
(CONTINUED)														
1120-09-81														
	4-1	CTH G W. OF USH 41	M4-5	24" X 12"	2.00	--	1	--	--	1	1	--		
	4-2	CTH G W. OF USH 41	M1-4	24" X 24"	4.00	--	--	--	--	1	--	--	4-1	USH 41
	4-3	CTH G W. OF USH 41	M6-1	21" X 21"	3.06	--	--	--	--	1	--	--	4-1	
	4-4	GREEN VALLEY ROAD S. OF CTH G	R1-1	30" X 30"	5.18	1	--	--	--	1	1	--		
	4-5	GREEN VALLEY ROAD S. OF CTH G	W4-4P	24" X 12"	2.00	--	--	--	--	1	--	--	4-5	
	4-6	CTH G W. OF USH 41	R2-1	24" X 30"	5.00	1	--	--	--	1	1	--		45 MPH
	4-7	CTH G W. OF USH 41	W54-57	36" X 36"	9.00	--	1	--	--	1	1	--		
	4-8	CTH G W. OF USH 41	W13-1	18" X 18"	2.25	--	--	--	--	1	--	--	4-7	35 MPH
	4-9	CTH G W. OF USH 41	W5-52R	12" X 36"	3.00	--	1	--	--	--	--	--		
	4-10	CTH G W. OF USH 41	W5-52L	12" X 36"	3.00	--	1	--	--	--	--	--		
	4-11	CTH G E. OF USH 41	W5-52R	12" X 36"	3.00	--	1	--	--	--	--	--		
	4-12	CTH G E. OF USH 41	W5-52L	12" X 36"	3.00	--	1	--	--	--	--	--		
	4-13	CTH G E. OF USH 41	-	- X -	--	--	--	--	1	--	--	1		TRUCK
	4-14	CTH G E. OF USH 41	M1-95A	24" X 30"	5.00	--	1	--	--	1	1	--		
	4-15	CTH G E. OF USH 41	M6-1	21" X 21"	3.06	--	--	--	--	1	--	--	4-14	
	4-16	CTH G E. OF USH 41	M1-5A	24" X 24"	4.00	--	1	--	--	1	1	--		CTH G
	4-17	CTH G E. OF USH 41	W1-7	48" X 24"	8.00	--	--	--	--	1	--	--	4-16	
	4-18	CTH G E. OF USH 41	M1-95A	24" X 30"	5.00	--	1	--	--	1	1	--		
	4-19	CTH G E. OF USH 41	M6-1	21" X 21"	3.06	--	--	--	--	1	--	--	4-18	
	4-20	USH 41 S. OF CTH G	M1-94	- - X	--	--	--	--	1	--	--	1		HWY G
	4-21	USH 41 N. OF CTH G	M1-94	- - X	--	--	--	--	1	--	--	1		HWY G
	4-22	CTH G W. OF USH 41	W12-55	48" X 18"	6.00	--	1	--	--	--	--	--		
	4-23	CTH G W. OF USH 41	R12-1	24" X 30"	5.00	--	1	--	--	--	--	--		
	4-24	CTH G E. OF USH 41	R12-1	24" X 30"	5.00	--	1	--	--	--	--	--		
	4-25	CTH G E. OF USH 41	W12-55	48" X 18"	6.00	--	1	--	--	--	--	--		
1120-09-81 SUBTOTALS					94.62	2	13	--	3	14	7	3		
TOTALS					233.25	17	20	4	14	40	27	8		

DELINEATORS

ID	STATION - STATION	LOCATION	633.0100 DELINEATOR POSTS STEEL EACH	633.0500 DELINEATOR REFLECTORS WHITE EACH	633.0500 DELINEATOR REFLECTORS YELLOW EACH	633.1000 DELINEATOR BRACKETS EACH
CAT 0010						
1120-09-77 STAGE 2						
	896'NAB'+00 - 906'NAB'+00	RT	--	4	--	4
	896'NAB'+00 - 904'NAB'+59	MED	--	--	5	5
	896'SAB'+00 - 906'SAB'+00	LT	2	4	--	2
	896'SAB'+00 - 904'SAB'+59	MED	--	--	5	5
TOTALS			2	8	10	16
				18		

NOTE: DELINEATOR SPACING IS NOT IN ACCORDANCE WITH SDDS FOR CONCRETE BARRIER.
DELINEATORS ON MEDIAN BARRIER SHALL BE PLACED EVERY 200 FEET.

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TRAFFIC CONTROL ITEMS

ID	STAGE	DAYS	643.0300 DRUMS NO.	643.0300 DRUMS DAYS	643.0420 BARRICADES TYPE III NO.	643.0420 BARRICADES TYPE III DAYS	643.0705 WARNING LIGHTS TYPE A NO.	643.0705 WARNING LIGHTS TYPE A DAYS	643.0715 WARNING LIGHTS TYPE C NO.	643.0715 WARNING LIGHTS TYPE C DAYS	643.0800 ARROW BOARDS NO.	643.0800 ARROW BOARDS DAYS	643.0900 SIGNS NO.	643.0900 SIGNS DAYS	643.1050* SIGNS PCMS NO.	643.1050* SIGNS PCMS DAYS
CAT 0010																
1120-09-81																
	STAGE 1															
	USH 41 NB	24	40	960	1	24	--	--	16	384	3	72	27	648	--	--
	USH 41 SB	24	40	960	1	24	--	--	16	384	3	72	27	648	--	--
	CTH G	24	16	384	24	576	16	384	--	--	--	--	27	648	2	48
	UNDISTRIBUTED			230		62		38		77		14		194		5
1120-09-81 SUBTOTALS				2,534		686		422		845		158		2,138		53
1120-09-77																
	STAGE 2															
	USH 41 NB	63	136	8,568	1	63	2	126	--	--	2	126	23	1,449	2	60
	USH 41 SB	63	136	8,568	1	63	2	126	--	--	2	126	23	1,449	2	60
	OFF-PEAK LANE CLOSURE	40	102	4,080	2	80	--	--	32	1,280	2	80	12	480	--	--
	CTH GG	63	24	1,512	20	1,260	24	1,512	--	--	--	--	26	1,638	--	--
	STAGE 2 SUBTOTALS			22,728		1,466		1,764		1,280		332		5,016		120
	STAGE 3															
	CTH GG	24	22	528	18	432	24	576	--	--	--	--	22	528	2	48
	GREEN VALLEY ROAD	24	--	--	13	312	20	480	--	--	--	--	20	480	--	--
	OLD DIXIE/DIXIE ROAD	24	--	--	13	312	20	480	--	--	--	--	20	480	--	--
	WOODENSHOE ROAD	24	--	--	7	168	10	240	--	--	--	--	10	240	--	--
	STAGE 3 SUBTOTALS			528		1,224		1,776		--		--		1,728		48
	UNDISTRIBUTED			2,326		269		354		128		33		674		17
1120-09-77 SUBTOTALS				25,582		2,959		3,894		1,408		365		7,418		185
TOTALS				28,116		3,645		4,316		2,253		524		9,557		238

*ITEM SHOWN ON OTHER SHEETS

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 7 DAYS	643.3000 DETOUR SIGNS DAYS	643.1050* TRAFFIC CONTROL SIGNS PCMS DAYS	REMARKS
	SB USH 41 DETOUR							
1	LT OF (CLICK IT - WHY RISK IT)	W20-2-F	48"x48"	1	7	49		
2	ACROSS FROM SIGN # 1 (MEDIAN SIDE)	W20-2-F	48"x48"	1	7	49		
3	LT OF TPYE 1 (MENASHA EXIT 134)	W20-2-G	48"x48"	1	7	49		
4	ACROSS FROM SIGN # 3 (MEDIAN SIDE)	W20-2-G	48"x48"	1	7	49		
5	LT OF TYPE 1 (BLUE HOSPITAL -EXIT 134)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
6	ACROSS FROM SIGN # 5 (MEDIAN SIDE)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
7	LT OF TYPE 1 (10-441-TILT RT; EXIT 134)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 6-2	30"x30"	1	7	49		RIGHT
8	LT OF J3-3 (E-10-TILT LT; N-441-TILT LT; W-10-TILT RT)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 6-2	30"x30"	1	7	49		RIGHT
9	ACROSS FROM SIGN # 8 (RIGHT SIDE)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 6-2	30"x30"	1	7	49		RIGHT
10	LT OF TYPE 1 (CB-NORTH-SOUTH; 1/3 MILE)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
11	ACROSS FROM SIGN # 10 (MEDIAN SIDE)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
12	LT OF TYPE 1 (CB-NORTH-SOUTH; TILT RT)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 6-1	30"x30"	1	7	49		AHEAD
13	ACROSS FROM SIGN # 12 (MEDIAN SIDE)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 6-1	30"x30"	1	7	49		AHEAD
14	LT OF TYPE 1 (76; OSHKOSH/SHIOCTON; EXIT 1)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
15	ACROSS FROM SIGN # 14 (MEDIAN SIDE)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		

*ITEM SHOWN ON OTHER SHEETS

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 7 DAYS	643.3000 DETOUR SIGNS DAYS	643.1050* TRAFFIC CONTROL SIGNS PCMS DAYS	REMARKS
(CONTINUED)								
16	1/2 MILE W OF SIGN # 14	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
17	ACROSS FROM SIGN # 16 (MEDIAN SIDE)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
18	LT OF TYPE 1 (76; OSHKOSH/SHIOCTON; TILT RT)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-3	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 6-2	30"x30"	1	7	49		RIGHT
19	250' W OF W 3-3 (SIGNAL AHEAD SIGN)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-L	21"x21"	1	7	49		
20	ACROSS FROM SIGN # 19 (LEFT SIDE)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-L	21"x21"	1	7	49		
21	ACROSS FROM J3-2 (S-76-LT; N-76-RT) LEFT SIDE	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		LEFT
22	LT OF J2-1 (E-10-AH RT)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
23	LT OF J4-1 (S-76) @ S RAMP TEMINALS	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
24	LT OF J4-1 (S-76) @ CTH II	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
25	250' S OF OAKRIDGE RD INTERSECTION ON STH 76	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
26	LT OF J4-1 (S-76) @ BREEZEWOOD LANE	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
27	LT OF J4-1 (S-76) @ CTH G	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD

*ITEM SHOWN ON OTHER SHEETS

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 7 DAYS	643.3000 DETOUR SIGNS DAYS	643.1050* TRAFFIC CONTROL SIGNS PCMS DAYS	REMARKS
(CONTINUED)								
28	LT OF J4-1 (S-76) @ CTH GG	MO 4-8	24"x12"	1	7	49		
	"	MO 3-3	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
29	MODIFY J1-1 (JCT 41)	WO 4-8-A	24"x18"	1	7	49		
	"	M 1-4	EXISTING					41
30	SB ADVANCE WARNING (FIELD DETERMINED)			2	7	49	7	
	SUBTOTAL			**101**		**4,900**	**7**	
	NB USH 41 DETOUR							
	GAP IN SIGN SEQUENCE NUMBERS							
50	LT OF TYPE 1 (76;JACKSON ST; EXIT 1 MILE)	W20-2-F	48"x48"	1	7	49		
51	ACROSS FROM SIGN # 51 (MEDIAN SIDE)	W20-2-F	48"x48"	1	7	49		
52	1/2 MILE N OF SIGN # 50	W20-2-G	48"x48"	1	7	49		
53	ACROSS FROM SIGN # 52 (MEDIAN SIDE)	W20-2-G	48"x48"	1	7	49		
54	1/4 MILE N OF SIGN # 52	MO 4-8	36"x18"	1	7	49		
	"	MO 3-1	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
55	ACROSS FROM SIGN # 54 (MEDIAN SIDE)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-1	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 5-2-R	30"x30"	1	7	49		
56	LT OF TYPE 1 (76;JACKSON ST; TILT RT - EXIT 124)	MO 4-8	36"x18"	1	7	49		
	"	MO 3-1	36"x18"	1	7	49		
	"	M 1-4	36"x36"	1	7	49		41
	"	MO 6-2	30"x30"	1	7	49		RIGHT
57	ABOVE R-3-8-P (LT TURN, LT & THRU, RT) LANE SIGN	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-L	21"x21"	1	7	49		
58	LT OF TRAFFIC SIGNAL(LT SIDE RAMP TERMINAL)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		LEFT
59	RT OF J2-1 (S-41-AH LT)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
60	LT OF R2-1 (SPEED LIMIT 45) SIGN	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
61	LT OF J4-1 (N-76) @ CTH GG	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD

*ITEM SHOWN ON OTHER SHEETS

TRAFFIC CONTROL DETOUR SIGN SUMMARY

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 7 DAYS	643.3000 DETOUR SIGNS DAYS	643.1050* TRAFFIC CONTROL SIGNS PCMS DAYS	REMARKS
(CONTINUED)								
62	LT OF J4-1 (N-76) @ CTH G	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
63	LT OF J4-1 (N-76) @ BREEZEWOOD LANE	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
64	250' N OF OAKRIDGE RD INTERSECTION ON STH 76	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
65	250' N OF LARSEN RD INTERSECTION ON STH 76	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
66	150' N OF R 2-1 (SPEED LIMIT 45) SIGN @ CTH II	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-R	21"x21"	1	7	49		
67	RT OF J1-1 (JCT II)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 5-1-R	21"x21"	1	7	49		
68	RT OF J13-2 (W-II-LT; E-II-RT)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		RIGHT
69	RT OF J13-1 (E-II)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
70	200' E OF CLAYTON AVE ON CTH II	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
71	LT OF J13-2 (CB-DBL ARROW; II-AH)	MO 4-8	24"x12"	1	7	49		
	"	MO 3-1	24"x12"	1	7	49		
	"	M 1-4	24"x24"	1	7	49		41
	"	MO 6-1	21"x21"	1	7	49		AHEAD
72	MODIFY J1-1 (JCT 41)	MO 4-8-A	24"x12"	1	7	49		
		M 1-4	EXISTING					
73	NB ADVANCE WARNING (FIELD DETERMINED)			2	7	49	7	
	SUBTOTAL			**78**		**3,773**	**7**	
	PROJECT TOTAL			**179**		**8,673**	**14**	

*ITEM SHOWN ON OTHER SHEETS

PAVEMENT MARKING ITEMS

ID	STATION - STATION	LOCATION	646.0106 EPOXY 4-INCH WHITE LF	646.0106 EPOXY 4-INCH YELLOW LF	646.0126 EPOXY 8-INCH WHITE LF	646.0841.S GROOVED WET REFLECTIVE CONTRAST TAPE WHITE LF
CAT 0010						
1120-09-81						
STAGE 1						
	46'CTG'+26 - 58'CTG'+72	LT & RT	2,432	2,247	--	--
1120-09-81 SUBTOTALS			2,432	2,247	--	--
			4,679			
1120-09-77						
STAGE 2						
	910'SAB'+50 - 918'SAB'+30	R/L	--	--	--	200
	15'CTGG'+36 - 30'CTGG'+96	LT & RT	2,835	3,122	200	--
STAGE 2 SUBTOTALS			2,835	3,122	200	200
STAGE 3						
	8'CTGG'+58 - 15'CTGG'+36	LT & RT	1,226	1,254	100	--
	30'CTGG'+96 - 39'CTGG'+47	LT & RT	1,578	876	300	--
	110'GRV'+00 - 116'GRV'+75	LT & RT	--	1,235	--	--
	116'GRV'+75 - 123'GRV'+25	LT & RT	--	1,207	--	--
	10'DIX'+55 - 15'DIX'+98	LT & RT	--	998	--	--
	15'DIX'+98 - 21'DIX'+18	LT & RT	--	941	--	--
STAGE 3 SUBTOTALS			2,804	6,511	400	--
1120-09-77 SUBTOTALS			5,639	9,633	600	200
			15,272			
TOTALS			8,071	11,879	600	200
			19,950			

REMOVING PAVEMENT MARKINGS

ID	STATION - STATION	646.0600 REMOVING PAVEMENT MARKINGS LF
CAT 0010		
1120-09-77		
STAGE 2		
	882'NAB'+70 - 890'NAB'+50	200
	910'SAB'+50 - 918'SAB'+30	200
TOTAL		400

TEMPORARY PAVEMENT MARKING ITEMS

ID	STATION - STATION	LOCATION	649.0400 REMOVABLE TAPE 4-INCH YELLOW LF
CAT 0010			
1120-09-77			
STAGE 2			
	882'NAB'+70 - 890'NAB'+50	RT	780
	910'SAB'+50 - 918'SAB'+30	RT	780
TOTALS			1,560

SAWING PAVEMENT ITEMS

ID	STATION - STATION	LOCATION	690.0150 SAWING ASPHALT LF	COMMENTS
CAT 0010				
1120-09-81				
STAGE 1				
	46'CTG'+26	LT & RT	124	
	48'CTG'+50	LT & RT	24	
	57'CTG'+25	LT & RT	24	
	58'CTG'+72 - 60'CTG'+72	LT & RT	252	
STAGE 1 SUBTOTALS			424	
	UNDISTRIBUTED		42	
1120-09-81 SUBTOTALS			466	
1120-09-77				
STAGE 2				
	895'NAB'+00	LT & RT	14	
	895'SAB'+00	LT & RT	14	
	896'NAB'+49	LT & RT	14	
	896'SAB'+49	LT & RT	14	
	904'NAB'+44	LT	14	
	904'SAB'+44	RT	14	
	904'SAB'+44	LT	14	
	904'NAB'+59	LT	7	
	904'SAB'+59	RT	7	
	906'NAB'+00	RT	10	
	906'SAB'+00	LT	10	
STAGE 2 SUBTOTALS			117	
STAGE 3				
	8'CTGG'+58	LT & RT	24	
	9'CTGG'+66	RT	20	DRIVEWAY
	12'CTGG'+76	RT	21	DRIVEWAY
	39'CTGG'+47	LT & RT	24	
	110'GRV'+00	LT & RT	24	
	110'GRV'45	RT	33	DRIVEWAY
	123'GRV'+25	LT & RT	23	
	10'DIX'+55	LT & RT	23	
	12'DIX'+63	RT	28	DRIVEWAY
	13'DIX'+47	RT	44	DRIVEWAY
	21'DIX'+18	LT & RT	24	
	21'WSR'+25	LT & RT	22	
STAGE 3 SUBTOTALS			310	
	UNDISTRIBUTED		47	
1120-09-77 SUBTOTALS			474	
TOTALS			940	

TEMPORARY SLOPE DRAIN

	LOCATION	SPV.0060.0252 TEMPORARY SLOPE DRAIN EACH
CAT 0010		
PROJECT 1120-09-81		
B-70-67	CTH G	4
PROJECT 1120-09-81 TOTALS		4
PROJECT 1120-09-77		
B-70-287	CTH GG	2
PROJECT 1120-09-77 TOTALS		2
TOTALS		6

TRUCK MOUNTED ATTENUATOR

	PROJECT	SPV.0075.0301 TRUCK MOUNTED ATTENUATOR WITH OPERATOR HR	SPV.0075.0302 TRUCK MOUNTED ATTENUATOR WITHOUT OPERATOR HR
CAT 0010			
	1120-09-77	80	80
TOTAL		80	80

LIGHTING CONDUIT

			652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH
	FROM	TO	LF
CATEGORY 0010			
1120-09-77			
	PB9	LB66	58
	LB66	LB67	300
	LB67	PB10X	297
TOTALS			655

STREET LIGHTING BASES

					SPV.0060.0351 CONCRETE BASES TYPE 7 MEDIAN	SPV.0060.0352 ANCHOR BOLT COVER SHROUD
	LIGHT NUMBER	STATION	OFFSET	LOCATION	EACH	EACH
CATEGORY 0010						
1120-09-77						
	LB66	898'NAB'+45	32.2'	LT	1	1
	LB67	901'NAB'+45	33.1'	LT	1	1
TOTALS					2	2

TRANSPORTATION PROJECT PLAT NO: 1120-09-21 - 4.18

BEING PART OF THE NE 1/4 OF THE NE 1/4 OF SECTION 34, PART OF THE SW 1/4 OF THE SW 1/4 OF SECTION 26 AND PART OF THE NW 1/4 OF THE NW 1/4 OF SECTION 35, TOWN OF OSHKOSH, ALSO PART OF THE SW 1/4 OF THE SW 1/4 AND THE SE 1/4 OF THE SW 1/4 OF SECTION 26, PART OF THE NW 1/4 OF THE NW 1/4 AND THE NE 1/4 OF THE NW 1/4 OF SECTION 35, CITY OF OSHKOSH, T19N-R16E, WINNEBAGO COUNTY, WISCONSIN.

RELOCATION ORDER USH 41 WINNEBAGO COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	*OWNER	INTEREST REQUIRED	R/W ACRES REQUIRED			P.L.E. ACRES	T.L.E. ACRES
			NEW	EXISTING	TOTAL		
4	WISCONSIN VOICE OF CHRISTIAN YOUTH, INC.	FEE	0.327		0.327		
5	TOWN OF OSHKOSH	FEE	0.458		0.458		
8	THOMAS RUSCH & RICHARD GABERT	FEE,TLE	0.370		0.370		0.024
24	WINNEBAGO CO.	FEE	0.139		0.139		

*OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

SCHEDULE OF UTILITIES & INTERESTS REQUIRED

UTILITY NUMBER	*OWNER	INTEREST REQUIRED
105	AMERICAN TRANSMISSION COMPANY	RELEASE OF RIGHTS

RESERVE FOR CLAUSES AND NOTE INFORMATION

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WINNEBAGO COUNTY COORDINATE SYSTEM, (ENGLISH), NAD 1983 (1991) ADJUSTMENT. ALL PLAT DISTANCES ARE GROUND LENGTHS.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS AND ARE REFERENCED TO THE US PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

EXISTING ACCESS CONTROL WAS ACQUIRED UNDER PROJECT(S): CA 03-2(5).

USH 41 IN WINNEBAGO COUNTY WAS DESIGNATED AS A FREEWAY UNDER SECTION 84.295 OF THE WISCONSIN STATUTES BY THE HIGHWAY COMMISSION ON JUNE 8, 1972.

EXISTING RIGHT OF WAY WAS REESTABLISHED UNDER PROJECT(S): TRANSPORTATION PROJECT PLAT NO. 1120-09-00-4.03, RECORDED IN FILE 1 OF TPP PAGE 42a, DOCUMENT NO. 1473538.

THE REFERENCE LINE SHOWN ON THIS PLAT MAY NOT BE THE SAME AS THE REFERENCE LINE SHOWN ON THE CONSTRUCTION PLAN

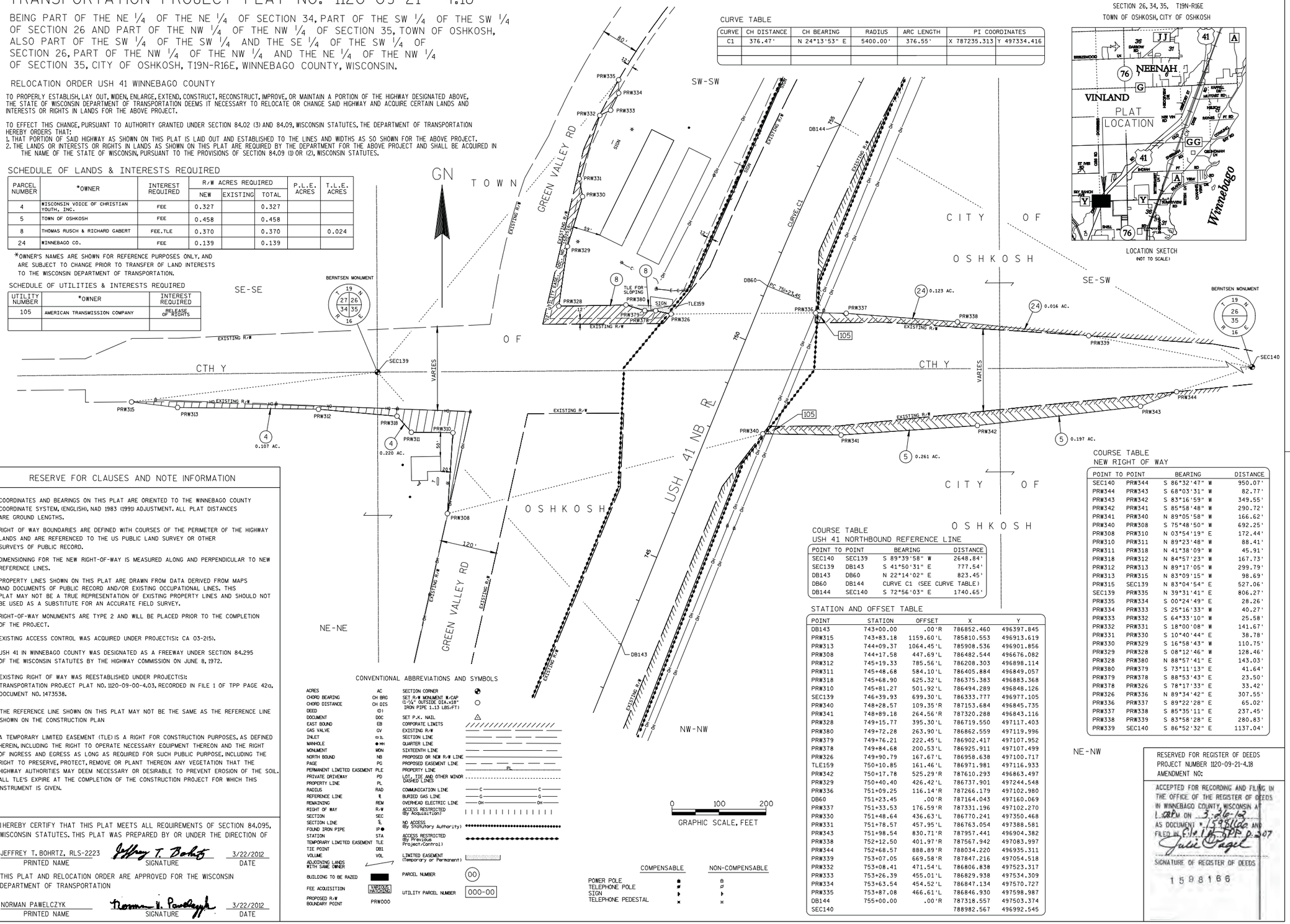
A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE TO PREVENT EROSION OF THE SOIL. ALL TLE'S EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

I HEREBY CERTIFY THAT THIS PLAT MEETS ALL REQUIREMENTS OF SECTION 84.095, WISCONSIN STATUTES. THIS PLAT WAS PREPARED BY OR UNDER THE DIRECTION OF

JEFFREY T. BOHRTZ, RLS-2223 — PRINTED NAME — SIGNATURE — 3/22/2012 DATE

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION

NORMAN PAWELCZYK — PRINTED NAME — SIGNATURE — 3/22/2012 DATE



CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACRES	AC
CHORD BEARING	CH BRG
CHORD DISTANCE	CH DIS
DEED	(D)
DOCUMENT	DOC
EAST BOUND	EB
GAS VALVE	GV
INLET	▭ IL
MANHOLE	● MH
MONUMENT	MON
NORTH BOUND	NB
PAGE	PG
PERMANENT LIMITED EASEMENT	PLE
PRIVATE DRIVEWAY	PD
PROPERTY LINE	PL
RADIUS	RAD
REFERENCE LINE	℄
REMAINING	REM
RIGHT OF WAY	R/W
SECTION	SEC
SECTION LINE	℄
FOUND IRON PIPE	IP●
STATION	STA
TEMPORARY LIMITED EASEMENT	TLE
TIE POINT	DB1
VOLUME	VOL
ADJOINING LANDS WITH SAME OWNER	
BUILDING TO BE RAZED	
FEE ACQUISITION	VARIOUS HATCHING
PROPOSED R/W BOUNDARY POINT	PRW000

SECTION CORNER	
SET R/W MONUMENT W/CAP (1-1/4" OUTSIDE DIA.x18" IRON PIPE 1.13 LBS/FT)	
SET P.K. NAIL	△
CORPORATE LIMITS	
EXISTING R/W	
SECTION LINE	
QUARTER LINE	
SIXTEENTH LINE	
PROPOSED OR NEW R/W LINE	
PROPOSED EASEMENT LINE	
PROPERTY LINE	PL
LOT, TIE AND OTHER MINOR DASHED LINES	
COMMUNICATION LINE	C
BURIED GAS LINE	G
OVERHEAD ELECTRIC LINE	OH
ACCESS RESTRICTED (By Acquisition)	
NO ACCESS (By Statutory Authority)	
ACCESS RESTRICTED (By Previous Project/Control)	
LIMITED EASEMENT (Temporary or Permanent)	
PARCEL NUMBER	00
UTILITY PARCEL NUMBER	000-00

GRAPHIC SCALE, FEET: 0 — 100 — 200

	COMPENSABLE	NON-COMPENSABLE
POWER POLE	●	○
TELEPHONE POLE	◆	◇
SIGN	▶	▷
TELEPHONE PEDESTAL	✖	✕

CURVE TABLE

CURVE	CH DISTANCE	CH BEARING	RADIUS	ARC LENGTH	PI COORDINATES	
C1	376.47'	N 24°13'53" E	5400.00'	376.55'	X 787235.313	Y 497334.416

SECTION 26, 34, 35, T19N-R16E
TOWN OF OSHKOSH, CITY OF OSHKOSH

LOCATION SKETCH
(NOT TO SCALE)

COURSE TABLE
NEW RIGHT OF WAY

POINT TO POINT		BEARING	DISTANCE
SEC140	PRW344	S 86°32'47" W	950.07'
PRW344	PRW343	S 68°03'31" W	82.77'
PRW343	PRW342	S 83°16'59" W	349.55'
PRW342	PRW341	S 85°58'48" W	290.72'
PRW341	PRW340	N 89°05'58" W	166.62'
PRW340	PRW308	S 75°48'50" W	692.25'
PRW308	PRW310	N 03°54'19" E	172.44'
PRW310	PRW311	N 89°23'48" W	88.41'
PRW311	PRW318	N 41°38'09" W	45.91'
PRW318	PRW312	N 84°57'23" W	167.73'
PRW312	PRW313	N 89°17'05" W	299.79'
PRW313	PRW315	N 83°09'15" W	98.69'
PRW315	SEC139	N 83°04'54" E	527.06'
SEC139	PRW335	N 39°31'41" E	806.27'
PRW335	PRW334	S 00°24'49" E	28.26'
PRW334	PRW333	S 25°16'33" W	40.27'
PRW333	PRW332	S 64°33'10" W	25.58'
PRW332	PRW331	S 18°00'08" W	141.67'
PRW331	PRW330	S 10°40'44" E	38.78'
PRW330	PRW329	S 16°58'43" W	110.75'
PRW329	PRW328	S 08°12'46" W	128.46'
PRW328	PRW380	N 88°57'41" E	143.03'
PRW380	PRW379	S 73°11'13" E	41.64'
PRW379	PRW378	S 88°53'43" E	23.50'
PRW378	PRW326	S 78°17'33" E	33.42'
PRW326	PRW336	N 89°34'42" E	307.55'
PRW336	PRW337	S 89°22'28" E	65.02'
PRW337	PRW338	S 85°35'11" E	237.45'
PRW338	PRW339	S 83°58'28" E	280.83'
PRW339	SEC140	S 86°52'32" E	1137.04'

COURSE TABLE
USH 41 NORTHBOUND REFERENCE LINE

POINT TO POINT		BEARING	DISTANCE
SEC140	SEC139	S 89°39'58" W	2648.84'
SEC139	DB143	S 41°50'31" E	777.54'
DB143	DB60	N 22°14'02" E	823.45'
DB60	DB144	CURVE C1 (SEE CURVE TABLE)	
DB144	SEC140	S 72°56'03" E	1740.65'

STATION AND OFFSET TABLE

POINT	STATION	OFFSET	X	Y
DB143	743+00.00	.00'R	786852.460	496397.845
PRW315	743+83.18	1159.60'L	785810.553	496913.619
PRW313	744+09.37	1064.45'L	785908.536	496901.856
PRW308	744+17.58	447.69'L	786482.544	496676.082
PRW312	745+19.33	785.56'L	786208.303	496898.114
PRW311	745+48.68	584.10'L	786405.884	496849.057
PRW318	745+68.90	625.32'L	786375.383	496883.368
PRW310	745+81.27	501.92'L	786494.289	496848.126
SEC139	746+39.93	699.30'L	786333.777	496977.105
PRW340	748+28.57	109.35'R	787153.684	496845.735
PRW341	748+89.18	264.56'R	787320.288	496843.116
PRW328	749+15.77	395.30'L	786719.550	497117.403
PRW380	749+72.28	263.90'L	786862.559	497119.996
PRW379	749+76.21	222.45'L	786902.417	497107.952
PRW378	749+84.68	200.53'L	786925.911	497107.499
PRW326	749+90.79	167.67'L	786958.638	497100.717
TLE159	750+10.85	161.46'L	786971.981	497116.933
PRW342	750+17.78	525.29'R	787610.293	496863.497
PRW329	750+40.40	426.42'L	786737.901	497244.548
PRW336	751+09.25	116.14'R	787266.179	497102.980
DB60	751+23.45	.00'R	787164.043	497160.069
PRW337	751+33.53	176.59'R	787331.196	497102.270
PRW330	751+48.64	436.63'L	786770.241	497350.468
PRW331	751+78.57	457.95'L	786763.054	497388.581
PRW343	751+98.54	830.71'R	787957.441	496904.382
PRW338	752+12.50	401.97'R	787567.942	497083.997
PRW344	752+68.57	888.89'R	788034.220	496935.311
PRW339	753+07.05	669.58'R	787847.216	497054.518
PRW332	753+08.41	471.54'L	786806.838	497523.317
PRW333	753+26.39	455.01'L	786829.938	497534.309
PRW334	753+63.54	454.52'L	786847.134	497570.727
PRW335	753+87.08	466.61'L	786846.930	497598.987
DB144	755+00.00	.00'R	787318.557	497503.374
SEC140			788982.567	496992.545

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 1120-09-21-4.18
AMENDMENT NO:

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN WINNEBAGO COUNTY, WISCONSIN AT 1:28PM ON 3-26-12 AS DOCUMENT # 1598186 AND FILED IN File 1 TPP p.207

Julie Paget
SIGNATURE OF REGISTER OF DEEDS

1598186

TRANSPORTATION PROJECT PLAT NO: 1120-09-21-4.19

BEING PART OF LOT 1 AND LOT 2 OF CSM NO. 6268 AND UNPLATTED LANDS OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 24, PART OF LOT 1 OF CSM NO. 3751 AND LOT 2 OF CSM NO. 5770 LOCATED IN THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 13, T19N-R16E, ALSO, PART OF LOT 1 OF CSM NO. 6474 LOCATED IN THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 18, T19N-R17E, TOWN OF VINLAND, WINNEBAGO COUNTY, WISCONSIN.

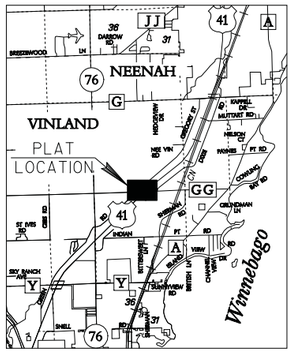
RELOCATION ORDER USH 41 WINNEBAGO COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:

1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SECTION 13,24 T19N-R16E
SECTION 18 T19N-R17E
TOWN OF VINLAND



LOCATION SKETCH
(NOT TO SCALE)

CURVE TABLE

CURVE	CH DISTANCE	CH BEARING	RADIUS	ARC LENGTH	PI COORDINATES
C1	717.35'	N 48°04'51" E	11500.00'	717.47'	X 797441.253 Y 507612.859
C2	352.39'	N 47°58'06" E	283.21'	380.33'	X 796566.238 Y 508078.352

COURSE TABLE
NEW RIGHT OF WAY

POINT TO POINT		BEARING	DISTANCE
SEC90	SEC79	N 89°28'39" E	2682.82'
SEC79	PRW355	S 80°52'43" W	221.27'
PRW355	PRW356	S 07°50'00" W	67.04'
PRW356	PRW345	S 80°05'40" W	114.36'
PRW345	PRW346	N 12°21'11" W	86.81'
PRW346	PRW347	N 83°35'50" W	649.87'
PRW347	PRW348	N 81°16'11" E	363.43'
PRW348	PRW349	N 77°25'13" E	213.00'
PRW349	PRW350	N 53°10'11" E	75.80'
PRW350	PRW351	CURVE C2 (SEE CURVE TABLE)	
PRW351	PRW354	N 85°58'01" E	228.96'
PRW354	PRW353	S 89°39'21" E	60.39'
PRW353	PRW352	S 33°14'37" E	13.04'
PRW352	SEC79	S 23°06'02" W	460.83'

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	*OWNER	INTEREST REQUIRED	R/W ACRES REQUIRED NEW	EXISTING	TOTAL	P.L.E. ACRES	T.L.E. ACRES
26	RICHARD BRANTMEIER, RITA COTTRELL, NANCY JEVECH, JEAN MELTZLOFF, RAYMOND JOHN OTTO FAMILY TRUST, LAURIE OTTO FAMILY TRUST, DORIS OTTO	FEE,TLE	0.018		0.018		0.060
27	MICHAEL AND HEIDE JOHNSON	TLE					0.011
28	THOMAS AND LANORE ZIOLKOWSKI	TLE					0.022
29	DAVID AND SHERI GRUNSKA	FEE	0.237		0.237		
31	VINLAND PROPERTIES, LLC	FEE	0.016		0.016		

*OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

COURSE TABLE
USH 41 NORTHBOUND REFERENCE LINE

POINT TO POINT		BEARING	DISTANCE
SEC90	SEC79	N 89°28'39" E	2682.82'
SEC79	DB145	S 23°44'57" W	1078.61'
DB145	DB146	N 46°17'37" E	982.53'
DB146	DB147	CURVE C1 (SEE CURVE TABLE)	
DB147	SEC79	S 78°04'58" W	827.48'

STATION AND OFFSET TABLE

POINT	STATION	OFFSET	X	Y
SEC90			794223.265	507648.816
DB145	885+00.00	.00'R	796471.583	506686.012
TLE158	887+27.56	1064.81'L	795900.340	507612.989
TLE156	887+39.88	1077.93'L	795900.175	507630.988
TLE153	887+66.21	1028.54'L	795953.338	507613.475
TLE152	887+78.53	1041.67'L	795953.173	507631.474
PRW347	887+94.89	1133.81'L	795901.330	507709.392
TLE145	889+81.75	390.64'L	796549.915	507301.279
TLE144	889+93.98	374.82'L	796569.690	507298.287
TLE150	890+53.24	767.41'L	796341.267	507623.033
TLE151	890+61.46	776.16'L	796341.157	507635.033
TLE146	890+70.30	471.15'L	796558.302	507420.656
TLE149	890+81.68	740.72'L	796380.265	507623.391
TLE147	890+84.89	457.47'L	796578.301	507420.854
TLE148	890+89.89	749.47'L	796380.155	507635.390
PRW348	890+92.68	925.48'L	796260.551	507764.556
PRW345	891+66.50	561.06'L	796565.719	507552.124
PRW346	892+11.67	635.19'L	796547.148	507636.922
PRW356	892+61.53	497.44'L	796678.371	507571.796
PRW349	892+75.02	815.38'L	796468.438	507810.947
PRW355	893+14.02	539.13'L	796687.507	507638.206
PRW350	893+50.27	806.30'L	796529.109	507856.385
DB146	894+82.53	.00'R	797181.843	507364.906
SEC79	894+95.71	413.54'L	796905.977	507673.283
PRW351	896+88.25	797.97'L	796790.855	508092.325
PRW354	898+57.41	656.29'L	797019.243	508108.428
PRW352	898+98.08	602.92'L	797086.781	508097.160
PRW353	898+99.89	615.82'L	797079.633	508108.065
DB147	902+00.00	.00'R	797715.617	507844.156

RESERVE FOR CLAUSES AND NOTE INFORMATION

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WINNEBAGO COUNTY COORDINATE SYSTEM, (ENGLISH), NAD 1983 (1991) ADJUSTMENT. ALL PLAT DISTANCES ARE GROUND LENGTHS.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS AND ARE REFERENCED TO THE US PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

EXISTING ACCESS CONTROL WAS ACQUIRED UNDER PROJECT(S): CA 03-210.

USH 41 IN WINNEBAGO COUNTY WAS DESIGNATED AS A FREEWAY UNDER SECTION 84.295 OF THE WISCONSIN STATUTES BY THE HIGHWAY COMMISSION ON JUNE 8, 1972.

EXISTING RIGHT OF WAY WAS REESTABLISHED UNDER PROJECT(S): TRANSPORTATION PROJECT PLAT NO. 1120-09-00-4.09, RECORDED IN FILE 1 OF TPP PAGE 48a, DOCUMENT NO. 1473544.

THE REFERENCE LINE SHOWN ON THIS PLAT MAY NOT BE THE SAME AS THE REFERENCE LINE SHOWN ON THE CONSTRUCTION PLAN

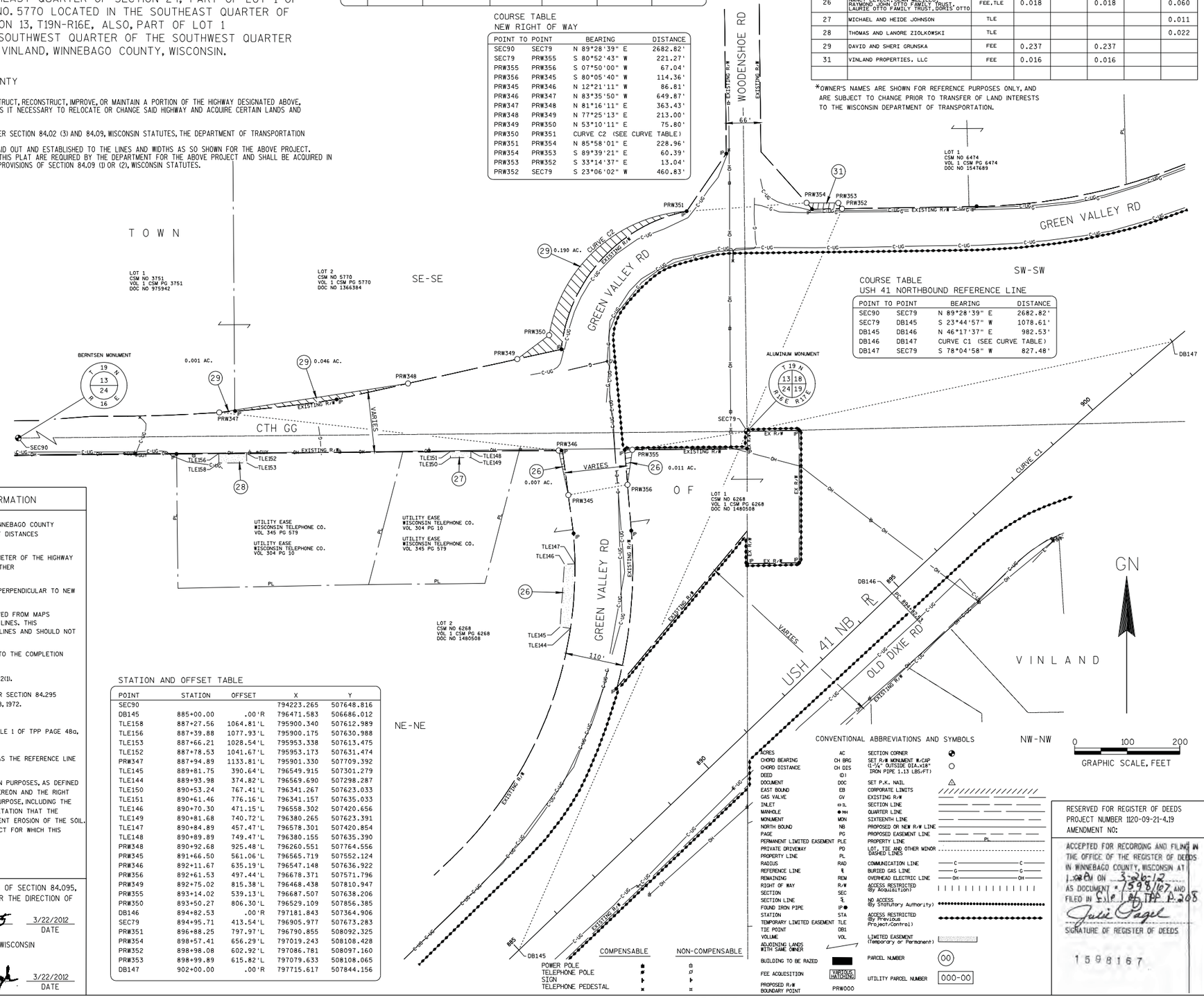
A TEMPORARY LIMITED EASEMENT (TLE) IS A RIGHT FOR CONSTRUCTION PURPOSES, AS DEFINED HEREIN, INCLUDING THE RIGHT TO OPERATE NECESSARY EQUIPMENT THEREON AND THE RIGHT OF INGRESS AND EGRESS AS LONG AS REQUIRED FOR SUCH PUBLIC PURPOSE, INCLUDING THE RIGHT TO PRESERVE, PROTECT, REMOVE OR PLANT THEREON ANY VEGETATION THAT THE HIGHWAY AUTHORITIES MAY DEEM NECESSARY OR DESIRABLE TO PREVENT EROSION OF THE SOIL. ALL TLE'S EXPIRE AT THE COMPLETION OF THE CONSTRUCTION PROJECT FOR WHICH THIS INSTRUMENT IS GIVEN.

I HEREBY CERTIFY THAT THIS PLAT MEETS ALL REQUIREMENTS OF SECTION 84.095, WISCONSIN STATUTES. THIS PLAT WAS PREPARED BY OR UNDER THE DIRECTION OF

JEFFREY T. BOHRTZ, RLS-2223 (PRINTED NAME) — Jeffrey T. Bohrtz (SIGNATURE) — 3/22/2012 (DATE)

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION

NORMAN PAWELCZYK (PRINTED NAME) — Norman W. Pawelczyk (SIGNATURE) — 3/22/2012 (DATE)



CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACRES	AC	SECTION CORNER	
CHORD BEARING	CH BRG	SET R/W MONUMENT W/CAP (1-1/4" OUTSIDE DIA.x18" IRON PIPE 1.13 LBS/FT)	
CHORD DISTANCE	CH DIS		
DEED	(D)		
DOCUMENT	DOC	SET P.K. NAIL	
EAST BOUND	EB	CORPORATE LIMITS	
GAS VALVE	GV	EXISTING R/W	
INLET	IL	SECTION LINE	
MANHOLE	MH	QUARTER LINE	
MONUMENT	MON	SIXTEENTH LINE	
NORTH BOUND	NB	PROPOSED OR NEW R/W LINE	
PAGE	PG	PROPOSED EASEMENT LINE	
PERMANENT LIMITED EASEMENT	PLE	PROPERTY LINE	
PRIVATE DRIVEWAY	PD	LOT, TIE AND OTHER MINOR DASHED LINES	
PROPERTY LINE	PL		
RADIUS	RAD	COMMUNICATION LINE	C C
REFERENCE LINE	℄	BURIED GAS LINE	G G
REMAINING	REM	OVERHEAD ELECTRIC LINE	OH OH
RIGHT OF WAY	R/W	ACCESS RESTRICTED (By Acquisition)	
SECTION	SEC		
SECTION LINE	℄	NO ACCESS (By Statutory Authority)	
FOUND IRON PIPE	IP		
STATION	STA	ACCESS RESTRICTED (By Previous Project/Control)	
TEMPORARY LIMITED EASEMENT	TLE		
TIE POINT	DB1		
VOLUME	VOL	LIMITED EASEMENT (Temporary or Permanent)	
ADJOINING LANDS WITH SAME OWNER			
BUILDING TO BE RAZED		PARCEL NUMBER	00
FEE ACQUISITION	VARIOUS HATCHING	UTILITY PARCEL NUMBER	000-00
PROPOSED R/W BOUNDARY POINT	PRW000		

	COMPENSABLE	NON-COMPENSABLE
POWER POLE	■	□
TELEPHONE POLE	●	○
SIGN	▶	▷
TELEPHONE PEDESTAL	✖	✖

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 1120-09-21-4.19
AMENDMENT NO:

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN WINNEBAGO COUNTY, WISCONSIN AT 1:28 PM ON 3-26-12 AS DOCUMENT # 1598167 AND FILED IN VOL ___ OF TPP P. 208

Julie Gagel
SIGNATURE OF REGISTER OF DEEDS

1598167

FILE NAME : F:\D3_11200921\040222_rw.dgn
APPRAISAL PLAT DATE :
PLOT DATE : 21-MAR-2012 16:15
PLOT BY : $$...plotuser...$$ PLOT NAME :
PLOT SCALE : 100.000000:1.000000

TRANSPORTATION PROJECT PLAT NO: 1120-09-21-4.20

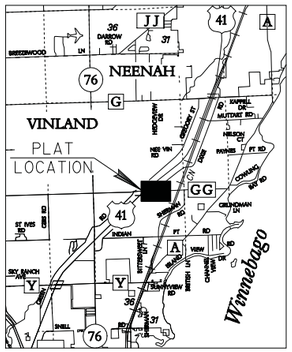
BEING PART OF LOT 1 OF CSM NO. 3294 AND LOT 1 OF CSM NO. 4019 LOCATED WITHIN THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 18, AND ALSO PART OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER AND THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 19, T19N-R17E, TOWN OF VINLAND, WINNEBAGO COUNTY, WISCONSIN.

RELOCATION ORDER USH 41 WINNEBAGO COUNTY

TO PROPERLY ESTABLISH, LAY OUT, WIDEN, ENLARGE, EXTEND, CONSTRUCT, RECONSTRUCT, IMPROVE, OR MAINTAIN A PORTION OF THE HIGHWAY DESIGNATED ABOVE, THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION DEEMS IT NECESSARY TO RELOCATE OR CHANGE SAID HIGHWAY AND ACQUIRE CERTAIN LANDS AND INTERESTS OR RIGHTS IN LANDS FOR THE ABOVE PROJECT.

TO EFFECT THIS CHANGE, PURSUANT TO AUTHORITY GRANTED UNDER SECTION 84.02 (3) AND 84.09, WISCONSIN STATUTES, THE DEPARTMENT OF TRANSPORTATION HEREBY ORDERS THAT:
1. THAT PORTION OF SAID HIGHWAY AS SHOWN ON THIS PLAT IS LAID OUT AND ESTABLISHED TO THE LINES AND WIDTHS AS SO SHOWN FOR THE ABOVE PROJECT.
2. THE LANDS OR INTERESTS OR RIGHTS IN LANDS AS SHOWN ON THIS PLAT ARE REQUIRED BY THE DEPARTMENT FOR THE ABOVE PROJECT AND SHALL BE ACQUIRED IN THE NAME OF THE STATE OF WISCONSIN, PURSUANT TO THE PROVISIONS OF SECTION 84.09 (1) OR (2), WISCONSIN STATUTES.

SECTION 18, 19 T19N-R17E
TOWN OF VINLAND



LOCATION SKETCH
(NOT TO SCALE)

SCHEDULE OF UTILITIES & INTERESTS REQUIRED

UTILITY NUMBER	*OWNER	INTEREST REQUIRED
100	WISCONSIN PUBLIC SERVICE CORPORATION-ELEC.	RELEASE OF RIGHTS
101	AT&T WISCONSIN	RELEASE OF RIGHTS

COURSE TABLE
USH 41 NORTHBOUND REFERENCE LINE

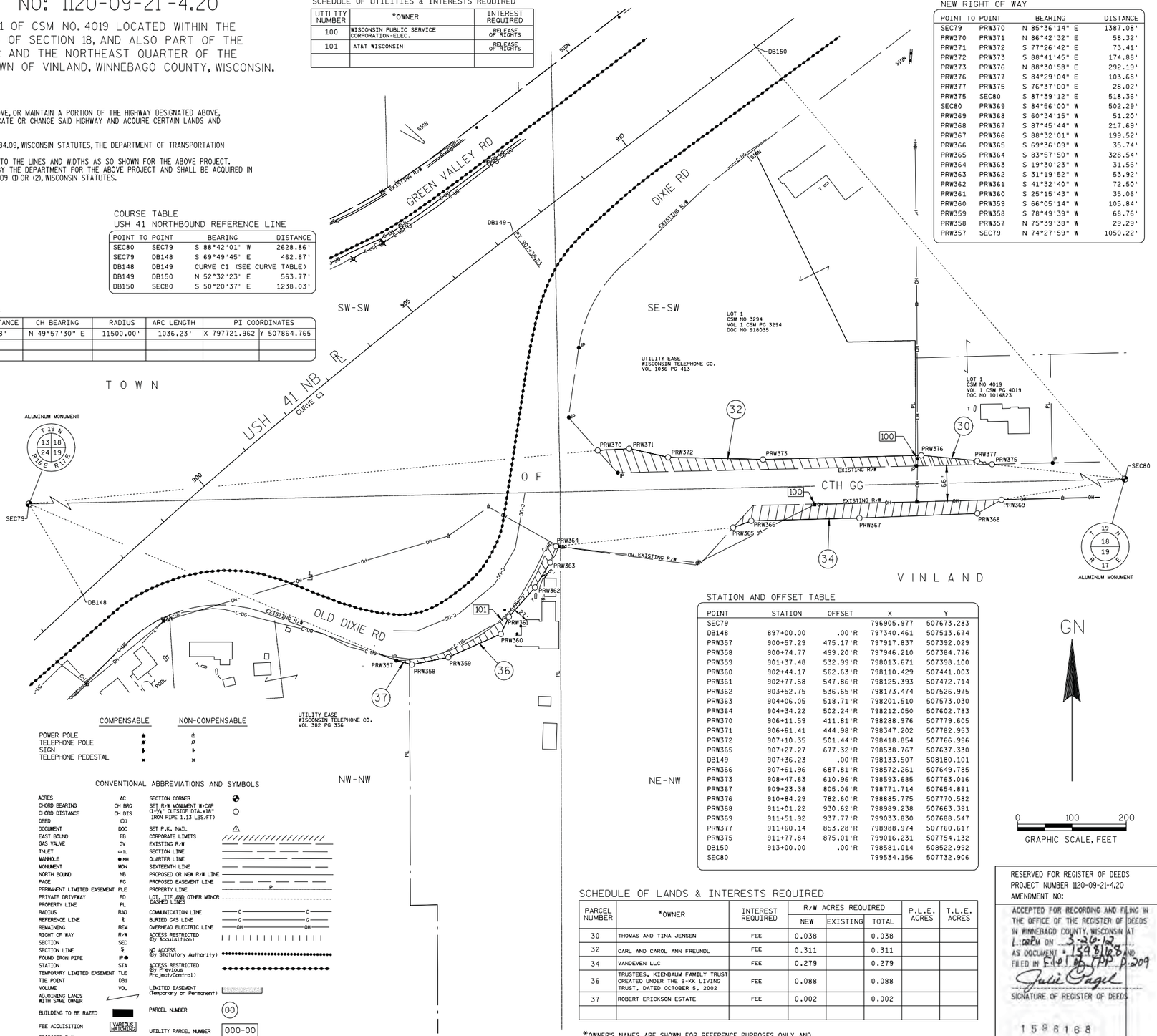
POINT TO POINT		BEARING	DISTANCE
SEC80	SEC79	S 88°42'01" W	2628.86'
SEC79	DB148	S 69°49'45" E	462.87'
DB148	DB149	CURVE C1 (SEE CURVE TABLE)	
DB149	DB150	N 52°32'23" E	563.77'
DB150	SEC80	S 50°20'37" E	1238.03'

CURVE TABLE

CURVE	CH DISTANCE	CH BEARING	RADIUS	ARC LENGTH	PI COORDINATES	
C1	1035.88'	N 49°57'30" E	11500.00'	1036.23'	X 797721.962	Y 507864.765

COURSE TABLE
NEW RIGHT OF WAY

POINT TO POINT		BEARING	DISTANCE
SEC79	PRW370	N 85°36'14" E	1387.08'
PRW370	PRW371	N 86°42'32" E	58.32'
PRW371	PRW372	S 77°26'42" E	73.41'
PRW372	PRW373	S 88°41'45" E	174.88'
PRW373	PRW376	N 88°30'58" E	292.19'
PRW376	PRW377	S 84°29'04" E	103.68'
PRW377	PRW375	S 76°37'00" E	28.02'
PRW375	SEC80	S 87°39'12" E	518.36'
SEC80	PRW369	S 84°56'00" W	502.29'
PRW369	PRW368	S 60°34'15" W	51.20'
PRW368	PRW367	S 87°45'44" W	217.69'
PRW367	PRW366	S 88°32'01" W	199.52'
PRW366	PRW365	S 69°36'09" W	35.74'
PRW365	PRW364	S 83°57'50" W	328.54'
PRW364	PRW363	S 19°30'23" W	31.56'
PRW363	PRW362	S 31°19'52" W	53.92'
PRW362	PRW361	S 41°32'40" W	72.50'
PRW361	PRW360	S 25°15'43" W	35.06'
PRW360	PRW359	S 66°05'14" W	105.84'
PRW359	PRW358	S 78°49'39" W	68.76'
PRW358	PRW357	N 75°39'38" W	29.29'
PRW357	SEC79	N 74°27'59" W	1050.22'



COMPENSABLE NON-COMPENSABLE

	COMPENSABLE	NON-COMPENSABLE
POWER POLE	●	○
TELEPHONE POLE	■	□
SIGN	▶	▷
TELEPHONE PEDESTAL	✖	✕

CONVENTIONAL ABBREVIATIONS AND SYMBOLS

ACRES	AC	SECTION CORNER	⊕
CHORD BEARING	CH BRG	SET R/W MONUMENT W/CAP (1-1/4" OUTSIDE DIA.x18" IRON PIPE 1.13 LBS/FT)	○
CHORD DISTANCE	CH DIS		
DEED	(D)	SET P.K. NAIL	△
DOCUMENT	DOC	CORPORATE LIMITS	
EAST BOUND	EB	EXISTING R/W	
GAS VALVE	GV	SECTION LINE	
INLET	▭ IL	QUARTER LINE	
MANHOLE	● MH	SIXTEENTH LINE	
MONUMENT	MON	PROPOSED OR NEW R/W LINE	
NORTH BOUND	NB	PROPOSED EASEMENT LINE	
PAGE	PG	PROPERTY LINE	PL
PERMANENT LIMITED EASEMENT	PLE	LOT, TIE AND OTHER MINOR DASHED LINES	
PRIVATE DRIVEWAY	PD		
PROPERTY LINE	PL	COMMUNICATION LINE	C C
RADIUS	RAD	BURIED GAS LINE	G G
REFERENCE LINE	℄	OVERHEAD ELECTRIC LINE	OH OH
REMAINING	REM	ACCESS RESTRICTED (By Acquisition)	
RIGHT OF WAY	R/W	NO ACCESS (By Statutory Authority)	
SECTION	SEC	ACCESS RESTRICTED (By Previous Project/Control)	
SECTION LINE	℄		
FOUND IRON PIPE	IP ●	LIMITED EASEMENT (Temporary or Permanent)	
STATION	STA		
TEMPORARY LIMITED EASEMENT	TLE	PARCEL NUMBER	00
TIE POINT	DB1		
VOLUME	VOL	UTILITY PARCEL NUMBER	000-00
ADJOINING LANDS WITH SAME OWNER			
BUILDING TO BE RAZED			
FEE ACQUISITION	VARIOUS HATCHING		
PROPOSED R/W BOUNDARY POINT	PRW000		

STATION AND OFFSET TABLE

POINT	STATION	OFFSET	X	Y
SEC79			796905.977	507673.283
DB148	897+00.00	.00'R	797340.461	507513.674
PRW357	900+57.29	475.17'R	797917.837	507392.029
PRW358	900+74.77	499.20'R	797946.210	507384.776
PRW359	901+37.48	532.99'R	798013.671	507398.100
PRW360	902+44.17	562.63'R	798110.429	507441.003
PRW361	902+77.58	547.86'R	798125.393	507472.714
PRW362	903+52.75	536.65'R	798173.474	507526.975
PRW363	904+06.05	518.71'R	798201.510	507573.030
PRW364	904+34.22	502.24'R	798212.050	507602.783
PRW370	906+11.59	411.81'R	798288.976	507779.605
PRW371	906+61.41	444.98'R	798347.202	507782.953
PRW372	907+10.35	501.44'R	798418.854	507766.996
PRW365	907+27.27	677.32'R	798538.767	507637.330
DB149	907+36.23	.00'R	798133.507	508180.101
PRW366	907+61.96	687.81'R	798572.261	507649.785
PRW373	908+47.83	610.96'R	798593.685	507763.016
PRW367	909+23.38	805.06'R	798771.714	507654.891
PRW376	910+84.29	782.60'R	798885.775	507770.582
PRW368	911+01.22	930.62'R	798989.238	507663.391
PRW369	911+51.92	937.77'R	799033.830	507688.547
PRW377	911+60.14	853.28'R	798988.974	507760.617
PRW375	911+77.84	875.01'R	799016.231	507754.132
DB150	913+00.00	.00'R	798581.014	508522.992
SEC80			799534.156	507732.906

GN

0 100 200
GRAPHIC SCALE, FEET

SCHEDULE OF LANDS & INTERESTS REQUIRED

PARCEL NUMBER	*OWNER	INTEREST REQUIRED	R/W ACRES REQUIRED NEW	EXISTING	TOTAL	P.L.E. ACRES	T.L.E. ACRES
30	THOMAS AND TINA JENSEN	FEE	0.038		0.038		
32	CARL AND CAROL ANN FREUNDL	FEE	0.311		0.311		
34	VANDEVEN LLC	FEE	0.279		0.279		
36	TRUSTEES, KIENBAUM FAMILY TRUST CREATED UNDER THE 9-KK LIVING TRUST, DATED OCTOBER 5, 2002	FEE	0.088		0.088		
37	ROBERT ERICKSON ESTATE	FEE	0.002		0.002		

*OWNER'S NAMES ARE SHOWN FOR REFERENCE PURPOSES ONLY, AND ARE SUBJECT TO CHANGE PRIOR TO TRANSFER OF LAND INTERESTS TO THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

RESERVE FOR CLAUSES AND NOTE INFORMATION

COORDINATES AND BEARINGS ON THIS PLAT ARE ORIENTED TO THE WINNEBAGO COUNTY COORDINATE SYSTEM, (ENGLISH), NAD 1983 (1991) ADJUSTMENT. ALL PLAT DISTANCES ARE GROUND LENGTHS.

RIGHT OF WAY BOUNDARIES ARE DEFINED WITH COURSES OF THE PERIMETER OF THE HIGHWAY LANDS AND ARE REFERENCED TO THE US PUBLIC LAND SURVEY OR OTHER SURVEYS OF PUBLIC RECORD.

DIMENSIONING FOR THE NEW RIGHT-OF-WAY IS MEASURED ALONG AND PERPENDICULAR TO NEW REFERENCE LINES.

PROPERTY LINES SHOWN ON THIS PLAT ARE DRAWN FROM DATA DERIVED FROM MAPS AND DOCUMENTS OF PUBLIC RECORD AND/OR EXISTING OCCUPATIONAL LINES. THIS PLAT MAY NOT BE A TRUE REPRESENTATION OF EXISTING PROPERTY LINES AND SHOULD NOT BE USED AS A SUBSTITUTE FOR AN ACCURATE FIELD SURVEY.

RIGHT-OF-WAY MONUMENTS ARE TYPE 2 AND WILL BE PLACED PRIOR TO THE COMPLETION OF THE PROJECT.

EXISTING ACCESS CONTROL WAS ACQUIRED UNDER PROJECT(S): CA 03-2(1).

USH 41 IN WINNEBAGO COUNTY WAS DESIGNATED AS A FREEWAY UNDER SECTION 84.295 OF THE WISCONSIN STATUTES BY THE HIGHWAY COMMISSION ON JUNE 8, 1972.

EXISTING RIGHT OF WAY WAS REESTABLISHED UNDER PROJECT(S): TRANSPORTATION PROJECT PLAT NO. 1120-09-00-4.09, RECORDED IN FILE 1 OF TPP PAGE 48a, DOCUMENT NO. 1473544.

THE REFERENCE LINE SHOWN ON THIS PLAT MAY NOT BE THE SAME AS THE REFERENCE LINE SHOWN ON THE CONSTRUCTION PLAN

I HEREBY CERTIFY THAT THIS PLAT MEETS ALL REQUIREMENTS OF SECTION 84.095, WISCONSIN STATUTES. THIS PLAT WAS PREPARED BY OR UNDER THE DIRECTION OF

JEFFREY T. BOHRTZ, RLS-2223 — PRINTED NAME
Jeffrey T. Bohrtz — SIGNATURE
3/22/2012 — DATE

THIS PLAT AND RELOCATION ORDER ARE APPROVED FOR THE WISCONSIN DEPARTMENT OF TRANSPORTATION

NORMAN PAWELCZYK — PRINTED NAME
Norman K. Pawelczyk — SIGNATURE
3/22/2012 — DATE

RESERVED FOR REGISTER OF DEEDS
PROJECT NUMBER 1120-09-21-4.20
AMENDMENT NO:

ACCEPTED FOR RECORDING AND FILING IN THE OFFICE OF THE REGISTER OF DEEDS IN WINNEBAGO COUNTY, WISCONSIN AT 1:00PM ON 3-26-12 AS DOCUMENT # 1598168 AND FILED IN File1 OF TPP P.209
Julie Gagle
SIGNATURE OF REGISTER OF DEEDS
1598168

FILE NAME : F:\D3_11200921\040223_rw.dgn PLOT DATE : 21-MAR-2012 16:17 PLOT BY : $$...plotuser...$$ PLOT NAME : PLOT SCALE : 100.000000:1.000000
APPRAISAL PLAT DATE :

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
848	14'CTGG'+63, RT	PAINTED CHISLED X ON TOP OF THE WEST END OF A 24" CMCP, SOUTHWEST QUADRANT OF CTH "GG" & THE WEST FRONTAGE ROAD. 60' S. OF THE C/L OF CTH "GG". 45' WEST OF THE C/L OF THE WEST FRONTAGE ROAD	776.50
849	22'CTGG'+80, RT	WDOT CAP LOCATED IN THE SOUTHWEST PARAPET WALL OF STRUCTURE #B-70-66-74, CTH "GG" OVER USH "41"	808.97

N

0 50 100

SCALE IN FEET

BM848

CTH GG 20'CTGG'

20

R/L SHARED USE PATH

WINNEBAGO COUNTY

R/L CTH GG

SLOPE INTERCEPT

STATE OF WISCONSIN

ABRP ENTERPRISES LLC

GREEN VALLEY ROAD

JAMES C BOELKE

HAROLD W THORPE

WPS

R/W

RETAINING WALL
R-70-46 REQ'D
STA 898'SAB'+36
TO STA 900'SAB'+75

+91.14
58.33'LT
MATCH RAILING
54-INCH

REMOVE FENCE

+33.95
73.58'LT

CONCRETE
BARRIER
TYPE S42

FENCE CHAIN LINK 6-FT

REMOVE
ASPHALTIC
SURFACE

AT&T

+00.00
68.00'LT
MATCH EXISTING FENCE

CONCRETE BARRIER TYPE S42
THRIE BEAM ANCHOR

ASPHALTIC
FLUMES

MGS GUARDRAIL TERMINAL
EAT AND THRIE BEAM TRANSITION

CONCRETE BARRIER TYPE S56

+74.83
36.00'LT

+24.59
38.00'LT

+54.00
12.00'RT

+61.00
24.00'RT

+35.00
36.00'LT

+44.50
36.00'LT

+04.14
68.00'LT
MATCH EXISTING
FENCE

LAW ENFORCEMENT PAD
(SEE CONSTRUCTION DETAIL)

ALICE OTTO ETAL

FENCE CHAIN
LINK 6-FT

REMOVE
FENCE

+80.23
74.33'LT

BM849

+03.66
62.85'LT

HMA PAVEMENT
TYPE E-0.3, 5-INCH

BASE AGGREGATE
DENSE ¾", 5-INCH

CONCRETE
PAVEMENT
11-INCH

R/L USH 41 SB

+60.00
12.00'RT

+12.00
24.00'RT

24

24'CTGG'

USH 41 SB

894'SAB'

896'SAB'

898'SAB'

900'SAB'

902'SAB'

904'SAB'

906'SAB'

908'S

894'NAB'

896'NAB'

898'NAB'

900'NAB'

902'NAB'

904'NAB'

906'NAB'

908'

USH 41 NB

+36.10
24.00'LT

+00.00
36.00'RT

+50.90
12.00'LT

+00.00
36.00'RT

+33.80
12.00'LT

+41.90
24.00'LT

R/L USH 41 NB

CONCRETE BARRIER
TYPE S56

CONCRETE BARRIER
TYPE S42

26

26'CTGG'

STA 25'CTGG'+42
STRUCTURE B-70-287
2-SPAN STEEL GIRDER
40 FT CLEAR ROADWAY WIDTH
SKEW 43.5° LHF

SLOPE INTERCEPT

HMA PAVEMENT
TYPE E-0.3, 5-INCH

BASE AGGREGATE
DENSE ¾", 5-INCH

LAW ENFORCEMENT PAD
(SEE CONSTRUCTION DETAIL)

END CONSTRUCTION
STA 906'NAB'+00.00
Y= 508096.70
X= 798025.79
MATCH EXISTING
(PROJECT 1120-09-71)

+00.00
79.00'RT
MATCH EXISTING FENCE

FENCE CHAIN LINK 6-FT

+82.01
79.01'RT

REMOVE
FENCE

+65.86
61.01'RT
MATCH RAILING 54-INCH

ASPHALTIC FLUMES

28

28'CTGG'

RETAINING WALL
R-70-47 REQ'D
STA 899'NAB'+82
TO STA 902'NAB'+73

STATE OF WISCONSIN

OLD DIXIE ROAD

10'DIX'

20'DIX'

18'DIX'

16'DIX'

12'DIX'

14'DIX'

30

30'CTGG'

CTH GG

DIXIE ROAD

R/L DIXIE ROAD

R/L OLD DIXIE ROAD

32'CTGG'

BEGIN CONSTRUCTION
STA 895'NAB'+00.00
Y= 507377.15
X= 797194.30
MATCH EXISTING
(PROJECT 1120-09-71)

GLENN E ERICKSON

ROBERT L BERGSTROM

ROBERT D ERICKSON

ROBERT D ERICKSON

WINNEBAGO COUNTY

CARL F FREUNDL

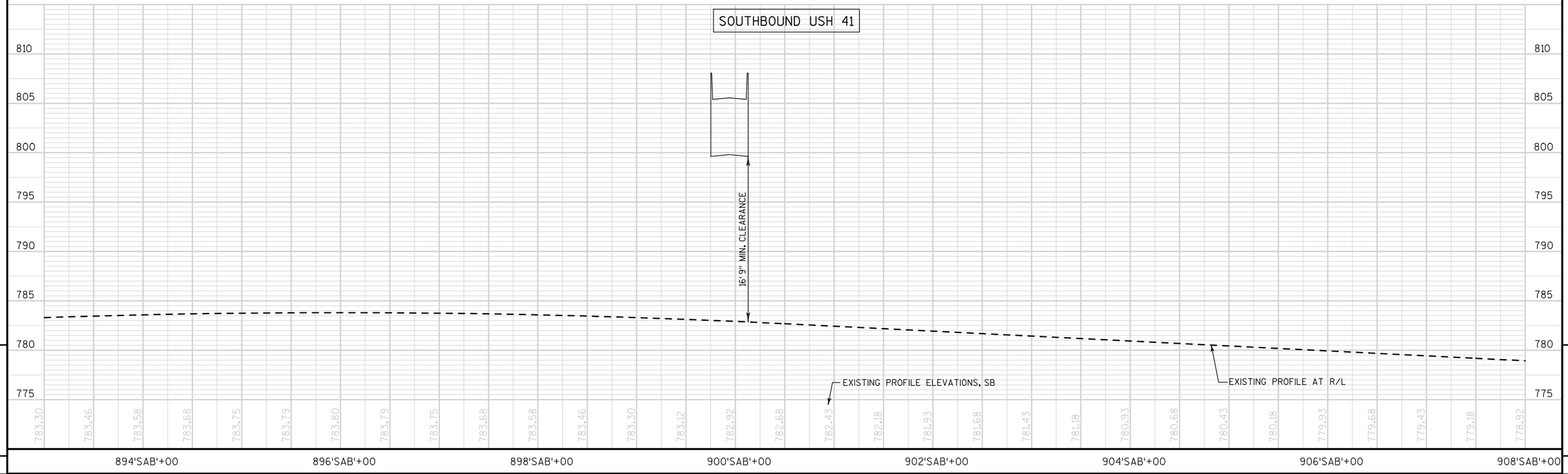
POOL

SIGN

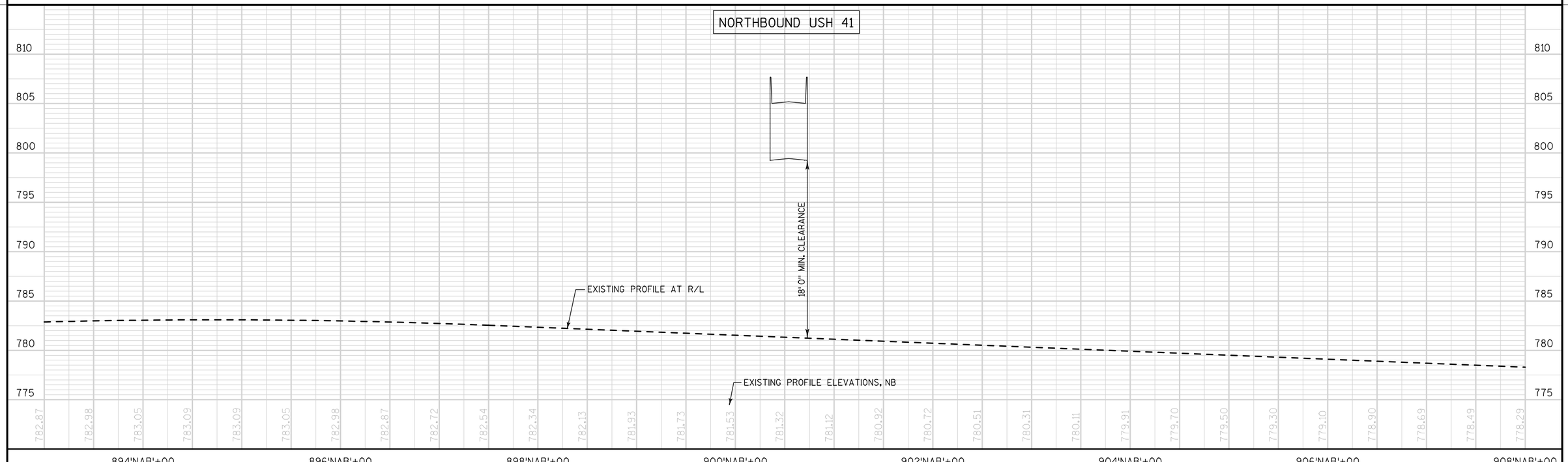
X = CLEARING AND GRUBBING

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PLAN USH 41 STA 893'NAB'+00 TO STA 908'NAB'+00	SHEET 114	E

SOUTHBOUND USH 41



NORTHBOUND USH 41



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PROFILE USH 41 STA 893'NAB'+00 TO STA 908'NAB'+00	SHEET 115 E

FILE NAME : ch_0977-78-81_050202_pp.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 100:1

WISDOT/CADDS SHEET 40

DATA TABLE

POINT NO.	STATION	OFFSET	RADIUS
1	14'CTGG'+60.57	79.00' RT	53.00'
2	14'CTGG'+78.29	84.00' LT	58.00'
3	16'CTGG'+14.50	69.00' LT	43.00'
4	16'CTGG'+01.89	79.00' RT	53.00'

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
848	14'CTGG'+63, RT	PAINTED CHISLED X ON TOP OF THE WEST END OF A 24" CMCP, SOUTHWEST QUADRANT OF CTH "GG" & GREEN VALLEY ROAD. 60'S. OF THE C/L OF CTH "GG". 45' WEST OF THE C/L OF GREEN VALLEY ROAD	776.50

N

0 50 100

SCALE IN FEET

DAVID J. GRUNSKA & SHERI L. GRUNSKA

ALICE OTTO ETAL
RICHARD O. BRANTMIER

THOMAS J. ZIOLKOWSKI & LANORE M. ZIOLKOWSKI

MICHAEL D. JOHNSON & HEIDI L. JOHNSON

WINNEBAGO COUNTY

CTH GG

R/L GREEN VALLEY ROAD

SLOPE INTERCEPT

SALVAGE GUARDRAIL

R/L GREEN VALLEY ROAD

'GRV'+40.20
17.00' LT

'GRV'+70.78
17.00' RT

+14.50
26.00' LT

MGS GUARDRAIL 3 WITH TERMINAL EAT

+66.00
27.00' LT

CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D

HMA PAVEMENT TYPE E-1, 6-INCH

HMA PAVEMENT TYPE E-0.3, 3½-INCH

BASE AGGREGATE DENSE ¾", 3-INCH

AT&T

WPS

TLE

CAUTION

+78.29
12.00' LT

+78.29 26.00' LT

14'CTGG'

16'CTGG'

+16.68
29.00' LT

+01.89
26.00' RT

+10.57
12.00' RT

+60.57
24.00' RT

+60.57
26.00' RT

'GRV'+91.41
17.00' LT

'GRV'+00.51
17.00' RT

BM 848

ASPHALTIC FLUME (TYP)

MATCH LINE STA 17'CTGG+00

STA 9'CTGG'+66 RT
20.1' ASPHALTIC PE

STA 11'CTGG'+42 RT
REMOVE EXISTING 18" CP

STA 12'CTGG'+76 RT
10.8' ASPHALTIC PE
REMOVE EXISTING 18" CP
15" CPCS REQ'D

BEGIN CONSTRUCTION
I.D. 1120-09-77
STA 8'CTGG'+58.05
MATCH EXISTING
SAW CUT REQUIRED

NOTE:
RADIUS DIMENSIONS ARE SHOWN TO THE FACE OF CURB.
X = CLEARING AND GRUBBING

VCL = 400'
K = 142

VCL = 1450'
K = 192

VPI STA 8'CTGG'+58.05
VPI EL 778.90

VPC STA 12'CTGG'+00.00
VPC EL 782.12

VPI STA 14'CTGG'+00.00
VPI EL 784.00

VPT STA 16'CTGG'+00.00
VPT EL 791.52

VPC STA 16'CTGG'+25.00
VPC EL 792.46

FINISHED PROFILE

EXISTING PROFILE

R/L GREEN VALLEY ROAD

0.94%
1.67%
0.62%
0.30%
-0.97%
-0.84%
-0.23%
-0.30%
1.16%
-0.38%

SPECIAL DITCH RT
SPECIAL DITCH LT
SPECIAL DITCH RT
SPECIAL DITCH RT

EXISTING PROFILE ELEVATIONS AT R/L
FINISHED PROFILE ELEVATIONS AT R/L

| | | |

DATA TABLE

POINT NO.	STATION	OFFSET	RADIUS
1	30'CTGG'+15.25	79.00' RT	53.00'
2	30'CTGG'+30.29	79.00' LT	53.00'
3	31'CTGG'+68.96	64.00' LT	38.00'
4	31'CTGG'+51.39	74.00' RT	48.00'

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
849	22'CTGG'+80, RT	WDOT CAP LOCATED IN THE SOUTHWEST PARAPET WALL OF STRUCTURE #B-70-66-74, CTH "GG" OVER USH "41"	808.97

NOTE:

SEE SDD "CONCRETE BARRIER SINGLE SLOPE" FOR BARRIER ON APPROACH SLAB. USE "ON BRIDGE" DETAIL.
INCIDENTAL TO CONCRETE BARRIERS TYPE S42, MATCH STRUCTURE SKEW.
SEE STRUCTURE PLANS.

SCALE IN FEET 0 50 100

NOTE:

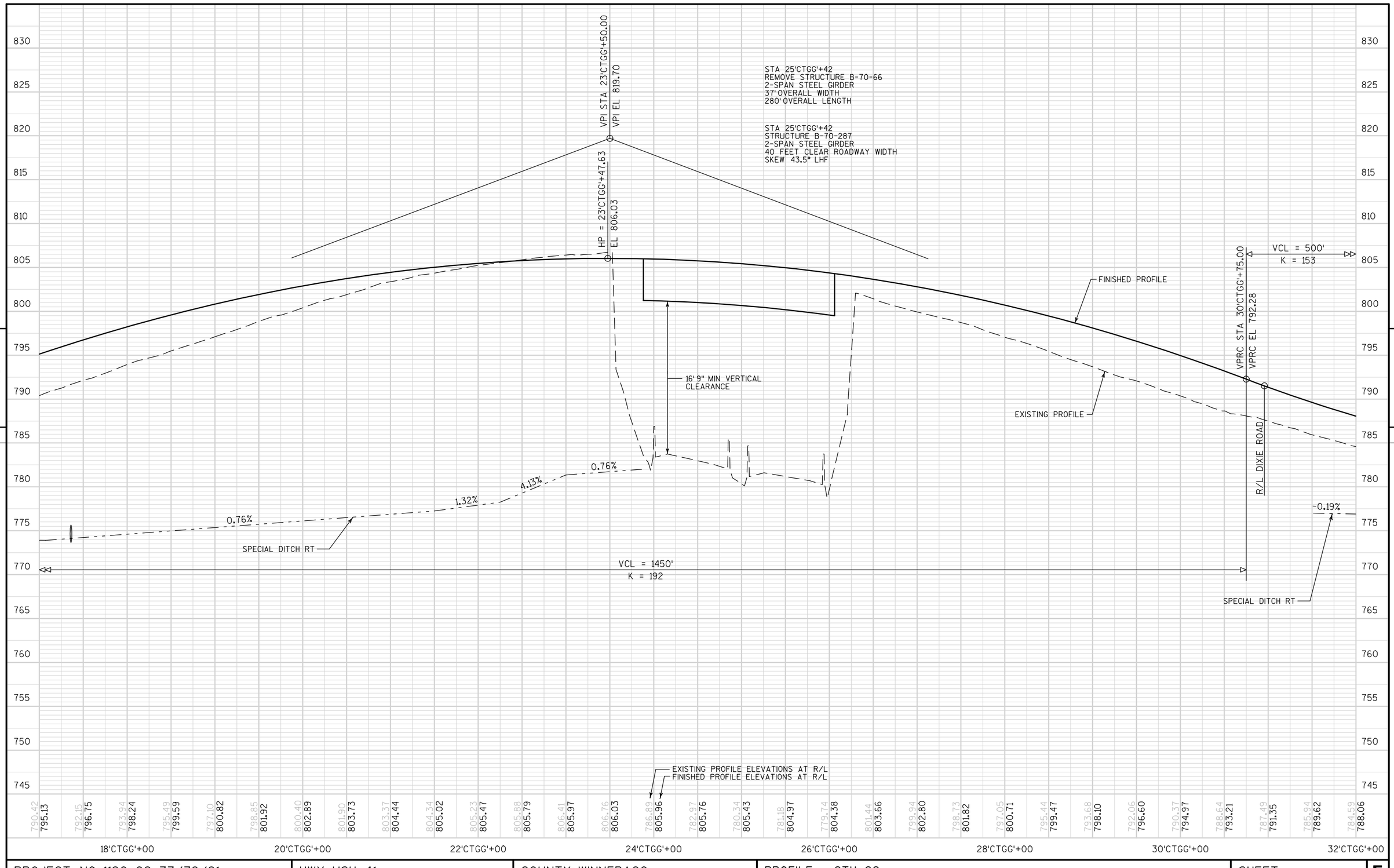
RADIUS DIMENSIONS ARE SHOWN TO THE FACE OF CURB.

X = CLEARING AND GRUBBING

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PLAN - CTH GG	SHEET 117	E

FILE NAME : ch_0977-78-81_050204_pp.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT NAME : PLOT SCALE : 100:1

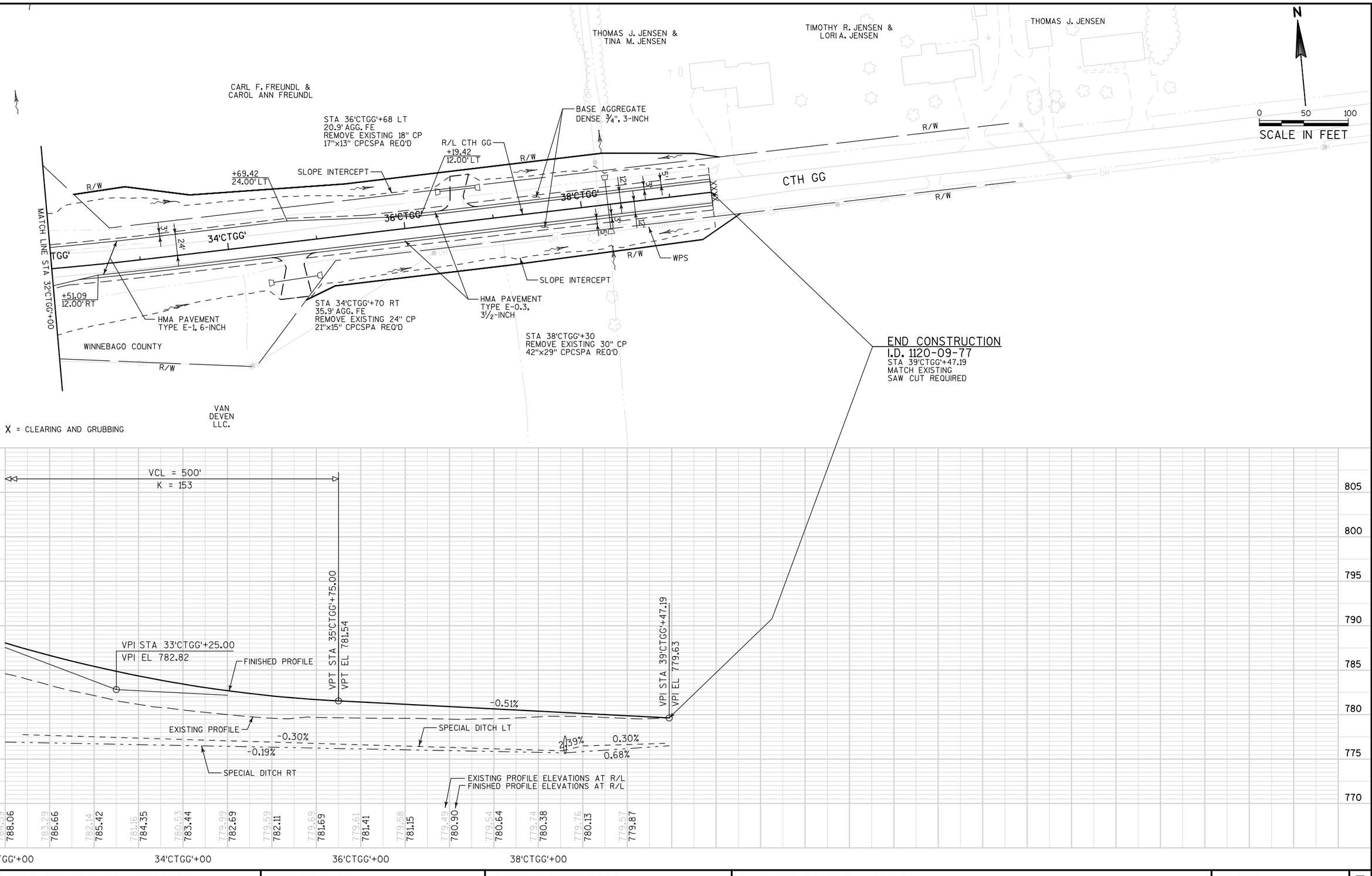
WISDOT/CADDS SHEET 44



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PROFILE - CTH GG	SHEET 118	E

FILE NAME : ch_0977-78-81_050205_pp.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 100:1

WISDOT/CADDS SHEET 40



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PLAN AND PROFILE - CTH GG	SHEET 119	E

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
859	1043'NAB'+41. RT	NORTHWEST BURY BOLT(FLAGGED), ON A HYDRANT, 30FT NORTH OF THE CENTERLINE OF CTH "G", 1600FT EAST OF USH "41"	762.46

DATA TABLE

POINT NO.	STATION	OFFSET	RADIUS
1	46'CTG'+46.87	49.39' RT	28.68'
2	49'CTG'+95.56	80.98' LT	60.59'
3	58'CTG'+68.14	81.01' RT	69.11'

NOTE:
RADIUS DIMENSION IS TO EDGE OF PAVEMENT.

N

0 50 100
SCALE IN FEET

BERGSTROM ROAD
R/W
USH 41 SB
USH 41 NB
1042'SAB'
1042'NAB'
1040'SAB'
1040'NAB'
1038'SAB'
1038'NAB'
1036'SAB'
1036'NAB'
1034'SAB'
1034'NAB'
CTH G
GREEN VALLEY ROAD
DIXIE ROAD
WISCONSIN CENTRAL LTD
CANADIAN NATIONAL RR

BEGIN CONSTRUCTION
I.D. 1120-09-78/81
STA 46'CTG'+26.15
MATCH EXISTING

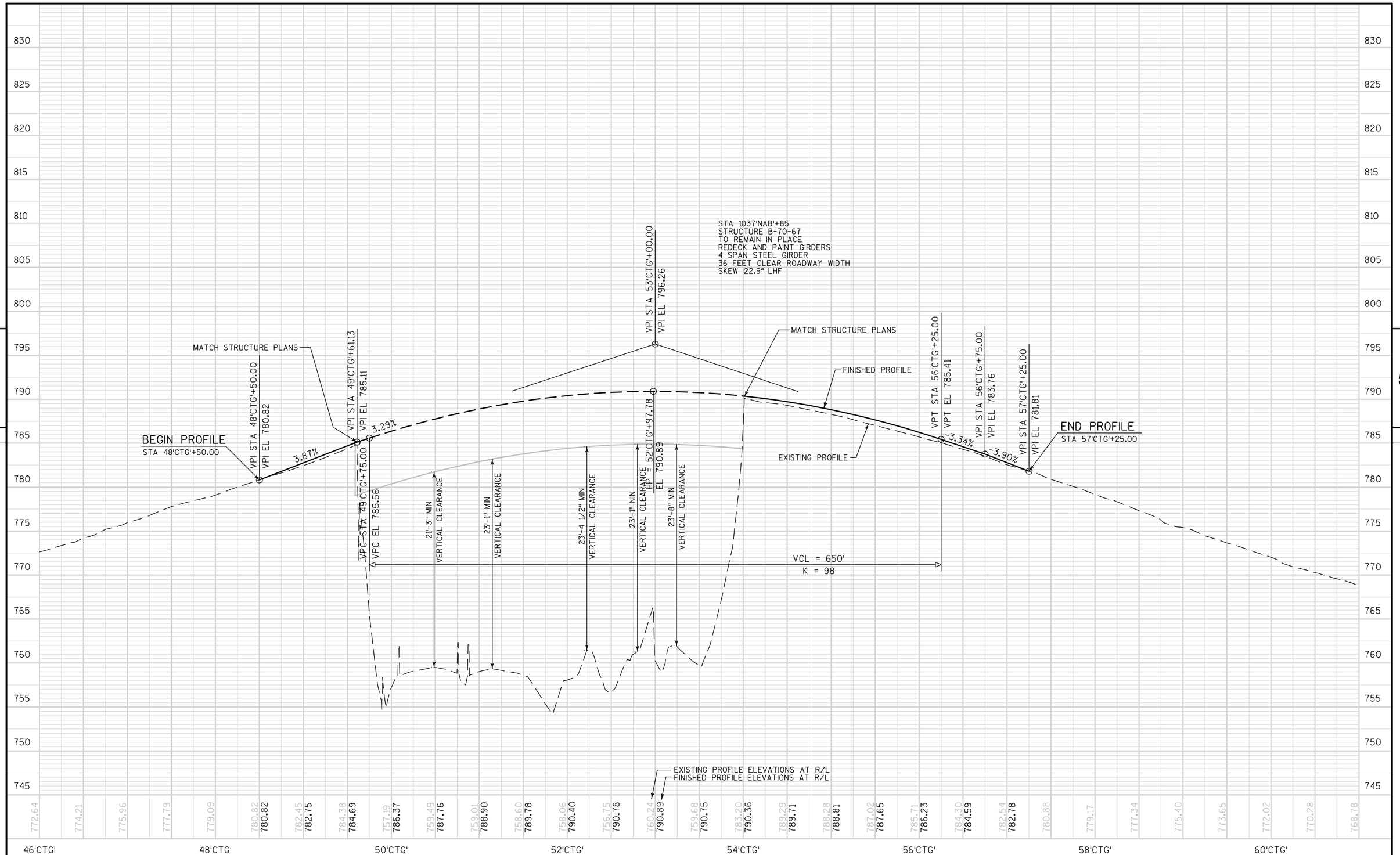
END CONSTRUCTION
I.D. 1120-78/81
STA 58'CTG'+72.10
MATCH EXISTING

+39.67 84.42' LT
+71.56 25.91' LT
+01.55 12.00' LT
+43.23 21.00' LT
+83.23 15.00' LT
+93.23 19.00' LT
+33.62 16.00' LT
+45.61 73.98' RT
+95.61 73.68' RT
+30.00 19.00' LT
+42.21 16.00' LT
+25.63 16.00' RT
+13.42 19.00' RT
+45.83 19.00' LT
+29.25 19.00' RT
+17.04 16.00 'RT
+45.19 20.76' RT
+36.10 19.00' RT
+39.11 12.00' RT
+47.88 23.96' RT
+17.73 42.35' RT
+13.72 56.42' RT
+19.72 49.07' RT
+17.36 74.28' RT
+14.53 124.21 RT
+05.37 163.63' RT
+99.62 179.81' RT
+51.39 12.00' LT
+71.54 15.58' LT
+67.67 19.00' LT
+17.63 21.00' LT
+30.17 19.00' RT
+99.50 18.64' RT
+80.17 21.00' RT
BM859

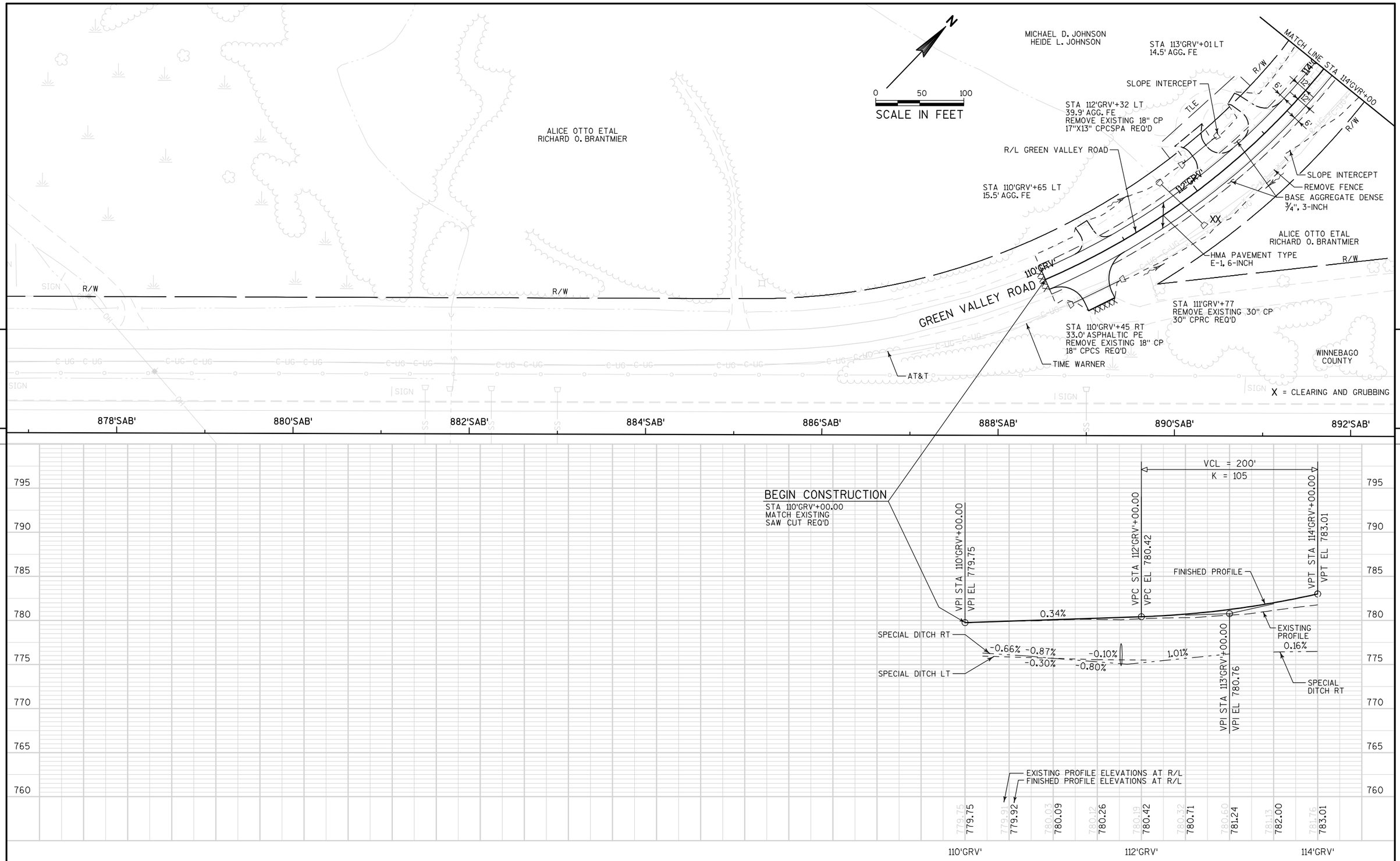
46'CTG' 48'CTG' 50'CTG' 52'CTG' 54'CTG' 56'CTG' 58'CTG' 60'CTG'

LAW ENFORCEMENT PAD
(SEE CONSTRUCTION DETAIL)
R/L USH 41 SB
R/L USH 41 NB
FENCE CHAIN LINK
SALVAGED 6-FEET
SPRINT
AT&T LEGACY
WE
AT&T
R/L CTH G
MGS GUARDRAIL TERMINAL
EAT AND THRIE BEAM
TRANSITION
MGS GUARDRAIL 3 WITH
TERMINAL EAT AND
THRIE BEAM TRANSITION
REMOVING ASPHALTIC SURFACE
MILLING AND HMA
PAVEMENT TYPE E-10
HMA PAVEMENT
TYPE E-0.3,
3½-INCH
CONCRETE PAVEMENT
APPROACH SLAB
CONCRETE
SURFACE
DRAINS
BASE AGGREGATE
DENSE ¾", 3-INCH
STEEL PLATE BEAM GUARD
SHORT RADIUS AND TERMINAL
HEIGHT TRANSITION REQUIRED
ON BOTH SIDES. BEAM GUARD
RADIUS +48.48
51.36' RT, 27.41' R
STEEL PLATE BEAM
GUARD TERMINAL EAT
STEEL PLATE BEAM
GUARD CLASS A
WITH THRIE BEAM
STRUCTURE
APPROACH
STA 1037'NAB'+85
STRUCTURE B-70-67
TO REMAIN IN PLACE
REDECK AND PAINT GIRDERS
4 SPAN STEEL GIRDER
38 FT CLEAR ROADWAY WIDTH
SKEW 22.9° LHF
HMA PAVEMENT TYPE
E-0.3, 3½-INCH
AT&T
WE

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PLAN: CTH G	SHEET 120	E



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PROFILE - CTH G	SHEET 121	E



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PLAN AND PROFILE - GREEN VALLEY ROAD	SHEET 122	E

THOMAS J. ZIOLKOWSKI &
LANORE M. ZIOLKOWSKI

NOTE:

ELEVATIONS AT FLANGE LINE.

ASPHALTIC FLUME (TYP)

SLOPE INTERCEPT

SALVAGE GUARDRAIL

DAVID J. GRUNSKA &
SHERI L. GRUNSKA

AT&T

HMA PAVEMENT
TYPE E-1, 6-INCH

WPS

22'WSR'

WOODENSHOE ROAD

R/L WOODENSHOE ROAD

STA 121'GVR'+47.84 =
STA 20'WSR'+00.00
TYPE "C" INTERSECTION REQ'D

BASE AGGREGATE DENSE
¾", 3-INCH

+98.22
11.00' LT

R/L GREEN VALLEY ROAD

ABRP ENTERPRISES LLC.

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
848	14'CTGG'+63, RT	PAINTED CHISLED X ON TOP OF THE WEST END OF A 24" CMCP, SOUTHWEST QUADRANT OF CTH "GG" & GREEN VALLEY ROAD. 60' S. OF THE C/L OF CTH "GG". 45' WEST OF THE C/L OF GREEN VALLEY ROAD	776.50

+12.65
11.00' LT

+45.16
11.00' LT

+93.12
16.00' LT

+12.65
11.00' RT

+23.22
16.00' LT

786.48
787.30
BM 848

787.24
788.73
788.31

788.89
790.41
792.66

WINNEBAGO
COUNTY

GREEN VALLEY ROAD

SHARED USE PATH

CTH GG

14'CTGG'

16'CTGG'

18'CTGG'

20'CTGG'

118'GRV'

120'GRV'

122'GRV'

124'GRV'

SLOPE INTERCEPT

MICHAEL D. JOHNSON &
HEIDE L. JOHNSON

STA 15'CTGG+35.95 =
STA 116'GRV'+75.22

+31.41
12.00' LT

786.89

790.50
789.20
787.93

TIME
WARNER

+31.41
12.00' RT

AT&T

WPS

STA 115'GRV'+94
24" CPRC REQ'D
STA 116'GRV'+12
REMOVE EXISTING 24" CP

STA 121'GRV'+03
24"x38" CPRCHE REQ'D
STA 121'GRV'+16
REMOVE EXISTING 30" CP

SLOPE INTERCEPT

R/L SHARED USE PATH

ALICE OTTO ETAL
RICHARD O. BRANTMIER

STATE OF
WISCONSIN

MATCH LINE STA 114'GVR'+00

SLOPE INTERCEPT

REMOVE FENCE

ALICE OTTO ETAL
RICHARD O. BRANTMIER

X = CLEARING AND GRUBBING

N

0 50 100
SCALE IN FEET

5

5

800
795
790
785
780
775
770
765

114'GRV' 116'GRV' 118'GRV' 120'GRV' 122'GRV' 124'GRV' 126'GRV'

781.76 783.01
782.25 784.13
782.82 785.25
783.47 786.37
784.12 787.50
784.77 788.62
785.23 789.50
785.22 789.04
784.82 788.10
783.93 786.60
782.49 784.62
781.18 782.57
779.80 780.69
778.71 779.13
777.82 777.91
777.13 777.01
776.51 776.44
776.22 776.20
776.27 776.29
776.48
776.68
777.05
777.27

VPT STA 114'GRV'+00.00
VPT EL 783.01

FINISHED PROFILE

VPI STA 116'GRV'+51.10
VPI EL 788.65

VPI STA 116'GRV'+99.60
VPI EL 789.50

VPI STA 118'GRV'+00.00
VPI EL 788.72

VPT STA 118'GRV'+75.00
VPT EL 785.65

VPC STA 119'GRV'+50.00
VPC EL 782.57

VCL = 350'
K = 76

2.25%

0.78%

-4.10%

EXCEPTION TO VERTICAL PROFILE

EXISTING PROFILE

VPC STA 117'GRV'+25.00
VPC EL 789.31

VCL = 150'
K = 45

0.16%

-1.05%

-0.69%

SPECIAL DITCH RT

R/L WOODENSHOE ROAD

LP = 12261.33
EL 776.19

VPT STA 123'GRV'+00.00
VPT EL 776.29

VPI STA 123'GRV'+25.00
VPI EL 776.42

END CONSTRUCTION
STA 123'GRV'+25.00
MATCH EXISTING
SAW CUT REQ'D

0.51%

0.30%

0.10%

SPECIAL DITCH RT

SPECIAL DITCH LT

VPI STA 121'GRV'+25.00
VPI EL 775.40

EXISTING PROFILE ELEVATIONS AT R/L
FINISHED PROFILE ELEVATIONS AT R/L

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PLAN AND PROFILE - GREEN VALLEY ROAD	SHEET 123	E

ROBERT L. BERGSTROM &
CAROL A. BERGSTROM

ROBERT D. ERICKSON &
BETTY ERICKSON

BEGIN CONSTRUCTION
STA 10'DIX'+55.00
MATCH EXISTING
SAW CUT REQ'D

10'DIX'

12'DIX'

14'DIX'

16'DIX'

WPS

STA 15'DIX'+10
24" CPRC REQ'D
STA 15'DIX'+39
REMOVE EXISTING 24" CP

SLOPE INTERCEPT

R/L OLD DIXIE ROAD

SLOPE INTERCEPT

STA 12'DIX'+63 RT
28.3' ASPHALTIC PE
REMOVE EXISTING 18" CP
18" CPCS REQ'D

BASE AGGREGATE
DENSE ¾", 3-INCH

STA 13'DIX'+47 RT
44.2' ASPHALTIC PE
REMOVE EXISTING 18" CP
18" CPCS REQ'D

OLD DIXIE ROAD

CTH GG

28'CTGG'

R/L SHARED USE PATH

SLOPE INTERCEPT

SHARED USE PATH

30

30'CTGG'

BASE AGGREGATE
DENSE ¾", 3-INCH
+19.19
12.00' LT

MATCH LINE STA 18'DIX'+00

DIXIE ROAD

+70.36
12.00' RT

+35.40
12.00' LT

+35.40
12.00' RT

793.05
789.33
791.34
794.75
792.14
790.30
790.83
790.91
789.89
787.69
788.38
788.15

SLOPE INTERCEPT
R/L DIXIE ROAD

STA 30'CTGG'+95.72 =
STA 15'DIX'+97.72

32'CTGG'

34'CTGG'

AT&T

HMA PAVEMENT
TYPE E-1,
6-INCH

ASPHALTIC FLUME (TYP)

SLOPE INTERCEPT

KIENBAUM FAMILY TRUST

VAN
DEVEN
LLC.

WINNEBAGO COUNTY

CARL F. FREUNDL &
CAROL ANN FREUNDL

R/W

NOTE:

ELEVATIONS AT FLANGE LINE.

N

0 50 100
SCALE IN FEET

X = CLEARING AND GRUBBING

5

5

VCL = 175'
K = 42

VCL = 150'
K = 61

VCL = 350'
K = 105

VPI STA 10'DIX'+55.00
VPI EL 780.28

VPC STA 11'DIX'+62.50
VPC EL 780.51

VPT STA 13'DIX'+37.50
VPT EL 784.55

VPC STA 13'DIX'+75.00
VPC EL 786.20

VPI STA 12'DIX'+50.00
VPI EL 780.70

VPI STA 14'DIX'+50.00
VPI EL 789.50

VPT STA 15'DIX'+25.00
VPT EL 790.97

VPI STA 15'DIX'+74.13
VPI EL 791.93

VPI STA 16'DIX'+22.37
VPI EL 790.52

VPC STA 17'DIX'+25.00
VPC EL 786.41

FINISHED PROFILE

EXISTING PROFILE

EXCEPTION TO VERTICAL PROFILE

0.22%
-0.76%
-1.14%
0.45%
-0.30%
-0.46%
4.40%
1.95%
-4.00%
0.44%
-0.68%

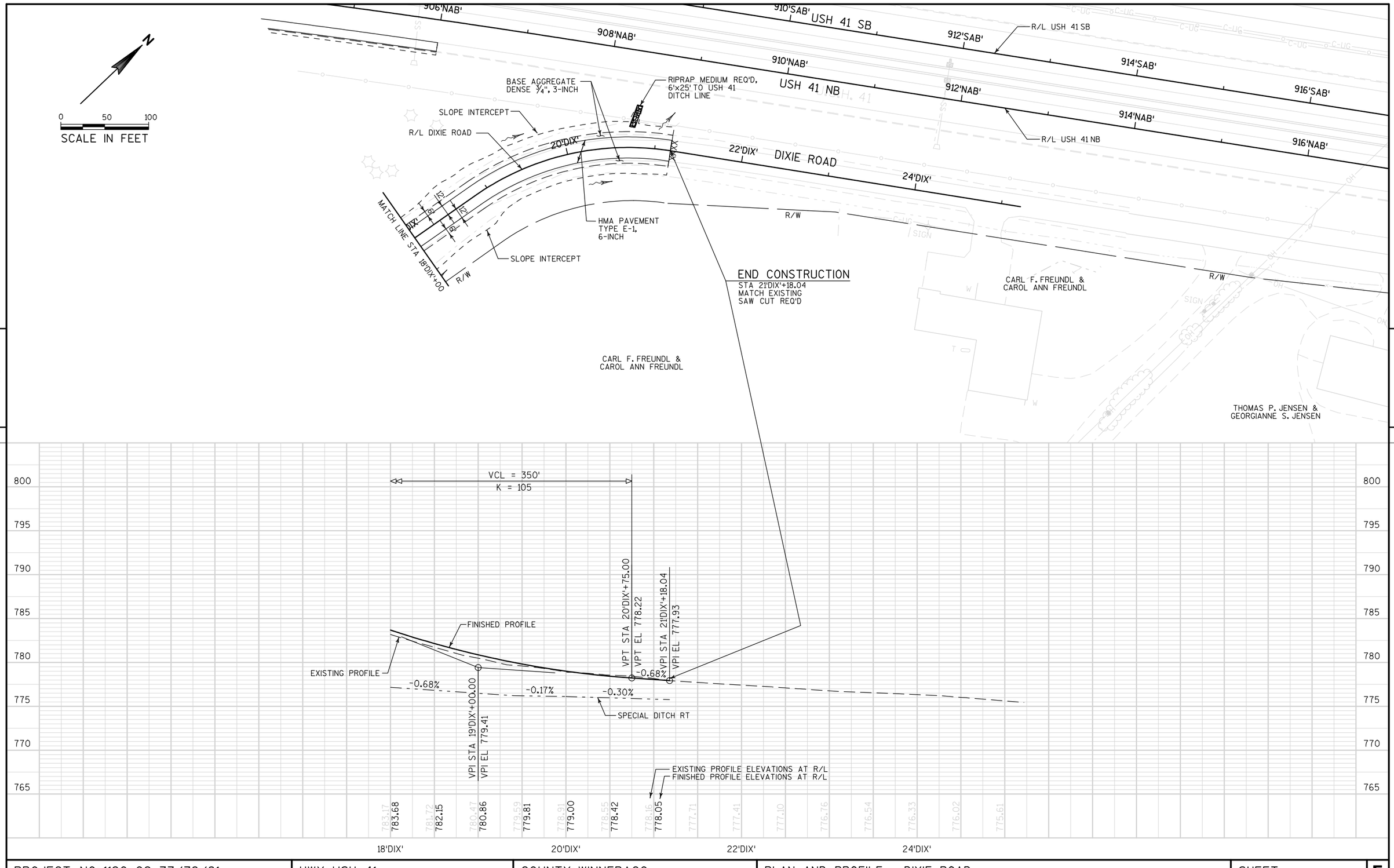
SPECIAL DITCH RT
SPECIAL DITCH LT
SPECIAL DITCH LT
SPECIAL DITCH RT
SPECIAL DITCH RT

EXISTING PROFILE ELEVATIONS AT R/L
FINISHED PROFILE ELEVATIONS AT R/L

780.77	780.32	780.35	780.38	780.49	780.48	780.67	780.76	781.10	781.62	782.13	783.07	783.48	785.10	785.11	787.25	786.56	789.04
787.60	790.43	788.04	791.45	787.77	791.42	787.08	789.41	786.16	787.41	784.68	785.44	783.17	783.68				

10'DIX' 12'DIX' 14'DIX' 16'DIX' 18'DIX'

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PLAN AND PROFILE - OLD DIXIE ROAD/DIXIE ROAD	SHEET 124	E



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PLAN AND PROFILE - DIXIE ROAD	SHEET 125	E

DATA TABLE

POINT NO.	STATION	OFFSET	RADIUS
1	20'WSR'+55.72	55.00' LT	40.00'
2	20'WSR'+76.37	75.00' RT	60.00'

N

0 50 100
SCALE IN FEET

R/L GREEN VALLEY ROAD
+15.72
54.80' LT
+55.72
15.00' LT
BASE AGGREGATE DENSE
¾", 3-INCH
AT&T
+16.38
11.00' LT
WPS
R/L WOODENSHOE ROAD
R/W
22'WSR'
23'WSR'
WOODENSHOE ROAD
R/L SHARED
USE PATH
18'CTGG'
18
R/L CTH GG
STA 121'GRV'+47.84 =
STA 20'WSR'+00.00
122'GRV'
+16.38
11.00' RT
HMA PAVEMENT TYPE
E-1, 6-INCH
+76.37
15.00' RT
AT&T
+16.37
75.30' RT
SLOPE
INTERCEPT
SLOPE INTERCEPT
R/L USH 41 SB
CTH GG
20'CTGG'
20 SHARED USE PATH
GREEN VALLEY ROAD
124'GRV'
WPS
END CONSTRUCTION
STA 21'WSR'+25.00
MATCH EXISTING
SAWCUT REQUIRED
USH 41 SB
896'SAB'
X = CLEARING AND GRUBBING

BEGIN CONSTRUCTION
STA 20'WSR'+16.00
VPI STA 20'WSR'+16.00
VPI EL 777.16
VPI STA 21'WSR'+25.00
VPI EL 776.89
FINISHED
PROFILE
-0.25%
EXISTING PROFILE
-0.23% 0.64%
0.02%
SPECIAL DITCH RT
SPECIAL DITCH LT
EXISTING PROFILE ELEVATIONS AT R/L
FINISHED PROFILE ELEVATIONS AT R/L
777.16
776.96
777.08
777.04
776.95
776.72
776.51
776.41

795 790 785 780 775 770 765 760

20'WSR' 22'WSR' 24'WSR'

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	PLAN & PROFILE - WOODENSHOE ROAD	SHEET 126	E

FILE NAME : ch_0977-78-81_050213_pp.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 100:1

WISDOT/CADDS SHEET 40

R/L WOODENSHOE ROAD
R/L GREEN VALLEY ROAD
WOODENSHOE ROAD
GREEN VALLEY ROAD
124'GRV'
122'GRV'
120'GRV'
R/W
WINNEBAGO COUNTY
N
0 50 100
SCALE IN FEET
R/L USH 41 SB
R/L USH 41 NB
R/L DIXIE ROAD
+98.29
10.00'LT
STA 30+69
15" CPCS REQ'D
18'DIX'
16'DIX'

BENCH MARKS

NO.	STATION	DESCRIPTION	ELEV.
849	22'CTGG'+80, RT	WDOT CAP LOCATED IN THE SOUTHWEST PARAPET WALL OF STRUCTURE *B-70-66-74, CTH "GG" OVER USH "41"	808.97

BASE AGGREGATE DENSE ¾", 3-INCH
LIMESTONE SCREENINGS, 3-INCH
RAILING 54-INCH 3' OUTSIDE OF AGGREGATE SHOULDER
R/L SHARED USE PATH
STATE OF WISCONSIN
SLOPE INTERCEPT
R/L CTH GG
+17.35
10.00'LT
MATCH FENCE CHAIN LINK 6-FEET
+83.10
10.00'LT
SHARED USE PATH
16'CTGG'
18'CTGG'
20'CTGG'
22'CTGG'
24'CTGG'
26'CTGG'
28'CTGG'
30'CTGG'
CTH GG
BM 849
902'SAB'
902'NAB'
904'SAB'
904'NAB'
900'SAB'
900'NAB'
USH 41 SB
USH 41 NB
B-70-287
+74.45
10.00'LT
MATCH FENCE CHAIN LINK 6-FEET
+84.00
7.00'LT
CURB AND GUTTER 30-INCH TYPE D
+68.45
16.00'RT, 9.00'R
RAILING 54-INCH 3' OUTSIDE OF AGGREGATE SHOULDER
LIMESTONE SCREENINGS, 3-INCH
SLOPE INTERCEPT
R/L SHARED USE PATH
SHARED USE PATH
LIMESTONE SCREENINGS, 3-INCH
X = CLEARING AND GRUBBING
SLOPE INTERCEPT

5
5

BEGIN CONSTRUCTION
STA 15+82.83
END CONSTRUCTION
STA 23+34.14
BEGIN CONSTRUCTION
STA 26+82.64
END CONSTRUCTION
STA 30+99.79

VPI STA 15+82.83 VPI EL 790.76
VPI STA 16+25.00 VPI EL 792.67
VPI STA 17+50.00 VPI EL 797.09
VPI STA 18+75.00 VPI EL 800.50
VPI STA 20+25.00 VPI EL 803.37
VPI STA 21+25.00 VPI EL 804.46
VPI STA 23+34.14 VPI EL 805.34
VPI STA 26+82.64 VPI EL 802.61
VPI STA 27+00.00 VPI EL 802.22
VPI STA 28+00.00 VPI EL 799.65
VPI STA 29+50.00 VPI EL 794.60
VPI STA 30+99.79 VPI EL 788.63

FINISHED PROFILE
EXISTING PROFILE
EXCEPTION TO VERTICAL PROFILE SEE CTH GG PROFILE
EXISTING PROFILE ELEVATIONS AT R/L
FINISHED PROFILE ELEVATIONS AT R/L

| | | |

Standard Detail Drawing List

08A05-18C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-01	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F07-05	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE FRAINS
08F08-02	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS
12A03-10	NAME PLATE (STRUCTURES)
13A03-05	CONCRETE PAVEMENT SHOULDERS
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
14B07-13A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-13H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-01A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-01E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B15-07A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-07C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11C	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS
14B20-11G	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL
14B24-07A	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07B	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B24-07C	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
14B25-01	STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS
14B27-01A	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01B	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B27-01C	STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL
14B32-01A	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B33-01G	CONCRETE BARRIER SINGLE SLOPE 42" THRIE BEAM ANCHOR
14B33-01H	CONCRETE BARRIER SINGLE SLOPE 42" THRIE BEAM ANCHOR
14B34-01A	32", 36" & 42" CONCRETE BARRIER SINGLE SLOPE CLASS B
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A02-07	DELINEATOR POST, DELINEATOR BRACKET AND DELINEATOR
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A06-02	DELINEATOR LAYOUT
15B03-12A	CHAIN LINK FENCE
15B03-12B	CHAIN LINK FENCE
15C02-04A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-04B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES

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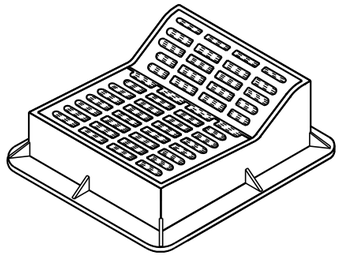
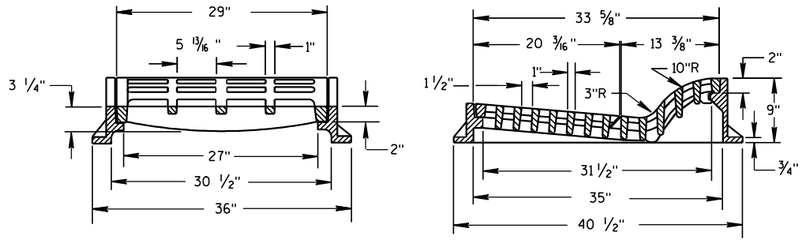
Standard Detail Drawing List

15C02-04C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-01	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C08-15A	PAVEMENT MARKING (MAINLINE)
15C08-15B	PAVEMENT MARKING (INTERSECTIONS)
15D12-02	TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.
15D14-01	TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)

6



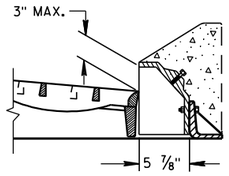


TYPE "F"

(APPROXIMATE WEIGHT 644 LBS.)

FRAME.....302 LBS.
GRATE.....160 LBS.
GRATE.....182 LBS.

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

(APPROXIMATE WEIGHT CURB BOX 68 LBS.)

USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

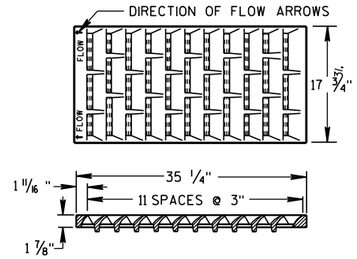
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

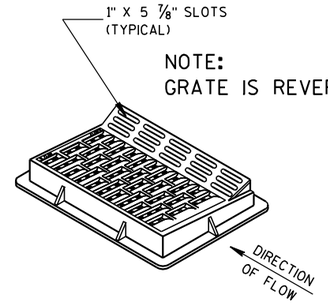
GENERAL NOTES

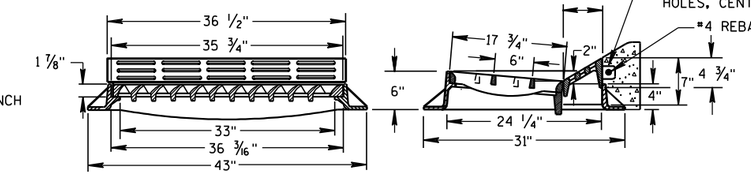
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

THE ACTUAL WEIGHT OF COVERS MAY VARY WITHIN 5 PERCENT, PLUS OR MINUS, OF THE APPROXIMATE WEIGHT.





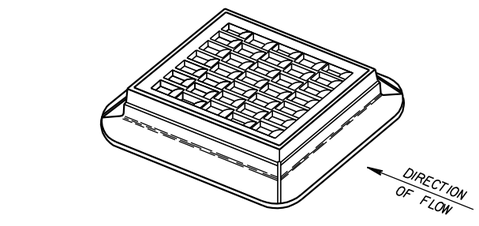


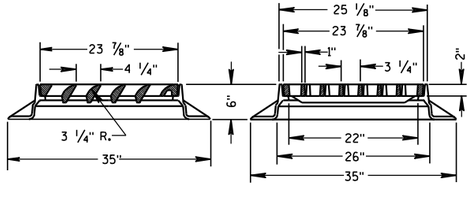
TYPE "HM"

(APPROXIMATE WEIGHT 414 LBS.)
FRAME..... 181 LBS.
GRATE..... 159 LBS.
CURB BOX..... 74 LBS.

USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE

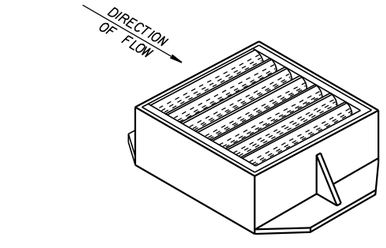


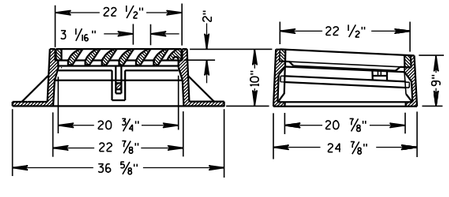


TYPE "S"

(APPROXIMATE WEIGHT 333 LBS.)

FRAME.....164 LBS.
GRATE..... 169 LBS.

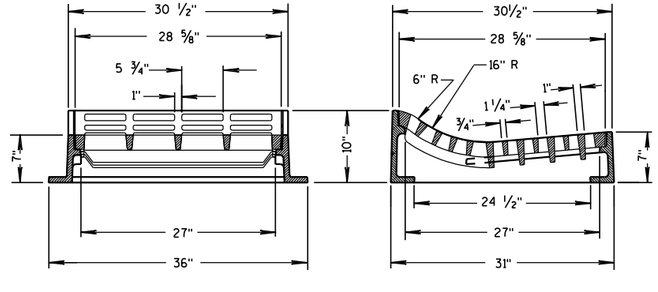




TYPE "V"

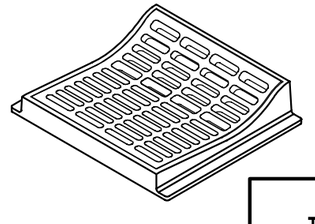
(APPROXIMATE WEIGHT 410 LBS.)

FRAME..... 269 LBS.
GRATE..... 136 LBS.
SAFETY BAR..... 5 LBS.



TYPE "T"

(APPROXIMATE WEIGHT 530 LBS.)
FRAME.....270 LBS.
GRATE.....260 LBS.
USE WITH TYPES R & T CONCRETE CURB & GUTTER, 36 INCH.



INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 8 A 5-18c

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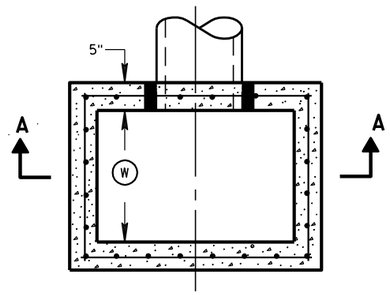
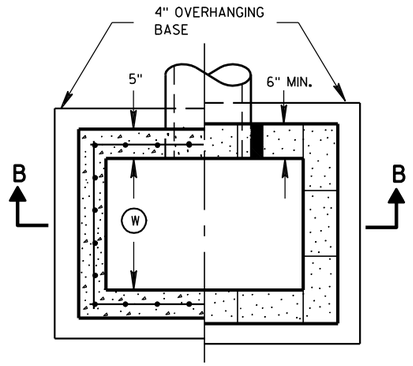
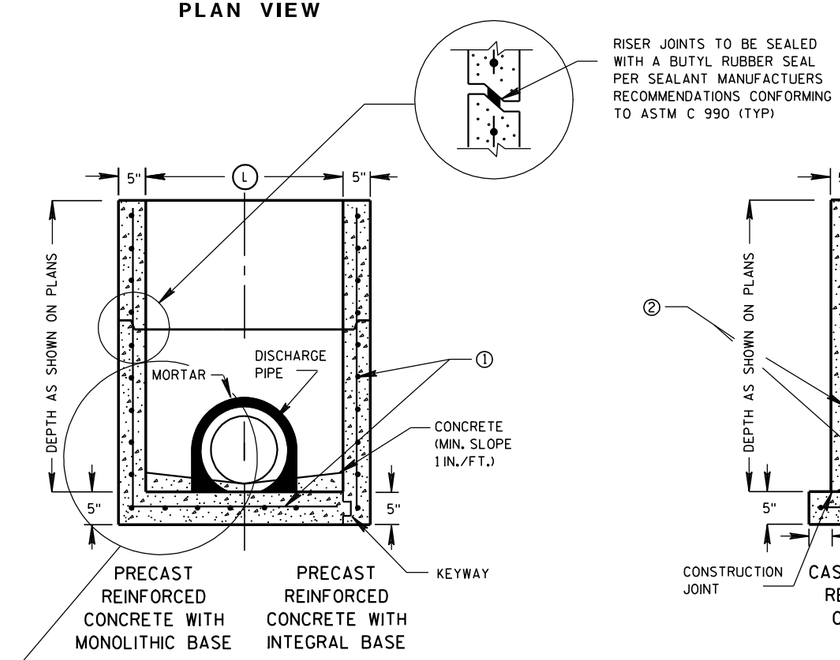
S.D.D. 8 A 5-18c



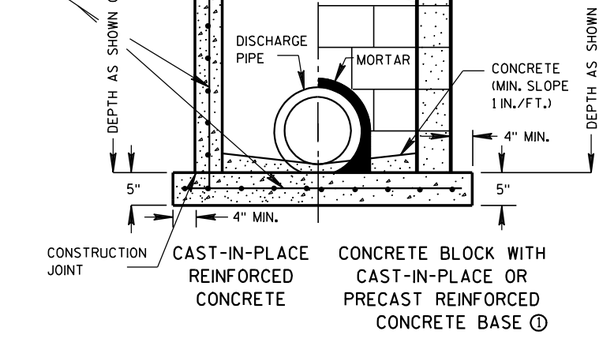
PLAN VIEW



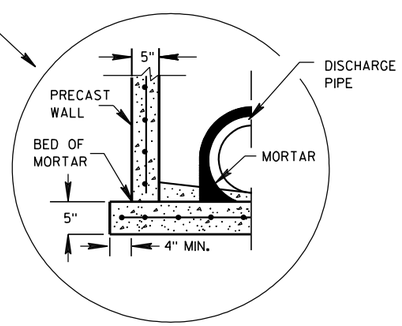
PLAN VIEW



SECTION A-A



SECTION B-B



SEPERATE PRECAST REINFORCED CONCRETE BASE OPTION

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST INLET UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR UNDERGROUND DRAINAGE STRUCTURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

ALL PRECAST INLET UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF ASTM C 913.

ALL DRAINAGE STRUCTURES ARE DESIGNATED ON THE PLANS AS "MANHOLES 3X3-L", "CATCH BASINS 4-B", "INLETS 2X3-H", ETC. THE FIRST NUMBERS DESIGNATES THE SIZE OF THE STRUCTURE, AND THE FOLLOWING LETTER DESIGNATES THE TYPE OF COVER TO BE USED TO COMPRISE THE COMPLETE UNIT.

BASES SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6 INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF GRANULAR BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE BASE.

ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

PRECAST REINFORCED RISERS SHALL HAVE A TONGUE AND GROOVE JOINT WITH TONGUE UP OR DOWN.

4" OVERHANGING BASES ARE REQUIRED FOR CAST-IN-PLACE REINFORCED CONCRETE AND CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPERATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3 INCH CLEARANCE ON EACH SIDE OF THE OUTSIDE WALL OF THE PIPE. SEE DETAIL "A". ASSUMES PIPE ENTERS PERPENDICULAR TO THE STRUCTURE.

① FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.

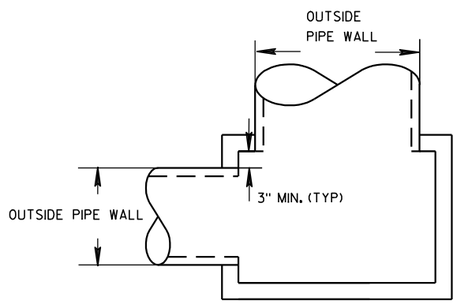
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE		INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
	WIDTH (W) (FT)	LENGTH (L) (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

INLET SIZE	MAXIMUM INSIDE PIPE DIAMETER	
	WIDTH (IN)	LENGTH (IN)
2X2-FT	12	12
2X2.5-FT	12	18
2X3-FT	12	24
2.5X3-FT	18	24



DETAIL "A"

INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
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6/5/2012 — DATE
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FHWA

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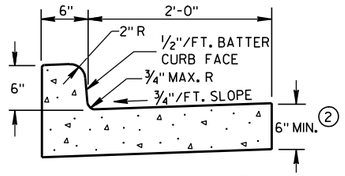
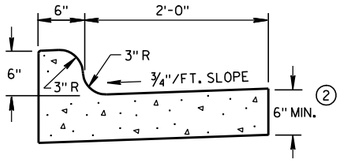
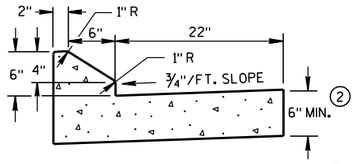
S.D.D. 8 C 7-1



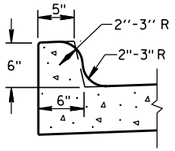
TYPES A & D (1)



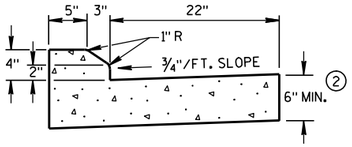
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

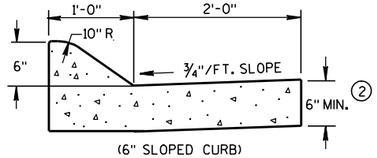


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

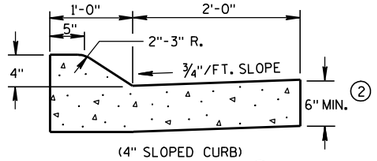


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

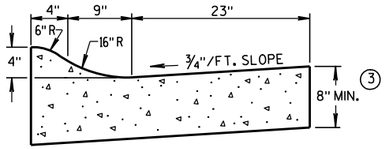


(6" SLOPED CURB)



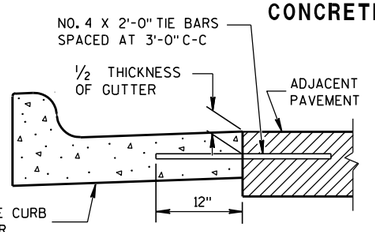
(4" SLOPED CURB)

TYPES A & D (1)

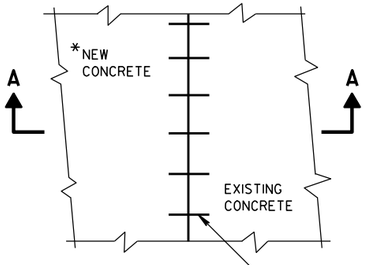


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"

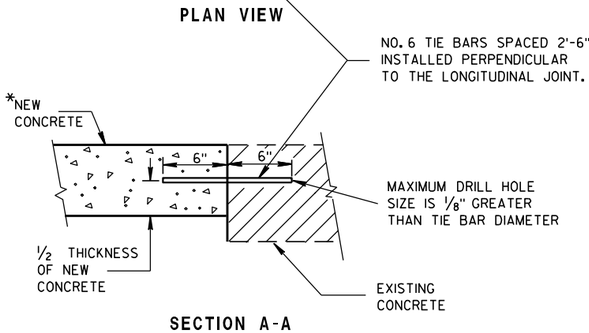


TYPICAL TIE BAR LOCATION (1)



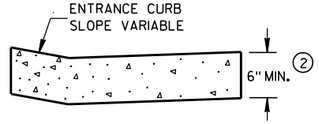
*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

PLAN VIEW

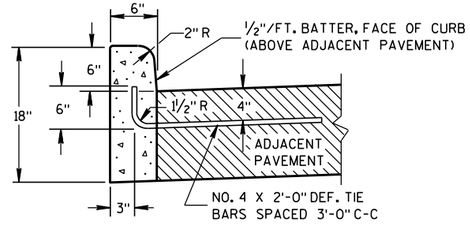


SECTION A-A

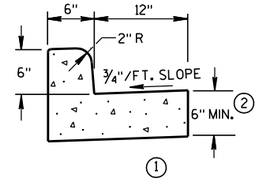
TIE BARS DRILLED INTO EXISTING PAVEMENT



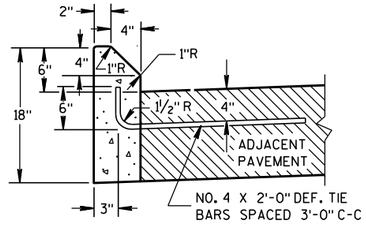
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



(1)
TYPES A & D

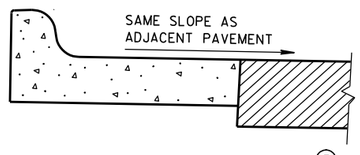


(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"



(1)
TYPES G & J

CONCRETE CURB



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

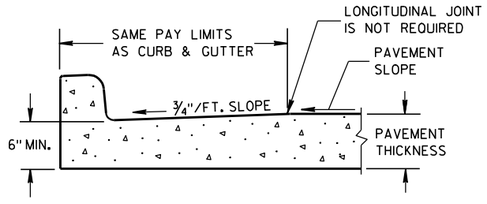
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

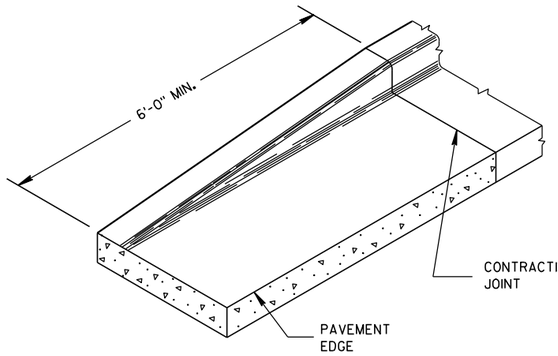
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(5) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

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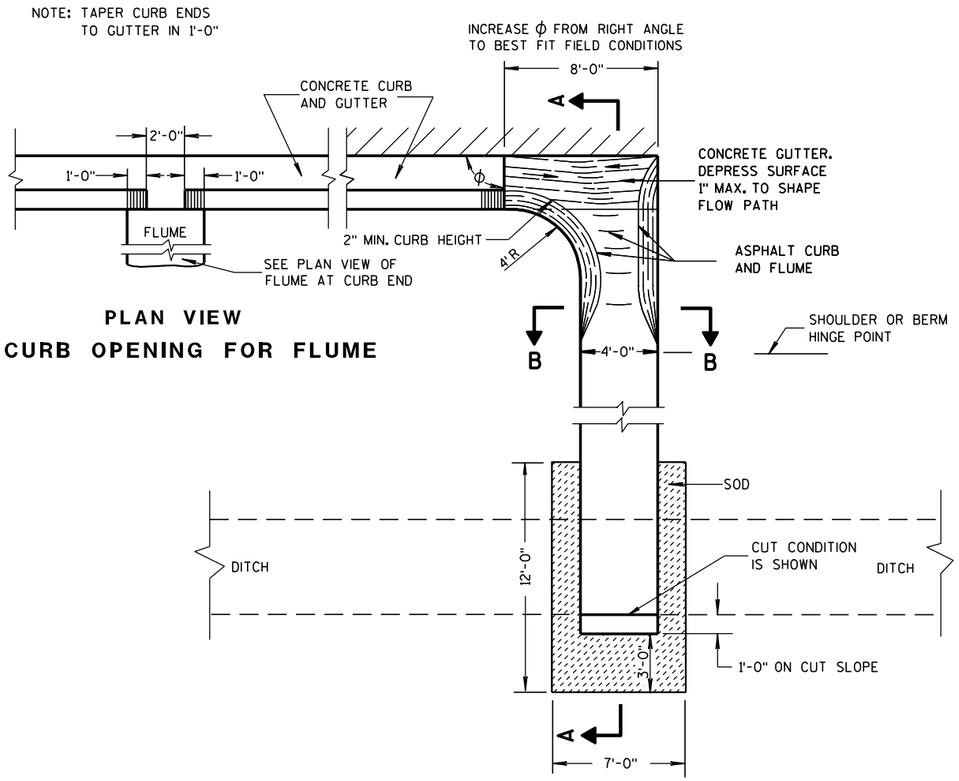
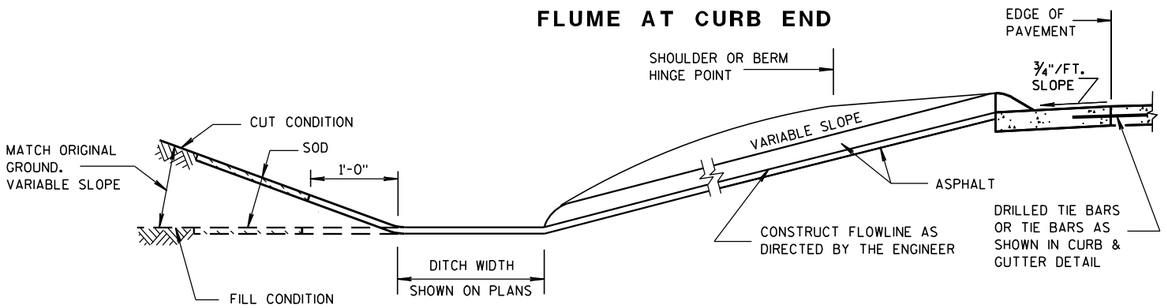
S.D.D. 8 D 1-17

ASPHALTIC FLUME

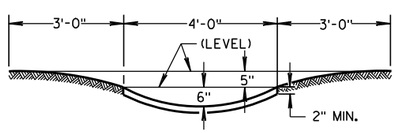


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

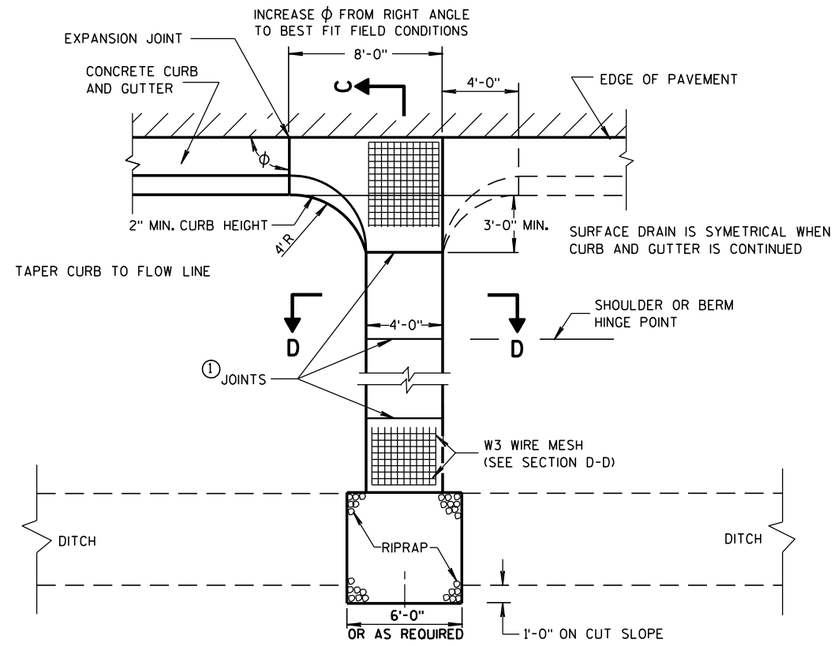
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

① JOINTS SHALL BE $\frac{1}{8}$ TO $\frac{1}{4}$ INCH WIDE BY $1\frac{1}{2}$ INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.

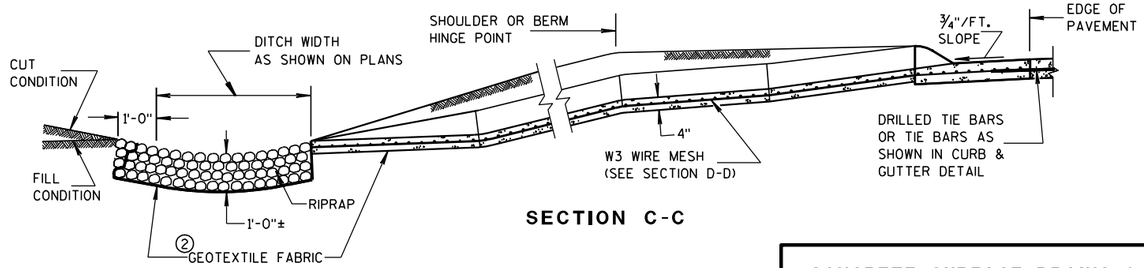
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

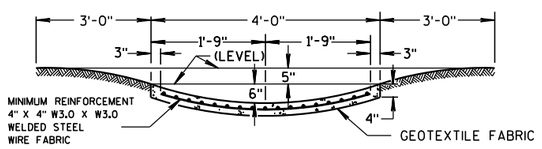
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-4-08 DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
MENT
FHWA

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S.D.D. 8 D 4-5

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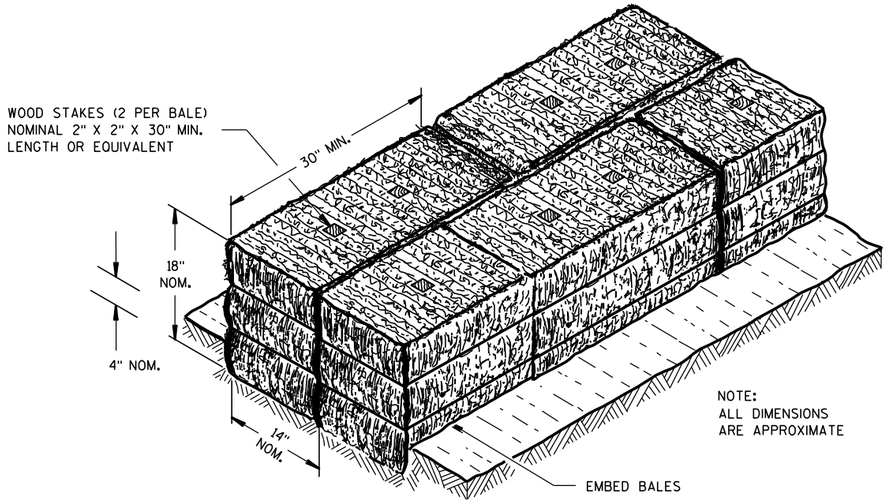
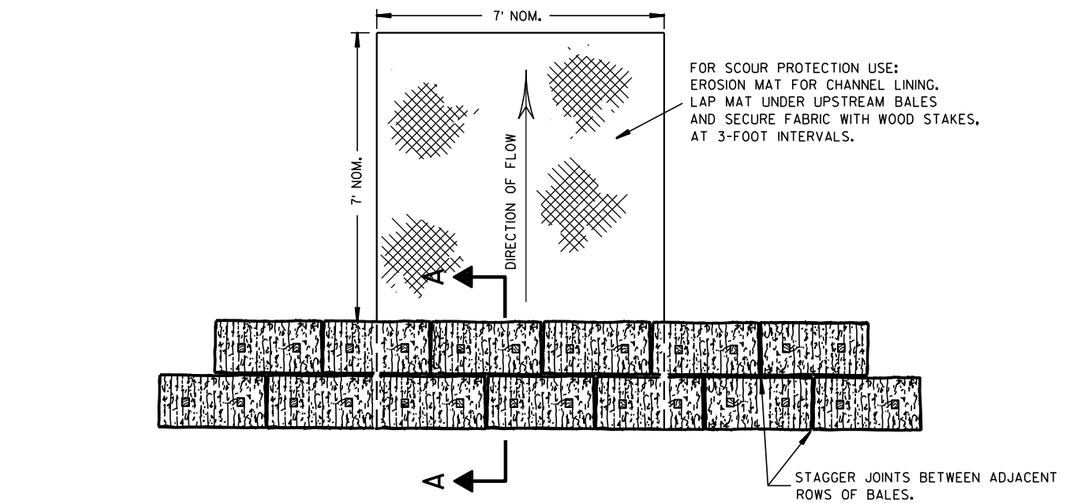
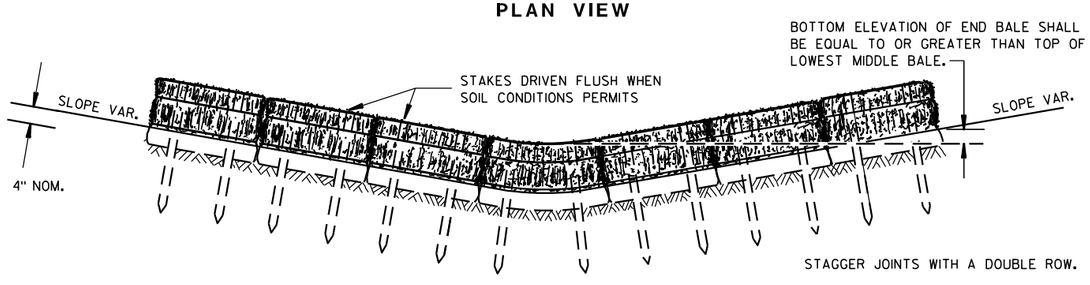
S.D.D. 8 D 4-5



SECTION A-A



PLAN VIEW



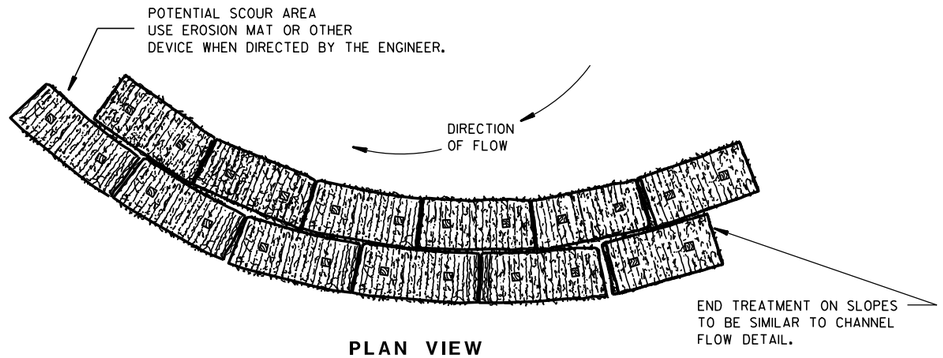
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

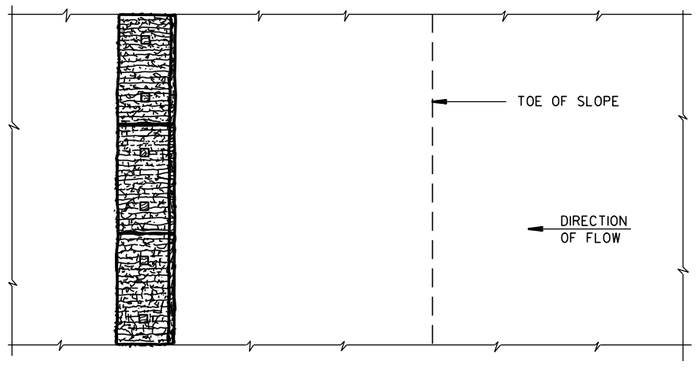
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

① TEMPORARY DITCH CHECKS EITHER EROSION BALES OR MANUFACTURED SHALL BE PAID FOR UNDER THE BID ITEM OF TEMPORARY DITCH CHECK. THE DEPARTMENT WILL NOT PAY FOR TEMPORARY DITCH CHECKS CONSTRUCTED OF A SINGLE ROW OF EROSION BALES.

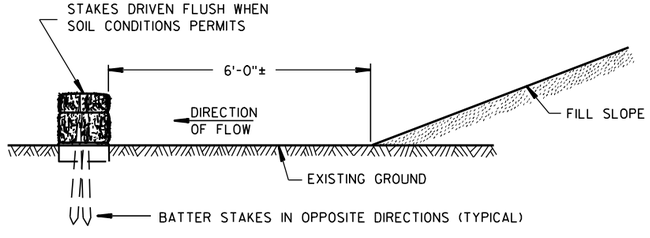


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/04/02 — DATE
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

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S.D.D. 8 E 8-3

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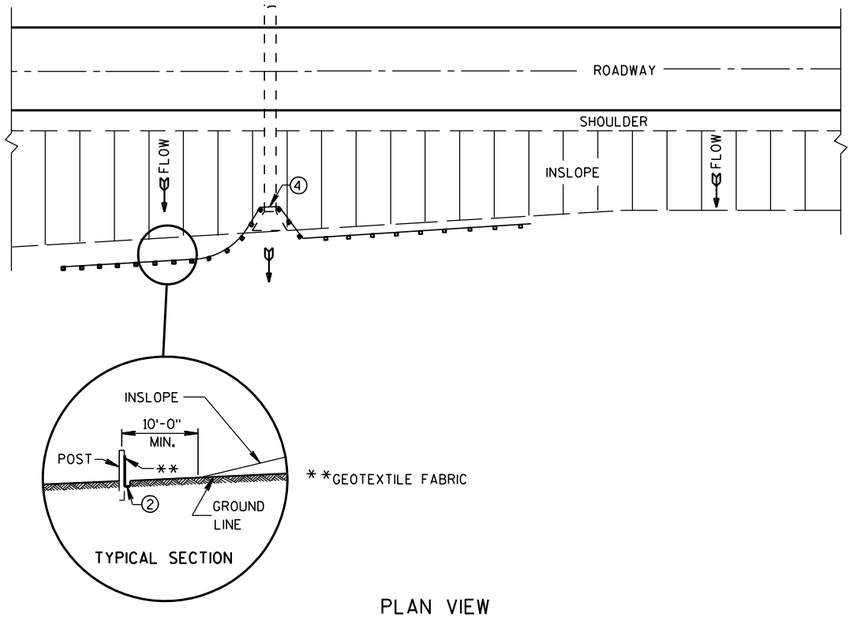
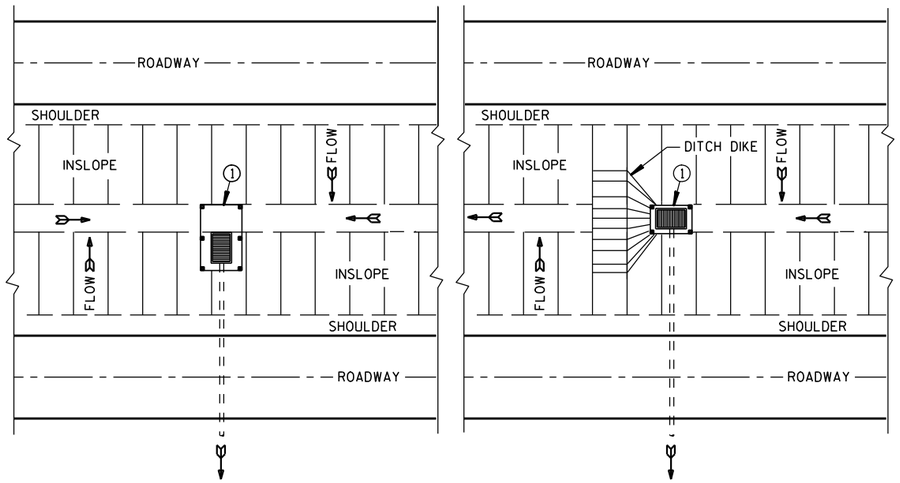
S.D.D. 8 E 8-3



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



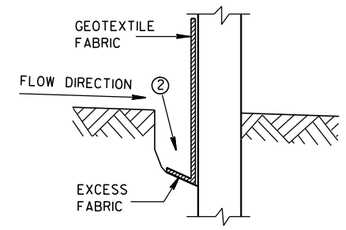
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

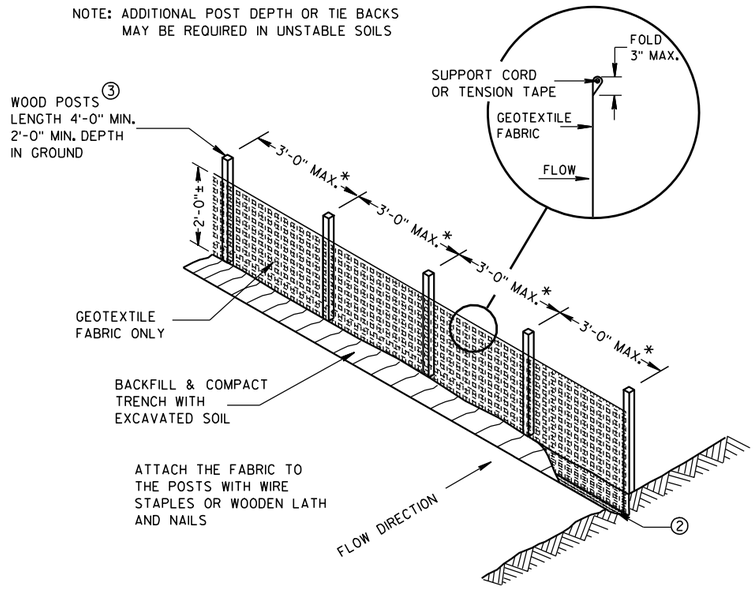
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

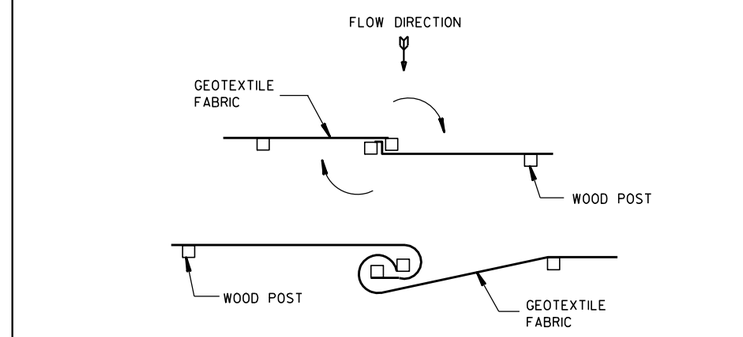
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



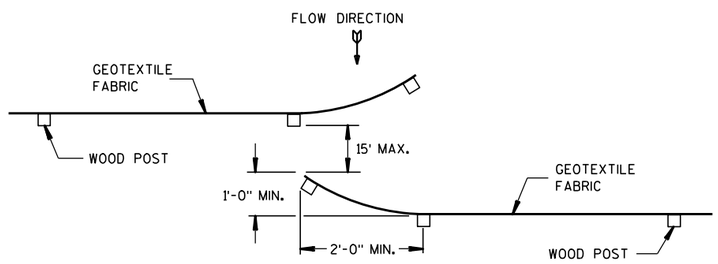
TRENCH DETAIL



SILT FENCE

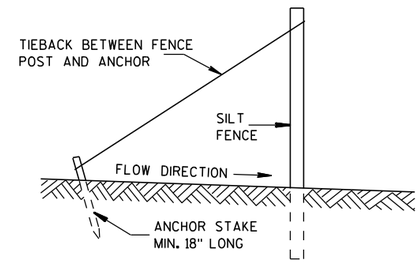


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
4-29-05 DATE	/S/ Beth Cannestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

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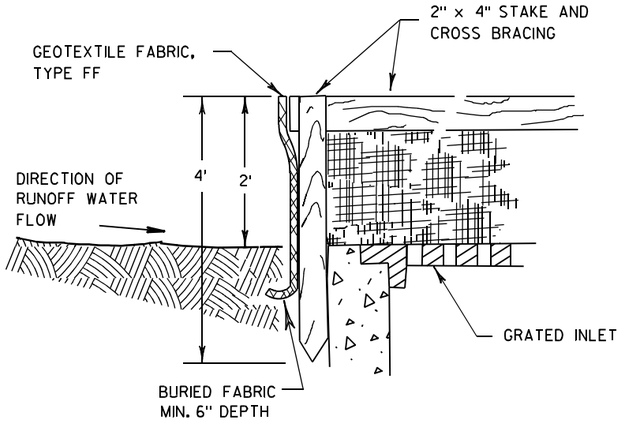
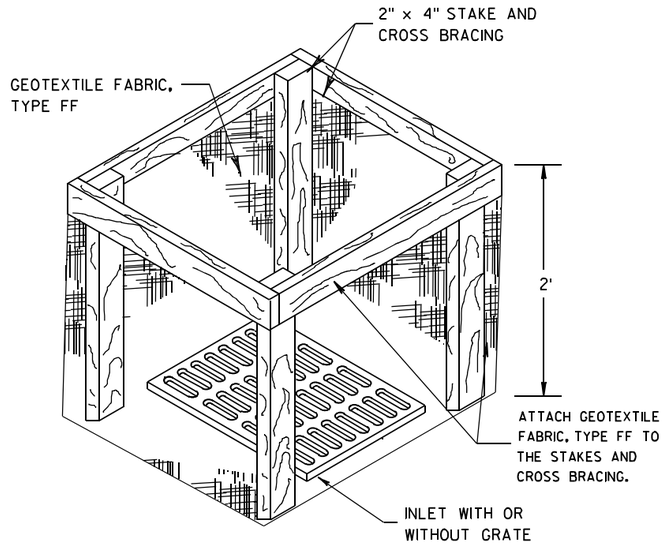
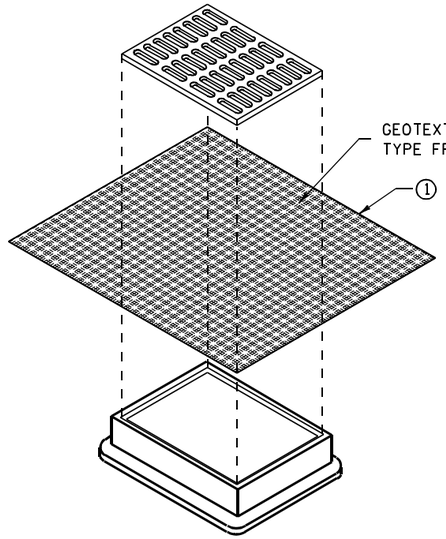


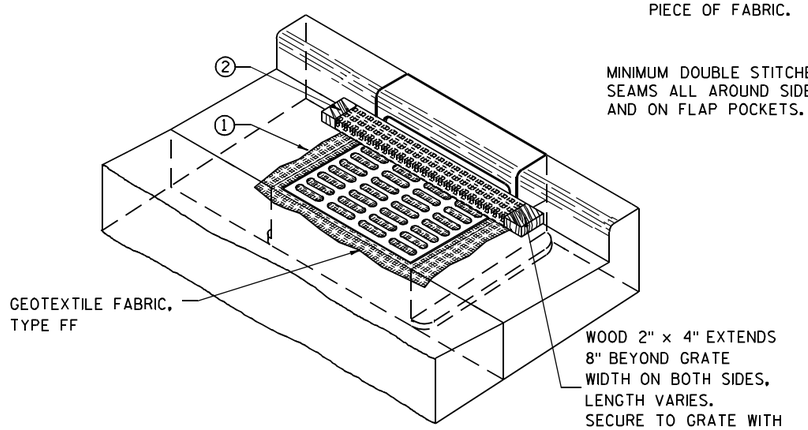


INLET PROTECTION, TYPE A

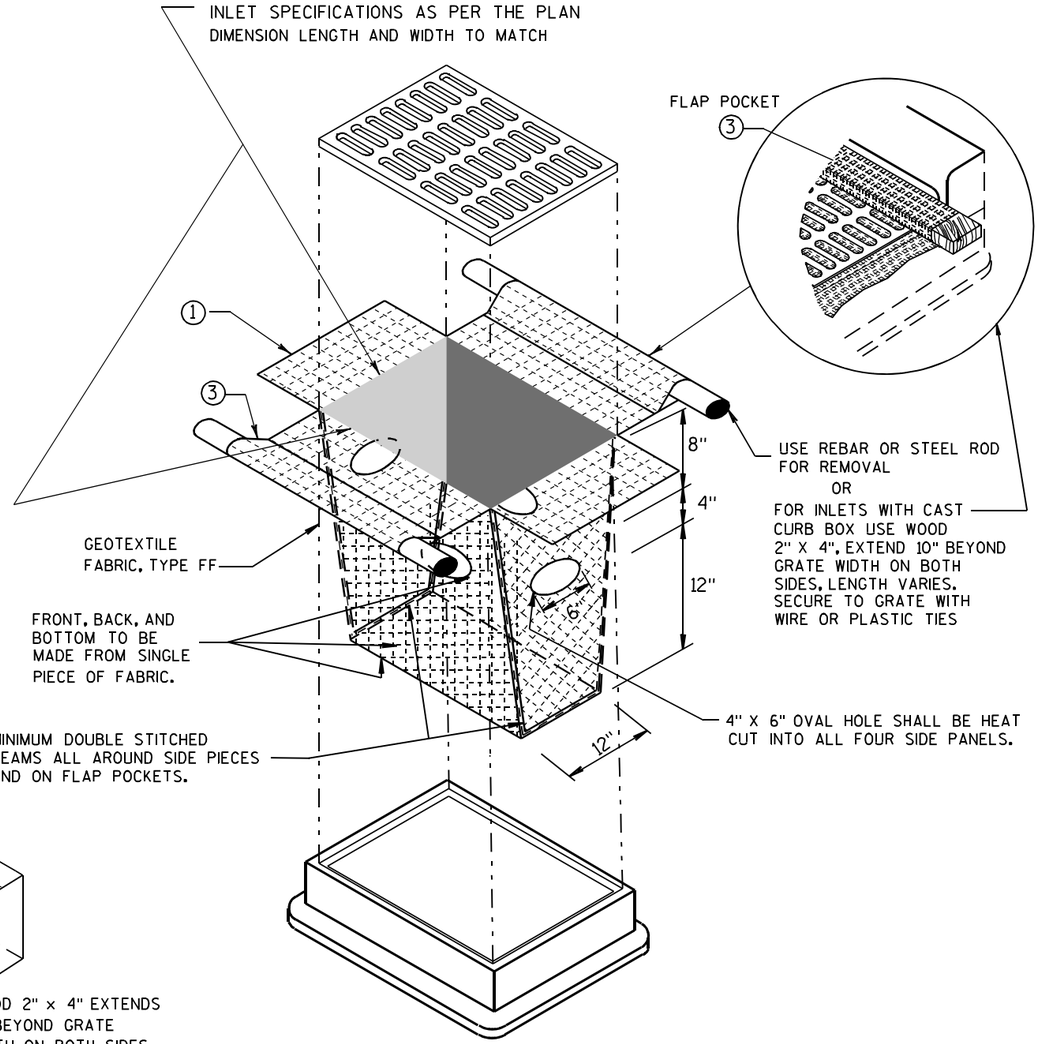


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH
OR WITHOUT A CURB BOX AS PER NOTE ②)

GENERAL NOTES

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

INSTALLATION NOTES

TYPE B & C

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

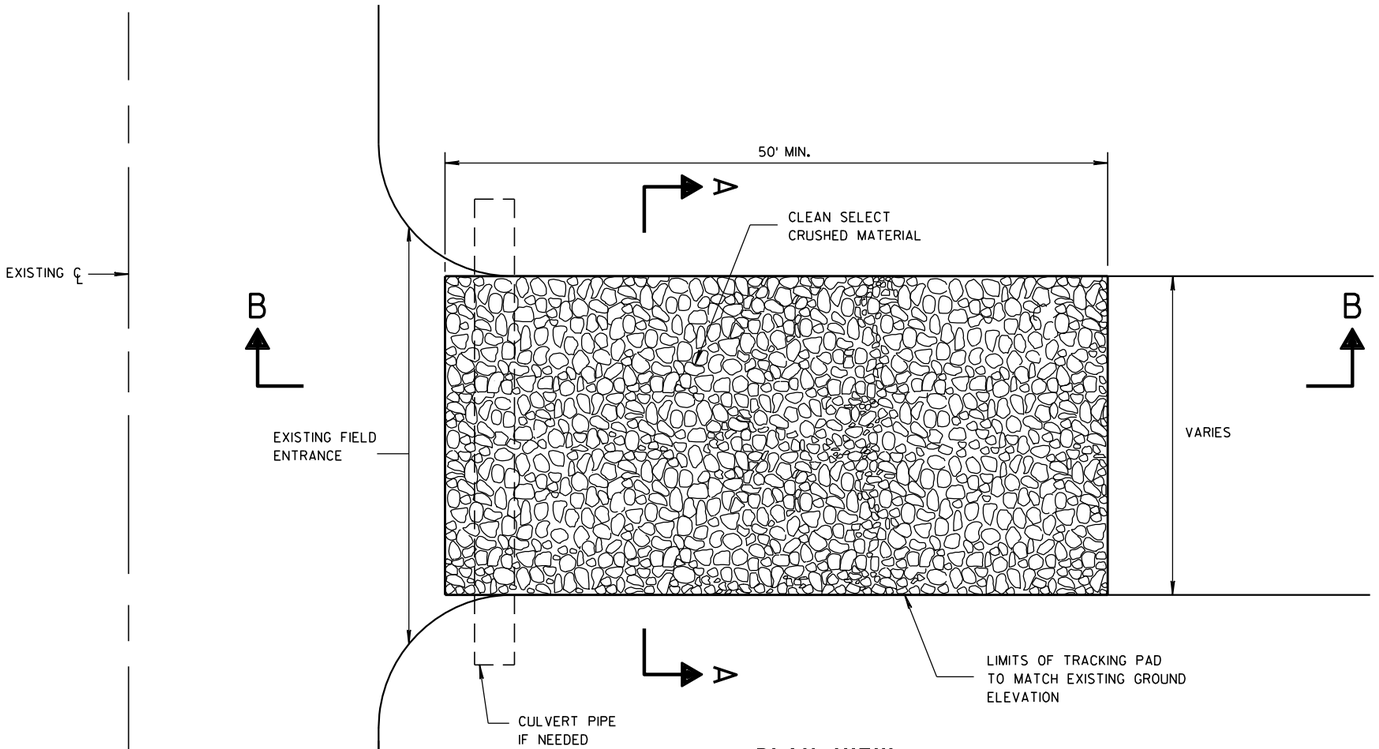
APPROVED

10/16/02
DATE

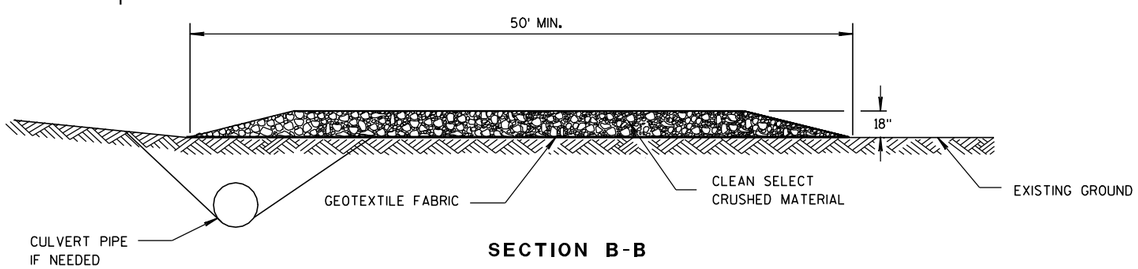
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6
S.D.D. 8 E 10-2



PLAN VIEW



SECTION B-B

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TRACKING PAD SHALL BE INSPECTED DAILY. DEFICIENT AREAS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

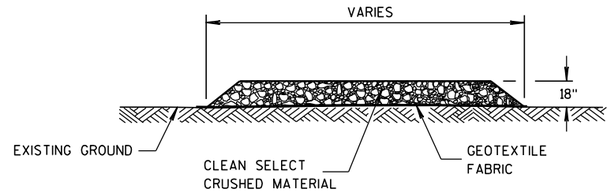
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

TRACKING PAD SHALL BE THE FULL WIDTH OF THE EGRESS POINT.

SURFACE WATER MUST BE PREVENTED FROM PASSING THROUGH THE TRACKING PAD. FLOWS SHALL BE DIVERTED AWAY, AROUND OR CONVEYED UNDER THE TRACKING PAD.

CULVERT PIPE OR OTHER BMP USED TO DIVERT WATER AWAY, AROUND OR UNDER THE TRACKING PAD SHALL BE DESIGNED TO CONVEY THE 2 YEAR - 24 HOUR EVENT.

THE COST OF ADDITIONAL BMP TO DIVERT WATER ARE INCIDENTAL TO THE TRACKING PAD BID ITEM.



SECTION A-A

TRACKING PAD

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S.D.D. 8 E 14-1

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/24/2011	/S/ Jerry H. Zoda	
DATE	ROADWAY STANDARDS ENGINEER	ENT

FHWA

6

S.D.D. 8 E 14-1

METAL APRON ENDWALLS

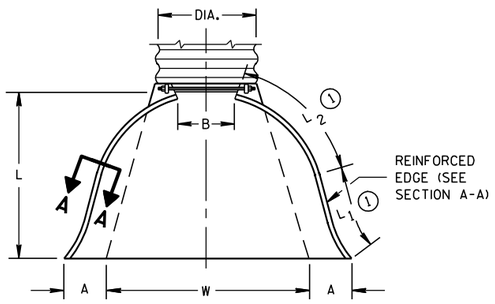
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	36	2 1/2 to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29 5/8	42	2 1/2 to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37 1/4	48	2 1/2 to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52 1/4	60	2 1/2 to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59 3/4	72	2 1/2 to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3 Pc.
60	.109×	.105×	18	33	12	87	—	—	114	2 to 1	3 Pc.
66	.109×	.105×	18	36	12	87	—	—	120	2 to 1	3 Pc.
72	.109×	.105×	18	39	12	87	—	—	126	2 to 1	3 Pc.
78	.109×	.105×	18	42	12	87	—	—	132	1 1/2 to 1	3 Pc.
84	.109×	.105×	18	45	12	87	—	—	138	1 1/2 to 1	3 Pc.
90	.109×	.105×	18	37	12	87	—	—	144	1 1/2 to 1	3 Pc.
96	.109×	.105×	18	35	12	87	—	—	150	1 1/2 to 1	3 Pc.

× EXCEPT CENTER PANEL SEE GENERAL NOTES

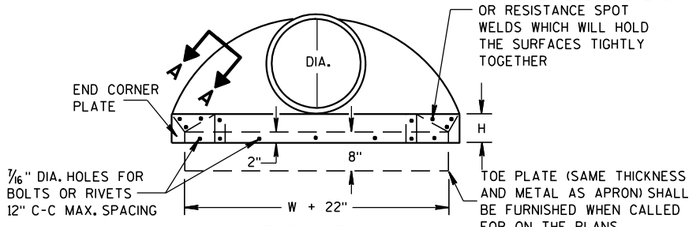
REINFORCED CONCRETE APRON ENDWALLS

PIPE DIA. (IN.)	DIMENSIONS (Inches) T	A	B	C	D	E	G	APPROX. SLOPE
12	2	4	24	48 7/8	72 1/8	24	2	3 to 1
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1
48	5	24	72	26	98	84	5	3 to 1
54	5 1/2	27	65	* 33 1/4 - ** 35	* 98 1/4 - ** 100	90	5 1/2	2 2/5 to 1
60	6	* 30 - ** 35	60	39	99	96	5	2 to 1
66	6 1/2	* 24 - ** 30	* 72 - ** 78	* 21 - ** 27	99	102	5 1/2	2 to 1
72	7	* 24 - ** 36	78	21	99	108	6	2 to 1
78	7 1/2	* 24 - ** 36	78	21	99	114	6 1/2	2 to 1
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1

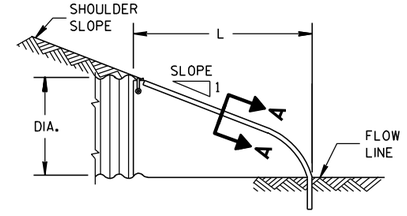
*MINIMUM
**MAXIMUM



PLAN VIEW

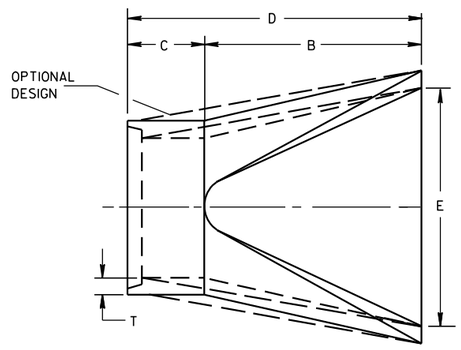


END VIEW

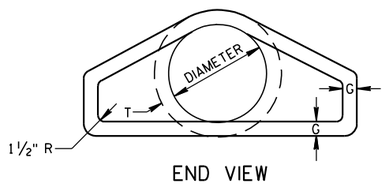


SIDE ELEVATION

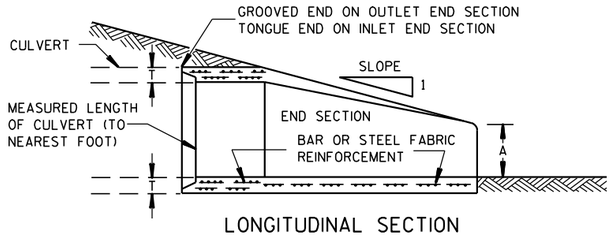
METAL ENDWALLS



PLAN

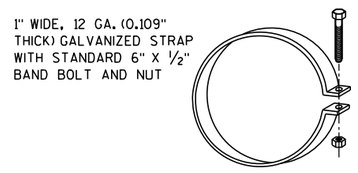


END VIEW



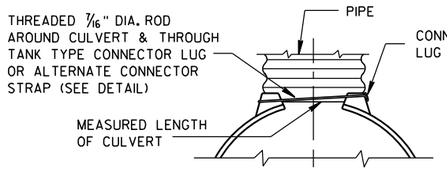
LONGITUDINAL SECTION

CONCRETE ENDWALLS

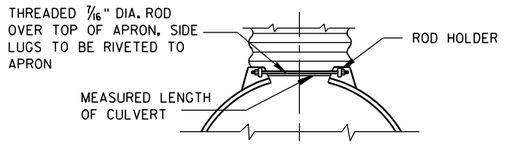


ALTERNATE FOR TYPE 1 CONNECTION

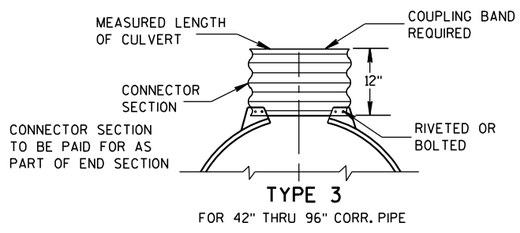
END SECTION CONNECTOR STRAP



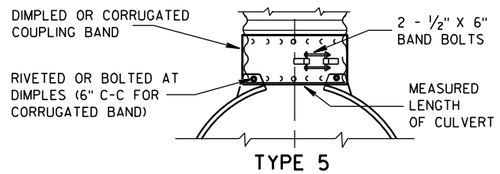
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

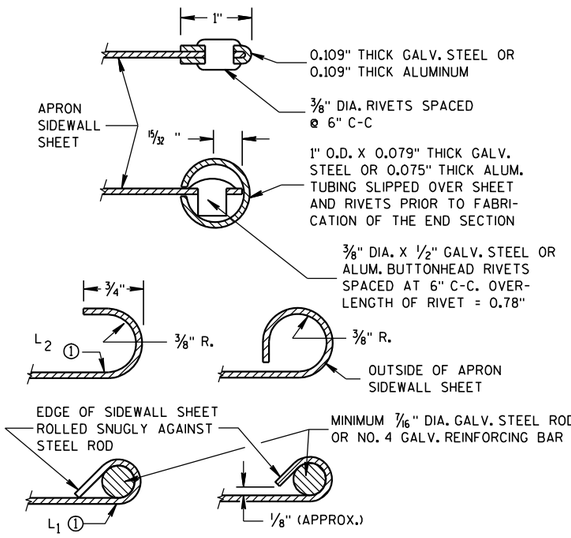
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

FOR CIRCUMFERENTIALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2, 3 OR 5 AS APPLICABLE.

FOR HELICALLY CORRUGATED PIPE USE ENDWALL CONNECTION DETAILS 1, 2 OR 5.

FOR HELICALLY CORRUGATED PIPES WITH TWO CIRCUMFERENTIAL CORRUGATIONS AT EACH END USE ENDWALL CONNECTION DETAILS 1, 2 OR 3.

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 60" THROUGH 96" DIAMETER APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

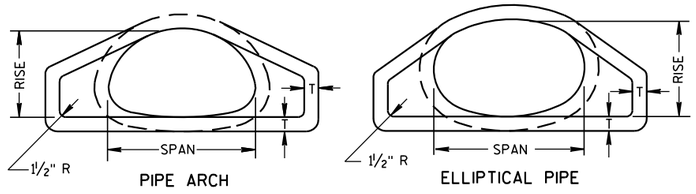
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94 DATE
/S/ Rory L. Rhinesmith
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 F 1-11



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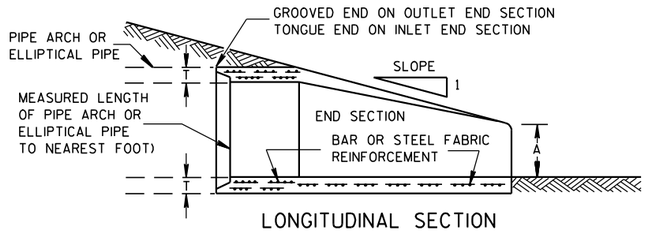
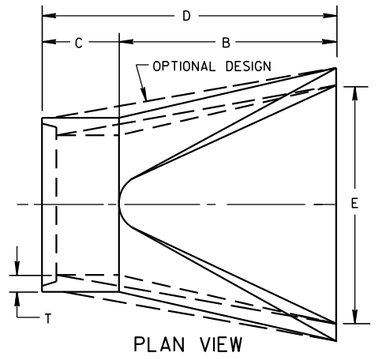
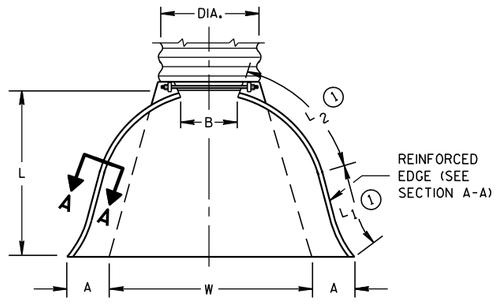


LONGITUDINAL SECTION

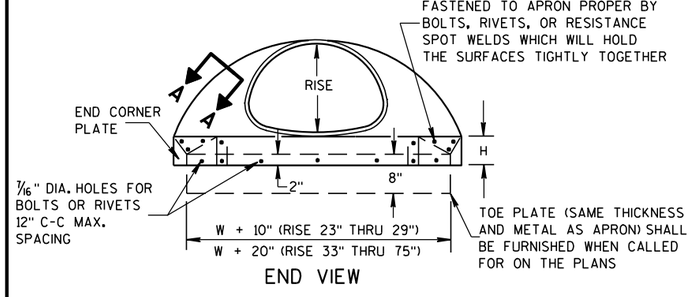


PLAN VIEW

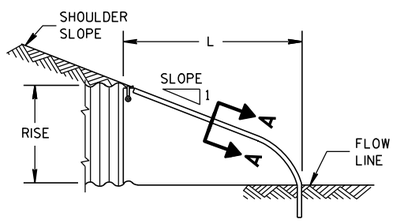
CONCRETE ENDWALLS



PLAN VIEW

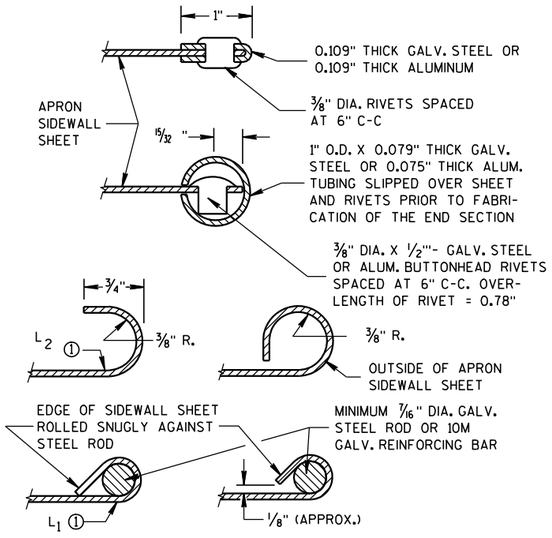


END VIEW



SIDE ELEVATION

METAL ENDWALLS



SECTION A-A

2- 2/3" X 1/2" CORRUGATIONS

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
15	17	13	.064	.060	7	9	6	19	14	16	30	2½ to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19⅜	36	2½ to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21¾	42	2½ to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27½	48	2½ to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37⅝	60	2½ to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45⅜	75	2½ to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54¾	85	2½ to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2½ to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72¾	102	2¼ to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82¼	114	2¼ to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82¼	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1½ to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1½ to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1½ to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1½ to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1½ to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1½ to 1	3 Pc.

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL SEE GENERAL NOTES

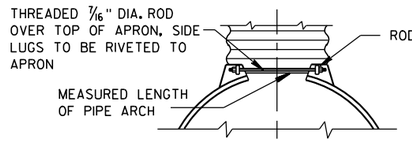
REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	29	18	3	8½	39	33	72	48	3 to 1
30	36	22	3½	9½	50	46	96	60	3 to 1
36	44	27	4	11⅛	60	36	96	72	3 to 1
42	51	31	4½	15 13/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5½	25½	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28½	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

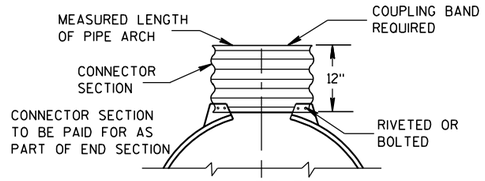
EQUIV. DIA. (Inches)	DIMENSIONS (Inches) ** SPAN	** RISE	T	A	B	C	D	E	APPROX. SLOPE
24	30	19	3¼	8½	39	33	72	48	3 to 1
30	38	24	3¾	9½	54	18	72	60	3 to 1
36	45	29	4½	11⅛	60	24	84	72	2½ to 1
42	53	34	5	15¾	60	36	96	78	2½ to 1
48	60	38	5½	21	60	36	96	84	2½ to 1
54	68	43	6	25½	60	36	96	90	2½ to 1
60	76	48	6½	30	60	36	96	96	2½ to 1

**NOMINAL SIZE



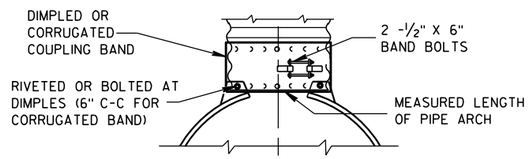
TYPE 2

FOR 17" X 13" THRU 112" X 75" PIPE ARCH



TYPE 3

FOR 64" X 43" THRU 112" X 75" PIPE ARCH



TYPE 5

ALTERNATE FOR:

ALL SIZES CORRUGATED PIPE ARCHES

NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL.

CONNECTION DETAILS

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

CONCRETE APRON ENDWALLS MAY NOT BE USED WITH GALVANIZED STEEL OR ALUMINUM CULVERT PIPE OR VISE VERSA. GALVANIZED STEEL OR ALUMINUM APRON ENDWALLS SHALL NORMALLY BE INSTALLED ON CULVERT PIPE OF THE SAME METAL.

ALL THREE PIECE STEEL APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 66" X 51" PIPE ARCH AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT OF THE PIPE ARCH PERIMETER.

LAP SEAMS SHALL BE TIGHTLY JOINED BY GALVANIZED RIVETS OR BOLTS FOR STEEL UNITS AND ALUMINUM RIVETS AND BOLTS FOR ALUMINUM UNITS. FOR THE 77" X 52" THROUGH 112" X 75" APRON ENDWALL SIZES, THE REINFORCED EDGES AND CENTER PANEL SEAMS SHALL BE FURTHER REINFORCED WITH GALVANIZED STEEL OR ALUMINUM STIFFENER ANGLES. THE ANGLES SHALL BE ATTACHED BY GALVANIZED NUTS AND BOLTS FOR STEEL UNITS AND ALUMINUM NUTS AND BOLTS FOR ALUMINUM UNITS.

WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

① FOR PIPE ARCH SIZES UP TO 73" X 55" A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94 — DATE

/S/ Rory L. Rhinesmith — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

6

S.D.D. 8 F 2-1

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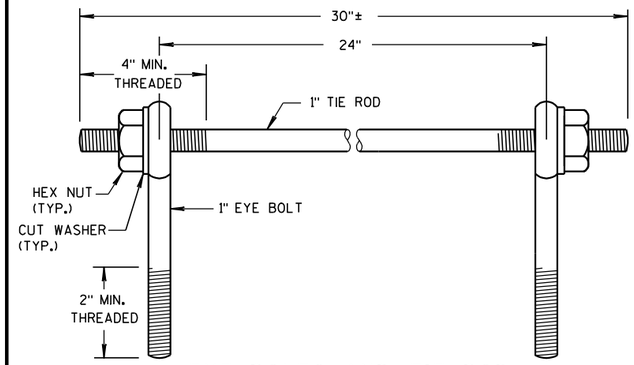
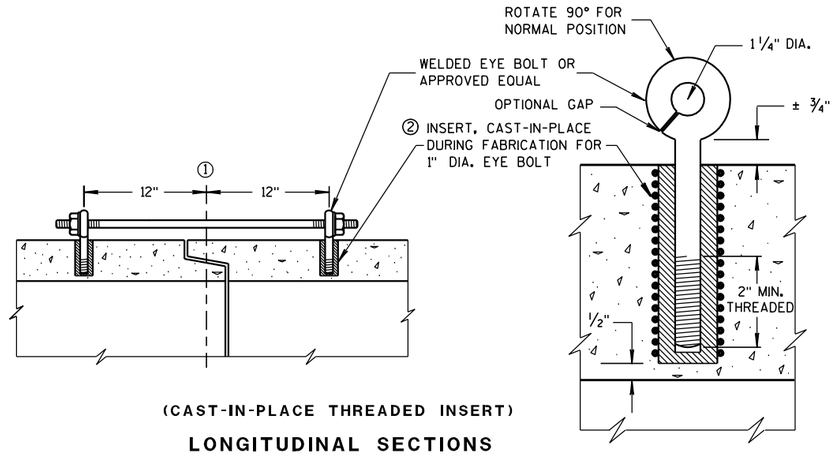
S.D.D. 8 F 2-1



EYE BOLTS AND TIE ROD



(CAST-IN-PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 1)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

CONCRETE CULVERT AND STORM SEWER PIPE SHALL BE TIED TOGETHER IN THE MANNER ILLUSTRATED BY THIS DETAIL AT LOCATIONS DESIGNATED IN THE STANDARD SPECIFICATIONS AND THE PLAN. THE CONTRACTOR MAY USE EITHER ALTERNATE 1, 2 OR 3 FOR DRAINAGE STRUCTURES. ONLY ALTERNATE 1 AND 3 MAY BE USED FOR CATTLE PASSES, UNLESS OTHERWISE STATED IN THE CONTRACT. THE MATERIALS, FABRICATION AND WORK NECESSARY TO TIE THE PIPE BY THIS DETAIL WILL BE CONSIDERED INCIDENTAL TO THE PIPE AND APRON ENDWALLS IF REQUIRED.

DETAILED DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR JOINT TIES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

① ℄ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.

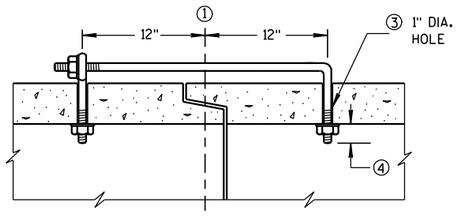
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ℄ OF TONGUE AND GROOVE.

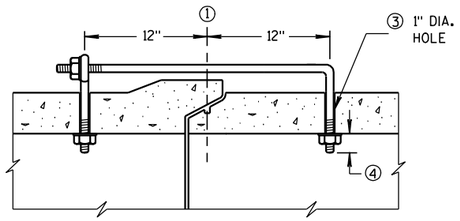
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.

⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



(TONGUE & GROOVE PIPE)

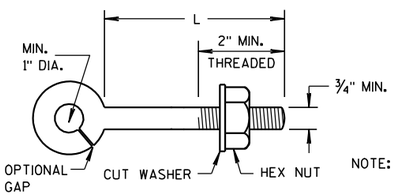


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

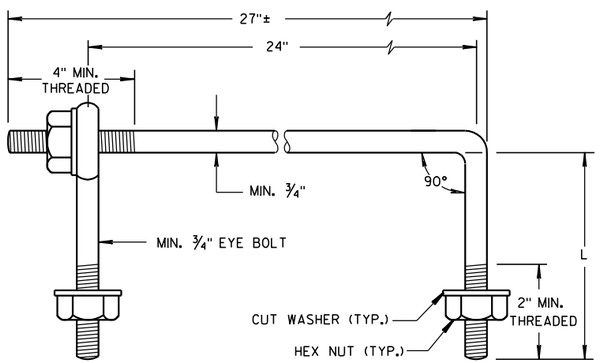
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



NOTE:

EYE BOLT

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



EYE BOLT AND TIE ROD

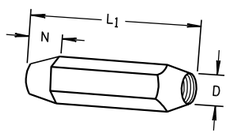
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)

ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L_1	N
12-60	5/8	5/8	5	1/2
66-84	3/4	3/4	5	1/2
90-108	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES



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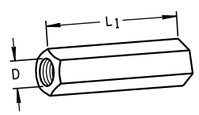
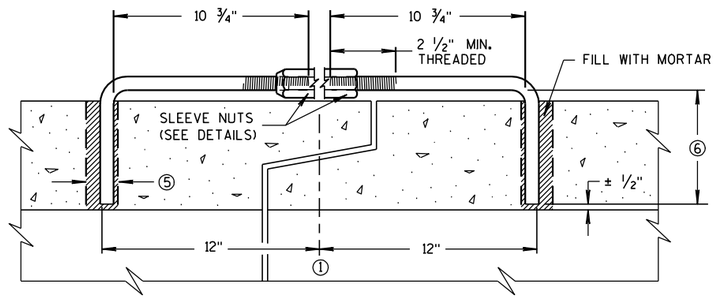


PLAIN

RIGHT AND LEFT THREADS

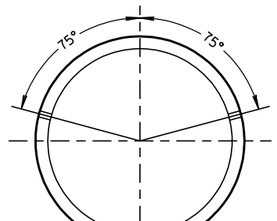
SLEEVE NUTS



LONGITUDINAL SECTION

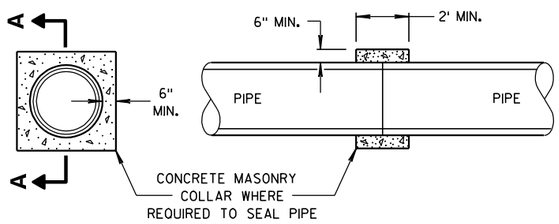
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



PLACEMENT OF (2) CAST-IN-PLACE INSERTS OR HOLES DURING FABRICATION FOR PIPE SECTIONS REQUIRING TIE RODS

TRANSVERSE SECTION



SECTION A-A

CONCRETE COLLAR DETAIL

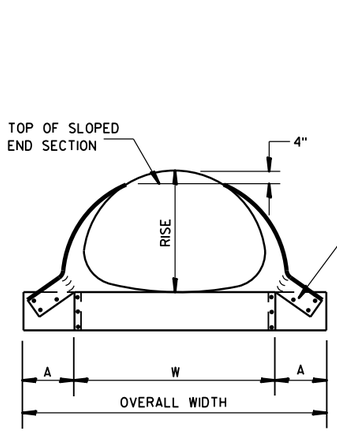
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

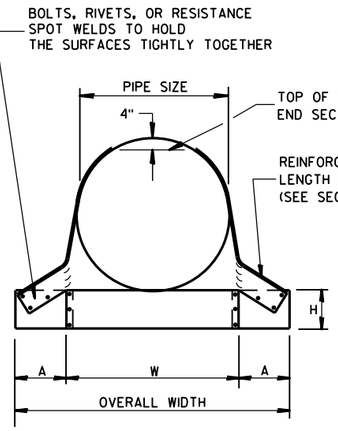
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
140
FHWA

6

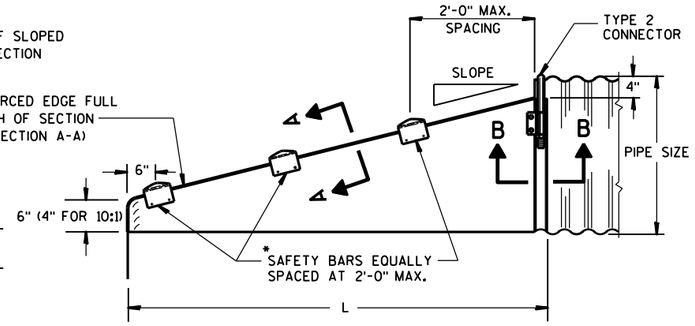
S.D.D. 8 F 4-7



FRONT VIEW



FRONT VIEW



SIDE VIEW

GENERAL NOTES

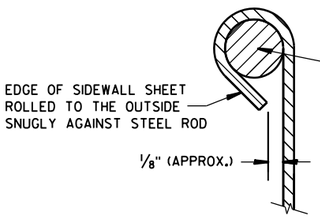
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

SLOPED END SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SECTION 521 FOR STEEL APRON ENDWALLS.

SAFETY BARS SHALL BE FABRICATED FROM GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL.

STEEL APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS

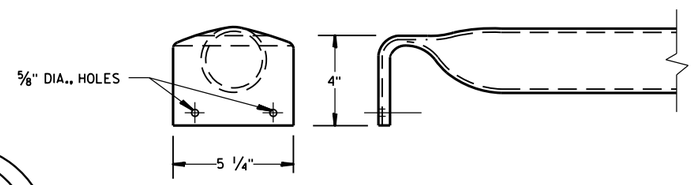
PIPE DIA. (IN.)	MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS					
		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	.064	8	6	21	37	4:1	20	6:1	30	10:1	70
18	.064	8	6	24	40	4:1	32	6:1	48	10:1	100
21	.064	8	6	27	43	4:1	44	6:1	66	10:1	130
24	.064	8	6	30	46	4:1	56	6:1	84	10:1	160
30	.109	12	9	36	60	4:1	80	6:1	120	10:1	220
36	.109	12	9	42	66	4:1	104	6:1	156	10:1	280
42	.109	16	12	48	80	4:1	128	6:1	192	——	——
48	.109	16	12	54	86	4:1	152	6:1	228	——	——
54	.109	16	12	60	92	4:1	176	6:1	264	——	——
60	.109	16	12	66	98	4:1	200	6:1	300	——	——



SECTION A-A

*NOTE:
THREE SAFETY BARS ARE SHOWN. ACTUAL NUMBER OF BARS REQUIRED AT A 2'-0" C-C MAX. SPACING WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

3" GALVANIZED PIPE. FLATTEN ENDS, THEN BEND OUTSIDE 4" TO MATCH END SECTION SIDES.

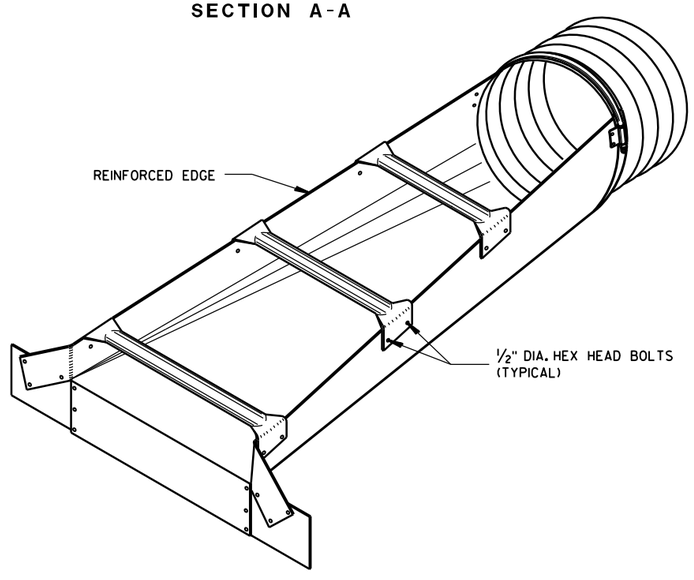


DETAIL OF SAFETY BAR

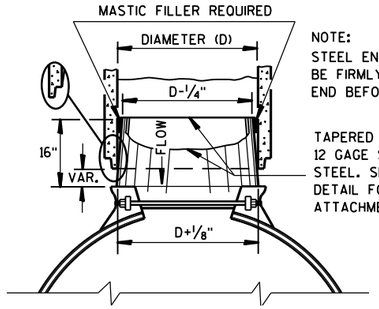
STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED SIDE DRAINS

EQUIV. DIA. (Inches)	(Inches) SPAN	(Inches) RISE	MIN. THICK. (Inches) ①	DIMENSIONS (Inches) A	H	W	OVERALL WIDTH	L DIMENSIONS SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	17	13	.064 *	7	6	30	44	4:1	19	6:1	30	10:1 ②	70
18	21	15	.064 *	8	6	27	43	4:1	20	6:1	30	10:1	70
21	24	18	.064 *	8	6	30	46	4:1	32	6:1	48	10:1	100
24	28	20	.064 *	8	6	34	50	4:1	40	6:1	60	10:1	120
30	35	24	.079 *	12	9	41	65	4:1	56	6:1	84	10:1	160
36	42	29	.109 *	12	9	48	72	4:1	76	6:1	114	10:1	210
42	49	33	.109	16	12	55	87	4:1	92	6:1	138	——	——
48	57	38	.109	16	12	63	95	4:1	112	6:1	168	——	——
54	64	43	.109	16	12	70	102	4:1	132	6:1	198	——	——

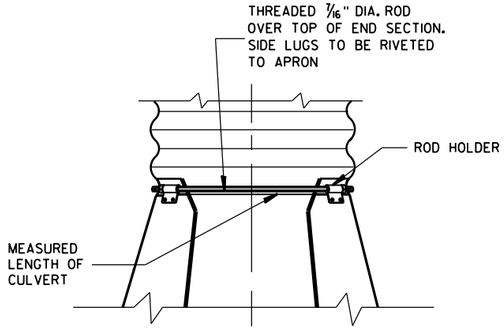
① * MINIMUM THICKNESS OF ALL 10:1 SLOPED SIDE DRAINS IS 0.109".
② ACTUAL SLOPE GREATER THAN 10:1.



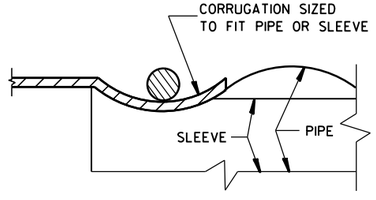
ISOMETRIC VIEW



STEEL ADAPTER SLEEVE FOR CONCRETE PIPE



TYPE 2
CONNECTION DETAIL



SECTION B-B

STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE DRAINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/14/2012 — DATE
/S/ Jerry H. Zoda — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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S.D.D. 8 F 7-5

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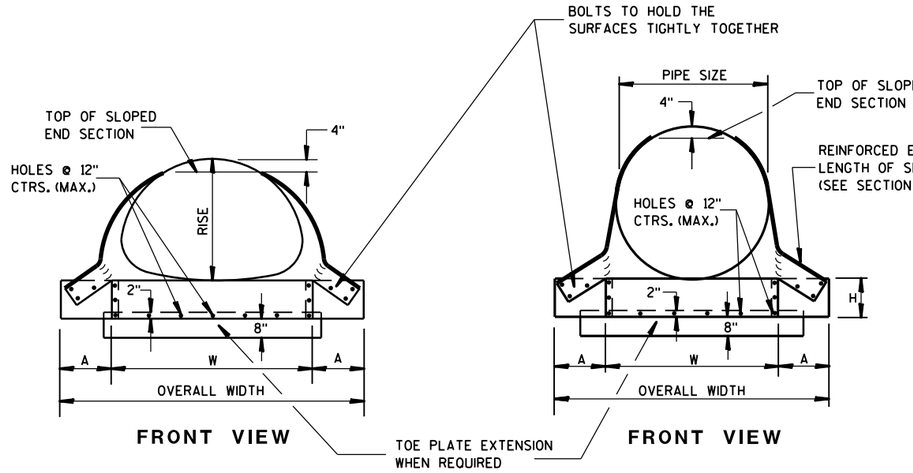
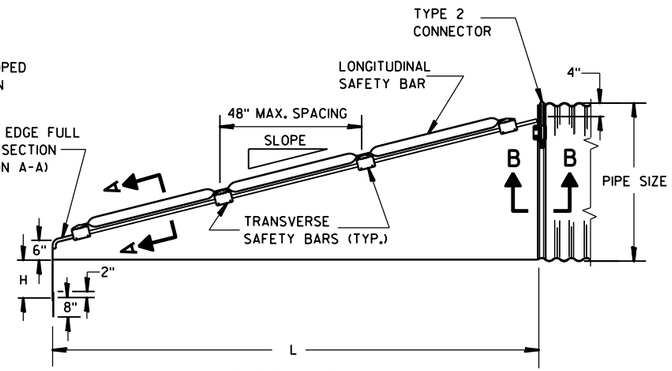
S.D.D. 8 F 7-5



FRONT VIEW

FRONT VIEW



SIDE VIEW
(48" SIZE ILLUSTRATED)

GENERAL NOTES

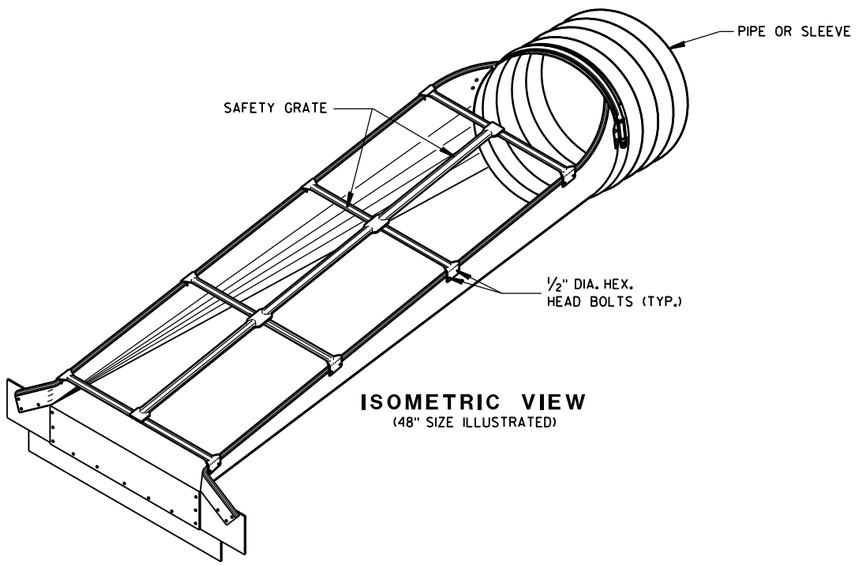
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

SAFETY GRATES SHALL BE FABRICATED FROM 3-INCH DIAMETER GALVANIZED PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL. THE LONGITUDINAL BAR SHALL BE WELDED TO THE TRANSVERSE BARS WHERE THE BARS CROSS. THE NUMBER OF TRANSVERSE BARS REQUIRED WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

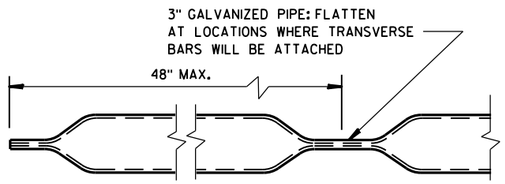
SLOPED STEEL ENDWALLS LOCATED AT THE ENDS OF CONCRETE CULVERT PIPE SHALL BE FURNISHED WITH STEEL ADAPTER SLEEVES.

STEEL APRON ENDWALLS FOR CULVERT PIPE CROSS DRAINS

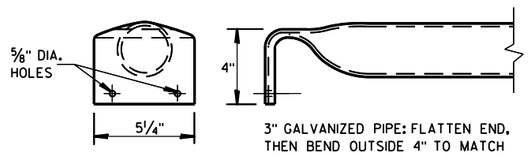
PIPE DIA. (IN.)	MIN. THICK.		DIMENSIONS (Inches)				L DIMENSIONS			
	IN.	GAGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
36	.109	12	12	9	42	66	4:1	104	6:1	156
42	.109	12	16	12	48	80	4:1	128	6:1	192
48	.109	12	16	12	54	86	4:1	152	6:1	228
54	.109	12	16	12	60	92	4:1	176	6:1	264
60	.109	12	16	12	66	98	4:1	200	6:1	300



ISOMETRIC VIEW
(48" SIZE ILLUSTRATED)



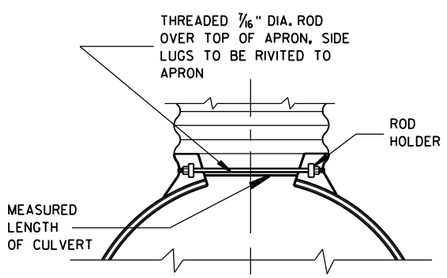
LONGITUDINAL SAFETY BAR



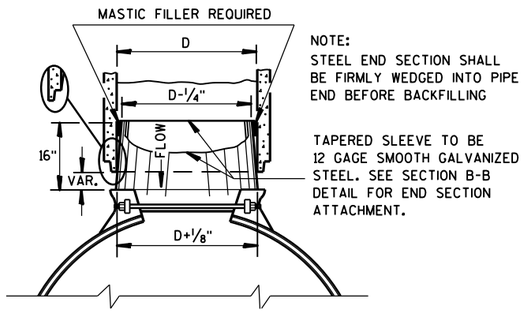
TRANSVERSE SAFETY BAR

STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED CROSS DRAINS

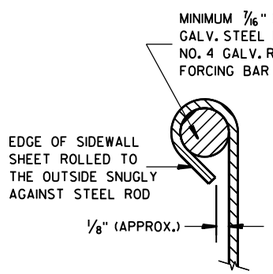
EQUIV. DIA. (IN.)	INCHES		MIN. THICK.		DIMENSIONS (Inches)				L DIMENSIONS			
	SPAN	RISE	IN.	GAGE	A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
30	35	24	.079	14	12	9	41	65	4:1	56	6:1	84
36	42	29	.109	12	12	9	48	72	4:1	76	6:1	114
42	49	33	.109	12	16	12	55	87	4:1	92	6:1	138
48	57	38	.109	12	16	12	63	95	4:1	112	6:1	168
54	64	43	.109	12	16	12	70	102	4:1	132	6:1	198
60	71	47	.109	12	16	12	77	109	4:1	148	6:1	222



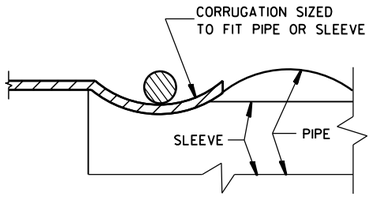
TYPE 2 CONNECTOR DETAIL



STEEL ADAPTER SLEEVE FOR CONCRETE PIPE



SECTION A-A



SECTION B-B

STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

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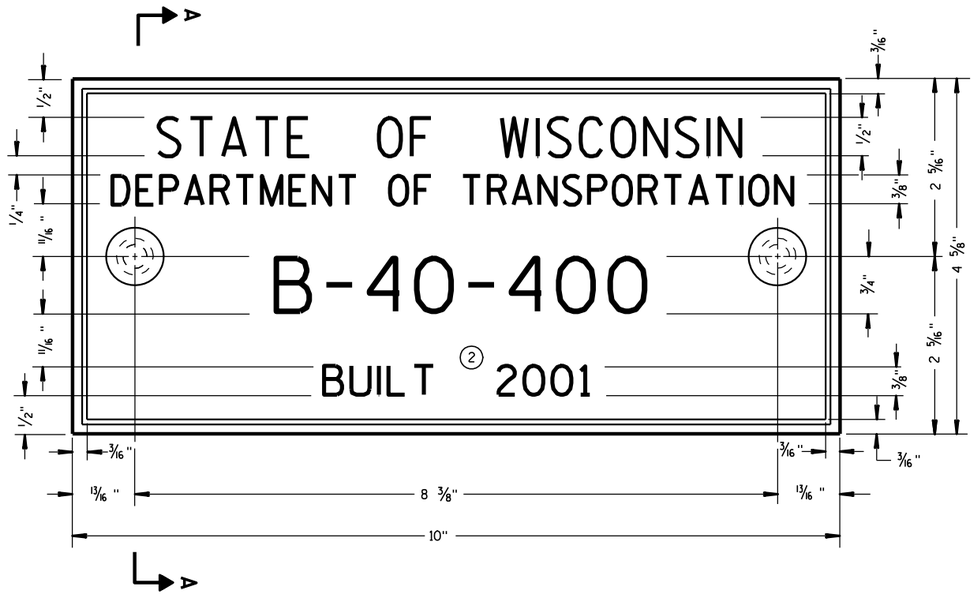
S.D.D. 8 F 8-2



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)

FOR MULTI-UNIT STRUCTURES
LINE 3 ABOVE SHALL READ

B = BRIDGE
C = CULVERT
R = RETAINING WALL

COUNTY NO.

BRIDGE NO.

UNIT NO. FOR MULTIPLE UNIT BRIDGE

B-40-400-1A

NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

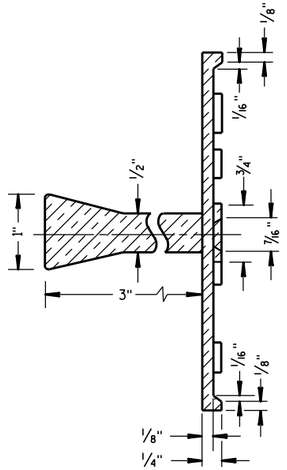
GENERAL NOTES

NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

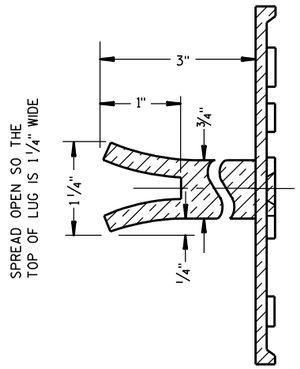
THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

(1) EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

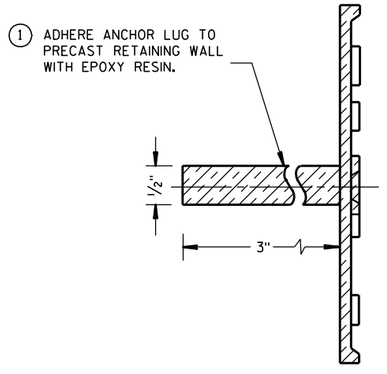
(2) REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



ALTERNATE LUG



ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

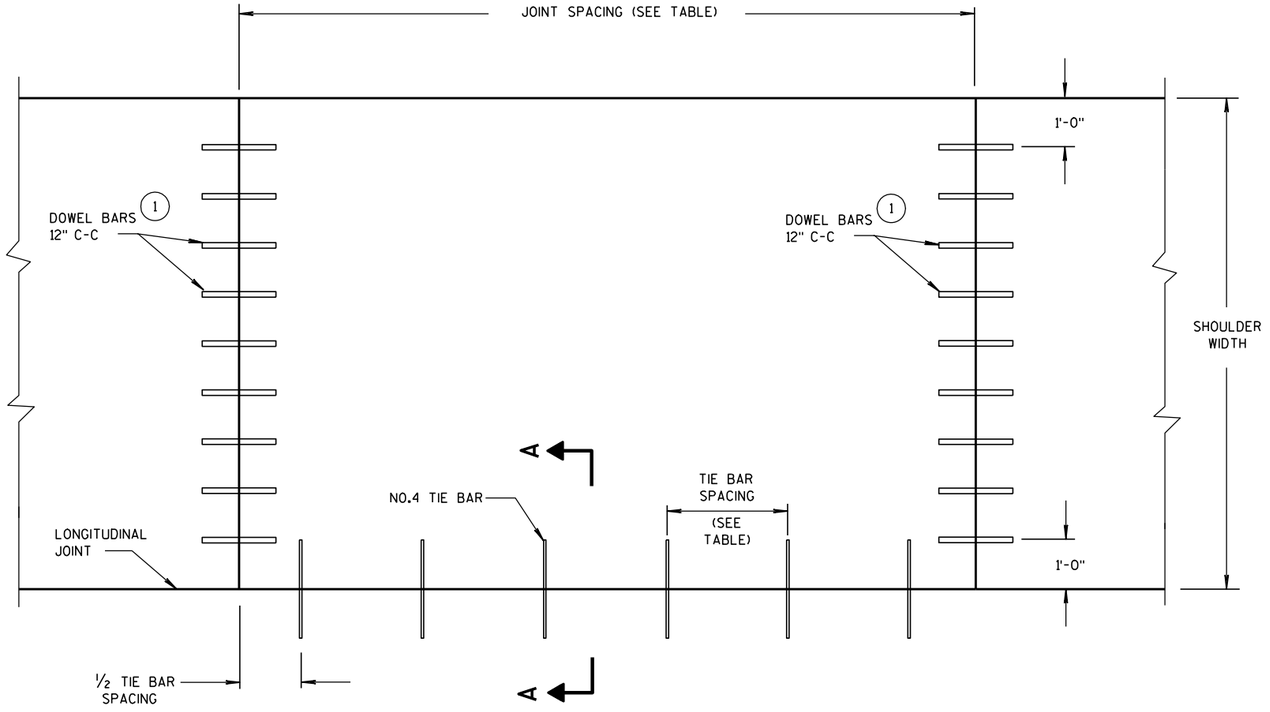
3/26/10 DATE

/S/ Scot Beck -- CHIEF STRUCTURAL DEVELOP ENGINEER

FHWA

6

S.D.D. 12 A 3-10



PLAN VIEW

CONCRETE PAVEMENT SHOULDER

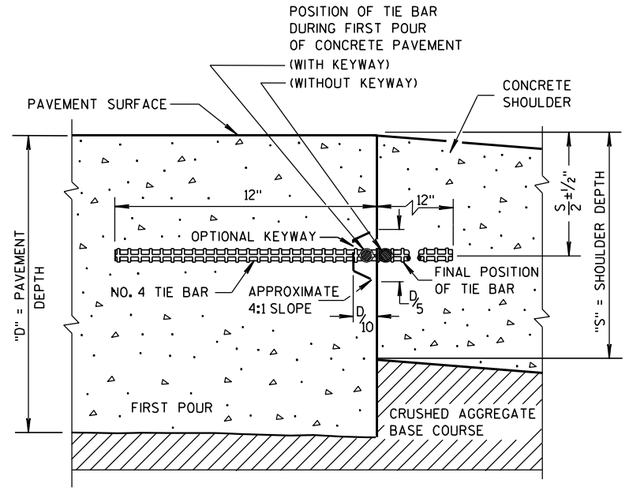
GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

TRANSVERSE JOINT DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.

FINISH THE SHOULDER PAVEMENT CONFORMING TO SUBSECTION 415.3.8 OF THE STANDARD SPECIFICATIONS.

TIE BARS SHALL CONFORM TO SUBSECTION 505.2.4 OF THE STANDARD SPECIFICATIONS.



SECTION A-A

LONGITUDINAL CONSTRUCTION JOINT

PAVEMENT TYPE OF TRAFFIC LANES	TIE BAR SPACING	SHOULDER JOINT SPACING
NON-REINFORCED	30"	MATCH JOINT SPACING OF ADJACENT TRAFFIC LANE
CONTINUOUSLY REINFORCED	30"	15' FOR 6' TO 10' WIDE SHOULDERS
CONTINUOUSLY REINFORCED	36"	12' FOR 3' WIDE SHOULDERS

(1)

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'

FOR DOWELED CONCRETE SHOULDERS WITH TRAPEZOIDAL CROSS SECTIONS, CHOSE THE APPROPRIATE DOWEL BAR DIAMETER BASED ON THE SMALLER PAVEMENT DEPTH (LIKELY THE OUTSIDE EDGE OF THE SHOULDER). IF USING BASKETS, USE BASKETS FOR THE AVERAGE THICKNESS OF THE CROSS SECTION.

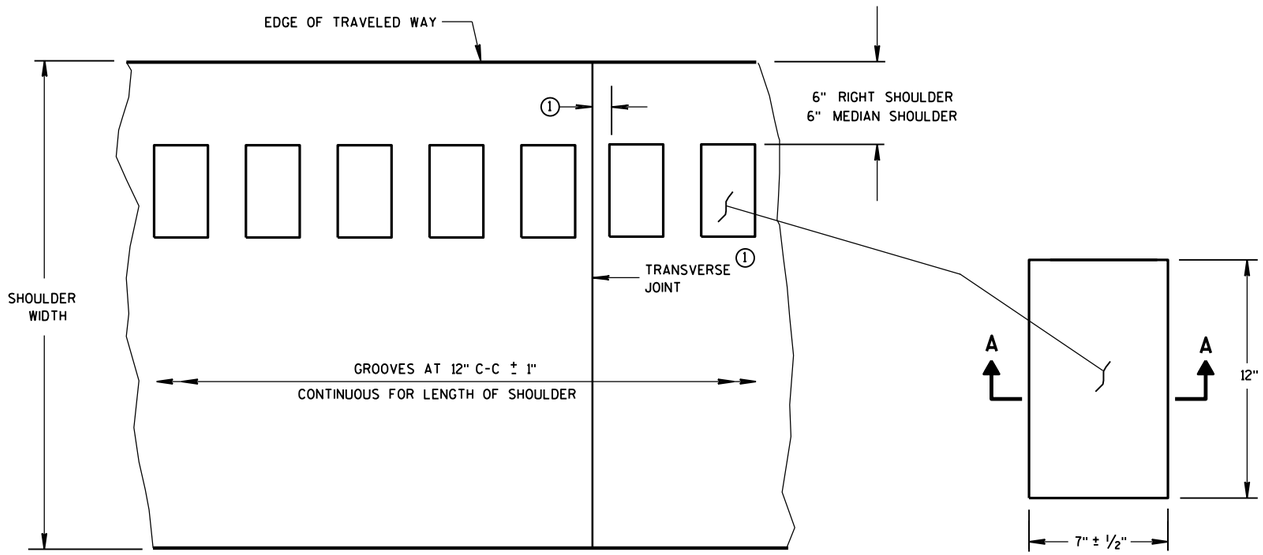
CONCRETE PAVEMENT SHOULDERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/15/2011 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & D — ENGINEER
FHWA

6

S.D.D. 13 A 3-5



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

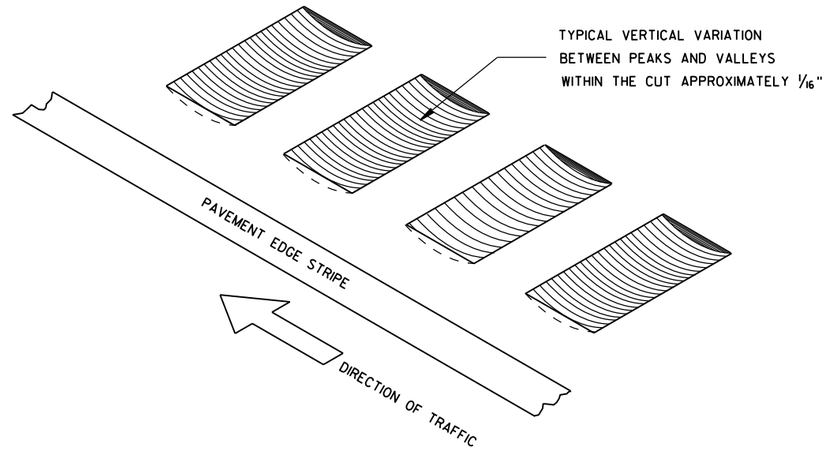
GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

(1) CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



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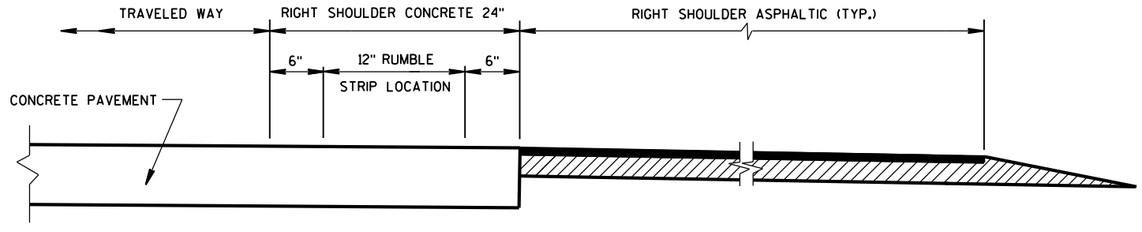
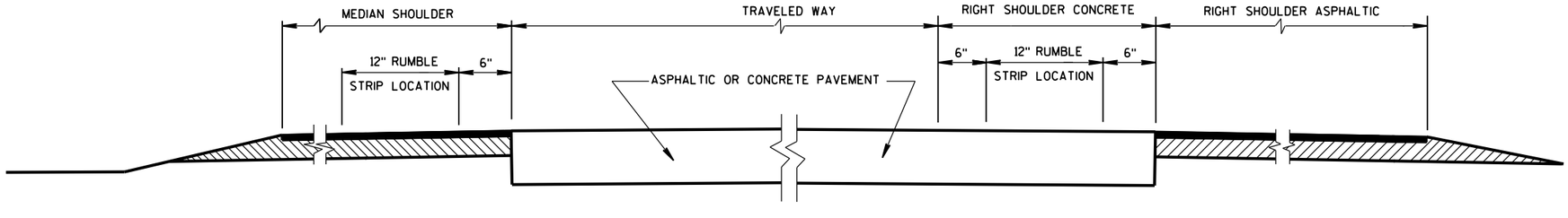


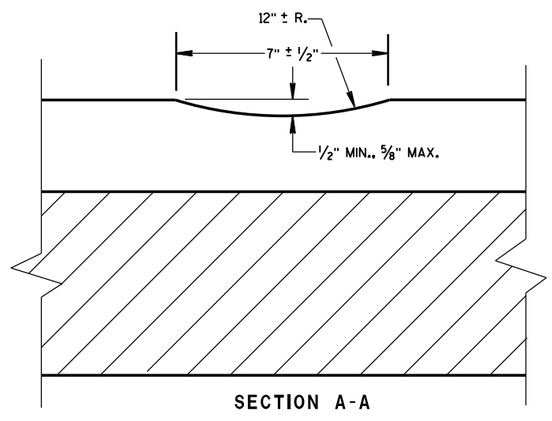
SECTION VIEW
CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



SECTION VIEW

TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS IN RURAL DIVIDED HIGHWAYS

(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 13 A 5-5a

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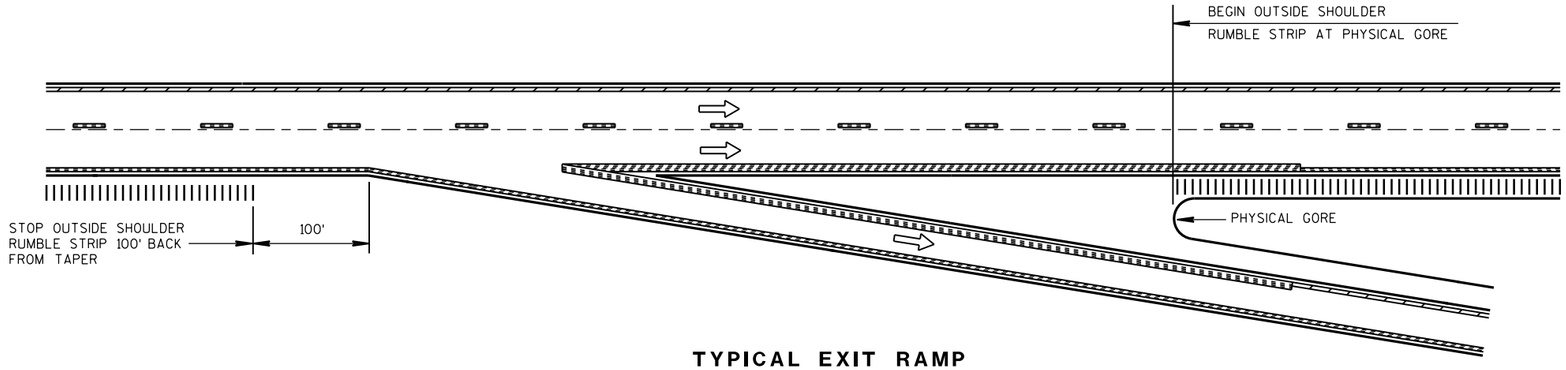
S.D.D. 13 A 5-5a



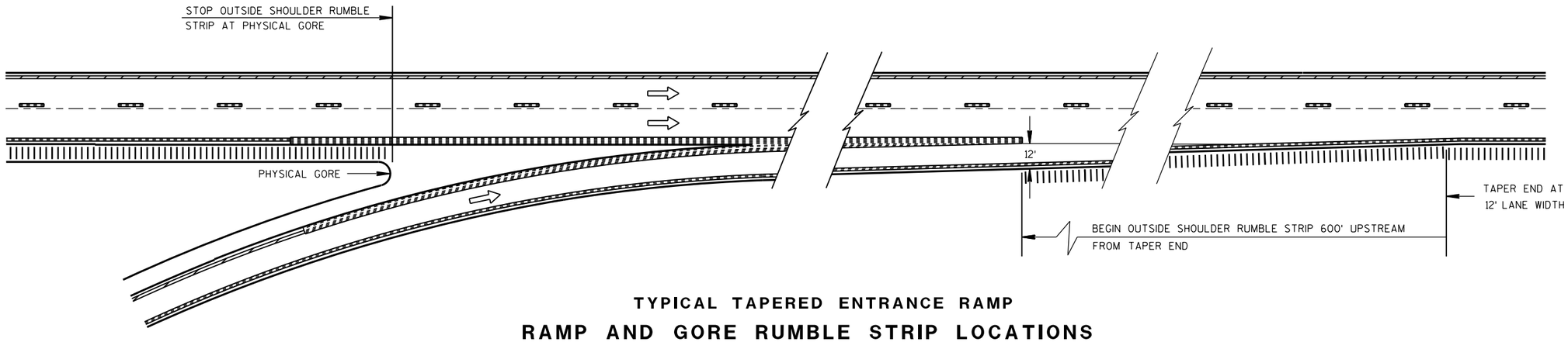
TYPICAL EXIT RAMP

NOTES:

NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

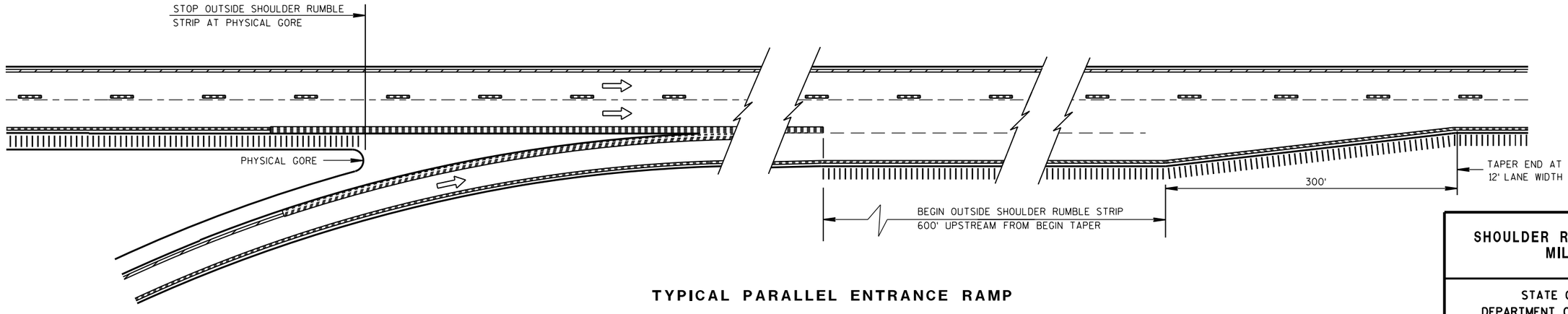
PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TYPICAL TAPERED ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS



TYPICAL PARALLEL ENTRANCE RAMP

RAMP AND GORE RUMBLE STRIP LOCATIONS

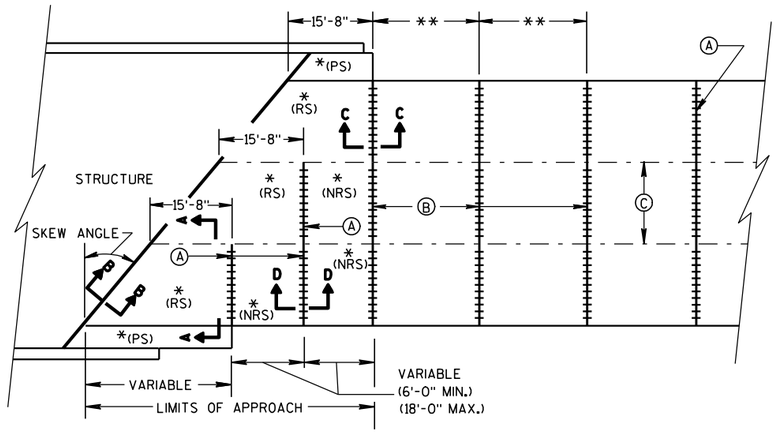
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

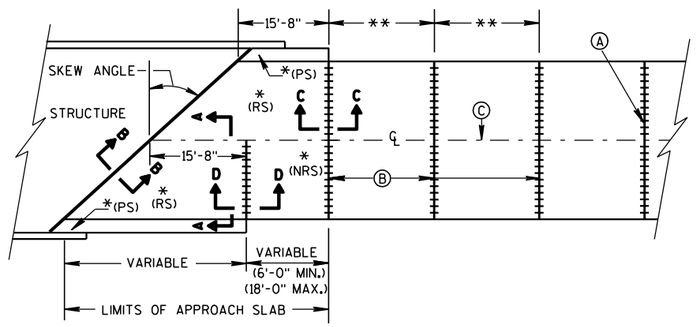
APPROVED
12/17/2012 — DATE
/S/ Jerry H. Zoga — ROADWAY STANDARDS ENGINEER
FHWA

6

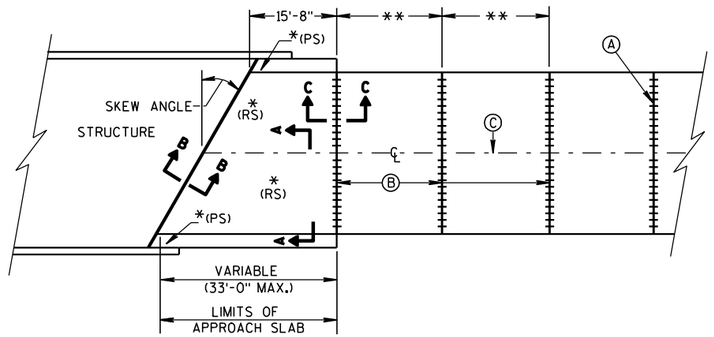
S.D.D. 13 A 5-5b



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >30°
(PAVEMENT WIDTH ≤30')



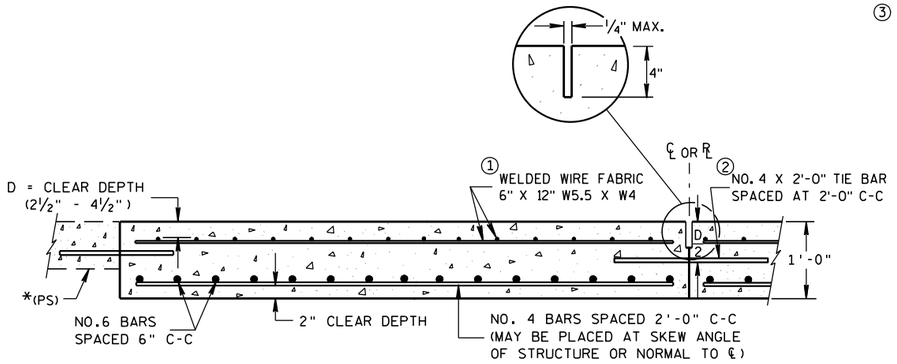
SKEWS ≤30°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

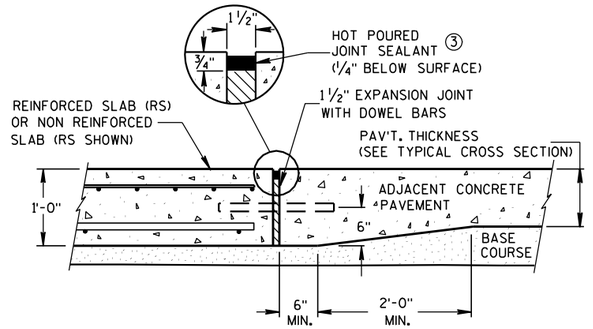
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

**STANDARD TRANSVERSE JOINT SPACING
(SEE SDD 13C4, SDD 13C11, & SDD 13C13)

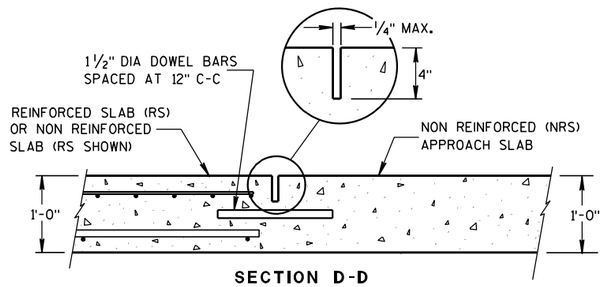
(A) STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
(B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄
(C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

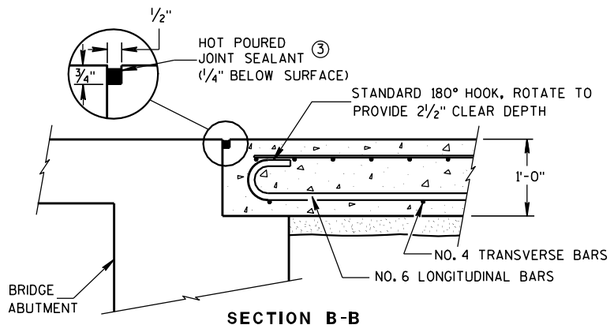
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

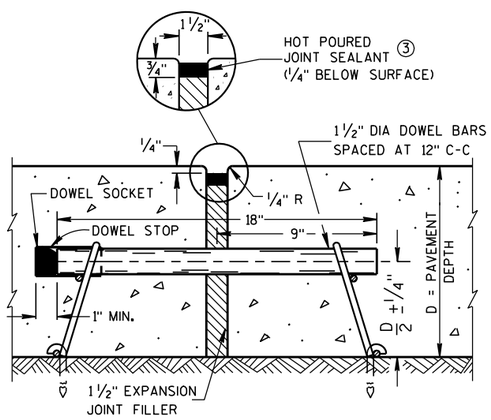
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

② THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

③ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



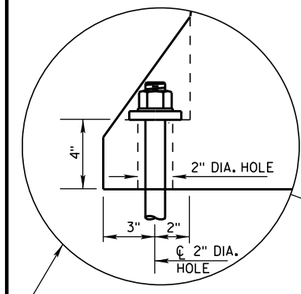
EXPANSION JOINT

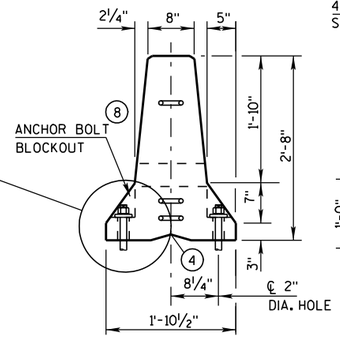
CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

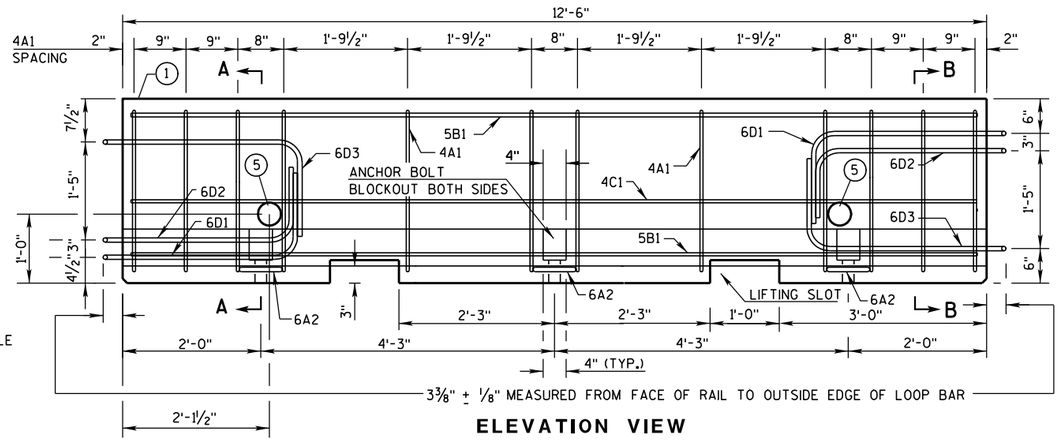
APPROVED
12/11/2009 — DATE
/S/ Deb Bischoff — PAVEMENT POLICY & DE ENGINEER
FHWA

6
S.D.D. 13 B 2-6

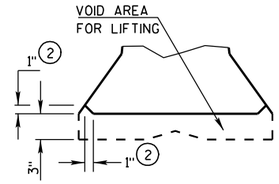




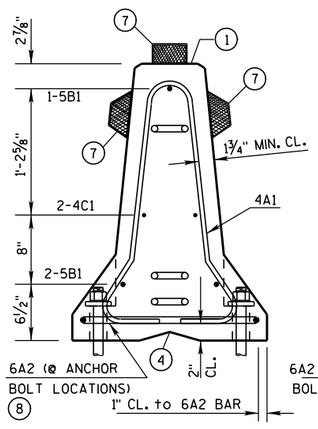
END VIEW



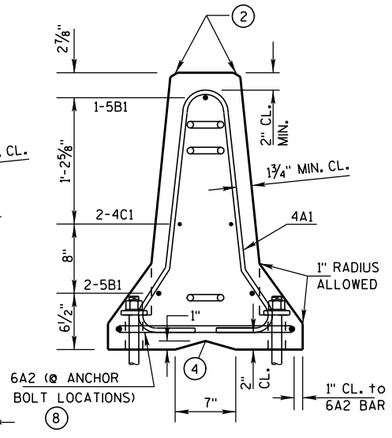
ELEVATION VIEW



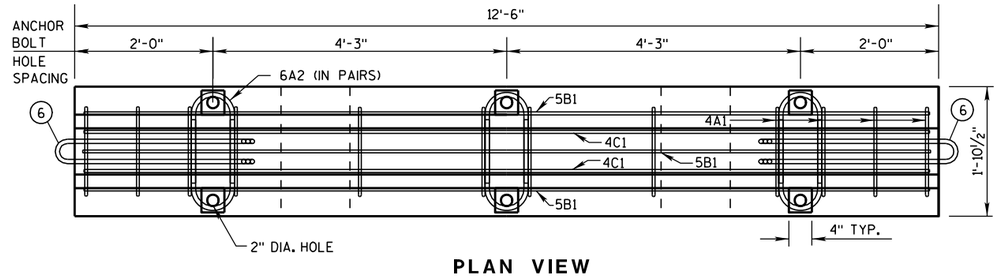
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

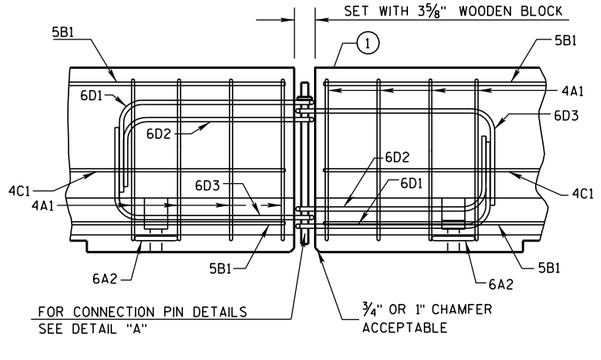


SECTION B-B
(STIRRUP PLACEMENT)

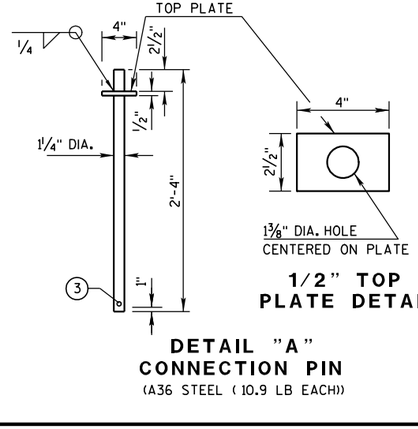


PLAN VIEW

DETAILS OF BARRIER SECTION

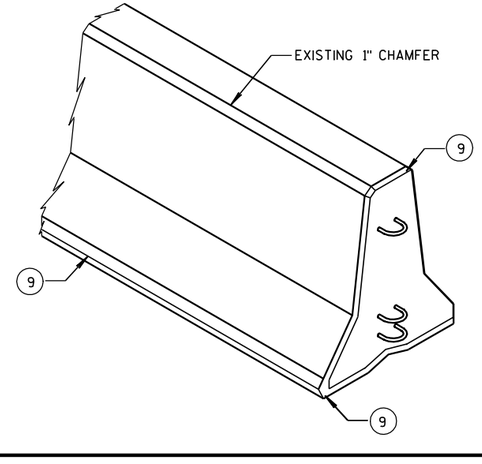


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-13(a) THRU 14B7-13(h).

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRCAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE ¾" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-½" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN ⅛" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

INSTALL MECHANICAL OR EPOXY ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

(1) MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE: WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)

(2) 1" CHAMFER TO PREVENT SPALLING.

(3) A ⅜" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..

(4) "V" NOTCH IS OPTIONAL.

(5) THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).

(6) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

(7) USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.

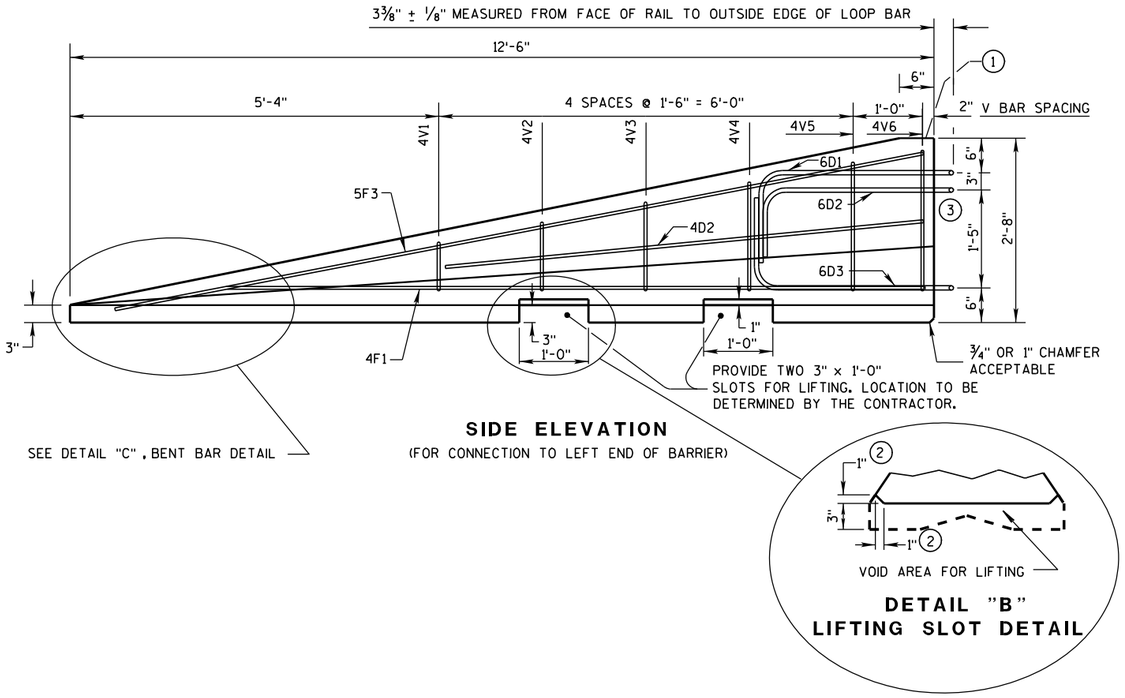
(8) SEE SHEET D FOR ANCHORING CRITERIA.

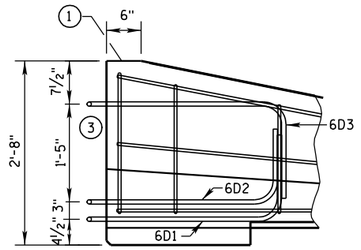
(9) 1" CHAMFER OPTIONAL.

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

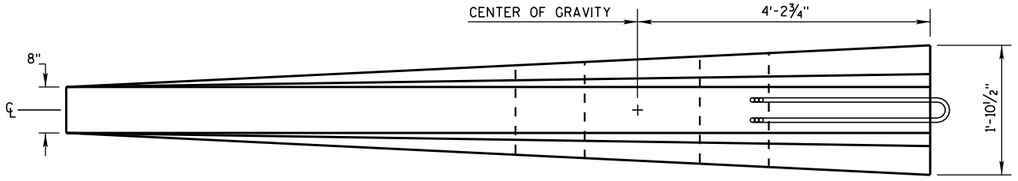
6
S.D.D. 14 B 7-13a

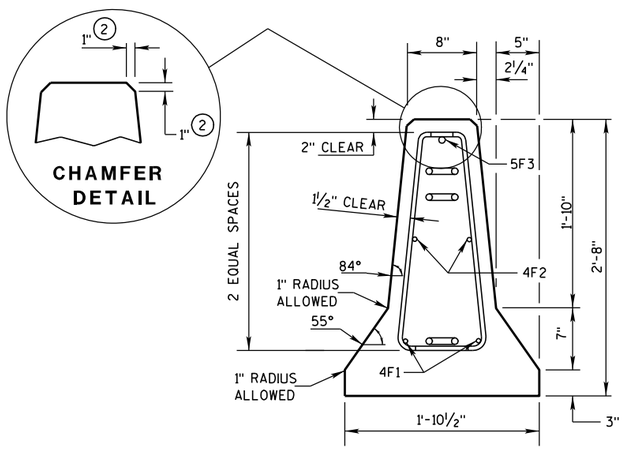


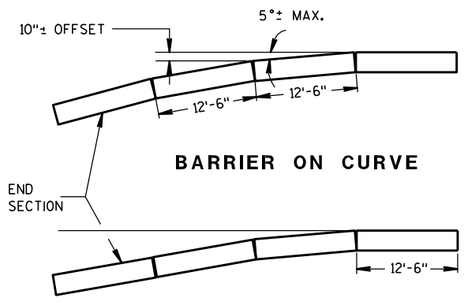


GENERAL NOTES

1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.







POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

DETAILS OF BARRIER TAPER SECTION

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

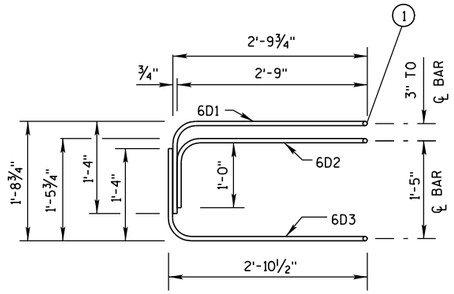
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 7-13b

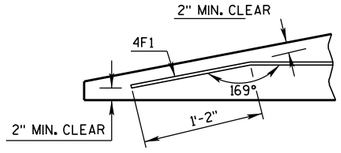
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

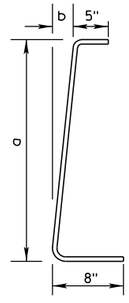
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



ELEVATION
LOOP BAR ASSEMBLY



DETAIL "C"
BENT BAR DETAIL



BAR	a	b
V1	10"	1"
V2	1'-1"	1¼"
V3	1'-5"	1⅝"
V4	1'-8"	1⅞"
V5	2'-0½"	2⅜"
V6	2'-3"	2¾"

4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

TAPER BARRIER SECTION

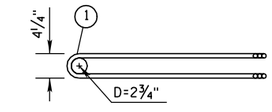
GENERAL NOTES

(1) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

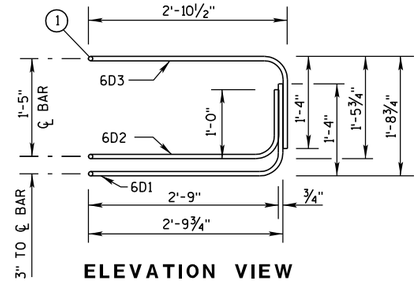
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

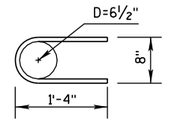
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



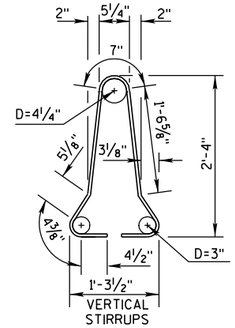
PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2



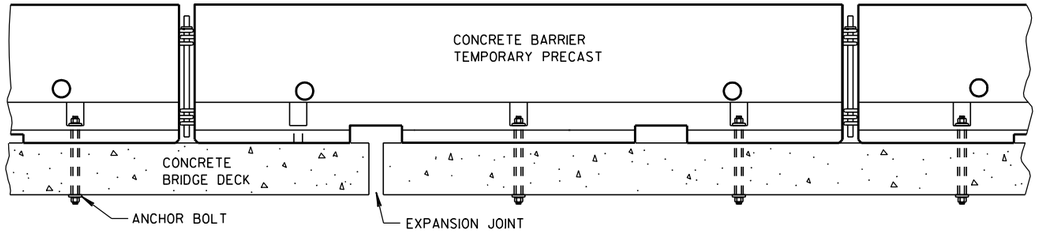
4A1

BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

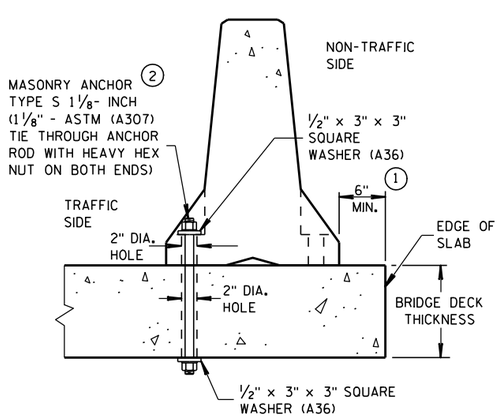
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 7-13c



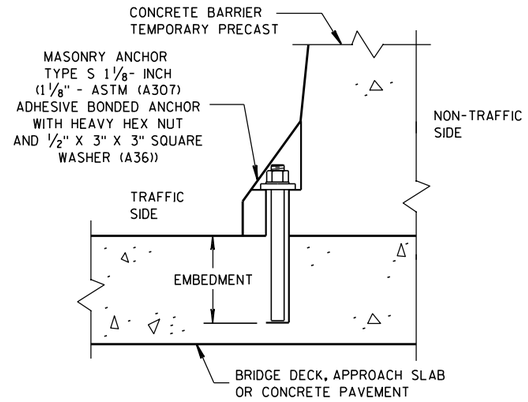
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



REMOVABLE ADHESIVE BONDED ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

2

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)

GENERAL NOTES

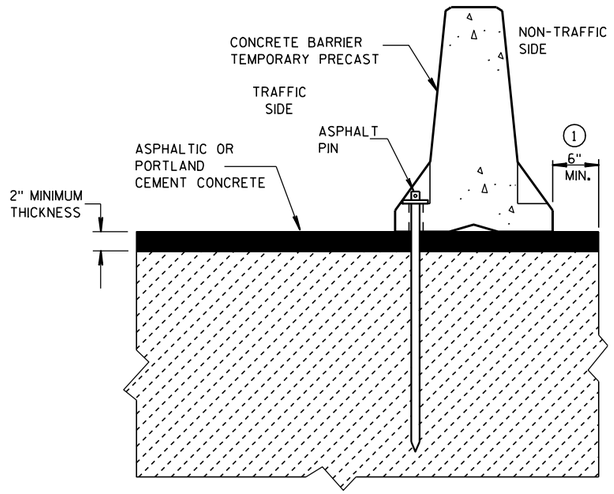
1. CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" SHALL BE ANCHORED IF:
   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT, IS LESS THAN 4 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 45 MPH OR GREATER, OR

   THE DISTANCE TO A 2 FOOT OR GREATER DROPOFF THAT IS STEEPER THAN 3H : 1V, FOR EXAMPLE THE EDGE OF A BRIDGE DECK OR A DROPOFF AT THE EDGE OF PAVEMENT. IS LESS THAN 2 FEET FROM THE SIDE OF THE BARRIER CLOSEST TO THE DROPOFF AND THE POSTED SPEED IS 40 MPH OR LESS.

2. ANCHORING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST.

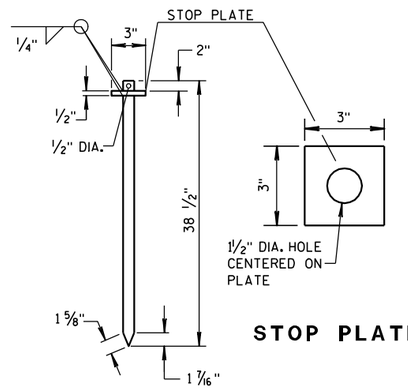
   WITH THE APPROVAL OF THE ENGINEER, REMOVABLE ADHESIVE BONDED (EPOXY) ANCHOR BOLT INSTALLATION MAY BE USED IN LIEU OF THROUGH BOLTED ANCHOR INSTALLATION. THE ADHESIVE BONDED ANCHOR BOLT MUST BE REMOVABLE. USE ASTM (A307) MASONRY ANCHORS TYPE S 1⅛-INCH, EMBEDDED TO A DEPTH SUFFICIENT TO DEVELOP THE ULTIMATE CAPACITY OF THE ANCHOR BOLT AND PROVIDE DOCUMENTATION TO CONFIRM THIS.

   UPON REMOVAL OR RELOCATION OF THE BARRIER UNITS, REMOVE ALLANCHOR BOLTS AND COMPLETELY FILL IN THE REMAINING HOLES IN CONCRETE BRIDGE DECKS, CONCRETE APPROACH SLABS AND CONCRETE PAVEMENTS THAT ARE TO REMAIN, WITH A NON-SHRINK COMMERICAL GROUT OR EPOXY MATERIAL IDENTIFIED ON THE CURRENT WISDOT APPROVED PRODUCTS LIST.



STAKE DOWN INSTALLATION FOR ASPHALTIC OR PORTLAND CEMENT CONCRETE SURFACE

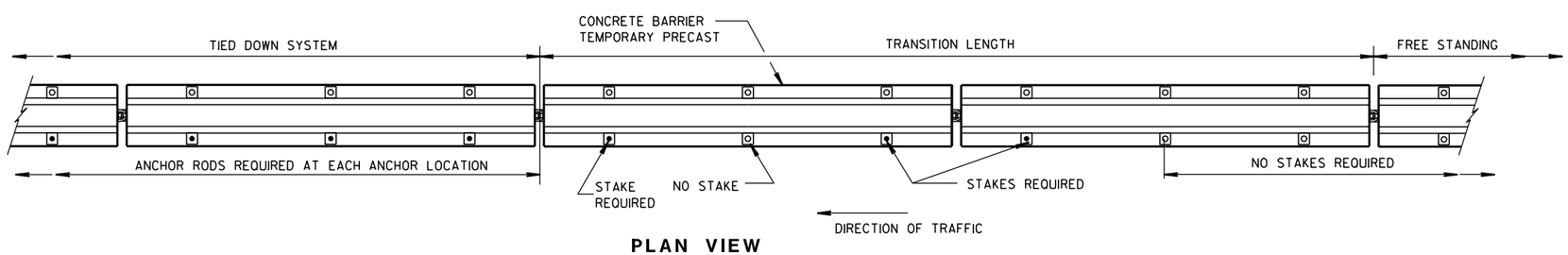
(STAKING IS INCIDENTAL TO CONCRETE BARRIER TEMPORARY PRECAST)



STOP PLATE

ASPHALT PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

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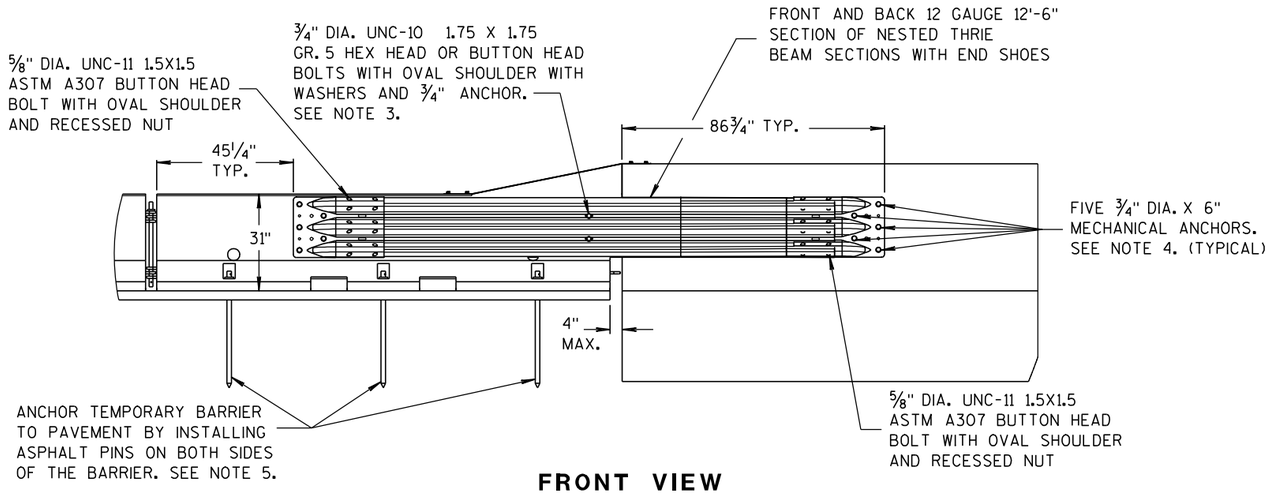
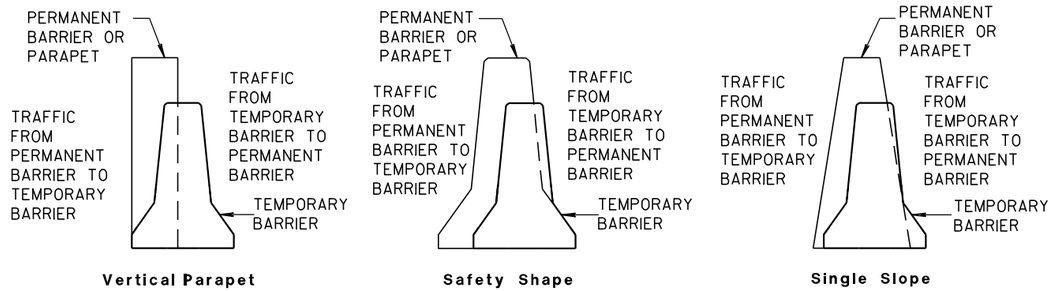
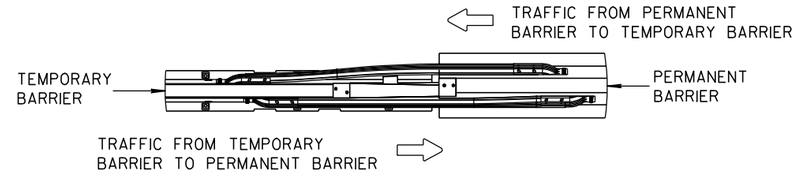


FRONT VIEW

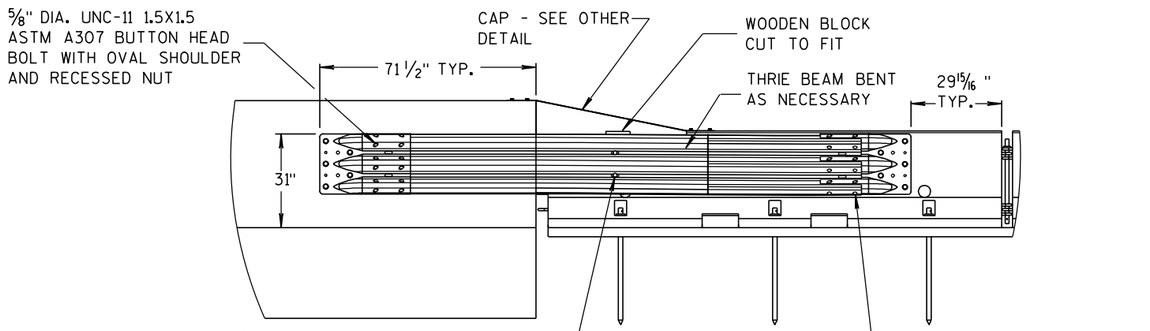
NOTES

1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR EPOXY ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

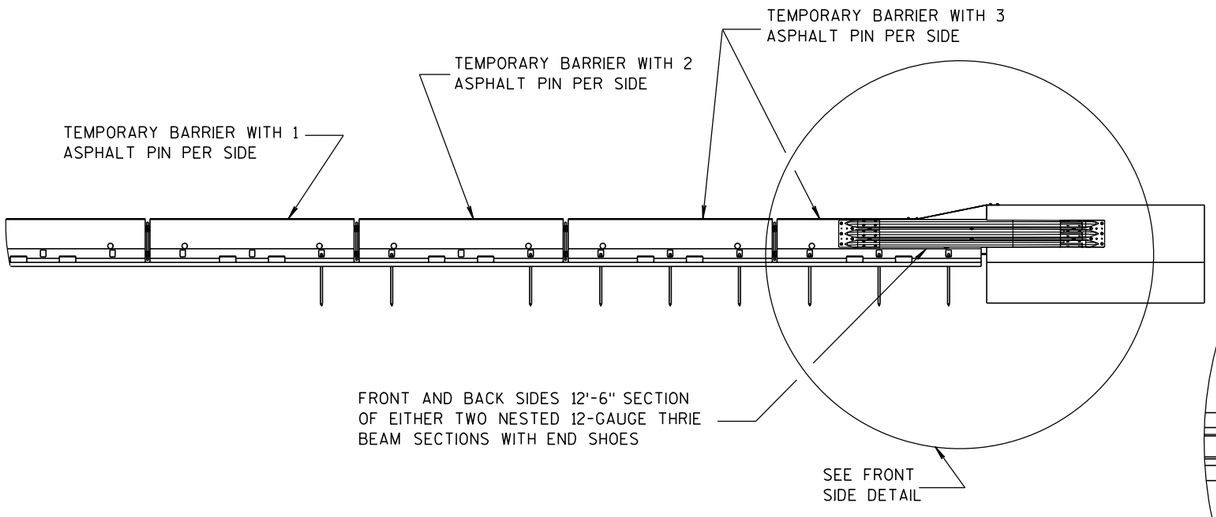




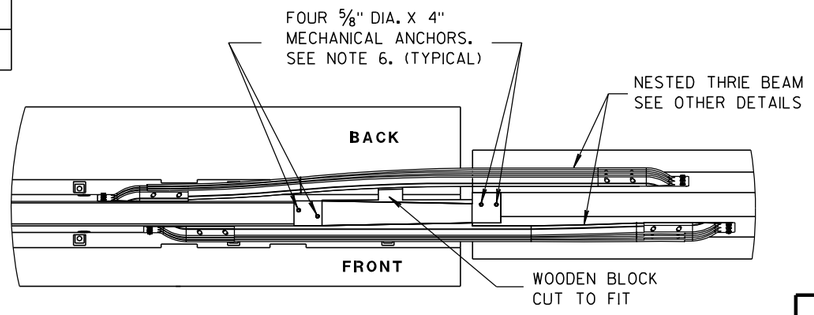
TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



BACK VIEW



FRONT VIEW



PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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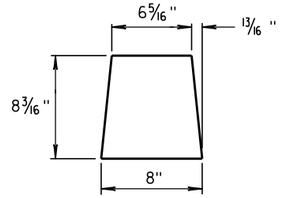
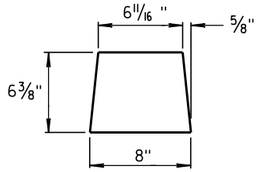
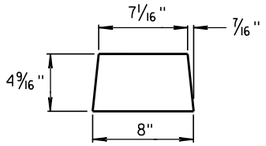


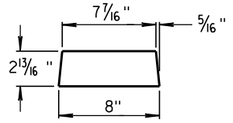
GUSSET 1



GUSSET 2

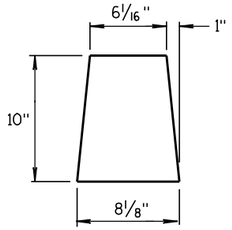


GUSSET 3

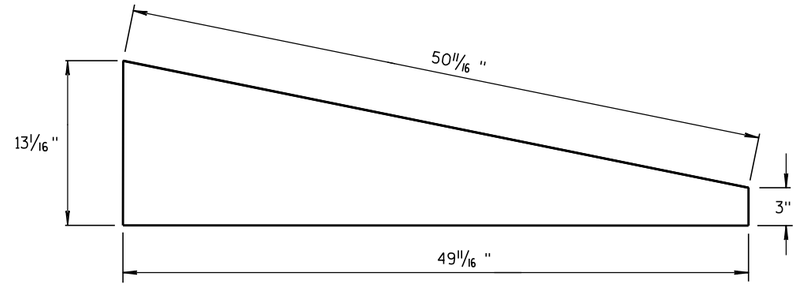


GUSSET 4

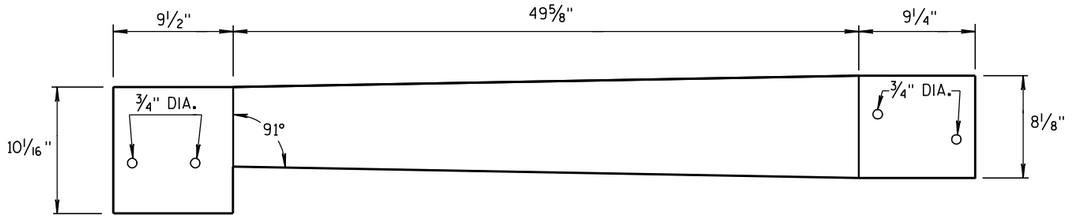
GUSSETS

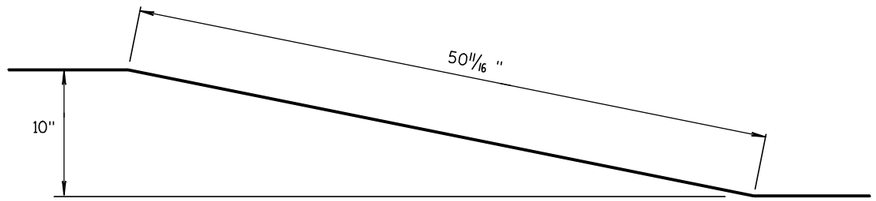


END PLATE

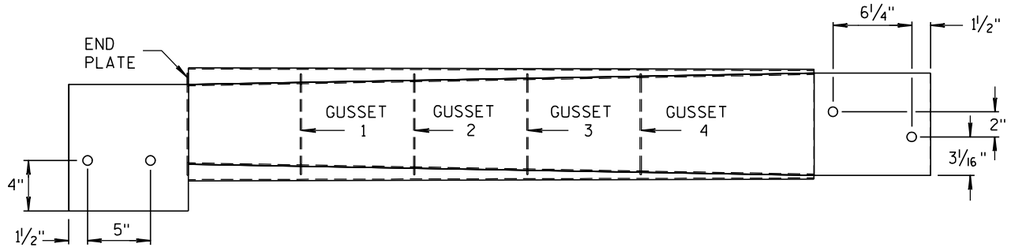


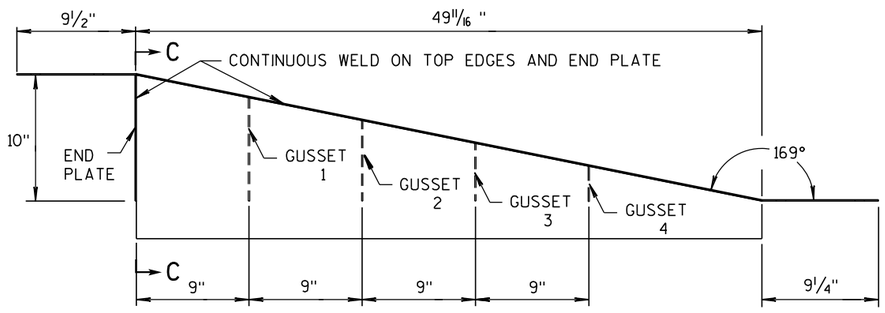
SIDE PLATE

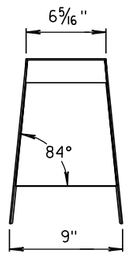




TOP PLATE







SECTION C-C

NOTES

1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

SIDE, TOP AND END PLATES FOR CAP FROM TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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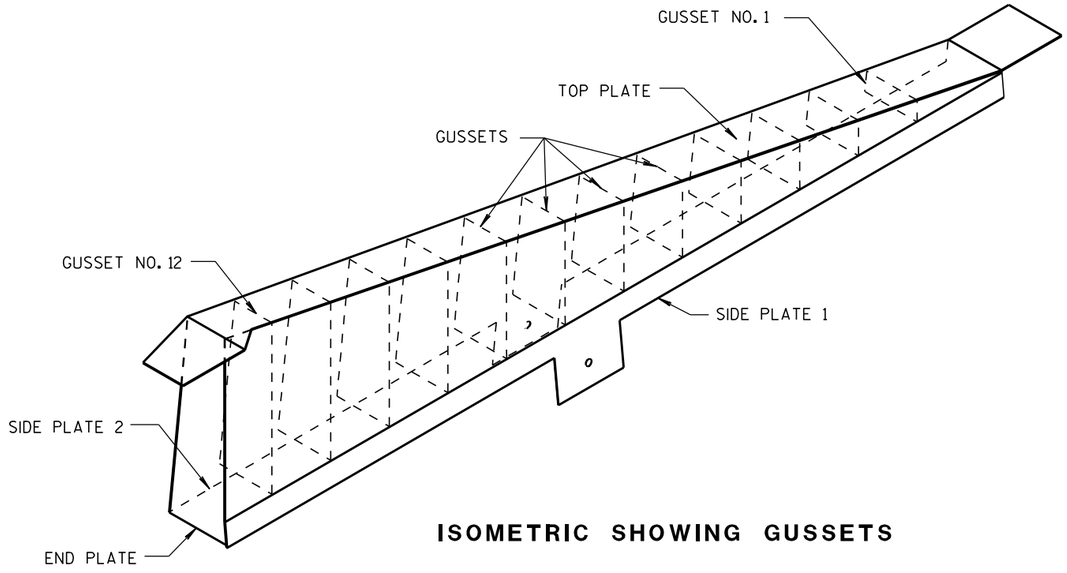
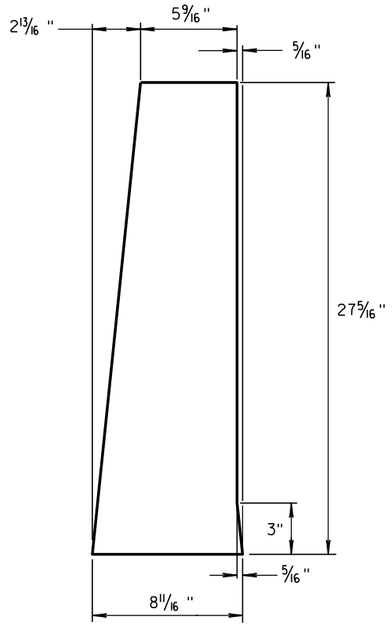
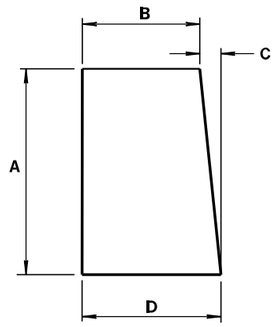


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



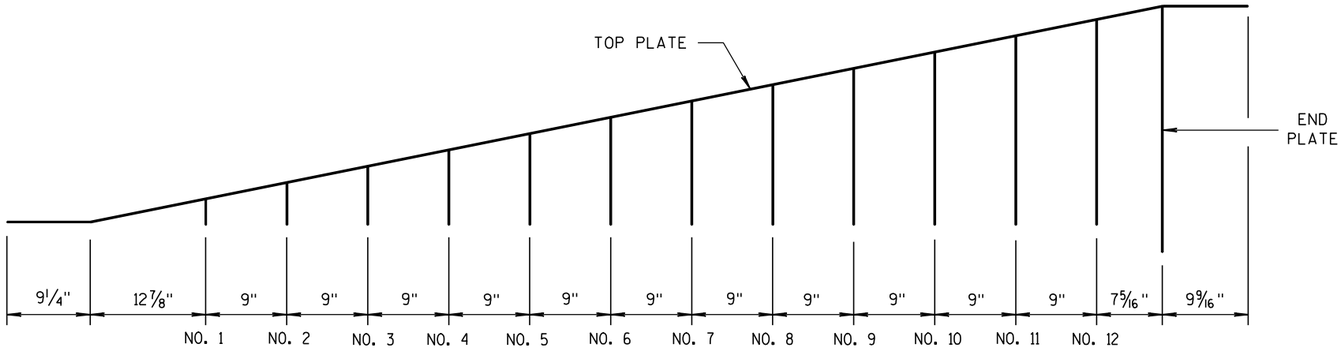
GUSSETS 1 - 12

ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 11/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8"	11/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8"	7"	1 1/16 "	8 1/16 "
6	11 15/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8"	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8"	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.



GUSSET LOCATION

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...

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S.D.D. 14 B 7-13g

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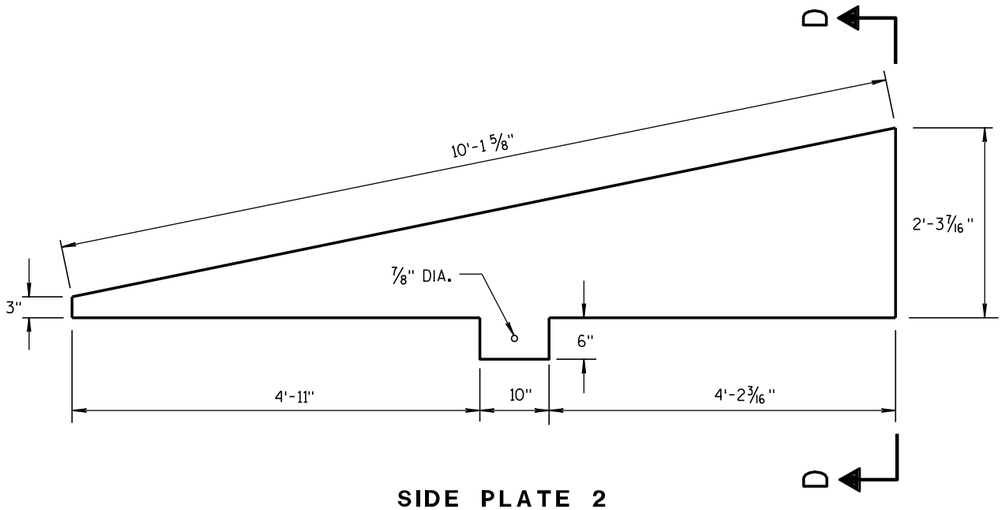
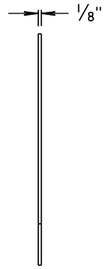
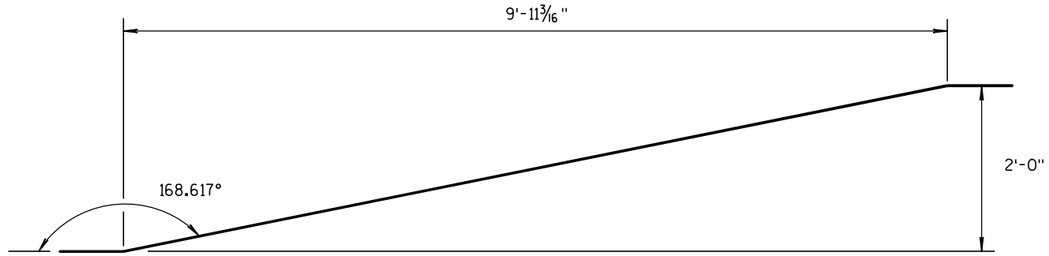
S.D.D. 14 B 7-13g



SIDE PLATE 2

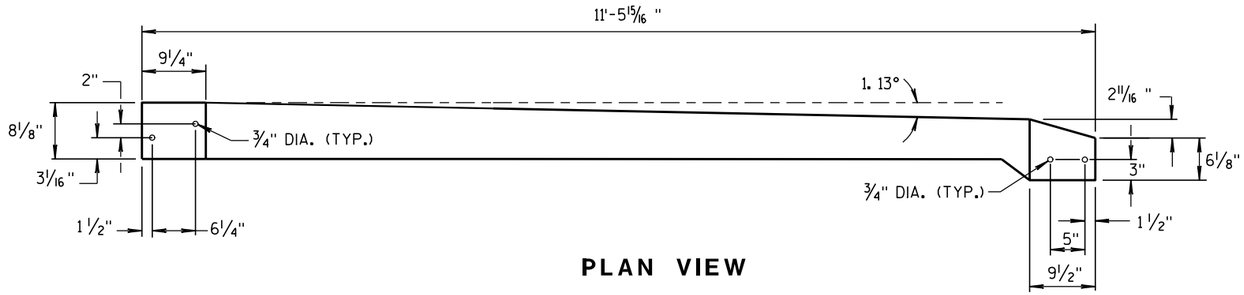


END VIEW



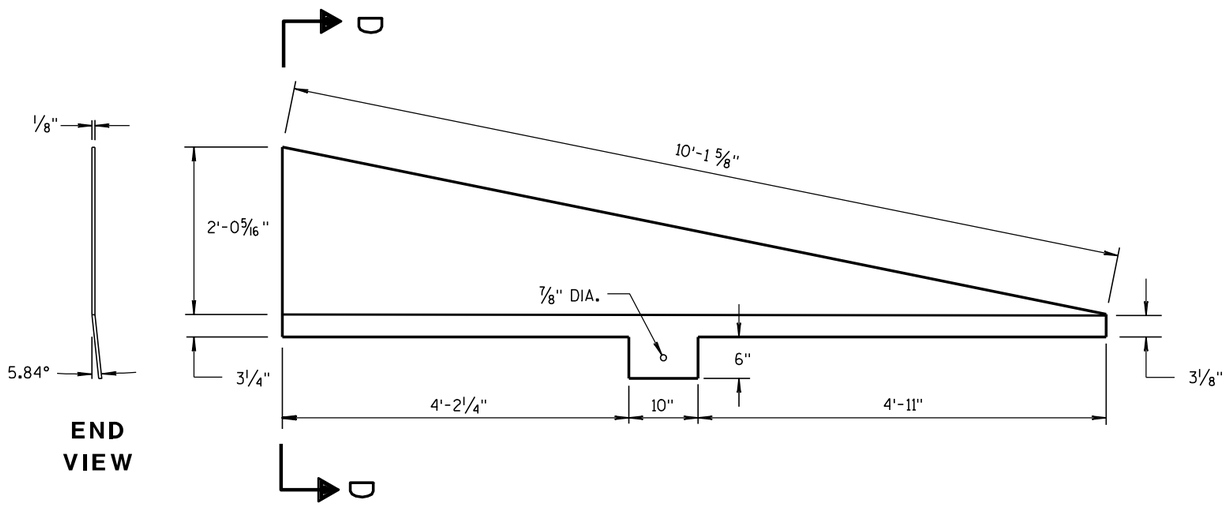
SIDE VIEW

TOP PLATE



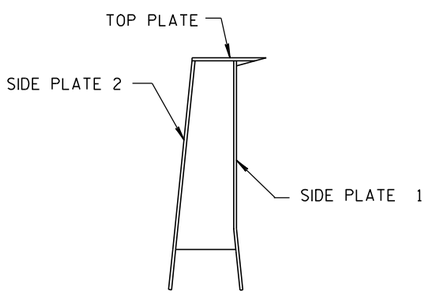
PLAN VIEW

TOP PLATE



END VIEW

SIDE PLATE 1



SECTION D-D

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED	
8/31/2012 DATE	/S/ Jerry H. ROADWAY STANDARDS ENGINEER
FHWA	155 ENT

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S.D.D. 14 B 7-13h

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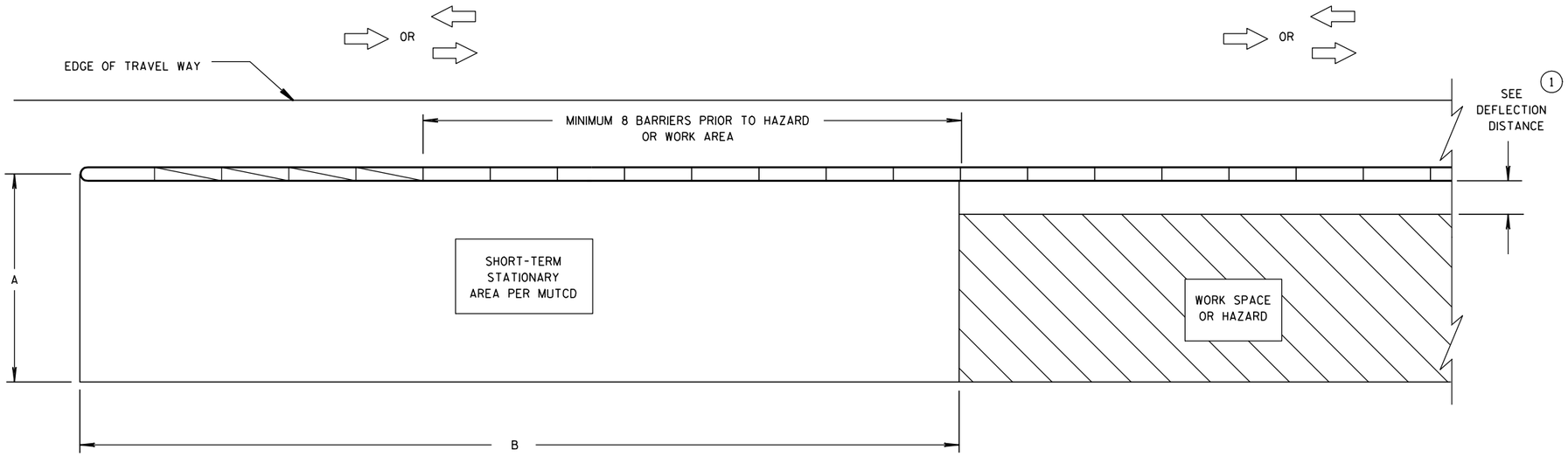
S.D.D. 14 B 7-13h



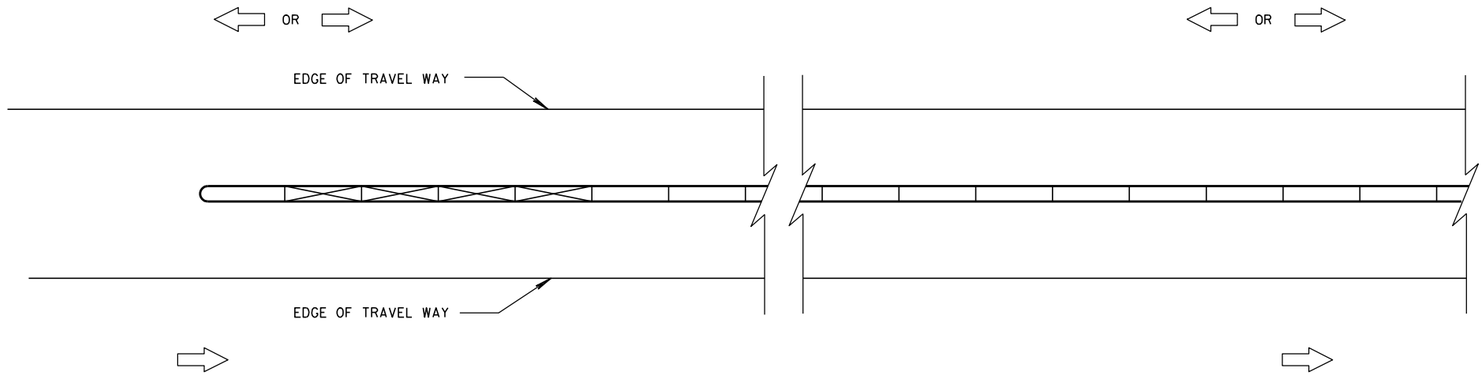
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

DIMENSION A TABLE (2)

FACILITY	POSTED SPEED MPH	DIMENSION A	
		MIN. FT	MAX. FT
FREEWAY/EXPRESSWAY	ALL	15	20
NON-FREEWAY/EXPRESSWAY	GREATER THAN OR EQUAL TO 45	10	15
NON-FREEWAY/EXPRESSWAY	LESS THAN 45	8	10
AADT LESS THAN 1,500	ALL	8	10

DIMENSION B TABLE (2)

POSTED SPEEDS MPH	DIMENSION B FT
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON BOTH SIDES OF BARRIER

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

GENERAL NOTES

SEE STANDARD DETAIL DRAWING 14B7 FOR MORE INFORMATION.

DETAILS PROVIDE A GENERAL LAYOUT OF TEMPORARY CONCRETE BARRIER, CRASH CUSHIONS, SAND BARREL ARRAYS AND TIE DOWN TRANSITIONS. DETAILS PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

ADDITIONAL TEMPORARY BARRIER MAY BE REQUIRED TO PROTECT TRAVELING PUBLIC FROM HAZARDS, CONTRACTOR'S OPERATIONS OR TO CONTROL TRAFFIC.

TEMPORARY BARRIER MAY BE REQUIRED TO BE ANCHORED TO PAVEMENT OR BRIDGE DECK.

FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

(1) FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.

(2) VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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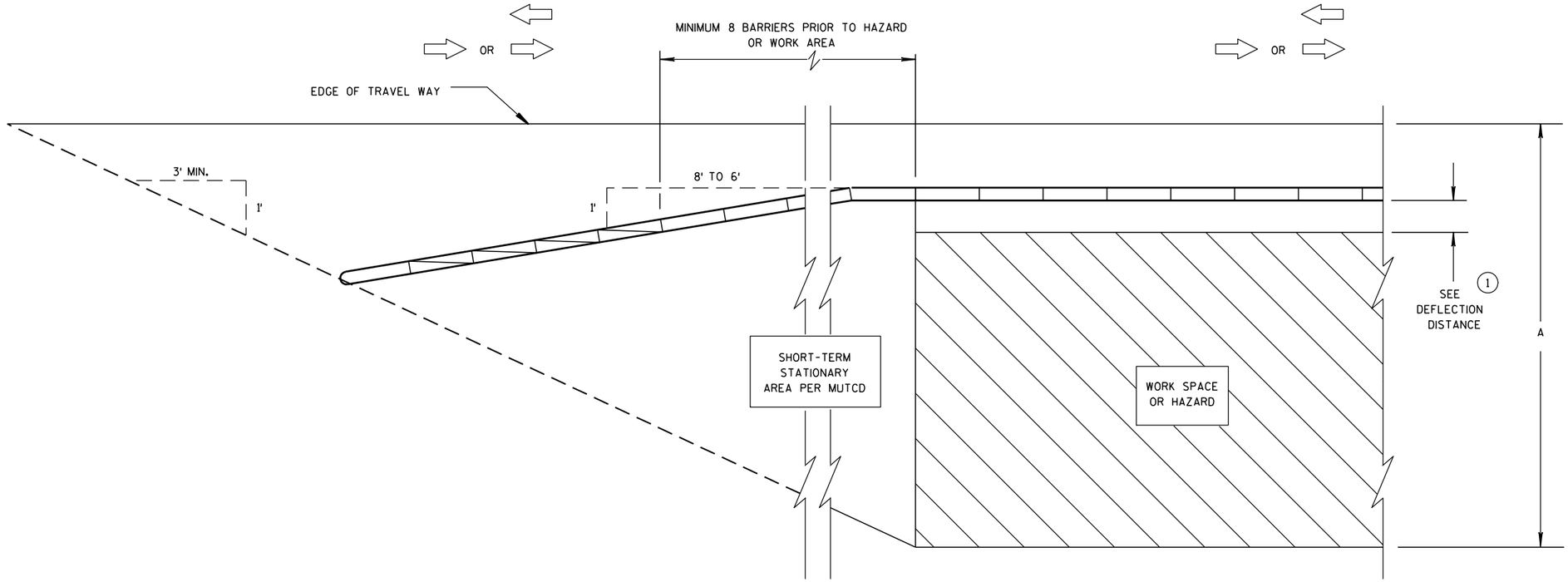
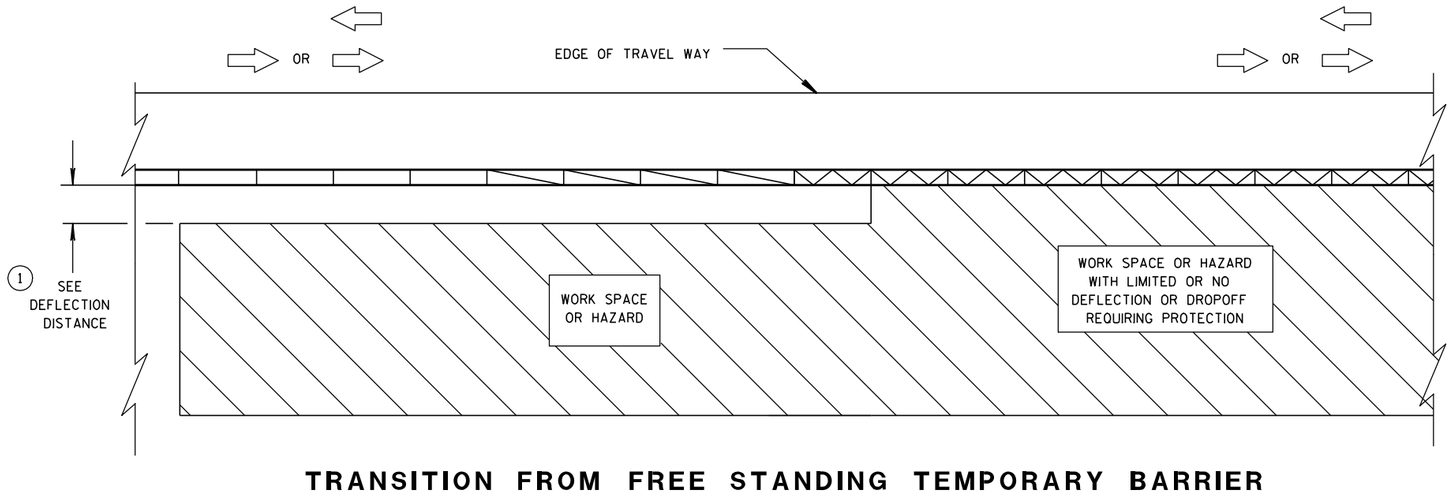
S.D.D. 14 B 8-1a



CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION



TRANSITION FROM FREE STANDING TEMPORARY BARRIER TO ANCHORED BARRIER

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
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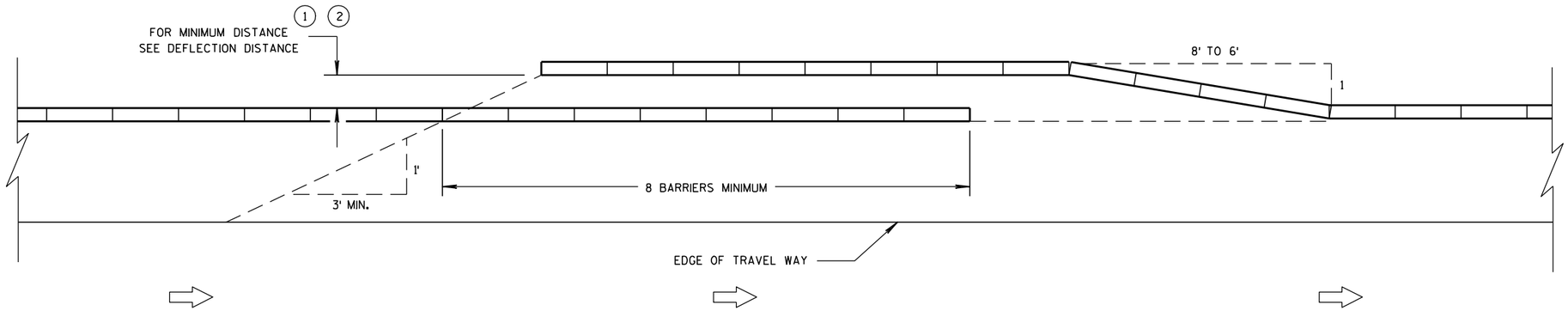
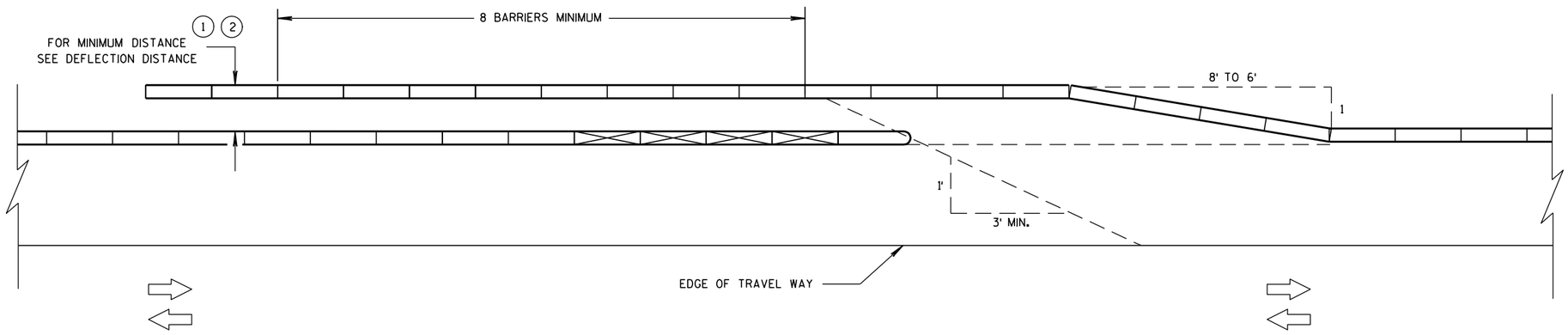
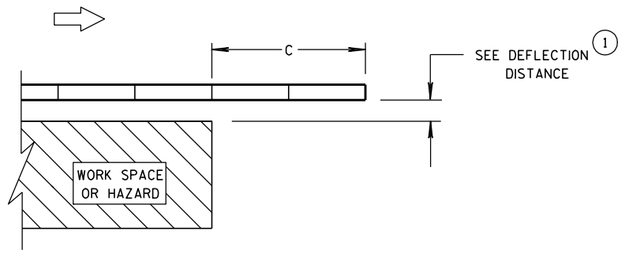


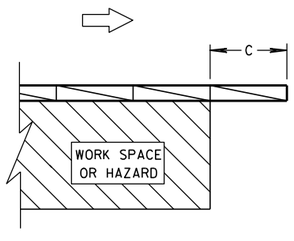
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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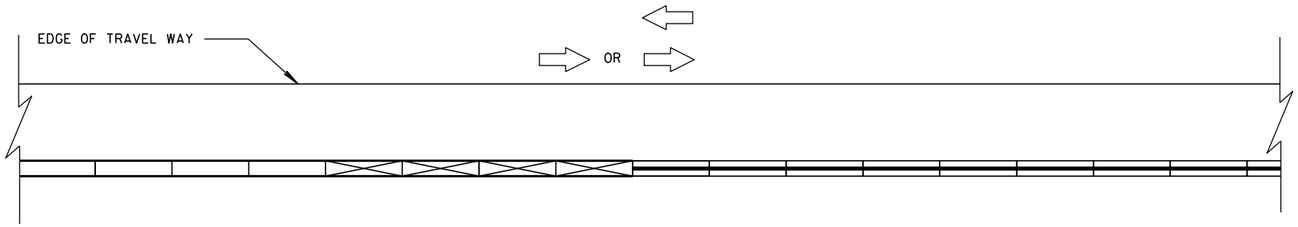
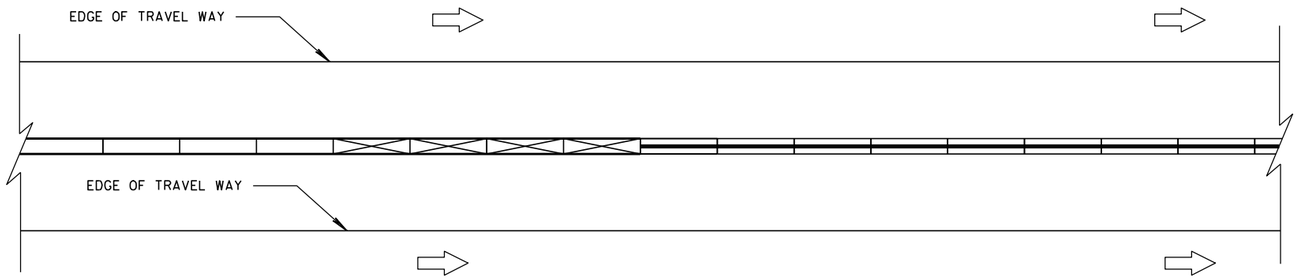


CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR
SAND BARREL ARRAY

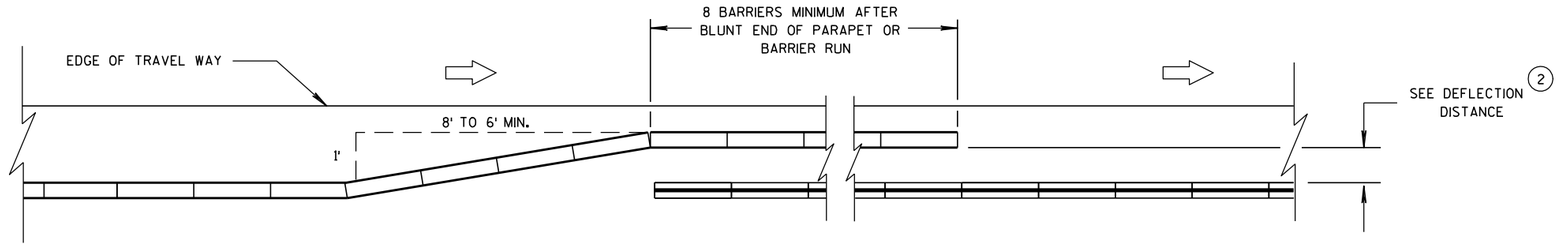
SEE FREE STANDING TRANSITION
TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION
TO TIED-DOWN SYSTEM DETAILS

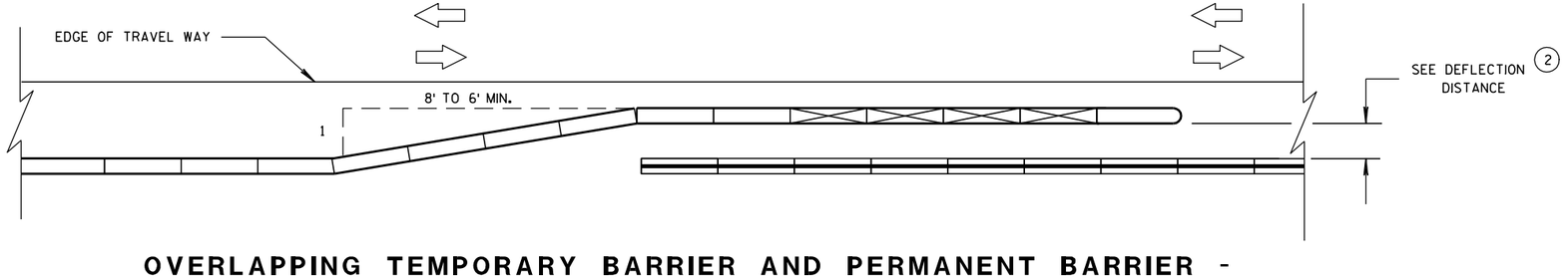
3 PINS PLACED ON
TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER
OR CONCRETE PARAPET

FREE STANDING TEMPORARY
BARRIER



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

CRASH CUSHION/SAND BARREL
ARRAY AND OTHER TEMPORARY
BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
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LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

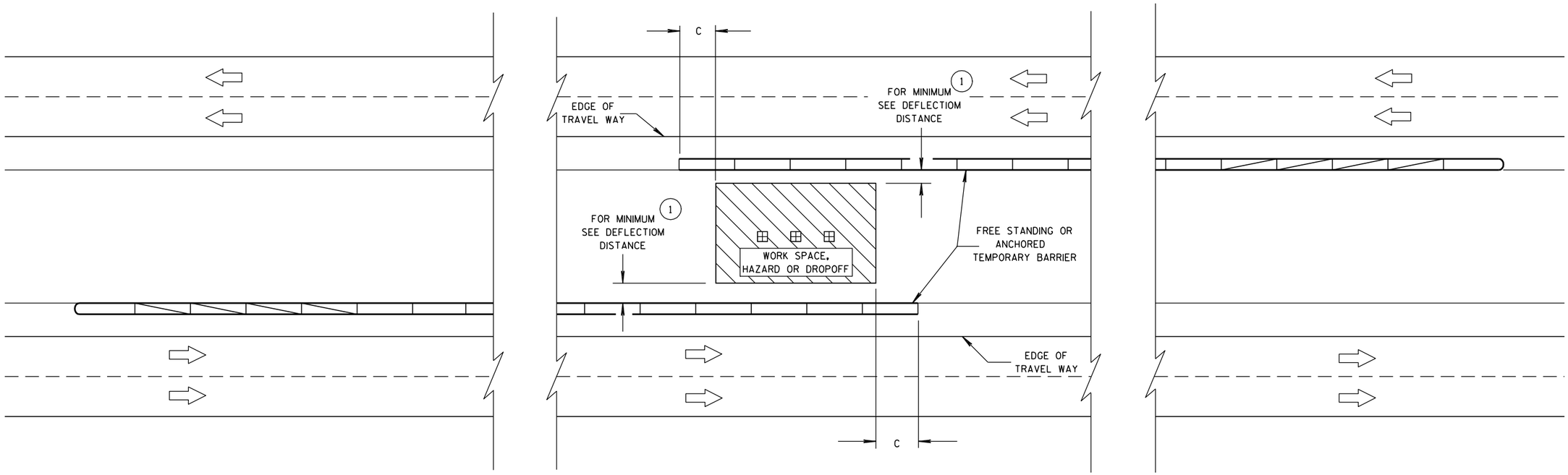
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER

FHWA

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GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, AND THE APPLICABLE SPECIAL PROVISIONS.

(1) W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.

DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.

(2) USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.

(3) INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

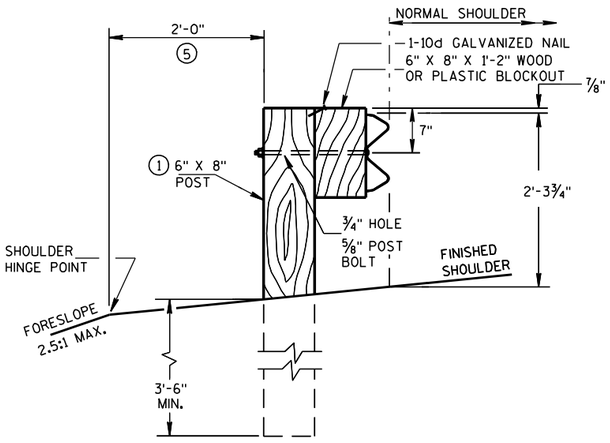
(4) USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.

(5) IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).

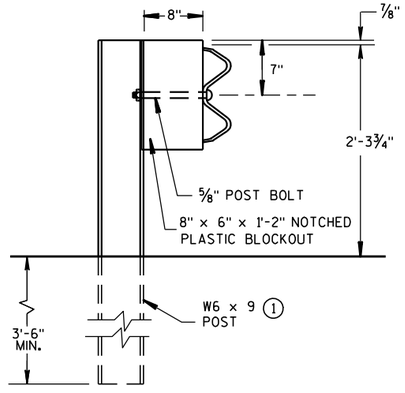
(6) IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.

INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.

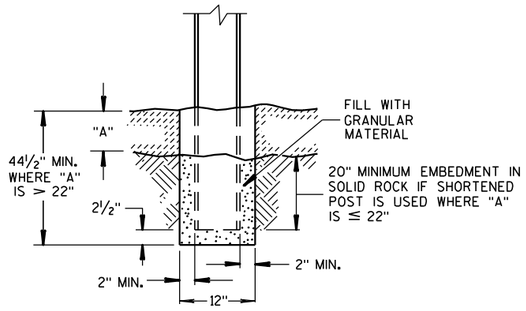
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



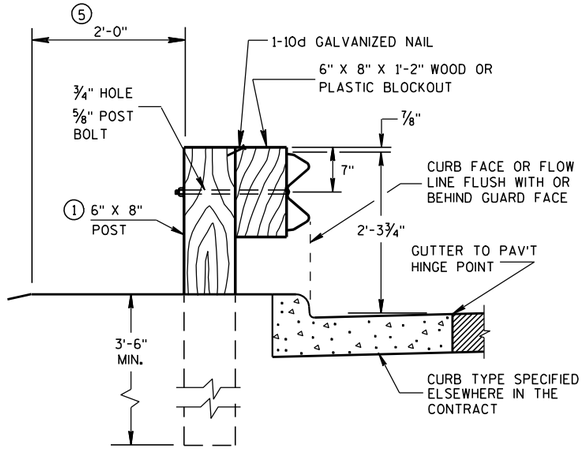
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



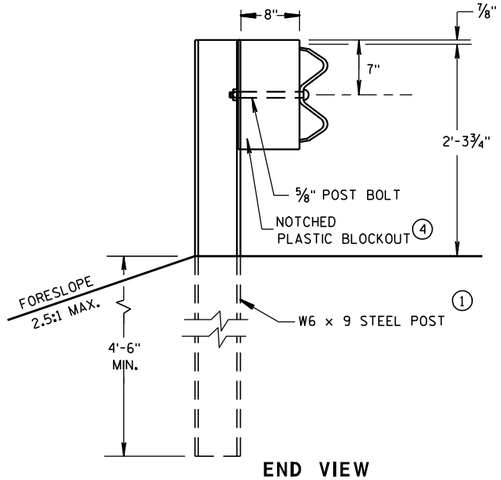
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



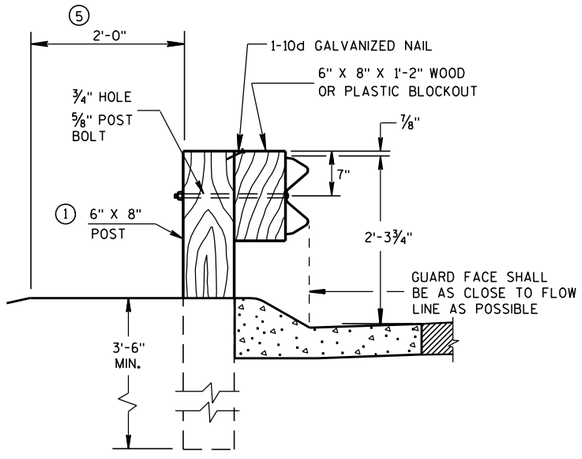
END VIEW
SETTING STEEL OR WOOD POST IN ROCK (6)



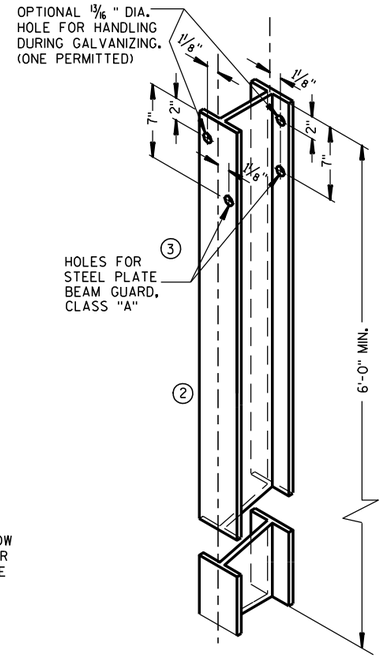
END VIEW
LOCATED ALONG A CURBED ROADWAY



END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)

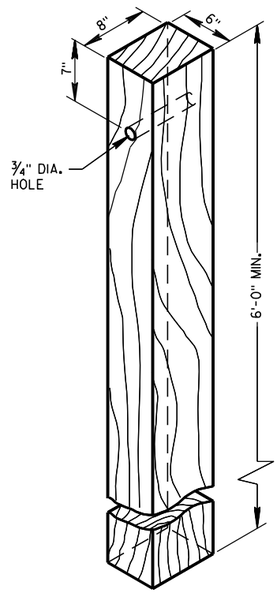


END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

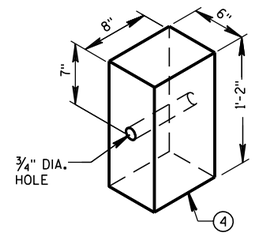


STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) (1)

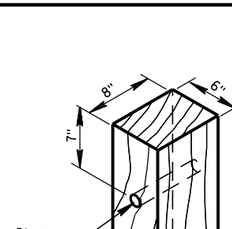
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



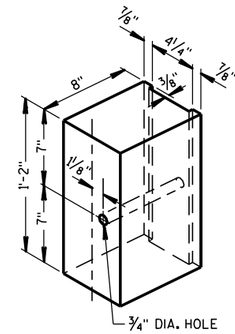
WOOD POST
(6"X8") NOMINAL



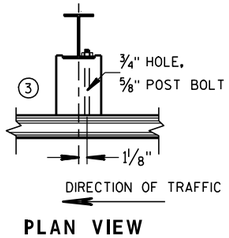
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



TYPICAL NOTCHED (1)
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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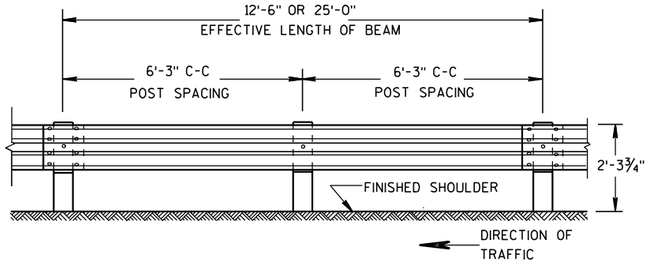
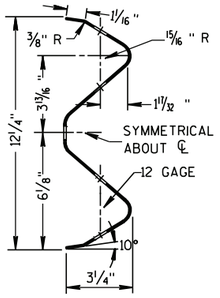
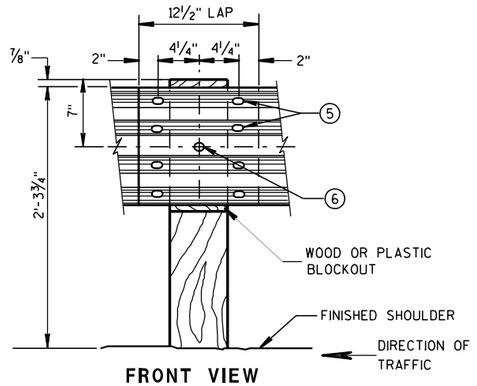


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM

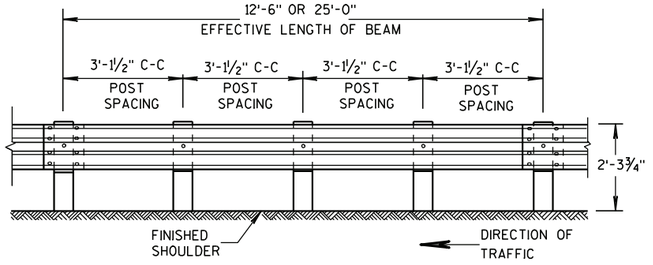


FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

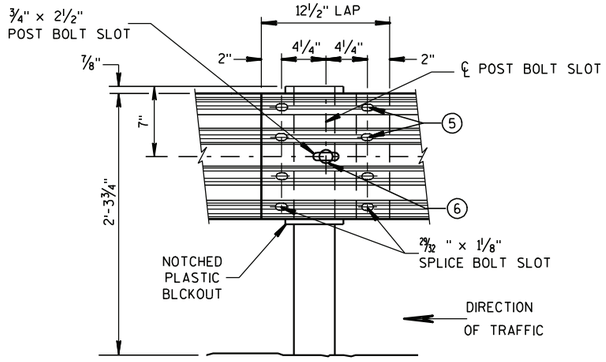
GENERAL NOTES

1. PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
2. DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
3. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
4. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.
5. 8 - 5/8" ϕ X 2 " BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
6. 5/8" ϕ X 1'-6" BUTTON HEAD BOLT AND AND RECESS NUT WITH ROUND WASHER UNDER NUT.



FRONT VIEW

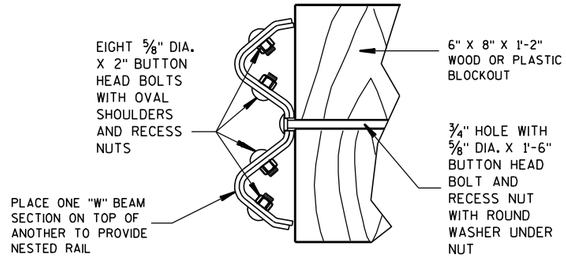
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

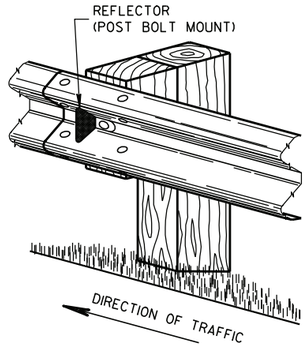


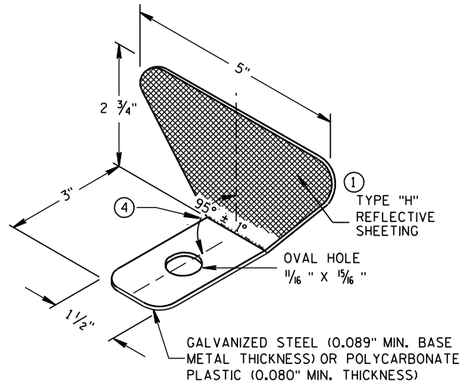
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING (2)

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (3)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 (4)	





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (1)

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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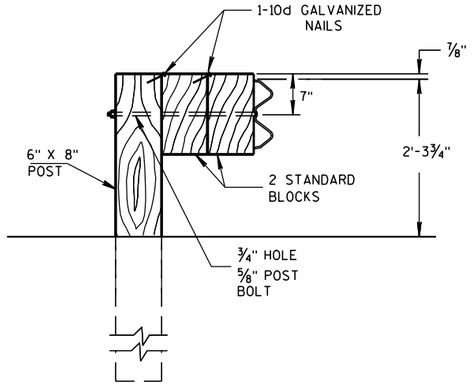
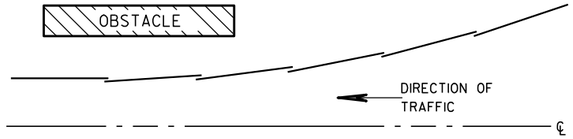
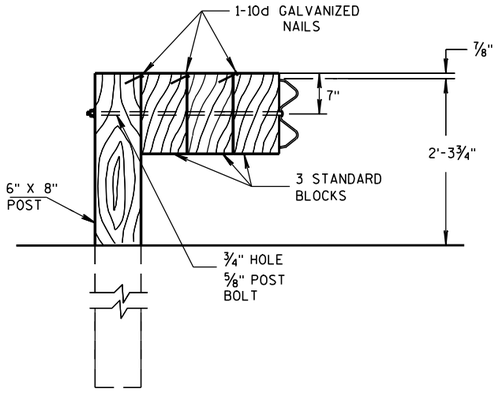


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

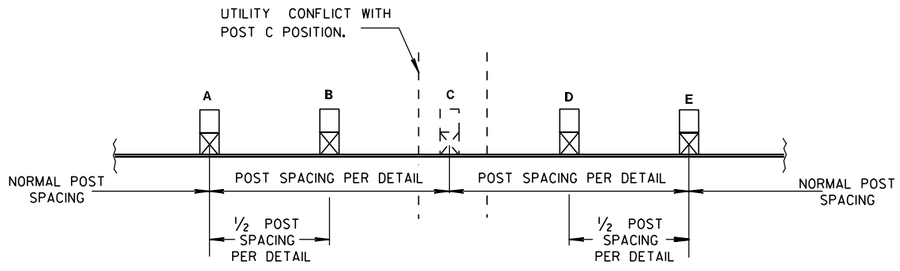


PLAN VIEW
BEAM LAPPING DETAIL



DETAIL FOR TRIPLE BLOCKS

TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

DO NOT USE EXTRA BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

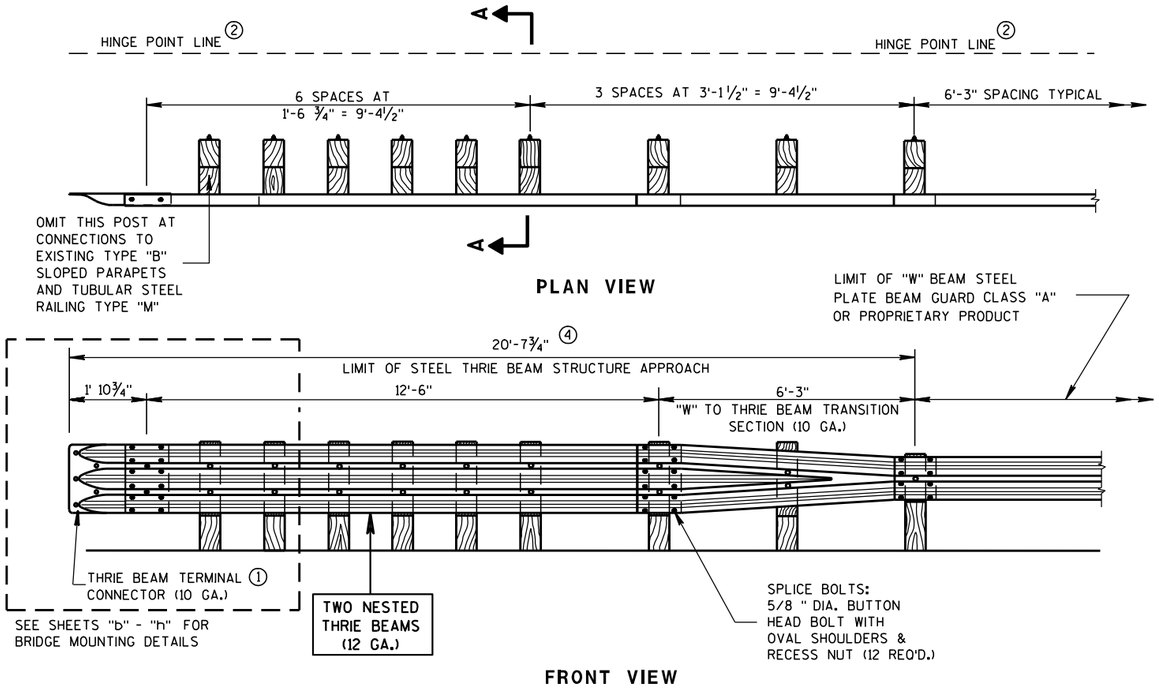
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/23/11	/S/ Jerry H. Zogg	
DATE	ROADWAY STANDARDS ENGINEER	ENT

FHWA

6
S.D.D. 14 B 15-7c



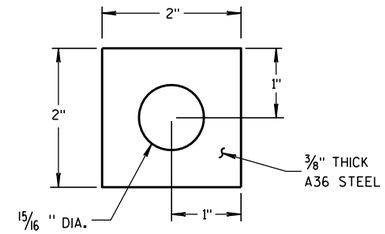


PLATE WASHER DETAIL

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

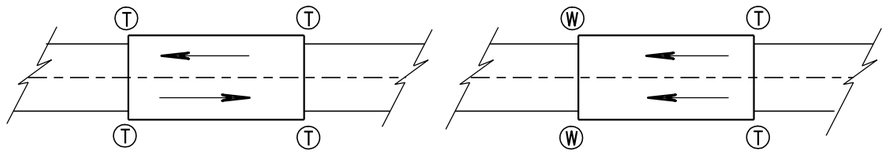
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



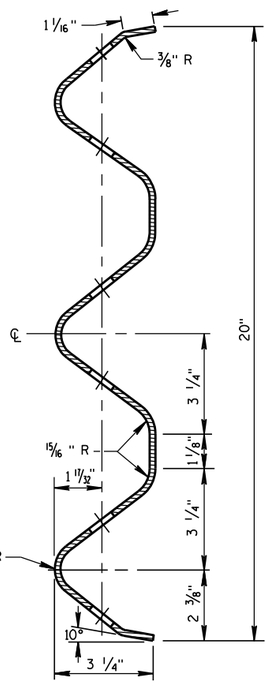
TWO WAY TRAFFIC

ONE WAY TRAFFIC

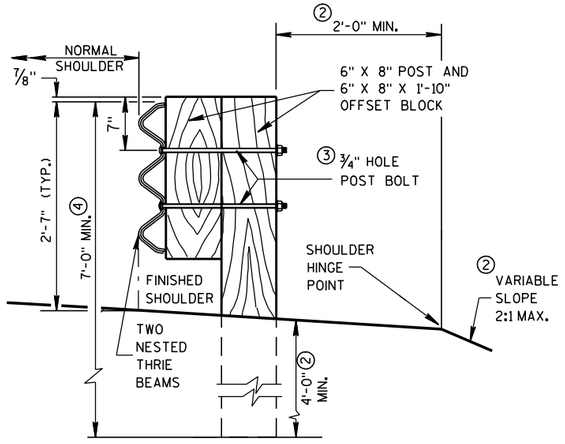
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

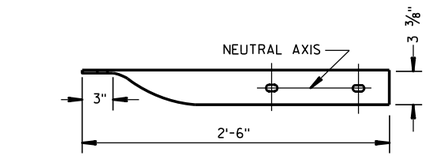
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

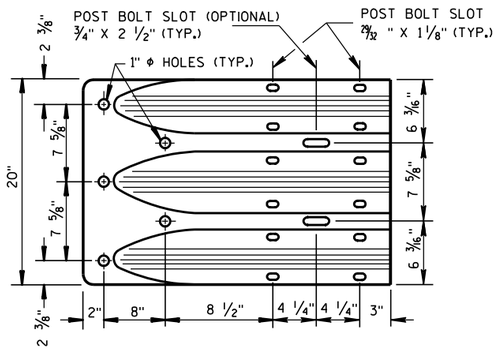


SECTION THRU THRIE BEAM RAIL ELEMENT

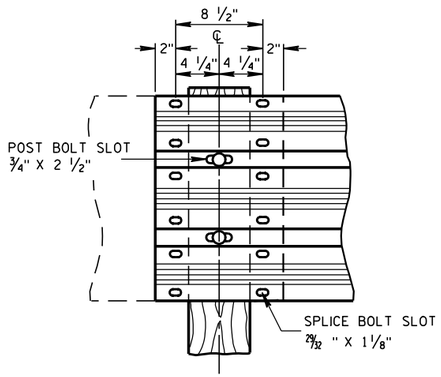


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA

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S.D.D. 14 B 20-11a

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

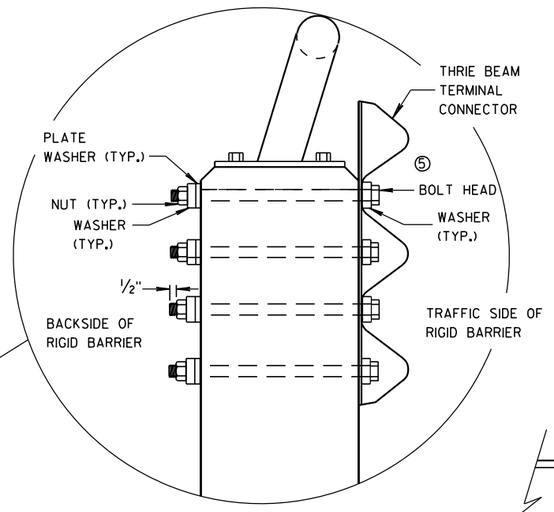
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

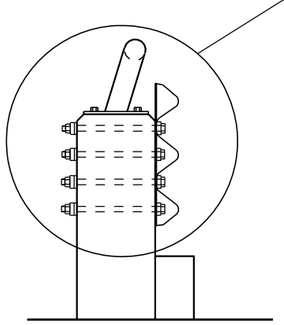
③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

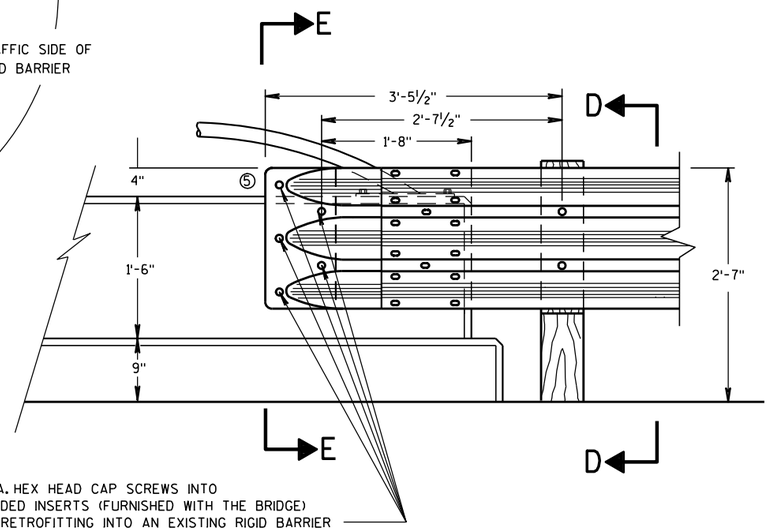
⑤ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.





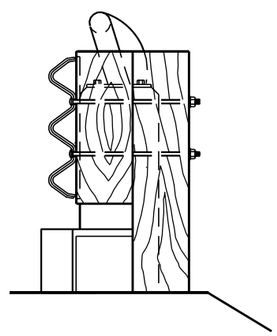
SECTION E-E



①② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)

FRONT VIEW

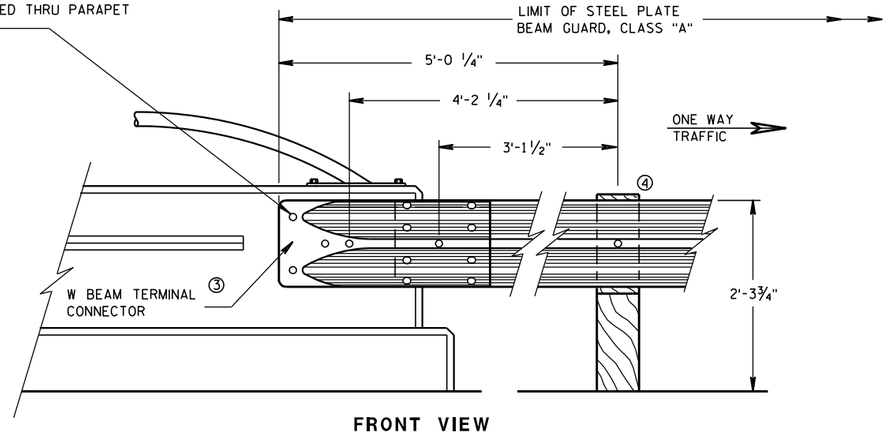


SECTION D-D

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

①② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED

1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO VERTICAL FACED PARAPETS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. Zaa — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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S.D.D. 14 B 20-11c

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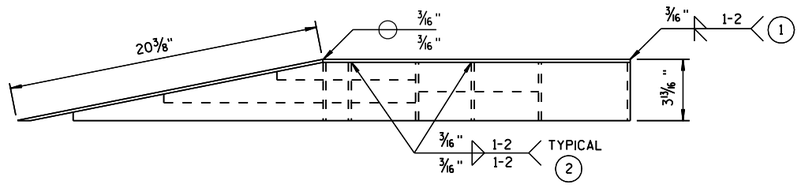

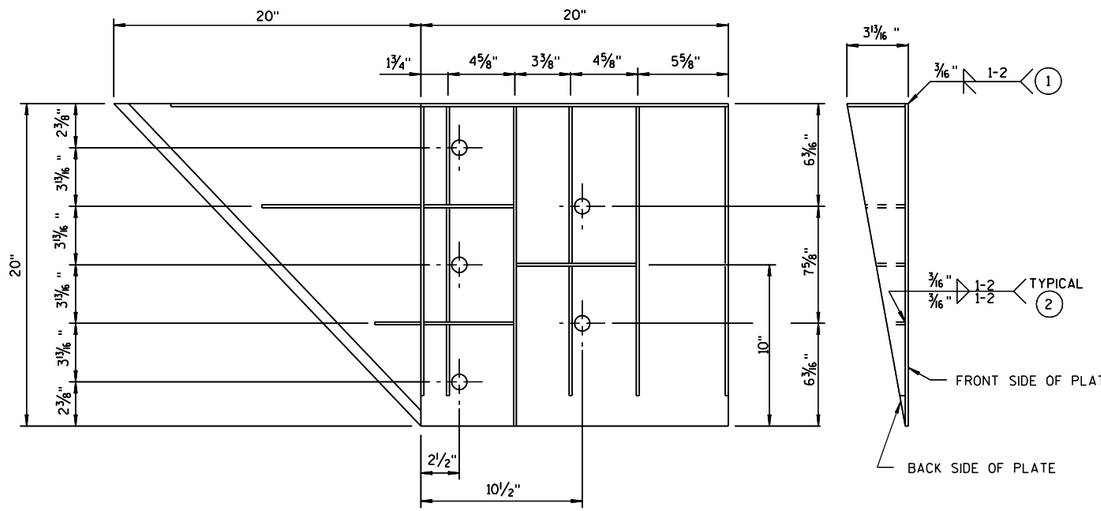

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

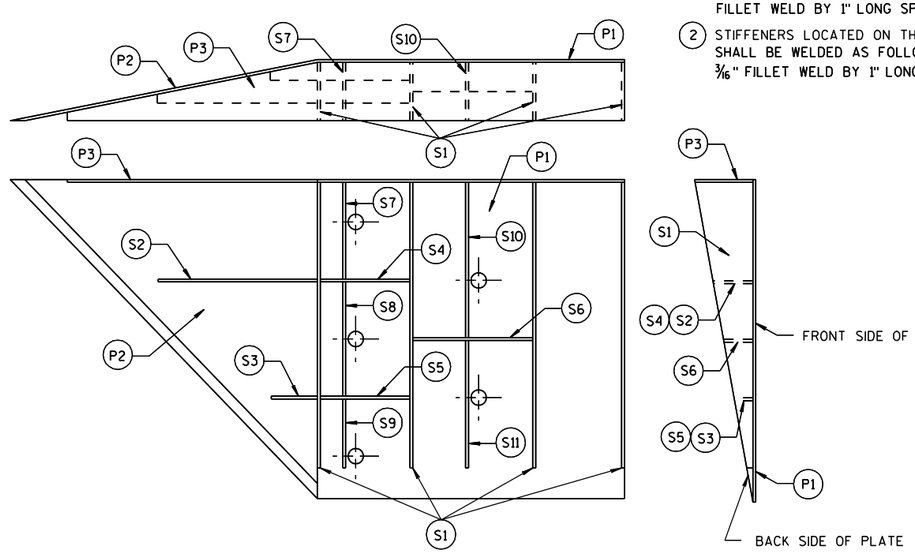

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

STEEL THRIE BEAM STRUCTURE APPROACH

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTOR PLATE DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 14 B 20-11g

BILL OF MATERIALS

NOTE NO.	QTY.	DESCRIPTION
(1)	4	WOOD BREAKAWAY TERMINAL POST: 5½" X 7½" X 3'-9"
(2)	**	STEEL TUBE: OPTION 1 - QUANITY OF 4 TS 8" X 6" X 0.188", 4'-6" LONG OR OPTION 2 - QUANITY OF 2 TS 8" X 6" X 0.188", 6'-0" AND 2 TS 8" X 6" X 0.188", 4'-6" LONG
(3)	2	SOIL PLATE: 2'-0" X 1'-6" X ¼" **
(4)	4	WOOD BREAKAWAY CRT POST: 6" X 8" X 6'-0"
(5)	6	WOOD OFFSET BLOCKS: 6' X 8" X 1'-2"
(6)	1	PIPE SLEEVE: 2" X 5 ½" STANDARD PIPE
(7)	1	BEARING PLATE
(8)	1	BCT CABLE ASSEMBLY
(9)	1	CABLE ANCHOR BOX
(10)	1	STRUT & YOKE
(11)	1	STEEL PLATE BEAM, END PANEL 12 GA. 13'-6½" LONG FOR SKT-350, ET-2000 AND ET-2000 PLUS
(12)	3	STEEL PLATE BEAM: 12 GA. 13'-6½"
(13)	1	ET-2000/ET-2000 PLUS GUARDRAIL EXTRUDER OR SKT-350 IMPACT HEAD: AS FURNISHED BY MANUFACTURER
(14)	1	REFLECTIVE SHEETING TYPE H: 18" X 18"
(15)	1	E.A.T. MARKER POST

GENERAL NOTES

FOLLOW MANUFACTURE'S BOLTING RECOMMENDATIONS. IF NONE ARE AVAILABLE, INSTALL ⅝" ϕ X 1'-6" BUTTON HEAD BOLTS AT ALL POSTS EXCEPT FOR POST 1.

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL),AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) THE 13 SLOT FIRST RAIL PANEL MAY BE USED IN LIEU OF THE 3 SLOT RAIL PANEL ON SKT-350 ONLY.

(D) THE TOP OF THE STEEL TUBE ON POSTS 1 THROUGH 4 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(E) THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST 5 THROUGH 8 SHALL BE ¾" ABOVE THE FINISHED GROUND LINE.

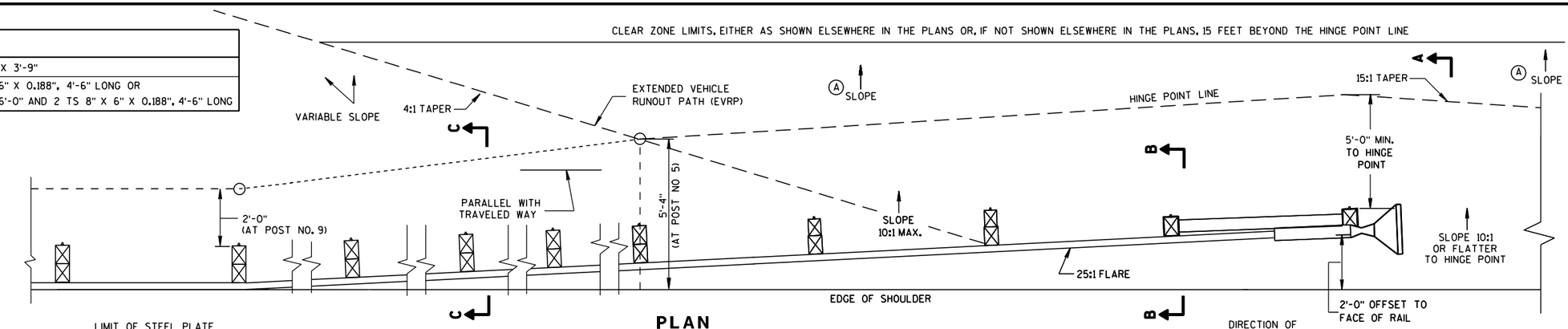
(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

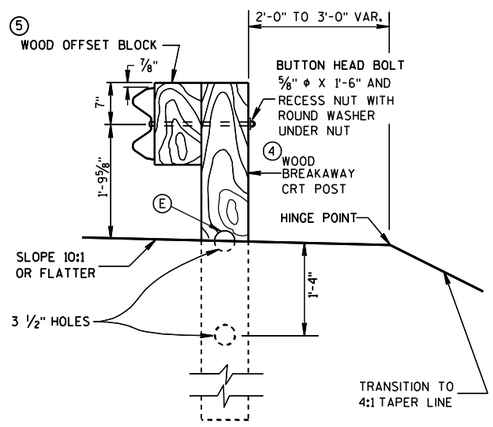
STEEL POSTS SHALL NOT BE ALLOWED FOR USE WITH ENERGY ABSORBING TERMINALS.

DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

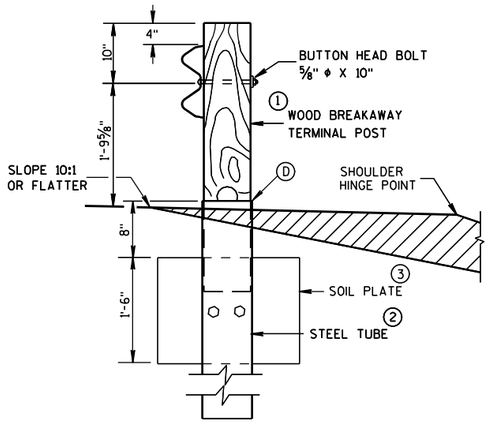
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

** SDD SHOWS 4 - 54 INCH STEEL TUBES WITH SOIL PLATES INSTALLED ON POST 1 AND POST 2. POST 3 AND 4 DO NOT NEED SOIL PLATES. AN ALTERNATIVE INSTALLATION WOULD CONSIST OF 2 - 72 INCH STEEL TUBES ON POST 1 AND POST 2 AND 54 INCH SOIL TUBES ON POSTS 3 AND 4. THE ALTERNATIVE INSTALLATION DOES NOT REQUIRE SOIL PLATES.

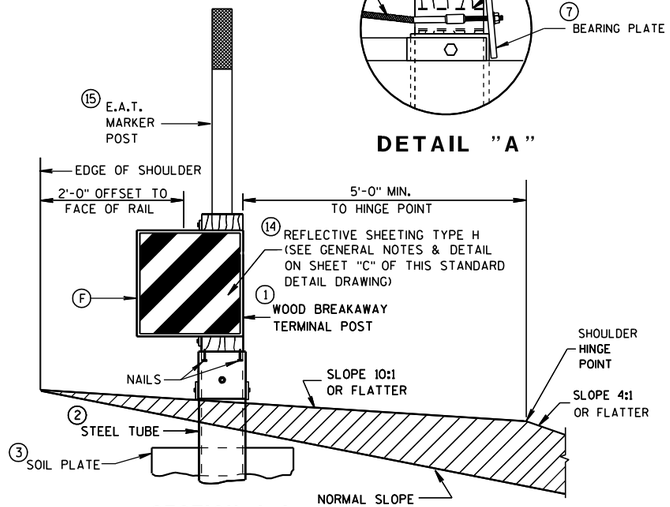




SECTION C-C
TYPICAL AT POST NOS. 6, 8

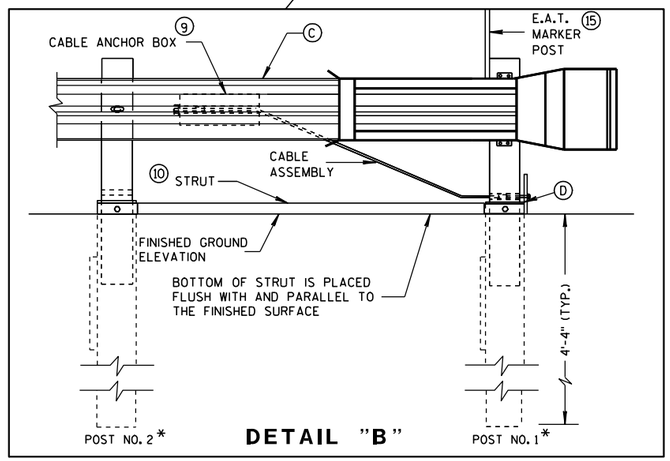


SECTION B-B
TYPICAL AT POST NO. 2*



DETAIL "A"

SECTION A-A
TYPICAL AT POST NO. 1*

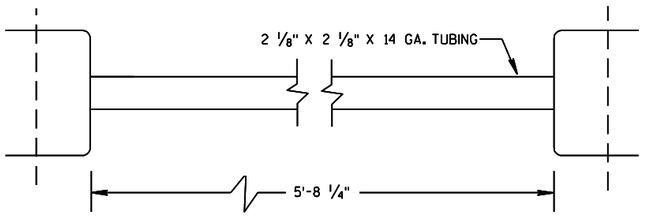


DETAIL "B"

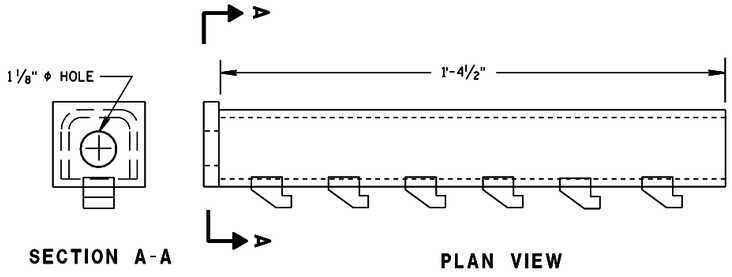
STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

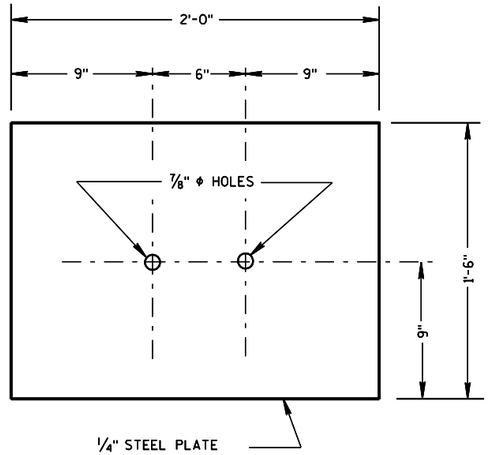
6
S.D.D. 14 B 24-7a



⑩ STRUT DETAIL (SKT-350)

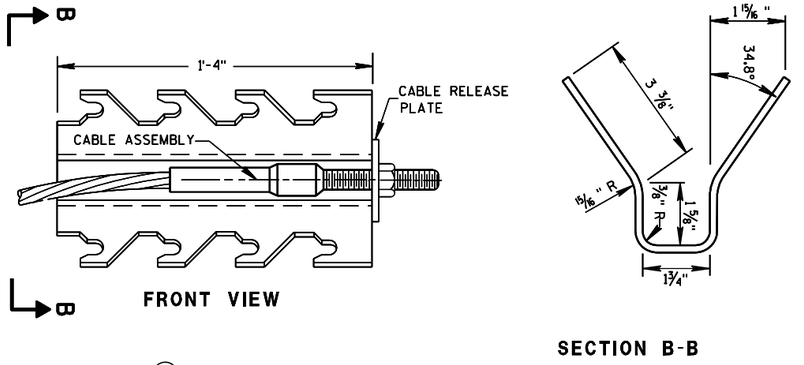


⑨ CABLE ANCHOR BOX (ET-2000/ET-2000 PLUS)



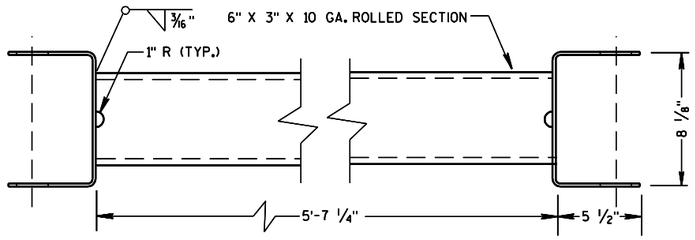
③ SOIL PLATE

(SKT-350, ET-2000/ET-2000 PLUS)



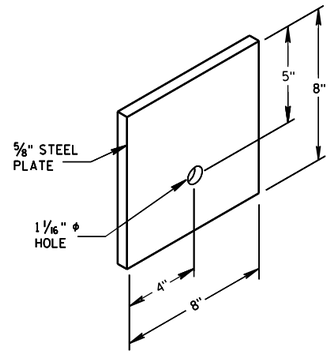
⑨ CABLE ANCHOR BOX (SKT-350)

(SKT-350)



⑩ STRUT DETAIL (ET-2000/ET-2000 PLUS)

(ET-2000/ET-2000 PLUS)

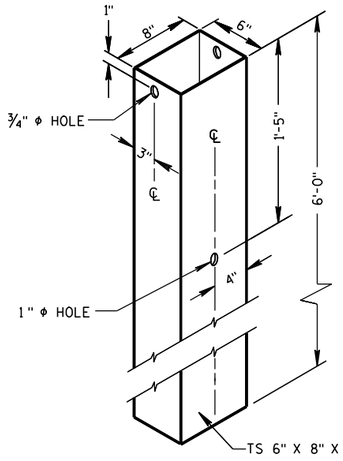


⑦ STEEL BEARING PLATE

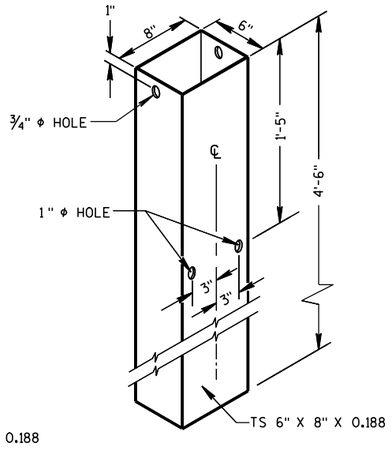
(SKT-350, ET-2000/ET-2000 PLUS)

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

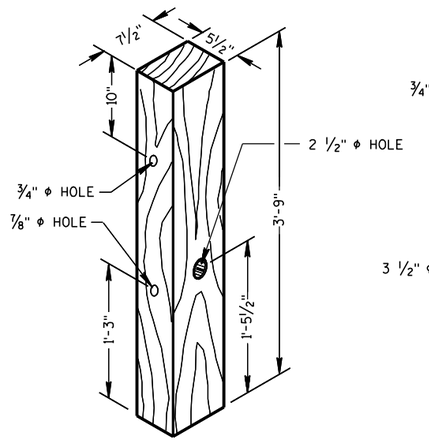
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



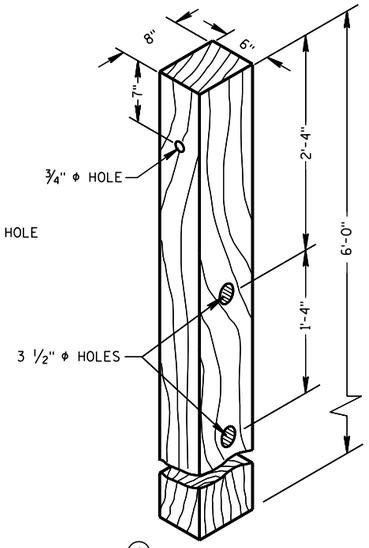
(2) 72" STEEL TUBE
(POSTS NO. 1-4



(2) 54" STEEL TUBE
(POSTS NO. 1-4



(1) TERMINAL POST
(POSTS NO. 1-4



(4) CRT POST
(POSTS NO'S 5-8

WOOD BREAKAWAY POSTS

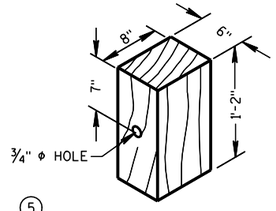
GENERAL NOTES

STEEL PLATE BEAM GUARD, ENERGY ABSORBING TERMINAL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH, WHICH SHALL INCLUDE HARDWARE, STEEL PLATE BEAM GUARD, POSTS, REFLECTIVE SHEETING AND INSTALLATION AS SHOWN.

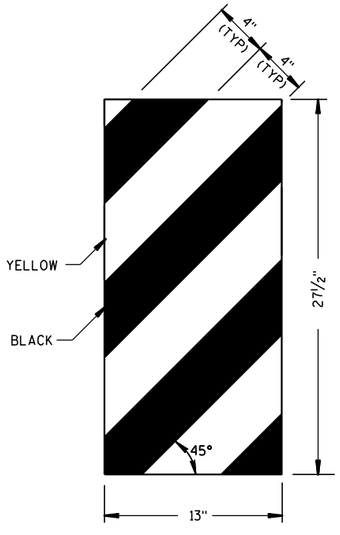
WHEN ROCK IS ENCOUNTERED DURING EXCAVATION, A 12 INCH DIA. POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK MAY BE USED IF APPROVED BY THE ENGINEER. GRANULAR MATERIAL SHALL BE PLACED IN THE BOTTOM OF THE HOLE APPROXIMATELY 2 ½" INCHES DEEP TO PROVIDE DRAINAGE. THE SOIL TUBES SHALL BE FIELD CUT TO LENGTH, PLACED IN THE HOLE AND BACKFILLED WITH ADEQUATELY COMPACTED MATERIAL EXCAVATED FROM THE HOLE.

SEE APPROVED PRODUCTS LIST FOR ACCEPTABLE E. A. T. MARKER POST.

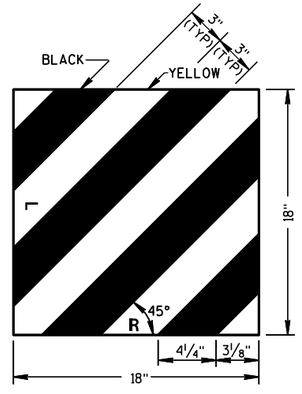
(G) ½" DIA. X 3" LAG BOLT WITH WASHER.



(5) WOOD OFFSET BLOCK
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

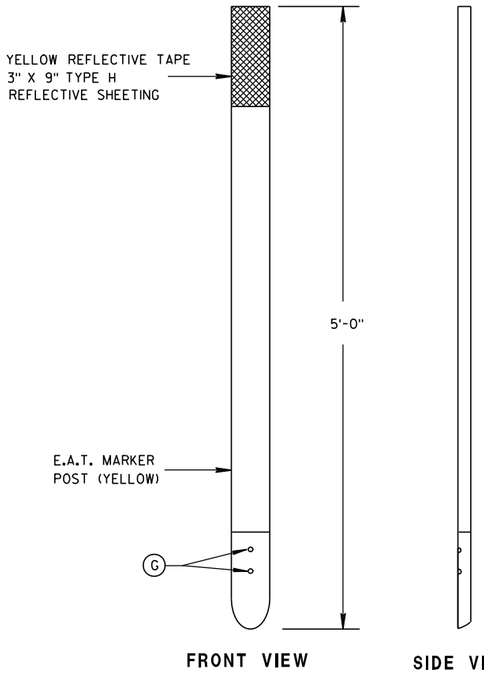


ET-2000 PLUS ONLY



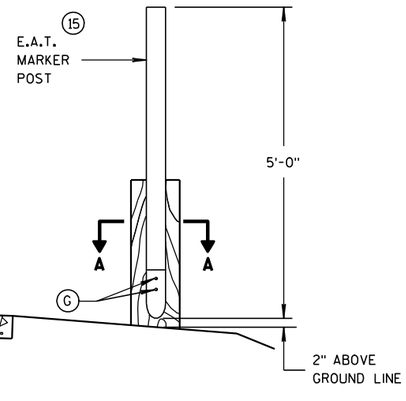
ET-2000 AND SKT-350

(14) REFLECTIVE SHEETING DETAILS

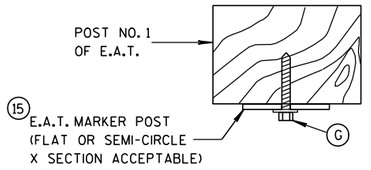


FRONT VIEW SIDE VIEW

(15) E.A.T. MARKER POST



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

STEEL PLATE BEAM GUARD
ENERGY ABSORBING TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

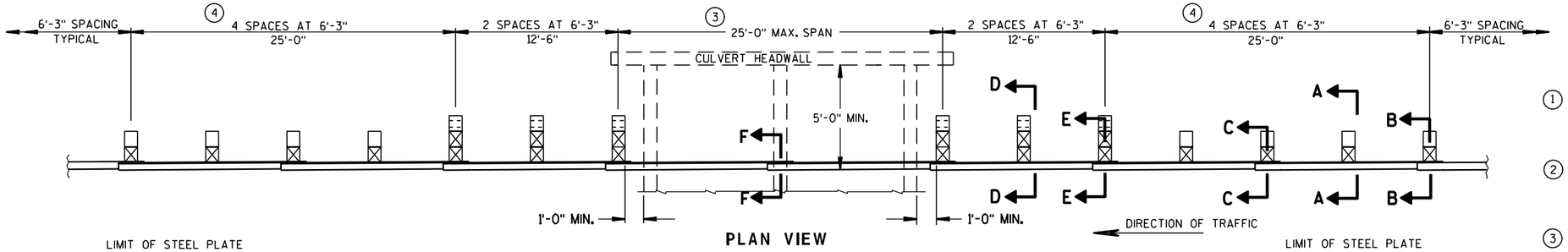
APPROVED
4-12-10 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
[illegible]ENT
FHWA

6

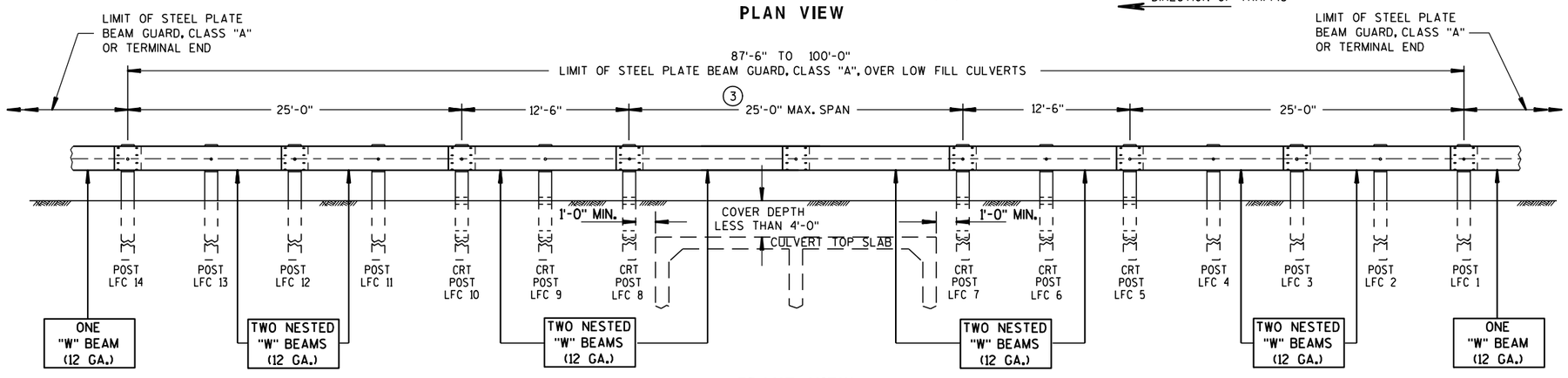
S.D.D. 14 B 24-7c

6

S.D.D. 14 B 24-7c



PLAN VIEW



FRONT VIEW

TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD OVER LOW FILL CULVERTS

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

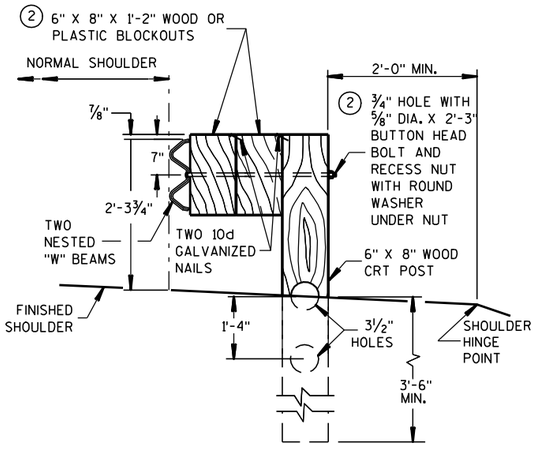
(1) MAINTAIN THE NESTING OF EACH NESTED PAIR OF "W" BEAM SECTIONS THROUGH SPLICES. ORIENTATE NESTED "W" BEAM SPLICES IN THE DIRECTION OF TRAFFIC AS THE PLAN VIEW SHOWS. SEE S.D.D. 14 B 15 FOR SPLICE INSTALLATION.

(2) THE CONTRACTOR MAY USE APPROVED PLASTIC BLOCKOUTS IN LIEU OF WOOD BLOCKOUTS. SEE S.D.D. 14 B 15 FOR TYPICAL BLOCKOUT, SPLICE AND REFLECTOR INSTALLATIONS. USE BOLT SIZES AND LENGTHS AS SHOWN ON THIS DETAIL.

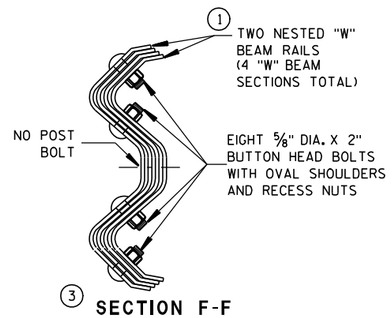
(3) PROVIDE 12'-6", 18'-9" AND 25'-0" SPANS ONLY. USE A MAXIMUM OF ONE SPLICE LOCATED ANYWHERE WITHIN THE SPAN SECTION. LOCATE ALL OTHER SPLICES AT BEAM GUARD POSTS.

(4) IN THE FIRST AND LAST 25 FOOT SECTIONS (POSTS LFC 1-4 & LFC 11-14), THE CONTRACTOR MAY USE W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS OR 6" X 8" WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS. DO NOT MIX STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS AND WOOD POSTS WITH EITHER WOOD OR PLASTIC BLOCKOUTS IN THE SAME INSTALLATION.

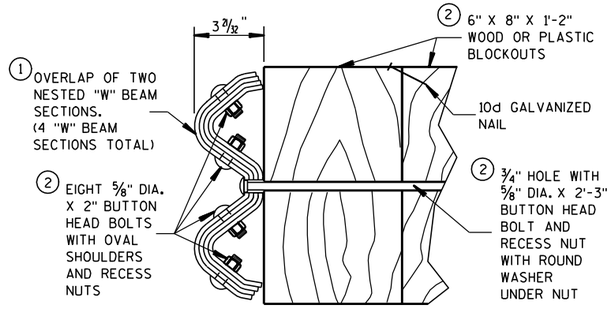
(5) WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK, THE PLAN TYPICAL SECTIONS OR DETAILS MAY SHOW, OR THE ENGINEER MAY ALLOW, THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. BUILD AS THE PLAN SHOWS OR ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST SOIL DEPTH TO 4'-6" OR MORE.



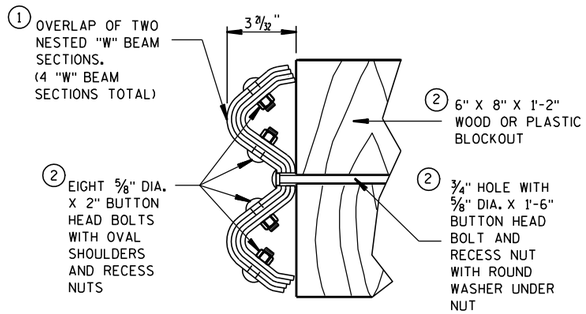
SECTION D-D
TYPICAL CRT POST LFC 6 AND 9



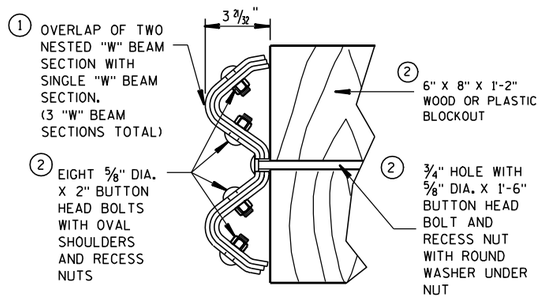
(3) SECTION F-F
BEAM SPLICE IN SPAN OVER CULVERT



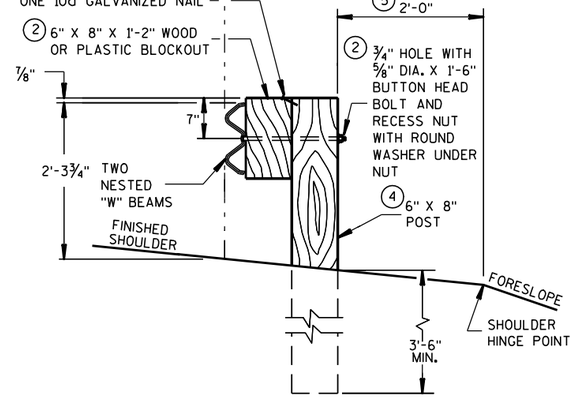
SECTION E-E
TYPICAL CRT POST LFC 5, 7, 8 AND 10



SECTION C-C
TYPICAL AT POSTS LFC 3 AND 12



SECTION B-B
TYPICAL AT POSTS LFC 1 AND 14



SECTION A-A
TYPICAL AT POST LFC 2,4,11,13

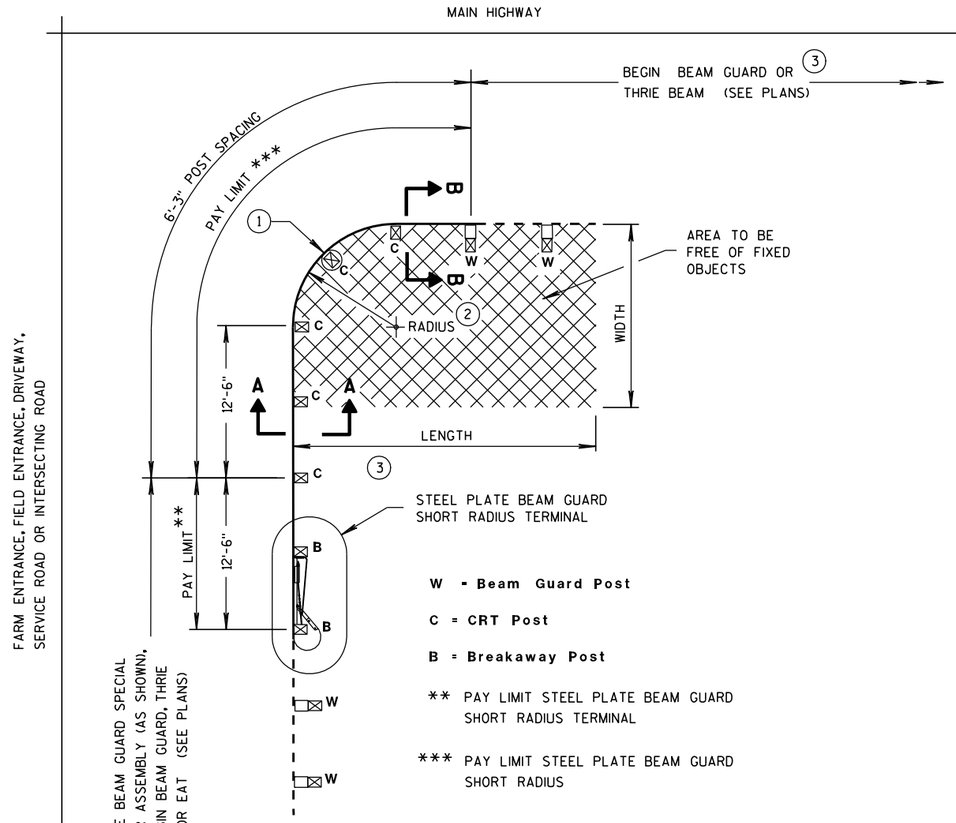
STEEL PLATE BEAM GUARD, CLASS "A", OVER LOW FILL CULVERTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

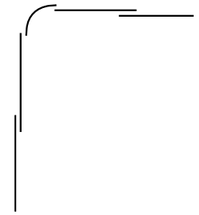
APPROVED
12/8/00 DATE
/S/ John Have... CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 25-1



TYPICAL LAYOUT
(8' RADIUS SHOWN)



TYPICAL LAP SPLICES
(8' RADIUS SHOWN)

GENERAL NOTES

ALL ANGLES, CHANNELS, AND PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A36 AND THE STRUCTURAL TUBING SHALL CONFORM TO ASTM A 500. WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE ANSI/AWS D1.1. ALL STRUCTURAL STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 123. PUNCHING, DRILLING, CUTTING, OR WELDING WILL NOT BE PERMITTED AFTER GALVANIZING. FURNISH AND INSTALL HARDWARE PER STANDARD SPECIFICATION 614.2. UNLESS NOTED OTHERWISE.

SHOP BEND CURVED RAIL SECTIONS.

SEE STANDARD DETAIL DRAWING 14 B 15 FOR OTHER DETAIL.

(1) ON THE 8 FOOT RADIUS INSTALLATION, DO NOT INSTALL BUTTON HEAD BOLT AT CENTER CRT POST.

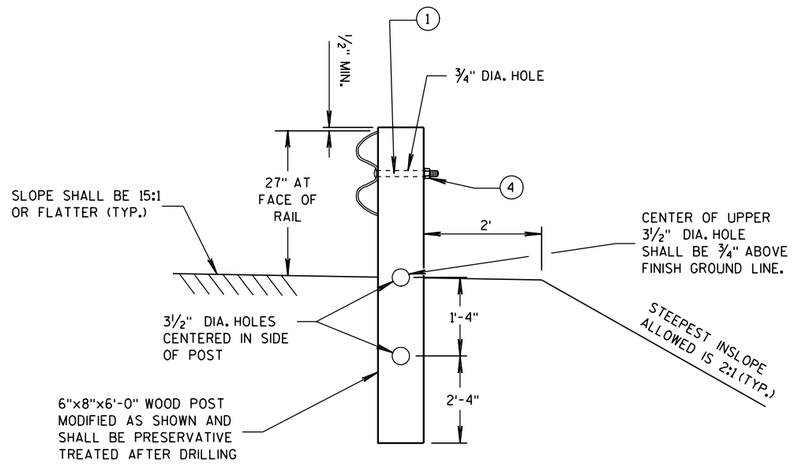
(2) RADIUS FROM 8' - 36'. SEE PLAN.

(3) HEIGHT TRANSITION MAY BE REQUIRED. SEE PLAN OR PROJECT ENGINEER.

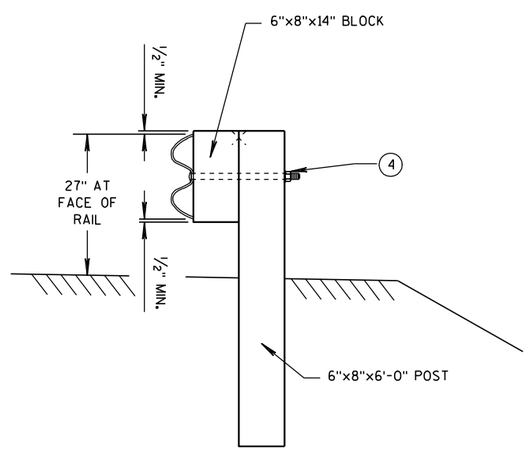
(4) 5/8" ø X 1'-6" BUTTON HEAD BOLT AND RECESS NUT WITH ROUND WASHER UNDER NUT.

RADIUS	NUMBER OF CRT POSTS	*NUMBER AND LENGTH OF CURVED RAILS	REQUIRED AREA FREE OF FIXED OBJECTS (LENGTH x WIDTH)
8'	5	1 at 12.5'	25' x 15'
16'	7	1 at 25'	30' x 15'
24'	9	1 at 25' and 1 at 12.5'	40' x 20'
32'	11	2 at 25'	50' x 20'

* THE NUMBER OF RAILS IS BASED ON A 90° INTERSECTION. SEE PLAN FOR NON 90° INSTALLATIONS.



SECTION A-A
(CRT POST)



SECTION B-B
(BEAM GUARD POST)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

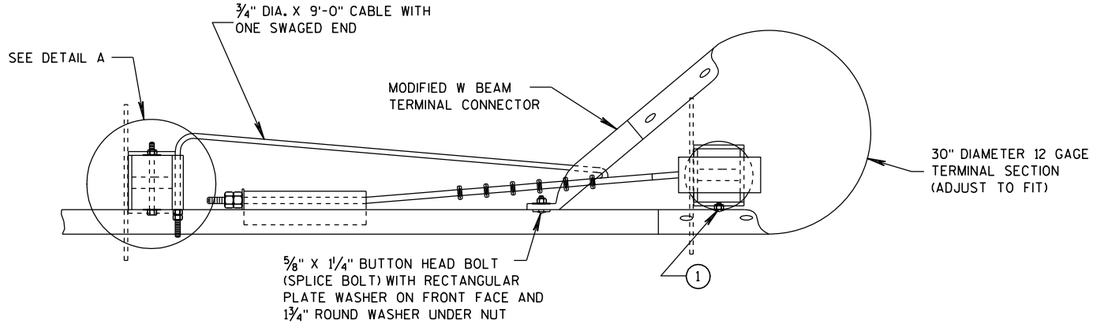
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

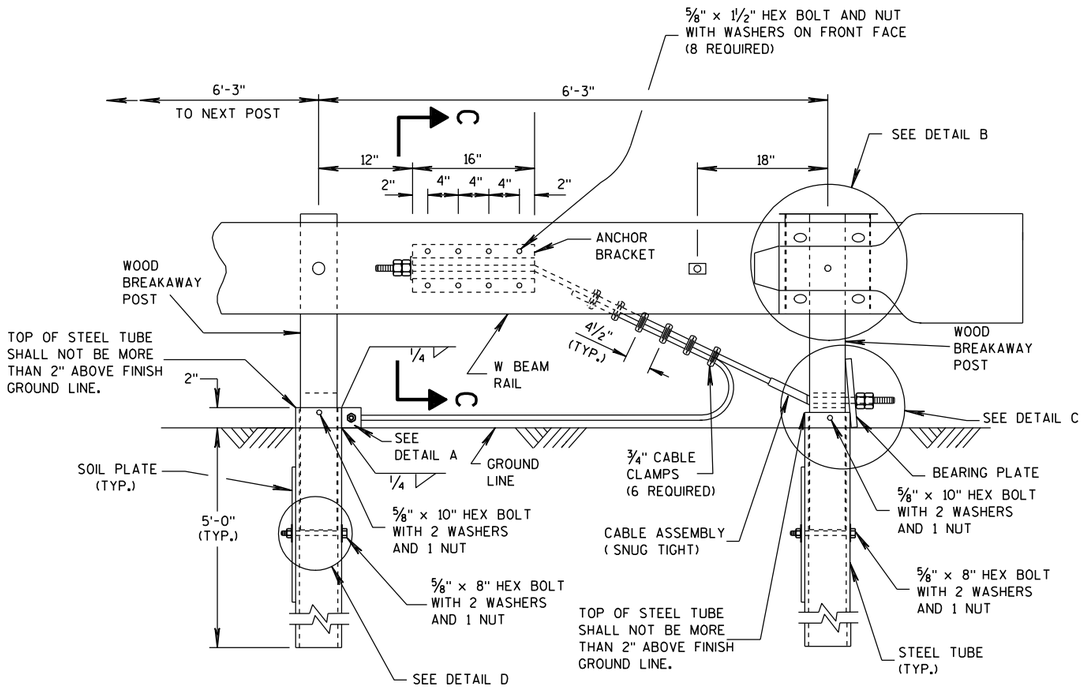
S.D.D. 14 B 27-1a

6

S.D.D. 14 B 27-1a



PLAN VIEW



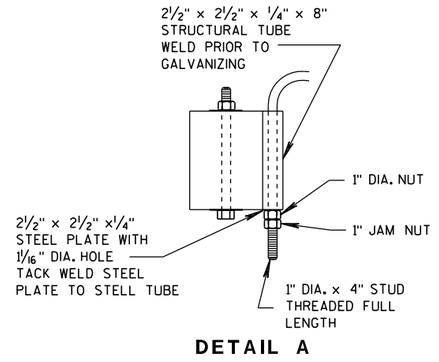
ELEVATION VIEW

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

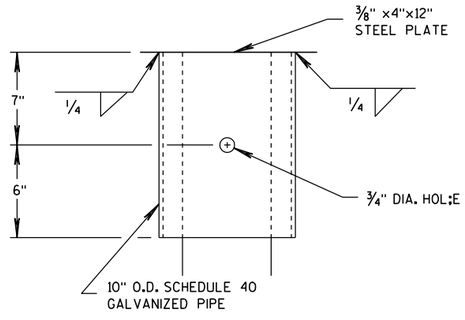
GENERAL NOTES

(1) ATTACH W BEAM RAIL TO THE STEEL PIPE WITH A ⅝" X 2" BUTTON HEAD BOLT WITH NO WASHER. CONNECTION TO THE POST IS NOT REQUIRED.

INSTALL GALVANIZED ¾" (6X19) PREFORMED WIRE OR INDEPENDENT WIRE ROPE CORE CONFORMING TO AASHTO M 30. MANUFACTURE WIRE ROPE OUT OF IMPROVED PLOW STEEL WITH A MINIMUM BREAKING STRENGTH OF 42,800 PSI.



DETAIL A



DETAIL B

(BEAM GUARD AND TERMINAL SECTION NOT SHOWN)

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

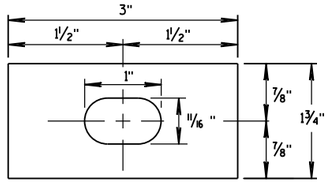
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

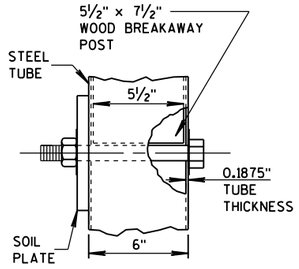
S.D.D. 14 B 27-1b

6

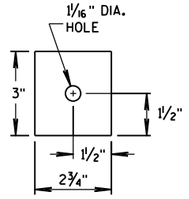
S.D.D. 14 B 27-1b



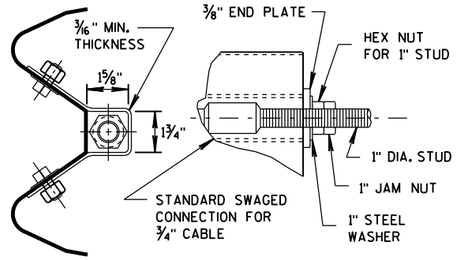
RECTANGULAR PLATE WASHER



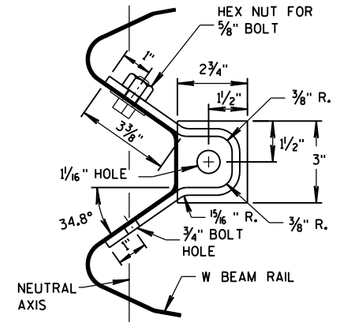
DETAIL D



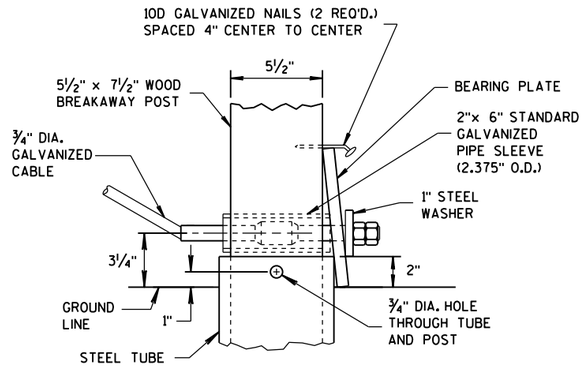
END PLATE



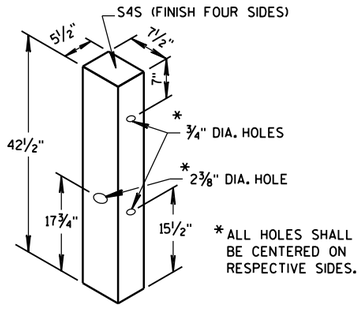
SECTION C-C
(END PLATE REMOVED)



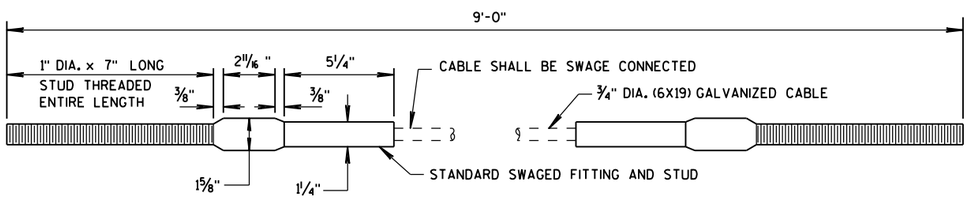
ANCHOR BRACKET



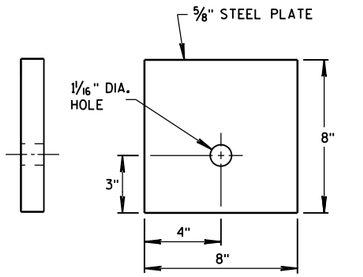
DETAIL C



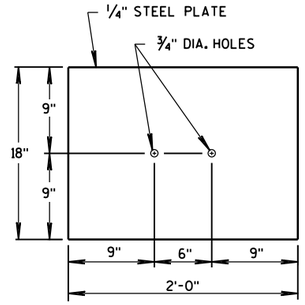
WOOD BREAKAWAY POST



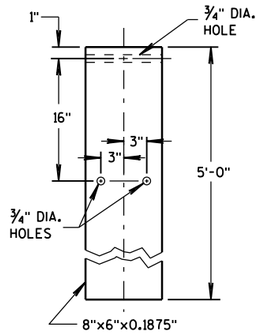
CABLE ASSEMBLY



BEARING PLATE



SOIL PLATE



STEEL TUBE

STEEL PLATE BEAM GUARD SHORT RADIUS TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

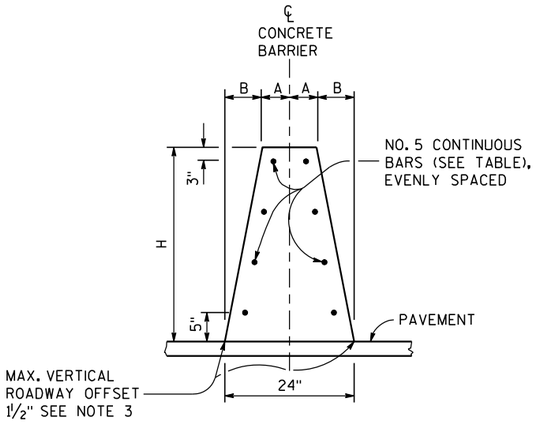
APPROVED
12/18/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

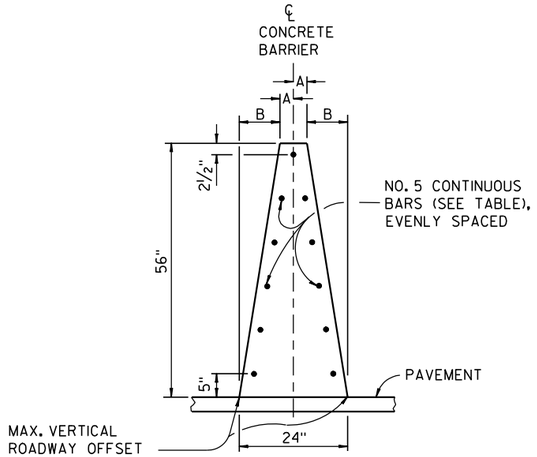
S.D.D. 14 B 27-1c

6

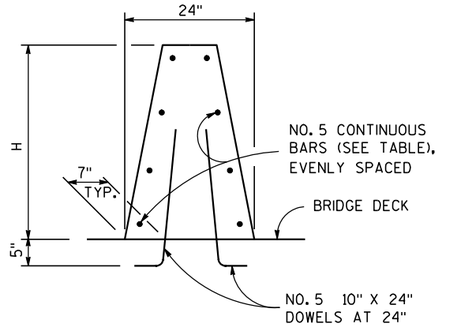
S.D.D. 14 B 27-1c



32-INCH, 36-INCH OR 42-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S32, TYPE S36, AND TYPE S42)



56-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S56)



SINGLE SLOPE CONCRETE BARRIER ON BRIDGE

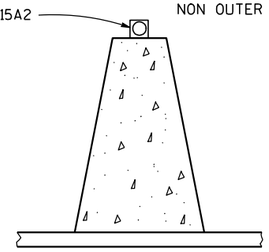
NON OUTER PARAPET APPLICATION

GENERAL NOTES

1. WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.
2. EXPANSION JOINTS IN CONCRETE BARRIER SHALL BE LOCATED AT ALL DECK, PAVEMENT AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL SHALL BE THE SAME SIZE AS JOINT OR ½" MINIMUM.
3. WHERE VERTICAL ROADWAY OFFSET IS GREATER THAN 1½", USE TYPE A
4. PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.
5. EXCEPT IN ANCHORS, VERTICAL REINFORCING STIRRUP NOT REQUIRED FOR ROADWAY OFFSETS LESS THAN 1'-0".
6. FOR TYPE S32, TYPE S36, TYPE S42, AND S56 MONOLITHIC FOOTING OR DOWELED FOOTING WITH 2-#8 x 8" @ 2'-0".
7. STAGGER LAPPING OF LONGITUDINAL STEEL. MINIMUM OVERLAP OF STEEL 2 FEET. BARS AT LAPS TO BE FIRMLY TIED OR CONNECTED.
8. 4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATION 501.
9. WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.
10. USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS OTHERWISE NOTED.
11. 2" CLEAR COVER TYPICAL.
12. COLD-JOINTS MAY BE USED BETWEEN ANCHOR INSTALLATIONS. WHEN A COLD JOINT IS NEEDED, 3 FEET OF LAP OF LONGITUDINAL STEEL IS REQUIRED. LAPS TO BE FIRMLY TIED
13. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 NO ADDITIONAL VERTICAL STEEL NEEDED. IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A REQUIRES VERTICAL STEEL. SEE OTHER DETAIL
14. IN TYPE S32, TYPE S36, TYPE S42 AND TYPE S56 DEPTH OF FOOTING 10". IN TYPE S32A, TYPE S36A, TYPE S42A AND TYPE S56A MATCH TOTAL HEIGHT OF SINGLE SLOPE BARRIER RETAINING WALL.
15. FOR ALL BARRIER TYPES SHOWN, ANCHOR IS REQUIRED AT CONCRETE BARRIER ENDS AND AT INTERRUPTIONS IN CONCRETE BARRIER. ANCHOR MAY BE AS SHOWN ON DRAWING OR DETAILS SHOWN ON S.D.D. 14B33. ANCHORS INCIDENTAL TO CBSS.

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF NO. 5 BARS EACH
32	7	5	8
36	6¼	5¾	8
42	5¼	6¾	10
56	3	9	11

SEE STANDARD DETAIL DRAWING 15A2 FOR DELINEATOR DETAILS



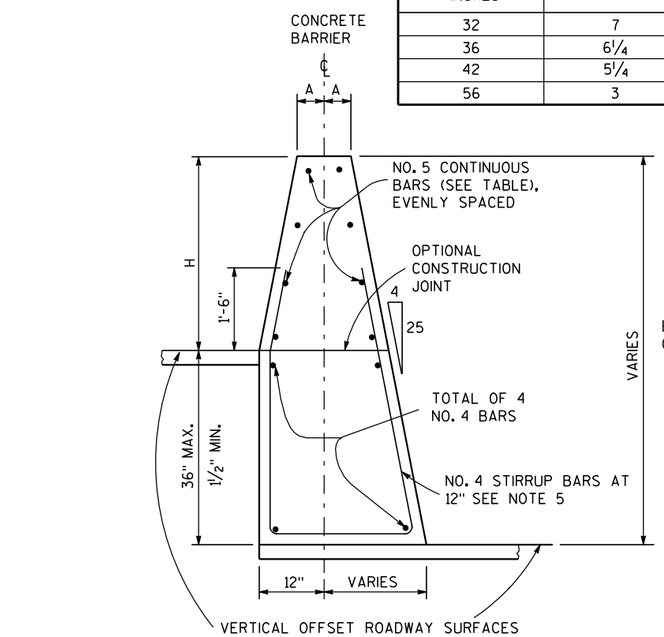
DELINEATION

DELINEATOR SPACING ON HORIZONTAL CURVES

RADIUS OF CURVE	APPROXIMATE SPACING ON CURVE
50 FEET	20 FEET
115 FEET	25 FEET
180 FEET	35 FEET
250 FEET	40 FEET
300 FEET	50 FEET
400 FEET	55 FEET
500 FEET	65 FEET
600 FEET	70 FEET
700 FEET	75 FEET
800 FEET	80 FEET
900 FEET	85 FEET
1000 FEET	90 FEET

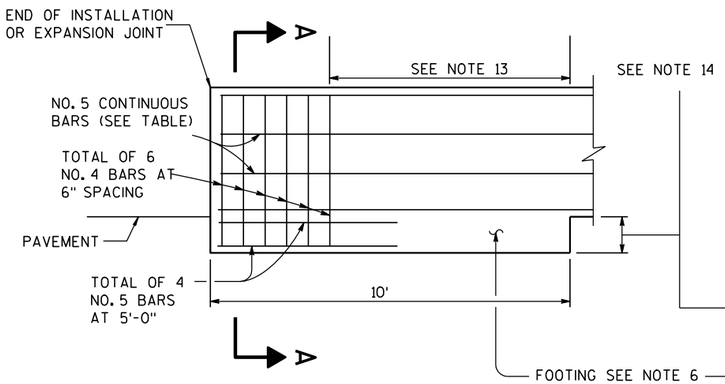
DELINEATOR SPACING ON RADIUS GREATER THAN 1000 FEET OR TANGENT SECTIONS

	LENGTH OF BARRIER	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2	



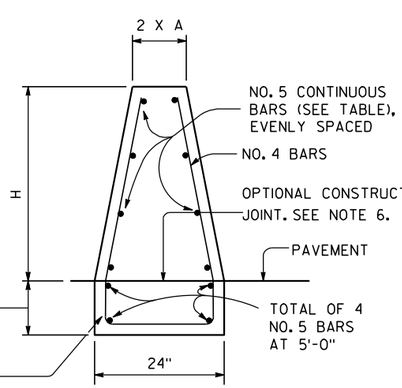
SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL (TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)

(BETWEEN ADJACENT ROADWAYS)



END ANCHOR SINGLE SLOPE CONCRETE BARRIER

AT CONSTRUCTION JOINT

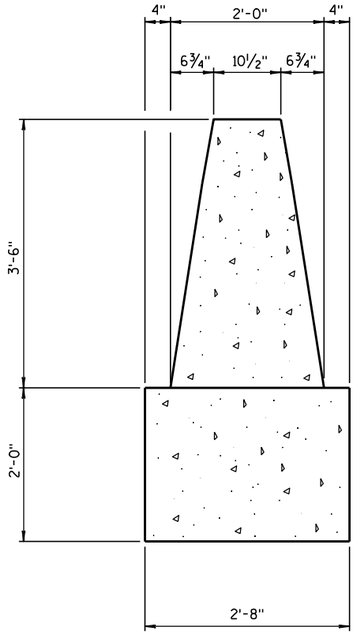


SECTION A-A

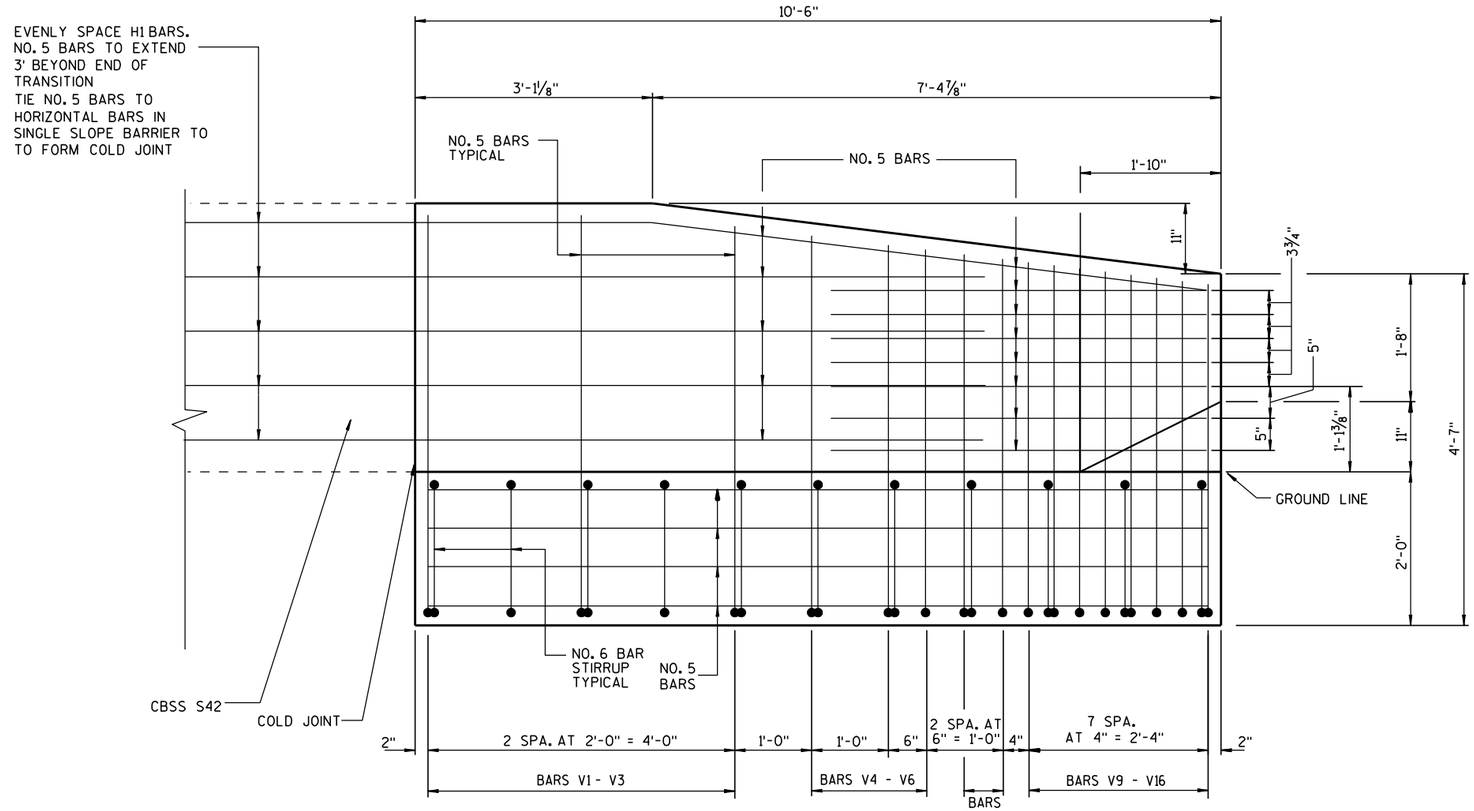
CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 32-1a

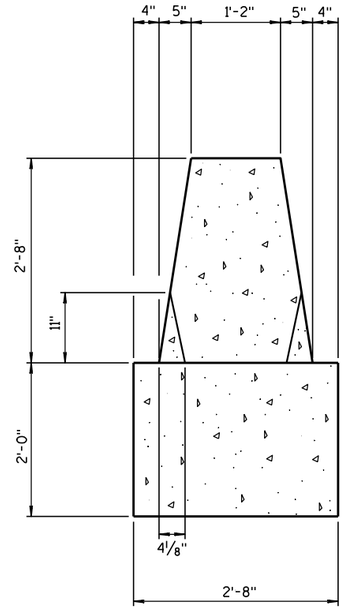


SECTION A-A

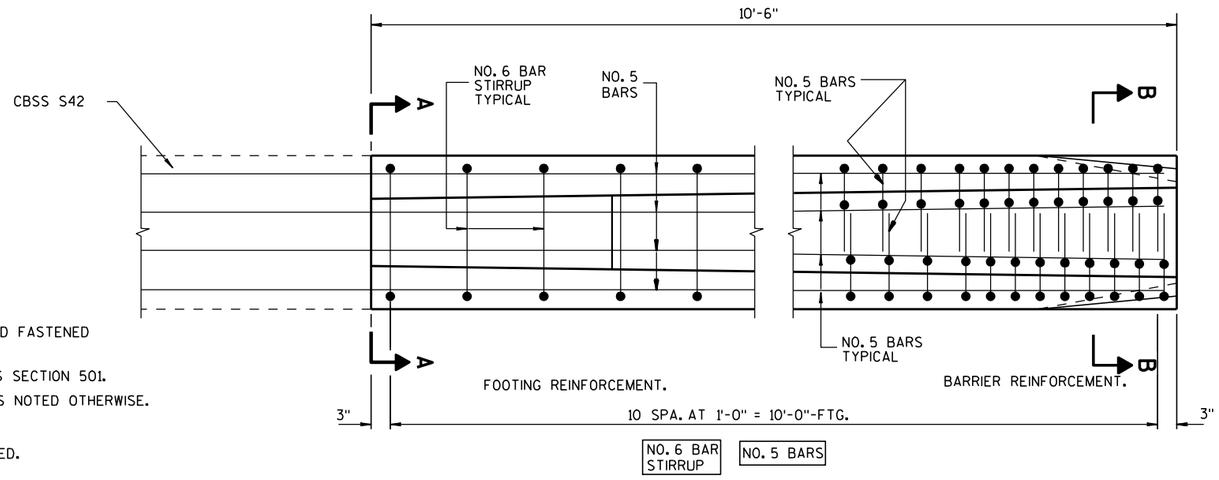


SEE SECTIONS ① THRU ⑯

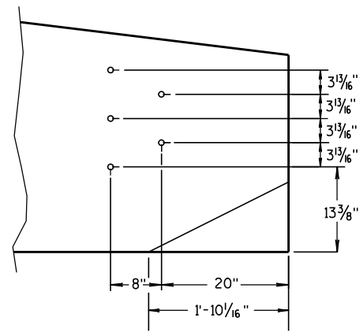
ELEVATION VIEW



SECTION B-B



PLAN VIEW



PVC PIPE LOCATIONS

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS SECTION 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

THRIE BEAM ANCHOR INCIDENTAL TO CONCRETE BARRIER ITEM.

INSTALL SCHEDULE 40 PVC PIPE 1" DIAMETER AT LOCATIONS INDICATED.

EXTEND PVC PIPE COMPLETELY THROUGH BARRIER.

CUT ENDS OF PVC PIPE FLUSH WITH FINISHED FACE of BARRIER.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

CONCRETE BARRIER SINGLE SLOPE 42" THRIE BEAM ANCHOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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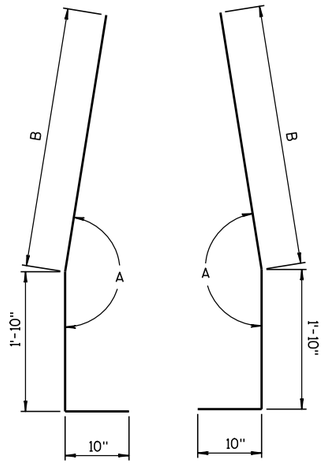
S.D.D. 14 B 33-1g

BAR CHART
SECTIONS V1 - V11

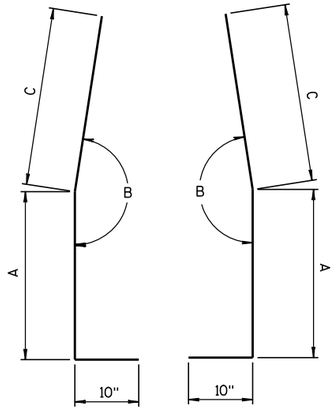
BAR	A	B
V1	170°-50'	3'-4½"
V2	171°-20'	3'-4½"
V3	171°-30'	3'-2½"
V4	171°-25'	3'-1½"
V5	171°-15'	3'-0"
V6	171°-15'	2'-11"
V7	171°-20'	2'-10½"
V8	171°-10'	2'-9½"
V9	171°-10'	2'-9"
V10	171°-05'	2'-8½"
V11	171°-10'	2'-8"



BAR BENDING DETAIL
FOR BARS V1 - V11

BAR CHART
SECTIONS V12 - V13

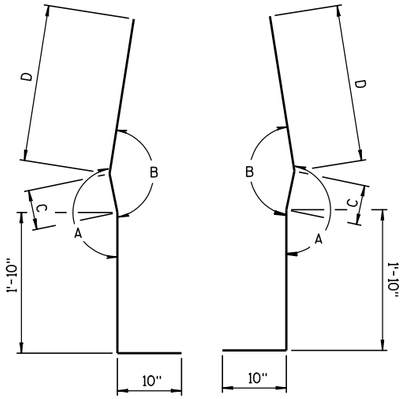
BAR	A	B	C
V12	2'-2"	171°-15'	2'-3½"
V13	2'-7"	171°-05'	1'-10"



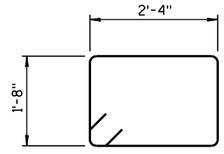
BAR BENDING DETAIL
FOR BARS V12 - V13

BAR CHART
SECTIONS V14 - V16

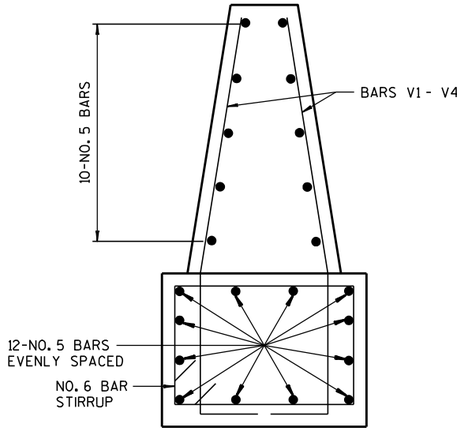
BAR	A	B	C	D
V14	168°-15'	159°-15'	6"	2'-0"
V15	169°-20'	161°-00'	8"	1'-10"
V16	168°-40'	160°-10'	10"	1'-8"



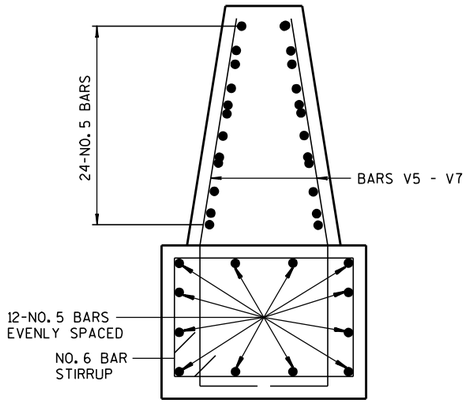
BAR BENDING DETAIL
FOR BARS V14 - V16



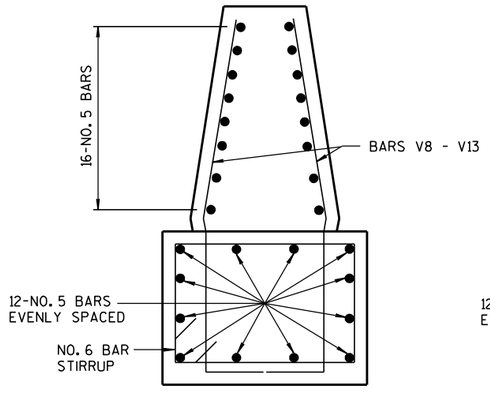
STIRRUP BAR
BENDING DETAIL



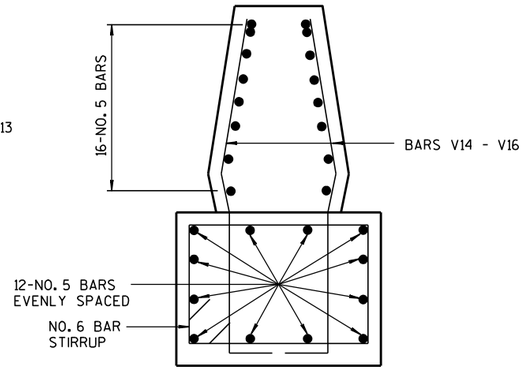
BAR DETAIL
SECTIONS V1 - V4



BAR DETAIL
SECTIONS V5 - V7



BAR DETAIL
SECTIONS V8 - V13



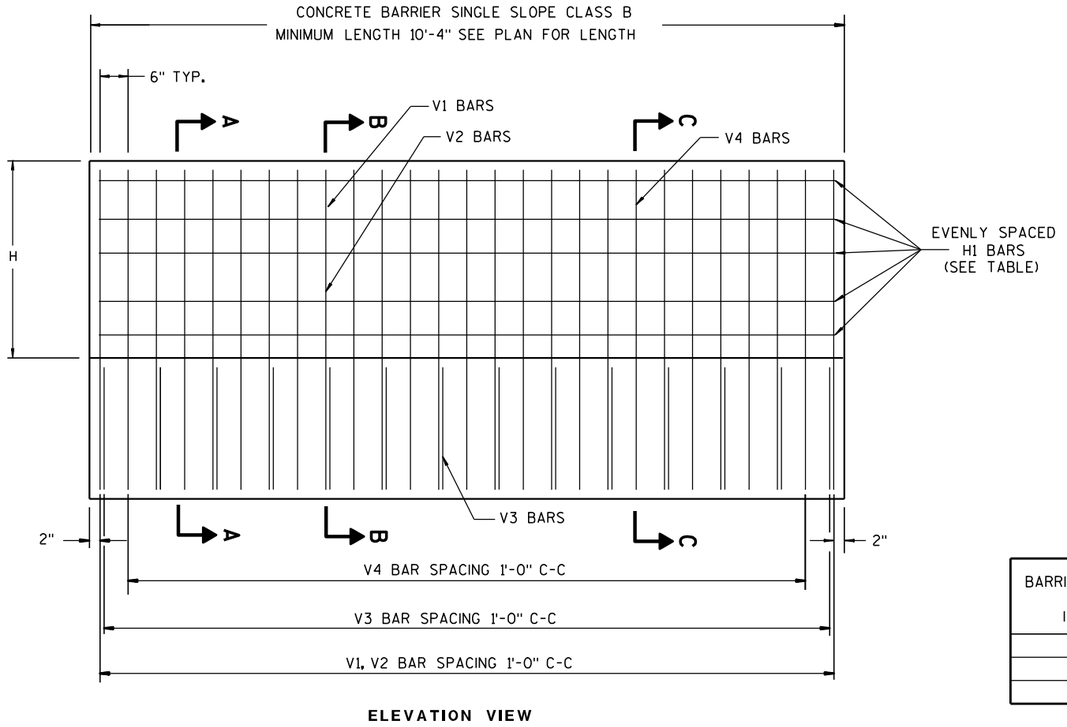
BAR DETAIL
SECTIONS V14 - V16

CONCRETE BARRIER
SINGLE SLOPE 42"
THRIE BEAM ANCHOR

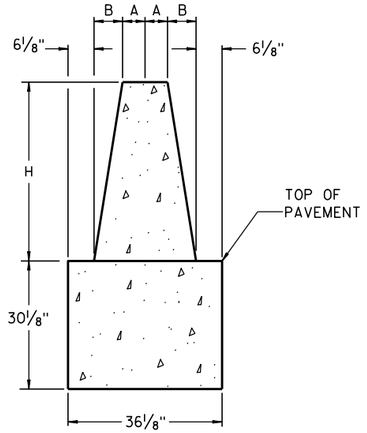
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6-3-2010 DATE
/S/ Jerry H. Z--- ROADWAY STANDARDS ENGINEER
FHWA

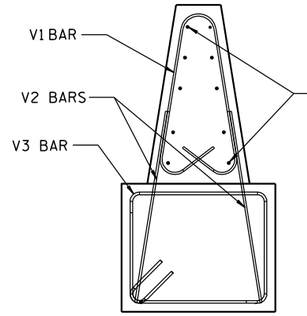
6
S.D.D. 14 B 33-1h



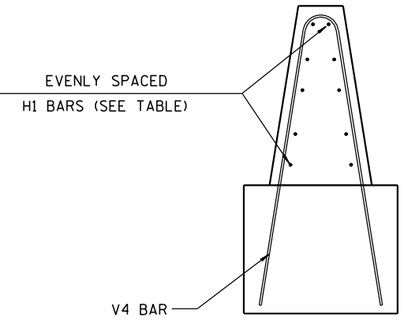
ELEVATION VIEW



SECTION A-A



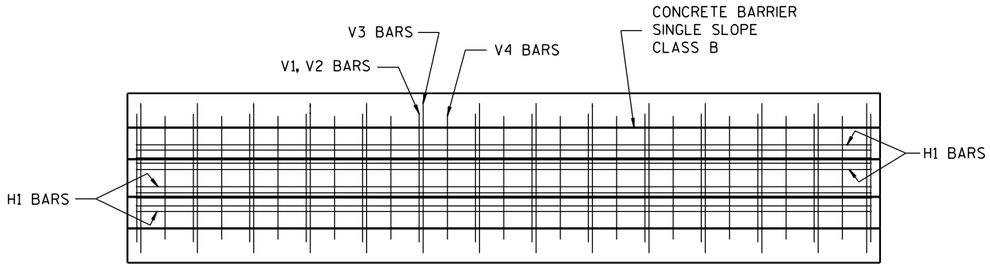
SECTION B-B



SECTION C-C

BARRIER HEIGHT H INCHES	A INCHES	B INCHES	NUMBER OF H1 BARS EACH
32	7	5	8
36	6¼	5¾	8
42	5¼	6¾	10

BARRIER HEIGHT H INCHES	V1 BAR		V4 BAR	
	C RAD. INCHES	D INCHES	E RAD. INCHES	F INCHES
32	5⅝	18¾	5½	53¾
36	4¾	23¾	4⅞	58⅜
42	3⅝	30½	3⅝	65⅜



PLAN VIEW

GENERAL NOTES

CONSTRUCT PER STANDARD SPECIFICATION 603.

SPLICES OF LONGITUDINAL BARS TO BE 2'LONG AND FIRMLY TIED AND FASTENED TOGETHER UNLESS NOTED OTHERWISE.

4000 PSI CONCRETE AIR ENTRAINMENT PER STANDARD SPECIFICATIONS 501.

USE ¾" BEVEL OR 1" RADIUS ON ALL EXPOSED SHARP EDGES UNLESS NOTED OTHERWISE.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

2" CLEAR COVER TYPICAL.

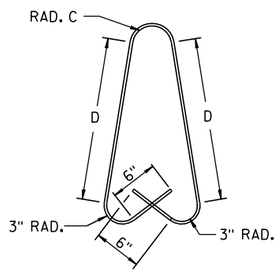
WHERE THE CONCRETE BARRIER IS ADDED TO THE FACE OF EXISTING CONCRETE STRUCTURE, MATCH EXISTING WEEP HOLES.

PAVEMENT AND PRINCIPAL WALL JOINTS. EXPANSION JOINT FILLER MATERIAL

PLACE BARRIER PERPENDICULAR TO SHOULDER GRADE, UNLESS INDICATED IN PLAN.

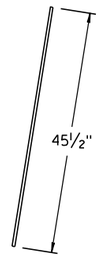
WHEN SWITCHING BETWEEN SLIP FORM AND CAST-IN-PLACE OPERATIONS, EXTEND LONGITUDINAL STEEL 3 FEET BEYOND SLIP-FORMING CUT OFF POINT. EXPOSED STEEL INTO NEXT POURS REINFORCEMENT. LAPS TO BE FIRMLY TIED.

IF REQUIRED USE THRIE BEAM ANCHOR. NO OTHER ANCHOR REQUIRED.



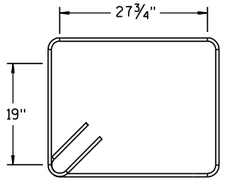
V1 BAR BENDING DETAIL

V1 BARS ARE NO. 4 BARS



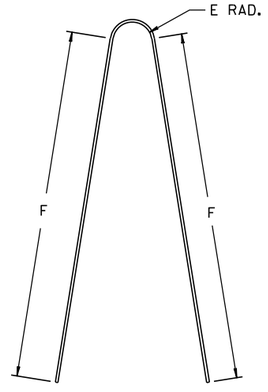
V2 BAR BENDING DETAIL

V2 BARS ARE NO. 5 BARS



V3 BAR BENDING DETAIL

V3 BARS ARE NO. 6 BARS



V4 BAR BENDING DETAIL

V4 BARS ARE NO. 6 BARS

32", 36" & 42"
CONCRETE BARRIER
SINGLE SLOPE CLASS B

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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S.D.D. 14 B 34-1a

GENERAL NOTES

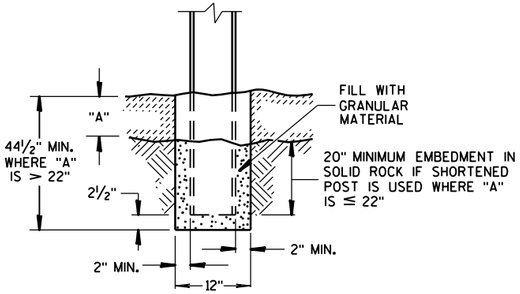
1. WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.

2. USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

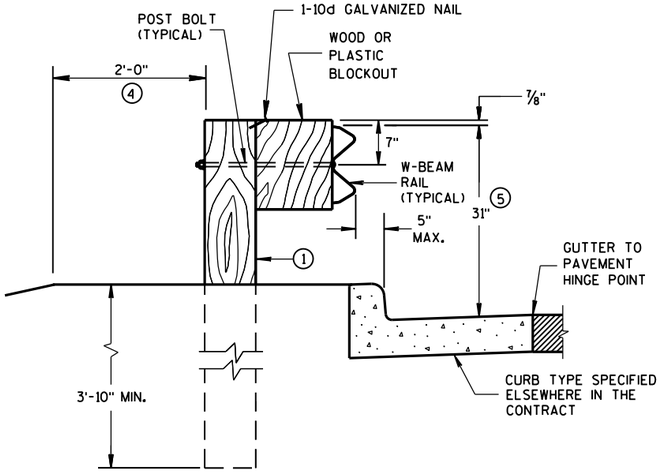
3. IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.

4. WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).

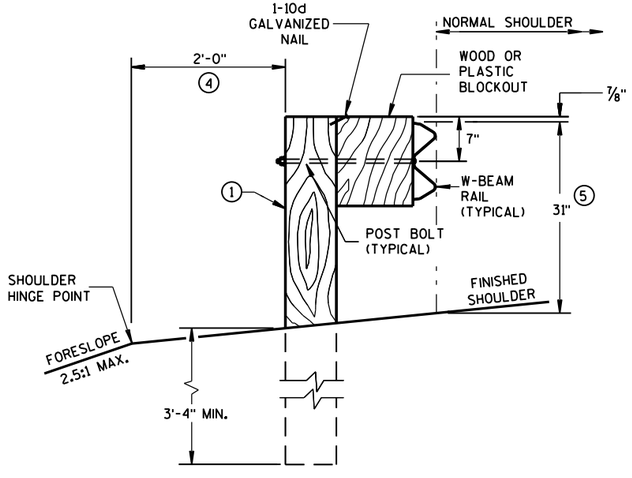
5. FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".



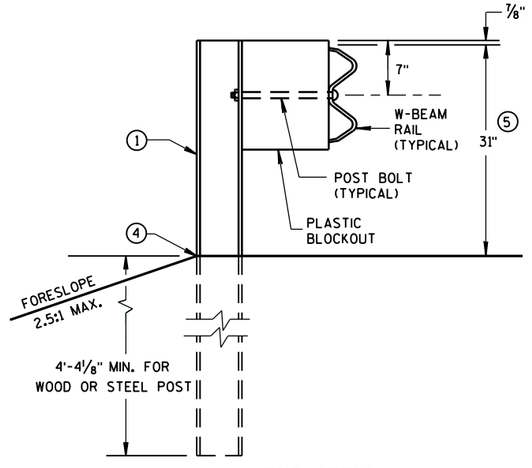
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ③



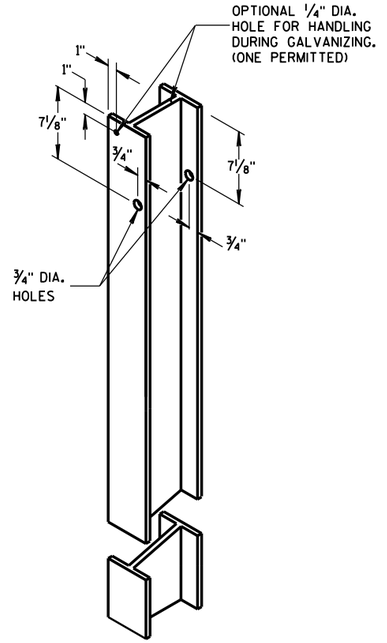
END VIEW
LOCATED ALONG A CURBED ROADWAY



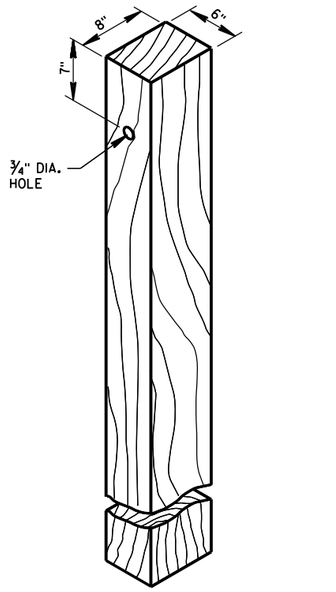
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



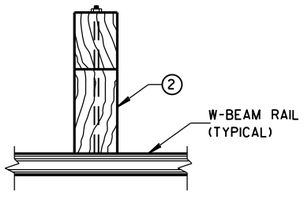
END VIEW
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



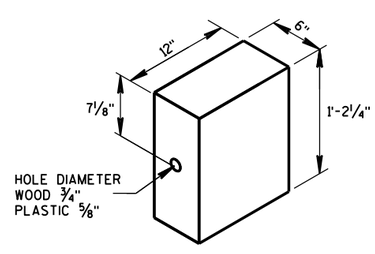
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



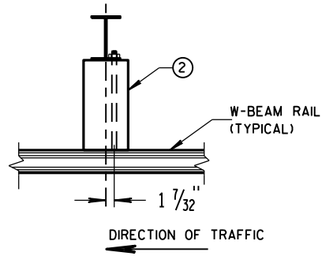
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

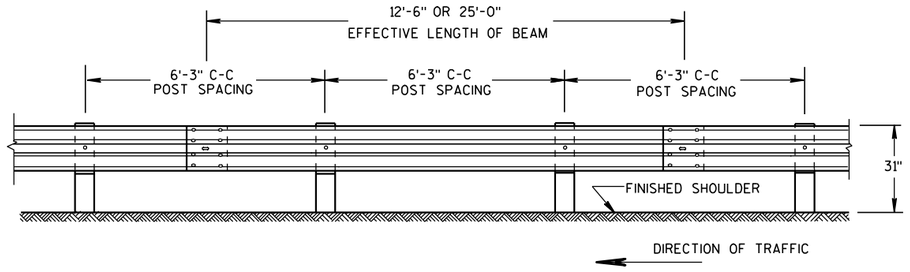


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

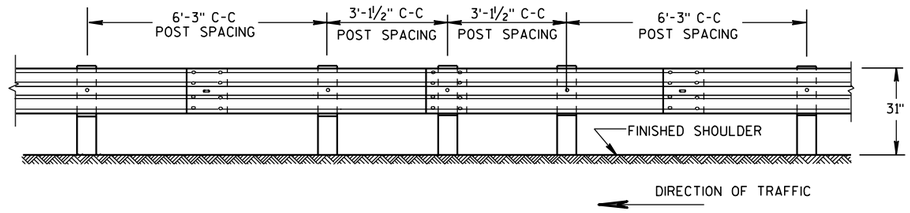
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 42-2a



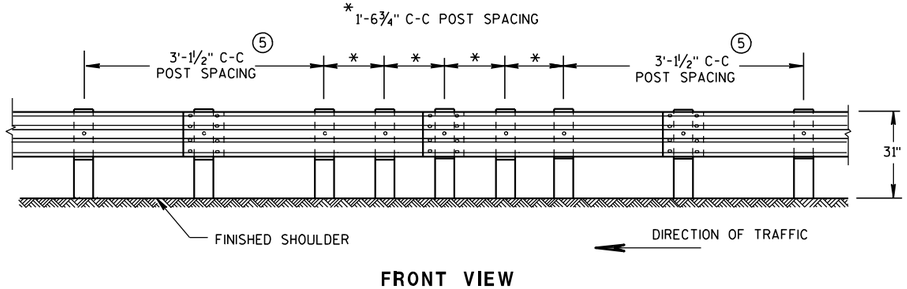
FRONT VIEW

POST SPACING STANDARD INSTALLATION



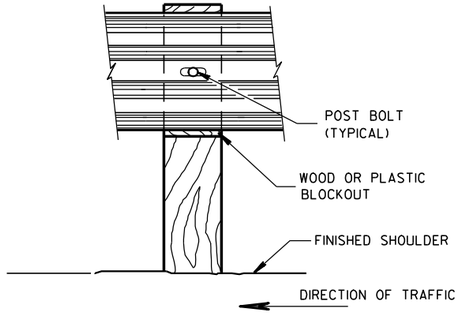
FRONT VIEW

HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)

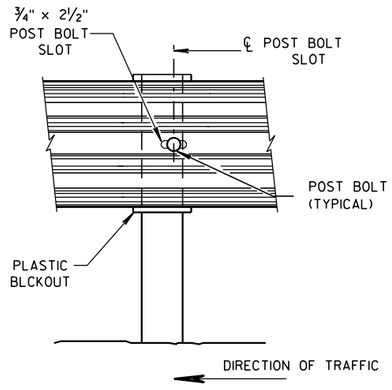


FRONT VIEW

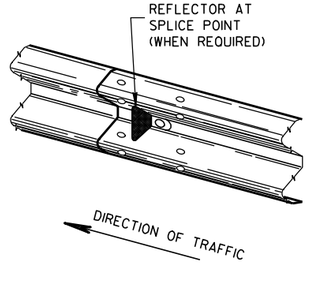
QUARTER POST SPACING (QS)

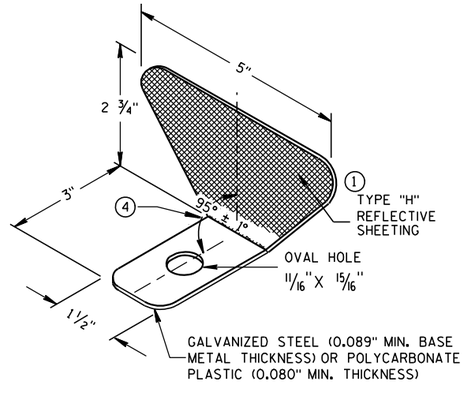


FRONT VIEW AT WOOD POST

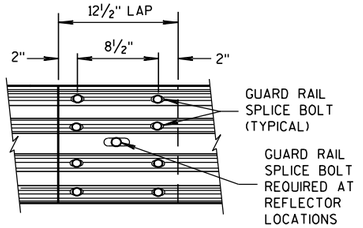


FRONT VIEW AT STEEL POST



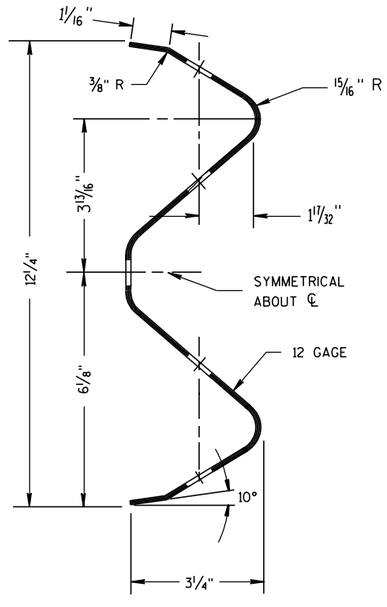


ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION ①



FRONT VIEW

MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL

GENERAL NOTES

① PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.

② DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.

③ REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

④ PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

⑤ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND ⅝" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A ⅝" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES ⅝" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING ②

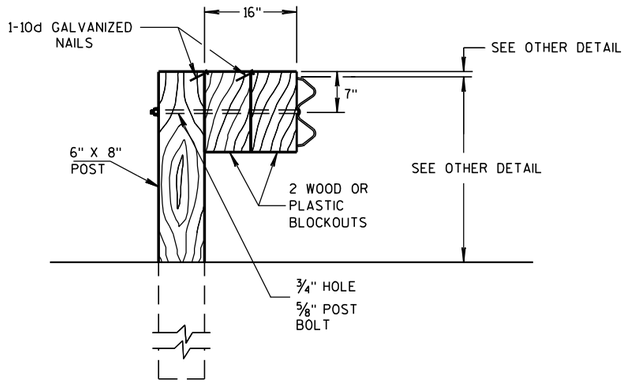
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	1 1	3
TWO WAY TRAFFIC	< 200' > 200'	25' C-C 50' C-C	1 1 ③	6
TWO WAY TRAFFIC	< 200' > 200'	50' C-C 100' C-C	2 2 ④	3

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

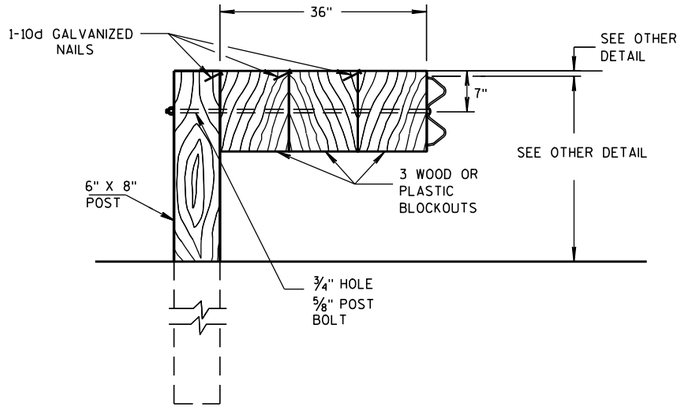
S.D.D. 14 B 42-2b

S.D.D. 14 B 42-2b



DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

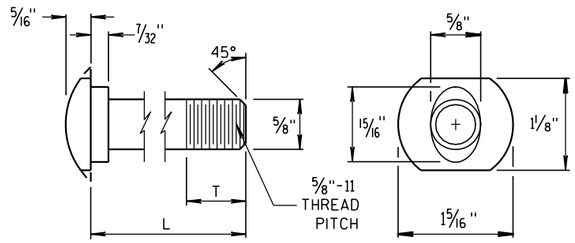


DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

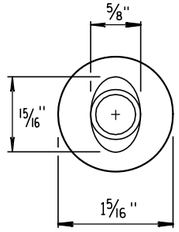
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

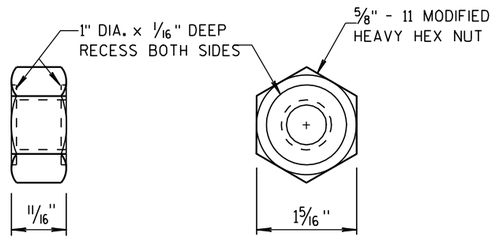


POST BOLT TABLE

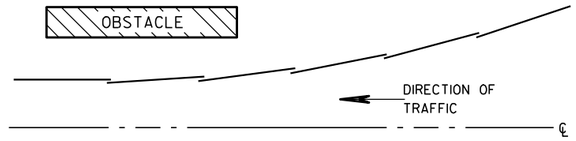
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

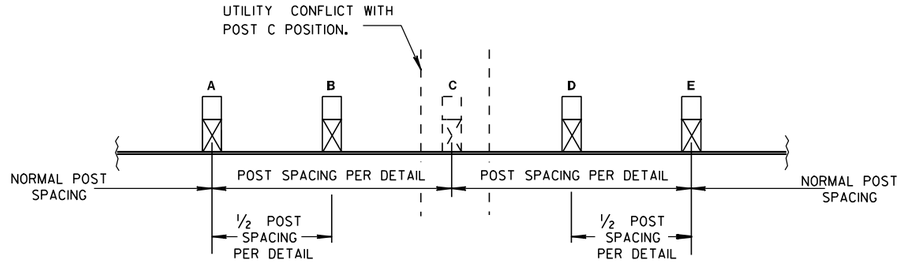


POST BOLT AND RECESS NUT

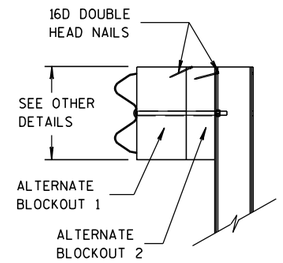


PLAN VIEW

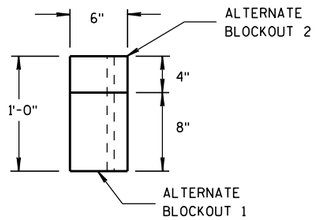
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/15/2011
DATE

/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER

FHWA

180

ENT

6

S.D.D. 14 B 42-2c

6

S.D.D. 14 B 42-2c

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE EXTENDED VEHICLE RUNOUT PATH (EVRP), THE HINGE POINT LINE (HPL),AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.

(B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.

(C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

(F) SHEETING IS ATTACHED TO 0.040 ALUMINUM SHEET AND ATTACHED TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER OF E.A.T.

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

SEE SDD 14B42 FOR MORE INFORMATION.

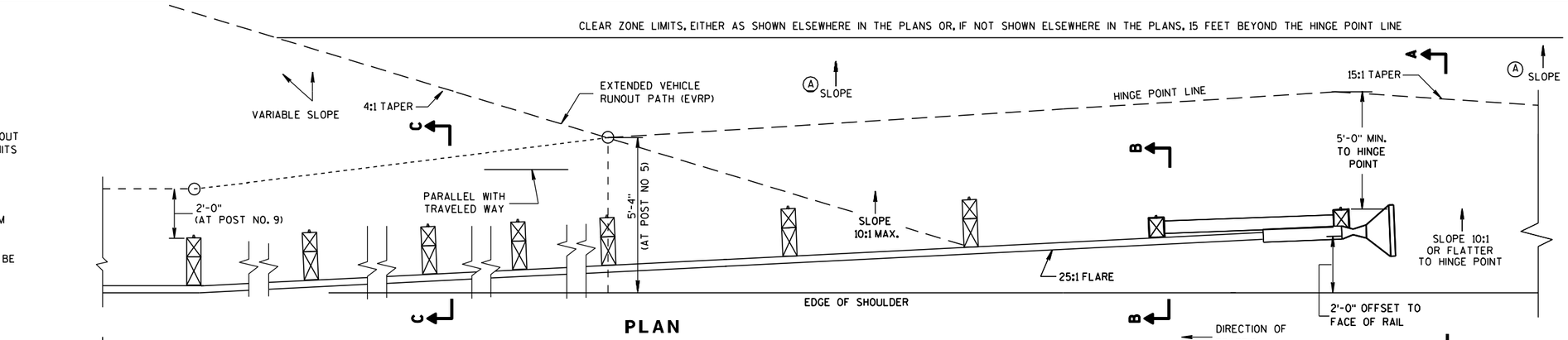
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

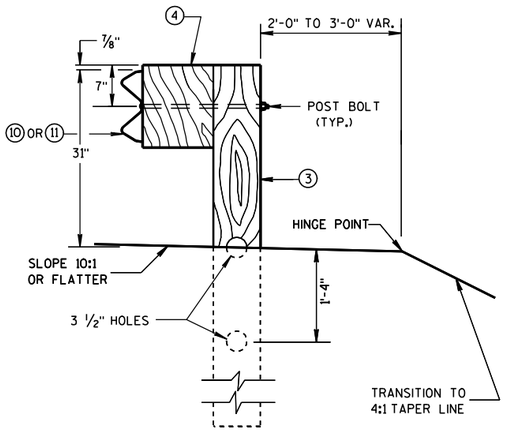
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

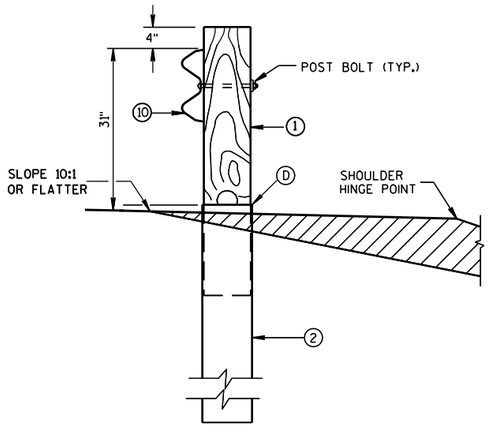
PATTERN AND COLORS ON REFLECTIVE SHEETING TYPE H ARE TO CONFORM TO OM3-L OR OM3-R OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (± ¾")

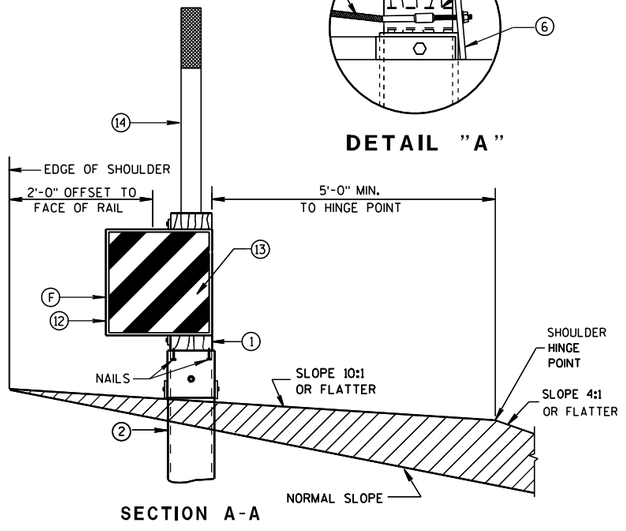




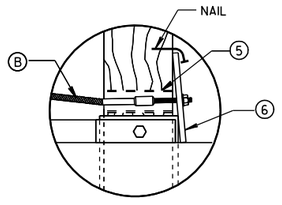
SECTION C-C
TYPICAL AT POST NOS. 3-9



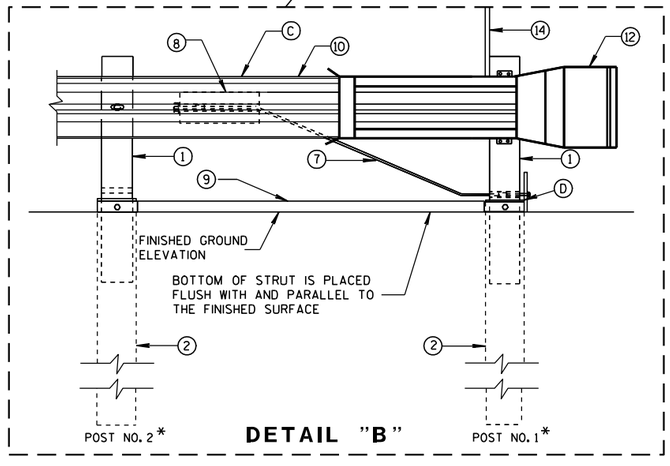
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



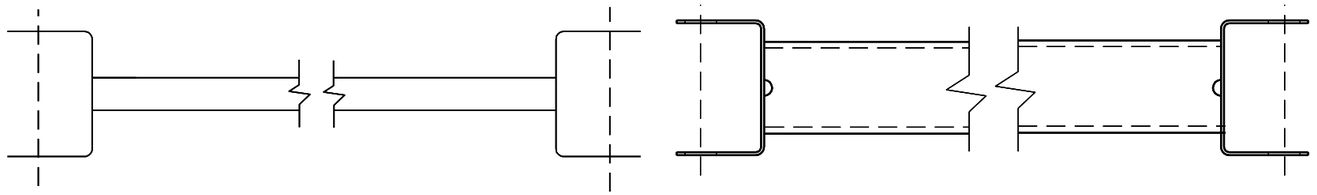
DETAIL "B"

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 14 B 44-1a

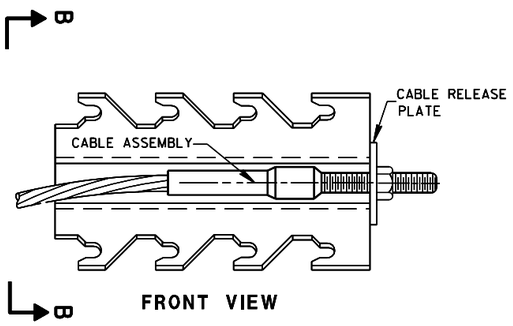
6



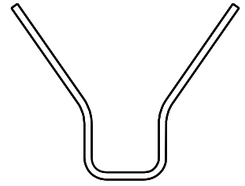
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

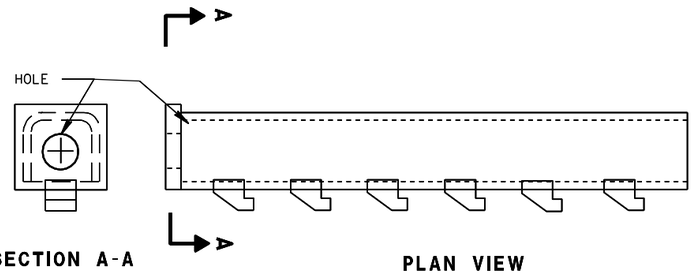
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE H (ONLY THE SHEETING IS SUPPLIED BY THE MANUFACTURER)
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



FRONT VIEW



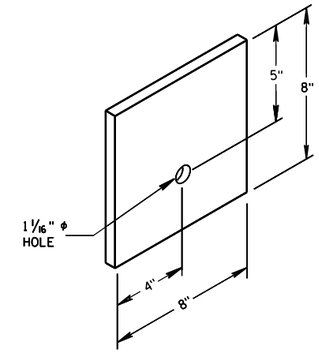
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



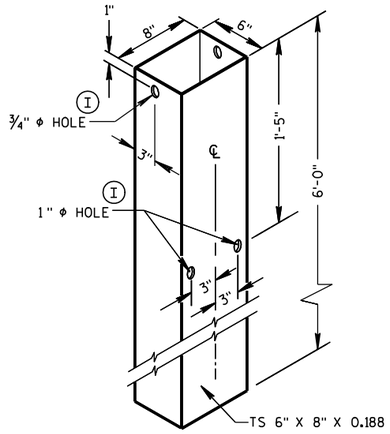
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

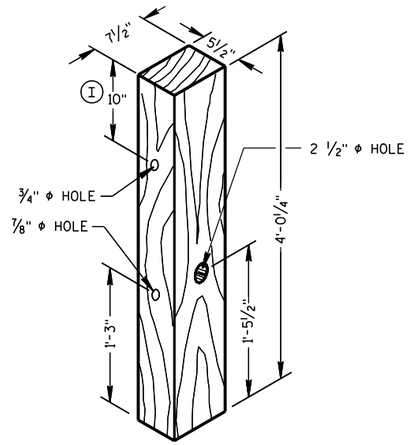
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 44-1b

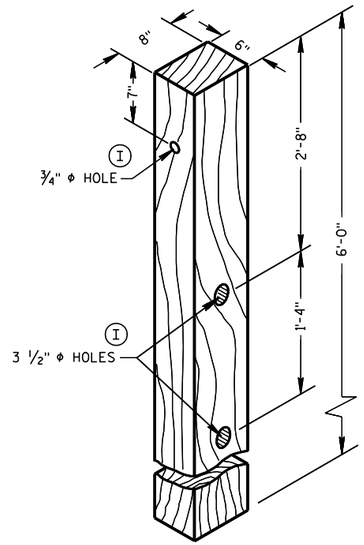


FOUNDATION TUBE (2)



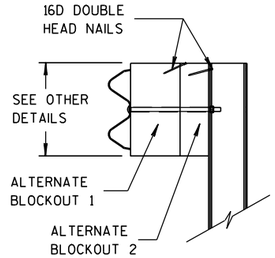
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

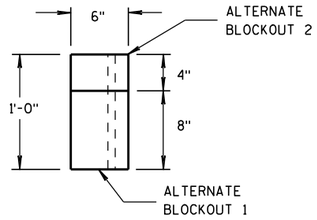


POSTS NUMBER 3-9

WOOD CRT POST (3)

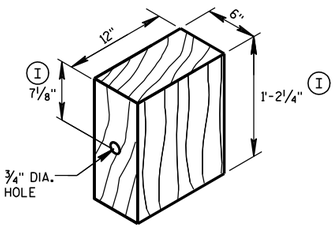


SIDE VIEW



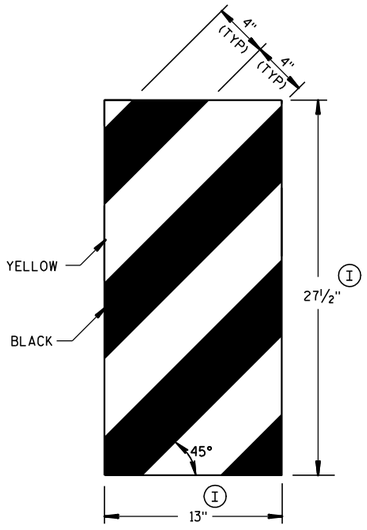
TOP VIEW

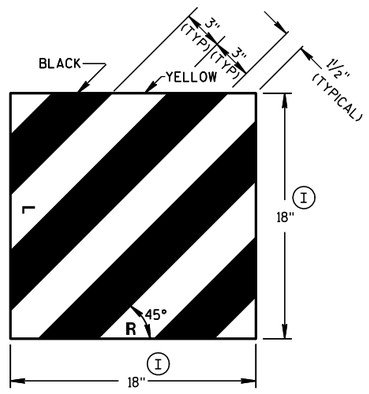
ALTERNATE WOOD BLOCKOUT DETAIL



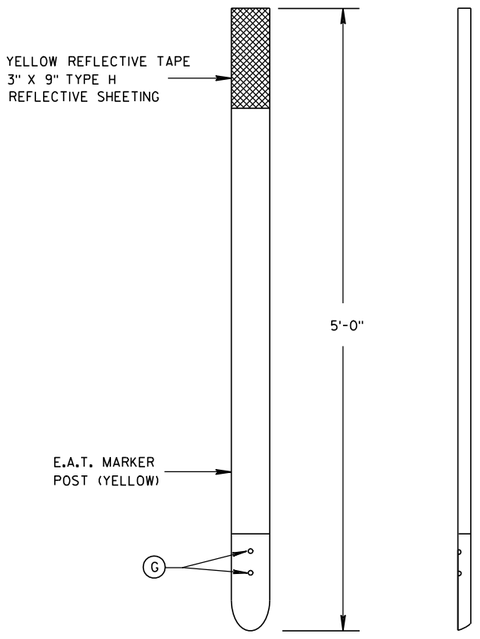
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2





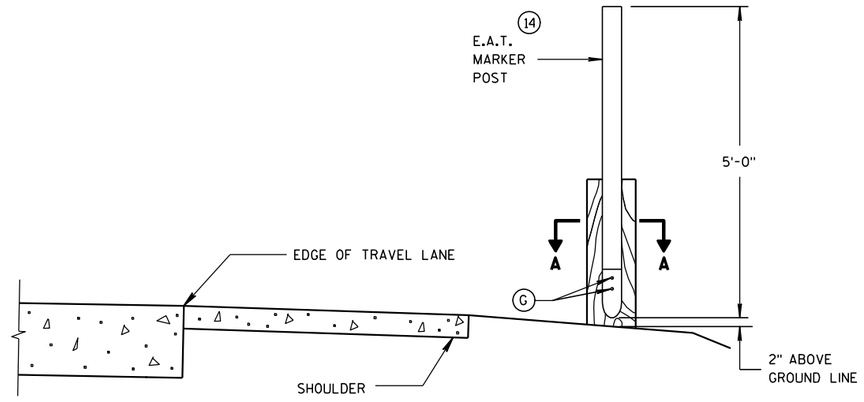
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

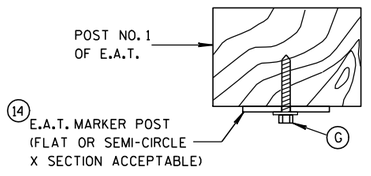
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

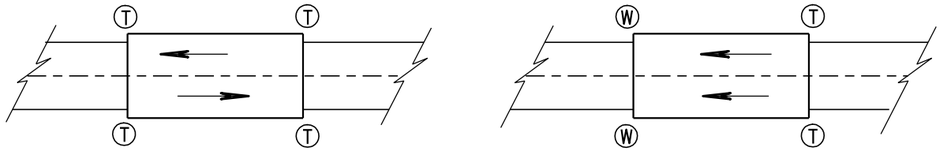
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 — DATE
/S/ Jerry H. [illegible] — ROADWAY STANDARDS ENGINEER
FHWA

6

S.D.D. 14 B 44-1c



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

GENERAL NOTES

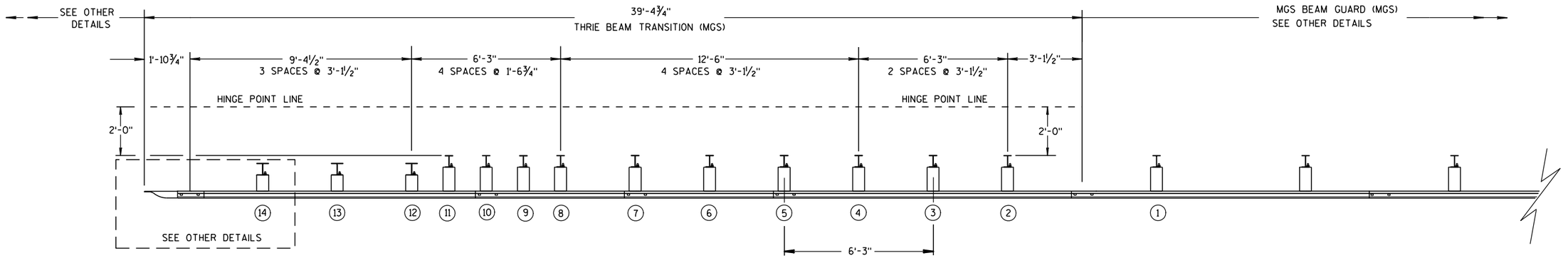
BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

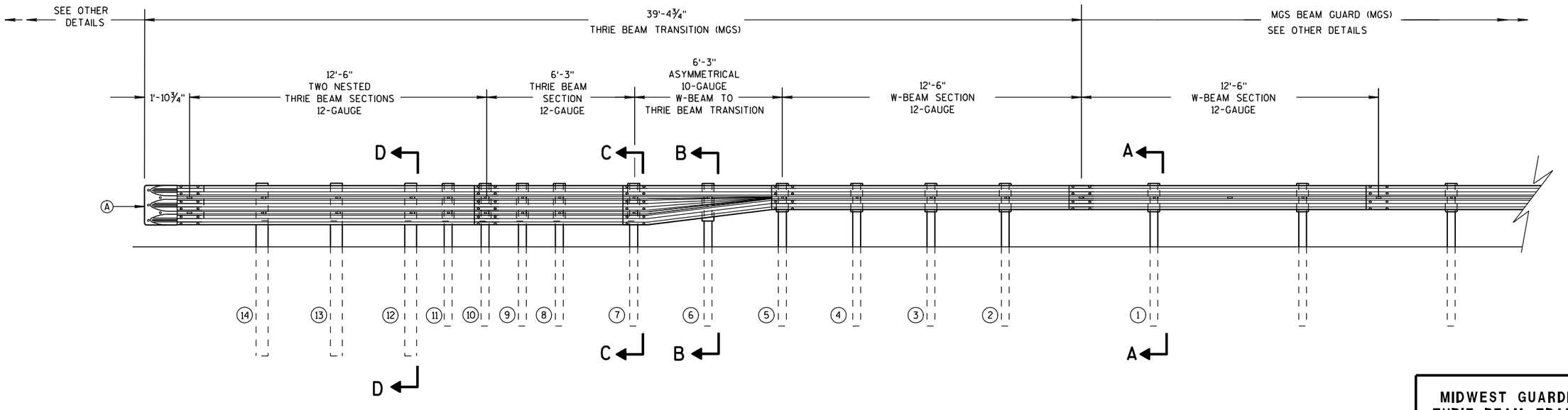
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

Ⓐ BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

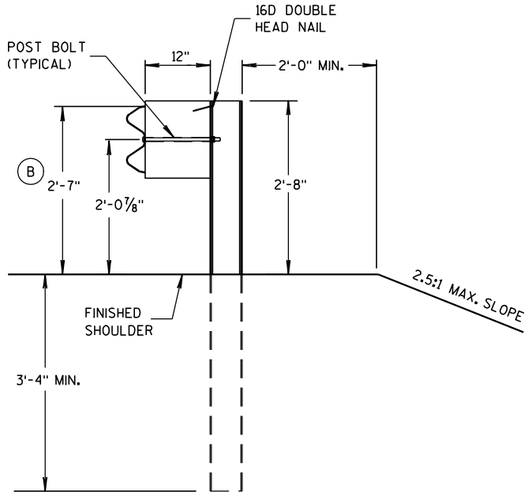
S.D.D. 14 B 45-3a

6

S.D.D. 14 B 45-3a

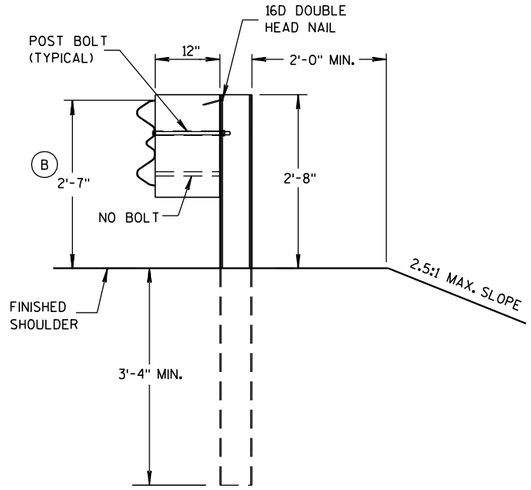
GENERAL NOTES

(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



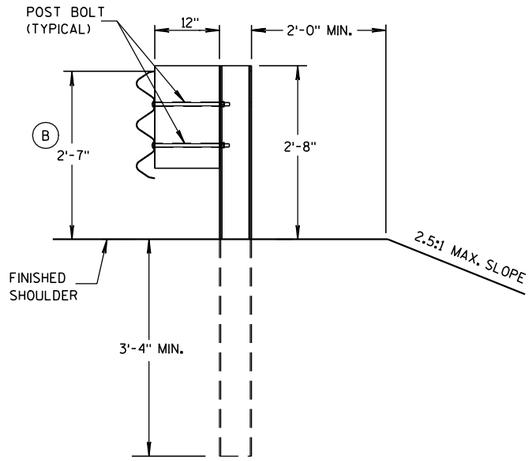
SECTION A-A

POSTS 1-5



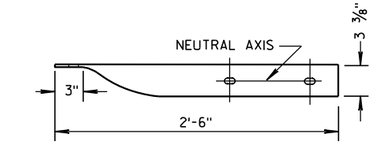
SECTION B-B

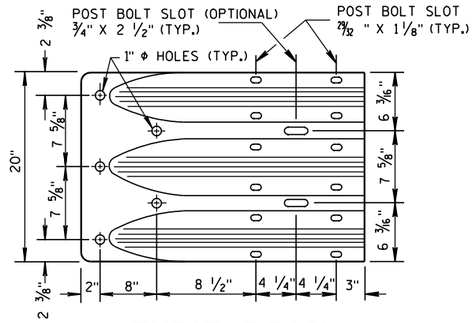
POST 6



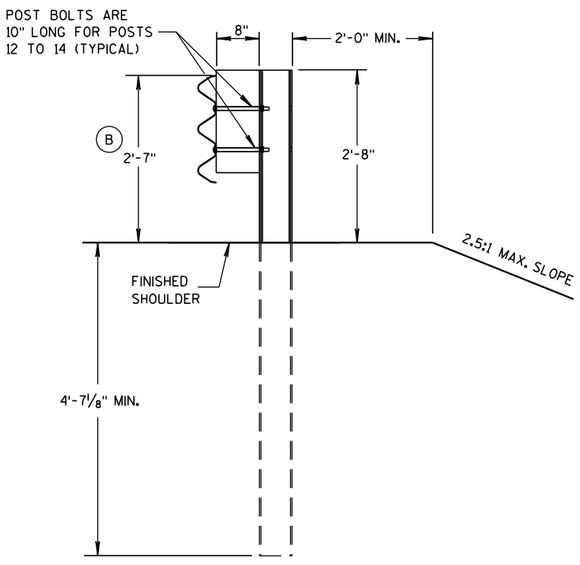
SECTION C-C

POSTS 7-11





THRIE BEAM TERMINAL CONNECTOR



SECTION D-D

POSTS 12-14

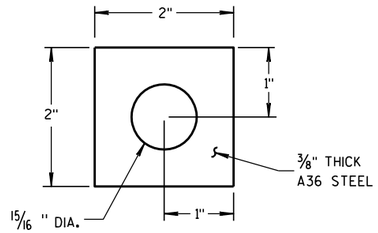
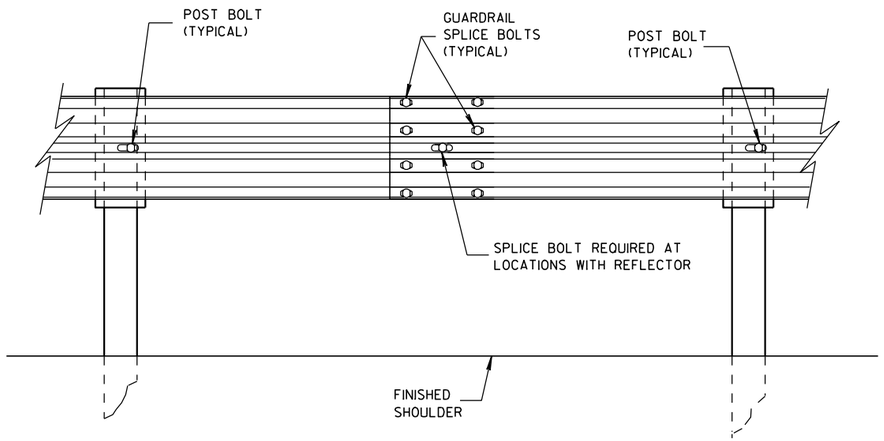
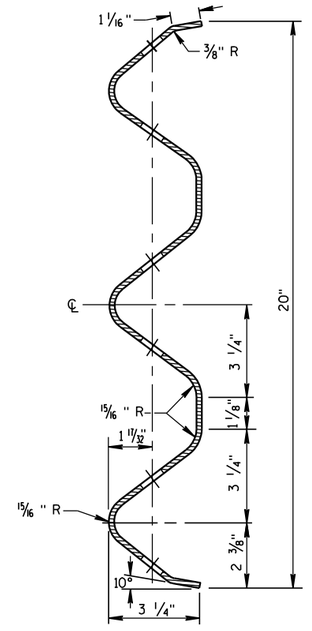


PLATE WASHER DETAIL



SPLICE DETAIL



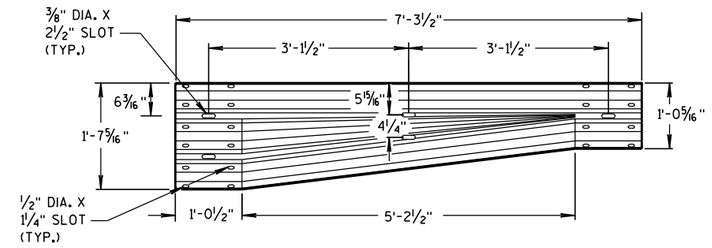
SECTION THRU THRIE BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

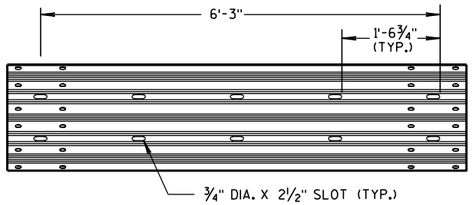
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

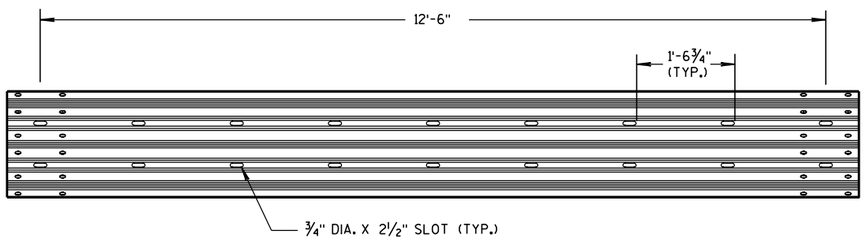
S.D.D. 14 B 45-3b



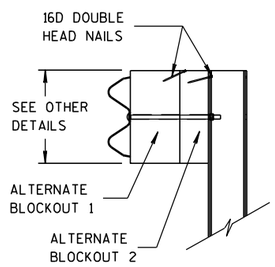
W-BEAM TO THRIE BEAM TRANSITION SECTION



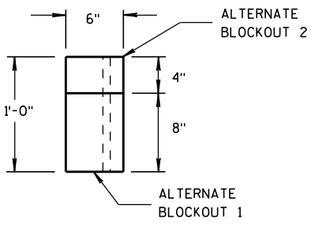
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

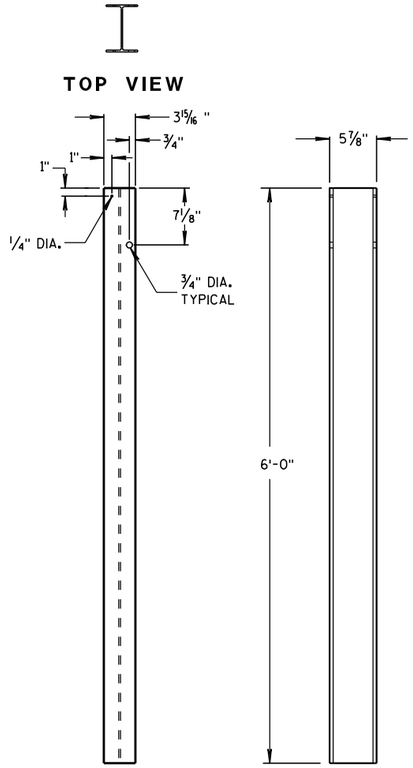


SIDE VIEW

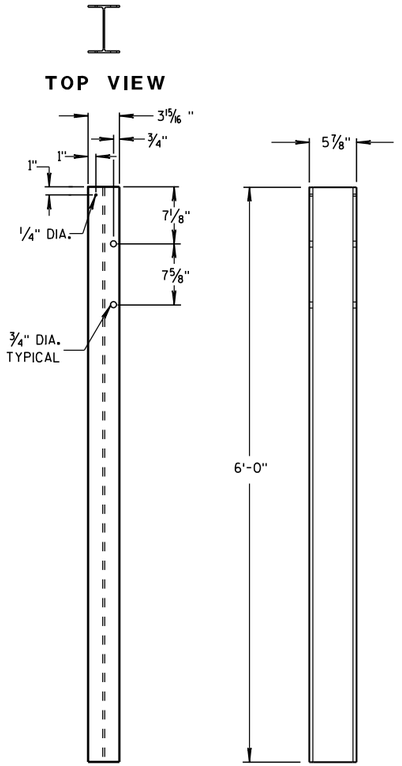


TOP VIEW

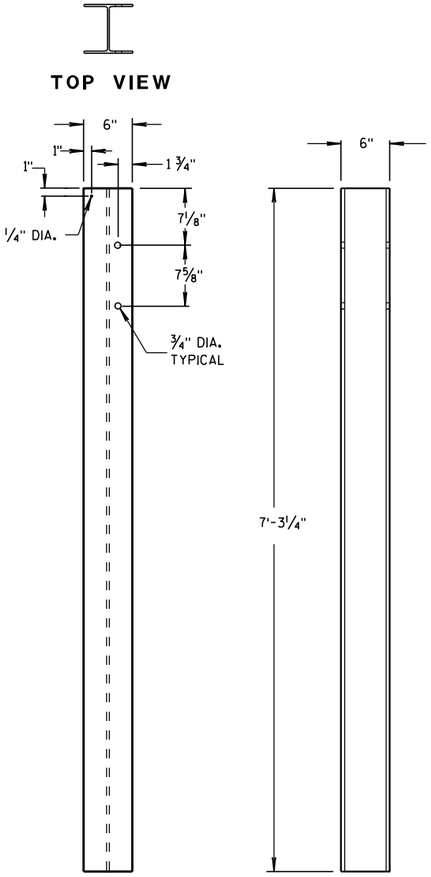
ALTERNATE WOOD BLOCKOUT DETAIL



STEEL POSTS 1-5

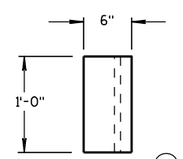


STEEL POSTS 6-11

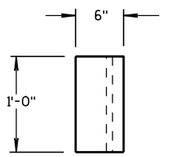


STEEL POSTS 12-14

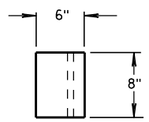
(1) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.



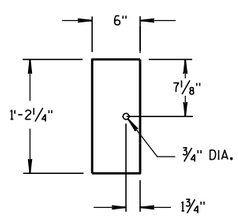
TOP VIEW (1)



TOP VIEW (1)

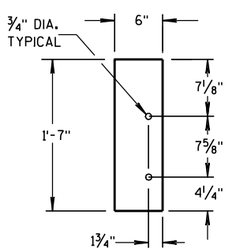


TOP VIEW



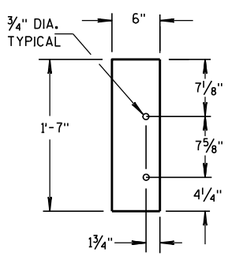
FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-11



FRONT VIEW

BLOCKOUT POSTS 12-14

STEEL POST SIZES

POST NUMBER	SECTION TYPE	LENGTH
1	W6x9	72"
2	W6x9	72"
3	W6x9	72"
4	W6x9	72"
5	W6x9	72"
6	W6x9	72"
7	W6x9	72"
8	W6x9	72"
9	W6x9	72"
10	W6x9	72"
11	W6x9	72"
12	W6x15	87 1/8"
13	W6x15	87 1/8"
14	W6x15	87 1/8"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 14 B 45-3c

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

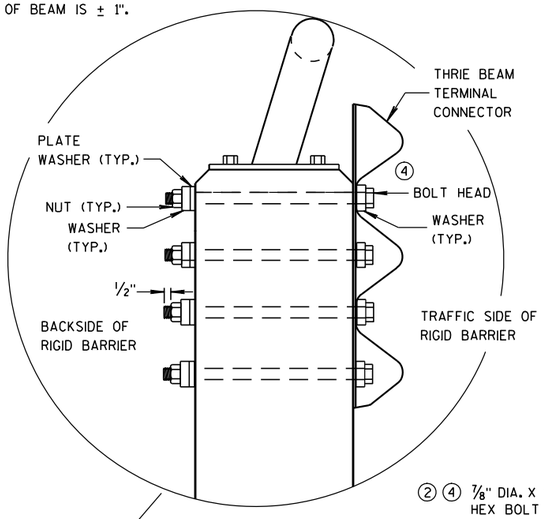
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

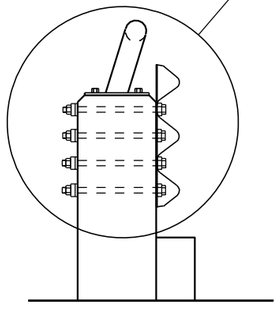
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2". BLOCK IS INCIDENTAL TO THE CONTRACT.

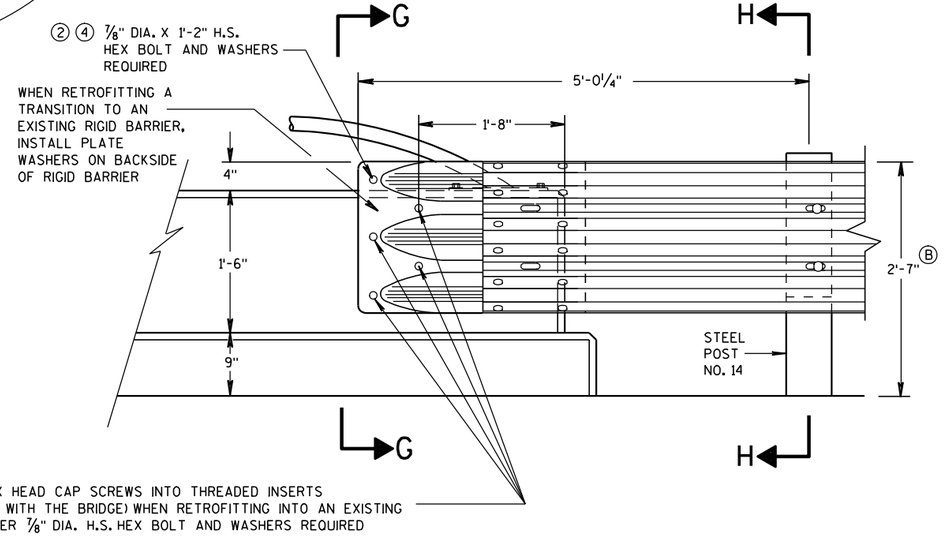
④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

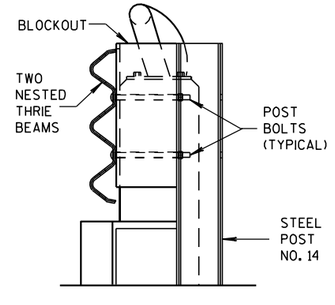




SECTION G-G

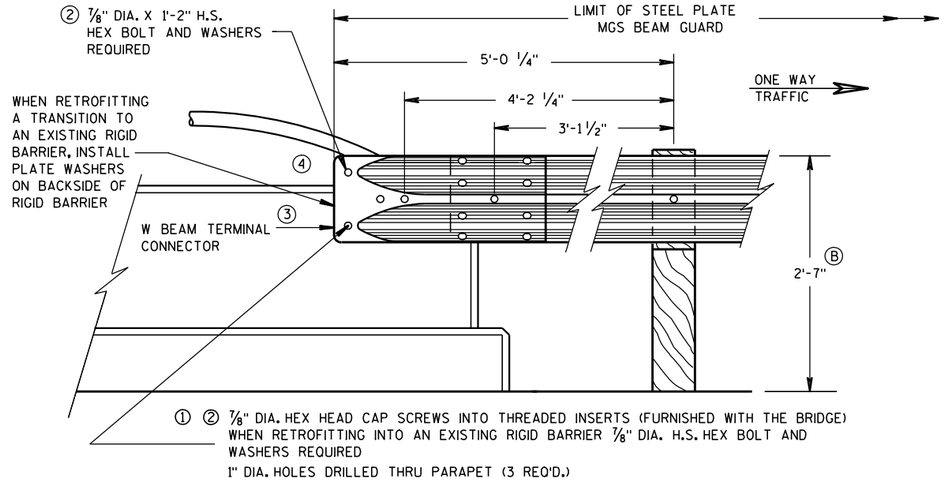


FRONT VIEW



SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-31-2012
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

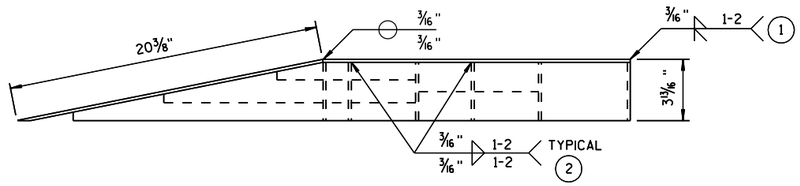
FHWA

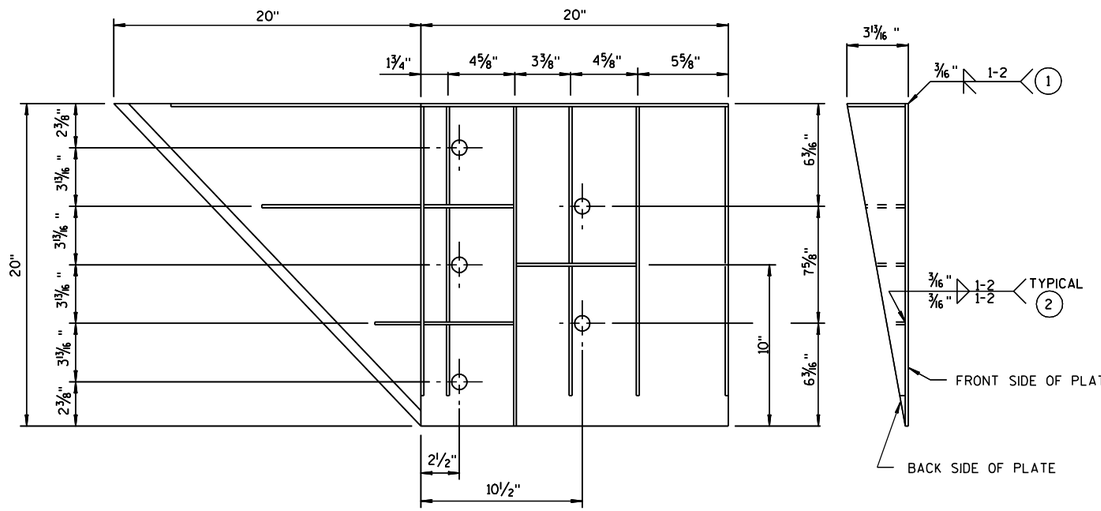
6

S.D.D. 14 B 45-3e

6

S.D.D. 14 B 45-3e





WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(1) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(2) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

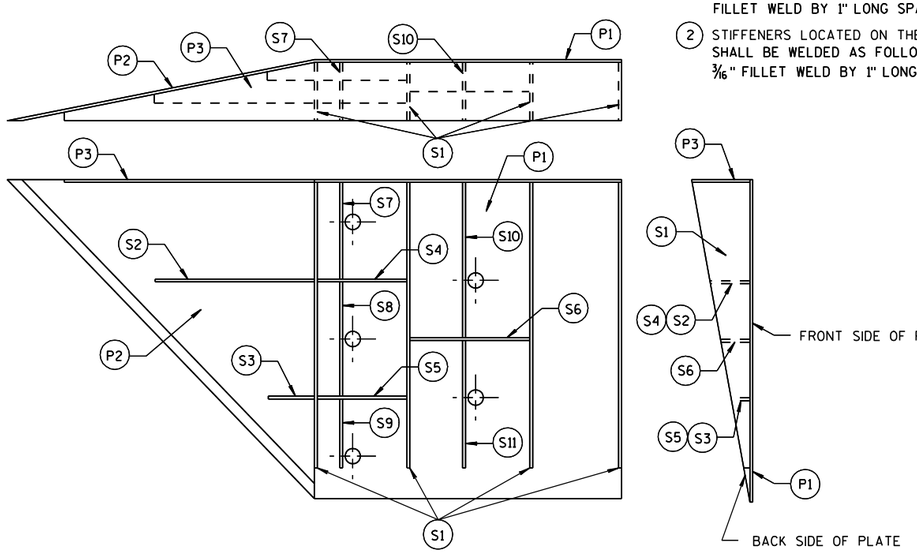


PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)				
PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
/S/ Jerry H ...
ROADWAY STANDARDS ENGINEER
FHWA

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S.D.D. 14 B 45-3i

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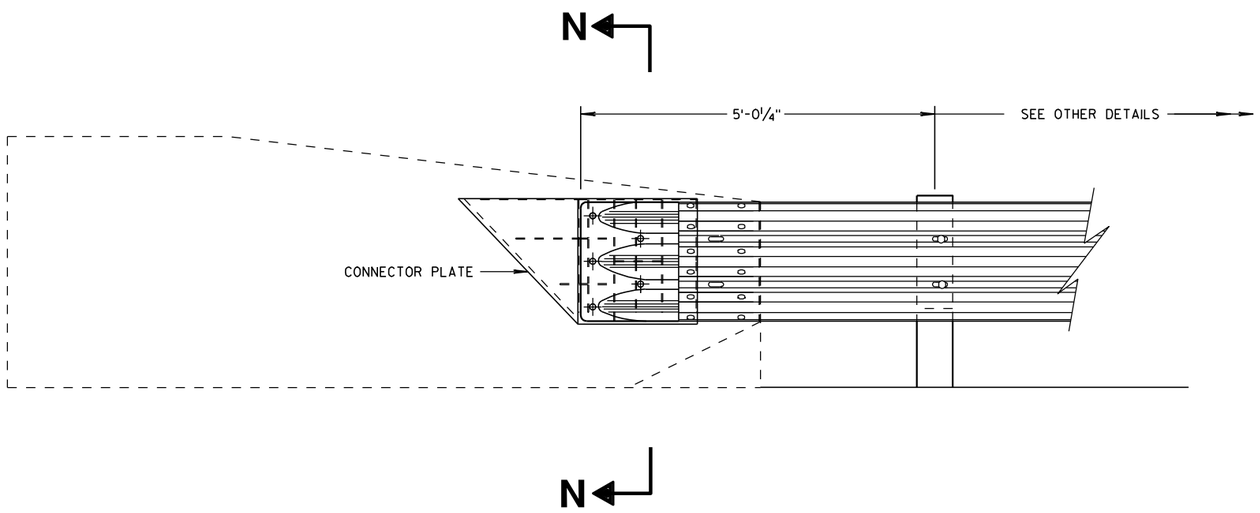
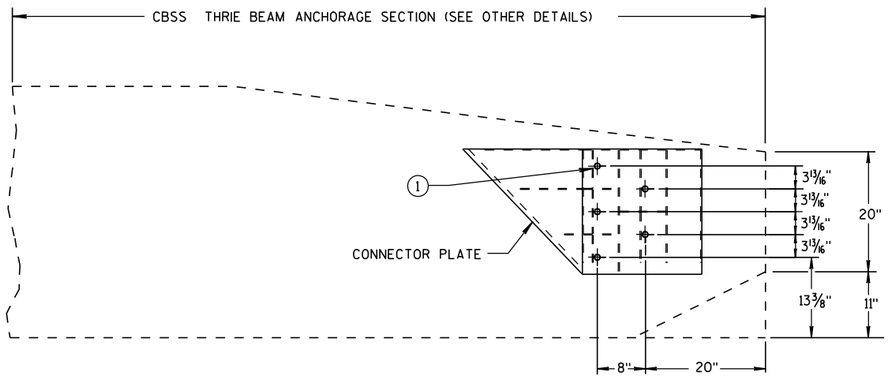
S.D.D. 14 B 45-3i



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

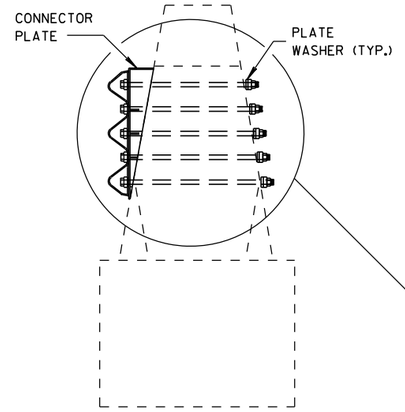


SINGLE SLOPE CONNECTION PLATE PLACEMENT

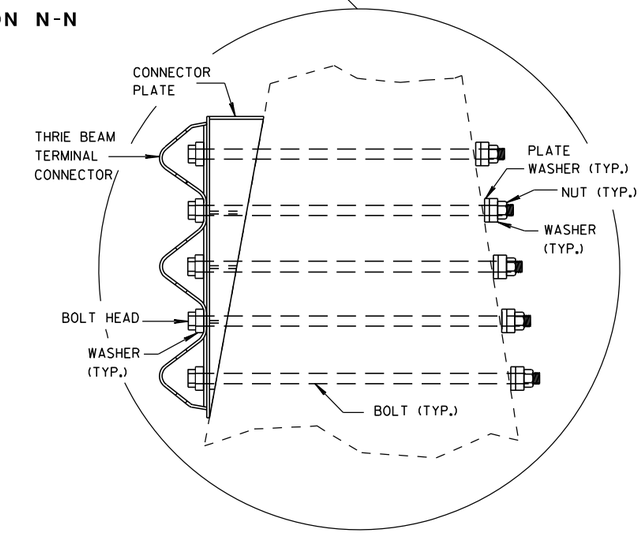
GENERAL NOTES

CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(1) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

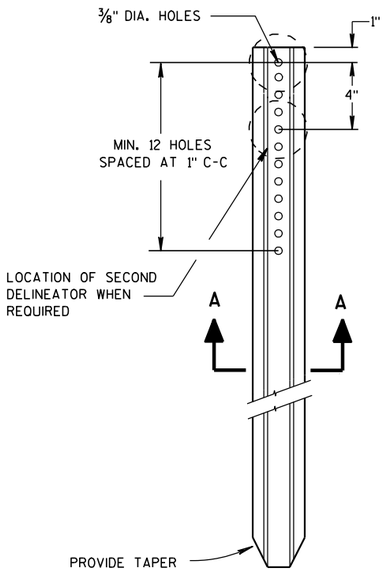
APPROVED
8/31/2012 DATE
/S/ Jerry H. [illegible]
ROADWAY STANDARDS ENGINEER
FHWA

6

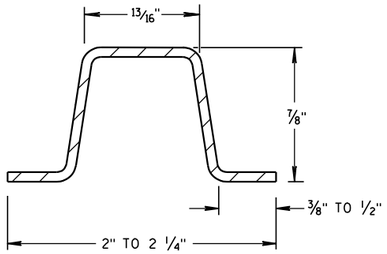
S.D.D. 14 B 45-3j

6

S.D.D. 14 B 45-3j

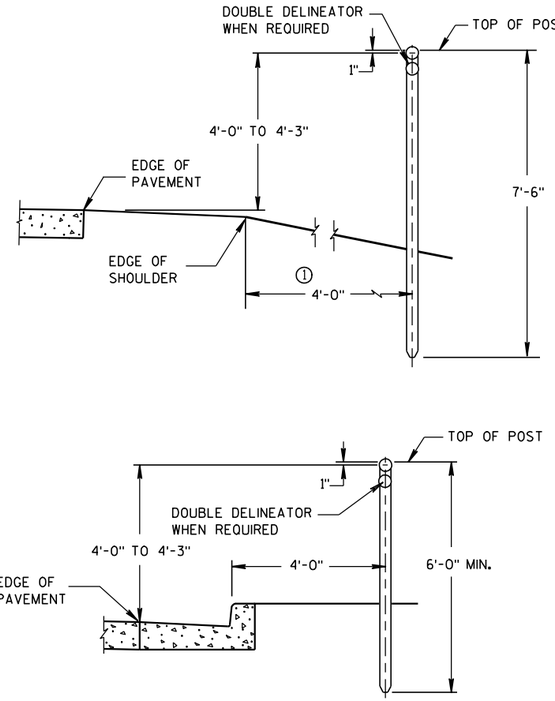


DELINEATOR POST



SECTION A-A

WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

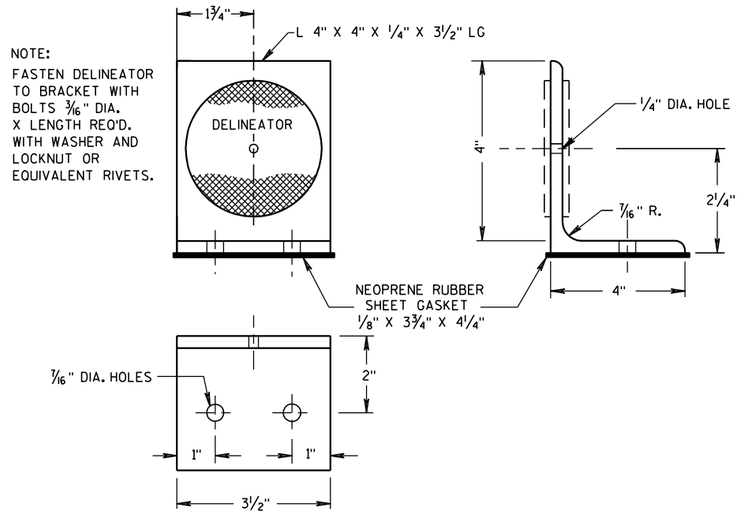


TYPICAL INSTALLATIONS OF DELINEATOR POSTS

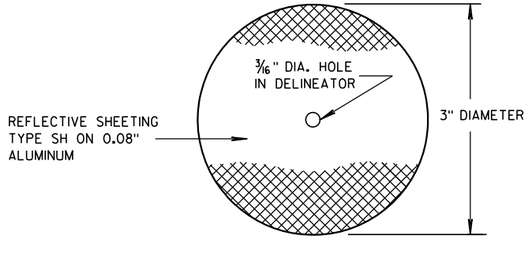
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

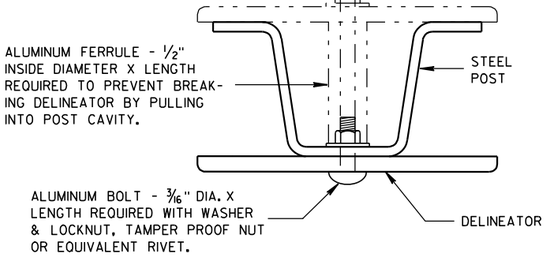
① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



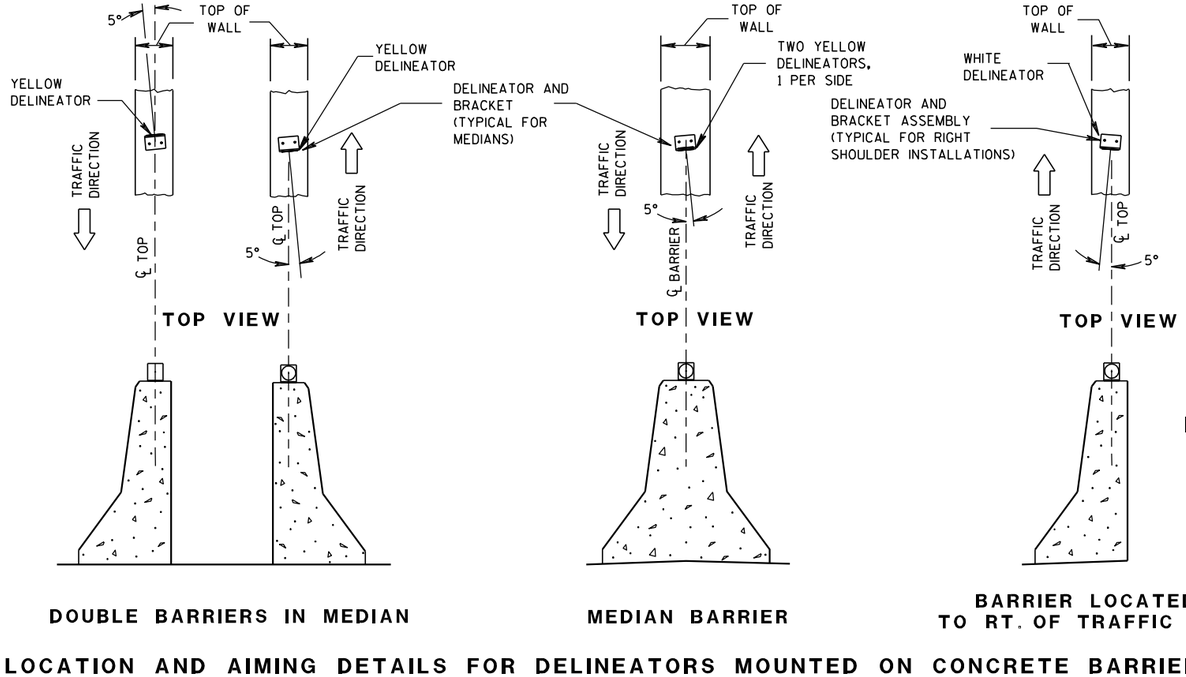
DELINEATOR BRACKET



DELINEATOR

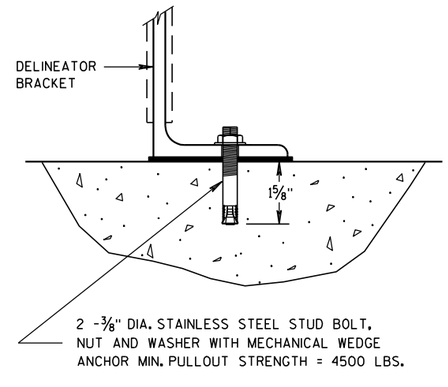


MOUNTING DETAIL FOR DELINEATOR



DOUBLE BARRIERS IN MEDIAN | MEDIAN BARRIER | BARRIER LOCATED TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATORS MOUNTED ON CONCRETE BARRIERS



DELINEATOR BRACKET MOUNTING DETAIL

DELINEATOR POST, DELINEATOR BRACKET AND DELINEATOR

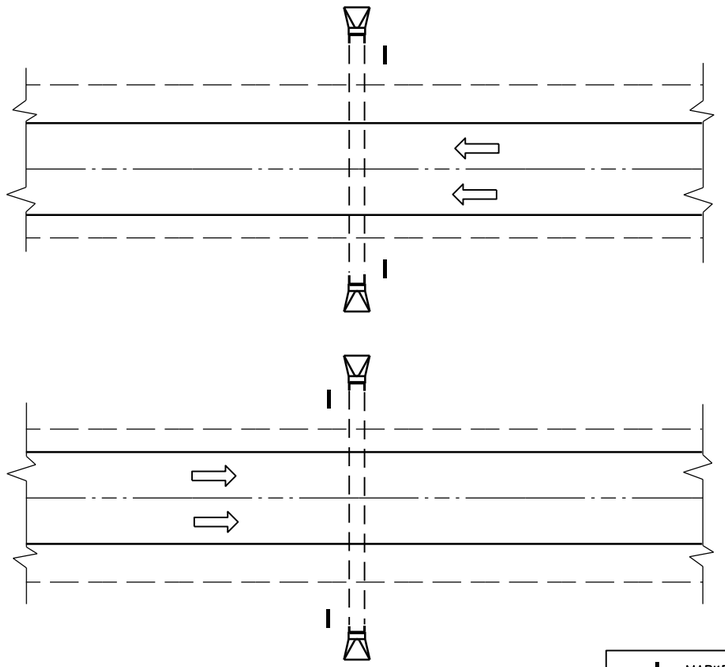
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
1/25/2011 — DATE
/S/ Thomas N. Nothdurft — STATE TRAFFIC ENGINEER

FHWA

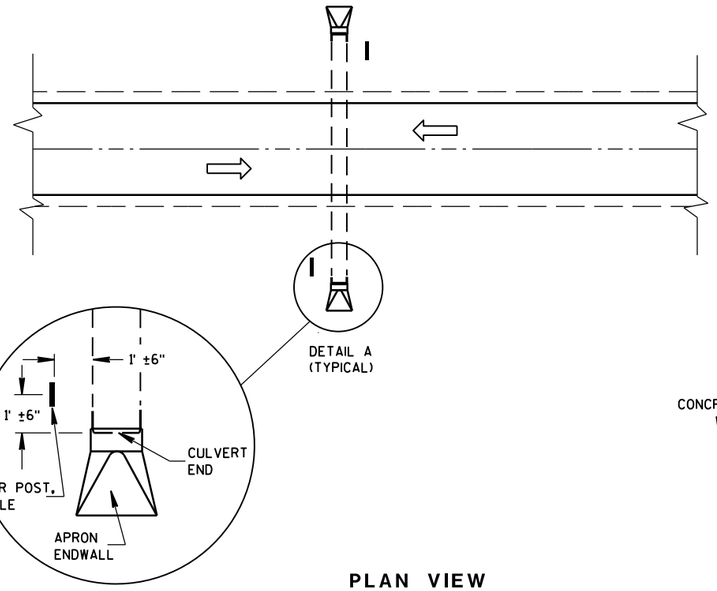
6

S.D.D. 15 A 2-7



PLAN VIEW

DIVIDED HIGHWAY



DETAIL A
(TYPICAL)

PLAN VIEW

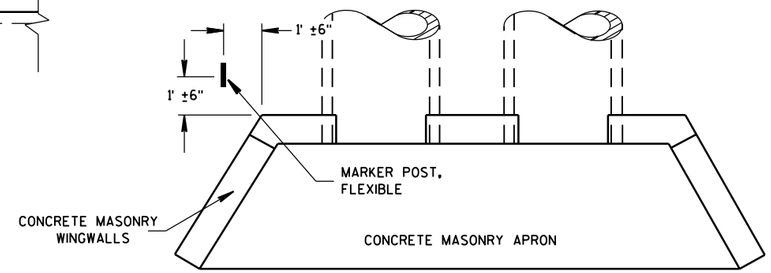
UNDIVIDED HIGHWAY

MARKER POST, FLEXIBLE

DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

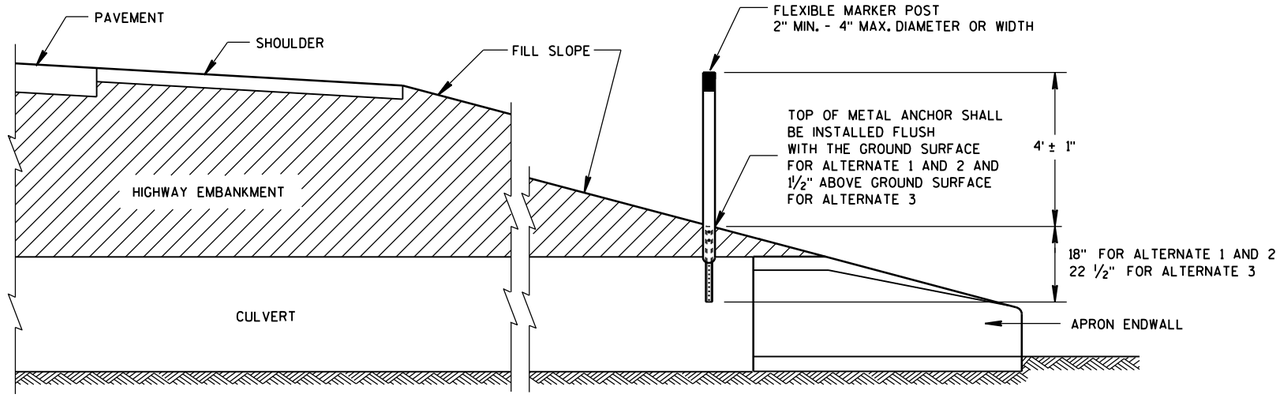
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.



PLAN VIEW

CONCRETE MASONRY ENDWALLS FOR CULVERT PIPE AND PIPE ARCH

FLEXIBLE MARKER POST LOCATION



CROSS SECTION

FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

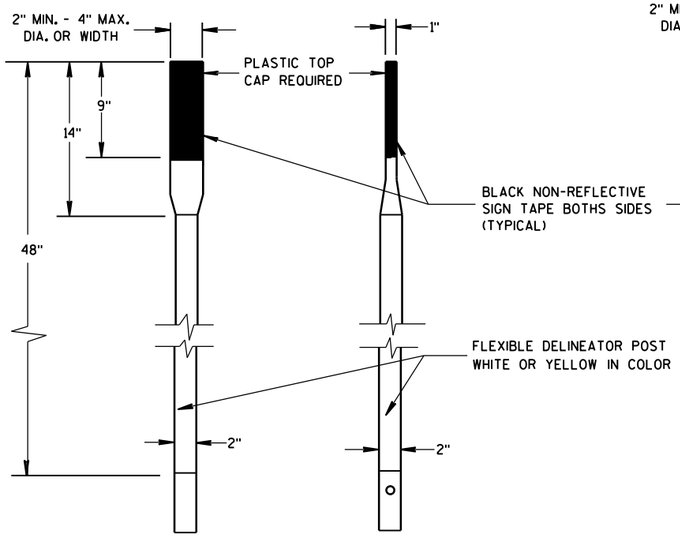
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

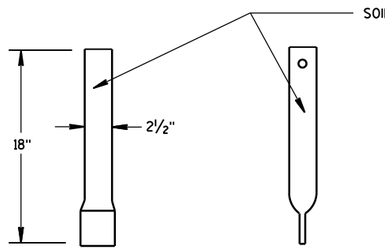
6

S.D.D. 15 A 3-2a

6

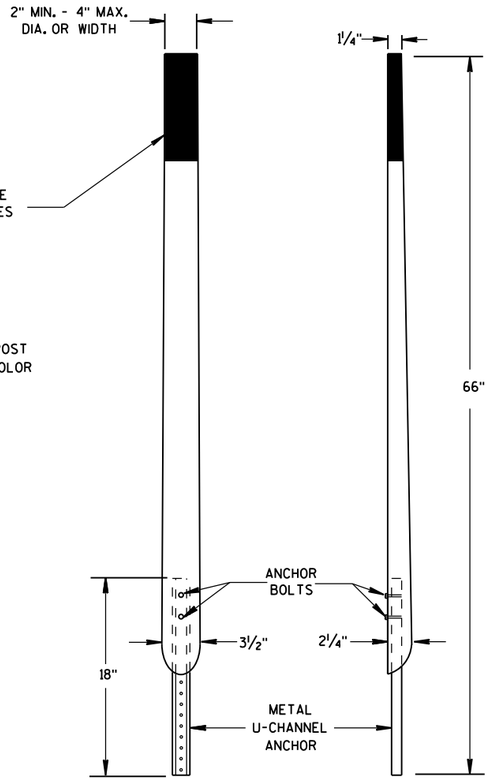
S.D.D. 15 A 3-2a





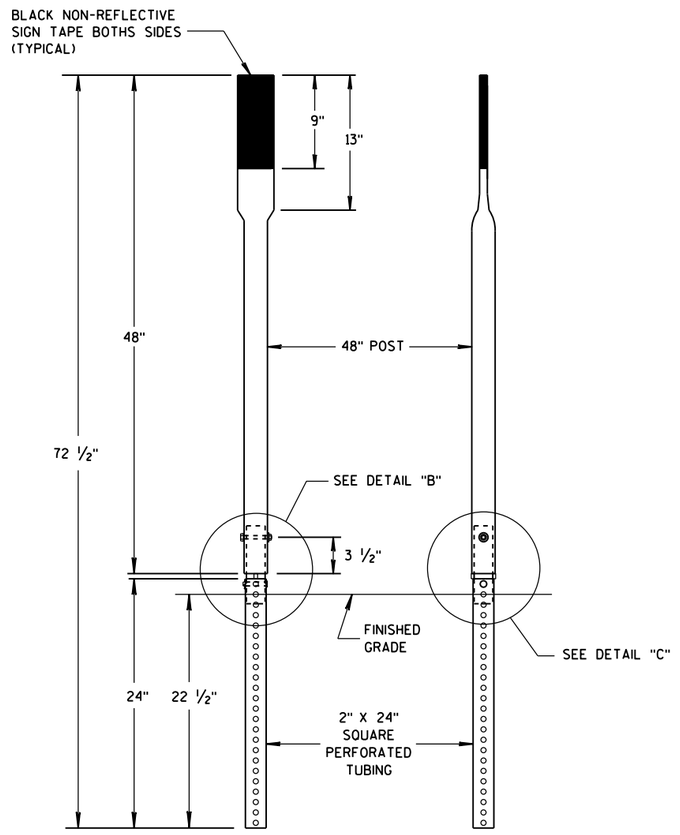
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

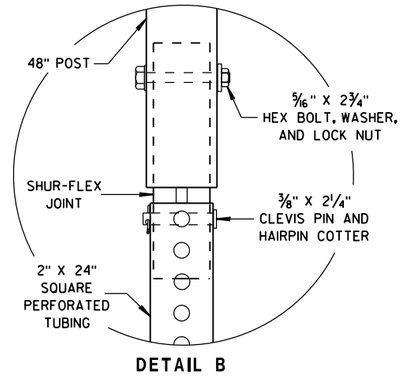
ALTERNATE 2



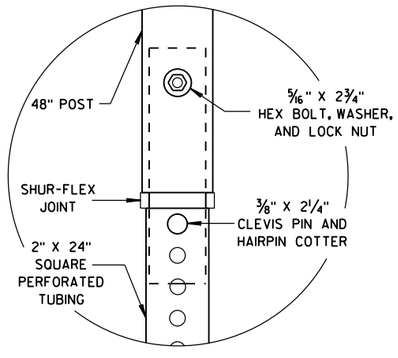
FRONT VIEW SIDE VIEW

ALTERNATE 3

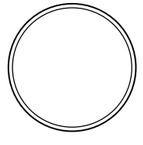
FLEXIBLE MARKER POSTS



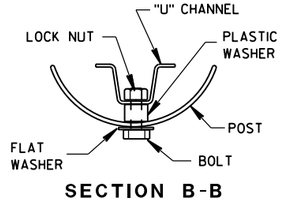
DETAIL B



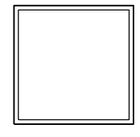
DETAIL C



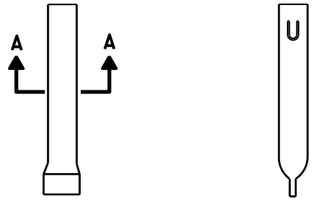
SECTION A-A



SECTION B-B

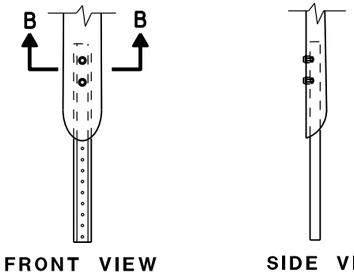


SECTION C-C



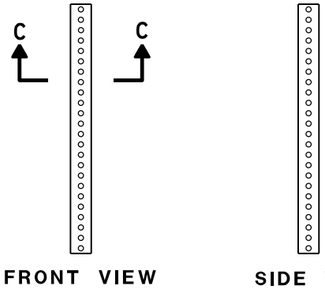
FRONT VIEW SIDE VIEW

ALTERNATE 1



FRONT VIEW SIDE VIEW

ALTERNATE 2



FRONT VIEW SIDE VIEW

ALTERNATE 3

FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/1/2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
FHWA

6

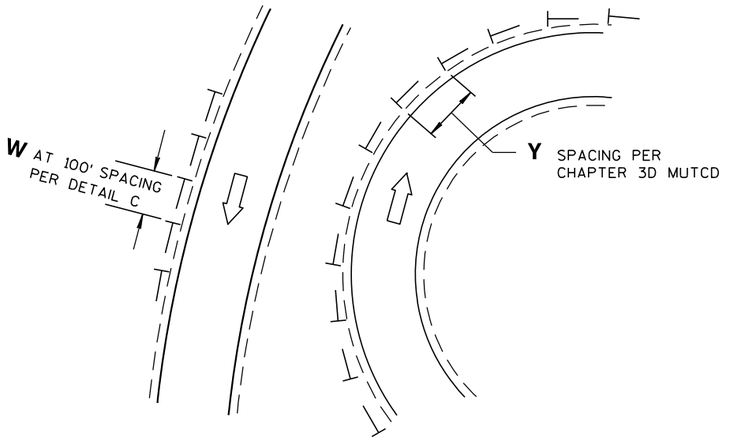
S.D.D. 15 A 3-2b

6

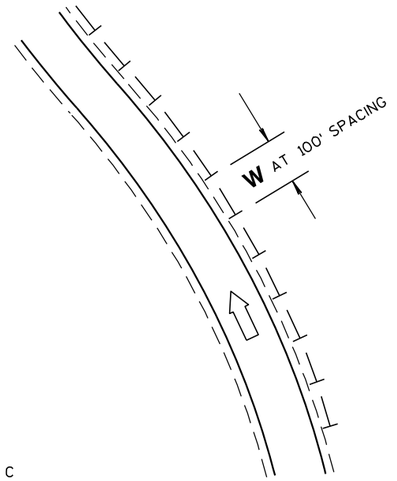
S.D.D. 15 A 3-2b

GENERAL NOTES

* USE DOUBLE DELINEATOR ALONG ACCELERATION-DECELERATION LANES AND TAPERS. USE SINGLE DELINEATOR WHEN RAMP PAVEMENT IS FULL WIDTH.



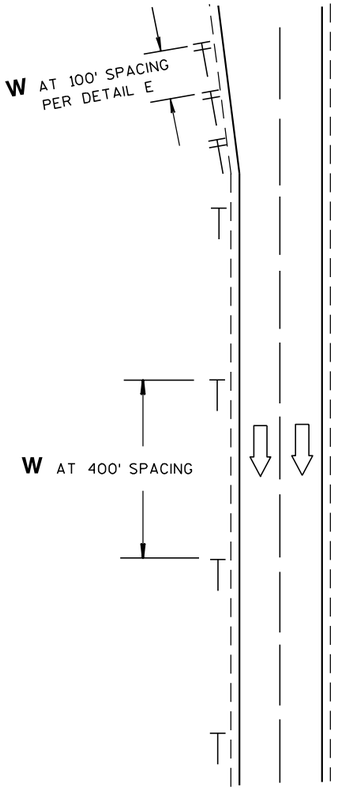
DETAIL A
DELINEATOR LAYOUT AT CURVED RAMP



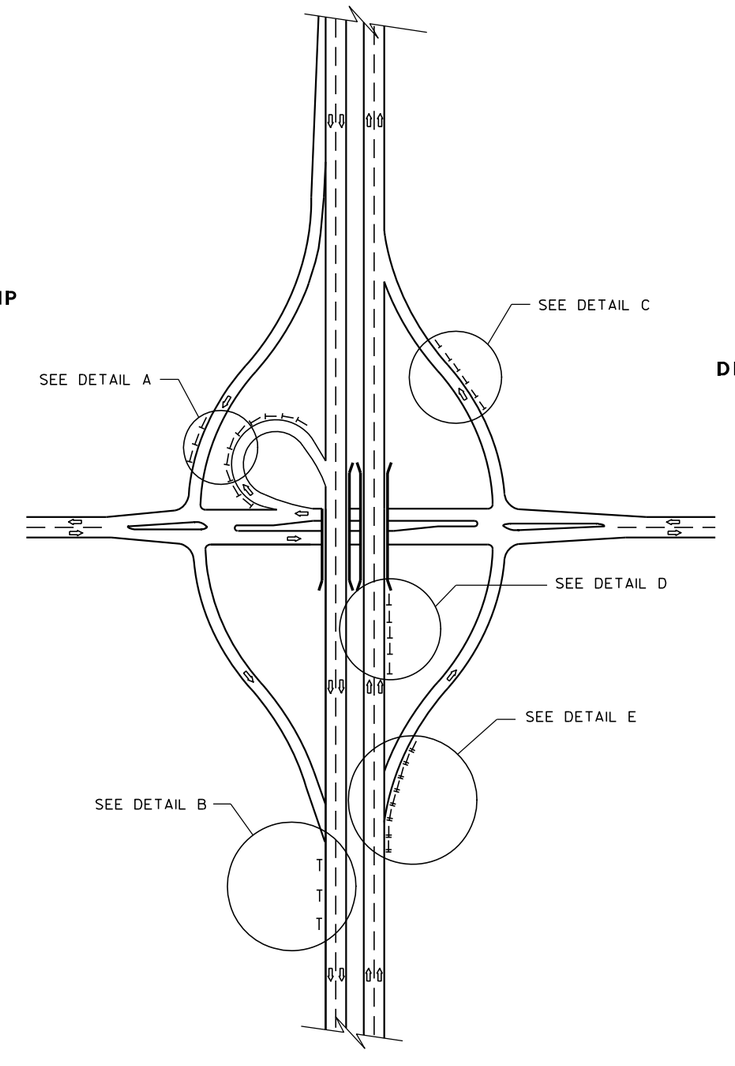
DETAIL C
DELINEATOR LAYOUT ALONG RAMP

LEGEND

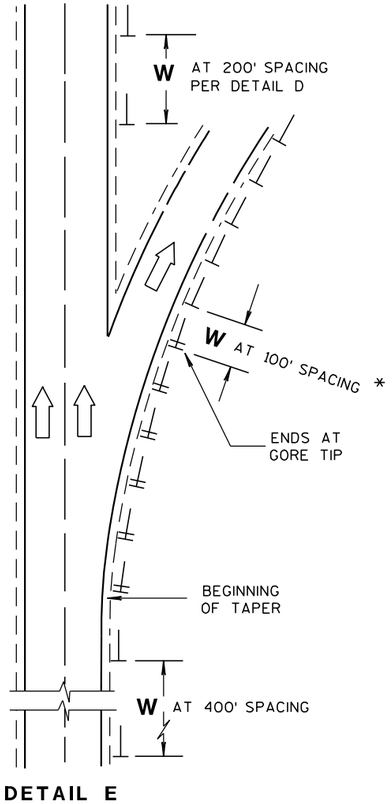
- DIRECTION OF TRAFFIC FLOW
- SINGLE DELINEATOR
- DOUBLE DELINEATOR
- W — WHITE
- Y — YELLOW



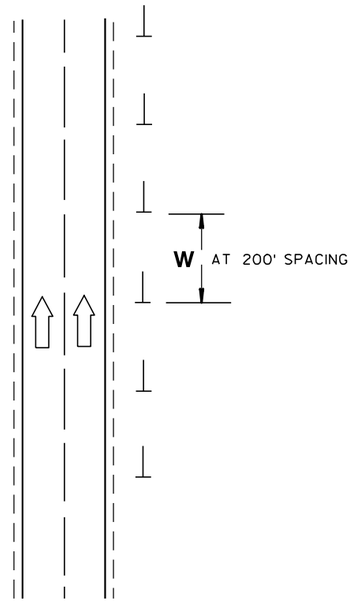
DETAIL B
DELINEATOR LAYOUT ALONG MAINLINE



DELINEATOR LAYOUT



DETAIL E
DELINEATOR LAYOUT FOR ACCELERATION - DECELERATION LANES AND TAPERS AT RAMPS



DETAIL D
DELINEATOR LAYOUT BETWEEN INTERCHANGE RAMPS

DELINEATOR LAYOUT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

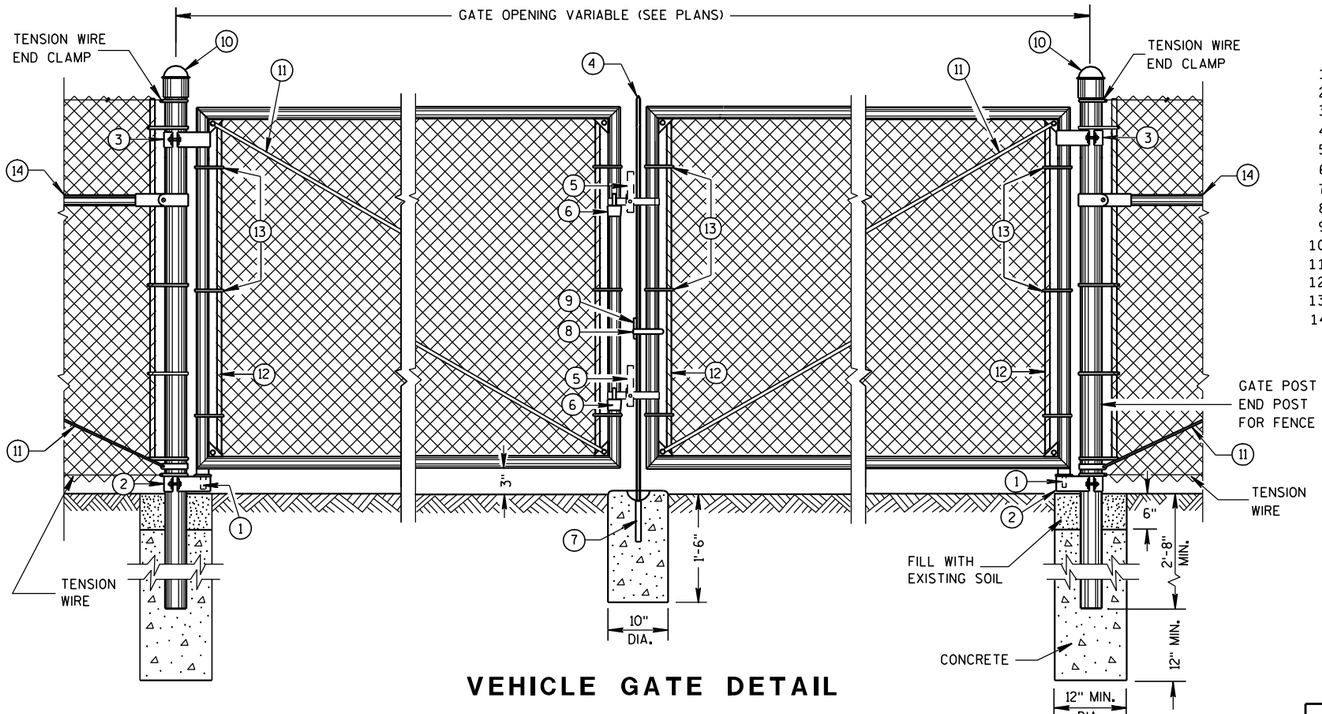
APPROVED
2/5/09 DATE
/S/ Thomas N. Nothohm STATE TRAFFIC ENGINEER
FHWA

6

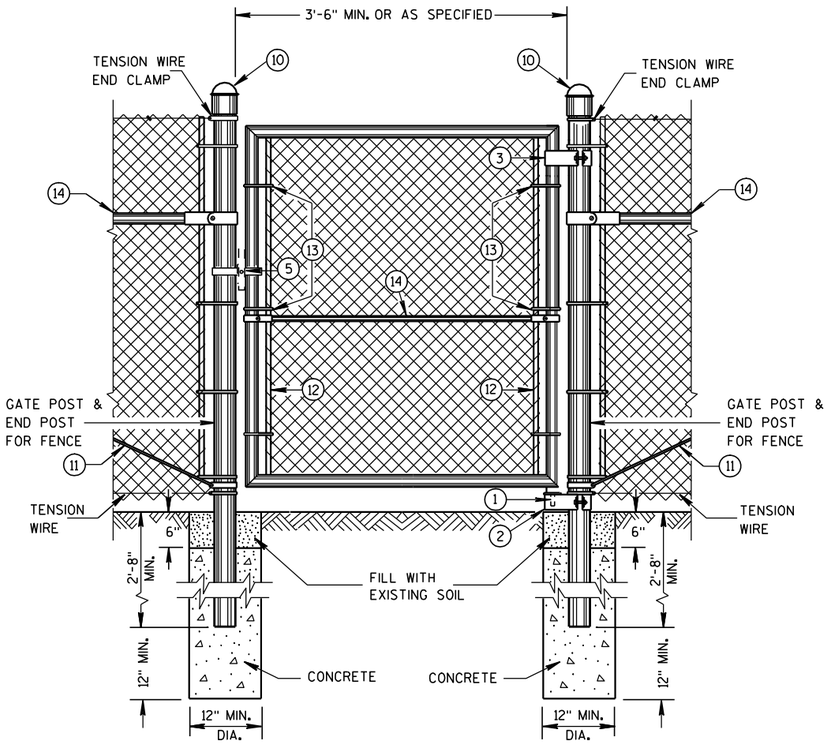
S.D.D. 15 A 6-2

6

S.D.D. 15 A 6-2



VEHICLE GATE DETAIL



PEDESTRIAN GATE DETAIL

LEGEND

1. STRAIGHT PLUG
2. BOTTOM HINGE
3. TOP HINGE
4. PLUNGER ROD
5. FULCRUM LATCH
6. FORK CATCH *
7. PLUNGER ROD CATCH
8. LOCK KEEPER GUIDE
9. LOCK KEEPER
10. DOME TOPS
11. TRUSS RODS
12. TENSION BAR
13. TENSION BANDS
14. BRACE RAIL

*NOT REQUIRED ON SINGLE SWING PEDESTRIAN GATE

GENERAL NOTES

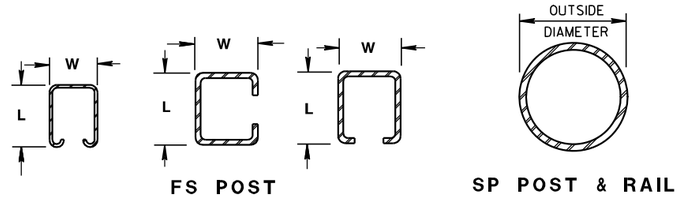
FENCE POSTS INSTALLED ON CONCRETE WALLS SHALL BE ANCHORED INTO EMBEDDED METAL SLEEVES OR CORED HOLE BY FILLING THE ANNULAR SPACE WITH PEA GRAVEL FOLLOWED BY AN EPOXY RESIN ADHESIVE. THE EPOXY RESIN ADHESIVE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 235, CLASS A, B OR C.

USE FENCE FABRIC KNUCKLED AT BOTH SELVAGES.

FOR LEAF GATES GREATER THAN 8 FEET WIDE, INSTALL INTERIOR VERTICAL BRACE RAIL AT 8 FOOT INTERVALS.

FOR FABRIC HEIGHTS GREATER THAN 8 FEET, INSTALL INTERIOR HORIZONTAL BRACE RAILS TO LEAF GATE.

MAXIMUM SAG FOR OUTER GATE MEMBER SHALL NOT EXCEED THE GREATER OF 1% OF THE LEAF GATE WIDTH OR 2 INCHES.



FS POST

SP POST & RAIL

CROSS SECTIONS OF POSTS AND RAILS

SHAPE, SIZE AND WEIGHT REQUIREMENTS FOR FORMED STEEL FENCE POST

POST TYPE	LENGTH (L) INCH	WIDTH (W) INCH	WEIGHT LBS/FT
FS1	1.625	1.25	1.35
FS2†	1.875	1.625	1.850
FS2	1.875	1.625	2.400
FS3	2.250	1.700	2.780

SHAPE, SIZE AND WEIGHT REQUIREMENTS FOR ROUND STEEL FENCE POST

POST TYPE	OUTSIDE DIMENSION INCH	WALL THICKNESS INCH	WEIGHT LBS/FT
SP1	1.660	0.140	2.270
SP2	1.900	0.145	2.720
SP3	2.375	0.154	3.650
SP4	2.875	0.203	5.800
SP5	4.000	0.226	9.120
SP6	6.625	0.280	18.990
SP7	8.625	0.322	28.580

REQUIRED FENCE POST SIZES

USE	FABRIC HEIGHTS FEET	POST TYPE
TERMINAL POSTS **	LESS THAN OR EQUAL TO 6 FT.	SP3
	GREATER THAN OR EQUAL TO 6 FT.	SP4
LINE POSTS	LESS THAN OR EQUAL TO 6 FT.	SP2
	LESS THAN OR EQUAL TO 8 FT.	SP3
	GREATER THAN OR EQUAL TO 8 FT.	SP4
	LESS THAN OR EQUAL TO 8 FT.	FS2 OR FS2†
	GREATER THAN OR EQUAL TO 8 FT.	FS3

REQUIRED POST SIZE FOR GATES

USE	LEAF WIDTHS FEET	POST TYPE
GATES	LESS THAN OR EQUAL TO 6 FT.	SP4
	LESS THAN OR EQUAL TO 13 FT.	SP5
	LESS THAN OR EQUAL TO 18 FT.	SP6
	LESS THAN OR EQUAL TO 23 FT.	SP7

BRACE RAIL TYPES

USE		TYPE
BRACE RAIL		SP1 OR FS1

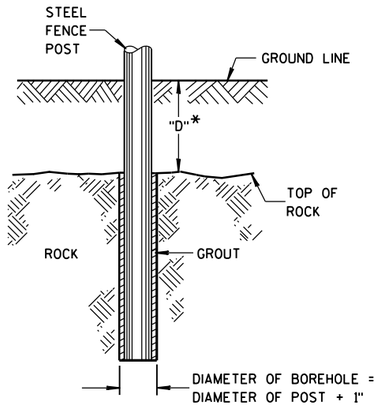
** INCLUDES END, CORNER, ANGLE, INTERSECTION AND INTERMEDIATE BRACED POSTS

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

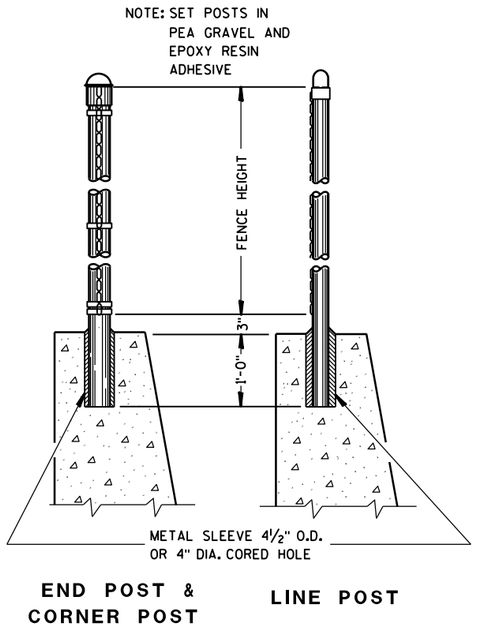
6

S.D.D. 15 B 3-12a

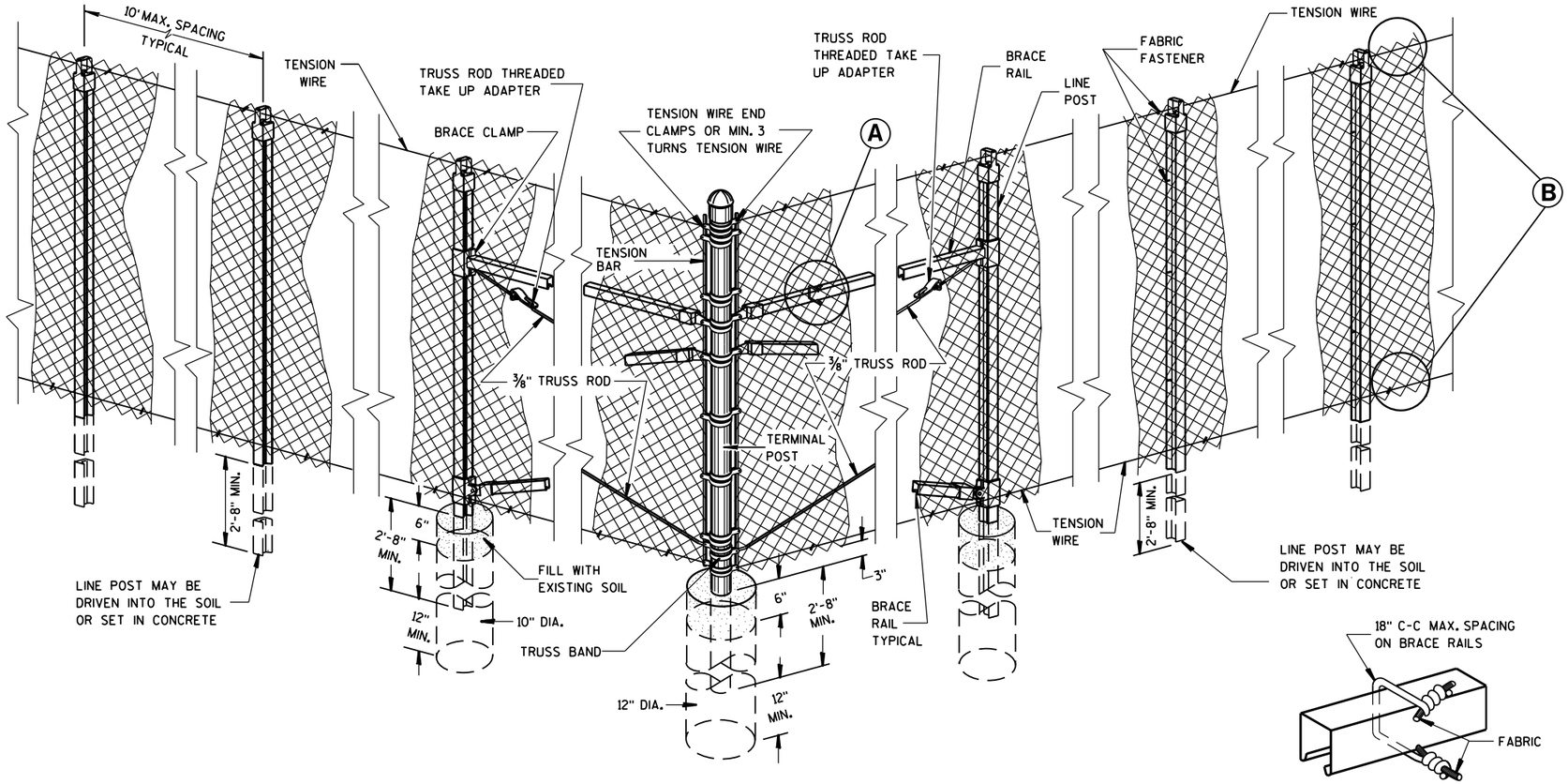


*IF "D" IS LESS THAN 2'-6", DRILL ROCK AND INSTALL GROUT

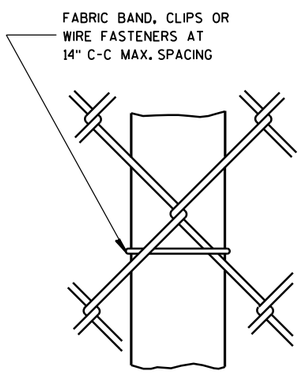
ROCK INSTALLATION OF LINE POST



DETAILS OF FENCE ON WALL

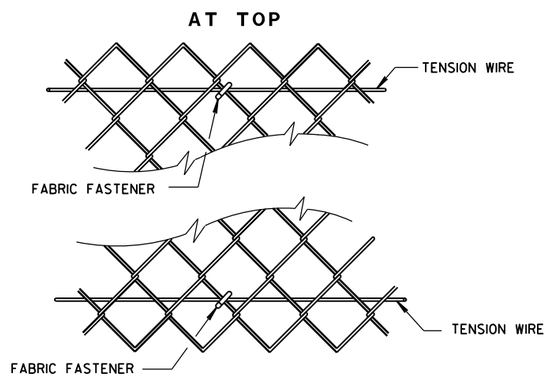


END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS



LINE POST

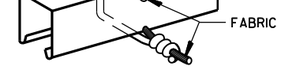
FABRIC FASTENER



AT BOTTOM

SELVAGES

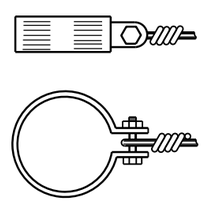
Ⓑ



BRACE RAIL

FABRIC FASTENER

Ⓐ



TENSION WIRE END CLAMP

FENCE CHAIN LINK

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

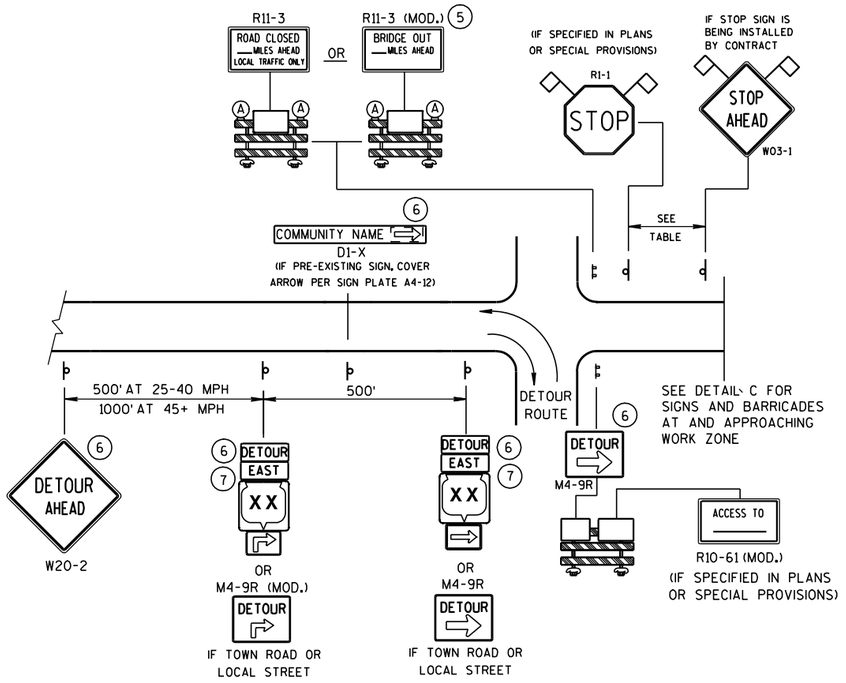
APPROVED
3/19/2010
DATE
/S/ Jerry H. Zoda
ROADWAY STANDARDS D ENGINEER
FHWA

6

S.D.D. 15 B 3-12b

6

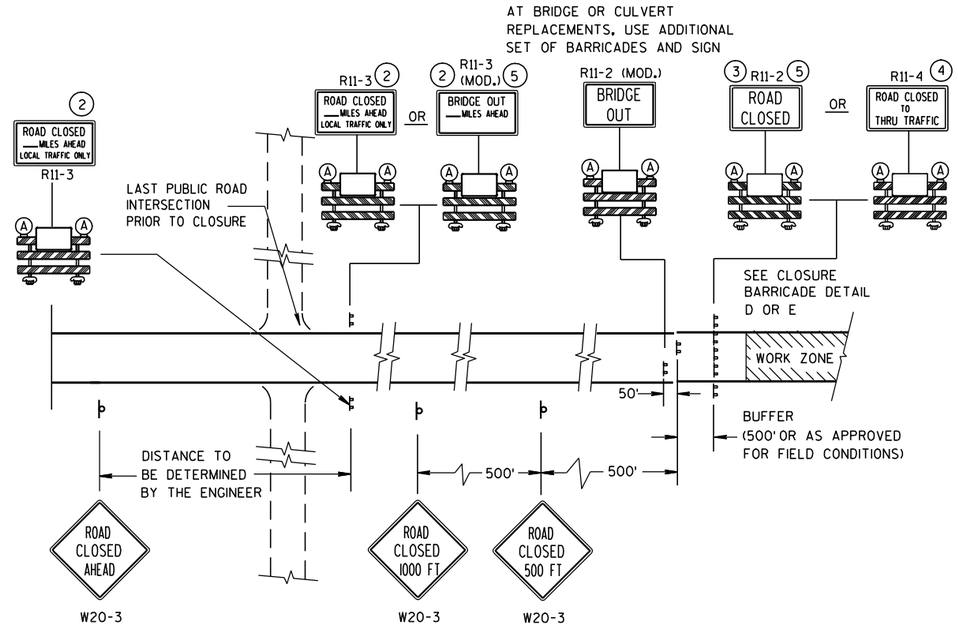
S.D.D. 15 B 3-12b



DETAIL A

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

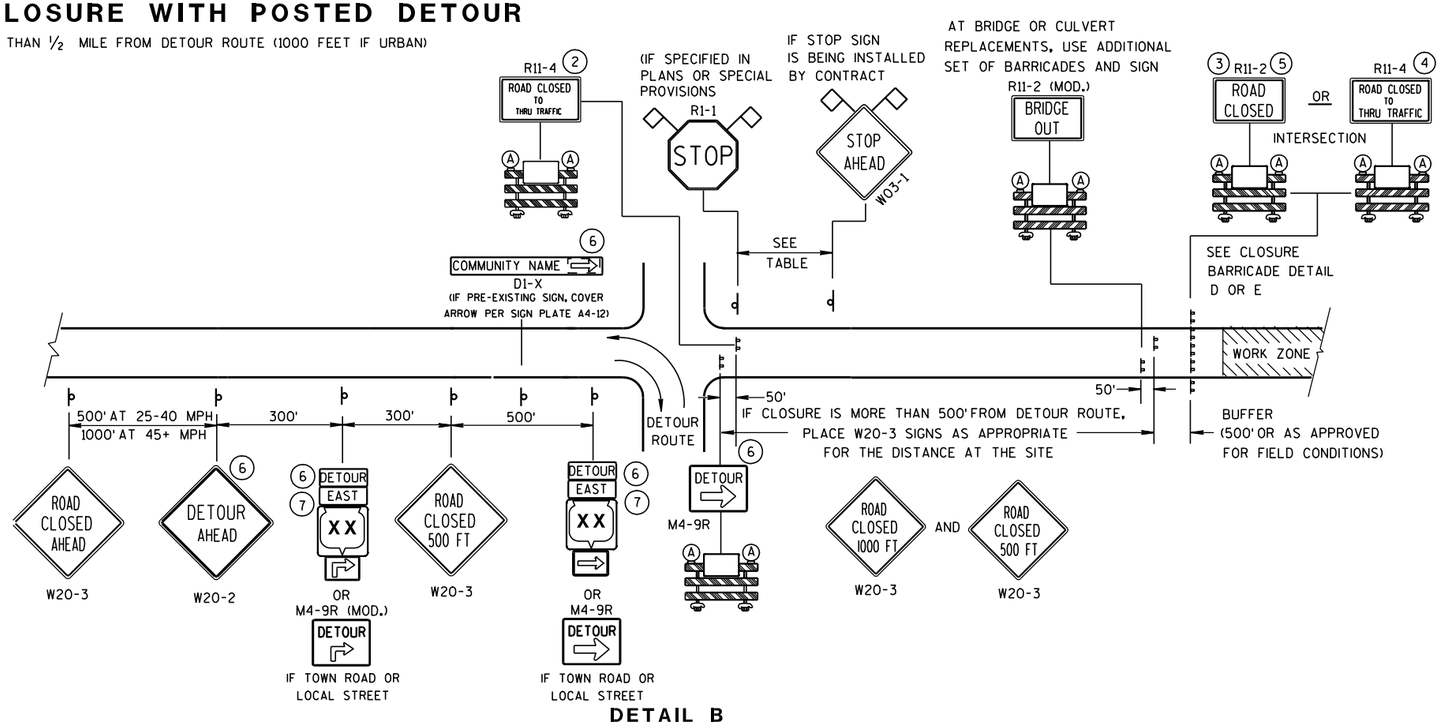


SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

DETAIL C

MAINLINE CLOSURE, NO POSTED DETOUR

SEE SDD 15C2-4b FOR GENERAL NOTES AND FOOTNOTES ① THROUGH ⑦



DETAIL B

MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

LEGEND

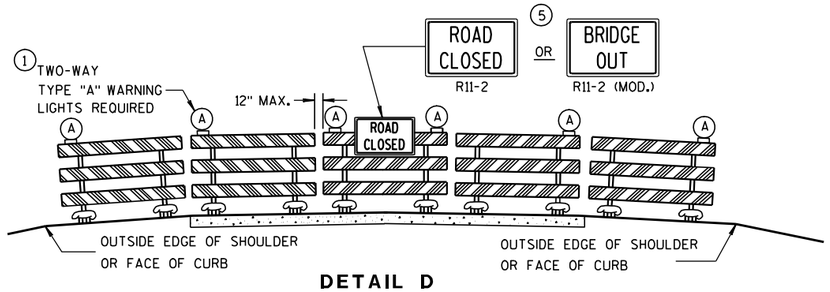
- POST MOUNTED SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK ZONE
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1; M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

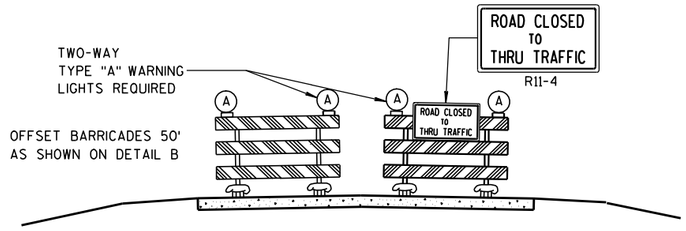
S.D.D. 15 C 2-4a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-4a FOR LEGEND

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3, R11-4, R10-61 AND R1-1 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

"WO AND "MO" SIGNS ARE THE SAME AS "W" AND "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
- R11-2 SHALL BE 48" X 30".
- R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".
- M4-9 SHALL BE 30" X 24".
- M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
- M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
- M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- R1-1 SHALL BE 36" X 36".

(1) TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).

(2) THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.

(3) FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.

(4) FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.

(5) FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.

(6) INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.

(7) "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9/16/03
DATE

/S/ Thomas N. N[illegible]
CHIEF SIGNS AND MAR[illegible]INEER

FHWA

6

S.D.D. 15 C 2-4b

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

GENERAL NOTES

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. MODIFY EXISTING SIGNS WHERE POSSIBLE.

THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

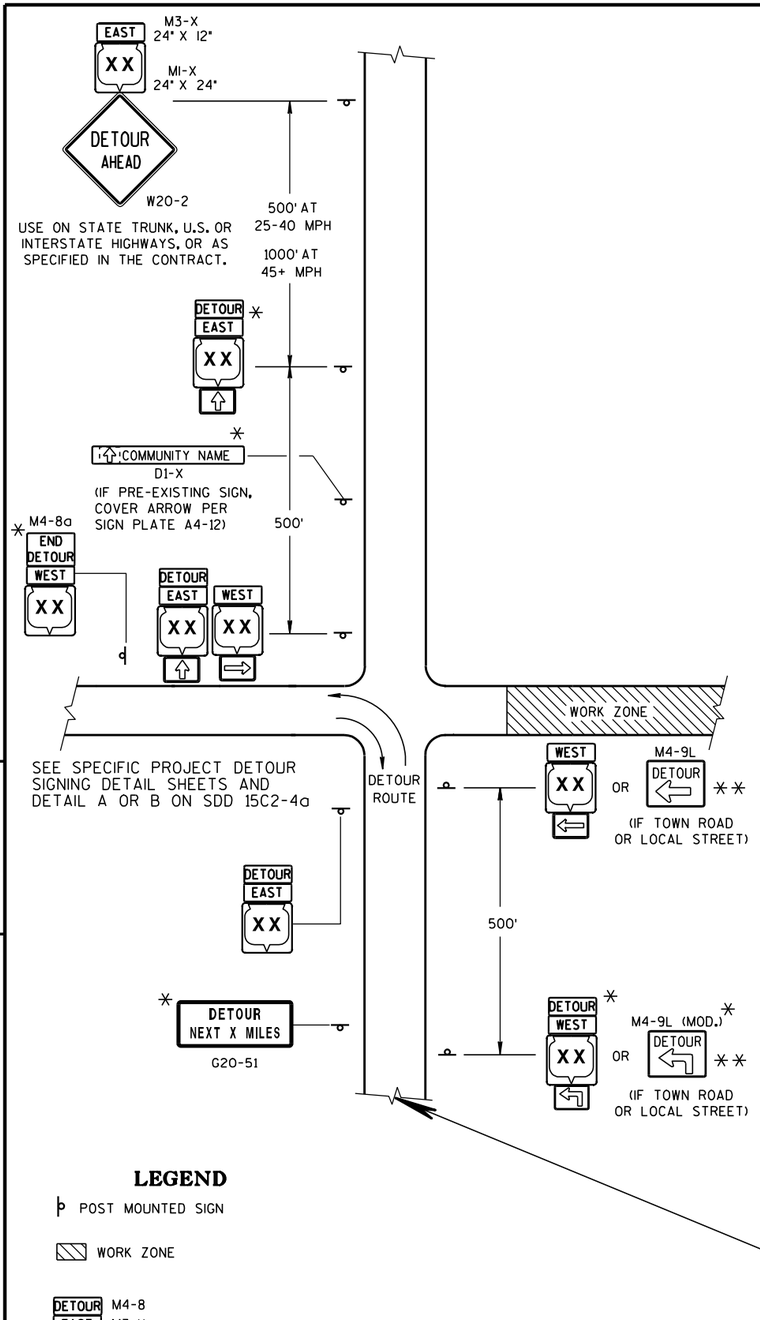
"MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

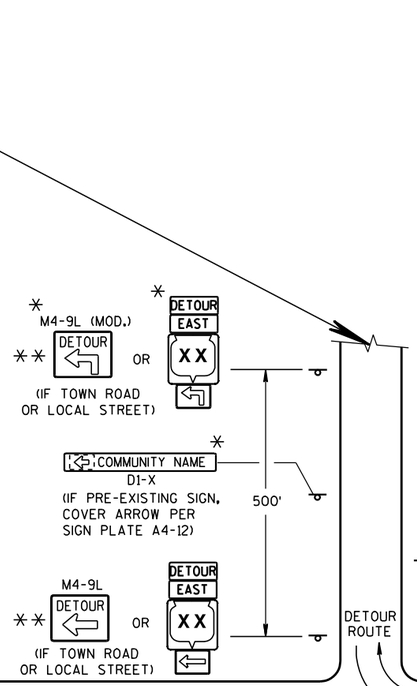
SIGN SIZES SHALL BE AS FOLLOWS:

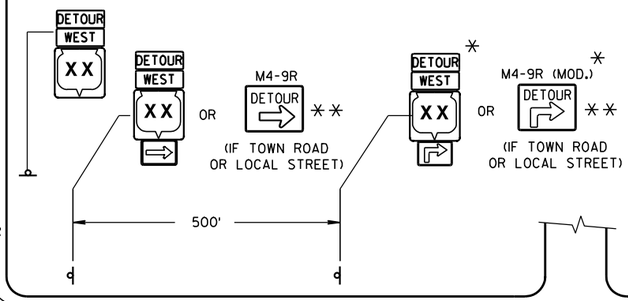
M3-X AND M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
M4-9 SHALL BE 30" X 24".
M4-8a SHALL BE 24" X 18".
G20-51 SHALL BE 60" X 24".
W20-2 SHALL BE 48" X 48".
D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

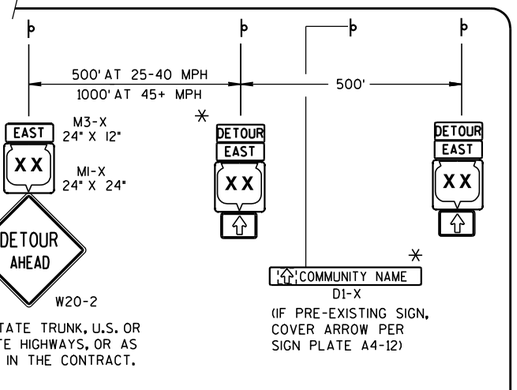
* OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.

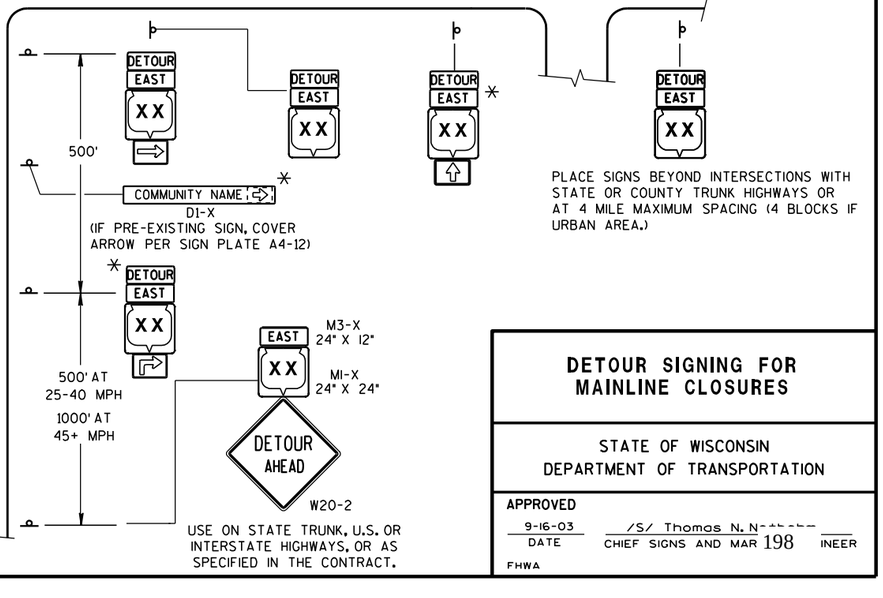
** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.











MATCH POINT

LEGEND

- POST MOUNTED SIGN
- WORK ZONE
- DETOUR EAST — M4-8 / M3-X
- XX OR COUNTY XX OR XX — M1-4 / M1-5A / M1-6
- MO5-1 OR MO6-1 OR MO6-1

DETAIL F

DETOUR SIGNING

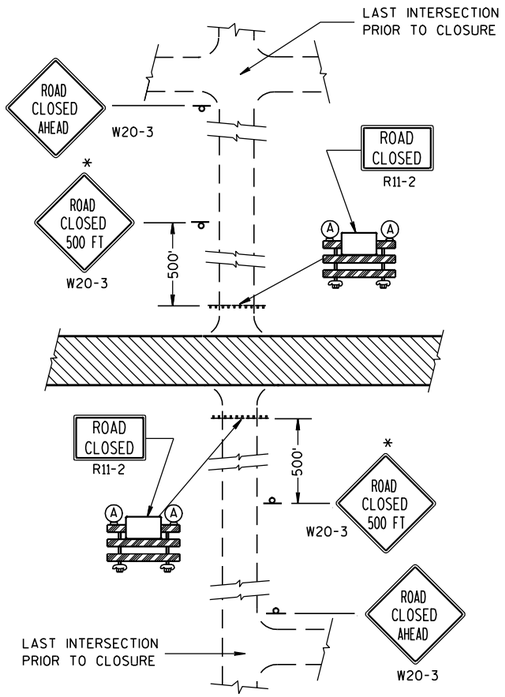
DETOUR SIGNING FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9-16-03 DATE
/S/ Thomas N. Nabholz
CHIEF SIGNS AND MARKINGS ENGINEER
FHWA

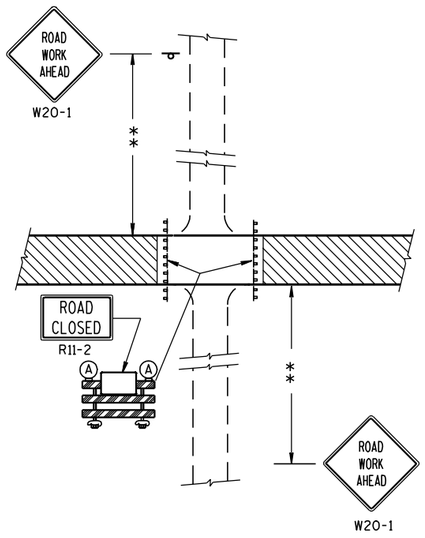
6 S.D.D. 15 C 2-4c

6 S.D.D. 15 C 2-4c



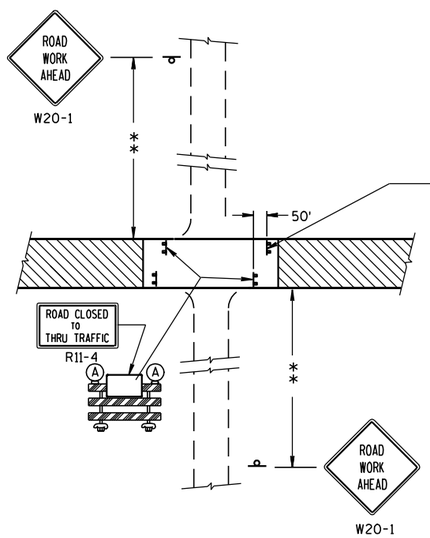
DETAIL 1

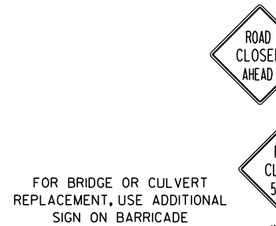
(NO ACCESS TO PROJECT)



DETAIL 2

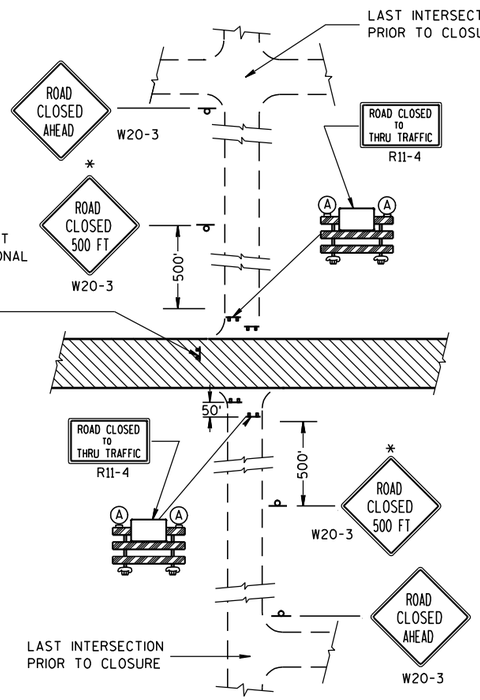
(PUBLIC CROSS-TRAFFIC MAINTAINED. NO ACCESS TO PROJECT).





DETAIL 3

(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4

(CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND BARRICADES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

THE REFLECTIVE SHEETING USED ON R11-2, R11-3 AND R11-4 SIGNS SHALL COMPLY WITH SUBSECTION 637.2.2.2 OF THE STANDARD SPECIFICATIONS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

LEGEND

- POST MOUNTED WARNING SIGN
- TYPE III BARRICADES
- (A) TYPE "A" LOW INTENSITY FLASHING WARNING LIGHT (FOR NIGHT USE)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

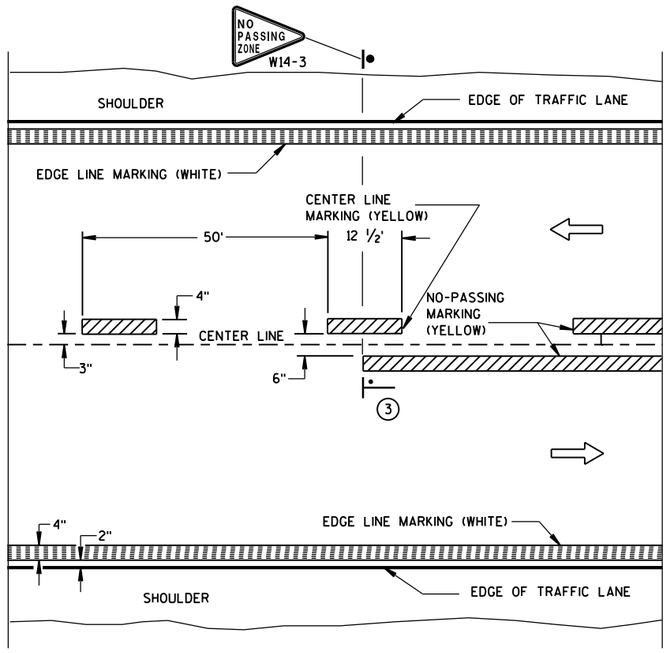
9-16-03
DATE

/S/ Thomas N. N[illegible]
CHIEF SIGNS AND MAR[illegible] INEER

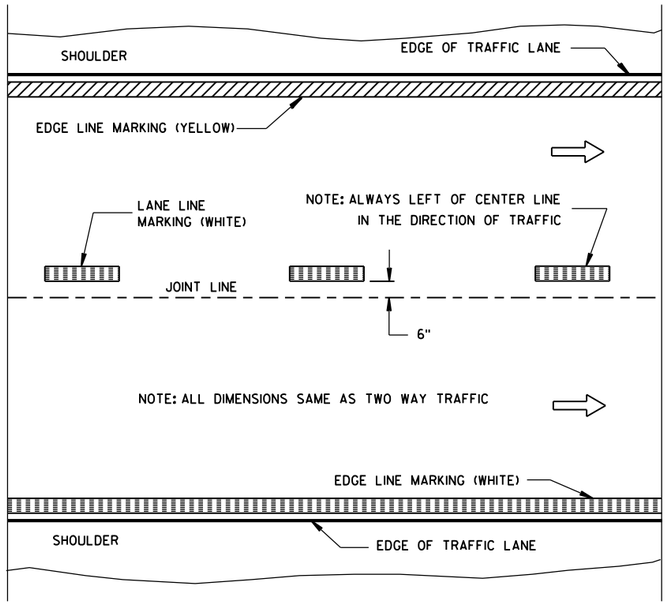
FHWA

6

S.D.D. 15 C 3-1

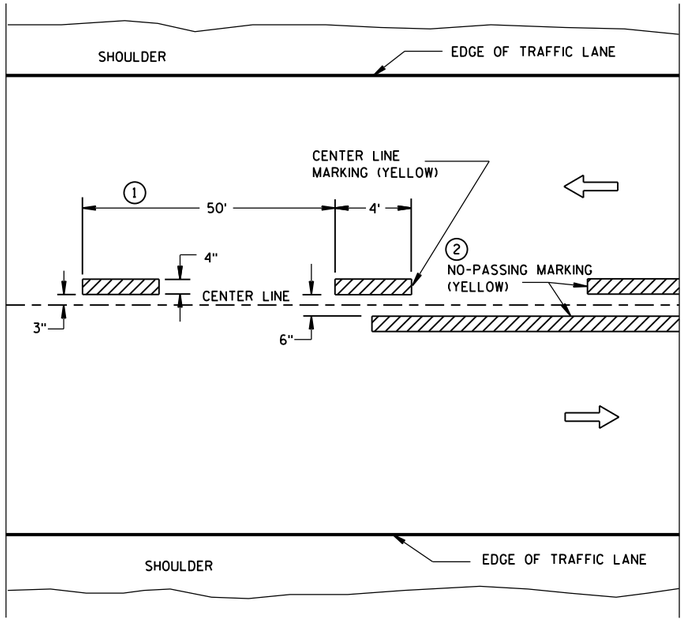


TWO WAY TRAFFIC

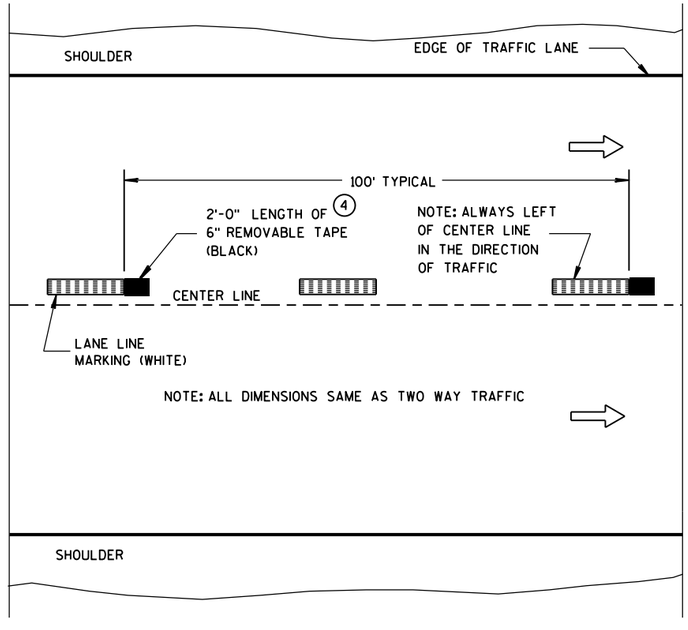


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

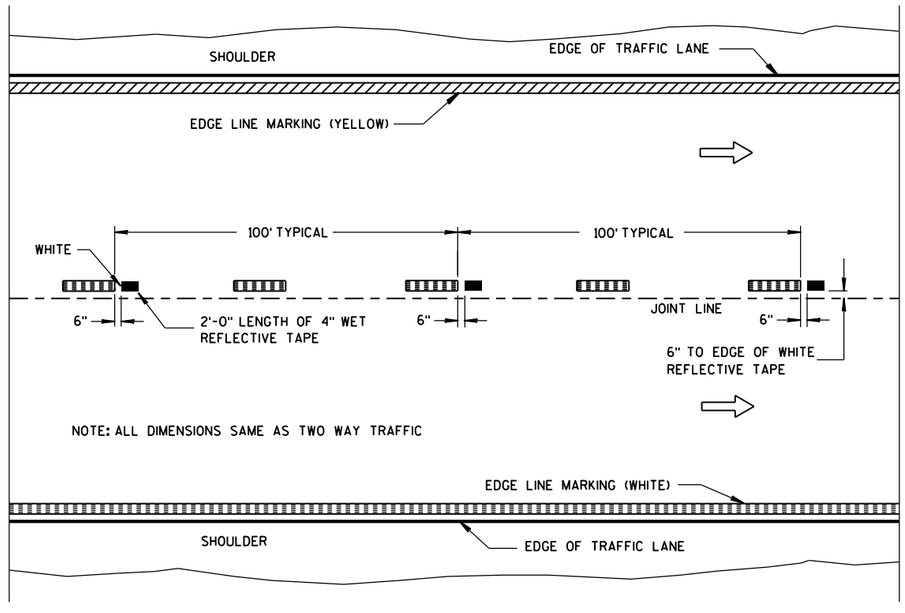
GENERAL NOTES

DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10-1-2012 — DATE
/S/ Travis Feltes — STATE TRAFFIC ENGINEER
200 — SIGN
FHWA

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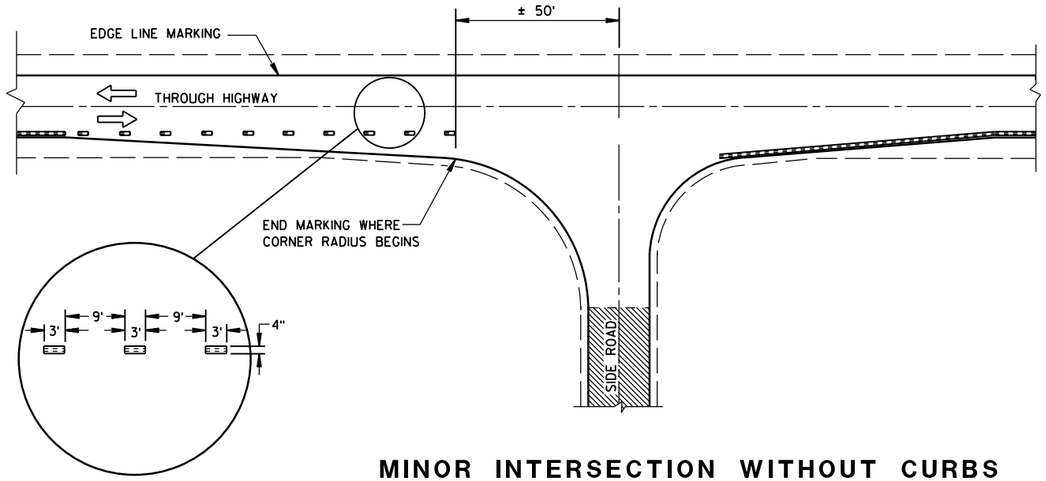
S.D.D. 15 C 8-15a

6

S.D.D. 15 C 8-15a



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

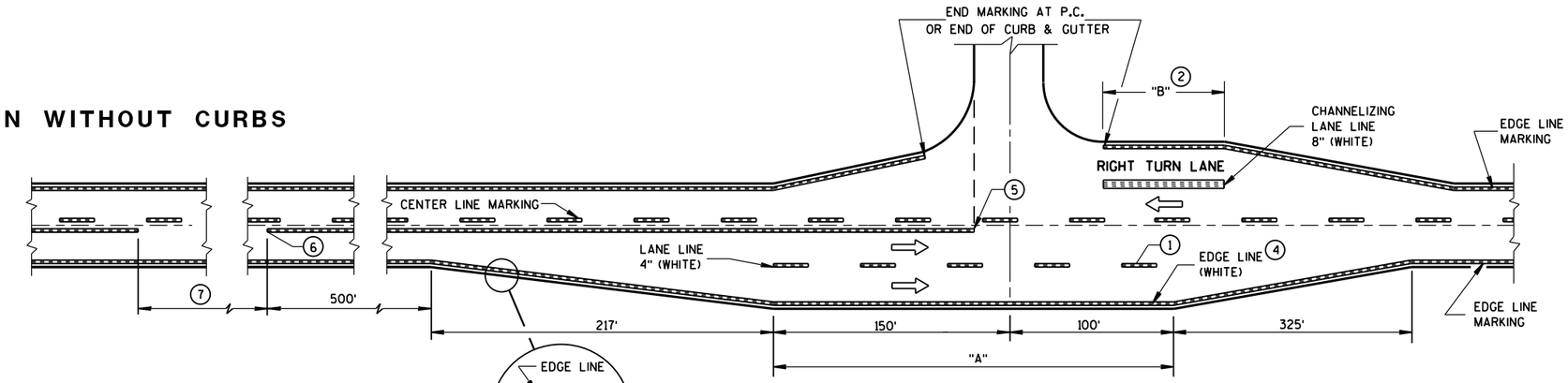
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

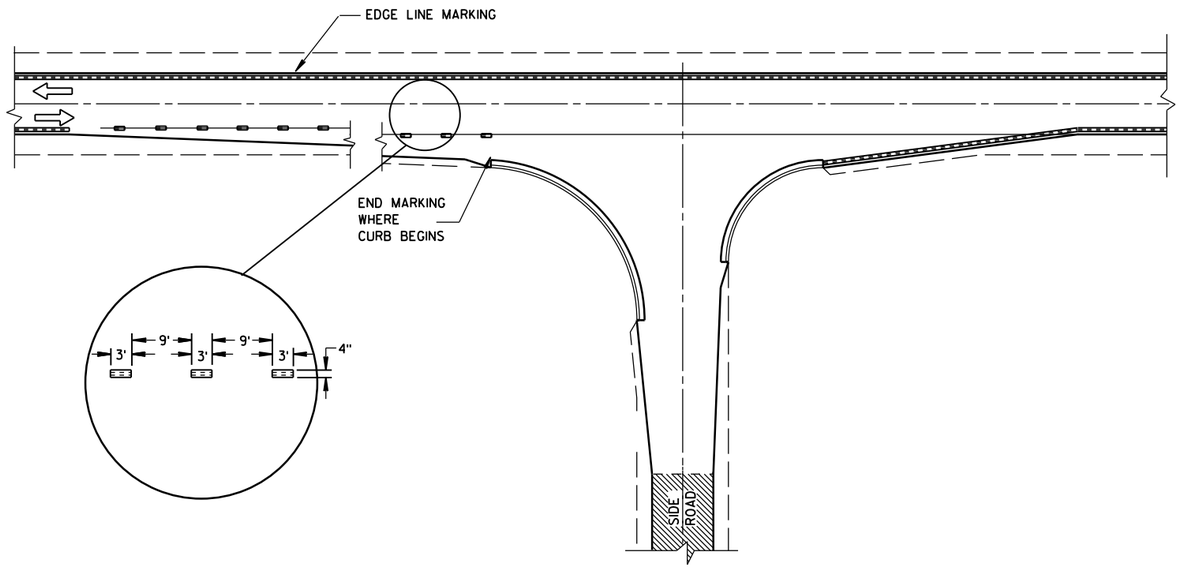
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



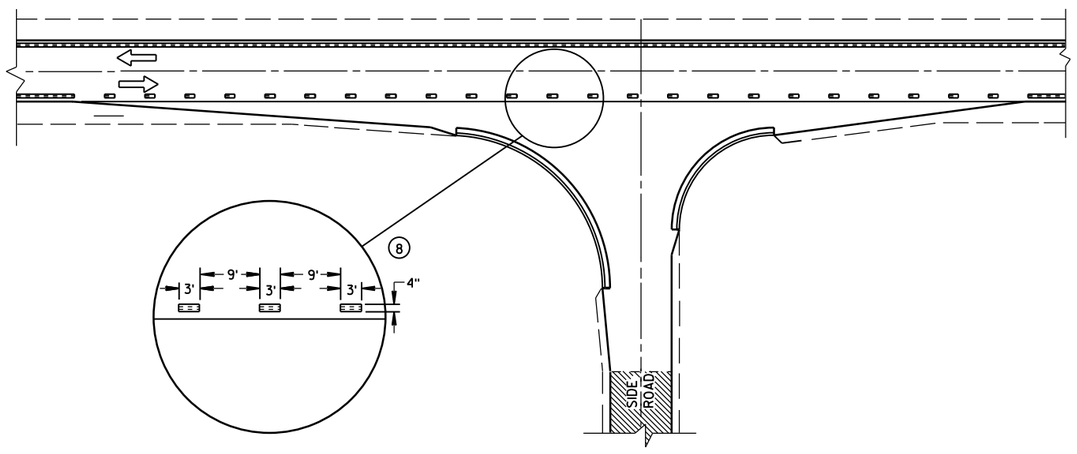
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 201

6

S.D.D. 15 C 8-15b

6

S.D.D. 15 C 8-15b

LEGEND

- POST WITH ATTACHED SIGN
- POST WITH ATTACHED SIGN IN DRUM
- DRUM WITH WARNING LIGHT (TYPE C)
- DRUM
- ARROW BOARD
- 8' TYPE III BARRICADE
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC

GENERAL NOTES :

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A MINIMUM OF 200 FEET, (500 FEET DESIREABLE) DISTANCE TO EXISTING SIGNS.

THIS LANE CLOSURE IS TYPICAL FOR CLOSING RIGHT LANE - REVERSE FOR CLOSING LEFT LANE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER. NO WARNING LIGHTS SHALL BE WORKING ON "COVERED" OR "DOWNED" SIGNS.

(1) CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

GENERAL NOTES CONTINUED:

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 7 CONTINUOUS DAYS AND NIGHTS.

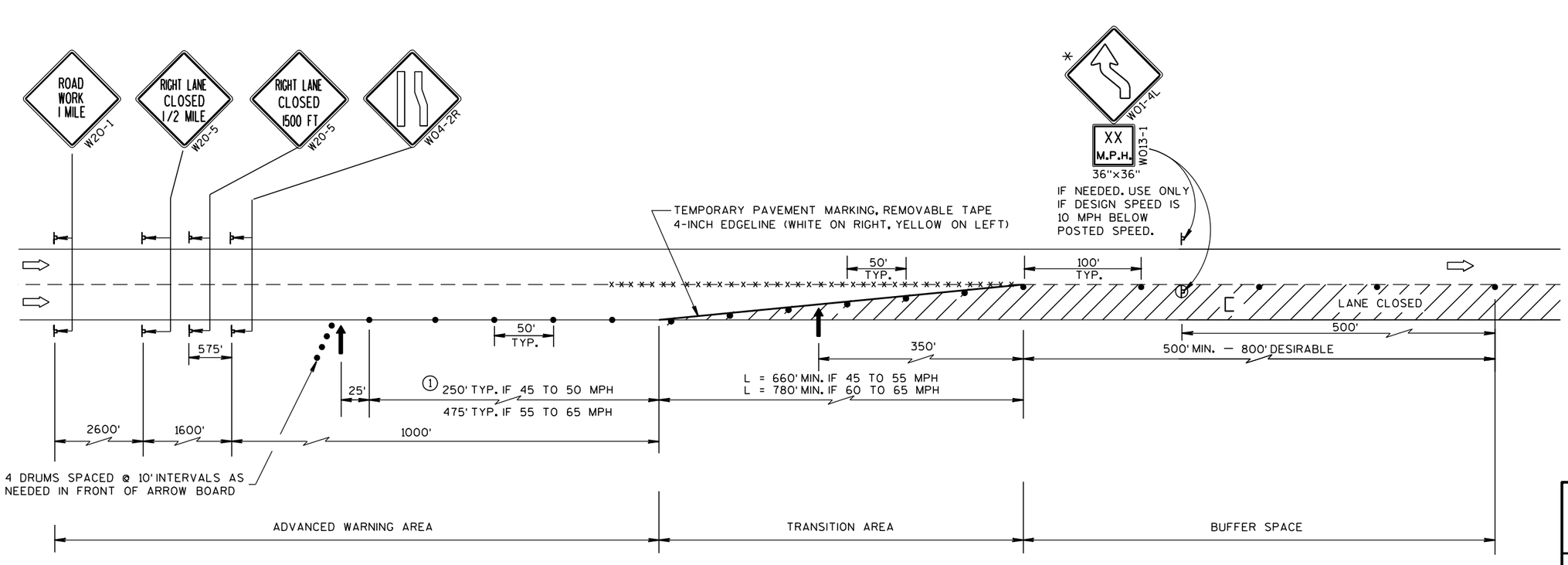
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

IF THE HORIZONTAL ALIGNMENT IS SUCH THAT A CURVE MAY REQUIRE ADDITIONAL DELINEATION, THE DEVICE SPACING MAY BE DECREASED TO 50 FEET.

IF LANE CLOSURE IS MORE THAN 1 MILE, PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1/4 MILE ACROSS THE CLOSED LANE TO HELP ENFORCE THE DRUM LINE.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE, SPEEDS GREATER THAN 40 M.P.H.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

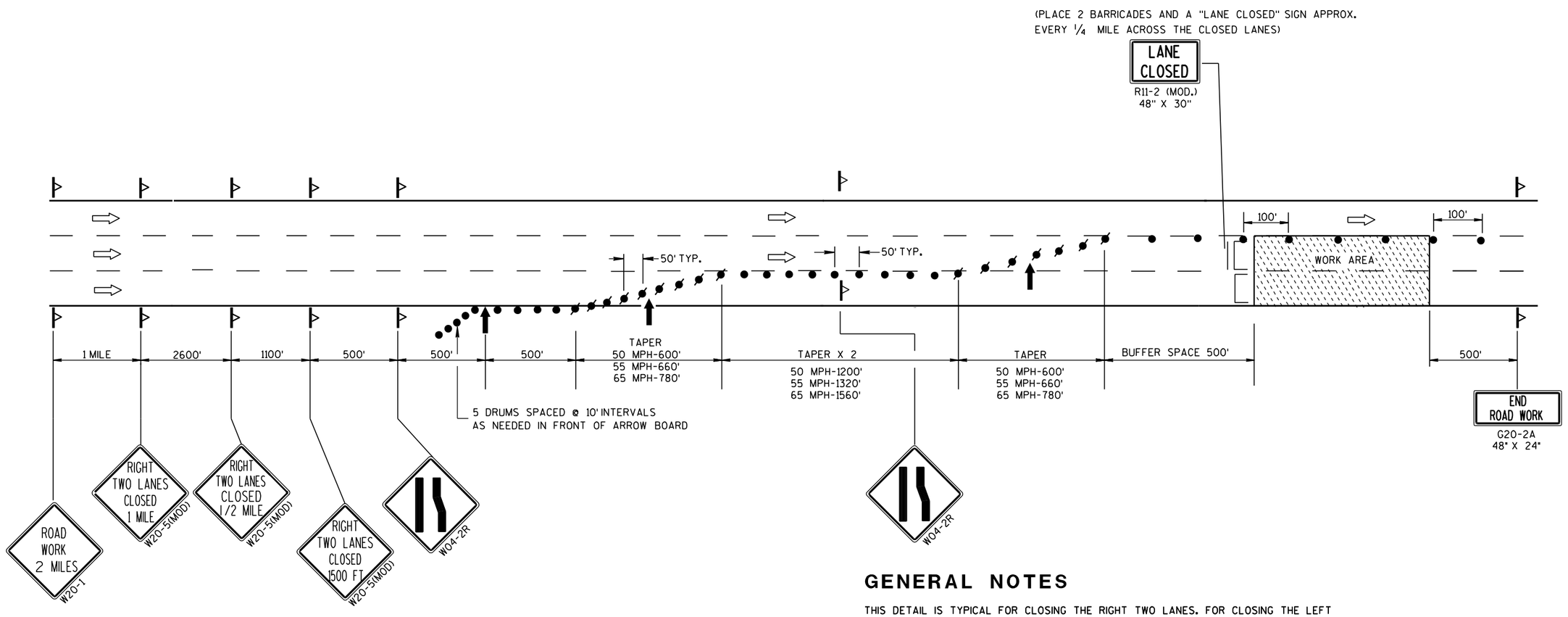
APPROVED
8-7-95 DATE
/S/ Chester J. [illegible]
DIRECTOR, OFFICE O 202 C
FHWA

6

S.D.D. 15 D 12-2

6

S.D.D. 15 D 12-2



LEGEND

- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY BURN)
- SIGN ON POST OR PORTABLE SUPPORT
- FLASHING ARROW BOARD
- TYPE III BARRICADE (8' EQUIVALENT) WITH/WITHOUT SIGN
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT TWO LANES. FOR CLOSING THE LEFT TWO LANES, REVERSE THE TRAFFIC CONTROL.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

"WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS FOR A MINIMUM 1500 FEET IN FRONT OF DRUMS.

WHEN A RAMP OR SIDE ROAD INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TRAFFIC CONTROL, TWO LANE CLOSURE ON FREEWAY OR EXPRESSWAY, SHORT-TERM (LESS THAN 24 HOURS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

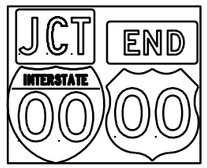
5/23/2000
DATE

/S/ Chester J. [illegible]
CHIEF SIGNS AND MAR 203 INEER

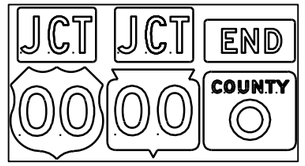
FHWA

TYPICAL ASSEMBLIES

J1-1

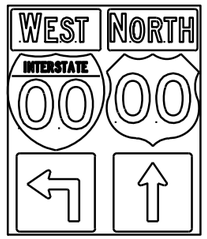


J1-2

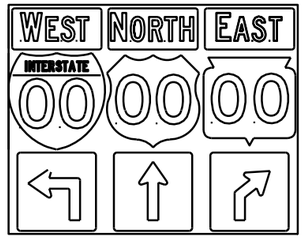


J1-3

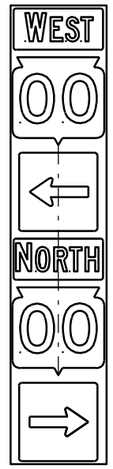
J2-1



J2-2

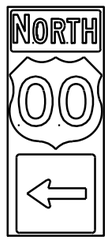


J2-3

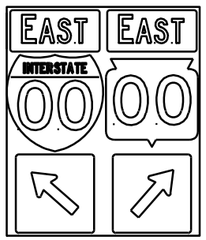


JV

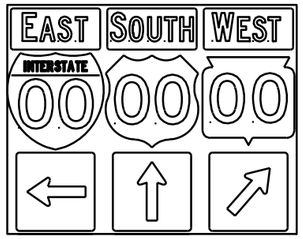
(Typical Vertical J-Assembly
See Note 10 and 11)



J3-1

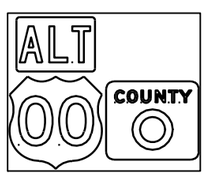


J3-2

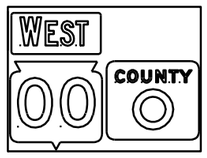


J3-3

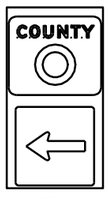
J4-1



J4-2



J4-2



J13-1

J12-1

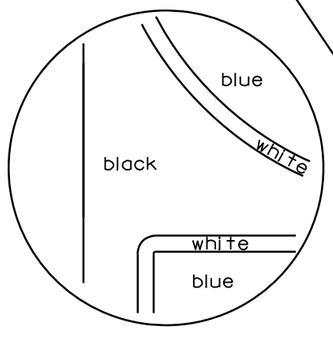
J32-1

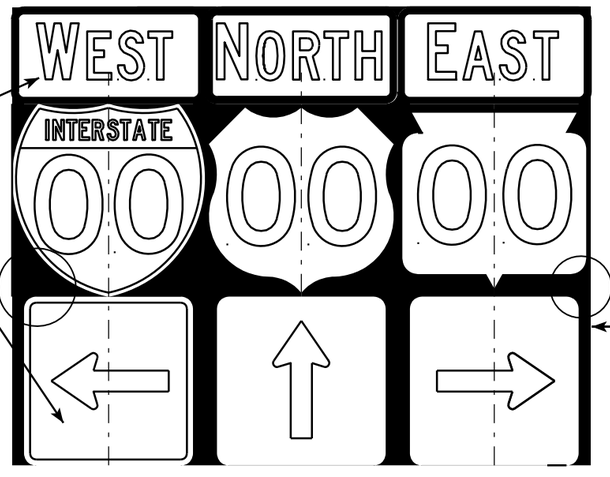
J33-1

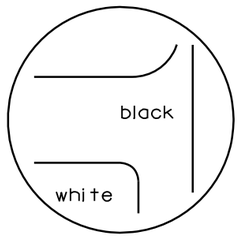
J23-1

J22-1

blue background
with interstate







black background

NOTES

1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Black Non-reflective
   Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. If base material is metal the corners shall be rounded.
5. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
6. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 interstate marker shall be blue.
7. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
8. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. Route assemblies that have 36 inch shields and have dimensions greater than 48 inchs (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
10. All Vertical J Assemblies are given a Sign Code of JV
11. For JV Assemblies that have a mixture of interstate and non interstate shields, arrows and cardinals shall be white on blue.

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

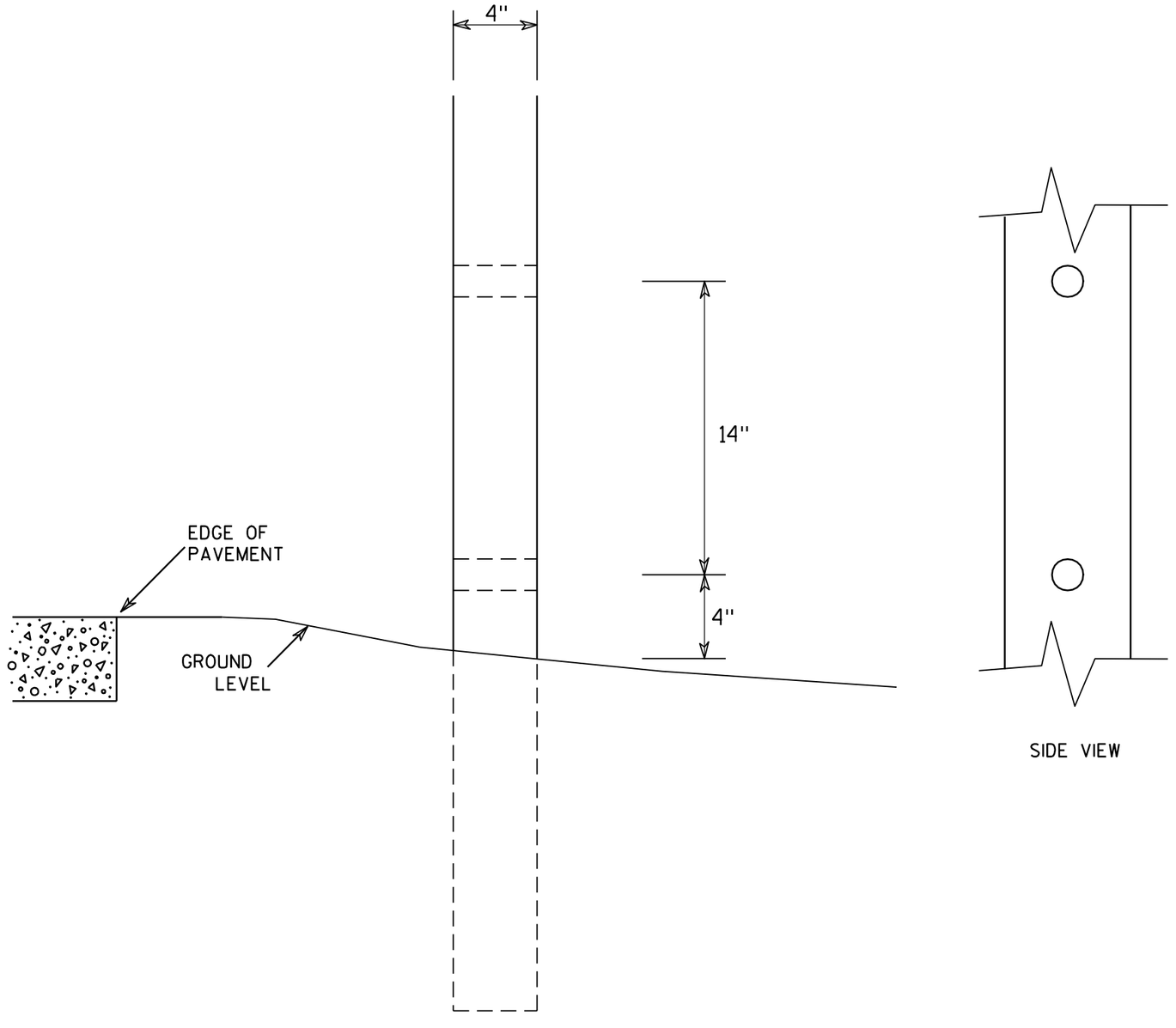
DATE 3/25/13 PLATE NO. A2-1S.7

7

7

PROJECT NO:

SHEET NO: 204 E



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

7

4 X 6 WOOD POST MODIFICATIONS

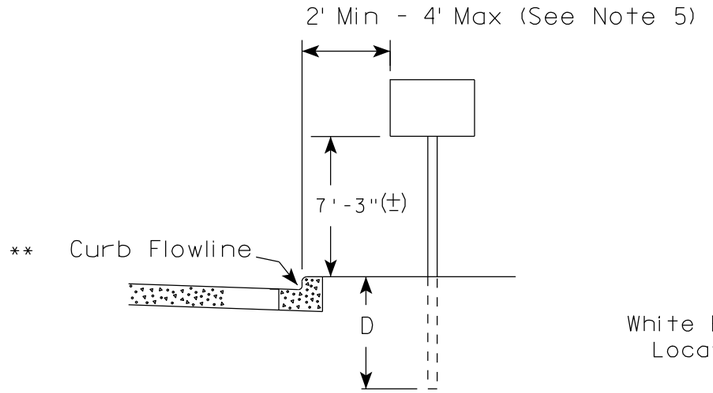
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang
for State Traffic Engineer

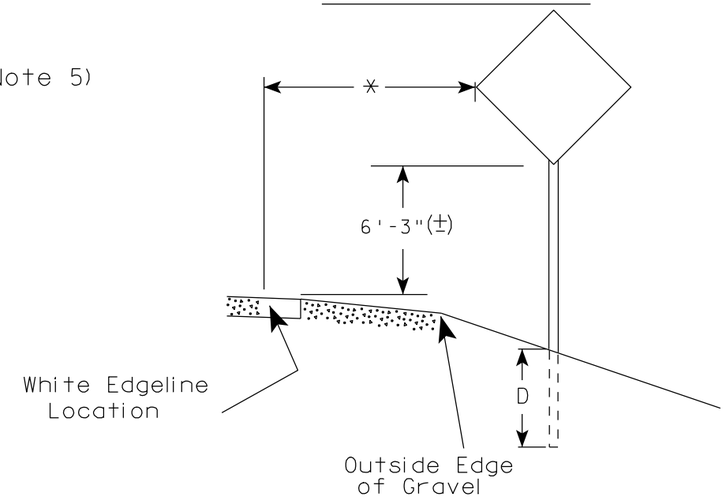
DATE 3/27/97 PLATE NO. A4-11.2

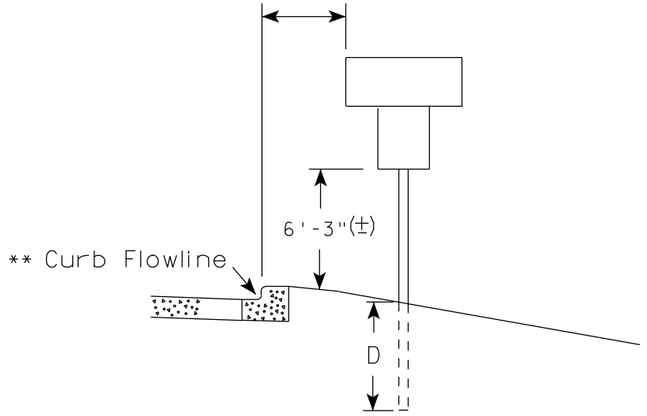
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 205	E

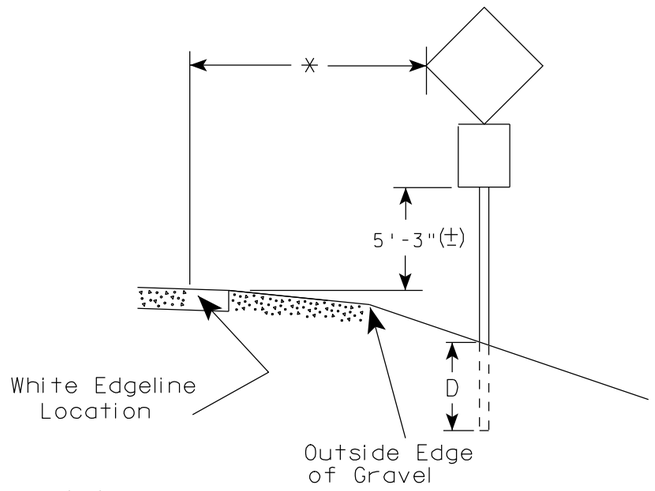
URBAN AREA



RURAL AREA (See Note 2)







** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

GENERAL NOTES

1. Signs wider than 4 feet or larger than 20 sq. ft. shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

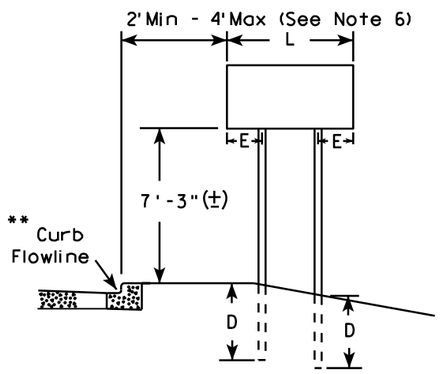
WISCONSIN DEPT OF TRANSPORTATION

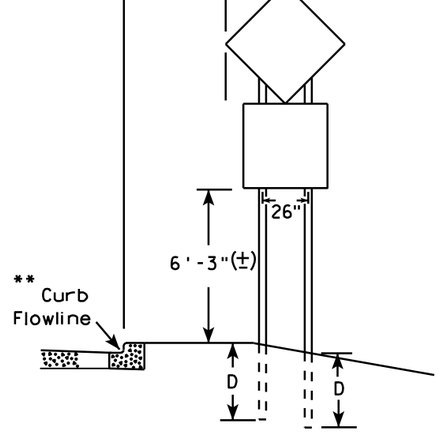
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-3.16

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 206	E

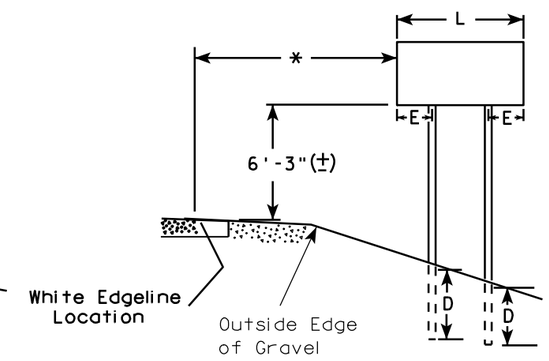
URBAN AREA

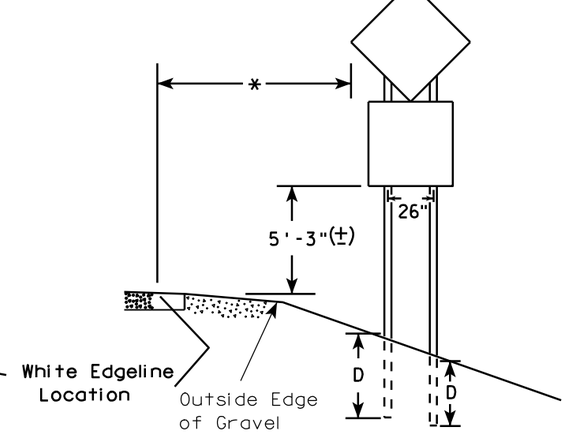




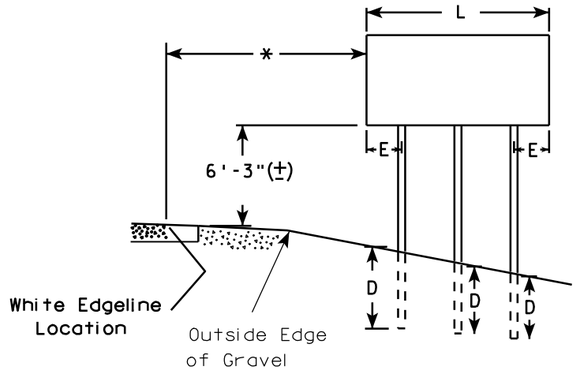
48" DIAMOND WARNING SIGN

RURAL AREA (See Note 3)





48" DIAMOND WARNING SIGN



GENERAL NOTES

1. For multiple post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
4. The (±) tolerance for mounting height is 3 inches.
5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4"-3" (±).

* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width or 20 S.F. or less in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
*** Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

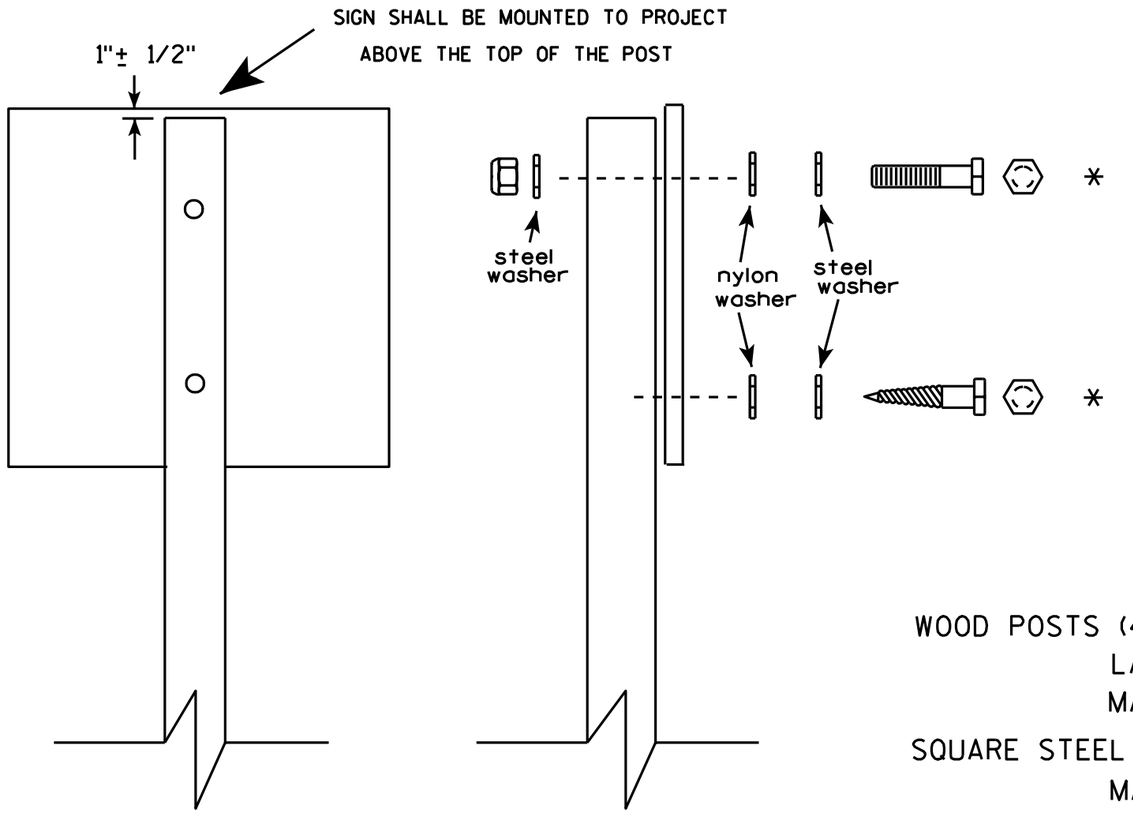
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/21/2011 PLATE NO. A4-4.11

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 207	E



Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3

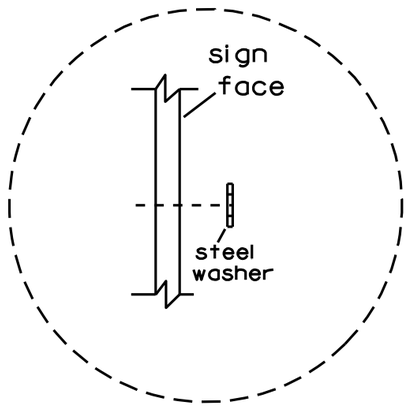
b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts

SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32 " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

ATTACHMENT OF SIGNS TO POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/23/10 PLATE NO. A4-8.7

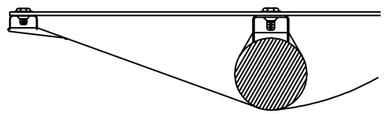
7

7

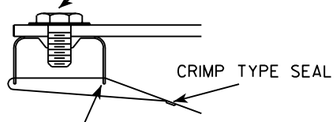
PROJECT NO:

SHEET NO: 208 E

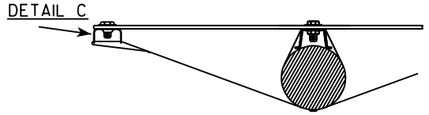
BRACE BANDING

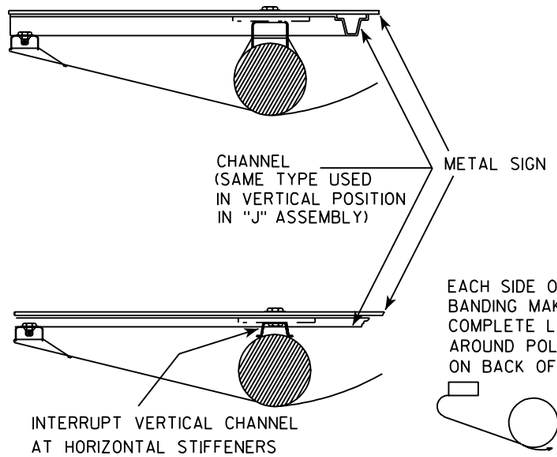


DETAIL C
CADMIUM PLATED STEEL BOLT
THROUGH BLACK BORDER



DETAIL C

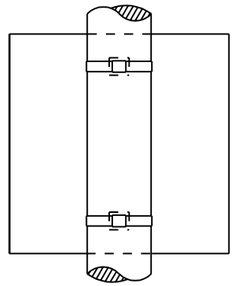


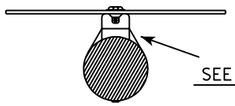


EACH SIDE OF BRACE
BANDING MAKES ONE
COMPLETE LOOP
AROUND POLE-SEAL
ON BACK OF POLE

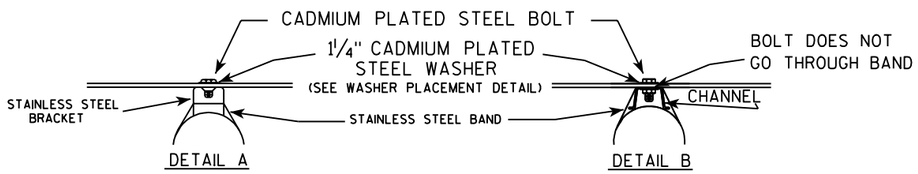
BRACKET BANDING

SINGLE SIGN

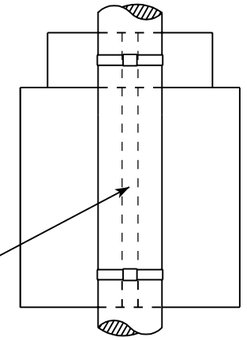




SEE DETAIL A



"J" ASSEMBLY

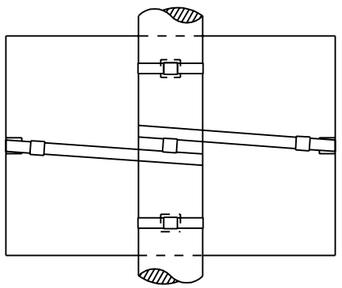


CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET

SEE DETAIL B

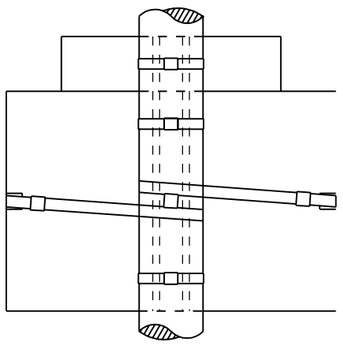
GENERAL NOTES

1. Signs 4' or greater in width shall have one brace band installed at the center of the sign.
2. Signs 3' or greater in height shall have three bracket bands installed. Signs less than 3' in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be ¾" in width and 0.025" thickness.

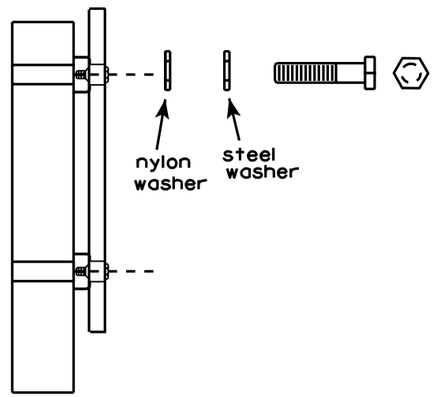


BRACE BANDING

BRACE BANDING SHALL BE TIGHTENED FIRMLY BUT NOT SO TIGHT AS TO APPRECIABLY CURVE FACE OF SIGN.



WASHER PLACEMENT



WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/08/05 PLATE NO. A5-9.2

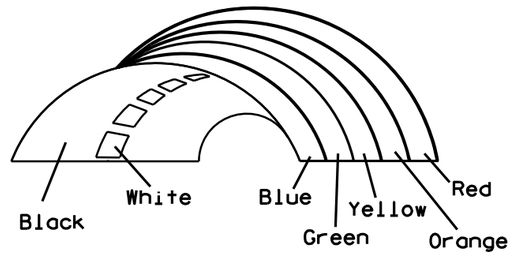
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 209	E

* VARIES

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - (See Note 5)
3. Message Series - (See Note 6)
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Border - Blue
   Line 1 - Red
   Line 2 - Black
   Line 3-5 - Blue
6. Line 1 - Dutch 8011L
   Line 2 - Series E
   Line 3-5 - Series C
7. Contractor shall provide and install a new post bracket in accordance with the I55-56B sign detail.

Background Colors of Symbol*



*1/4" Black Border between each color of rainbow and border of rainbow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	36	1 1/2	1/2	5/8	3	2	3 1/2	2 7/8	1	8	2 1/8	11 1/4	11 1/8	9 3/8	1 1/4		3/4	12 5/8	7 1/2							7.5
3																											
4																											
5																											

STANDARD SIGN
I55-56

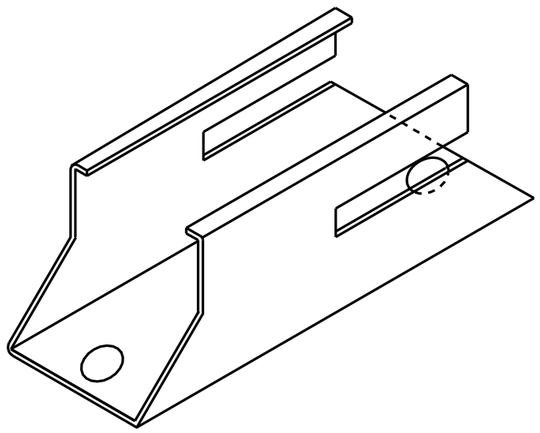
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/27/11 PLATE NO. 155-56.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 210

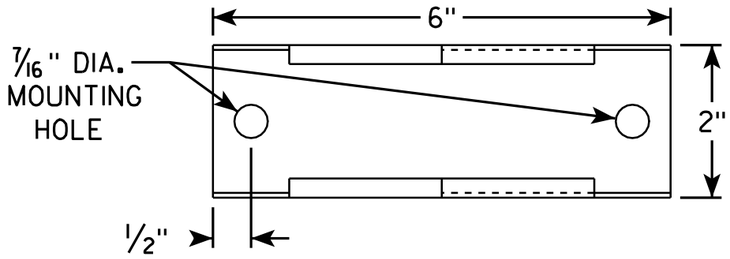
ISOMETRIC VIEW



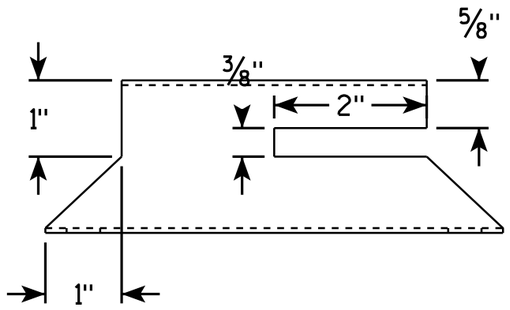
NOTES

1. Must be capable of permanent attachment to a wood or steel channel sign post utilizing the fastening hardware specified on the A4-8 sign plate.
2. Shall be entirely primed and painted with two coats of a black powder coated enamel paint.
3. Shall be made with 12 gauge steel, and incorporate no welds, no hinged components, no threaded lock-type components, and no parts which are loose or can be separated from the main body.
4. Shall have rounded edges with at least 1/8" radii.
5. Shall not have unrounded and uncoated metal edges which can contact the back surface of the roll-up sign.
6. Top of bracket shall be mounted 2' below the bottom of the I55-56 sign.
7. Cost of bracket and fastening hardware shall be incidental to the I55-56 sign.

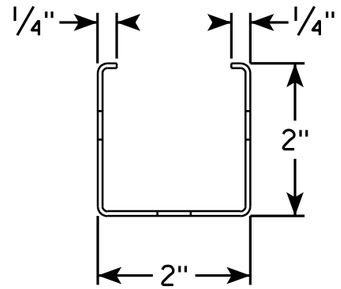
TOP VIEW



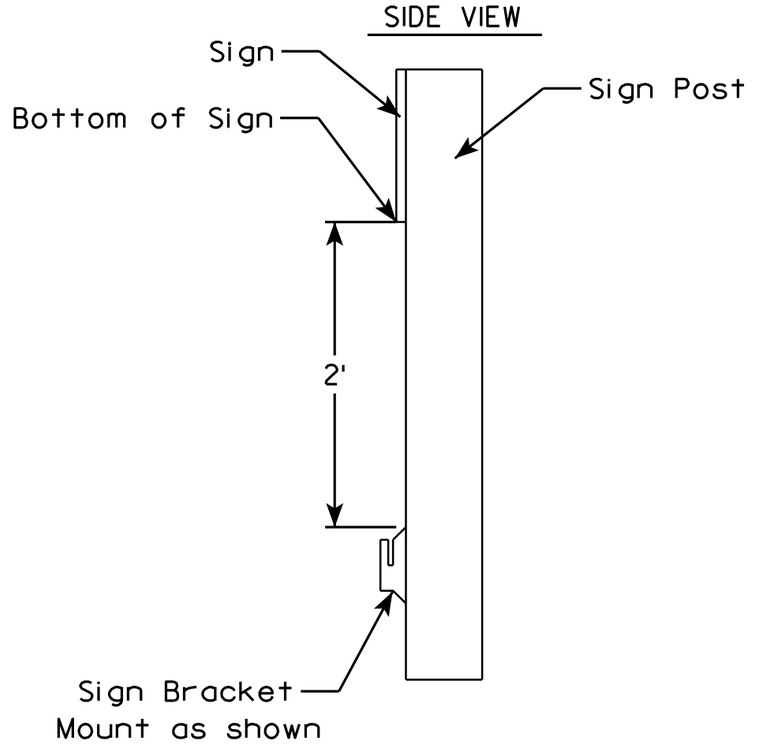
SIDE VIEW



END VIEW



SIDE VIEW



7

7

ROLLUP SIGN BRACKET I55-56B

WISCONSIN DEPT OF TRANSPORTATION

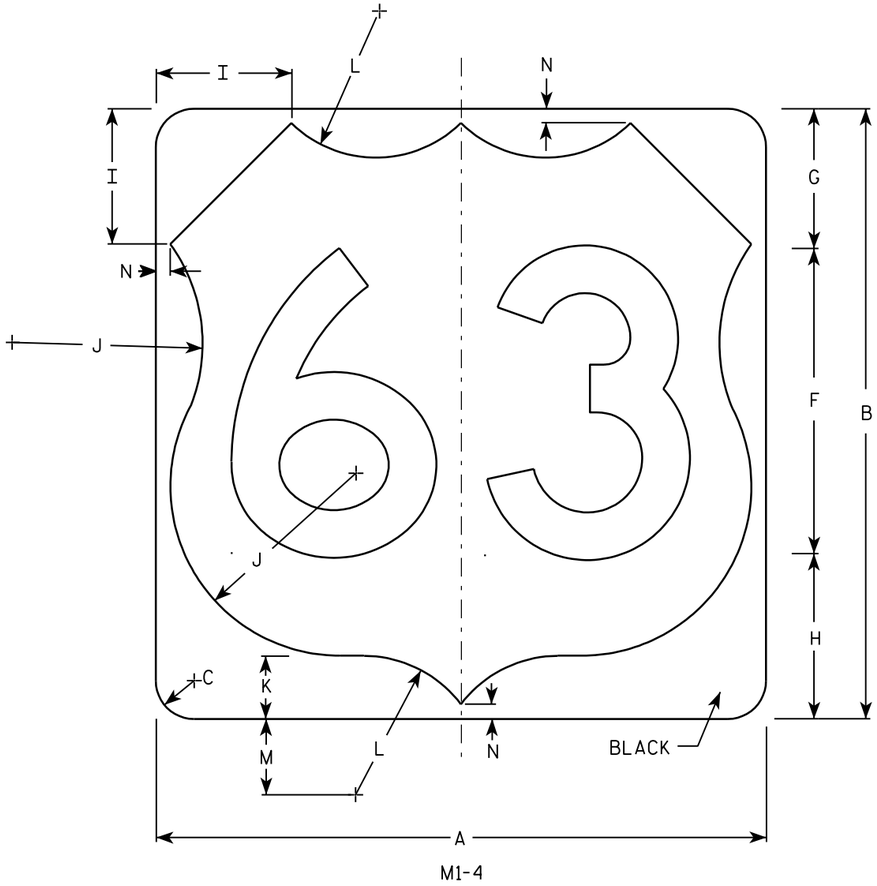
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 2/5/10 PLATE NO. I55-56B.1

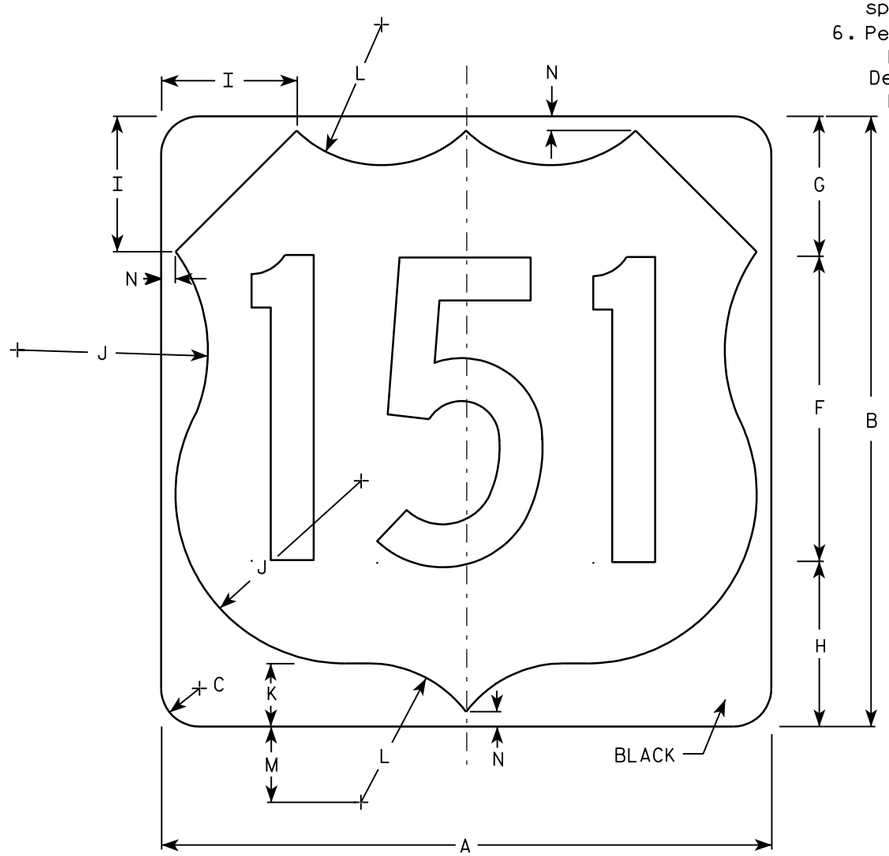
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 211	E

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary signs
   Background - Reflective



M1-4



M1-4

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 600 mm
3	900 mm X 900 mm
4	900 mm X 900 mm
5	900 mm X 900 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24	24	1 ½			12	5 ½	6 ½	5	7 ½	2 ½	5 ½	3	½													4.0	.36
3	36	36	2 ¼			18	8 ¼	9 ¼	7 ¼	11 ¼	3 ¾	8 ¼	4 ½	¾													9.0	.81
4	36	36	2 ¼			18	8 ¼	9 ¼	7 ¼	11 ¼	3 ¾	8 ¼	4 ½	¾													9.0	.81
5	36	36	2 ¼			18	8 ¼	9 ¼	7 ¼	11 ¼	3 ¾	8 ¼	4 ½	¾													9.0	.81

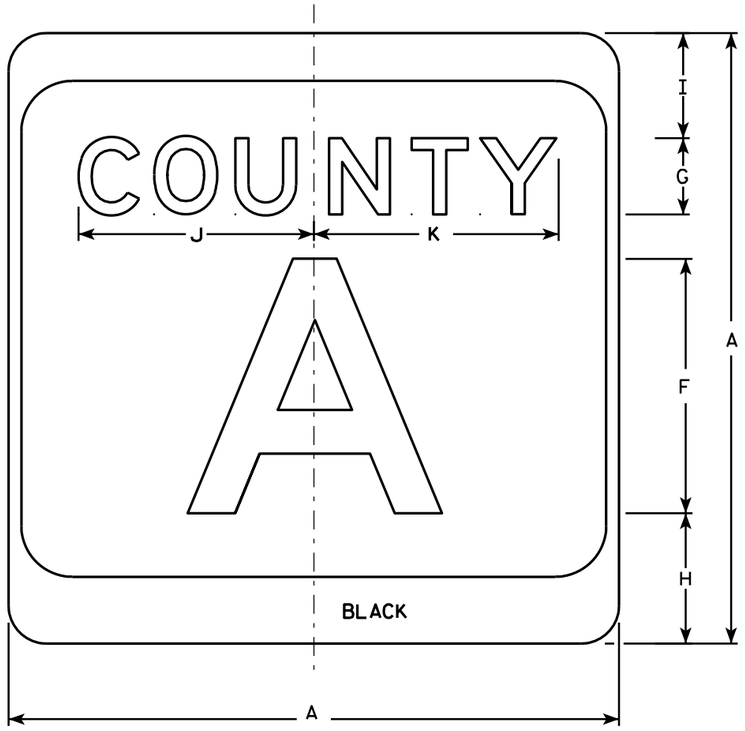
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

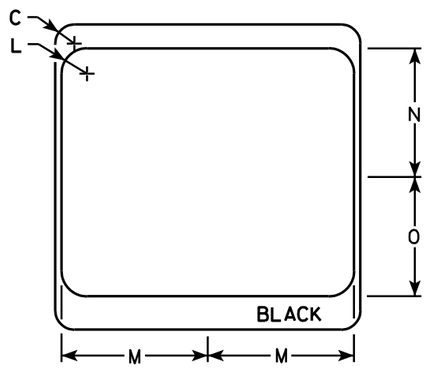
APPROVED Matthew R Rauch
for State Traffic Engineer

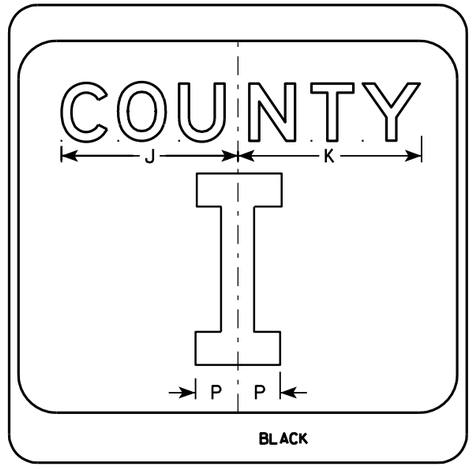
DATE 08/25/05 PLATE NO. M1-4.9

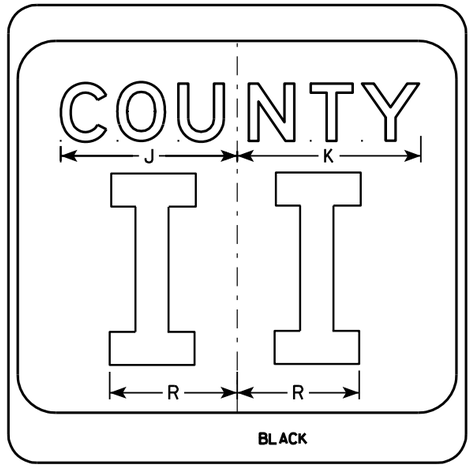
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 212 | E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

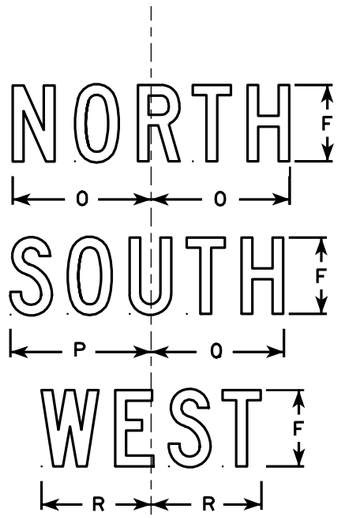
CTH MARKER
M1-5A FOR ASSEMBLIES

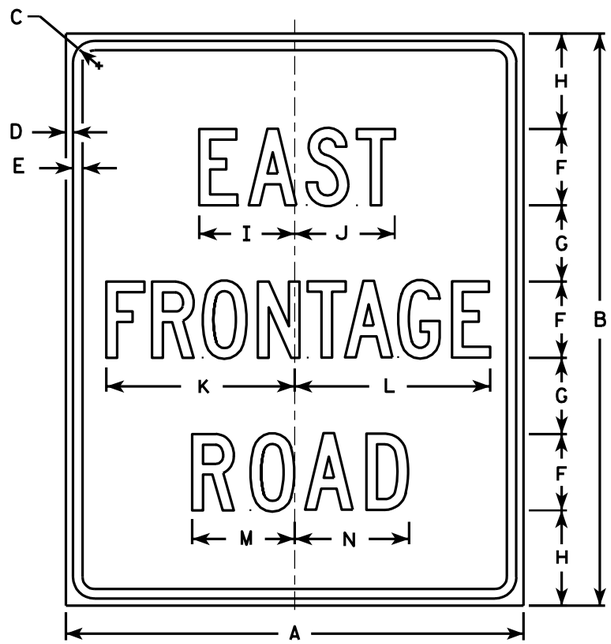
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 213	E





NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate message as required.

Metric equivalent for this sign is:

SIZE	
1	
2	600 mm X 750 mm
3	
4	900 mm X 1050 mm
5	

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	24	30	1 1/8	3/8	1/2	4	4	5	5	5 1/4	9 7/8	10 1/4	5 3/8	6	7 1/4	7 3/8	7	5 3/4									5.0	.45
3																												
4	36	42	1 3/8	5/8	5/8	6	5	7	7 1/2	7 7/8	14 3/4	15 3/8	8	9	10 7/8	11	10 1/2	8 5/8									10.5	.95
5																												

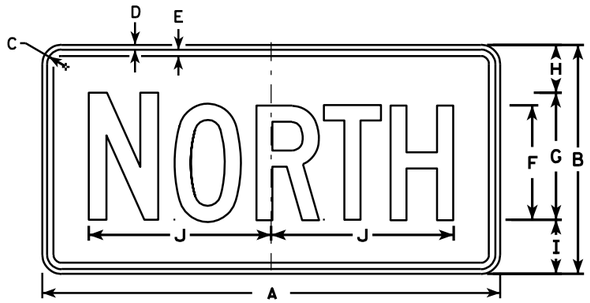
STANDARD SIGN
M1-95A

WISCONSIN DEPT OF TRANSPORTATION

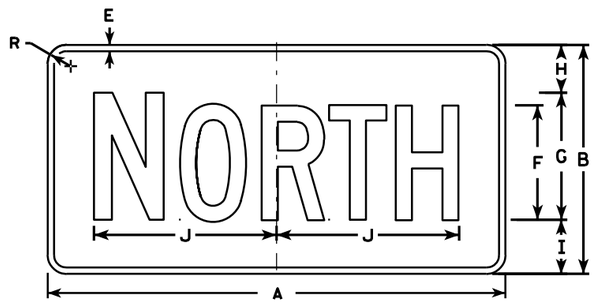
APPROVED Chester J Spang for State Traffic Engineer

DATE 1/30/02 PLATE NO. M1-95A.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 214 | E

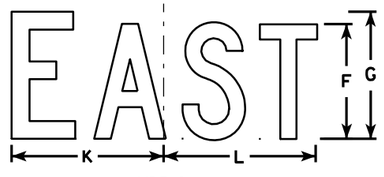


M3-1
MK3-1
MO3-1



MB3-1
MG3-1
MM3-1
MN3-1

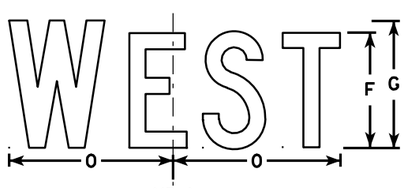
M3-2
MK3-2
MO3-2



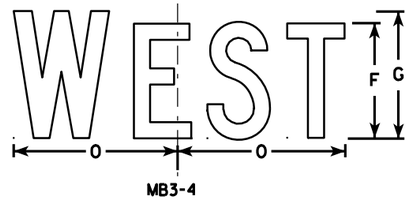
MB3-2
MG3-2
MM3-2
MN3-2

M3-3
MK3-3
MO3-3

MB3-3
MG3-3
MM3-3
MN3-3



M3-4
MK3-4
MO3-4



MB3-4
MG3-4
MM3-4
MN3-4

NOTES

1. All Signs Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White - Type H Reflective (Detour or temporary signs - Reflective) Message - Black
   MB3-1 thru MB3-4 Background - Blue Message - White - Type H Reflective (Detour or temporary signs - Reflective)
   MG3-1 thru MG3-4 Background - Green Message - White - Type H Reflective
   MK3-1 thru MK3-4 Background - Green Message - White - Type H Reflective
   MM3-1 thru MM3-4 Background - White - Type H Reflective Message - Green
   MN3-1 thru MN3-4 Background - Brown Message - White - Type H Reflective
   M03-1 thru M03-4 Background - Orange - Reflective Message - Black
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
5	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5

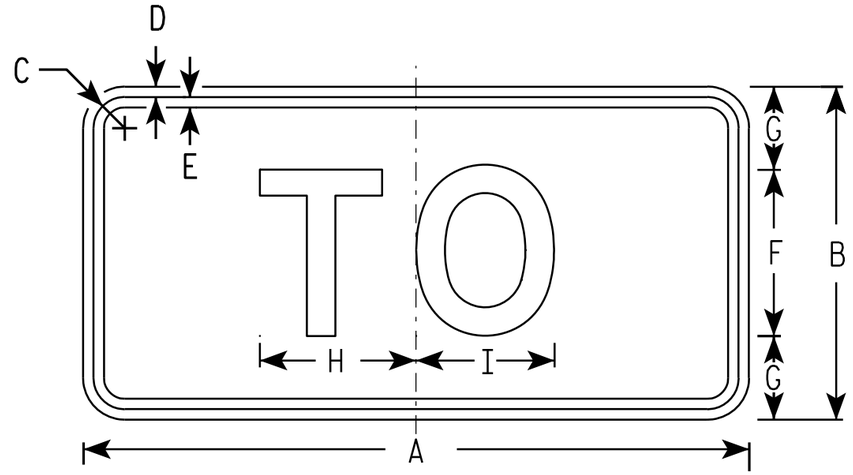
STANDARD SIGNS
M3-1 thur M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

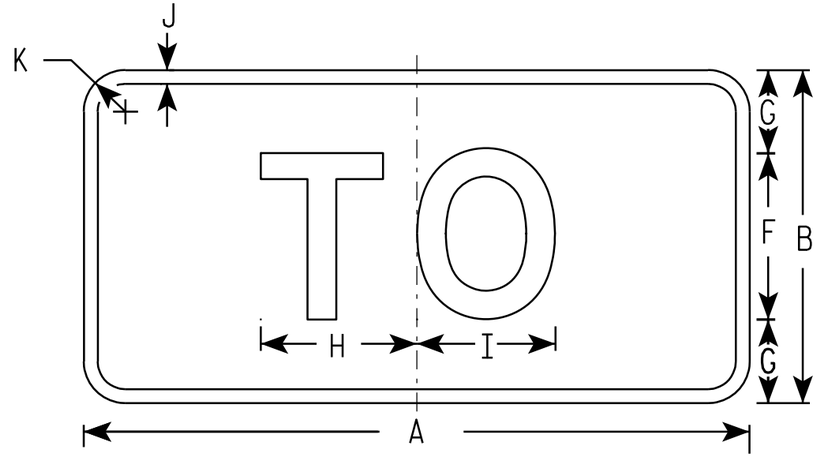
APPROVED Matthew R Rauch for State Traffic Engineer

DATE 11/10/10 PLATE NO. M3-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 215	E



M4-5
MK4-5
MM4-5



MB4-5
MG4-5
MN4-5

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White - Type H Reflective (Detour or temporary Signs - Reflective)
   Message - Black
   MB4-5 Background - Blue
   Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG4-5 Background - Green
   Message - White - Type H Reflective
   MK4-5 Background - Green
   Message - White - Type H Reflective
   MM4-5 Background - White - Type H Reflective
   Message - Green
   MN4-5 Background - Brown
   Message - White - Type H Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	5 3/8	5 1/4	1/2	1 1/2																2.00
3	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
4	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
5	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5

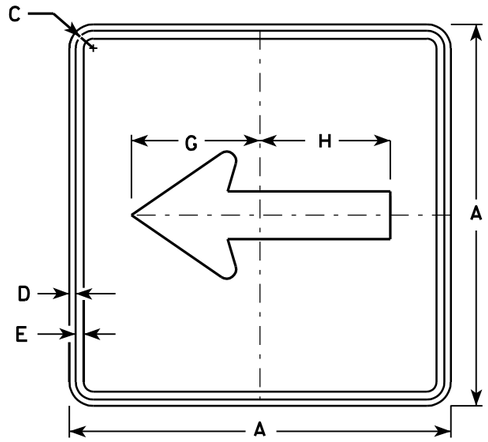
STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

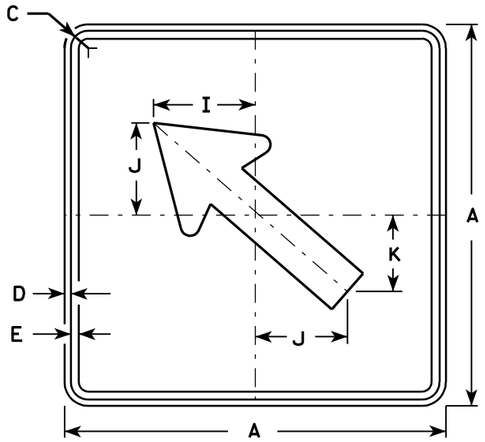
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-5.6

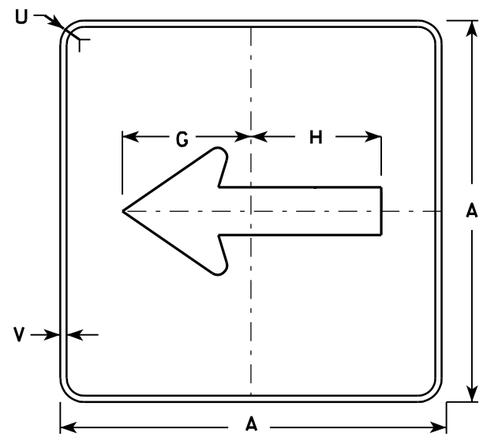
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 216 | E



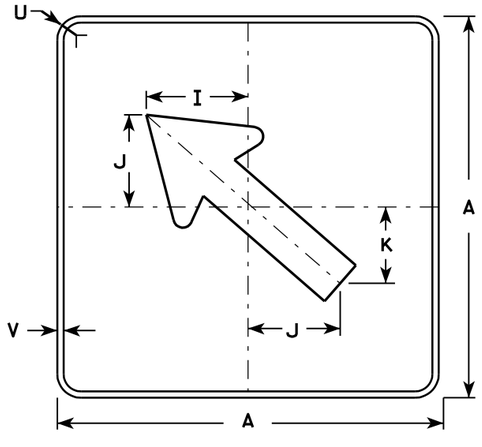
M6-1
MK6-1
MM6-1
MO6-1
MR6-1



M6-2
MK6-2
MM6-2
MO6-2
MR6-2



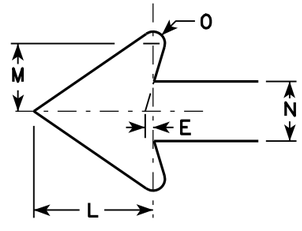
MB6-1
MG6-1
MN6-1



MB6-2
MG6-2
MN6-2

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White - Type H Reflective (Detour or temporary Signs - Reflective) Message - Black
   MB6-1 and MB6-2 Background - Blue Message - White - Type H Reflective (Detour or temporary Signs - Reflective)
   MG6-1 and MG6-2 Background - Green Message - White - Type H Reflective
   MK6-1 and MK6-2 Background - Green Message - White - Type H Reflective
   MM6-1 and MM6-2 Background - White - Type H Reflective Message - Green
   MN6-1 and MN6-2 Background - Brown Message - White - Type H Reflective
   MO6-1 and MO6-2 Background - Orange - Reflective Message - Black
   MR6-1 and MR6-2 Background - Brown Message - Yellow - Type H Reflective



Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56

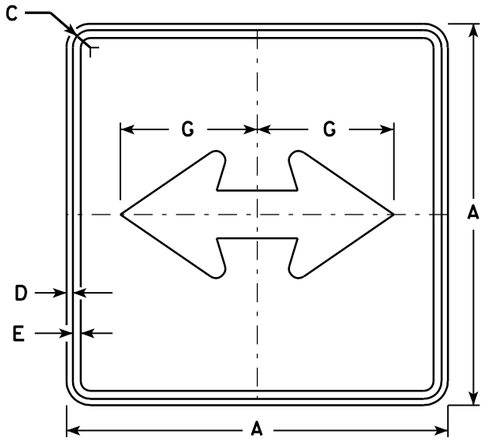
STANDARD SIGN M6-1 & M6-2 SERIES

WISCONSIN DEPT OF TRANSPORTATION

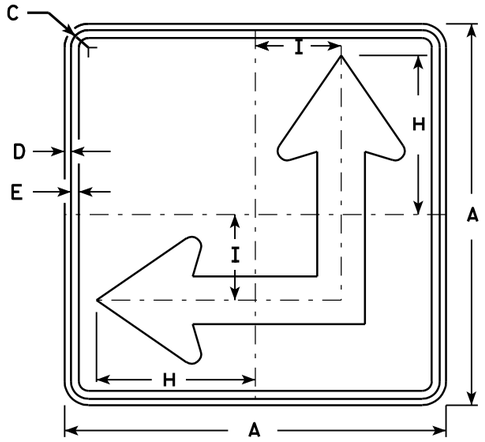
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-1.12

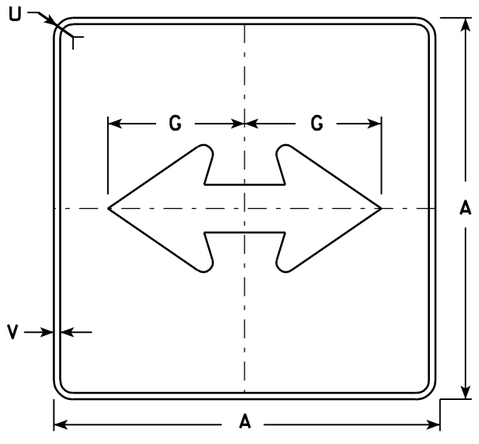
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 217	E



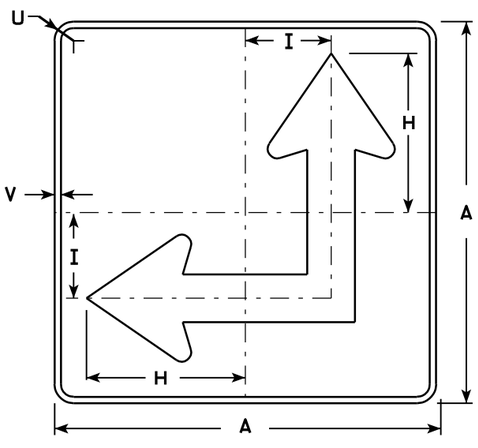
M6-4
MK6-4
MM6-4
MO6-4
MR6-4



M6-6
MK6-6
MM6-6
MO6-6
MR6-6



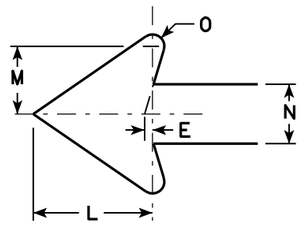
MB6-4
MG6-4
MN6-4



MB6-6
MG6-6
MN6-6

NOTES

1. Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See Note 4
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-4 and M6-6 Background - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   Message - Black
   MB6-4 and MB6-6 Background - Blue
   Message - White - Type H Reflective
   (Detour or temporary Signs - Reflective)
   MG6-4 and MG6-6 Background - Green
   Message - White - Type H Reflective
   MK6-4 and MK6-6 Background - Green
   Message - White - Type H Reflective
   MM6-4 and MM6-6 Background - White - Type H Reflective
   Message - Green
   MN6-4 and MN6-6 Background - Brown
   Message - White - Type H Reflective
   MO6-4 and MO6-6 Background - Orange - Reflective
   Message - Black
   MR6-4 and MR6-6 Background - Brown
   Message - Yellow - Type H Reflective
5. M6-6R same as M6-6L except arrow points ahead and right.



Metric equivalent for this sign is:

SIZE	
1	
2	525 mm X 525 mm
3	750 mm X 750 mm
4	750 mm X 750 mm
5	750 mm X 750 mm

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.	Area m2
1																												
2	21		1 1/8	3/8	3/8		7 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06	0.28
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25	0.56

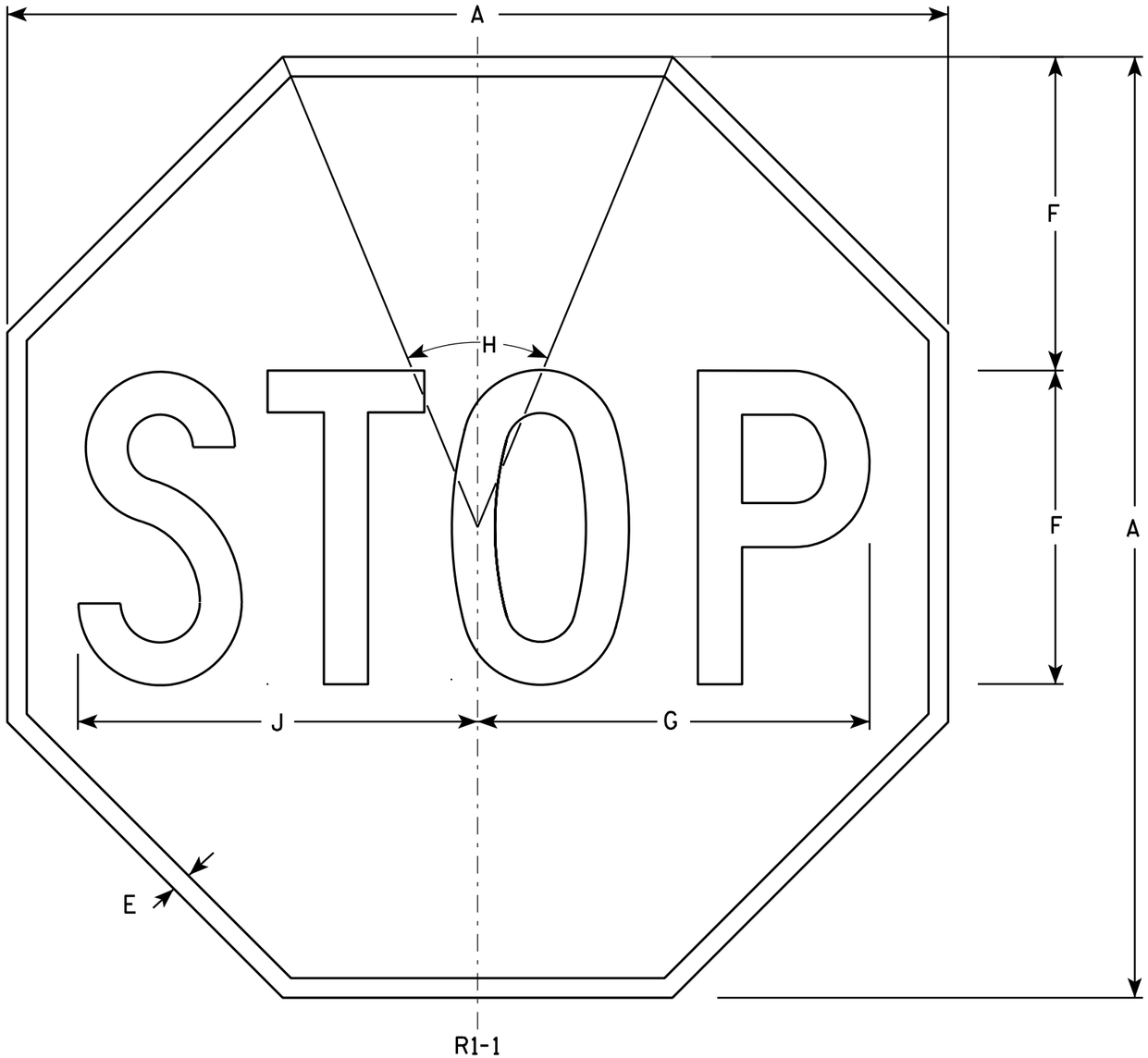
STANDARD SIGN M6-4 & M6-6 SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/16/10 PLATE NO. M6-4.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 218	E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

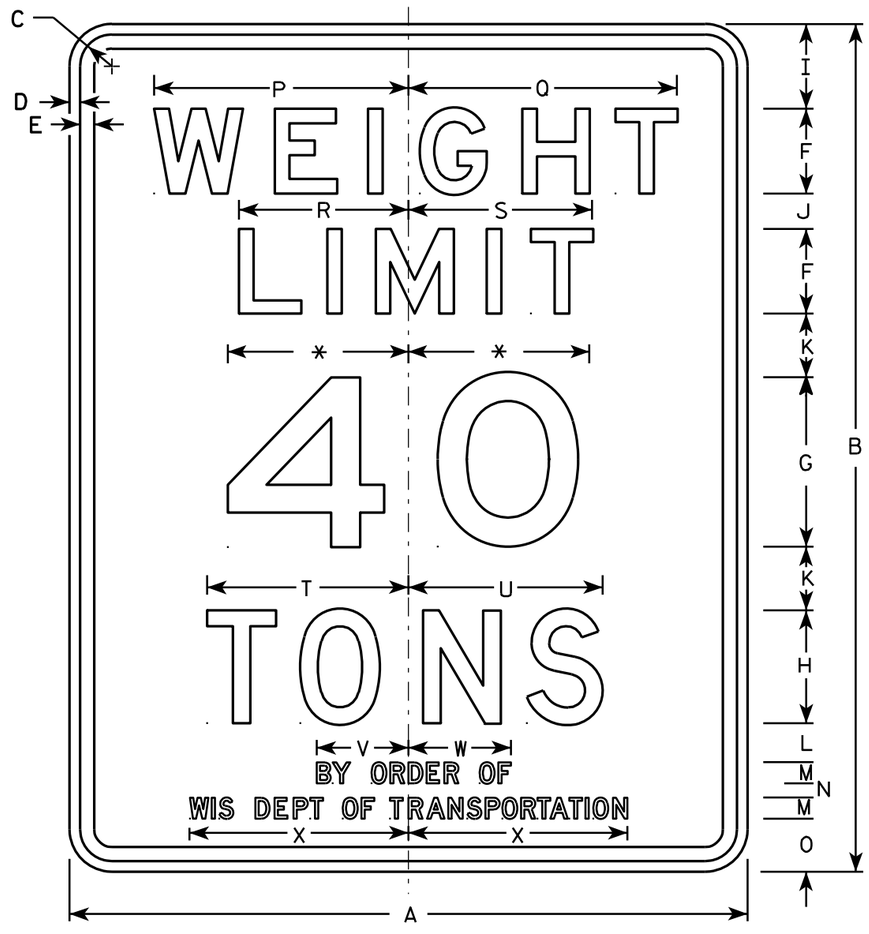
STANDARD SIGN
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 219	E



R12-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 2 & 3 are series E
   Lines 4, 5, & 6 are series D.
6. Substitute appropriate numeral and optically adjust spacing to achieve proper balance.
7. Substitute name of county or town on County Trunk and Town Highways respectively. Community name on City or Village Streets including Connecting Highways is optional.

* Varies (see note 6)

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	30	1 1/8	3/8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 7/8	9	9 1/2	6	6 1/2	7 1/8	6 7/8	3 1/4	3 5/8	7 3/4			5.0
2S	24	30	1 1/8	3/8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 7/8	9	9 1/2	6	6 1/2	7 1/8	6 7/8	3 1/4	3 5/8	7 3/4			5.0
2M	24	30	1 1/8	3/8	1/2	3	6	4	3	1 1/4	2 1/4	1 3/8	3/4	1/2	1 7/8	9	9 1/2	6	6 1/2	7 1/8	6 7/8	3 1/4	3 5/8	7 3/4			5.0
3	36	48	1 3/8	1/2	5/8	6	10	8	4 1/2	2 1/2	2 1/4	1 1/2	3/4	1/2	3	13 1/2	14 1/4	9	9 3/4	10 5/8	10 1/4	3 1/4	3 5/8	7 3/4			12.0
4	48	60	2 1/4	3/4	1	6	12	8	6	2 1/2	4 1/2	2 3/4	1 1/2	1	3 3/4	18	19	12	13	14 1/4	13 3/4	6 1/2	7 1/4	15 1/2			20.0
5																											

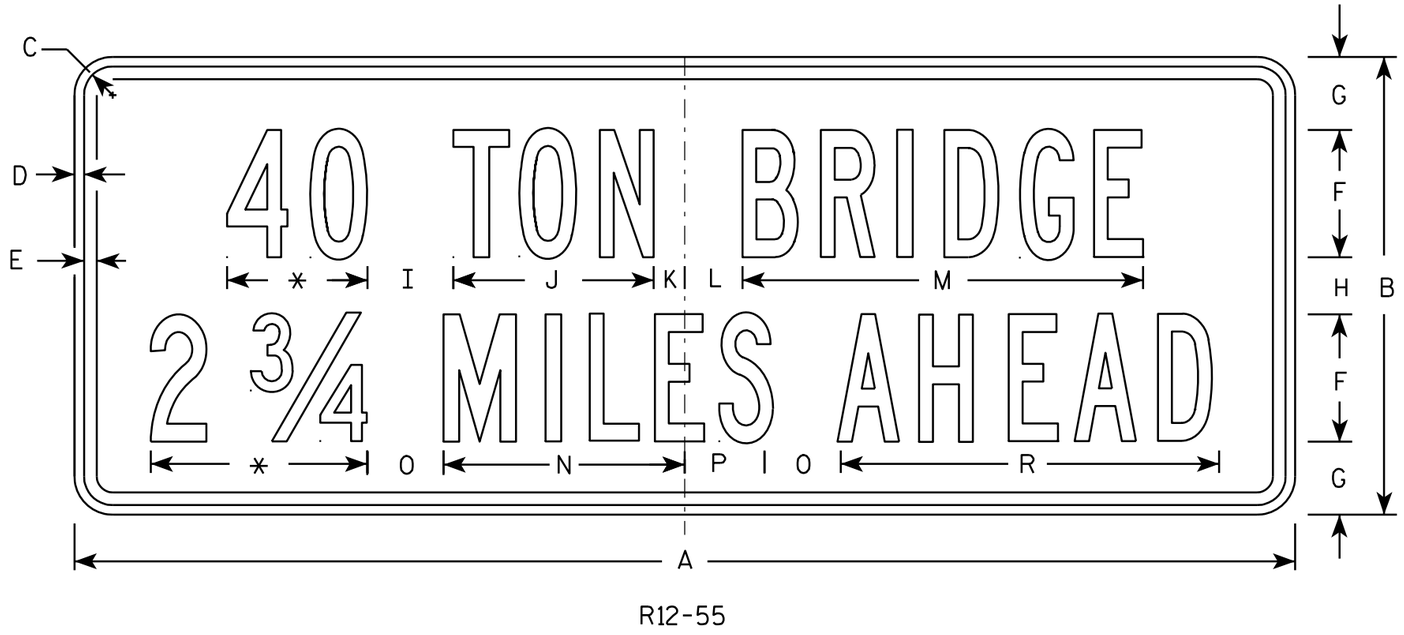
STANDARD SIGN
R12-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R12-1.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 220 | E



R12-55

* Varies

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - B for Size 2, Series D for Sizes 3 & 4
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.
6. For distances less than 5 miles, that figure should be expressed to the nearest 1/4 mile.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	18	1 1/8	3/8	1/2	5	2 7/8	2 1/4	3 3/8	7 7/8	1 1/4	2 1/4	15 3/4	9 1/2	3	3 1/8		14 7/8									6.0
2M	48	18	1 1/8	3/8	1/2	5	2 7/8	2 1/4	3 3/8	7 7/8	1 1/4	2 1/4	15 3/4	9 1/2	3	3 1/8		14 7/8									6.0
3	90	24	2 1/4	3/4	1	6	4	4	6	15 1/4	2 1/2	3 1/2	30 5/8	18 3/8	6	6 1/4		28 3/8									15.0
4	120	30	2 1/4	3/4	1	8	5 1/4	3 5/8	8	19 5/8	4	3	39 1/2	24 1/2	7	6 3/4		36 3/8									20.0
5	120	30	2 1/4	3/4	1	8	5 1/4	3 5/8	8	19 5/8	4	3	39 1/2	24 1/2	7	6 3/4		36 3/8									20.0

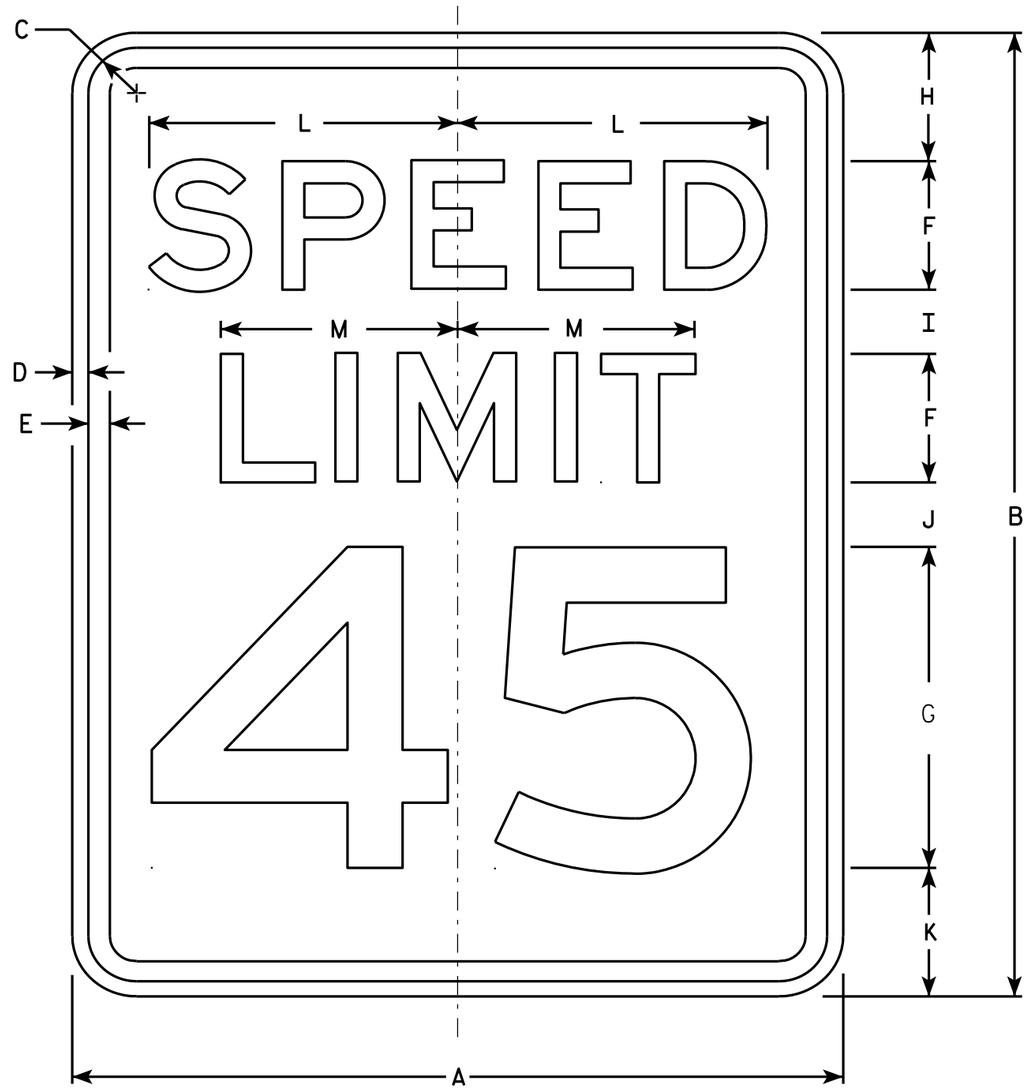
STANDARD SIGN
R12-55

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/23/11 PLATE NO. R12-55.5

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 221	E



R2-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/8	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 3/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 3/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	2 1/4	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

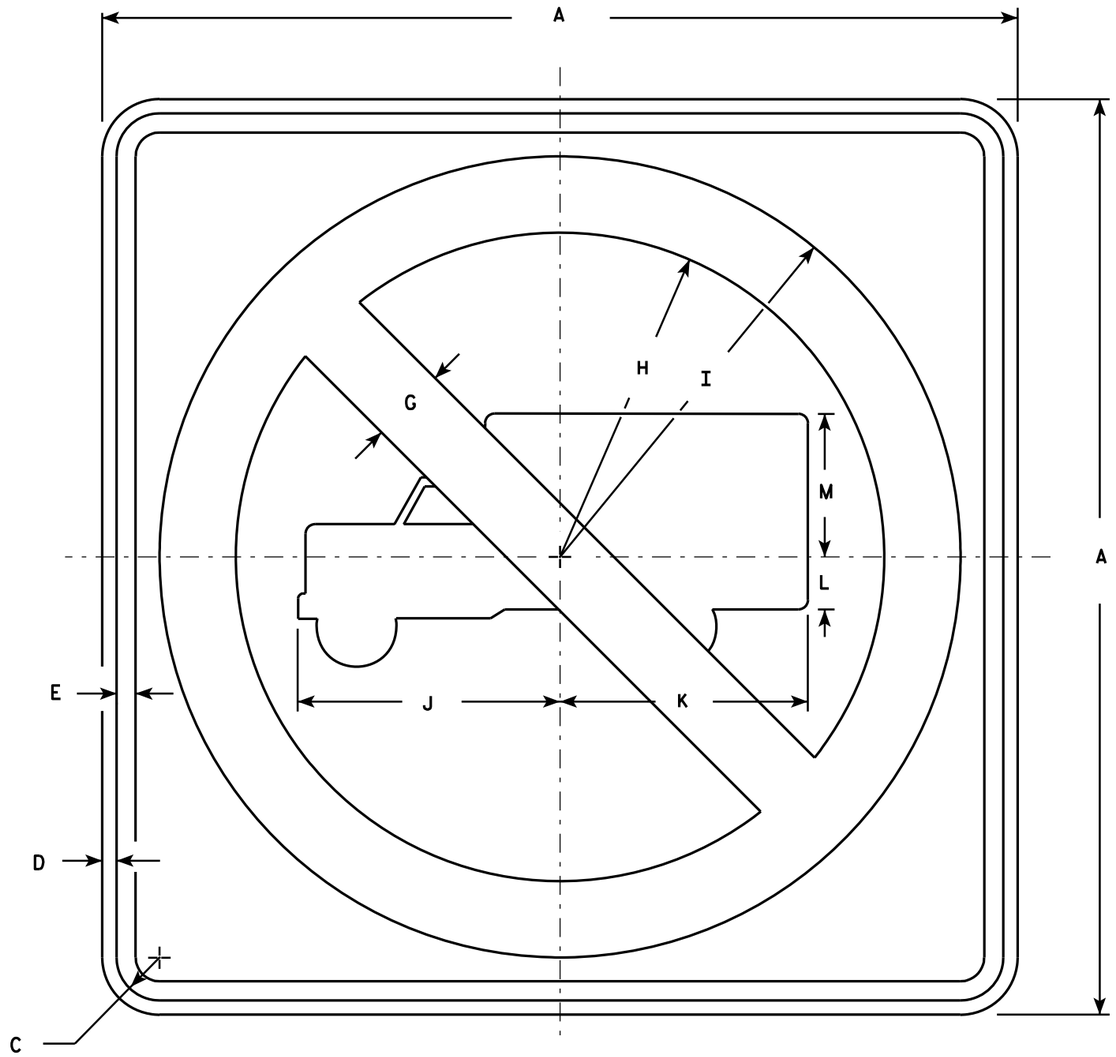
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 222 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R21.DGN PLOT DATE : 28-MAY-2010 08:32 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 4.717577:1.000000

WISDOT/CADDS SHEET 42



R5-2

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - See Note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Circle & Diagonal - Reflective red.
   Truck Symbol & Border - Non-reflective black.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24		1 1/8	3/8	1/2		2	8 1/2	10 1/2	6 7/8	6 1/2	1 3/8	3 3/4														4.0
2M	24		1 1/8	3/8	1/2		2	8 1/2	10 1/2	6 7/8	6 1/2	1 3/8	3 3/4														4.0
3	30		1 3/8	1/2	5/8		2 1/2	10 5/8	13 1/8	8 1/2	8 1/8	1 5/8	4 3/4														6.25
4	36		1 5/8	5/8	3/4		3	12 3/4	15 3/4	10 1/4	9 3/4	2	5 3/4														9.0
5	48		2 1/4	3/4	1		4	17	21	13 5/8	13	2 5/8	7 5/8														16.0

STANDARD SIGN
R5-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/29/2011 PLATE NO. R5-2.6

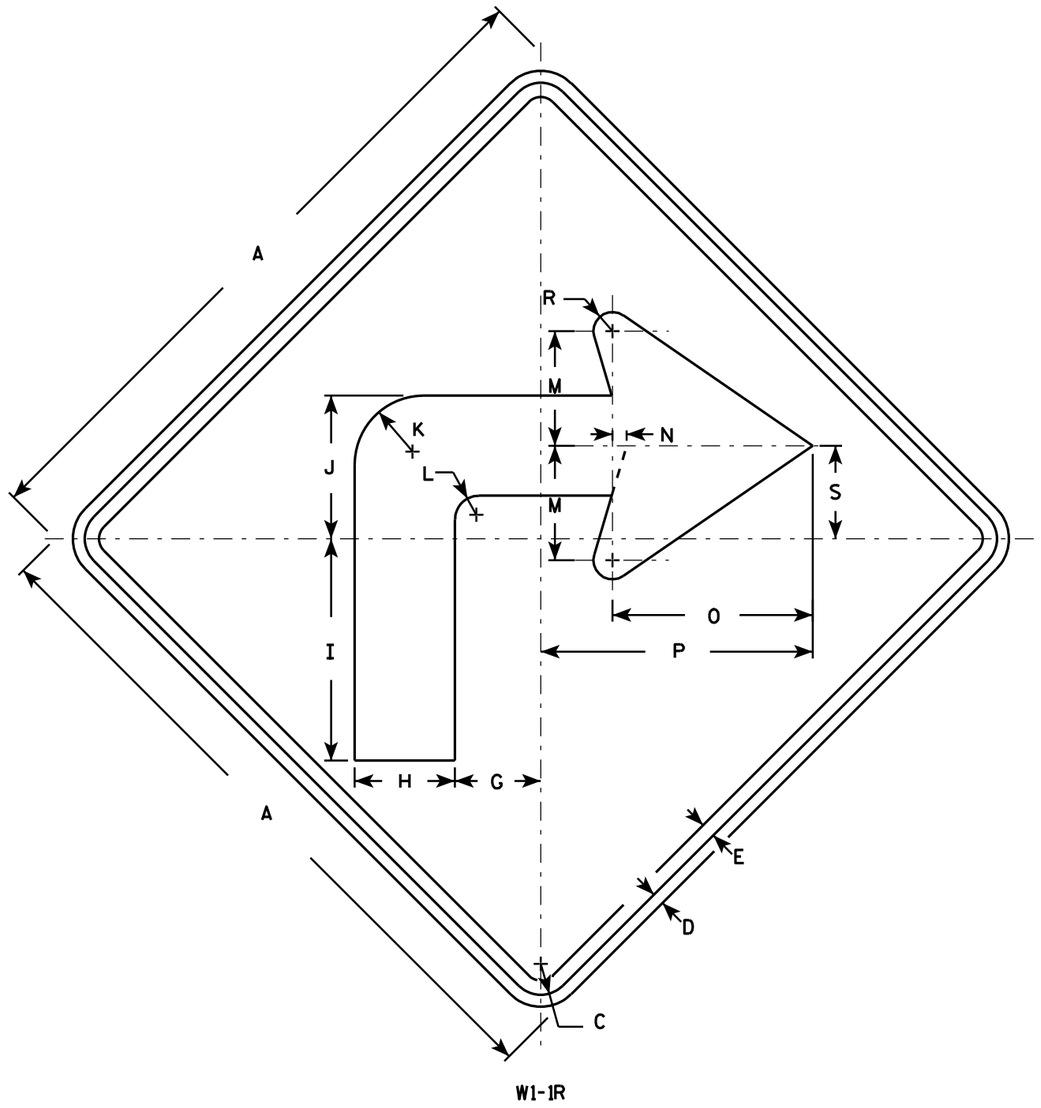
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 223	E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R52.DGN PLOT DATE : 29-MAR-2011 11:02 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.959043:1.000000

WISDOT/CADDS SHEET 42

7

7



W1-1R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W1-1L is the same as W1-1R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2		3	3 1/2	7 3/4	5	2 1/2	7/8	4	1/2	7	9 1/2		5/8	3 1/4								4.0
2S	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
2M	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
3	36		1 5/8	5/8	3/4		4 1/2	5 1/4	11 5/8	7 1/2	3 5/8	1 1/4	6	3/4	10 1/2	14 1/4		1	4 7/8								9.0
4	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0
5	48		2 1/4	3/4	1		6	7	15 1/2	10	4 7/8	1 5/8	8	1	14	19		1 1/4	6 1/2								16.0

STANDARD SIGN
W1-1

WISCONSIN DEPT OF TRANSPORTATION

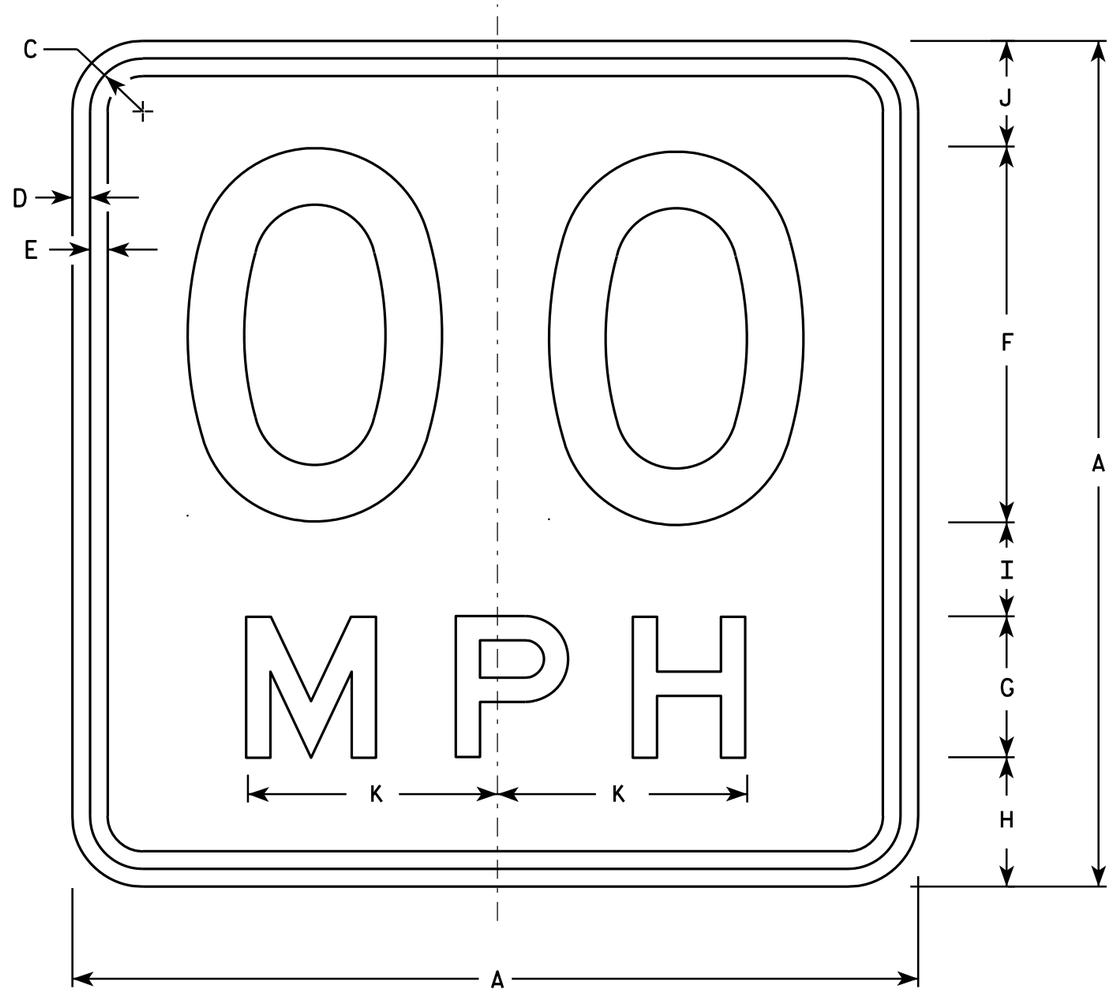
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/15/12 PLATE NO. W1-1.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 224 | E

7

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W11.DGN PLOT DATE : 15-MAY-2012 13:47 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 7.939035:1.000000
WISDOT/CADDS SHEET 42



W13-1

* For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - See Note 6
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
6. Line 1 is Series D
   Line 2 is Series E

	SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
	1	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2S	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
*	2M	18		1 1/8	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8																2.25
	3	24		1 1/8	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8																4.00
	4	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00
	5	36		1 5/8	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.00

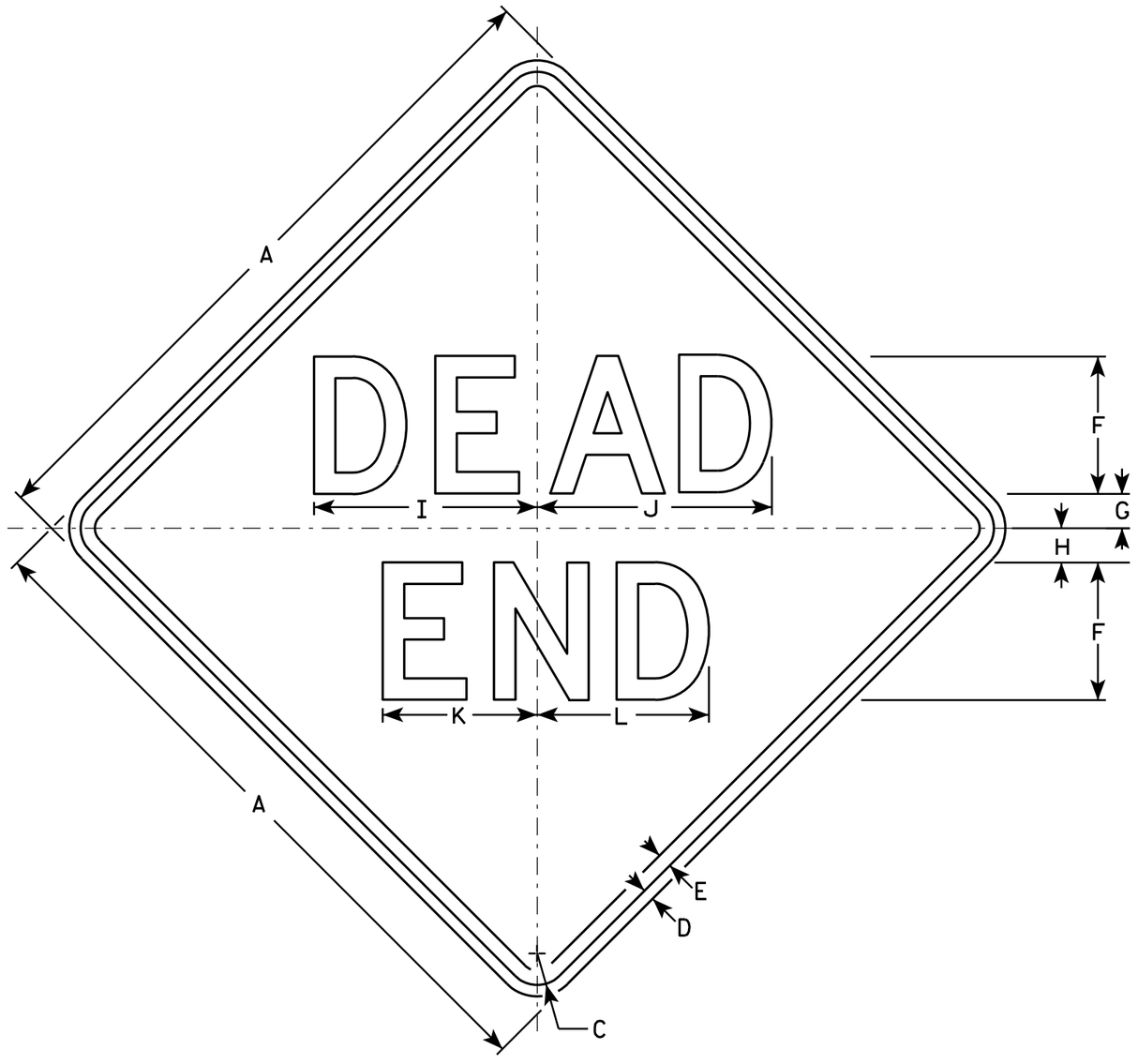
STANDARD SIGN
W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 5/31/12 PLATE NO. W13-1.16

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 225	E



W14-1

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	5	1	2	8 1/4	8 5/8	5 5/8	6 1/4															4.0
2S	30		1 3/8	1/2	5/8	6	1 1/2	2 1/2	9 3/4	10 1/4	6 3/4	7 1/2															6.25
2M	30		1 3/8	1/2	5/8	6	1 1/2	2 1/2	9 3/4	10 1/4	6 3/4	7 1/2															6.25
3	36		1 5/8	5/8	3/4	7	2	3	11 3/8	12	7 7/8	8 3/4															9.0
4																											
5																											

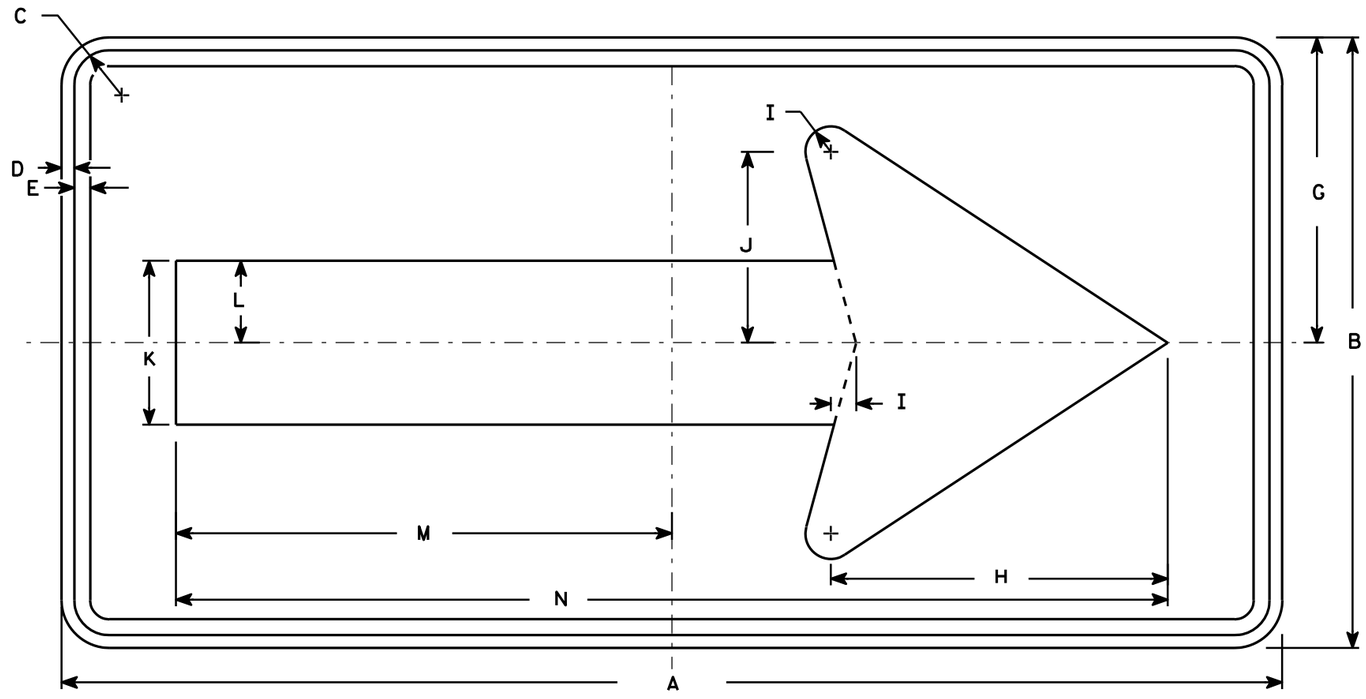
STANDARD SIGN
W14-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W14-1.7

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 226	E



W1-6

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	3/8		9	10	3/4	5 5/8	4 3/4	2 3/8	14 5/8	29 1/4													4.5
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	96	48	2 1/4	3/4	1		24	26 1/2	2	15	13	6 1/2	39	78													32.0

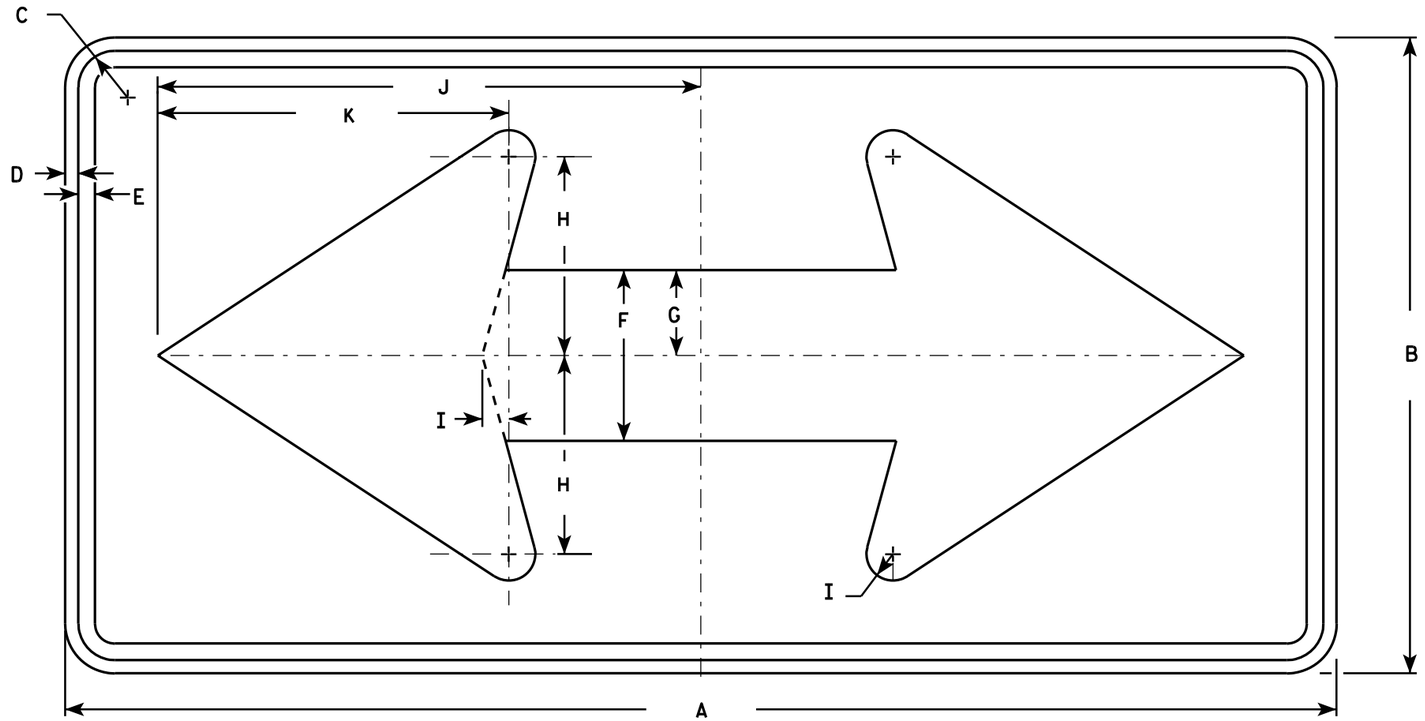
STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-6.8

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 227



W1-7

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

STANDARD SIGN
W1-7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 228 | E

W4-4P

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/8	3/8	3/8	3	2 1/4	1 1/2	8	1 1/2	3/8	10	6 1/4	2 1/4	2 1/4	6 1/4											2.0
2M	24	12	1 1/8	3/8	3/8	3	2 1/4	1 1/2	8	1 1/2	3/8	10	6 1/4	2 1/4	2 1/4	6 1/4											2.0
3	36	15	1 1/8	3/8	1/2	4	2 5/8	1 3/4	10 3/4	2 3/8	3/8	13 1/2	8 3/8	3	3 1/8	8 3/8											3.75
4	42	18	1 1/8	3/8	1/2	5	3	2	13 3/8	3 1/8	3/8	16 7/8	10 1/2	3 5/8	3 7/8	10 3/8											5.25
5																											

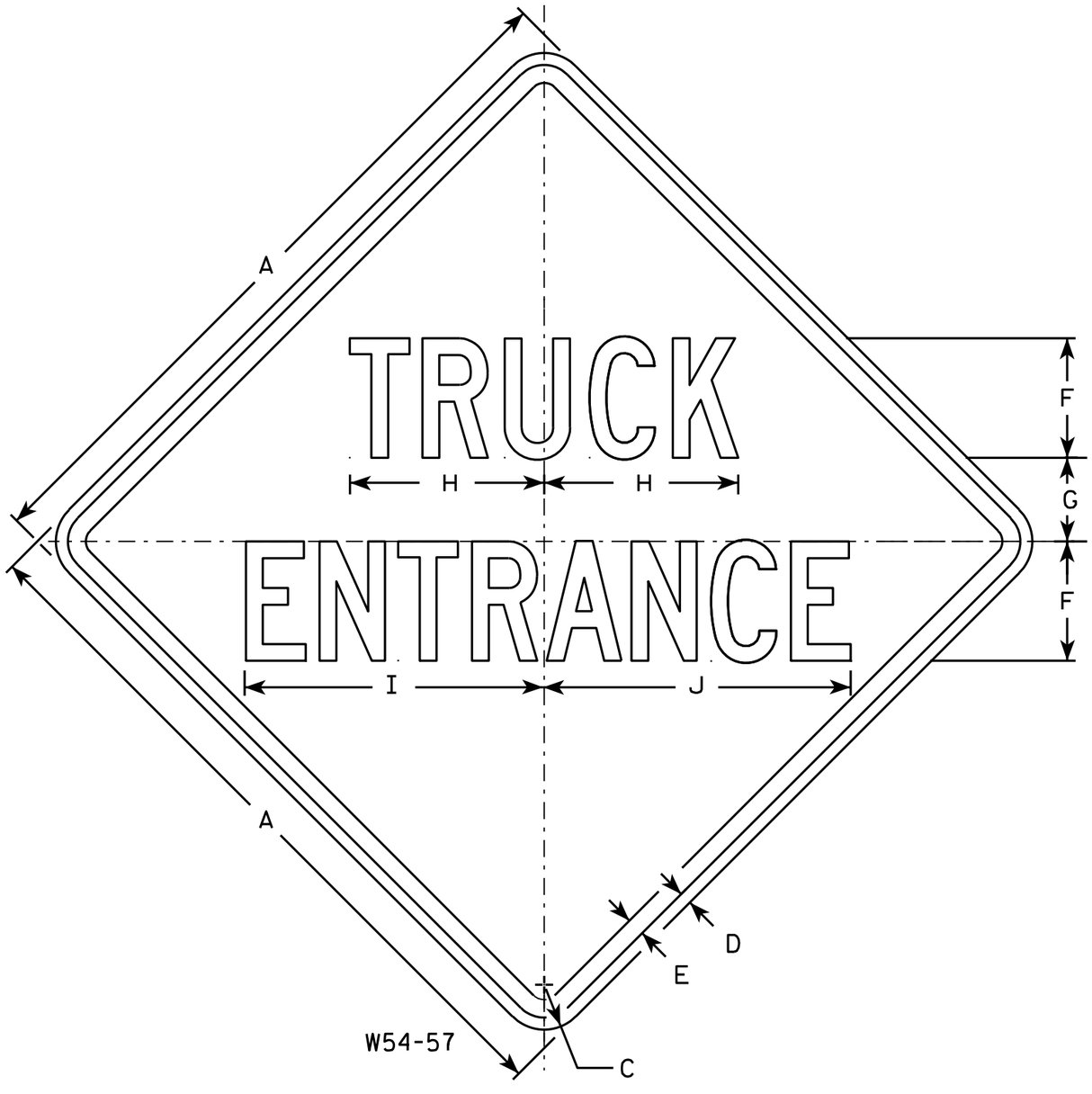
STANDARD SIGN
W4-4P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W4-4P.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 229 | E



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 3/8	1/2	5/8	5	3 1/2	8 1/8	12 1/2	12 7/8																	6.25
2M	36		1 5/8	5/8	3/4	6	4 1/4	9 5/8	15	15 3/8																	9.00
3	36		1 5/8	5/8	3/4	6	4 1/4	9 5/8	15	15 3/8																	9.00
4																											
5																											

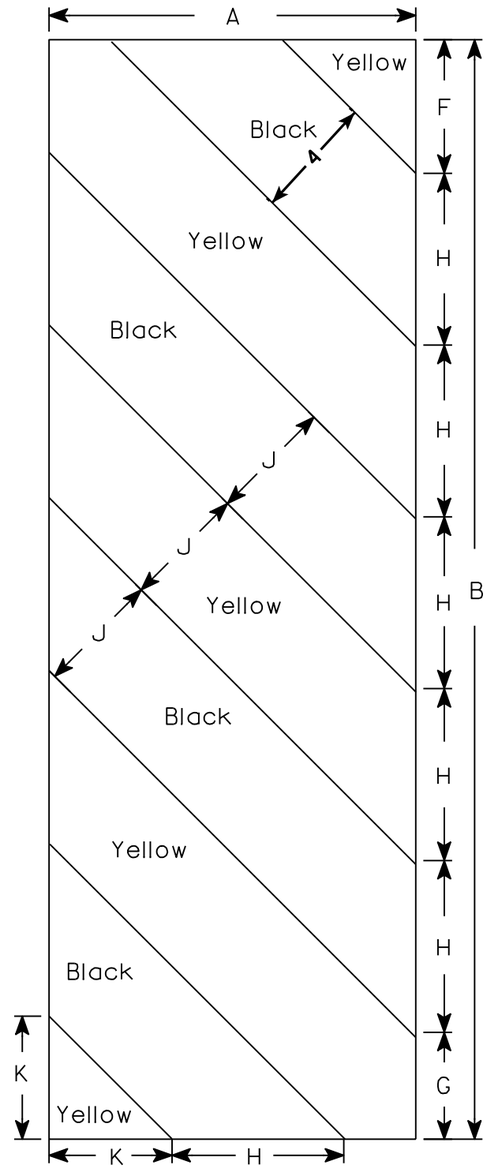
STANDARD SIGN
W54-57

WISCONSIN DEPT OF TRANSPORTATION

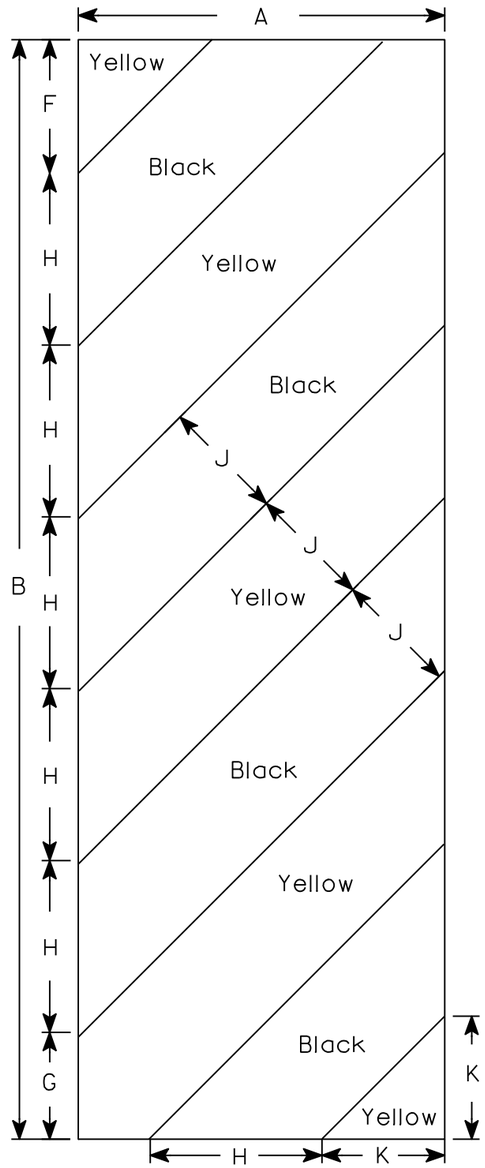
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W54-57.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 230	E



W5-52L



W5-52R

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. Alternate colors of stripes as shown.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
2M	12	36				4 3/8	3 1/2	5 5/8	45°	4	4																3.0
3	18	54				6	5 1/2	8 1/2	45°	6	6 9/16																6.75
4																											
5																											

STANDARD SIGN

W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

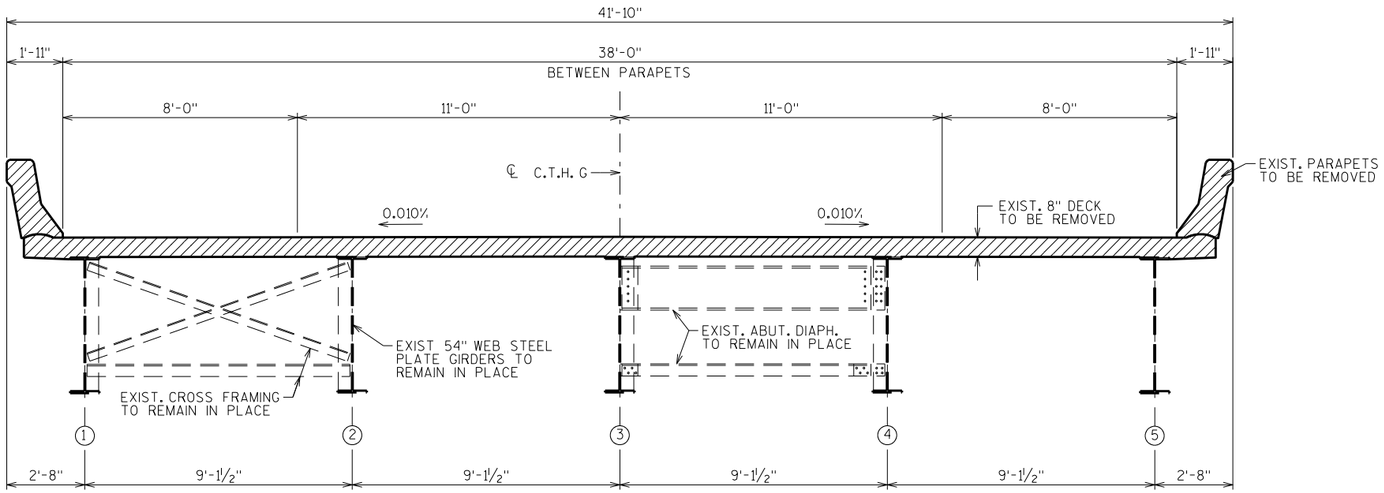
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 231	E

STATE PROJECT NUMBER

1120-09-81



CROSS SECTION THRU EXISTING ROADWAY LOOKING EAST

DESIGN DATA

LIVE LOAD:

INVENTORY RATING; HS-20
OPERATIONAL RATING; HS-33
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 250 KIPS.

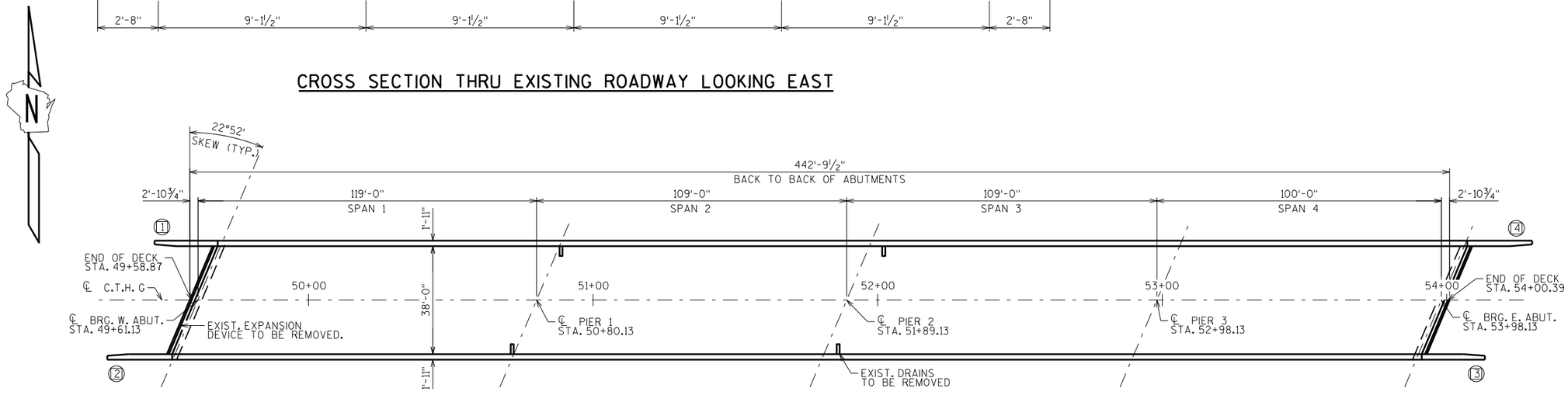
STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY SLAB — f'c = 4,000 P.S.I. ALL OTHER — f'c = 3,500 P.S.I.

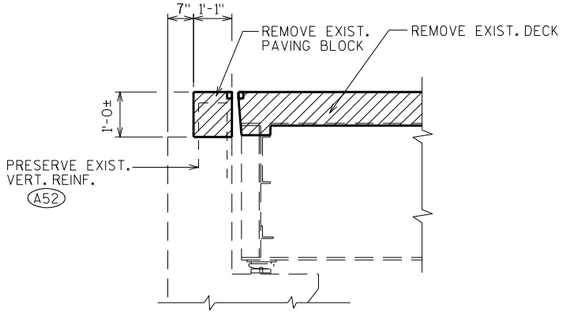
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

(A52) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

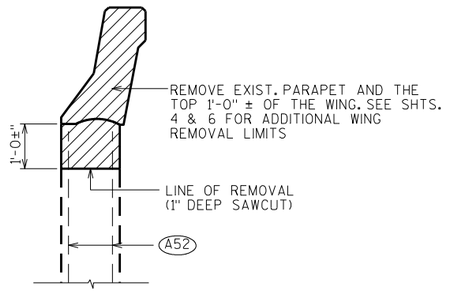


EXISTING PLAN

(1) INDICATES WING NUMBER



SECTION THRU EXIST. ABUTMENT BACKWALL



SECTION THRU EXIST. WINGS

LIST OF DRAWINGS

1. NEW DECK
2. QUANTITIES
3. WEST ABUTMENT
4. WEST ABUTMENT DETAILS
5. EAST ABUTMENT
6. EAST ABUTMENT DETAILS
7. HAUNCH DETAILS
8. SUPERSTRUCTURE CROSS SECTION
9. SUPERSTRUCTURE
10. SUPERSTRUCTURE DETAILS
11. EXPANSION DEVICE
12. COVER PLATE DETAILS
13. RAIL POST SPACING
14. SLOPED FACE PARAPET LF
15. ORNAMENTAL PROTECTIVE SCREENING
16. AESTHETIC DETAILS

STRUCTURE DESIGN CONTACT:
DANIELLE DE TENNIS (608) 266-8689
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By WISDOT
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 4/17/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-70-67

C.T.H. G OVER USH 41 & W.C.L. R.R.

COUNTY		~~TOWN~~/CITY/~~VILLAGE~~	
WINNEBAGO		NEENAH	
DESIGN SPEC.	REHABILITATION		N/A
DESIGNED BY	DFD	DESIGN CK'D.	BLB
DRAWN BY	DFD	PLANS CK'D.	BLB

NEW DECK

SHEET 1 OF 16

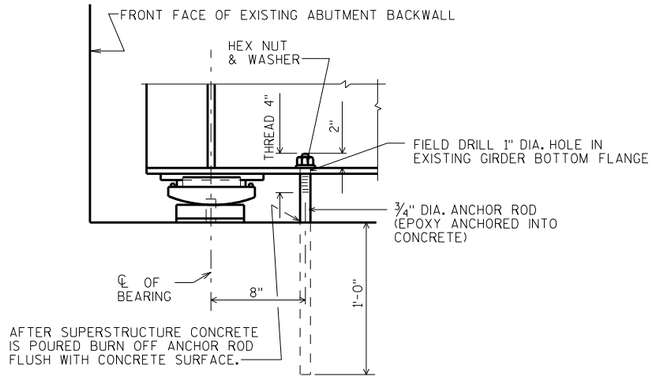
232

I.D. 1120-09-00F

DATE: APRIL 2013

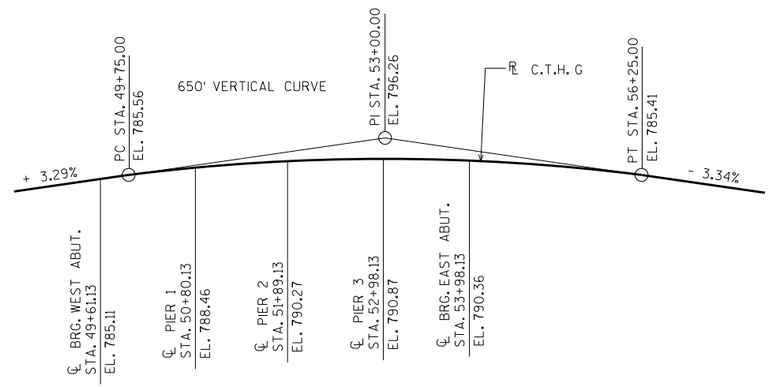
SCALE = 20

STATE PROJECT NUMBER
1120-09-81



TEMPORARY HOLD DOWN DEVICE

PLACE ONE PER GIRDER AT ABUTMENT WHERE SLAB POUR TERMINATES. LOCATE 4" (NORMAL) OFF ℄ OF GIRDER. ROD, NUT, WASHER & DRILLED HOLE IN GIRDER FLG. TO BE PAID FOR AS "MASONRY ANCHORS TYPE S 3/4 -INCH", MINIMUM PULLOUT CAPACITY OF 26 KIPS.



PROFILE GRADE LINE C.T.H. G

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	PIER 1	PIER 2	PIER 3	1120-09-78 TOTALS	1120-09-81 TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 49+61.13	LS	———	———	———	———	———	———	———	1
203.0225.S	DEBRIS CONTAINMENT STRUCTURE B-70-67	LS	———	———	———	———	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-70-67	LS	———	———	———	———	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	———	6	6	———	———	———	———	12
502.3100	EXPANSION DEVICE B-70-67	LS	———	———	———	———	———	———	———	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	2,230	7	7	———	———	———	———	2244
502.5005	MASONRY ANCHORS TYPE L NO. 5 BARS	EACH	———	174	174	———	———	———	———	348
502.6110	MASONRY ANCHORS TYPE S 3/4-INCH	EACH	———	———	5	———	———	———	———	5
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	131,935	2,180	2,170	———	———	———	———	136,285
509.1500	CONCRETE SURFACE REPAIR	SF	———	40	30	———	———	———	———	70
513.4090	RAILING TUBULAR SCREENING B-70-67	LS	———	———	———	———	———	———	———	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	15	15	———	———	———	———	30
517.0900.S	PREPARATION AND COATING OF TOP FLANGES B-70-67	LS	———	———	———	———	———	———	1	———
517.1010.S	CONCRETE STAINING B-70-67	SF	4,285	745	745	1,190	1,190	1,190	———	9,345
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE B-70-67	LS	———	———	———	———	———	———	1	———
517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-70-67	LS	———	———	———	———	———	———	1	———
517.6001.S	PORTABLE DECONTAMINATION FACILITY	LS	———	———	———	———	———	———	1	———
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	———	2	2	———	———	———	———	4
SPV.0035	HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES	CY	597	11	11	———	———	———	———	619
SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	———	5	5	5	5	5	25	———
	NON-BID ITEMS									
	FILLER	SIZE	———	———	———	———	———	———	1/2" & 3/4"	1/2" & 3/4"
			———	———	———	———	———	———		

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE TOP OF DECK SURFACE AND THE FRONT FACE AND THE TOP OF THE PARAPET, INCLUDING PARAPETS ON ABUTMENT WINGS.

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF ALL ABUTMENTS AND PIERS BELOW EXPANSION DEVICES. INCIDENTAL TO BID ITEM "HPC MASONRY STRUCTURES".

THE COLOR OF THE STEEL GIRDER FINISH TOP COAT SHALL BE NEENAH BROWN, (3 GALLONS FEDERAL STANDARD COLOR NO. 20400 TO 2 GALLONS SWHC 103 CEDARWOOD TO MATCH B-70-285) OR SIMILAR COLOR APPROVED BY THE ENGINEER.

DIMENSIONS SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLANS.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1975.

REMOVAL LINES ON THE OUTSIDE FACE OF WING WALLS SHALL BE DEFINED BY A 1-INCH SAW CUT.

PROVIDE TEMPORARY HOLD DOWN DEVICE AT ABUTMENT WHERE SLAB POUR TERMINATES. USE CONCRETE MASONRY ANCHORS TYPE 'S'.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

QUANTITIES

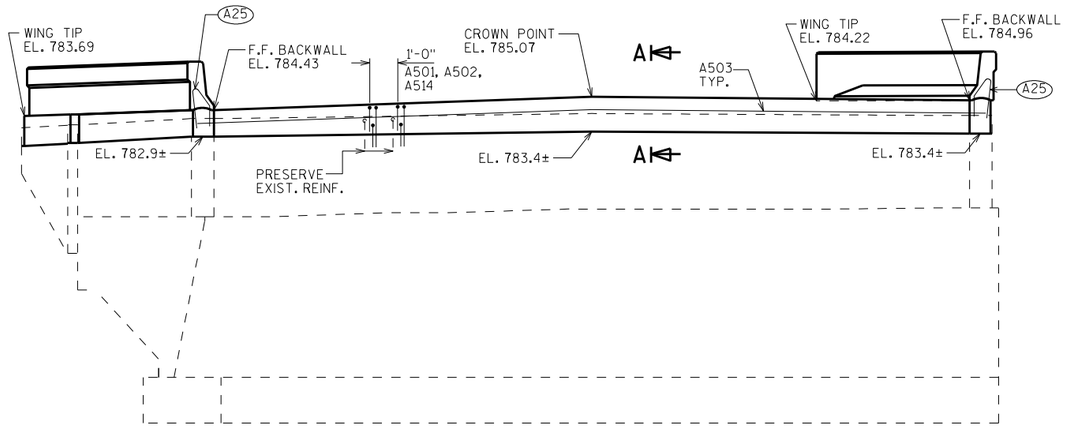
SHEET 2

233

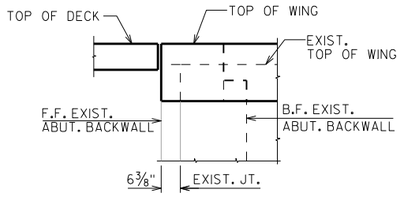
SCALE = 12

STATE PROJECT NUMBER

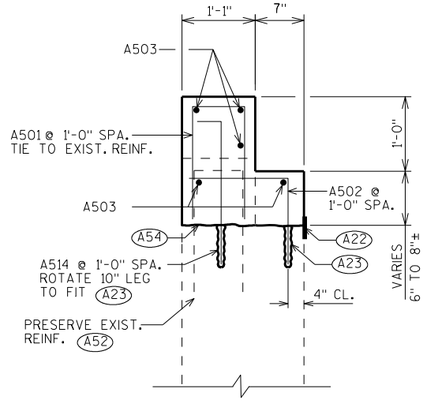
1120-09-81



ELEVATION
LOOKING WEST



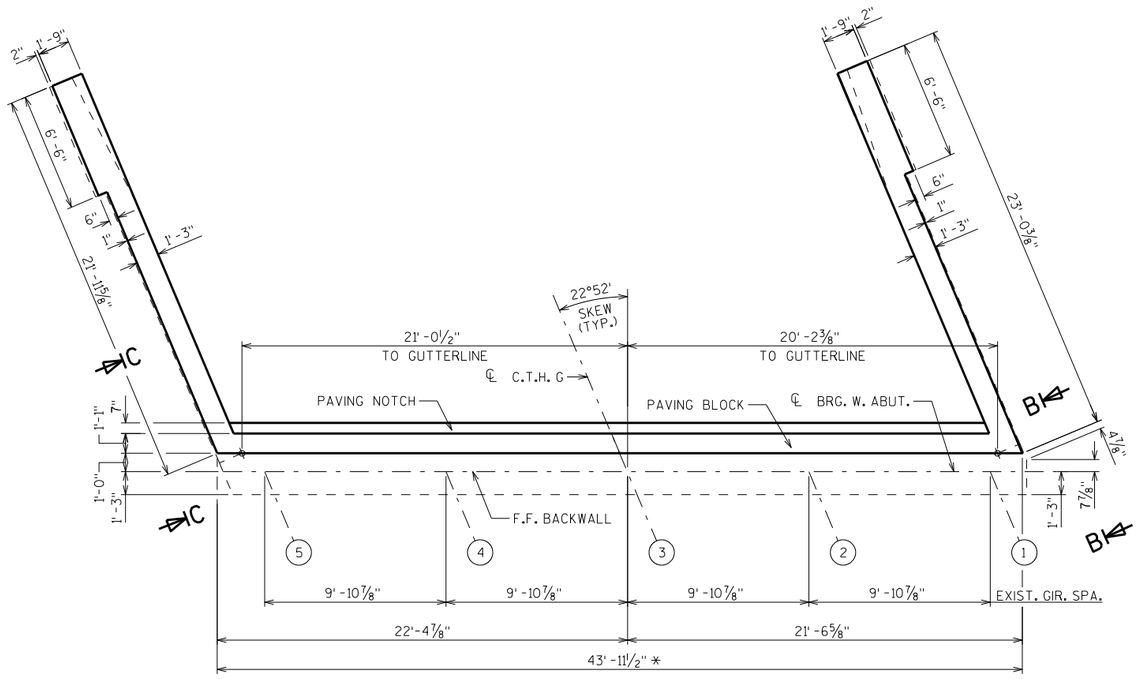
SECTION B-B



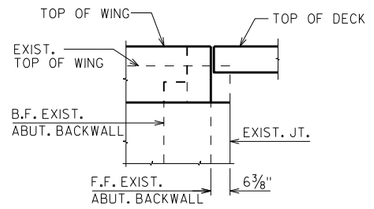
SECTION A-A

WING 2

WING 1



PLAN
* MEASURED ALONG F.F. BACKWALL



SECTION C-C

(A22) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A23) MASONRY ANCHORS TYPE L NO. 5 BARS HAVING A MIN. PULLOUT CAPACITY OF 19 KIPS. EMBED 1'-6" MIN. INTO EXIST. CONCRETE. EPOXY ANCHORED.

(A25) FOR PPT. BARS & DIMENSIONS SEE PARAPET SHT. 13

(A52) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

(A54) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MIN. ALL AREAS OF NEW TO EXIST. CONCRETE CONTACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

WEST ABUTMENT

SHEET 3

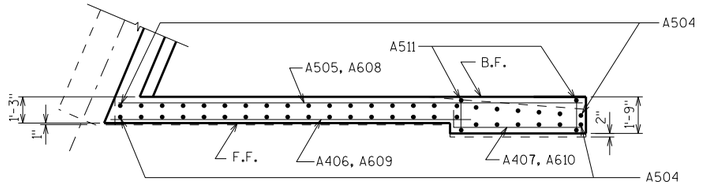
234

SCALE = 4

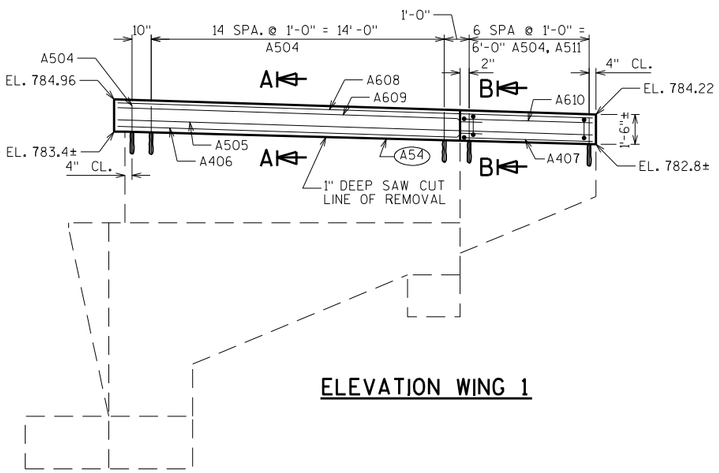
8

8

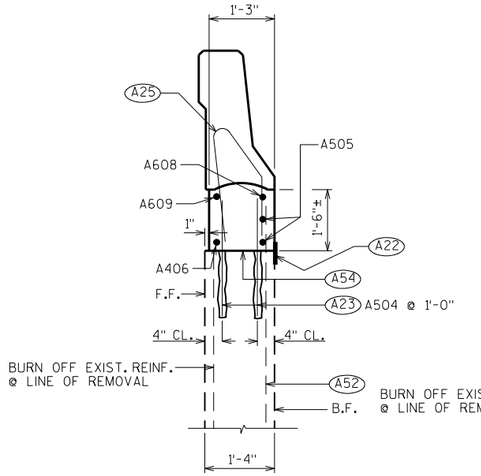
STATE PROJECT NUMBER
1120-09-81



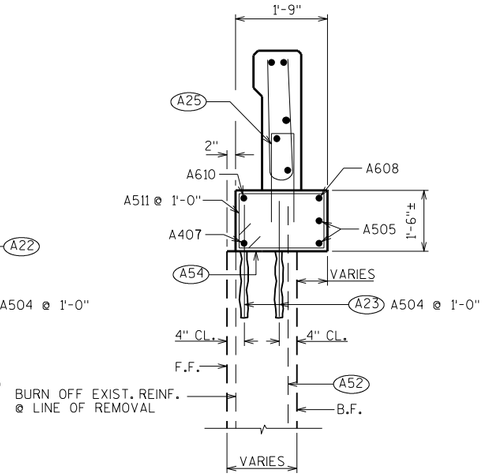
PLAN WING 1



ELEVATION WING 1



SECTION A-A

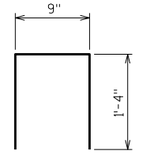


SECTION B-B

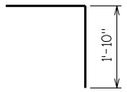
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501	X	42	3'-2"	X		PAVING BLOCK-VERT.
A502	X	42	2'-10"	X		PAVING BLOCK-VERT.
A503	X	5	43'-7"			PAVING BLOCK-HORIZ.
A504	X	90	2'-9"			WINGS 1 & 2-VERT.-MASONRY ANCHORS
A505	X	4	22'-1"			WINGS 1 & 2-HORIZ.
A406	X	1	17'-4"			WING 1-HORIZ.
A407	X	2	7'-0"	X		WINGS 1 & 2-HORIZ.
A608	X	2	22'-1"			WINGS 1 & 2-HORIZ.-TOP
A609	X	1	17'-4"			WING 1-HORIZ.-TOP
A610	X	2	7'-0"	X		WINGS 1 & 2-HORIZ.-TOP
A511	X	14	5'-7"	X		WINGS 1 & 2-VERT.
A412	X	1	16'-4"			WING 2-HORIZ.
A613	X	1	16'-4"			WING 2-HORIZ.-TOP
A514	X	42	1'-10"	X		PAVING BLOCK-VERT.



A501



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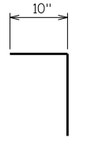
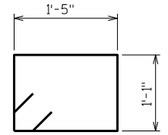


A514

A407,A610



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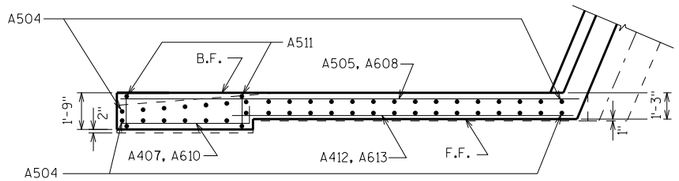
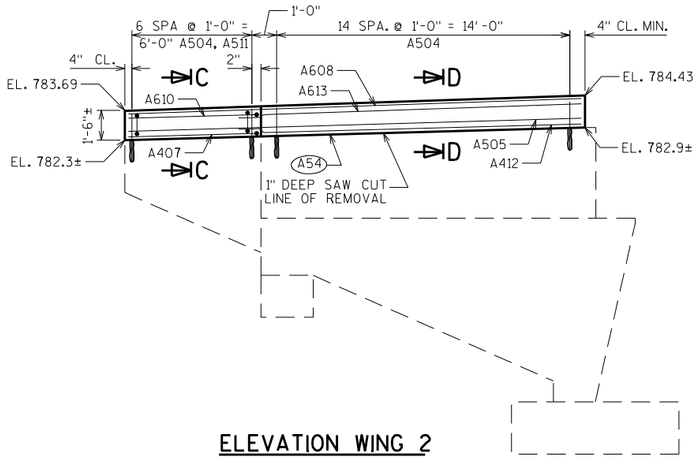
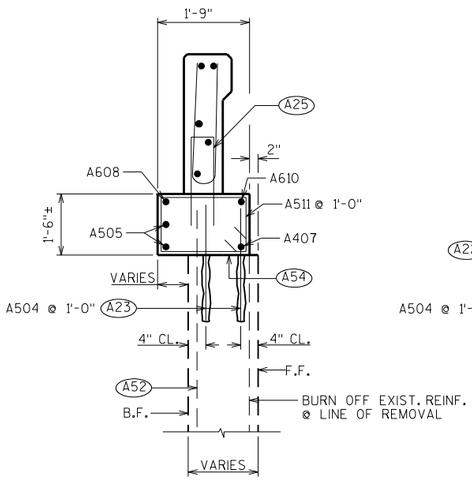


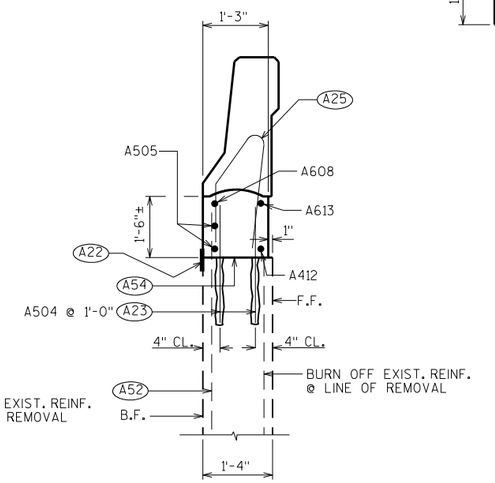
PLAN WING 2



ELEVATION WING 2



SECTION C-C



SECTION D-D

(A22) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A23) MASONRY ANCHORS TYPE L NO. 5 BARS, HAVING A MIN. PULLOUT CAPACITY OF 19 KIPS. EMBED 1'-6" INTO EXIST. CONCRETE. EPOXY ANCHORED.

(A25) FOR PPT. BARS & DIMENSIONS SEE PARAPET SHT. 13

(A52) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

(A54) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MIN. ALL AREAS OF NEW TO EXIST. CONCRETE CONTACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

WEST ABUTMENT DETAILS

SHEET 4

235

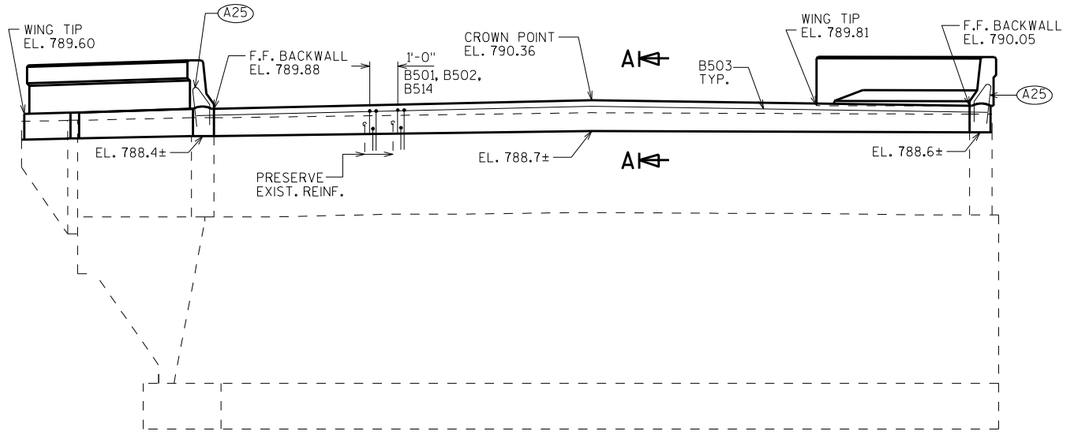
SCALE = 3.5

8

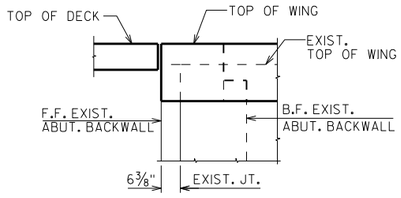
8

STATE PROJECT NUMBER

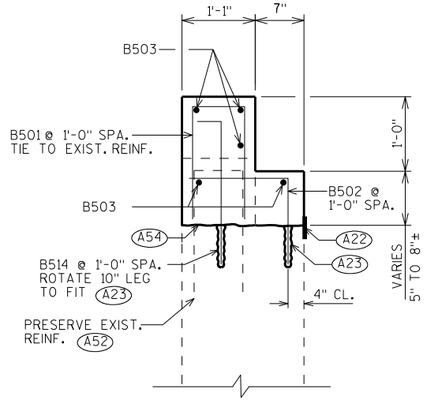
1120-09-81



ELEVATION
LOOKING EAST



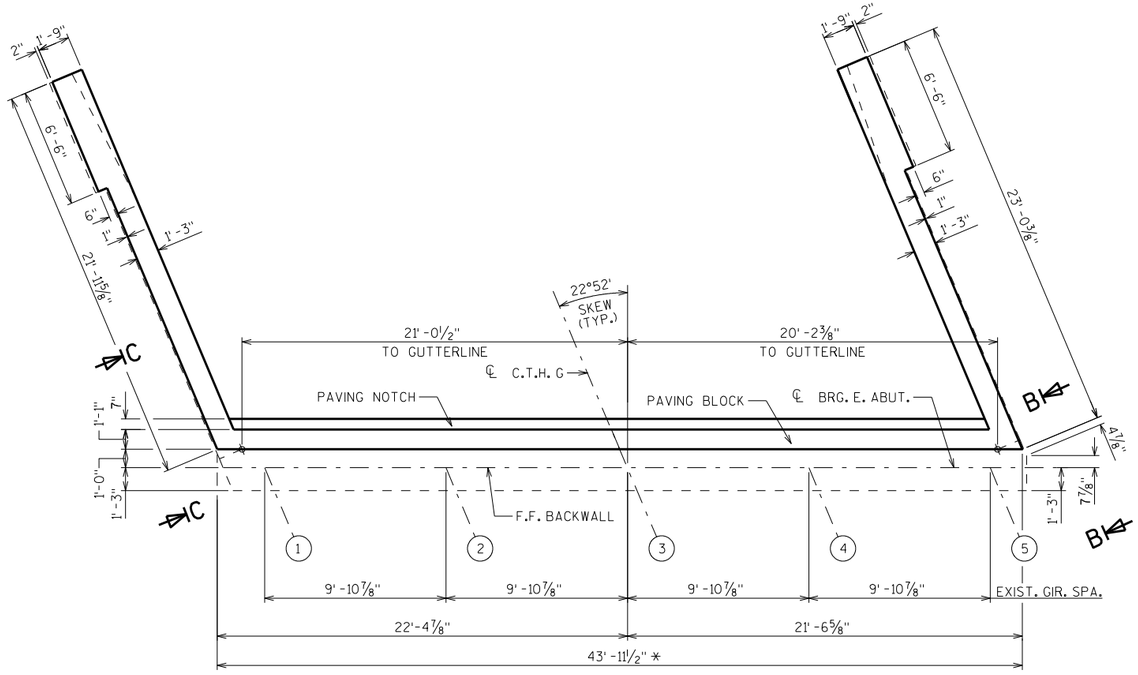
SECTION B-B



SECTION A-A

WING 4

WING 3



PLAN
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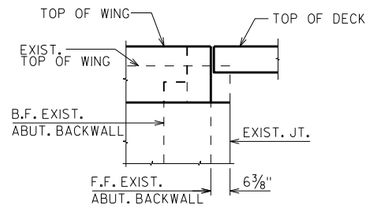


SECTION C-C

(A22) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A23) MASONRY ANCHORS TYPE L NO. 5 BARS HAVING A MIN. PULLOUT CAPACITY OF 19 KIPS. EMBED 1'-6" MIN. INTO EXIST. CONCRETE. EPOXY ANCHORED.

(A25) FOR PPT. BARS & DIMENSIONS SEE PARAPET SHT. 13

(A52) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

(A54) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MIN. ALL AREAS OF NEW TO EXIST. CONCRETE CONTACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

EAST ABUTMENT

SHEET 5

236

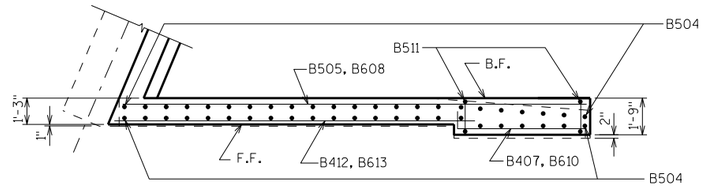
SCALE = 4

8

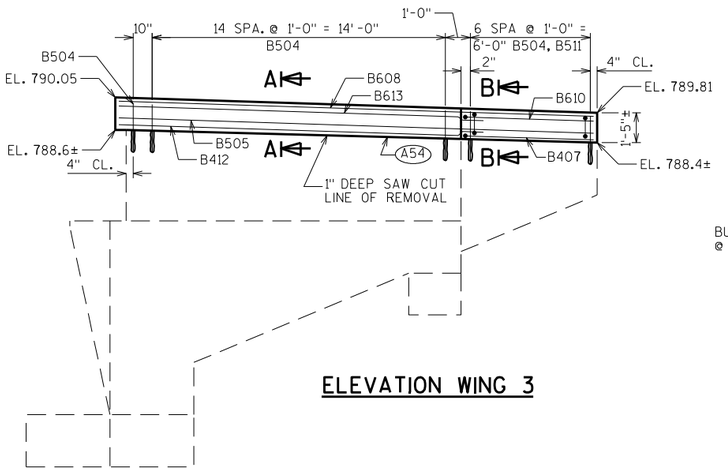
8

STATE PROJECT NUMBER

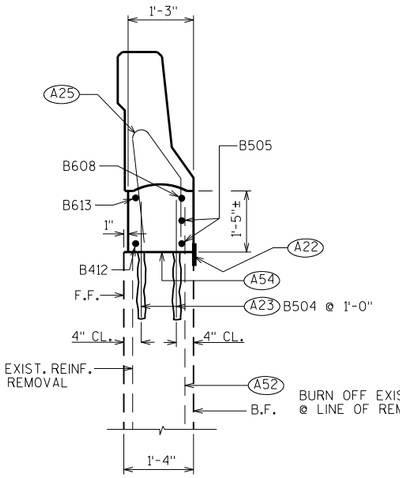
1120-09-81



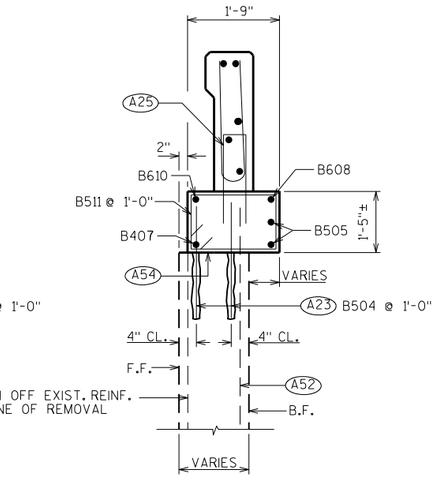
PLAN WING 3



ELEVATION WING 3



SECTION A-A

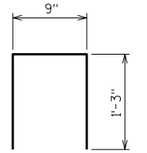


SECTION B-B

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501	X	42	3'-0"	X		PAVING BLOCK-VERT.
B502	X	42	2'-10"	X		PAVING BLOCK-VERT.
B503	X	5	43'-7"			PAVING BLOCK-HORIZ.
B504	X	90	2'-9"			WINGS 3 & 4-VERT.-MASONRY ANCHORS
B505	X	4	22'-1"			WINGS 3 & 4-HORIZ.
B406	X	1	17'-4"			WING 3-HORIZ.
B407	X	2	7'-0"	X		WINGS 3 & 4-HORIZ.
B608	X	2	22'-1"			WINGS 3 & 4-HORIZ.-TOP
B609	X	1	17'-4"			WING 3-HORIZ.-TOP
B610	X	2	7'-0"	X		WINGS 3 & 4-HORIZ.-TOP
B511	X	14	5'-7"	X		WINGS 3 & 4-VERT.
B412	X	1	16'-4"			WING 4-HORIZ.
B613	X	1	16'-4"			WING 4-HORIZ.-TOP
B514	X	42	1'-9"	X		PAVING BLOCK-VERT.



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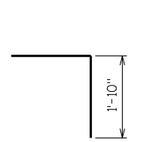

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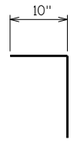

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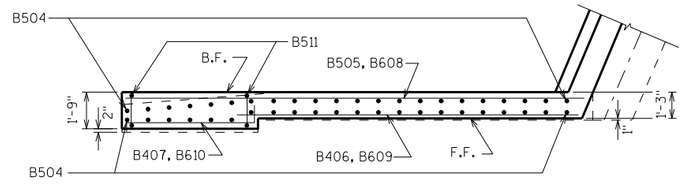
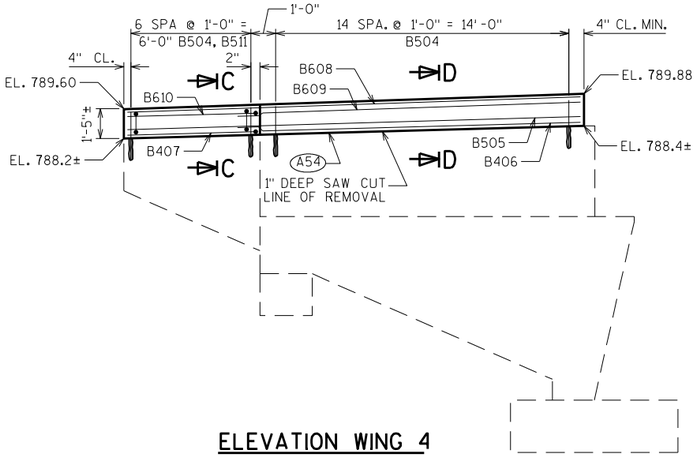
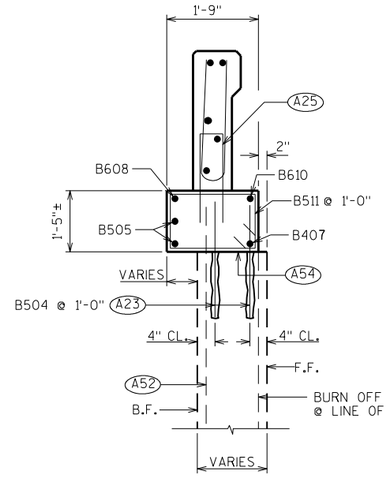


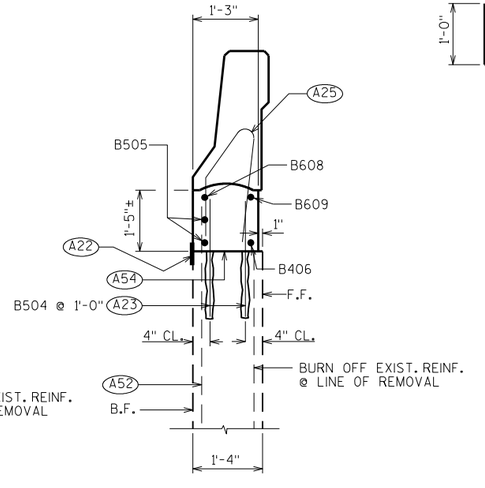
PLAN WING 4



ELEVATION WING 4

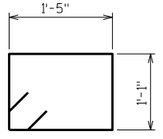


SECTION C-C



SECTION D-D

B407,B610



B511

(A22) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A23) MASONRY ANCHORS TYPE L NO. 5 BARS, HAVING A MIN. PULLOUT CAPACITY OF 19 KIPS. EMBED 1'-6" INTO EXIST. CONCRETE. EPOXY ANCHORED.

(A25) FOR PPT. BARS & DIMENSION SEE PARAPET SHT. 13

(A52) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

(A54) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MIN. ALL AREAS OF NEW TO EXIST. CONCRETE CONTACT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

EAST ABUTMENT DETAILS

SHEET 6

237

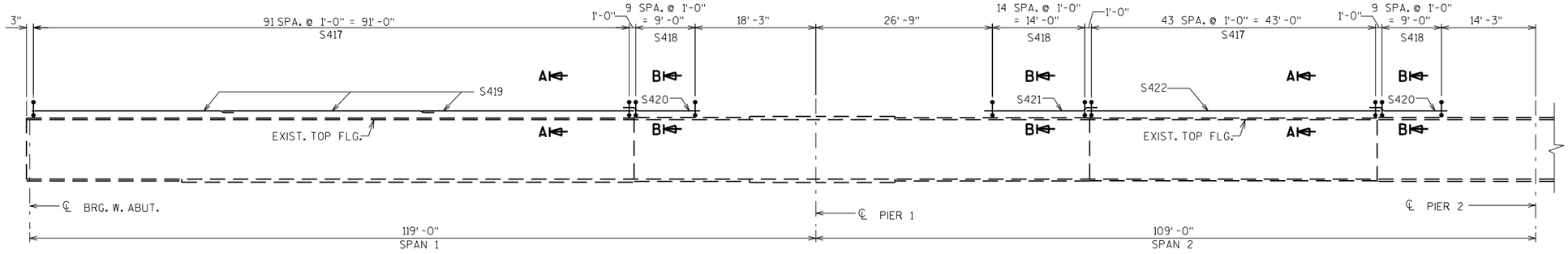
SCALE = 3.5

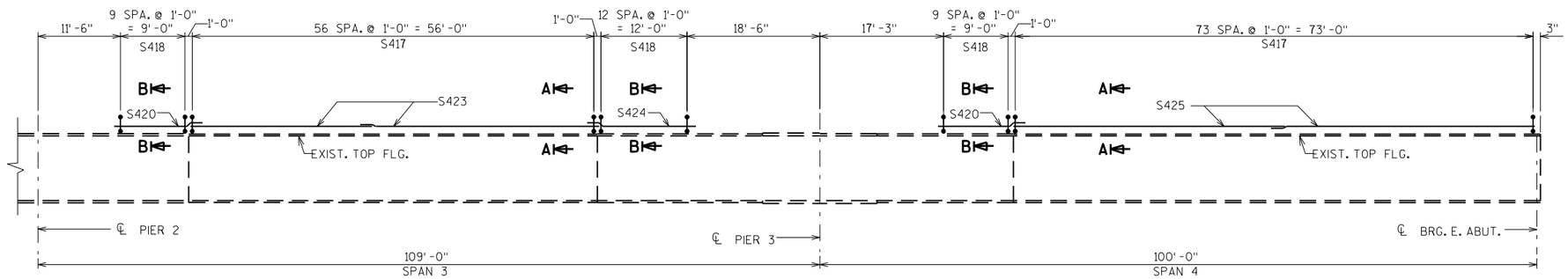
8

8

STATE PROJECT NUMBER

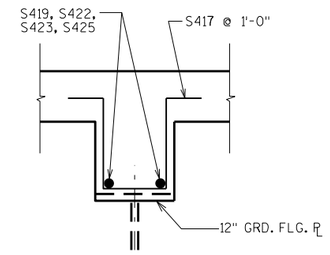
1120-09-81



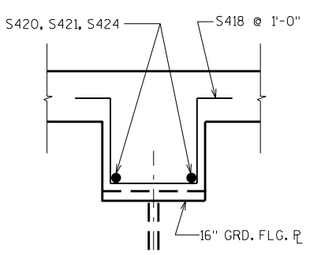


ELEVATION

HAUNCH REINF. TYP. EACH GIRDER
1'-8" MIN. LAP-# 4 BARS



SECTION A-A



SECTION B-B

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

HAUNCH DETAILS

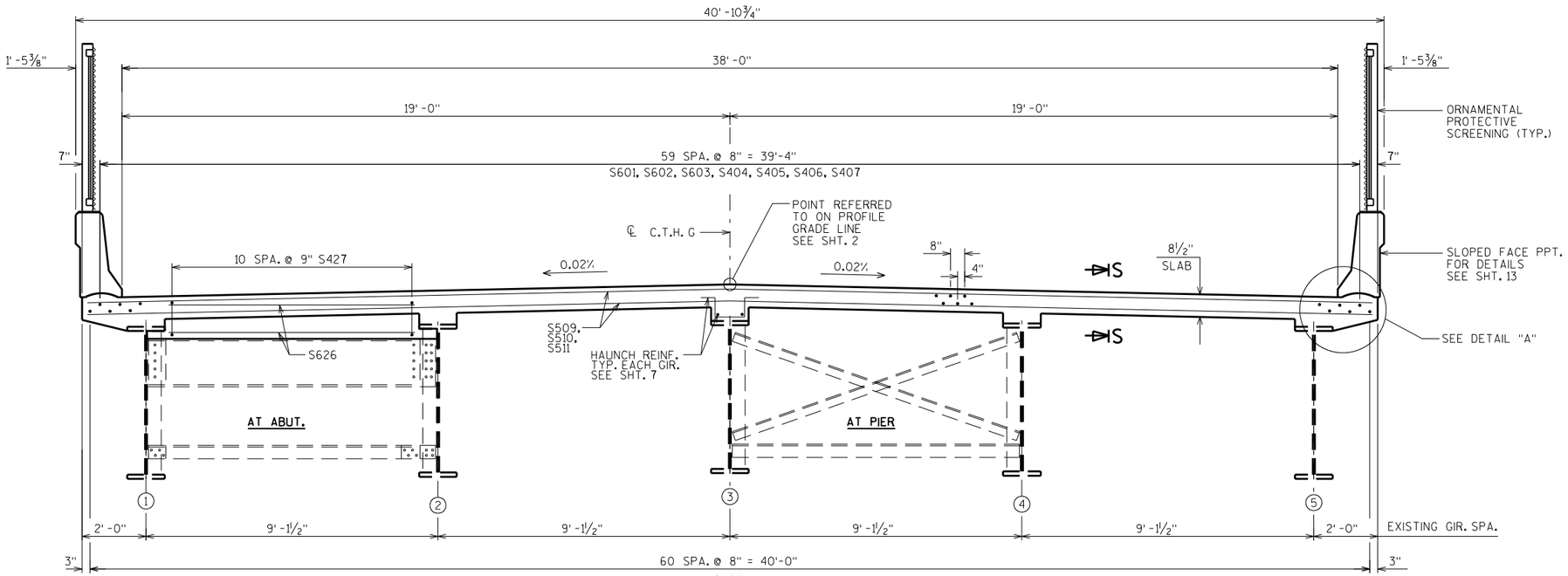
SHEET 7

238

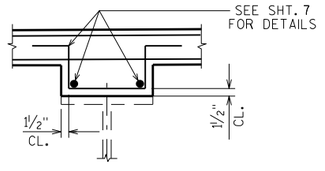
SCALE = 9

STATE PROJECT NUMBER

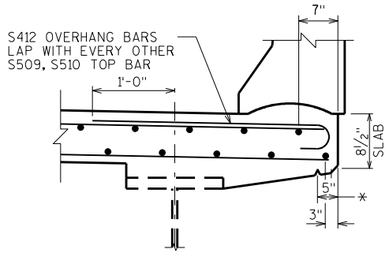
1120-09-81



CROSS SECTION THRU PROPOSED ROADWAY LOOKING EAST

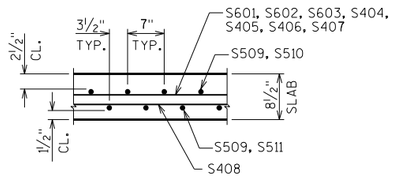


GIRDER HAUNCH DETAIL



DETAIL A

* ¾" CONTINUOUS DRIP GROOVE (TYP.) TERMINATE 2'-0" FROM FACE OF ABUTS.



SECTION S-S

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

SUPERSTRUCTURE CROSS SECTION

SHEET 8

239

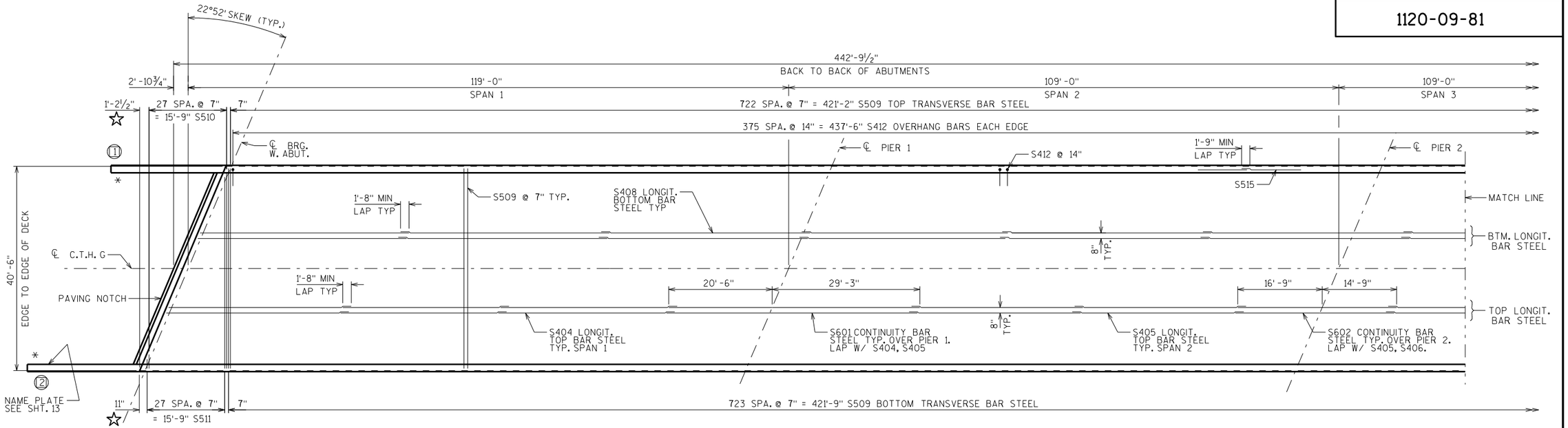
8

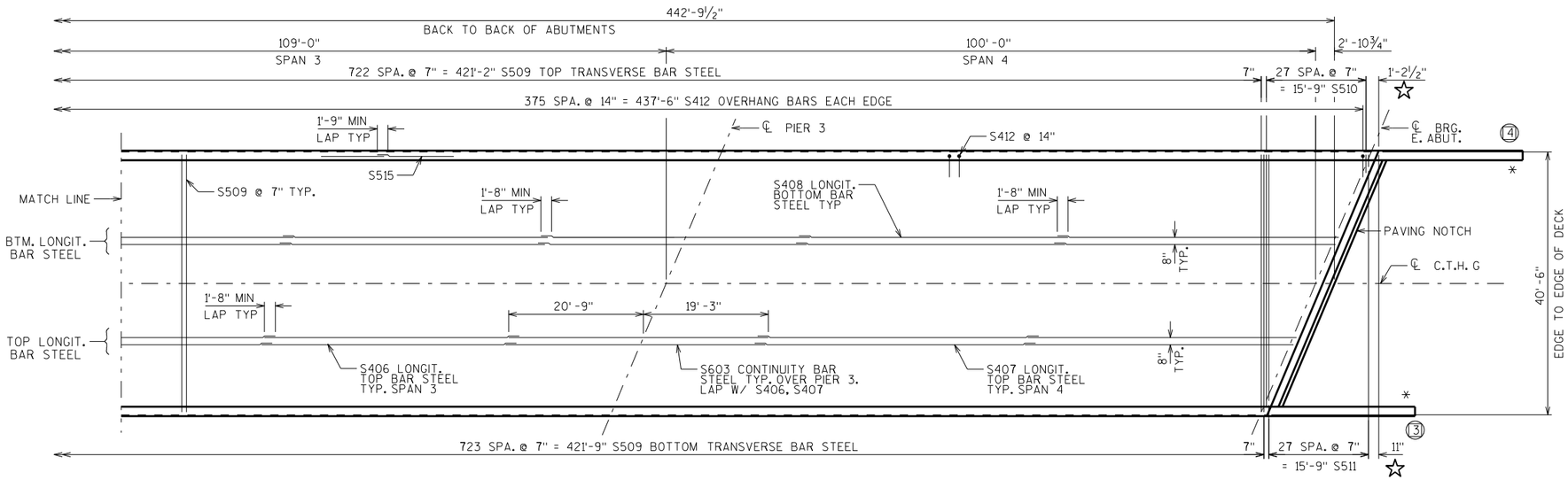
8

SCALE = 2.666

STATE PROJECT NUMBER

1120-09-81





PROPOSED PLAN

☆ MEASURED FROM EDGE OF DECK

⓪ INDICATES WING NUMBER

* PROVIDE FOR THRIE BEAM ATTACHMENT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

SUPERSTRUCTURE

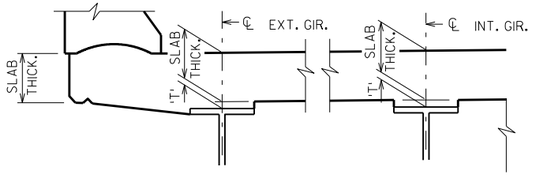
SHEET 9

240

SCALE = 10

8

8



CONCRETE HAUNCH DETAILS

TO DETERMINE 'T': AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED. ELEVATIONS OF THE TOP FLANGES, TOP OF SPLICE PLATES, OR TOP OF COVER PLATES, WHICHEVER APPLIES, SHALL BE TAKEN AT CENTERLINE OF BEARINGS, CENTERLINE OF FIELD SPLICES, AND AT TENTH POINTS.

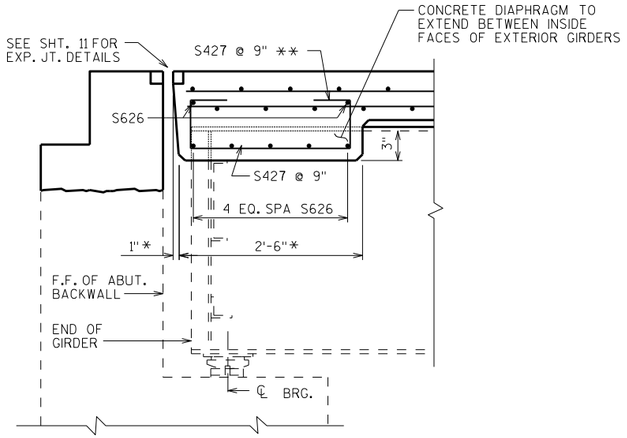
TOP OF DECK ELEV. AT FINAL GRADE.

\- TOP OF STEEL ELEV. AFTER EXISTING DECK REMOVAL.

\+ DEFLECTION (CONCRETE ONLY)

\- SLAB THICKNESS (8½")

= 'T' VALUE FOR SETTING HAUNCH.



ABUTMENT DIAPHRAGM DETAIL

* DIMENSION IS TAKEN NORMAL TO ℄ ABUTMENT

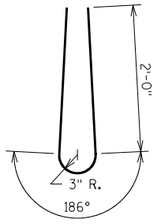
** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER

BILL OF BARS

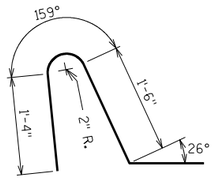
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S601	X	60	49'-9"			SLAB-TOP-LONGIT.-OVER PIER 1
S602	X	60	31'-6"			SLAB-TOP-LONGIT.-OVER PIER 2
S603	X	60	40'-0"			SLAB-TOP-LONGIT.-OVER PIER 3
S404	X	180	34'-10"			SLAB-TOP-LONGIT. SPAN 1
S405	X	120	34'-0"			SLAB-TOP-LONGIT. SPAN 2
S406	X	120	39'-3"			SLAB-TOP-LONGIT. SPAN 3
S407	X	120	42'-6"			SLAB-TOP-LONGIT. SPAN 4
S408	X	671	41'-5"			SLAB-BTM.-LONGIT.
S509	X	1447	40'-2"			SLAB-TOP & BTM.-TRANS.
S510	X	56	20'-11"		X	SLAB-TOP-TRANS. ⚠
S511	X	56	20'-3"		X	SLAB-BTM.-TRANS. ⚠
S412	X	752	3'-4"	X		OVERHANG BARS
S513	X	1318	4'-10"	X		PARAPET-VERT.
S514	X	1318	4'-2"	X		PARAPET-VERT.
S515	X	110	41'-5"			PARAPET-HORIZ.
S416	X	16	8'-11"			EXPAN.-DEVICE
S417	X	1335	3'-3"	X		HAUNCH VERT.
S418	X	340	3'-7"	X		HAUNCH VERT.
S419	X	30	31'-8"			HAUNCH HORIZ. SPAN 1
S420	X	40	11'-8"			HAUNCH HORIZ. SPAN 1-4
S421	X	10	16'-8"			HAUNCH HORIZ. SPAN 2
S422	X	10	43'-2"			HAUNCH HORIZ. SPAN 2
S423	X	20	29'-2"			HAUNCH HORIZ. SPAN 3
S424	X	10	14'-4"			HAUNCH HORIZ. SPAN 3
S425	X	20	37'-5"			HAUNCH HORIZ. SPAN 4
S626	X	56	8'-10"			ABUTMENT DIAPHRAGM HORIZ.
S427	X	88	4'-7"	X		ABUTMENT DIAPHRAGM VERT.

⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.



S513



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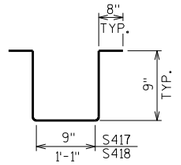
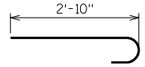
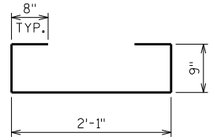


S417, S418



S412

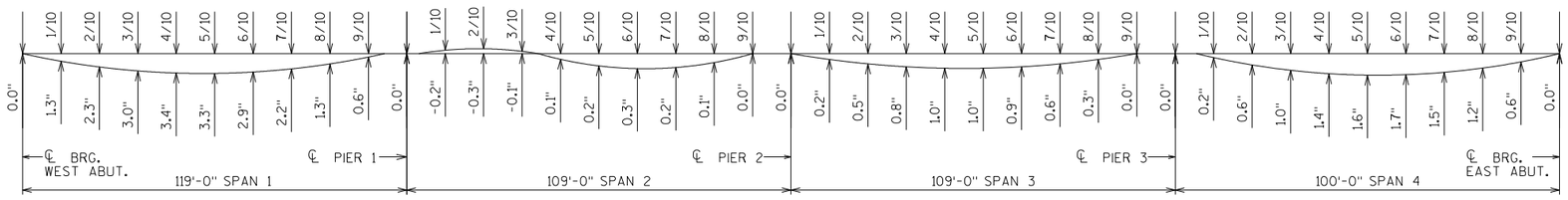


S427

BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
S510	2 SERIES OF 28	2'-3" TO 39'-7"
S511	2 SERIES OF 28	1'-7" TO 38'-11"

BUNDLE AND TAG EACH SERIES SEPARATELY.



DEFLECTION DIAGRAM

TOD ELEVATIONS

	W ABUT	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 1	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 2
GIRDER 1	785.00	785.39	785.77	786.13	786.48	786.81	787.13	787.44	787.73	788.00	788.27	788.49	788.71	788.91	789.10	789.28	789.45	789.60	789.74	789.87	789.99
GIRDER 2	785.06	785.45	785.83	786.20	786.55	786.89	787.21	787.52	787.82	788.10	788.36	788.60	788.82	789.02	789.22	789.40	789.57	789.73	789.88	790.01	790.13
GIRDER 3	785.11	785.50	785.89	786.26	786.62	786.96	787.29	787.61	787.91	788.19	788.46	788.70	788.92	789.13	789.33	789.52	789.69	789.86	790.01	790.15	790.27
GIRDER 4	784.80	785.19	785.58	785.96	786.32	786.67	787.00	787.32	787.63	787.92	788.19	788.43	788.66	788.88	789.08	789.27	789.45	789.62	789.77	789.92	790.05
GIRDER 5	784.49	784.88	785.28	785.66	786.02	786.38	786.72	787.04	787.35	787.64	787.92	788.17	788.40	788.62	788.83	789.02	789.21	789.38	789.54	789.69	789.82

	PIER 2	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER 3	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	E ABUT
GIRDER 1	789.99	790.10	790.19	790.27	790.34	790.40	790.44	790.48	790.50	790.51	790.50	790.49	790.47	790.43	790.39	790.34	790.27	790.20	790.11	790.02	789.91
GIRDER 2	790.13	790.24	790.34	790.43	790.50	790.56	790.61	790.65	790.68	790.69	790.69	790.68	790.66	790.63	790.59	790.54	790.48	790.41	790.33	790.24	790.13
GIRDER 3	790.27	790.39	790.49	790.58	790.66	790.73	790.78	790.82	790.85	790.87	790.87	790.87	790.85	790.83	790.79	790.74	790.69	790.62	790.54	790.46	790.36
GIRDER 4	790.05	790.17	790.27	790.37	790.45	790.52	790.58	790.63	790.66	790.68	790.69	790.69	790.68	790.65	790.62	790.58	790.53	790.46	790.39	790.31	790.21
GIRDER 5	789.82	789.94	790.05	790.15	790.24	790.31	790.38	790.43	790.47	790.49	790.51	790.51	790.50	790.48	790.45	790.41	790.37	790.31	790.24	790.16	790.07

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

SUPERSTRUCTURE DETAILS

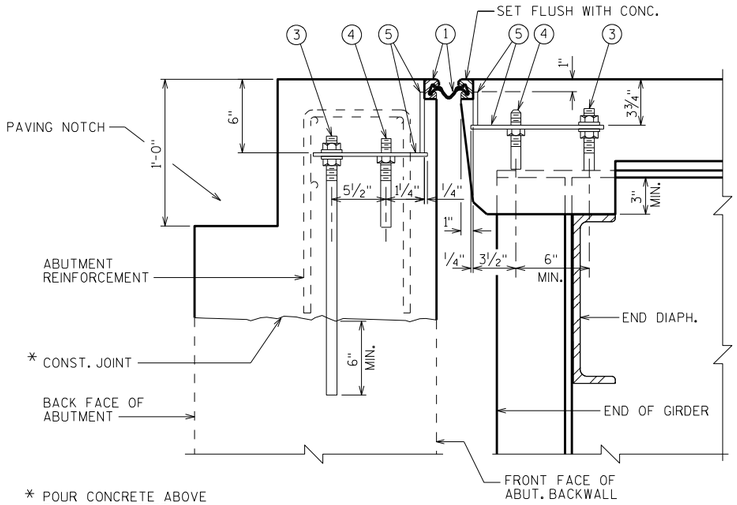
SHEET 10

241

SCALE = 12

STATE PROJECT NUMBER

1120-09-81



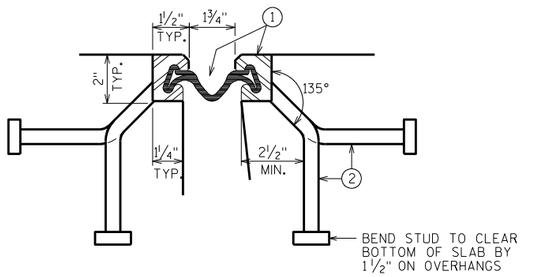
* POUR CONCRETE ABOVE THIS JOINT AFTER SUPERSTRUCTURE IS IN PLACE.

SECTION THRU JOINT AT ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE

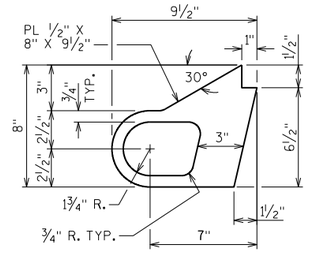
LEGEND

1. NEOPRENE STRIP SEAL (1¾ - INCH) & STEEL EXTRUSIONS.
2. STUDS ⅝"φ X 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.
2A. ½" THICK ANCHOR PLATE WITH ⅝"φ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
3. ¾" φ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. WELD THREADED ROD TO TOP FLANGE OR ATTACH BY BOLTING THRU FLANGE. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
4. ¾"φ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" X ½" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. FIELD OR SHOP WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1½" φ HOLE FOR NO. 3 & 1" φ HOLE FOR NO. 4.
6. GALVANIZED PLATE ⅜" X LIMITS SHOWN WITH HOLES FOR NO. 7. BEND AS SHOWN.
7. ¾"φ X 1½" STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. RECESS 1/16" BELOW PLATE SURFACE.
8. ¾"φ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
9. ¾"φ X 2¼" GALVANIZED THREADED COUPLING.
10. 1" X 5" SLOTTED CSK. HOLE FOR NO. 7. SLOT PARALLEL TO DIRECTION OF MOVEMENT.

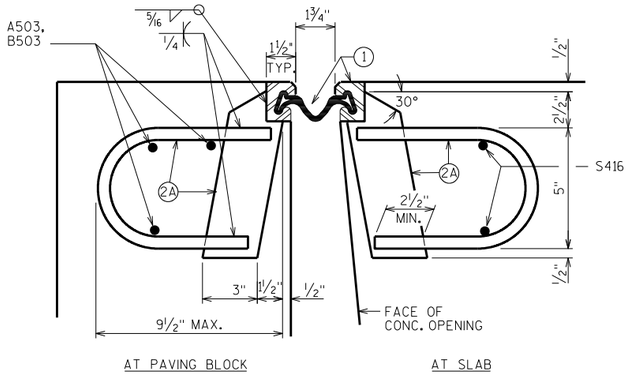


SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPETS, MEDIANS & SIDEWALKS

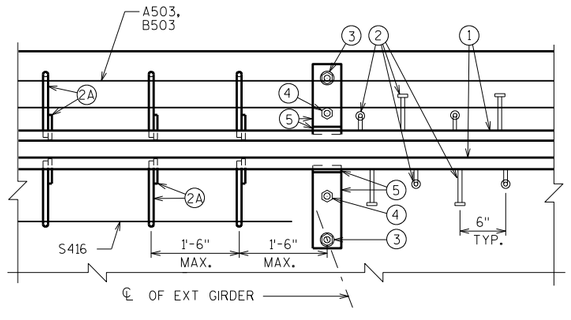


ALTERNATE STRIP SEAL ANCHOR



SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



PART PLAN

GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST PLATES & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. *6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THE PLATES & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED. SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

ANCHOR SYSTEM NO. 8 & NO. 9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE B-70-67".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

EXPANSION DEVICE

SHEET 11

242

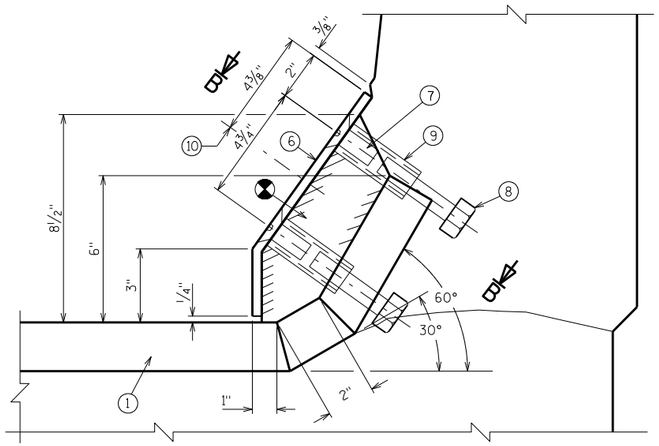
8

8

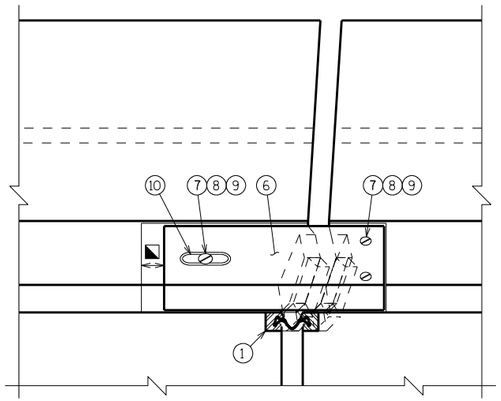
SCALE =

STATE PROJECT NUMBER

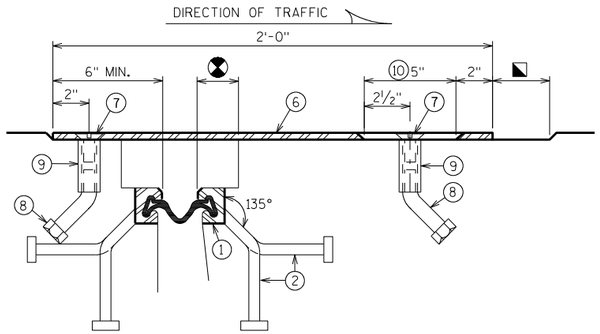
1120-09-81



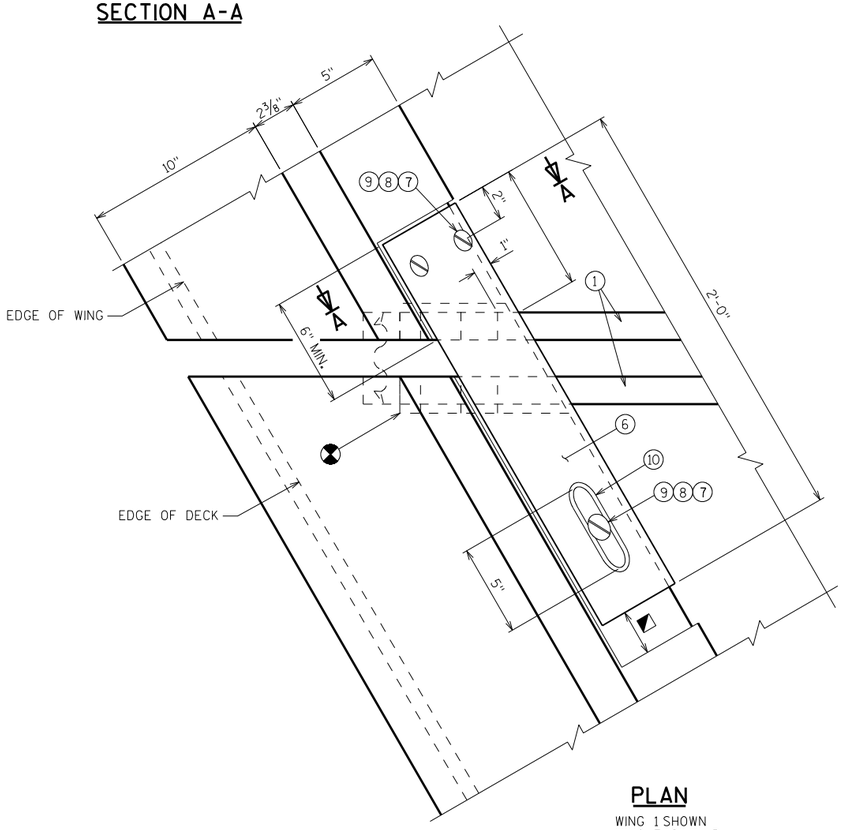
SECTION A-A



VIEW OF PARAPET PLATE FROM ROADWAY

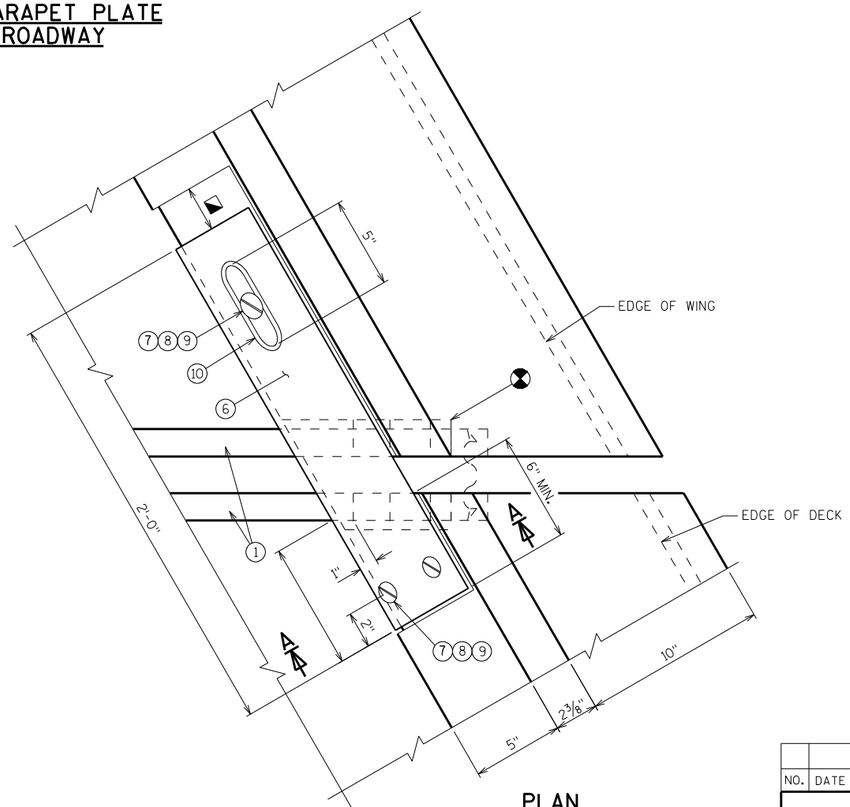


SECTION B-B



PLAN

WING 1 SHOWN
WING 3 SIMILAR



PLAN

WING 2 SHOWN
WING 4 SIMILAR

⊠ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

◪ JOINT OPENING DIM. ALONG SKEW PLUS 1/2".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

COVER PLATE DETAILS

SHEET 12

243

8

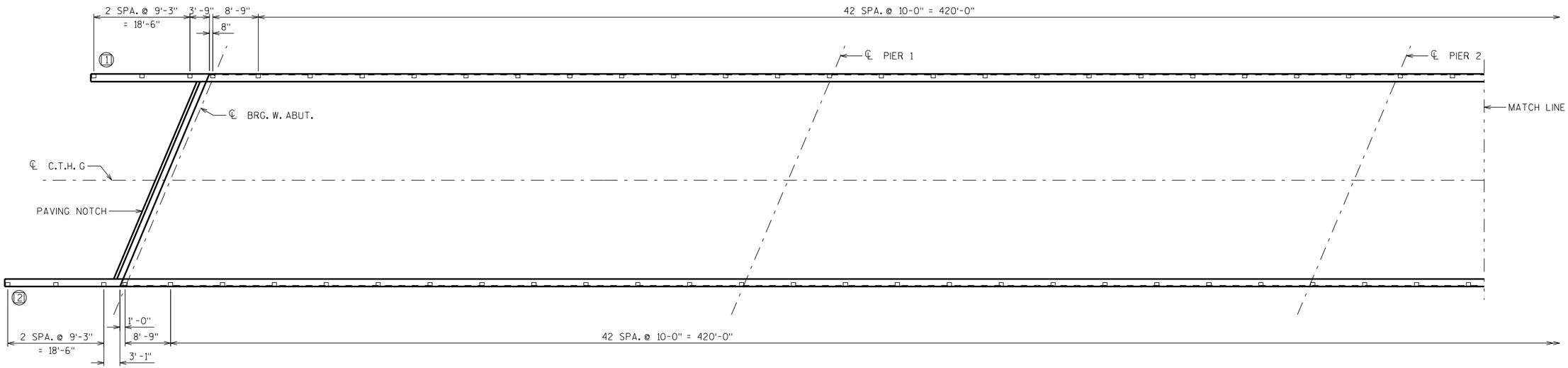
8

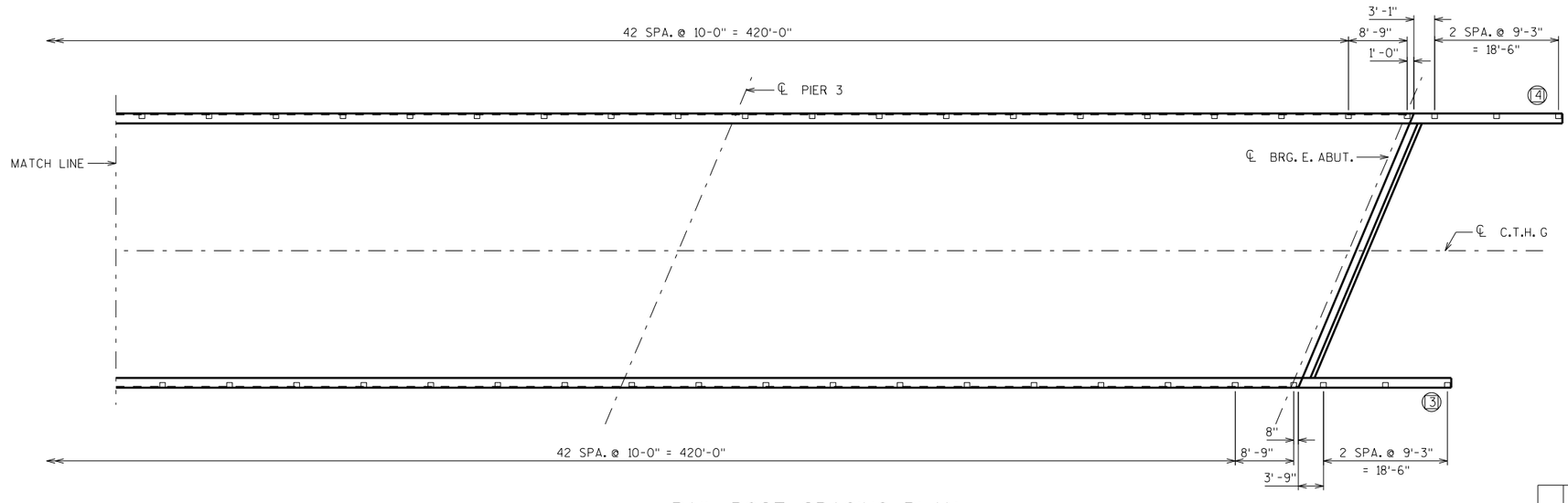
SCALE = 1.0

7-10

STATE PROJECT NUMBER

1120-09-81





RAIL POST SPACING PLAN

INDICATES WING NUMBER

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

RAIL POST SPACING

SHEET 13

244

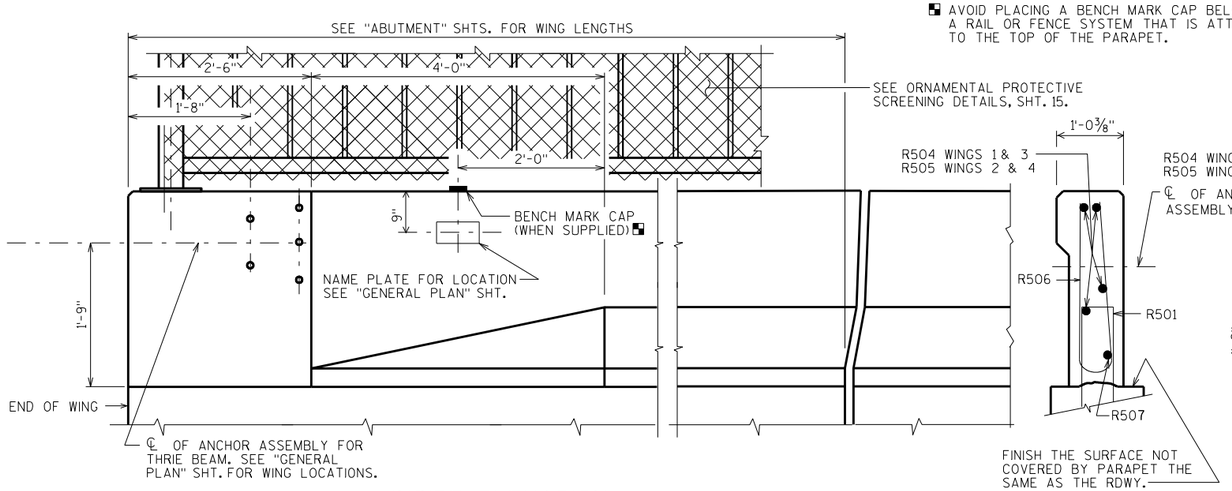
SCALE = 10

8

8

STATE PROJECT NUMBER

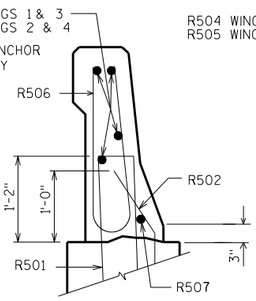
1120-09-81



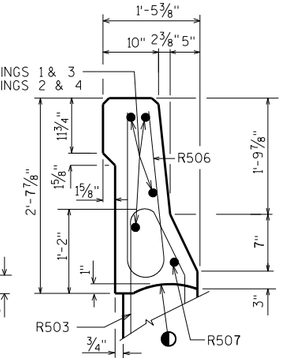
INSIDE ELEVATION

■ AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.

SECTION A



SECTION B

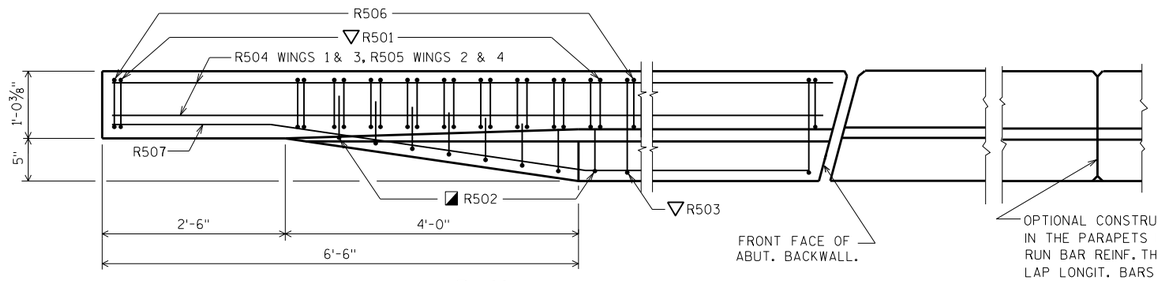


SECTION C

BILL OF BARS

FOR ABUTMENT PARAPETS

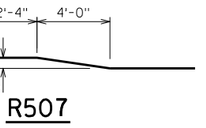
BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	28	28	4-7	X		PARAPET VERT.
R502	X	16	16	2-4	X		PARAPET VERT.
R503	X	47	47	4-7	X		PARAPET VERT.
R504	X	4	4	22'-3"			PARAPET HORIZ.
R505	X	4	4	21'-6"			PARAPET HORIZ.
R506	X	75	75	4-10	X		PARAPET VERT.
R507	X	2	2	22'-0"	X		PARAPET HORIZ.



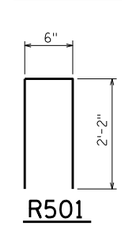
PLAN

FRONT FACE OF ABUT. BACKWALL.

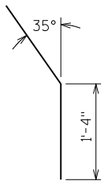
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 3/4" 'V' GROOVE.



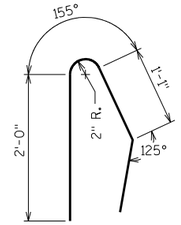
R507



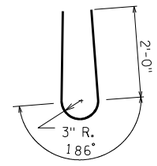
R501



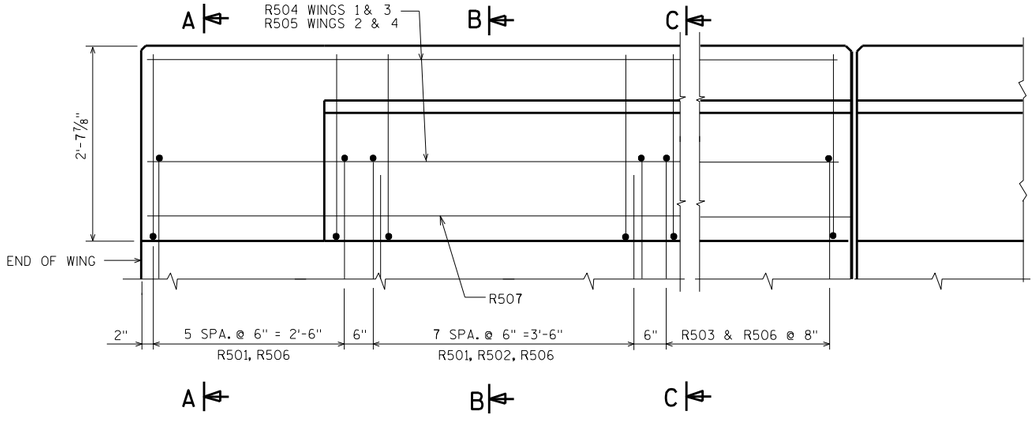
R502



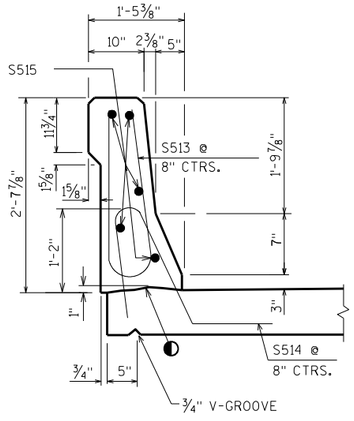
R503



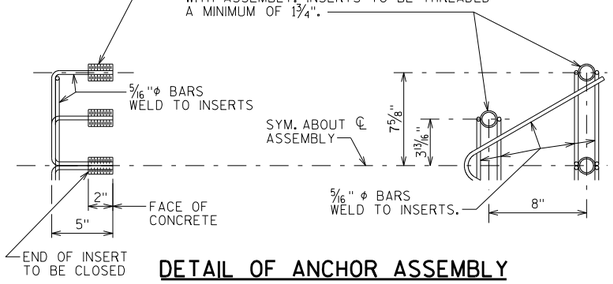
R506



OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

◪ R502 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R502 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

▽ R501 AND R503 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

SLOPED FACE PARAPET LF

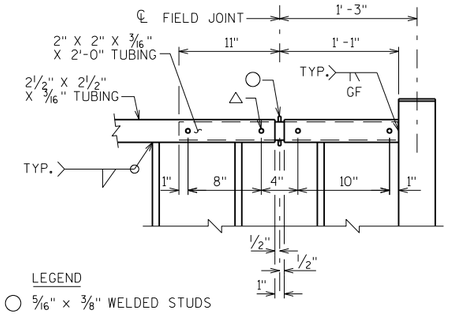
SHEET 14

245

SCALE =

8

8

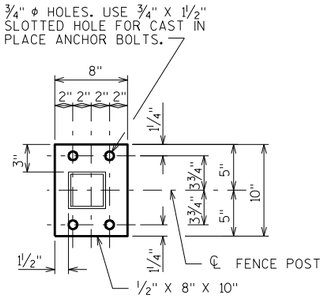


LEGEND

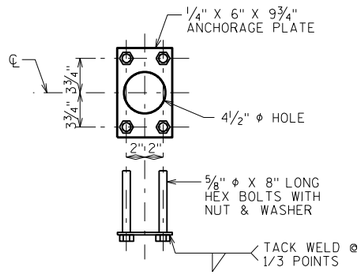
○ 5/16" x 3/8" WELDED STUDS

△ WELD BEAD ON EACH SIDE OF TUBE. GRIND BEADS SO THAT SLEEVE FITS FREELY INSIDE THE 2½" x 2½" TUBE.

RAILING EXPANSION JOINT DETAIL

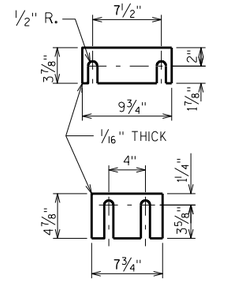


BASE PLATE



ANCHORAGE DETAIL

⅝" ϕ CONCRETE MASONRY ANCHOR, TYPE S EPOXY, 7" MINIMUM EMBEDMENT WITH A MINIMUM PULLOUT OF 20 KIPS MAY BE SUBSTITUTED FOR ⅝" CAST IN PLACE ANCHOR BOLTS. ANCHORAGE PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.



SHIM PLATE DETAILS

TWO SHIMS OF EACH SIZE REQUIRED PER POST

STATE PROJECT NUMBER

1120-09-81

NOTES

BID ITEM SHALL BE "RAILING TUBULAR SCREENING B-70-67" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

RAILS AND POSTS TO BE ASTM A500, GRADE B. BASE PLATES AND SHIMS TO BE ASTM A709, GRADE 36. ALL GALVANIZED AFTER FABRICATION.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPA. ARE TAKEN HORIZ. ALONG CENTER LINE OF RAILING AT BASE OF POST.

SHIMS SHALL BE USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

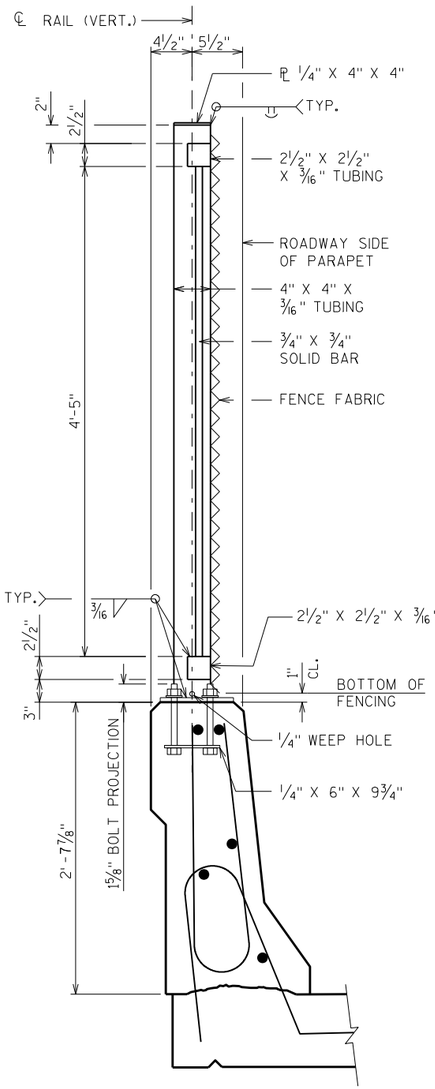
RAILING TO BE PAINTED AND FENCE FABRIC AND TIES TO BE VINYL COATED. FEDERAL COLOR NO. 27038, "BLACK".

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

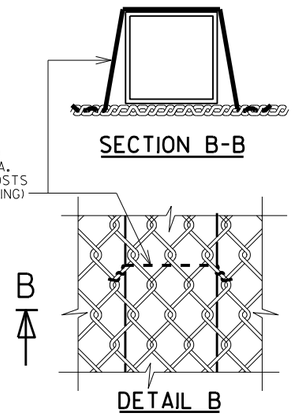
THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING.

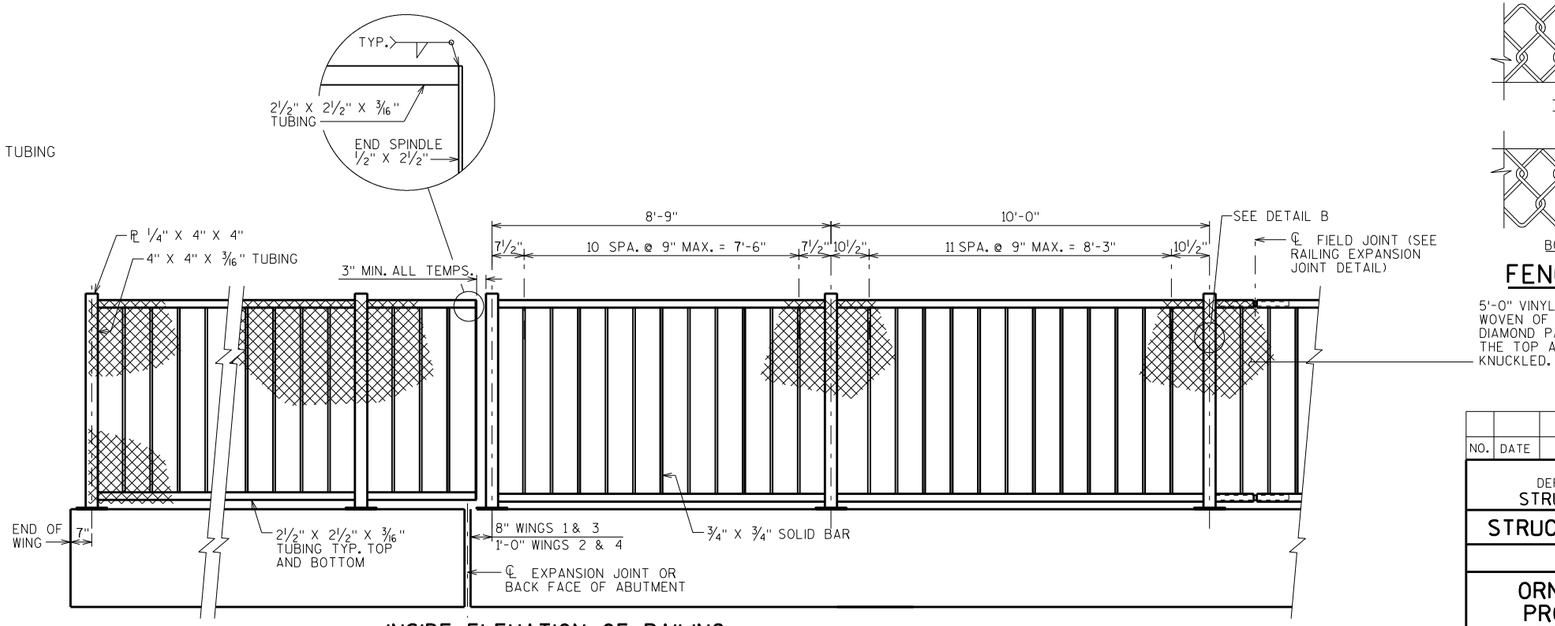
ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A #6 BLAST CLEANING BY SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.



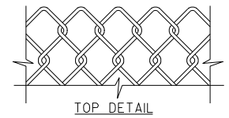
SECTION THRU RAILING



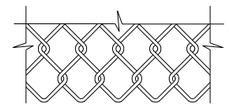
DETAIL B



INSIDE ELEVATION OF RAILING



TOP DETAIL



BOTTOM DETAIL

FENCE FABRIC

5'-0" VINYL COATED FENCE FABRIC WOVEN OF 9-GAUGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

ORNAMENTAL PROTECTIVE SCREENING

SHEET 15

246

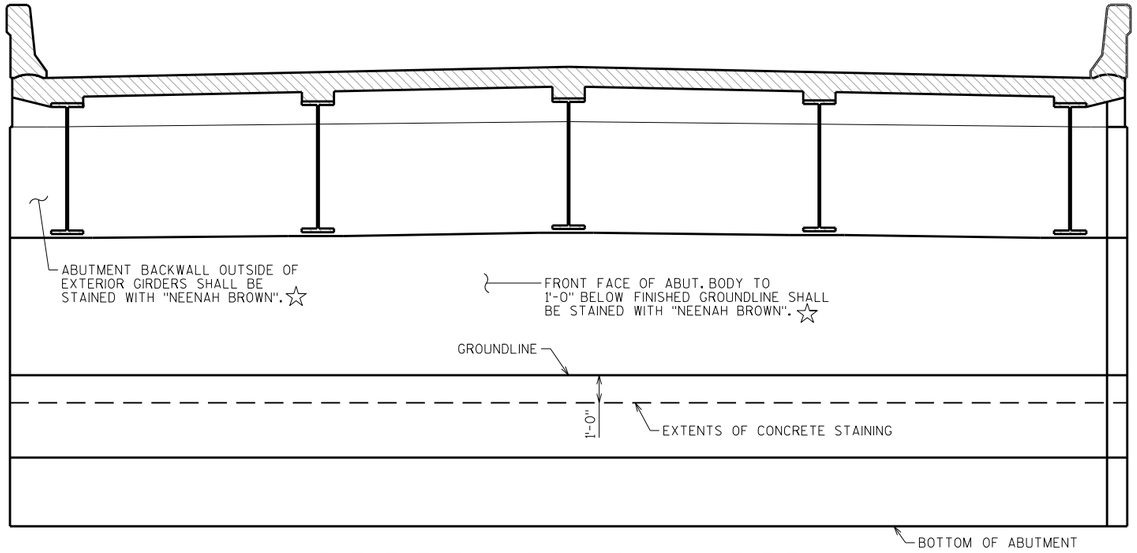
8

8

SCALE = 1.0

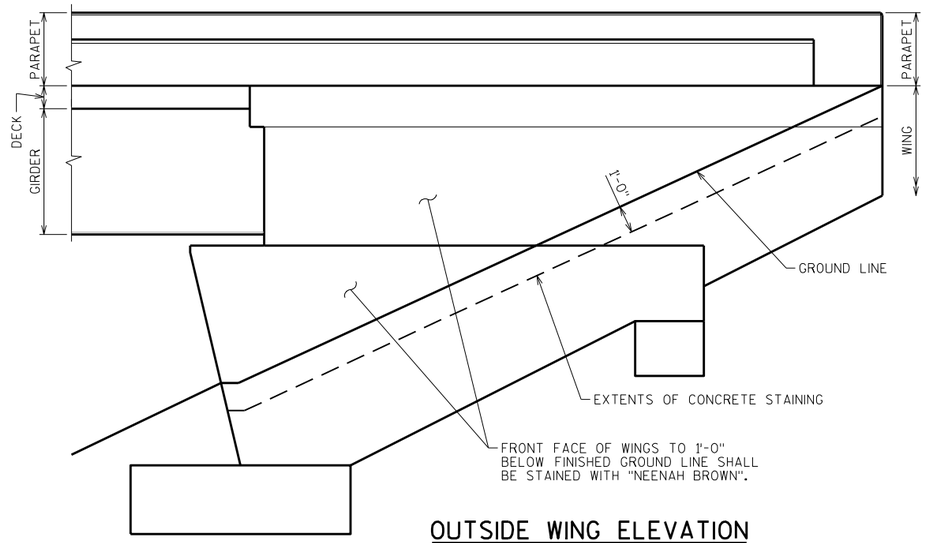
STATE PROJECT NUMBER

1120-09-81



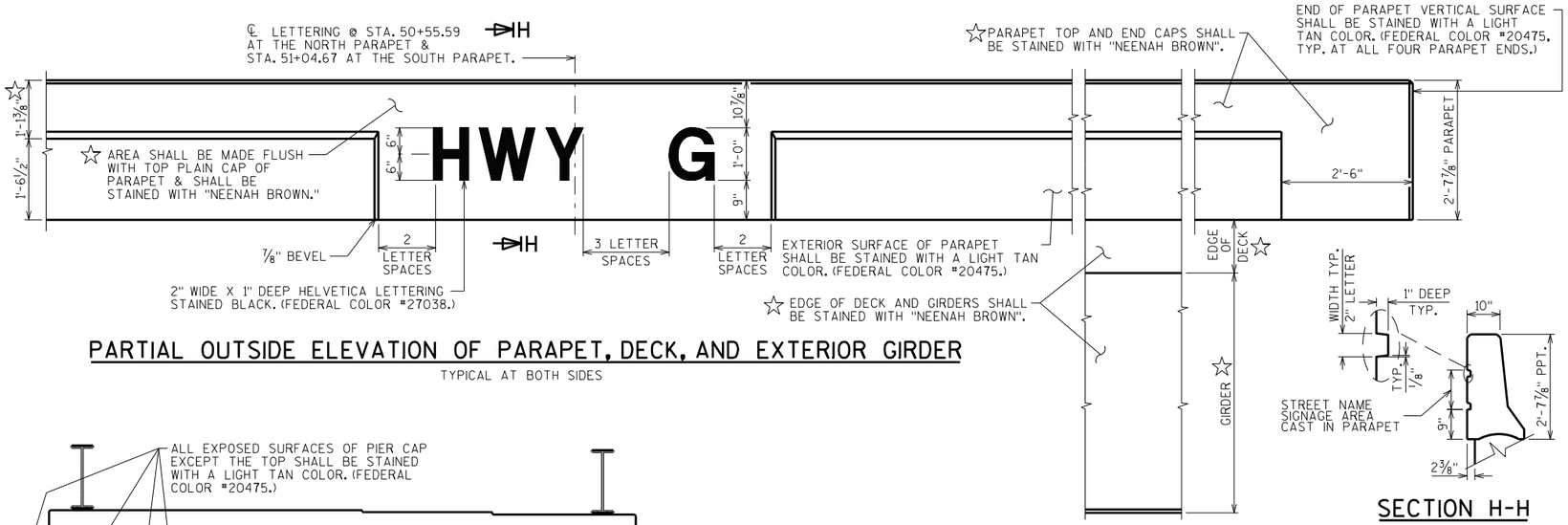
ABUTMENT ELEVATION LOOKING AT F.F.

TYPICAL AT BOTH ABUTMENTS



OUTSIDE WING ELEVATION

TYPICAL AT ALL WINGS

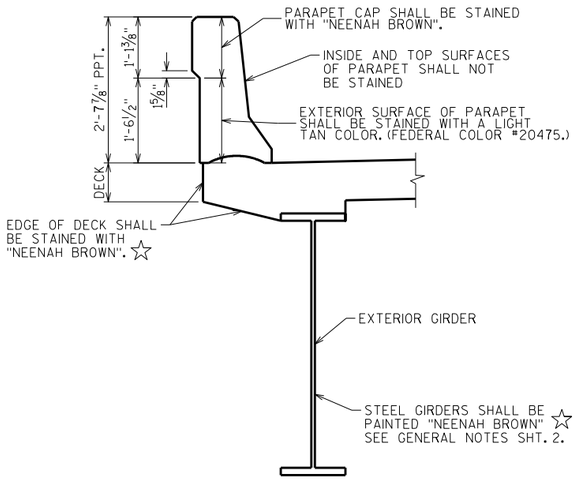


PARTIAL OUTSIDE ELEVATION OF PARAPET, DECK, AND EXTERIOR GIRDER

TYPICAL AT BOTH SIDES

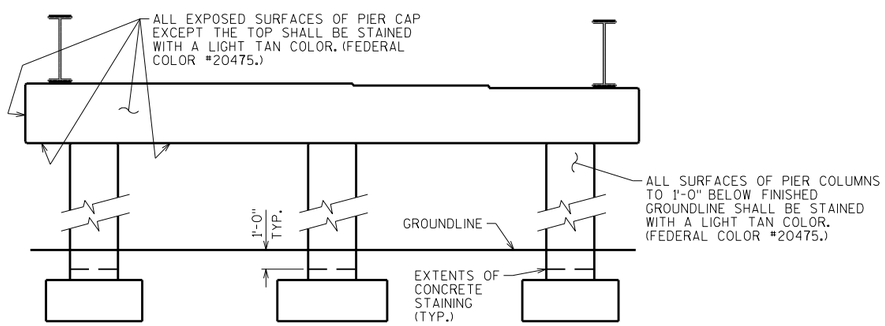
SECTION H-H

SHOWING LETTERING DIMENSIONS



PARTIAL CROSS SECTION AT EDGE OF DECK

TYPICAL AT BOTH EXTERIOR GIRDERS



PIER ELEVATION

SHOWING EXISTING PIER

NOTES:

FORMING LETTERING WORK SHALL BE PAID FOR UNDER THE BID ITEM "HPC MASONRY STRUCTURES".

STAINING LETTERING WORK SHALL BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING B-70-67".

STAINING OF NON-ARCHITECTURAL SURFACE TREATMENT AREAS & LETTERING WORK SHALL BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING B-70-67".

IF TOUCH UP PAINTING IS REQUIRED, IT SHALL BE DONE TO THE SATISFACTION OF THE FIELD ENGINEER AT NO ADDITIONAL COST.

LETTERING SHALL ONLY BE PLACED AT THE OUTSIDE FACES OF PARAPETS.

LETTERING FONT TYPE SHALL BE "HELVETICA" WITH 1'-0" HIGH UPPER CASE LETTERS.

☆ THESE SURFACES SHALL BE STAINED WITH "NEENAH BROWN". (3 GALLONS FEDERAL COLOR NUMBER 20400 TO 2 GALLONS SWHC 103 CEDARWOOD TO MATCH B-70-285.)

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-67

DRAWN BY DFD | PLANS CK'D. BLB

AESTHETIC DETAILS

SHEET 16

247

SCALE = 2.67

8

8

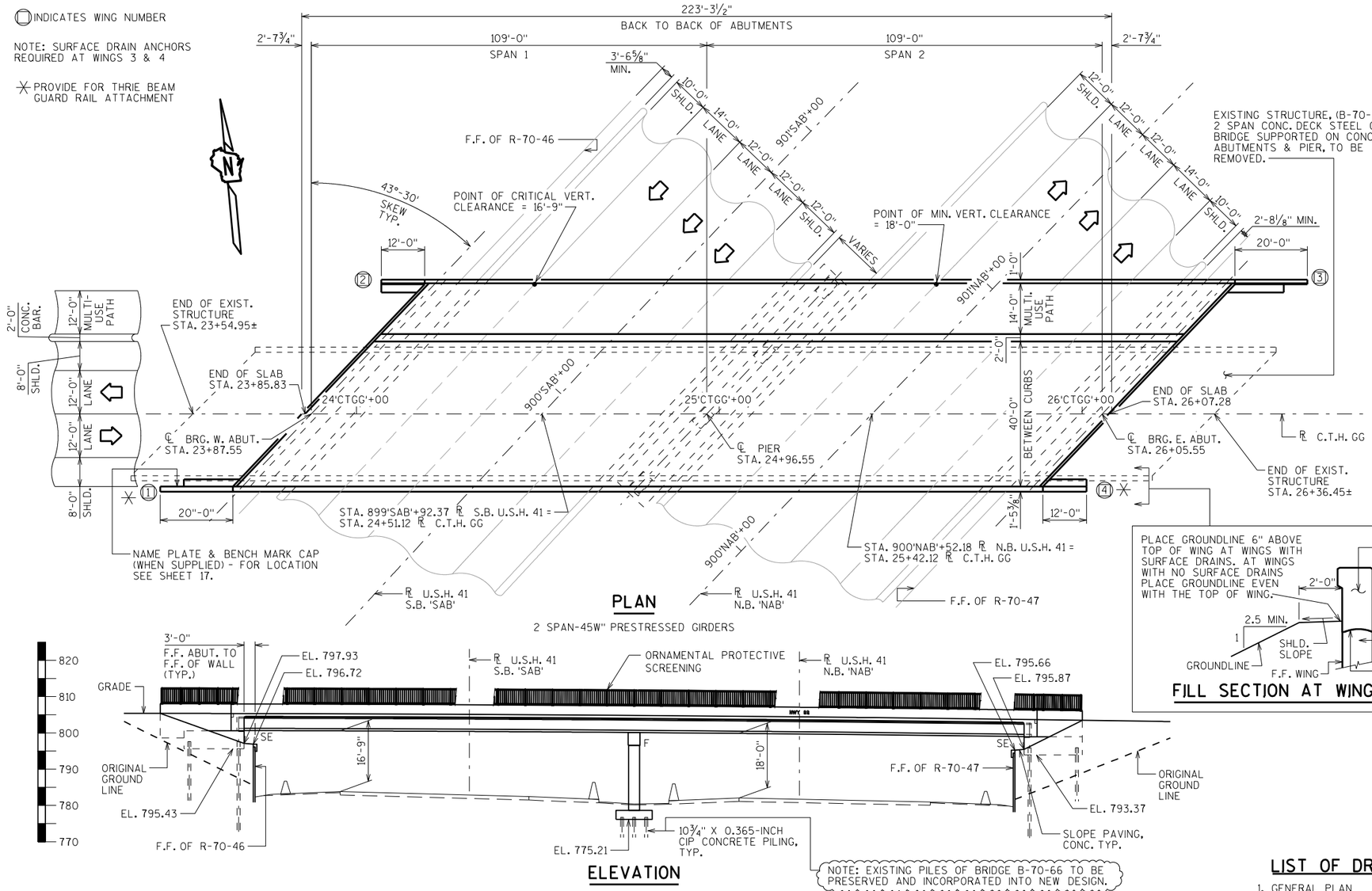
STATE PROJECT NUMBER

1120-09-77

INDICATES WING NUMBER

NOTE: SURFACE DRAIN ANCHORS REQUIRED AT WINGS 3 & 4

PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT

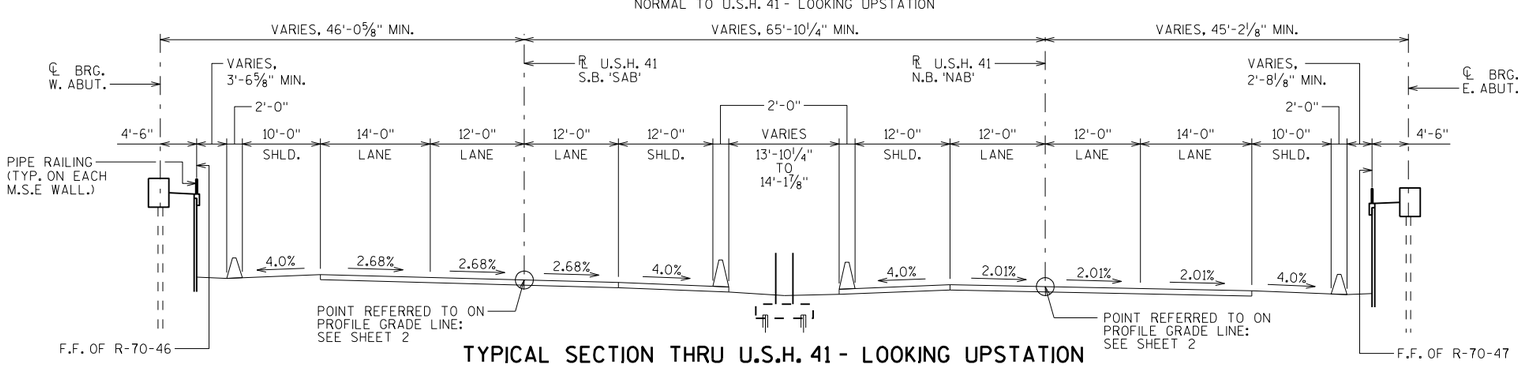


PLAN

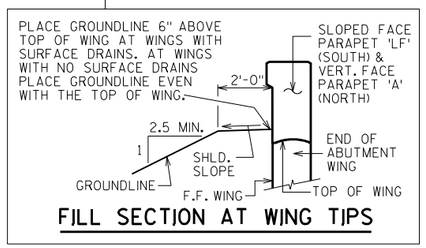
2 SPAN-45W" PRESTRESSED GIRDERS

ELEVATION

NORMAL TO U.S.H. 41 - LOOKING UPSTATION



TYPICAL SECTION THRU U.S.H. 41 - LOOKING UPSTATION



FILL SECTION AT WING TIPS

DESIGN DATA

LIVE LOAD:

DESIGN LOADING; HL-93

INVENTORY RATING FACTOR: RF= 1.06

OPERATING RATING FACTOR: RF= 1.37

WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 230 (KIPS)

STRUCTURE IS DESIGNED FOR A 1½" SACRIFICAL WEARING SURFACE PLACED AT INITIAL CONSTRUCTION INTEGRAL WITH THE DECK. NO ALLOWANCE HAS BEEN MADE FOR A FUTURE WEARING SURFACE LOAD.

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY — SLAB — f'c = 4,000 P.S.I.
ALL OTHER — f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

45W" PRESTRESSED GIRDERS, CONCRETE MASONRY — f'c = 8,000 P.S.I.
STRANDS- 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON 10-3/4" X 0.365-INCH CIP CONCRETE PILING. DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 75 FEET LONG AT WEST & EAST ABUTMENTS.

PIER TO BE SUPPORTED ON 10-3/4" X 0.365-INCH CIP CONCRETE PILING. DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 110 TONS ** PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED 55 FEET LONG.

** THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

TRAFFIC VOLUME

CTH GG	USH 41
A.D.T. = 1,490 (2035)	A.D.T. = 102,100 (2035)
R.D.S. = 60 M.P.H.	R.D.S. = 70 M.P.H.

CURVE DATA

℄ S.B. U.S.H. 41	℄ N.B. U.S.H. 41
P.I. = STA. 901+13.29	P.I. = STA. 901+11.08
Δ = 6°-14'-42.5"	Δ = 6°-14'-12.8"
T = 409.15'	T = 642.87'
L = 817.49'	L = 1284.48'
R = 7500.00	R = 11800.00
S.E. = 2.68%	S.E. = 2.01%
P.C. = STA. 897+04.14	P.C. = STA. 894+68.20
P.T. = STA. 905+21.63	P.T. = STA. 907+52.68
D = 0°-45'-50"	D = 0°-29'-8"

STRUCTURE DESIGN CONTACTS:

ALEXANDER CRABTREE (608) 266-3686

LAURA SHADEWALD (608) 267-9592

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. WEST ABUTMENT
5. WEST ABUTMENT DETAILS
6. EAST ABUTMENT
7. EAST ABUTMENT DETAILS
8. PIER
9. PIER DETAILS
10. 45W" PRESTRESSED GIRDER DETAILS 1
11. 45W" PRESTRESSED GIRDER DETAILS 2
12. STEEL DIAPHRAGM
13. SUPERSTRUCTURE
14. SUPERSTRUCTURE DETAILS 1
15. SUPERSTRUCTURE DETAILS 2
16. VERTICAL FACE PARAPET "A"
17. SLOPED FACE PARAPET "LF"
18. ORNAMENTAL PROTECTIVE SCREENING
19. ALTERNATE CONSTRUCTION JOINT & SLOPE PAVING DETAILS
20. AESTHETIC DETAILS

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS — CHIEF STRUCTURES DESIGN ENGINEER — 4/17/13 DATE

STRUCTURE **B-70-287**

C.T.H. GG OVER U.S.H. 41

COUNTY	TOWN ~~CITY/VILLAGE~~
WINNEBAGO	VINLAND

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ARC	DFD	ARC	DFD

GENERAL PLAN — SHEET 1 OF 20 — 248

I.D. 1120-09-00A

DATE: APR. 2013

SCALE = 16.0

8

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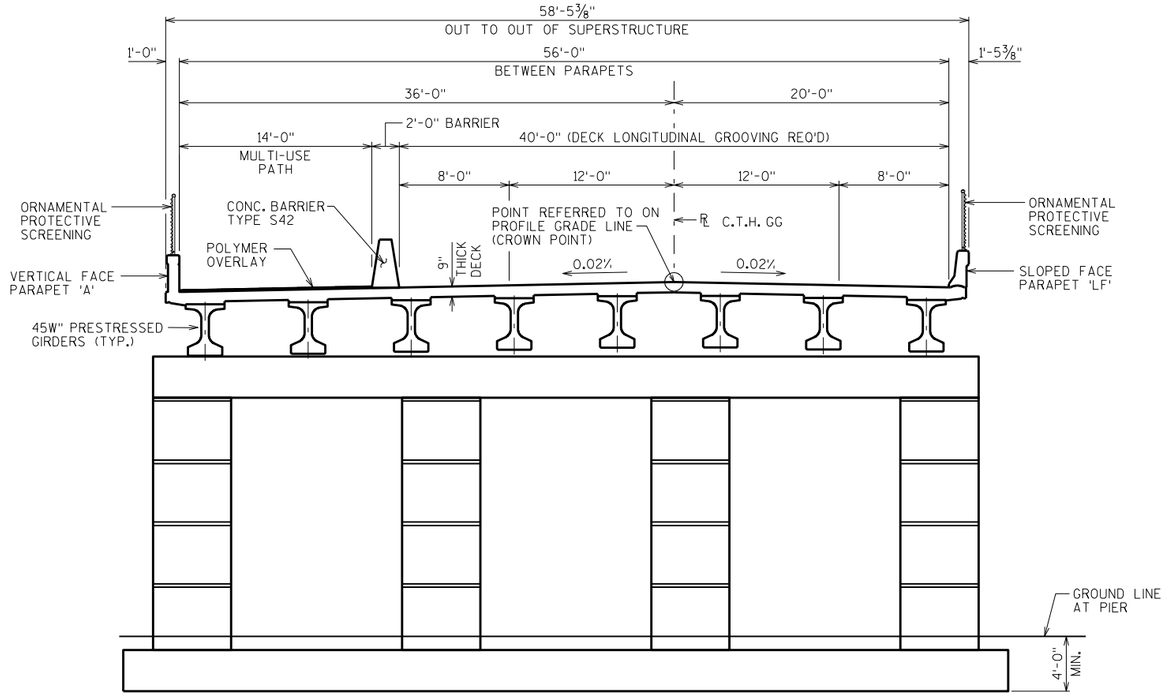


ELEVATION THROUGH ROADWAY

(LOOKING EAST)

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED. THE TOP LAYER OF BAR STEEL REINFORCEMENT IN THE DECK SHALL BE PLACED WITH 3½" OF CLEAR COVER.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

AT THE BACKFACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO: THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON ABUTMENT WINGS; THE TOP & BOTH SIDES OF SEPARATION BARRIER; AND THE BRIDGE DECK BTWN. THE CONC. BARRIER & SLOPED FACE PARAPET 'LF'.

POLYMER COATING WEARING SURFACE TO BE APPLIED TO SURFACE OF MULTI-USE PATH ONLY. (MULTI-USE PATH DOES NOT RECEIVE LONGITUDINAL GROOVING.)

LONGITUDINAL GROOVING OF THE BRIDGE DECK SHALL EXTEND THE LENGTH OF THE BRIDGE DECK, BUT ONLY IN THE AREA OF TRAFFIC FLOW (BTWN. CONC. BARRIER & SLOPED FACE PARAPET 'LF').

THE EXISTING GROUND LINE SHALL BE USED AS THE UPPER LIMITS OF EXCAVATION AT THE PIERS.

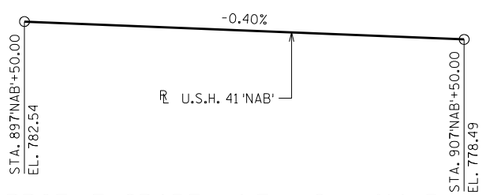
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS AND BEHIND M.S.E. WALL SHALL BE COVERED WITH SLOPE PAVING, CONCRETE MATERIAL TO THE EXTENT SHOWN ON SHEET 19 AND IN THE ABUTMENT DETAILS.

IF TOUCH UP PAINTING OF ORNAMENTAL PROTECTIVE SCREENING IS REQUIRED AFTER INSTALLATION IS COMPLETE, ALL TOUCH UP PAINTING IS TO BE DONE TO THE SATISFACTION OF THE FIELD ENGINEER AT NO ADDITIONAL COST.

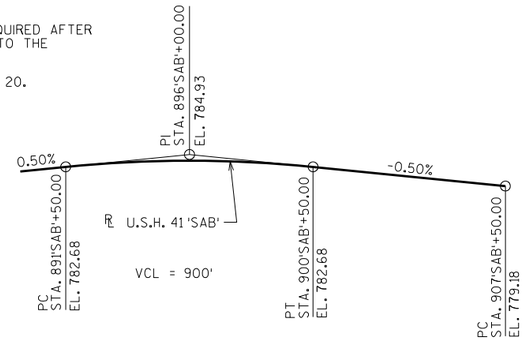
FOR CONCRETE COLOR & STAINING INSTRUCTIONS/LOCATIONS, SEE SHT. 20.

STATE PROJECT NUMBER

1120-09-77



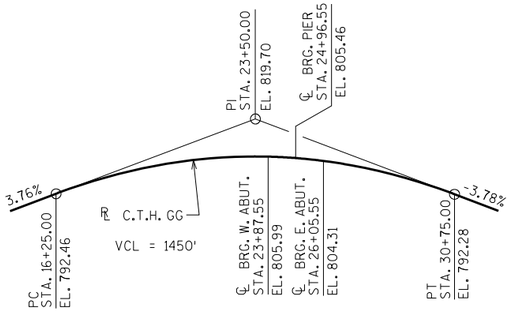
PROFILE GRADE LINE U.S.H. 41 N.B.



PROFILE GRADE LINE U.S.H. 41 S.B.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	WEST ABUT.	EAST ABUT.	PIER	TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 24+97.70	LS	———	———	———	———	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-70-287	LS	———	———	———	———	1
210.0100	BACKFILL STRUCTURE	CY	———	326	345	———	671
502.3200	PROTECTIVE SURFACE TREATMENT	SY	1,383	———	———	———	1,383
503.0146	PRESTRESSED GIRDER TYPE I 45W-INCH	LF	1,750	———	———	———	1,750
505.0405	BAR STEEL REINFORCEMENT HS BRIDGES	LB	———	5,860	5,660	13,120	24,640
505.0605	BAR STEEL REINFORCEMENT HS COATED BRIDGES	LB	109,970	2,240	2,270	25,730	140,210
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	———	8	8	16	32
506.4000	STEEL DIAPHRAGMS B-70-287	EACH	28	———	———	———	28
509.5100.S	POLYMER OVERLAY	SY	345	———	———	———	345
513.4090	RAILING TUBULAR SCREENING B-70-287	LS	———	———	———	———	1
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	17	17	———	34
517.1010.S	CONCRETE STAINING B-70-287	SF	5,750	550	570	2,290	9,160
550.2106	PILING CIP CONCRETE 10 3/4 X 0.365-INCH	LF	———	1,650	1,650	2,035	5,335
604.0400	SLOPE PAVING CONCRETE	SY	———	25	25	———	50
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	135	135	———	270
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	2	———	———	———	2
SPV.0035	HIGH PERFORMANCE CONCRETE (HPC) MASONRY STRUCTURES	CY	570	82	85	196	933
SPV.0165	LONGITUDINAL GROOVING BRIDGE DECK	SF	8,860	———	———	———	8,860
	NON-BID ITEMS						
	FILLER	SIZE	———	———	———	———	½", ¾" & 1"



PROFILE GRADE LINE C.T.H. GG

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

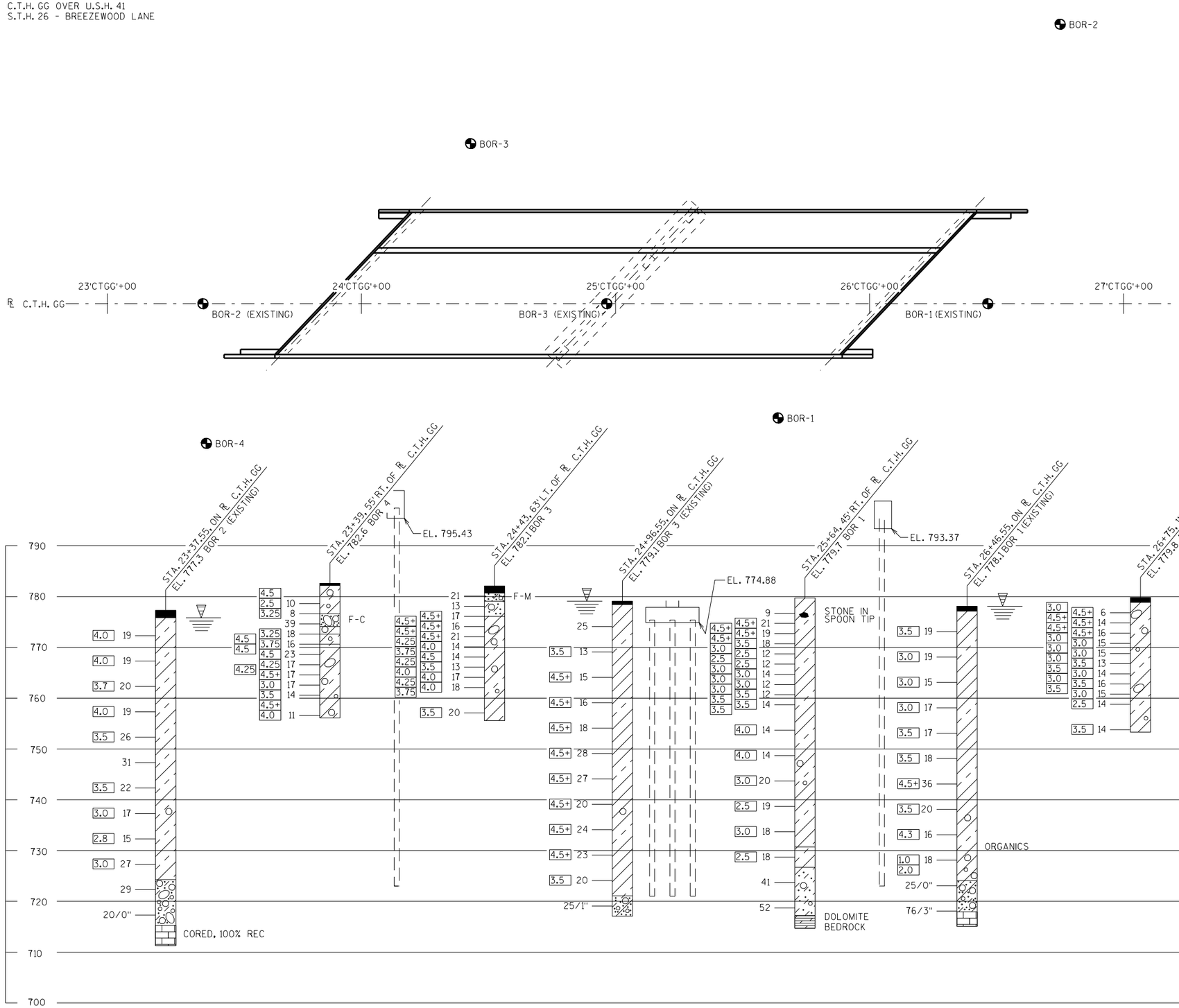
CROSS SECTION & QUANTITIES

SHEET 2

249

SCALE = 5.333

C.T.H. GG OVER U.S.H. 41
S.T.H. 26 - BREEZEWOOD LANE



STATE PROJECT NUMBER

1120-09-77

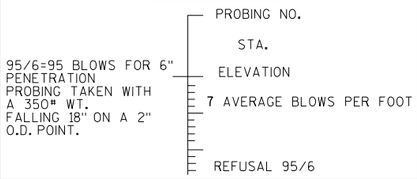
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

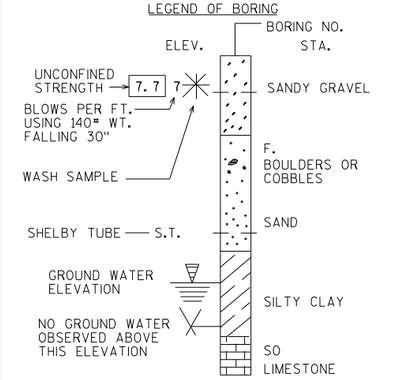
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE, SAND, PEAT, LIMESTONE, GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

SUBSURFACE EXPLORATION

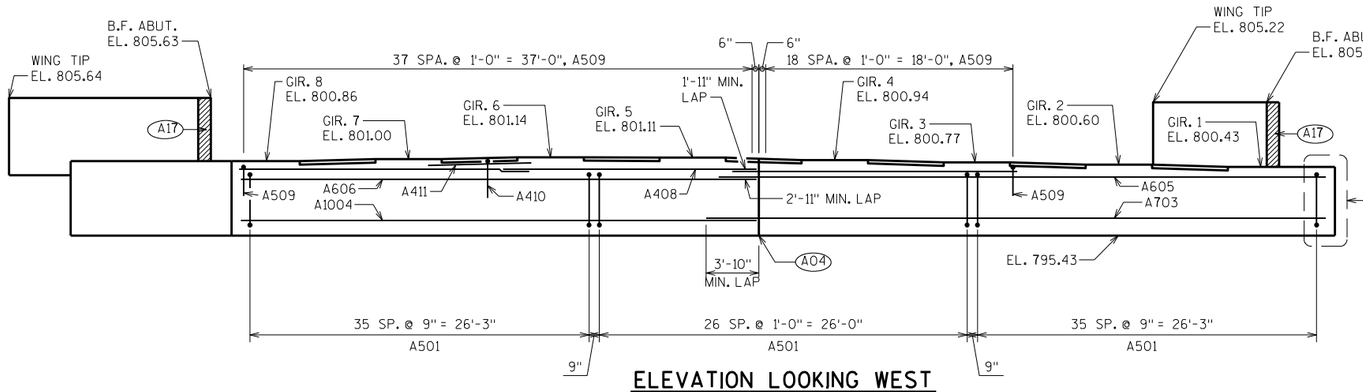
SHEET 3

250

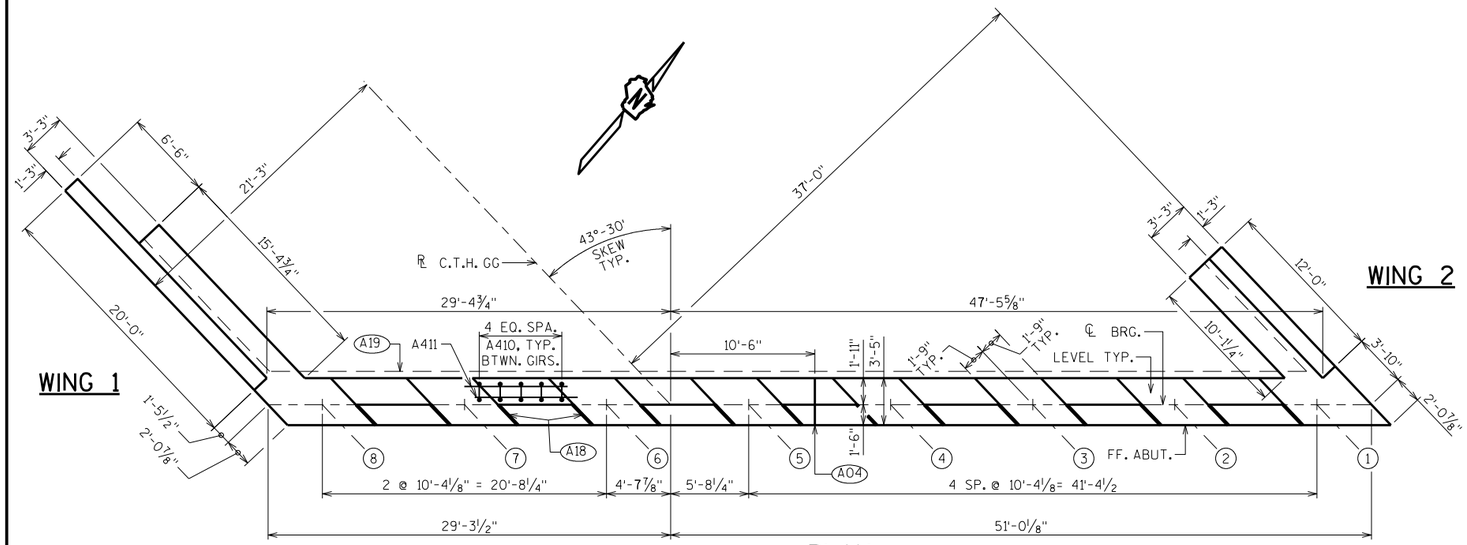
SCALE = 10

STATE PROJECT NUMBER

1120-09-77



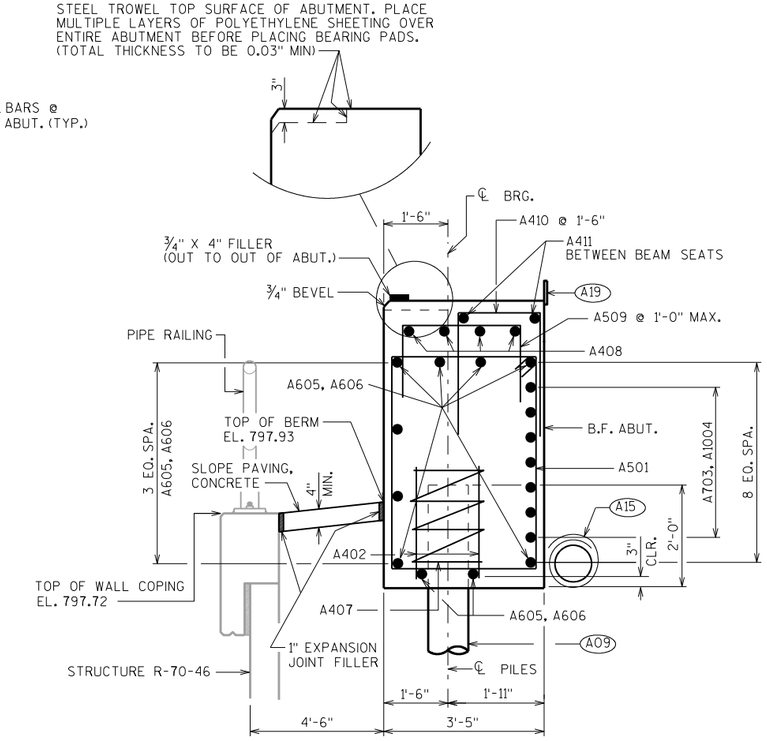
ELEVATION LOOKING WEST



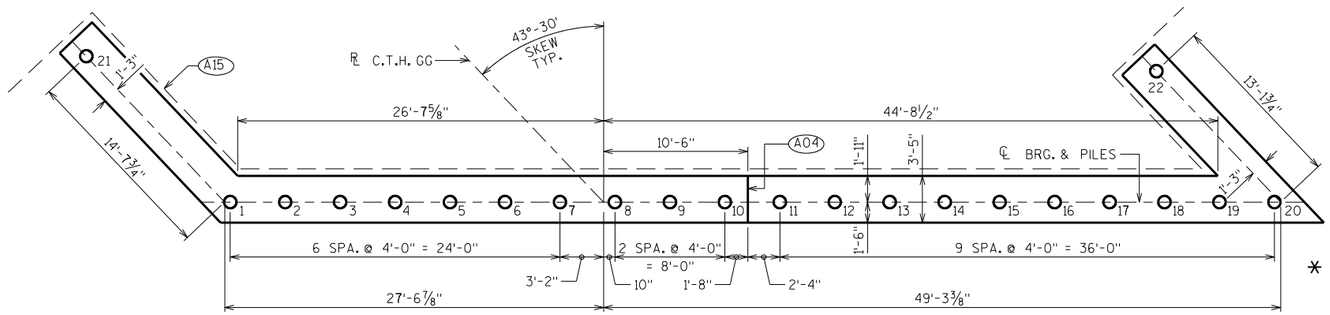
WING 1

WING 2

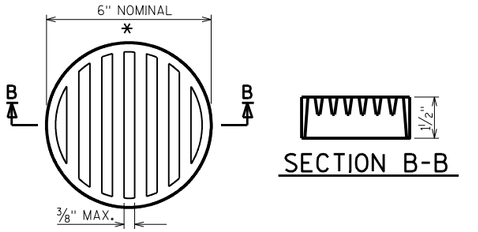
PLAN



SECTION THRU BODY



PILE PLAN



RODENT SCREEN DETAIL

SECTION B-B

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

(A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 X 8. ¾" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE. SEE SHT. 19 FOR ALTERNATE CONSTRUCTION JOINT DETAILS.

(A09) SUPPORT ABUTMENT ON 10¾" X 0.365-INCH CIP CONCRETE PILING, ESTIMATED 75 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

(A17) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING LIGHT TAN NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) ¾" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

WEST ABUTMENT

SHEET 4

251

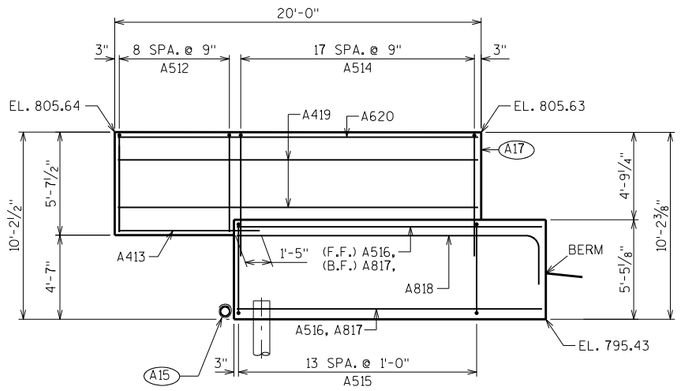
SCALE = 5.333

8

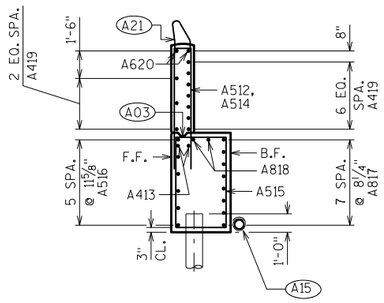
8

STATE PROJECT NUMBER

1120-09-77



WING 1 ELEVATION



WING 1 SECTION

A03 OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 X 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

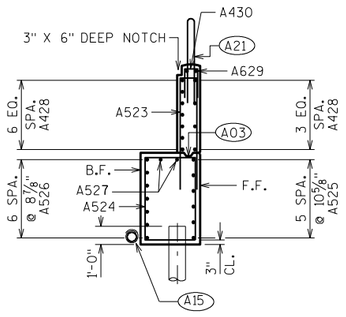
A15 PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

A17 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING LIGHT TAN NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

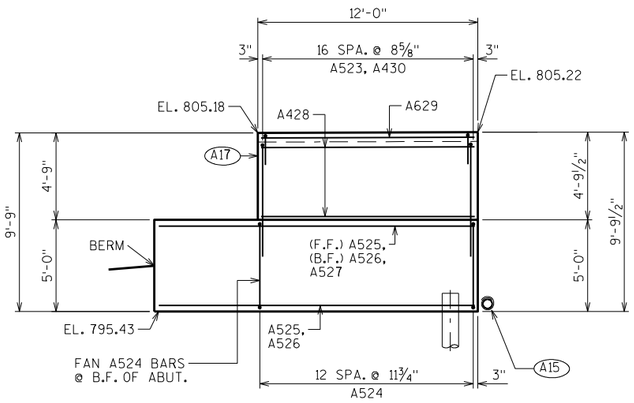
A21 FOR PPT. BARS & DIMENSION SEE PARAPET SHT.

BILL OF BARS

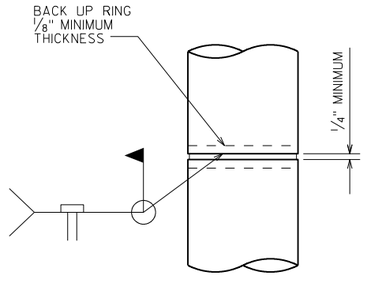
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		99	15'-3"	X		BODY-STIRRUPS
A402		44	2'-3"			PILES-2 PER PILE
A703		7	45'-7"			BODY-HORIZ.-B.F.
A1004		7	41'-3"	X		BODY-HORIZ.-B.F.
A605		10	44'-8"			BODY-HORIZ.-F.F.-TOP-BTM.
A606		10	38'-2"			BODY-HORIZ.-F.F.-TOP-BTM.
A407		22	28'-0"	X		PILES-1 PER PILE
A408		12	20'-7"			BODY-HORIZ.-TOP-UNDER GIRS. 3-8
A509		57	5'-8"	X		BODY-VERT.-TOP-UNDER GIRS. 3-8
A410		35	3'-11"	X		BODY-VERT.-BETWEEN BEAM SEATS
A411		14	7'-6"			BODY-HORIZ.-BETWEEN BEAM SEATS
A512	X	9	11'-0"	X		WING 1-VERT.
A413	X	2	7'-9"			WING 1-HORIZ.
A514	X	18	14'-0"	X		WING 1-VERT.
A515	X	14	16'-5"	X		WING 1-STIRRUP
A516	X	6	16'-10"			WING 1-HORIZ.-F.F.
A817	X	8	18'-10"			WING 1-HORIZ.-B.F.
A818	X	2	18'-10"	X		WING 1-HORIZ.
A419	X	10	19'-8"			WING 1-HORIZ.
A620	X	2	19'-8"			WING 1-HORIZ.
A521		NOT	USED			———
A422		NOT	USED			———
A523	X	17	13'-0"	X		WING 2-VERT.
A524	X	13	15'-7"	X		WING 2-STIRRUP
A525	X	6	17'-0"			WING 2-HORIZ.-F.F.
A526	X	7	12'-0"			WING 2-HORIZ.-B.F.
A527	X	2	12'-0"			WING 2-HORIZ.
A428	X	11	11'-8"			WING 2-HORIZ.
A629	X	2	11'-8"			WING 2-HORIZ.
A430	X	17	3'-8"	X		WING 2-VERT.



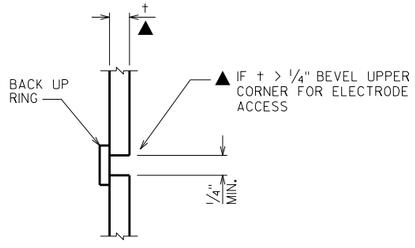
WING 2 SECTION



WING 2 ELEVATION

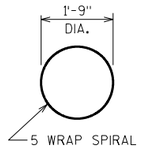


CAST-IN-PLACE 'PIPE PILE'

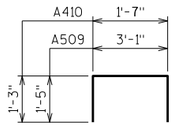


C.I.P. PILE WELD DETAIL

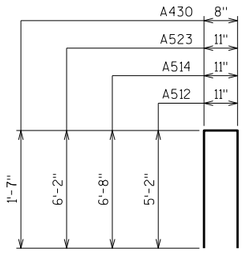
PILE DETAILS



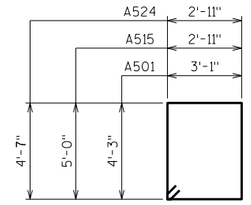
A407



A509, A410



A512, A514, A523, A430



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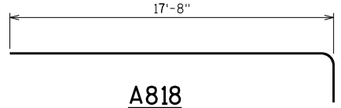

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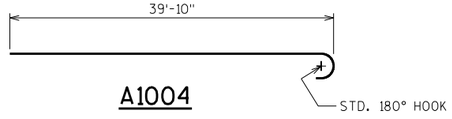


A1004

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

WEST ABUTMENT DETAILS

SHEET 5

252

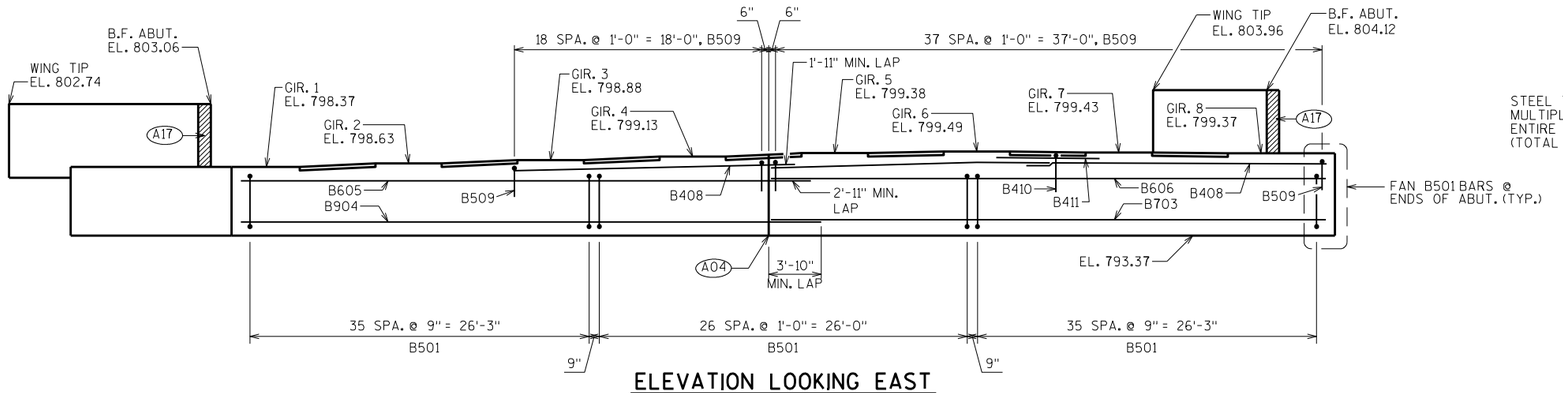
SCALE = 4.0

8

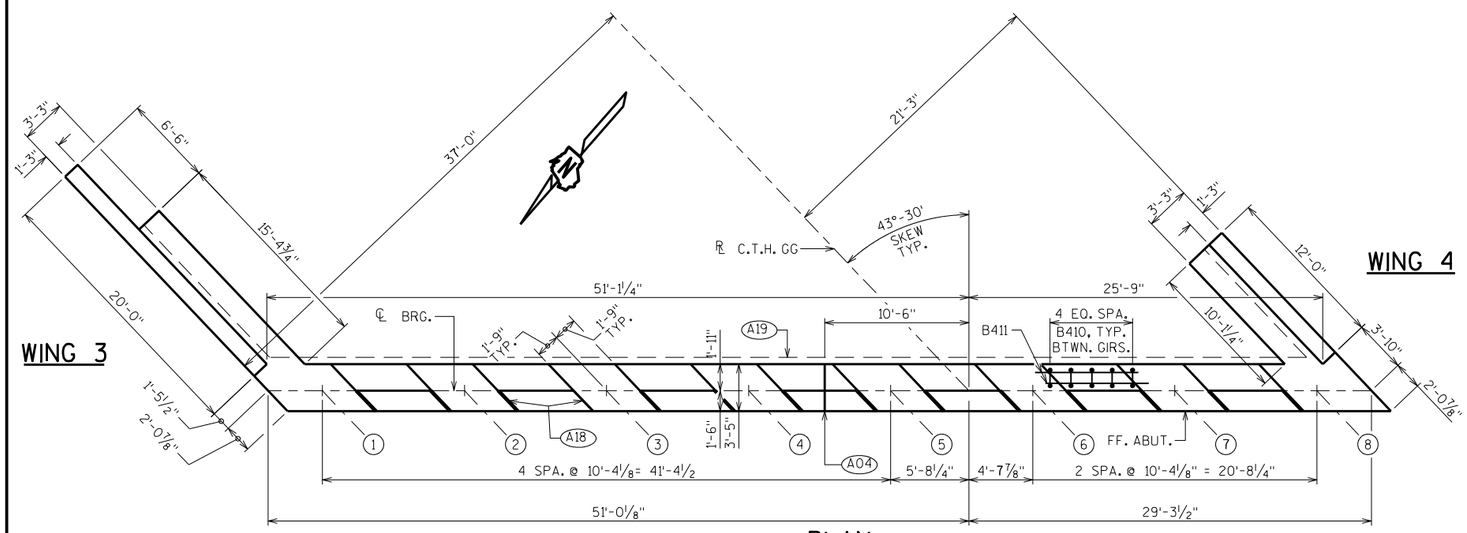
8

STATE PROJECT NUMBER

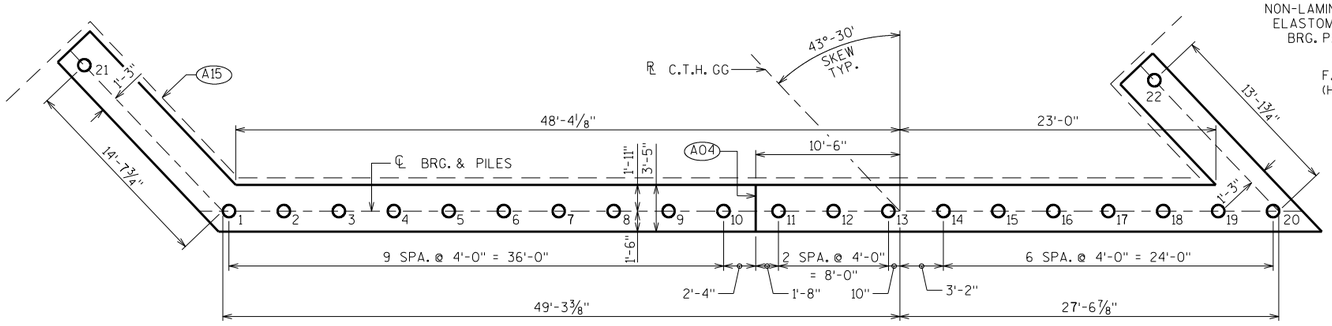
1120-09-77



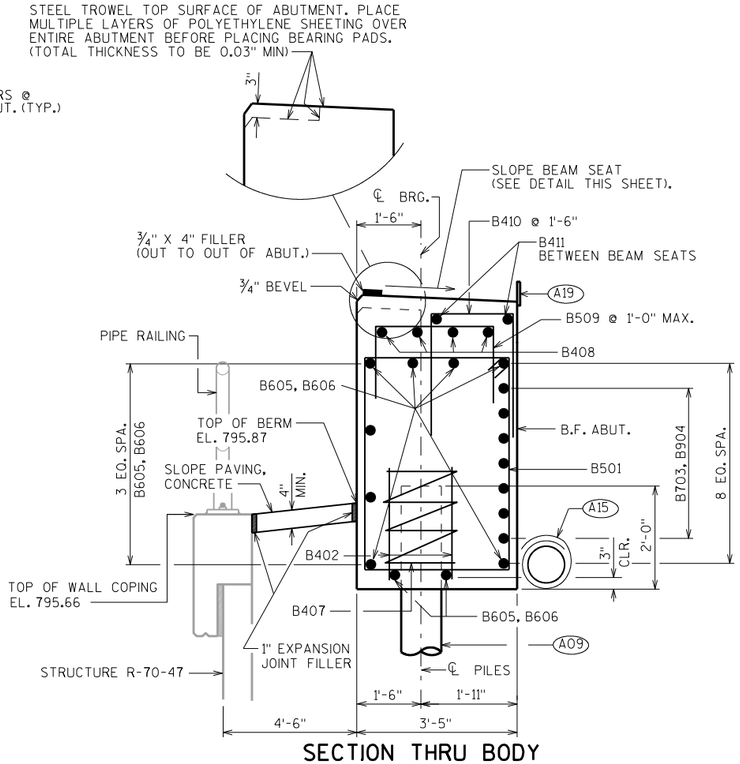
ELEVATION LOOKING EAST



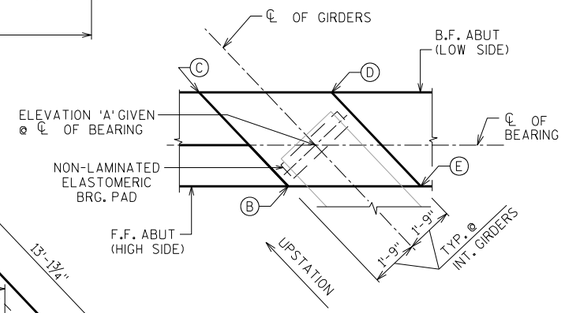
PLAN



PILE PLAN



SECTION THRU BODY



SLOPED BEAM SEAT DETAIL

(SHOWN AT INTERIOR GIRDER, EXTERIOR GIRDER SIMILAR)

	EL. 'A'	EL. 'B'	EL. 'C'	EL. 'D'	EL. 'E'
GIRDER 1	798.37	798.37	798.31	798.36	798.41
GIRDER 2	798.63	798.63	798.58	798.62	798.67
GIRDER 3	798.88	798.88	798.83	798.87	798.92
GIRDER 4	799.13	799.13	799.08	799.12	799.17
GIRDER 5	799.38	799.38	799.33	799.37	799.42
GIRDER 6	799.49	799.49	799.44	799.48	799.53
GIRDER 7	799.43	799.44	799.38	799.42	799.47
GIRDER 8	799.37	799.38	799.33	799.38	799.43

(A04) VERT. CONSTRUCTION JOINT: KEYWAY FORMED BY A BEVELED 2 X 8.¾" "V" GROOVE @ THE FRONT FACE AND 18" R.M.W. @ BACKFACE. SEE SHT. 19 FOR ALTERNATE CONSTRUCTION JOINT DETAILS.

(A09) SUPPORT ABUTMENT ON 10¾" X 0.365-INCH CIP CONCRETE PILING, ESTIMATED 75 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED. (SEE RODENT SCREEN DETAIL ON SHT. 4)

(A17) ½" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING LIGHT TAN NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

(A18) ¾" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

EAST ABUTMENT

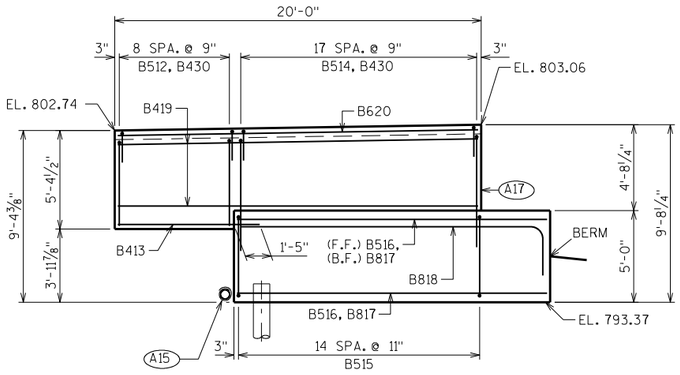
SHEET 6

253

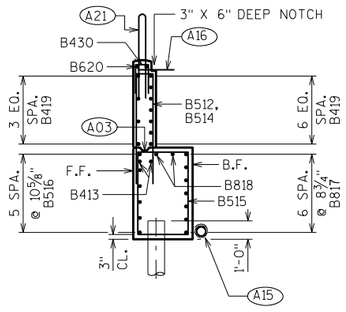
SCALE = 5.333

STATE PROJECT NUMBER

1120-09-77



WING 3 ELEVATION



WING 3 SECTION

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 X 6. (18" R.M.W. @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

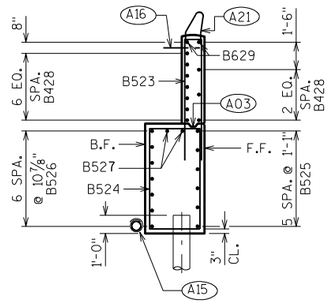
(A16) B431 BARS SPACED @ 1'-0" CTRS. EMBED 1'-0" INTO WING CONC. LOCATE 3" DOWN FROM TOP OF WING @ BACKFACE TO 6" DOWN @ WING TIP. (DRILLED IN EPOXY ANCHORED #4 BARS 2'-0" LONG MAY BE USED.) COST INCIDENTAL TO BID ITEM "BAR STEEL REINFORCEMENT HS COATED BRIDGES".

(A17) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING LIGHT TAN NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

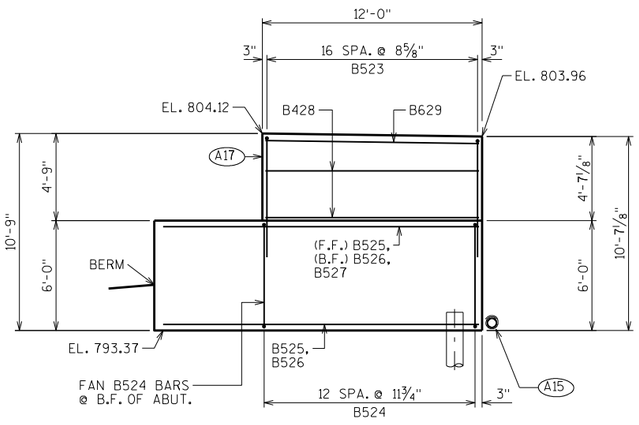
(A21) FOR PPT. BARS & DIMENSION SEE PARAPET SHT.

BILL OF BARS

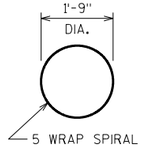
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B501		99	15'-3"	X		BODY-STIRRUPS
B402		44	2'-3"			PILES-2 PER PILE
B703		7	37'-9"			BODY-HORIZ.-B.F.
B904		7	45'-3"	X		BODY-HORIZ.-B.F.
B605		10	45'-0"			BODY-HORIZ.-F.F.-TOP-BTM.
B606		10	37'-9"			BODY-HORIZ.-F.F.-TOP-BTM.
B407		22	28'-0"	X		PILES-1 PER PILE
B408		12	20'-7"			BODY-HORIZ.-TOP-UNDER GIRS. 3-8
B509		57	6'-10"	X		BODY-VERT.-TOP-UNDER GIRS. 3-8
B410		35	3'-11"	X		BODY-VERT.-BETWEEN BEAM SEATS
B411		14	7'-6"			BODY-HORIZ.-BETWEEN BEAM SEATS
B512	X	9	9'-8"	X		WING 3-VERT.
B413	X	2	7'-8"			WING 3-HORIZ.
B514	X	18	12'-8"	X		WING 3-VERT.
B515	X	15	15'-8"	X		WING 3-STIRRUP
B516	X	6	16'-8"			WING 3-HORIZ.-F.F.
B817	X	7	18'-10"			WING 3-HORIZ.-B.F.
B818	X	2	18'-10"	X		WING 3-HORIZ.
B419	X	11	19'-8"			WING 3-HORIZ.
B620	X	2	19'-8"			WING 3-HORIZ.
B521		NOT	USED			———
B422		NOT	USED			———
B523	X	17	13'-10"	X		WING 4-VERT.
B524	X	13	17'-8"	X		WING 4-STIRRUP
B525	X	6	17'-0"			WING 4-HORIZ.-F.F.
B526	X	7	12'-0"			WING 4-HORIZ.-B.F.
B527	X	2	12'-0"			WING 4-HORIZ.
B428	X	10	11'-8"			WING 4-HORIZ.
B629	X	2	11'-8"			WING 4-HORIZ.
B430	X	27	3'-8"	X		WING 3-VERT.
B431	X	32	2'-0"			WING 3&4-SURFACE DRAIN ANCHORS



WING 4 SECTION



WING 4 ELEVATION



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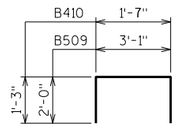

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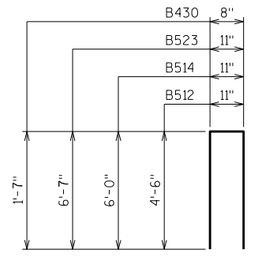

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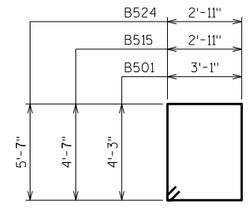

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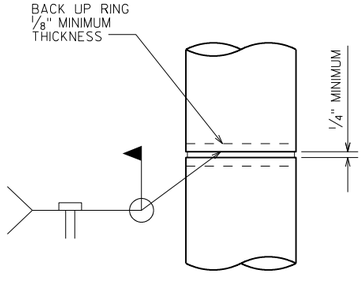
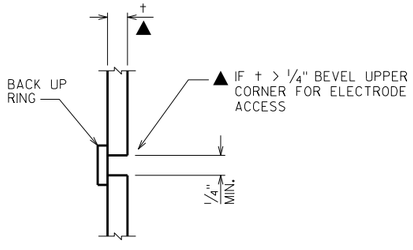
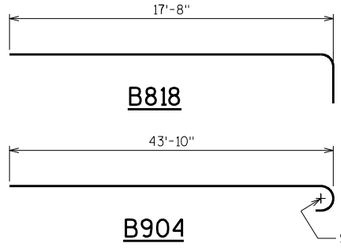


CAST-IN-PLACE 'PIPE PILE'



C.I.P. PILE WELD DETAIL

PILE DETAILS



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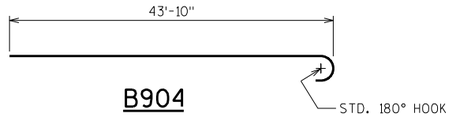


B904

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

EAST ABUTMENT DETAILS

SHEET 7

254

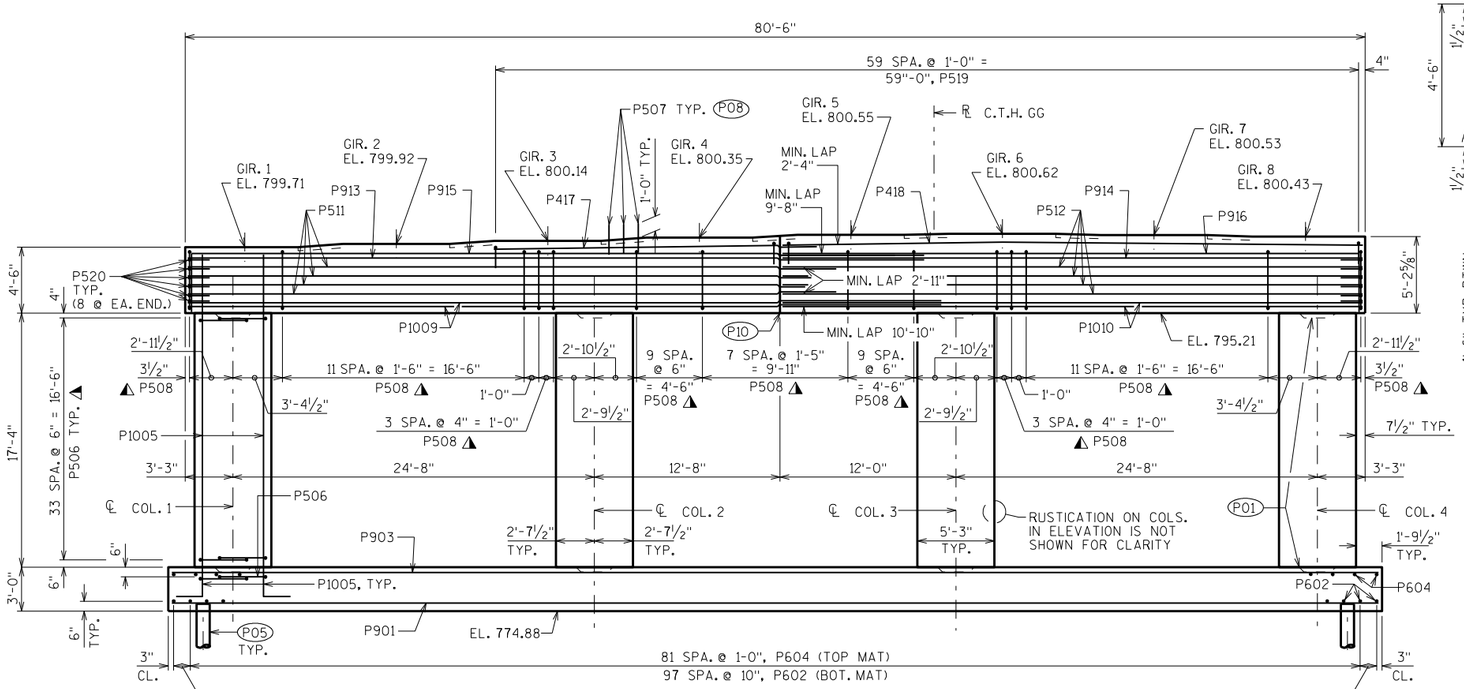
SCALE = 4.0

8

8

STATE PROJECT NUMBER

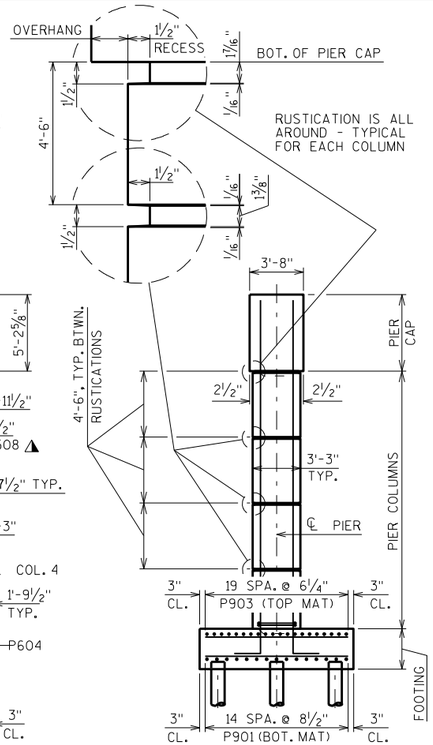
1120-09-77



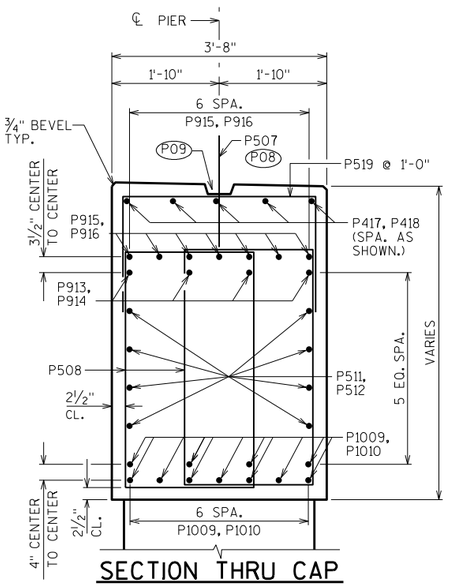
ELEVATION - LOOKING EAST

◭ = DBL. STIRRUP SPA.

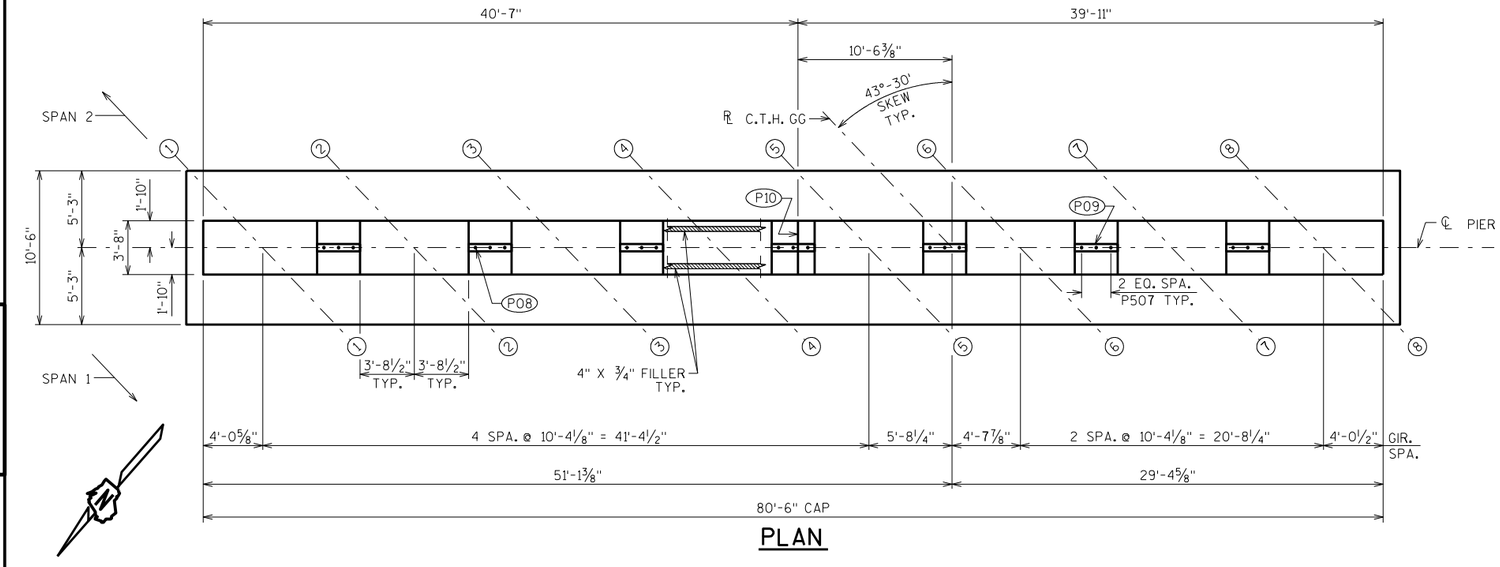
NOTE:
FOR PILE/FOOTING PLAN, SEE SHEET 9



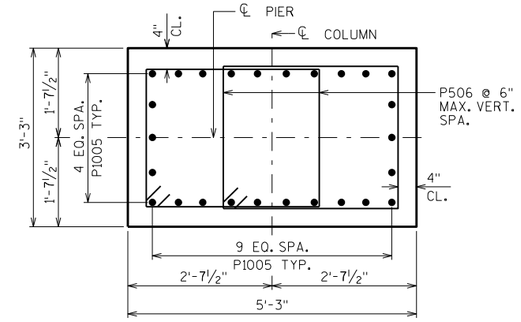
END VIEW



SECTION THRU CAP



PLAN



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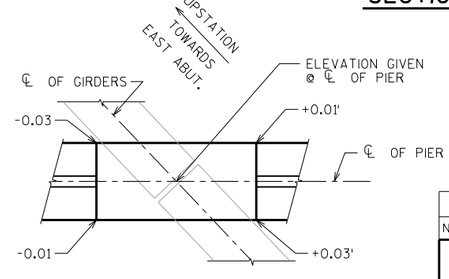


SLOPED BEAM SEAT DETAIL

(SHOWN AT INTERIOR GIRDER, EXTERIOR GIRDER SIMILAR)

(P01) 1'-3" X 2'-6" X 4" DEEP, CONSTRUCTION JOINT FORMED BY BEVELED KEYWAY.

(P05) SUPPORT PIER ON 10-3/4" DIA. X 0.365-INCH WALL THK. CAST-IN-PLACE CONCRETE PILING, ESTIMATED 55 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.

(P08) P507 BARS @ 1'-0" CTRS. BETWEEN BEAM SEATS. MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. (EMBED 1'-0" INTO CONC.)

(P09) KEYED CONSTRUCTION JOINT-FORMED BY BEVELED 2 X 6 BETWEEN BEAM SEATS.

(P10) VERT. CONSTRUCTION JOINT; KEYWAY FORMED BY A BEVELED 2" X 6" X 2'-0". FOR OPTIONAL DETAILS SEE "ALT. CONST. JOINT & SLOPE PAVING DETAILS," SHT. 19.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

PIER

SHEET 8

255

8

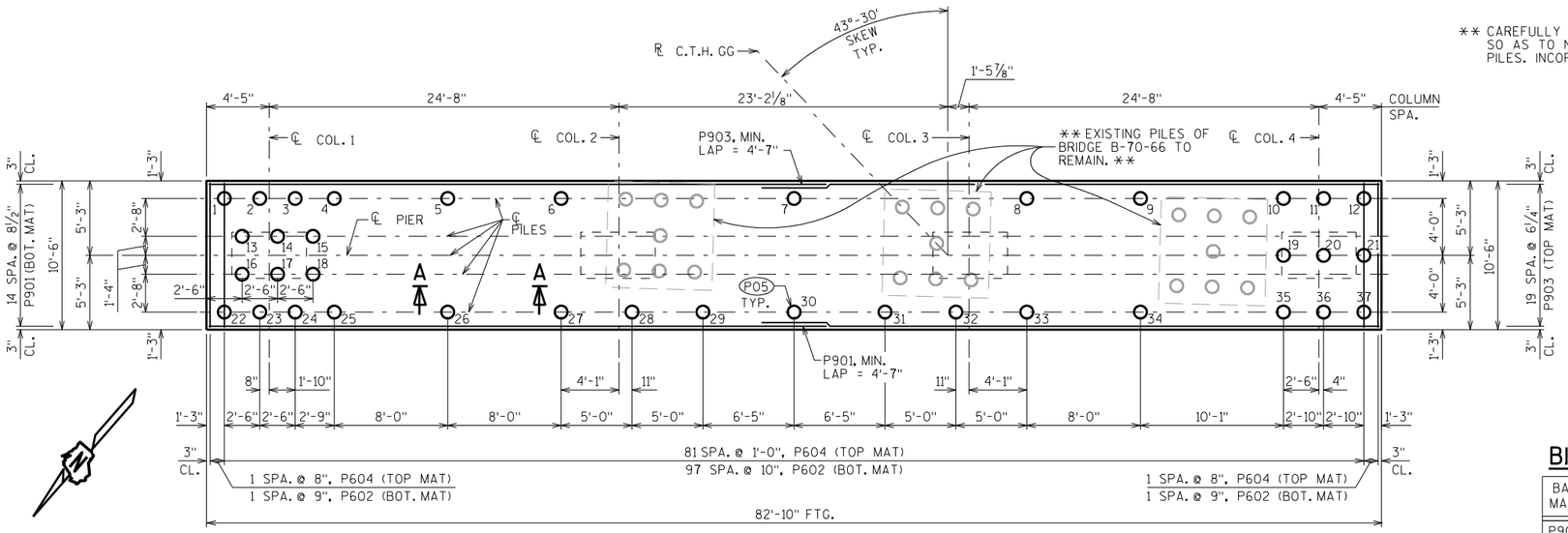
8

SCALE = 5.0

STATE PROJECT NUMBER

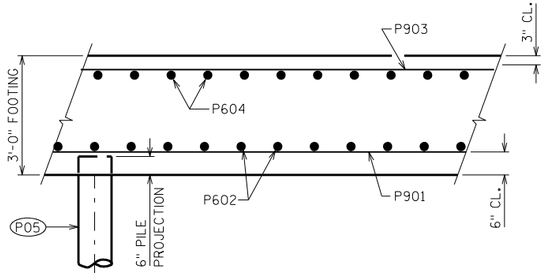
1120-09-77

** CAREFULLY REMOVE EXISTING CONCRETE FOOTINGS SO AS TO NOT DAMAGE EXISTING C.I.P. CONCRETE PIPES. INCORPORATE EXISTING PILES INTO NEW WORK.

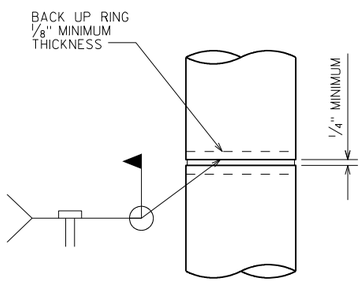


PILE/FOOTING PLAN

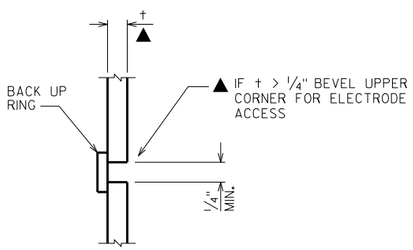
(P05) SUPPORT PIER ON 10-3/4" DIA. X 0.365-INCH WALL THK. CAST-IN-PLACE CONCRETE PILING, ESTIMATED 55 FEET LONG WITH A REQUIRED DRIVING RESISTANCE OF 110 TONS PER PILE.



SECTION A-A

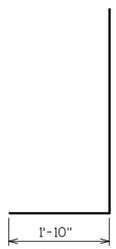


CAST-IN-PLACE 'PIPE PILE'

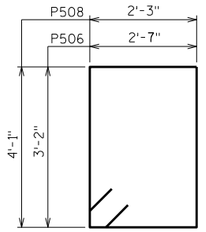


C.I.P. PILE WELD DETAIL

PILE DETAILS

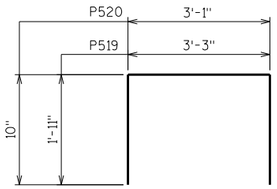


P1005



P506, P508

P915, P916



P519, P520

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
P901		30	43'-6"			FOOTING - HORIZ. (BOT. MAT)
P602		100	10'-0"			FOOTING - TRANS. (BOT. MAT)
P903		40	43'-6"			FOOTING - HORIZ. (TOP MAT)
P604		84	10'-0"			FOOTING - TRANS. (TOP MAT)
P1005	X	104	25'-4"	X		FOOTING/COLUMN - VERT.
P506	X	280	12'-2"	X		COLUMN - STIRRUPS
P507	X	21	2'-0"			CAP - DOWEL BARS
P508	X	120	13'-4"	X		CAP - STIRRUPS
P1009	X	11	51'-5"			CAP - HORIZ. - BOTTOM
P1010	X	11	39'-7"			CAP - HORIZ. - BOTTOM
P511	X	8	43'-6"			CAP - HORIZ. - SIDES
P512	X	8	39'-7"			CAP - HORIZ. - SIDES
P913	X	4	50'-3"			CAP - HORIZ. - TOP
P914	X	4	39'-7"			CAP - HORIZ. - TOP
P915	X	7	51'-5"	X		CAP - HORIZ. - TOP
P916	X	7	40'-9"	X		CAP - HORIZ. - TOP
P417	X	5	22'-0"			CAP - HORIZ. - TOP
P418	X	5	39'-7"			CAP - HORIZ. - TOP
P519	X	60	6'-10"	X		CAP - VERT. - TOP
P520	X	16	4'-6"	X		CAP ENDS - HORIZ.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

PIER DETAILS

SHEET 9

256

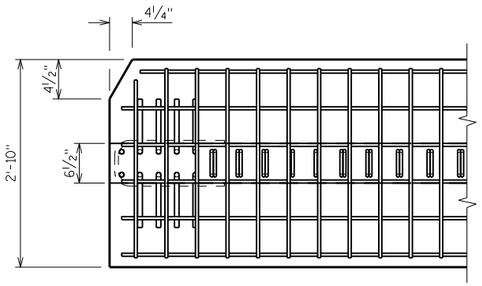
SCALE = 5.0

8

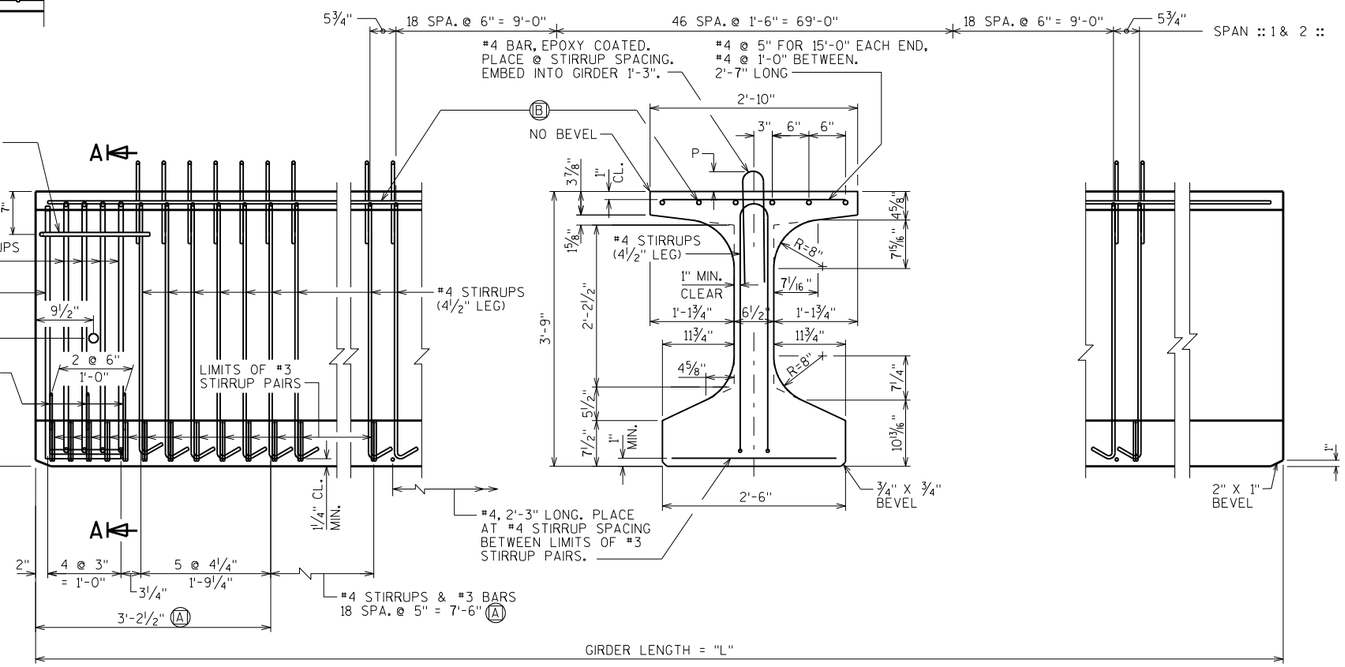
8

STATE PROJECT NUMBER

1120-09-77



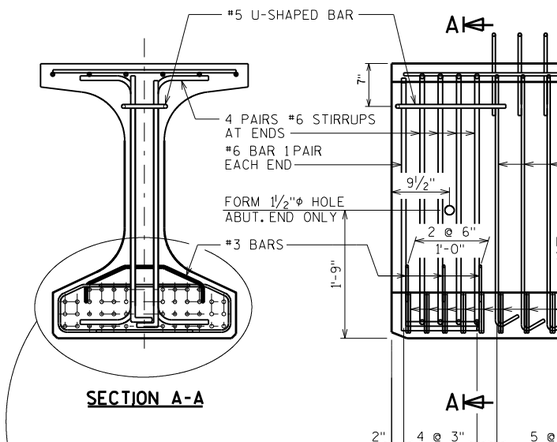
TOP FLANGE



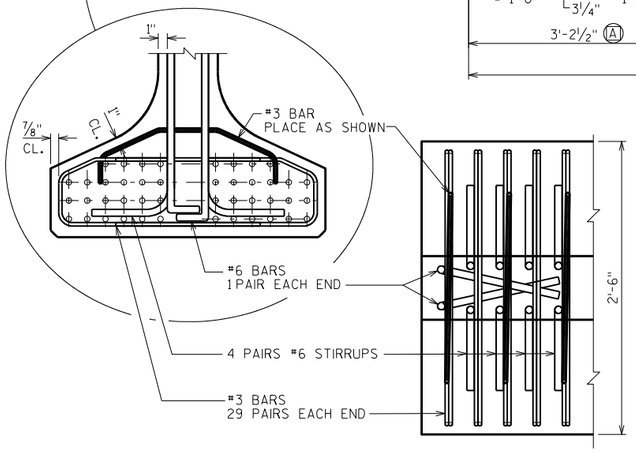
SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

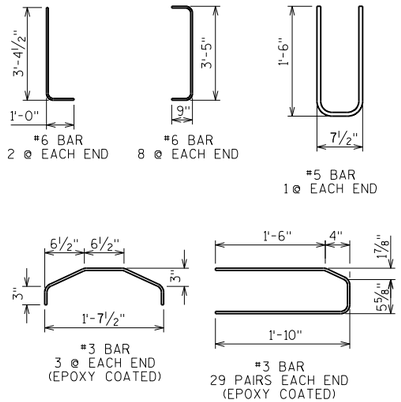
Ⓑ 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"



SECTION A-A



BOTTOM FLANGE



GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 0.6"Φ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi.

STRANDS SHALL BE FLUSH WITH THE END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, ENDS OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO APPLICATION OF THE SEALER.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, 1 OPTION IS AVAILABLE:

USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A497 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT CHIEF, (608)266-5161.

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER	GIRDER LENGTH "L" (FT.)	DEAD LOAD DEFL. (IN.) 1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	CONC. STRGTH. f'c (p.s.i.)	"P" 1ST ⅓ GIRDER (IN.)	"P" MID ⅓ OF GIRDER (IN.)	"P" END ⅓ OF GIRDER (IN.)	DIA. OF STRAND (IN.)	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.)
1	1-8	109.38	0.9	1.7	2.3	2.7	2.8	2.6	2.2	1.6	0.9	8000	7	7	7	0.60	38	6400	40.0	13.75	16.75	5.0	———	———
2	1-8	109.38	0.9	1.6	2.2	2.6	2.8	2.7	2.3	1.7	0.9	8000	7	7	7	0.60	38	6400	40.0	13.75	16.75	5.0	———	———

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

45W" PRESTRESSED GIRDER DETAILS 1

SHEET 10

257

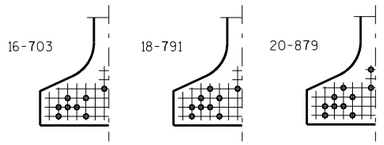
SCALE = 1.0

8

8

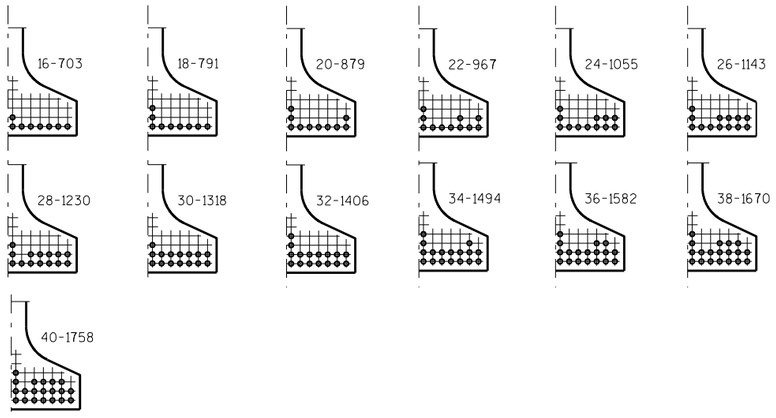
STATE PROJECT NUMBER

1120-09-77



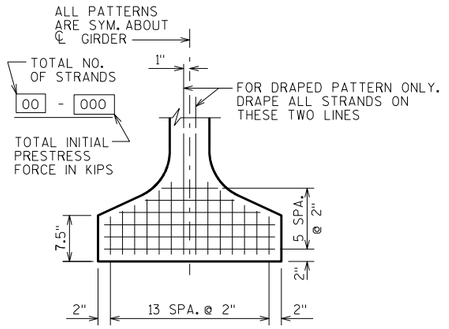
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6"Φ STRANDS

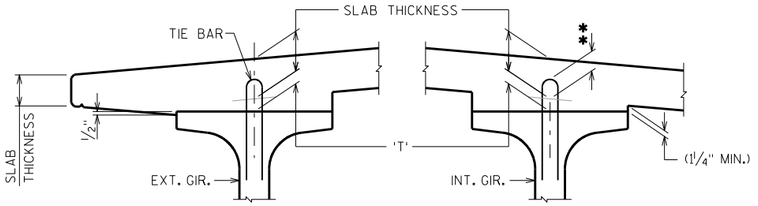


ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"Φ STRANDS



TYP. STRAND PATTERN



SLAB HAUNCH DETAIL

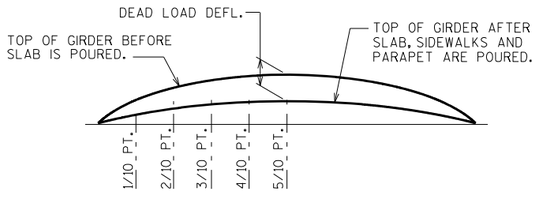
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

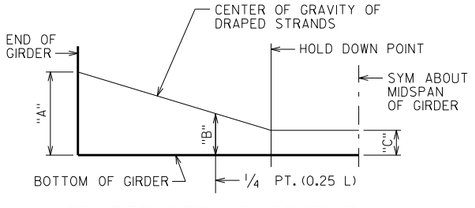
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2¾" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.)
1	4.38
2	4.38

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

45W" PRESTRESSED GIRDER DETAILS 2

SHEET 11

258

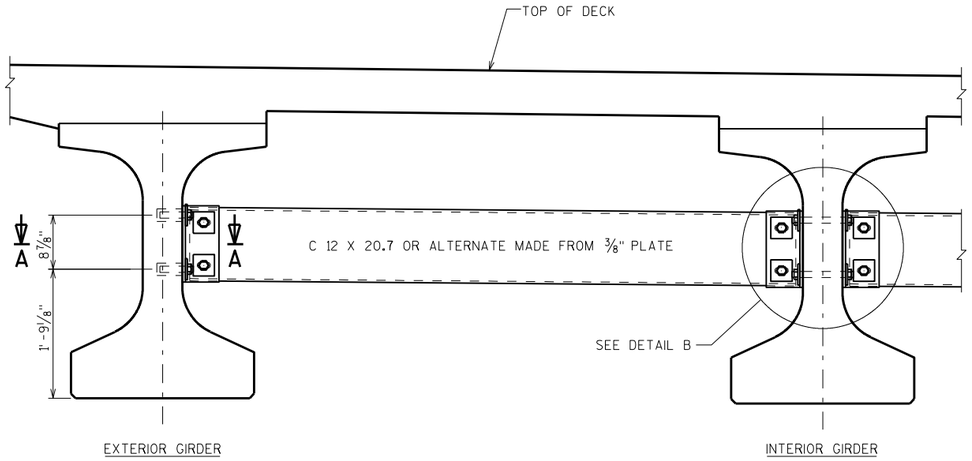
8

8

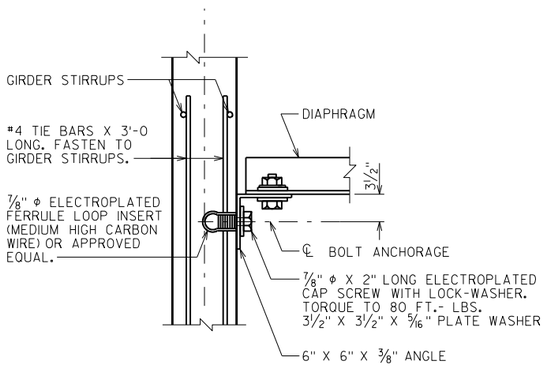
SCALE = 1.0

STATE PROJECT NUMBER

1120-09-77

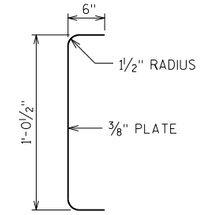


PART TRANSVERSE SECTION AT DIAPHRAGM

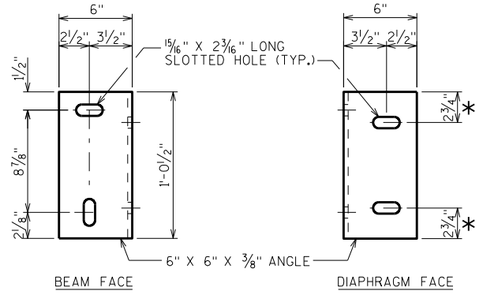


SECTION A-A

(FOR EXTERIOR ATTACHMENT)

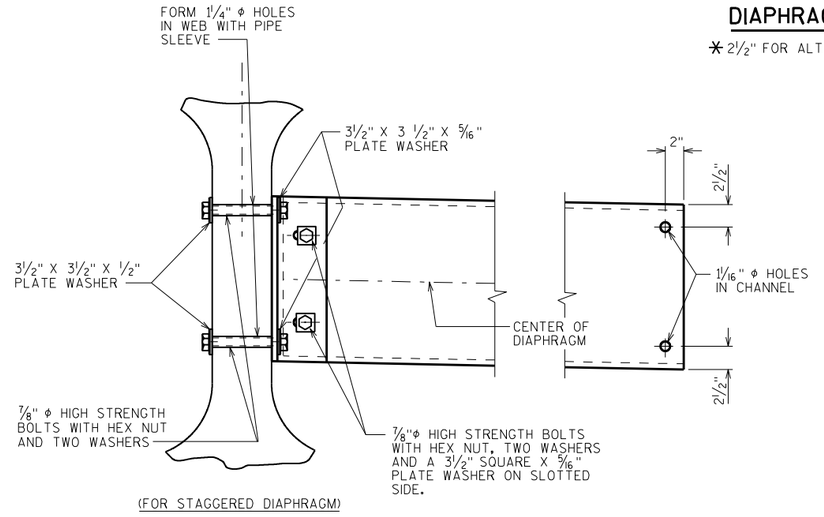


SECTION THRU ALTERNATE DIAPHRAGM



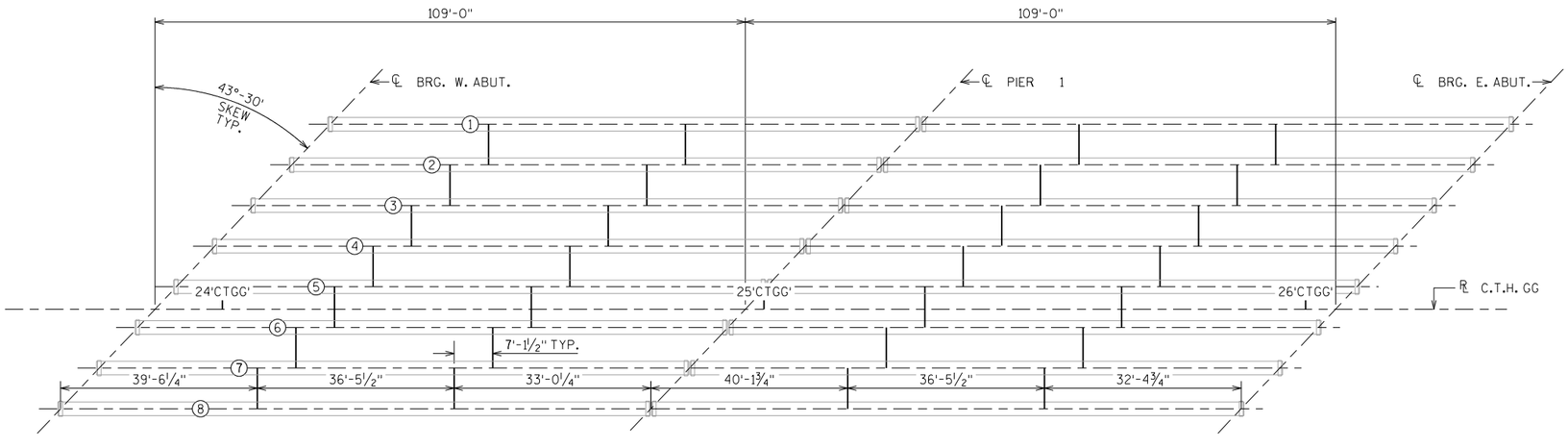
DIAPHRAGM SUPPORT

* 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM



(FOR STAGGERED DIAPHRAGM)

DETAIL B



INTERMEDIATE STEEL DIAPRHRAGM LAYOUT

NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-70-287", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT. ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

STEEL DIAPHRAGM

SHEET 12

259

8

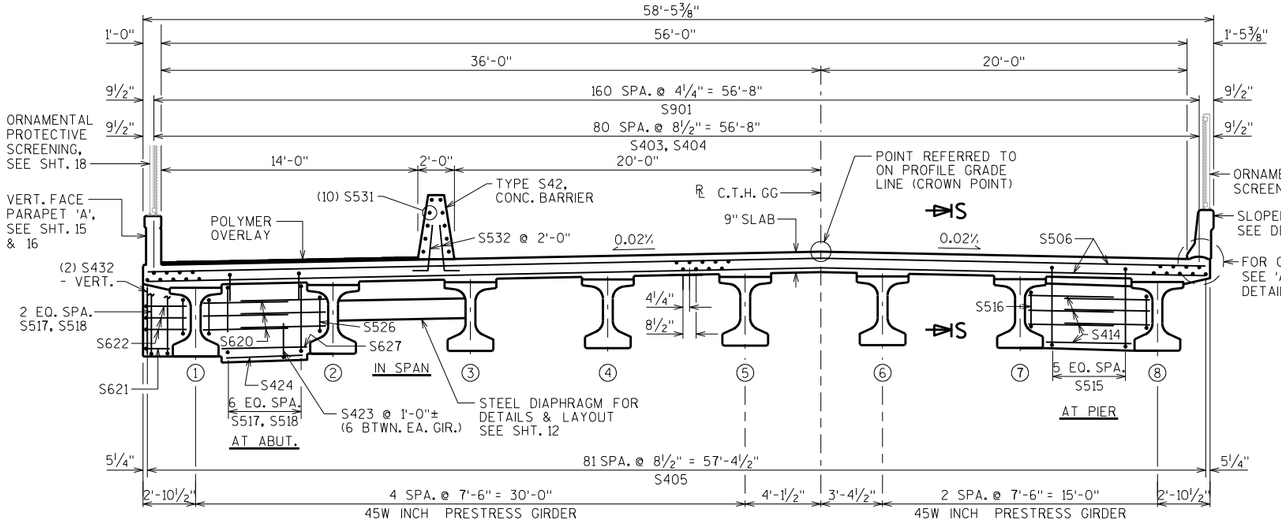
8

SCALE = 1.0

STATE PROJECT NUMBER

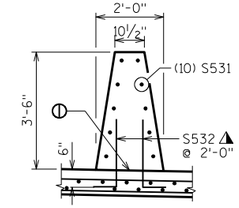
1120-09-77

⚠ CONTRACTOR MAY SUBSTITUTE CONC. MASONRY ANCHORS FOR S532 BARS. PAYMENT SHALL BE BASED ON S532 BARS DETAILED. USE ⅝" DIA. CONC. MASONRY ANCHORS, TYPE S (EPOXY ANCHORED). MIN. PULLOUT CAPACITY OF 19 KIPS. EMBED 6" INTO CONCRETE DECK.

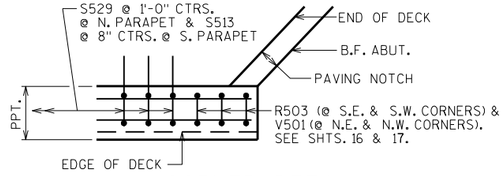


CROSS SECTION THRU ROADWAY

(LOOKING EAST)



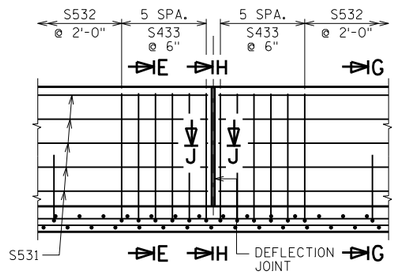
SECTION G-G



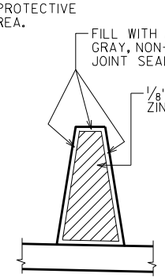
CORNER DETAIL

(SHOWING S.E. CORNER - DETAIL TYP. @ ALL CORNERS OF SUPERSTRUCTURE)

ⓘ ROUGH FLOAT SURFACE OR SAME FINISH AS EXPOSED DECK. DO NOT APPLY PROTECTIVE SURFACE TREATMENT TO THIS AREA.

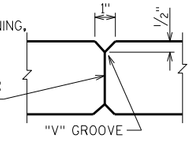


ELEVATION VIEW F-F

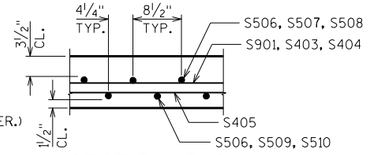


SECTION H-H

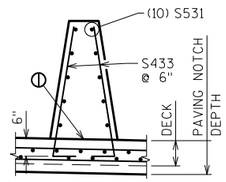
(SHOWING DEFLECTION JOINT IN BARRIER.)



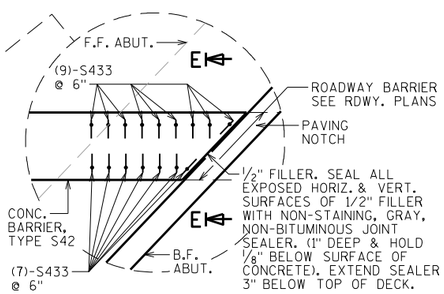
SECTION J-J



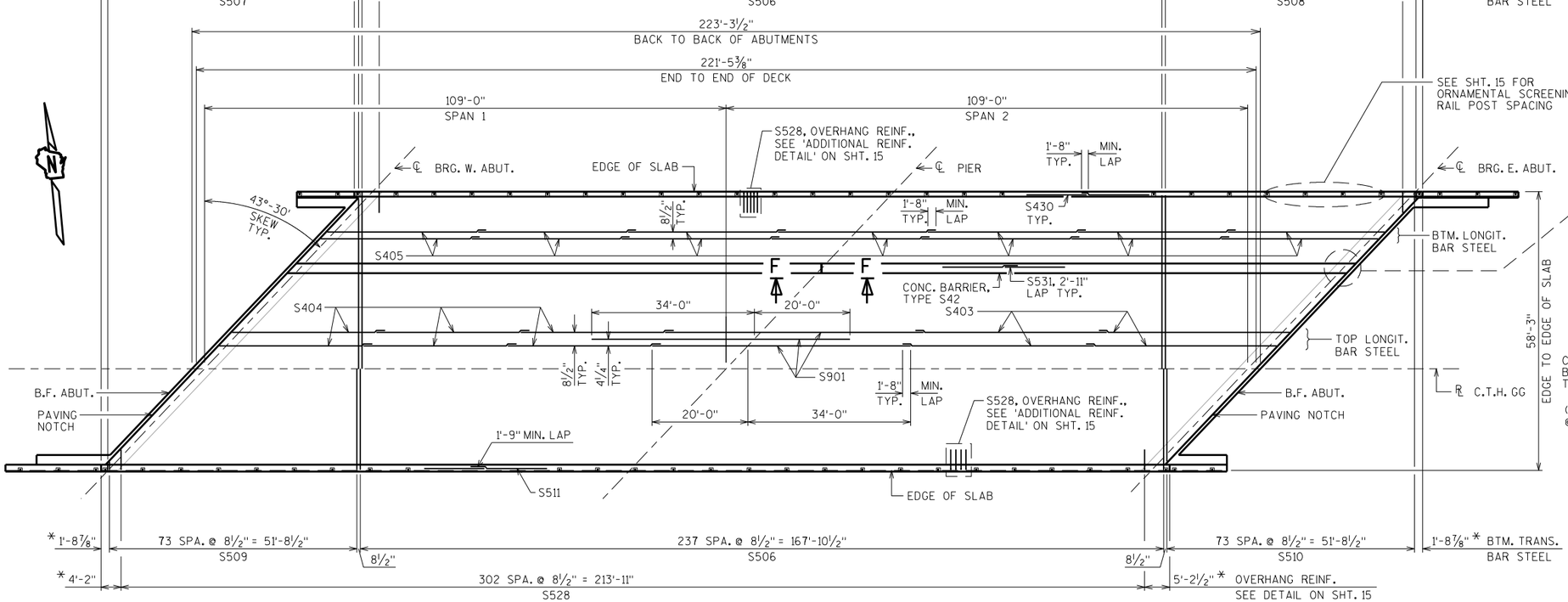
SECTION S-S



SECTION E-E



* DIM. TAKEN OFF B.F OF ABUT.



PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

SUPERSTRUCTURE

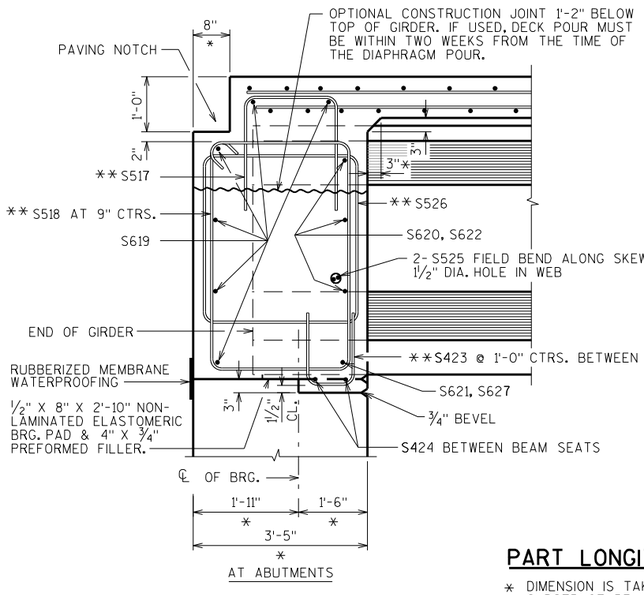
SHEET 13

260

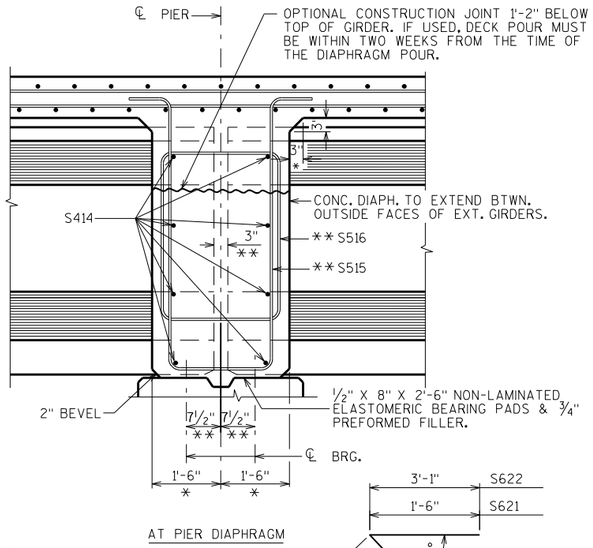
SCALE = 13.0

STATE PROJECT NUMBER

1120-09-77



AT ABUTMENTS

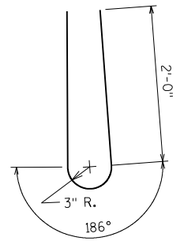


AT PIER DIAPHRAGM

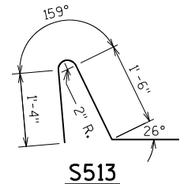
PART LONGIT. SECTION

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

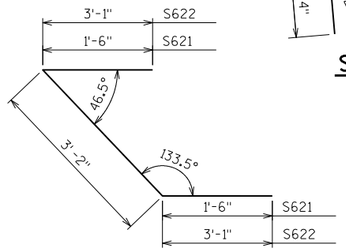
** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.



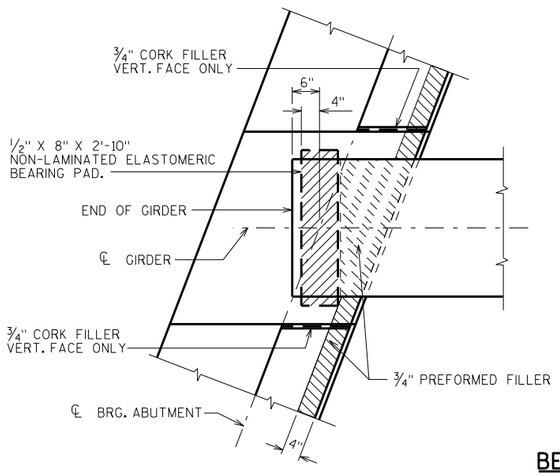
S512

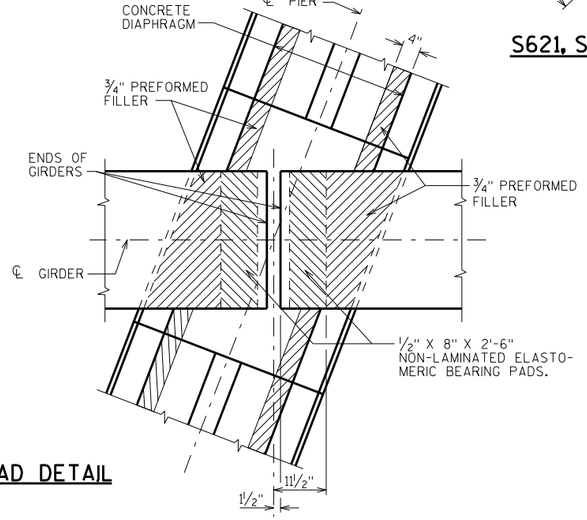


S513

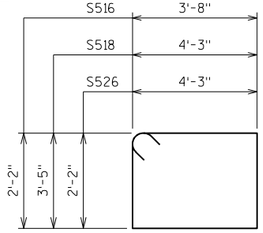


S621, S622





BEARING PAD DETAIL



S516, S518, S526

BAR SERIES TABLE

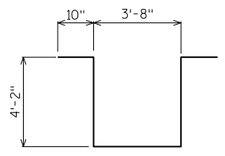
BUNDLE AND TAG EACH SERIES SEPARATELY

MARK	NO. REQD.	LENGTH
S507	1 SERIES OF 75	1'-4" TO 56'-6"
S508	1 SERIES OF 75	1'-4" TO 56'-6"
S509	1 SERIES OF 74	1'-8" TO 56'-2"
S510	1 SERIES OF 74	1'-8" TO 56'-2"

BILL OF BARS

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S901	X	161	54'-0"			LONGITUDINAL CONTINUITY
S902		NOT	USED			
S403	X	162	39'-11"			LONGITUDINAL TOP
S404	X	243	31'-10"			LONGITUDINAL TOP
S405	X	574	33'-0"			LONGITUDINAL BOTTOM
S506	X	475	57'-11"			TRANSVERSE TOP AND BOTTOM
S507	X	75	28'-11"		▲	TRANSVERSE TOP CUT LEFT
S508	X	75	28'-11"		▲	TRANSVERSE TOP CUT RIGHT
S509	X	74	28'-11"		▲	TRANSVERSE BOTTOM CUT LEFT
S510	X	74	28'-11"		▲	TRANSVERSE BOTTOM CUT RIGHT
S511	X	20	57'-1"			PARAPET 'LF' - HORIZ.
S512	X	336	4'-10"	X		PARAPET 'LF' - VERT.
S513	X	330	4'-7"	X		PARAPET 'LF' - VERT. - SLAB
S414	X	98	6'-5"			PIER DIAPHRAGM - HORIZ.
S515	X	42	13'-2"	X		PIER DIAPHRAGM - VERT.
S516	X	14	12'-4"	X		PIER DIAPHRAGM - VERT.
S517	X	110	6'-11"	X		ABUT. DIAPHRAGM - VERT.
S518	X	110	16'-0"	X		ABUT. DIAPHRAGM - VERT.
S619	X	24	41'-8"			ABUT. DIAPHRAGM - HORIZ.
S620	X	84	6'-4"			ABUT. DIAPHRAGM - HORIZ.
S621	X	4	5'-10"	X		ABUT. DIAPHRAGM - HORIZ. - ENDS
S622	X	12	9'-0"	X		ABUT. DIAPHRAGM - HORIZ. - ENDS
S423	X	84	4'-1"	X		ABUT. DIAPHRAGM - VERT.
S424	X	28	5'-0"			ABUT. DIAPHRAGM - HORIZ.
S525	X	32	6'-0"			ABUT. DIAPHRAGM - HORIZ.
S526	X	32	13'-6'	X		ABUT. DIAPHRAGM - VERT.
S627	X	14	6'-5"			ABUT. DIAPHRAGM - HORIZ.
S528	X	606	4'-10"	X		TRANSVERSE - DECK EDGE
S529	X	218	6'-8"	X		PARAPET 'A' - VERT.
S430	X	36	38'-7"			PARAPET 'A' - HORIZ.
S531	X	60	38'-9"			TYPE S42 CONC. BARRIER - HORIZ.
S532	X	208	2'-9"	X		TYPE S42 CONC. BARRIER - VERT.
S433	X	56	4'-7"	X		TYPE S42 CONC. BARRIER - VERT.
S434	X	8	4'-2"			ABUT. DIAPHRAGM - VERT. - ENDS



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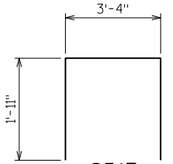

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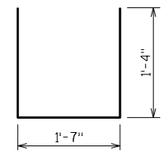

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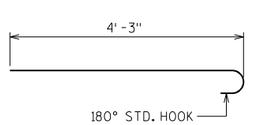

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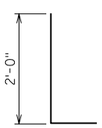

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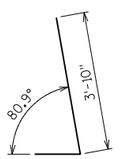

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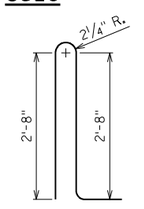


S529

TOP OF DECK ELEVATIONS

	W. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	PIER	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	E. ABUT.
LT E.O.D.	805.17	805.13	805.08	805.02	804.96	804.89	804.81	804.73	804.64	804.55	804.45	804.34	804.23	804.11	803.98	803.85	803.71	803.57	803.42	803.26	803.10
GIR. 1	805.22	805.17	805.12	805.07	805.00	804.94	804.86	804.78	804.69	804.60	804.50	804.40	804.28	804.17	804.04	803.91	803.77	803.63	803.48	803.33	803.17
GIR. 2	805.39	805.35	805.31	805.25	805.20	805.13	805.06	804.98	804.90	804.81	804.72	804.61	804.51	804.39	804.27	804.15	804.01	803.88	803.73	803.58	803.42
GIR. 3	805.57	805.53	805.49	805.44	805.38	805.32	805.26	805.19	805.11	805.02	804.93	804.83	804.73	804.62	804.50	804.38	804.25	804.12	803.98	803.83	803.68
GIR. 4	805.74	805.70	805.67	805.62	805.57	805.51	805.45	805.38	805.31	805.23	805.14	805.05	804.95	804.84	804.73	804.61	804.49	804.36	804.22	804.08	803.93
GIR. 5	805.90	805.87	805.84	805.80	805.75	805.70	805.64	805.58	805.51	805.43	805.35	805.26	805.16	805.06	804.95	804.84	804.72	804.59	804.46	804.32	804.17
GIR. 6	805.93	805.91	805.88	805.84	805.80	805.75	805.70	805.64	805.57	805.50	805.42	805.33	805.24	805.14	805.04	804.93	804.81	804.69	804.56	804.43	804.29
GIR. 7	805.79	805.77	805.75	805.72	805.68	805.63	805.58	805.53	805.46	805.40	805.32	805.24	805.15	805.06	804.96	804.85	804.74	804.62	804.50	804.37	804.23
GIR. 8	805.65	805.64	805.62	805.59	805.55	805.51	805.47	805.41	805.36	805.29	805.22	805.14	805.06	804.97	804.87	804.77	804.66	804.55	804.43	804.30	804.17
RT E.O.D.	805.62	805.61	805.59	805.56	805.53	805.49	805.44	805.39	805.33	805.27	805.20	805.12	805.04	804.95	804.85	804.75	804.65	804.53	804.41	804.29	804.15

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

SUPERSTRUCTURE DETAILS 1

SHEET 14

261

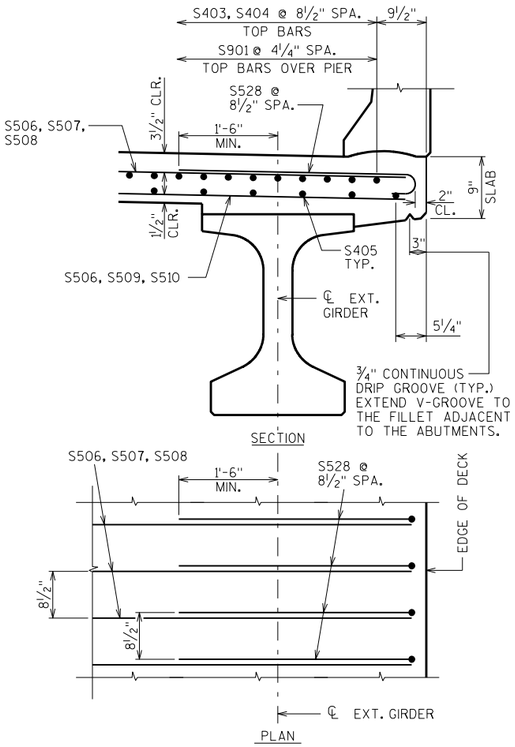
SCALE = 1.333

8

8

STATE PROJECT NUMBER

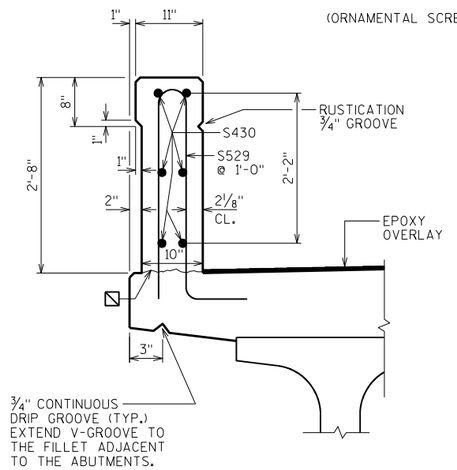
1120-09-77



ADDITIONAL REINF. DETAIL

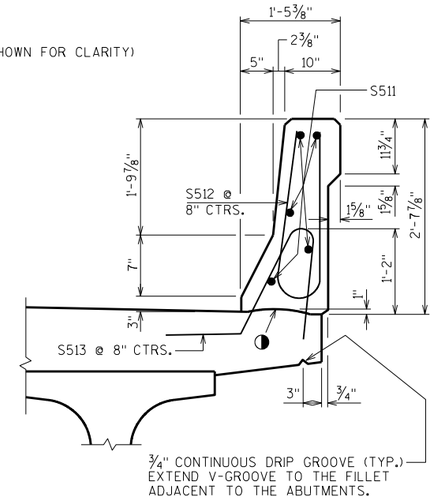
(NEAR GIRDER 8 SHOWN, GIRDER 1 SIMILAR)

(ORNAMENTAL SCREENING NOT SHOWN FOR CLARITY)



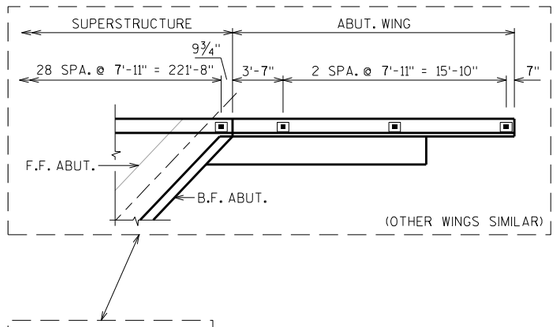
SECTION THRU PARAPET 'A' ON BRIDGE

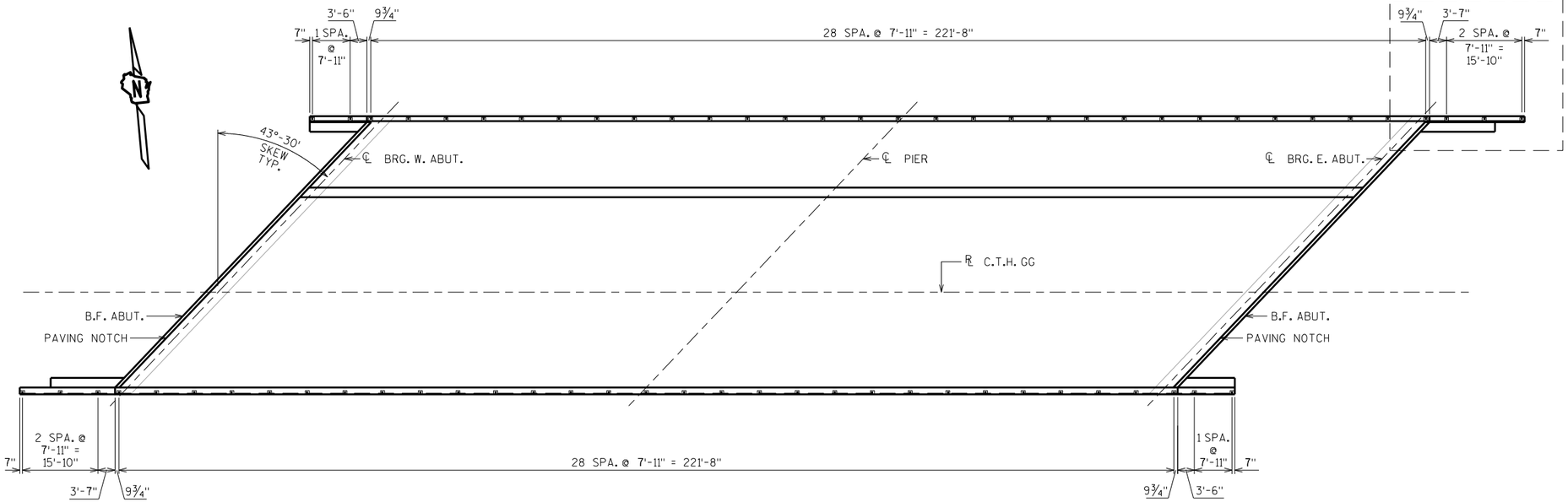
☒ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.



SECTION THRU PARAPET 'LF' ON BRIDGE

◐ CONST. JOINT - STRIKE OFF AS SHOWN





ORNAMENTAL SCREENING - RAIL POST SPACING PLAN

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

SUPERSTRUCTURE DETAILS 2

SHEET 15

262

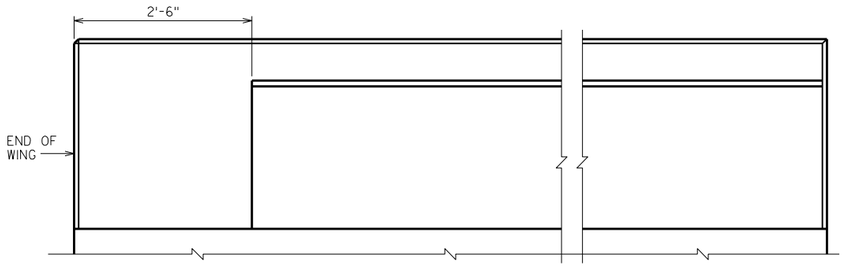
SCALE = 13.0

8

8

STATE PROJECT NUMBER

1120-09-77



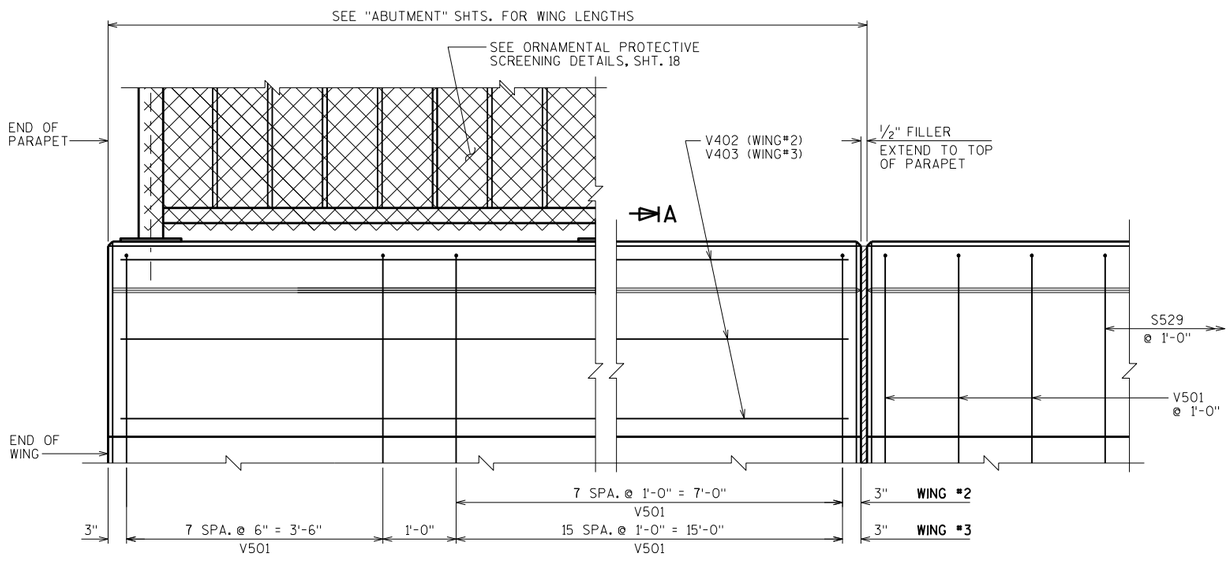
FRONT FACE OF PARAPET

BILL OF BARS

PARAPETS - (WING#2 & WING#3)

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
V501	X	46	9'-5"	X		PARAPET - VERT.
V402	X	6	11'-8"			PARAPET - HORIZ. - WING#2
V403	X	6	19'-8"			PARAPET - HORIZ. - WING#3

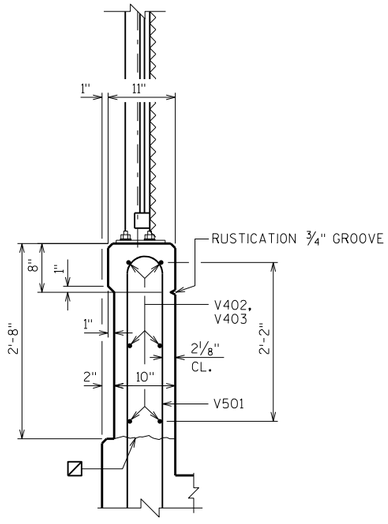
V501



AT ABUTMENTS A

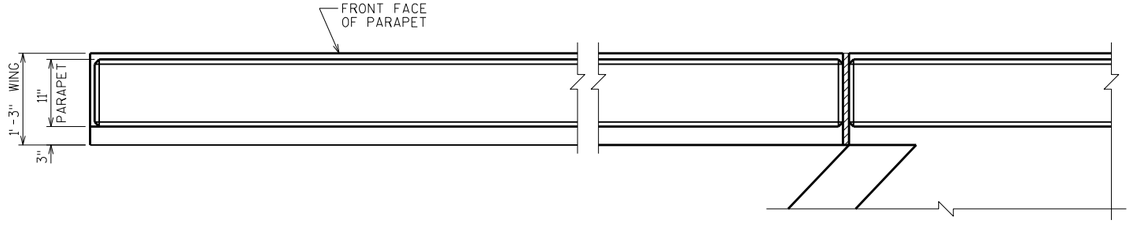
ELEVATION OF WING PARAPET

WING #2 SHOWN, WING #3 SIMILAR



SECTION A-A

☒ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.



PLAN OF WING PARAPET

WING #2 SHOWN, WING #3 SIMILAR

(ORNAMENTAL PROTECTIVE SCREENING NOT SHOWN FOR CLARITY)

NOTE: SEE SHEET 20 FOR ADDITIONAL INFORMATION RELATED TO AESTHETICS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

VERTICAL FACE PARAPET "A"

SHEET 16

263

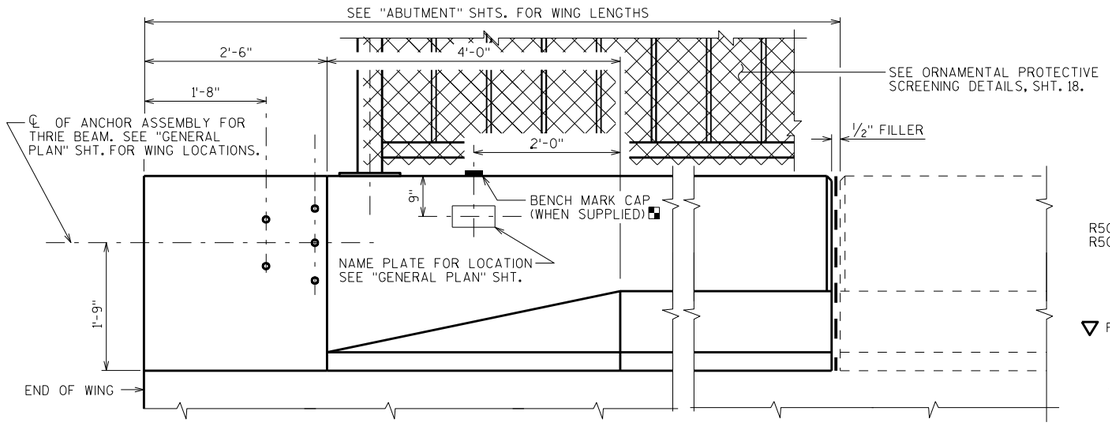
SCALE = 1.0

8

8

STATE PROJECT NUMBER

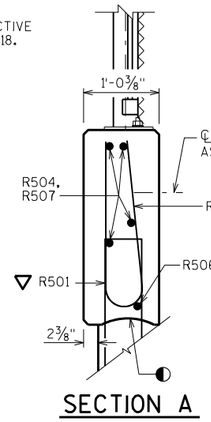
1120-09-77



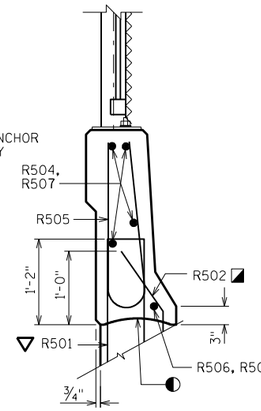
■ AVOID PLACING A BENCH MARK CAP BELOW A RAIL OR FENCE SYSTEM THAT IS ATTACHED TO THE TOP OF THE PARAPET.

INSIDE ELEVATION

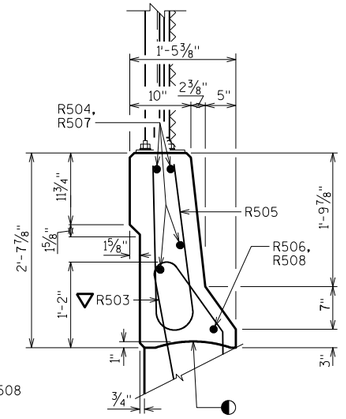
WING #4 SHOWN, WING #1 SIMILAR



SECTION A



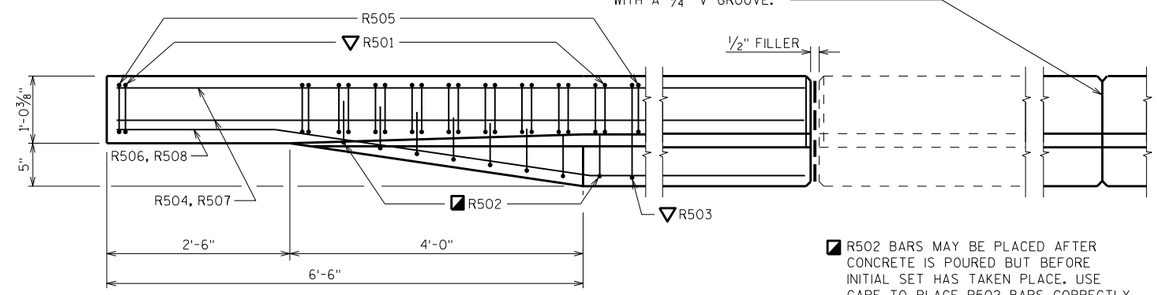
SECTION B



SECTION C

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF. THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A ¾" 'V' GROOVE.

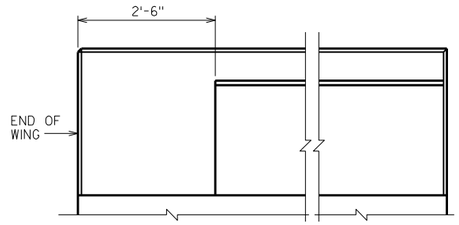


PLAN

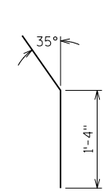
WING #4 SHOWN, WING #1 SIMILAR
(ORNAMENTAL PROTECTIVE SCREENING NOW SHOWN FOR CLARITY)

■ R502 BARS MAY BE PLACED AFTER CONCRETE IS POURED BUT BEFORE INITIAL SET HAS TAKEN PLACE. USE CARE TO PLACE R502 BARS CORRECTLY ALONG TRANSITION OF PARAPET.

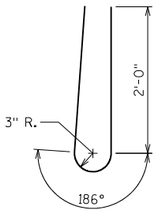
▽ R501 AND R503 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.



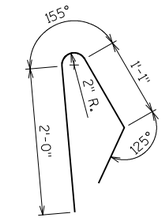
FRONT FACE OF PARAPET



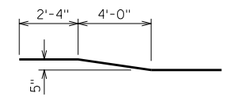
R502



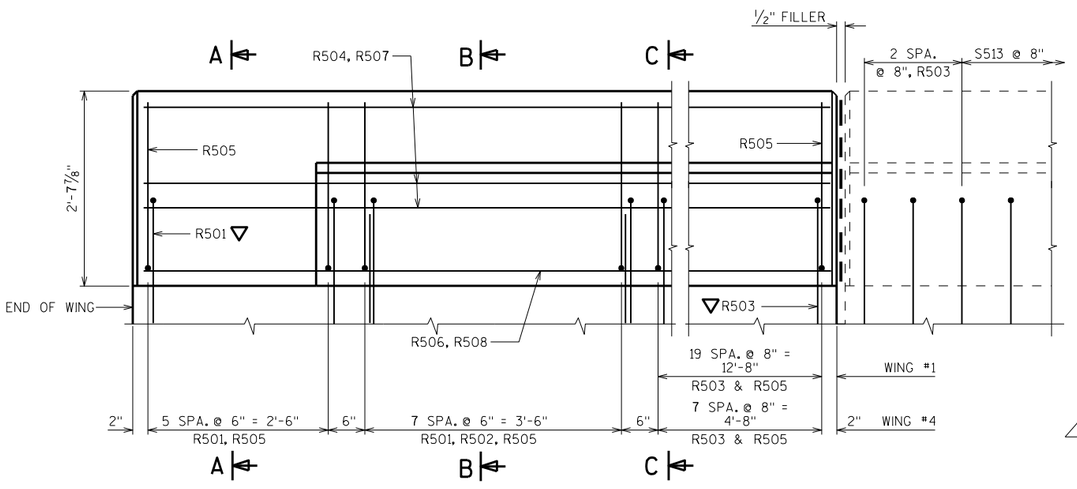
R505



R503

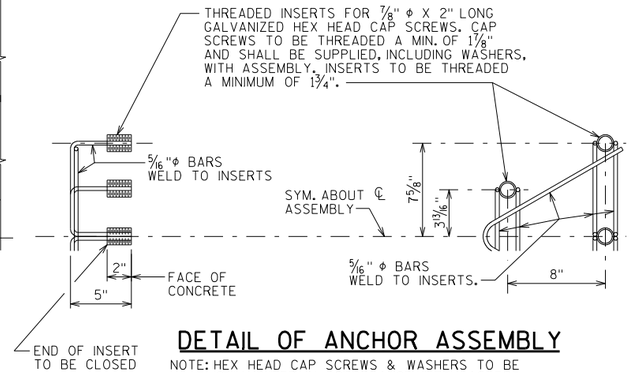


R506, R508



OUTSIDE ELEVATION

(ORNAMENTAL PROTECTIVE SCREENING NOW SHOWN FOR CLARITY)



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY BID ITEM SHALL BE "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD", EACH.

BILL OF BARS

PARAPETS - (WING#1 & WING#4)

BAR MARK	COAT	WEST ABUT.	EAST ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	14	14	4'-7"	X		PARAPET - VERT.
R502	X	8	8	2'-4"	X		PARAPET - VERT.
R503	X	23	11	4'-7"	X		PARAPET - VERT.
R504	X	4	--	19'-8"			PARAPET - HORIZ. - WING#1
R505	X	34	22	4'-10"	X		PARAPET - VERT.
R506	X	1	--	19'-8"	X		PARAPET - HORIZ. - WING#1
R507	X	--	4	11'-8"			PARAPET - HORIZ. - WING#4
R508	X	--	1	11'-8"	X		PARAPET - HORIZ. - WING#4

NOTE: SEE SHEET 20 FOR ADDITIONAL INFORMATION RELATED TO AESTHETICS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

SLOPED FACE PARAPET "LF"

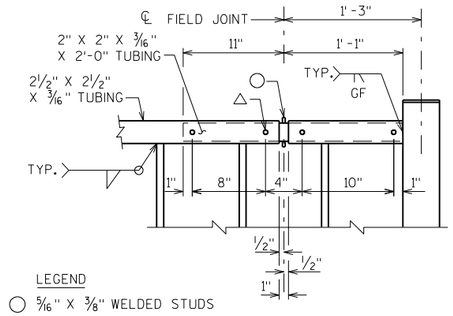
SHEET 17

264

SCALE = 1.0

8

8

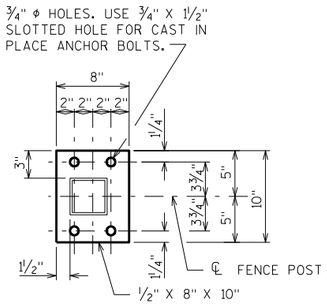


LEGEND

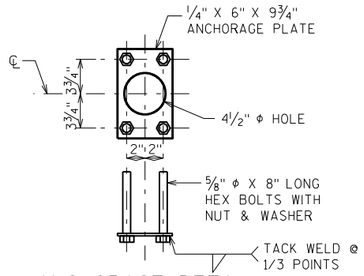
○ 5/16" X 3/8" WELDED STUDS

△ WELD BEAD ON EACH SIDE OF TUBE. GRIND BEADS SO THAT SLEEVE FITS FREELY IN THE I.D. OF 2½" ϕ TUBE.

RAILING EXPANSION JOINT DETAIL

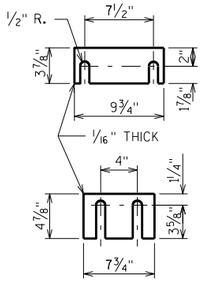


BASE PLATE



ANCHORAGE DETAIL

⅝" ϕ CONCRETE MASONRY ANCHOR, TYPE S EPOXY, 7" MINIMUM EMBEDMENT WITH A MINIMUM PULLOUT OF 20 KIPS MAY BE SUBSTITUTED FOR ⅝" CAST IN PLACE ANCHOR BOLTS. ANCHORAGE PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.



SHIM PLATE DETAILS

TWO SHIMS OF EACH SIZE REQUIRED PER POST

NOTES

BID ITEM SHALL BE "RAILING TUBULAR SCREENING B-70-287" WHICH SHALL INCLUDE ALL ITEMS SHOWN.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

RAILS AND POSTS TO BE ASTM A500, GRADE B. BASE PLATES AND SHIMS TO BE ASTM A709, GRADE 36. ALL GALVANIZED AFTER FABRICATION.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET POSTS NORMAL TO GRADE.

ALL POST SPA. ARE TAKEN HORIZ. ALONG CENTER LINE OF RAILING AT BASE OF POST.

SHIMS SHALL BE USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

CUT BOTTOM OF POST TO MAKE VERTICAL IN TRANSVERSE DIRECTION.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307. IF 307 IS USED, ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

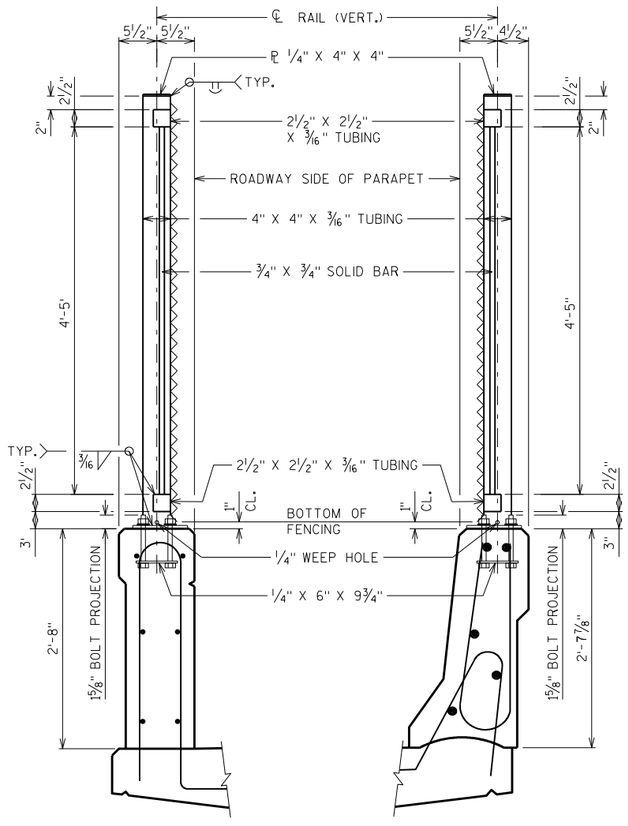
RAILING TO BE PAINTED AND FENCE FABRIC AND TIES TO BE VINYL COATED. FEDERAL COLOR NO. 27038, "BLACK".

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE NOT MORE THAN 3 POSTS.

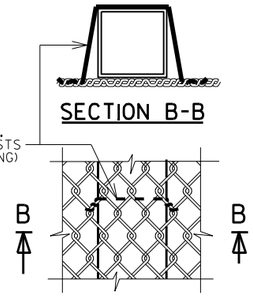
THE END OF THE FABRIC SHALL BE ATTACHED TO THE POST BY MEANS OF A TENSION BAR THREADED THROUGH THE END LOOPS OF THE FABRIC AND SECURED TO THE POST WITH CLAMPS & BOLT. THE FABRIC SHALL BE STRETCHED TO REMOVE ALL SLACK.

VENT HOLES SHALL BE DRILLED IN MEMBERS AS REQUIRED TO FACILITATE GALVANIZING.

ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A "6 BLAST CLEANING BY SSPC SPECIFICATIONS. PAINT OVER GALVANIZING WITH APPROVED TIE COAT AND TOPCOAT.

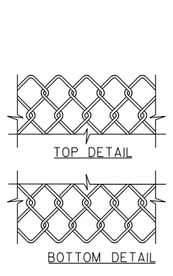


SECTION THRU RAILINGS



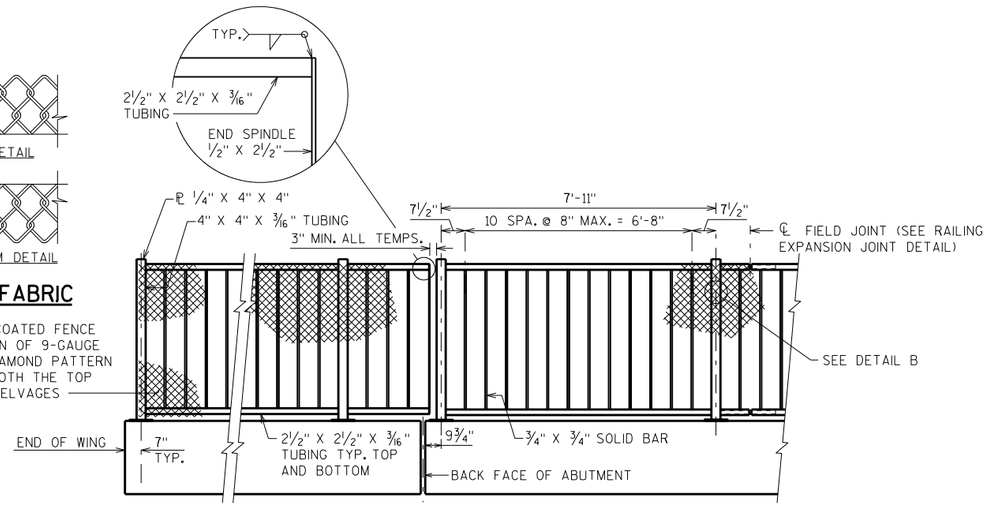
SECTION B-B

DETAIL B



FENCE FABRIC

5'-0" VINYL COATED FENCE FABRIC WOVEN OF 9-GAUGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP & BOTTOM SELVAGES KNUCKLED.



INSIDE ELEVATION OF RAILING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

ORNAMENTAL PROTECTIVE SCREENING

SHEET 18

265

STATE PROJECT NUMBER

1120-09-77

8

8

SCALE = 1.0

STATE PROJECT NUMBER
1120-09-77

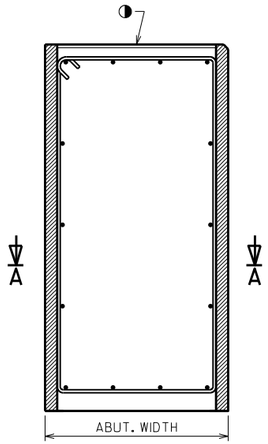
CONSTRUCTION JOINT NOTES

PARTIAL ZINC OR PLASTIC BULKHEAD MAY BE USED AS ALTERNATE CONSTRUCTION JOINT, WITH THE PERMISSION OF THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.

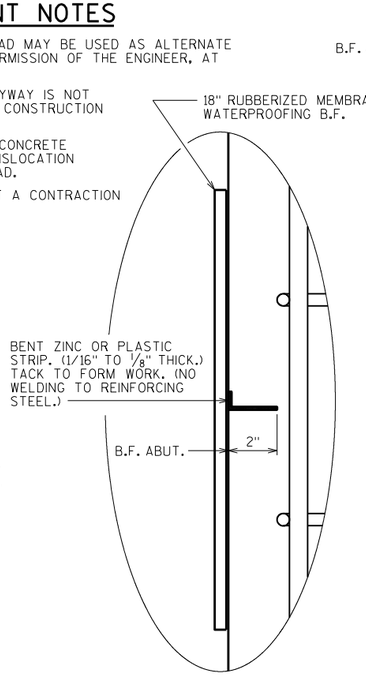
VERTICAL CONSTRUCTION JOINT KEYWAY IS NOT REQUIRED WHEN USING ALTERNATE CONSTRUCTION JOINT.

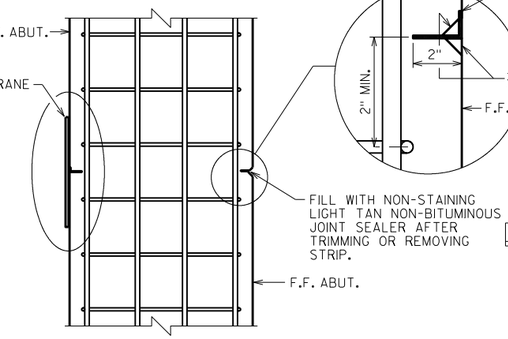
CARE IS TO BE USED IN CASTING CONCRETE AROUND BULKHEAD TO PREVENT DISLOCATION OR MISALIGNMENT OF THE BULKHEAD.

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY ½" DEEP.



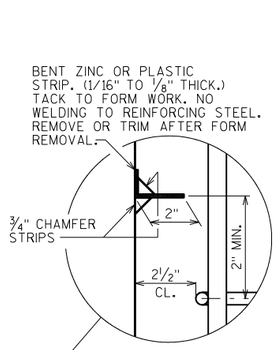
SECTION THRU ABUTMENT BODY



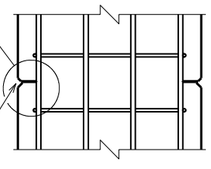


SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT



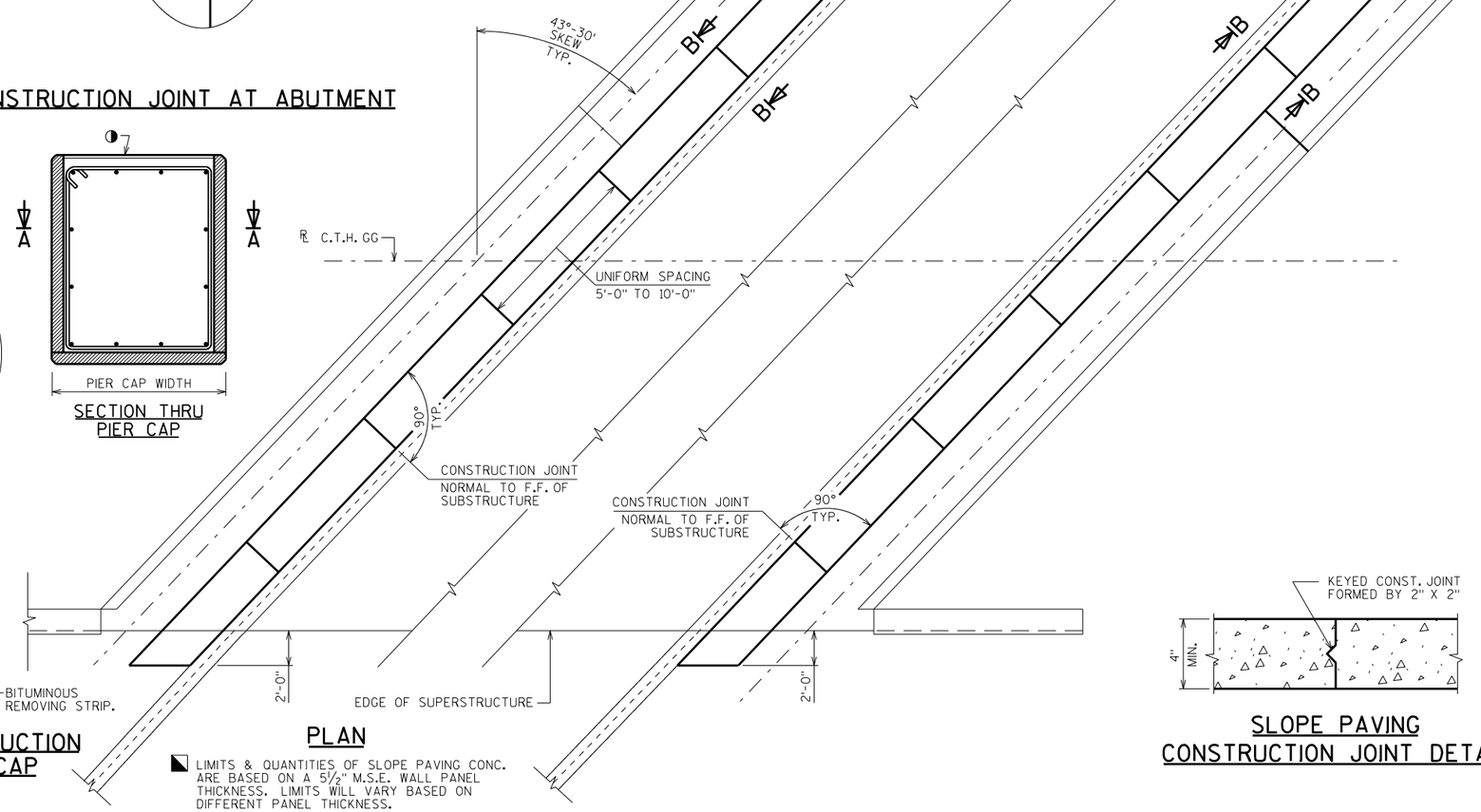
SECTION THRU PIER CAP



SECTION A-A

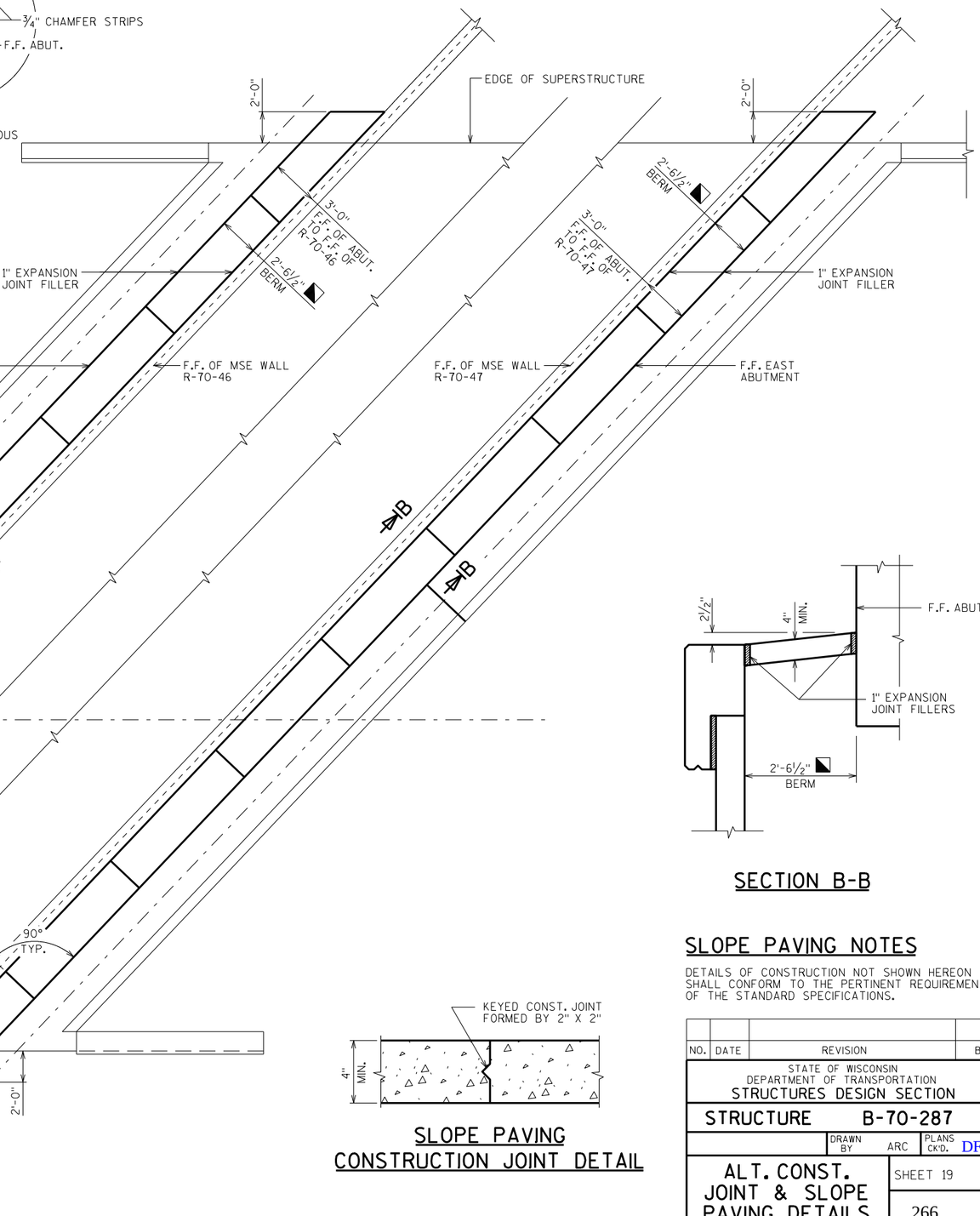
FILL WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER AFTER TRIMMING OR REMOVING STRIP.

ALTERNATE CONSTRUCTION JOINT AT PIER CAP



PLAN

◥ LIMITS & QUANTITIES OF SLOPE PAVING CONC. ARE BASED ON A 5½" M.S.E. WALL PANEL THICKNESS. LIMITS WILL VARY BASED ON DIFFERENT PANEL THICKNESS.



SECTION B-B

SLOPE PAVING NOTES

DETAILS OF CONSTRUCTION NOT SHOWN HEREON SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS.

SLOPE PAVING CONSTRUCTION JOINT DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

ALT. CONST. JOINT & SLOPE PAVING DETAILS

SHEET 19

266

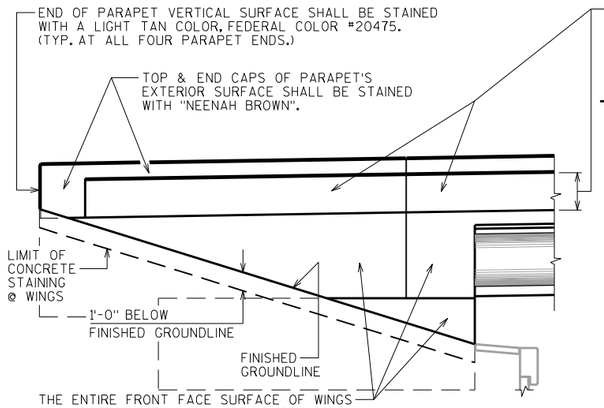
8

8

SCALE = 4.0

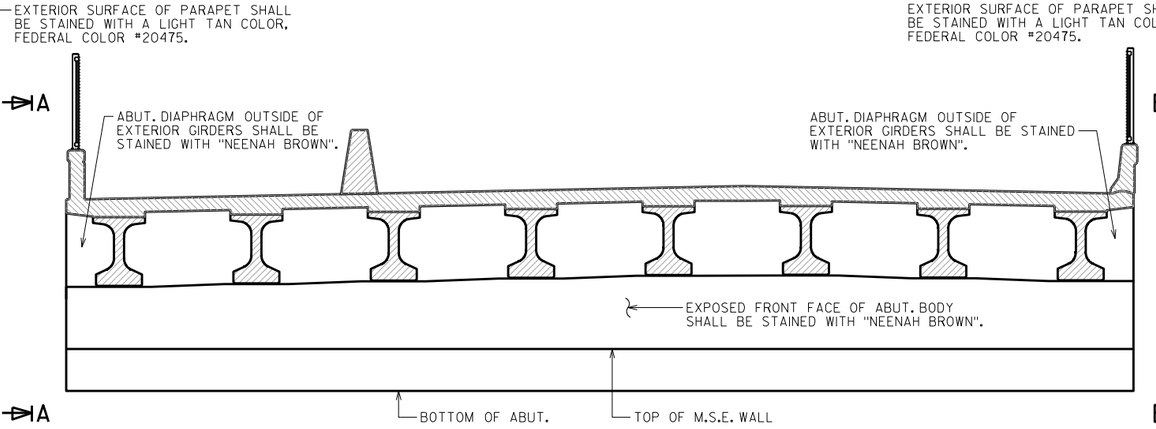
STATE PROJECT NUMBER

1120-09-77



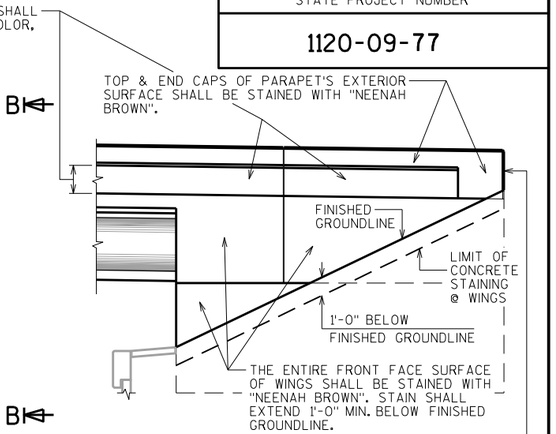
ELEVATION VIEW A-A

(ORNAMENTAL FENCING NOT SHOWN FOR CLARITY)



ABUTMENT ELEVATION LOOKING AT FRONT FACE

(EAST ABUT. SHOWN - WEST SIMILAR)



ELEVATION VIEW B-B

(ORNAMENTAL FENCING NOT SHOWN FOR CLARITY)

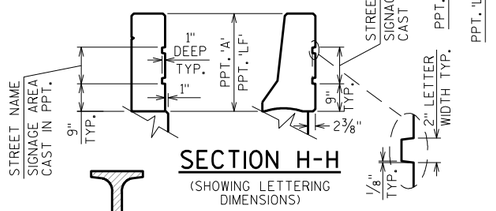
GENERAL STAINING NOTES:

STAINING & LETTERING WORK SHALL BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING B-70-287".

IF TOUCH UP PAINTING IS REQUIRED, IT SHALL BE DONE TO THE SATISFACTION OF THE FIELD ENGINEER AT NO ADDITIONAL COST.

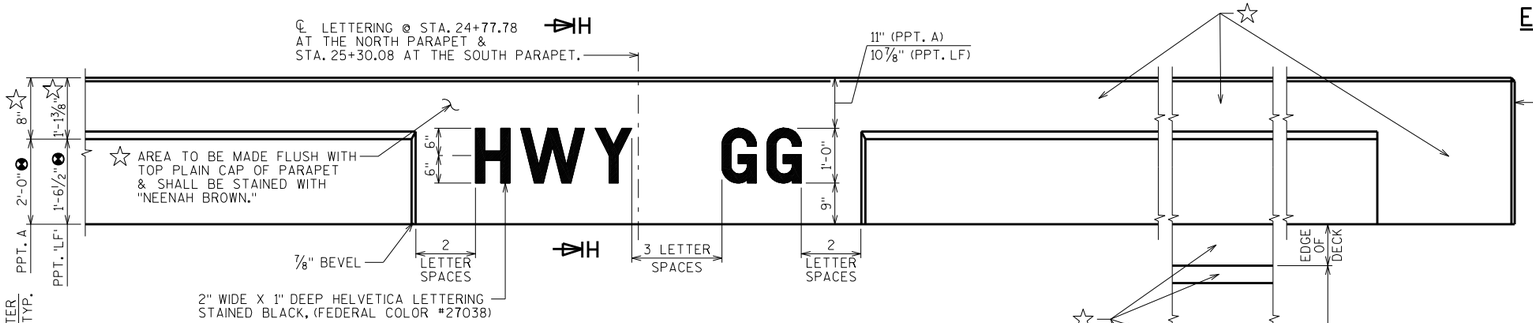
LETTERING SHALL ONLY BE PLACED AT THE OUTSIDE FACES OF PARAPETS.

LETTERING FONT TYPE SHALL BE "HELVETICA" WITH 1'-0" HIGH UPPER CASE.



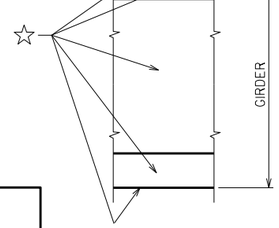
SECTION H-H

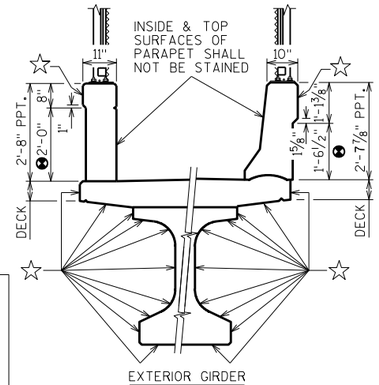
(SHOWING LETTERING DIMENSIONS)



PARTIAL OUTSIDE ELEVATION OF PARAPET, DECK & EXTERIOR GIRDER

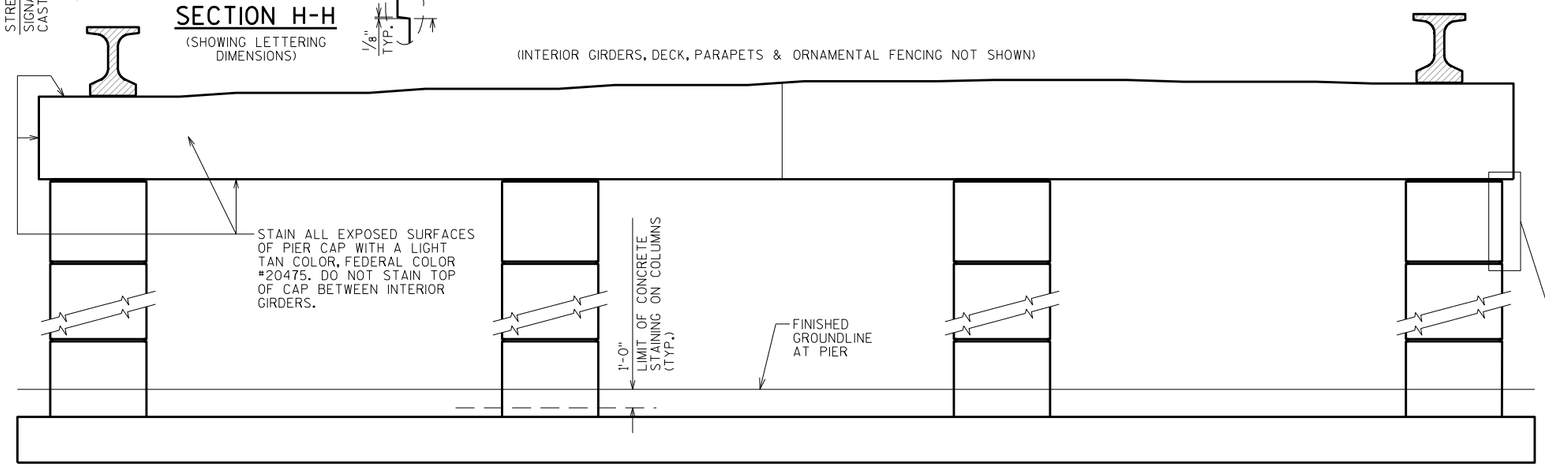
(TYP. AT BOTH SIDES)





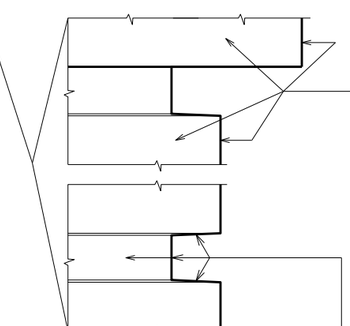
EXTERIOR GIRDER

(INTERIOR GIRDERS, DECK, PARAPETS & ORNAMENTAL FENCING NOT SHOWN)



PIER ELEVATION VIEW

THESE PIER COLUMN SURFACES SHALL BE STAINED WITH A LIGHT TAN COLOR, FEDERAL COLOR #20475.



THE SURFACES OF THE RUSTICATION BANDS AT THE PIER COLUMNS SHALL BE STAINED WITH "NEENAH BROWN".

● EXTERIOR SURFACES OF PARAPET SHALL BE STAINED WITH A LIGHT TAN COLOR, FEDERAL COLOR #20475.

☆ THESE SURFACES SHALL BE STAINED WITH "NEENAH BROWN".

PIER STAINING NOTES:

ALL EXPOSED SURFACES OF THE PIER SHALL BE STAINED WITH A LIGHT TAN COLOR, FEDERAL COLOR #20475. CARRY STAIN ON COLUMNS DOWN 1'-0" BELOW FINISHED GRADE.

ONLY THE TOP OF PIER CAP LOCATED AT THE OUTSIDE OF EXTERIOR GIRDER IS TO RECEIVE STAIN.

THE RUSTICATION BANDS AT THE PIER COLUMNS SHALL BE STAINED WITH "NEENAH BROWN".

"NEENAH BROWN" = 2 GALLONS OF SWHC 103 CEDARWOOD BROWN TO 3 GALLONS OF FEDERAL COLOR #20400. SHERWIN-WILLIAMS IN MENASHA HAS DONE A MANUAL MATCH OF THAT MIXTURE AND THAT FORMULA IS NOW ON FILE W/ THEM, KNOWN AS "NEENAH BROWN".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-70-287

DRAWN BY ARC | PLANS CK'D. DFD

AESTHETIC DETAILS

SHEET 20

267

SCALE = 4.0

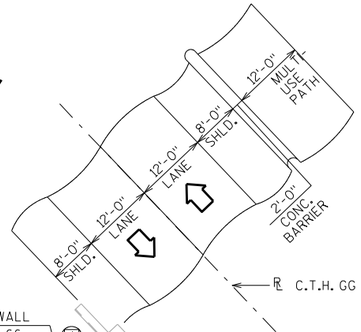
8

8

STATE PROJECT NUMBER

1120-09-77

INDICATES WING NUMBER OF BRIDGE



BEGIN WALL R-70-46
PC STA. 0+00.00 WALL = STA. 898'SAB'+36.05, OFFSET 42.62'LT

PT STA. 0+70.00 WALL = STA. 899'SAB'+05.66, OFFSET 42.62'LT

℄ C.T.H. GG

℄ BRG. B-70-287 WEST ABUT. STA. 23'CTGG'+87.55

SEE BRIDGE B-70-287 PLANS FOR ABUT. PILE SPA.

PC STA. 1+70.00 WALL = STA. 900'SAB'+05.10, OFFSET 41.54'LT

END WALL R-70-46
PT STA. 2+40.00 WALL = STA. 900'SAB'+74.71, OFFSET 41.54'LT

4'-6"

133°30'0"

24'CTGG'+00

F.F. OF WEST ABUT. B-70-287

F.F. OF R-70-46

WALL RADIUS = 7,542.62'

OFFSET VARIES (FROM WALL STA. 0+70.00 TO 1+70.00)

WALL RADIUS = 7,541.54'

899'SAB'+00

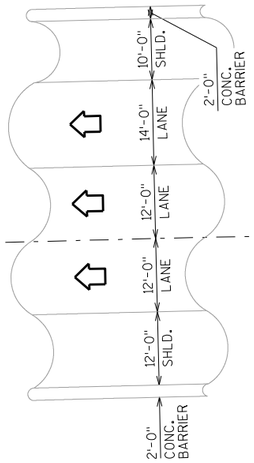
900'SAB'+00

901'SAB'+00

℄ U.S.H. 41 S.B. 'SAB'

STA. 899'SAB'+92.37 ℄ S.B. U.S.H. 41 =
STA. 24+51.12 ℄ C.T.H. GG

25'CTGG'+00



PLAN

M.S.E. RETAINING WALL

ALLOWABLE WALL SYSTEMS

WALL CONCRETE PANEL M.S.E. LRFD

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY CAST-IN-PLACE COPING — f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 ——— fy = 60,000 P.S.I.

DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD."

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWING ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL SHALL BE DESIGNED USING THE ELEVATIONS GIVEN ON SHEET 2.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE SLOPED BEHIND WALL AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE LOAD OF 240 PSF.

DESIGN THE MSE WALL IN FRONT OF THE ABUTMENT BODY TO RESIST THE FORCE FROM ALL HORIZONTAL EARTH PRESSURE ACTING ON THE BACK OF THE ABUTMENT BELOW THE BEAM SEATS AND A LIVE LOAD SURCHARGE OF 240 PSF.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

CURVE DATA

℄ S.B. U.S.H. 41

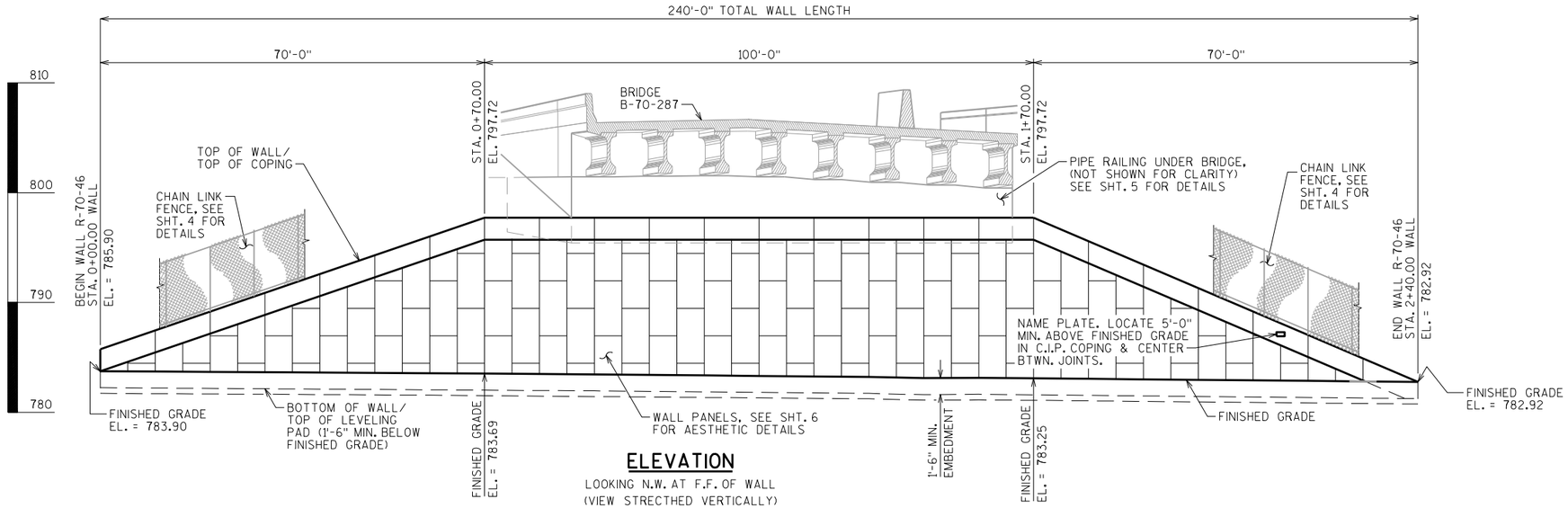
P.I. = STA. 901+13.29
Δ = 6°-14'-42.5"
T = 409.15'
L = 817.49'
R = 7500.00
S.E. = 2.68%
P.C. = STA. 897+04.14
P.T. = STA. 905+21.63
D = 0°-45'-50"

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. NOTES & QUANTITIES
3. WALL DETAILS
4. CHAIN LINK FENCE DETAILS
5. PIPE RAILING DETAILS
6. AESTHETIC DETAILS
7. SUBSURFACE EXPLORATION

STRUCTURE DESIGN CONTACTS:

ALEXANDER CRABTREE (608) 266-3686
LAURA SHADEWALD (608) 267-9592



ELEVATION

LOOKING N.W. AT F.F. OF WALL
(VIEW STRECTHED VERTICALLY)

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS — 4/17/13
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE R-70-46

N.W. RETAINING WALL FOR C.T.H. GG OVER U.S.H. 41

COUNTY	TOWN ~~CITY/VILLAGE~~
WINNEBAGO	VINLAND

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ARC	CAD	ARC	CAD

GENERAL PLAN & ELEVATION

SHEET 1 OF 7

268

I.D. 1120-09-00D

DATE: APR. 2012

SCALE = 12

8

8

STATE PROJECT NUMBER

1120-09-77

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS OTHERWISE SHOWN OR NOTED.

ALL WALL STATIONING AND OFFSETS ARE GIVEN TO THE FRONT FACE OF THE WALL (R-70-46).

THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF RETAINING WALL R-70-46 WITH THE ABUTMENT OF BRIDGE B-70-287.

THE EXISTING STRUCTURE (B-7066) IS NOT SHOWN. THE REMOVAL OF THE STRUCTURE IS INCLUDED IN A LUMP SUM PAY ITEM FOR BRIDGE B-70-287.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF WALL TO THE TOP OF LEVELING PAD, SET A CONSTANT DEPTH OF 1'-6" BELOW FINISHED GRADE.

THE CONCRETE MASONRY & REINFORCING STEEL FOR THE CAST-IN-PLACE COPING IS PAID FOR UNDER THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD."

SEE SPECIAL PROVISIONS FOR AESTHETIC TREATMENT TO WALL.

WALL EXTERNAL STABILITY EVALUATION

DIMENSIONS				
WALL HEIGHT (FEET)[1]	12.1	15.9	13.9	9.8
EXPOSED WALL HEIGHT (FEET)	10.6	14.4[2]	12.4	8.3
LENGTH OF REINFORCEMENT (FEET)[3]	8.5	15.1	9.7	8.0
LENGTH OF REINFORCEMENT/WALL HEIGHT	0.70	0.95	0.70	0.70
WALL STATION	0+50	1+50	1+80	2+00
BORING USED	B-4	B-2 EXT.	B-2 EXT.	B-3
CAPACITY TO DEMAND RATIO (CDR)[4]				
SLIDING (CDR > 1.0)	1.3	1.0	1.3	1.4
ECCENTRICITY (CDR > 1.0)	1.2	1.1	1.2	1.6
GLOBAL STABILITY (CDR > 1.0)	NA	1.7	NA	NA
BEARING RESISTANCE (CDR > 1.0)	3.1	1.3	1.8	2.5
REQUIRED BEARING RESISTANCE (PSF)	10,600	6,900	7,000	6,300

NOTES:

1. THE WALL HEIGHT INCLUDES AN EMBEDMENT OF 1.5 FEET.
2. THE WALL STABILITY EVALUATION INCLUDED A SURCHARGE LOAD THAT WAS EQUAL TO THE WEIGHT OF THE SOIL BEHIND THE ABUTMENT.
3. THE LENGTH OF REINFORCEMENT IS THE MINIMUM REQUIRED LENGTH.
4. CDR REQUIREMENTS AND LOAD AND RESISTANCE FACTORS ARE PRESENTED IN CHAPTER 14 OF THE BRIDGE MANUAL.
5. NA = NOT APPLICABLE, GLOBAL SLOPE STABILITY WAS EVALUATED AT THE CRITICAL WALL LOCATION.

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	2
	517.1010.S	CONCRETE STAINING R-70-46	SF	3,140
	517.1050.S	ARCHITECTURAL SURFACE TREATMENT R-70-46	SF	2,560
	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	260
	SPV.0090	FENCE CHAIN LINK POLYMER-COATED 6-FT	LF	160
	SPV.0105	RAILING PIPE GALVANIZED R-70-46	LS	1
	SPV.0165	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD	SF	2,860
		NON-BID ITEMS		
★		BACKFILL STRUCTURES	CY	1,700
		PRE-FORMED JOINT FILLER	SIZE	¾"
		NON-BITUMINOUS JOINT SEALER	SIZE	¾"

★ "BACKFILL STRUCTURE" QUANTITY IS FOR INFORMATIONAL PURPOSES ONLY. QUANTITY IS INCLUDED IN "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD."

SOIL PARAMETERS

SOIL DESCRIPTION & STRATUM LOCATIONS	FRICTION ANGLE, (DEGREES)	COHESION, (PSF)	UNIT WEIGHT, (PCF)
GRANULAR BACKFILL WITHIN THE WALL IN THE REINFORCING ZONE	30	0	120
FILL BEHIND AND BELOW THE REINFORCING ZONE	32	0	120
B-4, STA. 23+39 OF ℄ C.T.H. GG			
CLAY, BROWN, LITTLE SILT, LITTLE GRAVEL ELEVATION 782.3 FEET TO ELEVATION 776.6 FEET	0	3,000	125
SAND AND GRAVEL, FINE TO COURSE ELEVATION 776.6 FEET TO ELEVATION 774.6 FEET	35	0	130
CLAY AND SILT, BROWN, LITTLE GRAVEL ELEVATION 774.6 FEET TO ELEVATION 756.1 FEET	0	4,000	135
B-2 (EXISTING), STA. 26+47 OF ℄ C.T.H. GG			
EXISTING CLAY FILL ELEVATION 781.8 FEET TO ELEVATION 776.8 FEET	0	2,000	120
CLAY, SOME SILT ELEVATION 776.8 FEET TO ELEVATION 752.3 FEET	0	4,000	130
CLAY, SOME SILT ELEVATION 752.3 FEET TO ELEVATION 737.3 FEET	0	3,500	130
CLAY, SOME SILT, TRACE GRAVEL ELEVATION 737.3 FEET TO ELEVATION 727.3 FEET	0	3,000	125
CLAY, SOME SILT ELEVATION 727.3 FEET TO ELEVATION 723.3 FEET	0	3,000	125
GRAVEL, SOME SAND ELEVATION 723.3 FEET TO ELEVATION 716.3 FEET	35	0	135
LIMESTONE BEDROCK ELEVATION 716.3 FEET AND BELOW	0	96,000	140
B-3, STA. 26+75 OF ℄ C.T.H. GG			
GRANULAR FILL ELEVATION 781.6 FEET TO ELEVATION 780.6 FEET	30	0	120
SAND, FINE TO MEDIUM, SOME SILT, SOME GRAVEL ELEVATION 780.6 FEET TO ELEVATION 778.1 FEET	34	0	130
SILT, SOME SAND, LITTLE GRAVEL ELEVATION 778.1 FEET TO ELEVATION 776.1 FEET	32	0	120
CLAY, SOME SILT, LITTLE GRAVEL ELEVATION 776.1 FEET TO ELEVATION 755.6 FEET	0	4,000	130

NOTES:

THE TYPICAL WALL SECTION USED IN THE ANALYSES HAD AN EXPOSED HEIGHT THAT VARIES FROM 8.3 FEET TO 14.4 FEET. THE FOLLOWING ASSUMPTIONS ARE ALSO INCLUDED IN THE ANALYSES:

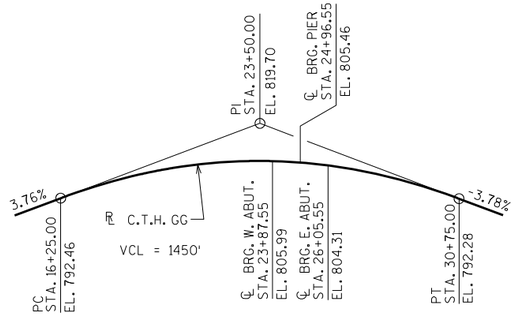
1. THE SLOPE IN FRONT AND BEHIND THE WALL IS HORIZONTAL.
2. GROUNDWATER LEVEL WAS ASSUMED TO BE PERCHED IN THE EXISTING BORING.
3. THE GRANULAR BACKFILL IS FREE DRAINING AND WILL NOT BECOME SATURATED.
4. THE MINIMUM EMBEDMENT DEPTH IS 1'-6" DEEP.
5. A SURCHARGE LOAD OF 240 PSF IS INCLUDED TO MODEL PEDESTRIAN AND LIGHTWEIGHT CONSTRUCTION EQUIPMENT.
6. AN ADDITIONAL SURCHARGE LOAD EQUIVALENT TO THE WEIGHT OF THE SOIL BEHIND THE ABUTMENT IS ALSO INCLUDED IN THE DESIGN.
7. GLOBAL STABILITY FACTOR OF SAFETY WAS DETERMINED BY THE COMPUTER PROGRAM XSTABL.
8. BEARING CAPACITY IS DETERMINED BY TERZAGHI'S BEARING CAPACITY EQUATION.
9. SETTLEMENT OF THE FOUNDATION ON COHESIONLESS AND COHESIVE SOIL IS BASED UPON METHODS DESCRIBED IN THE FHWA SOILS AND FOUNDATIONS MANUAL.

RECOMMENDATIONS

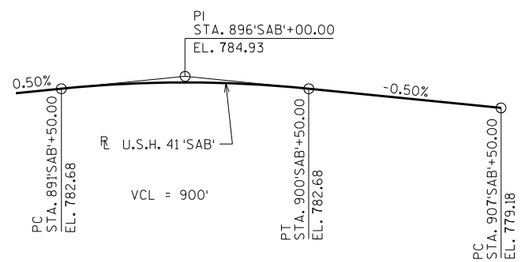
1. THE M.S.E. WALL WITH PRECAST CONCRETE PANELS WILL ACHIEVE THE EXTERNAL STABILITY FACTORS OF SAFETY IF THE SLIDING AND BEARING RESISTANCE REQUIREMENTS ARE MET. TABLE 3 PRESENTS THE MINIMUM LENGTH OF THE REINFORCEMENT. IN THE AREA OF THE WALL THAT SUPPORTS THE ABUTMENT, THE RATIO OF LENGTH OF REINFORCEMENT TO TOTAL HEIGHT OF WALL SHOULD BE INCREASED FROM 0.70 TO 0.95.
2. THE CONTRACTOR SHOULD REMOVE 12-INCHES OF SILT AND CLAY BELOW THE REINFORCING ZONE AND REPLACE WITH GRANULAR FILL IN THE AREAS THAT THE SILT AND CLAY ARE ENCOUNTERED.
3. THE BACKFILL BEHIND THE M.S.E. WALL WITH PRECAST CONCRETE FACING SHOULD BE GRANULAR AND FREE DRAINING.
4. THE NORTHEAST REGION SOILS ENGINEER SHOULD REVIEW THE FILL SUBSURFACE CONDITIONS PRIOR TO CONSTRUCTION OF THE WALL.

GEOMETRY TABLE

WALL STATION	'SAB' ℄ STATION	OFFSET TO F.F. OF WALL FROM ℄	TOP OF WALL EL.	FINISHED GRADE EL.
0+00.00	898+36.05	42.62'LT	785.90	783.90
0+10.00	898+46.00	42.62'LT	787.59	783.87
0+20.00	898+55.94	42.62'LT	789.28	783.84
0+30.00	898+65.88	42.62'LT	790.97	783.81
0+40.00	898+75.83	42.62'LT	792.65	783.78
0+50.00	898+85.77	42.62'LT	794.34	783.75
0+60.00	898+95.71	42.62'LT	796.03	783.72
0+70.00	899+05.66	42.62'LT	797.72	783.69
0+80.00	899+15.60	42.45'LT	797.72	783.64
0+90.00	899+25.54	42.30'LT	797.72	783.61
1+00.00	899+35.49	42.16'LT	797.72	783.56
1+10.00	899+45.43	42.03'LT	797.72	783.52
1+20.00	899+55.37	41.92'LT	797.72	783.47
1+30.00	899+65.32	41.81'LT	797.72	783.43
1+40.00	899+75.26	41.73'LT	797.72	783.39
1+50.00	899+85.21	41.65'LT	797.72	783.34
1+60.00	899+95.15	41.59'LT	797.72	783.30
1+70.00	900+05.10	41.54'LT	797.72	783.25
1+80.00	900+15.04	41.54'LT	795.61	783.21
1+90.00	900+24.99	41.54'LT	793.49	783.16
2+00.00	900+34.93	41.54'LT	791.38	783.11
2+10.00	900+44.87	41.54'LT	789.26	783.07
2+20.00	900+54.82	41.54'LT	787.15	783.02
2+30.00	900+64.76	41.54'LT	785.03	782.97
2+40.00	900+74.71	41.54'LT	782.92	782.92



PROFILE GRADE LINE C.T.H. GG



PROFILE GRADE LINE U.S.H. 41 S.B.

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STRUCTURE R-70-46

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NOTES & QUANTITIES

SHEET 2

269

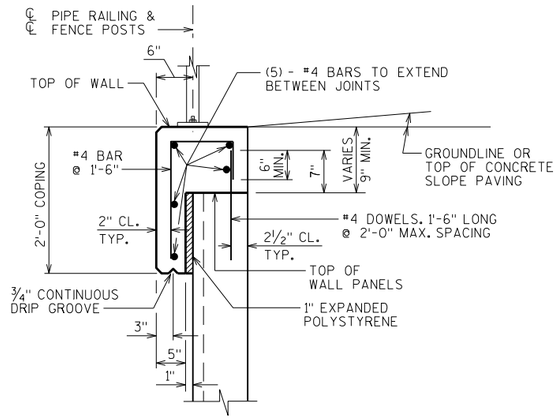
SCALE = 5.333

8

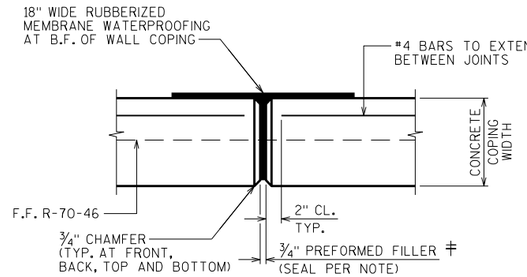
8

STATE PROJECT NUMBER

1120-09-77



CAST-IN-PLACE CONCRETE COPING DETAIL



COPING EXPANSION JOINT

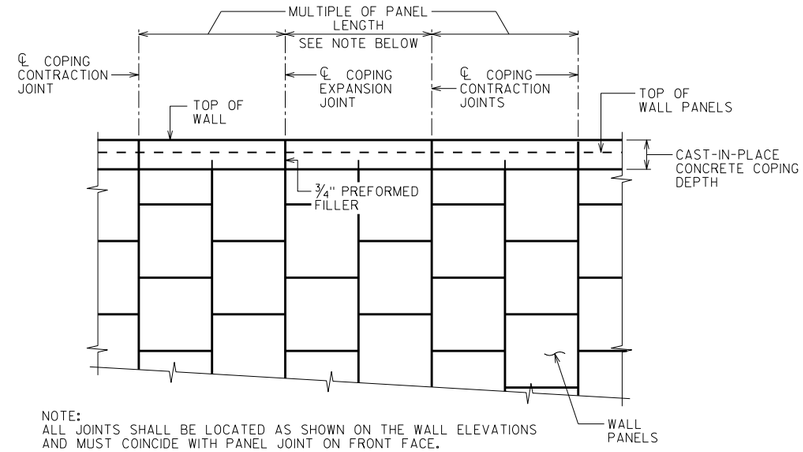
‡ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING "NEENAH BROWN" NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)

DO NOT RUN BAR STEEL THRU JOINT

MAXIMUM SPACING OF JOINTS SHALL BE 50'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF WALL PANELS.

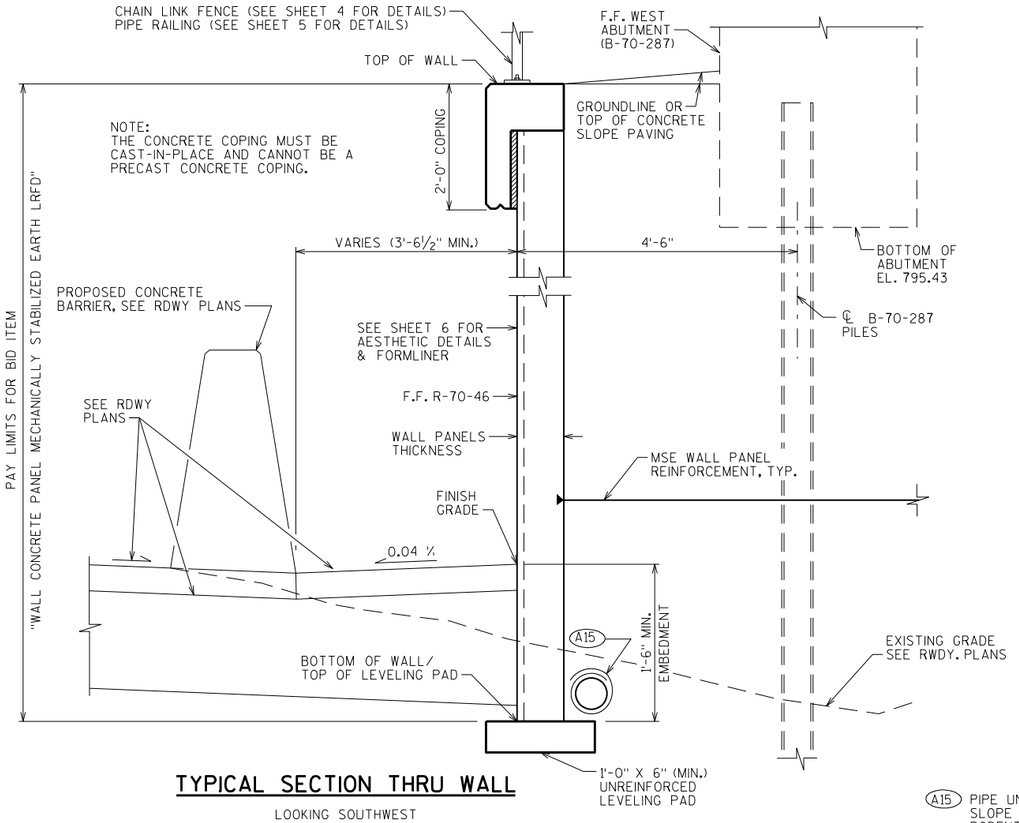
ALL EXPANSION JOINTS TO EXTEND THE FULL DEPTH OF COPING.



NOTE:
ALL JOINTS SHALL BE LOCATED AS SHOWN ON THE WALL ELEVATIONS AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE.

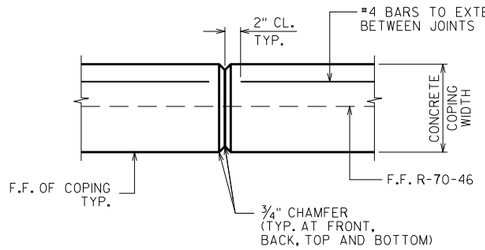
CAST-IN-PLACE COPING PARTIAL ELEVATION

LOOKING AT F.F. OF WALL



TYPICAL SECTION THRU WALL

LOOKING SOUTHWEST

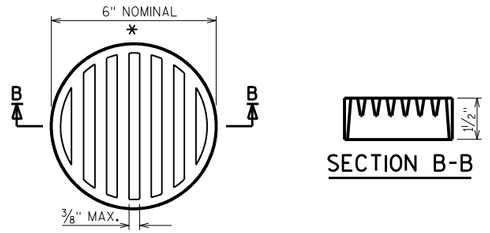


COPING CONTRACTION JOINT DETAIL

DO NOT RUN BAR STEEL THRU JOINT.

MAXIMUM SPACING OF JOINTS SHALL BE 12'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

ALL CONTRACTION JOINTS TO EXTEND THE FULL DEPTH OF COPING.



SECTION B-B

RODENT SCREEN DETAIL

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

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STRUCTURES DESIGN SECTION

STRUCTURE R-70-46

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WALL DETAILS | SHEET 3 | 270

SCALE =5.333

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STATE PROJECT NUMBER

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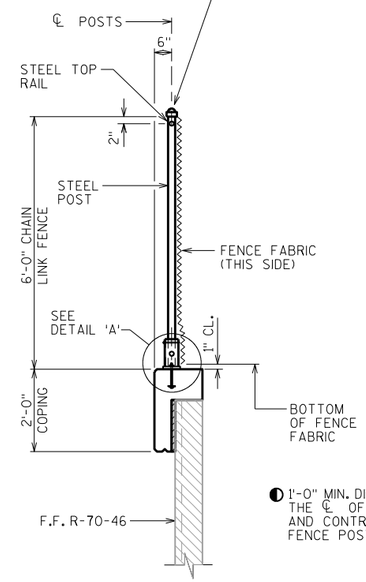
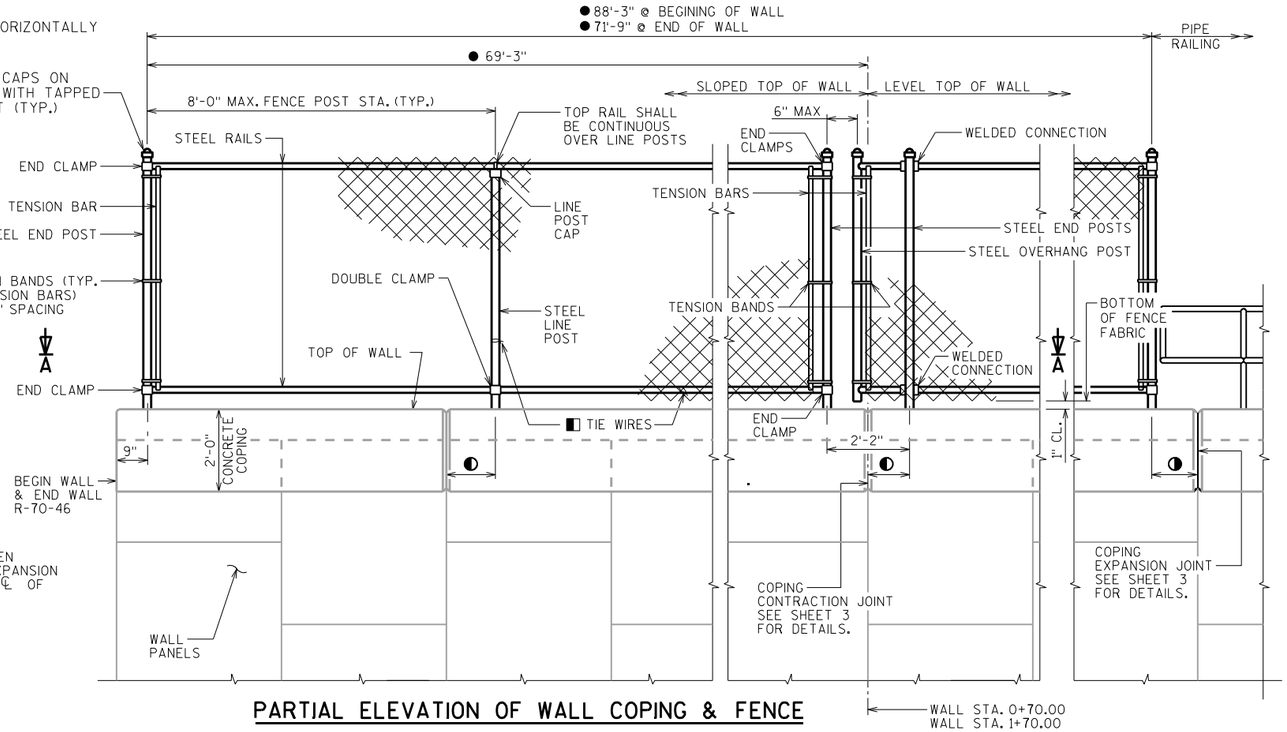
PLACE ORNAMENTAL CAPS ON TOP OF END POSTS WITH TAPPED SET SCREW OR BOLT (TYP.)



SECTION THRU FENCE

● DISTANCE MEASURED HORIZONTALLY

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF FENCE POSTS



PARTIAL ELEVATION OF WALL COPING & FENCE

LOOKING NORTHWEST AT F.F. WALL
(BEGINNING OF WALL SHOWN, END SIMILAR)

NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH A COLORED POLYMER-COATING ON THE OUTSIDE.

FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626. SEE THE "BRIDGE SPECIAL PROVISIONS" FOR ADDITIONAL DETAILS.

THE COLOR OF POLYMER-COATING FOR THIS STRUCTURE SHALL BE BLACK, FEDERAL COLOR #27038, IN ACCORDANCE WITH ASTM F934.

THE BID ITEM SHALL BE "FENCE CHAIN LINK POLYMER-COATED 6-FT.", LF.

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

◪ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING "NEENAH BROWN" NON-BITUMINOUS JOINT SEALER.

✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

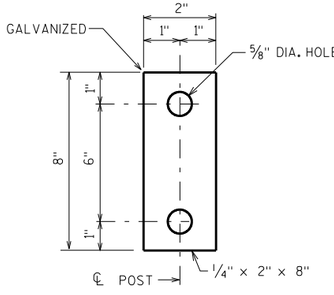
▲ ½" DIA. X 6⅞" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE "S", ½" DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR ½" DIA. BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE "S" ANCHORS ARE USED. SEE ✪

✪ ½" DIA. CONCRETE MASONRY ANCHOR, TYPE "S", 6" MIN. EMBEDMENT (EPOXY ANCHORED) INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS. ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.

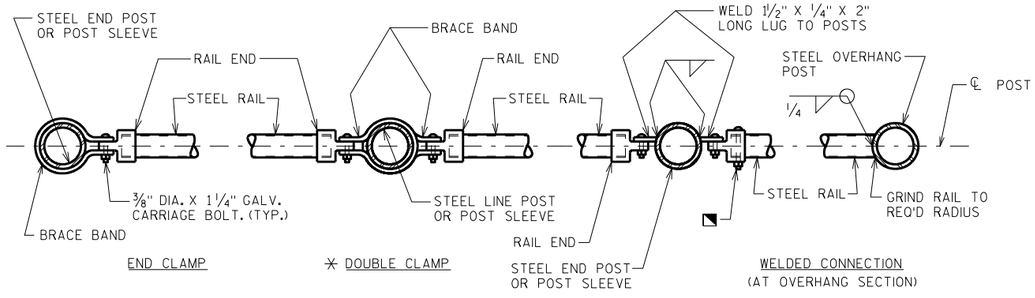
◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◹ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR ¼ POINT OF POST SPACING.



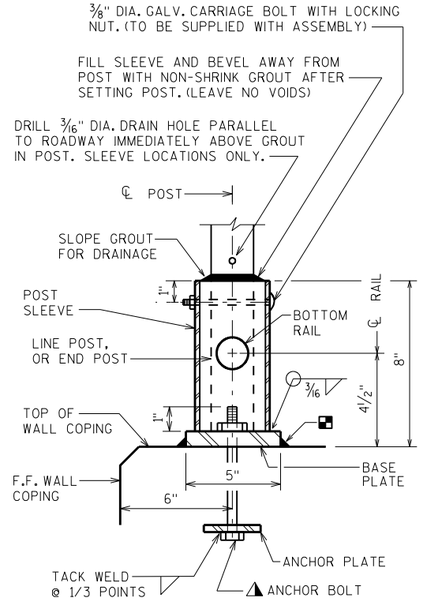
ANCHOR PLATE



END CLAMP ✳ DOUBLE CLAMP WELDED CONNECTION (AT OVERHANG SECTION)

SECTION A-A

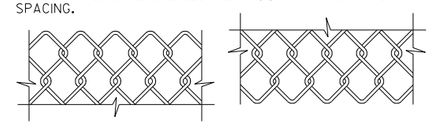
NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

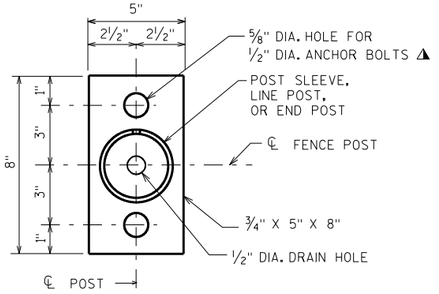
NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.



TOP DETAIL BOTTOM DETAIL

FENCE FABRIC

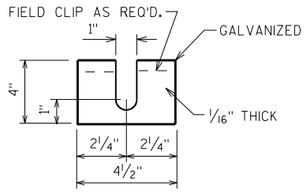
FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.



BASE PLATE

FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12



POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.

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STRUCTURE R-70-46

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CHAIN LINK FENCE DETAILS

SHEET 4

271

SCALE =5.333

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STATE PROJECT NUMBER

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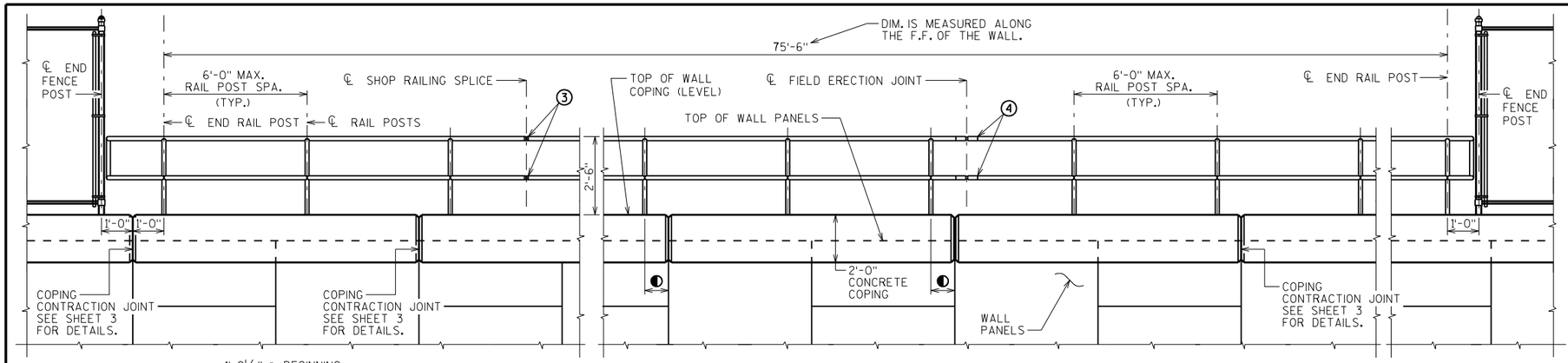
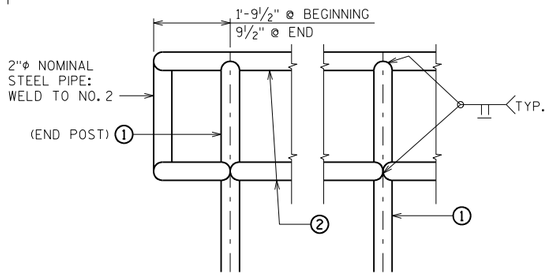


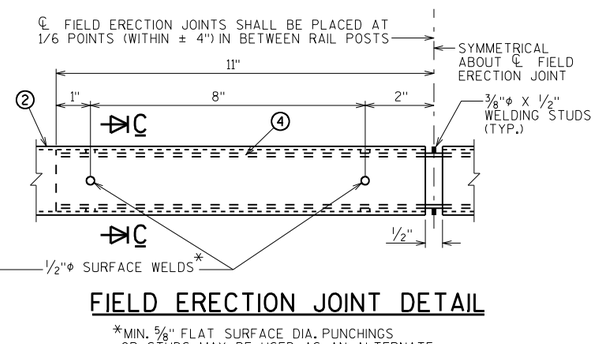
PARTIAL ELEVATION OF WALL COPING & RAILING

LOOKING NORTHWEST AT F.F. OF WALL

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF RAIL POSTS

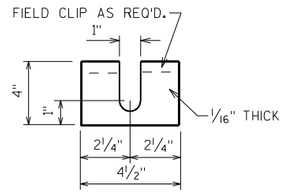


PART ELEVATION OF RAILING



FIELD ERECTION JOINT DETAIL

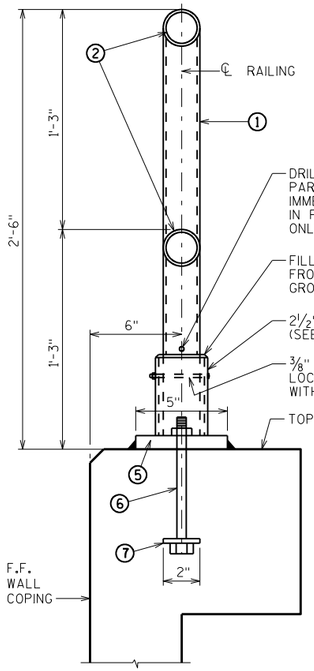
*MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.



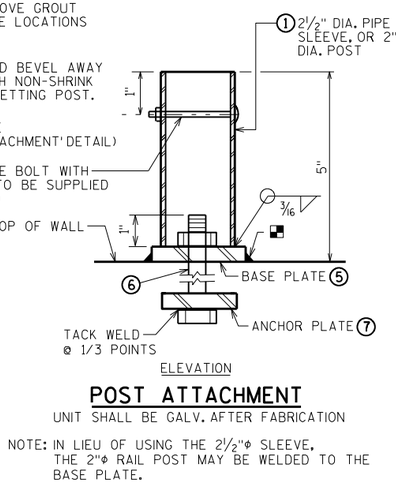
POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST.

SECTION C-C



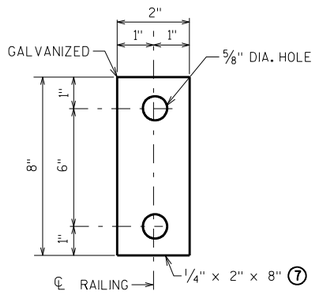
SECTION THRU RAILING



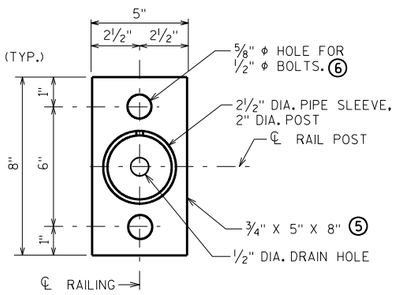
POST ATTACHMENT

UNIT SHALL BE GALV. AFTER FABRICATION

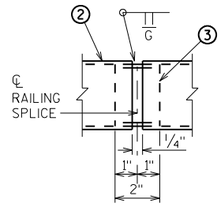
NOTE: IN LIEU OF USING THE 2½"Φ SLEEVE, THE 2"Φ RAIL POST MAY BE WELDED TO THE BASE PLATE.



ANCHOR PLATE



BASE PLATE



SHOP RAILING SPLICE DETAIL

(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)

NOTES

BID ITEM SHALL BE "RAILING PIPE GALVANIZED R-70-46", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 7) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D, FOR ALIGNMENT.

ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF POSTS.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

■ CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS IN POST SHIMS AND BASE PLATES WITH NON-STAINING, NEENAH-BROWN, NON-BITUMINOUS JOINT SEALER.

ALL RAILINGS, POSTS, GATES AND ASSOCIATED HARDWARE SHALL BE PAINTED BLACK (FEDERAL COLOR NO. 27038).

LEGEND

① 2"Φ NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. POSTS ARE TO BE SET VERTICAL.

② 2"Φ NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1

③ 1½"Φ PIPE SLEEVE FOR NO. 2. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 2 1/16".

④ 1½"Φ PIPE SLEEVE X 1'-10" LONG FOR NO. 2. PROVIDE ½"Φ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE ⅜"Φ X ½" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

⑤ PLATE ¾" X 5" X 8", WITH ⅝"Φ HOLE FOR ANCHOR BOLTS NO. 6. WELD TO NO. 1. OR PIPE SLEEVE AS SHOWN.

⑥ ½" DIA. X 6⅞" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE S, ½"Φ CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR ½"Φ BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED. SEE NOTE ☆

☆ ½" CONCRETE MASONRY ANCHOR, TYPE "S" 6" MIN. EMBEDMENT (EPOXY ANCHORED MIN. PULLOUT OF 10 KIPS, THREADED LENGTH OF ANCHOR, WASHER, AND NUT SHALL BE GALVANIZED.

⑦ ¼" X 2" X 8" FLAT BAR, WITH ⅝"Φ HOLES FOR ANCHOR BOLTS NO. 6.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-46

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PIPE RAILING DETAILS

SHEET 5

272

SCALE = 5.333

8

8

STATE PROJECT NUMBER
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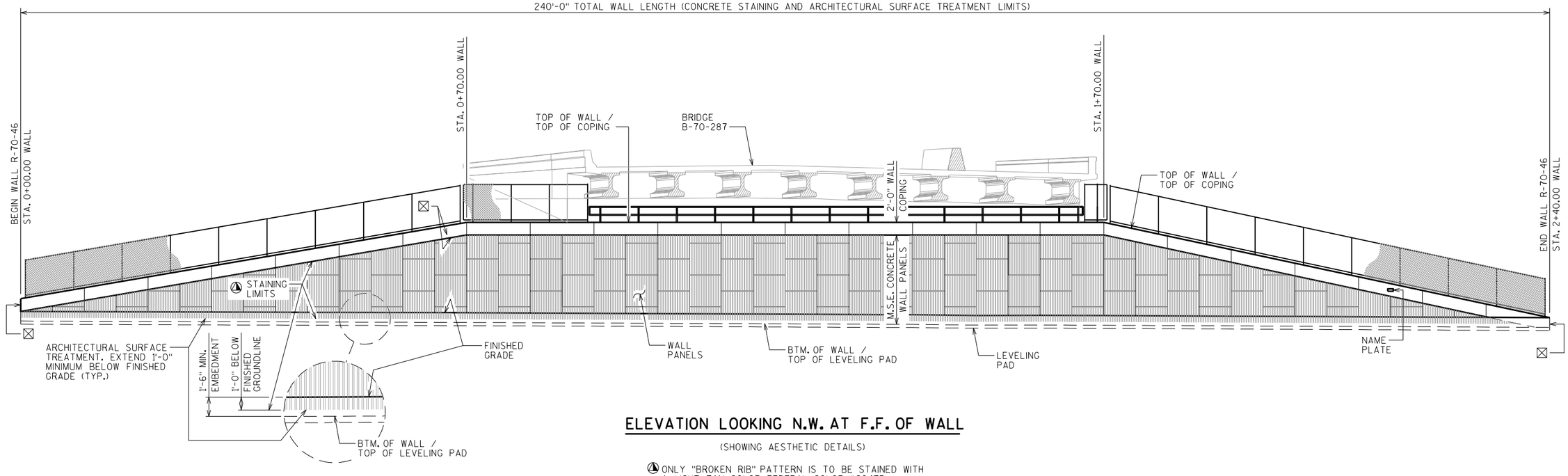
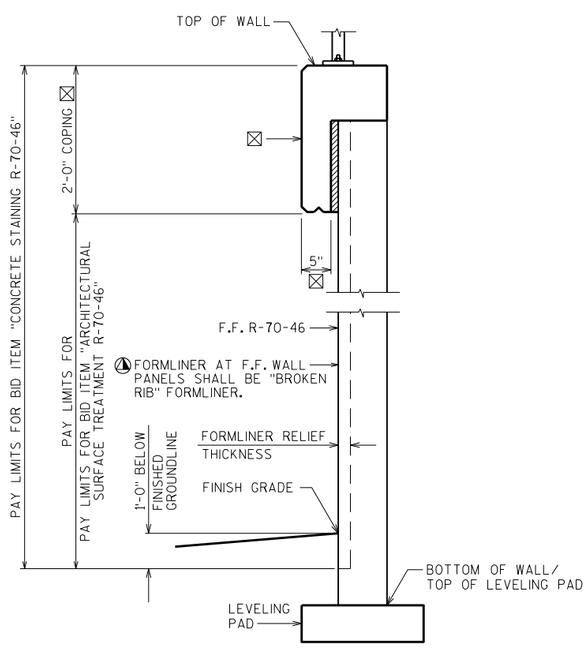


ELEVATION LOOKING N.W. AT F.F. OF WALL

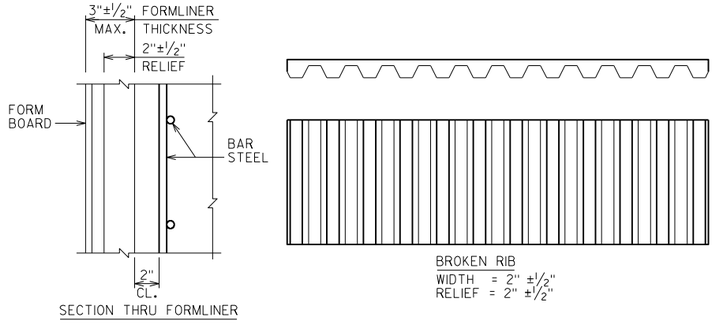
(SHOWING AESTHETIC DETAILS)

⚠ ONLY "BROKEN RIB" PATTERN IS TO BE STAINED WITH A LIGHT TAN COLOR, FEDERAL COLOR #20475.



SECTION THRU WALL

(SHOWING AESTHETIC DETAILS)



FORMLINER DETAILS

NOTES

ALL FORMLINER COURSING AT F.F. OF WALL SHALL BE VERTICAL.

ALL FORMLINER WORK SHALL BE COVERED UNDER THE BID ITEM "ARCHITECTURAL SURFACE TREATMENT R-70-46".

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

ALL STAINING AREAS SHALL BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING R-70-46".

IF TOUCH UP PAINTING IS REQUIRED, IT SHALL BE DONE TO THE SATISFACTION OF THE FIELD ENGINEER AT NO ADDITIONAL COST.

☒ THE ENTIRE F.F. OF WALL COPING, BOTTOM OF WALL COPING AND ENDS OF WALL SHALL BE STAINED WITH "NEENAH BROWN".

ALL ARCHITECTURAL SURFACE TREATMENT FORMLINER AREAS SHALL BE STAINED USING A LIGHT TAN STAIN, FEDERAL COLOR #20475. TO BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING R-70-46".

"NEENAH BROWN" = 2 GALLONS OF SWHC 103 CEDARWOOD BROWN TO 3 GALLONS OF FEDERAL COLOR #20400. SHERWIN WILLIAMS IN MENASHA HAS DONE A MANUAL MATCH OF THAT MIXTURE AND THAT FORMULA IS NOW ON FILE W/ THEM, KNOWN AS "NEENAH BROWN".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-46

DRAWN BY ARC | PLANS CK'D. CAD

AESTHETIC DETAILS

SHEET 6

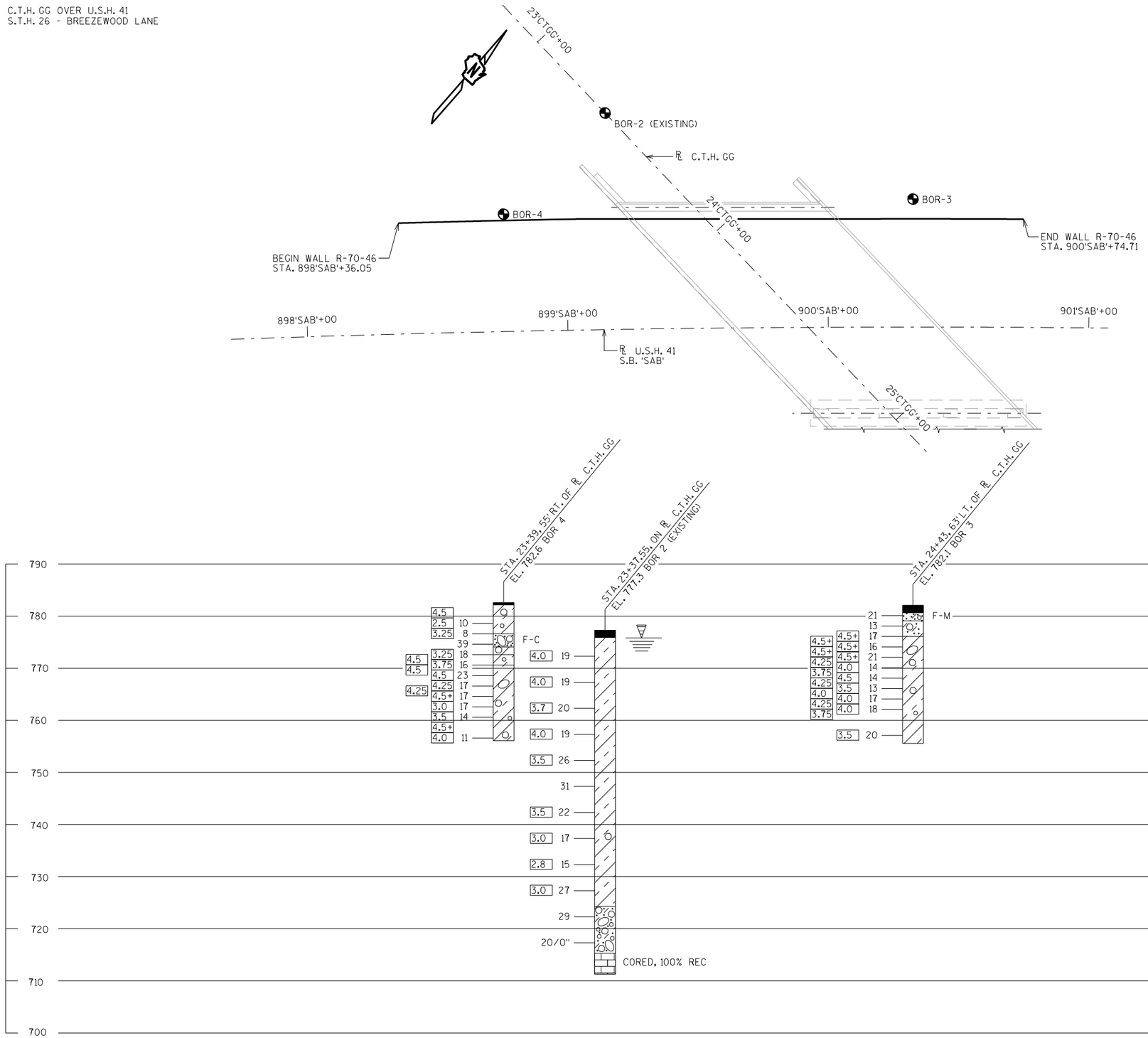
273

8

8

SCALE = 8

C.T.H. GG OVER U.S.H. 41
S.T.H. 26 - BREEZEWOOD LANE



STATE PROJECT NUMBER

1120-09-77

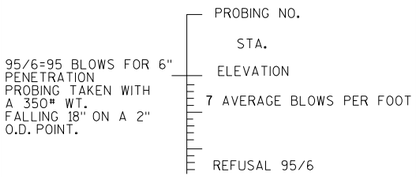
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

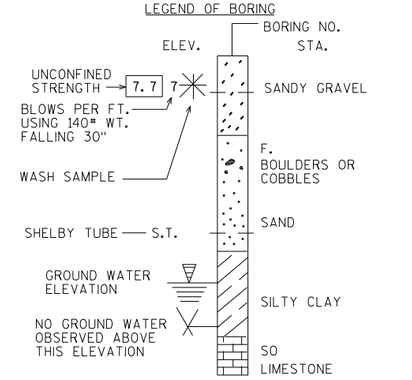
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-46

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SUBSURFACE EXPLORATION

SHEET 7

274

SCALE = 10

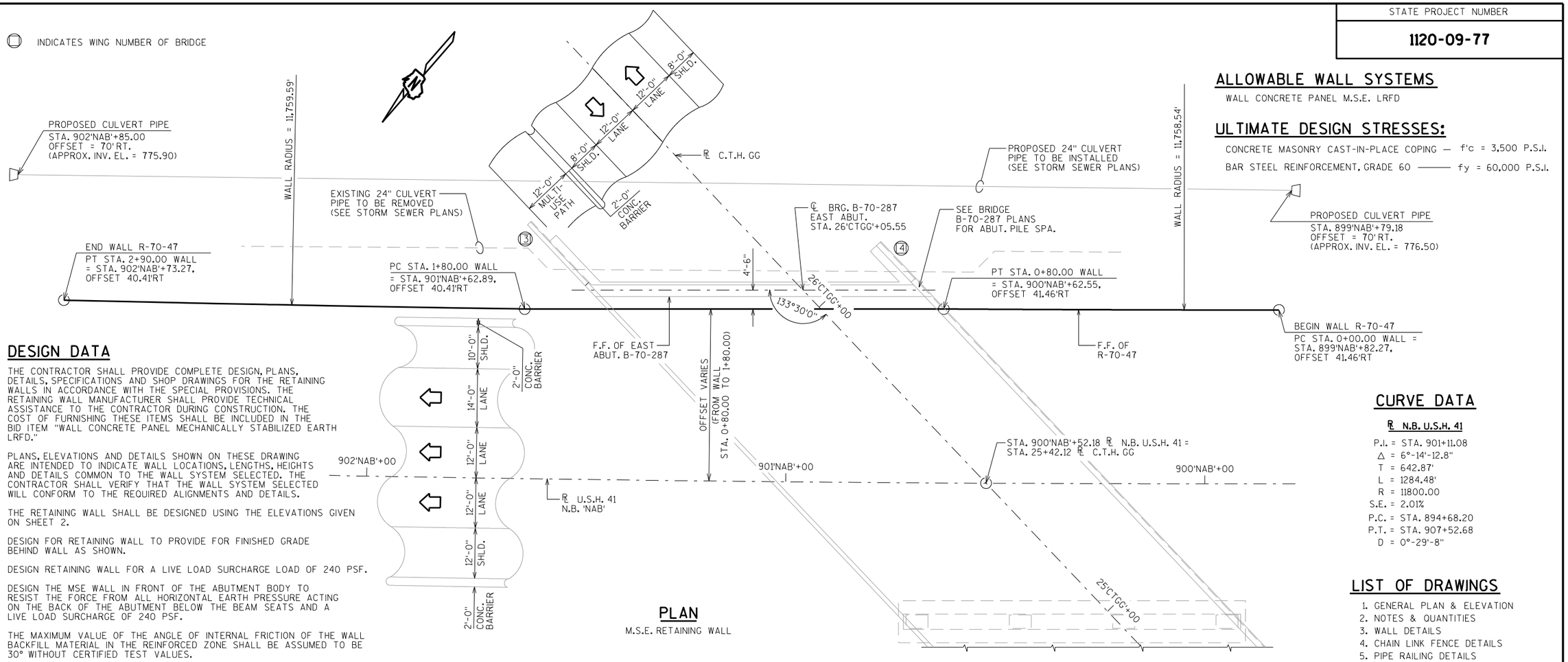
8

8

STATE PROJECT NUMBER

1120-09-77

INDICATES WING NUMBER OF BRIDGE



DESIGN DATA

THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS AND SHOP DRAWINGS FOR THE RETAINING WALLS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF FURNISHING THESE ITEMS SHALL BE INCLUDED IN THE BID ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD."

PLANS, ELEVATIONS AND DETAILS SHOWN ON THESE DRAWING ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.

THE RETAINING WALL SHALL BE DESIGNED USING THE ELEVATIONS GIVEN ON SHEET 2.

DESIGN FOR RETAINING WALL TO PROVIDE FOR FINISHED GRADE BEHIND WALL AS SHOWN.

DESIGN RETAINING WALL FOR A LIVE LOAD SURCHARGE LOAD OF 240 PSF.

DESIGN THE MSE WALL IN FRONT OF THE ABUTMENT BODY TO RESIST THE FORCE FROM ALL HORIZONTAL EARTH PRESSURE ACTING ON THE BACK OF THE ABUTMENT BELOW THE BEAM SEATS AND A LIVE LOAD SURCHARGE OF 240 PSF.

THE MAXIMUM VALUE OF THE ANGLE OF INTERNAL FRICTION OF THE WALL BACKFILL MATERIAL IN THE REINFORCED ZONE SHALL BE ASSUMED TO BE 30° WITHOUT CERTIFIED TEST VALUES.

PLAN

M.S.E. RETAINING WALL

ALLOWABLE WALL SYSTEMS

WALL CONCRETE PANEL M.S.E. LRFD

ULTIMATE DESIGN STRESSES:

CONCRETE MASONRY CAST-IN-PLACE COPING — f'c = 3,500 P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

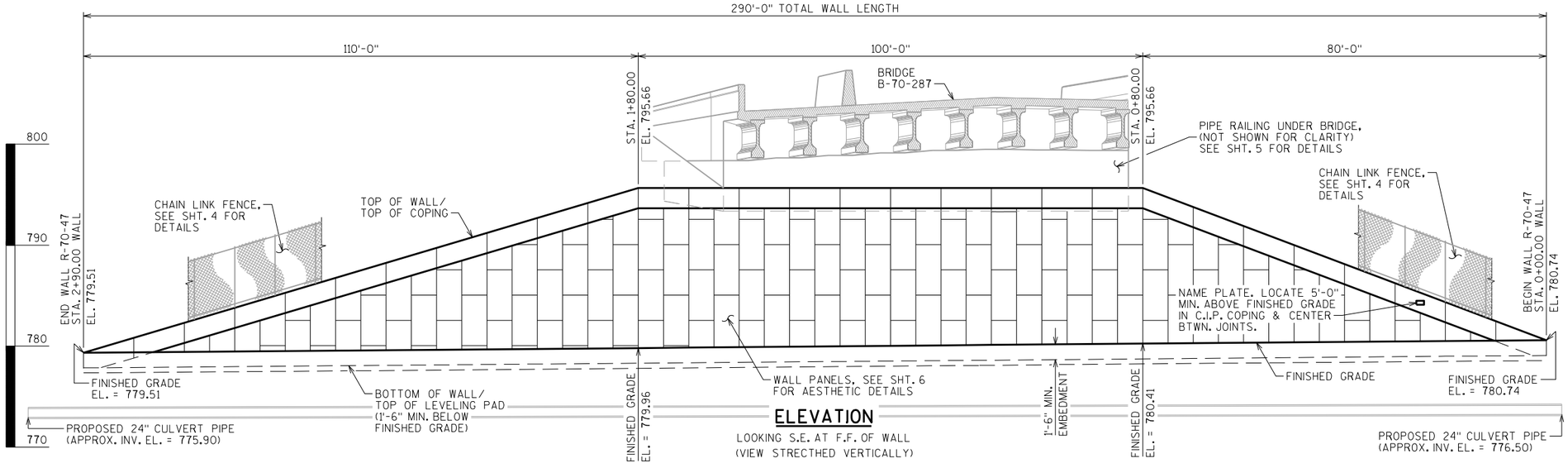
CURVE DATA

℄ N.B. U.S.H. 41

P.I. = STA. 901+11.08
Δ = 6°-14'-12.8"
T = 642.87'
L = 1284.48'
R = 11800.00
S.E. = 2.01%
P.C. = STA. 894+68.20
P.T. = STA. 907+52.68
D = 0°-29'-8"

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. NOTES & QUANTITIES
3. WALL DETAILS
4. CHAIN LINK FENCE DETAILS
5. PIPE RAILING DETAILS
6. AESTHETIC DETAILS
7. SUBSURFACE EXPLORATION



ELEVATION

LOOKING S.E. AT F.F. OF WALL (VIEW STRECTHED VERTICALLY)

STRUCTURE DESIGN CONTACTS:

ALEXANDER CRABTREE (608) 266-3686
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS — CHIEF STRUCTURES DESIGN ENGINEER — DATE 4/17/13

STRUCTURE R-70-47

S.E. RETAINING WALL FOR C.T.H. GG OVER U.S.H. 41

COUNTY	TOWN ~~CITY/VILLAGE~~
WINNEBAGO	VINLAND

DESIGN SPEC. AASHTO LRFD DESIGN SPEC. 5th EDITION

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
ARC	CAD	ARC	CAD

GENERAL PLAN & ELEVATION

SHEET 1 OF 7

275

I.D. 1120-09-00E

DATE: APR. 2012

SCALE = 12

8

8

STATE PROJECT NUMBER

1120-09-77

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

BEVEL ALL EXPOSED EDGES OF CONCRETE ¾" UNLESS NOTED OTHERWISE.

BAR STEEL REINFORCEMENT SHALL HAVE 2" CLEAR COVER UNLESS OTHERWISE SHOWN OR NOTED.

ALL WALL STATIONING AND OFFSETS ARE GIVEN TO THE FRONT FACE OF THE WALL (R-70-47).

THE CONTRACTOR MUST COORDINATE THE CONSTRUCTION OF RETAINING WALL R-70-47 WITH THE ABUTMENT OF BRIDGE B-70-287.

THE EXISTING STRUCTURE (B-70-66) IS NOT SHOWN. THE REMOVAL OF THE STRUCTURE IS INCLUDED IN A LUMP SUM PAY ITEM FOR BRIDGE B-70-287.

THE PLAN QUANTITY FOR THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD" IS BASED ON A WALL HEIGHT MEASURED FROM THE TOP OF WALL TO THE TOP OF LEVELING PAD. SET A CONSTANT DEPTH OF 1'-6" BELOW FINISHED GRADE.

THE CONCRETE MASONRY & REINFORCING STEEL FOR THE CAST-IN-PLACE COPING IS PAID FOR UNDER THE ITEM "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD."

SEE SPECIAL PROVISIONS FOR AESTHETIC TREATMENT TO WALL.

WALL EXTERNAL STABILITY EVALUATION

DIMENSIONS				
WALL HEIGHT (FEET)[1]	12.9	17.2	15.8	11.5
EXPOSED WALL HEIGHT (FEET)	11.4	15.7[2]	14.3	15.7
LENGTH OF REINFORCEMENT (FEET)[3]	9.0	17.4	11.5	8.0
LENGTH OF REINFORCEMENT/WALL HEIGHT	0.70	1.01	0.70	0.70
WALL STATION	0+60	1+80	1+90	2+20
BORING USED	B-1	B-1 EXT.	B-1 EXT.	B-2
CAPACITY TO DEMAND RATIO (CDR)[4]				
SLIDING (CDR > 1.0)	1.3	1.0	1.3	1.3
ECCENTRICITY (CDR > 1.0)	1.2	1.1	1.3	1.2
GLOBAL STABILITY (CDR > 1.0)	NA	1.8	NA	NA
BEARING RESISTANCE (CDR > 1.0)	1.9	1.1	1.6	2.2
REQUIRED BEARING RESISTANCE (PSF)	7,000	6,900	7,000	7,100

NOTES:

1. THE WALL HEIGHT INCLUDES AN EMBEDMENT OF 1.5 FEET.
2. THE WALL STABILITY EVALUATION INCLUDED A SURCHARGE LOAD THAT WAS EQUAL TO THE WEIGHT OF THE SOIL BEHIND THE ABUTMENT.
3. THE LENGTH OF REINFORCEMENT IS THE MINIMUM REQUIRED LENGTH.
4. CDR REQUIREMENTS AND LOAD AND RESISTANCE FACTORS ARE PRESENTED IN CHAPTER 14 OF THE BRIDGE MANUAL.
5. NA = NOT APPLICABLE, GLOBAL SLOPE STABILITY WAS EVALUATED AT THE CRITICAL WALL LOCATION.

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	2
	517.1010.S	CONCRETE STAINING R-70-47	SF	3,800
	517.1050.S	ARCHITECTURAL SURFACE TREATMENT R-70-47	SF	3,100
	612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	310
	SPV.0090	FENCE CHAIN LINK POLYMER-COATED 6-FT	LF	211
	SPV.0105	RAILING PIPE GALVANIZED R-70-47	LS	1
	SPV.0165	WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD	SF	3,460
		NON-BID ITEMS		
★		BACKFILL STRUCTURES	CY	2,300
		PRE-FORMED JOINT FILLER	SIZE	¾"
		NON-BITUMINOUS JOINT SEALER	SIZE	¾"

★ "BACKFILL STRUCTURE" QUANTITY IS FOR INFORMATIONAL PURPOSES ONLY. QUANTITY IS INCLUDED IN "WALL CONCRETE PANEL MECHANICALLY STABILIZED EARTH LRFD."

SOIL PARAMETERS

SOIL DESCRIPTION & STRATUM LOCATIONS	FRICTION ANGLE, (DEGREES)	COHESION, (PSF)	UNIT WEIGHT, (PCF)
GRANULAR BACKFILL WITHIN THE WALL IN THE REINFORCING ZONE	30	0	120
FILL BEHIND AND BELOW THE REINFORCING ZONE	32	0	120
B-1, STA. 25+64 OF ℄ C.T.H. GG			
CLAY, BROWN, SOME SILT, TRACE GRAVEL ELEVATION 779.0 FEET TO ELEVATION 775.7 FEET	0	2,000	120
CLAY, BROWN, SOME SILT, TRACE GRAVEL ELEVATION 775.7 FEET TO ELEVATION 769.7 FEET	0	4,000	130
CLAY, BROWN TO GRAY, SOME SILT, TRACE GRAVEL ELEVATION 769.7 FEET TO ELEVATION 744.7 FEET	0	3,000	125
CLAY, BROWN TO GRAY, SOME SILT, TRACE GRAVEL ELEVATION 744.7 FEET TO ELEVATION 726.7 FEET	0	2,500	120
SILT, GRAY, SOME SAND, SOME GRAVEL ELEVATION 726.7 FEET TO ELEVATION 717.2 FEET	35	0	135
BEDROCK ELEVATION 717.2 FEET AND BELOW	0	96,000	140
B-1 (EXISTING), STA. 26+47 OF ℄ C.T.H. GG			
CLAY, SOME SILT ELEVATION 778.5 FEET TO ELEVATION 777.6 FEET	0	2,000	120
CLAY, SOME SILT ELEVATION 777.6 FEET TO ELEVATION 743.1 FEET	0	3,000	125
CLAY, SOME SILT ELEVATION 743.1 FEET TO ELEVATION 733.1 FEET	0	4,000	130
CLAY, SOME SILT, ORGANICS ELEVATION 733.1 FEET TO ELEVATION 723.1 FEET	0	1,500	115
GRAVEL AND SAND, TRACE SILT ELEVATION 723.1 FEET TO ELEVATION 718.1 FEET	35	0	135
BEDROCK ELEVATION 718.1 FEET AND BELOW	0	96,000	140
B-2, STA. 26+75 OF ℄ C.T.H. GG			
CLAY, BROWN, SOME SILT, LITTLE GRAVEL ELEVATION 778.3 FEET TO ELEVATION 775.8 FEET	0	2,000	120
CLAY, BROWN, SOME SILT, LITTLE GRAVEL ELEVATION 775.8 FEET TO ELEVATION 770.7 FEET	0	4,000	130
CLAY, BROWN, SOME SILT, LITTLE GRAVEL ELEVATION 770.7 FEET TO ELEVATION 753.2 FEET	0	3,000	125

NOTES:

THE TYPICAL WALL SECTION USED IN THE ANALYSES HAD AN EXPOSED HEIGHT THAT VARIES FROM 10.0 FEET TO 15.7 FEET. THE FOLLOWING ASSUMPTIONS ARE ALSO INCLUDED IN THE ANALYSES:

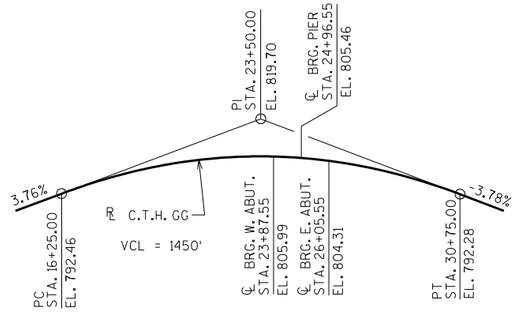
1. THE SLOPE IN FRONT AND BEHIND THE WALL IS HORIZONTAL.
2. GROUNDWATER LEVEL WAS ASSUMED TO BE PERCHED IN THE EXISTING BORING.
3. THE GRANULAR BACKFILL IS FREE DRAINING AND WILL NOT BECOME SATURATED.
4. THE MINIMUM EMBEDMENT DEPTH IS 1'-6" DEEP.
5. A SURCHARGE LOAD OF 240 PSF IS INCLUDED TO MODEL PEDESTRIAN AND LIGHTWEIGHT CONSTRUCTION EQUIPMENT.
6. AN ADDITIONAL SURCHARGE LOAD EQUIVALENT TO THE WEIGHT OF THE SOIL BEHIND THE ABUTMENT IS ALSO INCLUDED IN THE DESIGN.
7. GLOBAL STABILITY WAS DETERMINED BY THE COMPUTER PROGRAM XSTABL.
8. REQUIRED BEARING RESISTANCE IS DETERMINED BY TERZAGHI'S BEARING CAPACITY EQUATION.
9. SETTLEMENT OF THE FOUNDATION ON COHESIONLESS AND COHESIVE SOIL IS BASED UPON METHODS DESCRIBED IN THE FHWA SOILS AND FOUNDATIONS MANUAL.

RECOMMENDATIONS

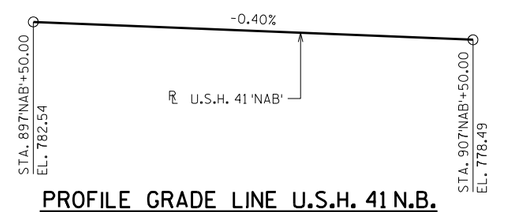
1. THE M.S.E. WALL WITH PRECAST CONCRETE PANELS WILL ACHIEVE THE EXTERNAL STABILITY FACTORS OF SAFETY IF THE SLIDING AND BEARING RESISTANCE REQUIREMENTS ARE MET. TABLE 3 PRESENTS THE MINIMUM LENGTH OF THE REINFORCEMENT. IN THE AREA OF THE WALL THAT SUPPORTS THE ABUTMENT, THE RATIO OF LENGTH OF REINFORCEMENT TO TOTAL HEIGHT OF WALL SHOULD BE INCREASED FROM 0.70 TO 1.01.
2. THE CONTRACTOR SHOULD REMOVE 12-INCHES OF SILT AND CLAY BELOW THE REINFORCING ZONE AND REPLACE WITH GRANULAR FILL IN THE AREAS THAT THE SILT AND CLAY ARE ENCOUNTERED.
3. THE BACKFILL BEHIND THE M.S.E. WALL WITH PRECAST CONCRETE FACING SHOULD BE GRANULAR AND FREE DRAINING.
4. THE NORTHEAST REGION SOILS ENGINEER SHOULD REVIEW THE FILL SUBSURFACE CONDITIONS PRIOR TO CONSTRUCTION OF THE WALL.

GEOMETRY TABLE

WALL STATION	'NAB' ℄ STATION	OFFSET TO F.F. OF WALL FROM ℄	TOP OF WALL EL.	FINISHED GRADE EL.
0+00.00	899+82.27	41.46'RT	780.74	780.74
0+10.00	899+92.31	41.46'RT	782.60	780.70
0+20.00	900+02.34	41.46'RT	784.47	780.66
0+30.00	900+12.38	41.46'RT	786.33	780.62
0+40.00	900+22.41	41.46'RT	788.20	780.58
0+50.00	900+32.45	41.46'RT	790.06	780.54
0+60.00	900+42.48	41.46'RT	791.93	780.50
0+70.00	900+52.52	41.46'RT	793.79	780.45
0+80.00	900+62.55	41.46'RT	795.66	780.41
0+90.00	900+72.59	41.39'RT	795.66	780.36
1+00.00	900+82.62	41.31'RT	795.66	780.32
1+10.00	900+92.66	41.23'RT	795.66	780.28
1+20.00	901+02.69	41.14'RT	795.66	780.23
1+30.00	901+12.73	41.04'RT	795.66	780.19
1+40.00	901+22.76	40.93'RT	795.66	780.14
1+50.00	901+32.79	40.81'RT	795.66	780.10
1+60.00	901+42.83	40.68'RT	795.66	780.05
1+70.00	901+52.86	40.55'RT	795.66	780.01
1+80.00	901+62.89	40.41'RT	795.66	779.96
1+90.00	901+72.93	40.41'RT	794.19	779.92
2+00.00	901+82.96	40.41'RT	792.72	779.88
2+10.00	901+93.00	40.41'RT	791.26	779.84
2+20.00	902+03.03	40.41'RT	789.79	779.80
2+30.00	902+13.07	40.41'RT	788.32	779.75
2+40.00	902+23.10	40.41'RT	786.85	779.71
2+50.00	902+33.14	40.41'RT	785.39	779.67
2+60.00	902+43.17	40.41'RT	783.92	779.63
2+70.00	902+53.20	40.41'RT	782.45	779.59
2+80.00	902+63.24	40.41'RT	780.98	779.55
2+90.00	902+73.27	40.41'RT	779.51	779.51



PROFILE GRADE LINE C.T.H. GG



PROFILE GRADE LINE U.S.H. 41 N.B.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-47

DRAWN BY ARC | PLANS CK'D. CAD

NOTES & QUANTITIES

SHEET 2

276

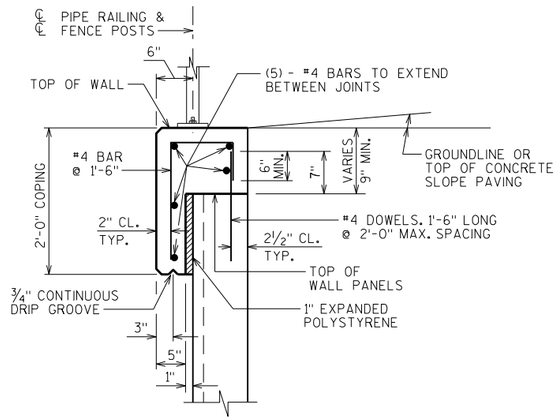
SCALE = 5.333

8

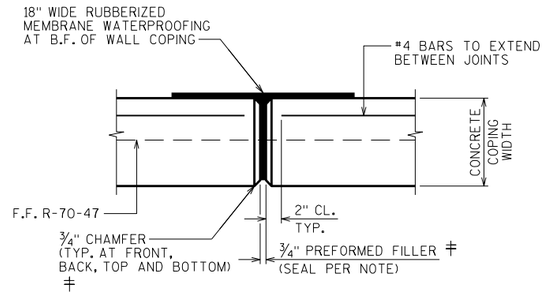
8

STATE PROJECT NUMBER

1120-09-77



CAST-IN-PLACE CONCRETE COPING DETAIL



COPING EXPANSION JOINT

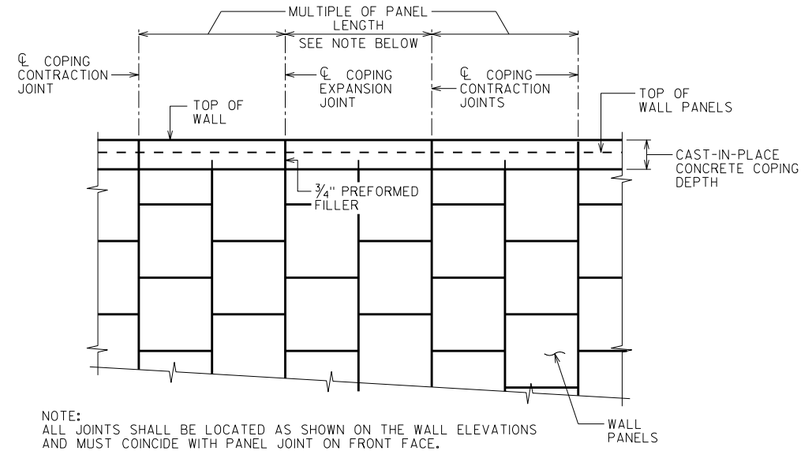
‡ SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF FILLER WITH NON-STAINING "NEENAH BROWN" NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONC.)

DO NOT RUN BAR STEEL THRU JOINT

MAXIMUM SPACING OF JOINTS SHALL BE 50'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

RUBBERIZED MEMBRANE WATERPROOFING TO EXTEND FROM TOP OF COPING TO 6" BELOW TOP OF WALL PANELS.

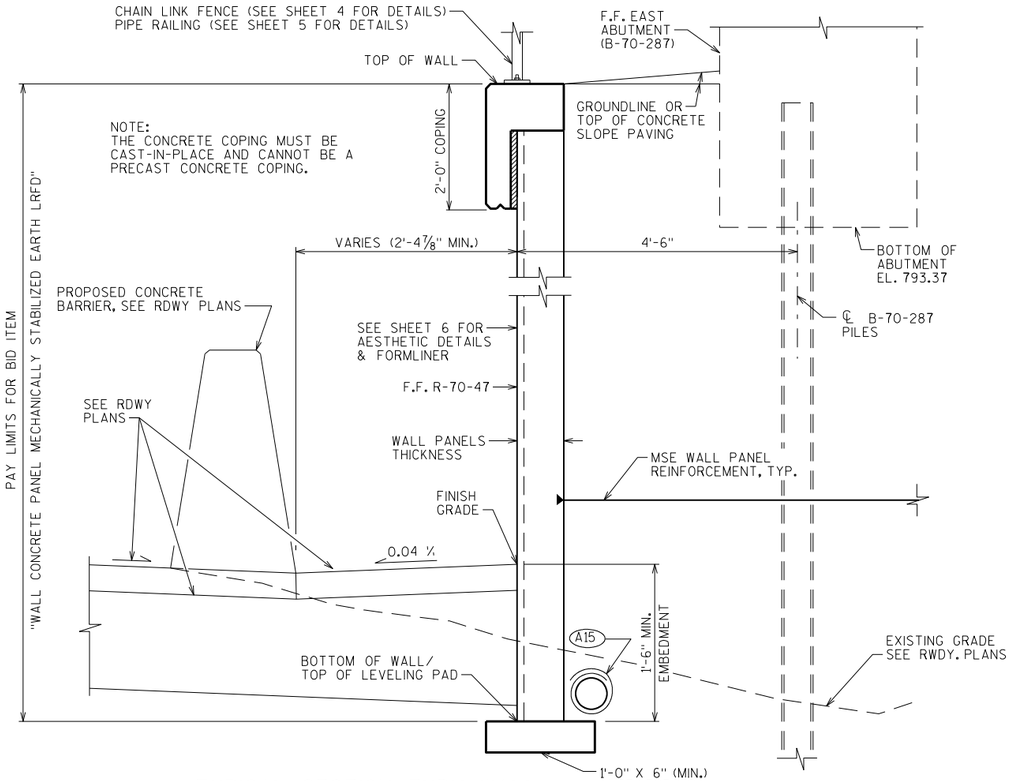
ALL EXPANSION JOINTS TO EXTEND THE FULL DEPTH OF COPING.



NOTE:
ALL JOINTS SHALL BE LOCATED AS SHOWN ON THE WALL ELEVATIONS AND MUST COINCIDE WITH PANEL JOINT ON FRONT FACE.

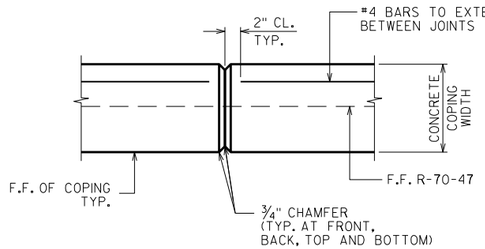
CAST-IN-PLACE COPING PARTIAL ELEVATION

LOOKING AT F.F. OF WALL



TYPICAL SECTION THRU WALL

LOOKING NORTHEAST

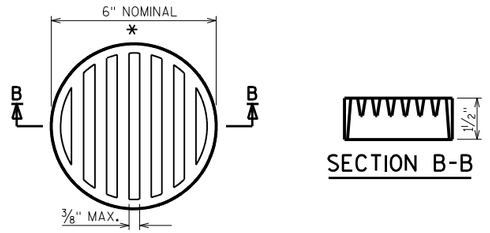


COPING CONTRACTION JOINT DETAIL

DO NOT RUN BAR STEEL THRU JOINT.

MAXIMUM SPACING OF JOINTS SHALL BE 12'-0" AND MUST LINE UP WITH THE WALL PANELS' JOINTS.

ALL CONTRACTION JOINTS TO EXTEND THE FULL DEPTH OF COPING.



SECTION B-B

RODENT SCREEN DETAIL

* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SCREEN, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SCREEN SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALLY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SCREEN TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SCREEN SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH SHEET METAL SCREWS.

(A15) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SCREEN REQUIRED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-47

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WALL DETAILS | SHEET 3 | 277

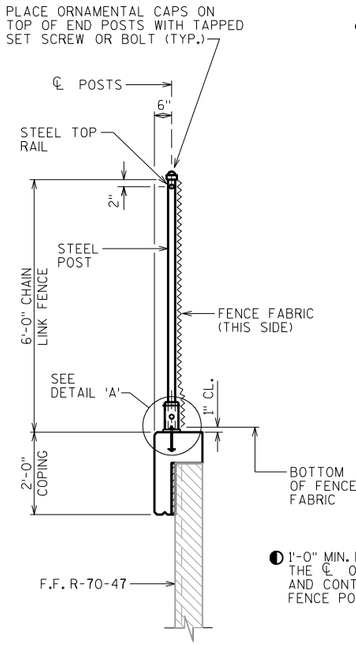
SCALE =5.333

8

8

STATE PROJECT NUMBER

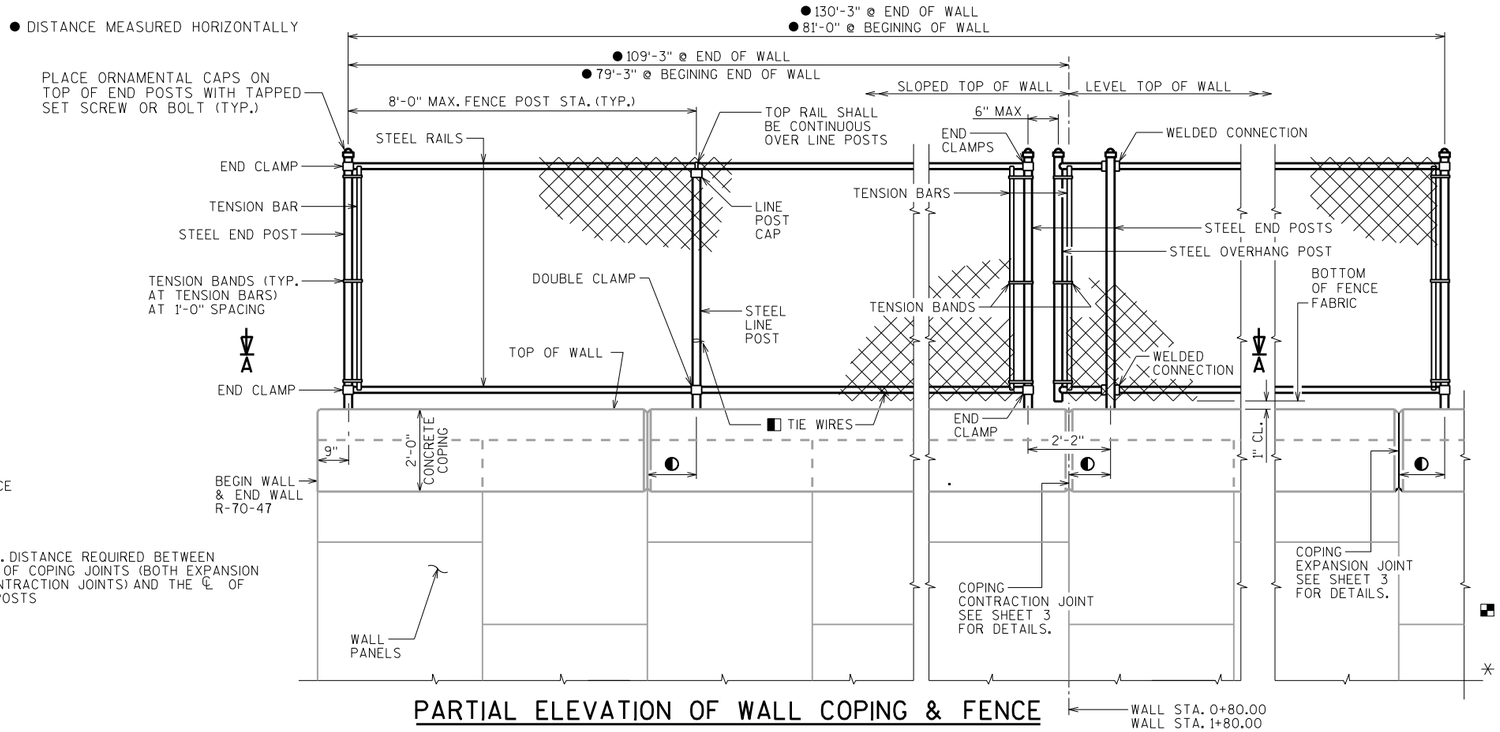
1120-09-77



◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF FENCE POSTS

SECTION THRU FENCE

● DISTANCE MEASURED HORIZONTALLY



PARTIAL ELEVATION OF WALL COPING & FENCE

LOOKING SOUTHEAST AT F.F. WALL
(END OF WALL SHOWN, BEGINNING SIMILAR)

NOTES

POSTS ARE TO BE SET VERTICAL.

ALL FENCE COMPONENTS SHALL BE GALVANIZED STEEL WITH A COLORED POLYMER-COATING ON THE OUTSIDE.

FABRIC SHALL CONFORM TO ASTM F668, CLASS 2B. STEEL RAILS, POSTS AND POST SLEEVES SHALL CONFORM TO ASTM F1083, STANDARD WEIGHT PIPE (SCHEDULE 40). FITTINGS SHALL CONFORM TO ASTM F626. SEE THE "BRIDGE SPECIAL PROVISIONS" FOR ADDITIONAL DETAILS.

THE COLOR OF POLYMER-COATING FOR THIS STRUCTURE SHALL BE BLACK (FEDERAL COLOR #27038) IN ACCORDANCE WITH ASTM F934.

THE BID ITEM SHALL BE "FENCE CHAIN LINK POLYMER-COATED 6-FT.", LF.

COMPLETE ANY REQUIRED WELDING OF COMPONENTS BEFORE GALVANIZING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

BASE PLATES, ANCHOR PLATES AND SHIMS SHALL BE ASTM A709, GRADE 36.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG THE C/L OF THE POST.

◪ CAULK AROUND PERIMETER OF BASE PLATE AND FILL PORTION OF SLOTTED HOLE AROUND ANCHOR BOLT IN SHIM WITH NON-STAINING "NEENAH BROWN" NON-BITUMINOUS JOINT SEALER.

✳ ALTERNATE TO DOUBLE CLAMP: USE LINE RAIL CLAMP (BOULEVARD) OR 180° BRACE BAND, WHICH MAY BE USED WHEN THE POSTS ARE EITHER BOLTED TO THE POST SLEEVES OR DIRECTLY WELDED TO THE BASE PLATE.

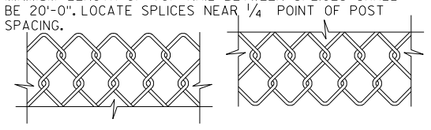
◭ ½" DIA. X 6⅞" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE "S", ½" DIA. CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR ½" DIA. BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE "S" ANCHORS ARE USED. SEE ☆

☆ ½" DIA. CONCRETE MASONRY ANCHOR, TYPE "S", 6" MIN. EMBEDMENT (EPOXY ANCHORED) INTO CONCRETE AND MINIMUM PULLOUT CAPACITY OF 10 KIPS. ANCHOR, WASHER AND NUT SHALL BE GALVANIZED.

◨ ATTACH FABRIC TO RAILS, AND TO POSTS WITHOUT TENSION BANDS, WITH TIE WIRES (ROUND, 9-GAGE) SPACED AT 1'-0".

◹ BOLT RAIL TO RAIL END TO SECURE OVERHANG SECTION. ALTERNATE IS TO WELD RAIL DIRECTLY TO END POST.

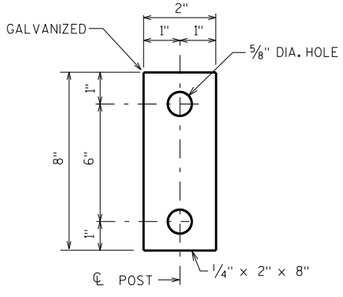
MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". LOCATE SPLICES NEAR ¼ POINT OF POST SPACING.



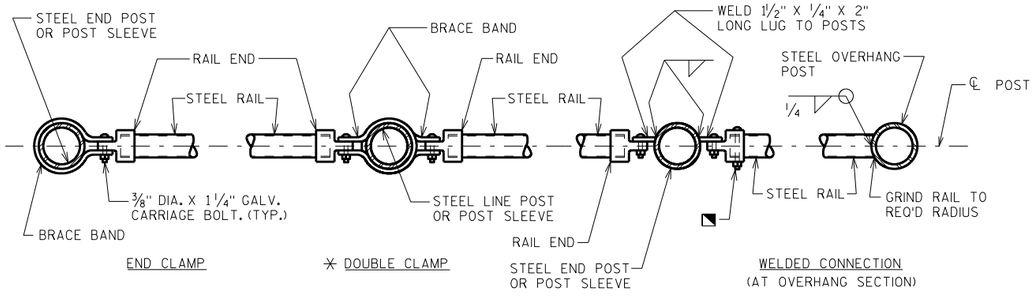
TOP DETAIL BOTTOM DETAIL

FENCE FABRIC

FENCE FABRIC WOVEN OF 9-GAGE WIRE IN 2" DIAMOND PATTERN MESH WITH BOTH THE TOP AND BOTTOM SELVAGES KNUCKLED.



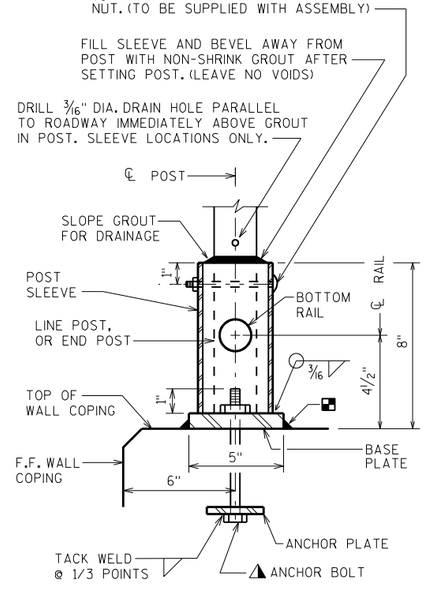
ANCHOR PLATE



END CLAMP ✳ DOUBLE CLAMP WELDED CONNECTION (AT OVERHANG SECTION)

SECTION A-A

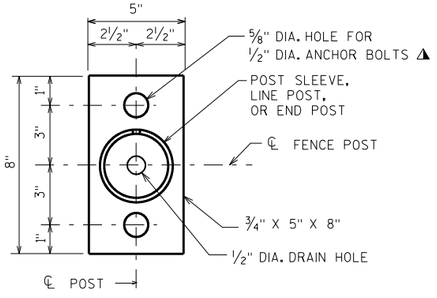
NOTE: PLACE ALL BOLT HEADS ON SIDE OF FENCE ADJACENT TO PEDESTRIANS



DETAIL 'A'

UNIT SHALL BE GALVANIZED AFTER FABRICATION

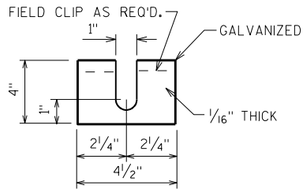
NOTE: IN LIEU OF USING THE POST SLEEVE, THE FENCE POST MAY BE WELDED TO THE BASE PLATE.



BASE PLATE

FENCE MEMBER SIZE & WEIGHT

STEEL FENCE MEMBER	OUTSIDE DIAMETER (INCHES)	WEIGHT (LB/FT)
RAILS	1.660	2.27
END POST	2.875	5.80
OVERHANG POST	2.875	5.80
LINE POST	2.375	3.65
POST SLEEVE	4.000	9.12



POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN END POSTS AND LINE POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST. USE WHERE REQUIRED FOR ALIGNMENT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-47

DRAWN BY ARC PLANS CK'D. CAD

CHAIN LINK FENCE DETAILS

SHEET 4

278

SCALE =5.333

8

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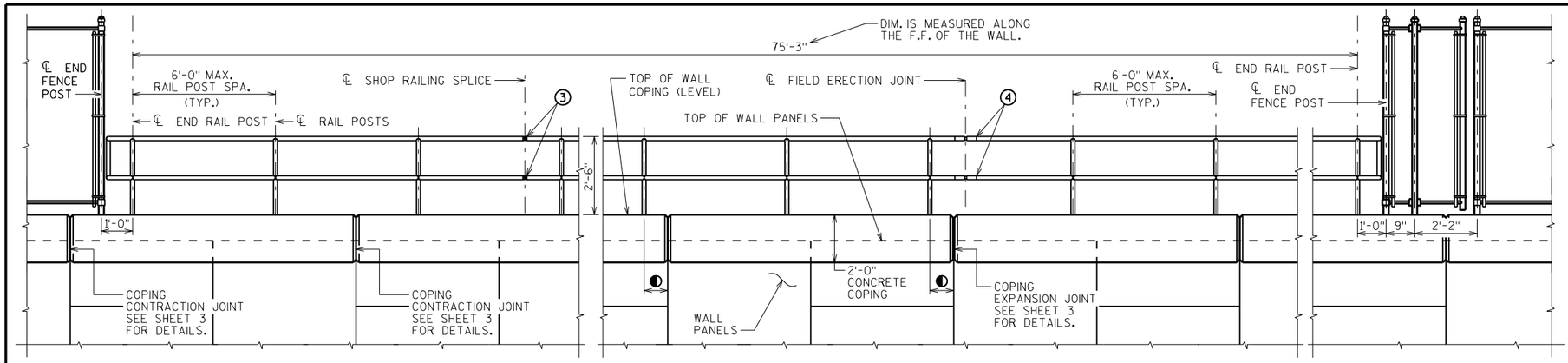
STATE PROJECT NUMBER

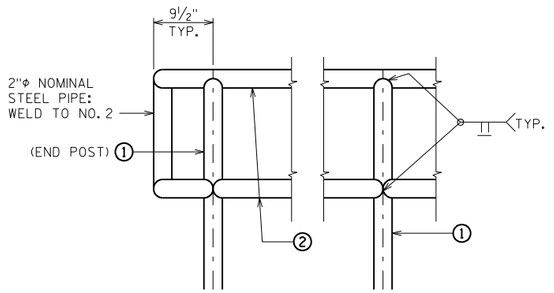
1120-09-77



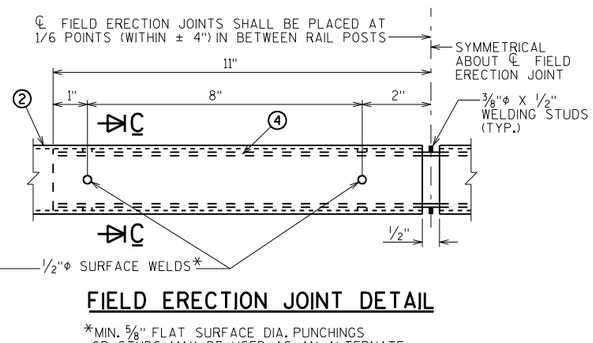
PARTIAL ELEVATION OF WALL COPING & RAILING

LOOKING SOUTHEAST AT F.F. OF WALL

◐ 1'-0" MIN. DISTANCE REQUIRED BETWEEN THE ℄ OF COPING JOINTS (BOTH EXPANSION AND CONTRACTION JOINTS) AND THE ℄ OF RAIL POSTS



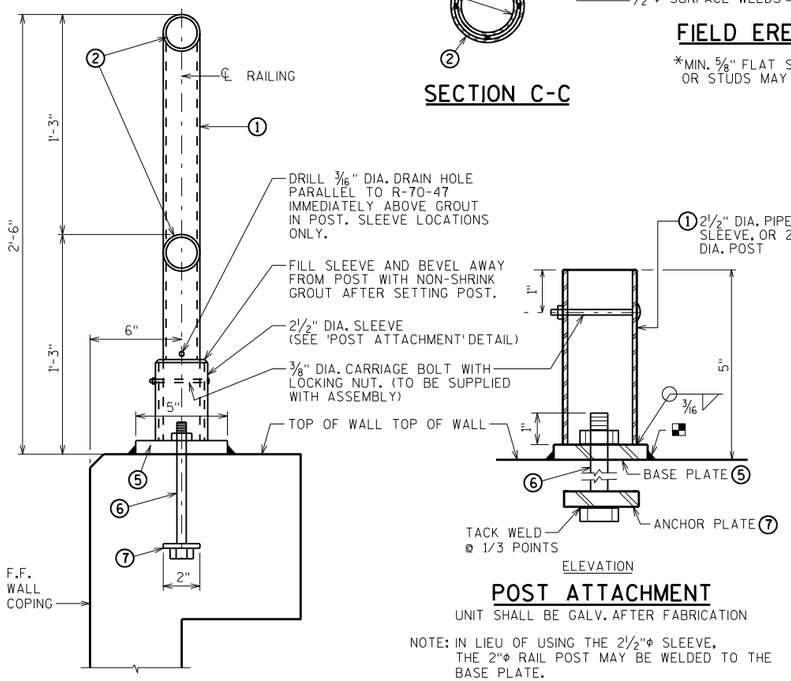
PART ELEVATION OF RAILING



FIELD ERECTION JOINT DETAIL

*MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

SECTION C-C

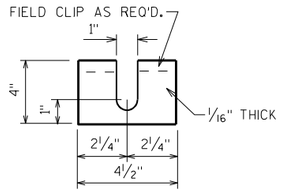


SECTION THRU RAILING

POST ATTACHMENT

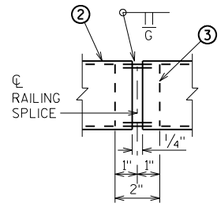
UNIT SHALL BE GALV. AFTER FABRICATION

NOTE: IN LIEU OF USING THE 2½"Φ SLEEVE, THE 2"Φ RAIL POST MAY BE WELDED TO THE BASE PLATE.



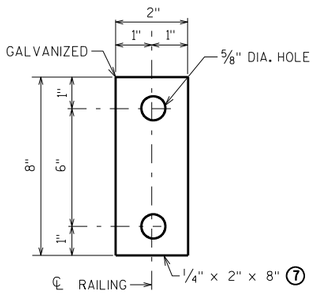
POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST.

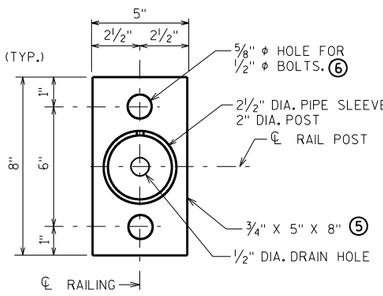


SHOP RAILING SPLICE DETAIL

(LOCATION MUST BE SHOWN ON THE SHOP DRAWINGS)



ANCHOR PLATE



BASE PLATE

NOTES

BID ITEM SHALL BE "RAILING PIPE GALVANIZED R-70-47", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

FIELD ERECTION JOINTS MUST BE PLACED IN BETWEEN RAIL POSTS WHERE THERE IS ALSO A CONCRETE COPING EXPANSION JOINT IN BETWEEN RAIL POSTS.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 7) SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS AND STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

DRILL DRAIN HOLES PRIOR TO GALVANIZING.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF POSTS.

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING.

■ CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS IN POST SHIMS AND BASE PLATES WITH NON-STAINING, NEENAH BROWN, NON-BITUMINOUS JOINT SEALER.

ALL RAILINGS, POSTS, GATES AND ASSOCIATED HARDWARE SHALL BE PAINTED BLACK (FEDERAL COLOR NO. 27038).

LEGEND

① 2"Φ NOMINAL STEEL PIPE FOR POSTS: CUT BOTTOM OF POST TO MATCH TOP OF CONCRETE. POSTS ARE TO BE SET VERTICAL.

② 2"Φ NOMINAL STEEL PIPE FOR RAILS: WELD TO NO. 1

③ 1½"Φ PIPE SLEEVE FOR NO. 2. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 2 1/16".

④ 1½"Φ PIPE SLEEVE X 1'-10" LONG FOR NO. 2. PROVIDE ½"Φ SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 2. PROVIDE ⅜"Φ X ½" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

⑤ PLATE ¾" X 5" X 8", WITH ⅝"Φ HOLE FOR ANCHOR BOLTS NO. 6. WELD TO NO. 1 OR PIPE SLEEVE AS SHOWN.

⑥ ½" DIA. X 6⅞" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE S, ½"Φ CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR ½"Φ BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED. SEE NOTE ☆

☆ ½" CONCRETE MASONRY ANCHOR, TYPE "S" 6" MIN. EMBEDMENT (EPOXY ANCHORED MIN. PULLOUT OF 10 KIPS, THREADED LENGTH OF ANCHOR, WASHER, AND NUT SHALL BE GALVANIZED.

⑦ ¼" X 2" X 8" FLAT BAR, WITH ⅝"Φ HOLES FOR ANCHOR BOLTS NO. 6.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE R-70-47

DRAWN BY ARC | PLANS CK'D. CAD

PIPE RAILING DETAILS

SHEET 5

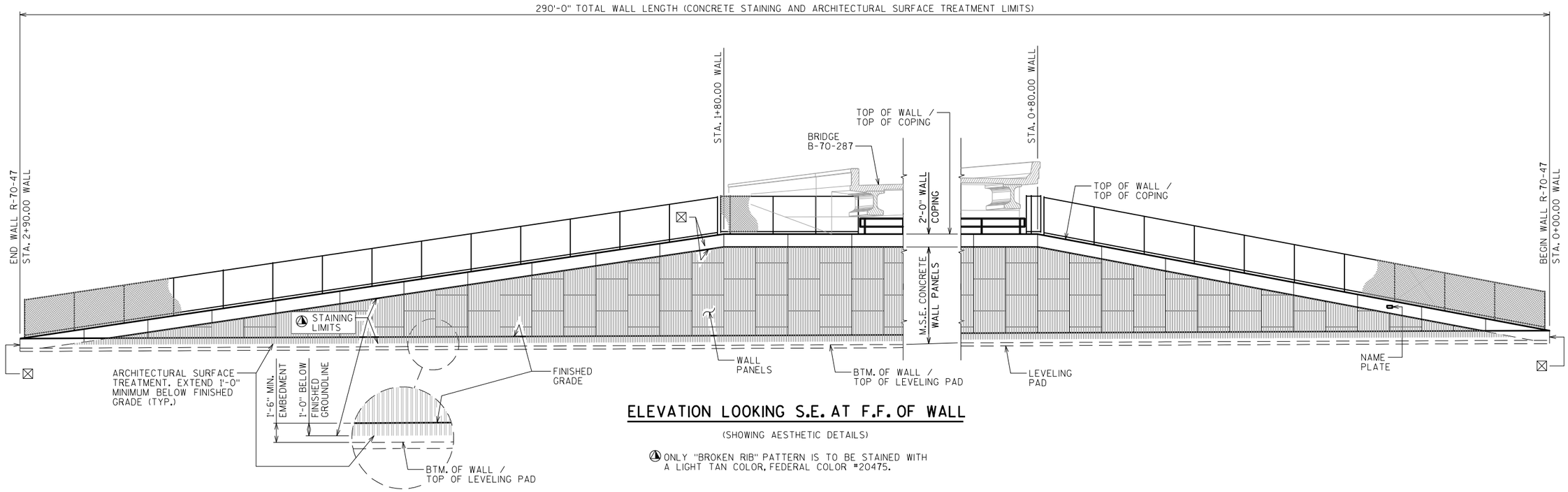
279

SCALE = 5.333

8

8

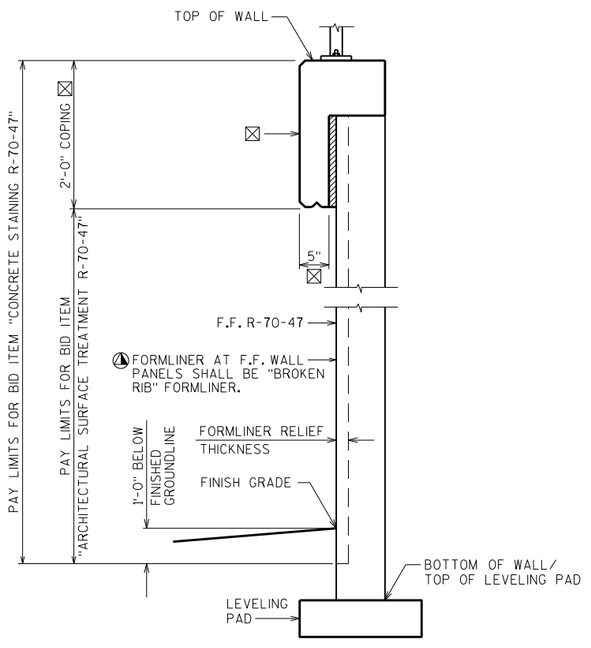
STATE PROJECT NUMBER
1120-09-77



ELEVATION LOOKING S.E. AT F.F. OF WALL

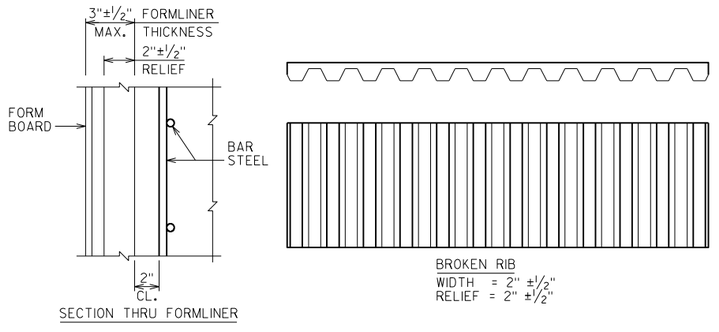
(SHOWING AESTHETIC DETAILS)

ⓐ ONLY "BROKEN RIB" PATTERN IS TO BE STAINED WITH A LIGHT TAN COLOR, FEDERAL COLOR #20475.



SECTION THRU WALL

(SHOWING AESTHETIC DETAILS)



FORMLINER DETAILS

NOTES

ALL FORMLINER COURSING AT F.F. OF WALL SHALL BE VERTICAL.

ALL FORMLINER WORK SHALL BE COVERED UNDER THE BID ITEM "ARCHITECTURAL SURFACE TREATMENT R-70-47".

THE FORMLINER PATTERN SHALL BE CONTINUOUS ACROSS CONSTRUCTION JOINTS.

STAINING AREAS SHALL BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING R-70-47".

IF TOUCH UP PAINTING IS REQUIRED, IT SHALL BE DONE TO THE SATISFACTION OF THE FIELD ENGINEER AT NO ADDITIONAL COST.

☒ THE ENTIRE F.F. OF WALL COPING, BOTTOM OF WALL COPING AND ENDS OF WALL SHALL BE STAINED WITH "NEENAH BROWN".

ALL ARCHITECTURAL SURFACE TREATMENT FORMLINER AREAS SHALL BE STAINED USING A LIGHT TAN STAIN, FEDERAL COLOR #20475. TO BE PAID FOR UNDER THE BID ITEM "CONCRETE STAINING R-70-47".

"NEENAH BROWN" = 2 GALLONS OF SWHC 103 CEDARWOOD BROWN TO 3 GALLONS OF FEDERAL COLOR #20400. SHERWIN WILLIAMS IN MENASHA HAS DONE A MANUAL MATCH OF THAT MIXTURE AND THAT FORMULA IS NOW ON FILE W/ THEM, KNOWN AS "NEENAH BROWN".

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-47

DRAWN BY ARC | PLANS CK'D. CAD

AESTHETIC DETAILS

SHEET 6

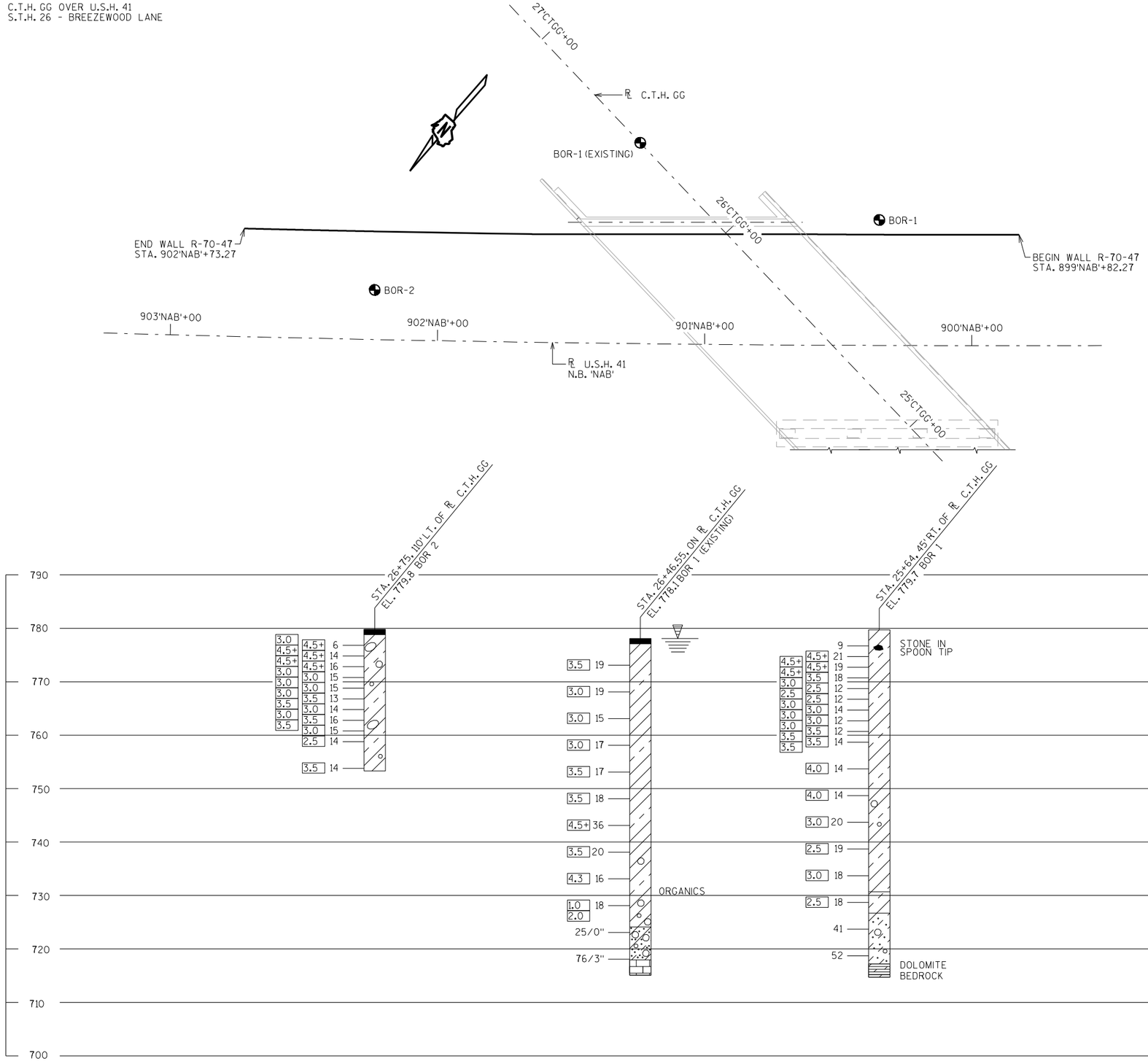
280

8

8

SCALE = 8

C.T.H. GG OVER U.S.H. 41
S.T.H. 26 - BREEZEWOOD LANE



STATE PROJECT NUMBER

1120-09-77

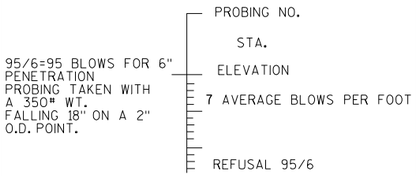
ABBREVIATIONS

F — FINE M — MEDIUM C — COARSE
WS — WEATHERED SO — SOUND

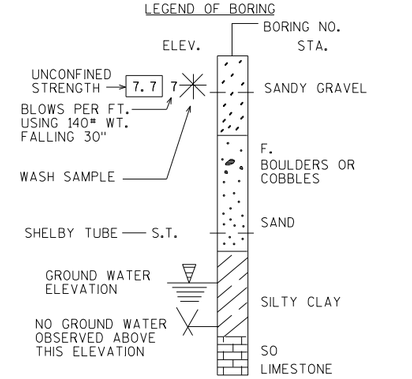
MATERIAL SYMBOLS

TOPSOIL, SILT, SANDSTONE
SAND, PEAT, LIMESTONE
GRAVEL, CLAY, IGNEOUS ROCK

LEGEND OF PROBING



LEGEND OF BORING



UNLESS OTHERWISE SPECIFIED, THE BLOWS PER FOOT AT THE LOCATIONS INDICATED ARE BASED ON DRIVING A 2" O.D. X 1.4" I.D. SPLIT SPOON SAMPLER WITH A 140# HAMMER HAVING A FREE FALL OF 30". THE BLOW COUNT IS TAKEN IN UNDISTURBED SOIL IMMEDIATELY BELOW A CASED OR OPEN HOLE ELIMINATING SIDE FRICTION ON THE DRIVE PIPE.

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

TO OBTAIN RELATIVE DATA CONCERNING THE CHARACTER OF MATERIAL IN AND UPON WHICH THE FOUNDATION MIGHT BE BUILT, BORINGS AND/OR SOUNDINGS WERE MADE AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING. THE DATA PRESENTED HEREIN REPRESENTS THE FINDINGS OF THE SUBSURFACE EXPLORATIONS MADE. HOWEVER, BECAUSE THE DEPTHS INVESTIGATED ARE LIMITED AND THE AREA OF THE BORINGS AND/OR SOUNDINGS IS VERY SMALL IN RELATION TO THE ENTIRE AREA, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT CONDITIONS BELOW THE DEPTHS INVESTIGATED OR THAT THE CLASSIFICATION OF MATERIAL ENCOUNTERED IN THESE INVESTIGATIONS IS NECESSARILY TYPICAL OF THE ENTIRE SITE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE R-70-47

DRAWN BY ARC PLANS CK'D. CAD

SUBSURFACE EXPLORATION

SHEET 7

281

SCALE = 10

DIVSION 1 - CTH GG

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
15+00	1500		0.0	96.0	0	0	0	0	0
16+00	1600	100	0.0	110.2	0	382	0	477	-477
17+00	1700	100	5.4	513.8	10	1156	10	1922	-1912
17+36	1736	36	4.6	567.1	7	721	17	2823	-2806
18+00	1800	64	4.8	699.5	11	1501	28	4699	-4671
19+00	1900	100	2.8	652.3	14	2503	42	7828	-7786
20+00	2000	100	3.3	597.9	11	2315	53	10722	-10669
21+00	2100	100	47.2	551.8	93	2129	147	13383	-13237
22+00	2200	100	87.0	584.4	248	2104	395	16014	-15619
23+00	2300	100	139.7	373.4	420	1774	815	18231	-17416
24+00	2400	100	0.0	0.0	259	691	1073	19095	-18021
				COLUMN TOTALS	1073	15276			

DIVSION 1 - CTH GG (CONTINUED)

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
26+00	2600		0.0	732.3	0	0	0	0	0
26+23	2623	23	4.2	885.7	2	689	2	861	-860
27+00	2700	77	0.0	593.4	6	2109	8	3498	-3490
28+00	2800	100	0.0	205.8	0	1480	8	5348	-5340
29+00	2900	100	0.0	391.5	0	1106	8	6730	-6722
30+00	3000	100	0.0	621.5	0	1876	8	9075	-9067
31+00	3100	100	0.0	73.7	0	1287	8	10684	-10676
				COLUMN TOTALS	8	8547			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

9

9

PROJECT NO: 1120-09-77/78/81 | HWY: USH 41 | COUNTY: WINNEBAGO | EARTHWORK | SHEET: 282 | E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

DIVISION 1 - USH 41 NB

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
895+00	89500		0.0	13.0	0	0	0	0	0
896+00	89600	100	0.0	7.2	0	37	0	47	-47
897+00	89700	100	0.0	7.4	0	27	0	81	-81
898+00	89800	100	0.0	7.4	0	27	0	115	-115
899+00	89900	100	0.0	7.4	0	27	0	149	-149
900+00	90000	100	0.0	2.2	0	18	0	171	-171
901+00	90100	100	0.0	1.4	0	7	0	179	-179
902+00	90200	100	0.0	1.3	0	5	0	185	-185
903+00	90300	100	0.0	0.5	0	3	0	189	-189
903+50	90350	50	33.4	13.0	31	12	31	205	-174
904+00	90400	50	0.0	0.0	31	12	62	220	-158
905+00	90500	100	0.0	0.0	0	0	62	220	-158
906+00	90600	100	0.0	0.0	0	0	62	220	-158
				COLUMN TOTALS	62	176			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

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PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	EARTHWORK	SHEET:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

DIVISION 1 - USH 41 SB

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
895+00	89500		0.0	0.0	0	0	0	0	0
896+00	89600	100	0.0	0.0	0	0	0	0	0
897+00	89700	100	0.0	0.0	0	0	0	0	0
898+00	89800	100	0.8	17.9	1	33	1	41	-40
899+00	89900	100	1.5	0.0	4	33	6	83	-77
900+00	90000	100	0.0	1.9	3	3	8	87	-79
901+00	90100	100	0.0	0.5	0	4	8	92	-84
902+00	90200	100	0.0	0.0	0	1	8	93	-85
903+00	90300	100	0.0	18.6	0	34	8	136	-128
903+50	90350	50	0.0	19.1	0	35	8	180	-172
904+00	90400	50	0.0	11.5	0	28	8	215	-207
905+00	90500	100	0.0	0.0	0	21	8	242	-234
906+00	90600	100	0.0	0.0	0	0	8	242	-234
		COLUMN TOTALS			8	194			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

9

9

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	EARTHWORK	SHEET:	E

FILE NAME : _____ PLOT DATE : _____ PLOT BY : _____ PLOT NAME : _____ ORG DATE : _____ ORIGINATOR : DIST _ PLOT SCALE : 1:1

DIVSION 2 - CTH GG

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
8+58	858		123.3	0.0	0	0	0	0	0
9+00	900	42	79.1	5.0	157	4	157	5	152
9+66	966	66	63.4	2.6	174	9	331	16	315
10+00	1000	34	35.7	10.2	62	8	394	27	367
11+00	1100	100	6.0	86.1	77	178	471	249	222
12+00	1200	100	5.7	157.8	22	452	493	814	-321
12+76	1276	76	57.0	173.5	88	466	581	1397	-816
13+00	1300	24	18.4	228.6	33	179	614	1620	-1006
14+00	1400	100	2.4	343.5	38	1059	653	2944	-2292
15+00	1500	100	0.0	96.0	4	814	657	3962	-3305
				COLUMN TOTALS	657	3169			

DIVSION 2 - CTH GG (CONTINUED)

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
31+00	3100		0.0	73.7	0	0	0	0	0
32+00	3200	100	6.5	339.1	12	764	12	955	-943
33+00	3300	100	7.7	223.5	26	1042	38	2258	-2219
34+00	3400	100	8.1	119.3	29	635	68	3051	-2983
34+70	3470	70	22.1	41.9	39	209	107	3312	-3205
35+00	3500	30	29.7	49.4	29	51	136	3375	-3240
36+00	3600	100	30.0	33.0	111	153	246	3566	-3320
36+68	3668	68	51.6	16.2	103	62	349	3643	-3295
37+00	3700	32	16.6	18.0	40	20	389	3669	-3280
38+00	3800	100	94.3	5.2	205	43	594	3723	-3128
38+30	3830	30	82.0	10.7	98	9	692	3734	-3041
39+00	3900	70	88.3	2.0	221	16	913	3754	-2841
39+47	3947	47	90.2	0.2	156	2	1069	3756	-2687
									0
				COLUMN TOTALS	1069	3005			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET.
2 - FILL	DOES NOT INCLUDE PAVEMENT EXC VOLUME. SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

DIVISION 2 - GREEN VALLEY ROAD

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE Note 3
110+00	11000		94.8	0.0	0	0	0	0	0
110+45	11045	45	113.4	0.9	173	1	173	1	173
110+65	11065	20	113.7	0.0	84	0	258	1	255
111+00	11100	35	93.5	1.5	134	1	392	3	386
111+77	11177	77	80.6	13.7	248	22	640	30	604
112+00	11200	23	86.0	7.2	71	9	711	41	660
112+32	11232	32	95.0	0.7	107	5	818	47	757
113+00	11300	68	58.9	4.6	194	7	1012	55	936
113+01	11301	1	60.5	4.8	2	0	1014	55	931
114+00	11400	99	36.3	31.4	178	66	1192	138	1018
115+00	11500	100	0.7	178.4	69	389	1261	624	592
115+94	11594	94	0.0	478.4	1	1143	1262	2053	-846
116+00	11600	6	0.0	502.5	0	109	1262	2189	-993
117+00	11700	100	0.0	340.2	0	1561	1262	4140	-2956
118+00	11800	100	0.0	253.0	0	1099	1262	5513	-4342
119+00	11900	100	4.7	131.4	9	712	1270	6403	-5237
120+00	12000	100	50.3	25.0	102	290	1372	6765	-5512
121+00	12100	100	69.2	0.0	221	46	1594	6822	-5365
121+03	12103	3	69.2	0.0	8	0	1601	6822	-5374
122+00	12200	97	92.2	0.0	290	0	1891	6822	-5102
123+00	12300	100	118.2	0.0	390	0	2281	6822	-4732
123+25	12325	25	112.8	0.0	107	0	2388	6822	-4645
				COLUMN TOTALS	2388	5458			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET. DOES NOT INCLUDE PAVEMENT EXC VOLUME.
2 - FILL	SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

DIVISION 2 - OLD DIXIE/DIXIE ROAD

STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
10+55	1055		108.68	0	0	0	0	0	0
11+00	1100	45	81.54	0	159	0	159	0	159
12+00	1200	100	91.65	0	321	0	479	0	479
12+63	1263	63	85.01	2.56	206	3	685	4	682
13+00	1300	37	51.3	6.06	93	6	779	11	768
13+47	1347	47	86.32	23.86	120	26	899	44	855
14+00	1400	53	38.61	126.43	123	148	1021	228	793
15+00	1500	100	122.6	401.3	299	977	1320	1450	-130
15+10	1510	10	141.85	437.8	49	155	1369	1644	-275
16+00	1600	90	0	0	236	730	1605	2556	-951
17+00	1700	100	27	113.03	50	209	1655	2818	-1163
18+00	1800	100	59.62	13.38	160	234	1815	3110	-1295
19+00	1900	100	74.88	0.47	249	26	2065	3142	-1078
20+00	2000	100	88.69	0	303	1	2367	3143	-776
21+00	2100	100	98.91	0	347	0	2715	3143	-429
21+18	2118	18	94.6	0	65	0	2780	3143	-364
				COLUMN TOTALS	2780	2515			

DIVISION 2 - WOODENSHOE ROAD

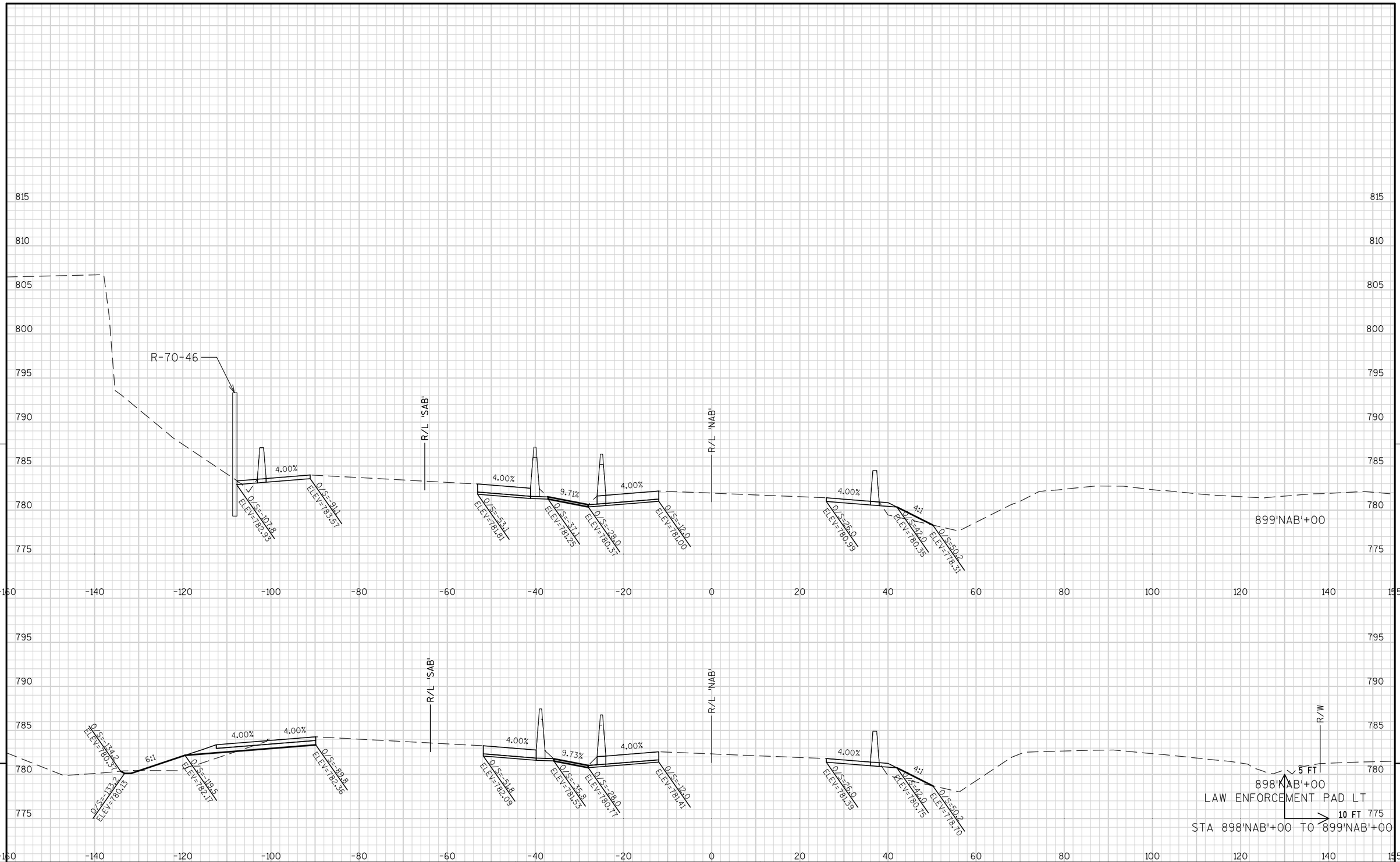
STATION	REAL STATION	DISTANCE	AREA (SF) CUT	AREA (SF) FILL	INCREMENTAL VOL (CY) (UNADJUSTED) CUT NOTE 1	INCREMENTAL VOL (CY) (UNADJUSTED) FILL NOTE 2	CUMMULATIVE VOL (CY) CUT 1.00 NOTE 1	CUMMULATIVE VOL (CY) EXPANDED FILL 1.25	MASS ORDINATE NOTE 3
20+16	2016		203.3	0.0	0	0	0	0	0
21+00	2100	84	90.9	0.8	458	1	458	2	456
21+25	2125	25	78.8	0.8	79	1	536	3	534
				COLUMN TOTALS	536	2			

NOTES:	
1 - CUT	CUT DOES NOT INCLUDE SALVAGED/UNUSABLE PAVEMENT MATERIAL. SALVAGED/UNUSABLE PAVEMENT MATERIAL IS CALCULATED ON THE SUMMARY SHEET. DOES NOT INCLUDE PAVEMENT EXC VOLUME.
2 - FILL	SALVAGED/UNUSABLE PAVMENT MATERIAL IS CALCULATED ON THE THE SUMMARY SHEET.
3 - MASS ORDINATE	[(CUT) - ((FILL) * FILL FACTOR)]

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 288	E

FILE NAME : ch_0977-78-81_USH_41_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

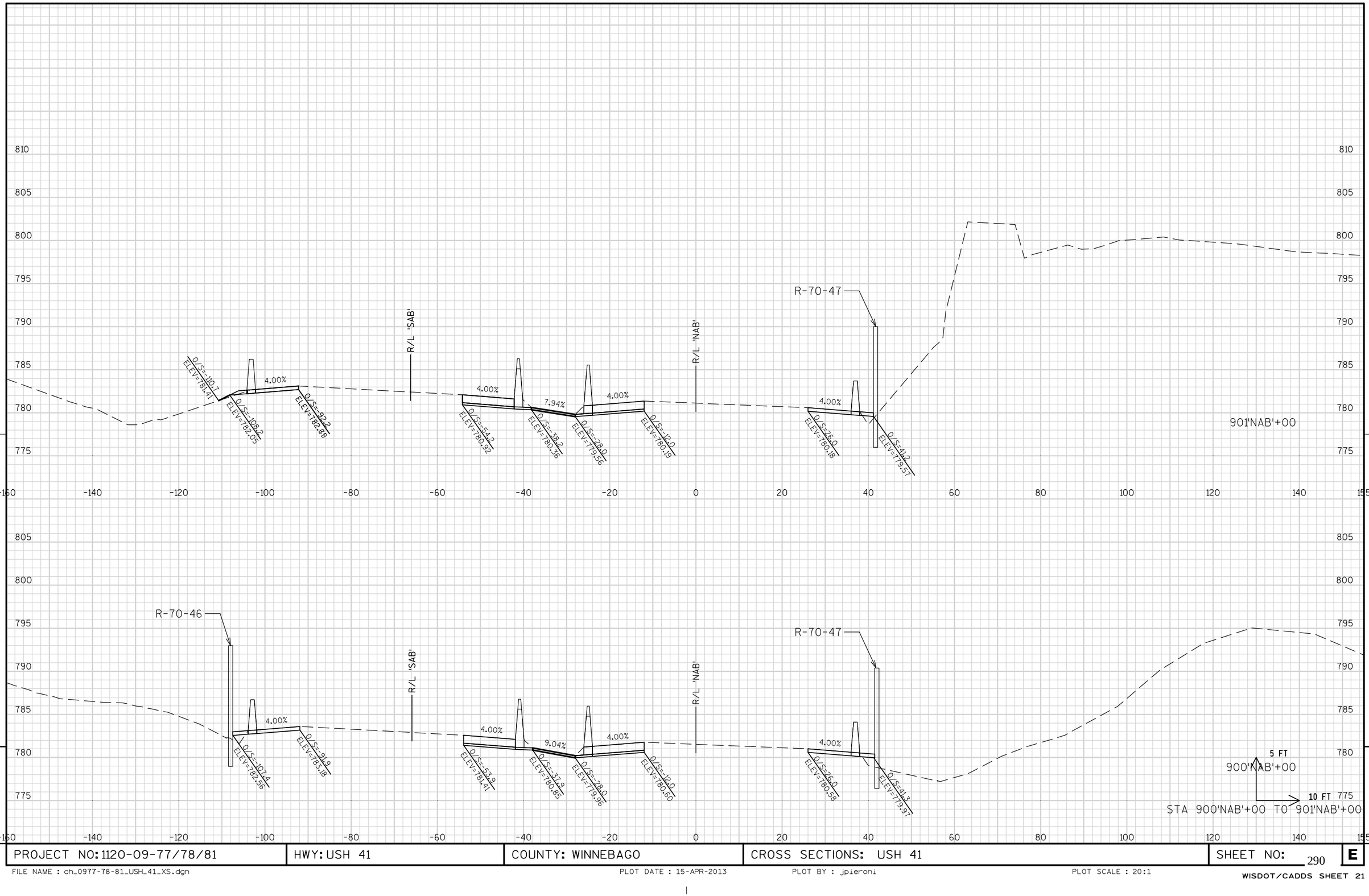
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 289	E

FILE NAME : ch_0977-78-81_USH_41_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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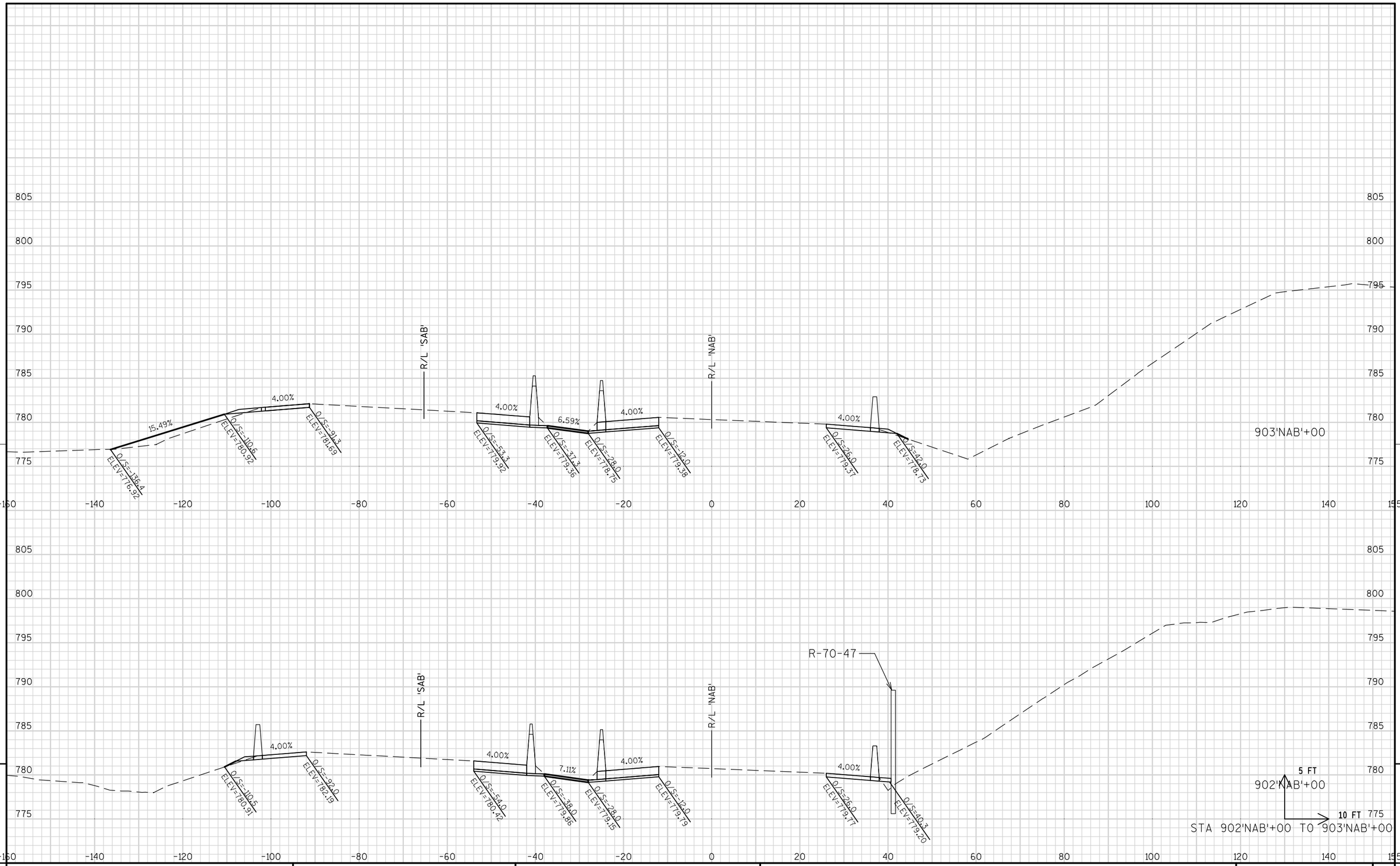
9

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 290	E

FILE NAME : ch_0977-78-81_USH_41_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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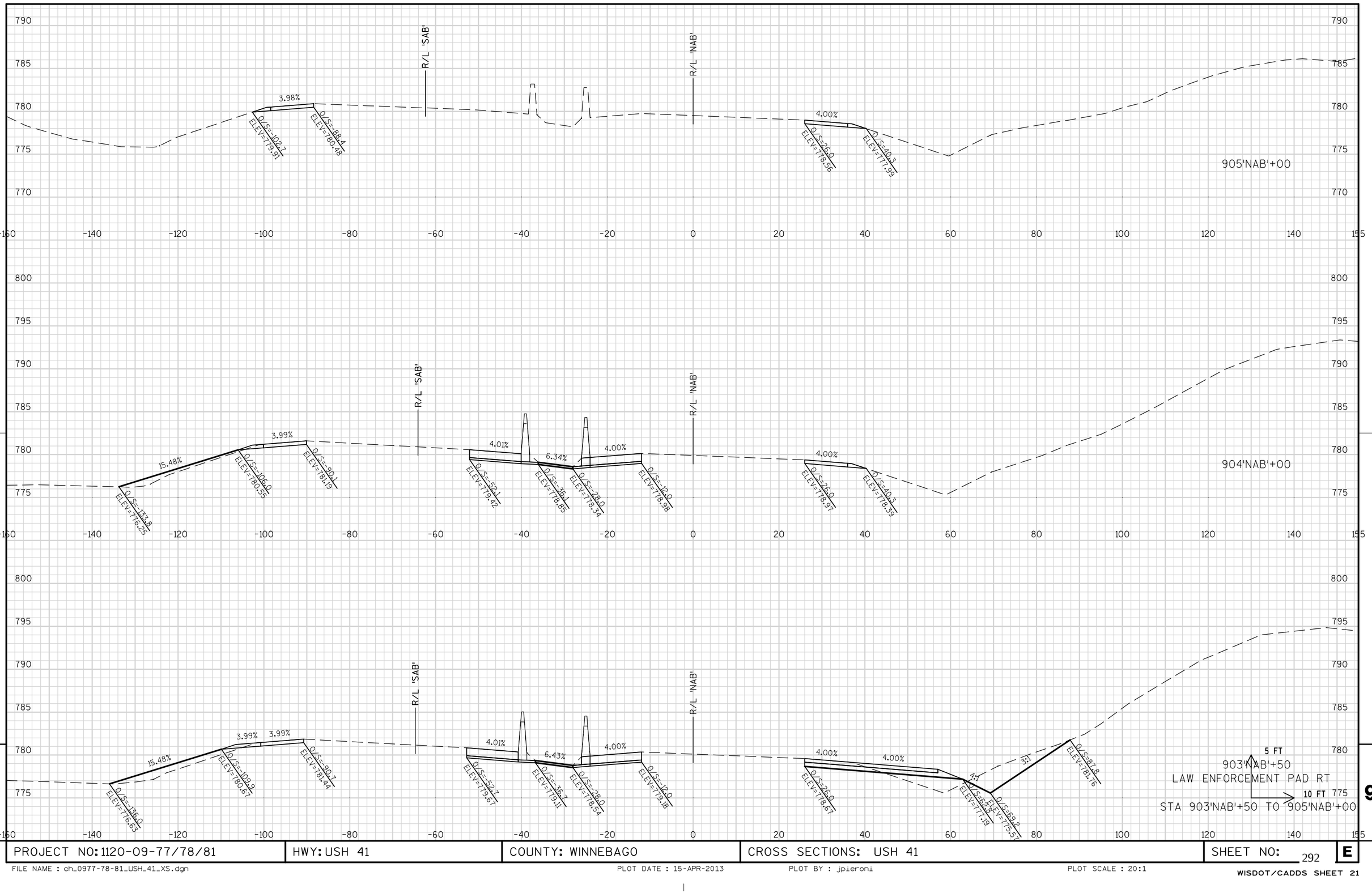
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 291	E

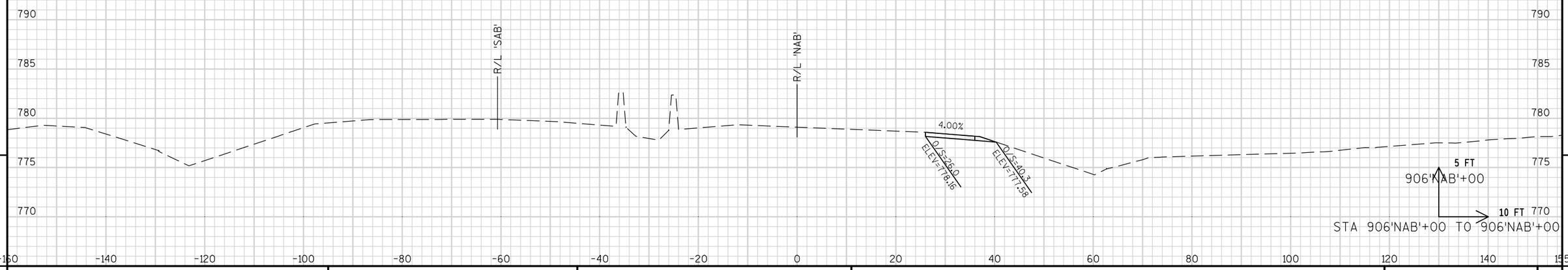


PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 292 E

FILE NAME : ch_0977-78-81_USH_41_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

END ABRUPT



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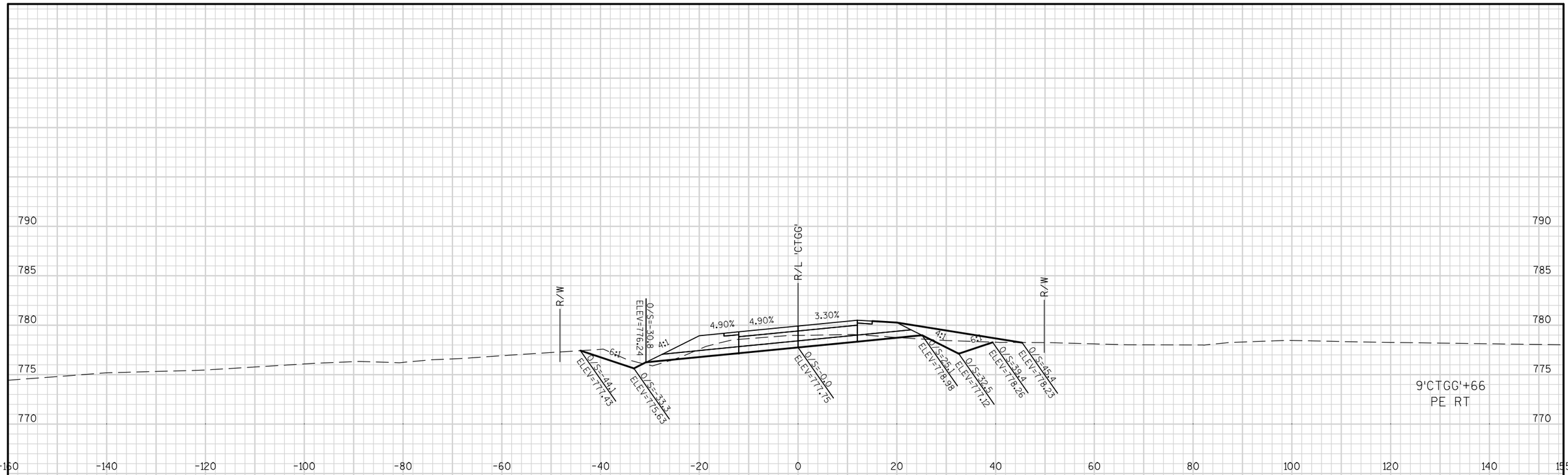
9

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: USH 41	SHEET NO: 293	E

FILE NAME : ch_0977-78-81_USH_41_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

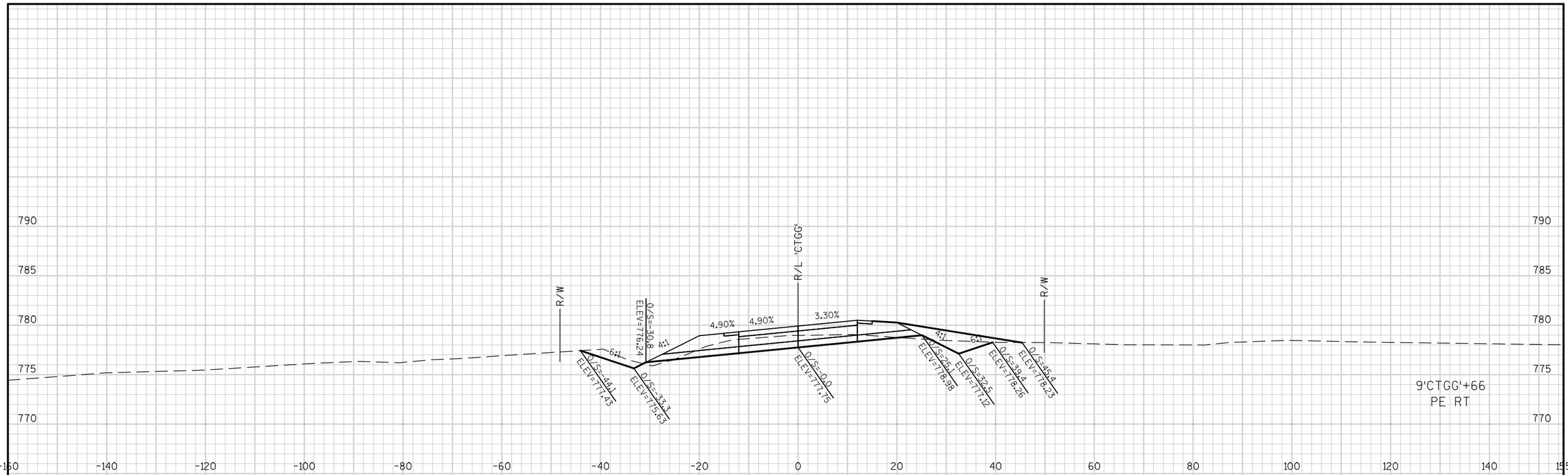
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 294	E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 295	E

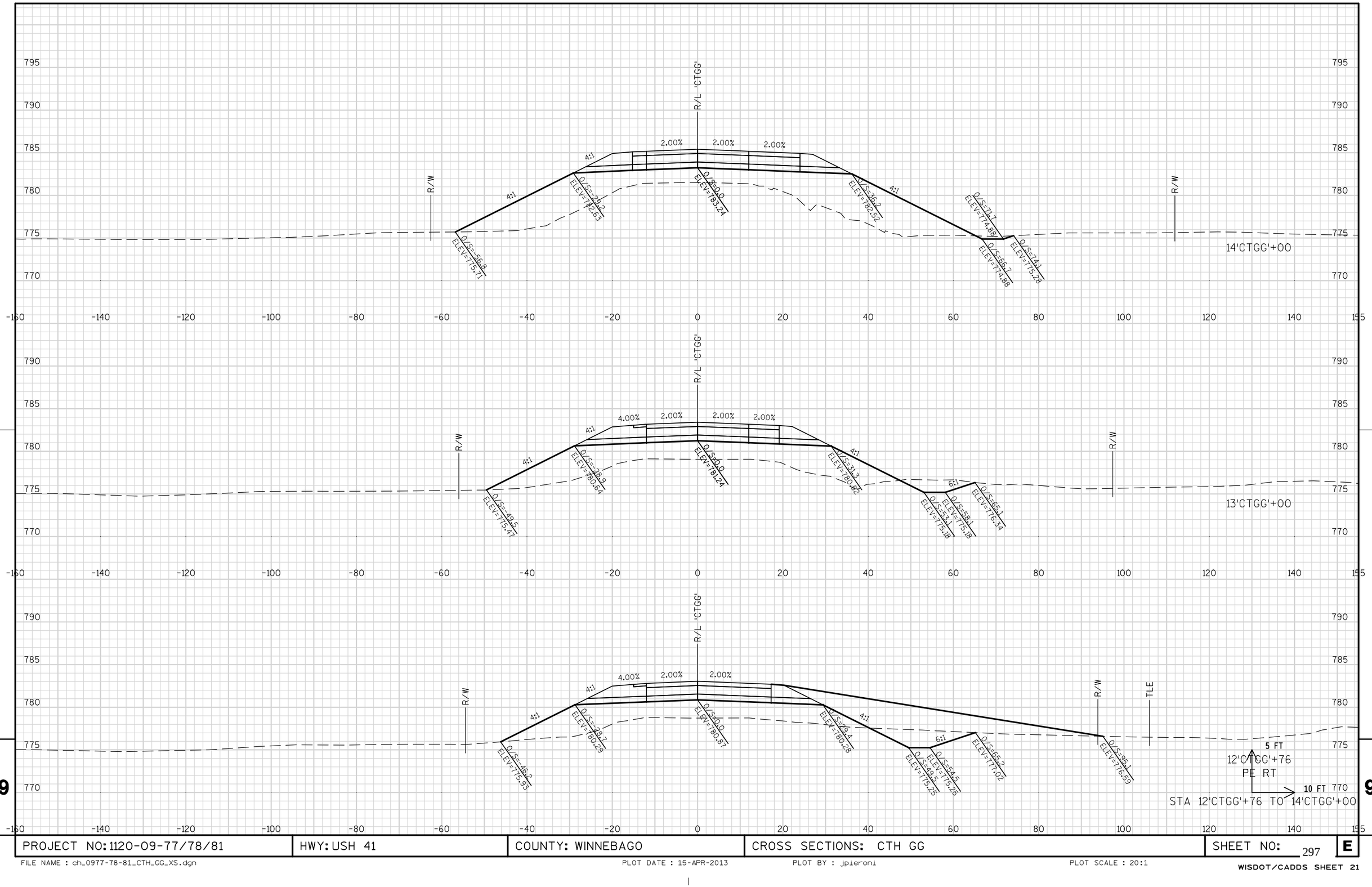
FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 296	E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

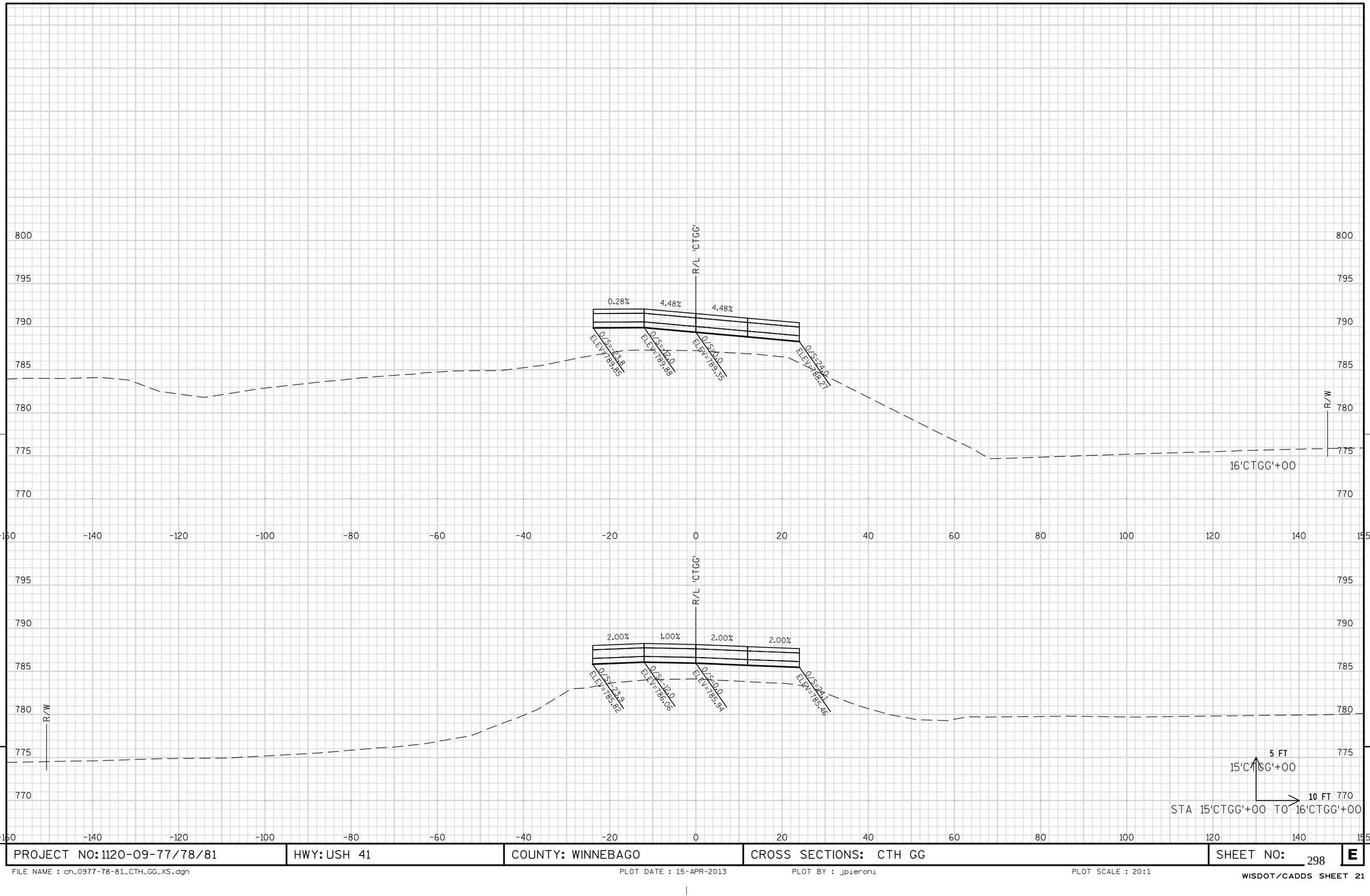
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 297	E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

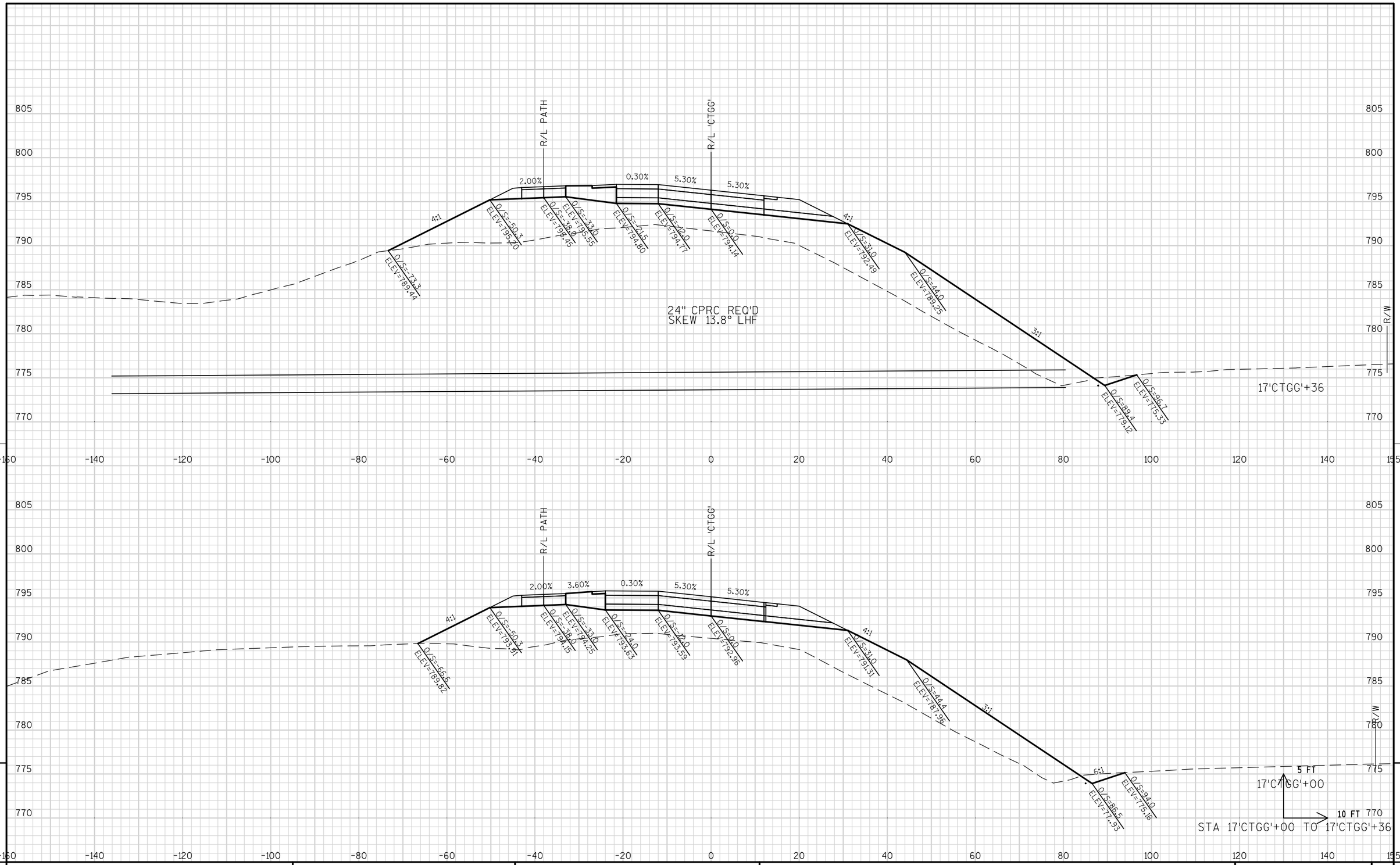
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 298 E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

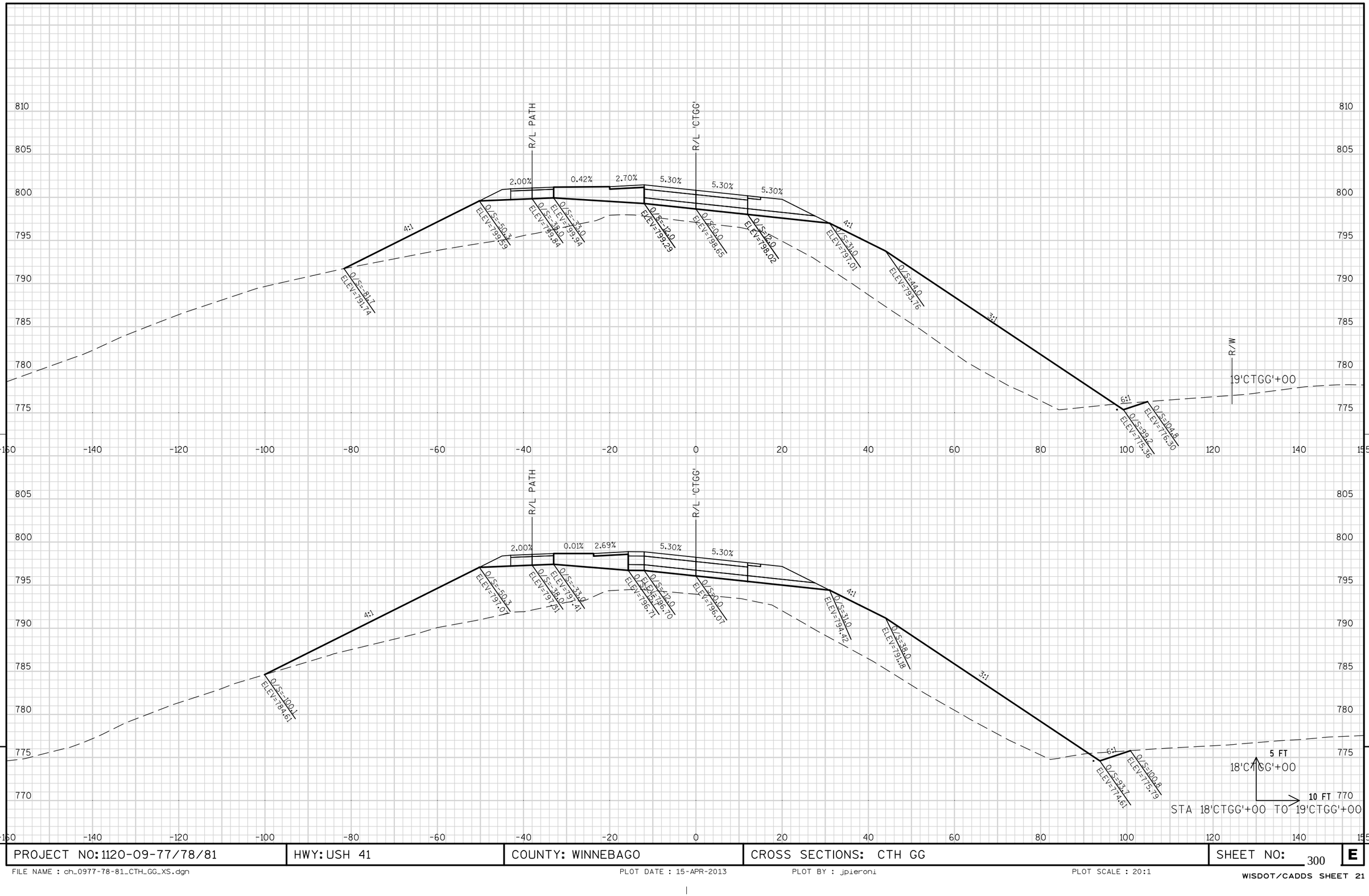
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 299 E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

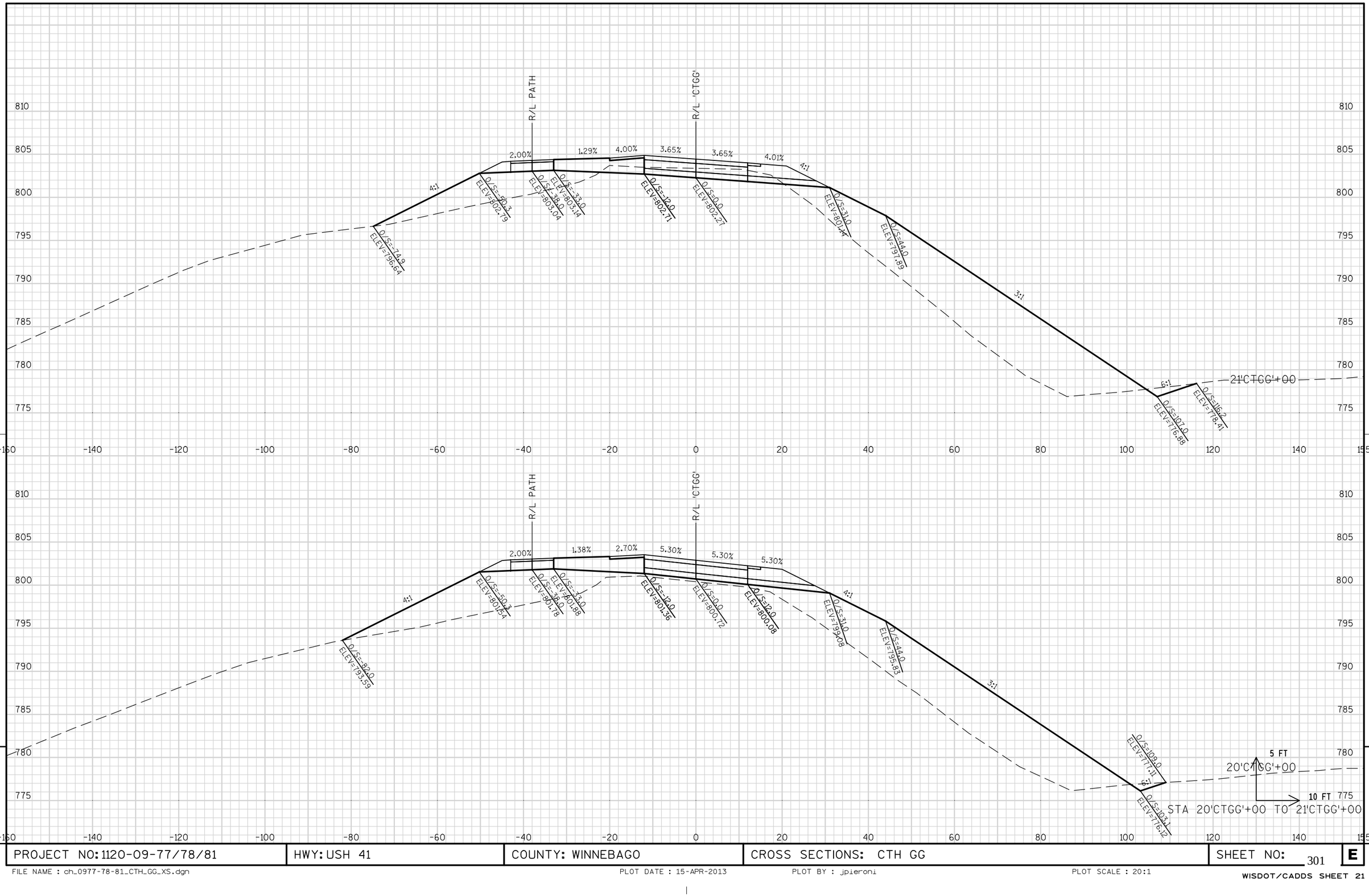
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 300 E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

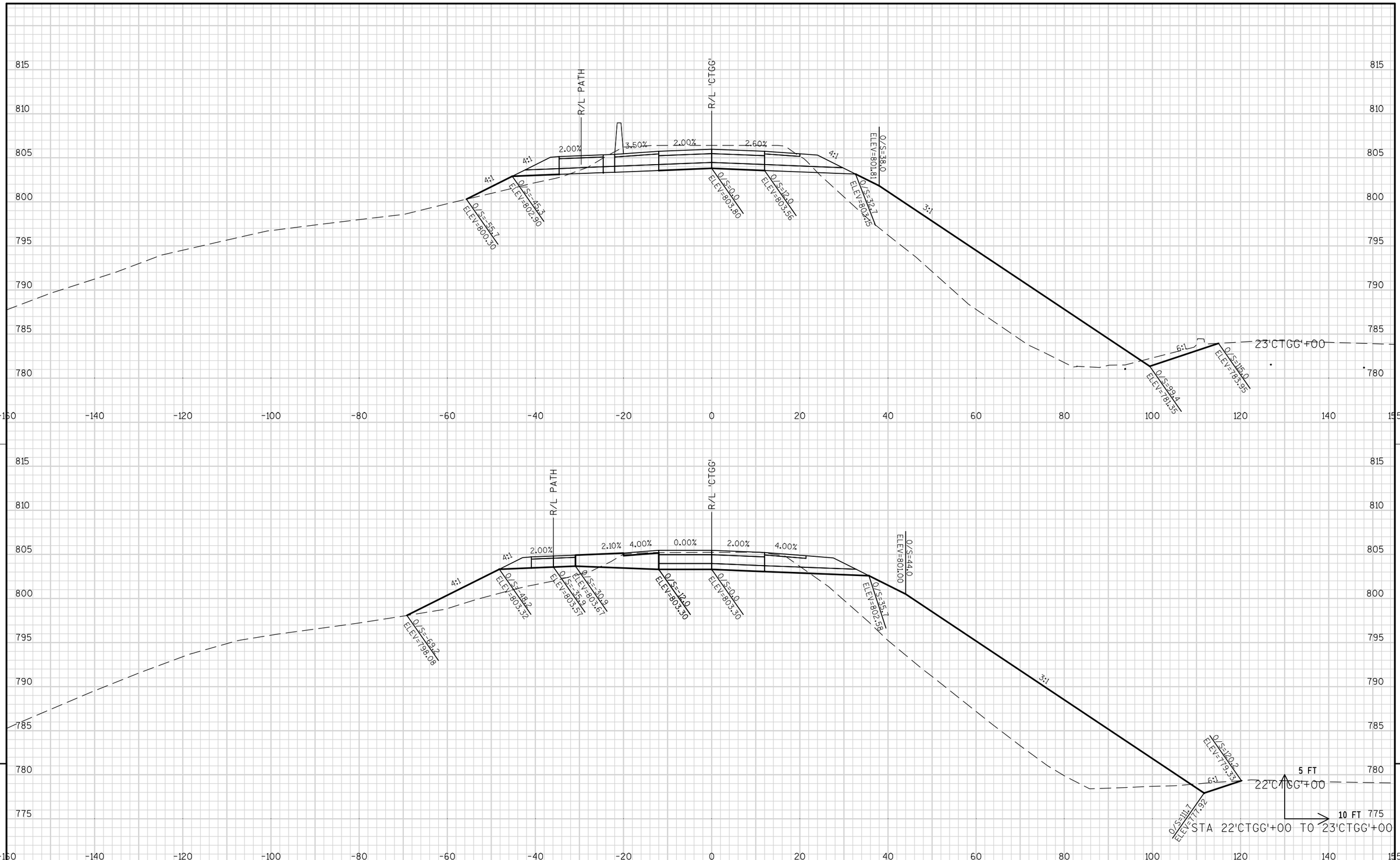
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 301 E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn | PLOT DATE : 15-APR-2013 | PLOT BY : jpieroni | PLOT SCALE : 20:1

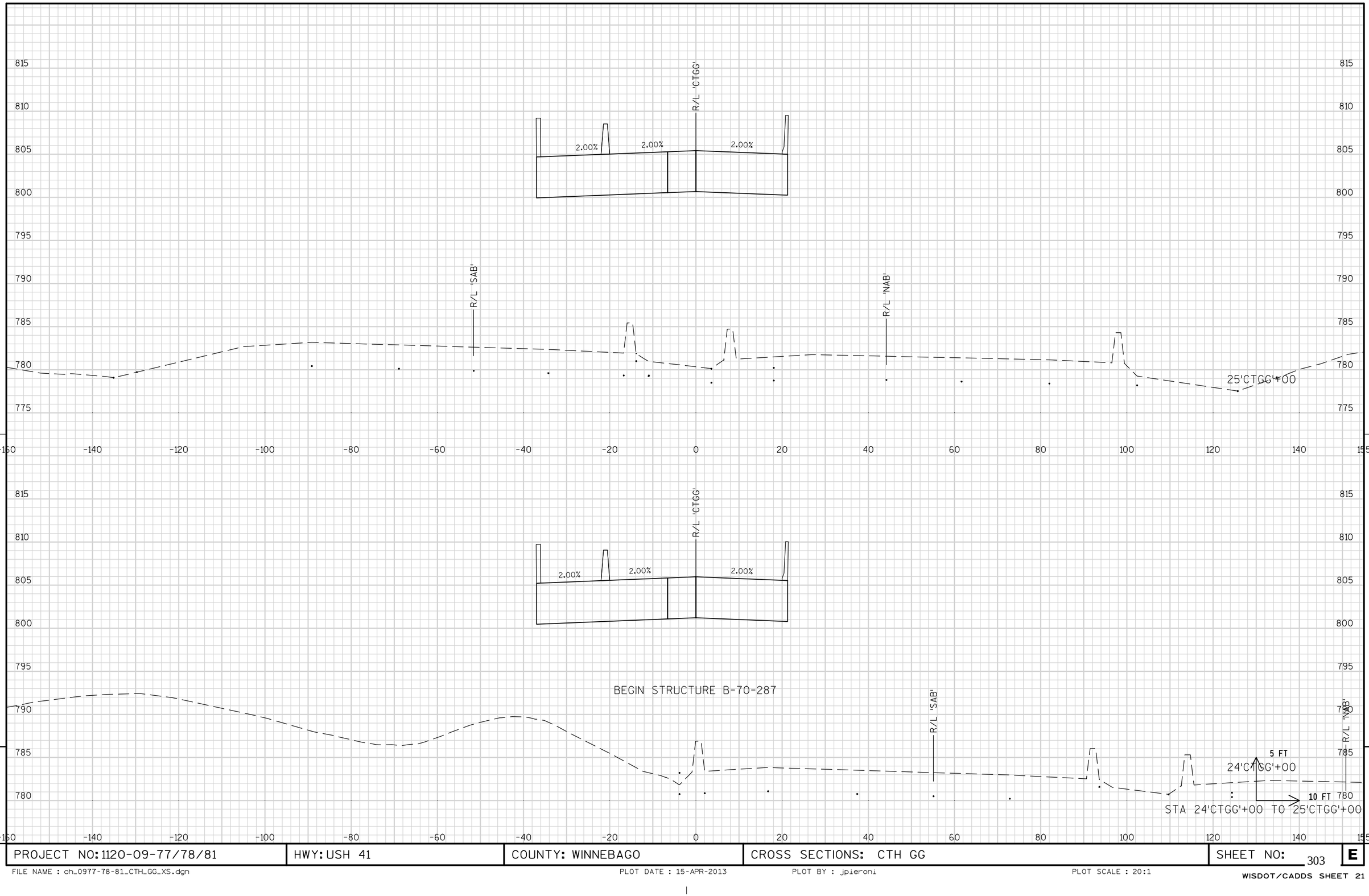
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 302	E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

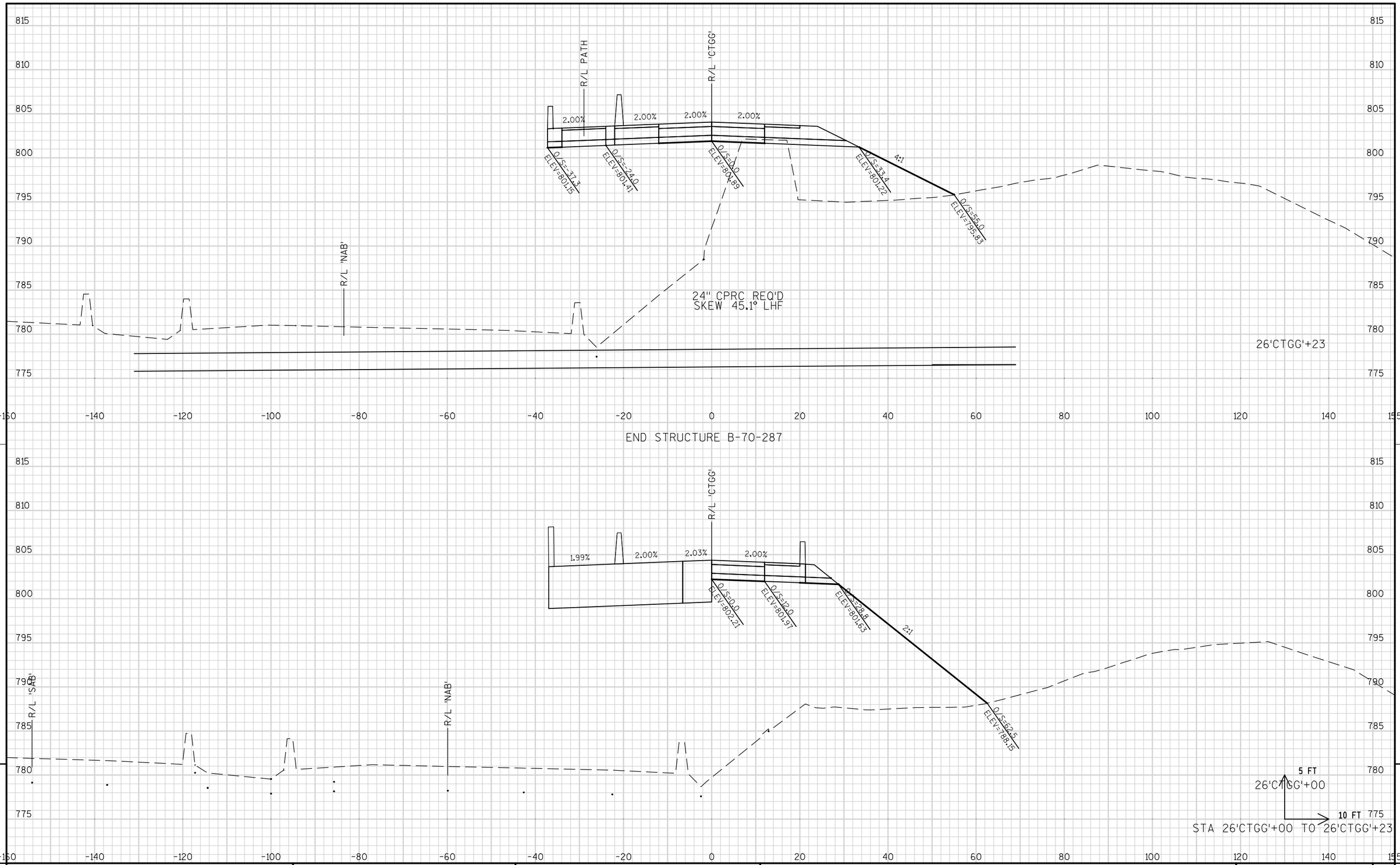
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 303 E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

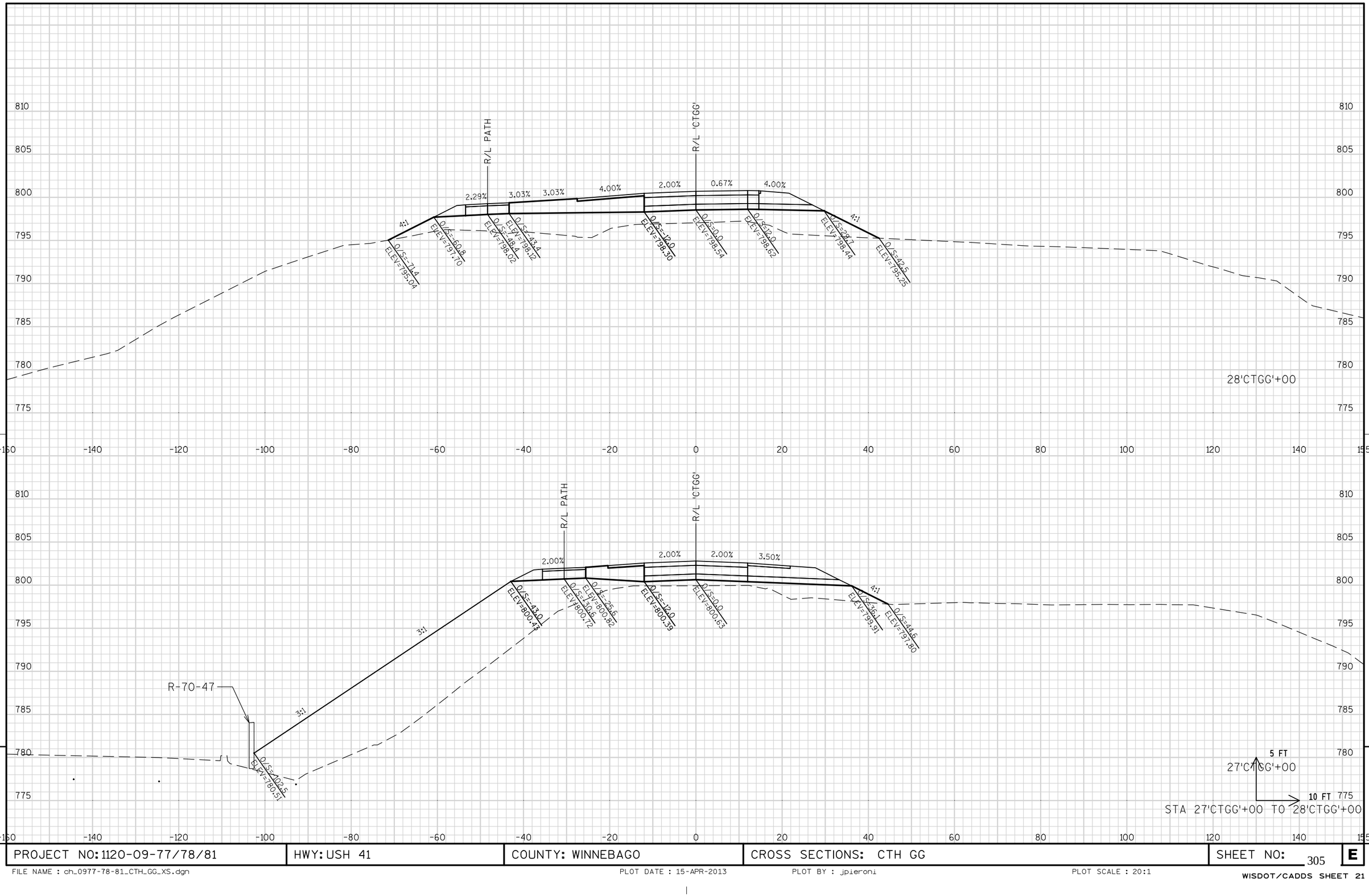
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 304	E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

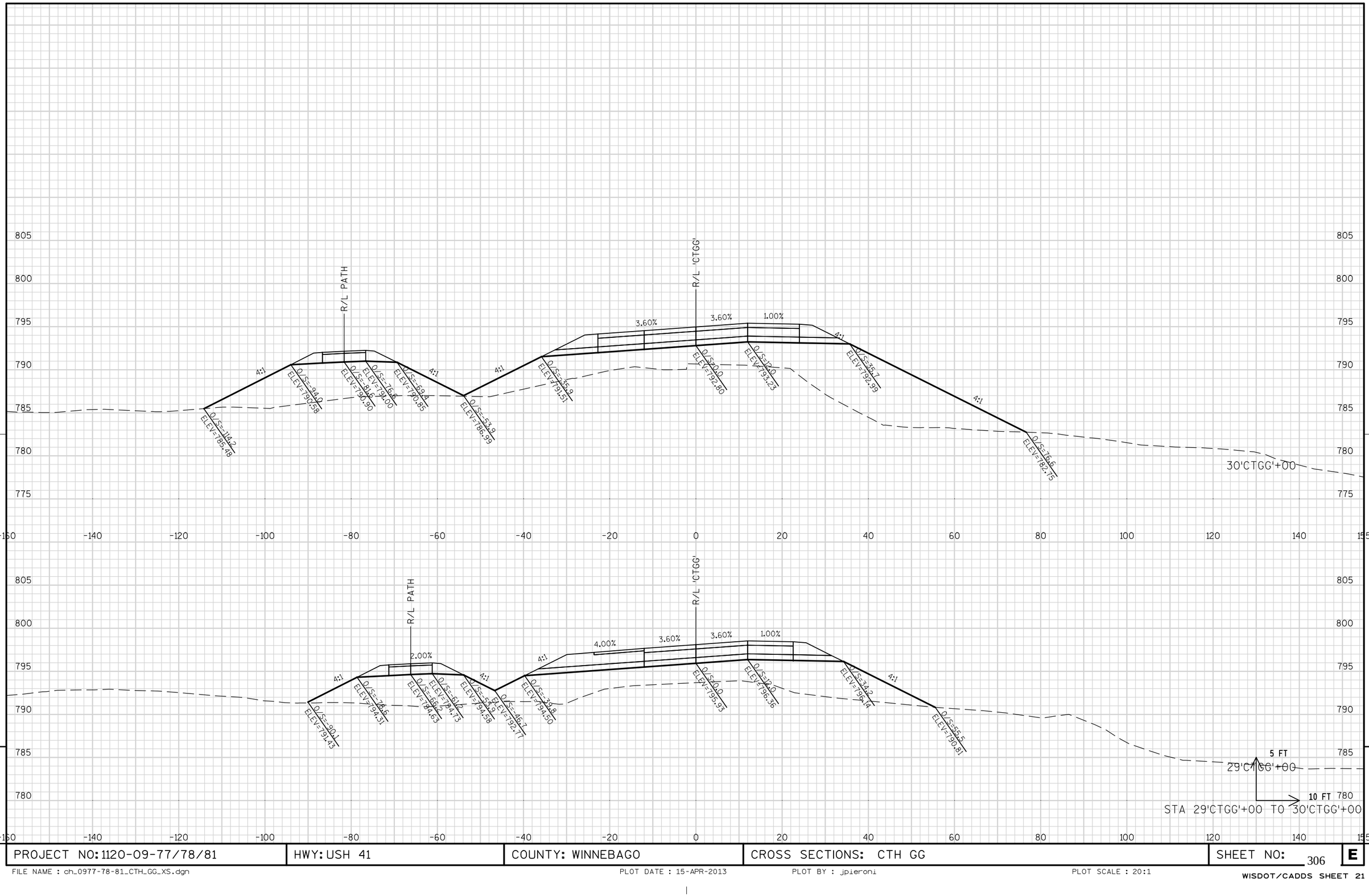
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 305 E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

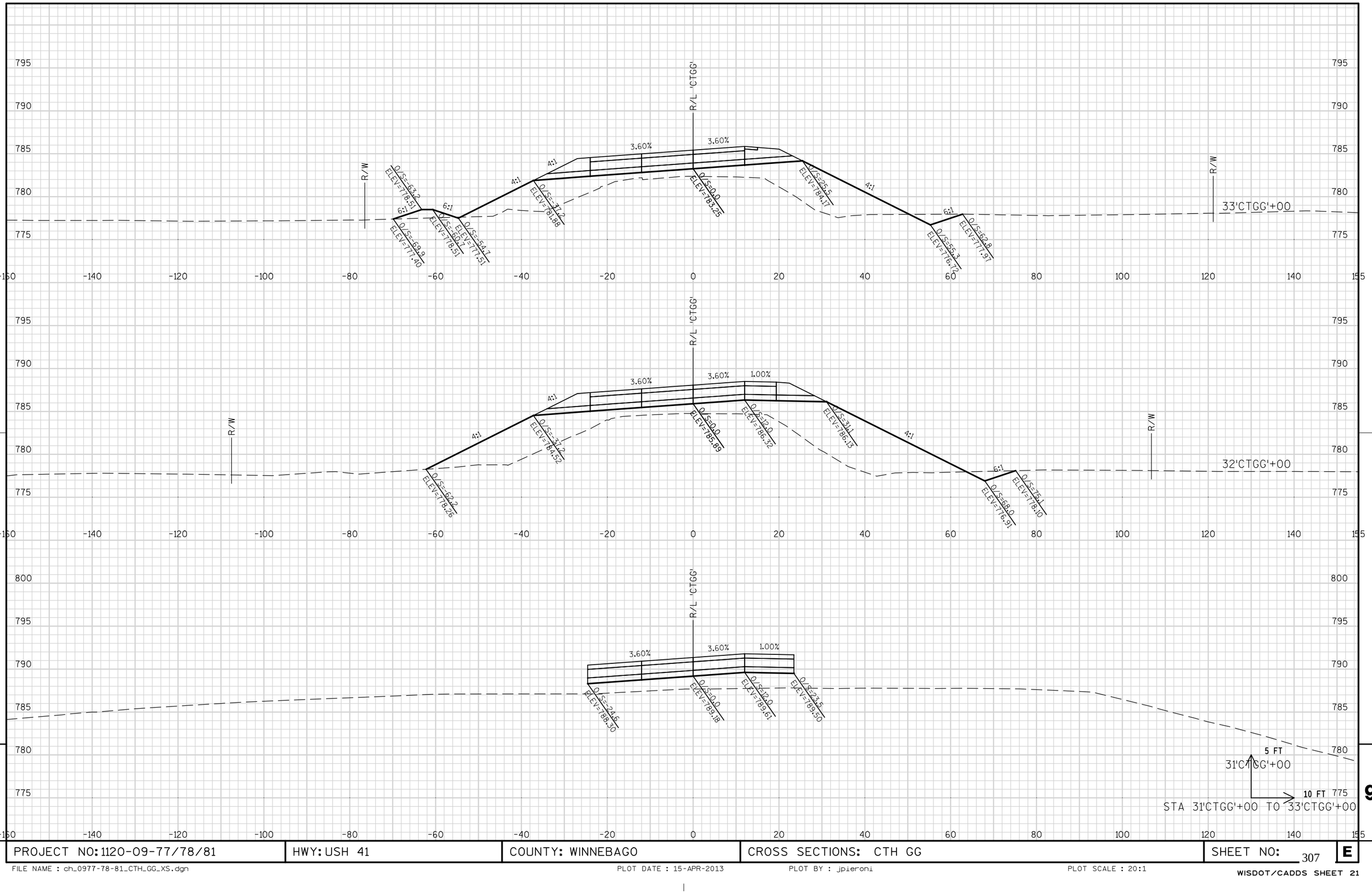
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 306 E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

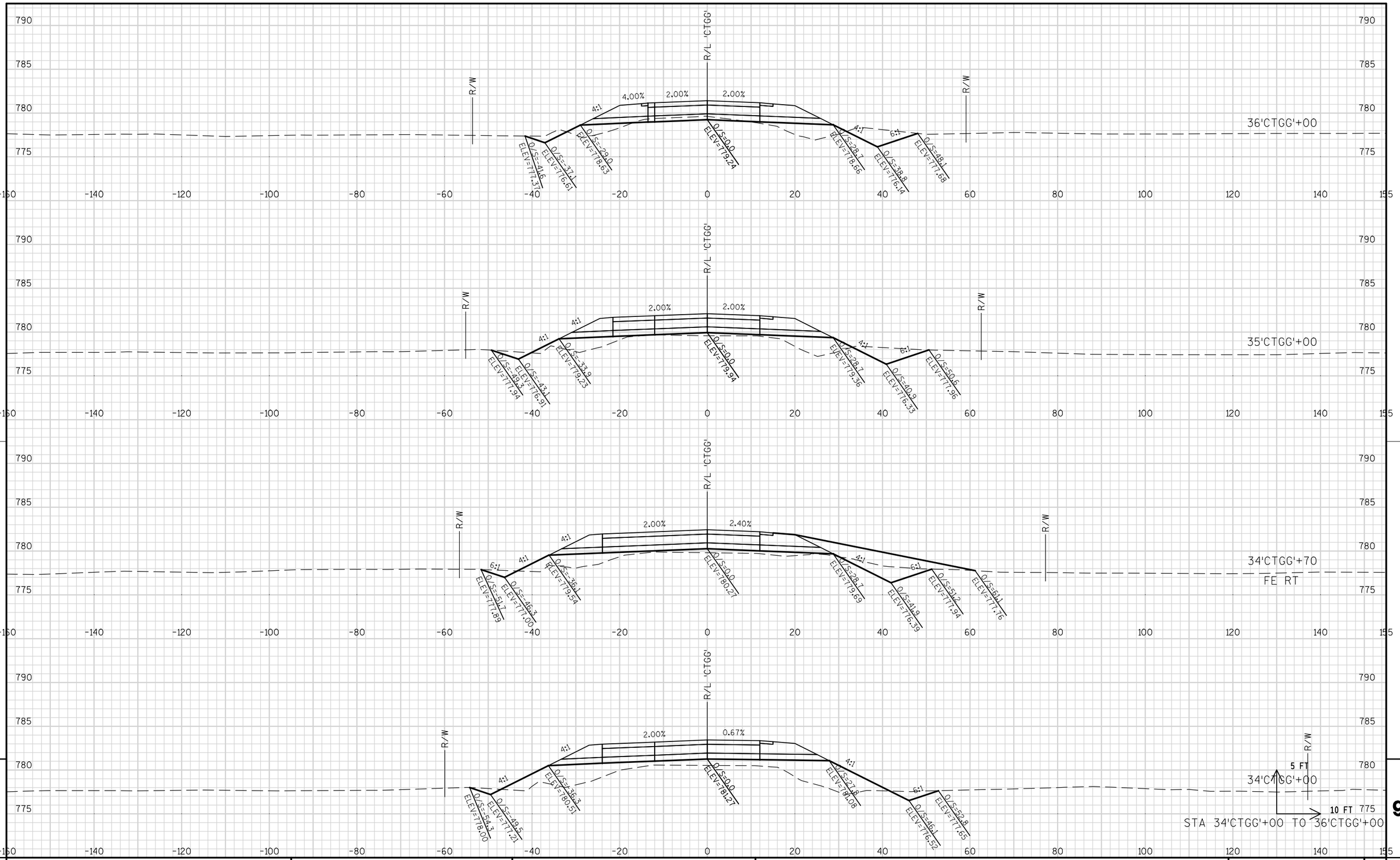
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 307	E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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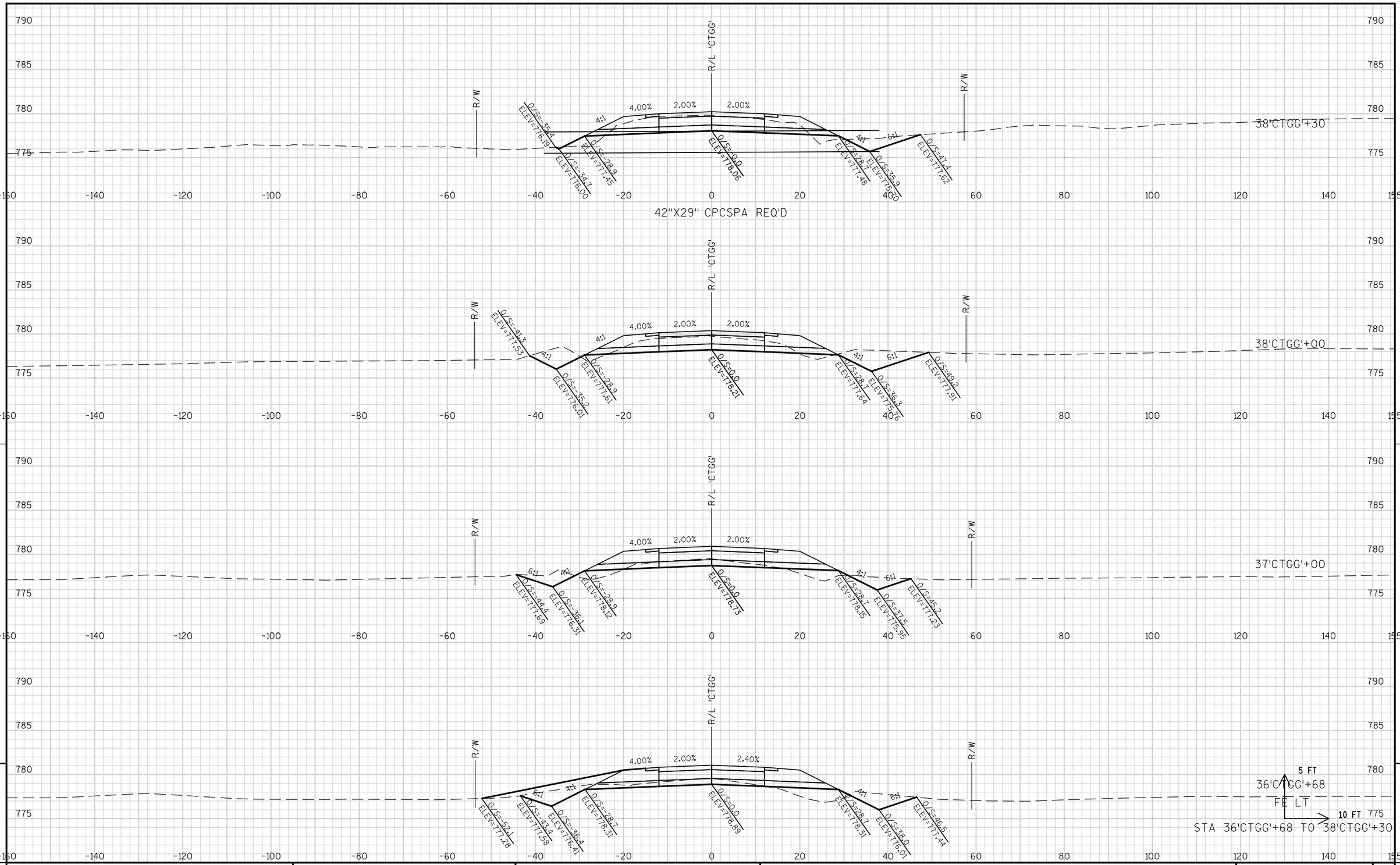
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 308	E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

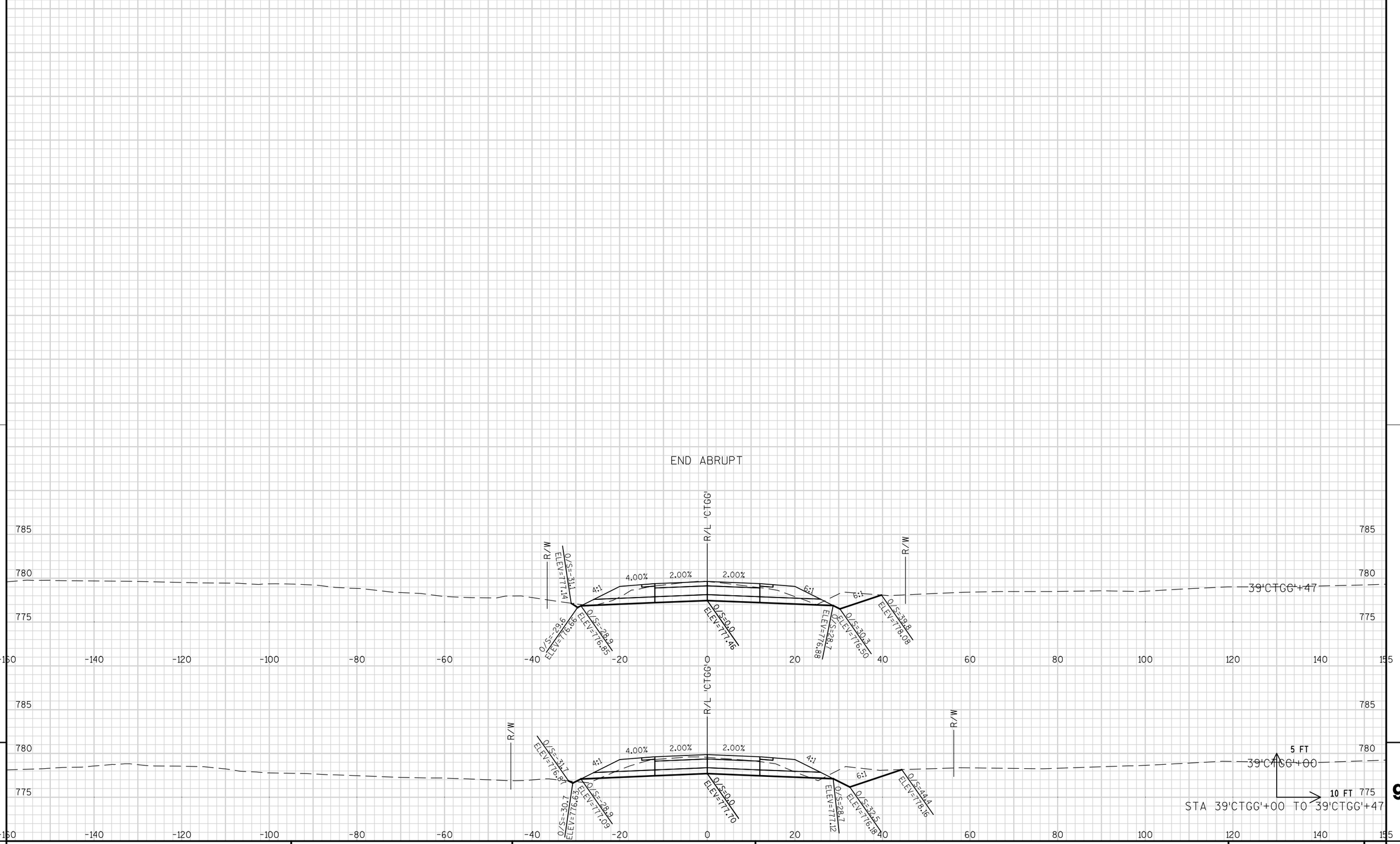


PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 309 E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 22-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

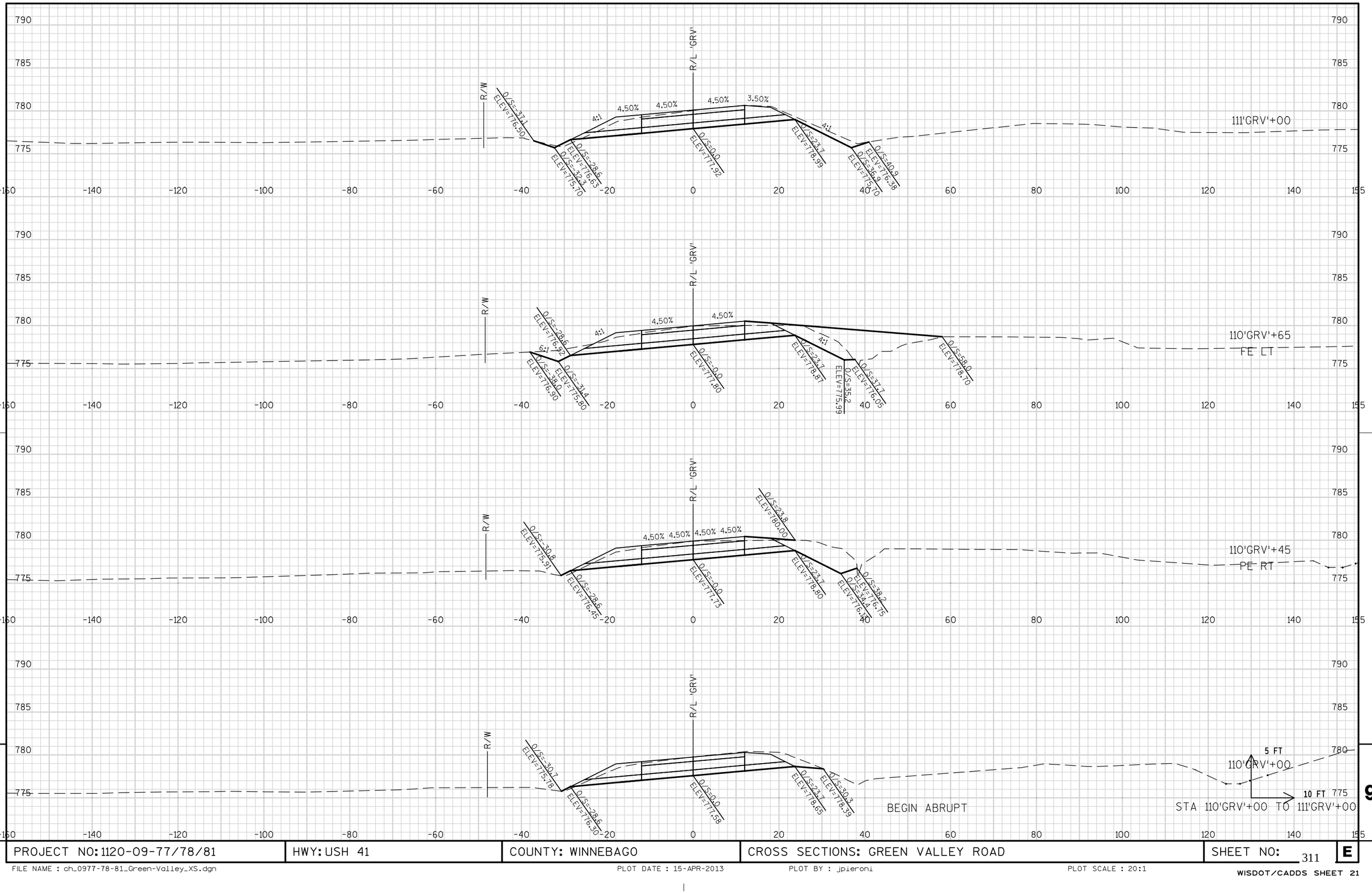
END ABRUPT



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: CTH GG	SHEET NO: 310 E

FILE NAME : ch_0977-78-81_CTH_GG_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

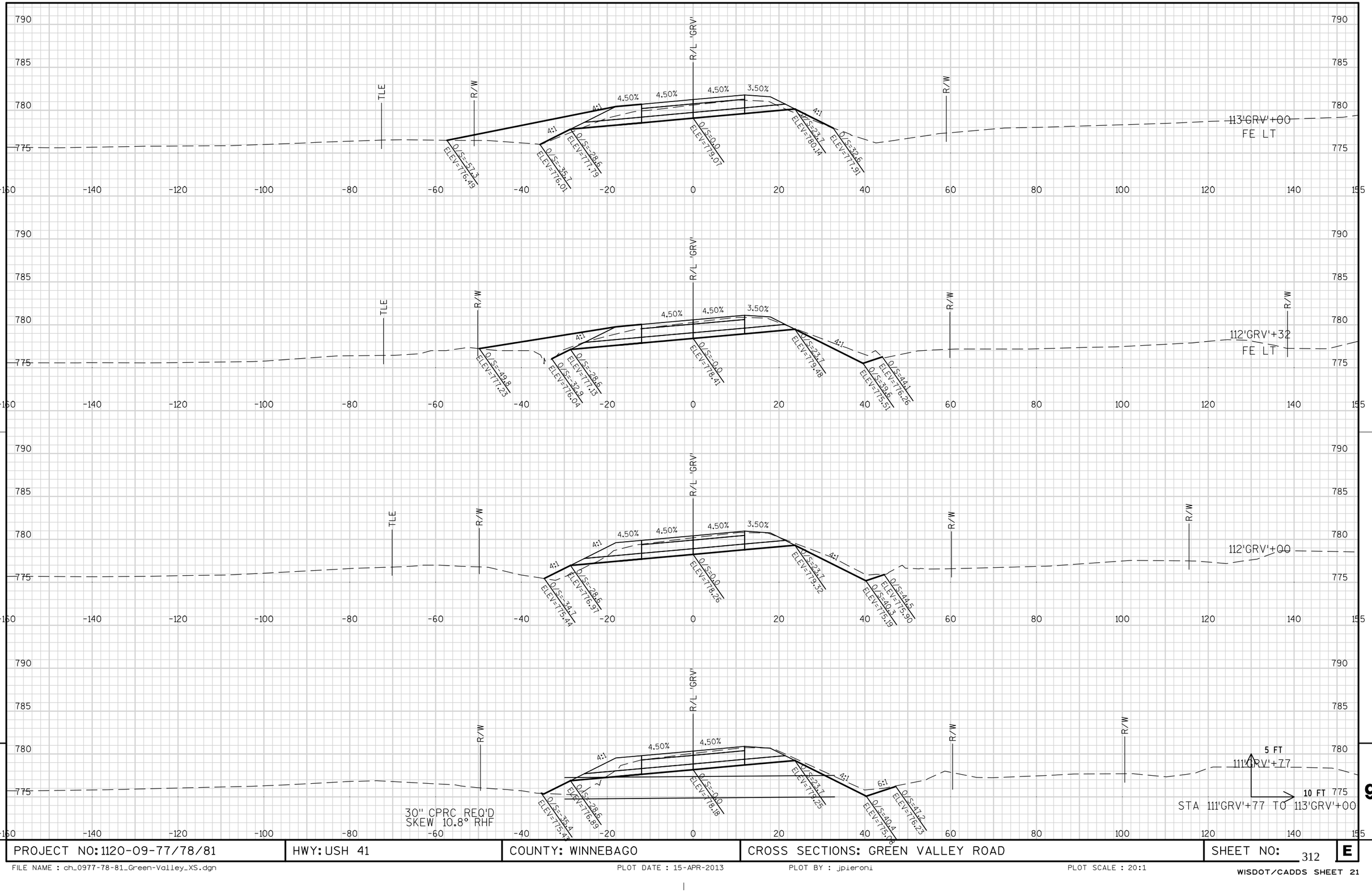
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 311 E

FILE NAME : ch_0977-78-81_Green-Valley_XS.dgn | PLOT DATE : 15-APR-2013 | PLOT BY : jpieroni | PLOT SCALE : 20:1

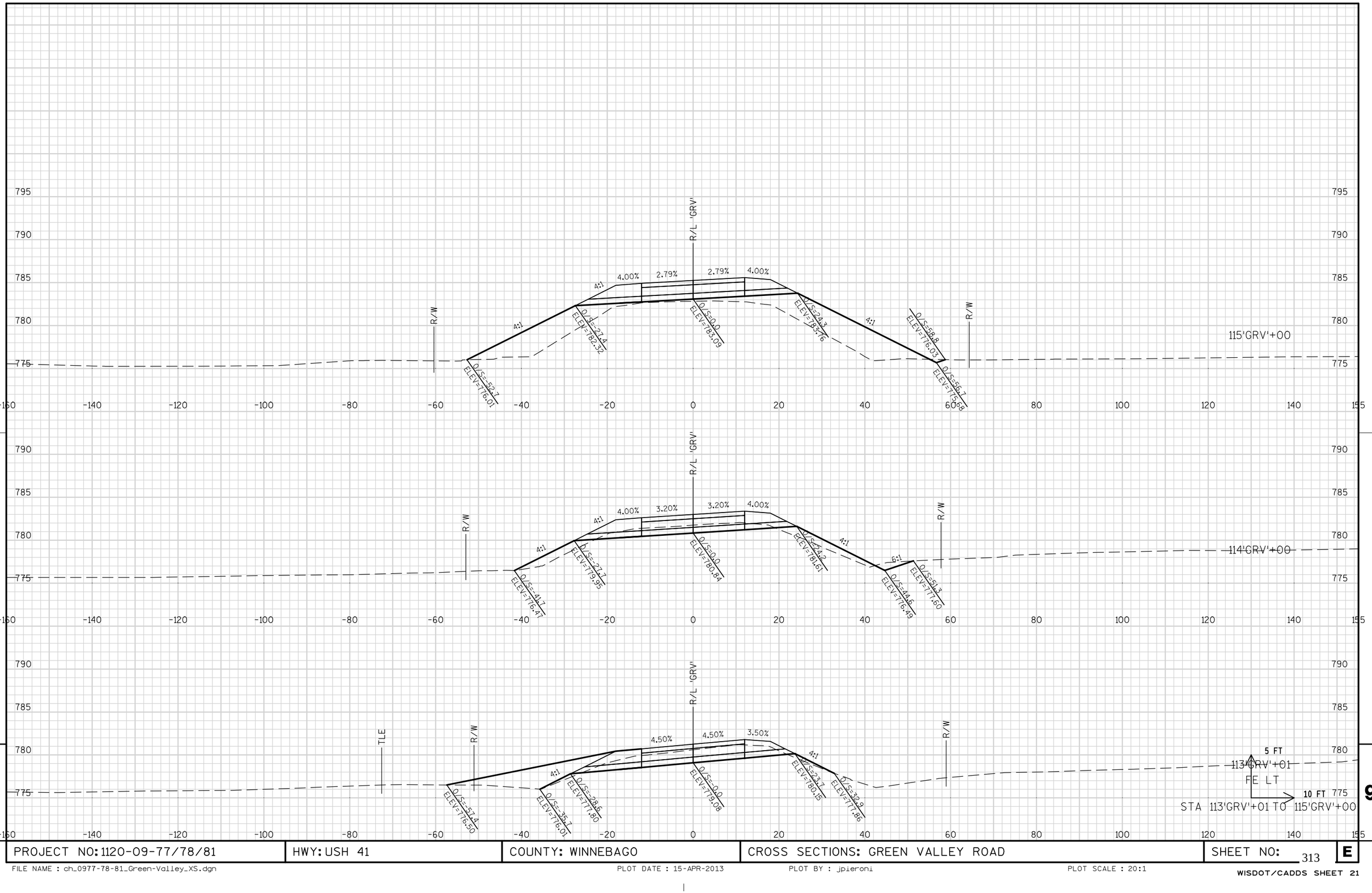
WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 312	E

FILE NAME : ch_0977-78-81_Green-Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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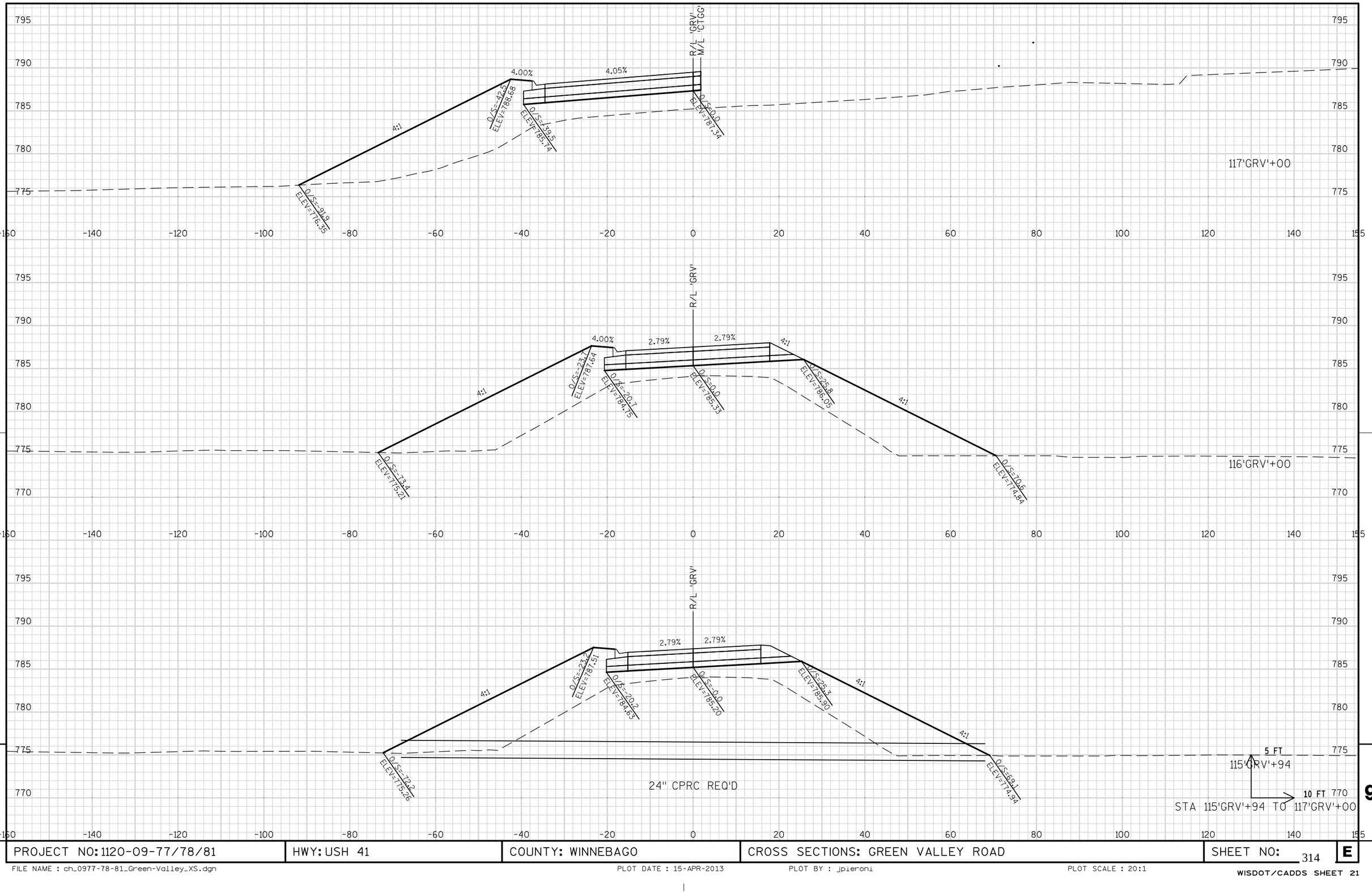
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 313 E

9

FILE NAME : ch_0977-78-81_Green-Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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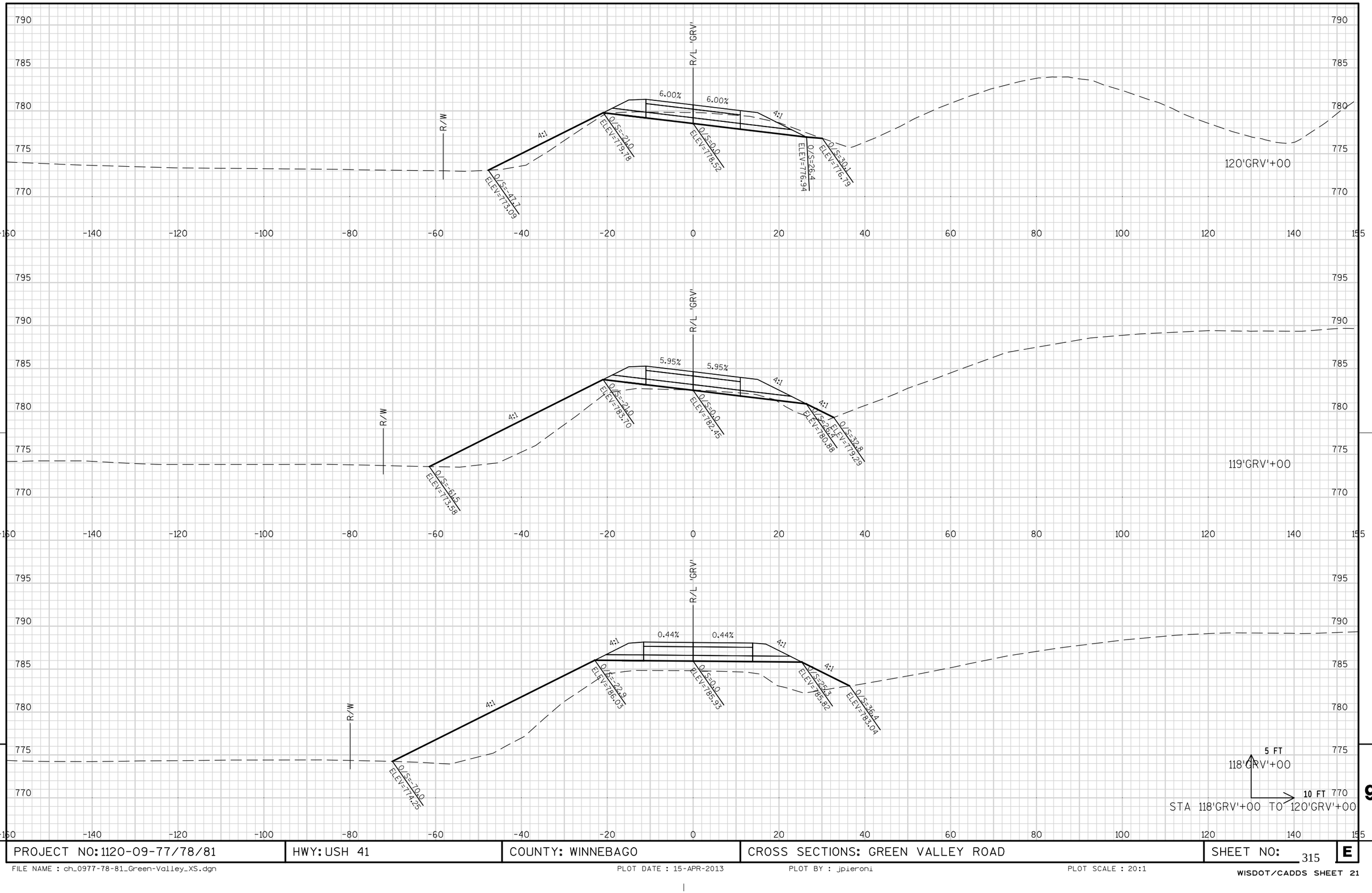
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 314	E

FILE NAME : ch_0977-78-81_Green-Valley_XS.dgn | PLOT DATE : 15-APR-2013 | PLOT BY : jpieroni | PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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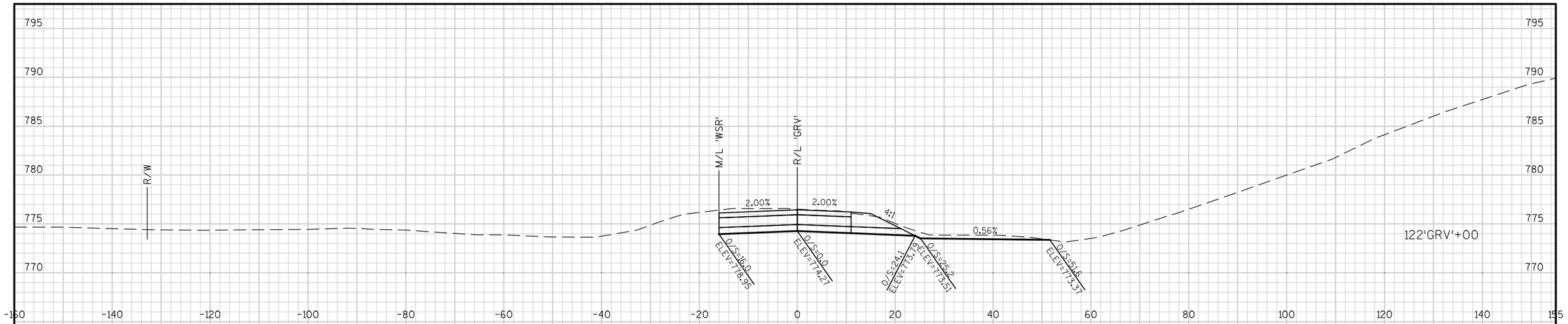
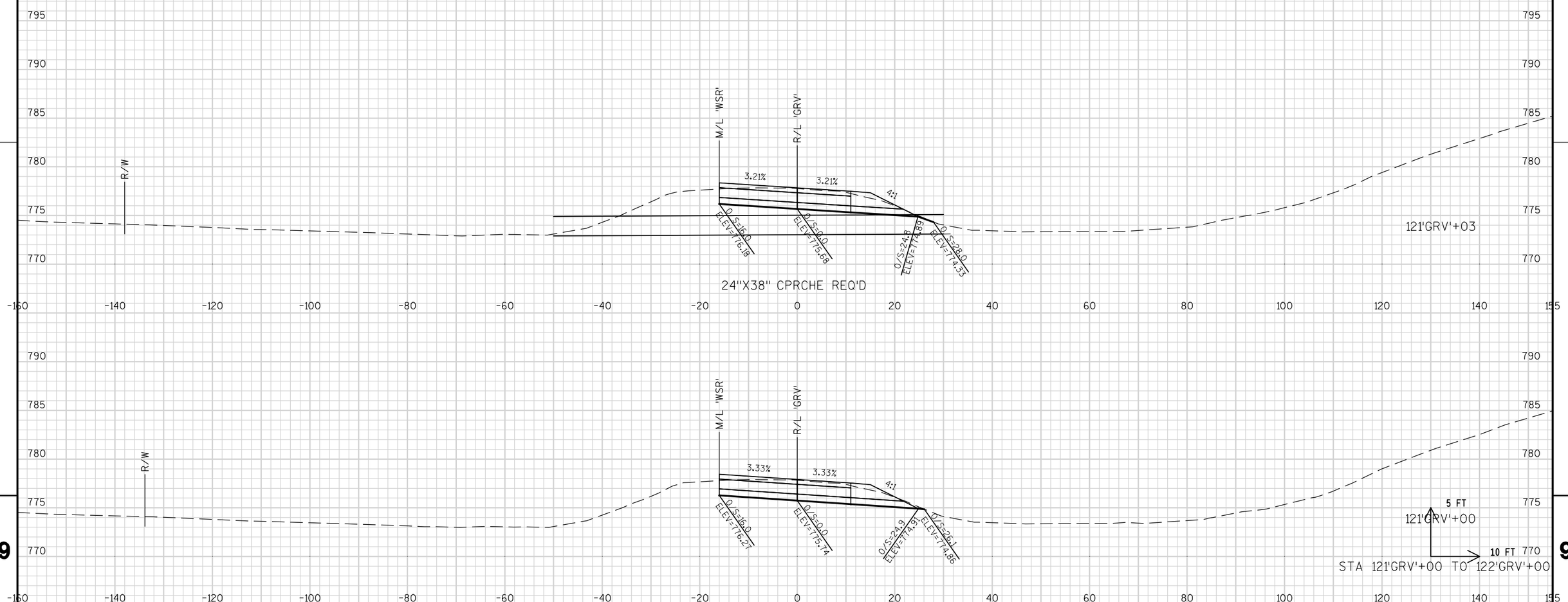
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 315	E

FILE NAME : ch_0977-78-81_Green-Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21





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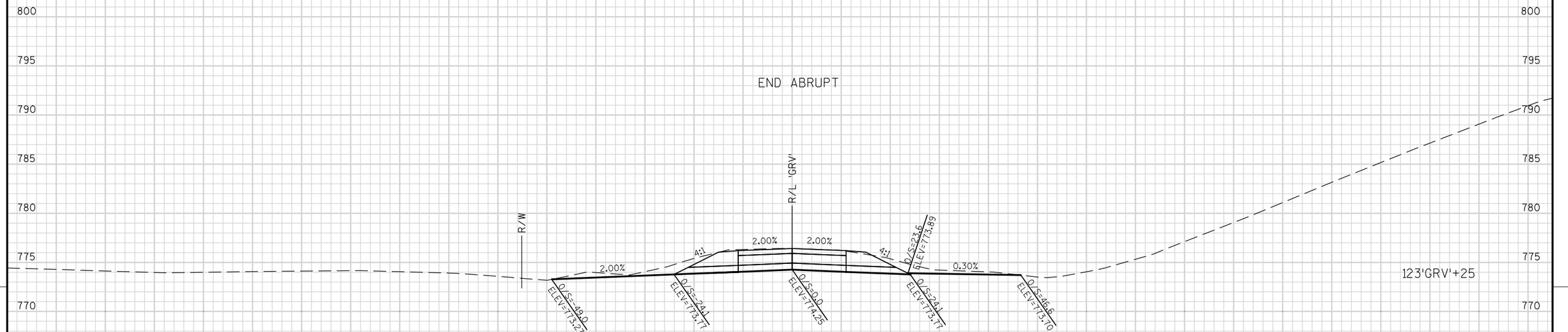
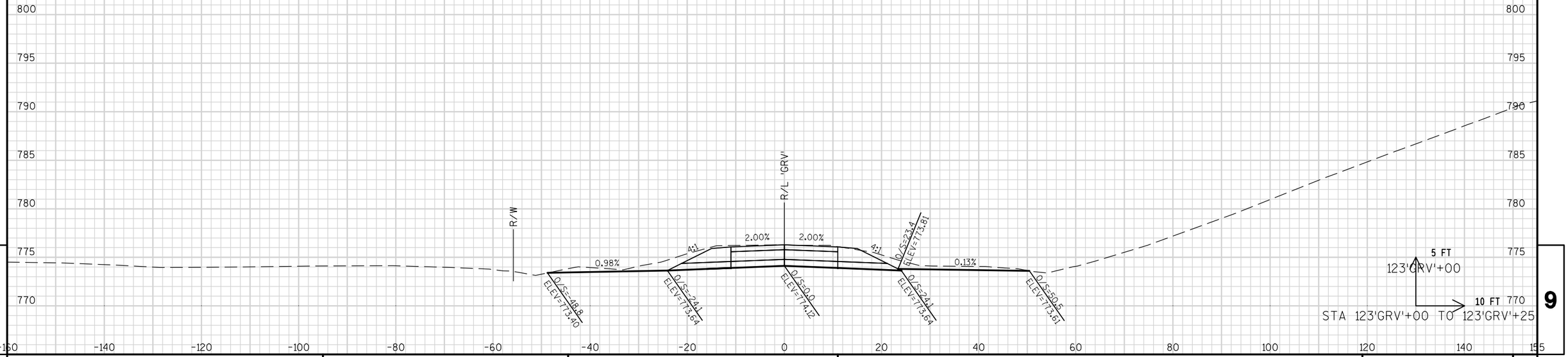
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 316	E

FILE NAME : ch_0977-78-81_Green-Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

END ABRUPT

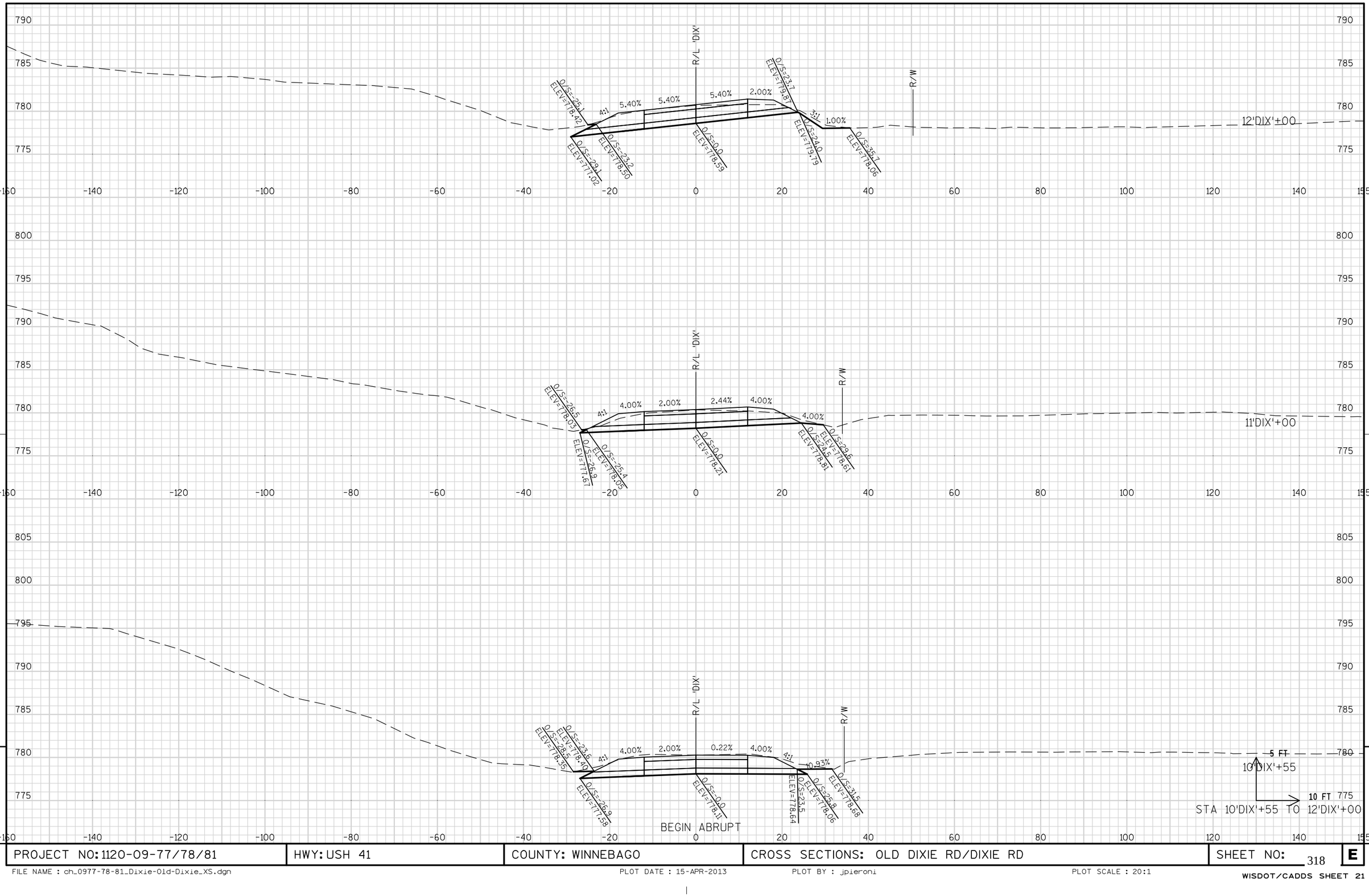




PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: GREEN VALLEY ROAD	SHEET NO: 317	E

FILE NAME : ch_0977-78-81_Green-Valley_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: OLD DIXIE RD/DIXIE RD	SHEET NO: 318 E

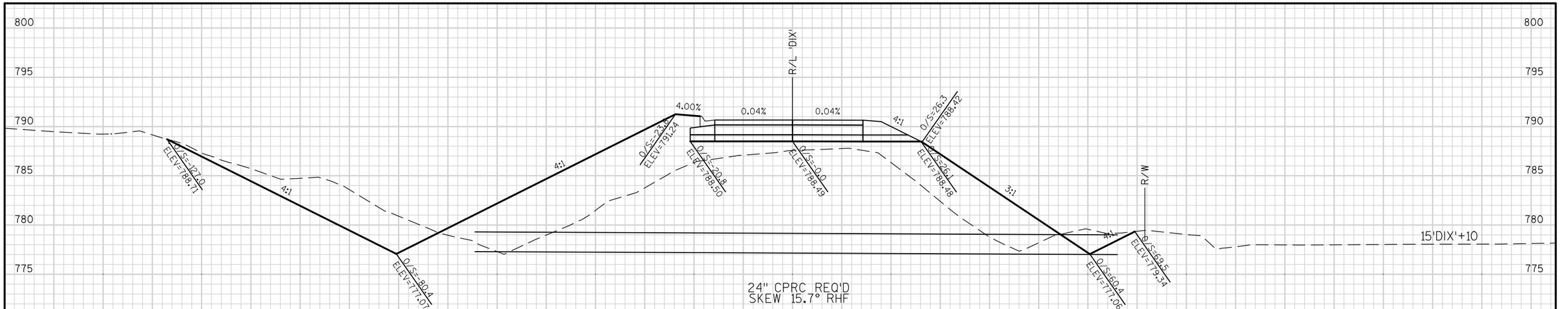
FILE NAME : ch_0977-78-81_Dixie-Old-Dixie_XS.dgn | PLOT DATE : 15-APR-2013 | PLOT BY : jpieroni | PLOT SCALE : 20:1

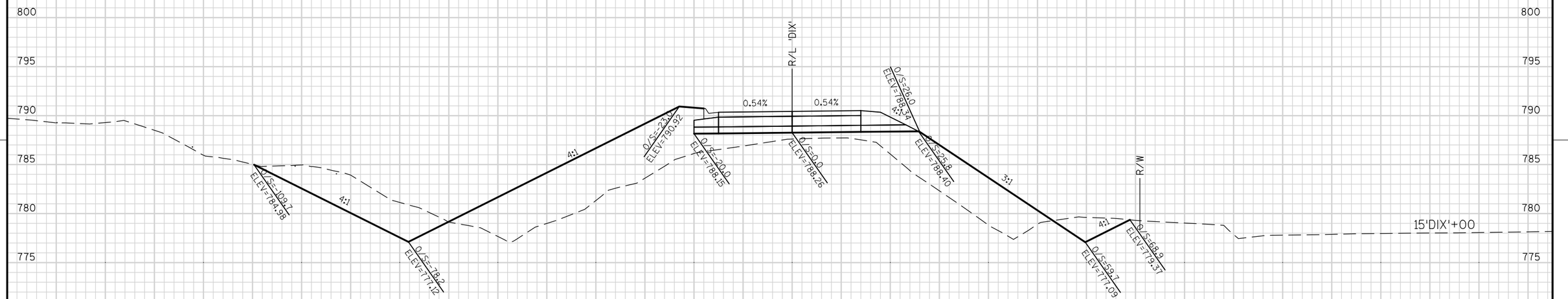
WISDOT/CADDS SHEET 21

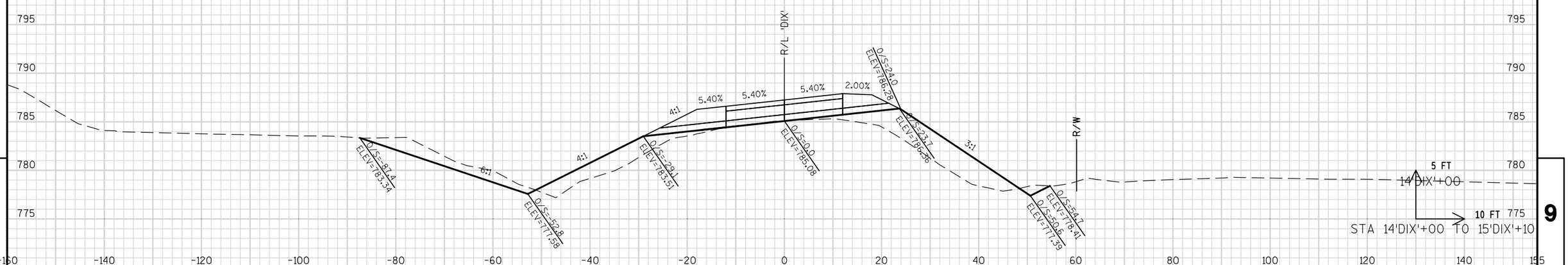
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: OLD DIXIE RD/DIXIE RD	SHEET NO: 319	E

FILE NAME : ch_0977-78-81_Dixie-Old-Dixie_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



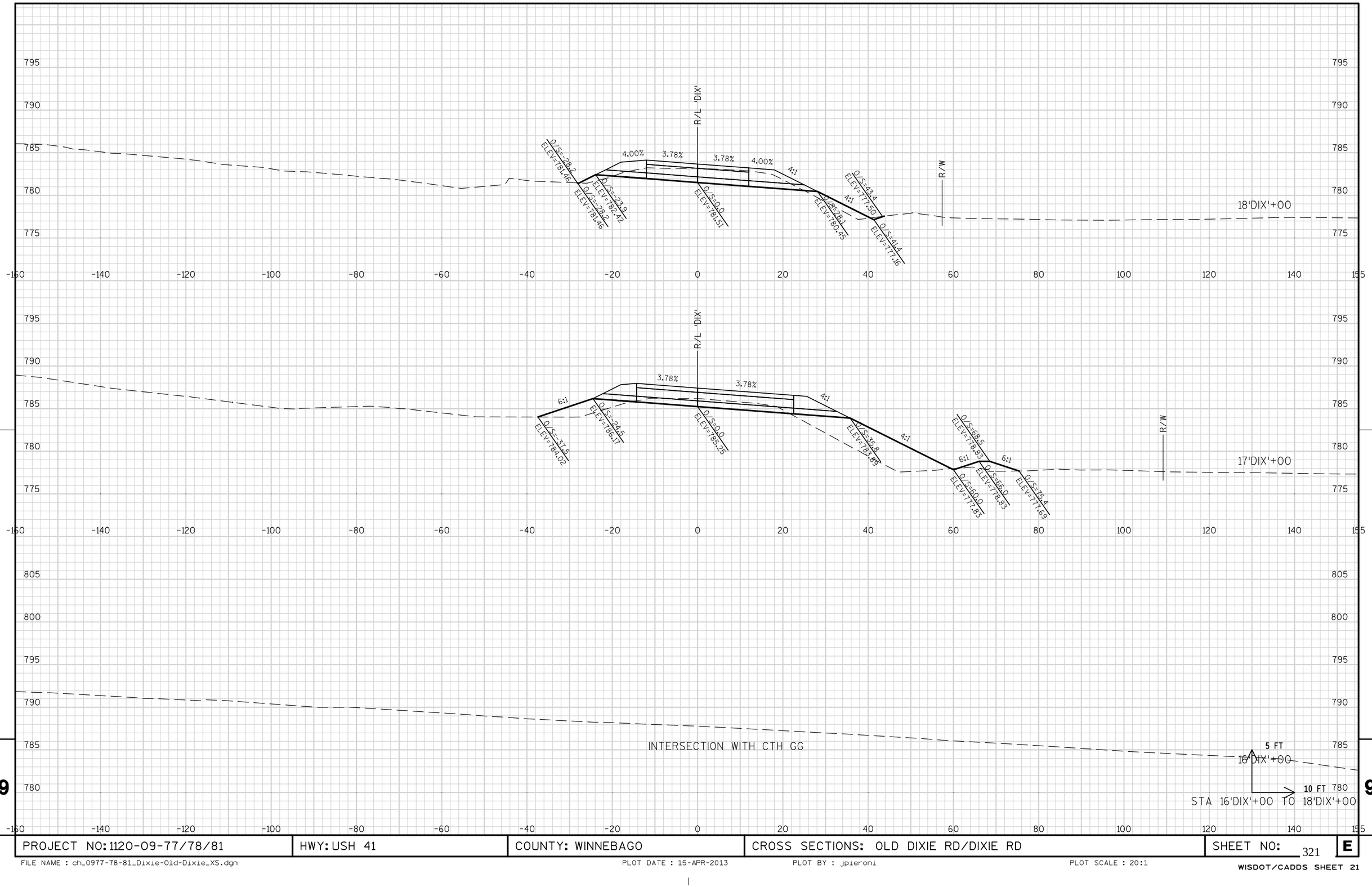




PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: OLD DIXIE RD/DIXIE RD	SHEET NO: 320 E

FILE NAME : ch_0977-78-81_Dixie-Old-Dixie_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



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PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: OLD DIXIE RD/DIXIE RD	SHEET NO: 321 E

FILE NAME : ch_0977-78-81_Dixie-Old-Dixie_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

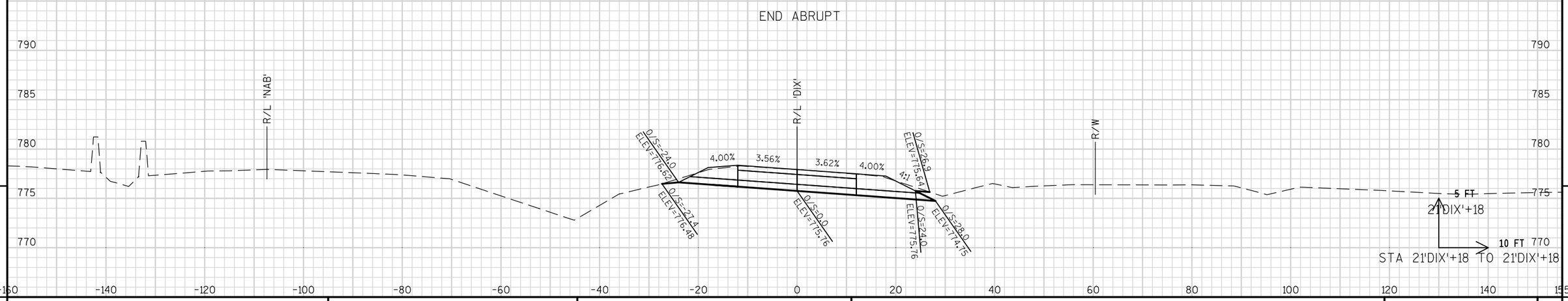
9

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: OLD DIXIE RD/DIXIE RD	SHEET NO: 322	E

FILE NAME : ch_0977-78-81_Dixie-Old-Dixie_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

END ABRUPT

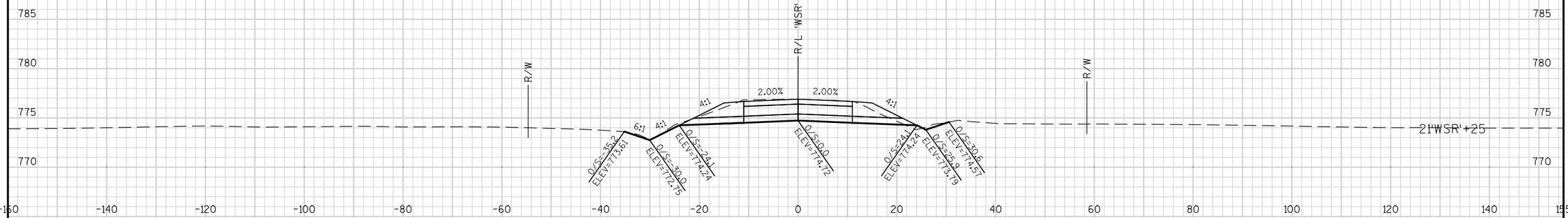


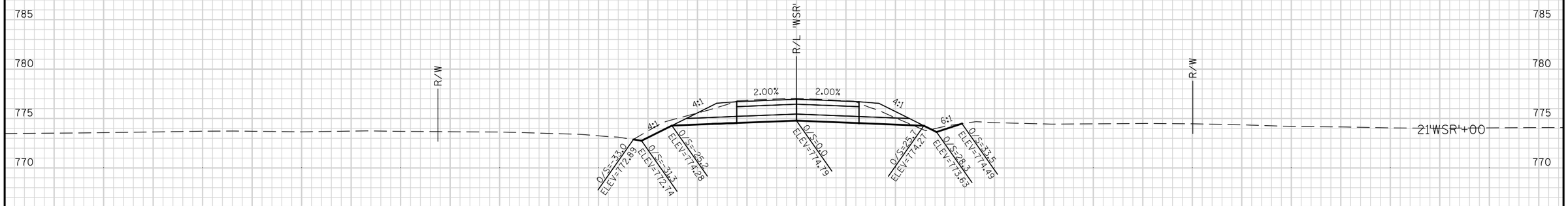
PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: OLD DIXIE RD/DIXIE RD	SHEET NO: 323 E

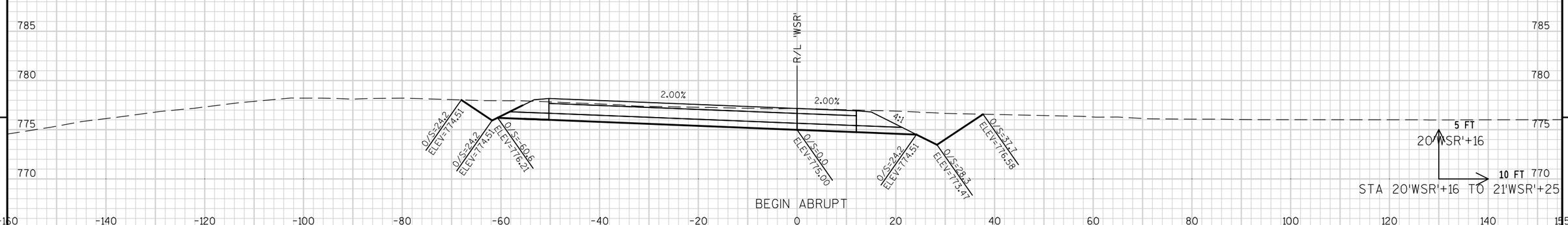
FILE NAME : ch_0977-78-81_Dixie-Old-Dixie_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

END ABRUPT







BEGIN ABRUPT

PROJECT NO: 1120-09-77/78/81	HWY: USH 41	COUNTY: WINNEBAGO	CROSS SECTIONS: WOODENSHOE ROAD	SHEET NO: 324	E

FILE NAME : ch_0977-78-81_Wooden-Shoe_XS.dgn PLOT DATE : 15-APR-2013 PLOT BY : jpieroni PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

Notes

Wisconsin Department of Transportation

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