WKE APR 2018

PROJECT ID: 3100-07-70
WITH: N/A

COUNTY: WAUKESHA

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 = 230

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

SUMMIT AVE, VILLAGE OF DOUSMAN

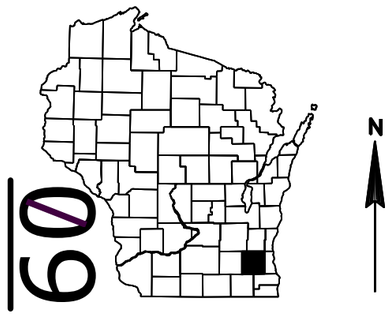
B67-0010 OVER BARK RIVER

STH 67

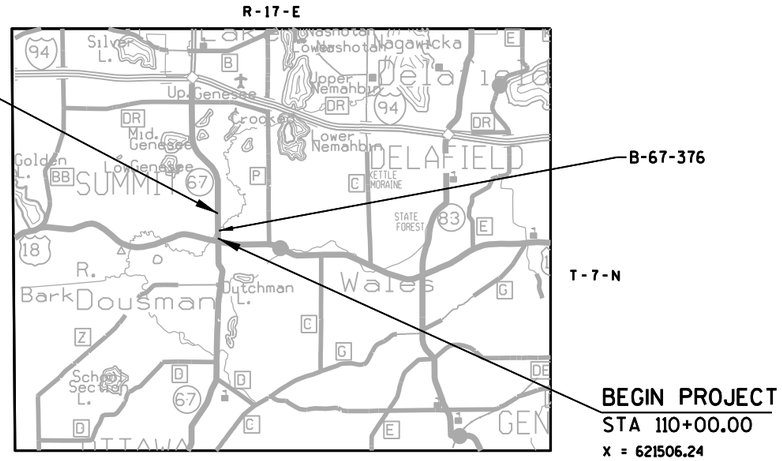
WAUKESHA COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3100-07-70	WISC 2018194	1

STATE PROJECT NUMBER
3100-07-70



N



DESIGN DESIGNATION

A.A.D.T. 2017	=	9,100 TO 10,000
A.A.D.T. 2037	=	11,100 TO 11,700
D.H.V.	=	1,476 - 1,556
D.D.	=	59/41
T.	=	4.9%
DESIGN SPEED	=	55 mph
ESALS	=	1,600,000

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
- WOODED OR SHRUB AREA

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
- ELECTRIC (E)
- FIBER OPTIC (FO)
- GAS (G)
- SANITARY SEWER (SAN)
- STORM SEWER (SS)
- TELEPHONE (T)
- WATER (W)
- UTILITY PEDESTAL
- POWER POLE
- TELEPHONE POLE

LAYOUT
SCALE 0 1.0 MI.

TOTAL NET LENGTH OF CENTERLINE = 0.365 MI.

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WAUKESHA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD 88 (2012).

ORIGINAL PLANS PREPARED BY

HNTB
11414 W. PARK PLACE
SUITE 300
MILWAUKEE, WI 53224
(414) 359-2300

WISCONSIN
ANDREW D. ROSEMEYER
E-43027
MADISON, WI
PROFESSIONAL ENGINEER

12/1/2017 (Date)

Andrew D. Rosemeyer (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WisDOT
Designer	HNTB
Project Manager	GARY METZER
Regional Examiner	WISDOT SE REGION
Regional Supervisor	JANET CANNON
C.O. Examiner	

APPROVED FOR THE DEPARTMENT

DATE: 30 NOV 2017 (Signature)

E

UTILITY CONTACTS

CENTURYLINK
SEND ALL CORRESPONDANCE TO:
KEVIN ZICKERT
224 INDUSTRIAL DRIVE
NORTH PRARIE, WI 53153
PHONE: (262) 392-5200
KEVIN.ZICKERT@CENTURYLINK.COM

CONSTRUCTION FIELD CONTACT:
MARK MURN
224 INDUSTRIAL DRIVE
NORTH PRARIE, WI 53153
PHONE: (262) 392-5210
MARK.MURN@CENTURYLINK.COM

WE ENERGIES - ELECTRIC
SEND ALL CORRESPONDANCE TO:
DAN SANDE
333 W.EVERETT ST - A299
MILWAKEE, WI 53203
PHONE: (414) 221-4578
DAN.SANDE@WE-ENERGIES.COM

CONSTRUCTION FIELD CONTACT:
BRYAN STOEHR
500 S. 116TH STREET
WEST ALLIS, WI 53214
PHONE: (414) 944-5516
BRYAN.STOEHR@WE-ENERGIES.COM

WE ENERGIES - GAS
SEND ALL CORRESPONDANCE TO:
DAN SANDE
333 W.EVERETT ST - A299
MILWAKEE, WI 53203
PHONE: (414) 221-4578
DAN.SANDE@WE-ENERGIES.COM

CONSTRUCTION FIELD CONTACT:
DANIELLE FINK
500 S. 116TH STREET
WEST ALLIS, WI 53214
PHONE: (414) 944-5627
DANIELLE.FINK@WE-ENERGIES.COM

WISDOT SIGNALS
DENNIS CAULEY
ELECTRICAL FIELD UNIT
935 S 60TH STREET
WEST ALLIS, WI 53214
PHONE: (414) 266-1170

OTHER CONTACTS

WISDOT PROJECT MANAGER
GARY METZER
141 NW BARSTOW STREET
P.O. BOX 798
WAKESHA, WI 53187-0798
PHONE: (262) 548-5685
GARY.METZER@DOT.WI.GOV

SOUTHEAST WISCONSIN REGIONAL PLANNING
ATTN: JOHN WASHBURN
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187-1607
PHONE: (262) 953-4295
JWASHBURN@SEWRPC.ORG

WI DNR LIAISON
CRAIG WEBSTER
DNR SERVICE CENTER
141 NW BARSTOW STREET, ROOM 180
WAUKESHA, WI 53188
PHONE: (262) 574-2141
CRAIG.WEBSTER@WISCONSIN.GOV

DESIGN
JASON MATSON
11414 W. PARK PLACE
SUITE 300
MILWAUKEE, WI 53224
PHONE: (414) 410-6740
JMATSON@HNTB.COM

ORDER OF SECTION 2 DETAIL SHEETS

GENERAL NOTES
PROJECT OVERVIEW
TYPICAL SECTIONS
CONSTRUCTION DETAILS
REMOVALS
PLAN DETAILS
PAVING GRADES
EROSION CONTROL
STORM SEWER
SIGNING
TRAFFIC SIGNALS
PAVEMENT MARKINGS
TRAFFIC CONTROL
DETOUR
ALIGNMENTS

GENERAL NOTES

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

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

A SAWED JOINT WILL BE REQUIRED WHERE NEW PAVEMENT IS TO MEET AN EXISTING PAVED SURFACE.

TRAFFIC CONTROL LOCATIONS AS SHOWN IN THE PLAN ARE SUGGESTED LOCATIONS. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.

DO NOT REMOVE TREES OR SHRUBS UNLESS DESIGNATED FOR REMOVAL BY THE ENGINEER.

DO NOT USE FERTILIZER WITHIN 10' OF WATERWAYS OR WETLAND AREAS.

USE SEED MIXTURE NO 60 FOR WETLAND AREAS AND WITHIN 20' OF WETLAND AREAS.

FOR GRADING AREAS ADJACENT TO OR CONTAINING WETLANDS, FLOODPLAINS, OR WATERWAYS, COMPLETE ROUGH GRADING THROUGH FINISHED LANDSCAPING WITHIN SEVEN (7) CALENDAR DAYS.

STOCKPILE EXCESSS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLAND, FLOODPLAINS, AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS TO BE LEFT FOR MORE THAN SEVEN (7) CALENDAR DAYS, SEED THE STOCKPILE WITH TEMPORARY SEED AND MULCH WITHIN 24 HOURS.

EROSION CONTROL BMP'S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL BMP'S SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY ANY OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS AT THE CONTRACTOR'S EXPENSE.

CROSS SECTIONS SHOWN INCLUDE THE THICKNESS OF TOPSOIL WHERE REQUIRED. TOPSOIL SHALL BE REPLACED WITH SPECIFIED THICKNESS AS OUTLINED IN THE STANDARD SPECIFICATIONS.

FILL AND COMPACT ALL HOLES OR OPENINGS BELOW SUBGRADE RESULTING FROM ABANDONMENT OR REMOVAL OF EXISTING STRUCTURES WITH MATERIAL SIMILAR TO EXISTING GROUND OR ENGINEER APPROVED BACKFILL TO AVOID POTENTIAL FROST HEAVING. BACKFILLING IS INCIDENTAL TO CORRESPONDING ABANDONMENT OR REMOVAL ITEM.

CURB AND GUTTER GRADES AND RADII ARE GIVEN OR MEASURED TO THE FLANGE.

CONTRACTOR MUST CONTACT THE PROJECT ENGINEER AND SEWRPC (JOHN WASHBURN) AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

ABBREVIATIONS

AEW	APRON END WALL
AGG	AGGREGATE
BAD	BASE AGGREGATE DENSE
BM	BENCH MARK
C&G	CURB AND GUTTER
C/L	CENTER OR CONSTRUCTION LINE
CMCP	CULVERT PIPE CORRUGATED METAL
CONC	CONCRETE
CP	CULVERT PIPE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CSD	CONCRETE SURFACE DRAIN
CY	CUBIC-YARD
D	DEGREE OF CURVE
Δ	DELTA
DISCH	DISCHARGE
EAT	ENERGY ABSORBING TERMINAL
FE	FIELD ENTRANCE
HMA	HOT MIX ASPHALT
INV	INVERT
L	LENGTH OF CURVE
LHF	LEFT HAND FORWARD
LT	LEFT
MIN	MINIMUM
M/L	MATCHLINE
NB	NORTHBOUND
NC	NORMAL CROWN
PAVT	PAVEMENT
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PE	PRIVATE ENTRANCE
PI	POINT OF INTERSECTION
PLE	PERMANENT LIMITED EASMENT
PT	POINT OF TANGENT
R	RADIUS OF CURVE
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
RRSP	RAILROAD SPIKE
RT	RIGHT
SALV	SALVAGED
SAPBC	SALVAGED ASPHALTIC PAVEMENT BASE COARSE
SB	SOUTHBOUND
SDD	STANDARD DETAIL DRAWINGS
SE	SUPER ELEVATION
SF	SQUARE FOOT
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
STA	STATION
SY	SQUARE YARD
T	TANGENT LENGTH
TLE	TEMPORARY LIMITED EASEMENT
VCL	VERTICAL CURVE LENGTH
VPC	POINT OF VERTICAL CURVE
VPI	POINT OF VERTICAL INTERSECTION
VPT	POINT OF VERTICAL TANGENT

2

N

BEGIN PROJECT/CONSTRUCTION
STH 67
STA 110+00.00
X: 621506.24
Y: 165327.09

BEGIN CONSTRUCTION
WHITAKER LANE
STA 10WL+00.00
STA 119+10.81

EXISTING B-67-010
PROPOSED B-67-376

R/L STH 67

STH 67

100 105 110 115 120 125 130 135 140

USH 18

BARK RIVER

WHITAKER LANE

WHITAKER COURT

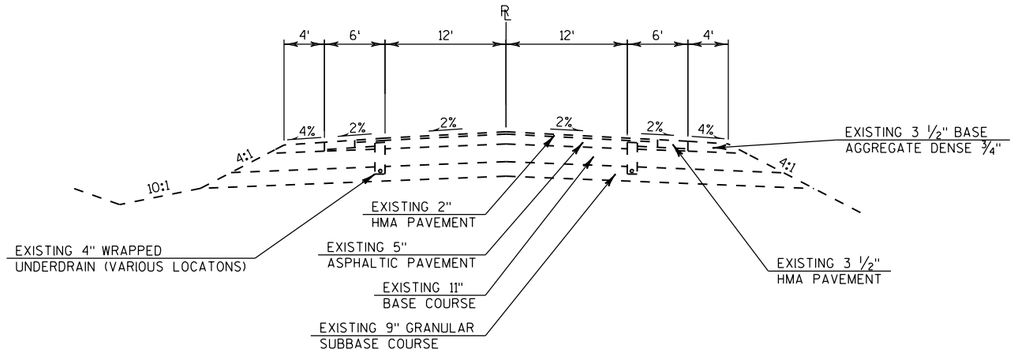
R/L WHITAKER LANE

END CONSTRUCTION
WHITAKER LANE
STA 13WL+00.00

END PROJECT/CONSTRUCTION
STH 67
STA 129+25.00

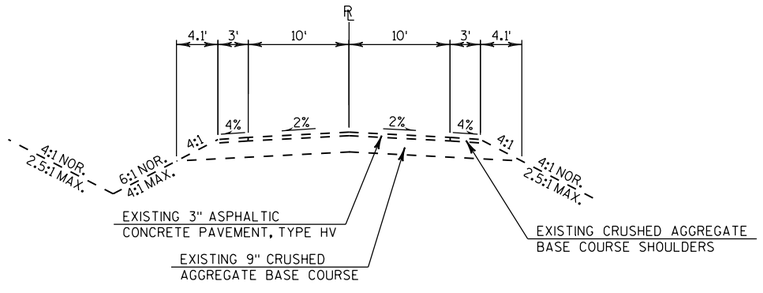
PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PROJECT OVERVIEW	SHEET 3	E

2



EXISTING TYPICAL SECTION
STH 67

STA 110+00 TO STA 129+25

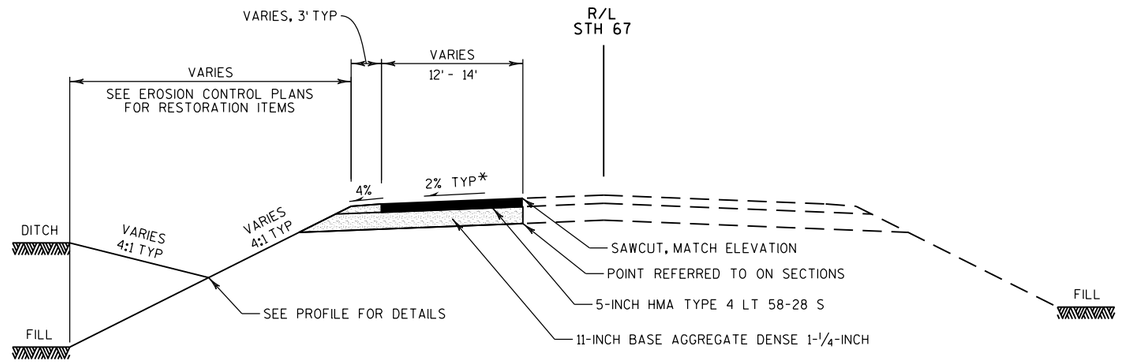


EXISTING TYPICAL SECTION
WHITAKER LANE

STA 10WL+00 TO STA 115WL+86

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TYPICAL SECTIONS: EXISTING STH 67	SHEET 4	E

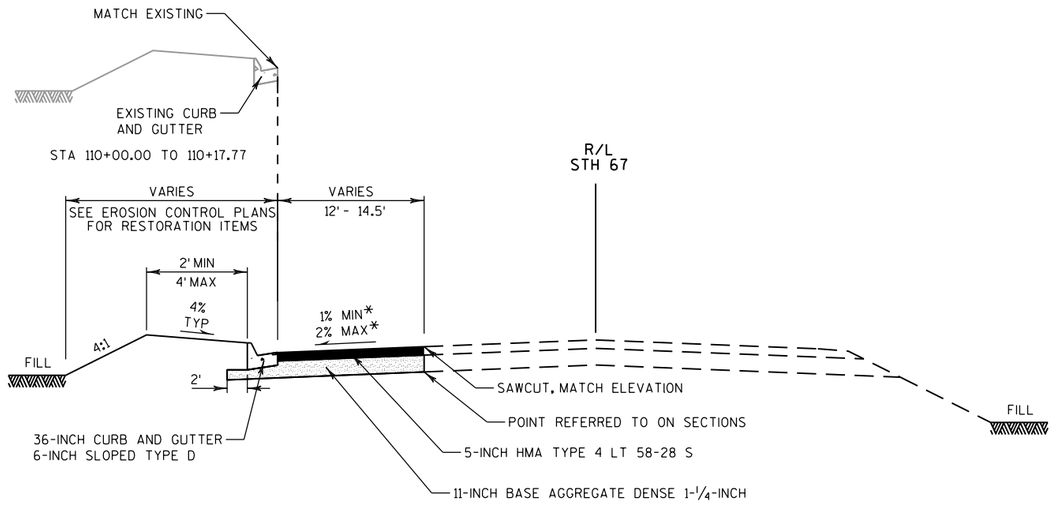
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TYPICAL FINISHED SECTION
STH 67

STA 112+65.00 TO STA 114+75.00

*MATCH ADJACENT CROSS SLOPE



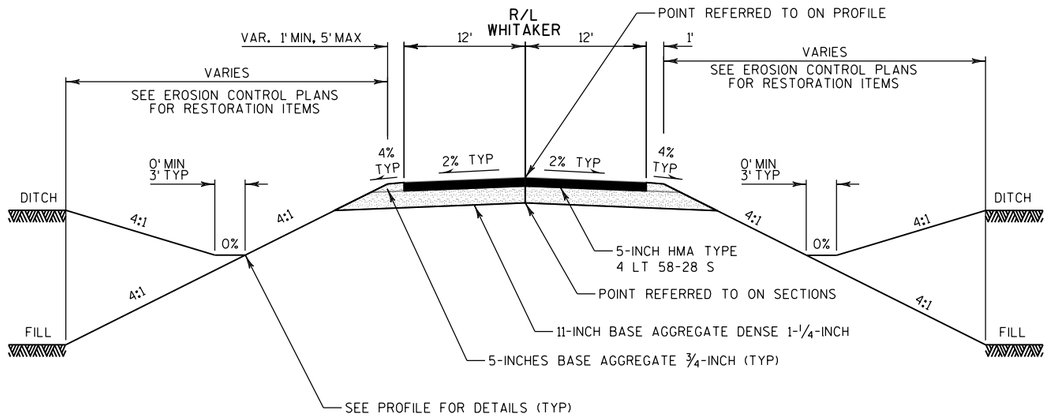
TYPICAL FINISHED SECTION
STH 67

STA 110+00.00 TO STA 112+65.00

*MATCH ADJACENT CROSS SLOPE

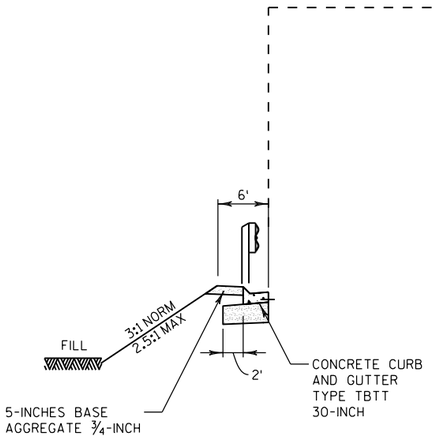
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2

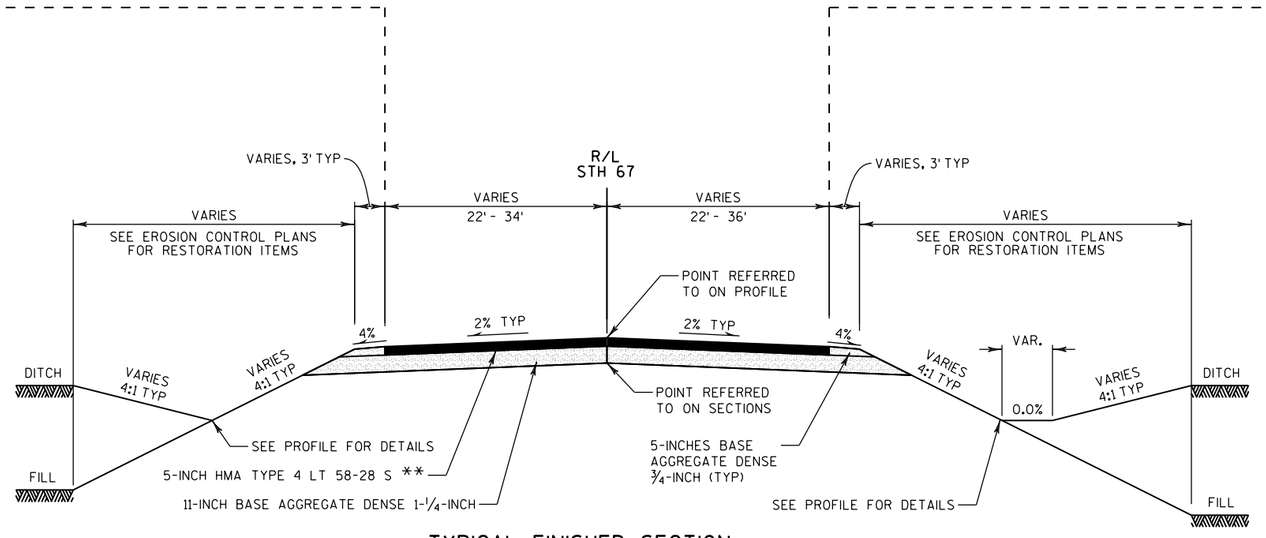


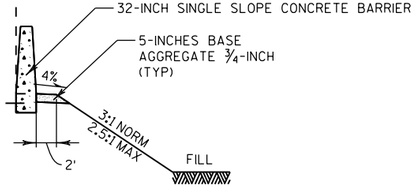
TYPICAL FINISHED SECTION
WHITAKER ROAD

STA 10WL+00 TO 13WL+00



STA 119+44.62 TO 119+68.71





STA 119+92.60 TO STA 120+17.40
STA 121+32.40 TO STA 121+81.40

TYPICAL FINISHED SECTION
STH 67

STA 112+65.00 TO STA 129+25.00

** SEE PLAN DETAILS REGARDING LIMITS OF CONCRETE APPROACH PAVEMENT

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TYPICAL SECTIONS	SHEET 6	E

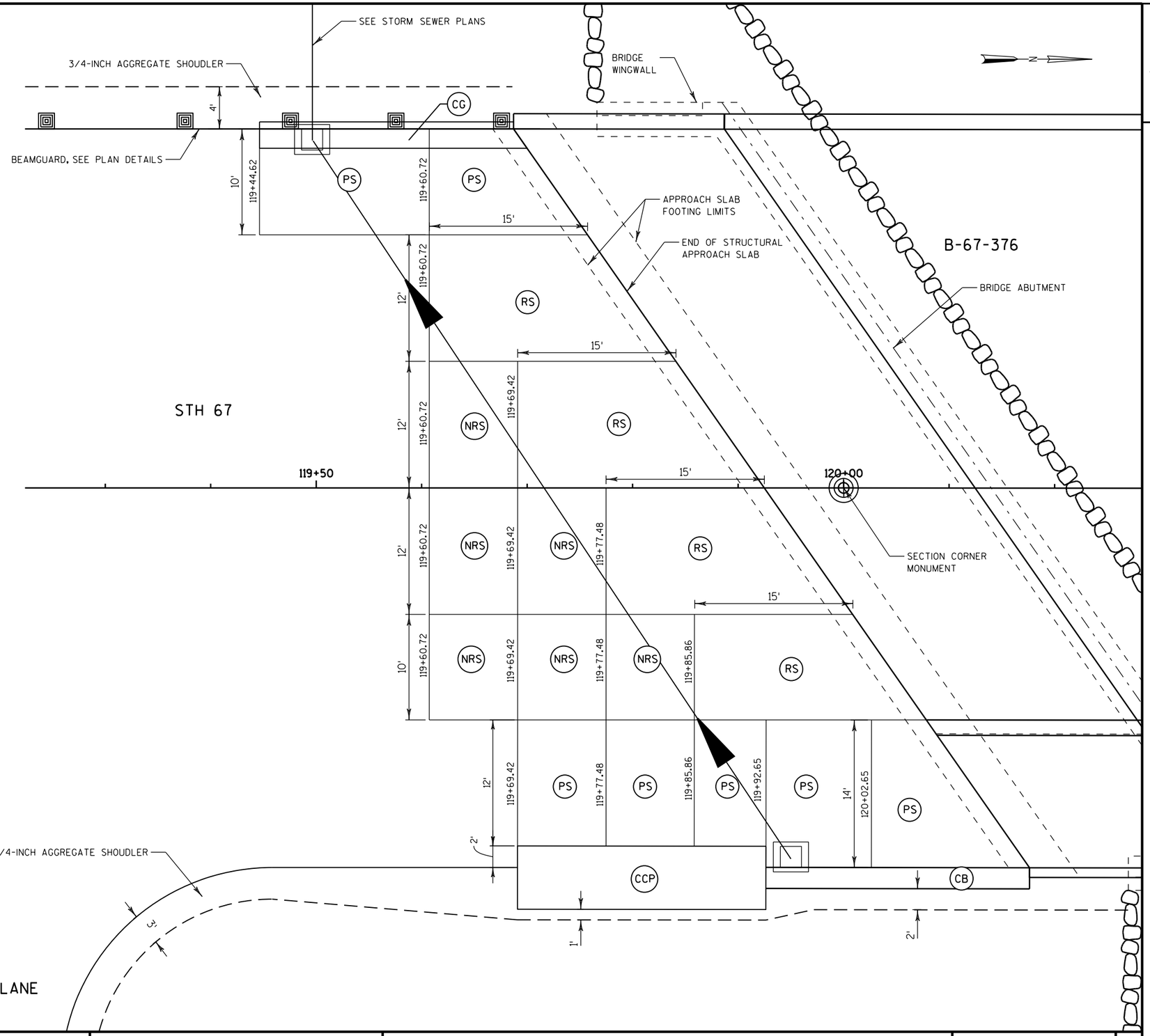
2

LEGEND

- (CCP) CRASH CUSHION PAD
- (PS) 8-INCH CONCRETE PAVEMENT
- (RS) REINFORCED CONCRETE APPROACH SLAB
- (NRS) NON-REINFORCED CONCRETE APPROACH SLAB
- (CB) 32-INCH SINGLE SLOPE CONCRETE BARRIER
- (CG) CONCRETE CURB AND GUTTER TYPE TBTT 30-INCH
- (AP) HMA PAVEMENT, SEE PLAN DETAILS

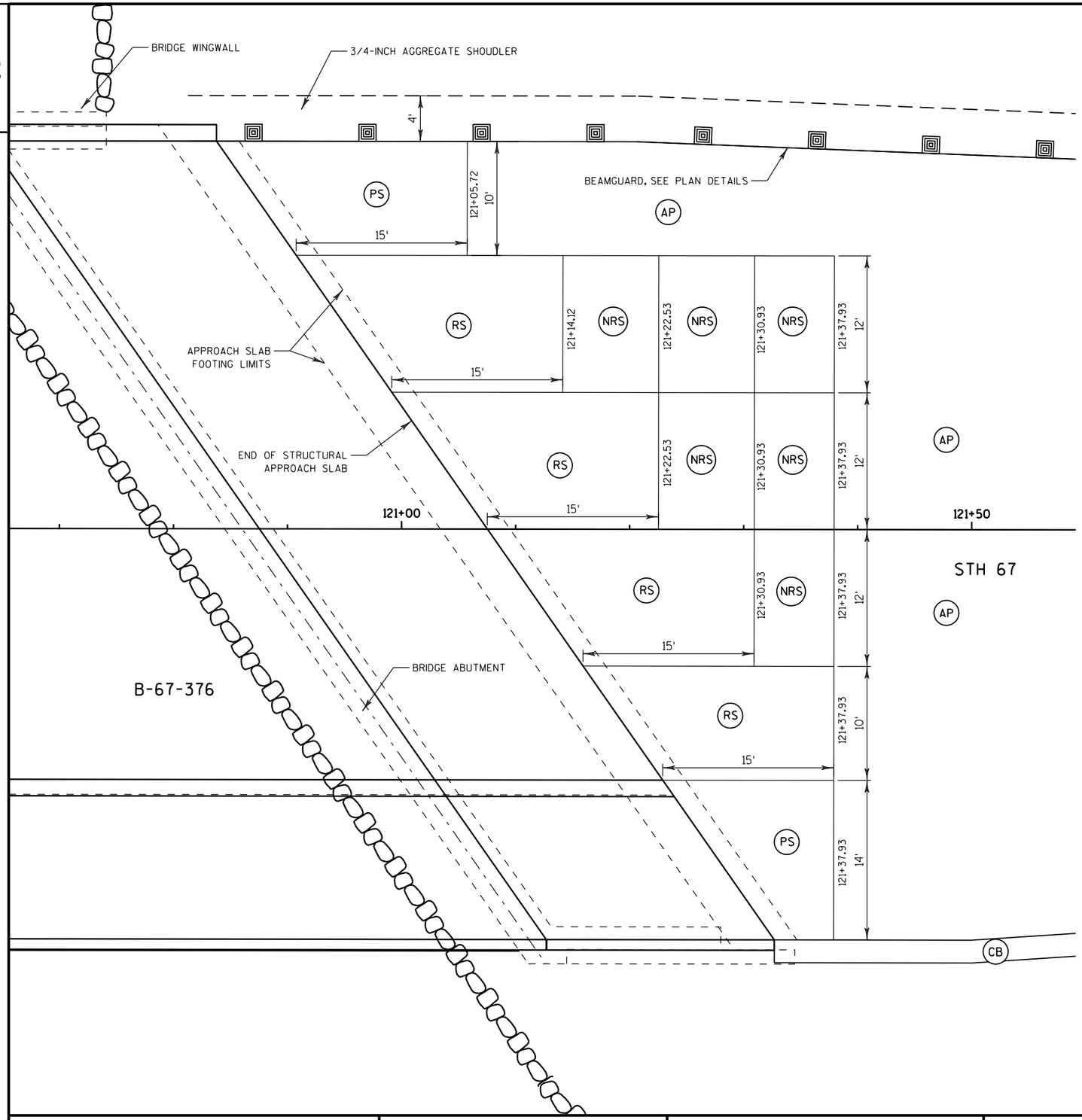
NOTES

1) REFER TO STANDARD DETAIL DRAWING 13B2 "CONCRETE BRIDGE APPROACH" FOR ADDITIONAL DETAILS



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CONSTRUCTION DETAIL: BRIDGE APPROACH	SHEET 7	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\021001_cd.dgn PLOT DATE : 2/9/2018 PLOT BY : grosemeyer PLOT NAME : $FILE$ PLOT SCALE : 10:1



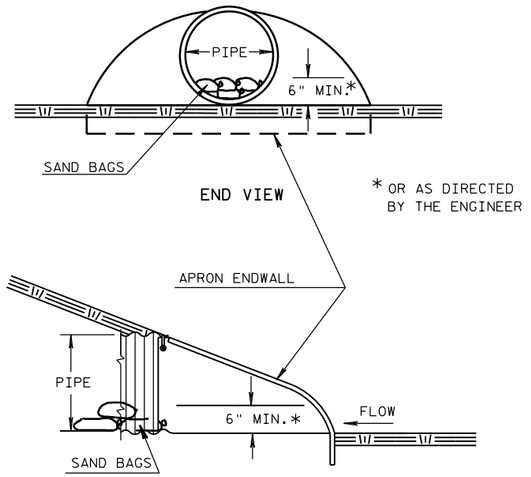
LEGEND

- (PS) 8-INCH CONCRETE PAVEMENT
- (RS) REINFORCED CONCRETE APPROACH SLAB
- (NRS) NON-REINFORCED CONCRETE APPROACH SLAB
- (AP) HMA PAVEMENT, SEE PLAN DETAILS
- (CB) 32-INCH SINGLE SLOPE CONCRETE BARRIER

NOTES

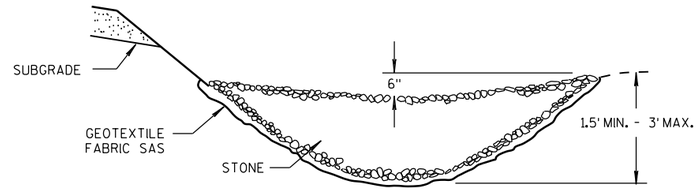
1) REFER TO STANDARD DETAIL DRAWING 13B2 "CONCRETE BRIDGE APPROACH" FOR ADDITIONAL DETAILS

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CONSTRUCTION DETAIL: BRIDGE APPROACH	SHEET 8	E

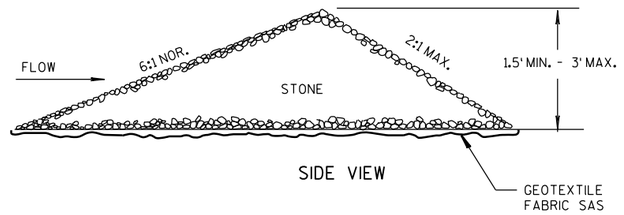


CULVERT PIPE CHECK

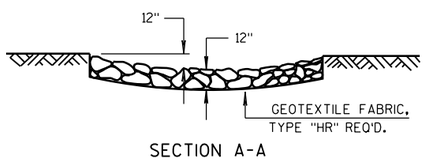
ESTIMATED BAG SIZE 18" x 12" x 6"	
PIPE SIZE	NO. OF BAGS
12"	1
15"	2
18"	2
24"	3
30"	5
36"	7

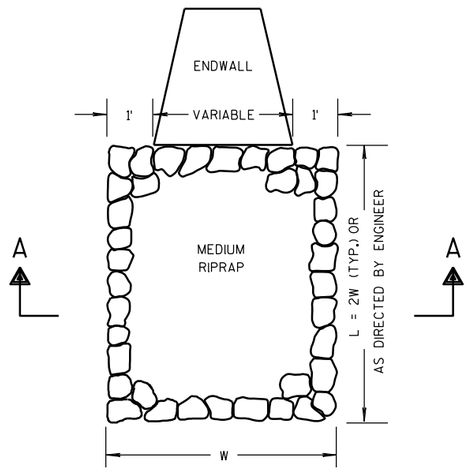


CROSS SECTIONAL VIEW

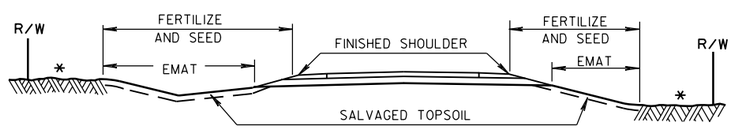


TEMPORARY STONE OR ROCK DITCH CHECK





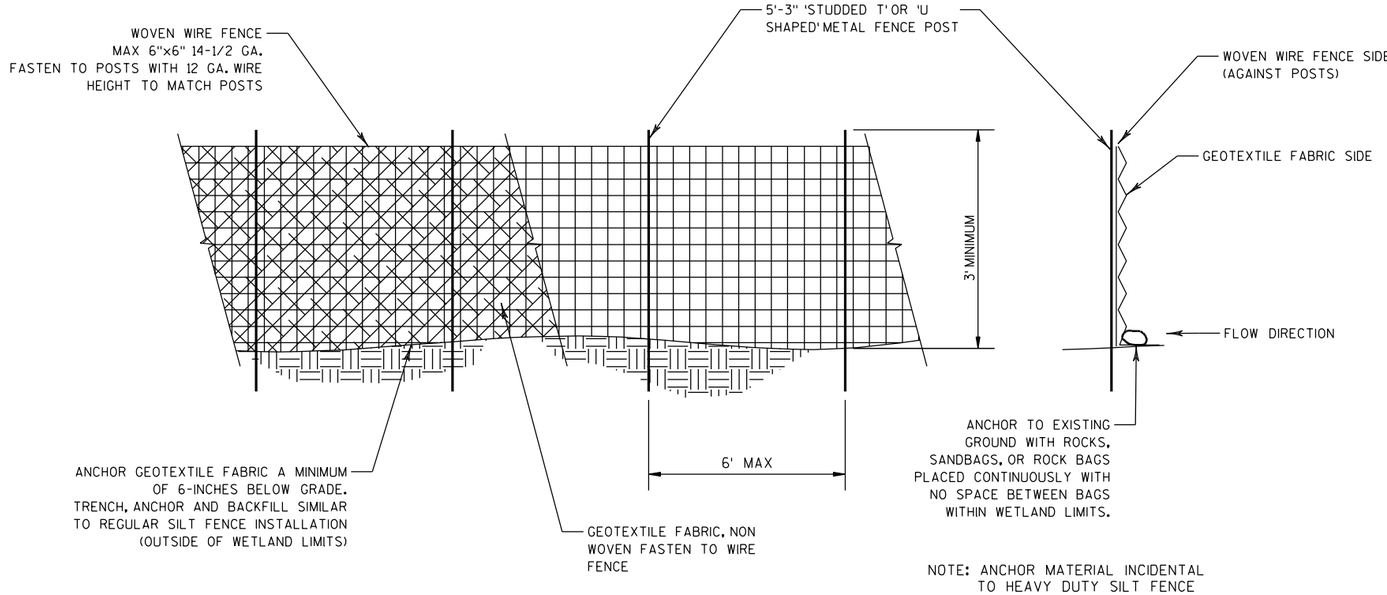
RIPRAP TREATMENT AT CULVERTS



DETAIL FOR FINISHING ITEMS

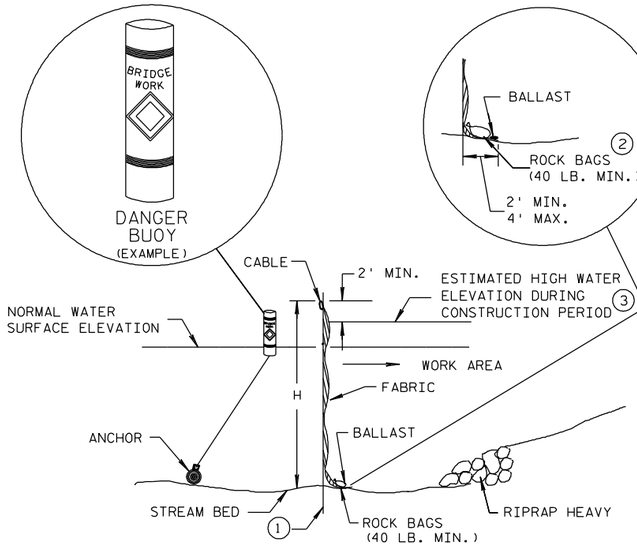
* DISTURBED AREAS TO BE FERTILIZED & SEEDED

2

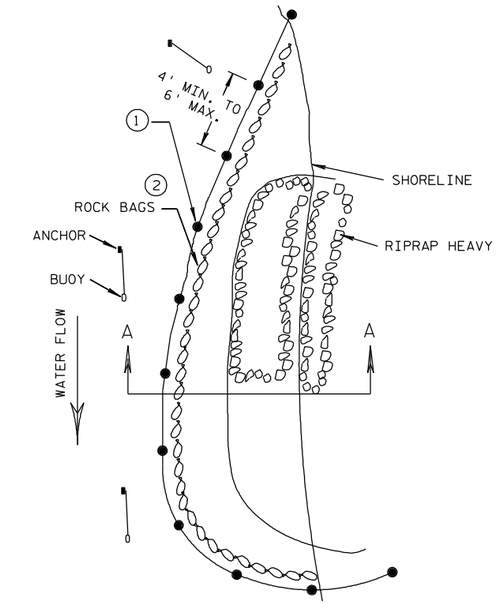


HEAVY DUTY SILT FENCE

2



SECTION A-A



PLAN VIEW

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.

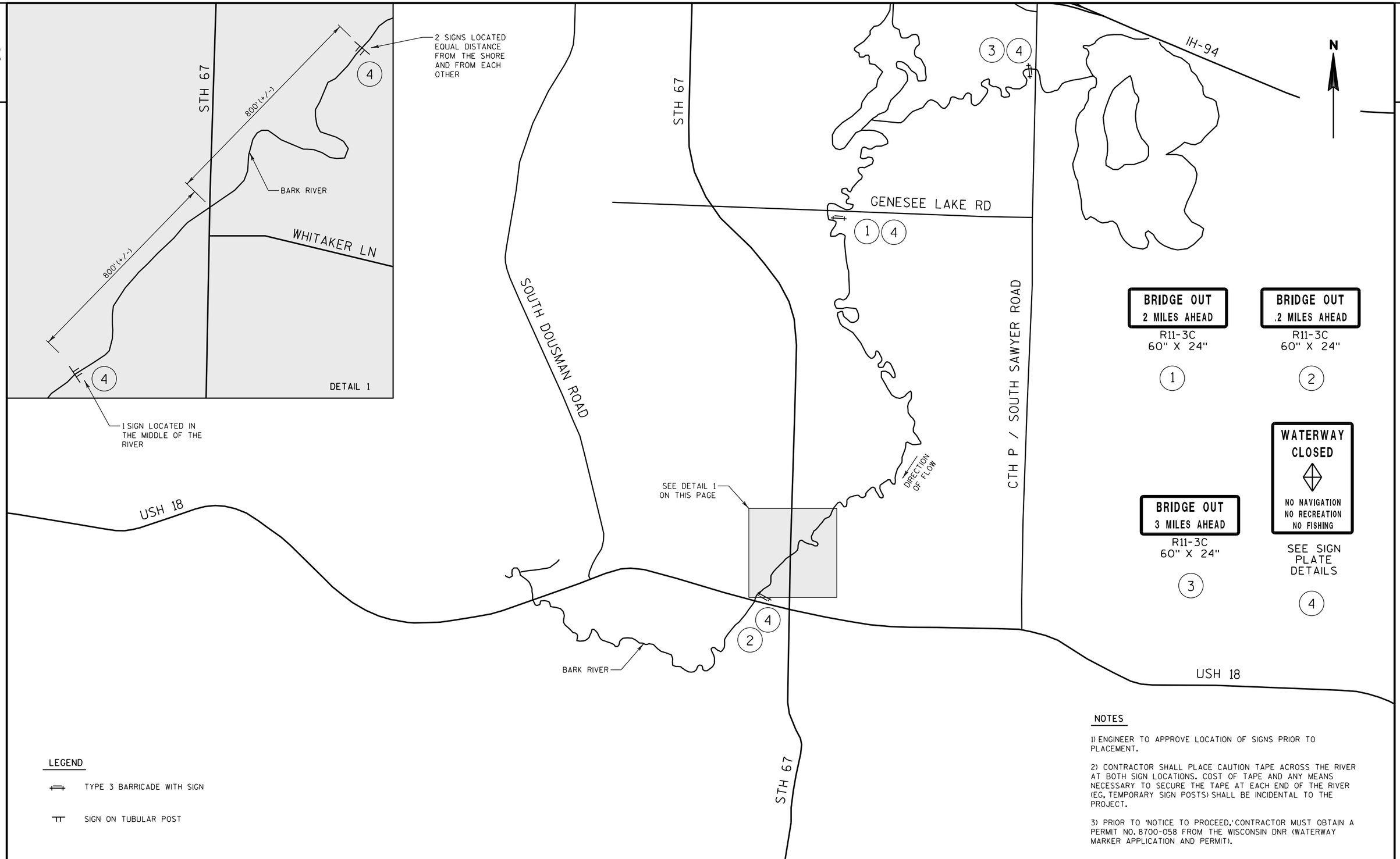
TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEER'S DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

(1) DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

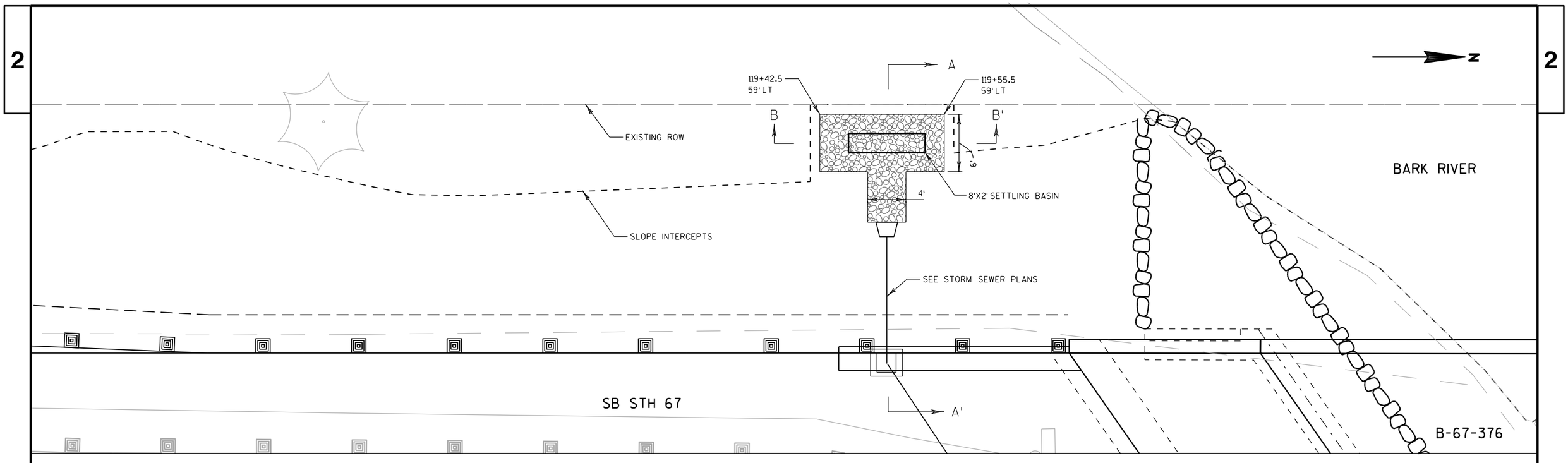
(2) INSTALL A CONTINUOUS LINE OF ROCK BAGS TO ANCHOR THE BARRIER TO THE STREAM BED.

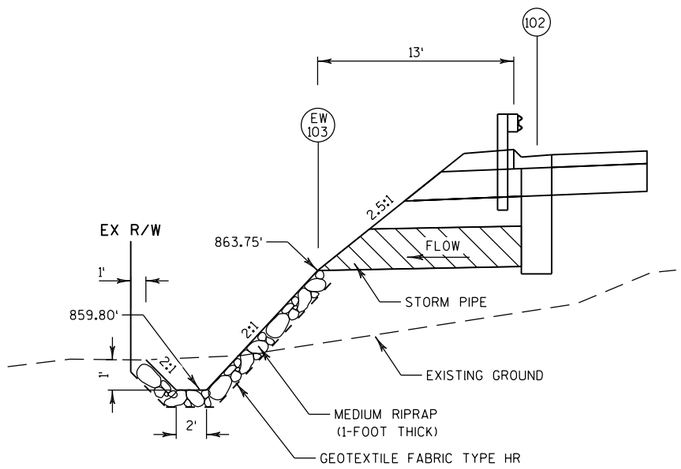
(3) ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MINIMUM BARRIER HEIGHT SHALL BE 2 FEET GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WHICHEVER IS GREATER.

ENHANCED TURBIDITY BARRIER DETAIL

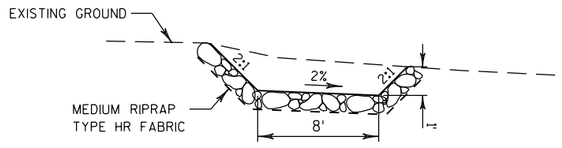


PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CONSTRUCTION DETAILS: RIVER CLOSURE	SHEET 12	E





SECTION A - A'



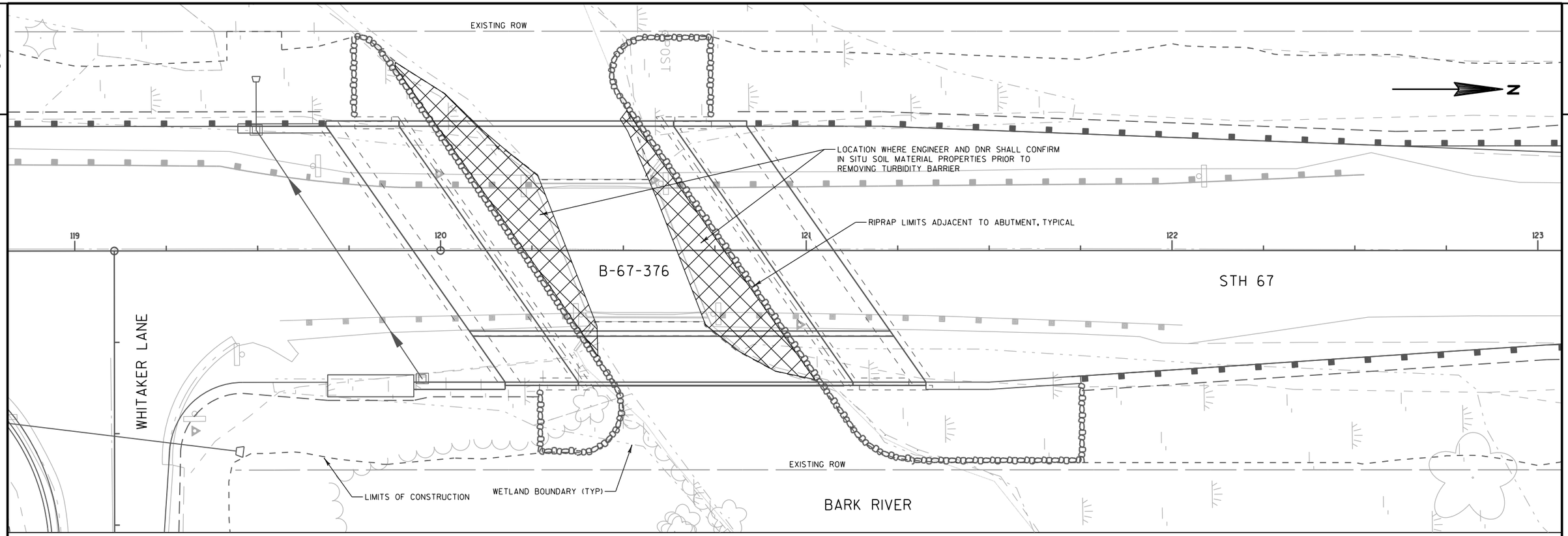
SECTION B - B'

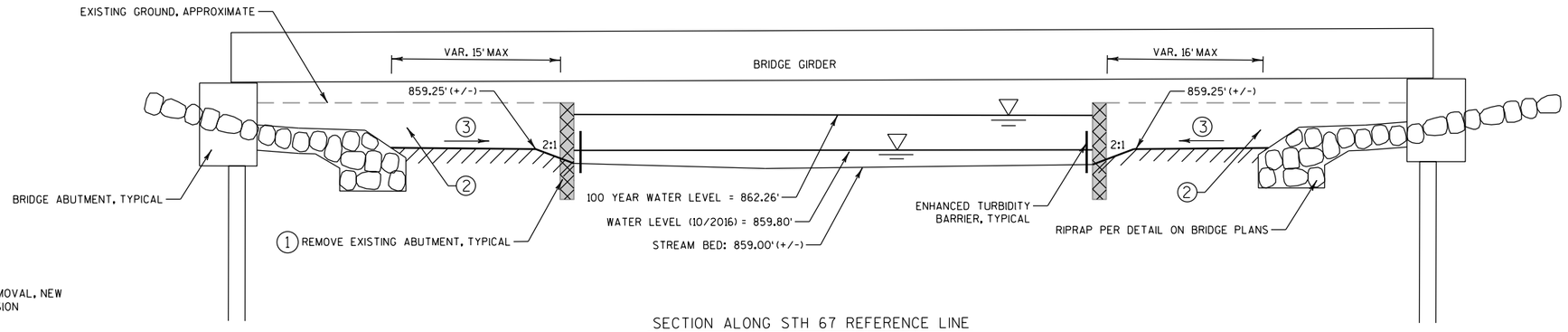
NOTES

1) SHAPE AND FIT SEDIMENT TRAP INTO THE FINISHED SURFACE. ADJUST BASED ON FIELD CONDITIONS AS DIRECTED BY THE ENGINEER

2) REFER TO THE MISCELANEOUS QUANTITIES FOR PAY ITEMS RELATED TO THE RIPRAP SEDIMENT TRAP

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CONSTRUCTION DETAIL: RIPRAP SEDIMENT TRAP	SHEET 13	E





SECTION ALONG STH 67 REFERENCE LINE

NOTES:

FOR ADDITIONAL DETAILS REGARDING THE BRIDGE REMOVAL, NEW BRIDGE CONSTRUCTION, AND BMP'S RELATED TO EROSION CONTROL, SEE THE PLANS AND SPECIFICATIONS.

1. EXISTING ABUTMENT REMOVAL AS COVERED UNDER ITEM "REMOVING OLD STRUCTURE OVER WATERWAY WITH APPROVED METHOD STA 120+50." REMOVE EXISTING ABUTMENT TO SPECIFIED DEPTHS AS SPECIFIED WITH THE SPV AND/OR STANDARD SPECIFICATIONS. FILL VOID LEFT FROM EXISTING ABUTMENT WITH MATERIAL AVAILABLE ONSITE AS APPROVED BY THE FIELD ENGINEER THROUGH THE DNR.
2. REMOVE EXISTING MATERIAL UNDER ITEM "EXCAVATION COMMON" BETWEEN THE EXISTING ABUTMENT AND THE PROPOSED B-67-376 ABUTMENT.
3. AFTER PLACING THE PROPOSED RIPRAP AND SELECTED CRUSH AT THE FACE OF PROPOSED ABUTMENTS, GRADE A GRADUAL FLAT AREA (SEE PLAN VIEW FOR APPROXIMATE AREA) SLOPING TOWARD THE RIVER TO A MINIMUM ELEVATION AS SHOWN IN THE SECTION VIEW. THE ENGINEER, THROUGH THE DNR, SHALL APPROVE THE IN SITU MATERIAL GRADED BETWEEN THE BARK RIVER AND THE RIPRAP. AN UNDISTRIBUTED QUANTITY OF LIGHT RIPRAP AND BACKFILL GRANULAR GRADE 1 IS SUPPLIED TO MITIGATE ANY POOR SOILS PRESENT. ADDITIONAL EXCAVATION REQUIRED SHALL BE PAID UNDER "EXCAVATION COMMON." SLOPE AT 1% TOWARD THE BARK RIVER.

LIGHT RIPRAP (16" DEPTH)

HEAVY RIPRAP (SEE BRIDGE PLANS)

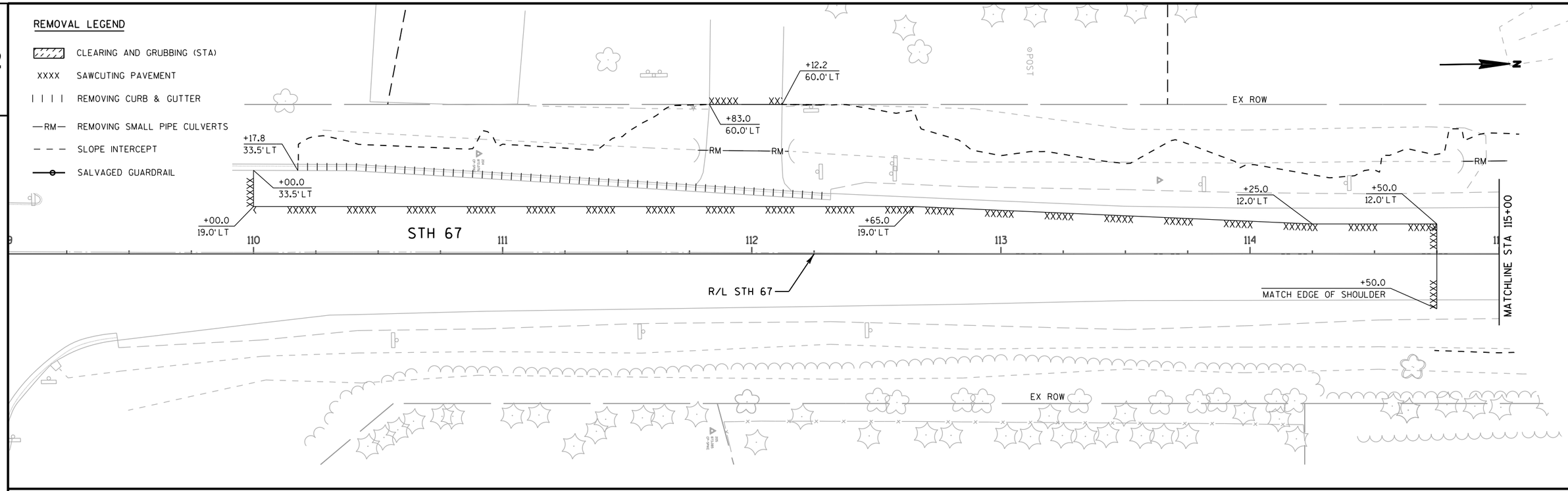
PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CONSTRUCTION DETAIL: EXISTING ABUTMENT GRADING	SHEET 14	E

FILE NAME : I:\66224\WO*10\t1\cds\021004_cd.dgn PLOT DATE : 2/9/2018 PLOT BY : grosemeyer PLOT NAME : $FILE$ PLOT SCALE : 26.9841:1

2

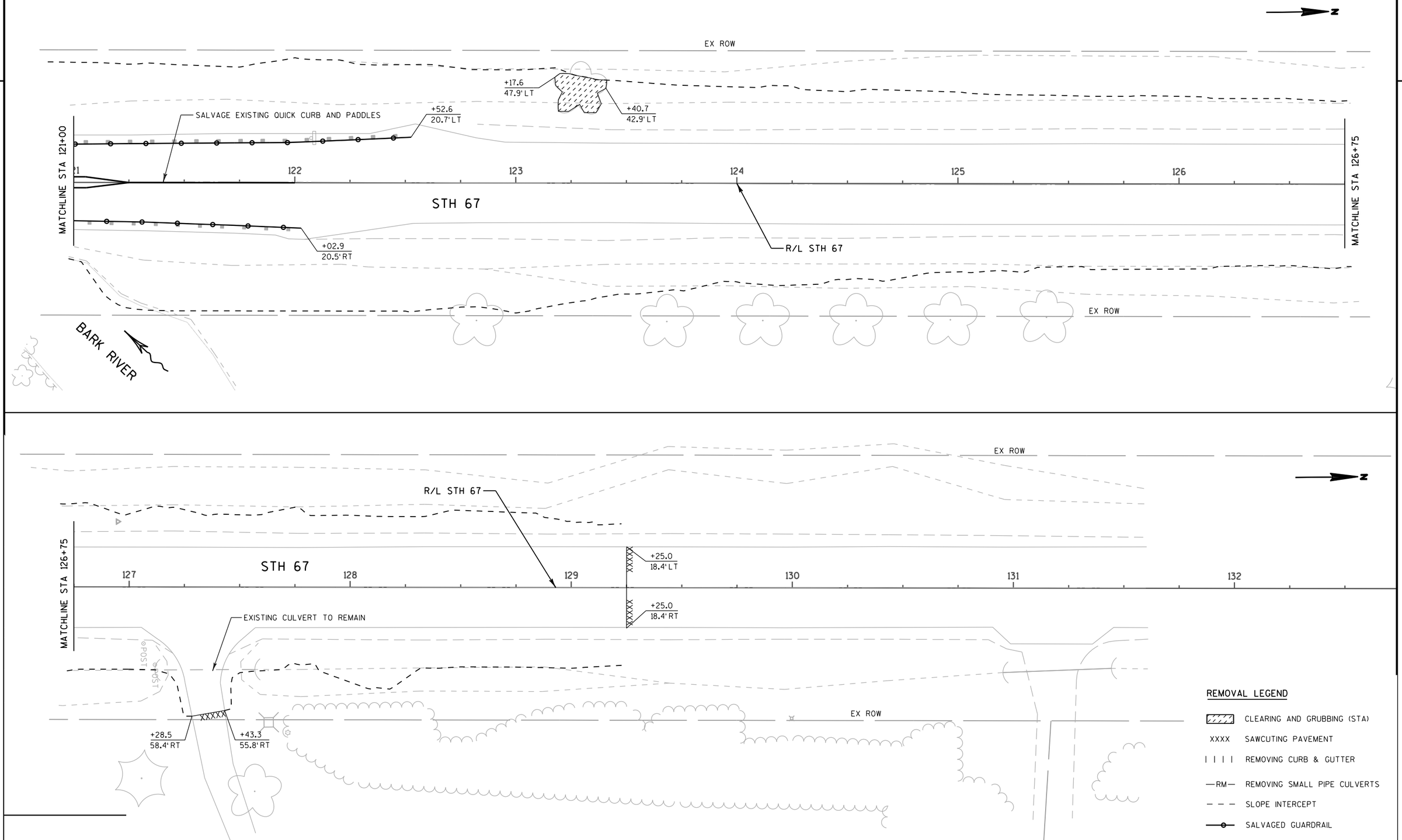
REMOVAL LEGEND

- CLEARING AND GRUBBING (STA)
- XXXX SAWCUTING PAVEMENT
- | | | | REMOVING CURB & GUTTER
- —RM— REMOVING SMALL PIPE CULVERTS
- – – – SLOPE INTERCEPT
- —o— SALVAGED GUARDRAIL



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	REMOVALS	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\021101_rm.dgn PLOT DATE : 2/7/2018 PLOT BY : grosemeyer PLOT NAME : PLOT SCALE : 40:1



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	REMOVALS	SHEET 16 E

2

N

MATCHLINE STA 10WL+75

EX ROW

11WL

12WL

13WL

14WL

15WL

+00.0
10.5' LT

RM

XXXXX

+82.1
32.9' RT

+99.7
32.4' RT

+00.0
12.6' RT

R/L WHITAKER LANE

WHITAKER LANE

POST

GRGE

REMOVAL LEGEND

- CLEARING AND GRUBBING (STA)
- XXXX SAWCUTING PAVEMENT
- | | | | REMOVING CURB & GUTTER
- —RM— REMOVING SMALL PIPE CULVERTS
- – – – SLOPE INTERCEPT
- —o— SALVAGED GUARDRAIL

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	REMOVALS	SHEET 17 E

2

BEGIN PROJECT
STA 110+00.00

SLOPE INTERCEPT, TYP

+00.0
-33.5'

+17.8
-33.5'

CG01

PV05

+83.0
-60.0'

+83.1
-48.4'

O1

29'

+12.2
-60.0'

+10.9
-48.2'

O2

CG01

+65.0
-31.0'

PV05

EXISTING R/W

+85.6
-22.0'

AG01

+40.8
-22.0'

AP01

+68.1
-33.5'

+26.0
-31.0'

15'

12'

+00.0
-19.00'

19'

SEE STH 67
PP SHEET

+65.0
-19.0

10'

+25.0
-12.0

+75.0
-12.0

110 111 112 113 114

REMOVE AND REPLACE AS NEED TO
INSTALL SIGNAL LOOP CONDUIT

STH 67

REMOVE AND REPLACE AS NEED
TO INSTALL SIGNAL LOOP CONDUIT

MATCHLINE STA 115+00

+75.0
22.0

3"

R/L STH 67

EXISTING R/W

LEGEND

- (AP01) HMA PAVEMENT TYPE 5 LT 58-28 S
- (AG01) BASE AGGREGATE DENSE 3/4-INCH
- (CG01) CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D
- (PV05) ASPHALTIC FLUME

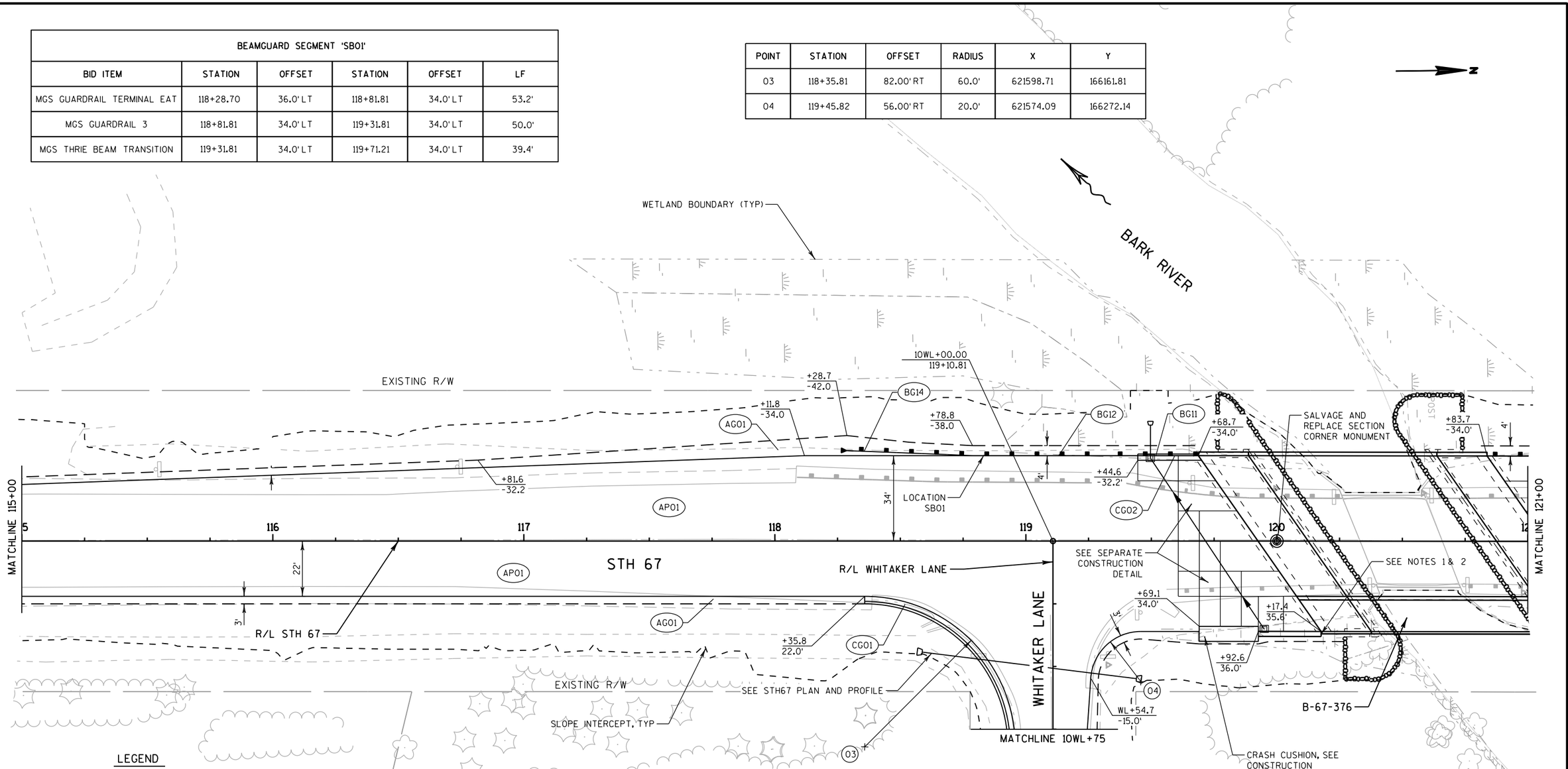
POINT	STATION	OFFSET	RADIUS	X	Y
01	111+68.09	46.50' LT	15.0'	621459.85	165495.79
02	112+25.96	46.00' LT	15.0'	621463.08	165553.62

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PLAN DETAILS	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO#10\t1\cds\021201_PD.dgn PLOT DATE : 2/12/2018 PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 40:1

BEAMGUARD SEGMENT 'SBO1'					
BID ITEM	STATION	OFFSET	STATION	OFFSET	LF
MGS GUARDRAIL TERMINAL EAT	118+28.70	36.0' LT	118+81.81	34.0' LT	53.2'
MGS GUARDRAIL 3	118+81.81	34.0' LT	119+31.81	34.0' LT	50.0'
MGS THRIE BEAM TRANSITION	119+31.81	34.0' LT	119+71.21	34.0' LT	39.4'

POINT	STATION	OFFSET	RADIUS	X	Y
03	118+35.81	82.00' RT	60.0'	621598.71	166161.81
04	119+45.82	56.00' RT	20.0'	621574.09	166272.14



LEGEND

- (AP01) HMA PAVEMENT TYPE 5 LT 58-28 S
- (AG01) BASE AGGREGATE DENSE 3/4-INCH
- (BG11) MGS THRIE BEAM TRANSITION
- (BG12) MGS GUARDRAIL 3
- (BG14) MGS TERMINAL EAT
- (CG01) CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D
- (CG02) CONCRETE CURB AND GUTTER TYPE TBTT 30-INCH

NOTES

1) PROVIDE 1/2" FILLER MATERIAL BETWEEN BRIDGE PARAPET AND ROADWAY BARRIER. COST INCIDENTAL TO THE ROADWAY BARRIER.

2) TRANSITION THE FACE OF THE ROADWAY BARRIER TO VERTICAL OVER 10-FEET TO MATCH THE BRIDGE PARAPET. TRANSITION COST INCIDENTAL TO ROADWAY BARRIER.

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PLAN DETAILS	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\021202_PD.dgn PLOT DATE : 2/7/2018 PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

2

LEGEND

- (AP01) HMA PAVEMENT TYPE 5 LT 58-28 S
- (AG01) BASE AGGREGATE DENSE 3/4-INCH
- (BG11) MGS THRIE BEAM TRANSITION
- (BG12) MGS GUARDRAIL 3
- (BG14) MGS TERMINAL EAT

BEAMGUARD SEGMENT 'SB02'					
BID ITEM	STATION FROM	OFFSET FROM	STATION TO	OFFSET TO	LF
MGS THRIE BEAM TRANSITION	120+81.22	34.0' LT	121+20.62	34.0' LT	39.4'
MGS GUARDRAIL 3	121+20.62	34.0' LT	122+58.02	30.6' LT	137.5'
MGS GUARDRAIL TERMINAL EAT	122+58.02	28.7' LT	123+11.18	28.7' LT	53.2'

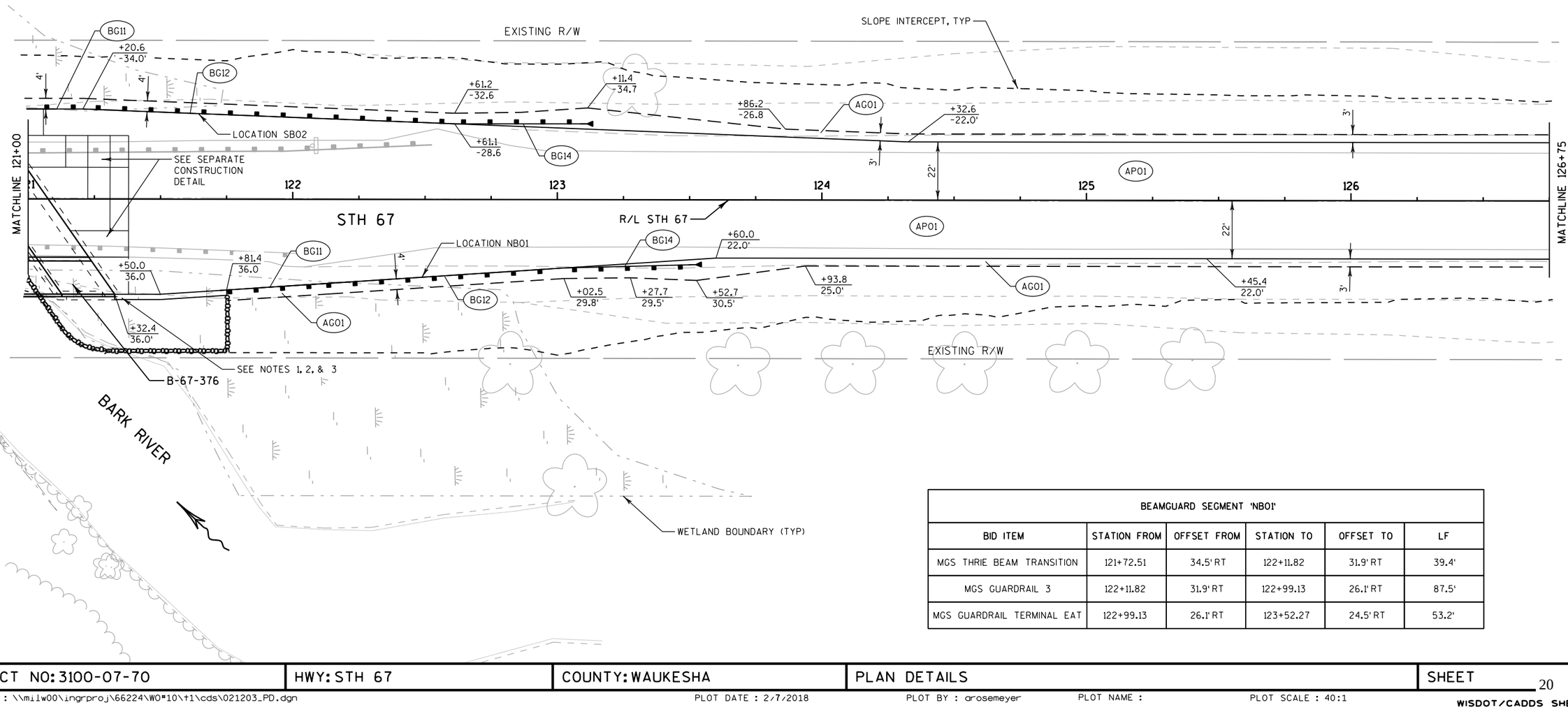
NOTES

1) OMIT THE FOOTING FOR THE SINGLE SLOPE BARRIER OVER THE PROPOSED BRIDGE WINGWALL NO.4.

2) PROVIDE 1/2" FILLER MATERIAL BETWEEN BRIDGE PARAPET AND ROADWAY BARRIER. COST INCIDENTAL TO THE ROADWAY BARRIER.

3) TRANSITION THE FACE OF THE ROADWAY BARRIER TO VERTICAL OVER 10-FEET TO MATCH THE BRIDGE PARAPET. TRANSITION COST INCIDENTAL TO ROADWAY BARRIER.

N



BEAMGUARD SEGMENT 'NB01'					
BID ITEM	STATION FROM	OFFSET FROM	STATION TO	OFFSET TO	LF
MGS THRIE BEAM TRANSITION	121+72.51	34.5' RT	122+11.82	31.9' RT	39.4'
MGS GUARDRAIL 3	122+11.82	31.9' RT	122+99.13	26.1' RT	87.5'
MGS GUARDRAIL TERMINAL EAT	122+99.13	26.1' RT	123+52.27	24.5' RT	53.2'

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PLAN DETAILS	SHEET 20	E

2

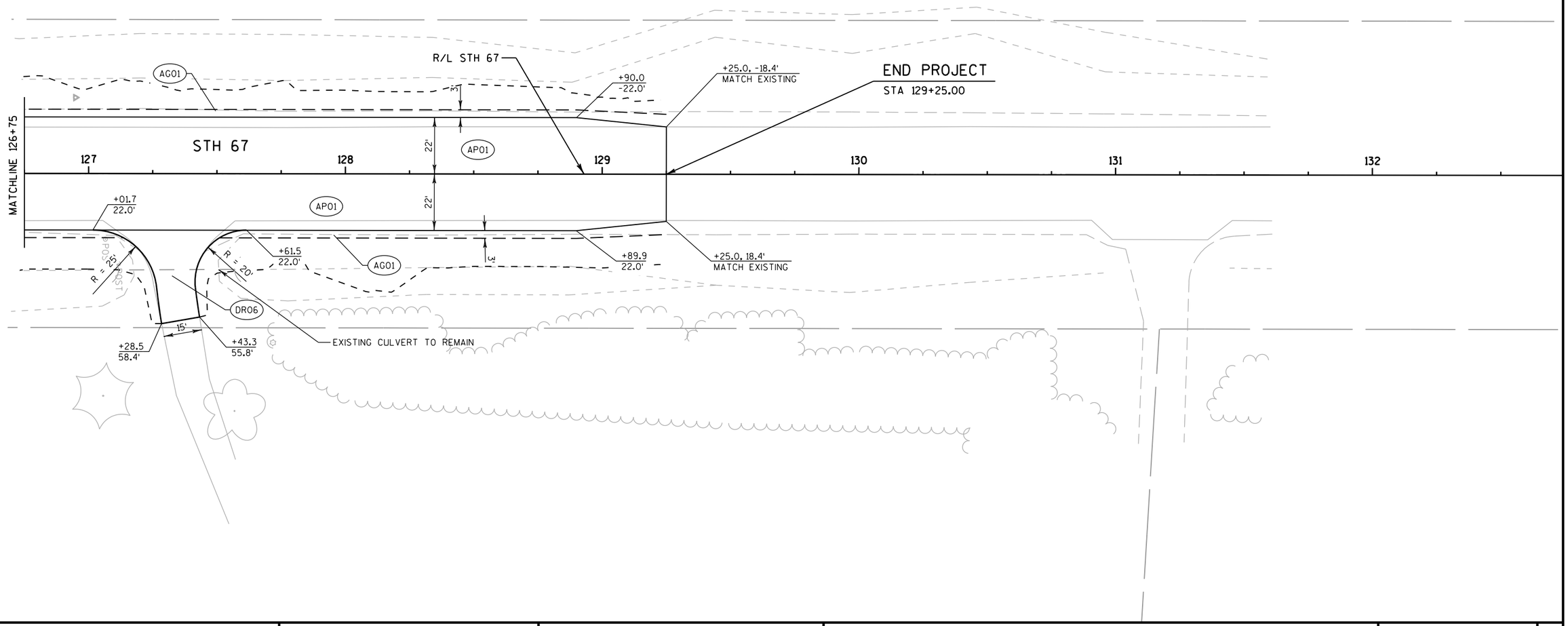
LEGEND

(AP01) HMA PAVEMENT TYPE 5 LT 58-28 S

(AG01) BASE AGGREGATE DENSE 3/4-INCH

(DR06) ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES, 3-INCH

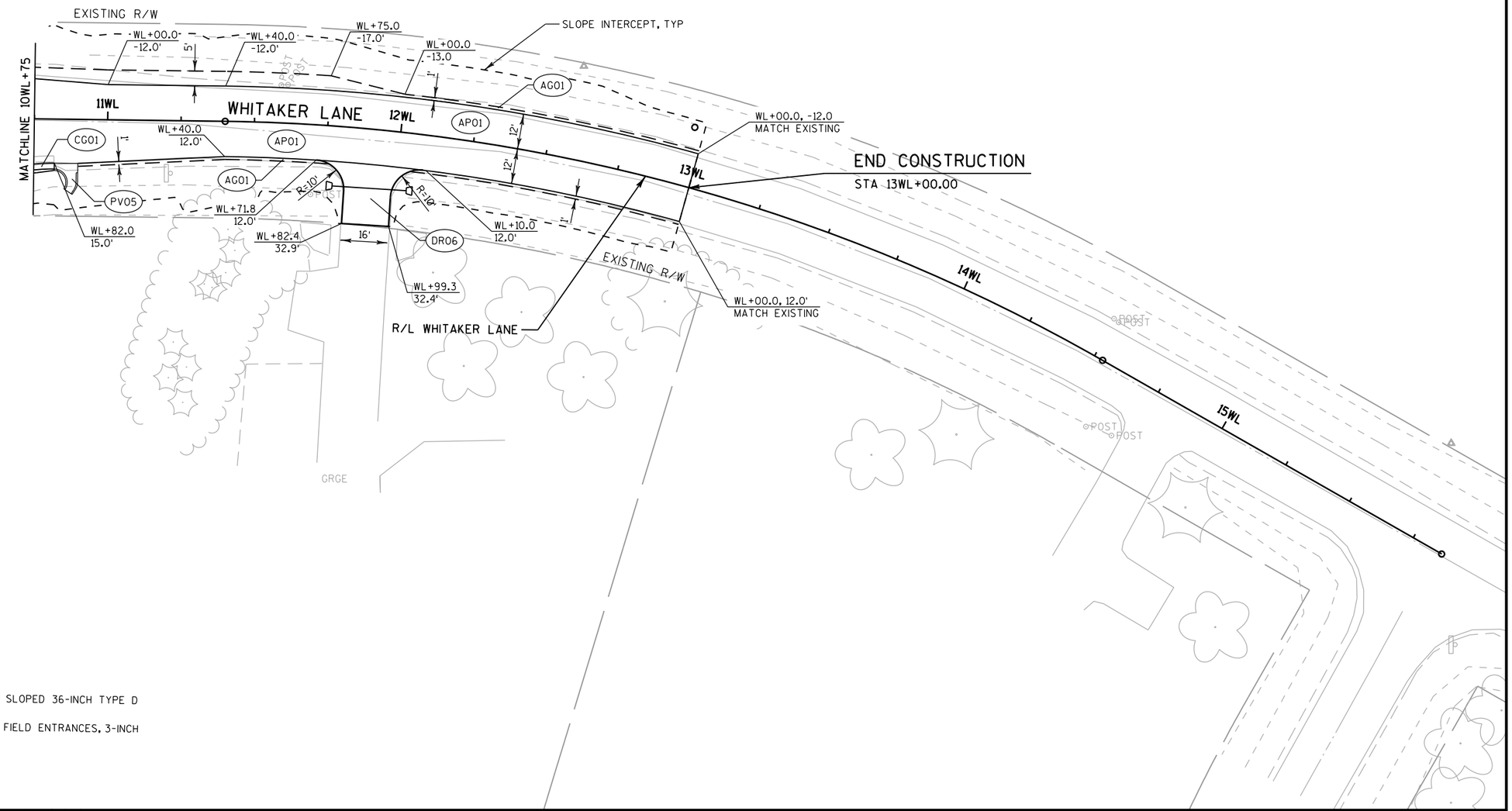
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PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PLAN DETAILS	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\021204_PD.dgn PLOT DATE : 2/7/2018 PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 40:1

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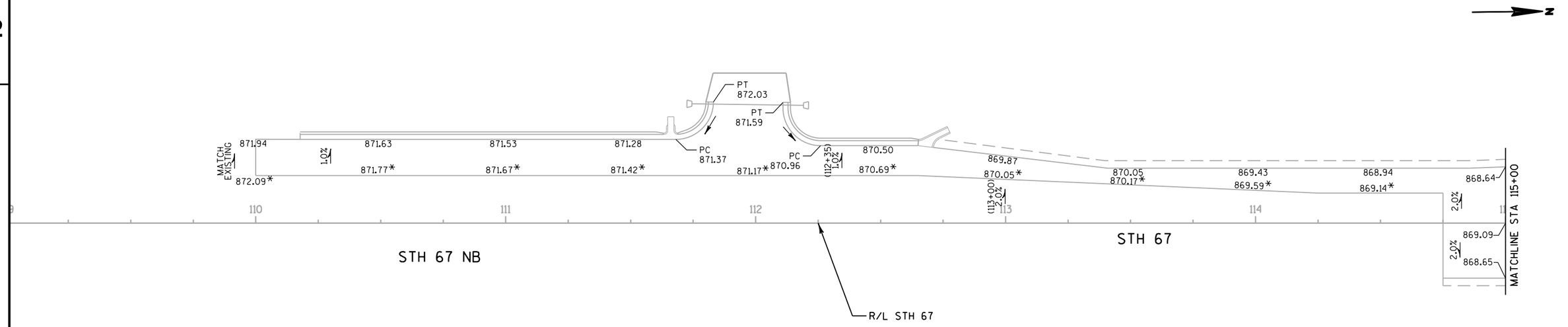


LEGEND

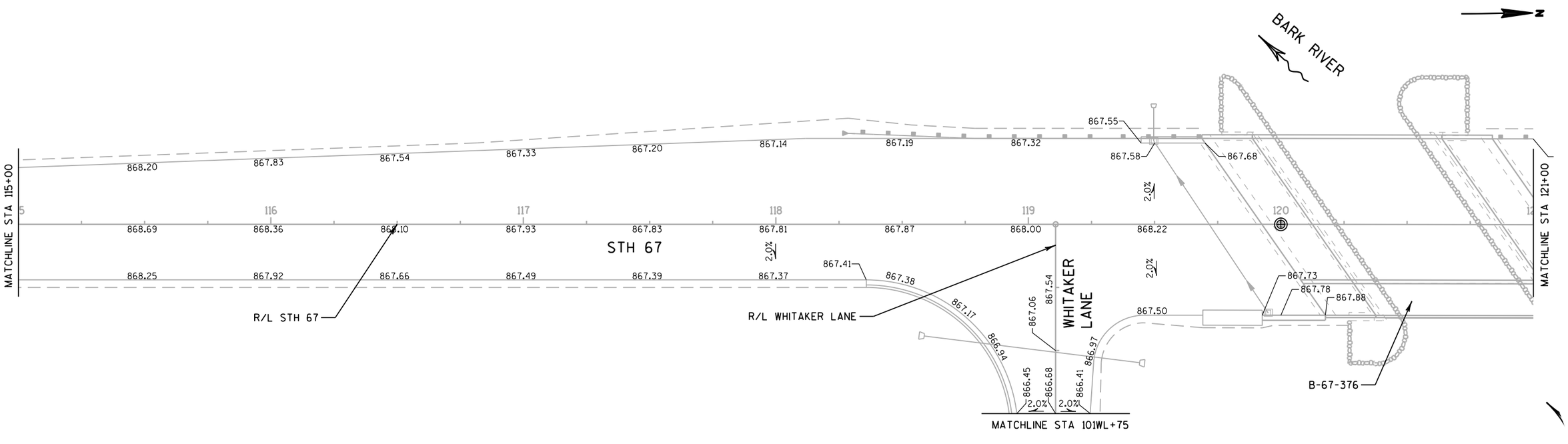
- (APO1) HMA PAVEMENT TYPE 5 LT 58-28 S
- (AGO1) BASE AGGREGATE DENSE 3/4-INCH
- (BG11) MGS THRIE BEAM TRANSITION
- (BG12) MGS GUARDRAIL 3
- (BG14) MGS TERMINAL EAT
- (CGO1) CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D
- (DRO6) ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES, 3-INCH
- (PVO5) ASPHALTIC FLUME

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PLAN DETAILS	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\021205_PD.dgn PLOT DATE : 2/7/2018 PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 40:1

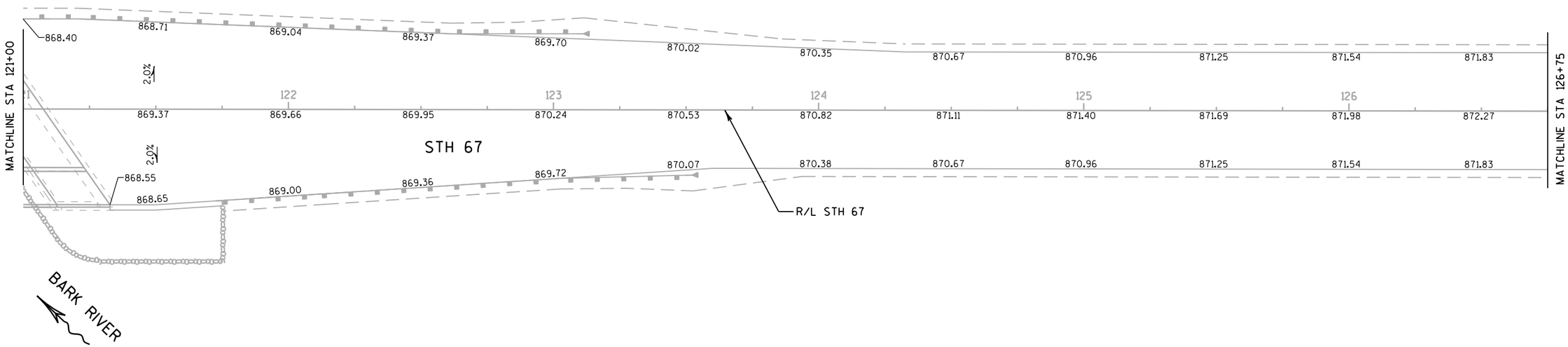


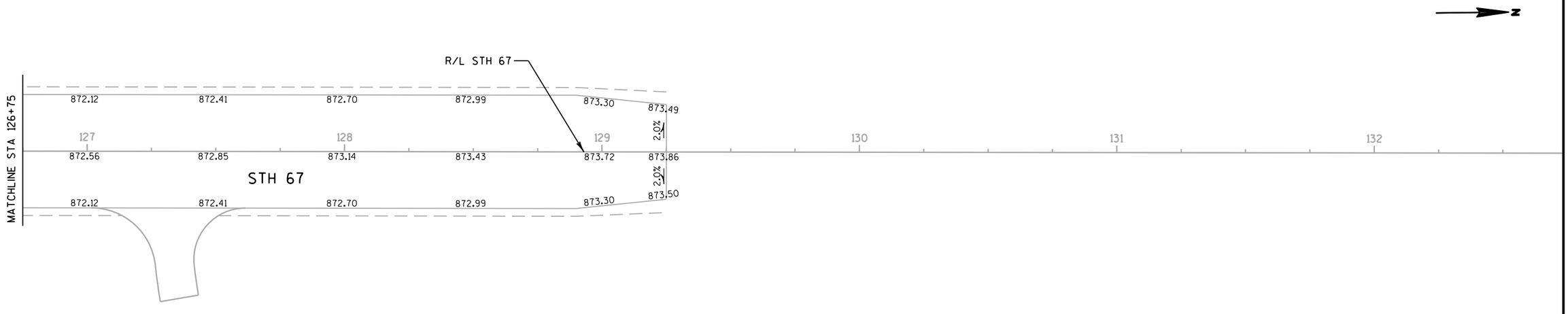
* APPROXIMATE ELEVATIONS. MATCH EXISTING. CONTRACTOR TO VERIFY ELEVATIONS PRIOR TO PAVING CURB&GUTTER. ADJUSTMENTS SHALL BE MADE TO THE CURB&GUTTER FLANGE ELEVATIONS AS NEEDED TO MAINTAIN CONSISTENT CROSS SLOPE MATCHING EXISTING.



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PAVING GRADES	SHEET 23	E

2



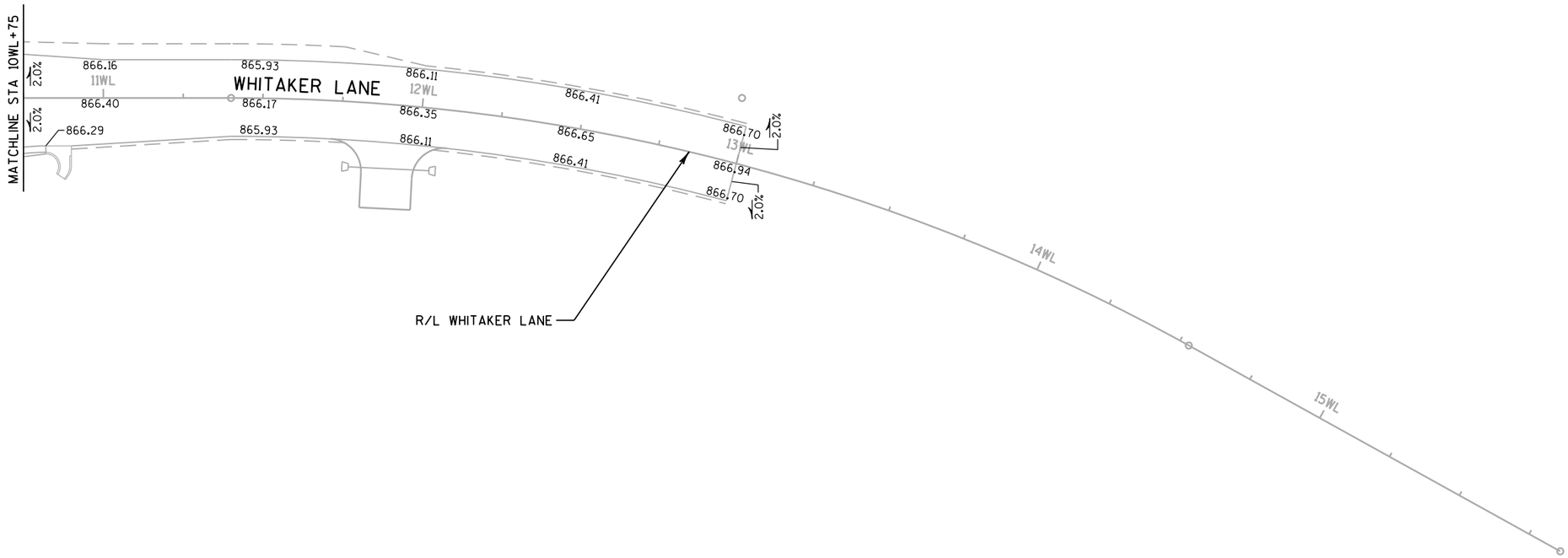


PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PAVING GRADES	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\021252_pg.dgn PLOT DATE : 2/7/2018 PLOT BY : grosemeyer PLOT NAME : PLOT SCALE : 40:1
WISDOT/CADDS SHEET 42

2

N



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PAVING GRADES	SHEET 25	E

FILE NAME : \\milw00\ingrproj\66224\WO#10\t1\cds\021253_pg.dgn PLOT DATE : 2/7/2018 PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 40:1

2

2

N

BEGIN PROJECT
STA 110+00.00

SLOPE INTERCEPT, TYP

EXISTING R/W

STH 67 SB

MATCHLINE STA 115+00

110 111 112 113 114

STH 67 NB

R/L STH 67

EXISTING R/W

EROSION CONTROL LEGEND

- EROSION MAT CLASS I TYPE A URBAN
- EROSION MAT CLASS II TYPE C
- SILT FENCE
- HEAVY DUTY SILT FENCE
- SURFACE WATER FLOW
- SLOPE INTERCEPT
- A — INLET PROTECTION TYPE A
- D — INLET PROTECTION TYPE D
- TEMPORARY DITCH CHECK
- ROCK BAGS
- MEDIUM RIP RAP

NOTES

1. ALL EXPOSED SOIL OR GRAVEL AREAS WILL BE PREMANENTLY RESTORED WITHIN 7 CALENDAR DAYS OR TEMPORARLY SEEDED AND MULCHED WTIHIN 24-HOURS OF DISTURBANCE

2. FINAL RESTORATION MUST BE COMPLETED PRIOR TO ROADWAY/BRIDGE WATER BEING DISCHARGED ONTO IT.

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	EROSION CONTROL	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO#10\t1\cds\022001_ec.dgn PLOT DATE : 2/7/2018 PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 40:1

2

N

WETLAND BOUNDARY (TYP)

BARK RIVER

SEE SEPARATE CONSTRUCTION DETAIL

+50.0
55.5'LT

+80.0
58.9'LT

EXISTING R/W

RIPRAP - SEE BRIDGE PLANS

A

D

MATCH EROSION CONTROL METHODS USED FOR BRIDGE CONSTRUCTION. TYPICAL ALL CORNERS OF B-67-0010

STH 67 SB

MATCHLINE 115+00

MATCHLINE 120+50

115

116

117

118

119

120

STH 67 NB

R/L STH 67

R/L WHITAKER LANE

WHITAKER LANE

EXISTING R/W

SLOPE INTERCEPT, TYP

MATCHLINE 10WL+75

HOLD 5-FEET FOR PEDESTRIAN ACCESS TO BARK RIVER

RIPRAP - SEE BRIDGE PLANS

TEMPORARY PRECAST CONCRETE BARRIER TO DEFLECT FLOW FROM TURBIDITY BARRIER

EROSION CONTROL LEGEND

- EROSION MAT CLASS I TYPE A URBAN
- EROSION MAT CLASS II TYPE C
- SILT FENCE
- HEAVY DUTY SILT FENCE
- SURFACE WATER FLOW
- SLOPE INTERCEPT
- TEMPORARY STONE OR ROCK DITCH CHECK
- INLET PROTECTION TYPE A
- INLET PROTECTION TYPE D
- TEMPORARY DITCH CHECK
- ROCK BAGS
- MEDIUM RIP RAP
- TURBIDITY BARRIER

NOTES

1. ALL EXPOSED SOIL OR GRAVEL AREAS WILL BE PERMANENTLY RESTORED WITHIN 7 CALENDAR DAYS OR TEMPORARILY SEEDED AND MULCHED WITHIN 24-HOURS OF DISTURBANCE

2. FINAL RESTORATION MUST BE COMPLETED PRIOR TO ROADWAY/BRIDGE WATER BEING DISCHARGED ONTO IT.

3. PLACE HEAVY DUTY SILT FENCE ADJACENT TO EXISTING WETLANDS ALONG THE SLOPE INTERCEPTS AS INDICATED WITH THE THICKER LINE WEIGHT.

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 27	E

EROSION CONTROL LEGEND

- EROSION MAT CLASS I TYPE A URBAN
- EROSION MAT CLASS II TYPE C
- SILT FENCE
- HEAVY DUTY SILT FENCE
- SURFACE WATER FLOW
- SLOPE INTERCEPT
- TEMPORARY STONE OR ROCK DITCH CHECK
- (A) INLET PROTECTION TYPE A
- (D) INLET PROTECTION TYPE D
- TEMPORARY DITCH CHECK
- ROCK BAGS
- MEDIUM RIP RAP
- TURBIDITY BARRIER

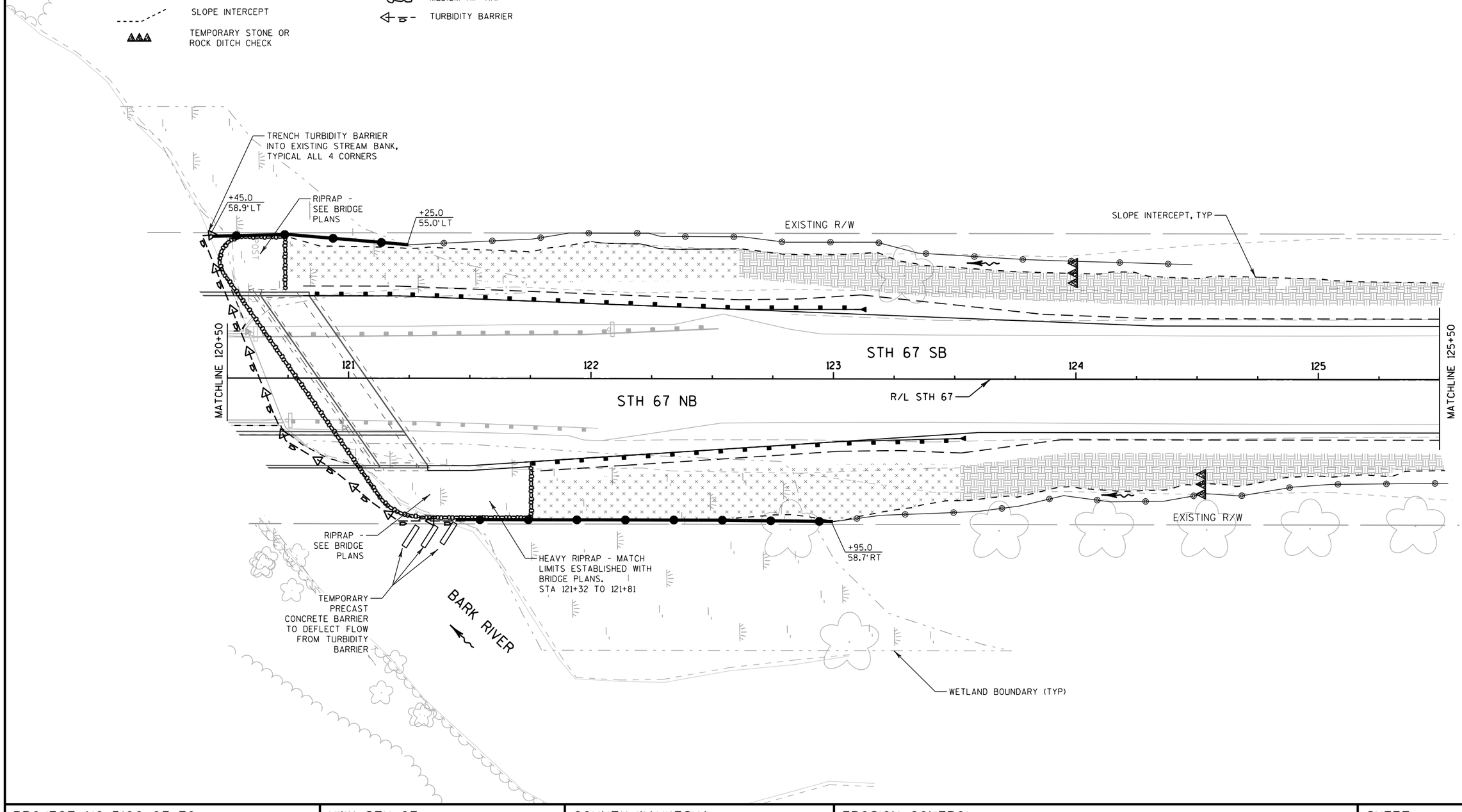
NOTES

1. ALL EXPOSED SOIL OR GRAVEL AREAS WILL BE PERMANENTLY RESTORED WITHIN 7 CALENDAR DAYS OR TEMPORARILY SEEDED AND MULCHED WITHIN 24-HOURS OF DISTURBANCE

2. FINAL RESTORATION MUST BE COMPLETED PRIOR TO ROADWAY/BRIDGE WATER BEING DISCHARGED ONTO IT.

3. PLACE HEAVY DUTY SILT FENCE ADJACENT TO EXISTING WETLANDS ALONG THE SLOPE INTERCEPTS AS INDICATED WITH THE THICKER LINE WEIGHT.

N



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	EROSION CONTROL	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO#10\t1\cds\022003_ec.dgn PLOT DATE : 2/7/2018 PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 40:1

EROSION CONTROL LEGEND

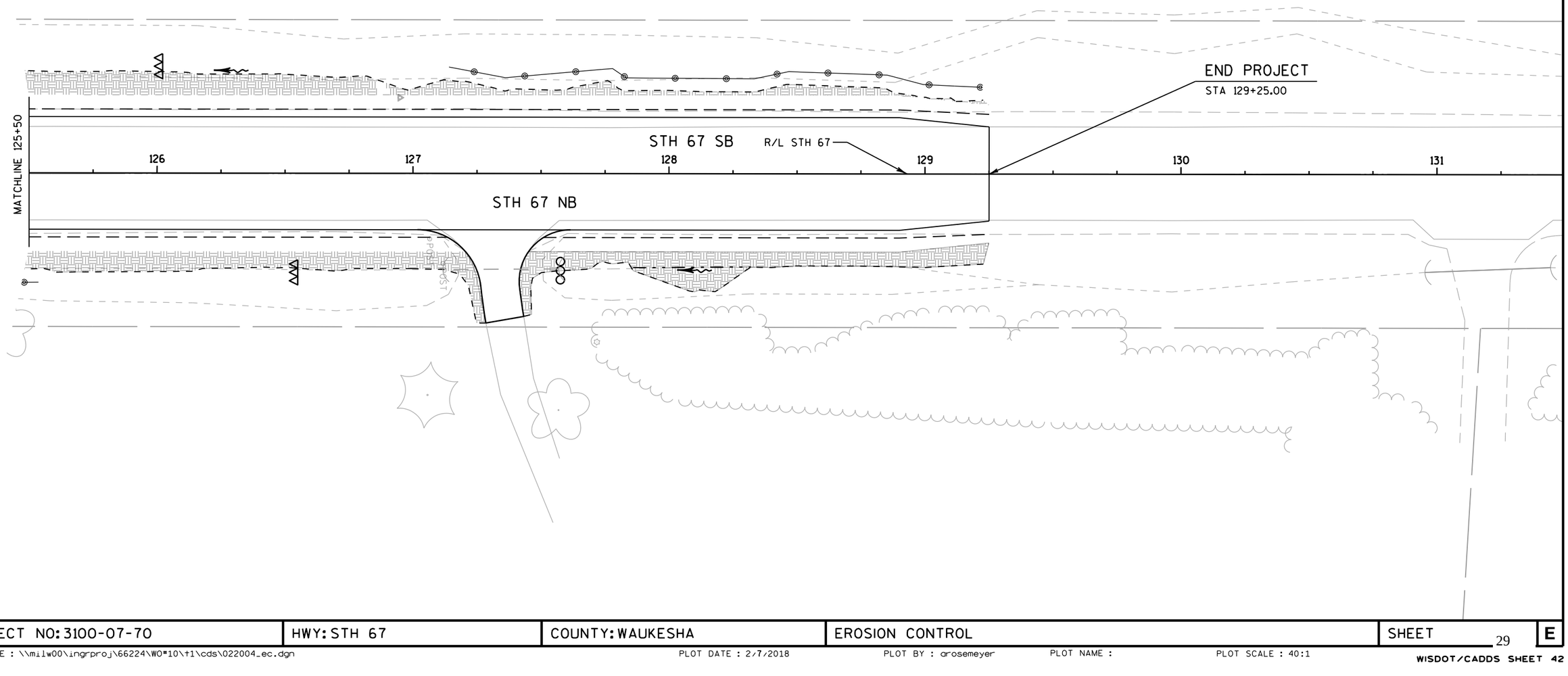
- EROSION MAT CLASS I TYPE A URBAN
- EROSION MAT CLASS II TYPE C
- SILT FENCE
- HEAVY DUTY SILT FENCE
- SURFACE WATER FLOW
- SLOPE INTERCEPT
- (A) INLET PROTECTION TYPE A
- (D) INLET PROTECTION TYPE D
- TEMPORARY DITCH CHECK
- ROCK BAGS
- MEDIUM RIP RAP

NOTES

1. ALL EXPOSED SOIL OR GRAVEL AREAS WILL BE PREMANENTLY RESTORED WITHIN 7 CALENDAR DAYS OR TEMPORARLY SEEDED AND MULCHED WTIHIN 24-HOURS OF DISTURBANCE

2. FINAL RESTORATION MUST BE COMPLETED PRIOR TO ROADWAY/BRIDGE WATER BEING DISCHARGED ONTO IT.

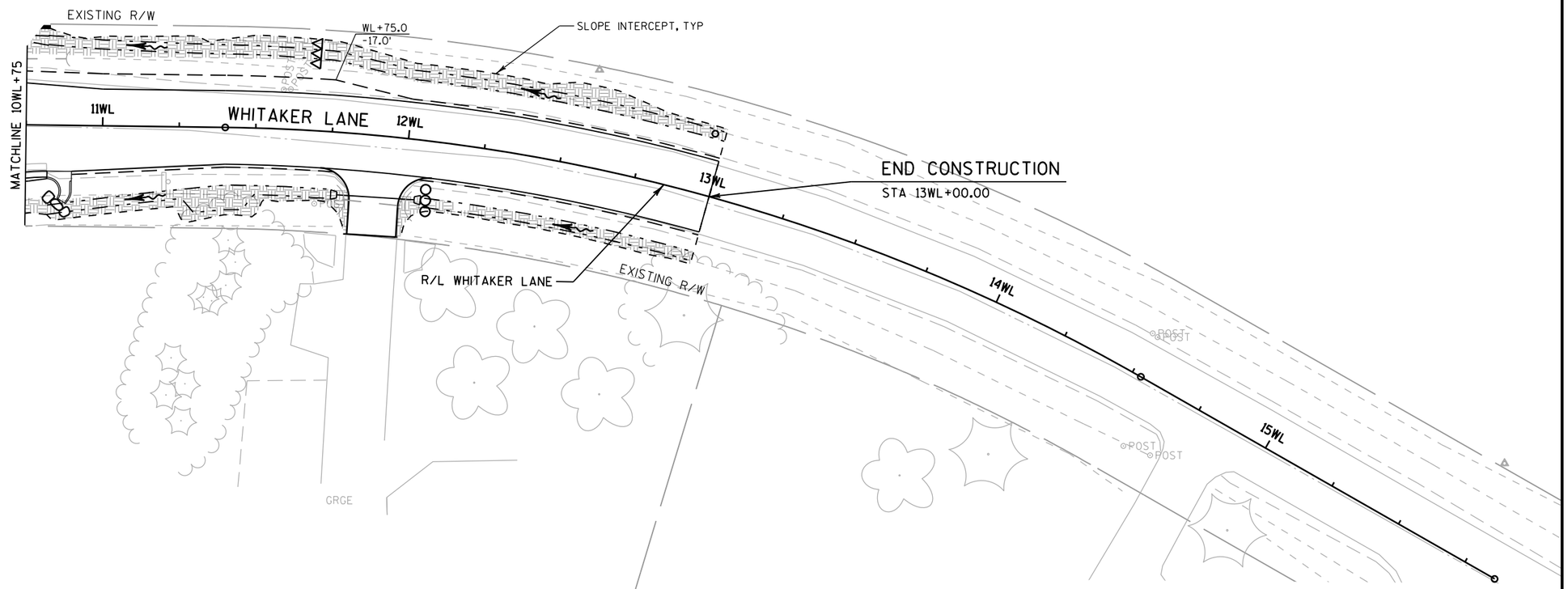
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PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	EROSION CONTROL	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO#10\t1\cds\022004_ec.dgn PLOT DATE : 2/7/2018 PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 40:1

2



EROSION CONTROL LEGEND

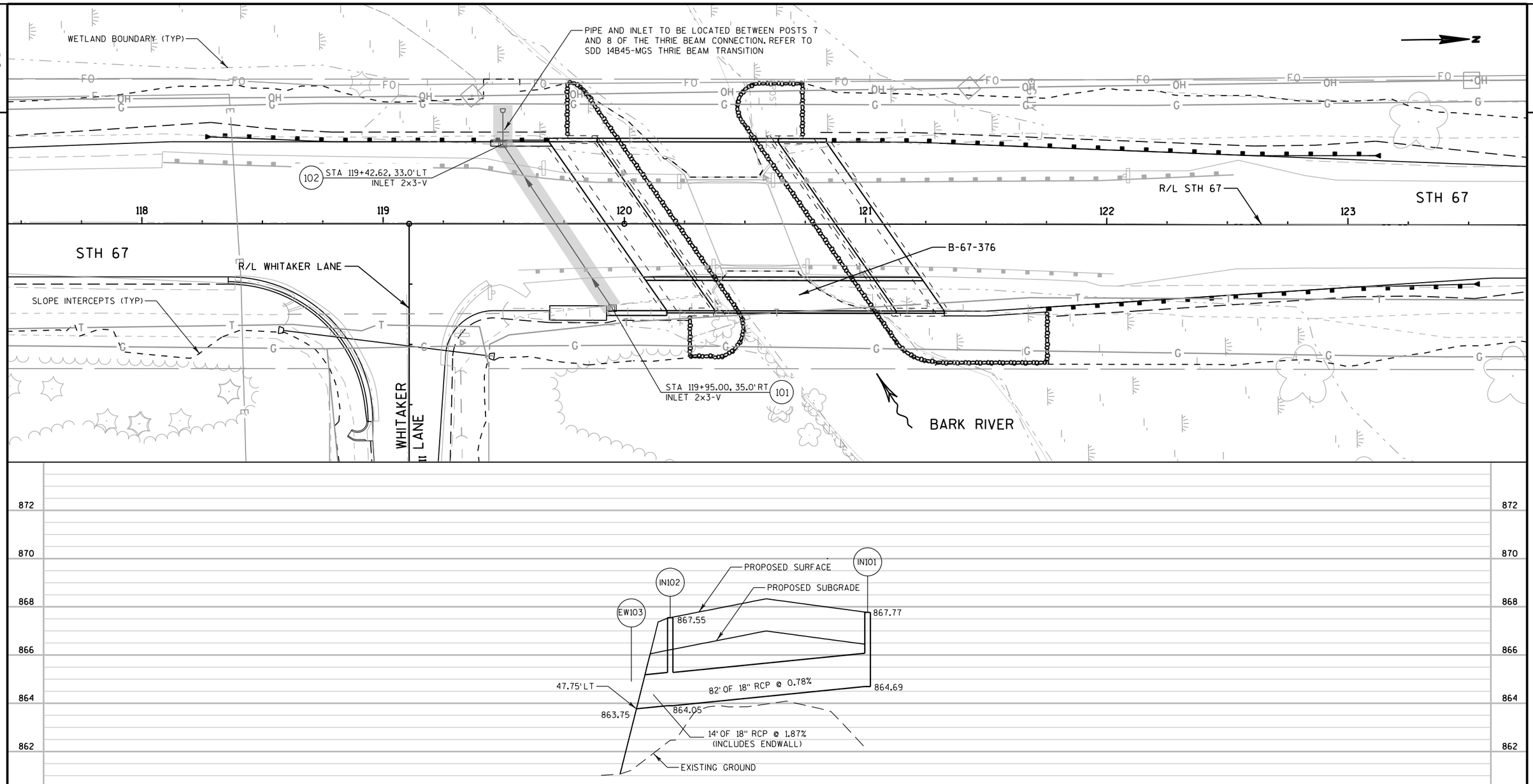
- EROSION MAT CLASS I TYPE A URBAN
- EROSION MAT CLASS II TYPE C
- SILT FENCE
- HEAVY DUTY SILT FENCE
- SURFACE WATER FLOW
- SLOPE INTERCEPT
- INLET PROTECTION TYPE A
- INLET PROTECTION TYPE D
- TEMPORARY DITCH CHECK
- ROCK BAGS
- MEDIUM RIP RAP

NOTES

1. ALL EXPOSED SOIL OR GRAVEL AREAS WILL BE PREMANENTLY RESTORED WITHIN 7 CALENDAR DAYS OR TEMPORARLY SEEDED AND MULCHED WTIHIN 24-HOURS OF DISTURBANCE

2. FINAL RESTORATION MUST BE COMPLETED PRIOR TO ROADWAY/BRIDGE WATER BEING DISCHARGED ONTO IT.

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	EROSION CONTROL	SHEET 30	E



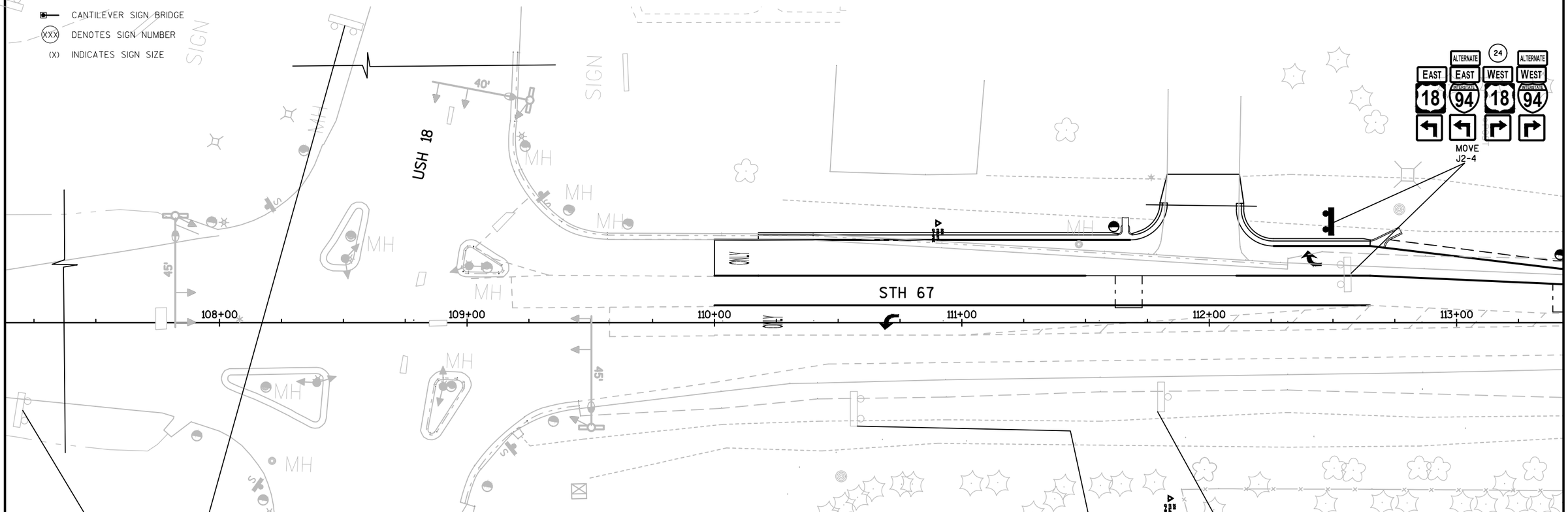
PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	STORM SEWER	SHEET 31	E

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE

NOTE: REMOVAL OF WEIGHT LIMIT SIGNS TO BE DONE FOLLOWING CONSTRUCTION OF BRIDGE

N



TYPE II ALUMINUM SIGNS REMOVED UNDER THE CONTRACT SHALL BE DELIVERED TO THE COUNTY SIGN SHOP. CONTACT THE FOLLOWING INDIVIDUAL AT THE SIGN SHOP FOR DISTRIBUTION COUNTY LOCATION.

SIGNING COORDINATOR	COUNTY(S)	PHONE*
• DENNIS NEWTON	MILWAUKEE	414-750-0257
• ANDRE CHAPMAN	RACINE	414-531-2635
• JENNY BUCKETT	KENOSHA, WASHINGTON, OZAUKEE	414-750-2427
• CHUCK SALDIVAR	WALWORTH, WAUKESHA	414-750-1682

SIGNS SHALL BE CAREFULLY REMOVED FROM SIGN SUPPORTS. THE SIGNS SHALL BE PALLETIZED FOR HANDLING WITH A FORKLIFT (SEE STANDARD SPEC 638.3.4). THE REGIONAL SIGN SHOP (414-266-1165) SHALL BE NOTIFIED THREE WORKING DAYS PRIOR TO DELIVERY OF THE SIGNS.

WHEN AN EXISTING STOP SIGN SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERECTED, THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD BE DONE AS CONCURRENTLY AS POSSIBLE. IN NO CASE SHALL A NEW SIGN/SUPPORT BE DOWN FOR MORE THAN 24 HOURS AND THERE SHALL NOT BE MORE THAN ONE SIGN OF THE SAME LEGEND MISSING IN A ROW.

WOOD POST SIZES, FOR TYPE II SIGNS ARE ESTIMATED LENGTHS AND THE ACTUAL LENGTH WILL BE DETERMINED IN THE FIELD.

STREET NAME SIGNS ARE PROPERTY OF THE MUNICIPALITY (CITY, VILLAGE OR TOWN). THE MUNICIPALITY SHALL BE CONTACTED TO REMOVE THEIR STREET NAME SIGNS PRIOR TO CONSTRUCTION AND IT IS THEIR RESPONSIBILITY TO REINSTALL THE OLD SIGNS OR REPLACE THEM FOLLOWING CONSTRUCTION. WISDOT DOES NOT FURNISH OR INSTALL STREET NAME SIGNS. THE STREET NAME SIGNS SHALL NOT BE PLACED ON TOP OF THE STOP SIGNS.

LOCATE NO PASSING PENNANTS BASED ON ESTABLISHING NO PASSING ZONES PAY ITEM. PLACE SIGNS BASED ON WHERE THE PAVEMENT MARKING FOR NO PASSING ZONES BEGIN.

SHEET 1 OF 7

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 32	E

2

LEGEND

EXISTING SIGN MOUNTED ON POST(S)

EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

PROPOSED SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

VMS VARIABLE MESSAGE SIGN

EXISTING LIGHT OR SIGNAL POLE

SIGN BRIDGE

CANTILEVER SIGN BRIDGE

XXX DENOTES SIGN NUMBER

(X) INDICATES SIGN SIZE

N

NO PASSING ZONE
W14-3
ESTR

ONLY ONLY ONLY
R3-8W
ESTR

Dousman
Waukesha
Sullivan
D1-3
ESTR

W3-3
ESTR

JCT 18
7 J1-1
MOVE

REMOVE
8 W5-52L (2S)
4' HEIGHT

114+00 115+00 116+00 117+00 STH 67 118+00 119+00

2 NARROW BRIDGE
REMOVE
DO NOT PASS
REMOVE
PART OF #2

3 WEIGHT LIMIT 20 TONS
REMOVE

4 REMOVE
40 M.P.H.
REMOVE

WHITAKER LN

5 SPEED LIMIT 25
R2-1
MOVE

6 STOP
R1-1
MOVE

SHEET 2 OF 7

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 33	E

FILE NAME : N:\PDS\C3D\CAD\31000700\SIGN\023201_PS.DWG
LAYOUT NAME - 023202_PS

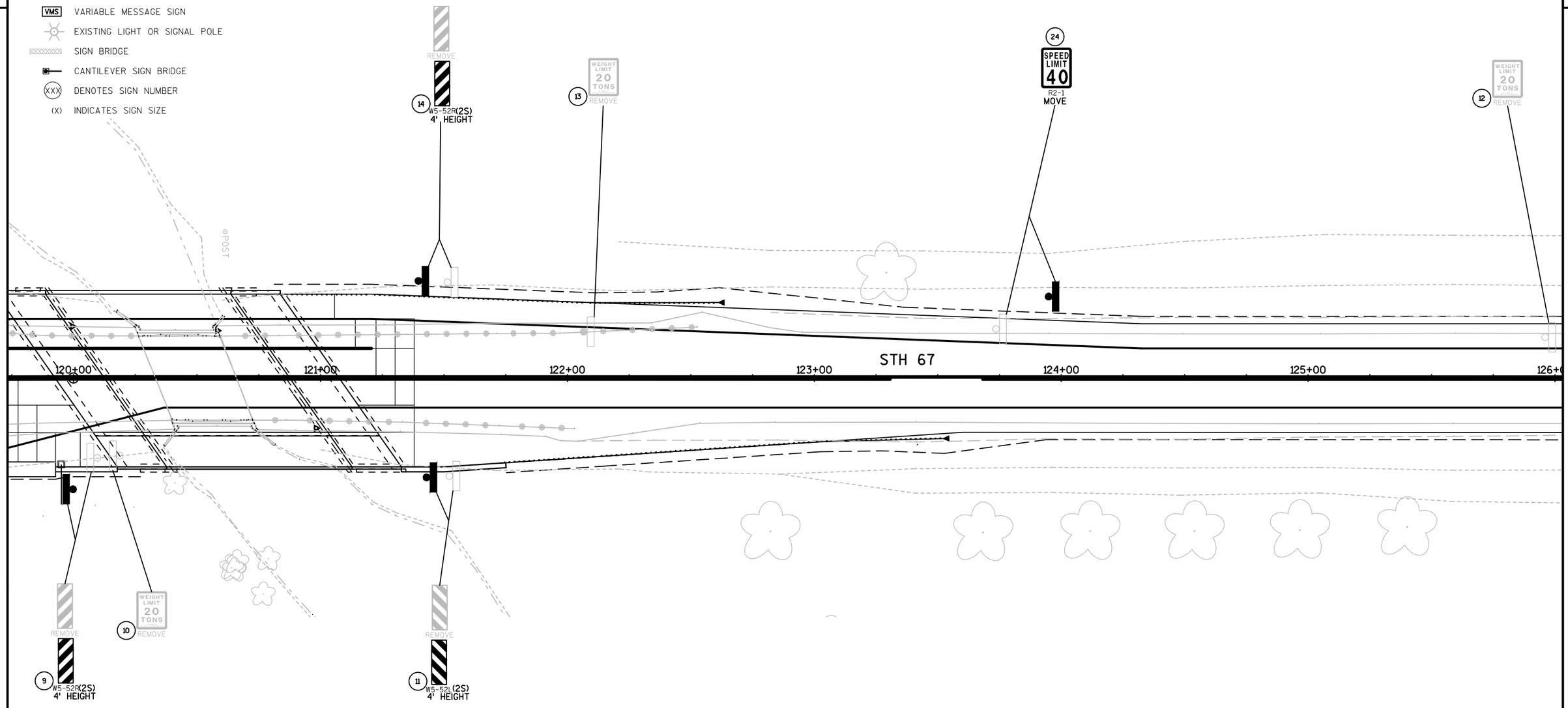
PLOT DATE : 11/21/2017 2:27 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- (XXX) — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE

N



SHEET 3 OF 7

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 34	E

FILE NAME : N:\PDS\C3D\CAD\31000700\SIGN\023201_PS.DWG
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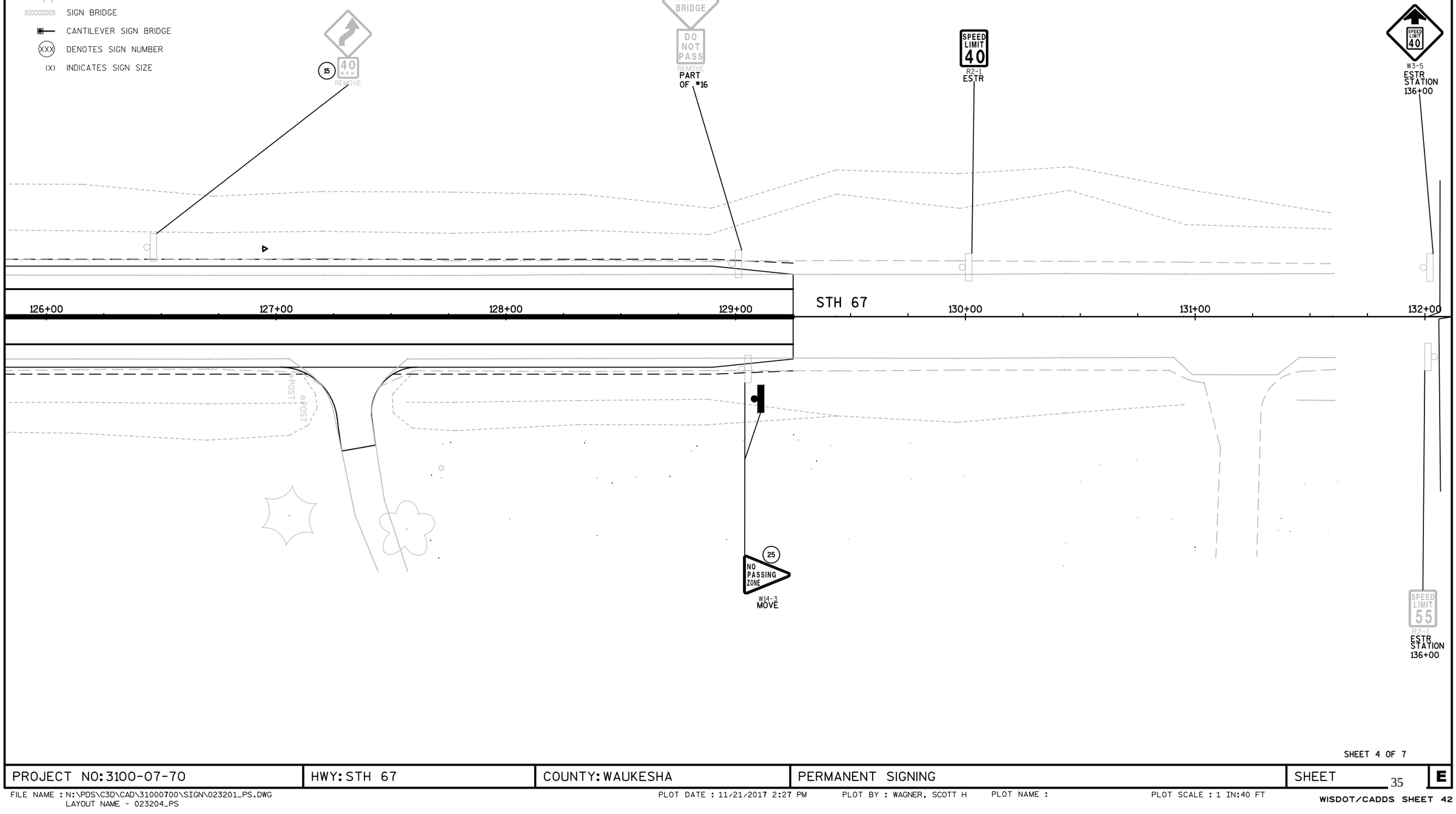
WISDOT/CADDS SHEET 42

2

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- VMS — VARIABLE MESSAGE SIGN
- EXISTING LIGHT OR SIGNAL POLE
- SIGN BRIDGE
- CANTILEVER SIGN BRIDGE
- XXX — DENOTES SIGN NUMBER
- (X) — INDICATES SIGN SIZE

N



SHEET 4 OF 7

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 35	E

2

2

LEGEND

EXISTING SIGN MOUNTED ON POST(S)

EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

PROPOSED SIGN MOUNTED ON POST(S)

PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE

(XXX) DENOTES SIGN NUMBER

(XX) INDICATES SIGN SIZE

[XX] INDICATES YEAR OF SIGN

CANTILEVER SIGN BRIDGE

N

STH 67

IH-94

27
21 TON BRIDGE
ON 67 SOUTH
FOLLOW DETOUR
REMOVE

18
20 TON BRIDGE
ON 67
3 MILES SOUTH
USE ALTERNATE ROUTES
REMOVE

HOSPITAL
EXIT 282

740'

250'

Park & Ride
EXIT 282
ESTR

17
20 TON BRIDGE
ON 67
3 MILES SOUTH
USE ALTERNATE ROUTES
REMOVE

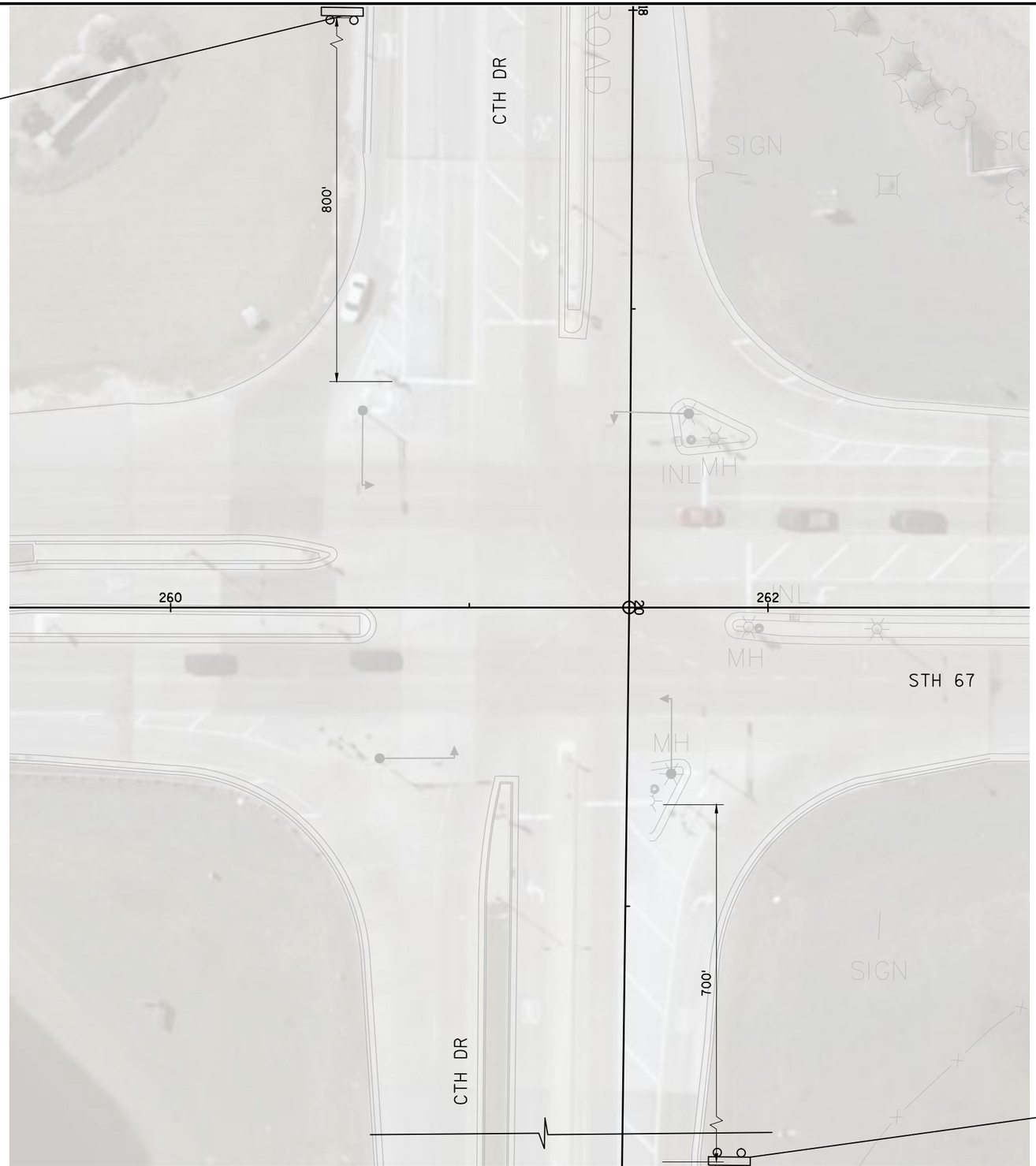
SHEET 5 OF 7

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 36	E

FILE NAME : N:\PDS\C3D\CAD\31000700\SIGN\023205_PS.DWG
LAYOUT NAME - 023205_PS

PLOT DATE : 11/21/2017 2:27 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:1000 FT

WISDOT/CADDS SHEET 42



N

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (XX) INDICATES SIGN SIZE
- [XX] INDICATES YEAR OF SIGN
- CANTILEVER SIGN BRIDGE

SHEET 6 OF 7

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 37 E

FILE NAME : N:\PDS\C3D\CAD\31000700\SIGN\023206_PS.DWG
LAYOUT NAME - 023206_PS

PLOT DATE : 11/21/2017 2:28 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

2

N

STH 83

28

21 TON BRIDGE
ON 67 SOUTH
FOLLOW DETOUR

REMOVE

IH 94

STH 83

LEGEND

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- (XXX) DENOTES SIGN NUMBER
- (XX) INDICATES SIGN SIZE
- [XX] INDICATES YEAR OF SIGN
- CANTILEVER SIGN BRIDGE

SHEET 7 OF 7

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PERMANENT SIGNING	SHEET 38	E

FILE NAME : N:\PDS\C3D\CAD\31000700\SIGN\023207_PS.DWG
LAYOUT NAME - 023207_PS

PLOT DATE : 11/21/2017 2:30 PM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:1000 FT

WISDOT/CADDS SHEET 42

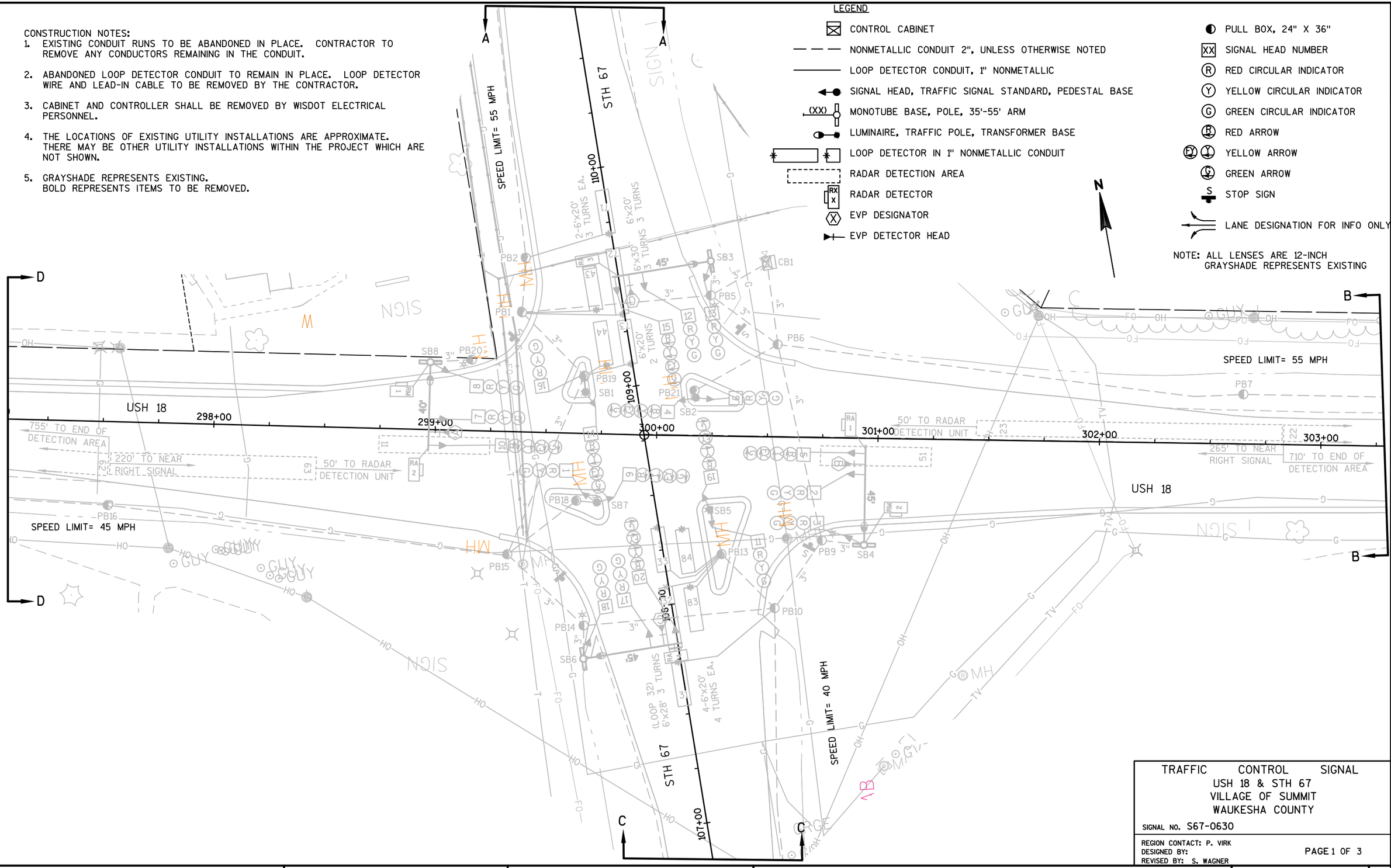
CONSTRUCTION NOTES:
1. EXISTING CONDUIT RUNS TO BE ABANDONED IN PLACE. CONTRACTOR TO REMOVE ANY CONDUCTORS REMAINING IN THE CONDUIT.
2. ABANDONED LOOP DETECTOR CONDUIT TO REMAIN IN PLACE. LOOP DETECTOR WIRE AND LEAD-IN CABLE TO BE REMOVED BY THE CONTRACTOR.
3. CABINET AND CONTROLLER SHALL BE REMOVED BY WISDOT ELECTRICAL PERSONNEL.
4. THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
5. GRAYSHADE REPRESENTS EXISTING. BOLD REPRESENTS ITEMS TO BE REMOVED.

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 35'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- RADAR DETECTION AREA
- RADAR DETECTOR
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- PULL BOX, 24" X 36"
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- STOP SIGN
- LANE DESIGNATION FOR INFO ONLY

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING

N



TRAFFIC CONTROL SIGNAL
USH 18 & STH 67
VILLAGE OF SUMMIT
WAUKESHA COUNTY

SIGNAL NO. S67-0630

REGION CONTACT: P. VIRK
DESIGNED BY:
REVISED BY: S. WAGNER

PAGE 1 OF 3

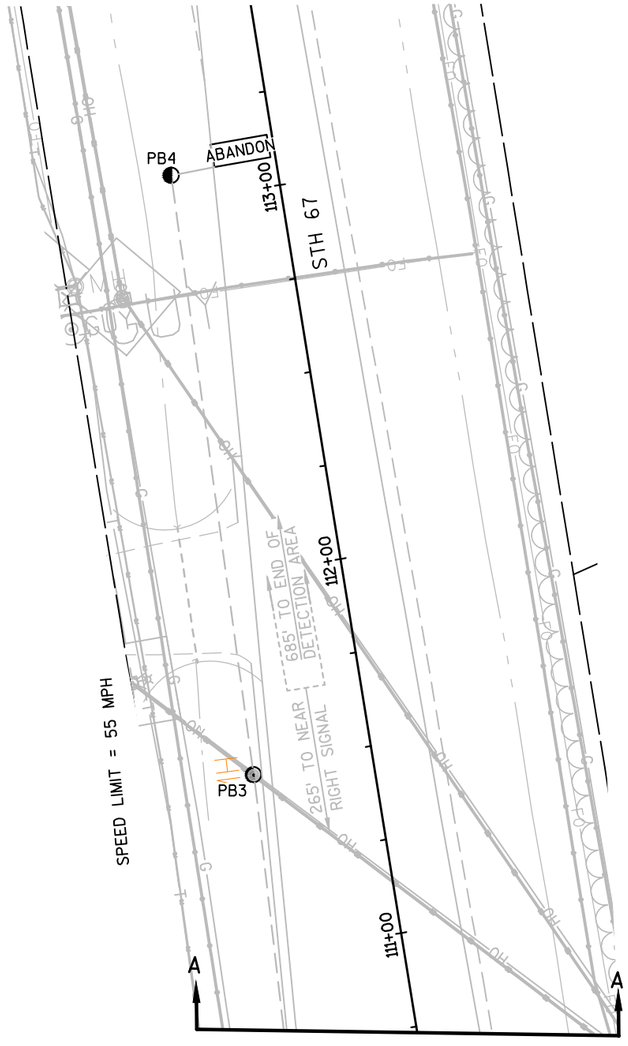
PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 39	E

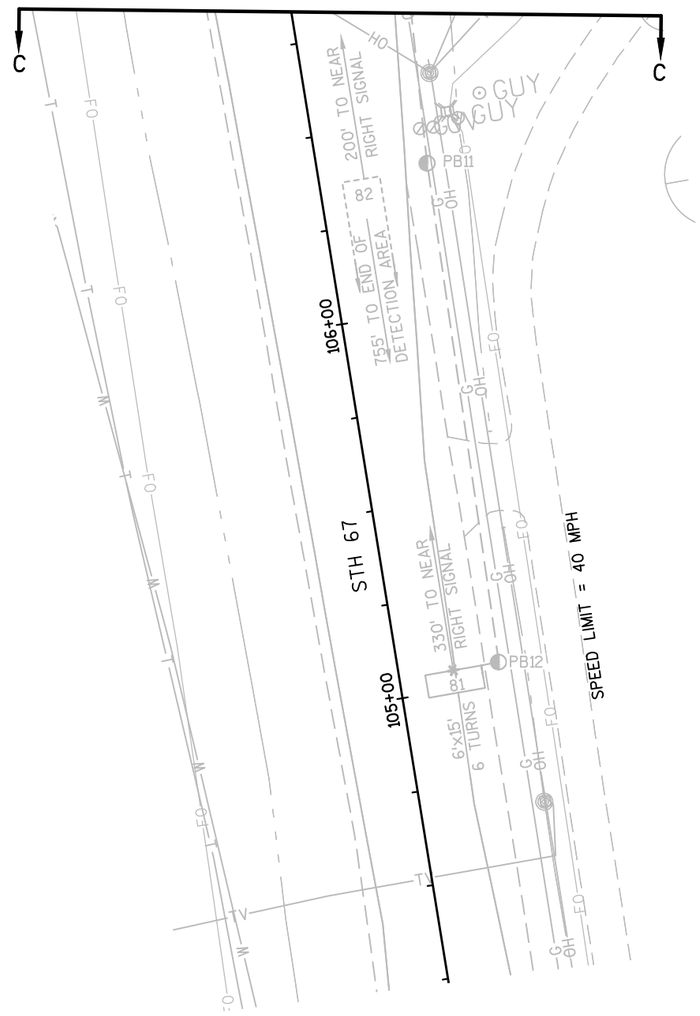
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LAYOUT NAME - S67-0630_REM1

PLOT DATE : 10/18/2017 8:52 AM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2







TRAFFIC CONTROL SIGNAL
USH 18 & STH 67
VILLAGE OF SUMMIT
WAUKESHA COUNTY

SIGNAL NO. S67-0630

REGION CONTACT: P. VIRK
DESIGNED BY:
REVISED BY: S. WAGNER

PAGE 2 OF 3

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 40	E

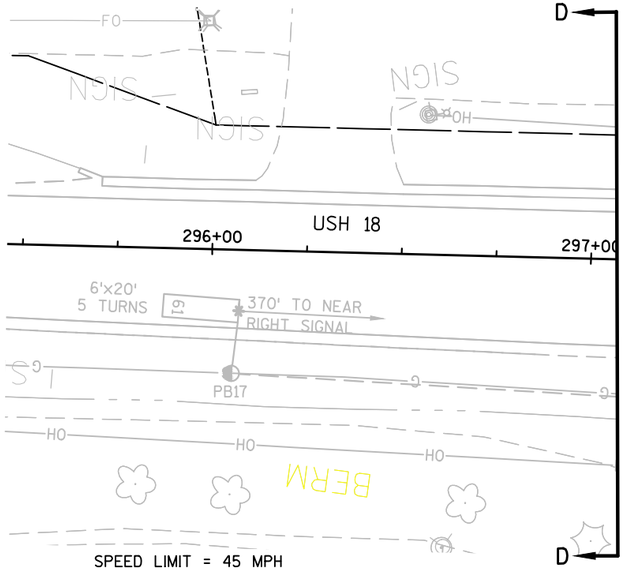
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LAYOUT NAME - S67-0630_F_REM2

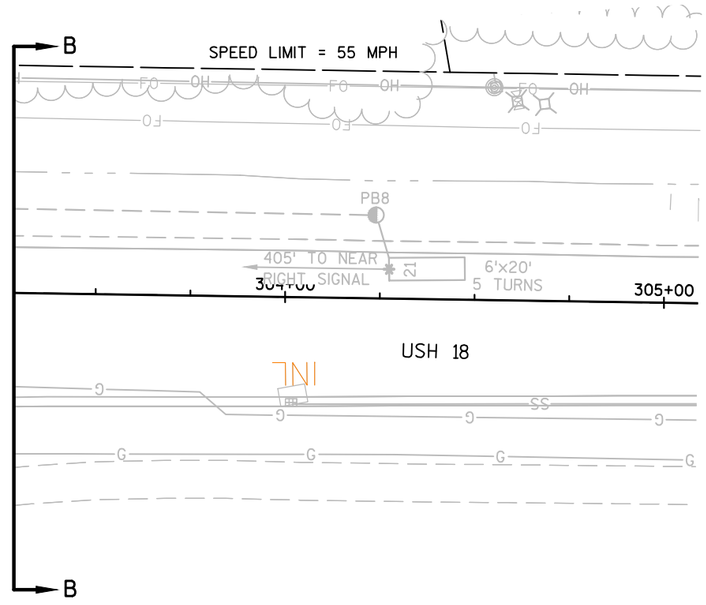
PLOT DATE : 10/18/2017 8:53 AM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

2

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TRAFFIC CONTROL SIGNAL
USH 18 & STH 67
VILLAGE OF SUMMIT
WAUKESHA COUNTY

SIGNAL NO. S67-0630

REGION CONTACT: P. VIRK
DESIGNED BY:
REVISED BY: S. WAGNER

PAGE 3 OF 3

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL REMOVAL PLAN	SHEET 41	E

FILE NAME : N:\PDS\C3D\CAD\31000700\SIG\S67-0630\S67-0630_REM.DWG
LAYOUT NAME - S67-0630_F_REM3

PLOT DATE : 10/18/2017 8:53 AM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

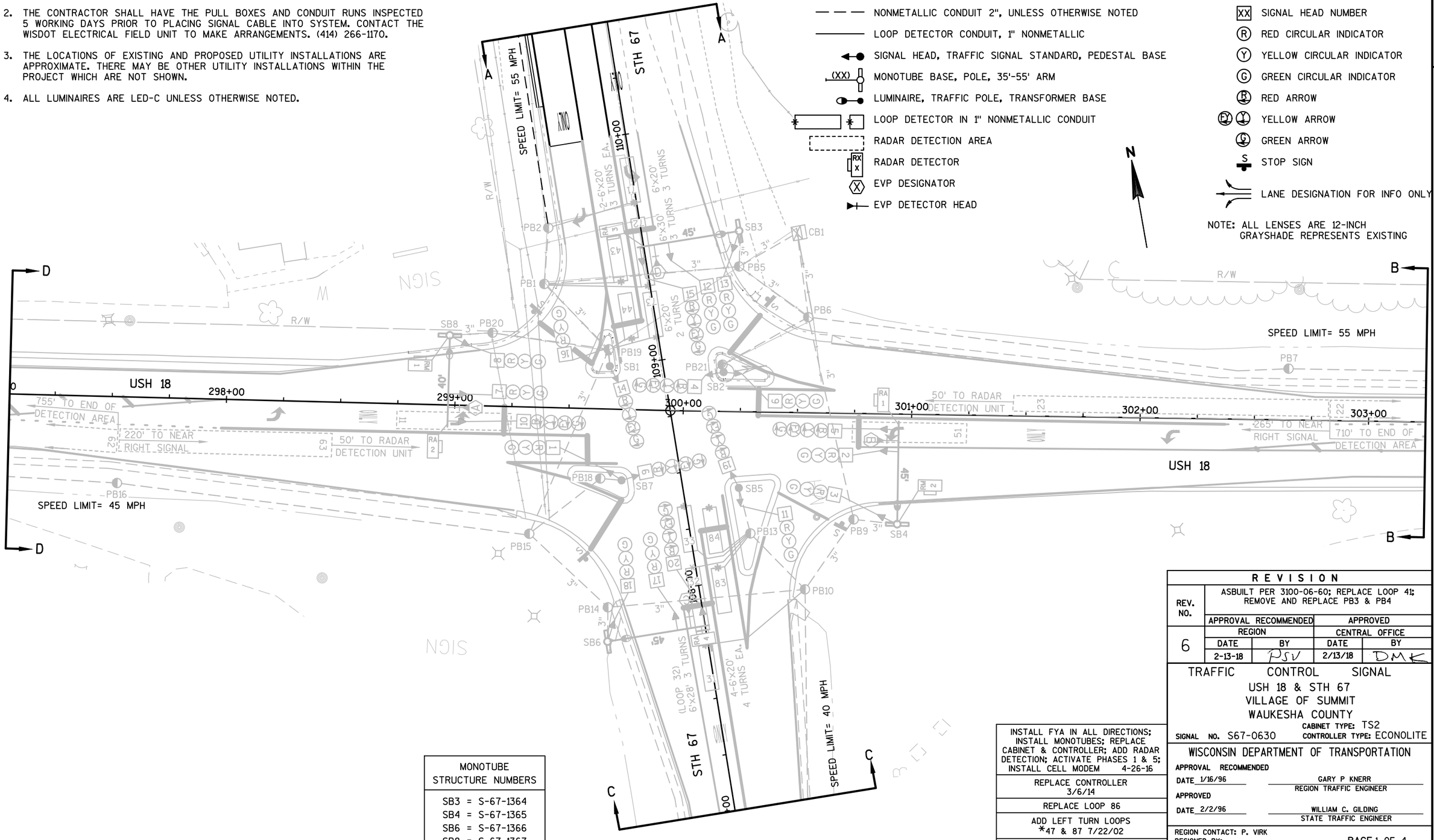
CONSTRUCTION NOTES:

1. * LOCATION IS TO FRONT CENTER OF DETECTOR LOOP.
2. THE CONTRACTOR SHALL HAVE THE PULL BOXES AND CONDUIT RUNS INSPECTED 5 WORKING DAYS PRIOR TO PLACING SIGNAL CABLE INTO SYSTEM. CONTACT THE WISDOT ELECTRICAL FIELD UNIT TO MAKE ARRANGEMENTS. (414) 266-1170.
3. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
4. ALL LUMINAIRES ARE LED-C UNLESS OTHERWISE NOTED.

LEGEND

- CONTROL CABINET
- NONMETALLIC CONDUIT 2", UNLESS OTHERWISE NOTED
- LOOP DETECTOR CONDUIT, 1" NONMETALLIC
- SIGNAL HEAD, TRAFFIC SIGNAL STANDARD, PEDESTAL BASE
- MONOTUBE BASE, POLE, 35'-55' ARM
- LUMINAIRE, TRAFFIC POLE, TRANSFORMER BASE
- LOOP DETECTOR IN 1" NONMETALLIC CONDUIT
- RADAR DETECTION AREA
- RADAR DETECTOR
- EVP DESIGNATOR
- EVP DETECTOR HEAD
- PULL BOX, 24" X 36"
- SIGNAL HEAD NUMBER
- RED CIRCULAR INDICATOR
- YELLOW CIRCULAR INDICATOR
- GREEN CIRCULAR INDICATOR
- RED ARROW
- YELLOW ARROW
- GREEN ARROW
- STOP SIGN
- LANE DESIGNATION FOR INFO ONLY

NOTE: ALL LENSES ARE 12-INCH
GRAYSHADE REPRESENTS EXISTING



MONOTUBE STRUCTURE NUMBERS
SB3 = S-67-1364
SB4 = S-67-1365
SB6 = S-67-1366
SB8 = S-67-1367

INSTALL FYA IN ALL DIRECTIONS; INSTALL MONOTUBES; REPLACE CABINET & CONTROLLER; ADD RADAR DETECTION; ACTIVATE PHASES 1 & 5; INSTALL CELL MODEM 4-26-16
REPLACE CONTROLLER 3/6/14
REPLACE LOOP 86
ADD LEFT TURN LOOPS *47 & 87 7/22/02
ADD DILEMA ZONE DETECTION

REVISION				
REV. NO.	ASBUILT PER 3100-06-60; REPLACE LOOP 41; REMOVE AND REPLACE PB3 & PB4			
	APPROVAL RECOMMENDED		APPROVED	
6	REGION		CENTRAL OFFICE	
	DATE	BY	DATE	BY
	2-13-18	PSV	2/13/18	DMK

TRAFFIC CONTROL SIGNAL
USH 18 & STH 67
VILLAGE OF SUMMIT
WAUKESHA COUNTY

SIGNAL NO. S67-0630
CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
DATE 1/16/96 — GARY P KNERR, REGION TRAFFIC ENGINEER

APPROVED
DATE 2/2/96 — WILLIAM C. GILDING, STATE TRAFFIC ENGINEER

REGION CONTACT: P. VIRK
DESIGNED BY:
REVISED BY: S. WAGNER

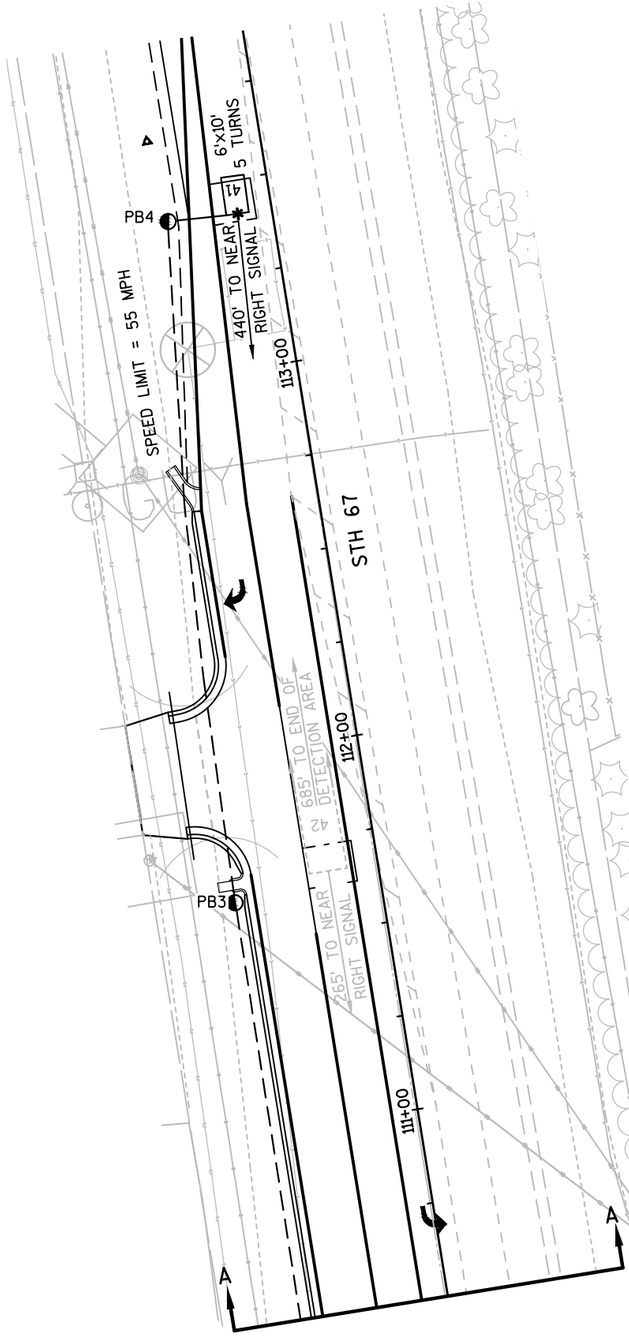
PAGE 1 OF 4

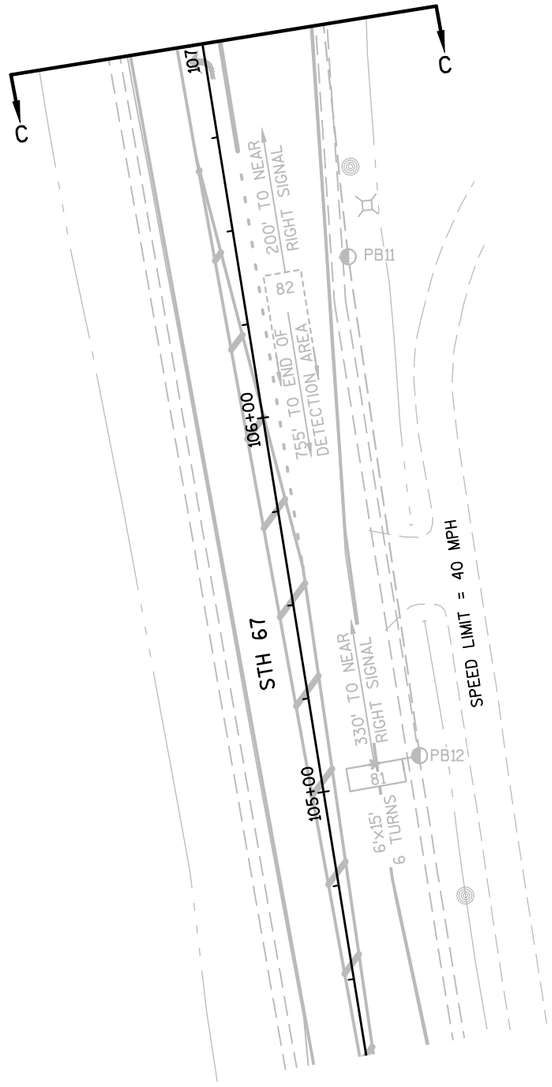
PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET 42	E

FILE NAME : N:\PDS\C3D\CAD\31000700\SIG\S67-0630\S67-0630_F.DWG
LAYOUT NAME - S67-0630_F_PG1

PLOT DATE : 2/14/2018 7:50 AM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42







TRAFFIC CONTROL SIGNAL
USH 18 & STH 67
VILLAGE OF SUMMIT
WAUKESHA COUNTY

SIGNAL NO. S67-0630

REGION CONTACT: P. VIRK
DESIGNED BY:
REVISED BY: S. WAGNER

PAGE 2 OF 4

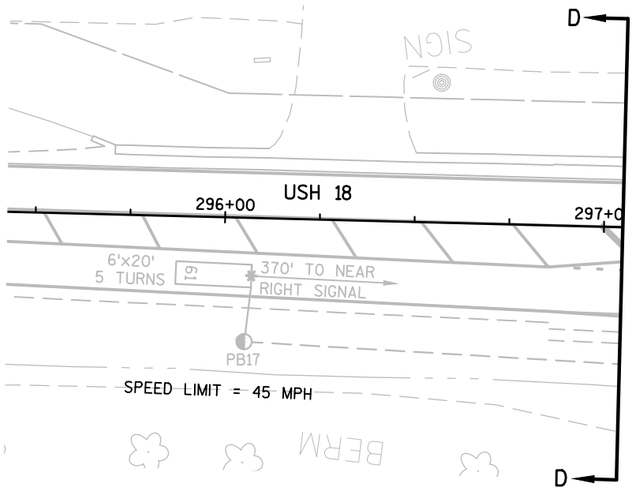
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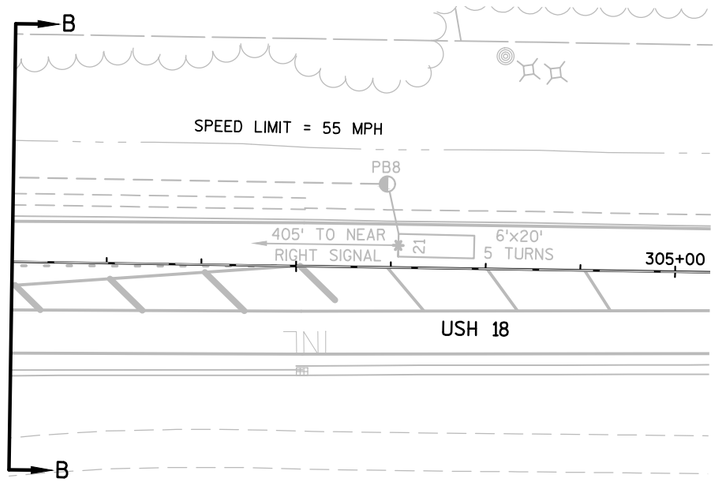
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LAYOUT NAME - S67-0630_F_PG2

PLOT DATE : 2/14/2018 7:50 AM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

2

N





TRAFFIC CONTROL SIGNAL
USH 18 & STH 67
VILLAGE OF SUMMIT
WAUKESHA COUNTY

SIGNAL NO. S67-0630

REGION CONTACT: P. VIRK
DESIGNED BY:
REVISED BY: S. WAGNER

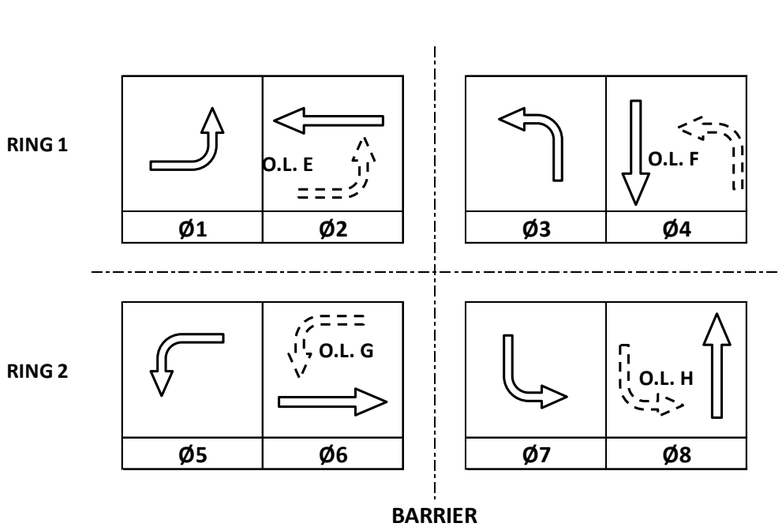
PAGE 3 OF 4

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC SIGNAL PLAN	SHEET 44	E

FILE NAME : N:\PDS\C3D\CAD\31000700\SIG\S67-0630\S67-0630_F.DWG
LAYOUT NAME - S67-0630_F_PG3

PLOT DATE : 2/14/2018 7:50 AM PLOT BY : WAGNER, SCOTT H PLOT NAME : PLOT SCALE : 1 IN:40 FT

	HEAD NUMBERS	FLASH
Ø1	4,5	R ⟵
Ø2	6,7,8	R
Ø3	14,15	R ⟵
Ø4	16,17,18	R
Ø5	9,10	R ⟵
Ø6	1,2,3	R
Ø7	19,20	R ⟵
Ø8	11,12,13	R
Ø2P		
Ø4P		
Ø6P		
Ø8P		
OLE	4,5	-
OLF	14,15	-
OLG	9,10	-
OLH	19,20	-





CONTROLLER LOGIC

PHASE NUMBER	PHASE LOCKING	DUAL ENTRY W / Ø	PHASE RECALL	PHASE ACTIVE
1		6		X
2	X	6	MIN	X
3		8		X
4		8		X
5		2		X
6	X	2	MIN	X
7		4		X
8		4		X

EMERGENCY VEHICLE PREEMPTION SEQUENCE

EMERGENCY VEHICLE PREEMPTOR	A	B	C	D
MOVEMENT				
PHASE	2+5	6+1	4+7	8+3

AFTER PREEMPTION SEQUENCE 2+5 OR 6+1, CONTROLLER SHALL RETURN TO PHASES 2+6.
AFTER PREEMPTION SEQUENCE 4+7 OR 8+3, CONTROLLER SHALL RETURN TO PHASES 4+8.

TYPE OF INTERCONNECT/COMMUNICATION	
NONE	
CLOSED LOOP	
TWISTED PAIR	
FIBER OPTIC*	
FIBER OPTIC (ETHERNET)	
RADIO	
CELL MODEM	X

TYPE OF COORDINATION	
NONE	X
TBC	
TRAFFIC RESPONSIVE	
ADAPTIVE	
*LOCATION OF MASTER CONTROLLER NO: S-	
SIGNAL SYSTEM NO: SS-	

TYPE OF LIGHTING	
BY OTHER AGENCY	
IN TRAFFIC CABINET	X
IN SEPARATE DOT LIGHTING CABINET	

TYPE OF PRE-EMPT	
NONE	
RAILROAD	
EMERGENCY VEHICLE	X
GTT	X
TOMAR	
HARDWIRE	
OTHER	
LIFT BRIDGE	
QUEUE DETECTION	

DETECTOR LOGIC

DETECTOR INPUT	3	1	7	5	11	9	15	13	17	19	21			49	51	53
PLAN LOOP DETECTOR*(S)	21	32	41	44	71	73	83		11					22	42	63
CALLED PHASE	2	3	4	4	7	7	8		1					2	4	5
CALL OPTION	X	X		X	X	X	X		X							X
DELAY TIME						X										
EXTENTION OPTION	X	X	X	X	X	X	X		X					X	X	X
EXTEND TIME			X											X	X	
USE ADDED INITIAL	X															
CROSS SWITCH PHASE		4			8	8			2							

DETECTOR INPUT	4	2	8	6	12	10	16	14	18	20	22			50	52	54
PLAN LOOP DETECTOR*(S)	31	33	43	61	72	81	84		51					23	62	82
CALLED PHASE	3	3	4	6	7	8	8		5					2	6	8
CALL OPTION	X	X	X	X	X		X		X					X		
DELAY TIME		X														
EXTENTION OPTION	X	X	X	X	X	X	X		X					X	X	X
EXTEND TIME						X									X	X
USE ADDED INITIAL				X												
CROSS SWITCH PHASE	4	4			8				6							

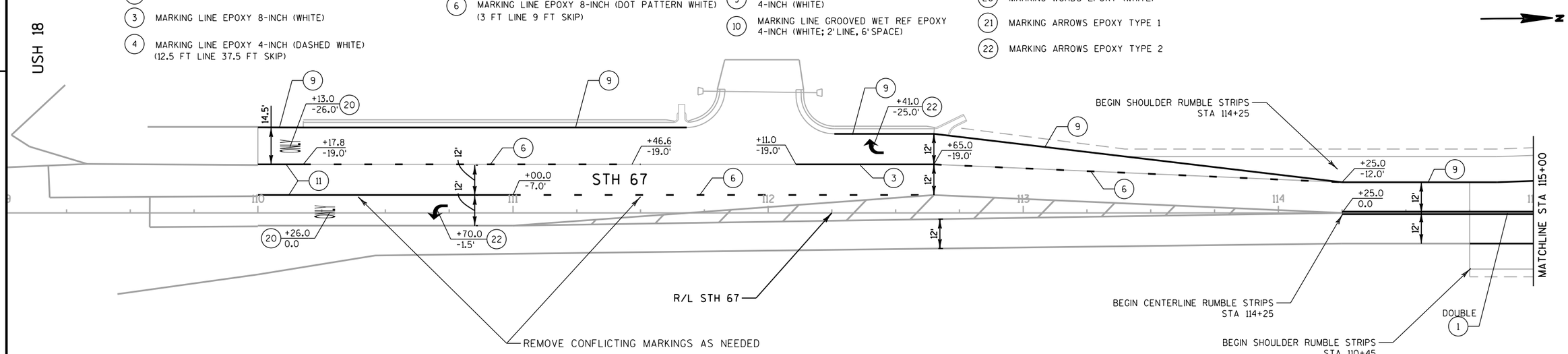
GENERAL NOTES:

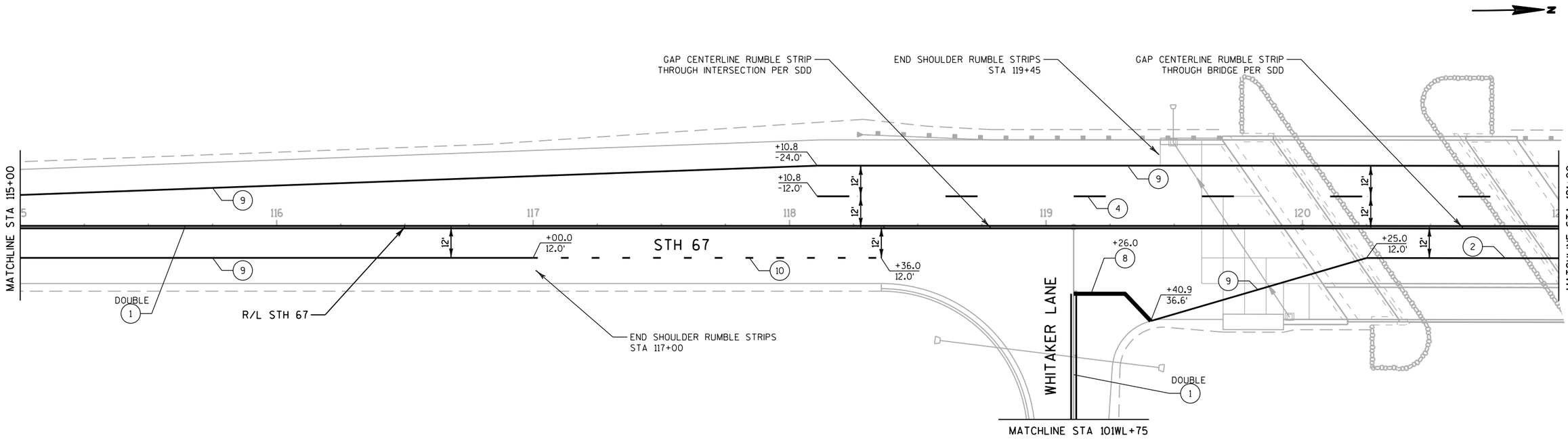
1.
2.
3.
4.

USH 18 & STH 67
VILLAGE OF SUMMIT
WAUKESHA COUNTY

SIGNAL NO: S67-0630 CABINET TYPE: TS2
CONTROLLER TYPE: ECONOLITE
DATE: 03/2018 PAGE NO. 4 OF 4

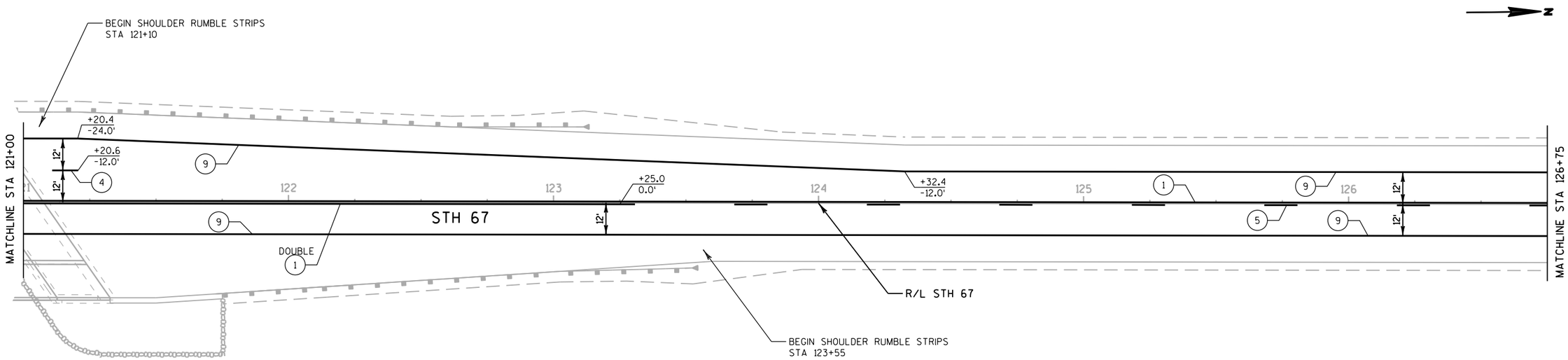
1. MARKING LINE EPOXY 4-INCH (YELLOW)
2. MARKING LINE EPOXY 4-INCH (WHITE)
3. MARKING LINE EPOXY 8-INCH (WHITE)
4. MARKING LINE EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)
5. MARKING LINE EPOXY 4-INCH (DASHED YELLOW) (12.5 FT LINE 37.5 FT SKIP)
6. MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE) (3 FT LINE 9 FT SKIP)
8. MARKING STOP LINE EPOXY 18-INCH (WHITE)
9. MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
10. MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE; 2' LINE, 6' SPACE)
11. MARKING LINE GROOVED PERMANENT TAPE 8-INCH (WHITE)
20. MARKING WORDS EPOXY (WHITE)
21. MARKING ARROWS EPOXY TYPE 1
22. MARKING ARROWS EPOXY TYPE 2

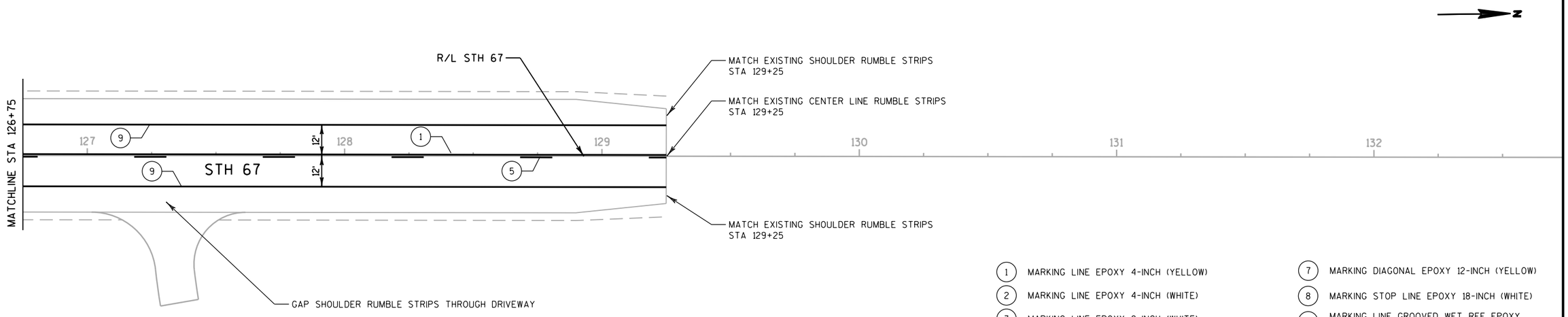




PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 46	E

2





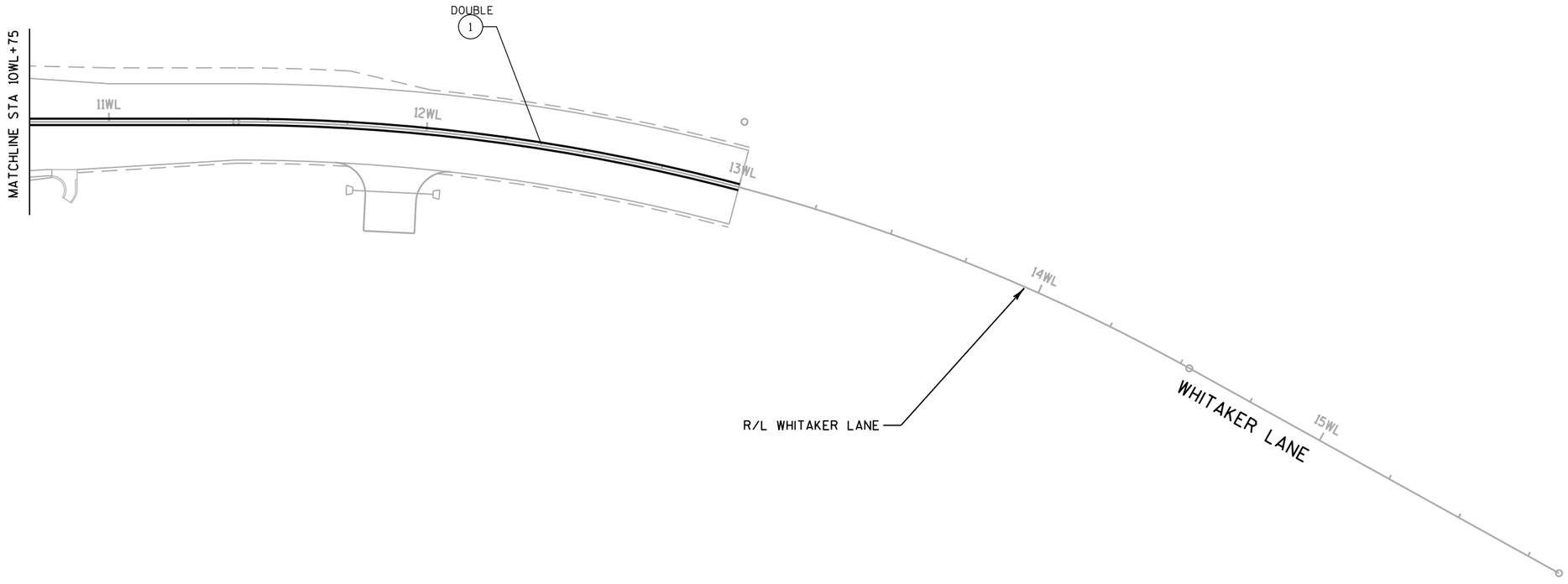
NOTES:

CONTRACTOR TO VERIFY THAT 'NO PASSING ZONE' LIMITS MATCH EXISTING CONDITIONS UNLESS OTHERWISE SPECIFIED BY THE ENGINEER

(1) MARKING LINE EPOXY 4-INCH (YELLOW)
(2) MARKING LINE EPOXY 4-INCH (WHITE)
(3) MARKING LINE EPOXY 8-INCH (WHITE)
(4) MARKING LINE EPOXY 4-INCH (DASHED WHITE) (12.5 FT LINE 37.5 FT SKIP)
(5) MARKING LINE EPOXY 4-INCH (DASHED YELLOW) (12.5 FT LINE 37.5 FT SKIP)
(6) MARKING LINE EPOXY 8-INCH (DOT PATTERN WHITE) (3 FT LINE 9 FT SKIP)
(7) MARKING DIAGONAL EPOXY 12-INCH (YELLOW)
(8) MARKING STOP LINE EPOXY 18-INCH (WHITE)
(9) MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)
(10) MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE; 2' LINE, 6' SPACE)
(20) MARKING WORDS EPOXY (WHITE)
(20) MARKING ARROWS EPOXY TYPE 1
(22) MARKING ARROWS EPOXY TYPE 2

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 47	E

2



1 MARKING LINE EPOXY 4-INCH (YELLOW)

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PAVEMENT MARKINGS	SHEET 48	E

GENERAL NOTES FOR TRAFFIC CONTROL

1) THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGN 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. CONFLICTING SIGNS WILL BE COVERED USING THE APPROPRIATE STANDARD BID ITEM, TRAFFIC CONTROL COVERING SIGNS TYPE I OR TRAFFIC CONTROL COVERING SIGNS TYPE II.

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

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

5) TURNING TRAFFIC CONTROL DEVICES WHEN NOT IN USE TO OBSURE THE MESSAGE IS NOT ALLOWED.

GENERAL NOTES FOR FIXED MESSAGE SIGNS FOUND ON TRAFFIC CONTROL SHEETS

1) CONTRACTOR SHALL LOCATE FIXED MESSAGE SIGNS A MINIMUM OF 400' FROM ANY TYPE I SIGN AND A MINIMUM OF 200' FROM ANY TYPE II SIGN.

2) ALL FIXED MESSAGE SIGNS SHALL BE BLACK NON-REFLECTIVE MESSAGE ON STANDARD REFLECTIVE SHEETING-REFERENCE: "WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION", LATEST EDITION.

3) SEE FIXED MESSAGE SIGN CONSTRUCTION DETAIL SHEETS FOR MORE INFORMATION.

TRAFFIC CONTROL LEGEND

- TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A
- TRAFFIC CONTROL BARRICADE TYPE III WITH LIGHTS TYPE A AND ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH LIGHT TYPE C
- TRAFFIC CONTROL ARROW BOARD
- TRAFFIC CONTROL SIGN(S) ON PERMANENT SUPPORT
- TRAFFIC CONTROL SIGN(S) ON TEMPORARY SUPPORT
- PCMS — TRAFFIC CONTROL SIGNS PORTABLE CHANGABLE MESSAGE
- TRAFFIC FLOW ARROW
- WORK ZONE

2

2

N

USH 18

STH 67

STH 67

LEFT TURN LANE
R3-55L
24" X 30"

25' TYP

R3-2
24" X 24"

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

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

MAINTAIN DRIVEABLE SURFACE BETWEEN WIS 18 AND CHURCH DRIVEWAY AT ALL TIMES (EXCEPT DURING PAVING OPERATIONS)

RIPRAP
BERM
SIGN
INL
A/C
U/C
SLAB
FLAG
1-143
1-142.2 869.47
1-142.12 869.00
1-143.20 864.26
1-142.20 872.01
1-142.18 871.82

NOTES:

1) SEE DETOUR SHEETS FOR ADVANCED SIGNING

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC CONTROL: STH 67 / USH 18 INTERSECTION	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\025901_tc.dgn PLOT DATE : 2/9/2018 11:03:12 AM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 80:1

WISDOT/CADDS SHEET 42

2

2

STH 67

BARK RIVER

N

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

POST
POST

MAINTAIN DRIVEABLE SURFACE TO RESIDENT ALONG WHITAKER AT ALL TIMES (EXCEPT DURING PAVING OPERATIONS)

WHITAKER LANE

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

ROAD CLOSED 500 FT
W20-3

ROAD CLOSED AHEAD
W20-3

BRIDGE OUT
BARRICADE

500' 500'

PLACE SIGNS ALONG WB WHITAKER LANE

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC CONTROL: STH 67 / WHITAKER INTERSECTION	SHEET 51	E

2

N

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

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

STH 67

126 127 128 129 130 131

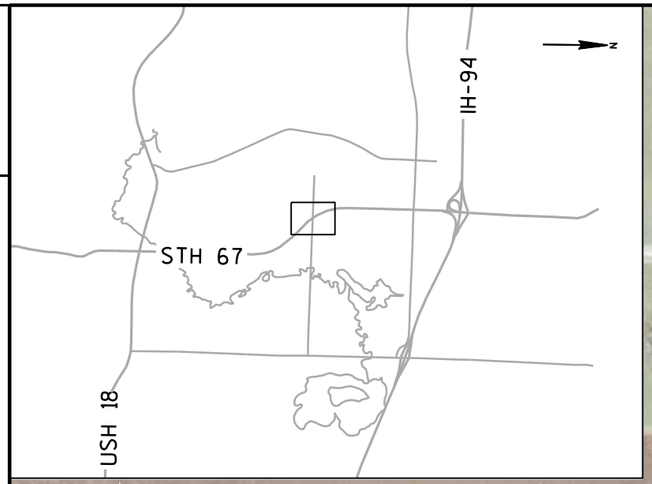
POST

POST

MAINTAIN DRIVEABLE SURFACE TO RESIDENT ALONG STH 67 AT ALL TIMES (EXCEPT DURING PAVING OPERATIONS)

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC CONTROL: STH 67 NORTH CONSTRUCTION LIMITS	SHEET 52	E

2



SOUTH
67
M3-3
24"X12"
M1-6
24"X24"
ROAD CLOSED AHEAD
W20-3

250'

END ROAD WORK
G20-2A
48" X 24"

SOUTH
67
M3-3
24"X12"
M1-6
24"X24"
BRIDGE OUT
R11-2B
48"X30"

ROAD CLOSED 500 FT
W20-3

ROAD CLOSED 1000 FT
W20-3

ROAD CLOSED 1500 FT
W20-3

N

500'

500'

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

250'

END ROAD WORK
G20-2A
48" X 24"

GENESEE LAKE RD

STH 67

500'

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

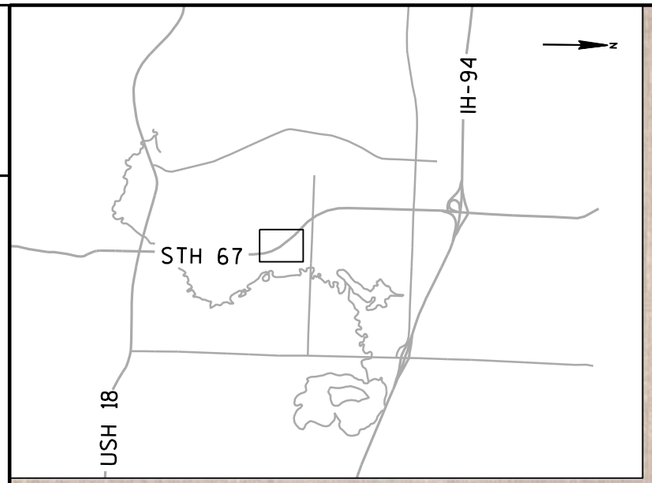
SOUTH
67
M3-3
24"X12"
M1-6
24"X24"
BRIDGE OUT
R11-2B
48"X30"

250'

SOUTH
67
M3-3
24"X12"
M1-6
24"X24"
ROAD CLOSED AHEAD
W20-3

END ROAD WORK
G20-2A
48" X 24"

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC CONTROL: STH 67 / GENESSE LAKE RD INTERSECTION	SHEET 53	E



2

N

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

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

4 BARRICADES (EA)

500'

STH 67

250'

N GRIFFITH ROAD

M3-3
24"X12"
SOUTH
M1-6
24"X24"
67
R11-2B
48"X30"
BRIDGE OUT

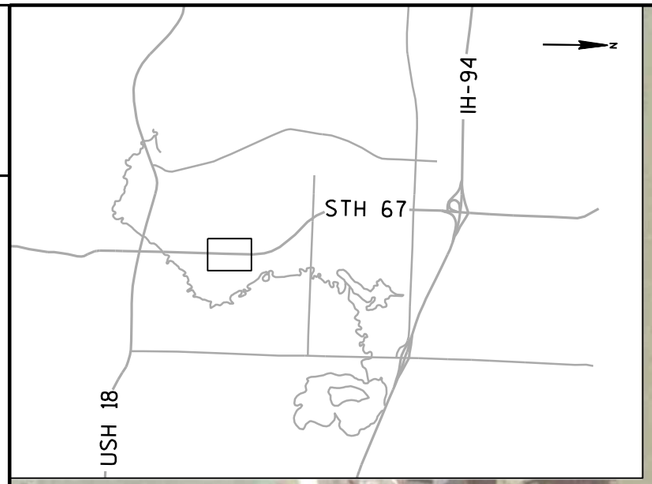
M3-3
24"X12"
SOUTH
M1-6
24"X24"
67
ROAD CLOSED AHEAD
W20-3

END ROAD WORK
G20-2A
48" X 24"

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC CONTROL: STH 67 / GRIFFITH RD INTERSECTION	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\025905_tc.dgn PLOT DATE : 2/9/2018 11:03:38 AM PLOT BY : crosemeyer PLOT NAME : PLOT SCALE : 80:1

2



END ROAD WORK
G20-2A
48" X 24"

M3-3
24"X12"
SOUTH
M1-6
24"X24"
67
R11-2B
48"X30"
BRIDGE OUT

SOUTH
M3-3
24"X12"
67
M1-6
24"X24"
ROAD CLOSED AHEAD
W20-3

500'

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

SUMMIT MOORS DR

500'

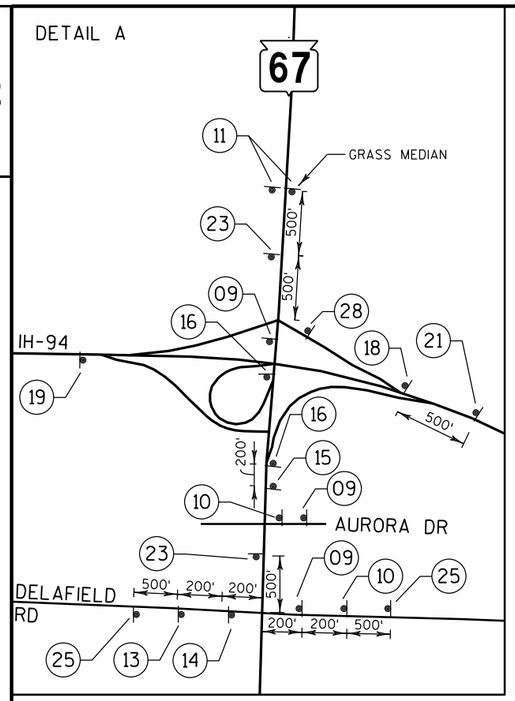
N

STH 67

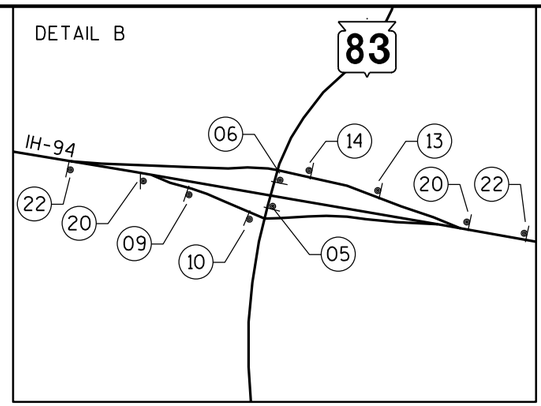
R11-4
60" X 30"
ROAD CLOSED TO THRU TRAFFIC
TYPE III BARRICADE

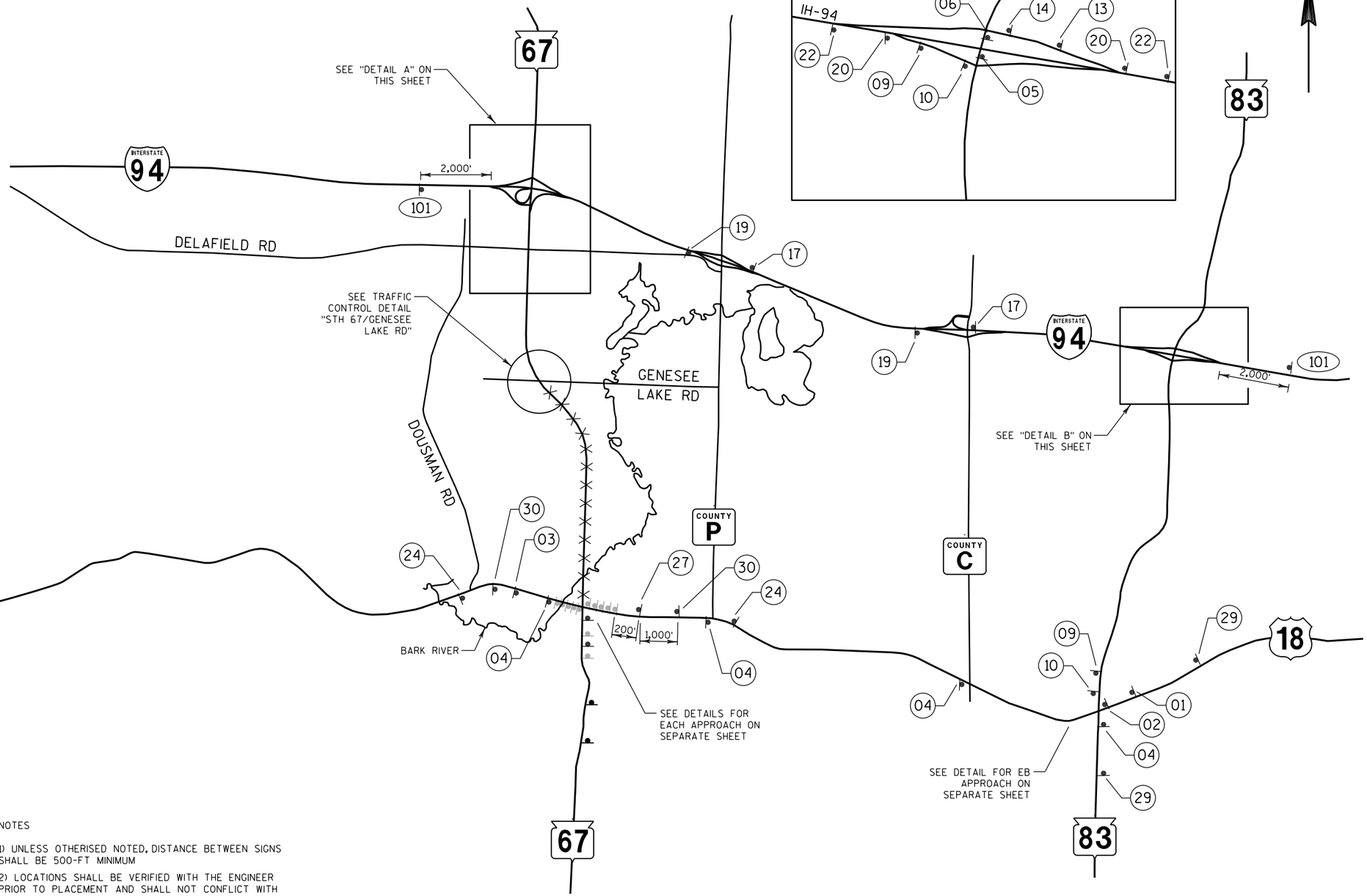
PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC CONTROL: STH 67 / GRIFFITH RD INTERSECTION	SHEET 55	E

DETAIL A



DETAIL B





LEGEND

- COVERING SIGN TYPE II
- X X X ROAD CLOSED
- TRAFFIC CONTROL SIGN
- (00) SEE DETAIL ON SEPARATE SHEET
- EXISTING SIGN

NOTES

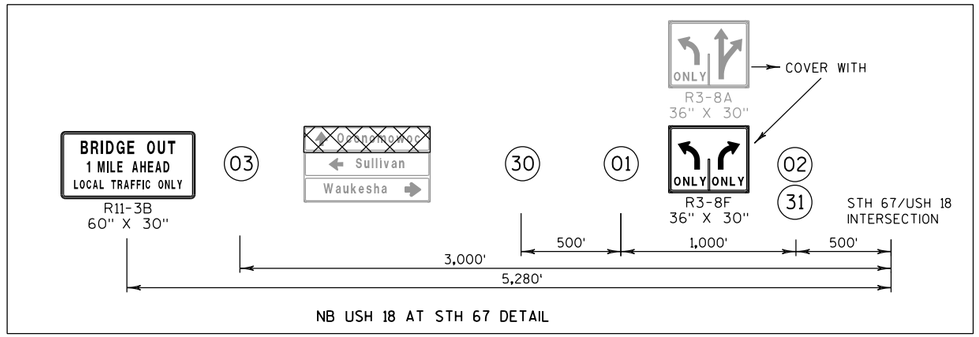
1) UNLESS OTHERISED NOTED, DISTANCE BETWEEN SIGNS SHALL BE 500-FT MINIMUM

2) LOCATIONS SHALL BE VERIFIED WITH THE ENGINEER PRIOR TO PLACEMENT AND SHALL NOT CONFLICT WITH EXISTING SIGNS NOT IDENTIFIED AS BEING COVERED.

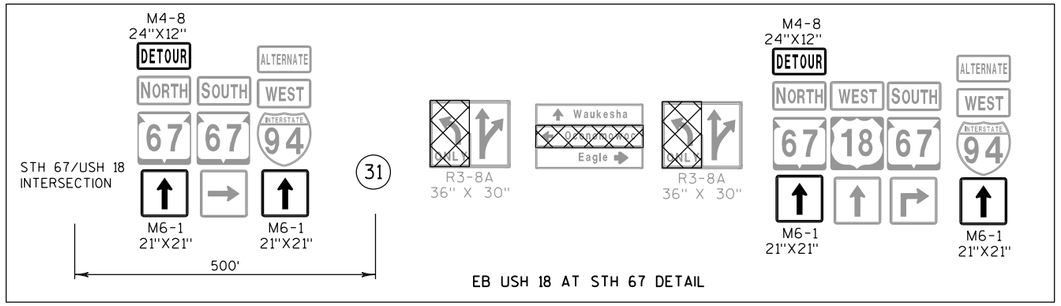
3) NO COVERING OF EXISTING SIGNS UNLESS SHOWN ON THE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.

SCALE, FEET 0 1/2 MILE 1 MILE

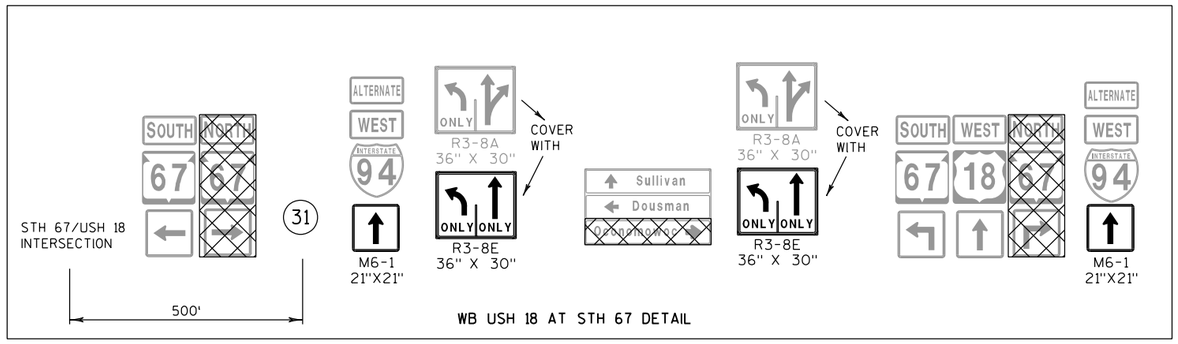
PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC CONTROL DETOUR	SHEET 56	E



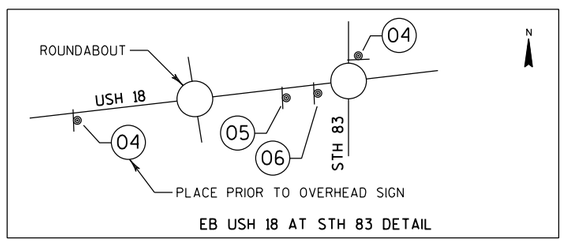
NB USH 18 AT STH 67 DETAIL



EB USH 18 AT STH 67 DETAIL



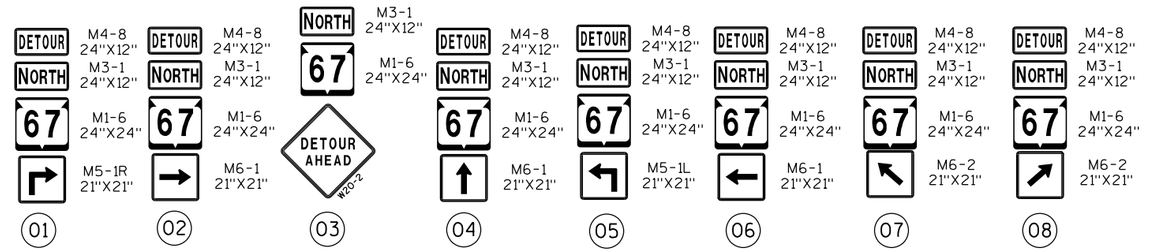
WB USH 18 AT STH 67 DETAIL

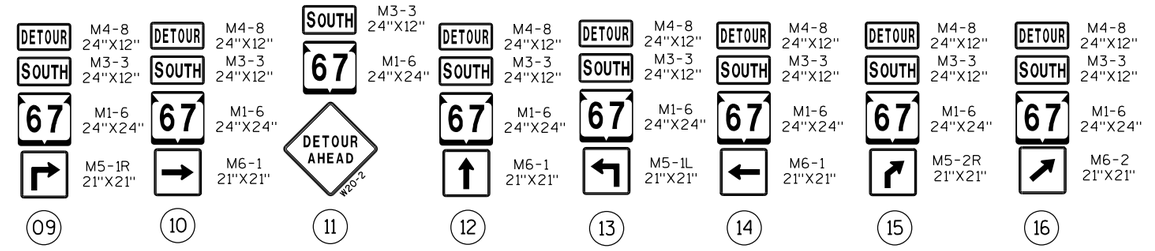


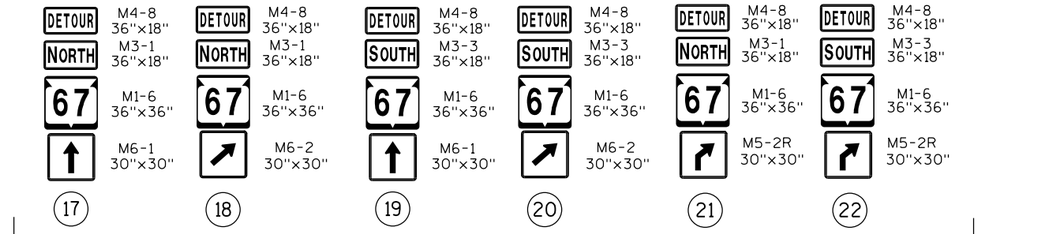
EB USH 18 AT STH 83 DETAIL

HWY 67 BRIDGE OUT
AT HWY 18
FOLLOW DETOUR

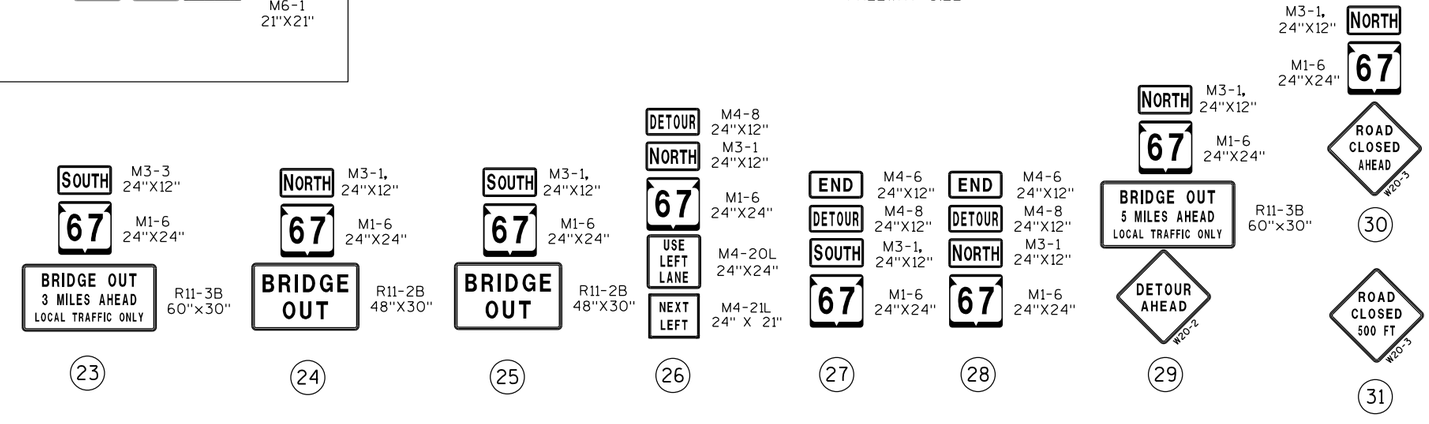
FMS
101





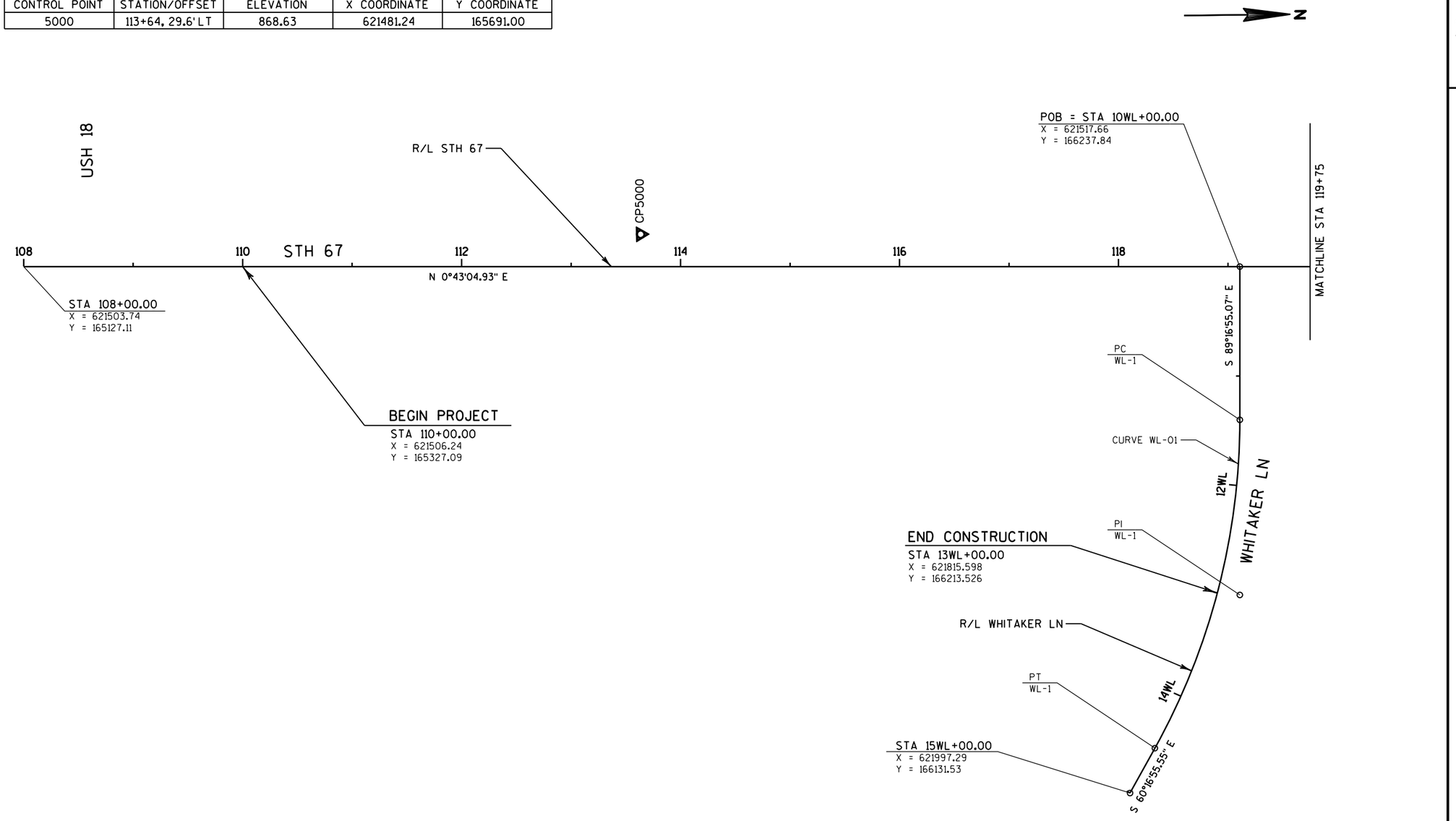


FREEWAY SIZE



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TRAFFIC CONTROL DETOUR	SHEET 57	E

CONTROL POINT	STATION/OFFSET	ELEVATION	X COORDINATE	Y COORDINATE
5000	113+64, 29.6' LT	868.63	621481.24	165691.00

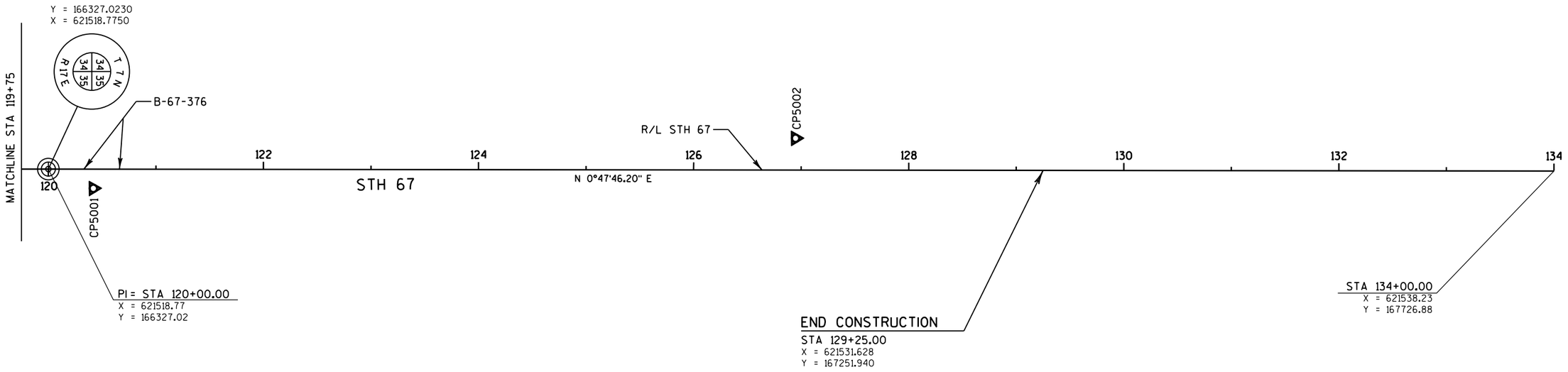


CURVE: WL-1

PC = 11WL+40.00
X = 621657.65
Y = 166236.08
PI = 13WL+00.00
X = 621817.63
Y = 166234.08
PT = 14WL+53.14
X = 621956.59
Y = 166154.76
R = 618.68
DELTA = 28°59'59.51" RT
D = 9°15'39.65"
L = 313.14
T = 160.00
E = 20.35
BK = S 89°16'55.07" E
AH = S 60°16'55.55" E

CONTROL POINT	STATION/OFFSET	ELEVATION	X COORDINATE	Y COORDINATE
5001	120+42, 17.9' RT	864.69	621537.28	166368.63
5002	126+95, 29.6' LT	869.68	621498.87	167022.13

N



3100-07-70

Line	Item	Item Description	Unit	Total	Qty
0002	108.4400	CPM Progress Schedule	EACH	1.000	1.000
0004	201.0105	Clearing	STA	1.500	1.500
0006	201.0205	Grubbing	STA	1.500	1.500
0008	203.0100	Removing Small Pipe Culverts	EACH	5.000	5.000
0010	204.0150	Removing Curb & Gutter	LF	363.000	363.000
0012	204.9105.S	Removing (item description) 01. Loop Detector Wire & Lead-in Cable	LS	1.000	1.000
0014	205.0100	Excavation Common	CY	3,356.000	3,356.000
0016	206.1000	Excavation for Structures Bridges (structure) 01. B-67-376	LS	1.000	1.000
0018	209.1500	Backfill Granular Grade 1	TON	37.000	37.000
0020	210.1500	Backfill Structure Type A	TON	414.000	414.000
0022	213.0100	Finishing Roadway (project) 01. 3100-07-70	EACH	1.000	1.000
0024	305.0110	Base Aggregate Dense 3/4-Inch	TON	338.000	338.000
0026	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	6,932.000	6,932.000
0028	415.0080	Concrete Pavement 8-Inch	SY	146.000	146.000
0030	415.0410	Concrete Pavement Approach Slab	SY	318.000	318.000
0032	440.4410	Incentive IRI Ride	DOL	965.000	965.000
0034	455.0605	Tack Coat	GAL	616.000	616.000
0036	460.2000	Incentive Density HMA Pavement	DOL	2,160.000	2,160.000
0038	460.5225	HMA Pavement 5 LT 58-28 S	TON	2,689.000	2,689.000
0040	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	24.000	24.000
0042	465.0315	Asphaltic Flumes	SY	21.000	21.000
0044	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	2,041.000	2,041.000
0046	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	1,048.000	1,048.000
0048	502.0100	Concrete Masonry Bridges	CY	624.000	624.000
0050	502.3200	Protective Surface Treatment	SY	942.000	942.000
0052	502.3210	Pigmented Surface Sealer	SY	104.000	104.000
0054	503.0137	Prestressed Girder Type I 36W-Inch	LF	584.000	584.000
0056	505.0400	Bar Steel Reinforcement HS Structures	LB	12,230.000	12,230.000
0058	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	76,060.000	76,060.000
0060	505.0800.S	Bar Steel Reinforcement HS Stainless Structures	LB	2,480.000	2,480.000
0062	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	16.000	16.000
0064	506.4000	Steel Diaphragms (structure) 01. B-67-376	EACH	7.000	7.000
0066	513.4056	Railing Tubular Type H (structure) 01. B-67-376	LF	115.000	115.000
0068	516.0500	Rubberized Membrane Waterproofing	SY	37.000	37.000
0070	521.3112	Culvert Pipe Corrugated Steel 12-Inch	LF	32.000	32.000
0072	522.0118	Culvert Pipe Reinforced Concrete Class III 18-Inch	LF	88.000	88.000
0074	522.0412	Culvert Pipe Reinforced Concrete Class IV 12-Inch	LF	50.000	50.000
0076	522.1012	Apron Endwalls for Culvert Pipe Reinforced Concrete	EACH	3.000	3.000

Standard Detail Drawing List

08A05-19C	INLET COVERS TYPE F, HM, HM-S, S, T, V, HM-GJ, & HM-GJ-S
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D18-01	DRIVEWAY AND SIDEWALK RAMPS TYPES X & Y
08D19-01	DRIVEWAY AND SIDEWALK RAMPS TYPE Z
08D20-01	DRIVEWAYS WITH CURB & GUTTER RETURNS
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E11-02	TURBIDITY BARRIER
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09B02-10	CONDUIT
09B04-11	PULL BOX
09F15-04A	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)
13A10-01A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01B	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B32-05A	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-05B	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-05C	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-05D	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B32-05E	CONCRETE BARRIER SINGLE SLOPE (CBSS)
14B33-01A	CONCRETE BARRIER SINGLE SLOPE 32" THRIE BEAM ANCHOR
14B33-01B	CONCRETE BARRIER SINGLE SLOPE 32" THRIE BEAM ANCHOR
14B33-01C	CONCRETE BARRIER SINGLE SLOPE 32" THRIE BEAM ANCHOR
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15C02-06A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-06B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C07-14A	PAVEMENT MARKING SYMBOLS
15C07-14B	PAVEMENT MARKING WORDS
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C08-18B	PAVEMENT MARKING (TURN LANES)
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

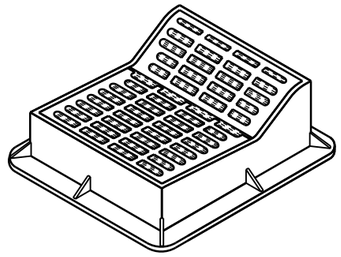
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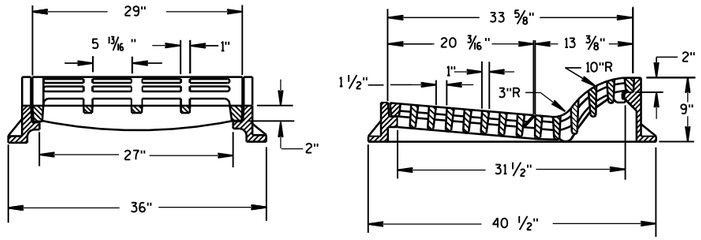
Standard Detail Drawing List

15D38-02B ATTACHMENT OF SIGNS TO POSTS

6

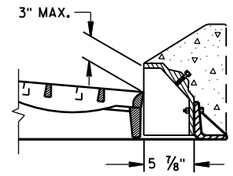
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TYPE "F"

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



ALTERNATIVE CURB BOX FOR TYPE "HM" COVER

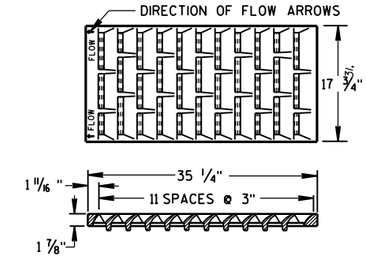
USE WITH TYPES G & J CONCRETE CURB & GUTTER, 30 INCH
NOTED AS TYPE HM-GJ ON DRAINAGE TABLE

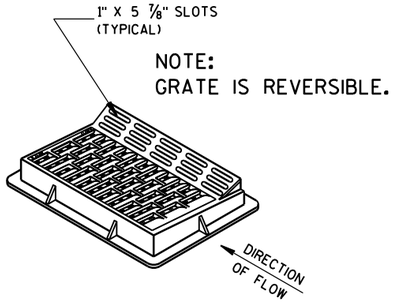
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM-GJ" COVER
NOTED AS TYPE HM-GJ-S ON DRAINAGE TABLE

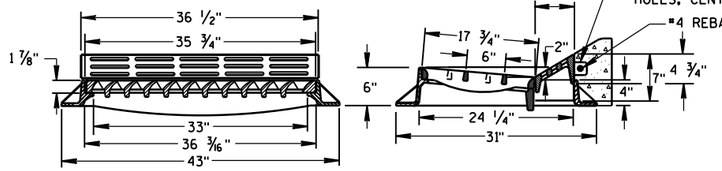
GENERAL NOTES

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.



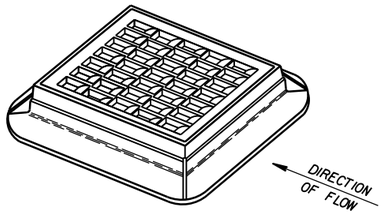


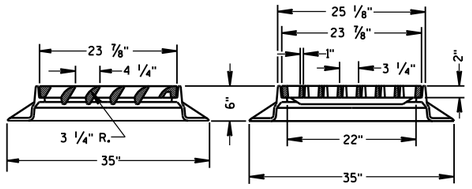


TYPE "HM"

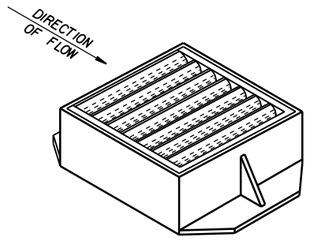
USE WITH TYPES A & D CONCRETE CURB & GUTTER, 36 INCH.

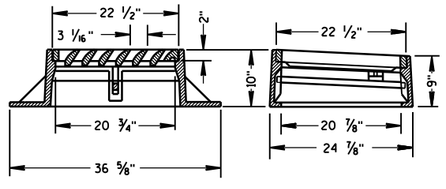
NOTE:
SPECIAL GRATE FOR THE
TYPE "H" COVER MAY ALSO BE
USED FOR THE TYPE "HM" COVER
NOTED AS TYPE HM-S ON DRAINAGE TABLE



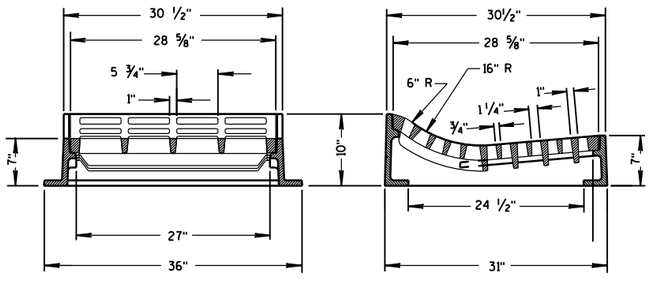


TYPE "S"



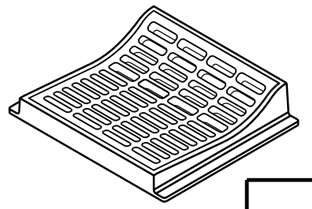


TYPE "V"



TYPE "T"

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
11/27/2013
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

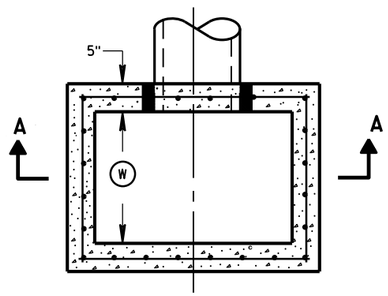
FHWA

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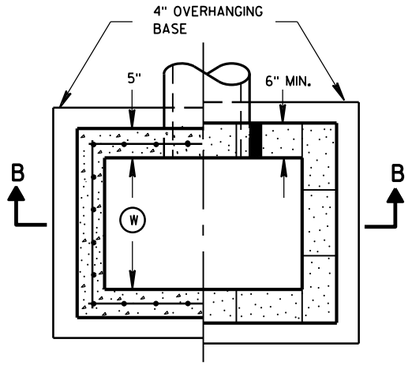
S.D.D. 8 A 5-19c

6

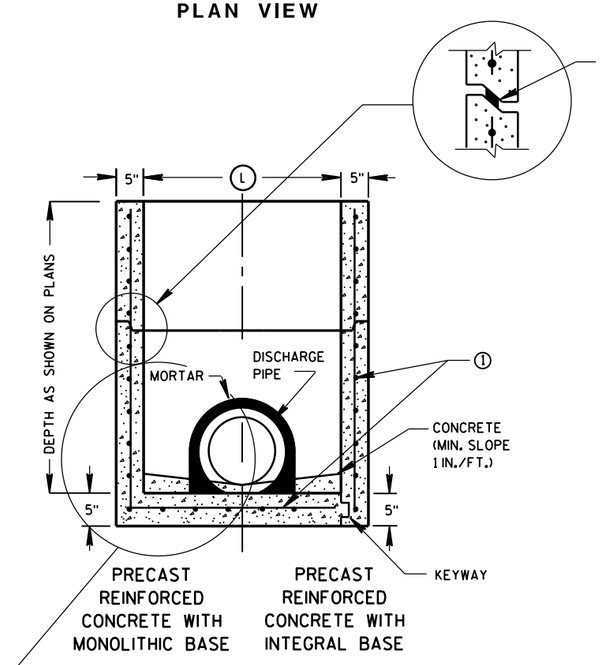
S.D.D. 8 A 5-19c



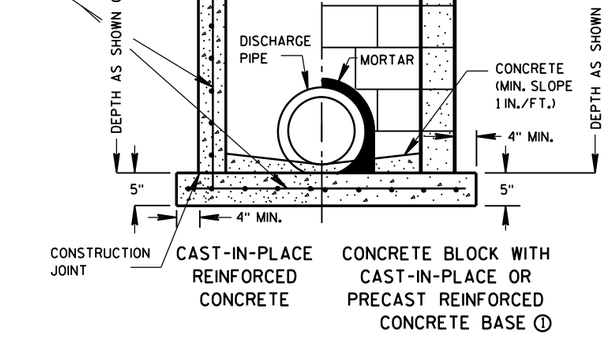
PLAN VIEW



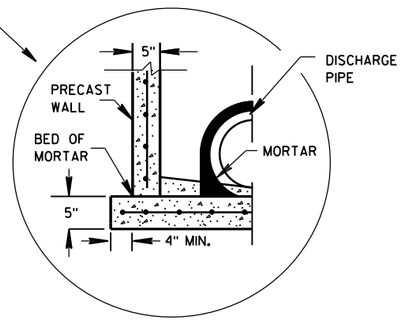
PLAN VIEW



SECTION A-A



SECTION B-B



SEPARATE 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 FOUNDATION 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 SEPARATE 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.

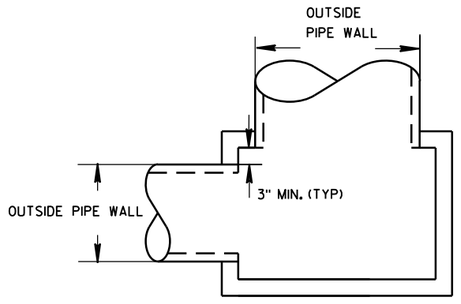
② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

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



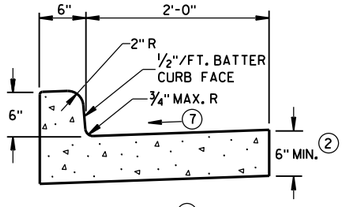
DETAIL "A"

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

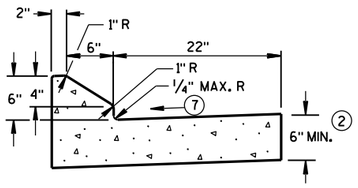
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 — DATE
/S/ Rodney Taylor
ROADWAY STANDARDS D IT UNIT SUPERVIS
FHWA

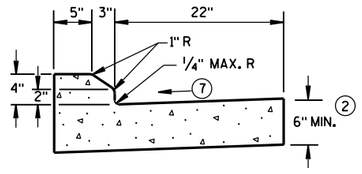
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT



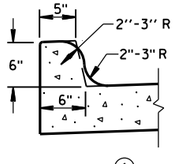
TYPES A (1) & D



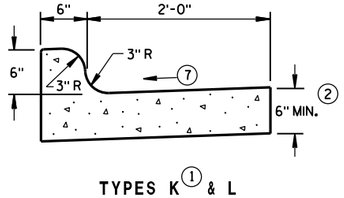
6" SLOPED CURB TYPES G (1) & J



4" SLOPED CURB TYPES G (1) & J

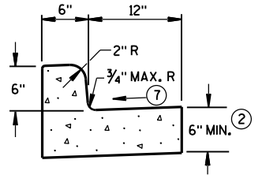


TYPES K (1) & L
(OPTIONAL CURB SHAPE)



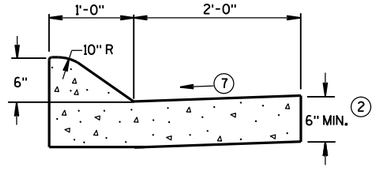
TYPES K (1) & L

CONCRETE CURB & GUTTER 30"

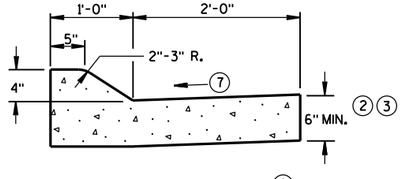


TYPES A (1) & D

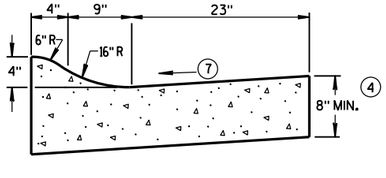
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A (1) & D

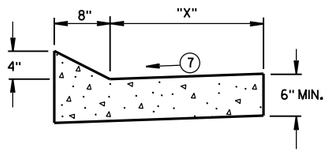


4" SLOPED CURB TYPES A (1) & D



4" SLOPED CURB TYPES R (1) & T (5)

CONCRETE CURB & GUTTER 36"



TYPES TBT & TBTT (1)

CONCRETE CURB & GUTTER

TBT & TBTT	"X"
30"	22"
36"	28"

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.

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, R AND TBTT.

(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) USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.

(4) 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.

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

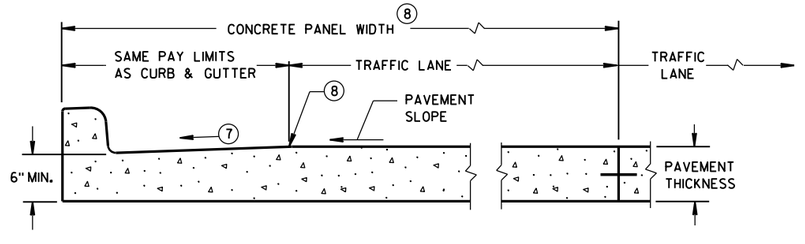
(6) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

(7) USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.

(8) INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

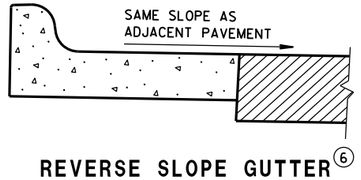
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

PAVEMENT THICKNESS	MAXIMUM PANEL WIDTH
LESS THAN 10"	12'
10" & ABOVE	15'



PARTIAL SECTION OF PAVEMENT *
WITH INTEGRAL CURB & GUTTER

* BIKE LANE IS NOT SHOWN.

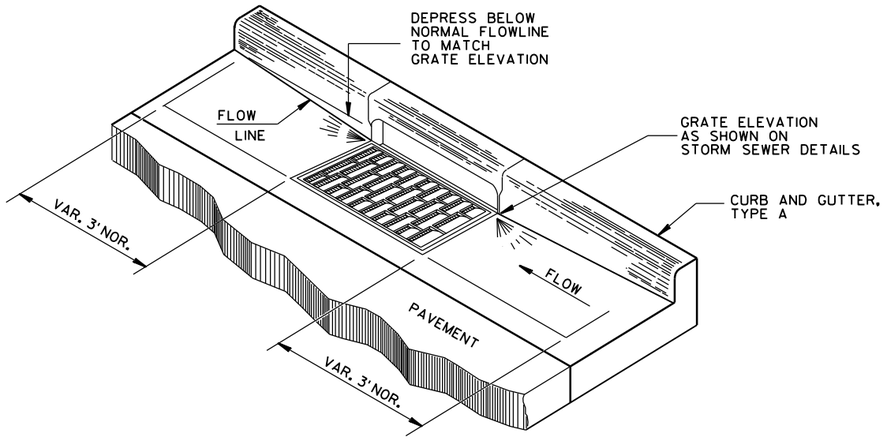


REVERSE SLOPE GUTTER (6)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

CONCRETE CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

S.D.D. 8 D 1-20a



DETAIL OF CURB AND GUTTER AT INLETS

(TYPE H INLET COVER SHOWN)

GENERAL NOTES

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

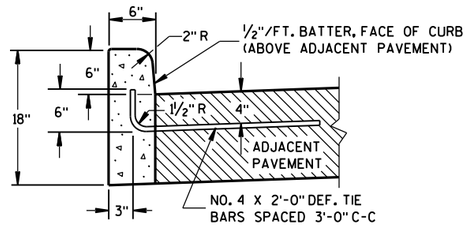
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

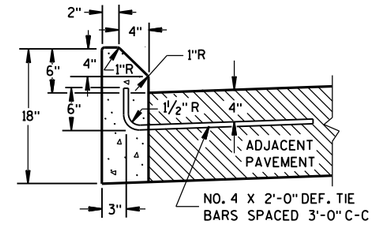
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.

(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.

(9) REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

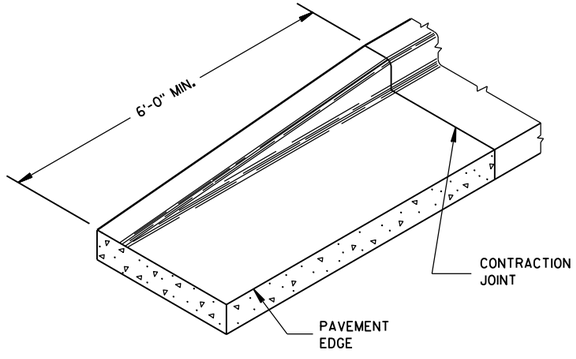


TYPES A(1) & D

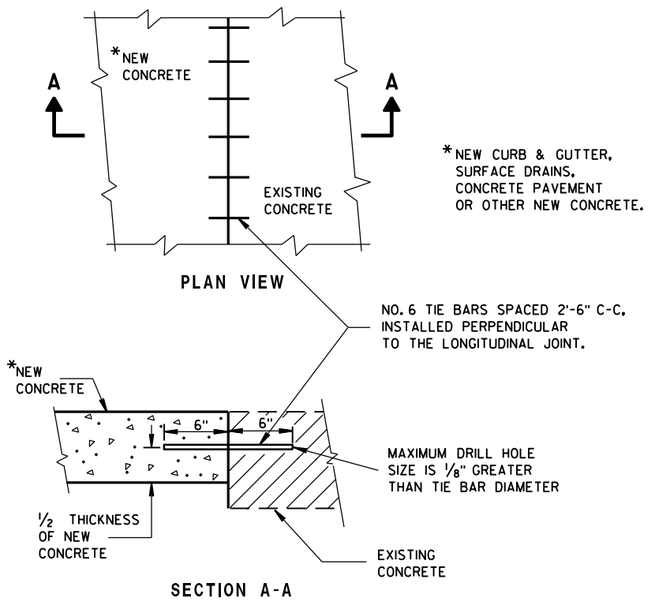


TYPES G(1) & J

CONCRETE CURB



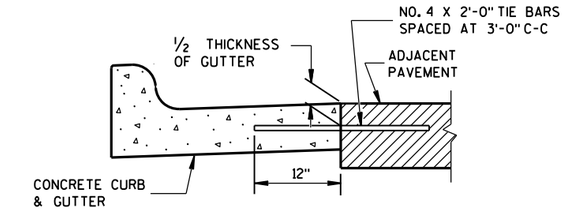
END SECTION CURB & GUTTER



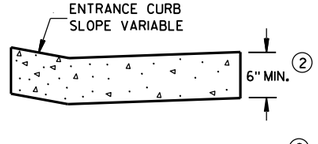
PLAN VIEW

SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT



TYPICAL TIE BAR LOCATION (1)



DRIVEWAY ENTRANCE CURB (9)

(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

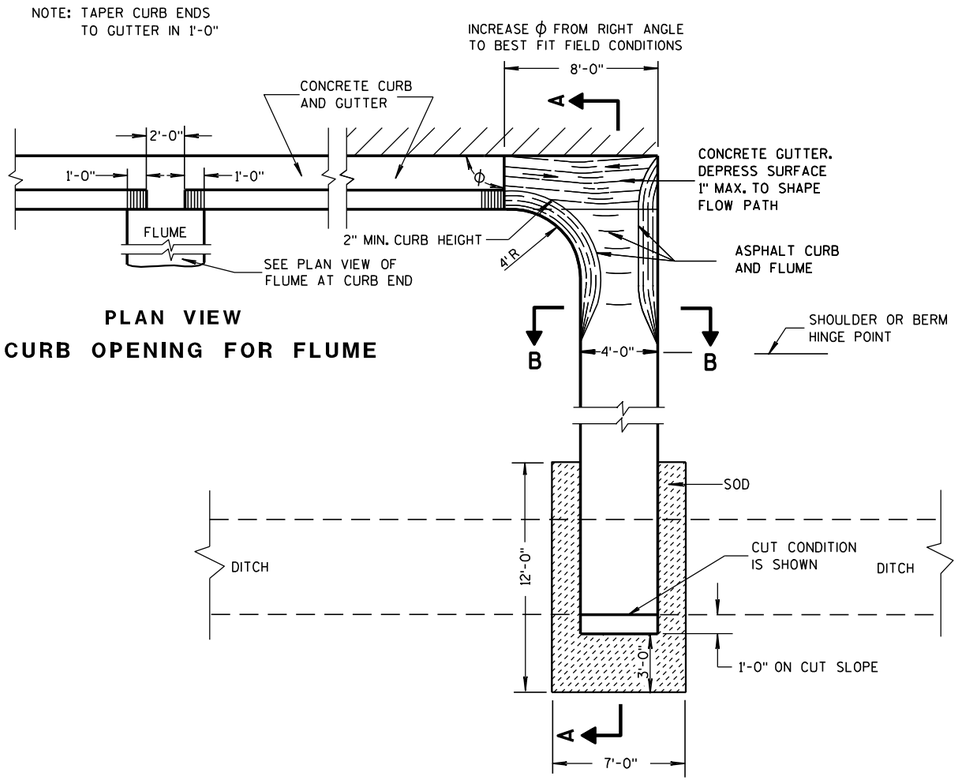
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERVISOR
FHWA
ENT

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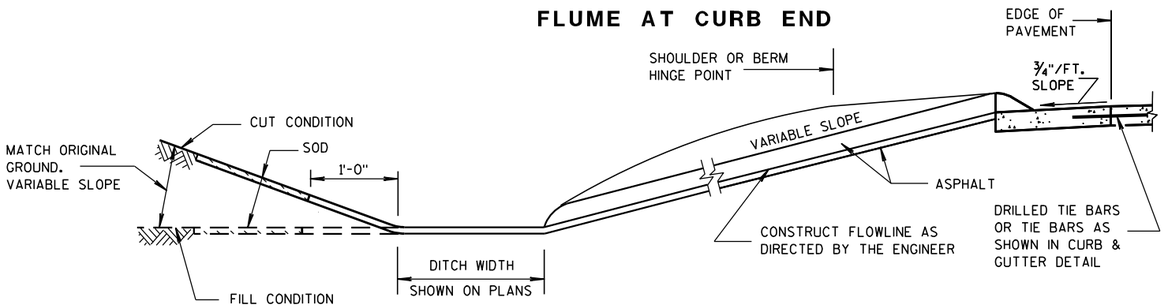
S.D.D. 8 D 1-20b

ASPHALTIC FLUME

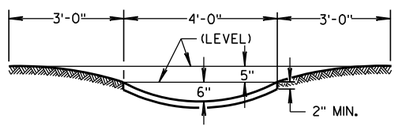


PLAN VIEW
CURB OPENING FOR FLUME

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.

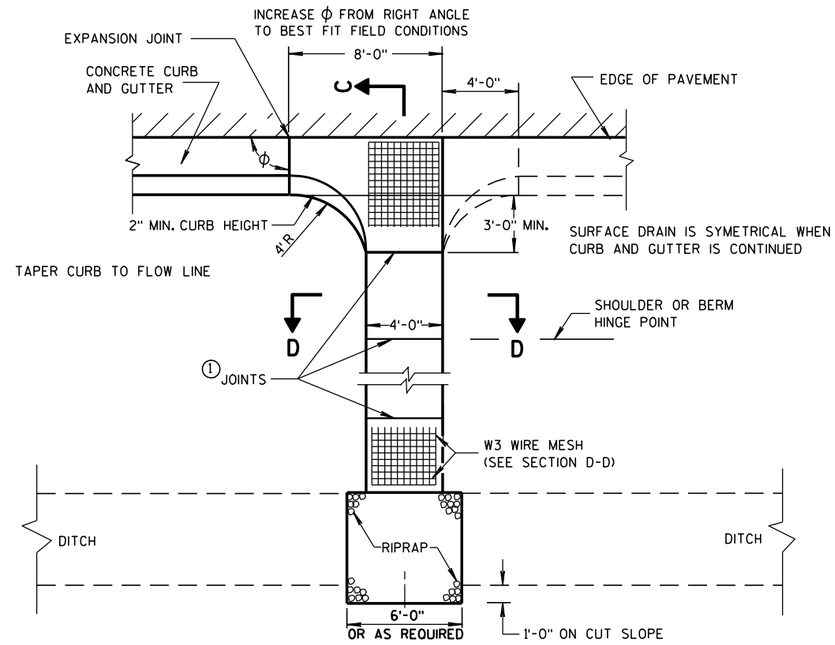
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

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.

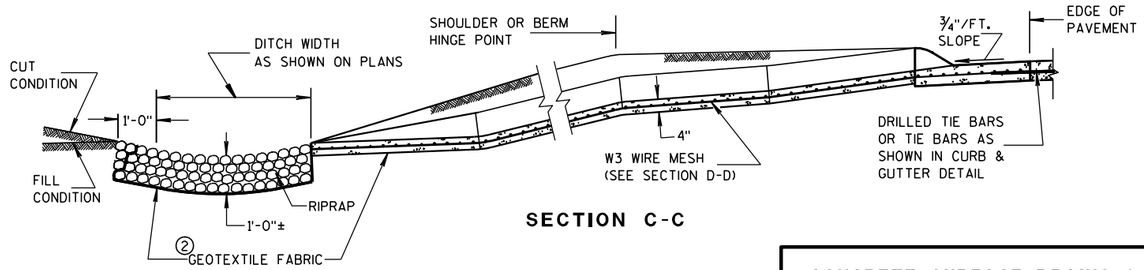
② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.

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

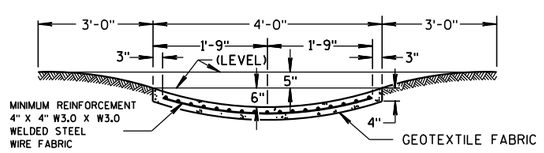
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

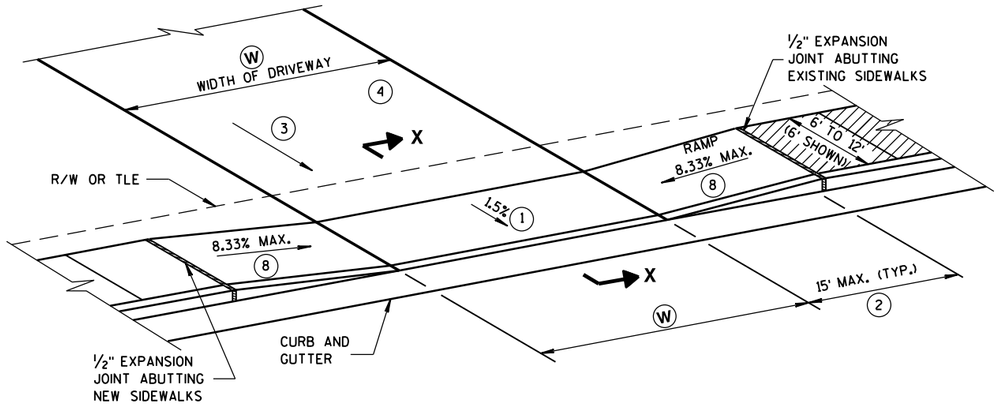
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

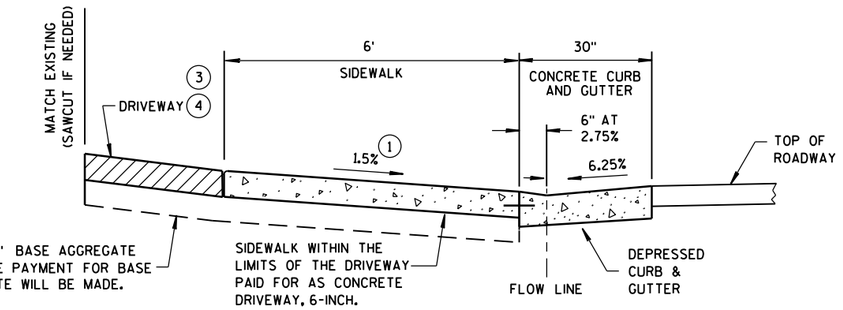
9-4-08 DATE — /S/ Jerry H. Zogg ROADWAY STANDARDS ENGINEER — MENT

FHWA

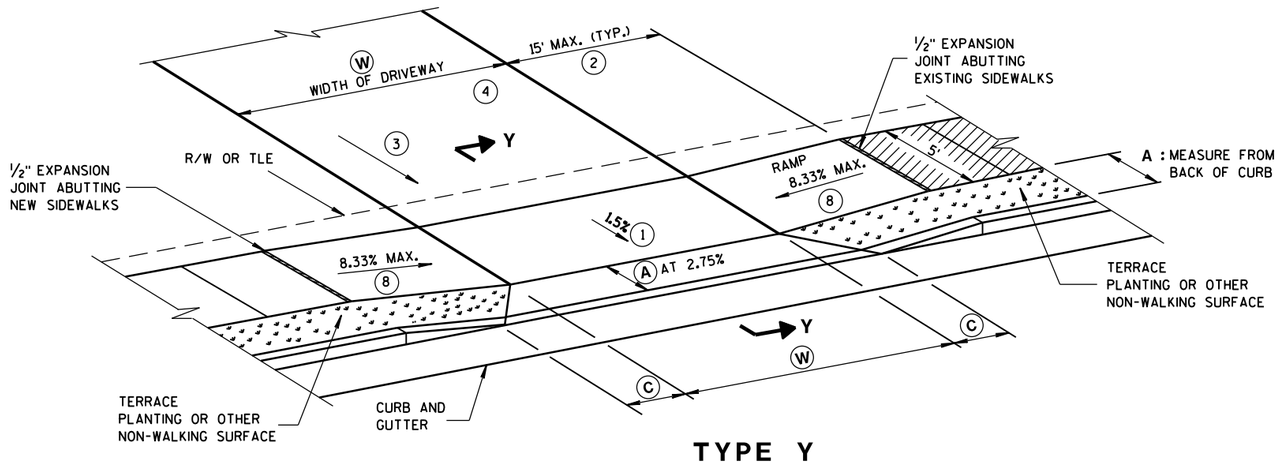
6
S.D.D. 8 D 4-5



TYPE X
SIDEWALK ABUTS CURB & GUTTER
TERRACE VARIES 0 TO 3 FEET



SECTION X-X

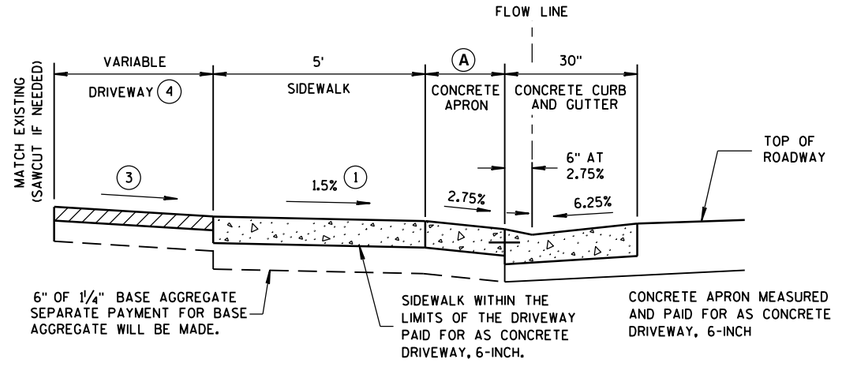


TYPE Y
SIDEWALK WITH NARROWER TERRACE
TERRACE VARIES 4 TO 6 FEET

(W): 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)
16' MIN. - 35' MAX. COMMERCIAL (CE)

GENERAL NOTES

1. CONSTRUCTION TOLERANCE OF 0.5% ± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
2. THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE SIDEWALK SHALL BE AS FLAT AS FEASIBLE AND NOT EXCEED THE LONGITUDINAL GRADE OF THE ROADWAY.
3. DRIVEWAY SLOPES: DESIRABLE MAXIMUM
   - 10.5% UP AWAY FROM SIDEWALK (SAG)
   - 8.5% DOWN AWAY FROM SIDEWALK (CREST)
   - ABSOLUTE MAXIMUM 15% FOR BOTH CREST AND SAG
4. DRIVEWAY TYPES
   - 6-INCH CONCRETE DRIVEWAY PAVEMENT OVER 6-INCH BASE AGGREGATE
   - 2-INCH TO 3-INCH ASPHALTIC SURFACE OVER 6-INCH BASE AGGREGATE
   - 6-INCH BASE AGGREGATE (MAY BE INCREASED FOR CLAY SUBGRADES)
5. PROVIDE CONSTRUCTION JOINTS ALONG THE CENTER OF THE CONCRETE FOR DRIVEWAYS UNDER 20 FEET IN WIDTH AND AT THE THIRD POINTS OVER 20 FEET IN WIDTH.
6. (W) IS SHOWN ON PLAN AND PROFILE SHEETS.
7. OFFSETS, ELEVATIONS, AND PERCENT GRADE ARE SHOWN ON THE CROSS SECTIONS.
8. SLOPE SIDEWALK RAMP TOWARD APRON AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.



NOTE: SIDEWALK MAY BE DEPRESSED IN DRIVEWAY AREAS

SECTION Y-Y

DRIVEWAY DETAIL
WITH CONCRETE CURB & GUTTER
(URBAN AND SUBURBAN)

TABLE Y

(A) FEET	(C) FEET
3.5'	2.0'
4.5'	3.0'
5.5'	3.5'

NOT TO SCALE

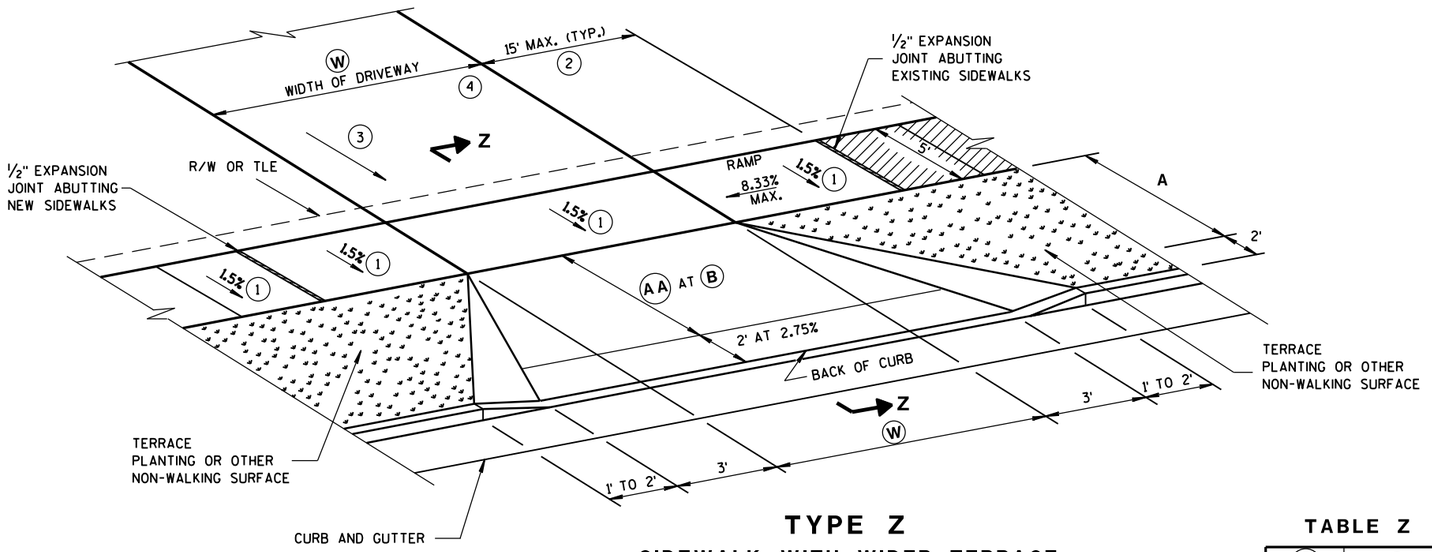
DRIVEWAY AND SIDEWALK RAMPS
TYPES X & Y

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 — /S/ Rodney Taylor
DATE — ROADWAY STANDARDS UNIT SUPERV — ENT
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S.D.D. 8 D 18-1



TYPE Z

SIDEWALK WITH WIDER TERRACE
TERRACE VARIES 7 TO 12 FEET

TABLE Z

(AA) FEET	(B) %
4.5'	11.5%
5.5'	9-11.5%
6.5'	8-11.5%
7.5'	7-11.5%
8.5'	6-11.5%
9.5'	5-11.5%

GENERAL NOTES

1. CONSTRUCTION TOLERANCE OF 0.5% ± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

2. THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE SIDEWALK SHALL BE AS FLAT AS FEASIBLE AND NOT EXCEED THE LONGITUDINAL GRADE OF THE ROADWAY.

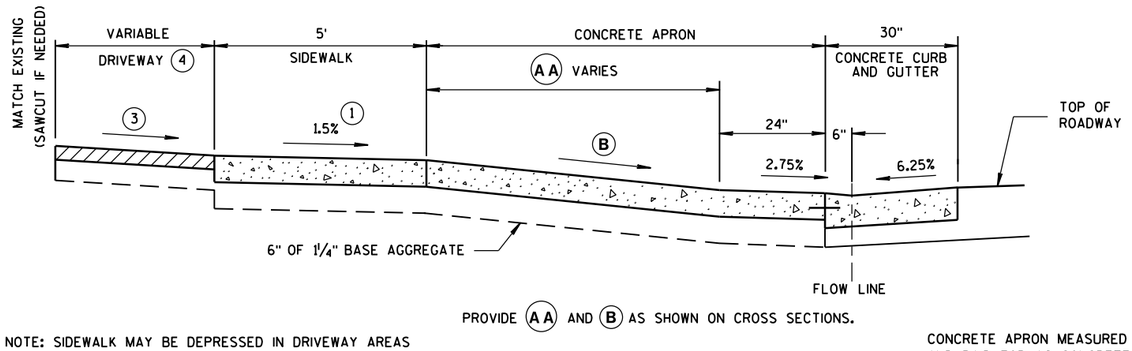
3. DRIVEWAY SLOPES: DESIRABLE MAXIMUM
   - 10.5% UP AWAY FROM SIDEWALK (SAG)
   - 8.5% DOWN AWAY FROM SIDEWALK (CREST)
   - ABSOLUTE MAXIMUM 15% FOR BOTH CREST AND SAG

4. DRIVEWAY TYPES
   - 6-INCH CONCRETE DRIVEWAY PAVEMENT OVER 6-INCH BASE AGGREGATE
   - 2-INCH TO 3-INCH ASPHALTIC SURFACE OVER 6-INCH BASE AGGREGATE
   - 6-INCH BASE AGGREGATE (MAY BE INCREASED FOR CLAY SUBGRADES)

5. PROVIDE CONSTRUCTION JOINTS ALONG THE CENTER OF THE CONCRETE FOR DRIVEWAYS UNDER 20 FEET IN WIDTH AND AT THE THIRD POINTS OVER 20 FEET IN WIDTH.

6. (W) IS SHOWN ON PLAN AND PROFILE SHEETS.

7. OFFSETS, ELEVATIONS, AND PERCENT GRADE ARE SHOWN ON THE CROSS SECTIONS.



PROVIDE (AA) AND (B) AS SHOWN ON CROSS SECTIONS.

NOTE: SIDEWALK MAY BE DEPRESSED IN DRIVEWAY AREAS FOR **B** VALUES NOT SHOWN IN TABLE Z.

SIDEWALK WITHIN THE LIMITS OF THE DRIVEWAY PAID FOR AS CONCRETE DRIVEWAY, 6-INCH.

SEPARATE PAYMENT FOR BASE AGGREGATE WILL BE MADE.

CONCRETE APRON MEASURED AND PAID FOR AS CONCRETE DRIVEWAY, 6-INCH

SECTION Z-Z

DRIVEWAY DETAIL
WITH CONCRETE CURB & GUTTER

(URBAN AND SUBURBAN)

(W): 12' MIN. - 24' MAX. RESIDENTIAL AND NON-COMMERCIAL (PE & FE)
16' MIN. - 35' MAX. COMMERCIAL (CE)

NOT TO SCALE

DRIVEWAY AND SIDEWALK RAMPS TYPE Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

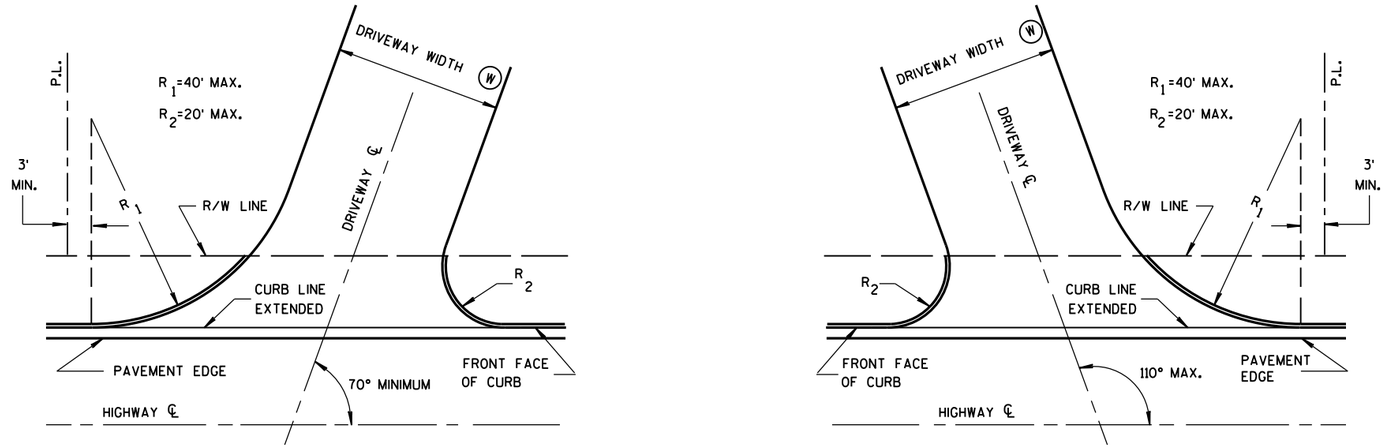
APPROVED
December, 2016 — /S/ Rodney Taylor
DATE — ROADWAY STANDARDS UNIT SUPERV — ENT
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S.D.D. 8 D 19-1

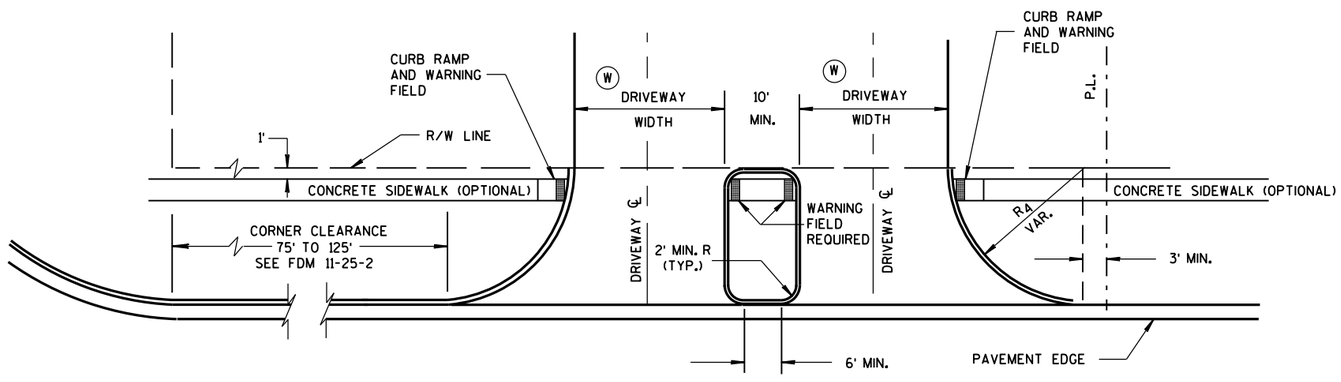
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S.D.D. 8 D 19-1



SKEWED DRIVEWAY DETAILS
(COMMERCIAL AND NON-COMMERCIAL)

SIDEWALK NOT SHOWN



DRIVEWAY LOCATION AND SPACING DETAILS

SIDEWALK SHOWN

NOTES

A MAXIMUM RADIUS OF 10 FEET SHALL BE USED FOR NON-COMMERCIAL PRIVATE ENTRANCES. RADII FOR COMMERCIAL DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER BASED ON TRAFFIC AND DRIVEWAY PERMIT RESTRICTIONS.

THE MINIMUM ANGLE OF INTERSECTION BETWEEN THE DRIVEWAY AND HIGHWAY CENTERLINES SHALL BE 70°.

ALL CURVILINEAR PRIVATE ENTRANCE OUTLINES SHALL BE CONTAINED WITHIN THE HIGHWAY R/W.

NO DRIVEWAY SHALL BE BUILT WITHIN 3 FEET OF THE PROPERTY LINE EXCEPT FOR EXISTING JOINT DRIVEWAY SHARED BY TWO OWNERS.

Ⓦ DRIVEWAY WIDTHS:

COMMERCIAL - 35' MAX., 16' MIN.

RESIDENTIAL AND NON-COMMERCIAL - 24' MAX., 12' MIN.

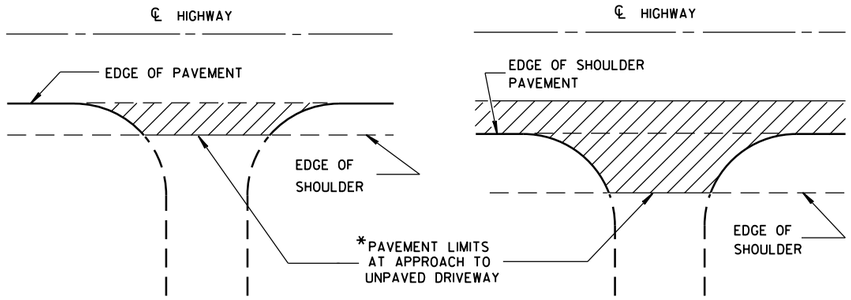
DRIVEWAYS WITH CURB & GUTTER RETURNS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERV
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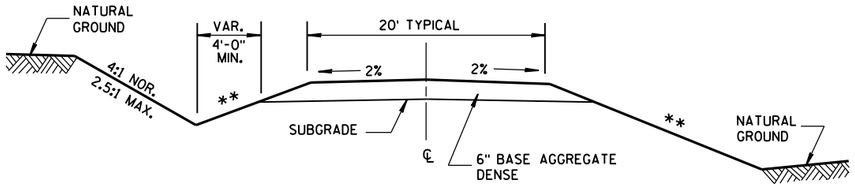


*WHERE DRIVEWAY IS PAVED, APPROACH PAVEMENT SHOULD BE EXTENDED TO MATCH DRIVEWAY PAVEMENT.

PLAN VIEW
(UNPAVED SHOULDER ON HIGHWAY)

PLAN VIEW
(PAVED SHOULDER ON HIGHWAY)

RURAL DRIVEWAY INTERSECTION DETAIL
(NO CURB & GUTTER OR SIDEWALK)

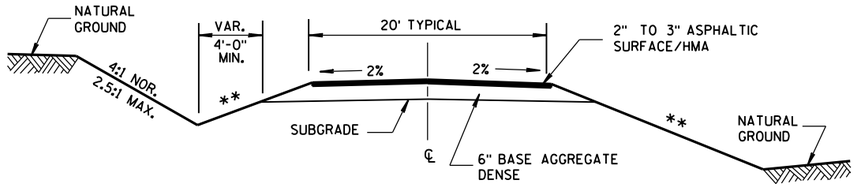


IN CUT **IN FILL**

TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE AGGREGATE SURFACE

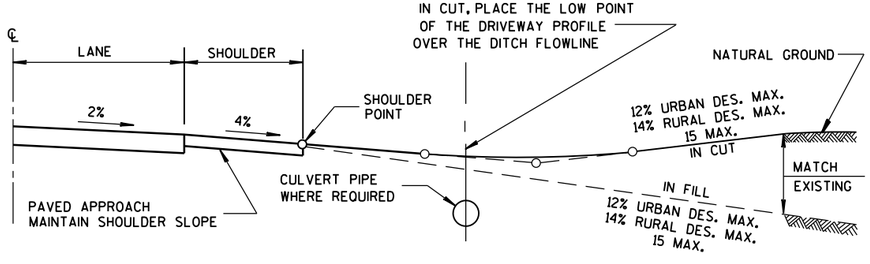
** SLOPE CAN VARY WITH SPEED. SEE 11-45-2.6.2.

POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥35 TO <60	6:1
≥60	10:1



IN CUT **IN FILL**

TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE ASPHALTIC SURFACE



TYPICAL DRIVEWAY PROFILES

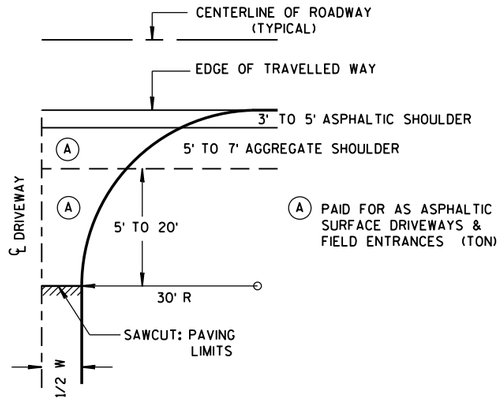
DRIVEWAYS WITHOUT CURB & GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 — /S/ Rodney Taylor
DATE — ROADWAY STANDARDS UNIT SUPERV — ENT
FHWA

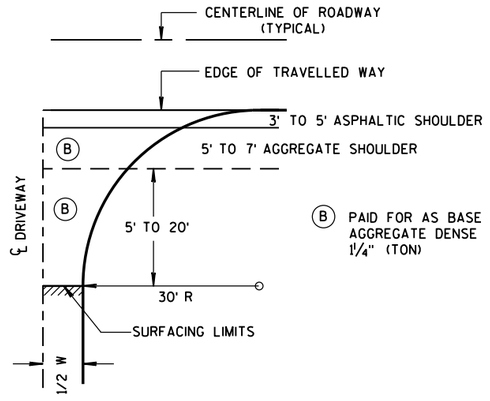
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S.D.D. 8 D 21-1



PLAN VIEW
HALF SECTION

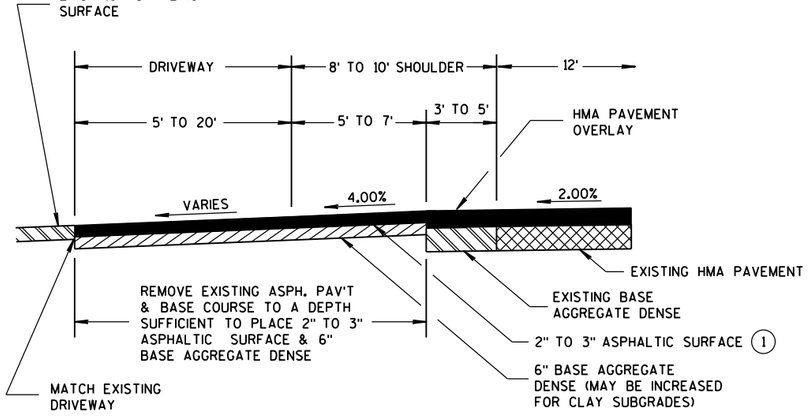
W MIN. = 16'
W MAX. = 24'



PLAN VIEW
HALF SECTION

GENERAL NOTES

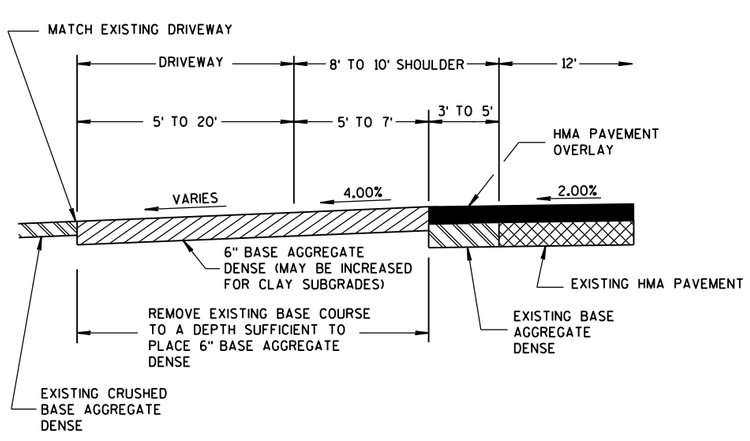
(1) DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.



PROFILE VIEW

RURAL ENTRANCE WITH ASPHALTIC SURFACE

RESURFACING PROJECTS



PROFILE VIEW

RURAL ENTRANCE WITH AGGREGATE SURFACE

6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

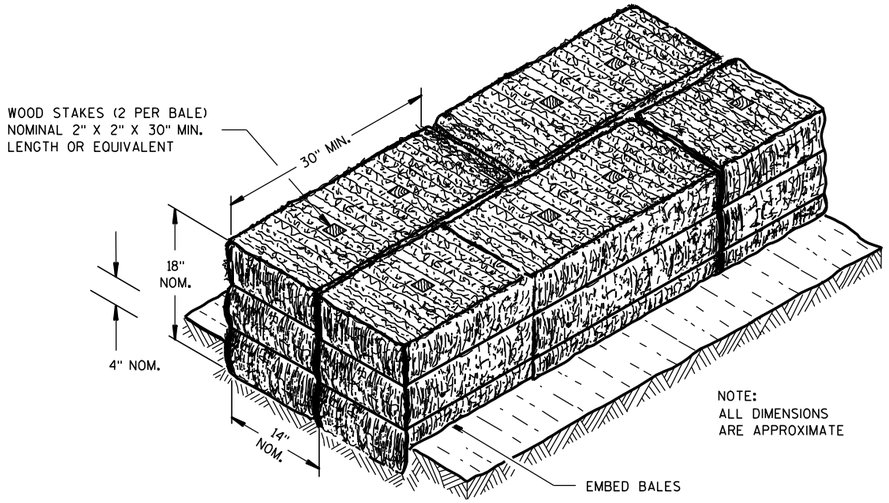
APPROVED
December, 2016 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS UNIT SUPERV
ENT
FHWA

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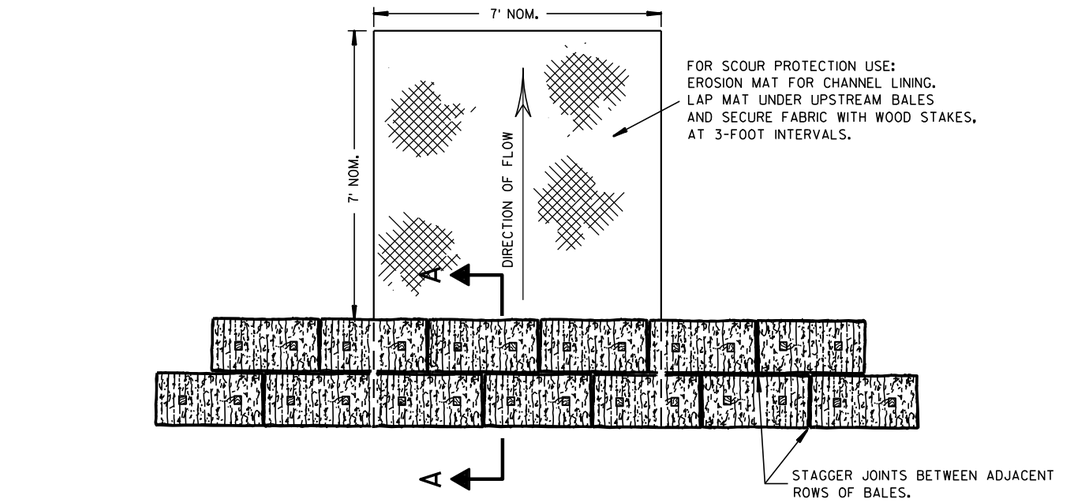
S.D.D. 8 D 22-1

6

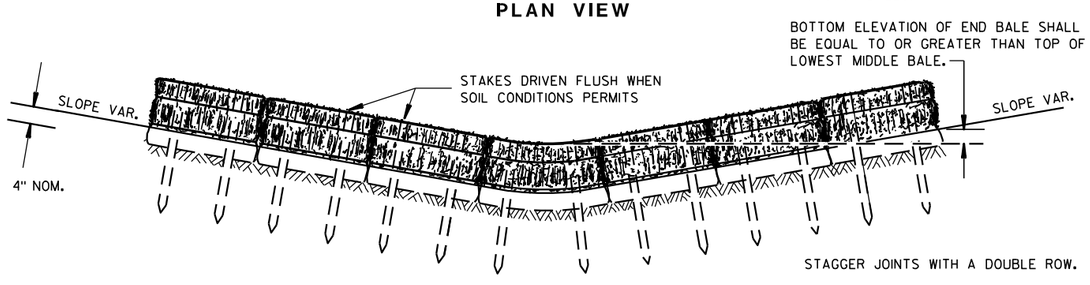
S.D.D. 8 D 22-1



SECTION A-A



PLAN VIEW



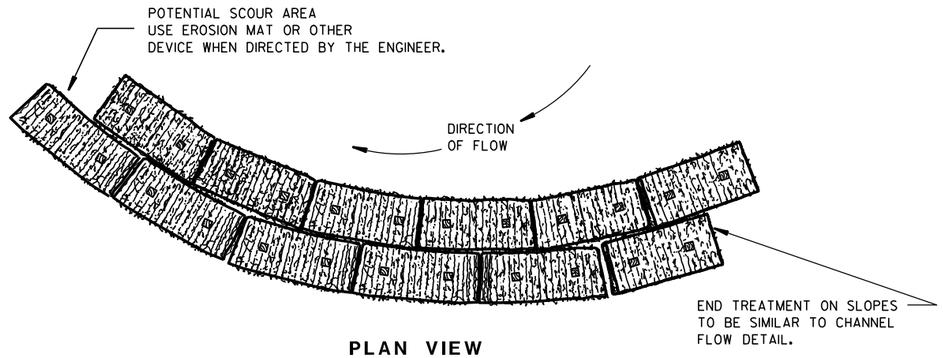
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES (1)

GENERAL NOTES

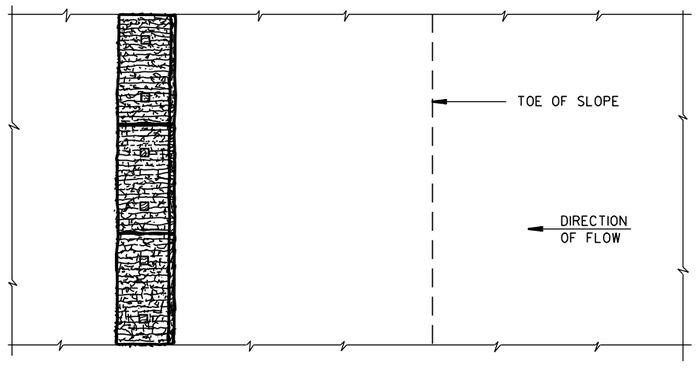
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

(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.

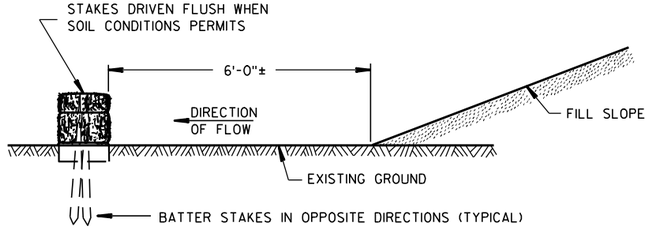


PLAN VIEW

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

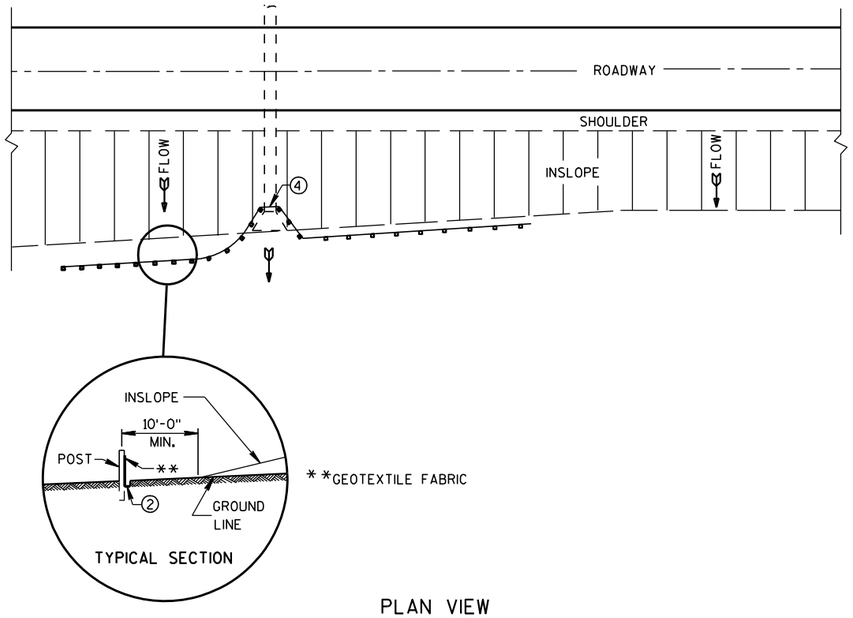
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02 — DATE

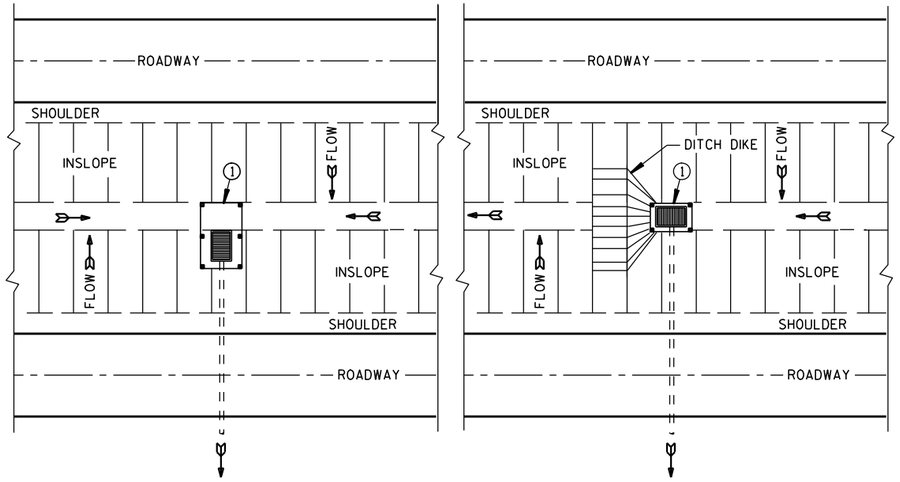
/S/ Beth Cannestra — CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



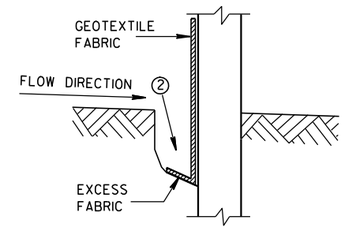
PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

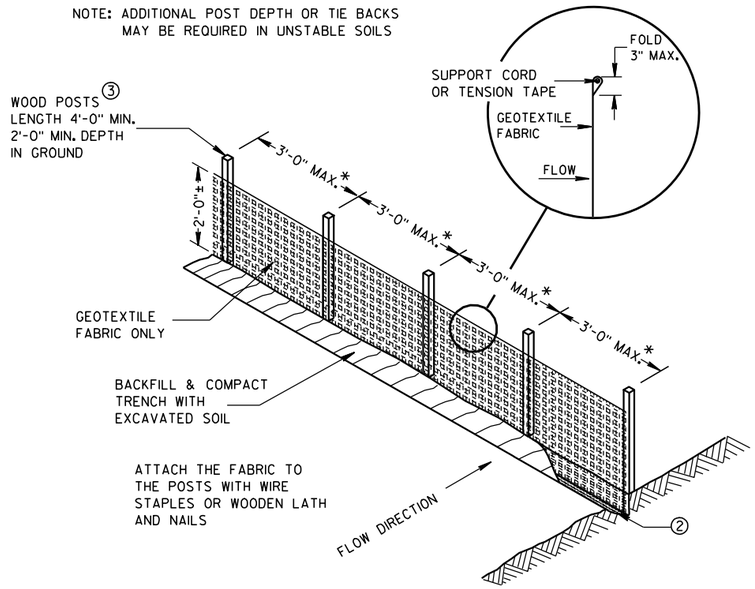
GENERAL NOTES

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

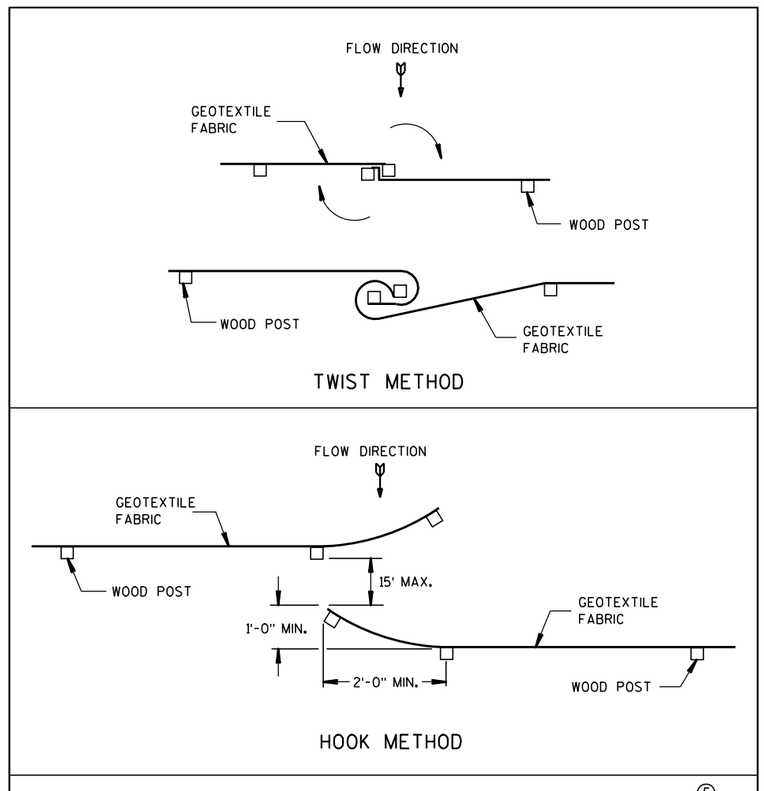
1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL 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.



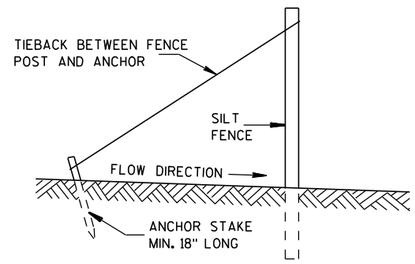
TRENCH DETAIL



SILT FENCE



JOINING TWO LENGTHS OF SILT FENCE 5



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

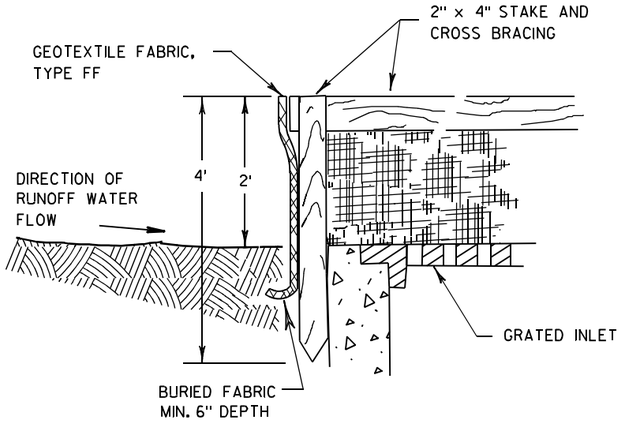
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

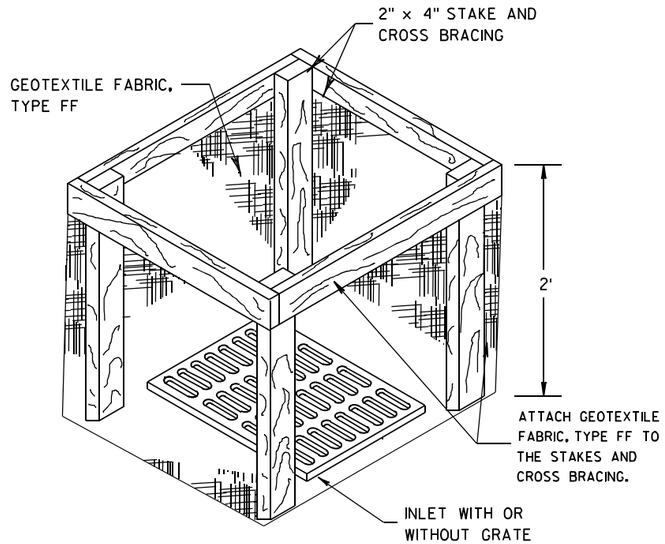
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S.D.D. 8 E 9-6

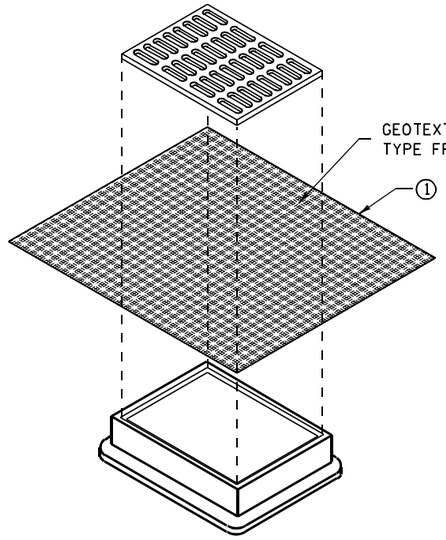
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S.D.D. 8 E 9-6



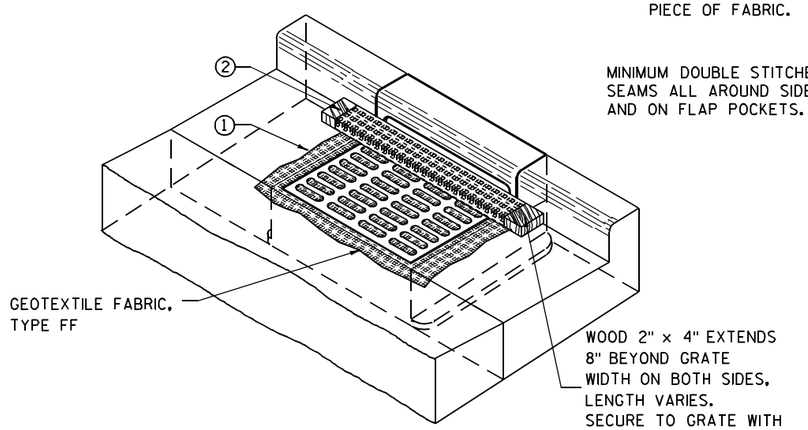


INLET PROTECTION, TYPE A

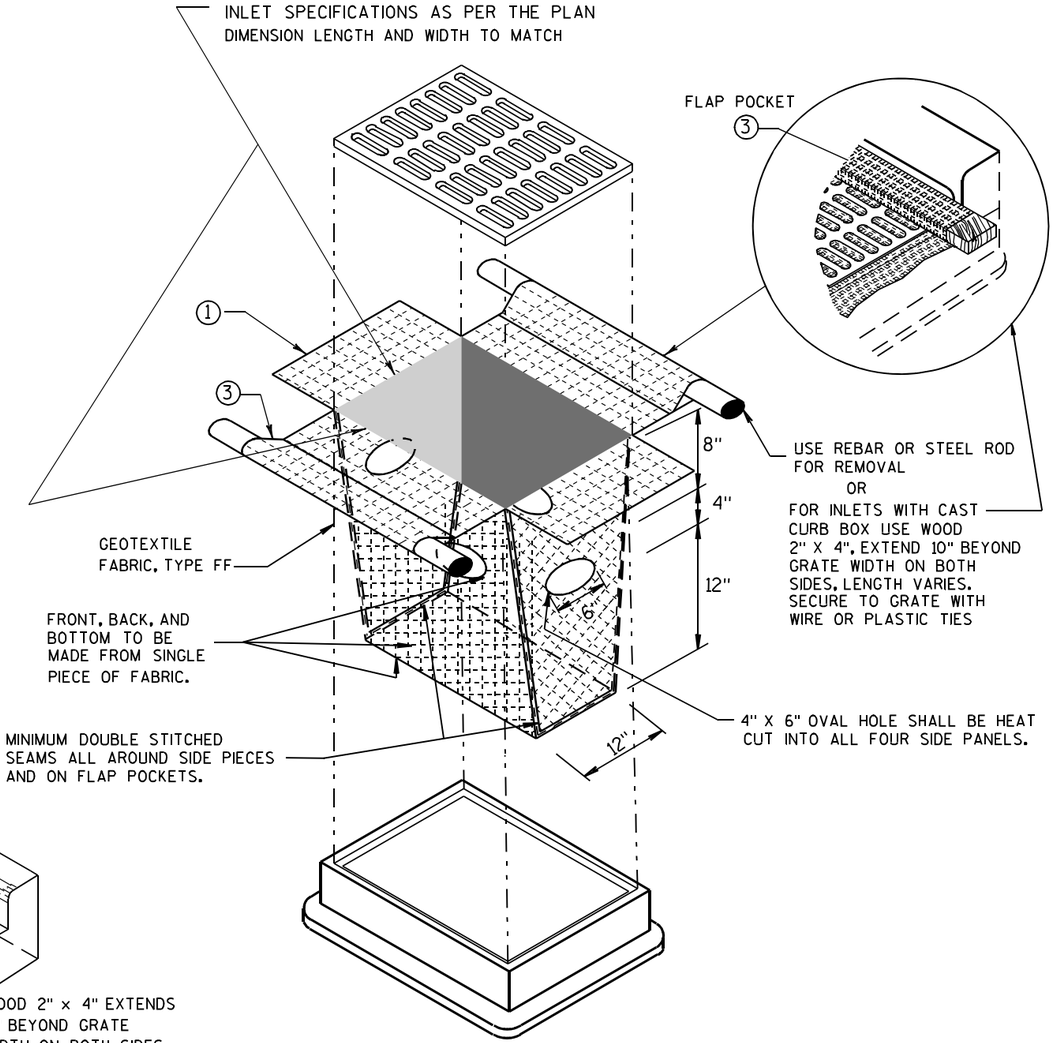


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

(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

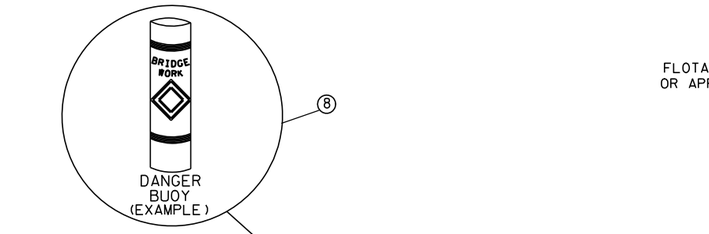
FHWA

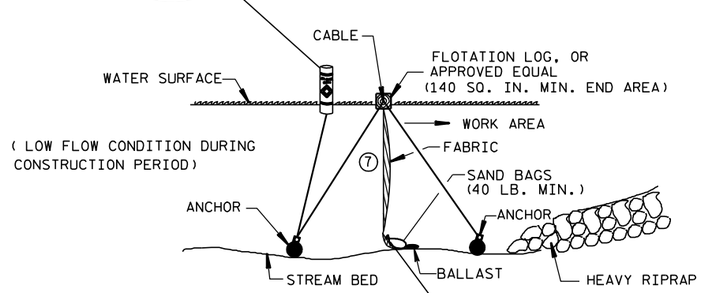
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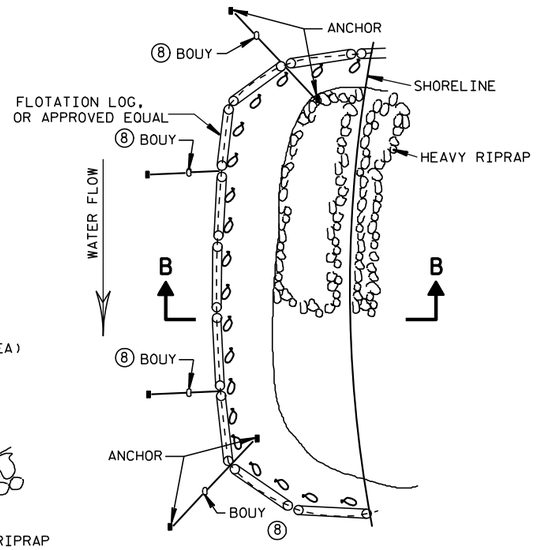
S.D.D. 8 E 10-2

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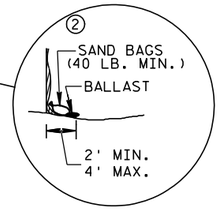
S.D.D. 8 E 10-2



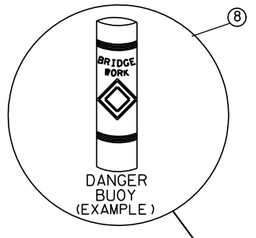


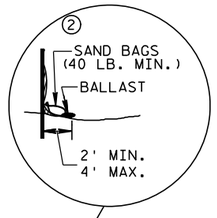


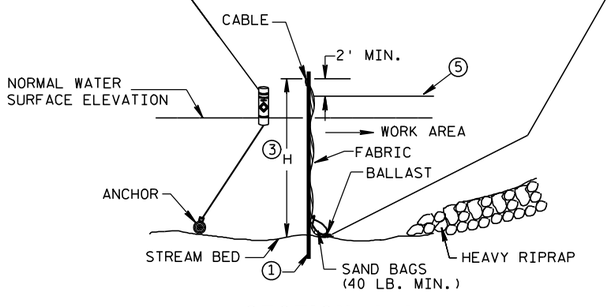
SECTION B-B



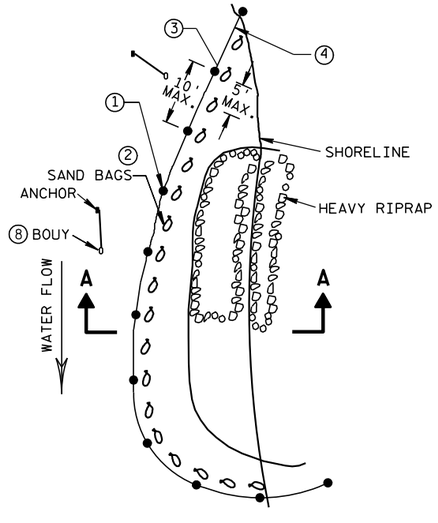
TURBIDITY BARRIER FLOAT ALTERNATIVE
CAUTION - SEE NOTE 6







SECTION A-A



PLAN VIEW

TURBIDITY BARRIER STANDARD POST INSTALLATION

TURBIDITY BARRIER PLACEMENT 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.

TURBIDITY BARRIER MAY BE REMOVED AT THE ENGINEERS DISCRETION, WHEN PERMANENT EROSION CONTROL MEASURES HAVE BEEN ESTABLISHED.

① DRIVEN STEEL POSTS, PIPES, OR CHANNELS. LENGTH SHALL BE SUFFICIENT TO SECURELY SUPPORT BARRIER AT HIGH WATER ELEVATIONS.

② SANDBAGS TO BE USED AS ADDITIONAL BALLAST WHEN ORDERED BY THE ENGINEER TO MEET ADVERSE FIELD CONDITIONS. SPACE AS APPROPRIATE FOR SITE CONDITIONS.

③ WHEN BARRIER HEIGHT, H, EXCEEDS 8 FT., POST SPACING MAY NEED TO BE DECREASED.

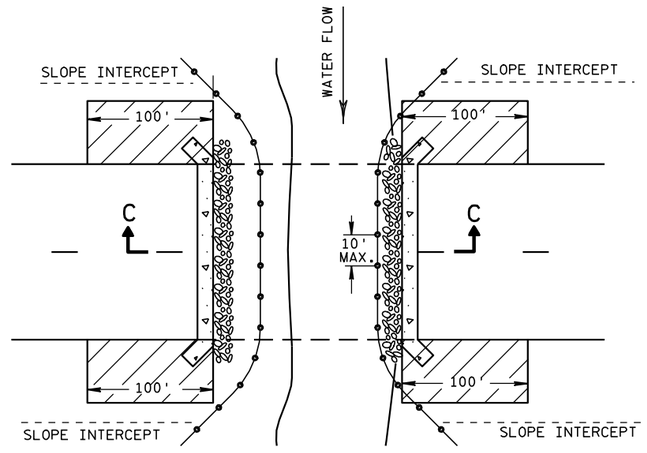
④ IN WATERWAYS SUBJECT TO FLUCTUATING WATER ELEVATIONS, PROVISIONS SHOULD BE MADE TO ALLOW THE WATER TO EQUALIZE ON EACH SIDE OF THE BARRIER. THIS MAY BE ACCOMPLISHED BY LEAVING A PORTION OF THE BARRIER OPEN ON THE UPSTREAM END.

⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE 02 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

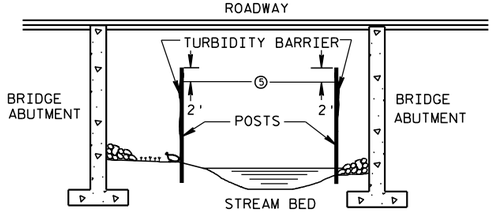
⑥ FLOAT ALTERNATIVE WILL ONLY BE ALLOWED WITH WRITTEN APPROVAL OF THE ENGINEER, AND IS MEANT FOR LOCATIONS WHERE BED ROCK PREVENTS THE INSTALLATION OF POSTS.

⑦ ALLOW SUFFICIENT SLACK VERTICALLY AND HORIZONTALLY SO THAT SEDIMENT BUILD UP WILL NOT SEPARATE OR LOWER THE TURBIDITY BARRIER.

⑧ USE AS DIRECTED BY COAST GUARD OR DNR PERMIT WHEN WORKING IN NAVIGABLE WATERWAYS.



PLAN VIEW



SECTION C-C

TURBIDITY BARRIER DETAIL SHOWING TYPICAL PLACEMENT AT STRUCTURES

TURBIDITY BARRIER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

METAL APRON ENDWALLS

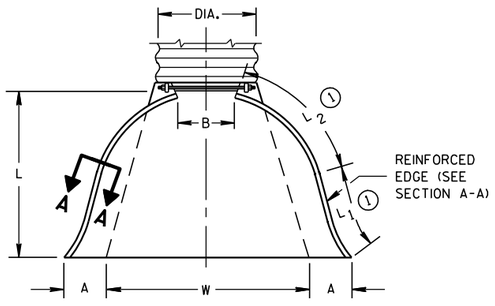
PIPE DIA. (IN.)	MIN. THICK. (Inches) STEEL	MIN. THICK. (Inches) ALUM.	DIMENSIONS (Inches) A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")	APPROX. SLOPE	BODY
12	.064	.060	6	6	6	21	12	17 1/2	24	2 1/2 to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21 3/4	30	2 1/2 to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28 1/4	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

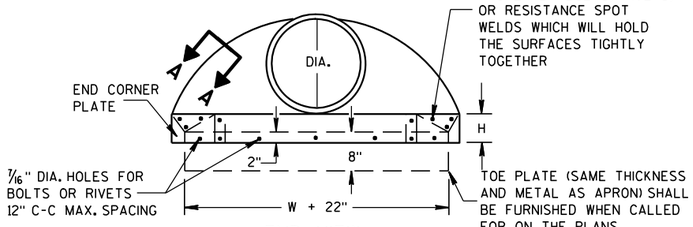
REINFORCED CONCRETE APRON ENDWALLS

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

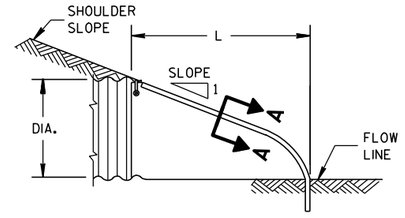
*MINIMUM
**MAXIMUM



PLAN VIEW

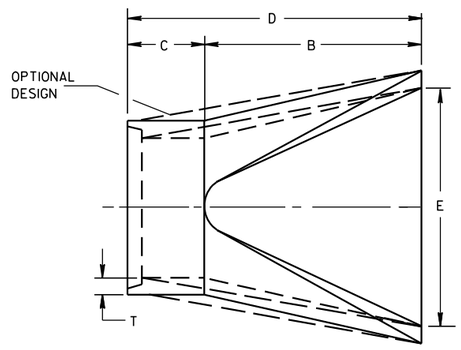


END VIEW

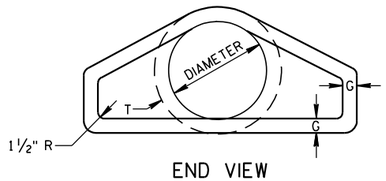


SIDE ELEVATION

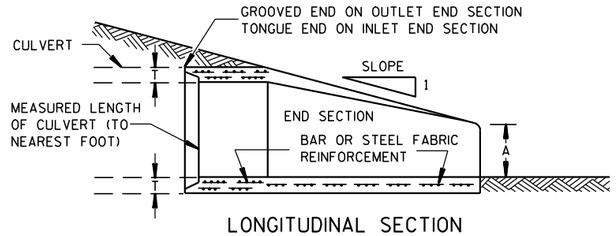
METAL ENDWALLS



PLAN

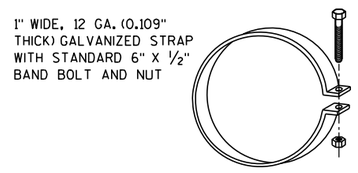


END VIEW



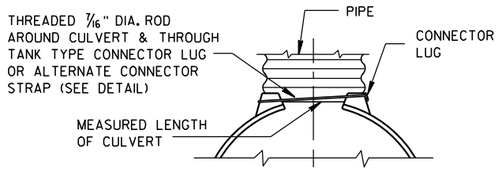
LONGITUDINAL SECTION

CONCRETE ENDWALLS

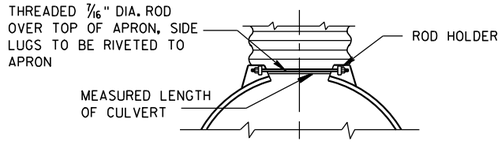


ALTERNATE FOR TYPE 1 CONNECTION

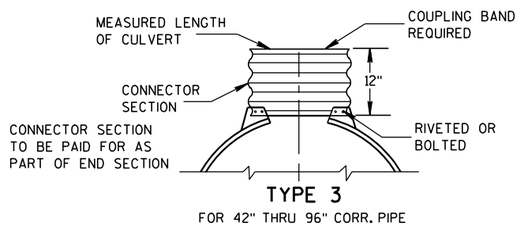
END SECTION CONNECTOR STRAP



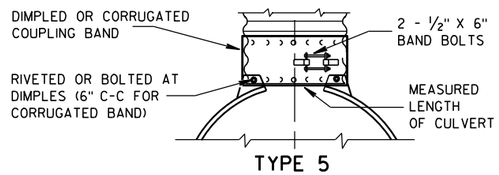
TYPE 1
FOR 12" THRU 24" CORR. PIPE



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

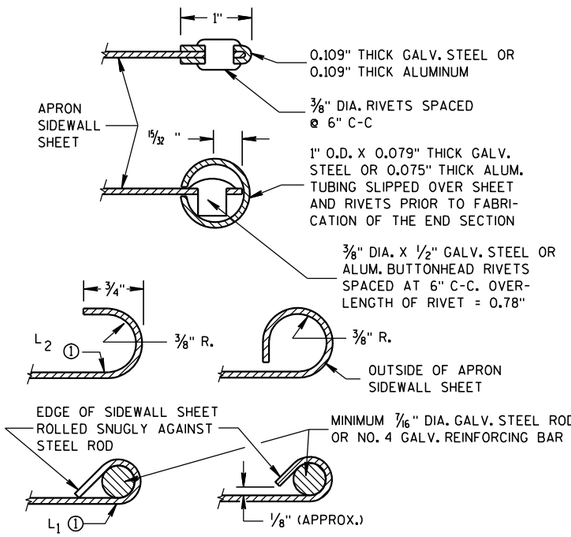
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL. AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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.

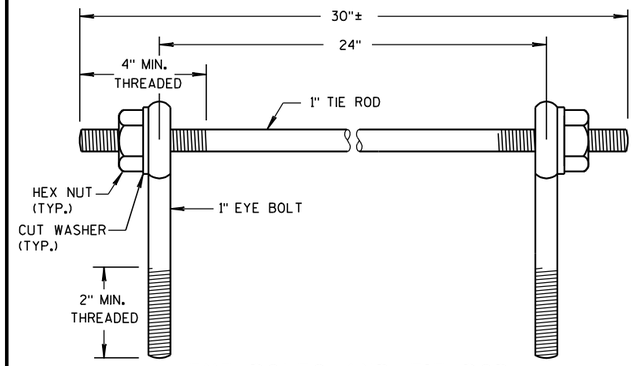
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE

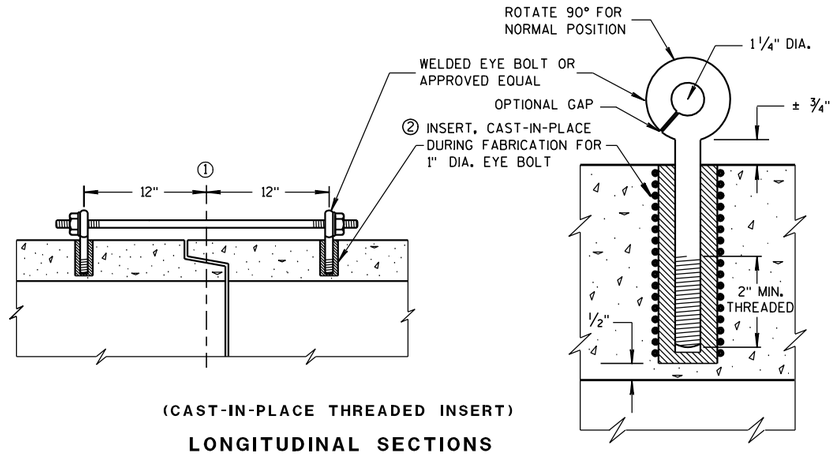
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6
S.D.D. 8 F 1-11



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.

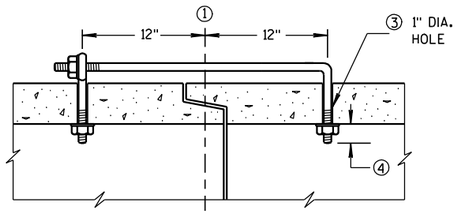
② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.

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

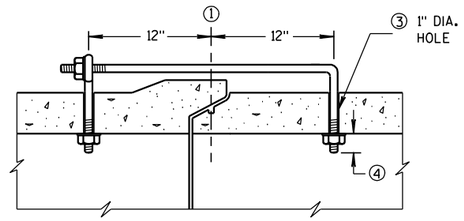
④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.

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)

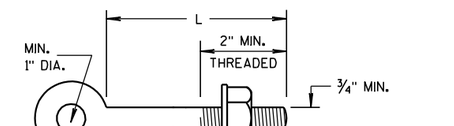


(MODIFIED BELL PIPE)

LONGITUDINAL SECTION

EYE BOLT DIMENSION TABLE

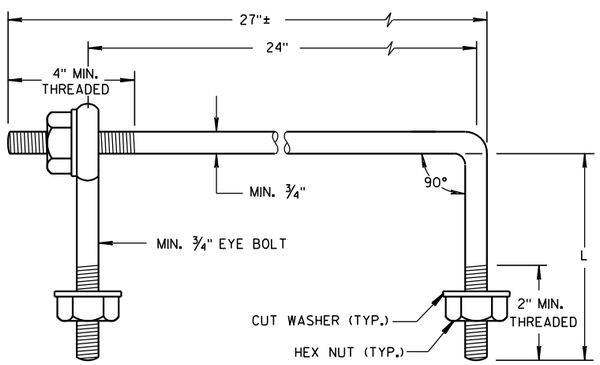
PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
18" TO 24"	4 1/2"	6 1/4"
30"	5"	7"
36"	5 1/2"	7"
42"	6"	
48"	6 1/2"	
60"	7 1/2"	
66"	8"	



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

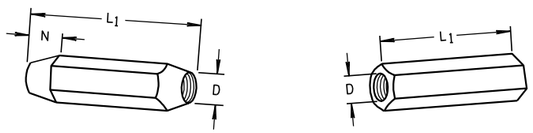
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)

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

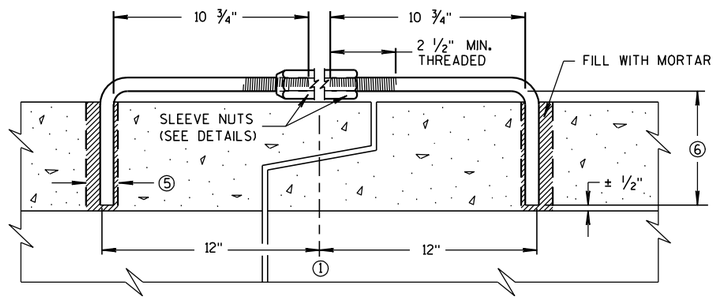
DIMENSIONS SHOWN ARE IN INCHES



TAPERED PLAIN

RIGHT AND LEFT THREADS

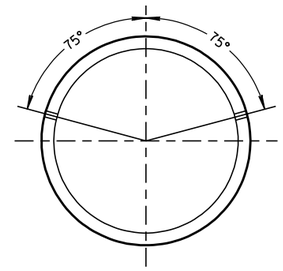
SLEEVE NUTS



LONGITUDINAL SECTION

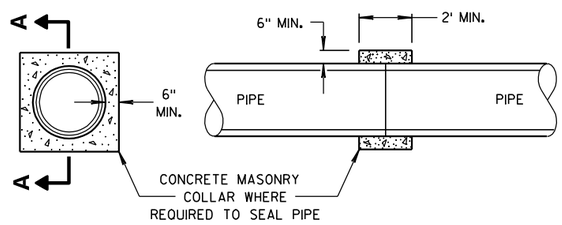
(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)

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

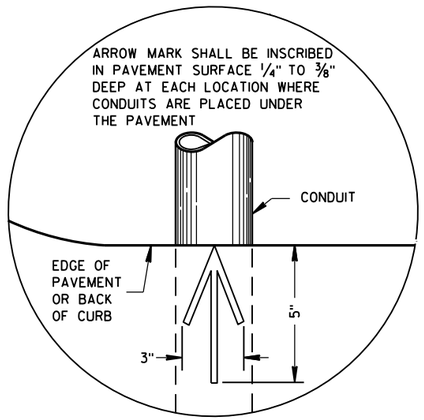
APPROVED
6/5/2012 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
78
FHWA

6

S.D.D. 8 F 4-7

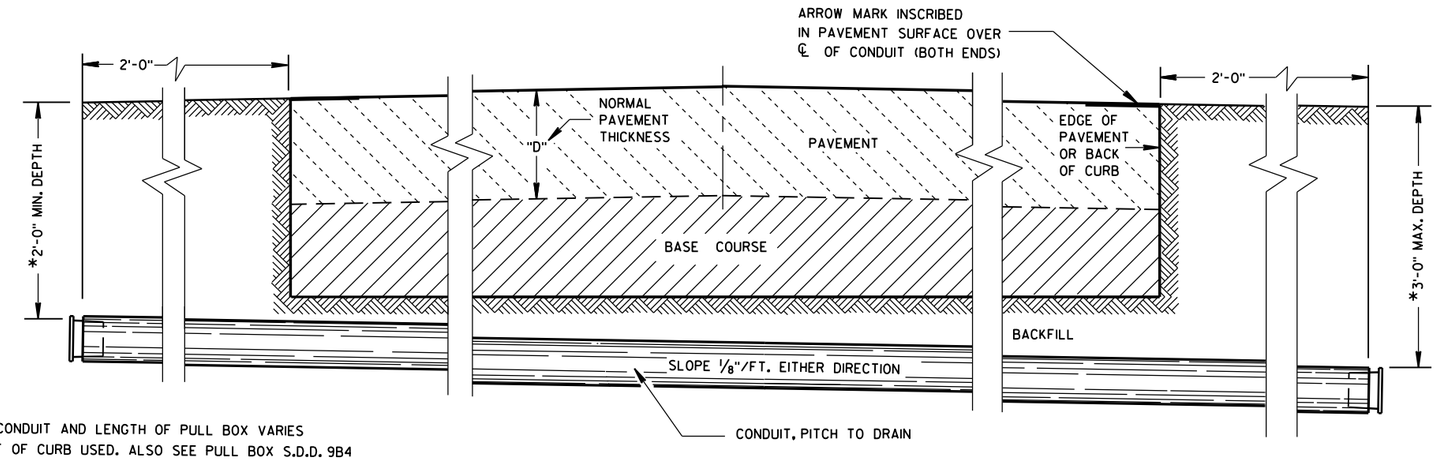
6

S.D.D. 8 F 4-7



PLAN VIEW

ARROW MARK



*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

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.).

TRACER 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.

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March, 2017 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

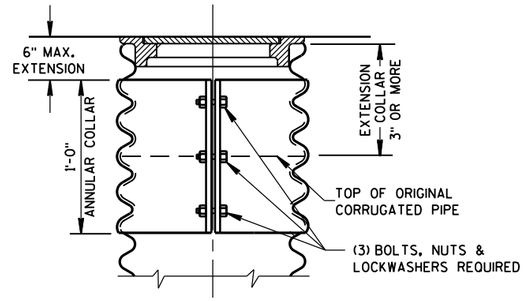
S.D.D. 9 B 2-10

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

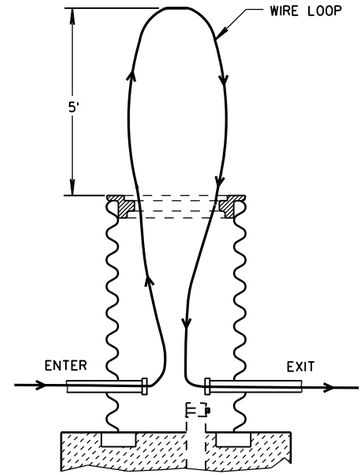
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2	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.

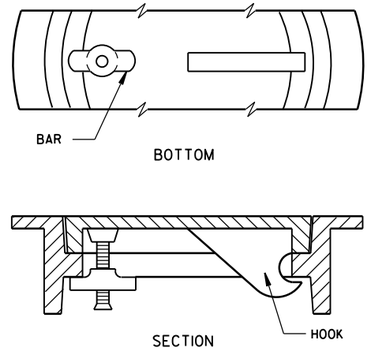
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

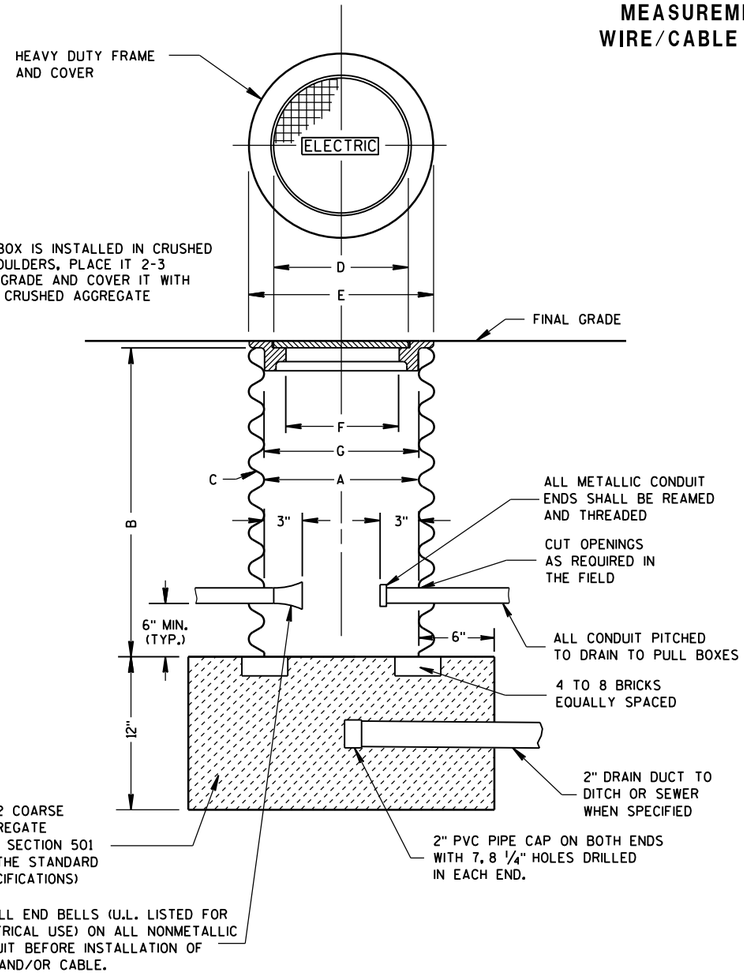


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



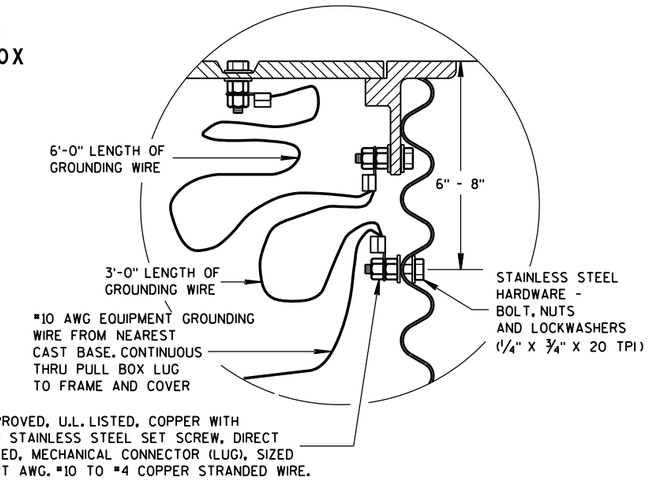
ALTERNATE COVER (LOCKING)

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

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.

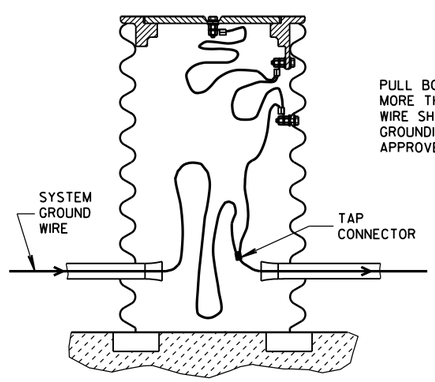
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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.

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

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 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

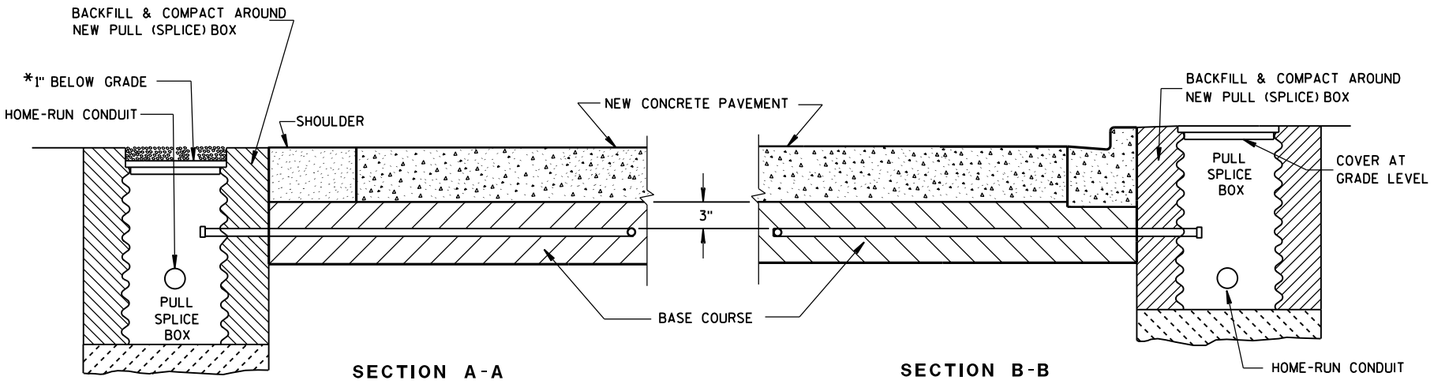
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 B 4-11



SECTION A-A
NO CURB & GUTTER

SECTION B-B
CURB & GUTTER

*RECESS PULL (SPLICE) BOX SO THAT THE COVER IS 3" BELOW GRADE IN SHOULDER AREAS OF CRUSHED AGGREGATE. BACKFILL OVER COVER WITH THE CRUSHED AGGREGATE TO BRING THE AREA TO GRADE LEVEL.

LOOP DETECTOR INSTALLATION DETAIL

GENERAL NOTES

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

LOOP SIZE, CONFIGURATION LOCATION, NUMBER OF TURNS OF WIRE AND ASSOCIATED SIGNAL PHASE SHALL BE AS SHOWN ON THE PLANS.

PITCH LEAD OUT CONDUIT TO DRAIN TO ROADSIDE PULL (SPLICE) BOX.

SPLICES SHALL BE INSTALLED BY USING CAST IN PLACE SPLICE KITS LISTED ON THE DEPARTMENTS APPROVED PRODUCTS LIST OR AN ENGINEER APPROVED EQUAL. NON-INSULATED BUTT SPLICES TO FIT #12 AWG STRANDED WIRE SHALL BE USED. SPLICES SHALL BE SOLDERED AND INSULATED FROM EACH OTHER AS PER INSTRUCTIONS INCLUDED IN THE SPLICE KIT.

MEASURE GROUND RESISTANCE USING A MEGGER. REPLACE LOOP WIRE NOT ATTAINING A READING OF INFINITY TO GROUND.

AFTER SPLICING THE LOOP WIRE TO THE LOOP LEAD-IN CABLE, THE CONTRACTOR SHALL MEASURE INDUCTANCE, GROUND RESISTANCE AND WIRE RESISTANCE AT THE CABINET END OF THE LEAD-IN CABLE AND FURNISH A COPY OF THE READINGS TO THE PROJECT ENGINEER FOR EVALUATION.

LOOP DETECTOR LEADS SHALL BE IDENTIFIED WITH THEIR ASSOCIATED LOOP BY USE OF WATERPROOF TAGS AT BOTH ENDS OF THE CABLE. A LISTING OF THE CABLE IDENTIFICATION PER INDIVIDUAL LOOP LEAD-IN SHALL BE PLACED IN THE CABINET.

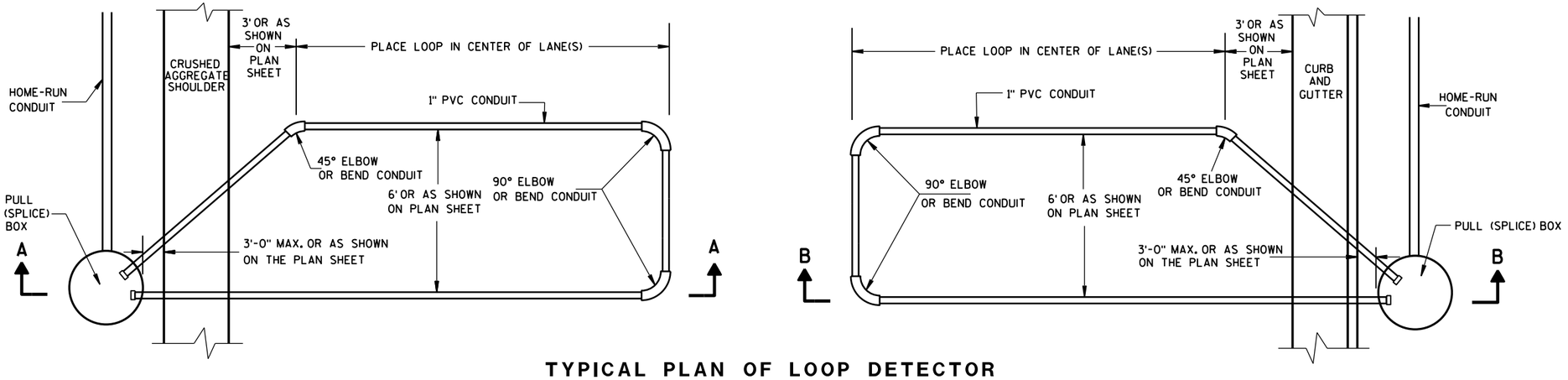
THE #12 AWG. LOOP WIRE IN THE PULL (SPLICE) BOX SHALL BE HAND TWISTED AT LEAST 3 TWISTS PER FOOT BEFORE BEING SPLICED TO THE LOOP LEAD-IN CABLE.

SPLICES OF LOOP WIRE TO LEAD-IN CABLE SHALL BE MADE ONLY IN PULL (SPLICE) BOXES AT THE SIDE OF THE ROAD.

THE #12 AWG LOOP WIRE SHALL BE INSTALLED FROM THE ROADSIDE PULL (SPLICE) BOX THROUGH THE LOOP CONDUIT, BACK TO THE ROADSIDE PULL (SPLICE) BOX, AND BE INSTALLED IN ONE, NON-SPLICE CONTINUOUS LENGTH.

PROTECTION OF THE CONDUIT IN THE BASE COURSE, SHALL BE REQUIRED AFTER INSTALLATION AND BEFORE NEW PAVEMENT IS INSTALLED.

SHOULD INSTALLATION REPAIR BE REQUIRED, IT SHALL BE DONE UNDER THE DIRECTION OF THE PROJECT ENGINEER.



TYPICAL PLAN OF LOOP DETECTOR WITH 18" OR 24" PULL (SPLICE) BOX

LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 1)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

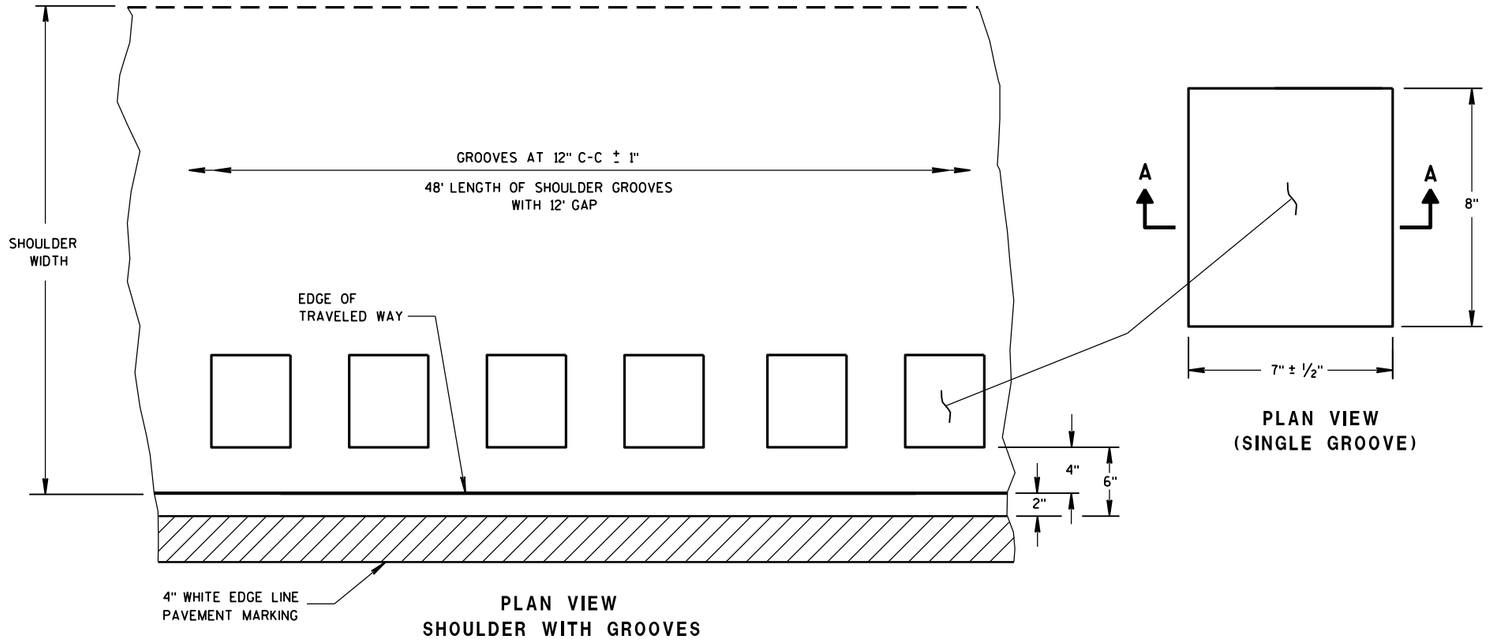
APPROVED
Sept. 2014
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL
FHWA

6

S.D.D. 9 F 15-4a

6

S.D.D. 9 F 15-4a



PLAN VIEW
SHOULDER WITH GROOVES

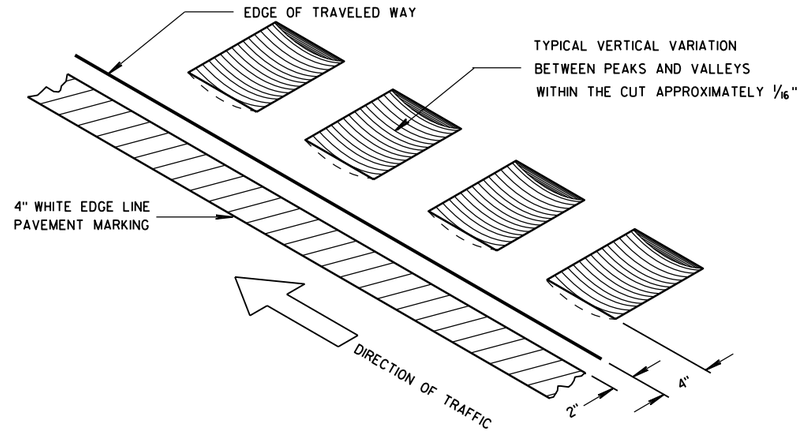
PLAN VIEW
(SINGLE GROOVE)

GENERAL NOTES

DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

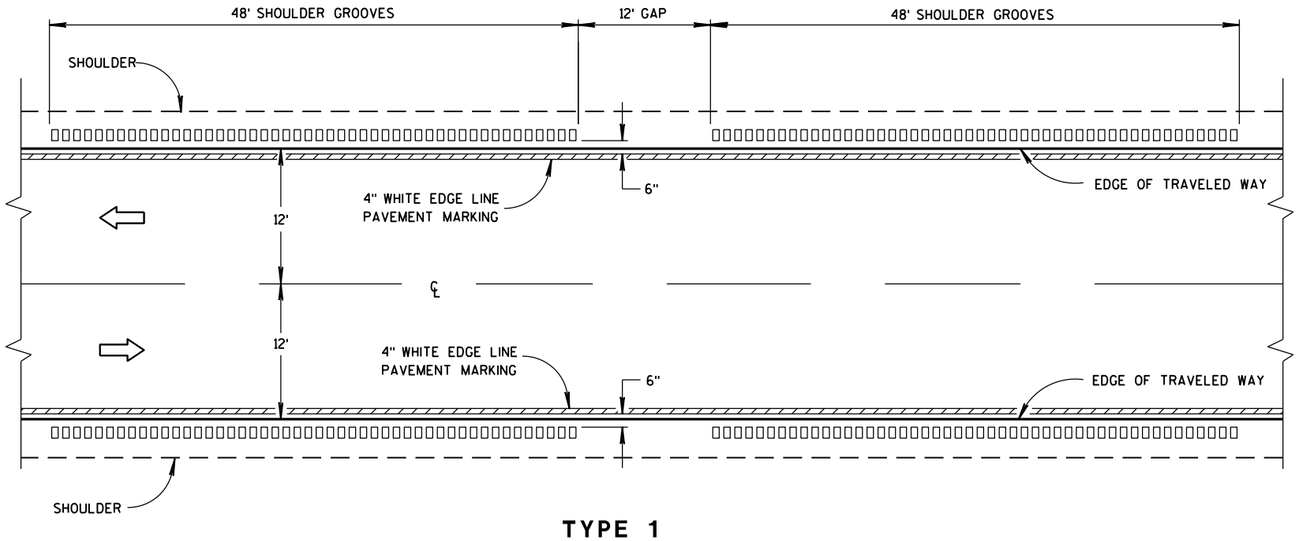
DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.

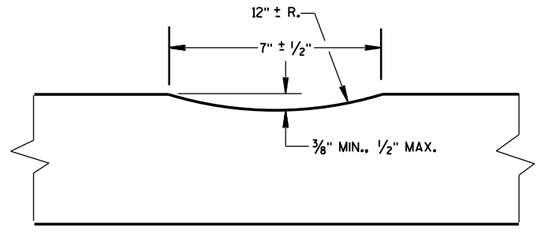


ISOMETRIC

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



TYPE 1
2-LANE SHOULDER RUMBLE STRIP



SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

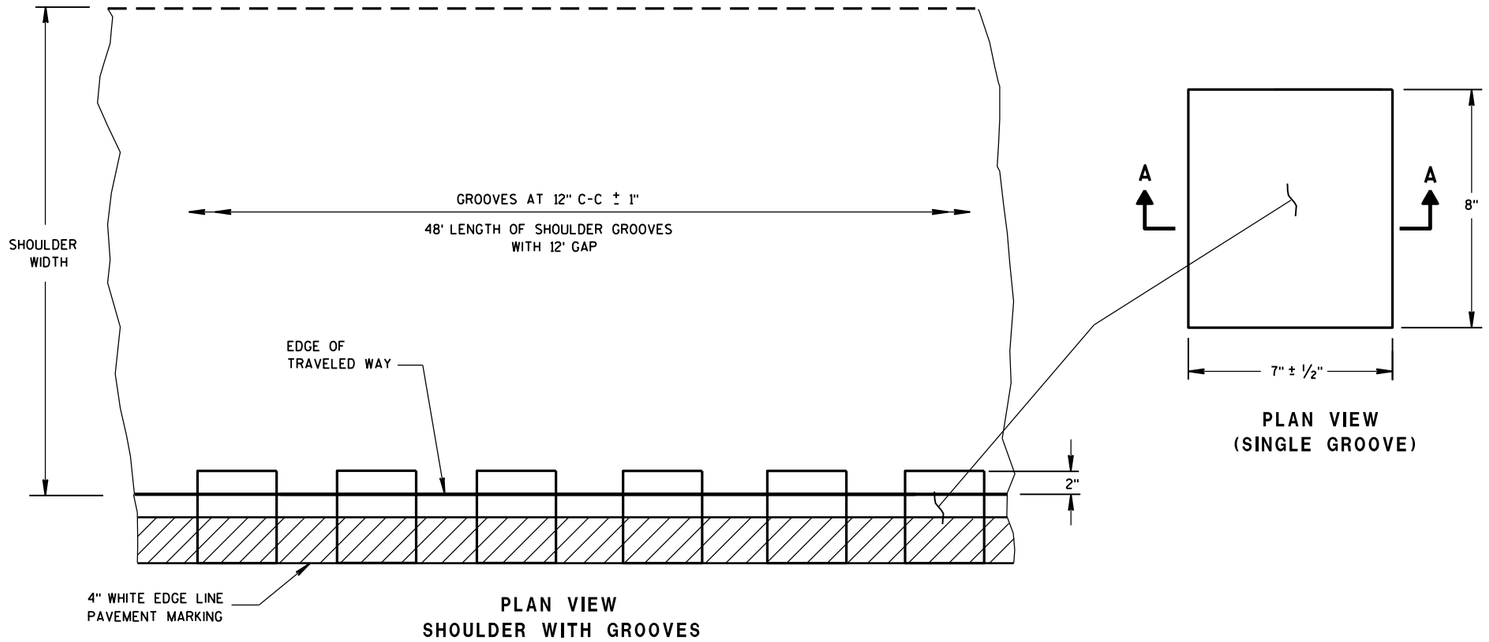
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

S.D.D. 13 A 10-1a

6

S.D.D. 13 A 10-1a



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

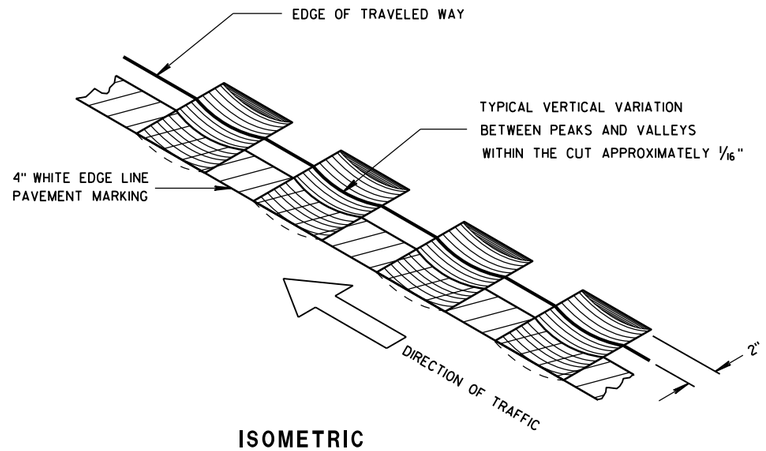
PLACEMENT DETAIL FOR TYPE 2 MILLED RUMBLE STRIP

GENERAL NOTES

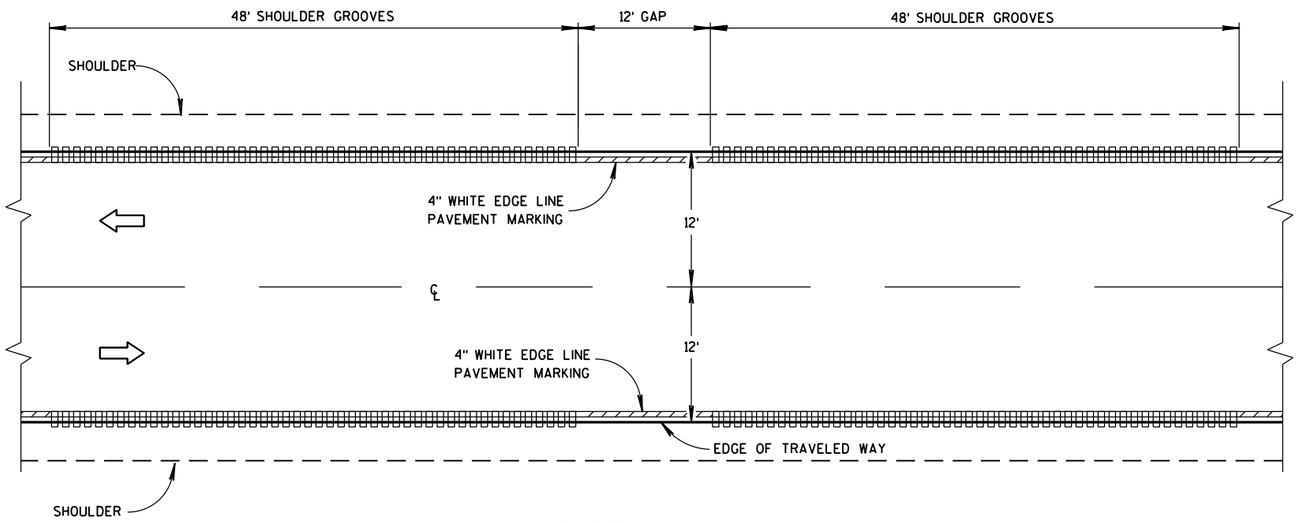
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL SHOULDER GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

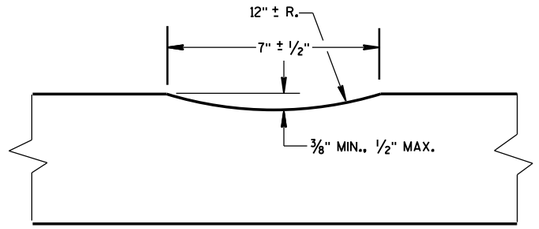
(1) SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC



TYPE 2
2-LANE SHOULDER RUMBLE STRIP



SECTION A-A

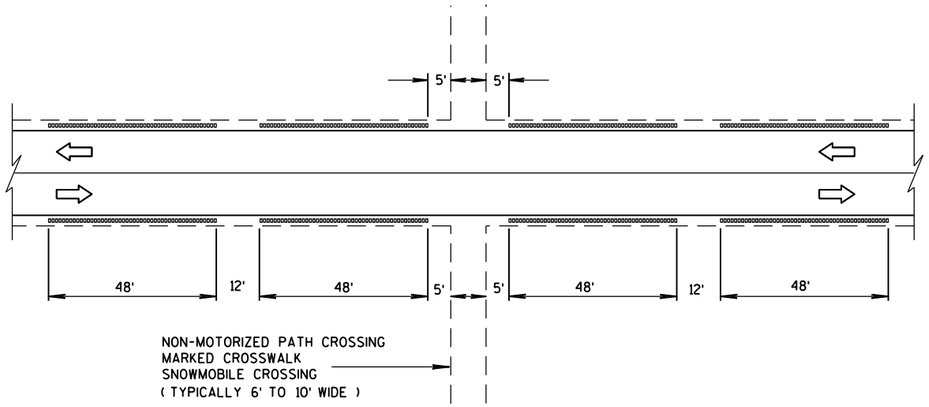
2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

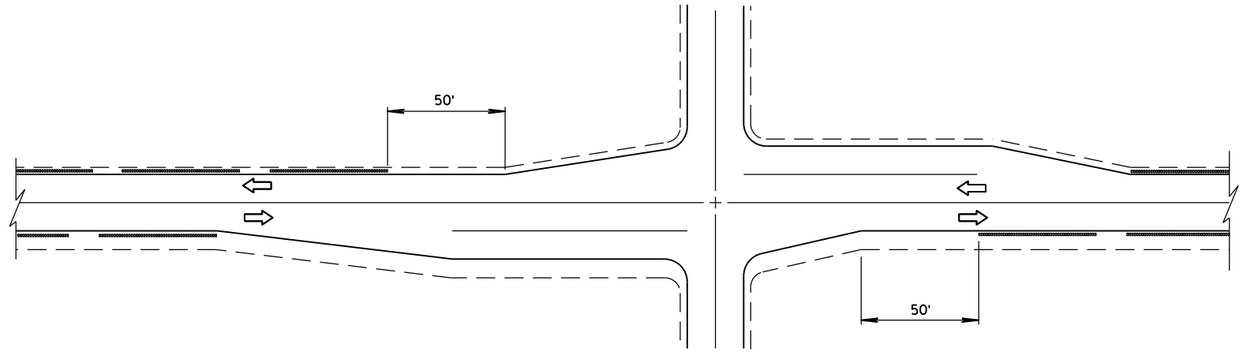
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S.D.D. 13 A 10-1b

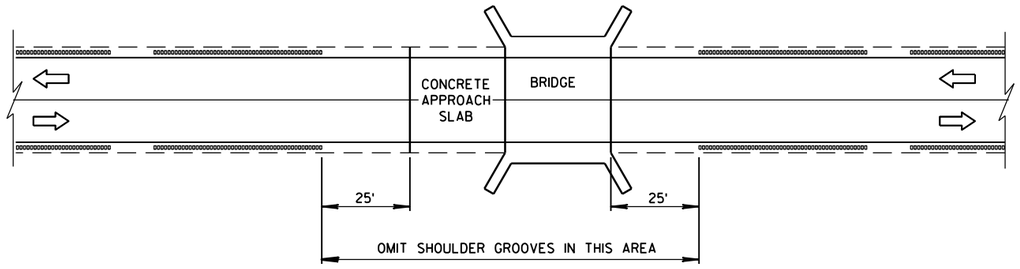
S.D.D. 13 A 10-1b



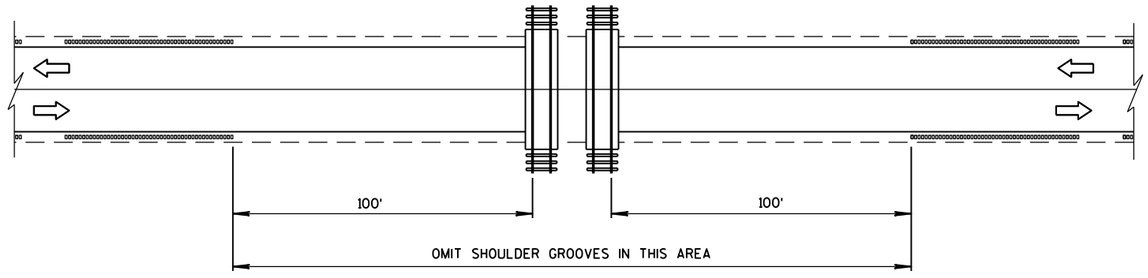
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



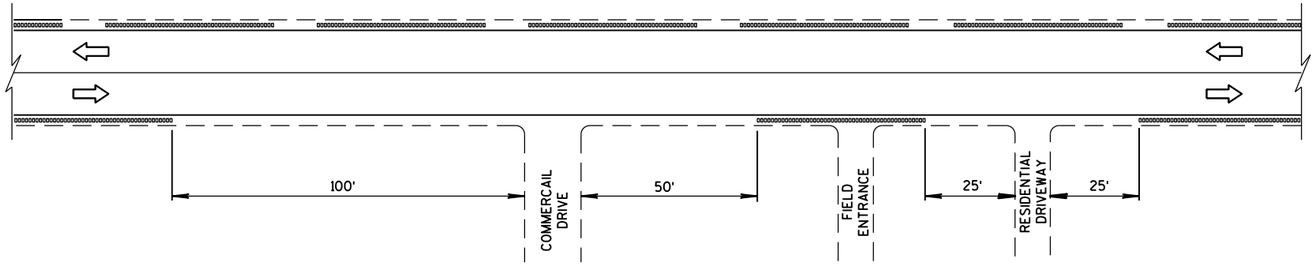
SHOULDER GROOVES AT INTERSECTIONS



SHOULDER GROOVES AT BRIDGES



SHOULDER GROOVES AT RAILROADS



SHOULDER GROOVES AT DRIVEWAYS (1)

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

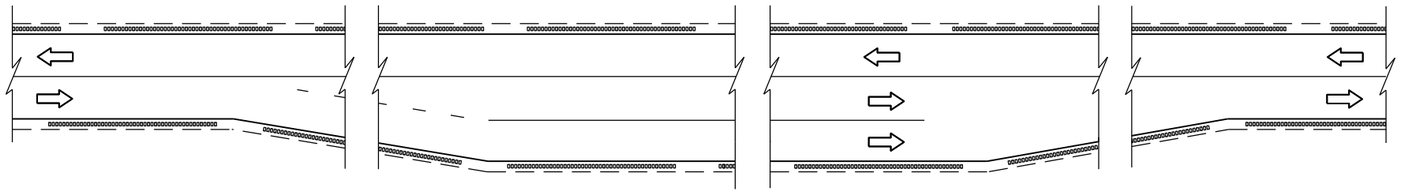
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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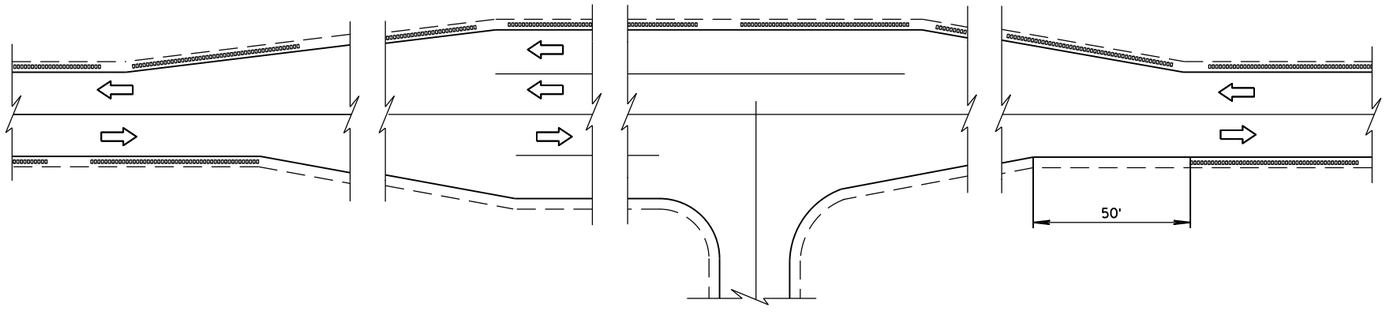
S.D.D. 13 A 10-1c

6

S.D.D. 13 A 10-1c



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

6

6

S.D.D. 13 A 10-1d

S.D.D. 13 A 10-1d

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

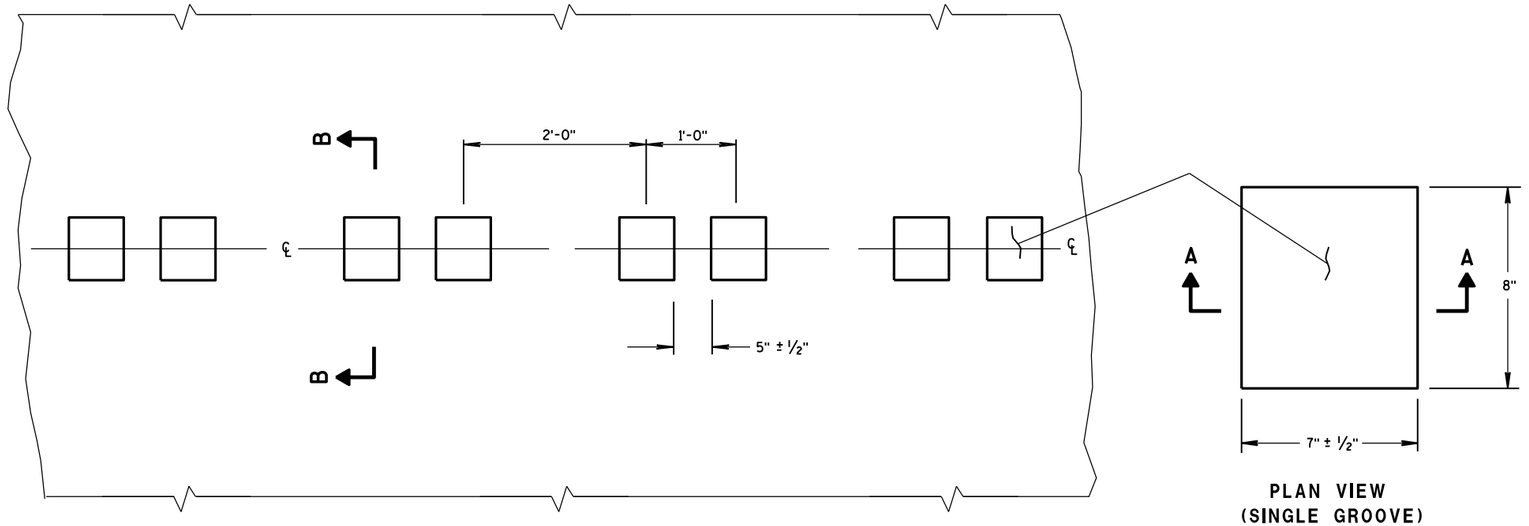
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/17/2012
DATE

/S/ Jerry H. Zoga
ROADWAY STANDARDS ENGINEER

FHWA



PLAN VIEW
CENTER LINE WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

GENERAL NOTES

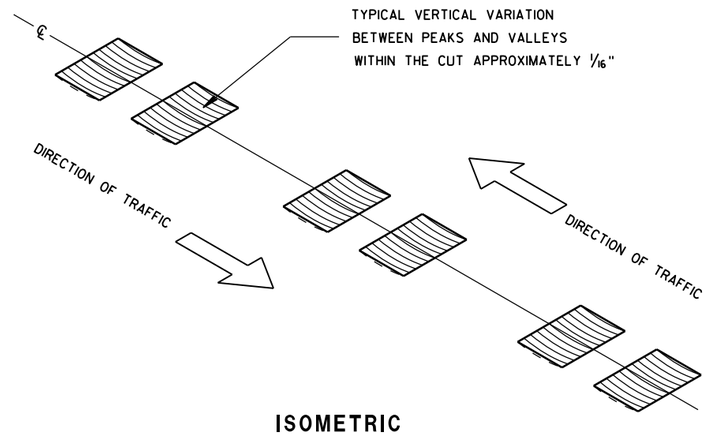
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTER LINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

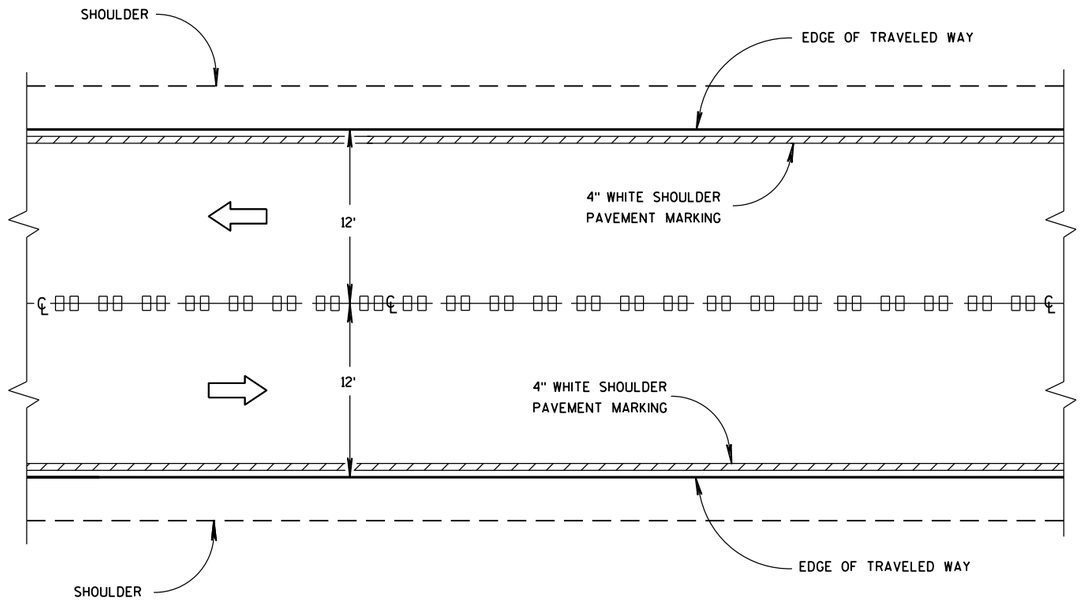
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

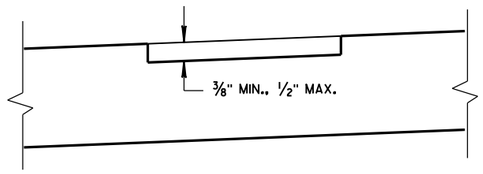
(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



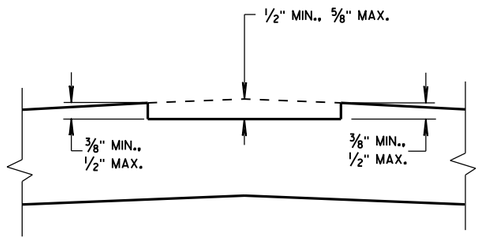
ISOMETRIC



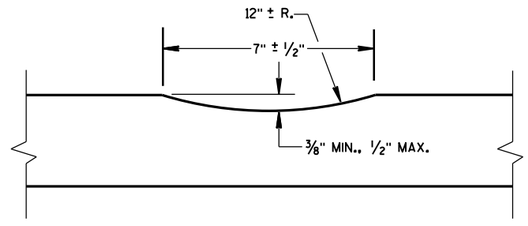
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



SECTION B-B
CROWNED ROADWAY



SECTION A-A

6

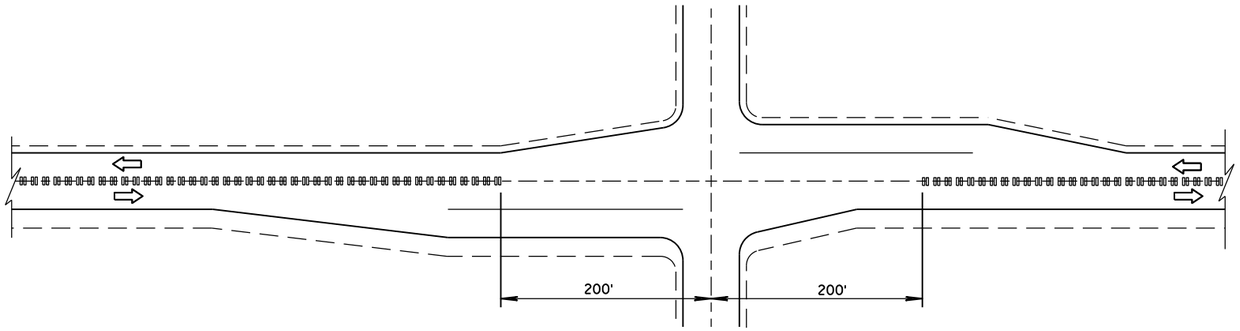
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S.D.D. 13 A 11-2a

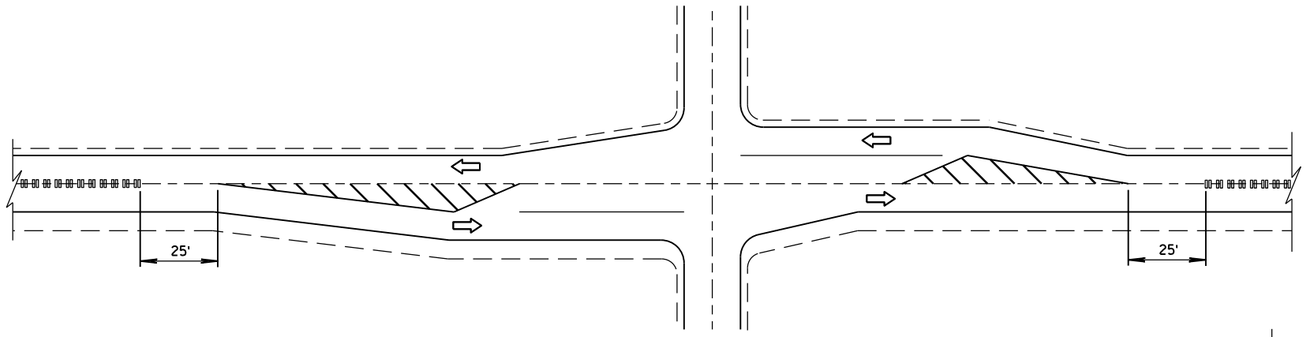
S.D.D. 13 A 11-2a

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

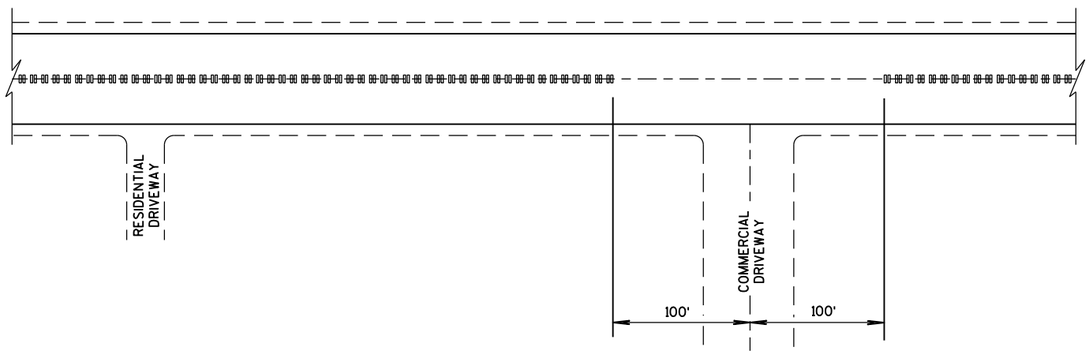
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



CENTER LINE GROOVES AT INTERSECTIONS

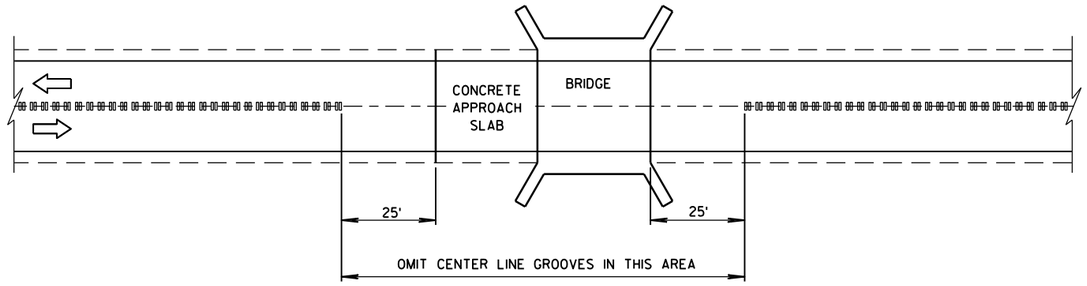


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

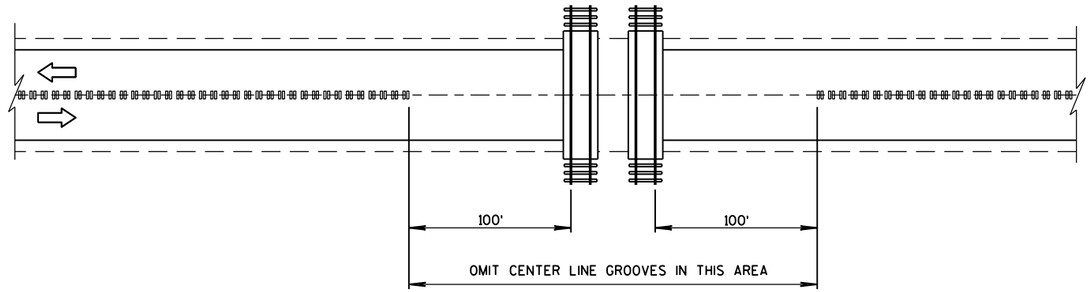


CENTER LINE GROOVES AT DRIVEWAYS (1)

(1) CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



CENTER LINE GROOVES AT BRIDGES



CENTER LINE GROOVES AT RAILROADS

6

S.D.D. 13 A 11-2b

6

S.D.D. 13 A 11-2b

2-LANE RURAL
CENTER LINE RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

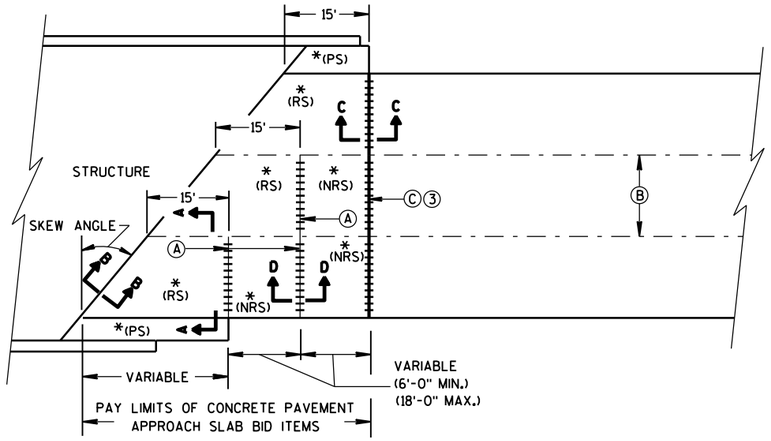
APPROVED

5/15/2013
DATE

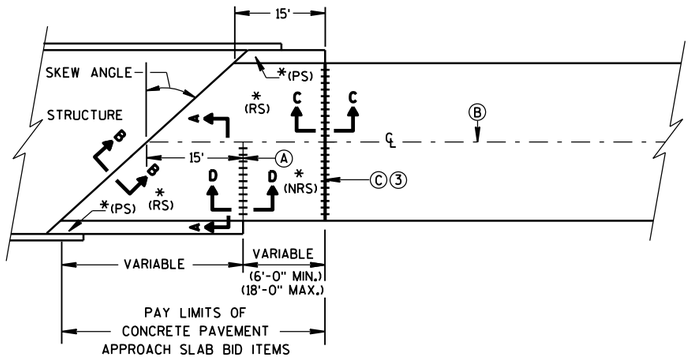
/S/ Jerry H. Zoda
ROADWAY STANDARDS DEVELOPMENT ENGINEER

NT

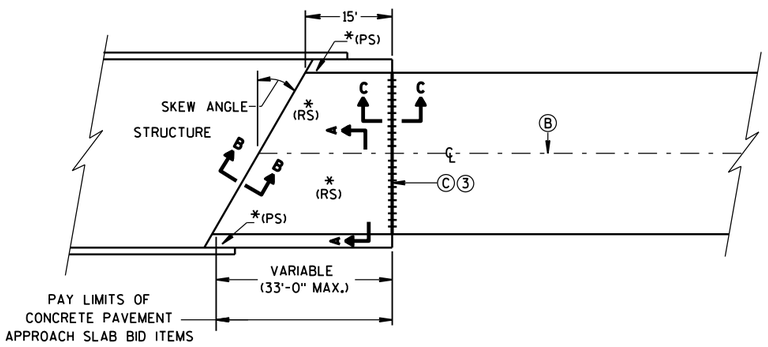
FHWA



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



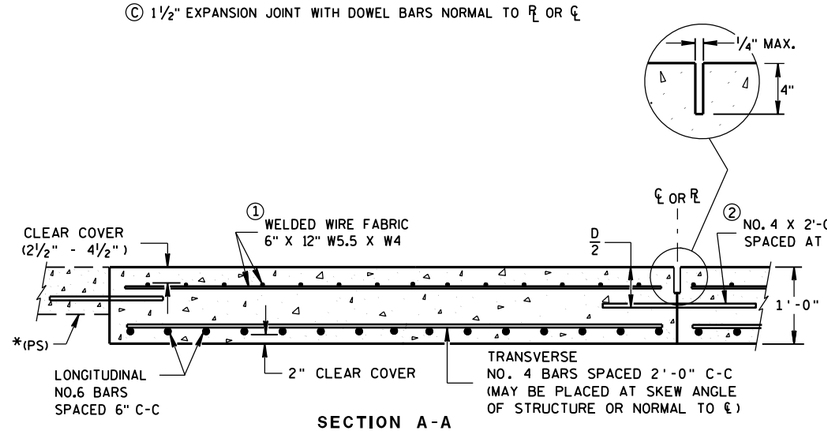
SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

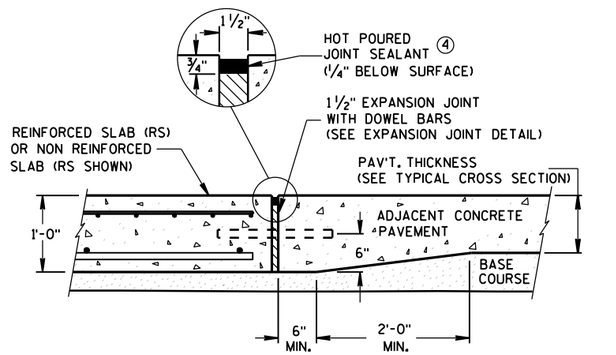
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

***STANDARD DOWEL BAR DIAMETER
(SEE SDD 13C11, & SDD 13C13)

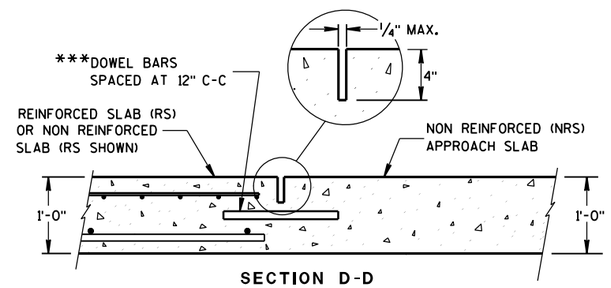
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



SECTION A-A
REINFORCEMENT POSITIONING DETAIL



SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT



SECTION D-D
CONTRACTION JOINT

GENERAL NOTES

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.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

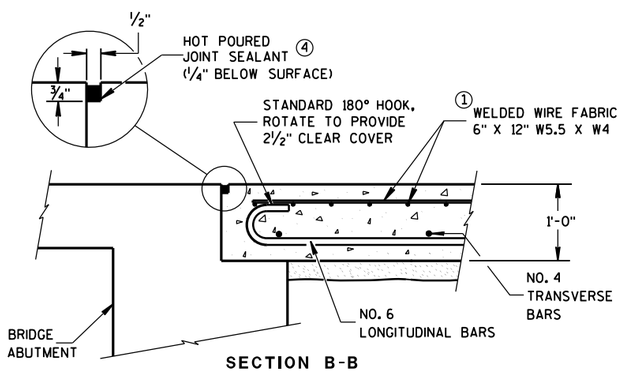
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

② THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.

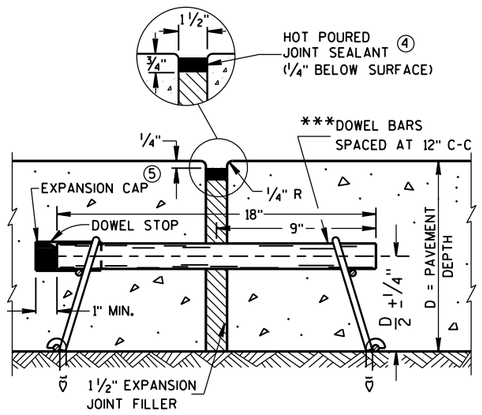
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

④ USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.

⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.



SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT



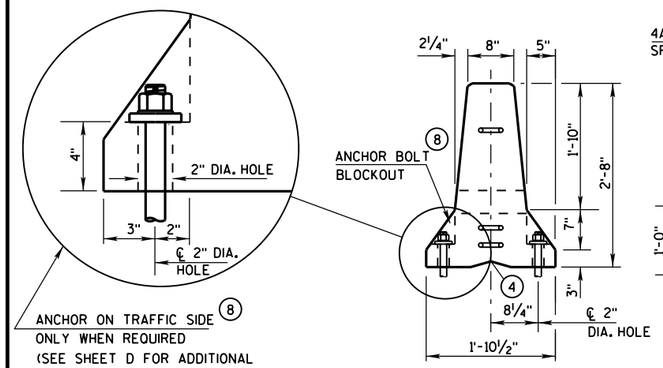
EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

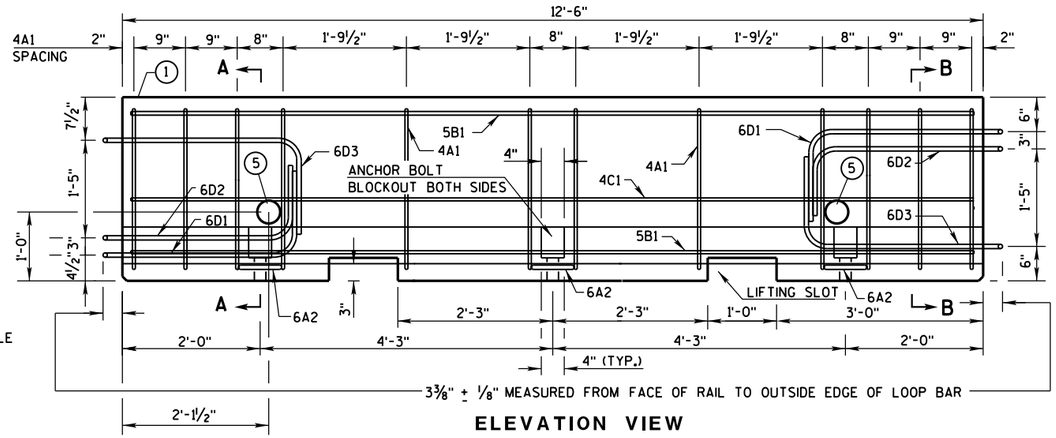
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015
DATE
/S/ Peter Kemp, P.E.
PAVEMENT SUPER
FHWA

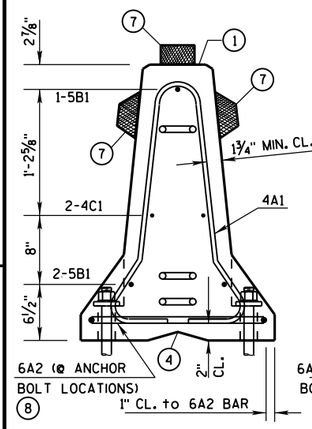
6
S.D.D. 13 B 2-8a



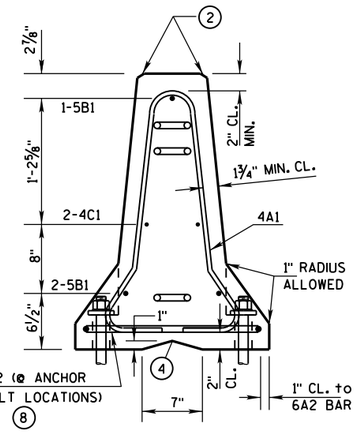
END VIEW



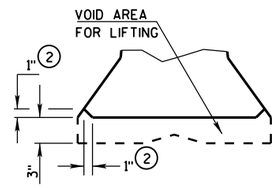
ELEVATION VIEW



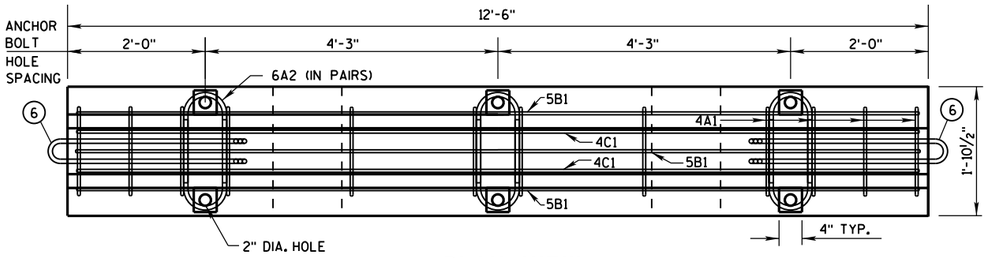
SECTION A-A
(STIRRUP PLACEMENT)



SECTION B-B
(STIRRUP PLACEMENT)

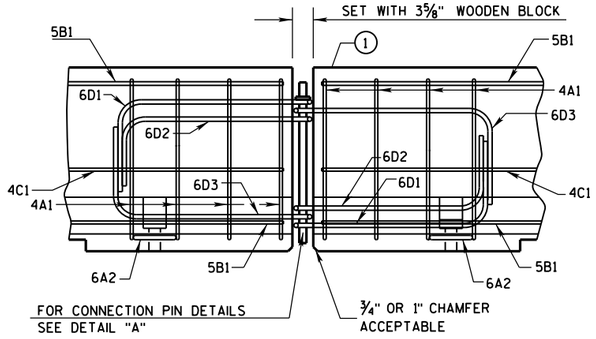


DETAIL "B"
LIFTING SLOT DETAIL

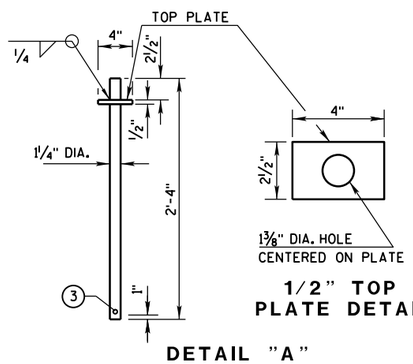


PLAN VIEW

DETAILS OF BARRIER SECTION

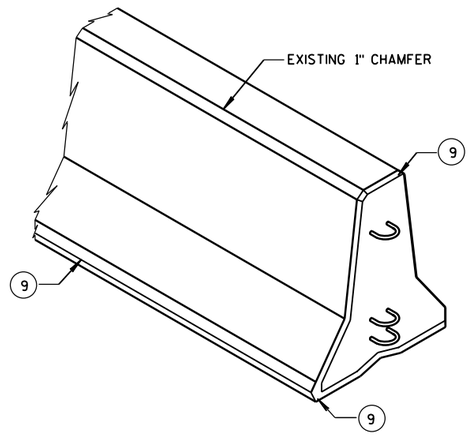


DETAILS OF BARRIER CONNECTION



1/2" TOP PLATE DETAIL

DETAIL "A"
CONNECTION PIN
(A36 STEEL (10.9 LB EACH))



GENERAL NOTES

THESE GENERAL NOTES APPLY TO SHEETS 14B7-15(a) THRU 14B7-15(i).

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 ADHESIVE 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: WI CBTP
- 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 HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.

(9) 1" CHAMFER OPTIONAL.

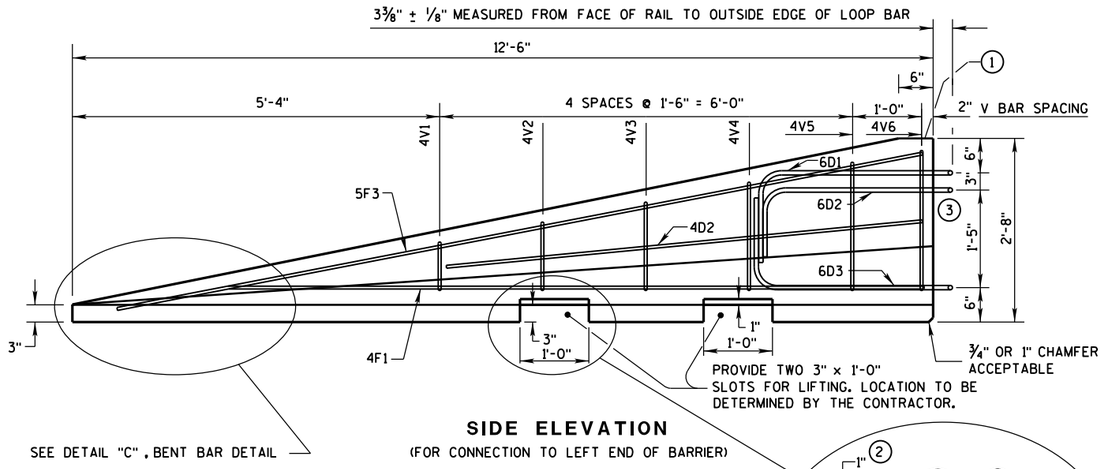
f'c = 4,000 psi

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

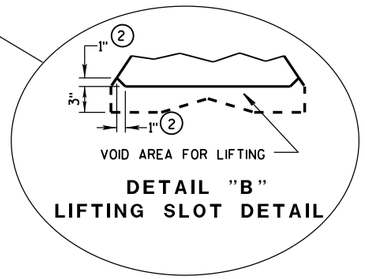
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

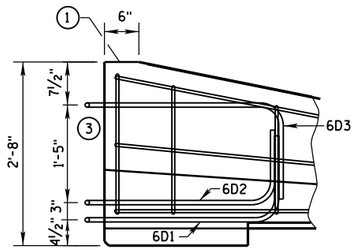
S.D.D. 14 B 7-15a



SIDE ELEVATION
(FOR CONNECTION TO LEFT END OF BARRIER)



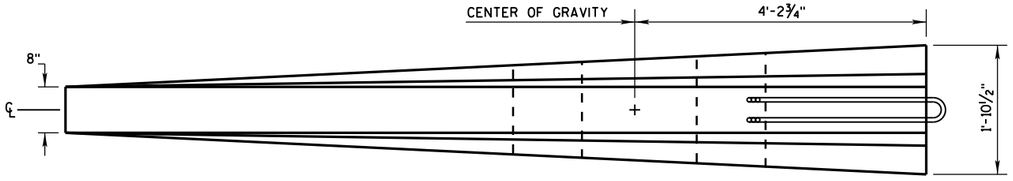
DETAIL "B"
LIFTING SLOT DETAIL



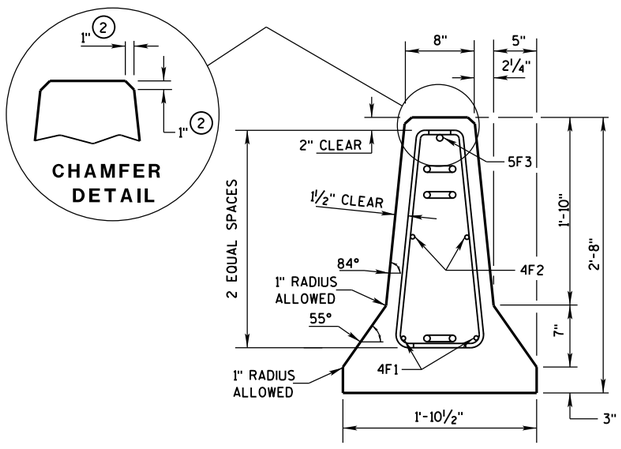
SIDE ELEVATION
LOOP BAR ASSEMBLY INVERTED
FOR OPPOSITE END.
(FOR CONNECTION TO RIGHT END OF BARRIER)

GENERAL NOTES

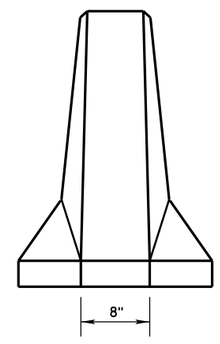
1. MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
   a. TYPE WICBTP
   b. MANUFACTURER
   c. DATE MANUFACTURED (MONTH AND YEAR)
2. 1" CHAMFER TO PREVENT SPALLING.
3. NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.



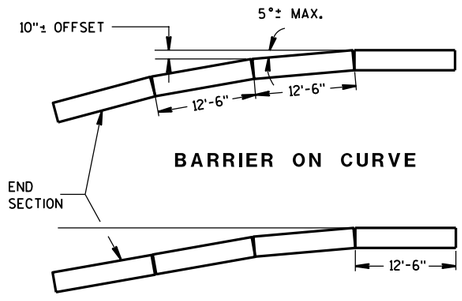
PLAN VIEW



END SECTION



FRONT ELEVATION



BARRIER ON CURVE

FLARE AT BARRIER END

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 TRANSPOR

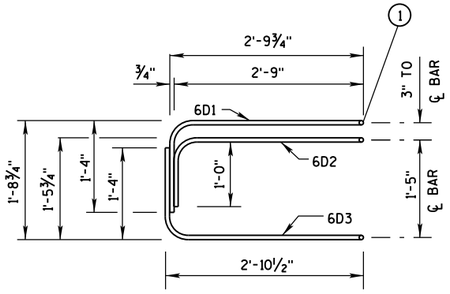
6

S.D.D. 14 B 7-15b

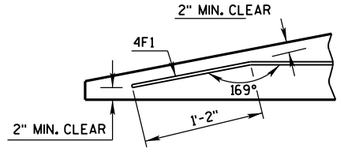
BARRIER TAPER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

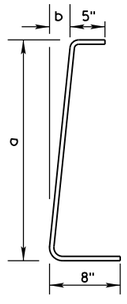
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



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

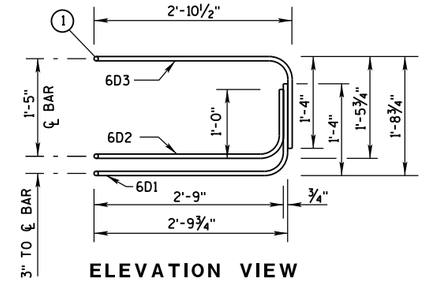
GENERAL NOTES

(1) NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

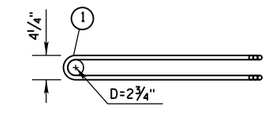
BARRIER SECTION BILL OF MATERIALS

(PER 12'-6" BARRIER SECTION)

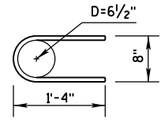
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4A1	4	12	6'-0"
6A2	6	6	2'-11"
5B1	5	3	12'-2"
4C1	4	2	12'-2"
LOOP ASSEMBLY			
6D1	6	2	8'-5"
6D2	6	2	7'-7"
6D3	6	2	8'-6"



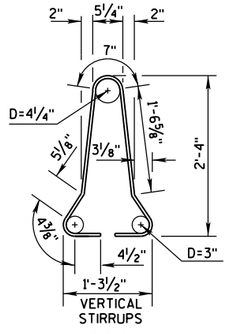
ELEVATION VIEW



PLAN VIEW
LOOP BAR ASSEMBLY
(MARKED END SHOWN, INVERT FOR OTHER END)



6A2



4A1

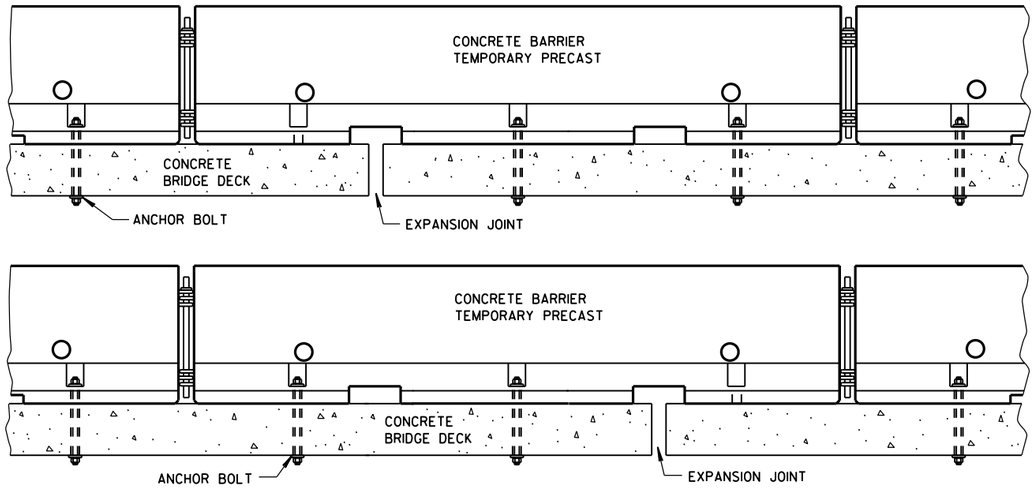
BARRIER SECTION

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 7-15c



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.)

GENERAL NOTES

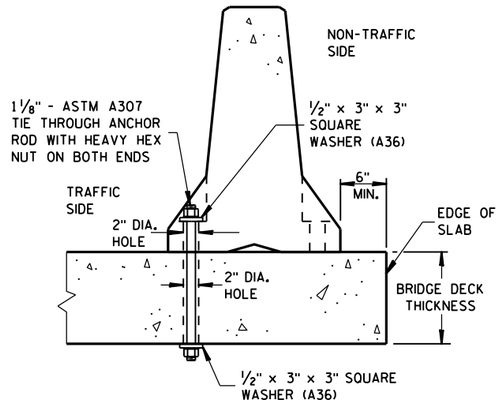
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

REMOVE ALL ANCHORS WHEN NO LONGER NEEDED. FILL CONCRETE PAVEMENTS, DECKS AND APPROACH SLABS WITH NON-SHRINK COMMERICAL GROUT FROM THE APPROVED PRODUCT LIST. FILL ASPHALT PAVEMENTS WITH ASTM D6690 TYPE II RUBBERIZED CRACK FILLER.

(1) 1⅛" DIAMENTER A307 THREADED ROD. ½" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL. ASTM A563A HEAVY HEX NUT.

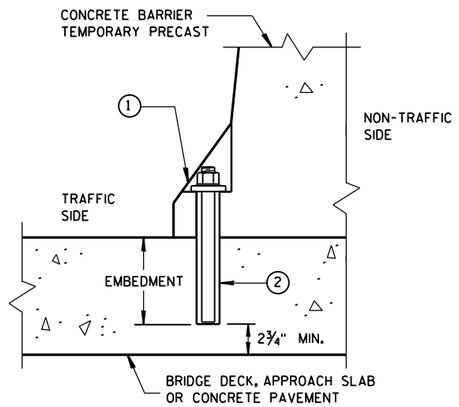
(2) ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5¼" EMBEDMENT. SEE 603.2 AND 603.3.1.2 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.

(3) ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THAN DRIVE ASPHALT ANCHOR PIN.



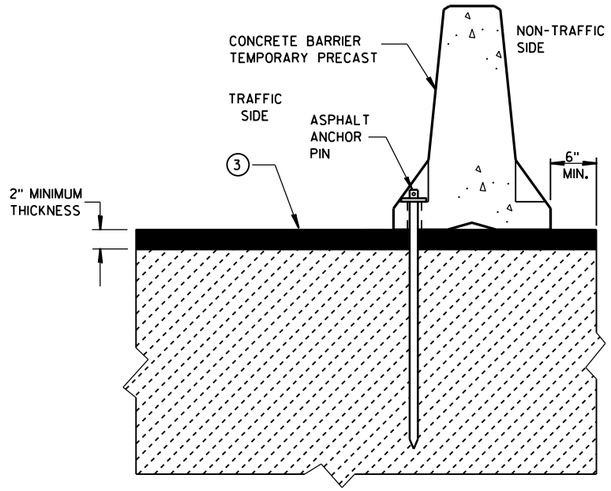
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOTUSE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)

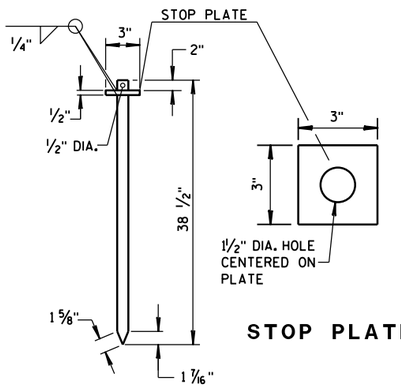


REMOVABLE ADHESIVE ANCHOR INSTALLATION ON CONCRETE BRIDGE DECK, CONCRETE APPROACH SLAB, OR CONCRETE PAVEMENT

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



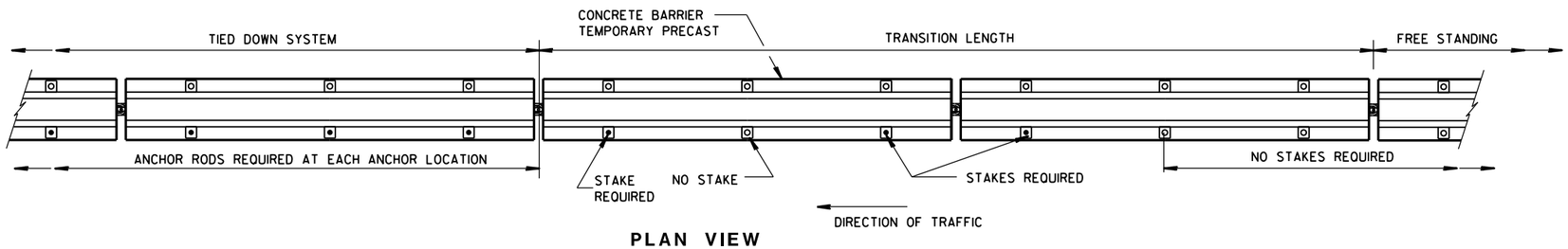
STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE



STOP PLATE

ASPHALT ANCHOR PIN

(ASTM A36 STEEL)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

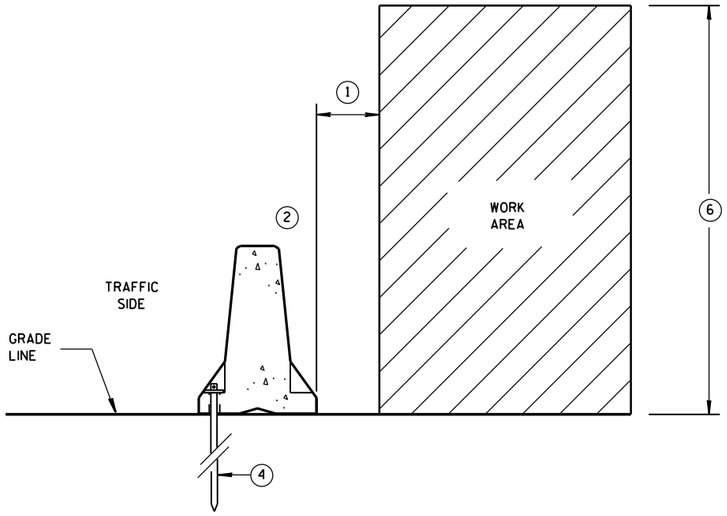
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

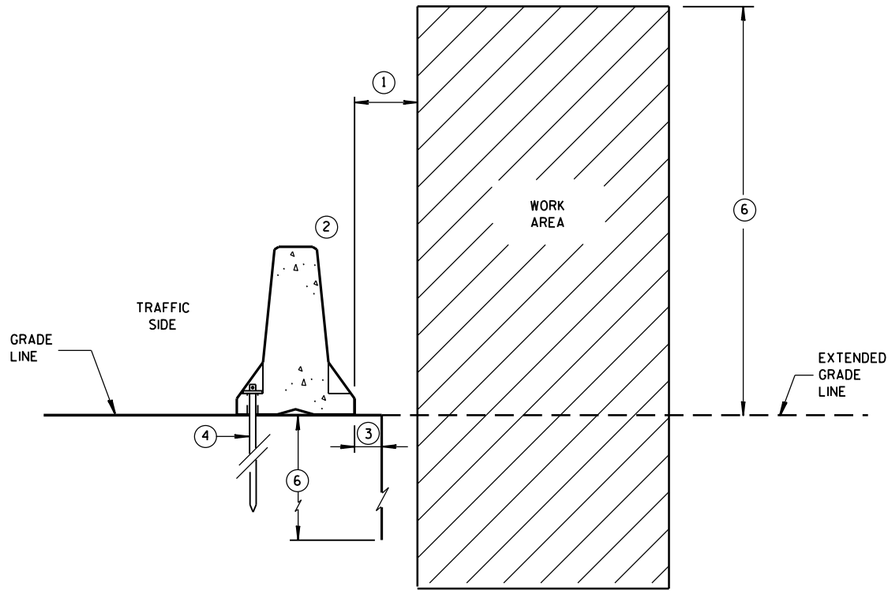
STATE OF WISCONSIN
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ANCHORED BARRIER SPACE REQUIREMENTS FOR HAZARDS EXTENDED ABOVE THE GRADE LINE

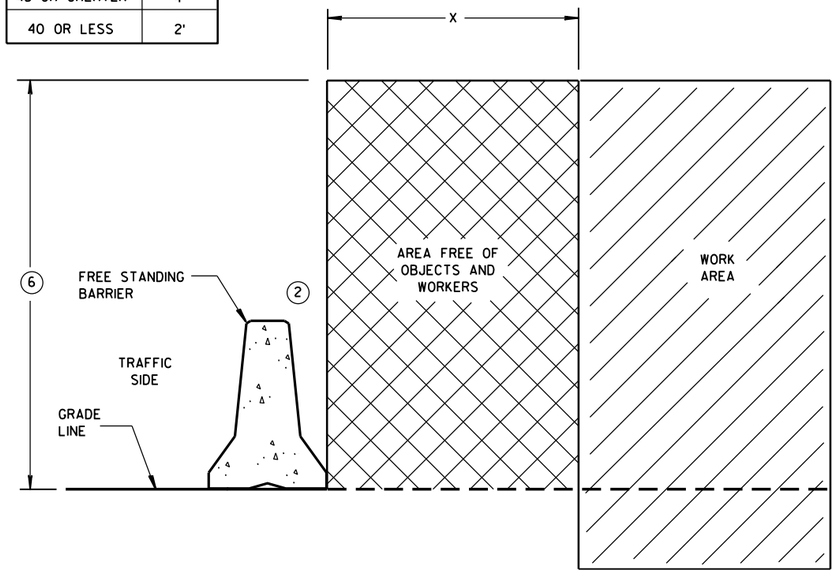


ANCHORED BARRIER SPACE REQUIREMENTS ON VERTICAL DROP OFFS

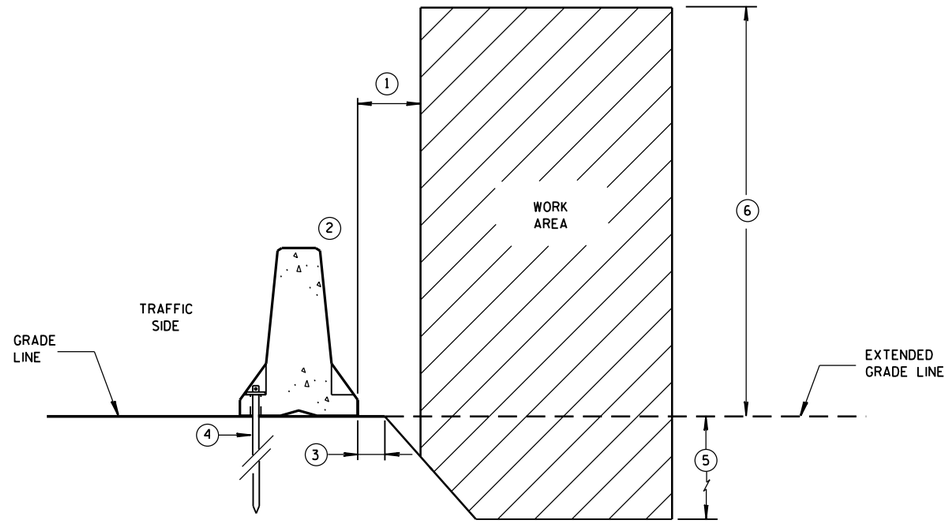
GENERAL NOTES

1. WHEN OBJECTS EXTEND ABOVE THE GRADE, A MINIMUM OF 1 FOOT IS REQUIRED FROM BACK OF BARRIER TO OBJECT. SEE OTHER DETAILS FOR FOR THE MINIMUM OFFSET FROM BACK OF BARRIER TO SLOPES OR VERTICAL DROPS.
2. OBJECTS ARE NOT TO BE PLACED ON, MOUNTED TO, OR LEANED AGAINST THE BARRIER WITHOUT PERMISSION OF THE PROJECT ENGINEER.
3. SEE OTHER DETAIL ON SHEET "D" FOR SPACE REQUIREMENTS.
4. SEE BOLT THROUGH DECK, REMOVABLE ADHESIVE ANCHOR, OR A STAKE DOWN FOR ASPHALTIC SURFACE TREATMENT DETAILS. ASPHALTIC ANCHOR SHOWN.
5. DEPTH OF 3 FEET OR MORE.
6. Y = 6'-6".

POSTED SPEED MPH	X
45 OR GREATER	4'
40 OR LESS	2'



FREE STANDING BARRIER SPACE REQUIREMENTS



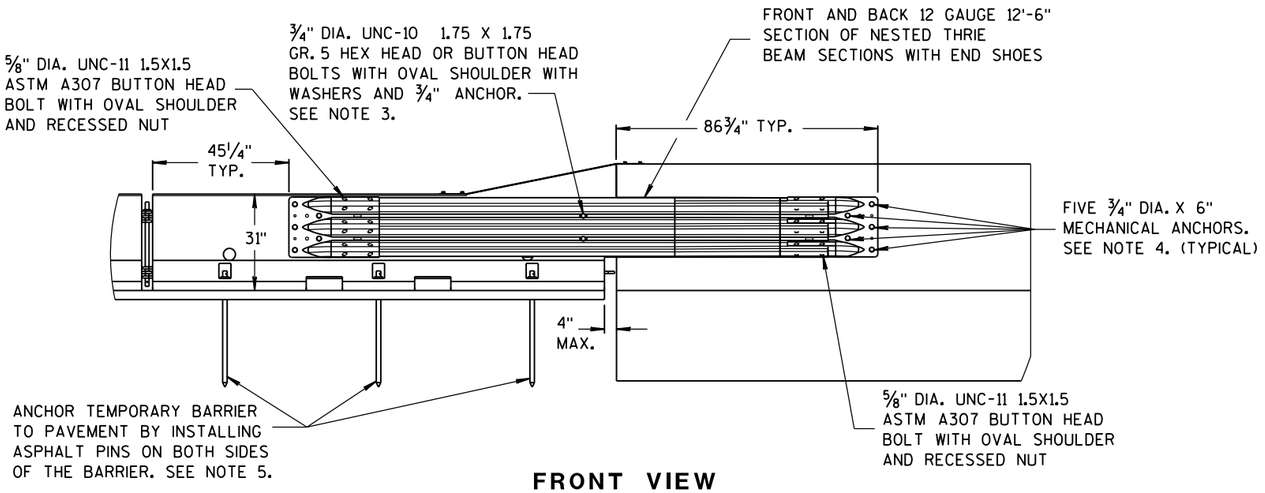
ANCHORED BARRIER SPACE REQUIREMENTS ON SLOPES

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

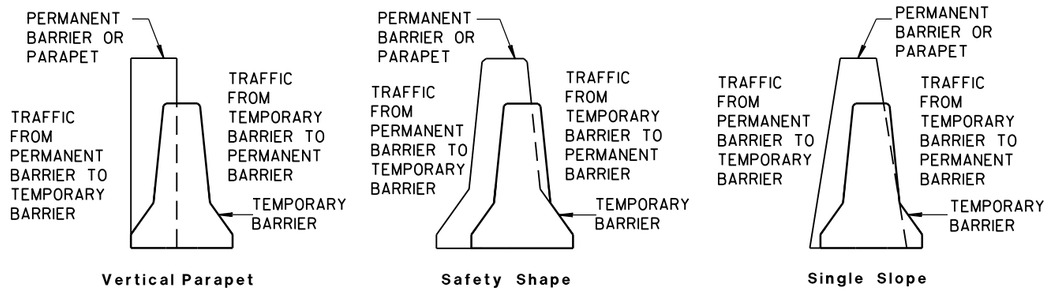
STATE OF WISCONSIN
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FRONT VIEW

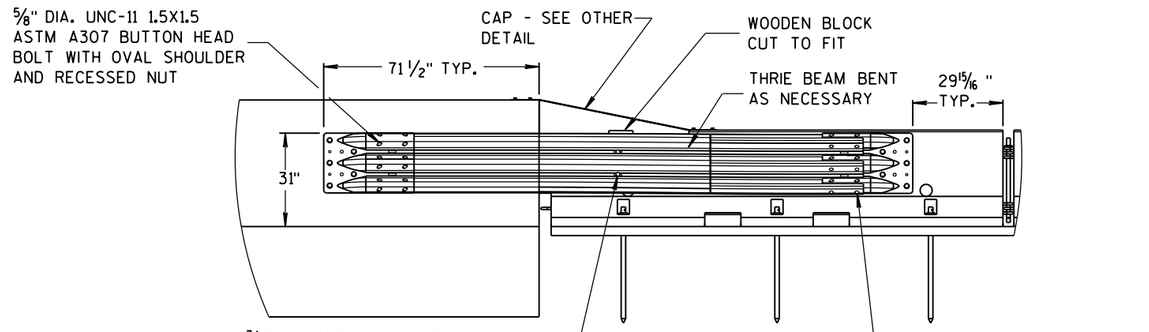


TEMPORARY BARRIER PLACEMENT FOR BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

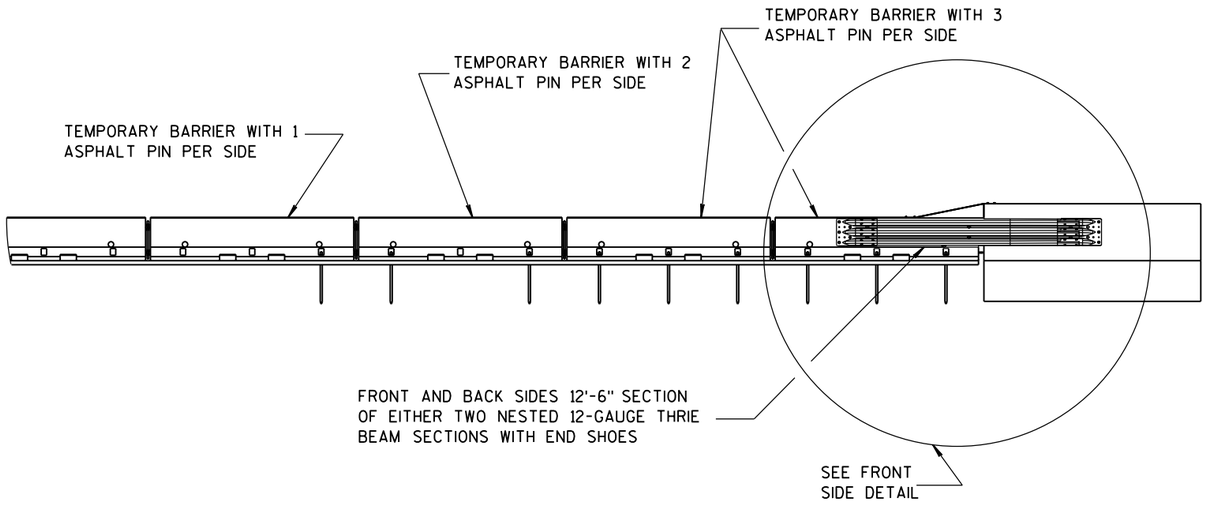
NOTES

NESTED THRIE BEAM IS REQUIRED ON BOTH SIDES OF THE TEMPORARY BARRIER FOR ALL INSTALLATIONS REGARDLESS OF TRAFFIC.

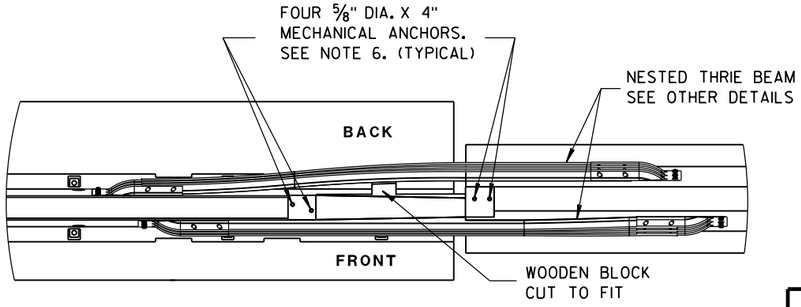
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD 10.48 KIPS.
4. MINIMUM MECHANICAL OR ADHESIVE 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 ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.



BACK VIEW



FRONT VIEW



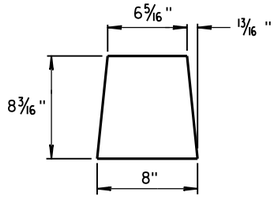
PLAN VIEW

BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM

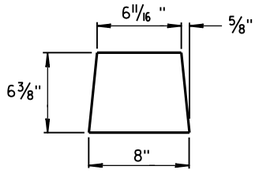
CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

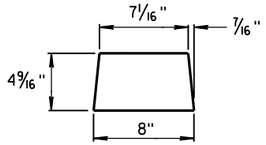
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S.D.D. 14 B 7-15f



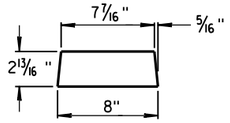
GUSSET 1



GUSSET 2

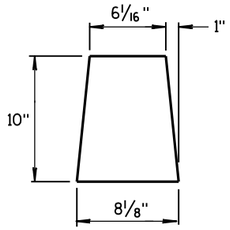


GUSSET 3

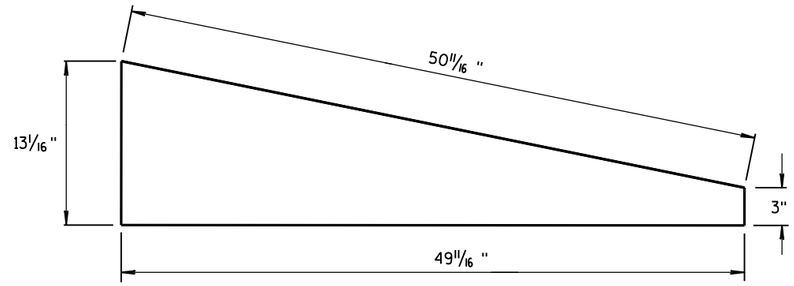


GUSSET 4

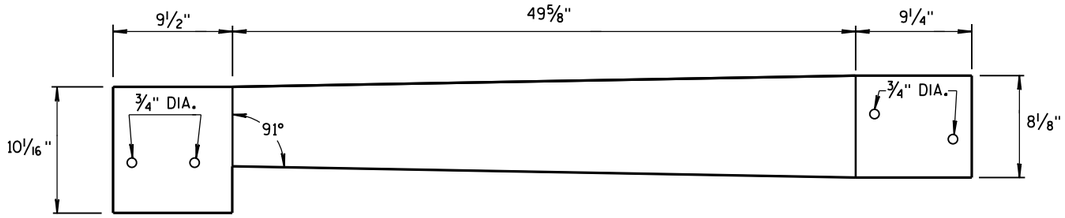
GUSSETS

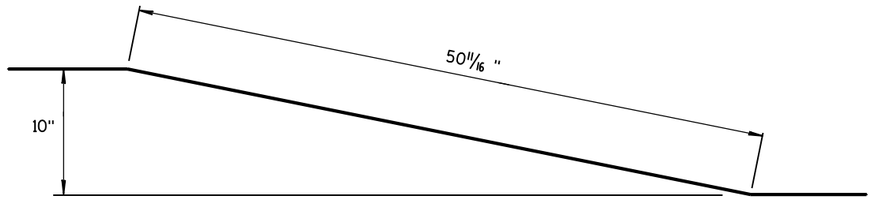


END PLATE



SIDE PLATE

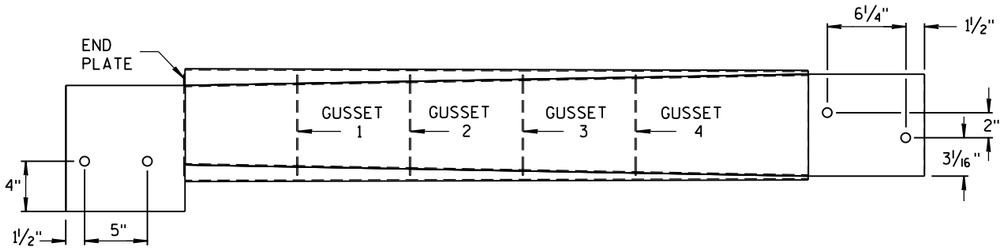


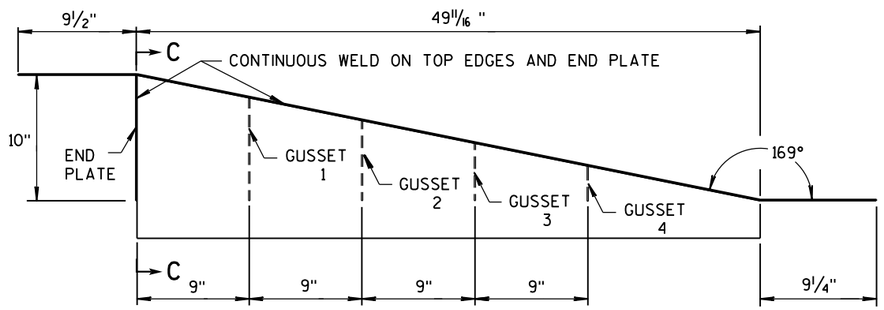


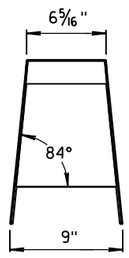
TOP PLATE

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.







SECTION C-C

NOTES

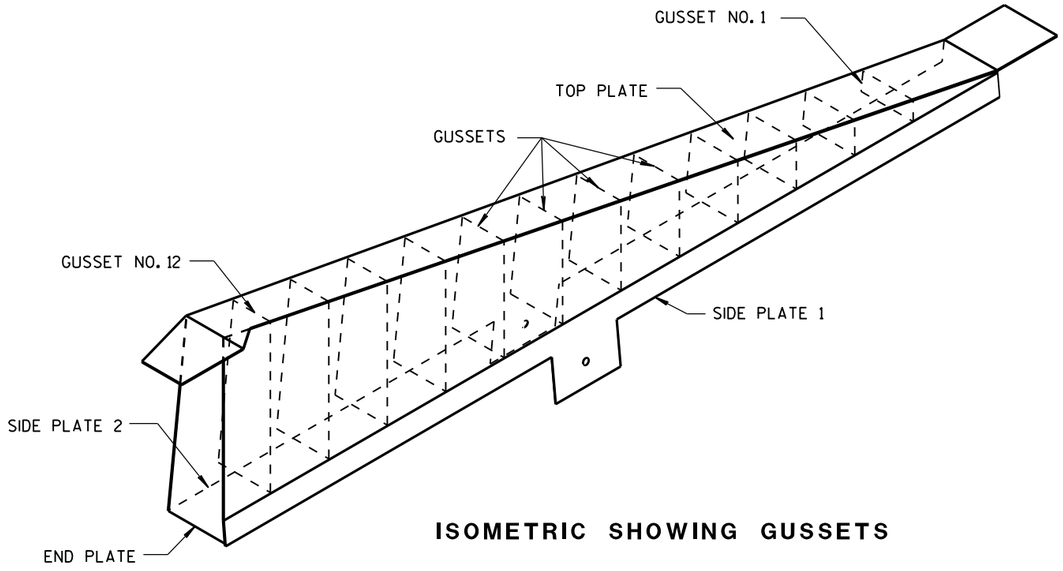
1. FOUR GUSSETS AND END PLATE ARE STITCH WELDED ON THREE SIDES.
2. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE, AND GUSSETS.

CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 42" PERMANENT CONCRETE BARRIER

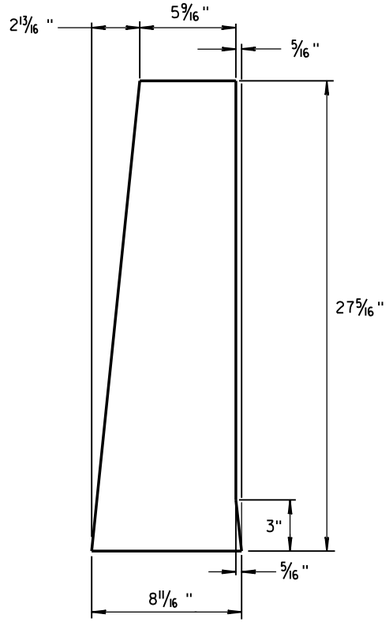
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 14 B 7-15g

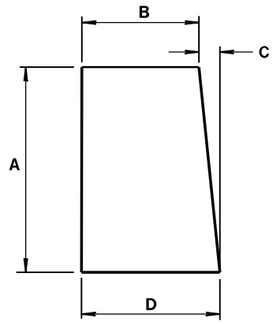


ISOMETRIC SHOWING GUSSETS



END PLATE

1/8" STEEL PLATE



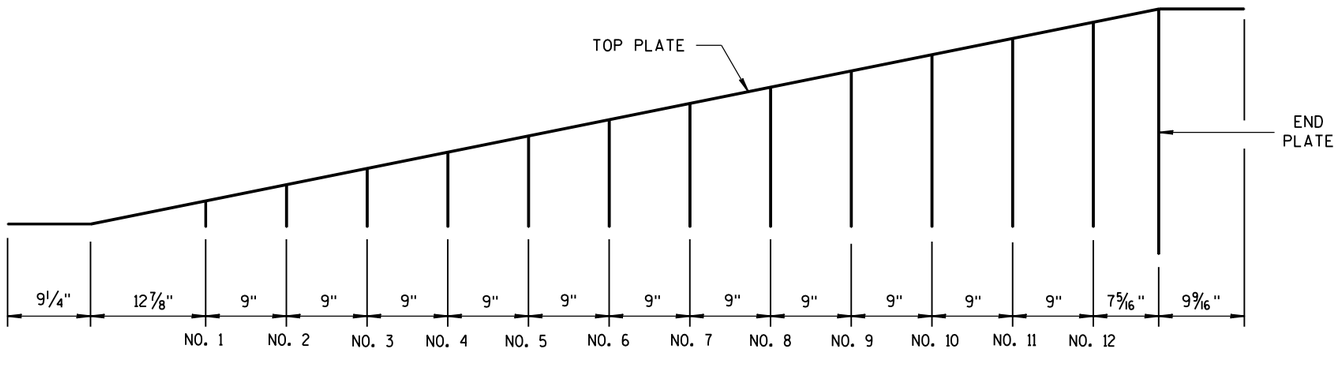
GUSSETS 1 - 12

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

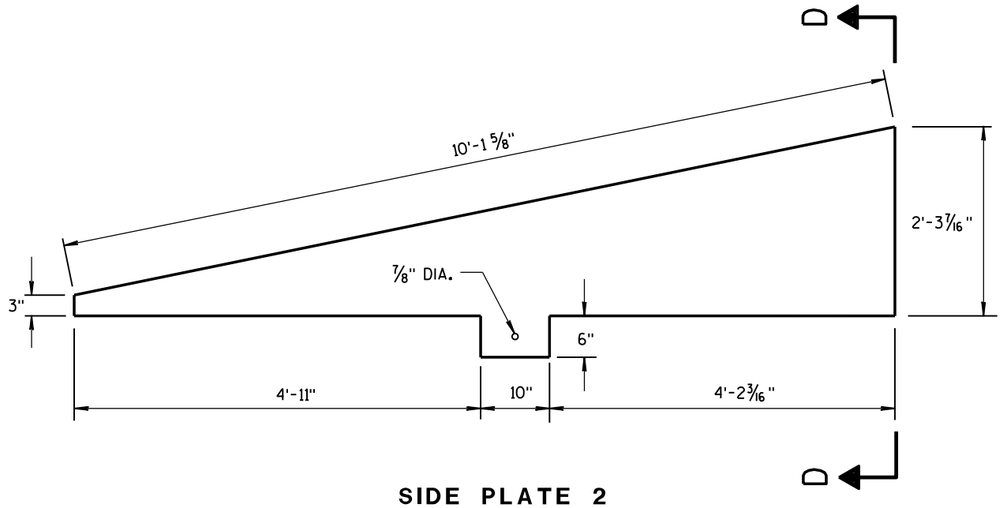
CAP DETAILS FOR TEMPORARY CONCRETE BARRIER TO 56" PERMANENT CONCRETE BARRIER

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

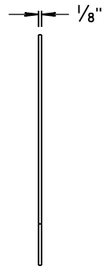
STATE OF WISCONSIN
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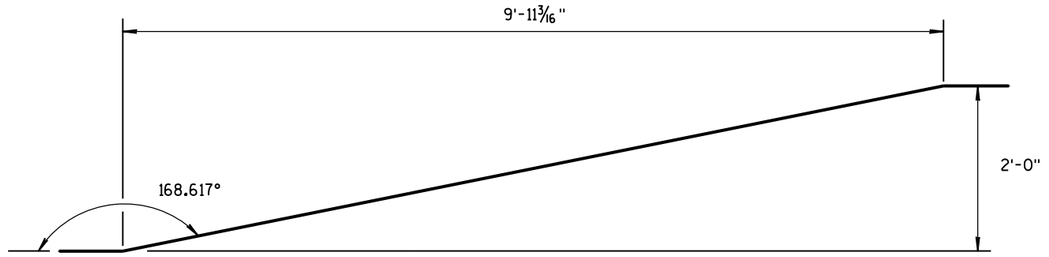
S.D.D. 14 B 7-15h



SIDE PLATE 2

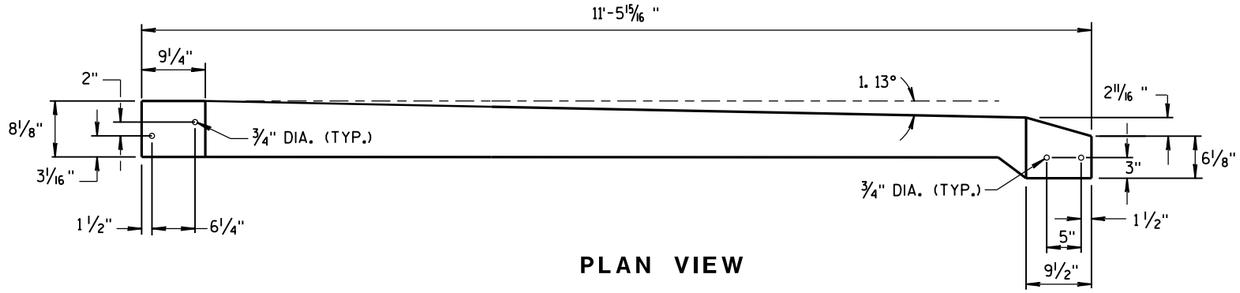


END VIEW



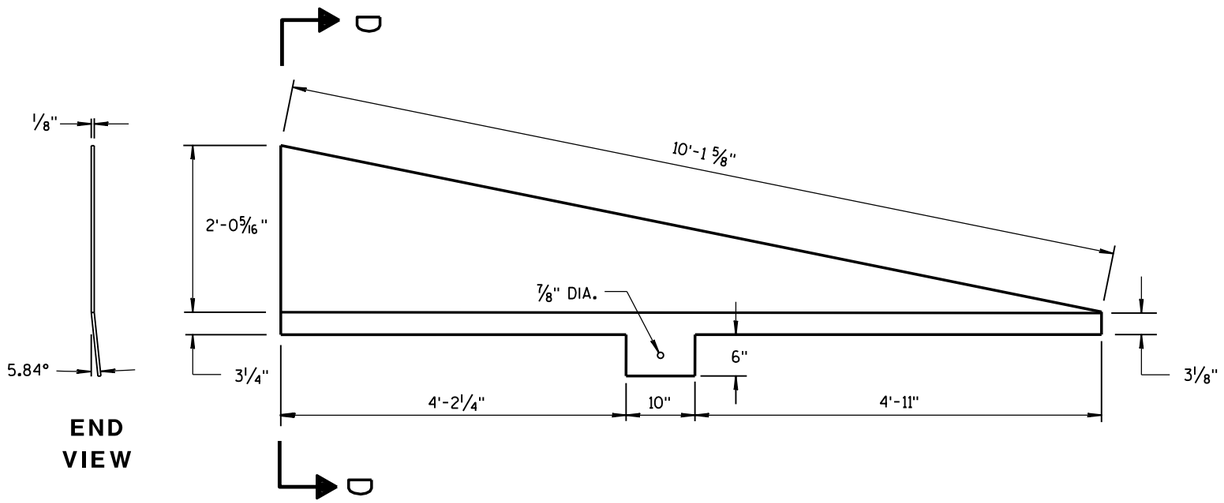
SIDE VIEW

TOP PLATE



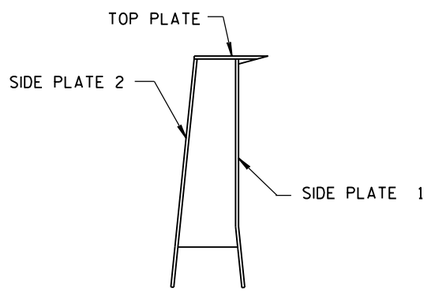
PLAN VIEW

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
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERV

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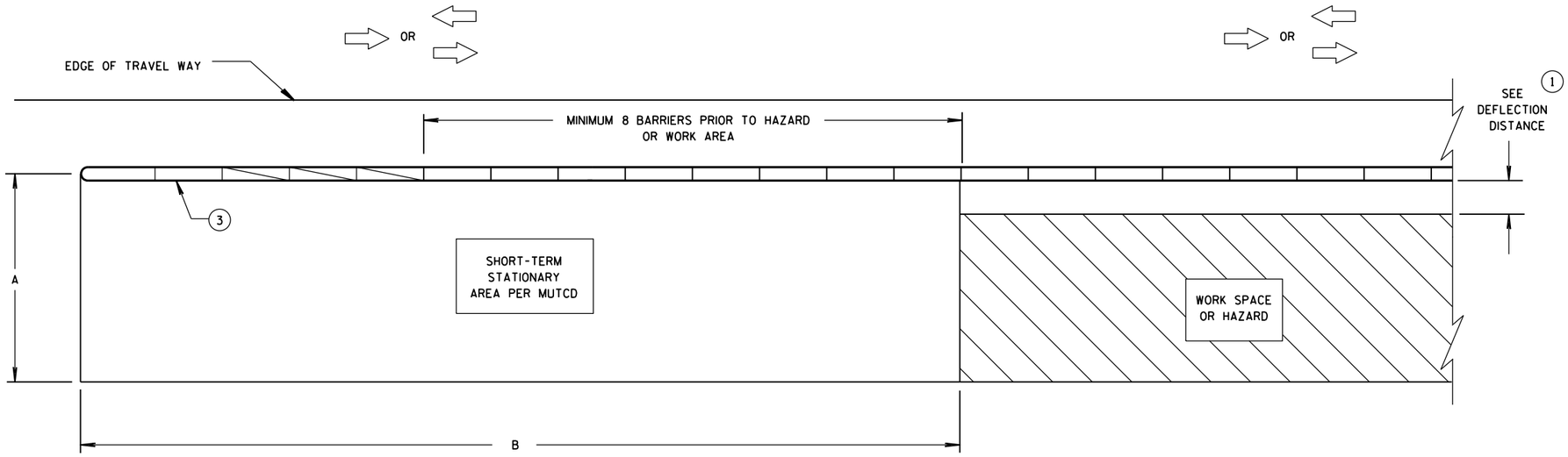
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S.D.D. 14 B 7-15i

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S.D.D. 14 B 7-15i



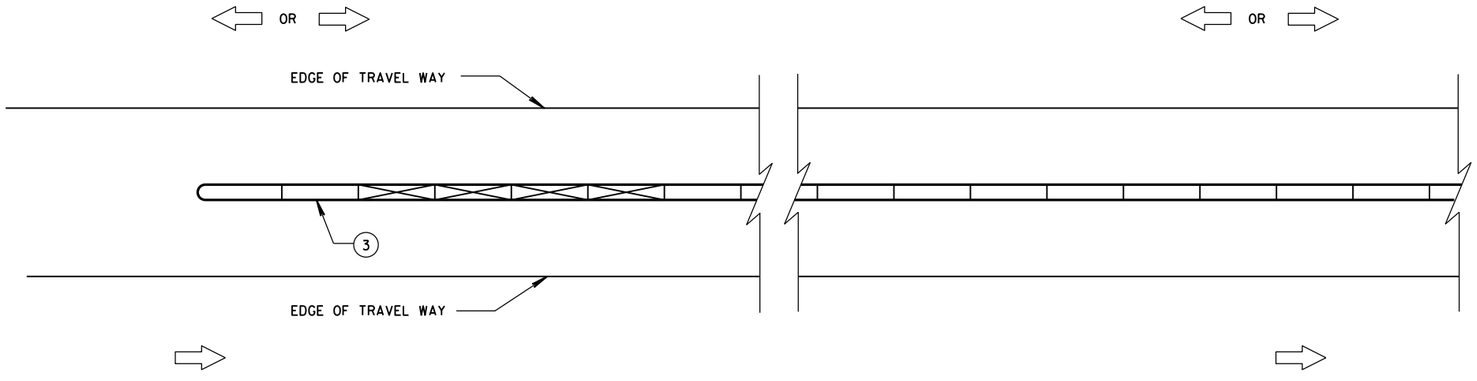
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

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.

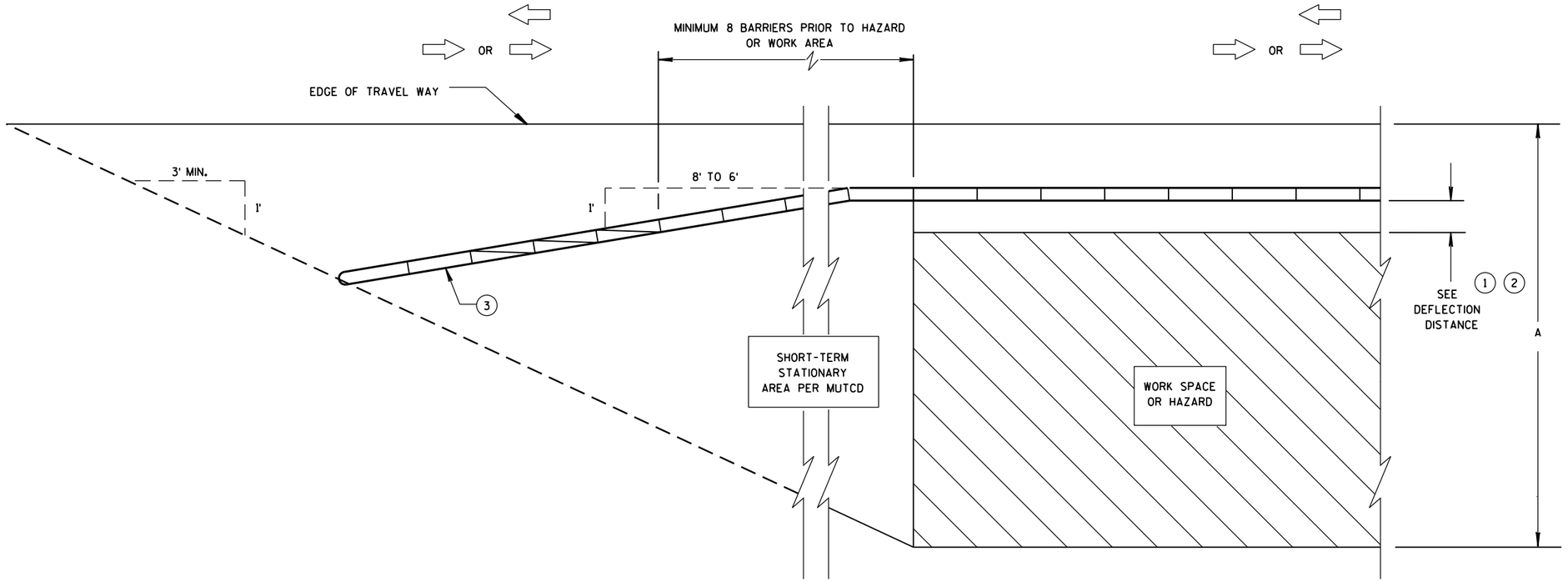
(3) ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. IF MANUFACTURER'S RECOMMENDATIONS ARE NOT PROVIDED, ANCHOR 3 PINS ON TRAFFIC SIDE.

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

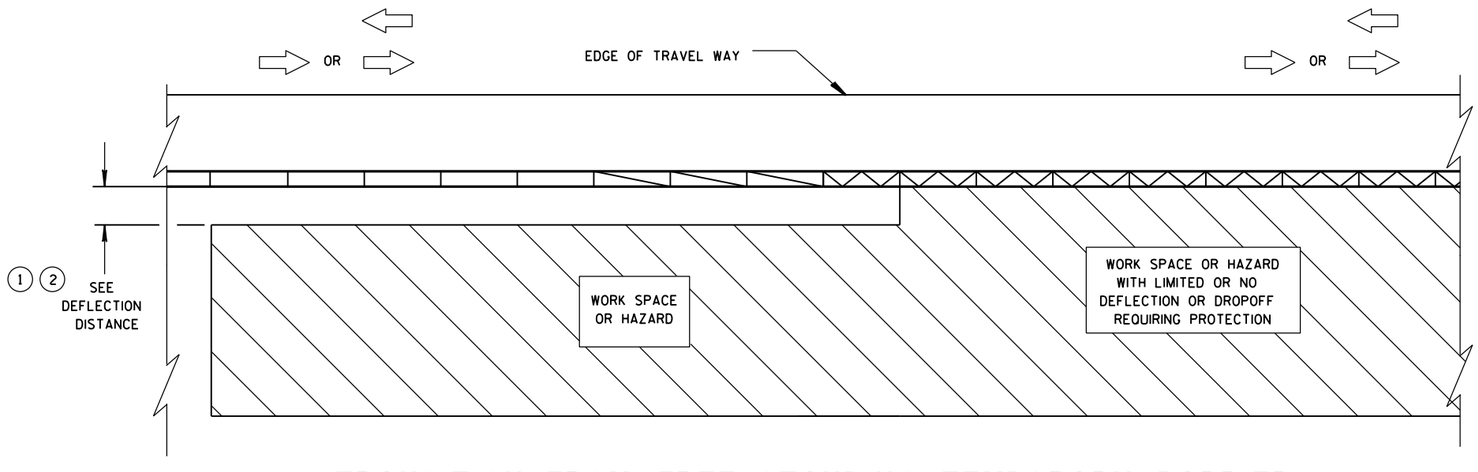
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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S.D.D. 14 B 8-2a



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

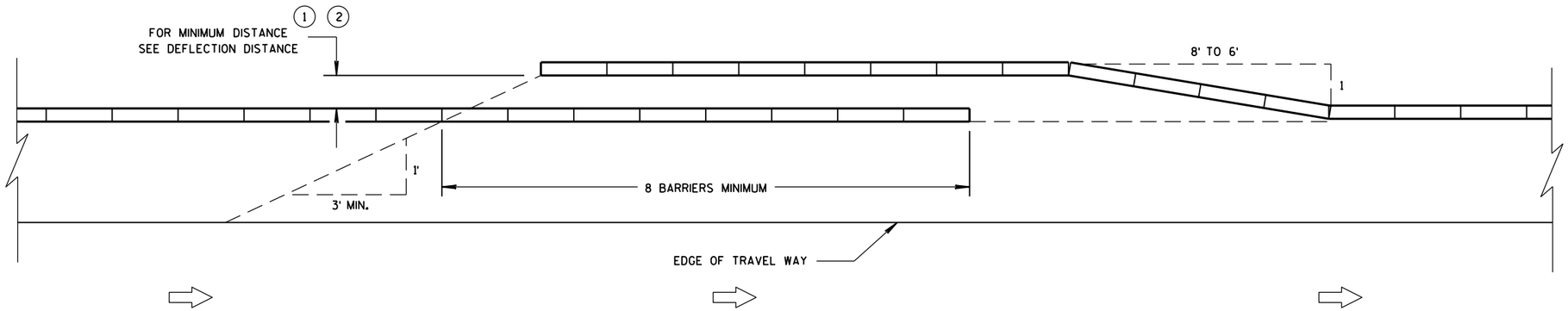
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

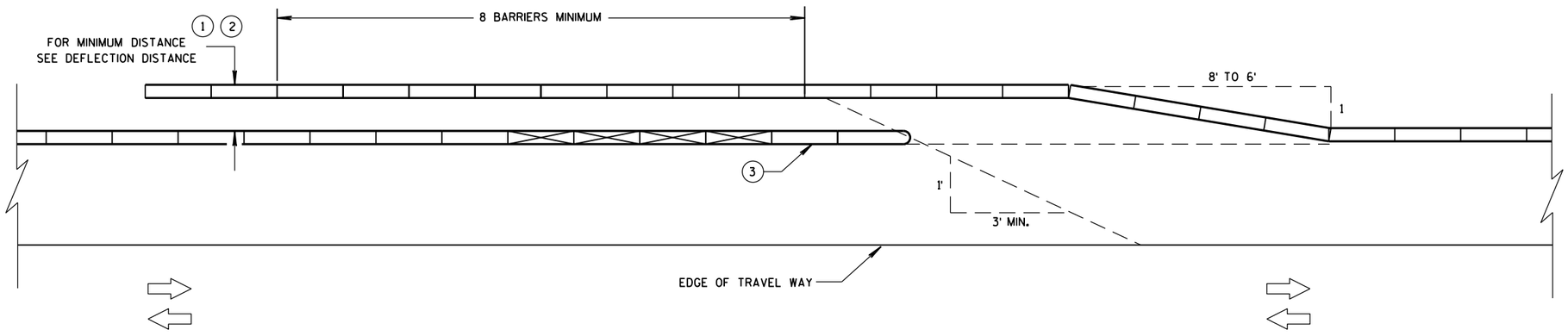
STATE OF WISCONSIN
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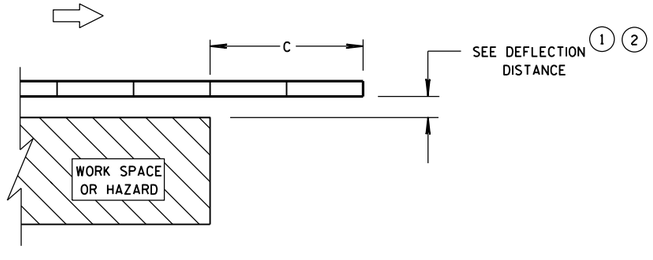
S.D.D. 14 B 8-2b



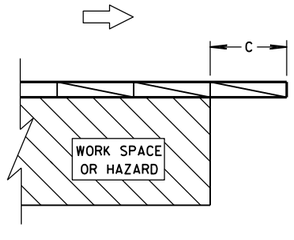
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



ENDING TEMPORARY BARRIER DOWNSTREAM - UNANCHORED



ENDING TEMPORARY BARRIER DOWNSTREAM - ANCHORED

LEGEND

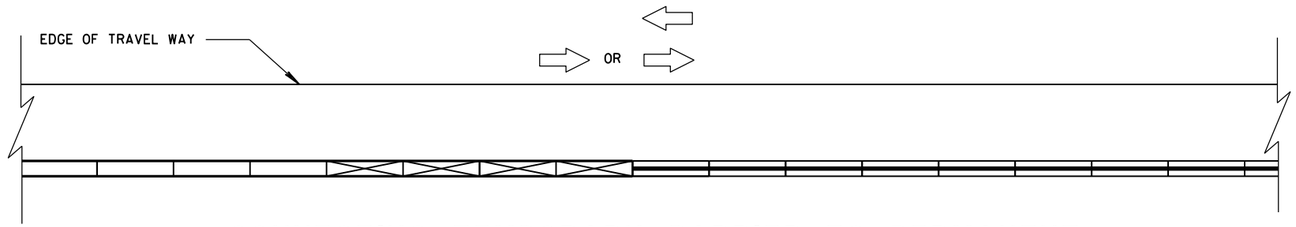
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

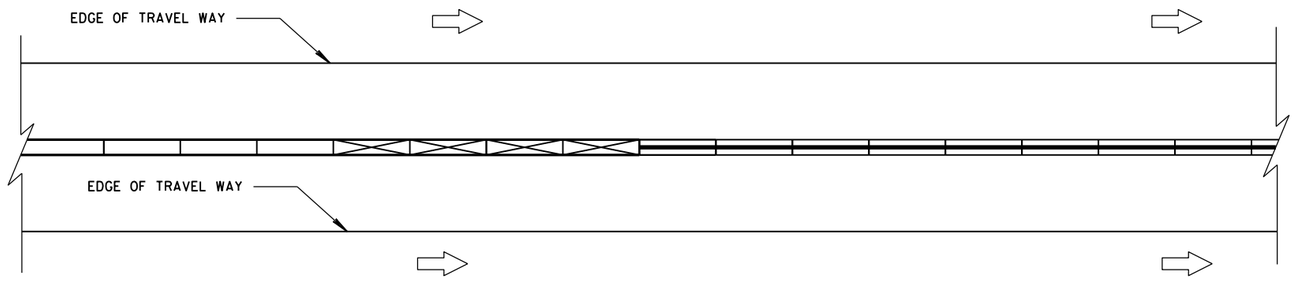
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 8-2c



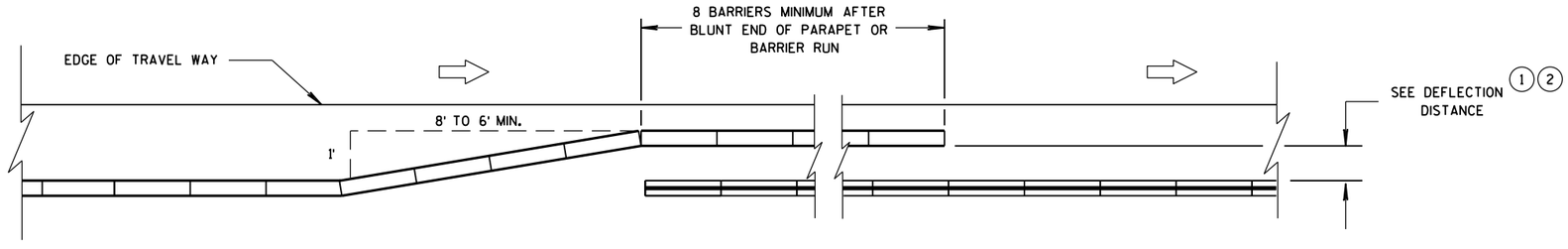
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



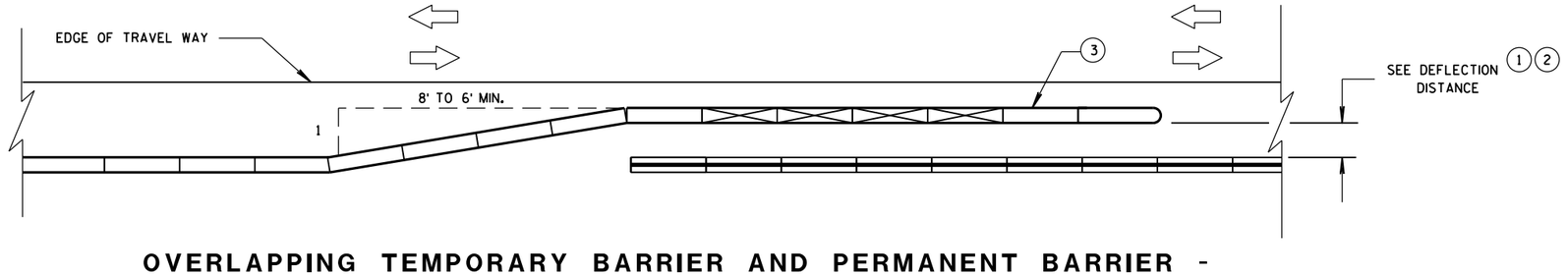
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

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 TRANSPOI

6

S.D.D. 14 B 8-2d

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

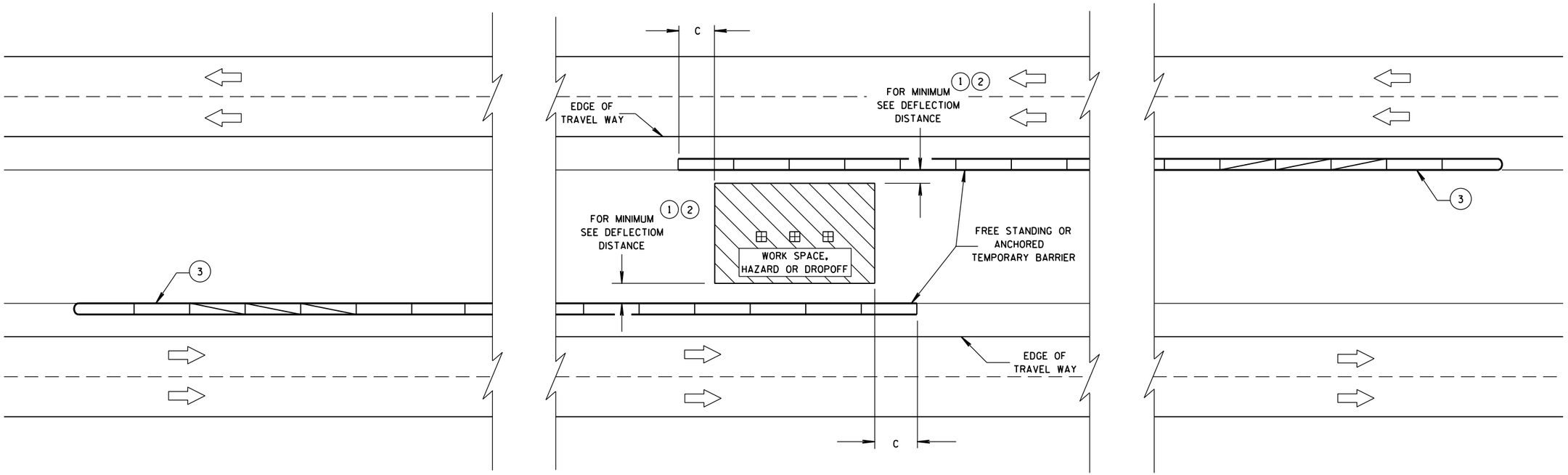
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

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



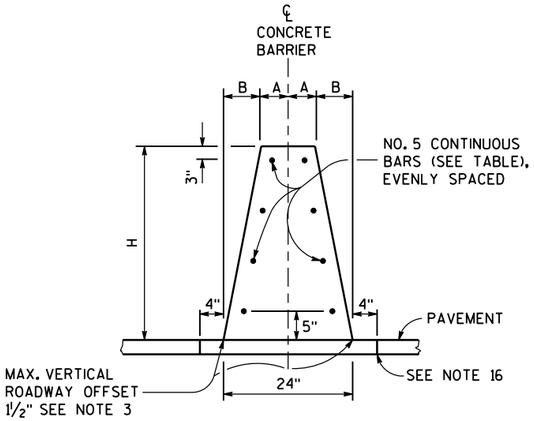
CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

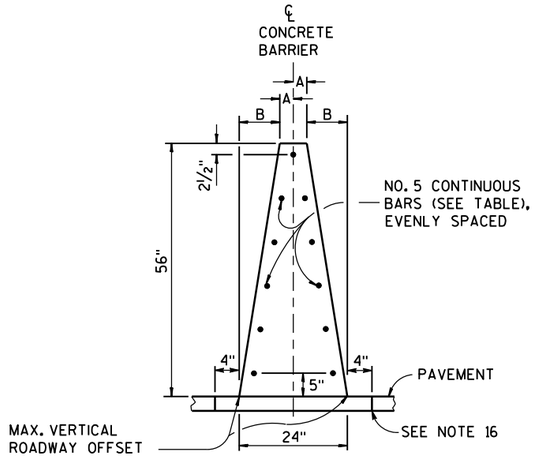
APPROVED
June, 2015
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINNER
FHWA

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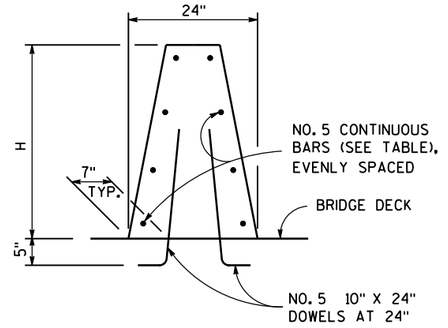
S.D.D. 14 B 8-2e



32-INCH, 36-INCH OR 42-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S32, TYPE S36, AND TYPE S42)



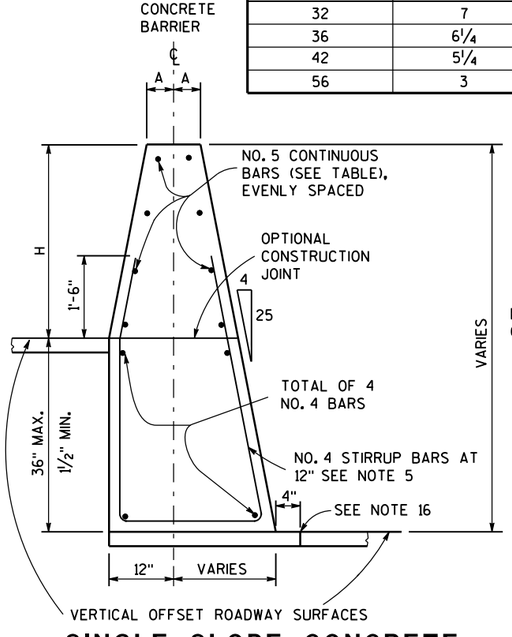
56-INCH SINGLE SLOPE CONCRETE BARRIER (TYPE S56)



SINGLE SLOPE CONCRETE BARRIER ON BRIDGE

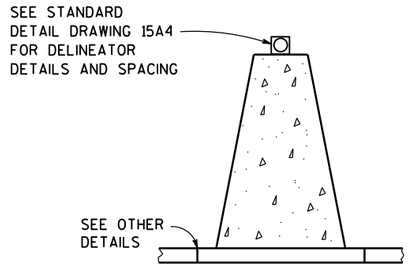
NON OUTER PARAPET APPLICATION

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

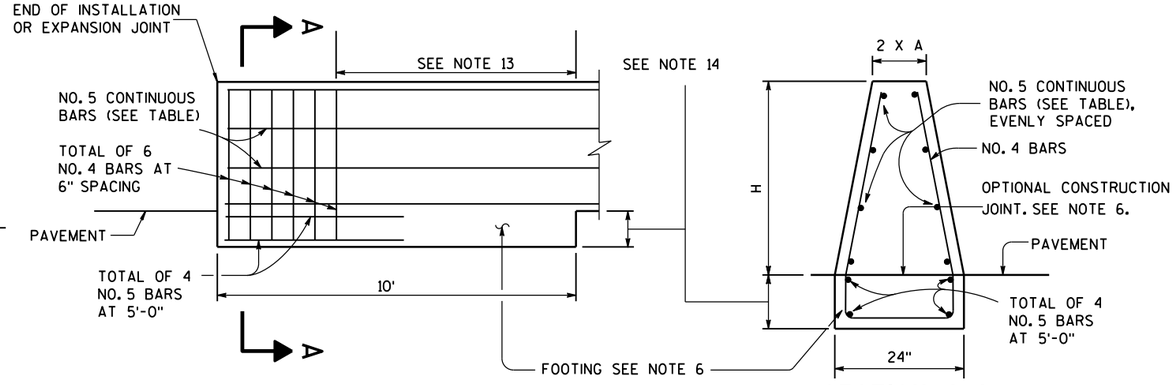


SINGLE SLOPE CONCRETE BARRIER AND RETAINING WALL (TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)

(BETWEEN ADJACENT ROADWAYS)



DELINEATION



END ANCHOR SINGLE SLOPE CONCRETE BARRIER

AT CONSTRUCTION JOINT

SECTION A-A

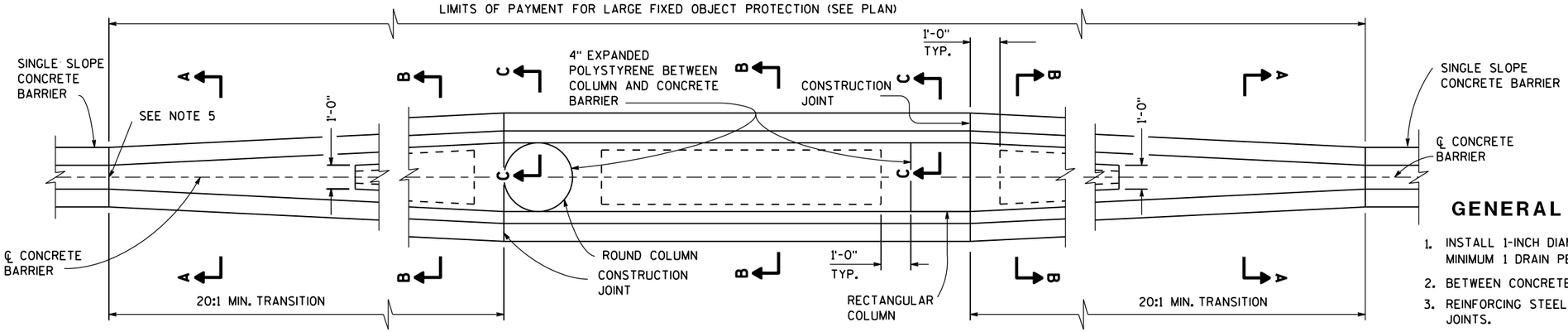
GENERAL NOTES

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, 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.
16. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.

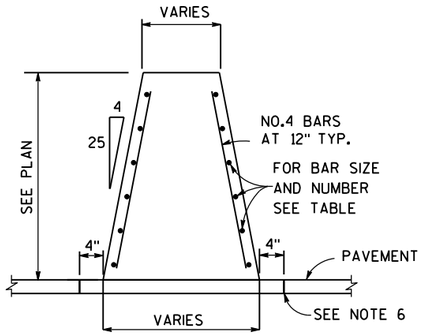
CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

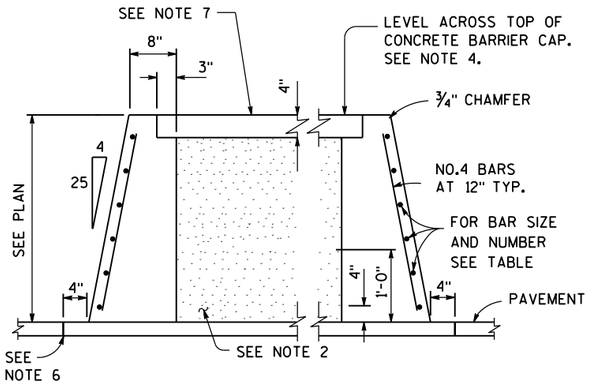
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S.D.D. 14 B 32-5a



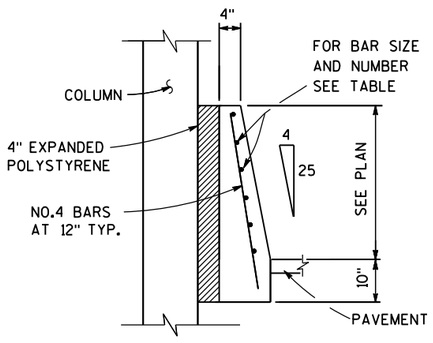
LARGE FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56



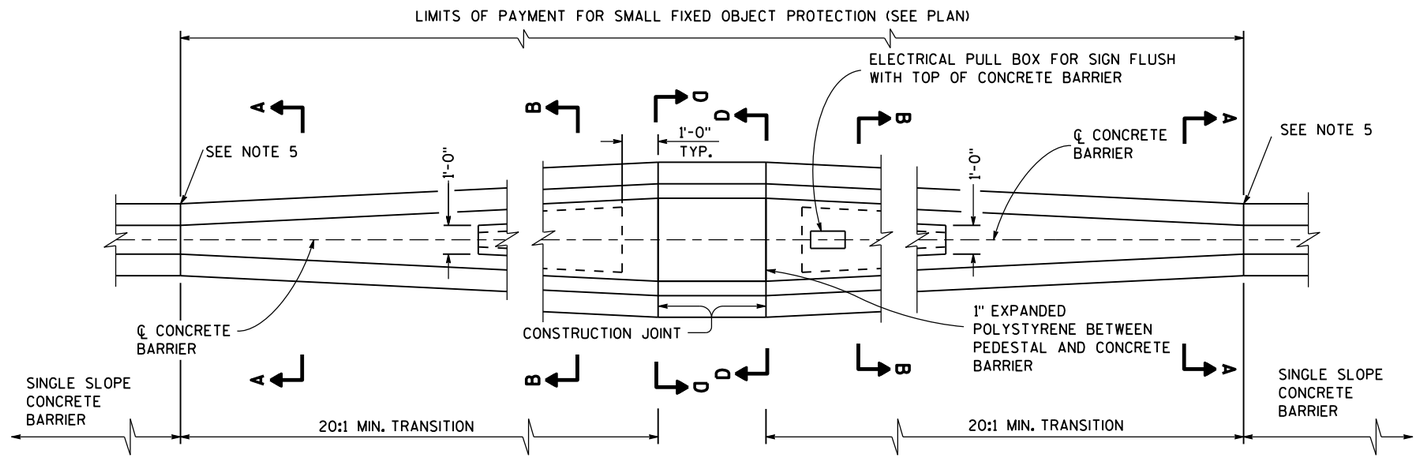
SECTION A-A



SECTION B-B



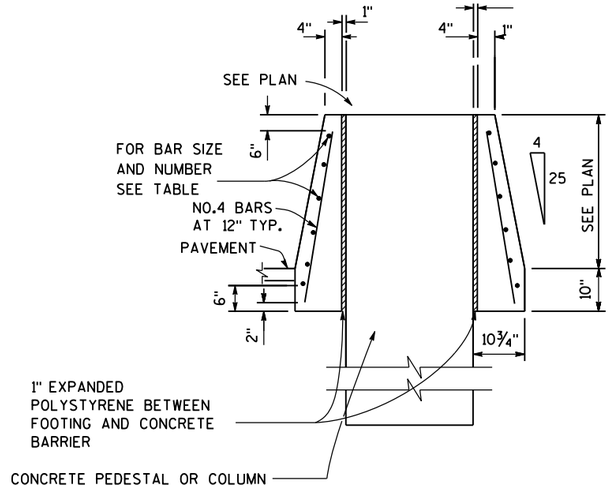
SECTION C-C



SMALL FIXED OBJECTS PROTECTION
TYPE S32, TYPE S36, TYPE S42, TYPE S56

GENERAL NOTES

1. INSTALL 1-INCH DIAMETER DRAIN PIPE EVERY 20 FEET OF CROSS SECTION B-B. MINIMUM 1 DRAIN PER CAVITY.
2. BETWEEN CONCRETE BARRIER WALLS FILL WITH FOUNDATION BACKFILL.
3. REINFORCING STEEL SHALL EXTEND CONTINUOUS THROUGH CONSTRUCTION JOINTS.
4. ADJUST HEIGHT OF CONCRETE BARRIER WALL ON LOW SIDE OF OFFSET OR SUPERELEVATED ROADWAYS TO PROVIDE LEVEL GRADE ACROSS TOP OF CONCRETE CAP.
5. IF FIXED OBJECT PROTECTION IS INSTALLED FIRST, USE COLD JOINTS. IF CBSS PLACED FIRST, USE EXPANSION JOINT.
6. CONCRETE PAD UNDER CBSS MAY BE PLACED INTEGRAL WITH BARRIER, PLACED SEPARATELY OR PLACED WITH CONCRETE SHOULDER AND SAWED FULL DEPTH. SAWING OF CONCRETE SHOULDER IS INCIDENTAL TO CONCRETE BARRIER BID ITEM. CONCRETE PAD MINIMUM DEPTH IS 6 INCHES, OR EQUAL TO THE DEPTH OF THE CONCRETE SHOULDER.
7. USE NO. 3 BAR SPACED 12 INCHES CENTER TO CENTER (PLACED IN EACH DIRECTION) OR EQUIVALENT WIRE MESH.



SECTION D-D

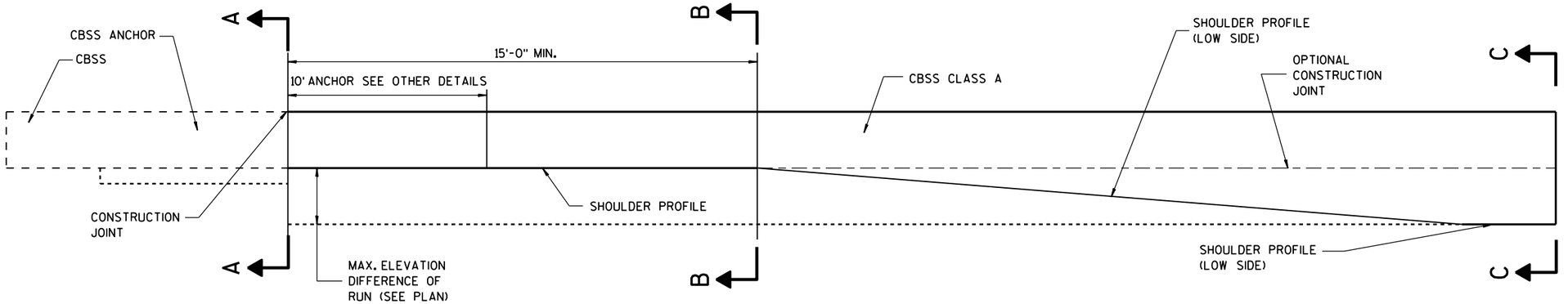
BARRIER HEIGHT H INCHES	BAR SIZE	NUMBER OF BARS EACH
32	4	6
36	4	6
42	5	6
56	5	9

CONCRETE BARRIER SINGLE SLOPE (CBSS)

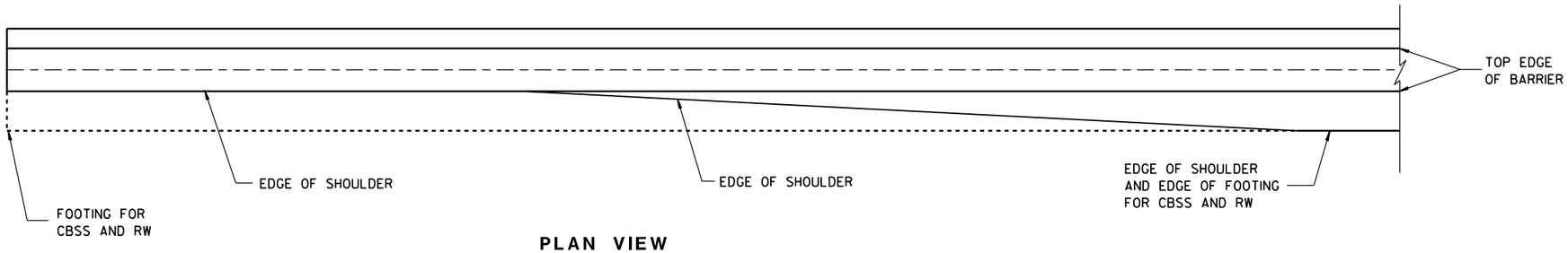
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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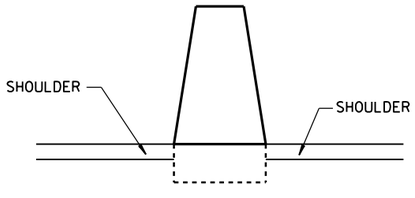
S.D.D. 14 B 32-5b



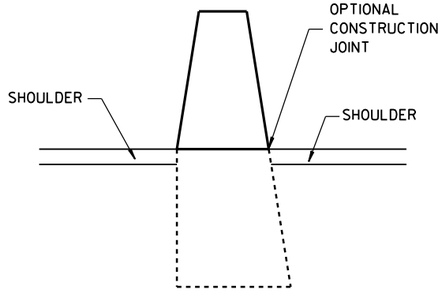
ELEVATION VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



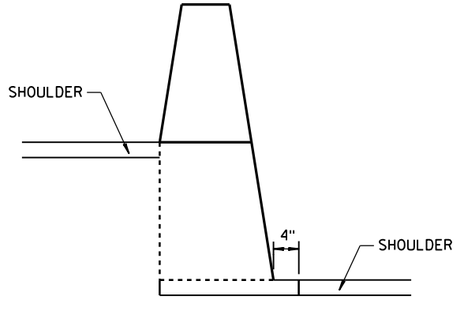
PLAN VIEW
TRANSITION TO CBSS CLASS A
(TYPE S32A, TYPE S36A, TYPE S42A, TYPE S56A)



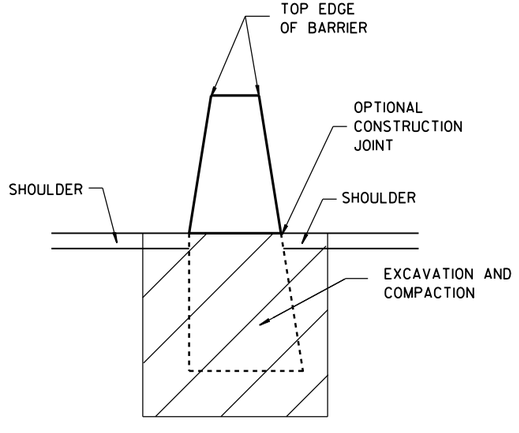
SECTION A-A



SECTION B-B



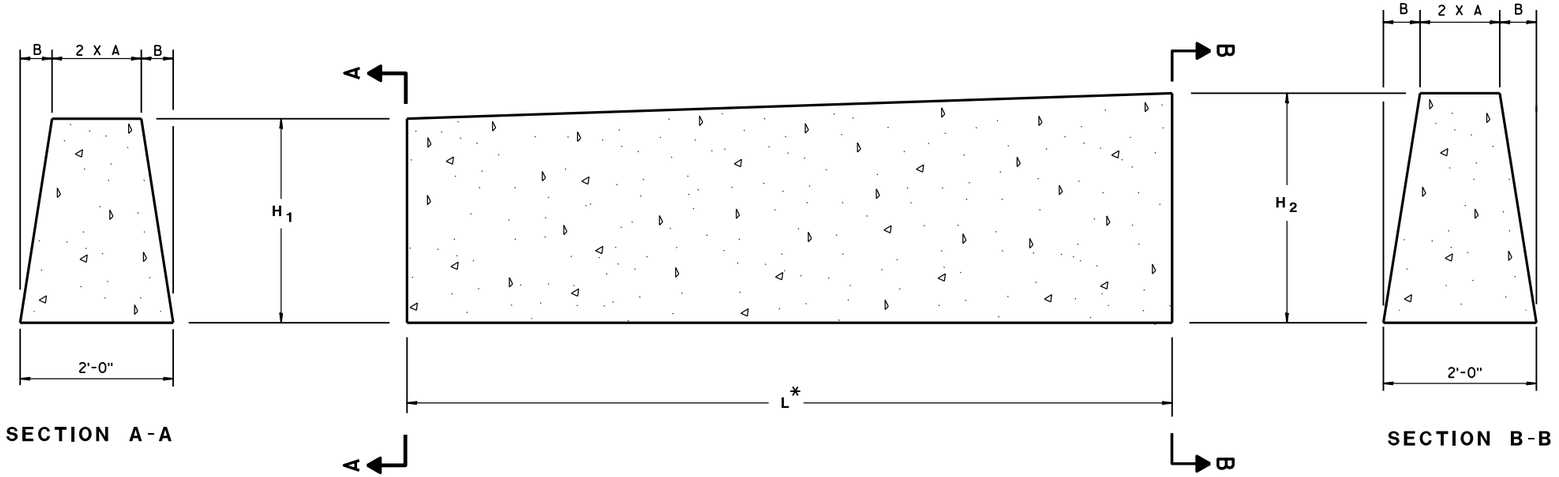
SECTION C-C



CONCRETE BARRIER SINGLE SLOPE (CBSS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6
S.D.D. 14 B 32-5c



SECTION A-A

SECTION B-B

DOUBLE COLD JOINT HEIGHT TRANSITION

BARRIER DIMENSIONS

BARRIER HEIGHT INCHES	A INCHES	B INCHES
32	7	5
36	6 1/4	5 3/4
42	5 1/4	6 3/4
56	3	9

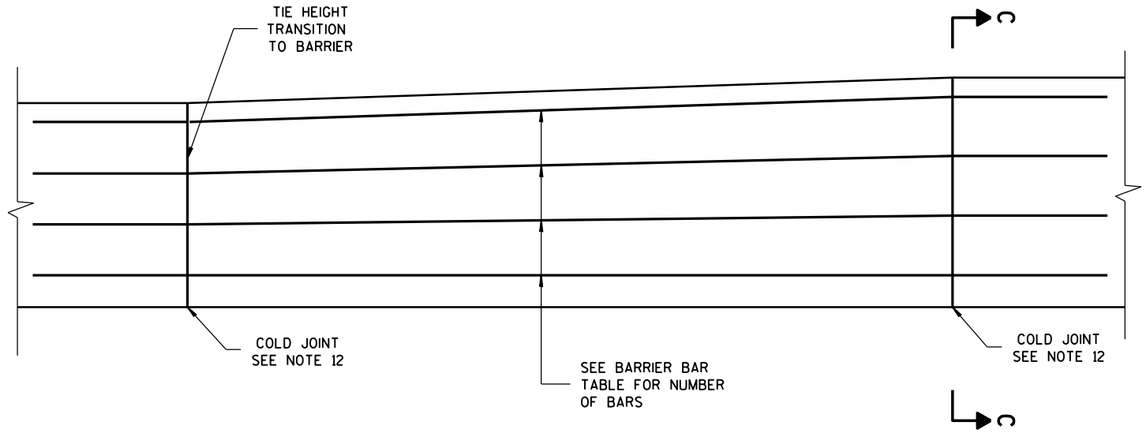
MULTIPLE HEIGHT TRANSITIONS MAY BE USED IN SEQUENCE TO GET TO APPROPRIATE HEIGHT.

USE COLD JOINT TO CONNECT MULTIPLE HEIGHT TRANSITIONS.

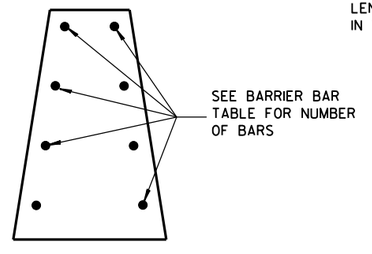
BARRIER BARS

H_1	H_2	L*	NUMBER OF NO. 5 BARS
32"	36"	10'-0"	8
36"	42"	10'-6"	10
42"	56"	24'-6"	11

* LENGTH OF DOUBLE COLD JOINT INCLUDED IN THE TOTAL LENGTH OF CBSS.



STEEL REINFORCEMENT DETAIL



SECTION C-C

CONCRETE BARRIER SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS D UNIT SUPERVI NT

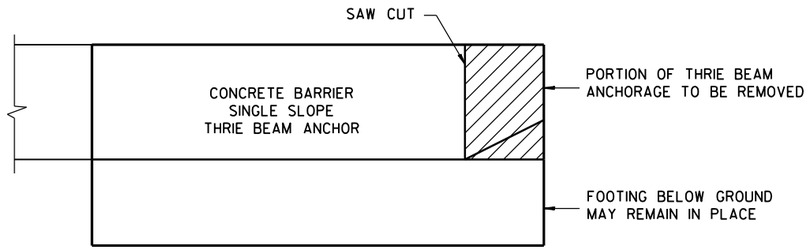
FHWA

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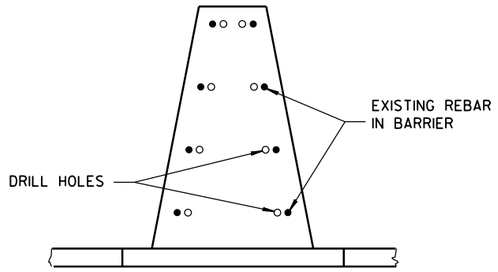
S.D.D. 14 B 32-5d

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S.D.D. 14 B 32-5d



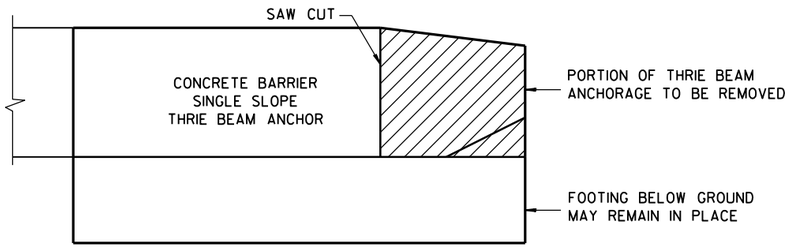
REMOVAL AREA OF
32" CONCRETE THRIE BEAM ANCHORAGE



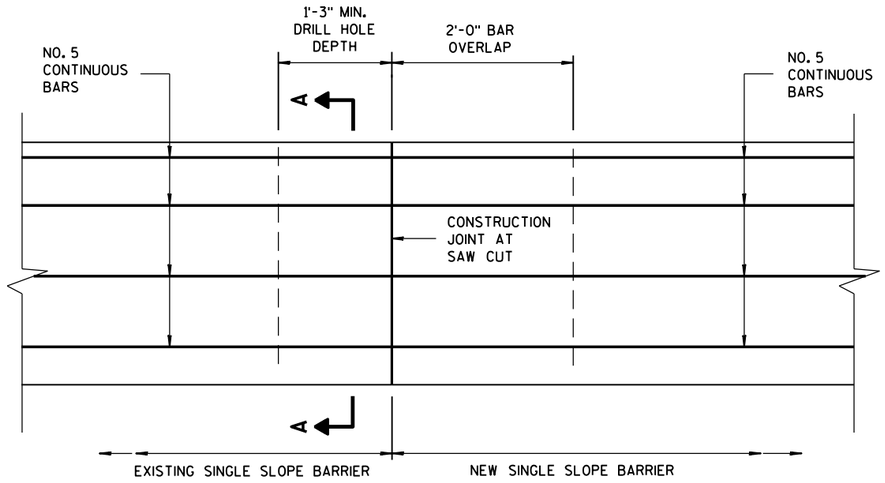
SECTION A-A

GENERAL NOTES

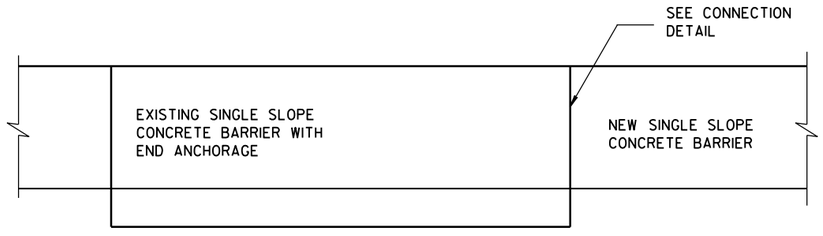
1. THE NUMBER OF DRILL HOLES IS EQUAL TO THE NUMBER OF REBAR IN BARRIER (SEE OTHER DETAILS).
2. MINIMUM DEPTH OF DRILL HOLES IS 1'-3".
3. DRILL HOLES TO BE A MINIMUM OF 4 INCHES FROM THE EDGE OF CONCRETE.
4. INSTALL EPOXY COATED NO. 5 BARS IN DRILL HOLES.
5. END ANCHORAGE MAY OR MAY NOT BE PRESENT ON EXISTING BARRIER.
6. REMOVE THRIE BEAM ANCHORAGE AS SHOWN.



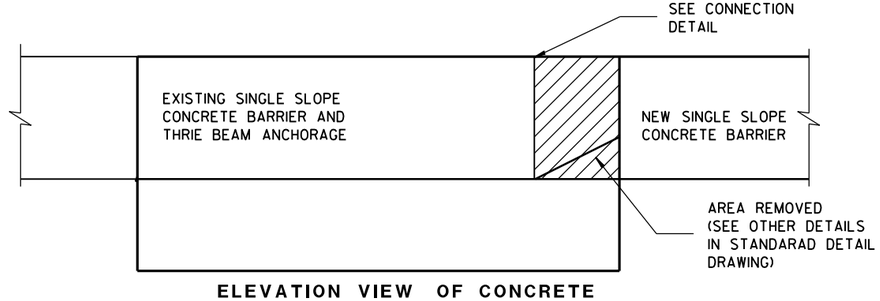
REMOVAL AREA OF CONCRETE THRIE BEAM
ANCHORAGE WITH HEIGHT GREATER THAN 32"



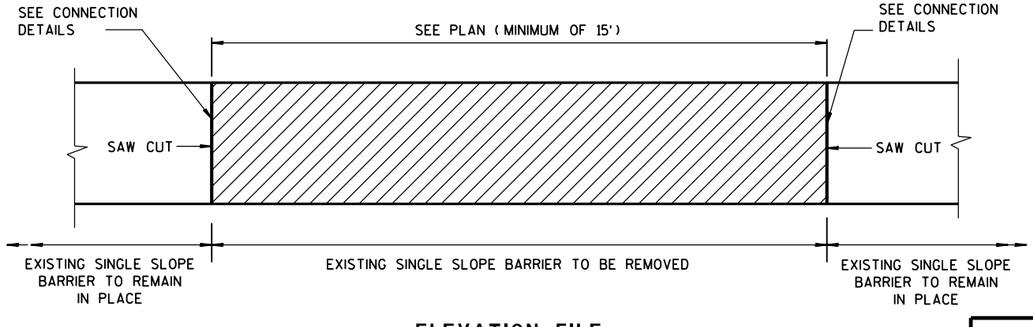
CONNECTION OF EXISTING SINGLE SLOPE CONCRETE BARRIER TO
NEW SINGLE SLOPE CONCRETE BARRIER



ELEVATION VIEW OF CONCRETE
BARRIER EXTENSION NEAR END ANCHORAGE



ELEVATION VIEW OF CONCRETE
BARRIER EXTENSION NEAR THRIE BEAM TERMINAL



ELEVATION FILE
BARRIER REMOVAL AND REPLACEMENT

CONCRETE BARRIER
SINGLE SLOPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 — DATE
/S/ Rodney Taylor — ROADWAY STANDARDS D UNIT SUPERVI NT
FHWA

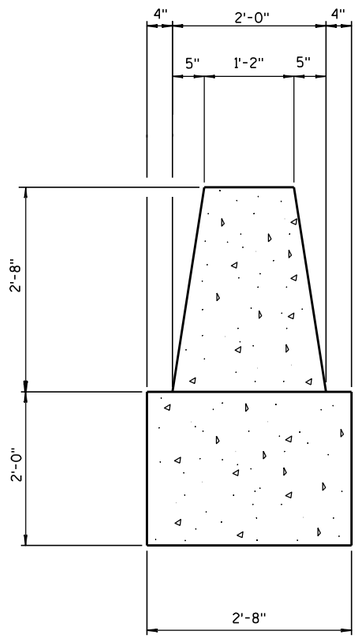
RETROFIT OR REPAIR SINGLE SLOPE CONCRETE BARRIER

6

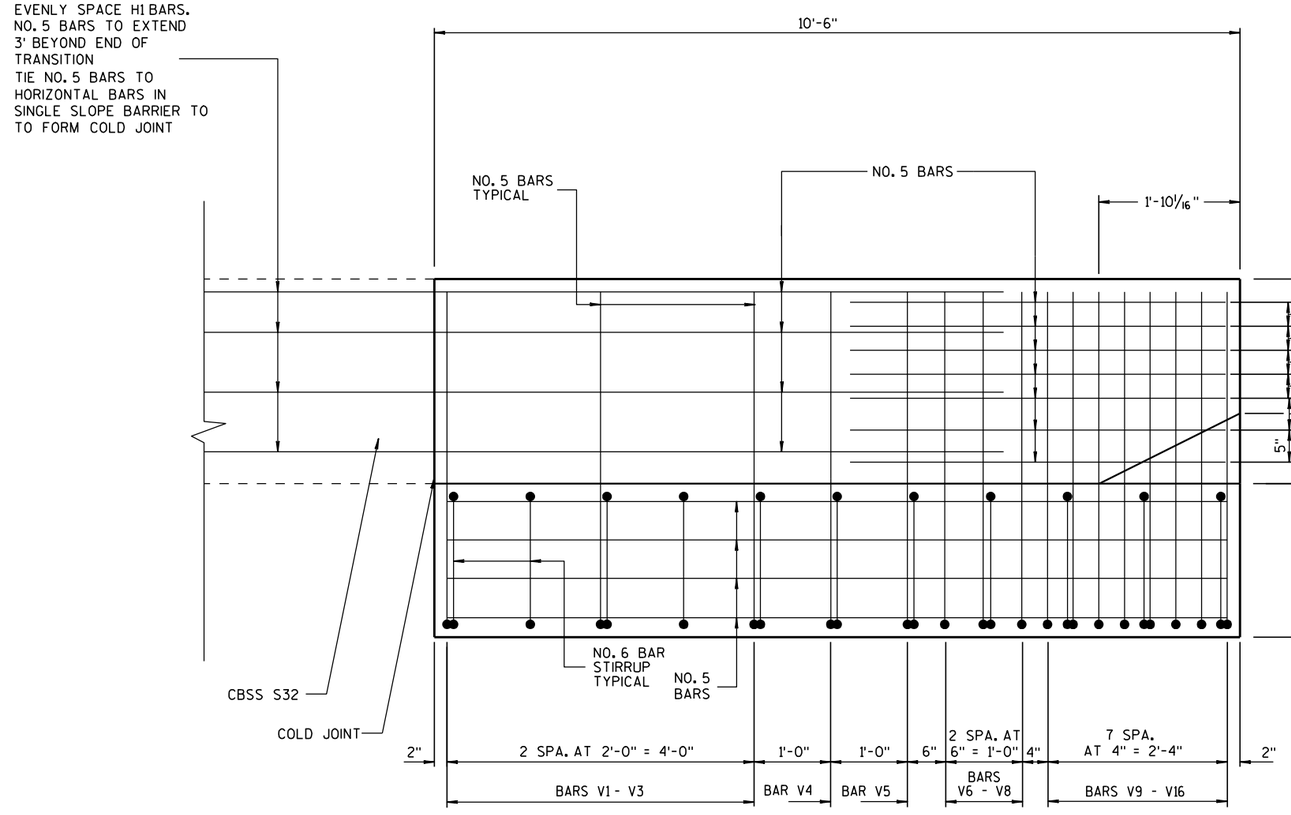
S.D.D. 14 B 32-5e

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S.D.D. 14 B 32-5e

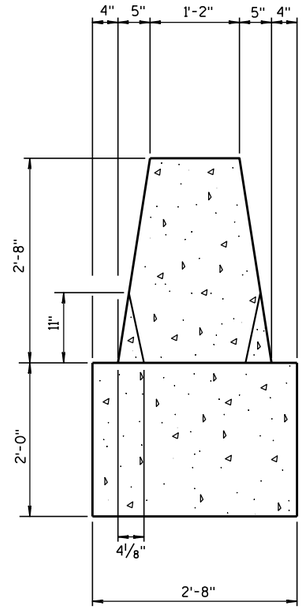


SECTION A-A

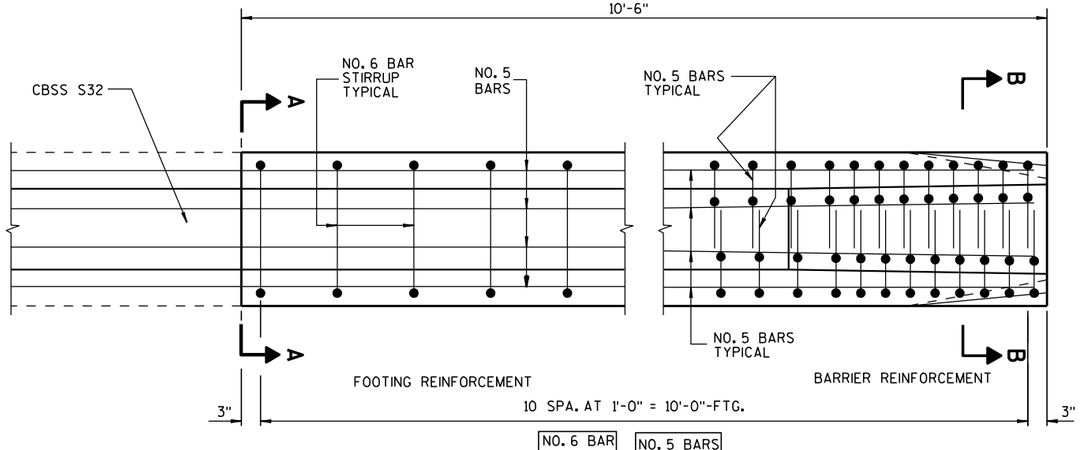


SEE SECTIONS (1) THRU (16)

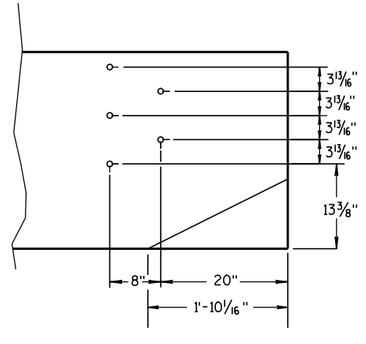
ELEVATION VIEW



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 3/4" 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.

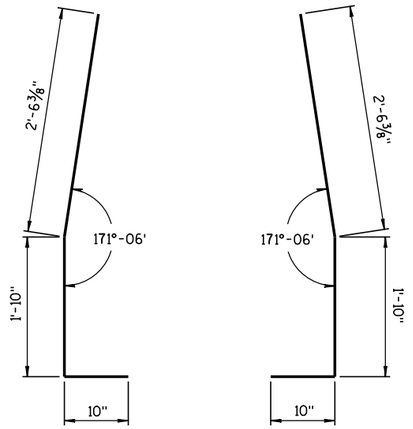
CUT ENDS OF PVC PIPE FLUSH WITH FINISHED FACE of BARRIER.

THE NUMBER IN BAR DESIGNATION REPRESENTS THE BARS LOCATION.

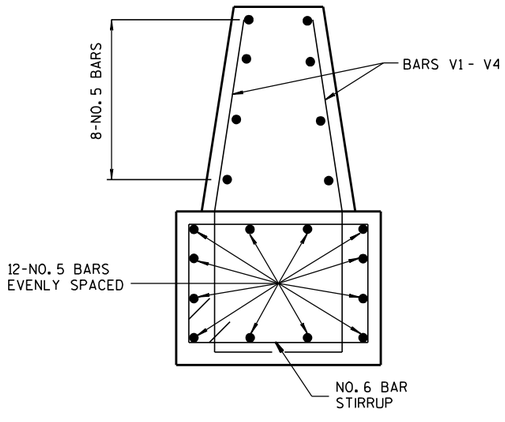
2" CLEAR COVER TYPICAL.

CONCRETE BARRIER
SINGLE SLOPE 32"
THRIE BEAM ANCHOR

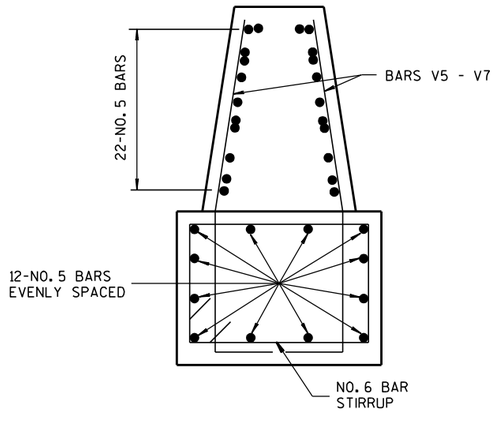
STATE OF WISCONSIN
DEPARTMENT OF TRANSPO...



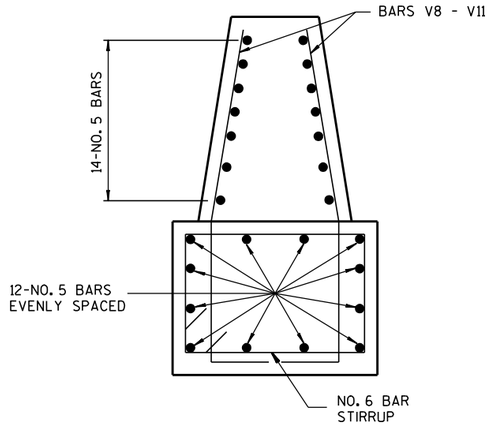
BAR BENDING DETAIL
FOR BARS V1 - V11



BAR DETAIL
SECTIONS 1 - 4



BAR DETAIL
SECTIONS 5 - 7



BAR DETAIL
SECTIONS 8 - 11

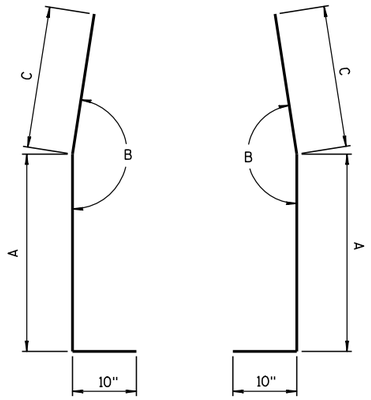
CONCRETE BARRIER
SINGLE SLOPE 32"
THRIE BEAM ANCHOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6
S.D.D. 14 B 33-1b

BAR CHART
SECTIONS V12 - V13

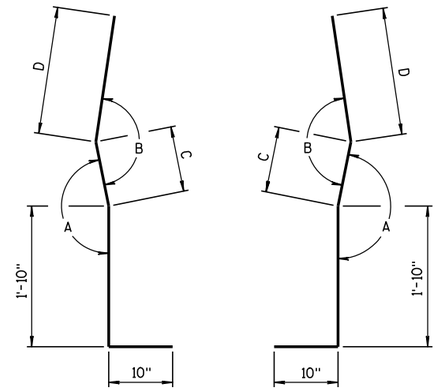
BAR	A	B	C
V12	2'-2"	171°-15'	2'-1 3/4"
V13	2'-7"	171°-05'	1'-9 3/8"



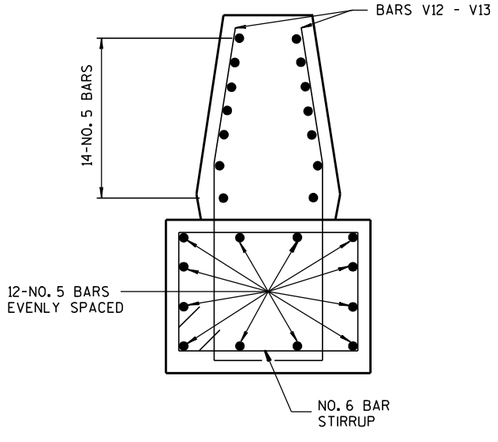
BAR BENDING DETAIL
FOR BARS V12 - V13

BAR CHART
SECTIONS V14 - V16

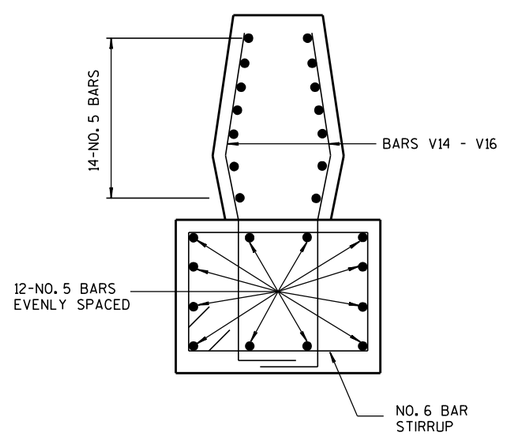
BAR	A	B	C	D
V14	168°-15'	159°-15'	6"	2'-0"
V15	169°-20'	161°-00'	8"	1'-10"
V16	168°-40'	160°-10'	10"	1'-8"



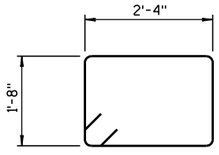
BAR BENDING DETAIL
FOR BARS V14 - V16



BAR DETAIL
SECTIONS 12 - 13



BAR DETAIL
SECTIONS 14 - 16



STIRRUP BAR
BENDING DETAIL

CONCRETE BARRIER
SINGLE SLOPE 32"
THRIE BEAM ANCHOR

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6-3-2010
DATE

/S/ Jerry H. Zoss
ROADWAY STANDARDS ENGINEER

FHWA

6

S.D.D. 14 B 33-1c

6

S.D.D. 14 B 33-1c

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.

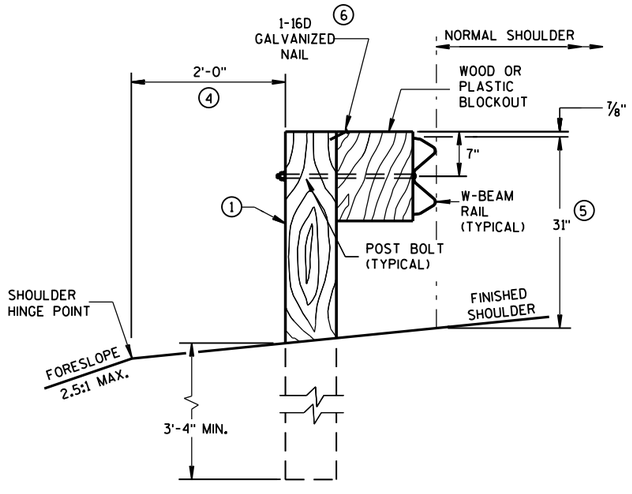
② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2½ INCHES 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).

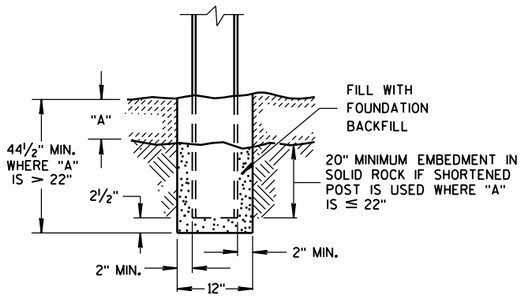
⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



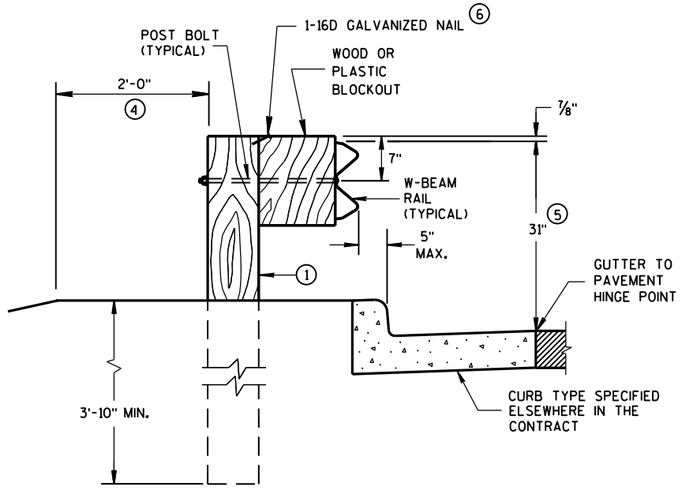
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



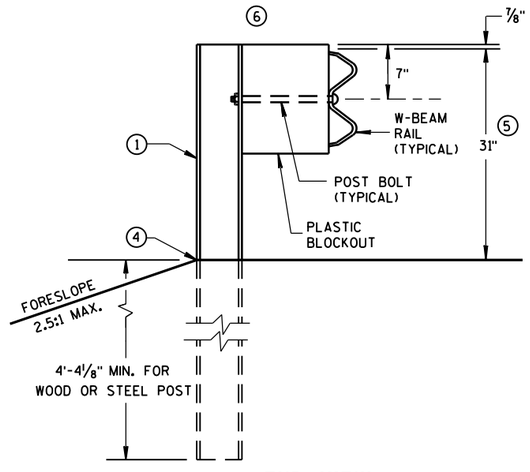
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



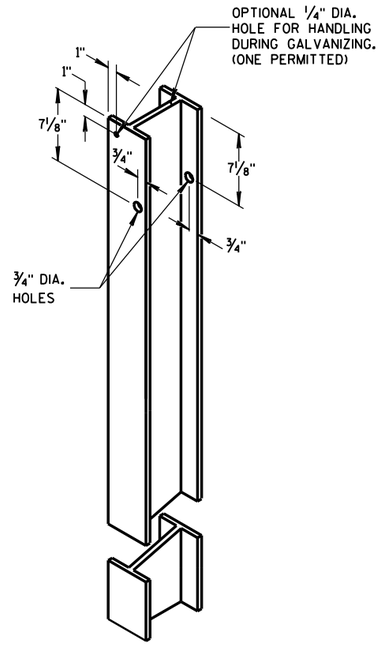
END VIEW

LOCATED ALONG A CURBED ROADWAY

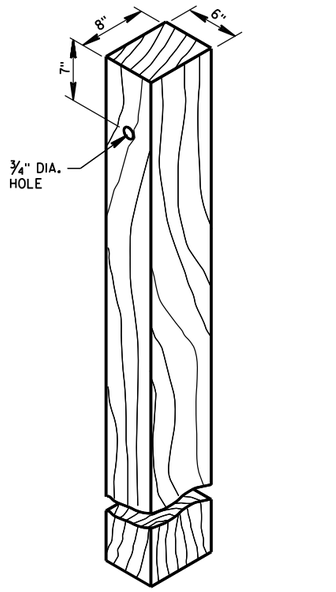


END VIEW

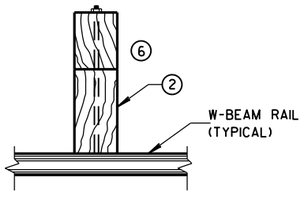
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



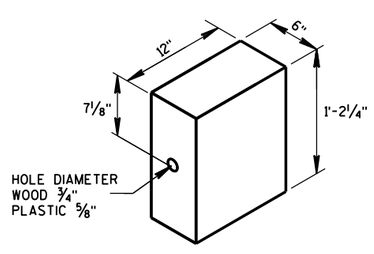
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



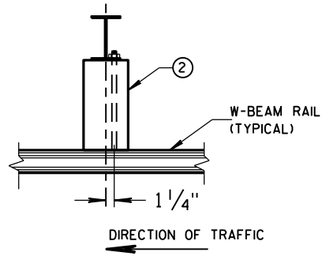
WOOD POST
(6" X 8") NOMINAL ①



PLAN VIEW
WOOD POST,
BLOCKOUT & BEAM



WOOD OR
PLASTIC BLOCKOUT ②

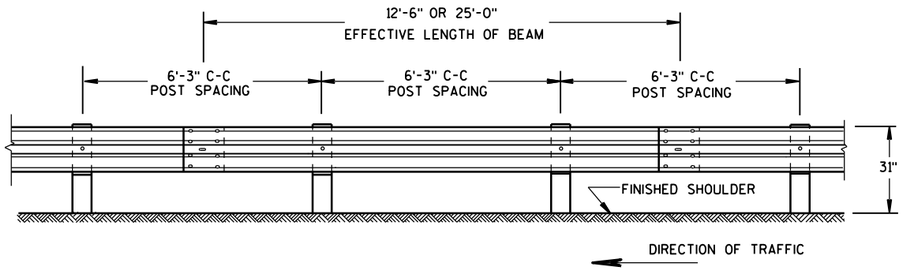


PLAN VIEW
STEEL POST,
PLASTIC BLOCKOUT & BEAM

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

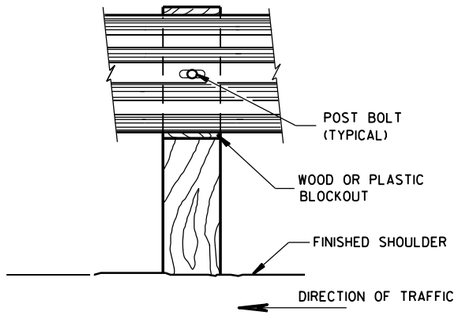
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6
S.D.D. 14 B 42-5a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



FRONT VIEW AT WOOD POST

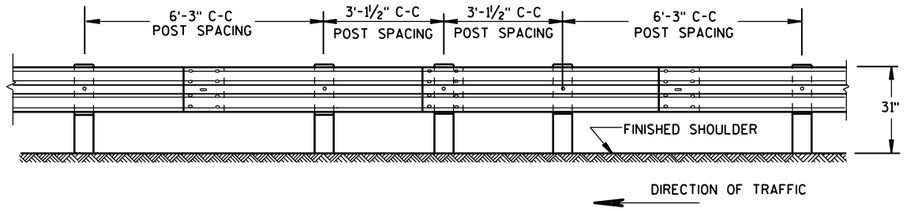
GENERAL NOTES

(8) 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.

(11) 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

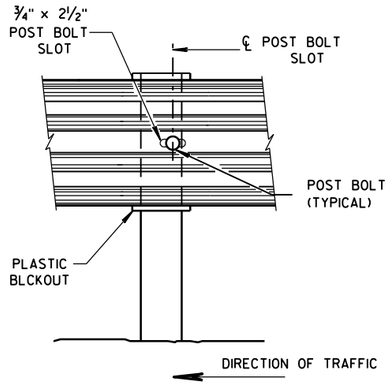
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

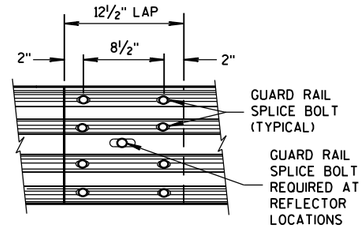


FRONT VIEW

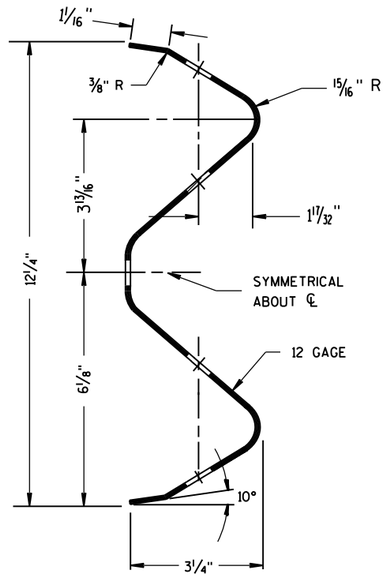
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



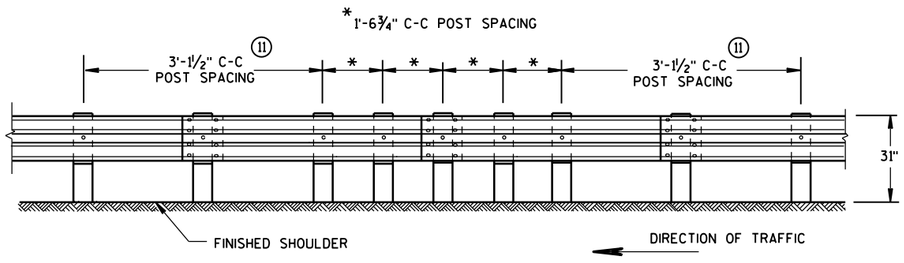
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE

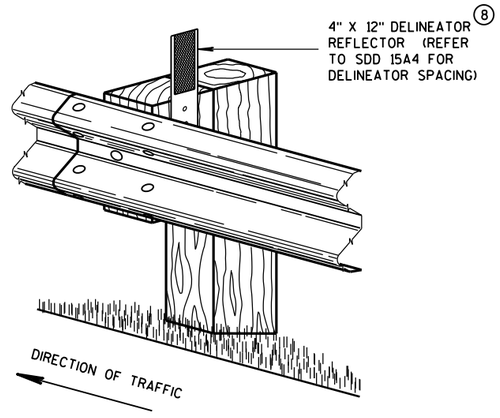


SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)



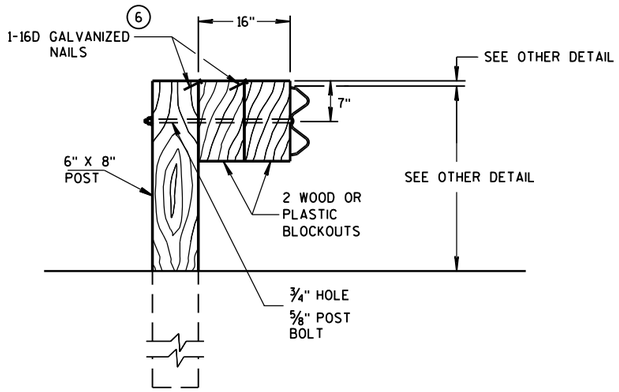
ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

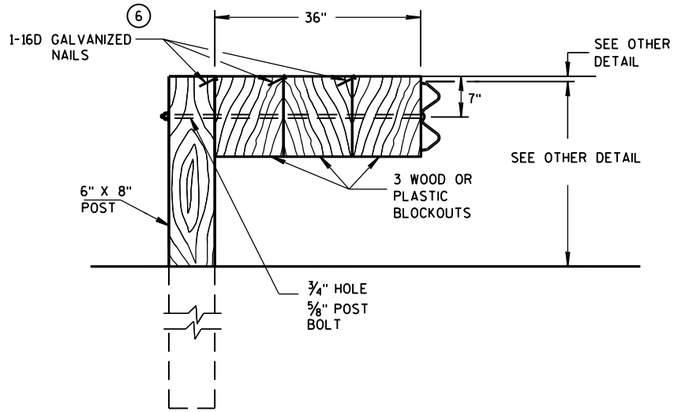
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S.D.D. 14 B 42-5b



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.

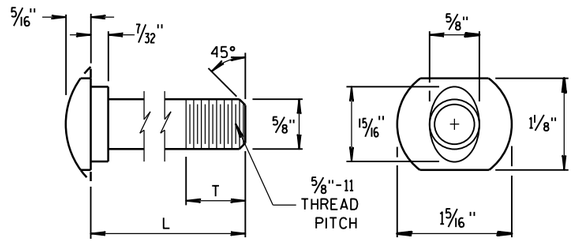


DETAIL FOR 36" BLOCKOUT DEPTH

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.

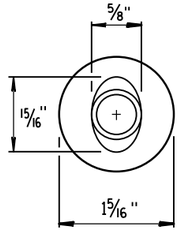
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

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.

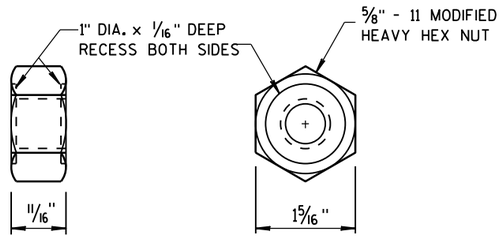


POST BOLT TABLE

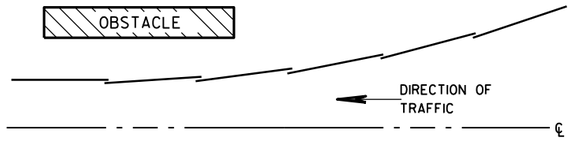
L	T (MIN.)
1¼"	1⅛"
2"	1¾"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

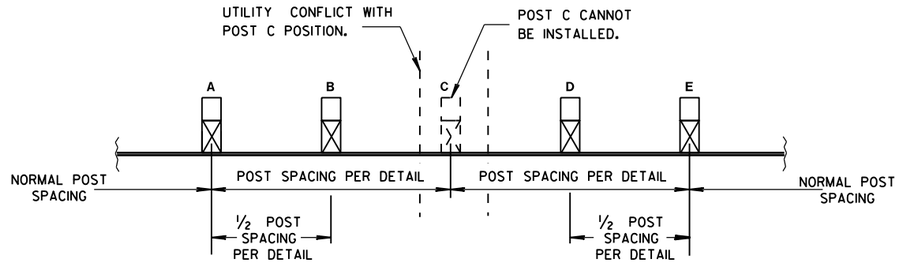


POST BOLT, SPLICE BOLT AND RECESS NUT

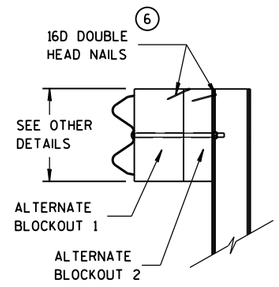


PLAN VIEW

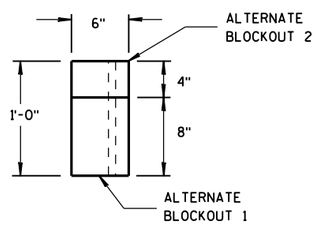
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



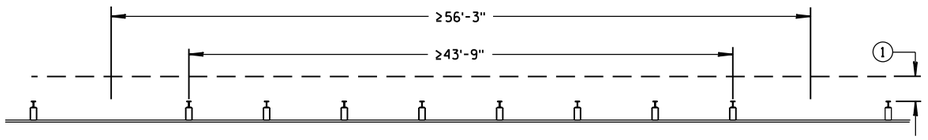
TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

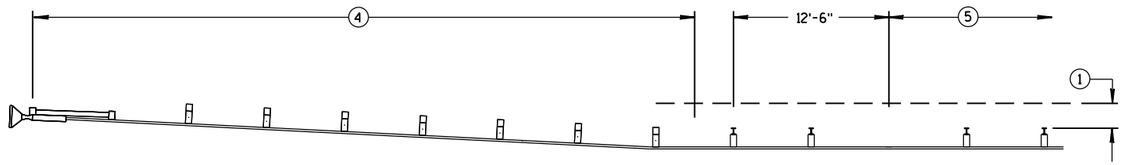
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

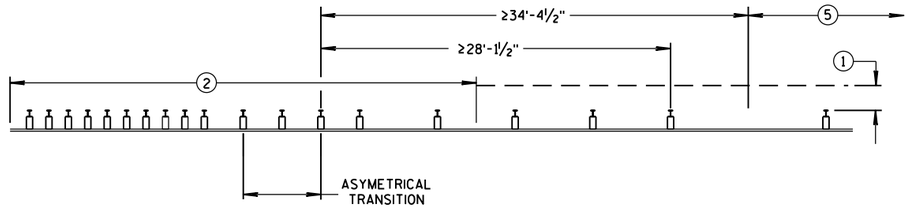
6
S.D.D. 14 B 42-5c



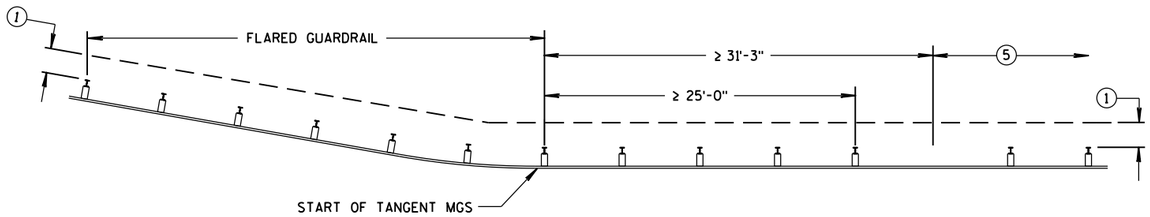
MISSING POST IN NORMAL BEAM GUARD RUN



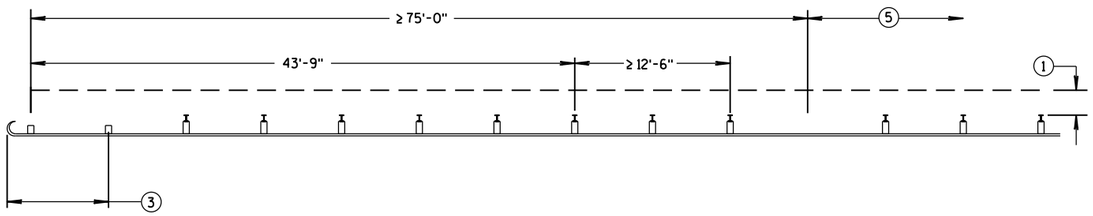
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



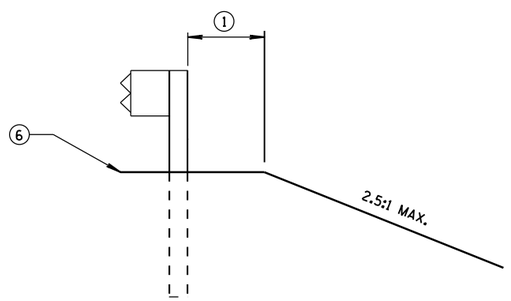
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

1. MINIMUM OF 2 FEET OF GRADING BEHIND POST.
2. SEE SDD 14B45 FOR MORE DETAILS.
3. SEE SDD 14B47 FOR MORE DETAILS.
4. SEE SDD 14B44 FOR MORE DETAILS.
5. SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
6. SEE PLAN FOR SHOULDER DESIGN.

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017
DATE
FHWA

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

6

S.D.D. 14 B 42-5d

6

S.D.D. 14 B 42-5d

GENERAL NOTES

(A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, 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.

(F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.

(H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

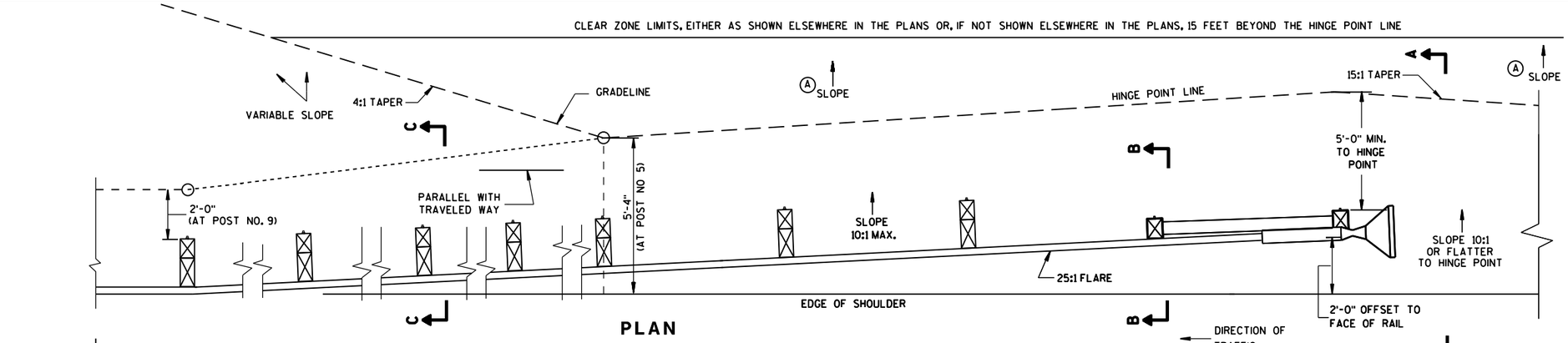
SEE SDD 14B42 FOR MORE INFORMATION.

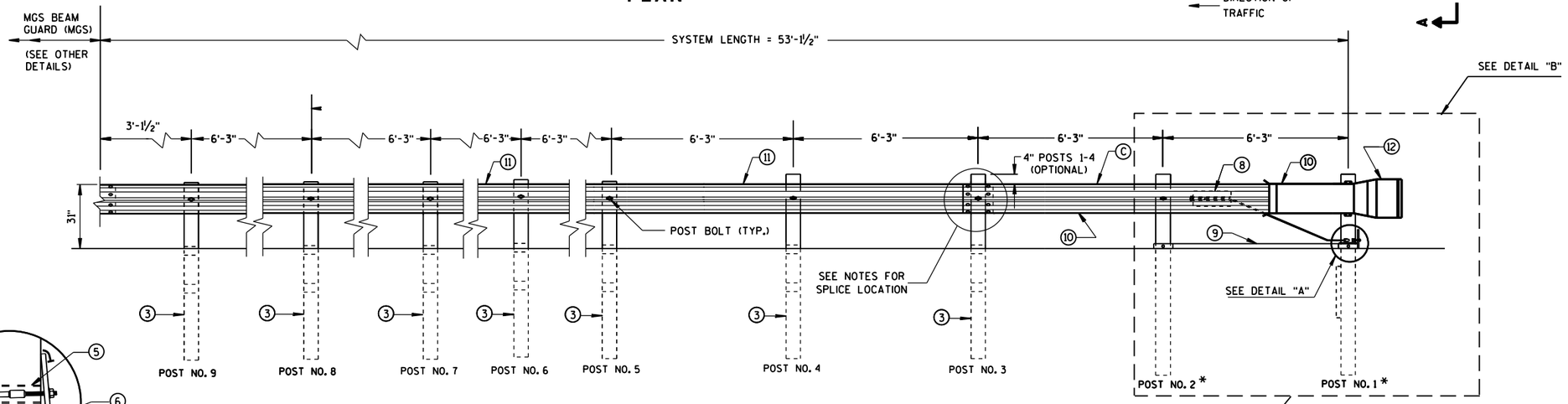
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

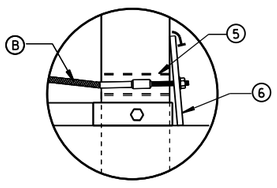
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

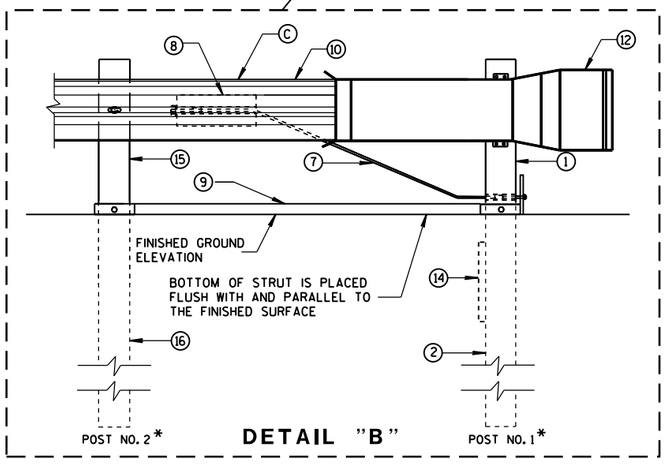
SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

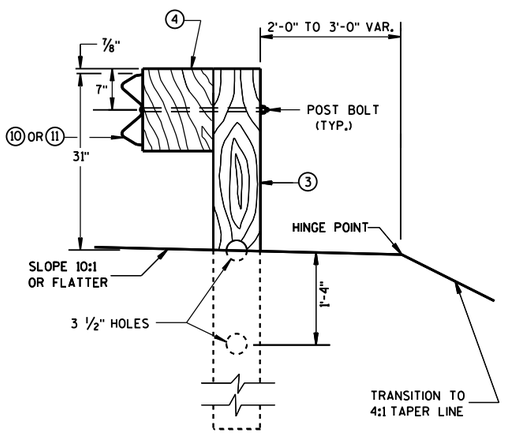
THE CENTER OF THE UPPER 3½" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.

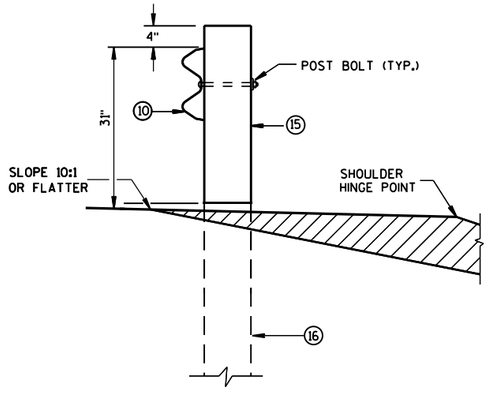


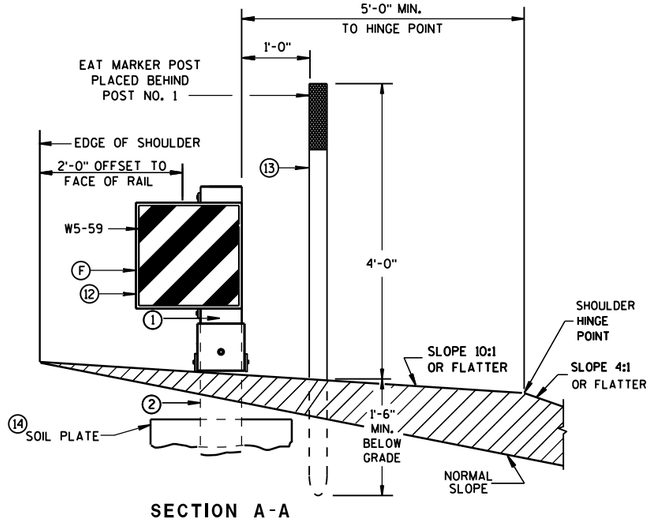






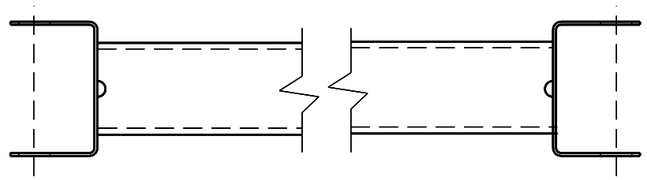






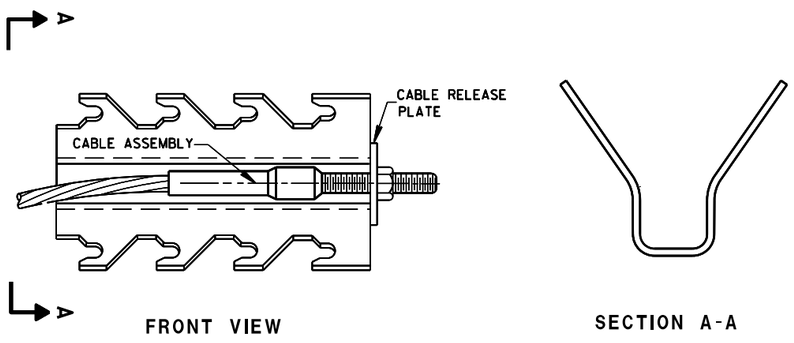
MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
STATE OF WISCONSIN DEPARTMENT OF TRANSPO

6 S.D.D. 14 B 44-3a



(9) (H)

GENERIC GROUND STRUT



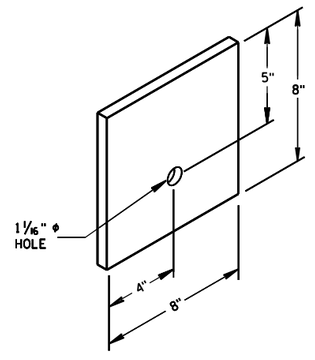
FRONT VIEW

SECTION A-A

GENERIC ANCHOR CABLE BOX (8) (H)

BILL OF MATERIALS

PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	UPPER POST NO. 1 6" X 6" TUBE
(2)	LOWER POST NO. 1
(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)	IMPACT HEAD
(13)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
(14)	SOIL PLATE
(15)	UPPER POST NO. 2
(16)	LOWER POST NO. 2



BEARING PLATE (6)

6

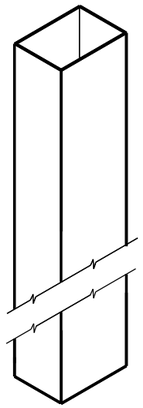
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S.D.D. 14 B 44-3b

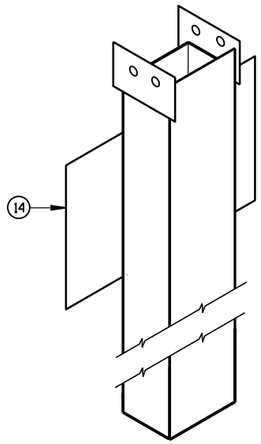
S.D.D. 14 B 44-3b

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

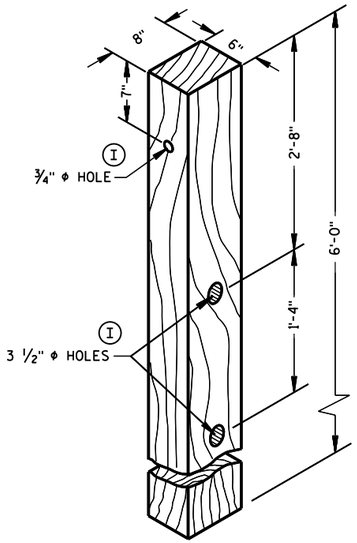
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



UPPER POST NO. 1 (1)

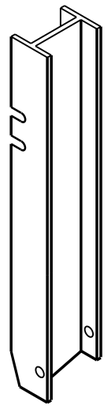


LOWER POST NO. 1 (2)

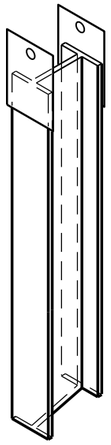


POSTS NUMBER 3-9

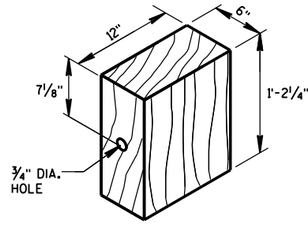
WOOD CRT POST (3)



UPPER POST NO. 2 (15)

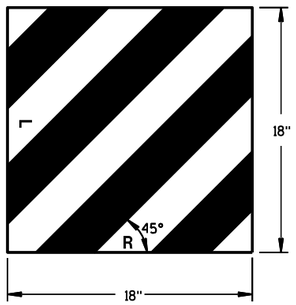


LOWER POST NO. 2 (16)



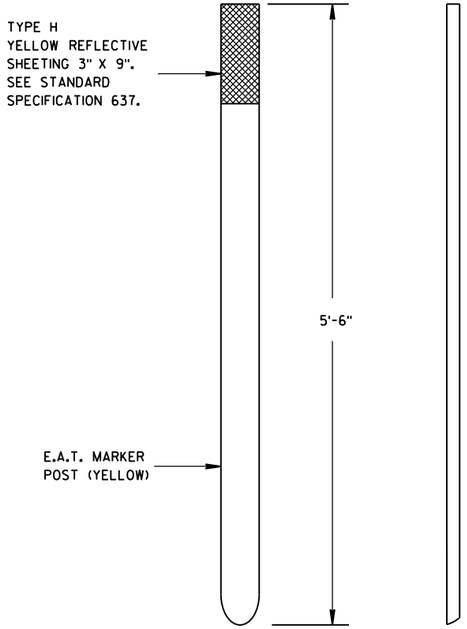
WOOD BLOCKOUT (4)

REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



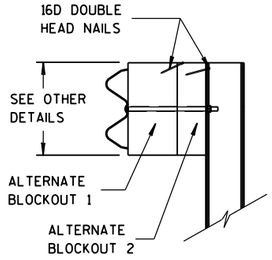
W5-59

REFLECTIVE SHEETING DETAIL (H)

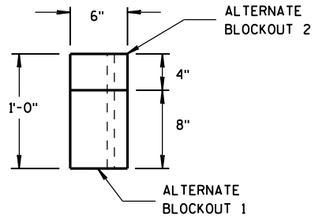


FRONT VIEW SIDE VIEW

E.A.T. MARKER POST (13)



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

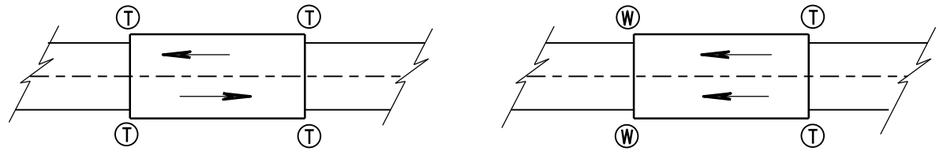
June 2017
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS
UNIT SUPERVISOR

FHWA

6

S.D.D. 14 B 44-3c



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

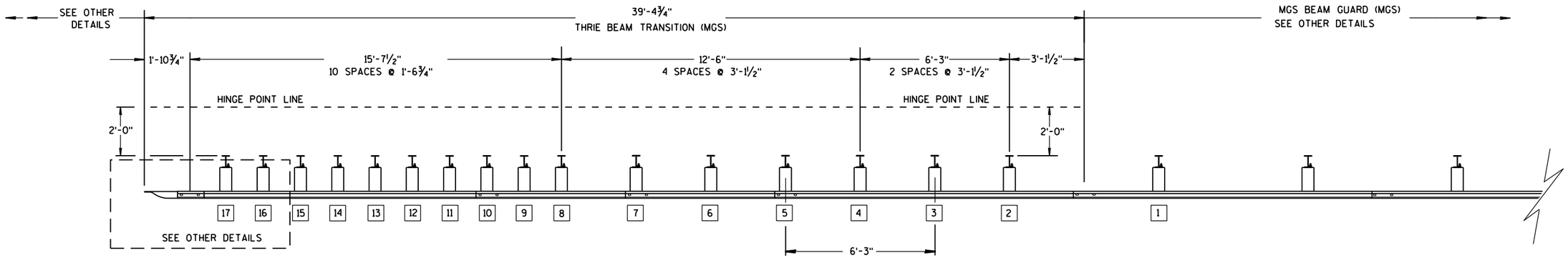
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

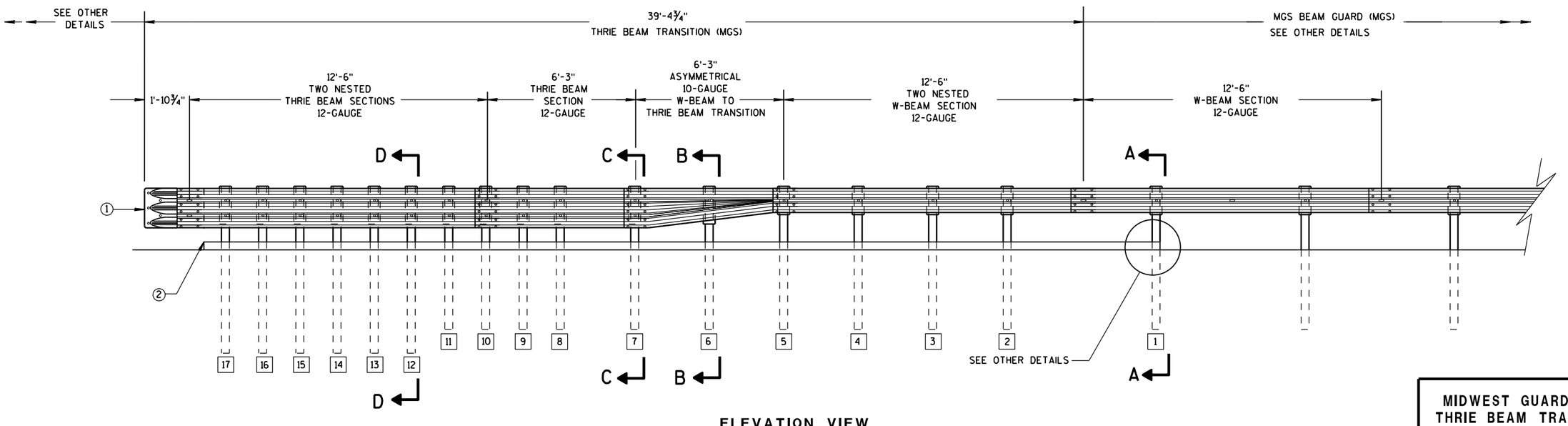
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 45-4a

6

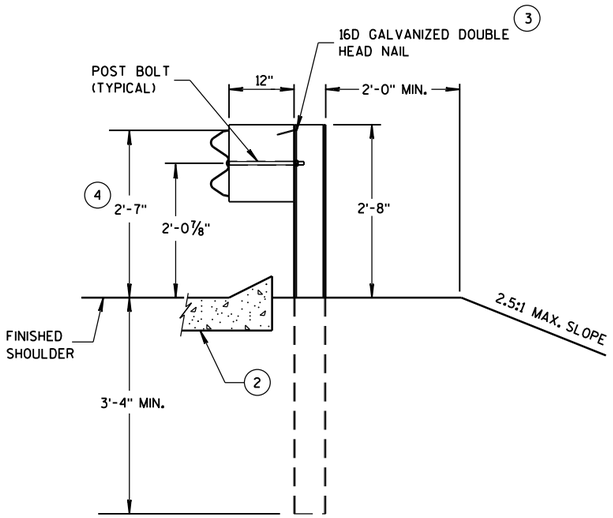
S.D.D. 14 B 45-4a

GENERAL NOTES

(2) OPTIONAL CURB AND GUTTER OR DRAINAGE_FEATURE SEE PLAN FOR INFORMATION.

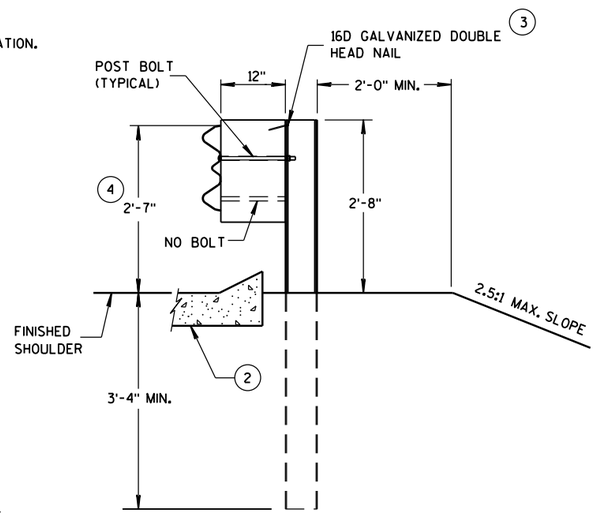
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



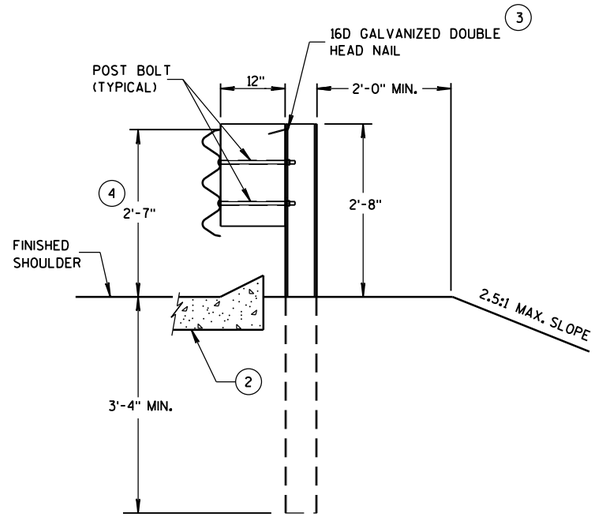
SECTION A-A

POSTS 1-5



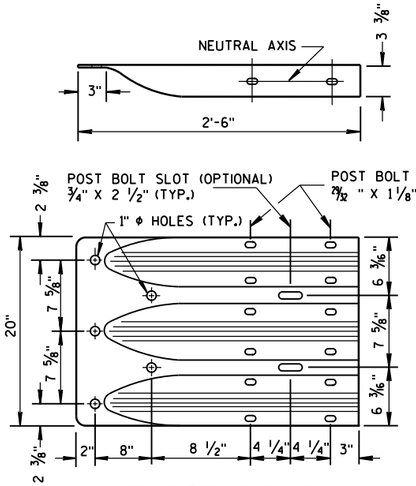
SECTION B-B

POST 6



SECTION C-C

POSTS 7-11



THRIE BEAM TERMINAL CONNECTOR

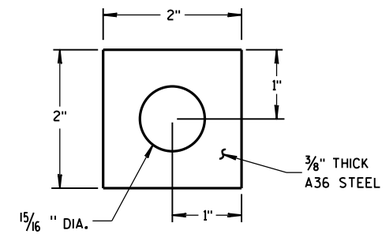
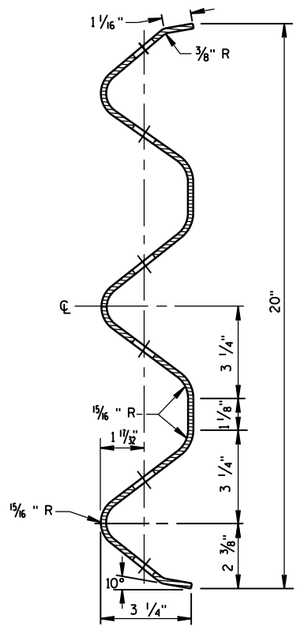
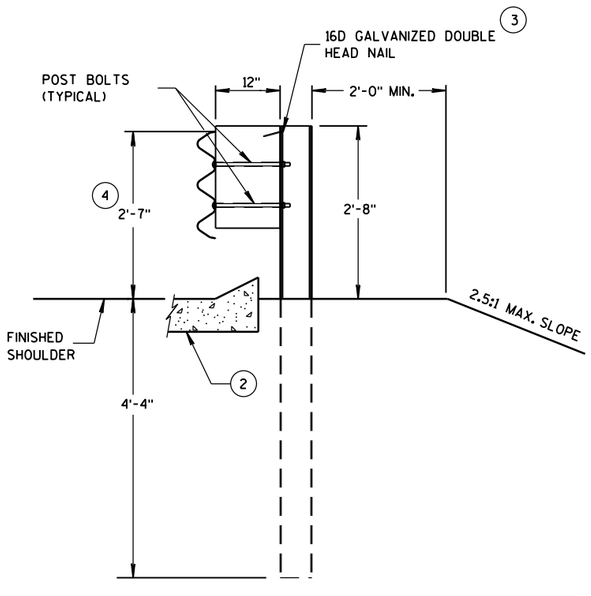


PLATE WASHER DETAIL

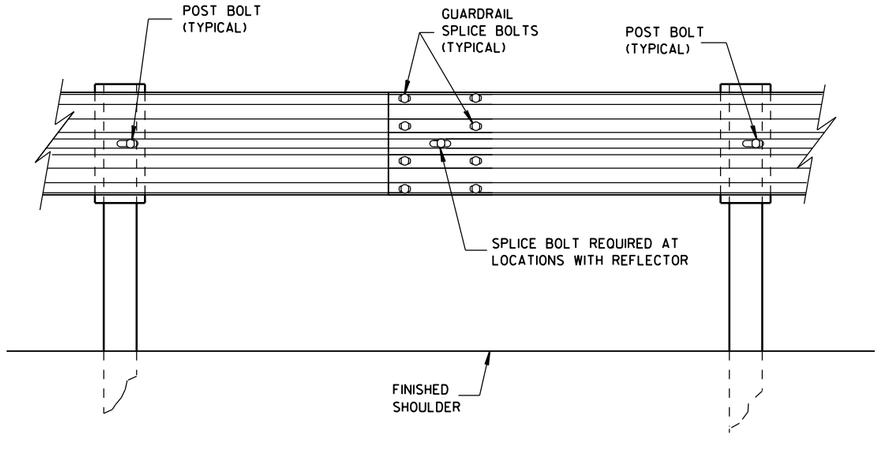


SECTION THRU THRIE BEAM RAIL ELEMENT



SECTION D-D

POSTS 12-17



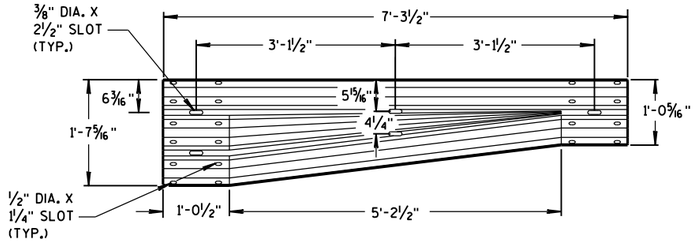
SPLICE DETAIL

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

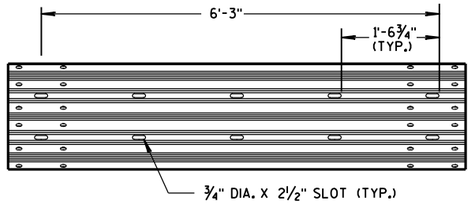
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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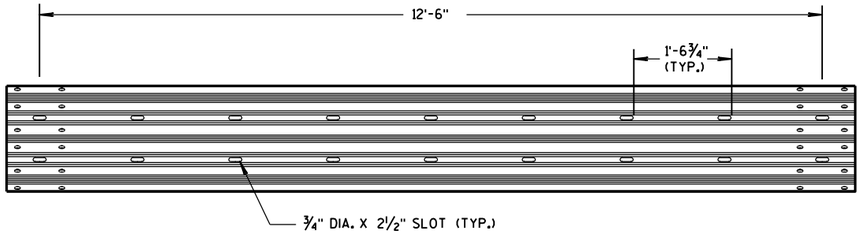
S.D.D. 14 B 45-4b



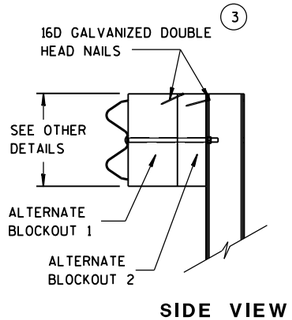
W-BEAM TO THRIE BEAM TRANSITION SECTION



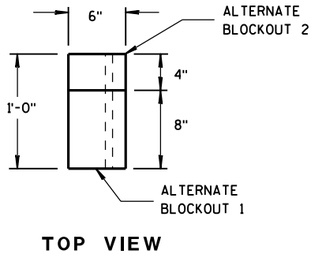
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

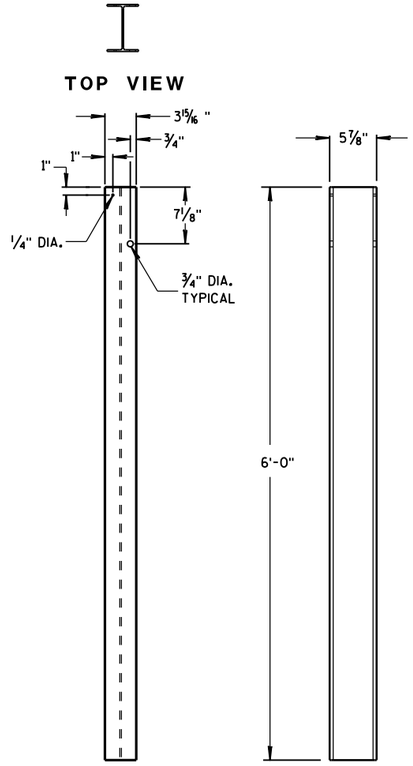


SIDE VIEW

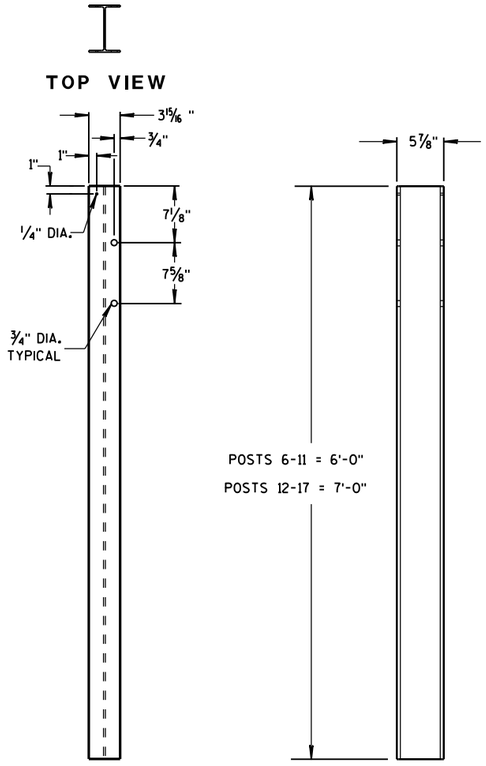


TOP VIEW

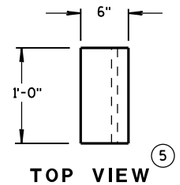
ALTERNATE WOOD BLOCKOUT DETAIL



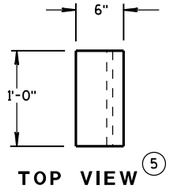
STEEL POSTS 1-5



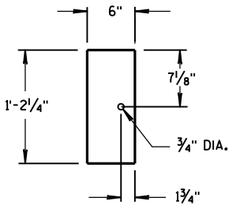
STEEL POSTS 6-17



TOP VIEW (5)

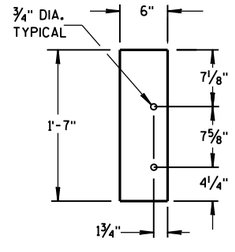


TOP VIEW (5)



FRONT VIEW

BLOCKOUT POSTS 1-5



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

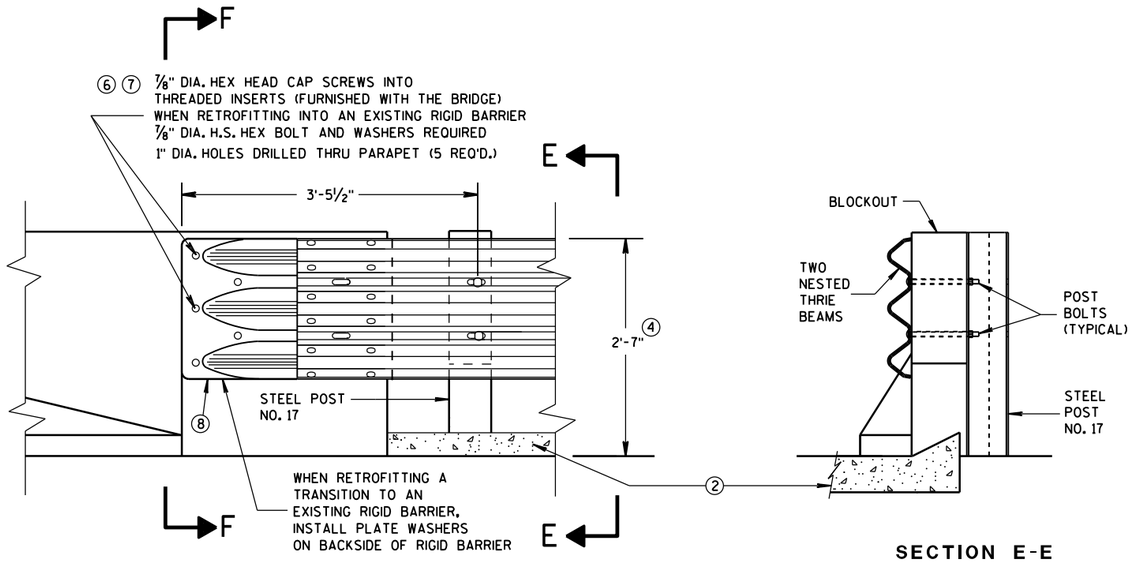
(5) WOOD BLOCKS MAY BE CONSTRUCTED OUT OF 2 WOOD BLOCKS. SEE ALTERNATE WOOD BLOCK DETAIL.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 14 B 45-4c



FRONT VIEW

SECTION E-E

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

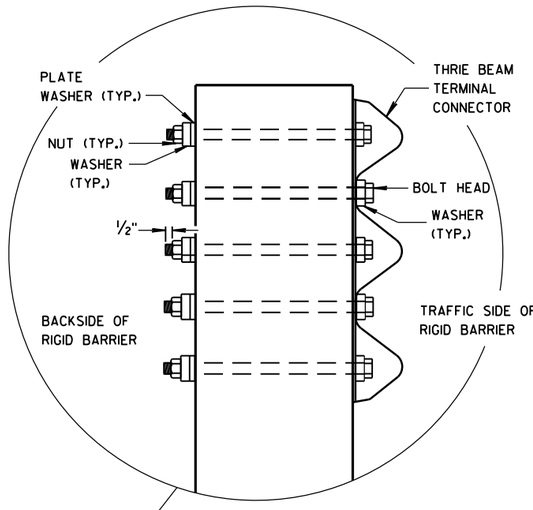
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

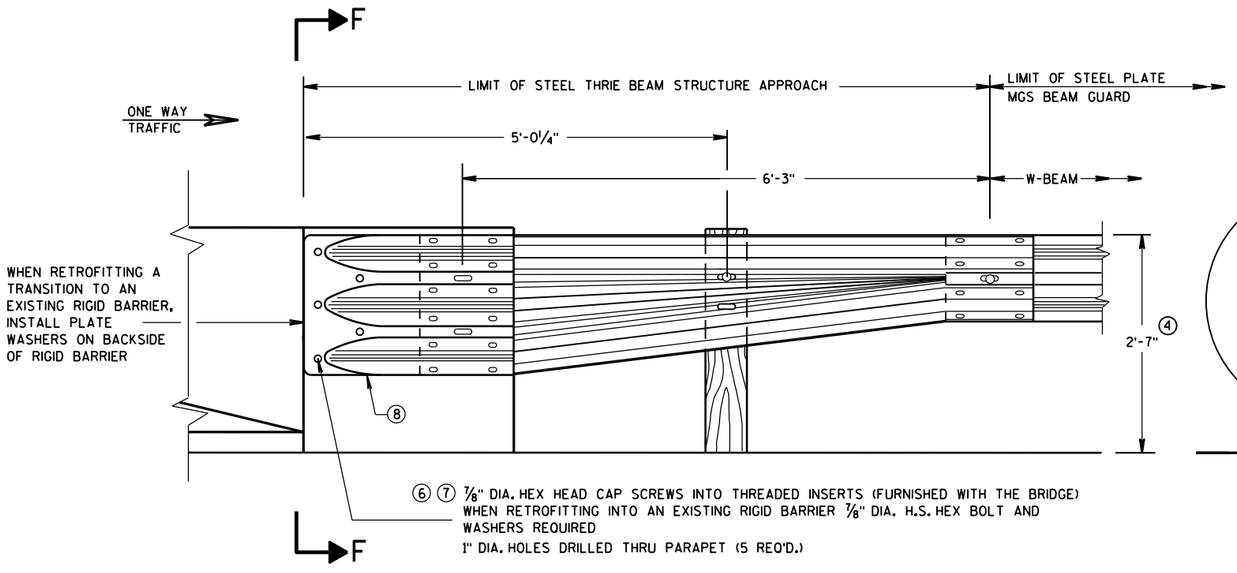
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

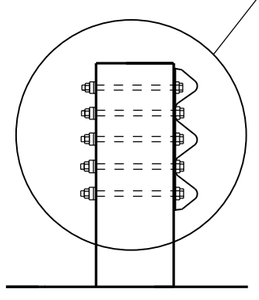
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. 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.

⑧ 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".

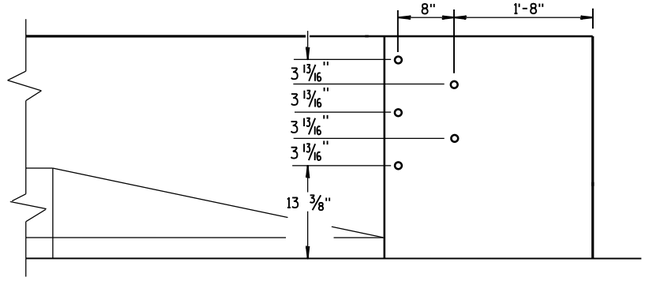




FRONT VIEW



SECTION F-F



DRILL HOLE LOCATION

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

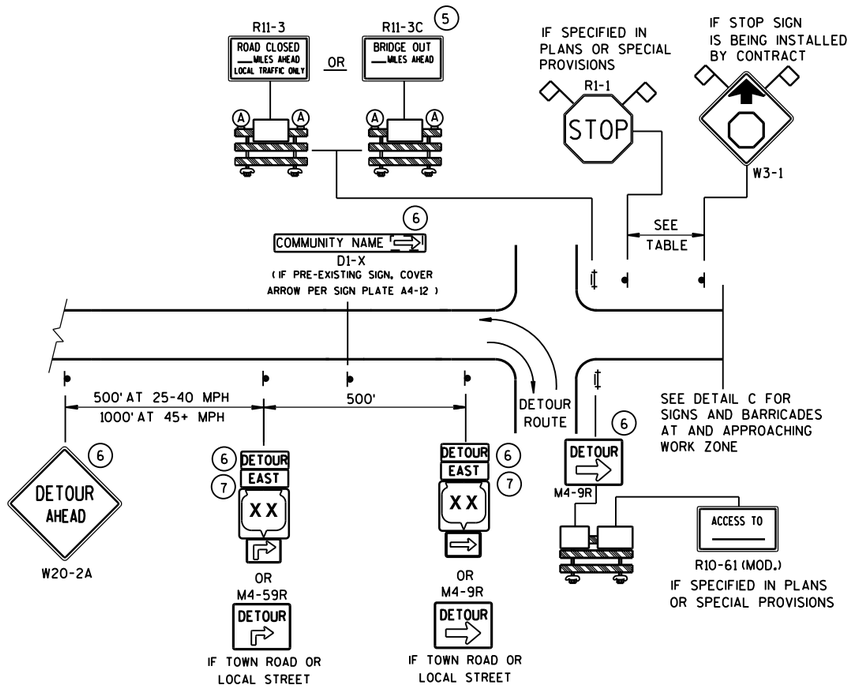
APPROVED
June, 2015 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 14 B 45-4d

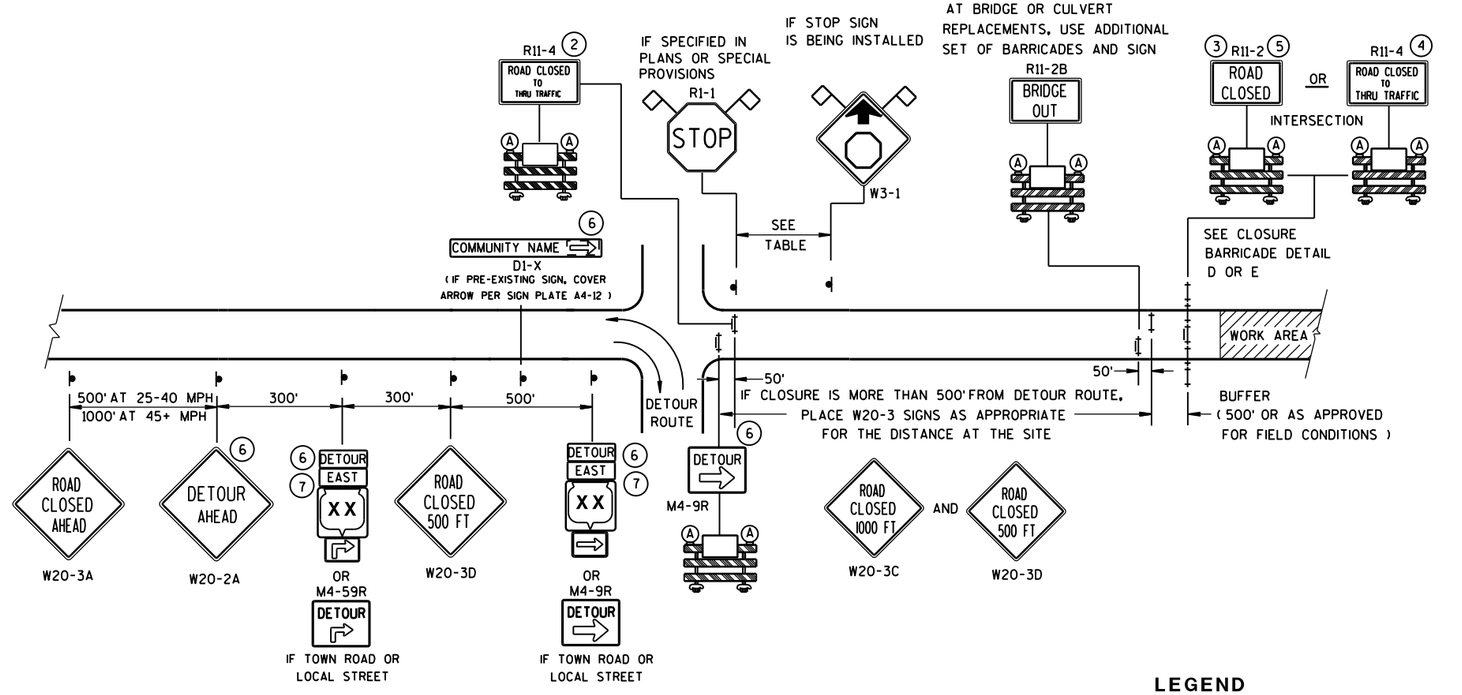
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S.D.D. 14 B 45-4d



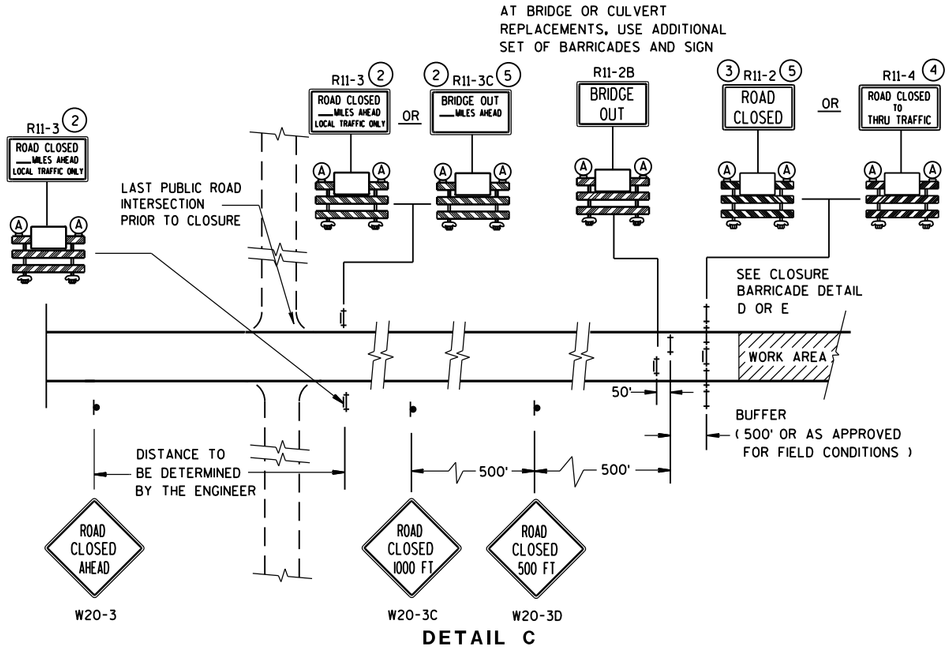
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN ½ MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS 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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA
- DETOUR / EAST — M4-8 / M3-X
- XX — M1-4; COUNTY XX — M1-5A; XX — M1-6
- M05-1 OR M06-1
- FLAGS, 16" X 16" MIN., (ORANGE)

SEE SDD 15C2-SHEET "**b**" FOR GENERAL NOTES AND FOOTNOTES (1) THROUGH (7)

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

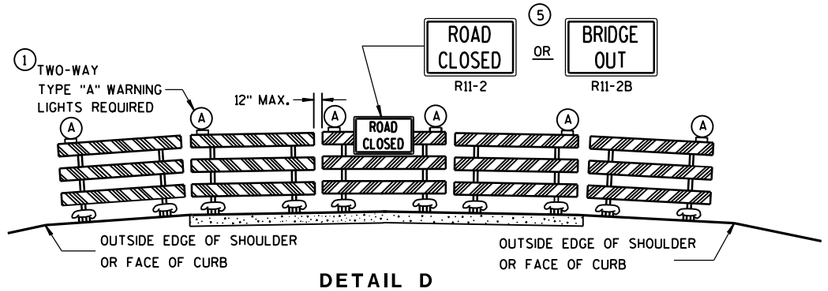
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA

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S.D.D. 15 C 2-6a

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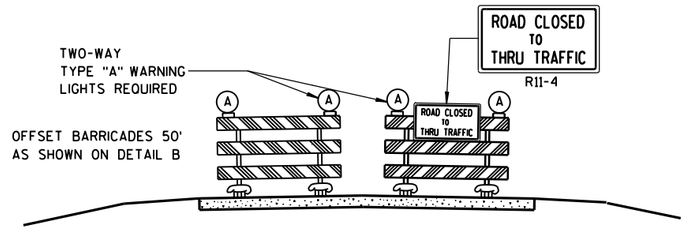
S.D.D. 15 C 2-6a



DETAIL D

ROAD CLOSURE BARRICADE DETAIL

APPROACH VIEW



DETAIL E

LANE CLOSURE BARRICADE DETAIL

APPROACH VIEW

SEE SDD 15C2-SHEET "**a**" 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.

"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 SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
- 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

Sept. 2015 — DATE

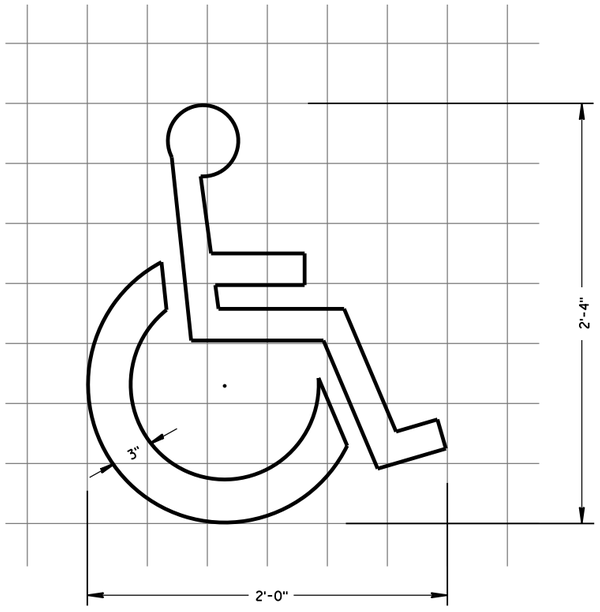
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZO... SAFETY ENGI... — FHWA — FIC

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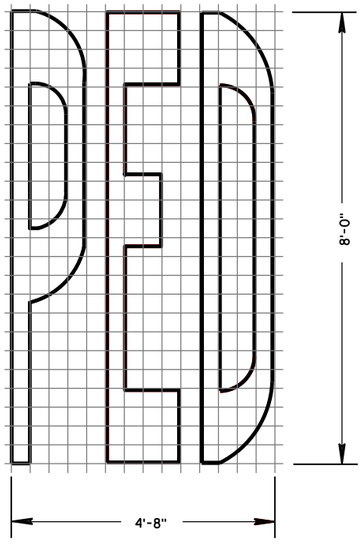
S.D.D. 15 C 2-6b

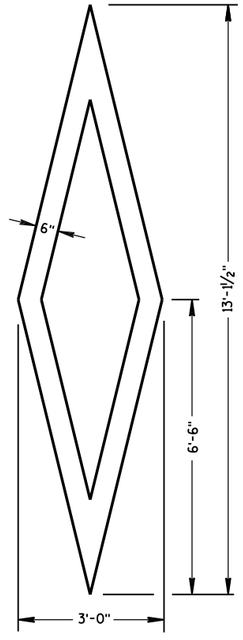
GENERAL NOTES

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



HANDICAP SYMBOL





PREFERENTIAL LANE SYMBOL

6

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S.D.D. 15 C 7-14a

S.D.D. 15 C 7-14a

PAVEMENT MARKING SYMBOLS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

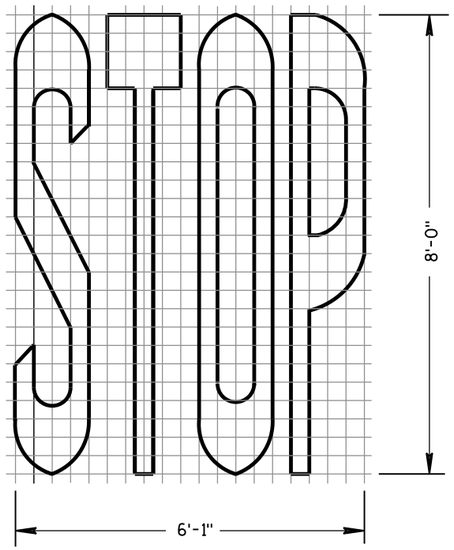
June 2017 — DATE

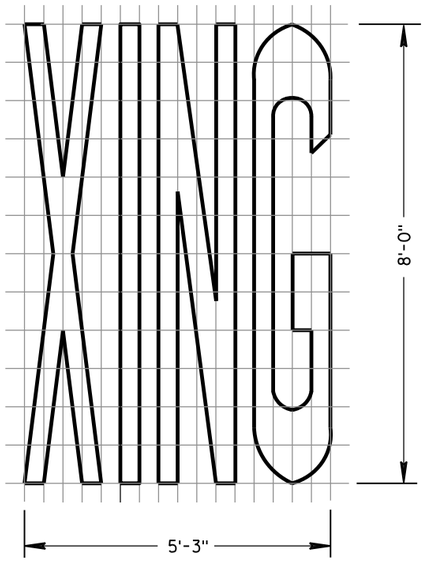
/S/ Matthew R. Rauch — STATE SIGNING AND MARK EER

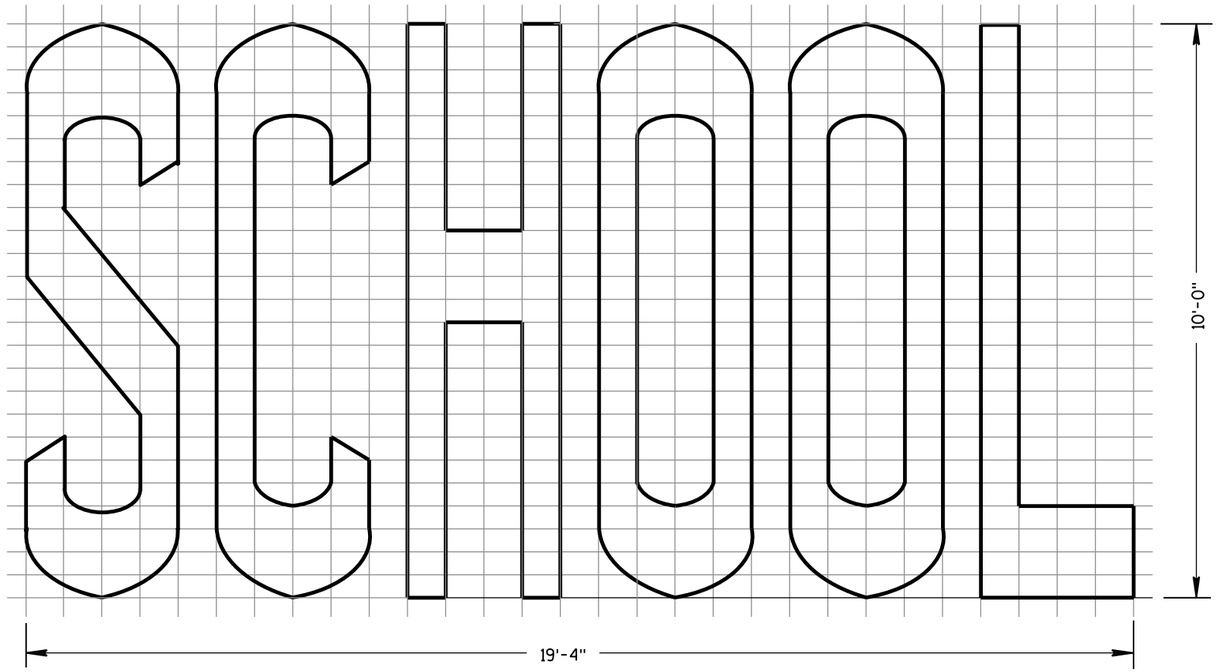
FHWA

GENERAL NOTES

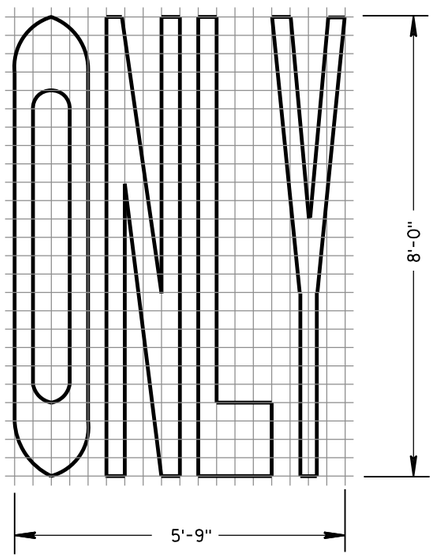
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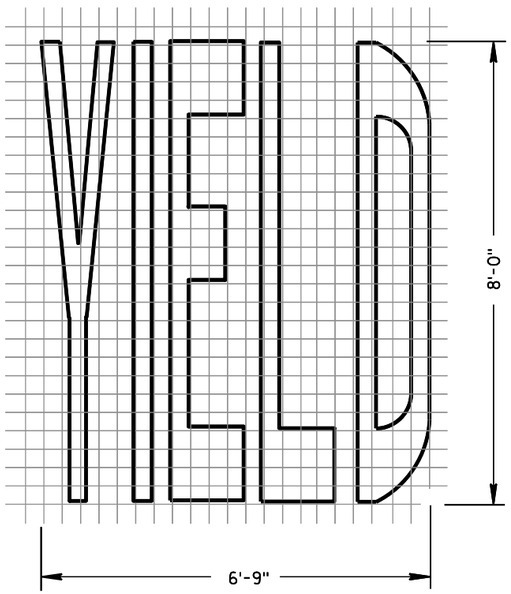


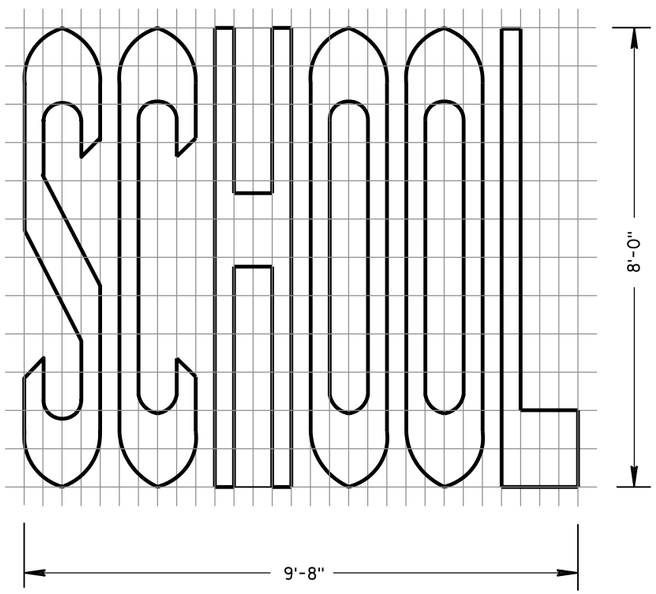




TWO-LANE







SINGLE-LANE

PAVEMENT MARKING WORDS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

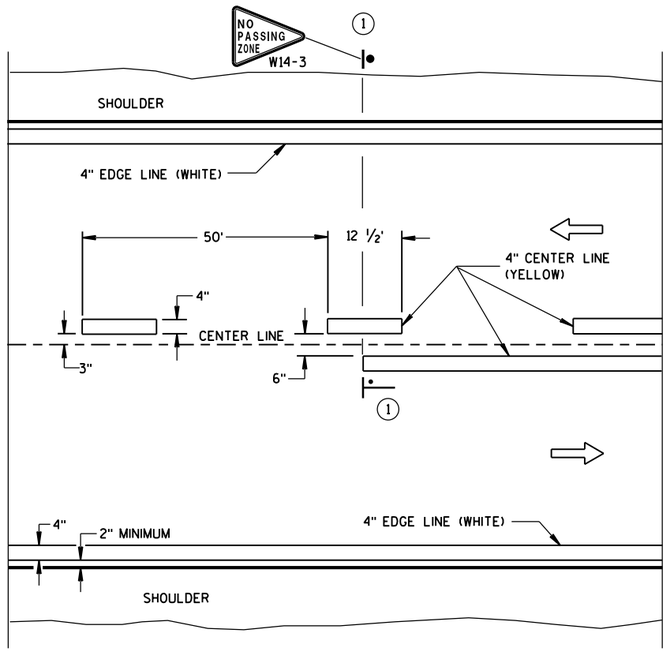
APPROVED
June 2017 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MARK
EER
FHWA

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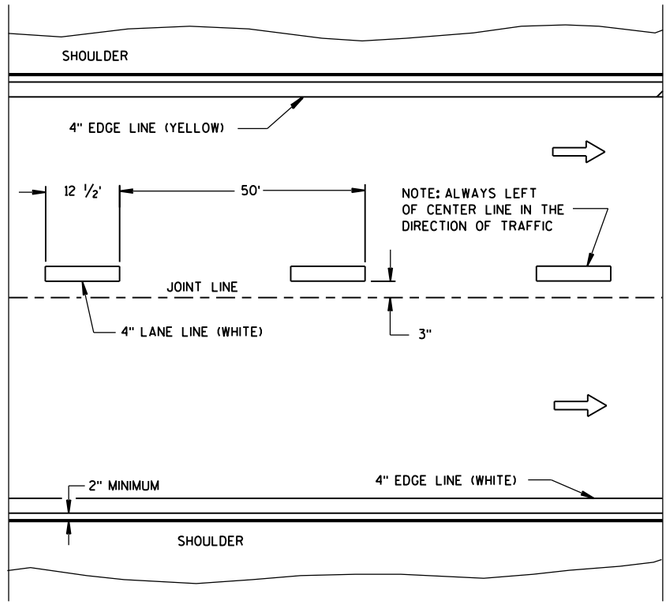
S.D.D. 15 C 7-14b

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S.D.D. 15 C 7-14b



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

GENERAL NOTES

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

(1) LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING.

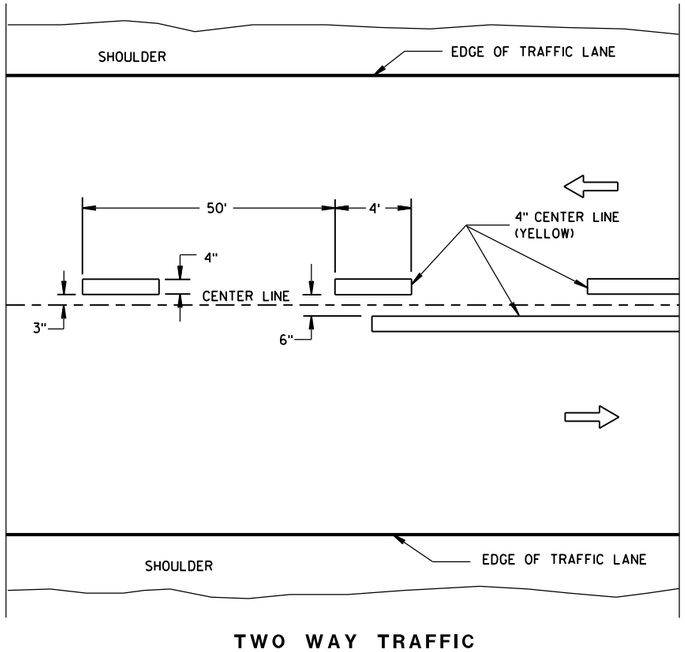
NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

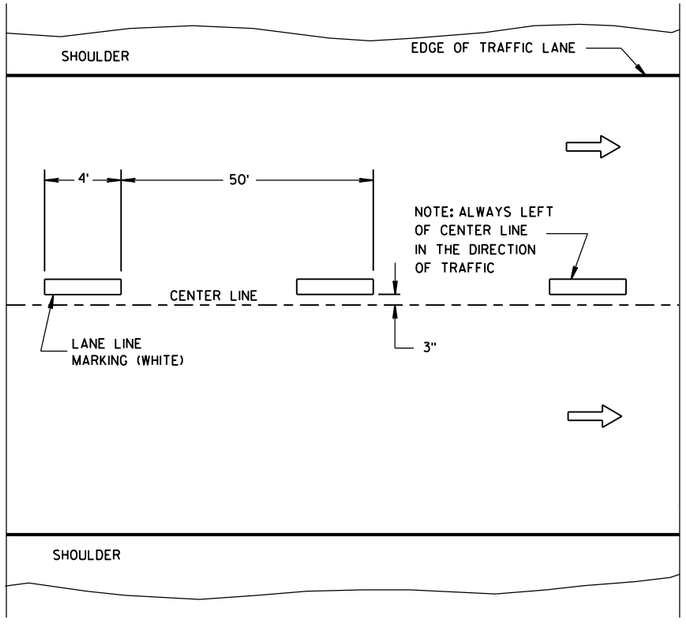
LEGEND

"T" MARKING

POST MOUNTED SIGN



TWO WAY TRAFFIC



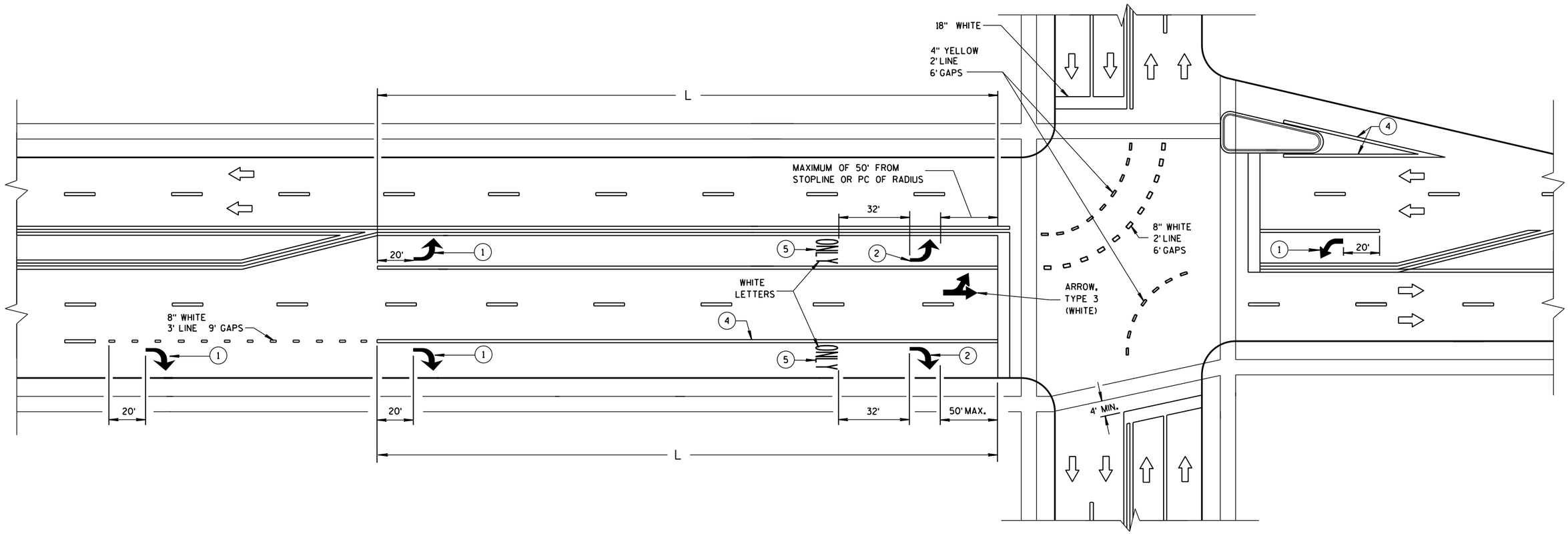
ONE WAY TRAFFIC

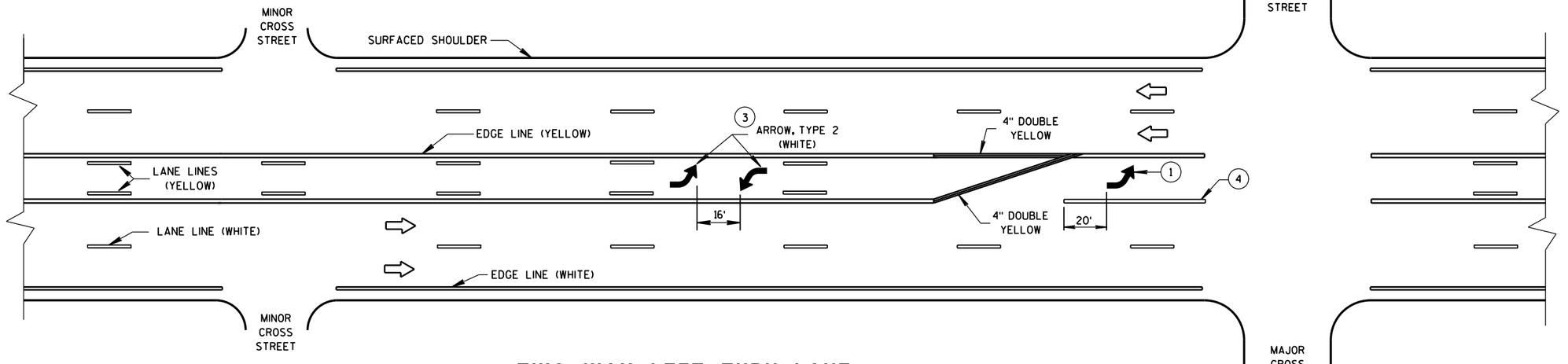
TEMPORARY PAVEMENT MARKING

LONGITUDINAL MARKING (MAINLINE)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Matthew R. Rauch STATE SIGNING AND MAR ;INEER
FHWA	

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S.D.D. 15 C 8-18a





GENERAL NOTES

(1) REQUIRED ARROW, TYPE 2 (WHITE).

(2) REQUIRED ARROW, TYPE 2 (WHITE) WHEN L IS GREATER THAN 78 FEET AND LESS THAN OR EQUAL TO 166 FEET.

(3) A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.

(4) 8" WHITE

(5) REQUIRED WORD ONLY WHEN L IS GREATER THAN 166 FEET.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL

L = LENGTH OF TURN BAY

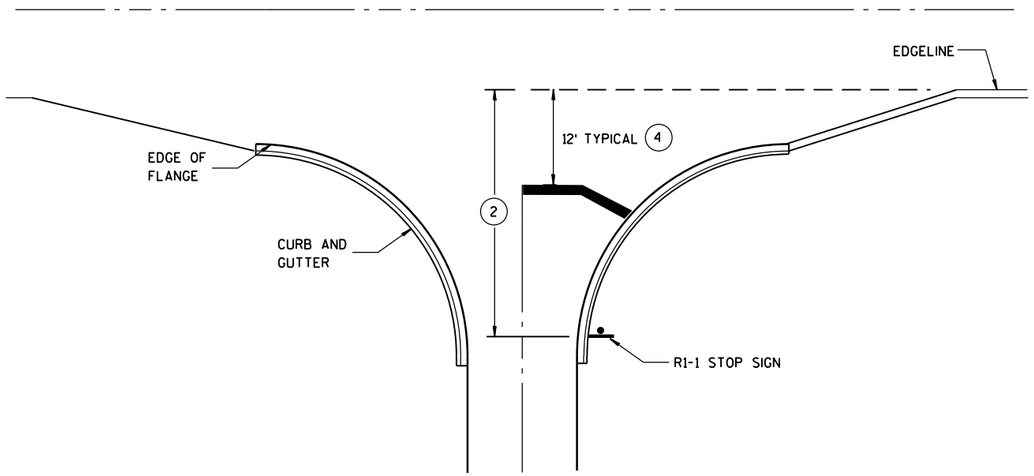
TWO WAY LEFT TURN LANE

PAVEMENT MARKING
(TURN LANES)

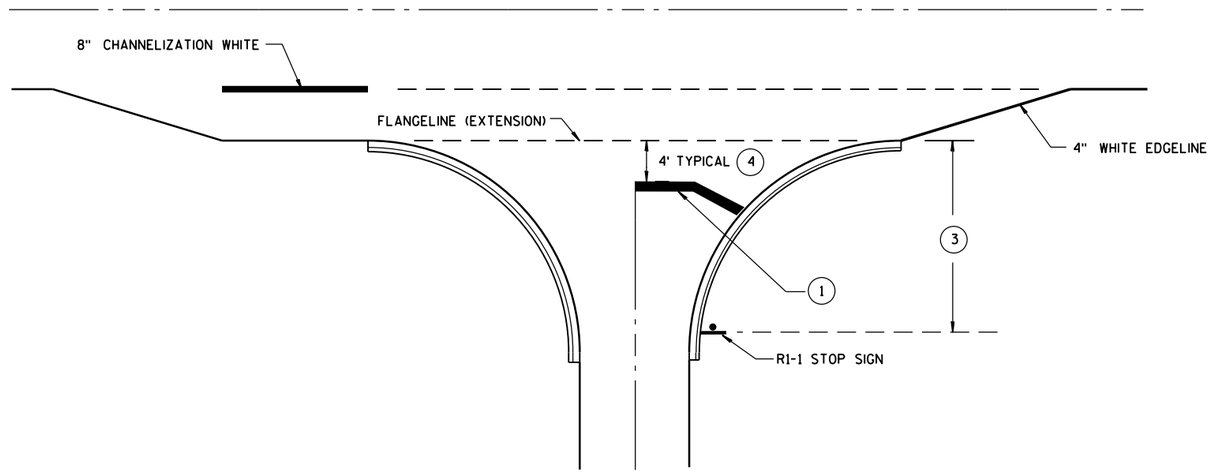
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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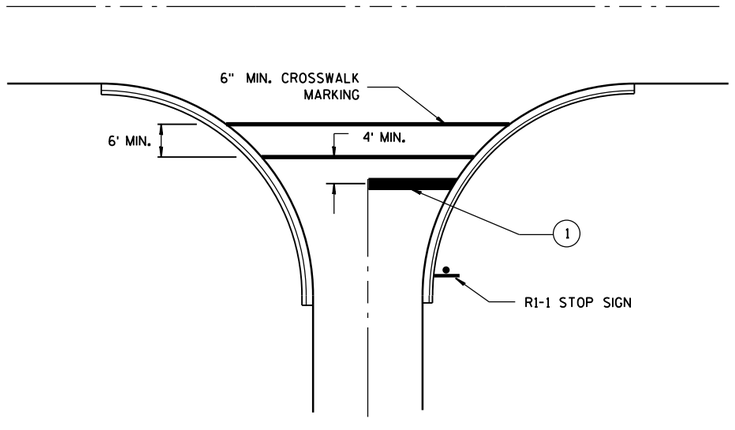
S.D.D. 15 C 8-18b



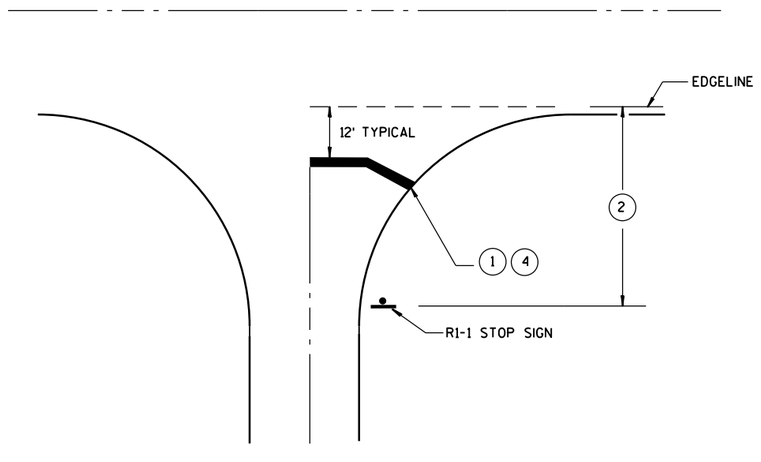
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

1. 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
2. IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE THAN NO STOP LINE IS REQUIRED.
3. IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP LINE IS REQUIRED.
4. MOVE CLOSER TO EDGE OF TRAVEL LANE AS NEEDED FOR VISIBILITY AND SIGHT LINES. (NO CLOSER THAN 4 FEET).

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

4-18-2016
DATE

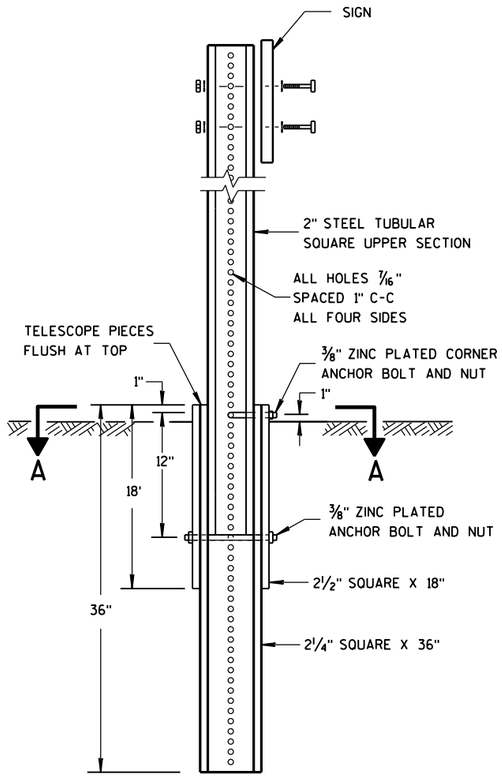
/S/ Matthew R. Rauch
STATE SIGNING AND MAR[illegible]NEER

FHWA

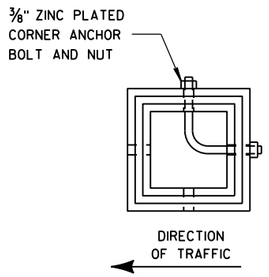
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S.D.D. 15 C 33-2

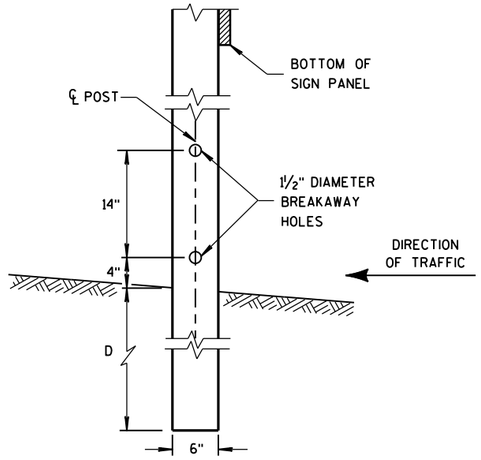
S.D.D. 15 C 33-2



DETAIL OF TUBULAR STEEL SIGN POST



SECTION A-A



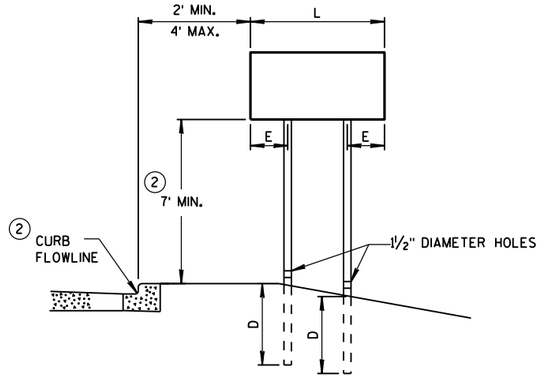
4"x6" WOOD POST MODIFICATION

GENERAL NOTES

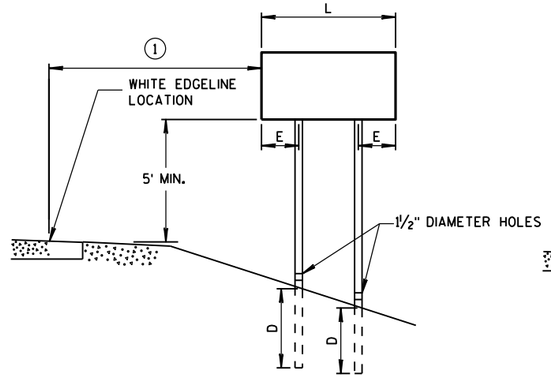
(1) 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.

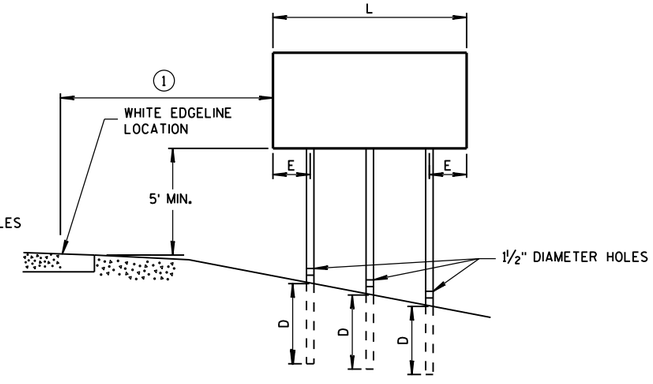
(2) THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.

(3) FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.



URBAN AREA





RURAL AREA

POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

TUBULAR STEEL POSTS

AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

SIGNS WIDER THAN 3 FEET OR LARGER THAN 9 SQ. FT. SHALL BE MOUNTED ON MULTIPLE POSTS (SEE ABOVE TABLE).

SIGNS LARGER THAN 27 SQ. FT. SHALL NOT BE MOUNTED ON TUBULAR STEEL POSTS.

WOOD POST EMBEDMENT DEPTH

AREA OF SIGN INSTALLATION (SQ. FT.)	D (MIN)
20 OR LESS	4'
GREATER THAN 20	5'

4" X 6" WOOD POST

POST SPACING REQUIREMENTS		NUMBER OF WOOD POSTS REQUIRED
L	E	
48" OR LESS AND LESS THAN 20 SQ. FT.	-	1
LESS THAN 60"	12"	2
60" TO 120"	L/5	2
GREATER THAN 120" LESS THAN 168"	12"	3
168" AND GREATER	12"	4

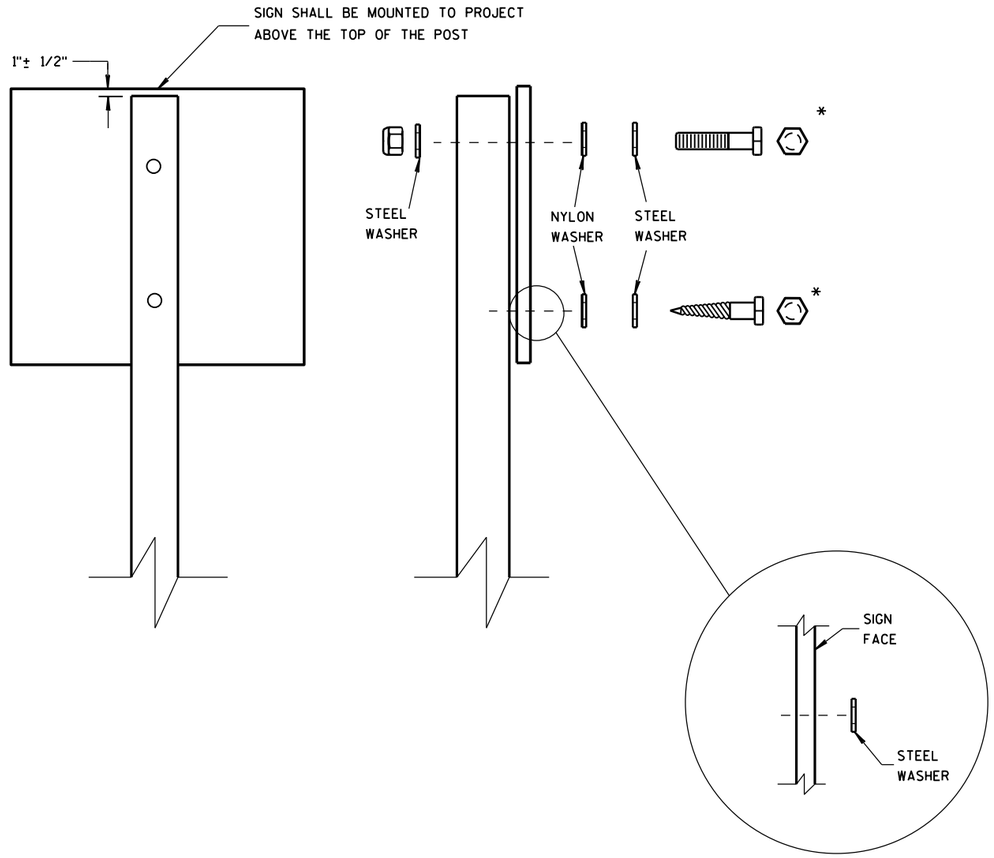
SEE NOTE (3)

TEMPORARY TRAFFIC CONTROL SIGN MOUNTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 15 D 38-2a



WASHER PLACEMENT WHEN SIGN HAS OTHER THAN TYPE H OR TYPE F FACE

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

* 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. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

6

6

S.D.D. 15 D 38-2b

S.D.D. 15 D 38-2b

ATTACHMENT OF SIGNS TO POSTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heldtke
WORK ZONE ENG

FHWA

Line	Item	Item Description	Unit	Total	Qty
		12-Inch			
0078	522.1018	Apron Endwalls for Culvert Pipe Reinforced Concrete 18-Inch	EACH	2.000	2.000
0080	550.0500	Pile Points	EACH	50.000	50.000
0082	550.2106	Piling CIP Concrete 10 3/4 X 0.365-Inch	LF	5,500.000	5,500.000
0084	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	324.000	324.000
0086	601.0586	Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type TBTT	LF	25.000	25.000
0088	603.1132	Concrete Barrier Type S32	LF	75.000	75.000
0090	603.8000	Concrete Barrier Temporary Precast Delivered	LF	58.000	58.000
0092	603.8125	Concrete Barrier Temporary Precast Installed	LF	58.000	58.000
0094	606.0100	Riprap Light	CY	56.000	56.000
0096	606.0200	Riprap Medium	CY	11.000	11.000
0098	606.0300	Riprap Heavy	CY	356.000	356.000
0100	608.0318	Storm Sewer Pipe Reinforced Concrete Class III 18-Inch	LF	98.000	98.000
0102	611.0654	Inlet Covers Type V	EACH	2.000	2.000
0104	611.3230	Inlets 2x3-FT	EACH	2.000	2.000
0106	612.0406	Pipe Underdrain Wrapped 6-Inch	LF	251.000	251.000
0108	614.0150	Anchor Assemblies for Steel Plate Beam Guard	EACH	4.000	4.000
0110	614.0800	Crash Cushions Permanent	EACH	1.000	1.000
0112	614.0920	Salvaged Rail	LF	624.000	624.000
0114	614.0925	Salvaged Guardrail End Treatments	EACH	4.000	4.000
0116	614.2300	MGS Guardrail 3	LF	276.000	276.000
0118	614.2500	MGS Thrie Beam Transition	LF	117.000	117.000
0120	614.2610	MGS Guardrail Terminal EAT	EACH	3.000	3.000
0122	616.0600.S	Fence Temporary	LF	50.000	50.000
0124	618.0100	Maintenance And Repair of Haul Roads (project) 01. 3100-07-70	EACH	1.000	1.000
0126	619.1000	Mobilization	EACH	1.000	1.000
0128	624.0100	Water	MGAL	138.000	138.000
0130	625.0500	Salvaged Topsoil	SY	4,183.000	4,183.000
0132	627.0200	Mulching	SY	418.000	418.000
0134	628.1104	Erosion Bales	EACH	20.000	20.000
0136	628.1504	Silt Fence	LF	1,186.000	1,186.000
0138	628.1520	Silt Fence Maintenance	LF	1,186.000	1,186.000
0140	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0142	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0144	628.2006	Erosion Mat Urban Class I Type A	SY	3,301.000	3,301.000
0146	628.2027	Erosion Mat Class II Type C	SY	881.000	881.000
0148	628.7005	Inlet Protection Type A	EACH	2.000	2.000

Line	Item	Item Description	Unit	Total	Qty
0150	628.7020	Inlet Protection Type D	EACH	2.000	2.000
0152	628.7504	Temporary Ditch Checks	LF	140.000	140.000
0154	628.7515.S	Stone or Rock Ditch Checks	CY	15.000	15.000
0156	628.7570	Rock Bags	EACH	24.000	24.000
0158	629.0210	Fertilizer Type B	CWT	2.700	2.700
0160	630.0120	Seeding Mixture No. 20	LB	90.000	90.000
0162	630.0160	Seeding Mixture No. 60	LB	23.000	23.000
0164	630.0200	Seeding Temporary	LB	100.000	100.000
0166	633.5200	Markers Culvert End	EACH	4.000	4.000
0168	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	6.000	6.000
0170	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	10.000	10.000
0172	634.0810	Posts Tubular Steel 2x2-Inch X 10-FT	EACH	3.000	3.000
0174	637.2210	Signs Type II Reflective H	SF	1.000	1.000
0176	637.2230	Signs Type II Reflective F	SF	12.000	12.000
0178	638.2102	Moving Signs Type II	EACH	6.000	6.000
0180	638.2602	Removing Signs Type II	EACH	24.000	24.000
0182	638.3000	Removing Small Sign Supports	EACH	46.000	46.000
0184	642.5201	Field Office Type C	EACH	1.000	1.000
0186	643.0300	Traffic Control Drums	DAY	4,280.000	4,280.000
0188	643.0420	Traffic Control Barricades Type III	DAY	3,760.000	3,760.000
0190	643.0705	Traffic Control Warning Lights Type A	DAY	1,200.000	1,200.000
0192	643.0715	Traffic Control Warning Lights Type C	DAY	6,800.000	6,800.000
0194	643.0900	Traffic Control Signs	DAY	33,370.000	33,370.000
0196	643.0920	Traffic Control Covering Signs Type II	EACH	27.000	27.000
0198	643.1000	Traffic Control Signs Fixed Message	SF	175.600	175.600
0200	643.1050	Traffic Control Signs PCMS	DAY	78.000	78.000
0202	643.5000	Traffic Control	EACH	1.000	1.000
0204	645.0111	Geotextile Type DF Schedule A	SY	154.000	154.000
0206	645.0120	Geotextile Type HR	SY	838.000	838.000
0208	646.1020	Marking Line Epoxy 4-Inch	LF	2,624.000	2,624.000
0210	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	3,119.000	3,119.000
0212	646.3020	Marking Line Epoxy 8-Inch	LF	168.000	168.000
0214	646.3050	Marking Line Grooved Permanent Tape 8-Inch	LF	121.000	121.000
0216	646.5020	Marking Arrow Epoxy	EACH	2.000	2.000
0218	646.5120	Marking Word Epoxy	EACH	2.000	2.000
0220	646.6120	Marking Stop Line Epoxy 18-Inch	LF	36.000	36.000
0222	646.9010	Marking Removal Line Water Blasting 4-Inch	LF	260.000	260.000
0224	650.4000	Construction Staking Storm Sewer	EACH	3.000	3.000
0226	650.4500	Construction Staking Subgrade	LF	2,158.000	2,158.000
0228	650.5000	Construction Staking Base	LF	2,158.000	2,158.000

Line	Item	Item Description	Unit	Total	Qty
0230	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	325.000	325.000
0232	650.6000	Construction Staking Pipe Culverts	EACH	4.000	4.000
0234	650.6500	Construction Staking Structure Layout (structure) 01. B-67-376	LS	1.000	1.000
0236	650.7000	Construction Staking Concrete Pavement	LF	125.000	125.000
0238	650.8500	Construction Staking Electrical Installations (project) 01. 3100-07-70	LS	1.000	1.000
0240	650.9910	Construction Staking Supplemental Control (project) 01. 3100-07-70	LS	1.000	1.000
0242	650.9920	Construction Staking Slope Stakes	LF	2,158.000	2,158.000
0244	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	377.000	377.000
0246	652.0800	Conduit Loop Detector	LF	62.000	62.000
0248	653.0135	Pull Boxes Steel 24x36-Inch	EACH	2.000	2.000
0250	653.0905	Removing Pull Boxes	EACH	2.000	2.000
0252	655.0700	Loop Detector Lead In Cable	LF	612.000	612.000
0254	655.0800	Loop Detector Wire	LF	310.000	310.000
0256	690.0150	Sawing Asphalt	LF	649.000	649.000
0258	715.0415	Incentive Strength Concrete Pavement	DOL	3,744.000	3,744.000
0260	715.0502	Incentive Strength Concrete Structures	DOL	6,240.000	6,240.000
0262	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	900.000	900.000
0264	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	1,000.000	1,000.000
0266	SPV.0035	Special 01. Roadway Embankment	CY	8,863.000	8,863.000
0268	SPV.0060	Special 02. Section Corner Monument	EACH	1.000	1.000
0270	SPV.0090	Special 01. Salvaging Lane Dividers	LF	370.000	370.000
0272	SPV.0090	Special 02. Heavy Duty Silt Fence	LF	610.000	610.000
0274	SPV.0105	Special 01. Removing Old Structure over Waterway with Approved Method Sta. 120+50	LS	1.000	1.000
0276	SPV.0180	Special 01. Enhanced Turbidity Barrier	SY	185.000	185.000
0278	SPV.0195	Special 01. Selected Crushed Material for Travel Corridor	TON	124.000	124.000

3

FINISHING ROADWAY

ROADWAY	213.0100 EACH
STH 67 / WHITAKER	1
PROJECT 3100-07-70 TOTAL	1

ASPHALT FLUMES

ROADWAY	STATION	OFFSET	465.0315 ASPHALT FLUMES SY
STH 67	111+66	LT	5
STH 67	112+68	LT	7
WHITAKER	10WL+86	LT	9
PROJECT 3100-07-70 TOTAL			21

REMOVING CURB & GUTTER

ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	204.0150 REMOVING CURB & GUTTER LF
PROJECT 3100-07-70					
STH 67	110+18	33.5' LT	112+32	23.3' LT	232
STH 67/WHITAKER	118+39	21.6' RT	10WL+82	14.3' RT	91
STH 67/WHITAKER	10WL+59	14.9' LT	119+44	26.2' RT	40
PROJECT 3100-07-70 TOTAL					363

3

CLEAR AND GRUBBING

ROADWAY	STATION	OFFSET	201.0105 CLEARING STA	201.0205 GRUBBING STA
STH 67	119+85 - 120+52	RT	1	1
STH 67	123+18 - 123+41	LT	.5	.5
PROJECT 3100-07-70 TOTAL			1.5	1.5

REMOVING DRAIN ITEMS

ROADWAY	FROM STATION	FROM OFFSET	203.0100 REMOVING SMALL PIPE CULVERTS EACH
PROJECT 3100-07-70			
STH 67	111+97	41.4' LT	1
STH 67	115+04	37.4' LT	1
STH 67	119+06	37.5' RT	1
WHITAKER	10WL+74	21.6' LT	1
WHITAKER	11WL+90	22.1' RT	1
PROJECT 3100-07-70 TOTAL			5

SUBGRADE

ROADWAY	STATION	OFFSET	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	624.0100 WATER MGAL
STH 67	110+00 - 118+35.81	RT	43	--	1
STH 67	110+00 - 120+17.40	LT/RT	--	2,779	56
STH 67	112+71.09 - 119+67.81	LT	84	--	2
STH 67	120+81.22 - 129+25.01	LT	93	--	2
STH 67	120+81.22 - 129+25.01	LT/RT	--	3,085	62
STH 67	121+34.54 - 127+13.58	RT	64	--	1
STH 67	127+50.99 - 129+25.01	RT	17	--	--
STH 67 / WHITAKER	120+17.68 - 13WL+00.00	LT/RT	31	--	1
WHITAKER	10WL+25.00 - 13WL+00.00	LT/RT	--	638	13
WHITAKER	10WL+90.00 - 11WL+76.29	RT	3	--	--
WHITAKER	12WL+04.67 - 13WL+00.00	RT	3	--	--
PROJECT 3100-07-70 TOTAL			338	6,502	138

CONCRETE ITEMS

ROADWAY	STATION	OFFSET	415.0080 CONCRETE PAVEMENT 8-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY
STH 67	119+45 - 119+76	LT	31	--
STH 67	119+61 - 120+08	LT/RT	--	159
STH 67	119+69 - 120+18	RT	78	--
STH 67	120+84 - 121+06	LT	21	--
STH 67	120+91 - 121+38	LT/RT	--	159
STH 67	121+23 - 121+38	RT	16	--
PROJECT 3100-07-70 TOTALS			146	318

ALL ITEMS ON THIS SHEET ARE CATEGORY 0020

EARTHWORK SUMMARY

							205.0100		SPV.0035.01		
					(2) CUT	(3) EBS EXCAVATION	(1) EXCAVATION COMMON	UNEXPANDED FILL	(4) ROADWAY EMBANKMENT	(5) MASS ORDINATE +/-	
CATEGORY	DIVISION	STAGE	ROADWAY	STATION RANGE	CY	CY	CY	CY	CY		COMMENTS
0020	1	-	STH 67	110+00 TO 119+89	1,257	334	1,592	2,368	2,702	-1,110	
		-	STH 67	119+89 TO 120+84	173	-	173	-	-		(6)
		-	WHITAKER LANE	10+50 TO 13+00	313	14	327	127	141	186	
				UNDISTRIBUTED	-	-	42	-	57	-	
		SUBTOTALS DIVISION 1			1,743	348	2,133	2,495	2,900	-752	
0020	2	-	STH 67	120+84 TO 129+25	886	313	1,199	5,533	5,846	-4,647	
				UNDISTRIBUTED	-	-	24	-	117	-	
		SUBTOTALS DIVISION 2			886	313	1,223	5,533	5,963	-4,647	

3100-07-70 PROJECT TOTALS	3,356	8,863

(1) EXCAVATION COMMON = CUT + EBS EXCAVATION
(2) CUT VOLUME INCLUDES CONCRETE AND ASPHALTIC SURFACE MATERIAL
(3) EBS EXCAVATION TO BE BACKFILLED WITH MATERIAL AVAILABLE ONSITE AS APPROVED BY THE ENGINEER AND PAID AS ROADWAY EMBANKMENT.
EBS QUANTITY ESTIMATED BASED ON AMOUNT OF WORK OUTSIDE OF EXISTING PAVEMENT LIMITS
(4) ROADWAY EMBANKMENT = UNEXPANDED FILL + BACKFILLED EBS EXCAVATION
(5) THE MASS ORDINATE IS CALCULATED BY DIVISION. A POSITIVE VALUE INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION AND A NEGATIVE NUMBER INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.
MASS ORDINATE = CUT - UNEXPANDED FILL. THE MASS ORDINATE IS FOR INFORMATION PURPOSES ONLY AS ROADWAY EMBANKMENT AND COMMON EXCAVATION ARE NOTE BALANCED FOR QUANTITY PURPOSES AND DOES NOT GUARANTEE THE QUALITY OF COMMON EXCAVATION AND IF IT CAN BE REUSED ONSITE.
(6) EXCAVATION COMMON FOR REMOVING EXISTING MATERIAL BETWEEN THE OLD AND NEW BRIDGE ABUTMENTS.

FILE NAME: \\MADW00\INGRPROJ\60002\t1\cds\030201_mq.ppt PLOT DATE : 2/9/2018 2:13:29 PM PLOT BY : HNTB Corp PLOT NAME : 030201_mq2 PLOT SCALE : 1:1

HMA PAVEMENT

ROADWAY	OFFSET	STATION FROM		STATION TO	455.0605 TACK COAT GAL	460.5225 HMA PAVEMENT 5 LT 58-28 S TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES TON	465.0425 ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL LF	465.0475 ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL LF
STH 67	LT/RT	110+00	-	119+69	247	1,093	--	--	--
STH 67	LT/RT	121+10	-	129+25	297	1,312	--	--	--
STH 67	RT	127+02	-	127+62	6	--	16	--	--
STH 67	RT	110+46	-	117+11	--	--	--	136	--
STH 67	LT/RT	114+25	-	117+11	--	--	--	--	286
STH 67	LT	114+25	-	119+45	--	--	--	520	--
STH 67	LT	121+06	-	129+25	--	--	--	820	--
STH 67	LT/RT	121+63	-	129+25	--	--	--	--	762
STH 67	RT	123+60	-	129+25	--	--	--	565	--
WHITAKER	LT/RT	10WL+25	-	13WL+00	64	284	--	--	--
WHITAKER	RT	11WL+72	-	12WL+10	2	--	8	--	--
PROJECT 3100-07-70 TOTAL					616	2,689	24	2,041	1,048

CRASH CUSHION

ROADWAY	STATION	OFFSET	614.0800 CRASH CUSHION PERMANENT EACH	DESIGN SPEED	CRASH TEST LEVEL	BACK WIDTH	OBJECT MARKING PATTERN	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS
STH 67	119+92.6	36.0' RT	1	55	TL-3	4	OM-3R (W5-58R SIGN PLATE)	BIDIRECTIONAL	L AND R	PERMANENT CONCRETE BARRIER ON SHOULDER
PROJECT 3100-07-70 TOTAL			1							

CURB & GUTTER AND BARRIER ITEMS

ROADWAY	STATION			OFFSET	601.0557 CONCRETE CURB AND GUTTER 6-INCH SLOPED 36-INCH TYPE D LF	601.0586 CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE TBTT LF	603.1132 CONCRETE BARRIER TYPE S32 LF
STH 67	110+17.80	-	111+83.10	LT	171	--	--
STH 67	112+10.90	-	112+65.00	LT	62	--	--
STH 67	119+44.60	-	119+68.70	LT	--	25	--
STH 67	119+92.60	-	120+17.40	RT	--	--	25
STH 67	121+32.40	-	121+81.40	RT	--	--	50
STH 67/WHITAKER	118+35.80	-	10WL+82.00	RT	91	--	--
PROJECT 3100-07-70 TOTAL					324	25	75

RIPRAP

ROADWAY	STATION	OFFSET	209.1500 BACKFILL GRANULAR GRADE 1 TON	606.0100 RIPRAP LIGHT CY	606.0200 RIPRAP MEDIUM CY	606.0300 RIPRAP HEAVY CY	645.0120 GEOTEXTILE FABRIC TYPE HR SY
STH 67	112+77	LT	--	--	3	--	10
STH 67	119+50	LT	--	--	4	--	14
STH 67	119+50	RT	--	--	2	--	7
STH 67	121+32 - 121+81	RT	--	--	--	48	117
WHITAKER LANE	10+87	RT	--	--	2	--	7
UNDISTRIBUTED (DEFINING NEW STREAM BOTTOM)			37	56	--	--	--
UNDISTRIBUTED (SETTLING BASIN)			--	--	--	--	70
UNDISTRIBUTED (ROCK/STONE DITCH CHECKS)			--	--	--	--	20
PROJECT 3100-07-70 TOTAL			37	56	11	48	245

ALL ITEMS ON THIS SHEET ARE CATEGORY 0020

3

SALVAGED RAIL

ROADWAY	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	614.0920 SALVAGED RAIL LF	614.0925 SALVAGED GUARDRAIL END TREATMENT EACH
STH 67	118+09	25.4' LT	120+26	17.0' LT	218	1
STH 67	119+56	19.2' RT	120+40	17.1' RT	84	1
STH 67	120+60	17.0' LT	122+53	20.7' LT	193	1
STH 67	120+73	17.0' RT	122+03	20.5' RT	130	1
PROJECT 3100-07-70 TOTAL					624	4

MGS BEAMGUARD

ROADWAY	LOCATION	FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	614.2300 MGS 3 LF	614.2500 MGS THRIE BEAM TRANSTITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH
STH 67	SB 01	118+28.7	36.0' LT	119+71.21	34.0' LT	50	39	1
STH 67	SB 02	120+81.22	34.0' LT	123+11.18	28.7' LT	138	39	1
STH 67	NB 01	121+72.51	34.5' RT	123+52.27	24.5' RT	88	39	1
PROJECT 3100-07-70 TOTAL						276	117	3

3

RESTORATION ITEMS

ROADWAY	STATION RANGE			OFFSET	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.2027 EROSION MAT CLASS II TYPE C SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LBS	630.0160 SEEDING MIXTURE NO. 60 LBS	630.0200 SEEDING TEMPORARY LBS
STH 67	110+18	-	111+80	LT	180	--	180	--	0.1	5	--	--
STH 67	112+14	-	118+15	LT	609	--	609	--	0.4	16	--	--
STH 67	118+15	-	119+69	LT	192	--	--	192	0.1	--	5	--
STH 67	120+84	-	122+60	LT	268	--	--	268	0.2	--	7	--
STH 67	122+60		129+25	LT	579	--	579	--	0.4	16	--	--
STH 67 / WHITAKER	110+00	-	11WL+82	RT	1,107	--	1,107	--	0.7	30	--	--
STH 67 / WHITAKER	13WL+00	-	119+75	RT	241	--	241	--	0.2	7	--	--
STH 67	119+75	-	120+17	RT	45	--	--	45	0.0	--	1	--
STH 67	121+32	-	121+81	RT	376	--	--	376	0.2	--	10	--
STH 67	121+81	-	129+25	RT	585	--	585	--	0.4	16	--	--
	UNDISTRIBUTED				--	418	--	--	--	--	--	100
PROJECT 3100-07-70 TOTAL					4,183	418	3,301	881	2.7	90	23	100

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0020

MOBILIZATION

ROADWAY	619.1000 EACH
STH 67	1
PROJECT 3100-07-70 TOTAL	1

TEMPORARY FENCE

ROADWAY	616.0600.S FENCE TEMPORARY LF
UNDISTRIBUTED	50
PROJECT 3100-07-70 TOTALS	50

MAINTENANCE AND REPAIR OF HAUL ROADS (3100-07-70)

ROADWAY	618.0100 EACH
PROJECT 3100-07-70	1
PROJECT 3100-07-70 TOTAL	1

EROSION CONTROL ITEMS

ROADWAY	STATION	OFFSET	628.1104 EROSION BALES EACH	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	SPV.0180.01 ENHANCED TURBIDITY BARRIER SY	628.7005 INLET PROTECTION TYPE A EACH	628.7020 INLET PROTECTION TYPE D EACH	628.7504 TEMPORARY DITCH CHECK LF	628.7515.S TEMPORARY STONE OR ROCK DITCH CHECK CY	628.7570 ROCK BAGS EACH	SPV.0090.02 HEAVY DUTY SILT FENCE LF
STH 67	110+00	LT	--	--	--	--	--	--	--	--	10	--	--	--
STH 67	110+18 - 110+92	LT	--	80	80	--	--	--	--	--	--	--	--	--
STH 67	111+71	LT	--	--	--	--	--	--	--	--	--	--	1	--
STH 67	112+00	RT	--	--	--	--	--	--	--	--	10	--	--	--
STH 67	113+30	LT	--	--	--	--	--	--	--	--	10	--	--	--
STH 67	114+00	RT	--	--	--	--	--	--	--	--	10	--	--	--
STH 67	115+50	LT	--	--	--	--	--	--	--	--	10	--	--	--
STH 67	116+10	RT	--	--	--	--	--	--	--	--	10	--	--	--
STH 67	115+47 - 119+80	LT	--	205	205	--	--	--	--	--	--	--	--	230
STH 67	118+25	RT	--	--	--	--	--	--	--	--	--	5	--	--
STH 67	118+55	RT	--	--	--	--	--	--	--	--	--	--	2	--
STH 67 / WHITAKER	110WL+75 - 120+50	RT	--	--	--	--	--	--	--	--	--	--	--	145
STH 67	119+49.64	LT	--	--	--	--	--	--	1	1	--	--	--	--
STH 67	119+95.00	RT	--	--	--	--	--	--	1	1	--	--	--	--
STH 67	119+75 - 120+50	LT/RT	--	--	--	--	--	84	--	--	--	--	--	--
STH 67	120+45 - 121+44	LT/RT	--	--	--	--	--	101	--	--	--	--	--	--
STH 67	120+45 - 124+50	LT	--	325	325	--	--	--	--	--	--	--	--	80
STH 67	121+44 - 125+50	RT	--	255	255	--	--	--	--	--	--	--	--	155
STH 67	124+00	LT	--	--	--	--	--	--	--	--	--	5	--	--
STH 67	124+50	RT	--	--	--	--	--	--	--	--	--	5	--	--
STH 67	126+00	LT	--	--	--	--	--	--	--	--	10	--	--	--
STH 67	126+50	RT	--	--	--	--	--	--	--	--	10	--	--	--
STH 67	127+14 - 129+22	LT	--	211	211	--	--	--	--	--	--	--	--	--
STH 67	127+52	RT	--	--	--	--	--	--	--	--	--	--	1	--
WHITAKER LANE	12WL+30	LT	--	--	--	--	--	--	--	--	10	--	--	--
	UNDISTRIBUTED		20	110	110	4	4	--	--	--	50	--	20	--
PROJECT 3100-07-70 TOTAL			20	1,186	1,186	4	4	185	2	2	140	15	24	610

* FOR INFORMATION ONLY

CPM PROGRESS SCHEDULE

ROADWAY	108.4400 CPM PROGRESS SCHEDULE EACH
STH 67	1
PROJECT 3100-07-70 TOTAL	1

ALL ITEMS ON THIS SHEET ARE CATEGORY 0020

FILE NAME: \\MADW00\INGRPROJ\60002\t1\cds\030201_mq.ppt PLOT DATE : 2/9/2018 2:13:29 PM PLOT BY : HNTB Corp PLOT NAME : 030201_mq5 PLOT SCALE : 1:1

TRAFFIC CONTROL ITEMS

ROADWAY	DURATION DAYS	643.5000 TRAFFIC CONTROL (3100-07-70) EACH	643.0300 TRAFFIC CONTROL DRUMS EACH*	643.0300 DAYS	643.0420 TRAFFIC CONTROL BARRICADES TYPE III EACH*	643.0420 DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A EACH*	643.0705 DAYS	643.0715 TRAFFIC CONTROL WARNING LIGHTS TYPE C EACH*	643.0715 DAYS	643.0900 TRAFFIC CONTROL SIGNS EACH*	643.0900 DAYS	643.0910 TRAFFIC CONTROL COVERING SIGNS TYPE II CYCLES*	643.0910 EACH	643.1051 TRAFFIC CONTROL SIGNS PCMS EACH*	643.1051 DAYS
PRECONSTRUCTION	7	--	--	--	--	--	--	--	--	--	--	--	--	--	4	28
STH 67/ WIS 18 INTERSECTION	120	--	34	4,080	6	720	10	1,200	12	1,440	4	480	1	11	--	--
WHITAKER LANE	120	--	--	--	4	480	--	--	8	960	2	240	--	--	--	--
STH 67 NORTH CONSTRUCTION LIMITS	120	--	--	--	5	600	--	--	10	1,200	3	360	--	--	--	--
STH 67/GENESSE LAKE RD INTERSECTION	120	--	--	--	6	720	--	--	12	1,440	18	2,160	--	--	--	--
STH 67/GRIFFITH RD INTERSECTION	120	--	--	--	6	720	--	--	12	1,440	9	1,080	--	--	--	--
DETOUR SIGNAGE	120	--	--	--	--	--	--	--	--	--	226	27,120	1	11	--	--
WATERWAY DETOUR	120	--	--	--	3	360	--		--	--	3	360	--	--	--	--
UNDISTRIBUTED	120	1	--	200	--	160	--	--	--	320	--	1,570	1	5	--	50
PROJECT 3100-07-70 TOTAL		1		4,280		3,760		1,200		6,800		33,370	27			78

* PROVIDED FOR INFORMATION ONLY

FIELD FACILITY

ROADWAY	642.5201 FIELD FACILITY TYPE C EACH
PROJECT 3100-07-70	1
PROJECT 3100-07-70 TOTAL	1

3

CONCRETE BARRIER

ROADWAY	STATION	OFFSET	603.8000 TEMPORARY PRECAST DELIVERED LF	603.8125 TEMPORARY PRECAST INSTALLED LF
STH 67	120+60	RT	25	25
STH 67	121+30	RT	33	33
PROJECT 3100-07-70 TOTAL			58	58

PAVEMENT MARKINGS

ROADWAY	646.1020 MARKING LINE EPOXY 4-INCH (WHITE) LF	646.1020 12.5' / 37.5' (WHITE) LF	646.1020 12.5' / 37.5' (YELLOW) LF	646.1020 (YELLOW) LF	646.1040 MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH (WHITE) LF	646.1040 2' / 6' (WHITE) LF	646.3020 MARKING LINE EPOXY 8-INCH (WHITE) LF	646.3020 3' / 9' (WHITE) LF	646.3050 MARKING LINE GROOVED PERMANENT TAPE 8-INCH (WHITE) LF	646.5020 MARKING ARROW EPOXY (WHITE) EACH	646.5120 MARKING WORDS EPOXY (WHITE) EACH	646.6120 MARKING STOP LINE EPOXY 18-INCH (WHITE) LF	646.9010 MARKING REMOVAL LINE WATER BLASTING 4-INCH LF
PROJECT 3100-07-70													
STH 67	--	78	150	1,850	3,085	34	54	114	121	2	2	--	260
WHITAKER LANE	--	--	--	546	--	--	--	--	--	--	--	36	--
PROJECT 3100-07-70 TOTAL		2,624			3,119		168		121	2	2	36	260

ALL ITEMS ON THIS SHEET ARE CATEGORY 0020

CONSTRUCTION SLOPE STAKING

LOCATION	650.4000 STORM SEWER EACH	650.4500 SUBGRADE LF	650.4500 BASE LF	650.5500 CURB GUTTER AND CURB & GUTTER LF	650.6000 PIPE CULVERTS EACH	650.6500 STRUCTURE LAYOUT B-67-376 LS	650.7000 CONCRETE PAVEMENT LF	650.8500 ELECTRICAL INSTALLATIONS 3100-07-70 LS	650.9910 SUPPLEMENTAL CONTROL 3100-07-70 LS	650.9920 SLOPE STAKES LF
STH 67	3	1,858	1,858	243	3	--	125	--	--	1,858
WHITAKER	--	300	300	82	1	--	--	--	--	300
PROJECT 3100-07-70 TOTALS	3	2,158	2,158	325	4	1	125	1	1	2,158

SAWCUTS

ROADWAY	STATION			OFFSET	690.0150 SAWING ASPHALT LF
STH 67	110+00	-	114+75	LT/RT	525
STH 67	111+83	-	112+12	LT	29
STH 67	127+28	-	127+43	RT	15
STH 67	129+25	-	129+25	LT/RT	37
WHITAKER	11WL+80	-	11WL+97	RT	16
WHITAKER	13WL+00	-	13WL+00	LT/RT	27
PROJECT 3100-07-70 TOTAL					649

TRAFFIC CONTROL FIXED MESSAGE SIGNS

LOCATION	FMS NO.	634.0616 POSTS WOOD 4X6-INCH X 16-FT EACH	634.0810 POSTS TUBULAR STEEL 2x2-INCH x 10-FT EACH	643.1000 TRAFFIC CONTROL SIGNS FIXED MESSAGE SF
PROJECT 3100-07-70				
EB I-94	101	3	--	51.8
WB I-94	101	3	--	51.8
BARK RIVER	102	--	1	12.0
BARK RIVER	102	--	1	12.0
BARK RIVER	102	--	1	12.0
CTH P / BARK RIVER	102	--	--	12.0
GENESEE LAKE ROAD / BARK RIVER	102	--	--	12.0
USH 18 / BARK RIVER	102	--	--	12.0
PROJECT 3100-07-70 TOTALS		6	3	175.6

SECTION CORNER MONUMENT

ROADWAY	NORTHING	EASTING	STATION	OFFSET	SPV.0060.02 SECTION CORNER MONUMENTS EACH
STH 67	166,327.02	621,518.78	120+00.00	0.00' RT/LT	1
PROJECT 3100-07-70 TOTAL					1

SALVAGING LANE DIVIDERS

ROADWAY	STATION			SPV.0090.01 SALVAGING LANE DIVIDERS LF
STH 67	119+50	-	122+00	370
PROJECT 3100-07-70 TOTAL				370

ALL ITEMS ON THIS SHEET ARE CATEGORY 0020

3

STORM SEWER PIPES

FROM STR	TO STR	INVERT ELEV FT	DISCH ELEV FT	SLOPE	608.0318 STORM SEWER PIPE REINFORCED CONCRETE CLASS III 18-INCH LF
IN 101	IN 102	864.69	864.05	0.78%	82
IN 102	EW103	864.05	863.75	1.87%	16
PROJECT 3100-07-70 TOTALS					98

STORM SEWER STRUCTURES

STRUCTURE NUMBER	STATION	OFFSET	FLANGE OR RIM ELEV	LOWEST INVERT	DEPTH	611.0654 INLET COVERS TYPE V EACH	611.3230 INLETS 2x3-FT EACH
101	119+95.00	35.0' RT	867.77	864.69	1.83	1	1
102	119+42.62	33.0' LT	867.55	864.05	2.25	1	1
PROJECT 3100-07-70 TOTALS						2	2

3

CULVERT PIPE ITEMS

INLET END STATION	INLET END OFFSET	INLET END ELEVATION	DISCHARGE END STATION	DISCHARGE END OFFSET	DISCHARGE END ELEVATION	SLOPE	521.3112 CULVERT PIPE CORRUGATED STEEL 12-INCH LF	522.0118 CULVERT PIPE REINFORCED CONCRETE CLASS III 18-INCH LF	522.0412 CULVERT PIPE REINFORCED CONCRETE CLASS IV 12-INCH LF	522.1012 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 12-INCH EACH	522.1018 APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH EACH	633.5200 MARKERS CULVERT END EACH
111+72	47.7 LT	869.59	112+22	47.0 LT	869.33	0.50%	--	--	50	2	--	2
118+57	44.1 RT	863.98	119+46	55.0 RT	863.63	0.40%	--	88	--	--	2	2
11WL+75	20.0 RT	870.87	112+25	43.2 RT	870.65	0.70%	32	--	--	--	--	--
			119+95	35.0 RT	867.77	EW103	--	--	--	1	--	1
PROJECT 3100-07-70 TOTALS							32	88	50	3	2	4

GENERAL NOTES

1) STATIONS AND OFFSETS ARE TO THE CENTER OF STRUCTURES OR TO THE APRON END OF ENDWALLS UNLESS OTHERWISE NOTED.
2) RIM AND GRATE ELEVATIONS ARE GIVEN AT THE CENTER OF STRUCTURE AND MAY DIFFER FROM ELEVATION CALLOUT ON CONSTRUCTION DETAILS.
3) STRUCTURE DEPTH = RIM ELEVATION - LOWEST INVERT - CASTING - 6 INCH ADJUSTMENT, EXCEPT MEDIAN INLETS.
4) FLAT TOP SLAB REQUIRED ON MANHOLES WITH INLET COVERS.
5) LIMIT QUANTITY OF ADJUSTING RINGS TO TWO PER INLET OR MANHOLE STRUCTURE.
6) PLAN LENGTH REPRESENTS LENGTH OF PIPE
7) TAKE PRECAUTIONARY MEASURES WHERE CULVERT PIPES AND STORM SEWER PIPES HAVE REDUCED SUBGRADE COVER.
8) JOINT TIES (COST INCIDENTAL TO STORM SEWER PIPE) FOR CONCRETE PIPE SHALL BE USED TO CONNECT ALL CONCRETE APRON ENDWALLS AND THE LAST THREE PIPE SEGEMENTS PRECEDING THE APRON ENDWALL.
9) VERIFY EXISTING STORM SEWER SYSTEM CONNECTION LOCATIONS AND ELEVATIONS PRIOR TO ORDERING DRAINAGE STRUCTURES AND PIPES AND NOTIFY THE ENGINEER OF PLAN DEVIATIONS PRIOR TO INSTALLATION.

* ADDITIONAL QUANTITIES FOUND ELSEWHERE.

ALL ITEMS ON THIS SHEET
ARE CATEGORY 0020

3

USH 18 & STH 67
WAUKESHA COUNTY
CATEGORY 0030
S67-0630

REMOVE LOOP DETECTOR WIRE AND LEAD-IN CABLE

LOCATION	204.9105.S REMOVE LOOP DETECTOR WIRE & LEAD-IN CABLE L.S.
USH 18 & STH 67	1
TOTAL	1

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH L.F.
PB2	PB3	196
PB3	PB4	181
TOTAL		377

TRAFFIC DETECTOR LOOPS

LOOP NO.	HOME RUN PB	LOCATION*	SIZE (FT)x(FT)	NO. OF TURNS	SDD INSTALLATION REFERENCE	652.0800 CONDUIT LOOP DETECTOR L.F.	655.0700 LOOP DETECTOR LEAD IN CABLE L.F.	655.0800 LOOP DETECTOR WIRE L.F.
41	PB4	113+41.8, 27.5' LT	6'X10'	5	LOOP DETECTOR INSTALLED IN BASE COURSE WITH PULL (SPLICE) BOX OFF ROADWAY (OPTION 2)	62	612	310
					TOTAL	62	612	310

* LOCATION IS TO FRONT CENTER OF DETECTOR LOOP

* * FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

PULL BOXES

PULL BOX NO.	LOCATION*	653.0135 PULL BOXES STEEL 24x36-INCH EACH
PB3	111+61.5, 38.8' LT	1
PB4	113+41.8, 27.5' LT	1
	TOTAL	2

* FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

REMOVE PULL BOXES

PULL BOX NO.	653.0905 REMOVING PULL BOXES EACH
PB3	1
PB4	1
TOTAL	2

TYPE II PERMANENT SIGNING - CATEGORY CODE 0020

SIGN NO.	SIGN CODE	SIGN MESSAGE	TYPE II SIGN SIZE W [IN.] x H [IN.]	637.2210 SIGNS TYPE II REFLC H [SF]	637.2230 SIGNS TYPE II REFLC F [SF]	638.2602 REM SIGNS TYPE II [EA]	638.3000 REM SMALL SIGN SUP [EA]	638.2102 MOVE SIGNS TYPE II [EA]	634.0618 WOOD POSTS 4"X 6"x18' [EA]	MOUNT ON SAME POST AS SIGN #	REMARKS
1	R12-55					1					THE D2-2 SIGN IS TO REMAIN
											THAT IS BELOW IT
2	W5-2					1	1				REMOVE R4-1 BELOW IT. Part of same pay item
3	R12-1					1	1				
4	W1-4R					1	1				W13-1 PART OF REMOVAL
5	R2-1						1	1	1		
6	R1-1						1	1	1		
7	J1-1						1	1	1		
8	W5-52L(2S)		12 X 36		3.000	1	1		1		4 FOOT MOUNTING HEIGHT
9	W5-52R(2S)		12 X 36		3.000	1	1		1		4 FOOT MOUNTING HEIGHT
10	R12-1					1	1				
11	W5-52L(2S)		12 X 36		3.000	1	1		1		4 FOOT MOUNTING HEIGHT
12	R12-1					1	1				
13	R12-1					1	1		1		
14	W5-52R(2S)		12 X 36		3.000	1	1		1		4 FOOT MOUNTING HEIGHT
15	W1-4R					1	1				W13-1 PART OF REMOVAL
16	W5-2					1	1				R4-1 PART OF REMOVAL
17	NONE	20 TON BRIDGE SIGN				1	3				
18	NONE	20 TON BRIDGE SIGN				1	3				
19	NONE	20 TON BRIDGE SIGN				1	3				
20	NONE	20 TON BRIDGE SIGN				1	3				
21	NONE	20 TON BRIDGE SIGN				1	3				
22	NONE	20 TON BRIDGE SIGN				1	3				
23	NONE	20 TON BRIDGE SIGN				1	3				
24	R2-1					1	1	1			
25	W14-3					1	1	1			
26	J2-4						2	1	2		
27	NONE	20 TON BRIDGE SIGN				1	3				
28	NONE	20 TON BRIDGE SIGN				1	3				
UNDISTRIBUTED				1.000							
TOTALS				1.000	12.000	24	46	6	10		

SHEET 1 OF 1

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	MISCELLANEOUS QUANTITIES – PERMANENT SIGNING	SHEET:	E

ST. MARY'S EPISCOPAL CHURCH

N

USH 18

10WL+00.00
119+10.81

WE ENERGIES OVERHEAD ELECTRIC

WE ENERGIES UNDERGROUND ELECTRIC

BARK RIVER

WISDOT SIGNALS

WE ENERGIES GAS/PATROLEUM

CENTURY LINK COMMUNICATIONS

EXISTING ROW

SLOPE INTERCEPT (TYP)

R/L STH 67

106 108 110 112 114 116 118 120

STH 67

MATCHLINE 120+00

BEGIN PROJECT
STA 110+00
X: 621506.24
Y: 165327.09

EXISTING ROW

WE ENERGIES OVERHEAD ELECTRIC

CENTURY LINK COMMUNICATIONS

WE ENERGIES GAS/PATROLEUM

WHITAKER LANE

R/L WHITAKER LANE

MARK AND HWE SCHUELKE

JAMES AND CAROL DAPP

ROBERT AND SHEILA SCOTT

JEFFREY AND CHARMAINE COTA

MARY / EHRGOOD

5

5

885
880
875
870
865
860
855
850

EXISTING SURFACE

5.3%

1.6%

0.9%

SPECIAL DITCH LT

DRIVEWAY CULVERT
BEGIN 111+72, 47.7'LT; 869.59'
END 112+22, 47.0'LT; 869.33'
SLOPE: 0.5% / 50 LF
12" DIA CLASS IV RC CULVERT PIPE

VPC STA 114+75.00
VPC EL 869.33

-0.97%

1.1%

SPECIAL DITCH LT

PROPOSED PROFILE

VPI STA 117+25.00
VPI EL 866.90

VCL = 500'
K = 323

-0.5%

SPECIAL DITCH RT

VPT STA 119+75.00
VPT EL 868.35

0.58%

18" DIA CLASS III RC CULVERT PIPE
BEGIN 118+57, 44.1'RT; 863.98'
END 119+46, 55.0'RT; 863.63'
SLOPE: 0.40% / 86 LF

872.6 872.2 872.2 872.15 872.1 872.11 872.1 872.04 871.8 871.88 870.5 871.62 871.3 871.26 870.8 870.88 870.5 870.49 870.0 870.05 869.6 869.57 869.0 869.09 868.5 868.69 867.9 868.36 866.8 868.10 866.6 867.93 866.0 867.83 865.4 867.81 865.0 867.87 864.5 868.00 864.2 868.22 863.9 868.50

106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00 118+00 119+00 120+00

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PLAN AND PROFILE - STH 67	SHEET 144	E

REMOVE EXISTING STRUCTURE B-67-010
SINGLE SPAN CONCRETE SLAB BRIDGE

WE ENERGIES ELECTRIC OVERHEAD

WE ENERGIES GAS/PATROLEUM

Ccentury LINK COMMUNICATIONS

SLOPE INTERCEPT (TYP)

N

EXISTING ROW

MATCHLINE 120+00

STH 67

R/L STH 67

CENTURY LINK COMMUNICATIONS

WE ENERGIES GAS/PATROLEUM

EXISTING ROW

DO NOT DISTURB
EXISTING CULVERT

WE ENERGIES ELECTRIC OVERHEAD

CENTURY LINK COMMUNICATIONS

BARK RIVER

END PROJECT
STA 129+25.00

VPI STA 129+25.00
VPI EL 873.86

PROPOSED PROFILE

0.58%

0.70%

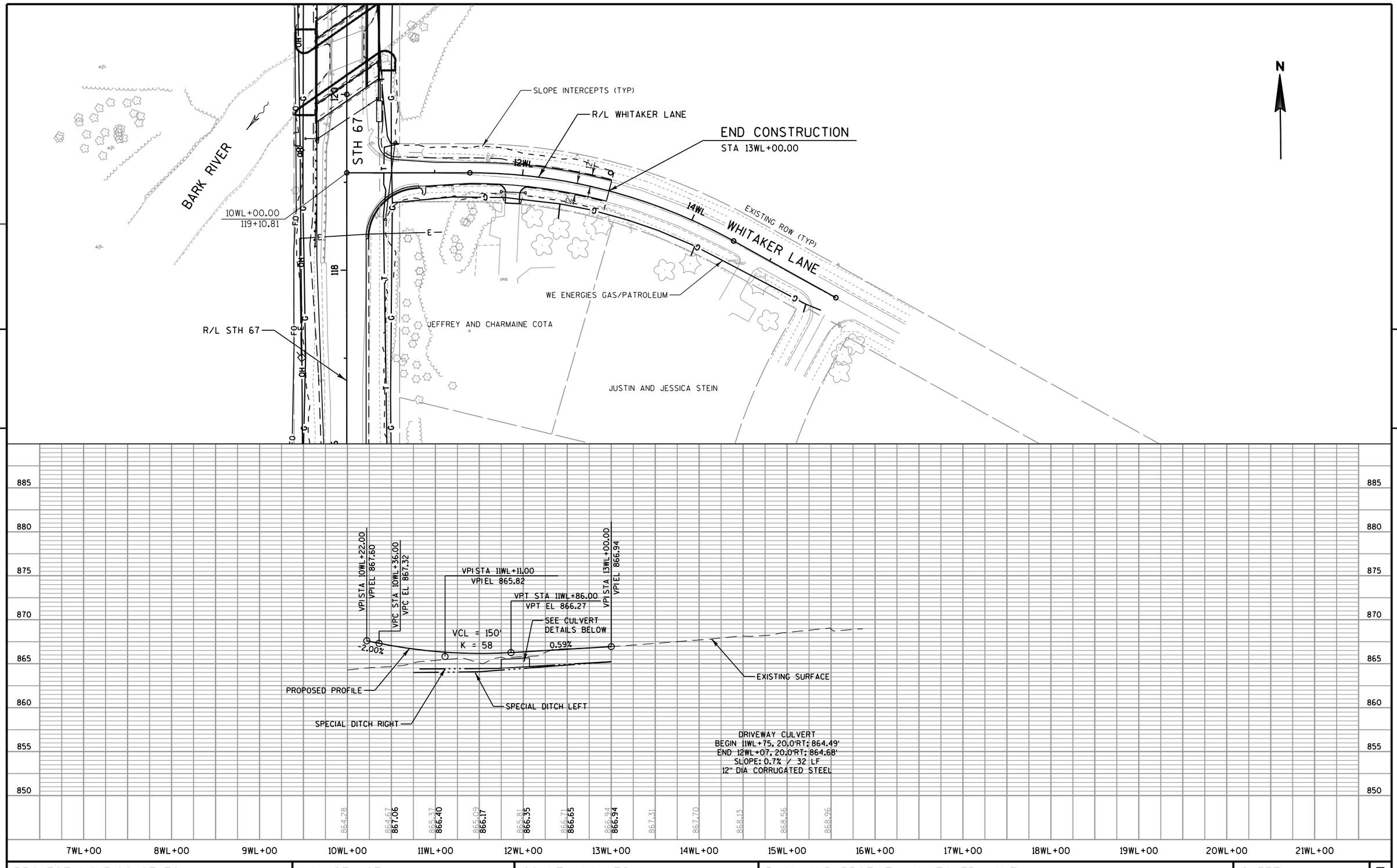
EXISTING SURFACE

SPECIAL DITCH RT

BRIDGE B-67-376
SINGLE SPAN 36W-INCH GIRDERS
35° SKEW

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PLAN AND PROFILE - STH 67	SHEET E

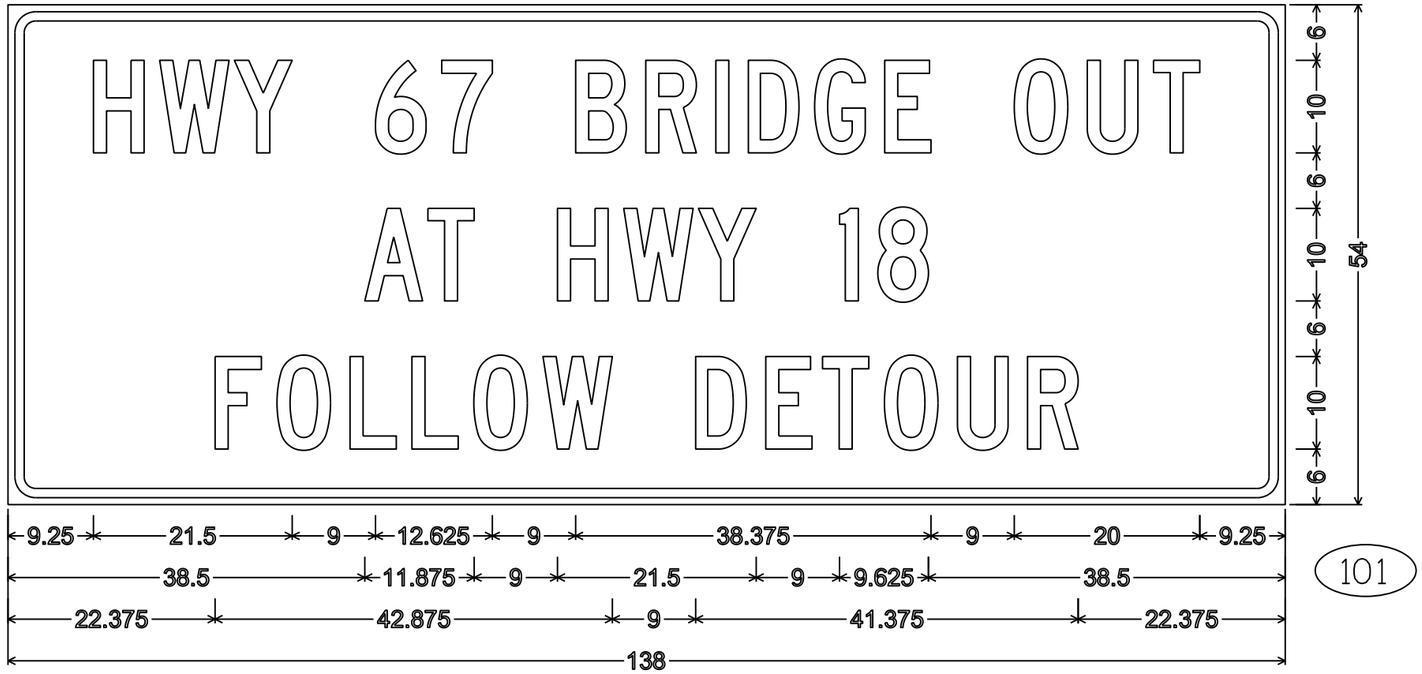
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PLOT DATE : 2/12/2018
PLOT BY : arosemeyer
PLOT NAME :
PLOT SCALE : 100:1
WISDOT/CADDS SHEET 40



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	PLAN AND PROFILE - WHITAKER LANE	SHEET 146	E

NOTES

1. Fixed Message Type II Signs - Type F Reflective
2. Color:
   Background - Orange
   Message - Black
3. Message Series - C



101

3.000" Radius, 1.000" Border, 0.750" Indent

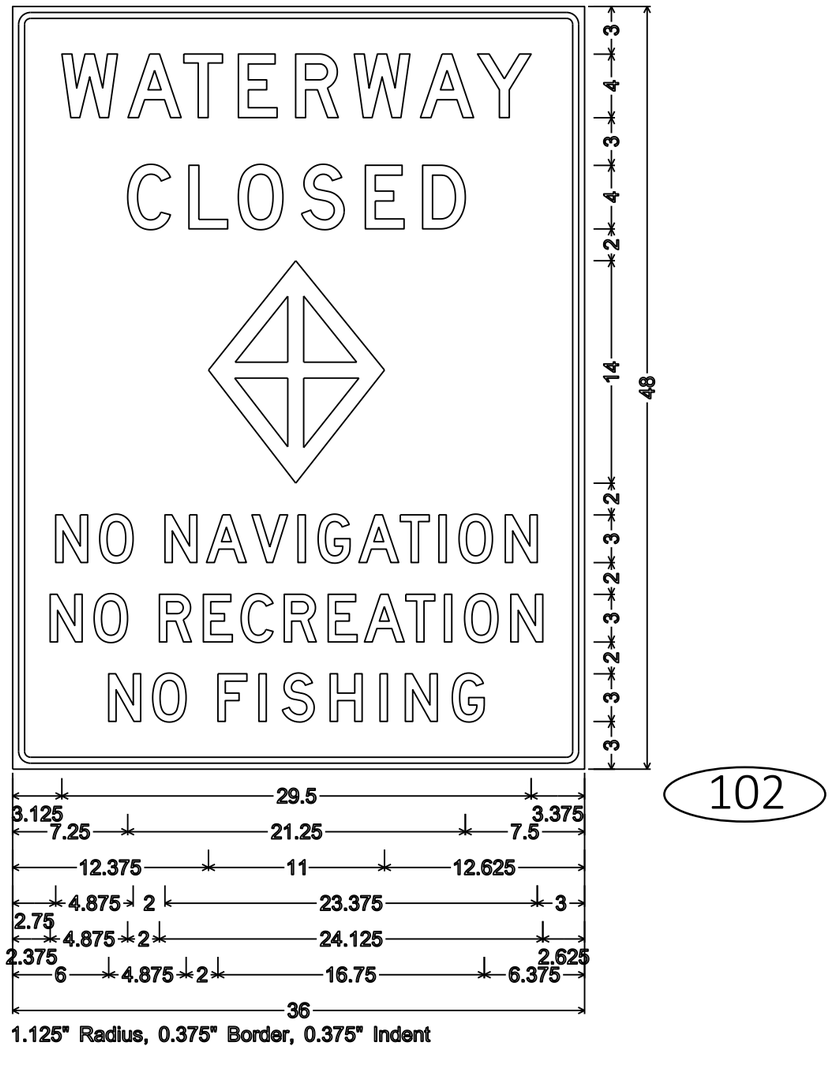
7

7

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	TEMPORARY SIGNING	SHEET NO: 147	E

NOTES

1. Fixed Message Type II Signs - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - D
4. Restricted Area Symbol Background is Orange Type F Reflective Sheeting

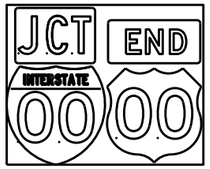


102

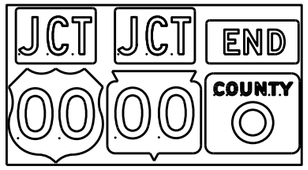
TYPICAL ASSEMBLIES



J1-1



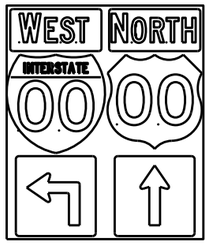
J1-2



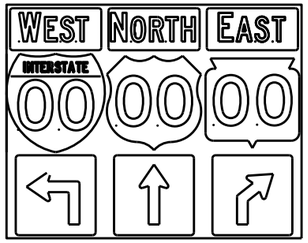
J1-3



J2-1



J2-2

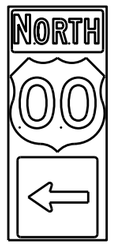


J2-3

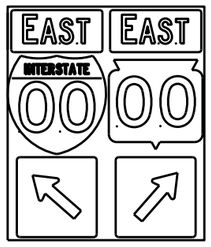


JV

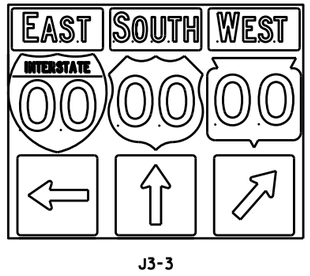
(Typical Vertical J-Assembly
See Note 10 and 11)



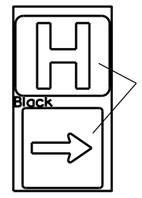
J3-1



J3-2



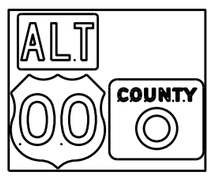
J3-3



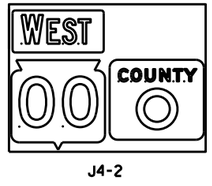
JH-1



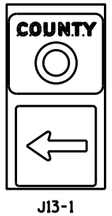
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1

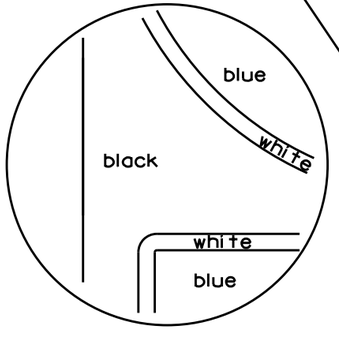


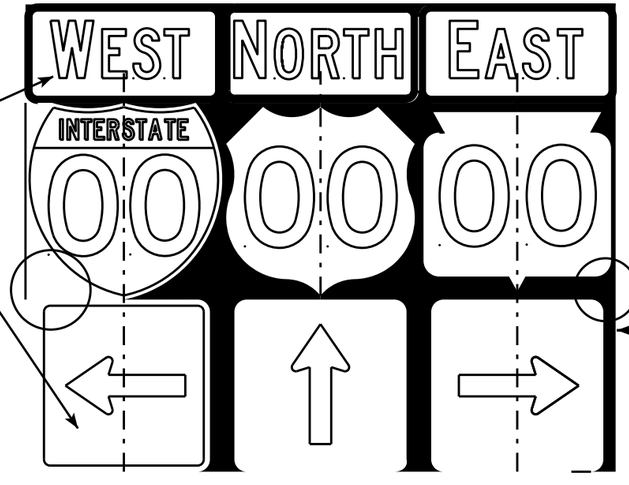
J23-1

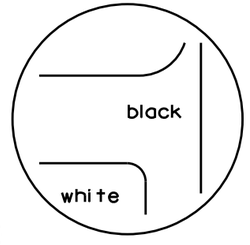


J22-1

[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

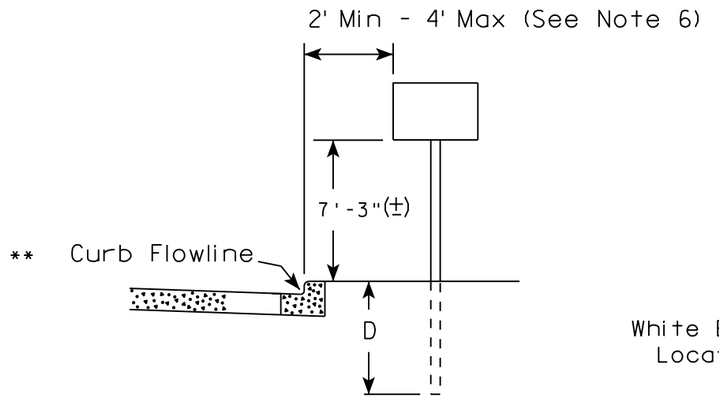
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/06/14 PL... A2-1S.8

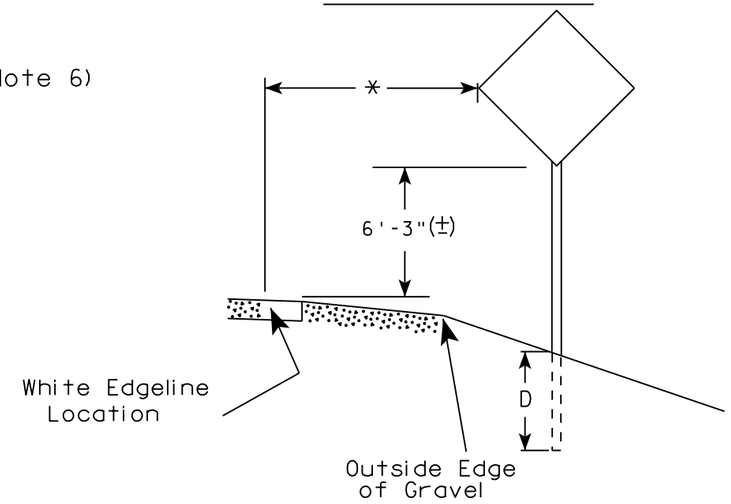
PROJECT NO: SHEET NO: E

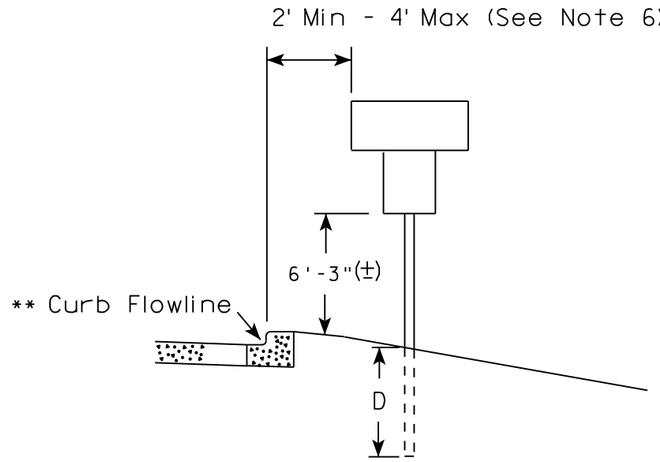
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :
WISDOT/CADDS SHEET 42

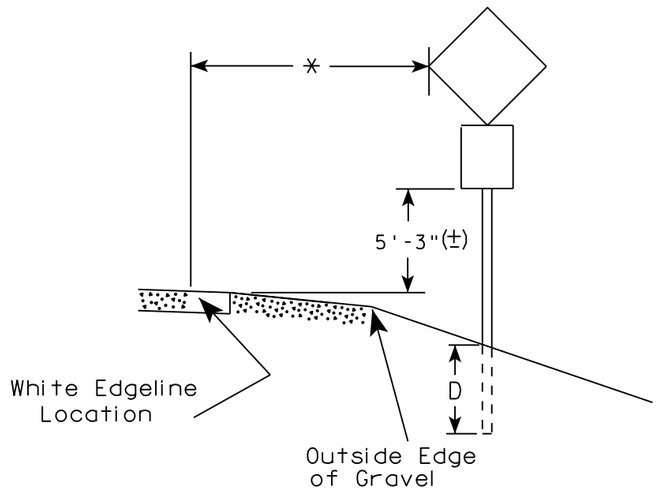
URBAN AREA



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 20 sq.ft or larger, 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. J-Assemblies are considered to be one sign for mounting height.
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 signs shall be mounted at a height of 5'-3" (±) or as directd 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), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) 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'

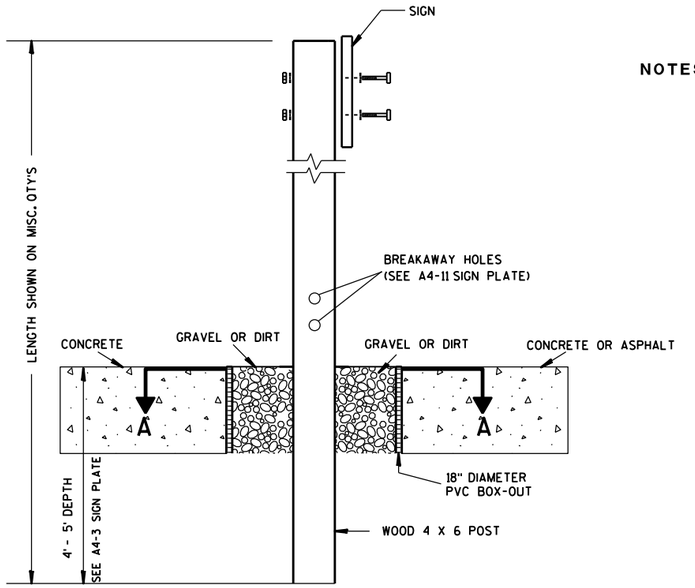
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-3.21

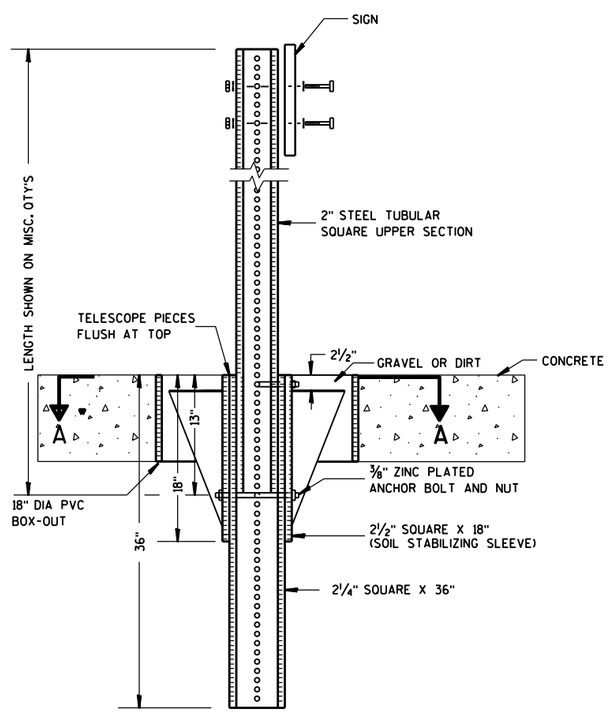
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 150	E



ELEVATION VIEW

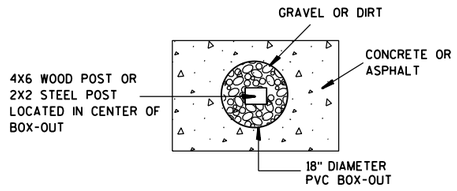
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

NOTES:
1. ALL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO INSTALLATION
2. SEE SIGN PLATE A4-8 FOR SIGN HARDWARE REQUIREMENTS
3. 18 INCH X 18 INCH SQUARE BOX-OUTS MAY BE USED FOR INSTALLATIONS IN EXISTING CONCRETE OR ASPHALT LOCATIONS.



ELEVATION VIEW

DETAIL OF STEEL 2 X 2 SIGN POST IN BOX-OUT



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST BOX-OUTS A4-3B

WISCONSIN DEPT OF TRANSPORTATION

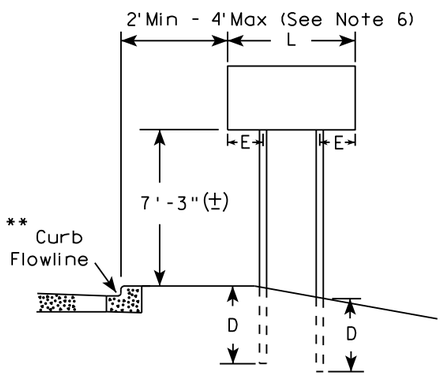
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 1/27/14 PLATE NO. A4-3B.1

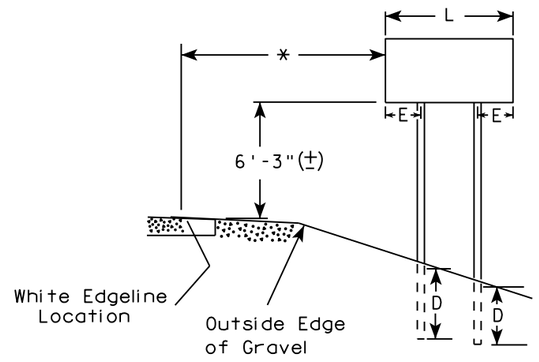
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

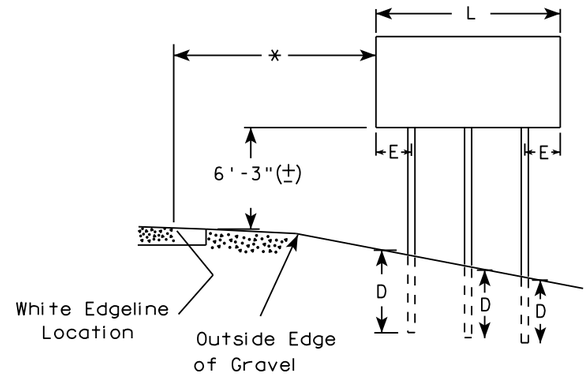
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A43B.DGN PLOT DATE : 27-JAN-2014 09:48 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42

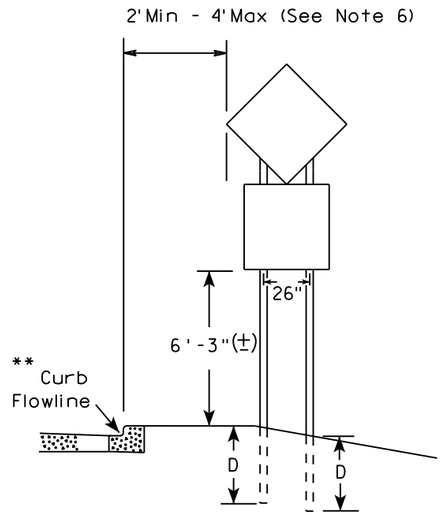
URBAN AREA



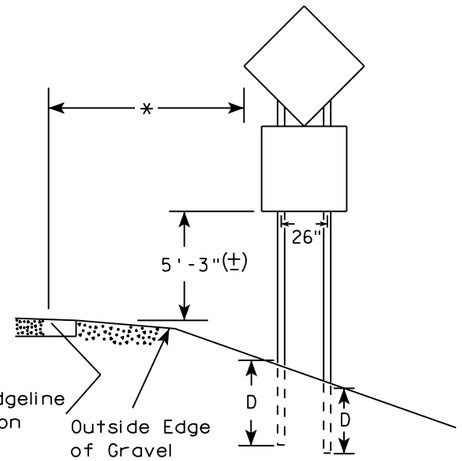
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)		
	L	E
***	Greater than 48" Less than 60"	12"
	60" to 108"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 108" to 144"	12"

GENERAL NOTES

1. For 3 or 4 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. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs 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), In Road Object Markers (W5-54) & End of Road Markers (W5-56) 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 and less than 20 S.F. in area.

POST EMBEDMENT DEPTH

Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

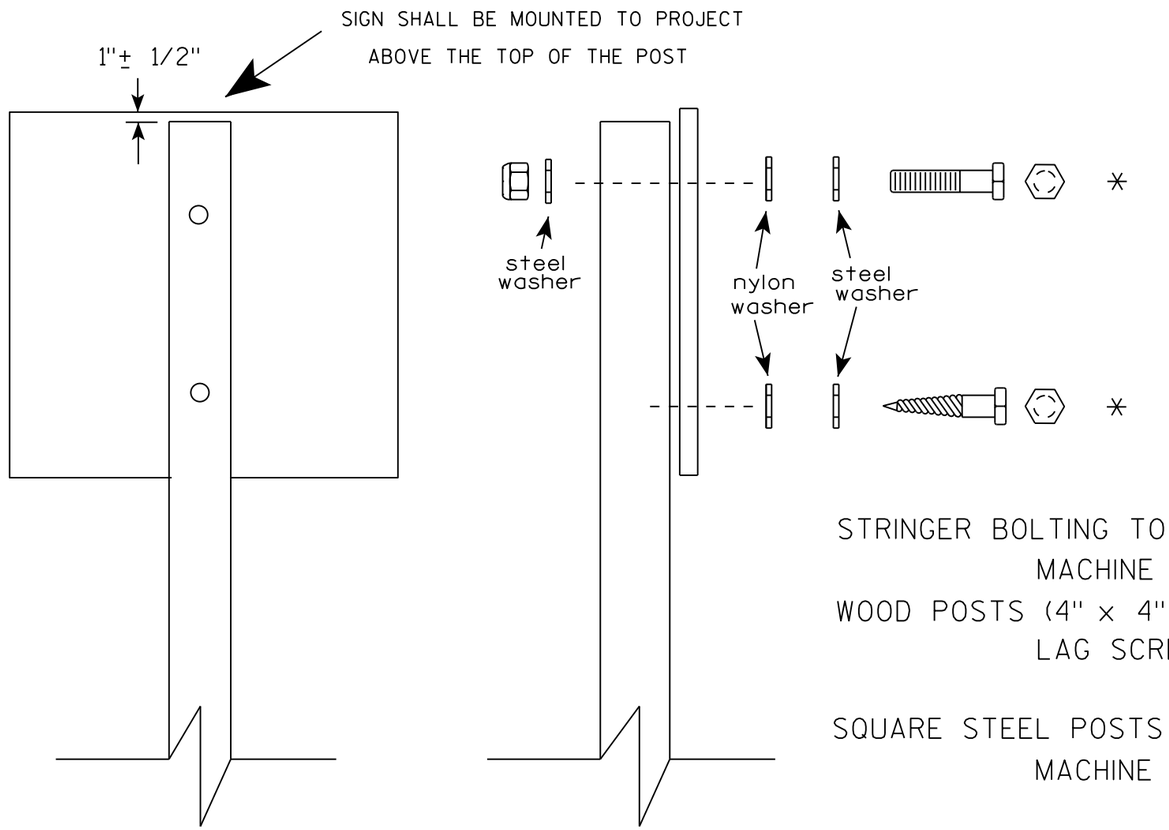
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 8/21/17 PLATE NO. A4-4.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 152	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.

STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)

MACHINE BOLTS - 5/16" X 1-3/4" Length w/ lock nuts

WOOD POSTS (4" x 4" or 4" x 6")

LAG SCREWS - 3/8" X 3" (NO STRINGERS ON BACK OF SIGN)

3/8" X 4" (STRINGERS ON BACK OF SIGN)

SQUARE STEEL POSTS (2" x 2")

MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)

3/8" X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)

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

* 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

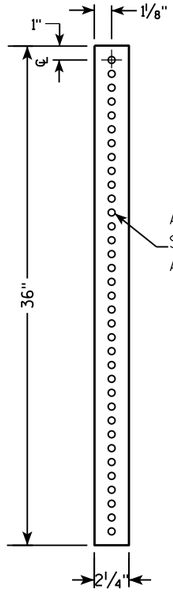
DATE 8/11/16 PLATE NO. A4-8.8

PROJECT NO: SHEET NO: E

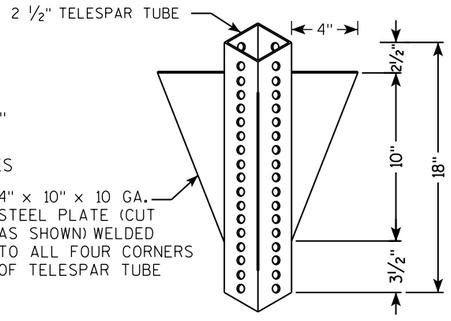
FILE NAME : C:\CADfiles\Projects\tr_stdplate\A48.DGN PLOT DATE : 11-AUG-2016 11:35 PLOT BY : $$ plotuser $$

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

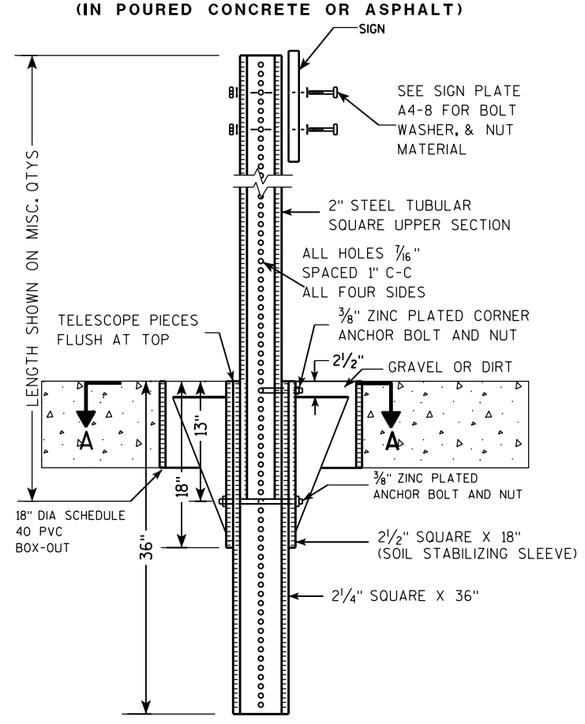
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



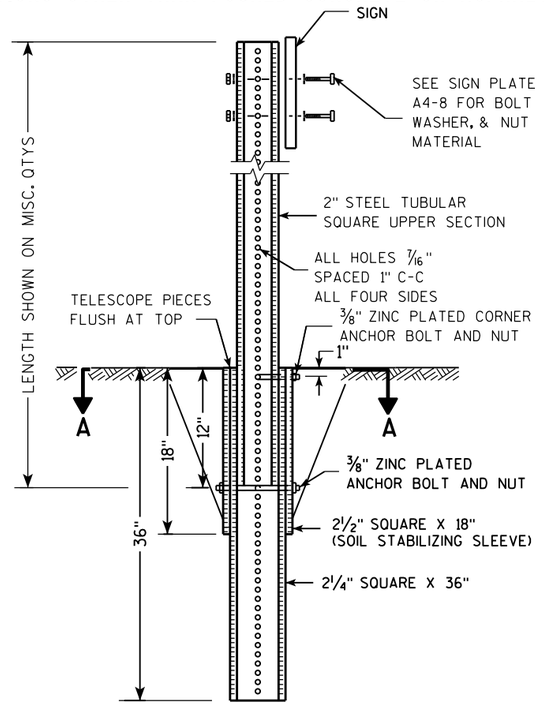
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

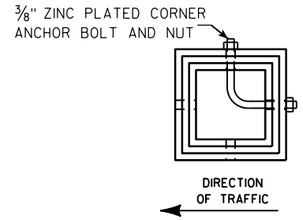


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)





SECTION A-A

Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

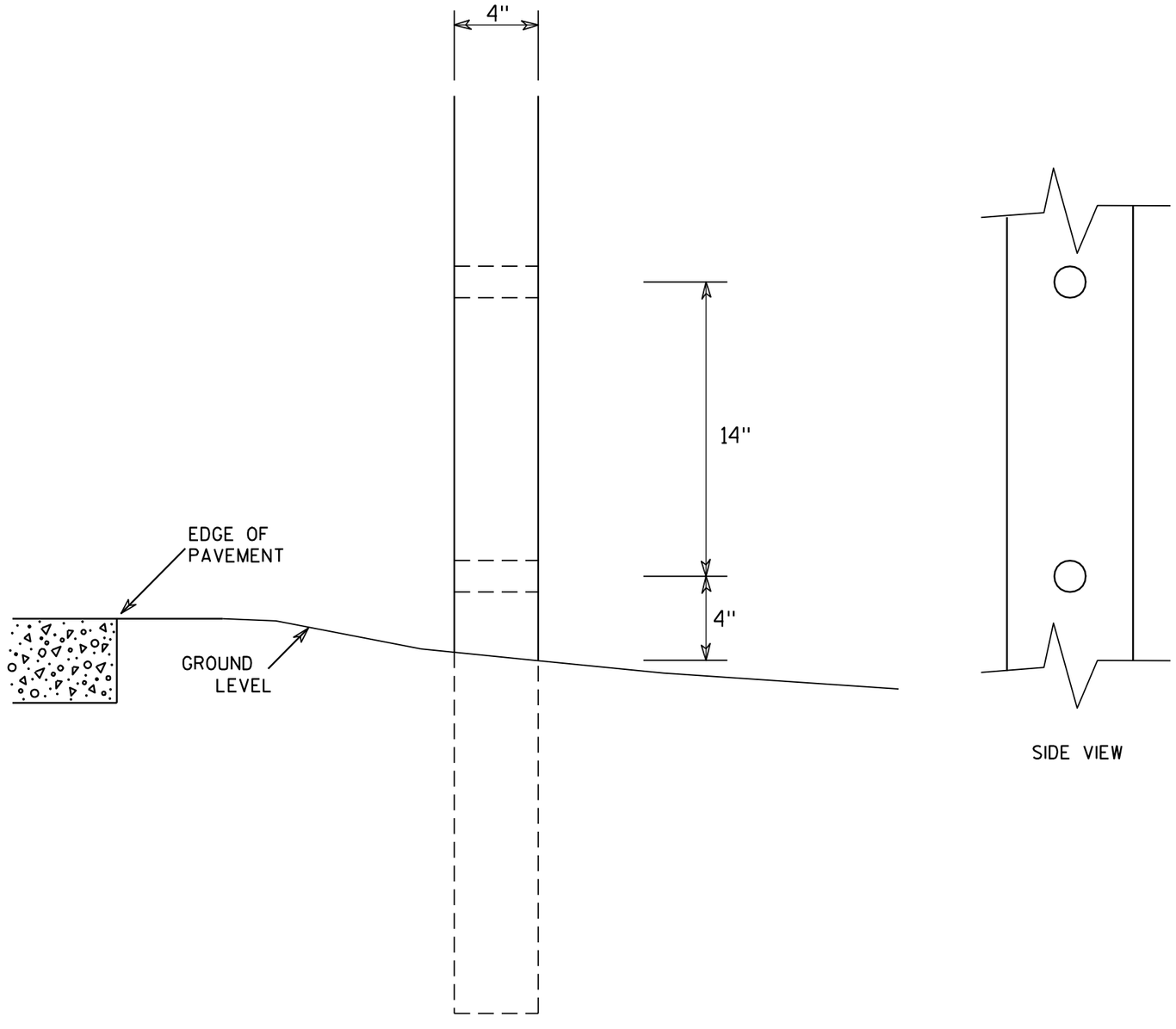
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE 154 A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	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

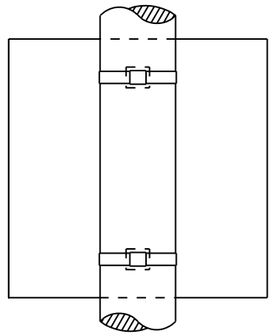
APPROVED Chester J Spang for State Traffic Engineer

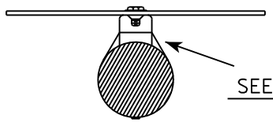
DATE 3/27/97 PLATE NO. A4-11.2

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 155	E

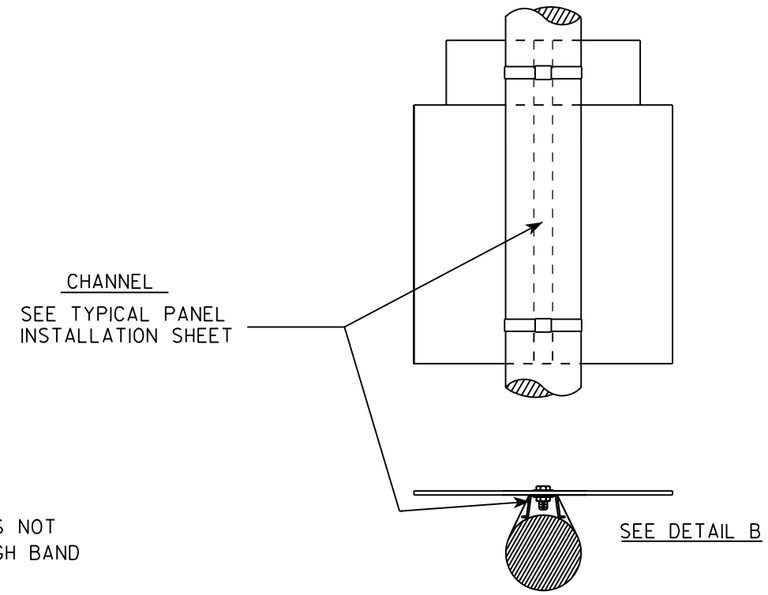
BANDING

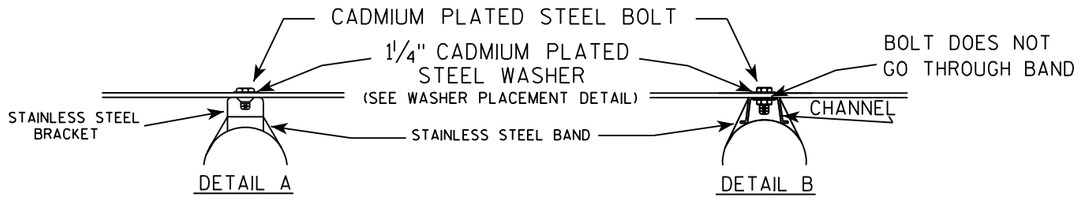
SINGLE SIGN



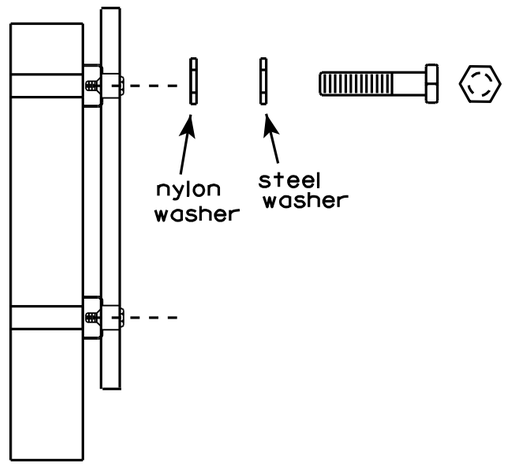


"J" ASSEMBLY





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

GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet 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.

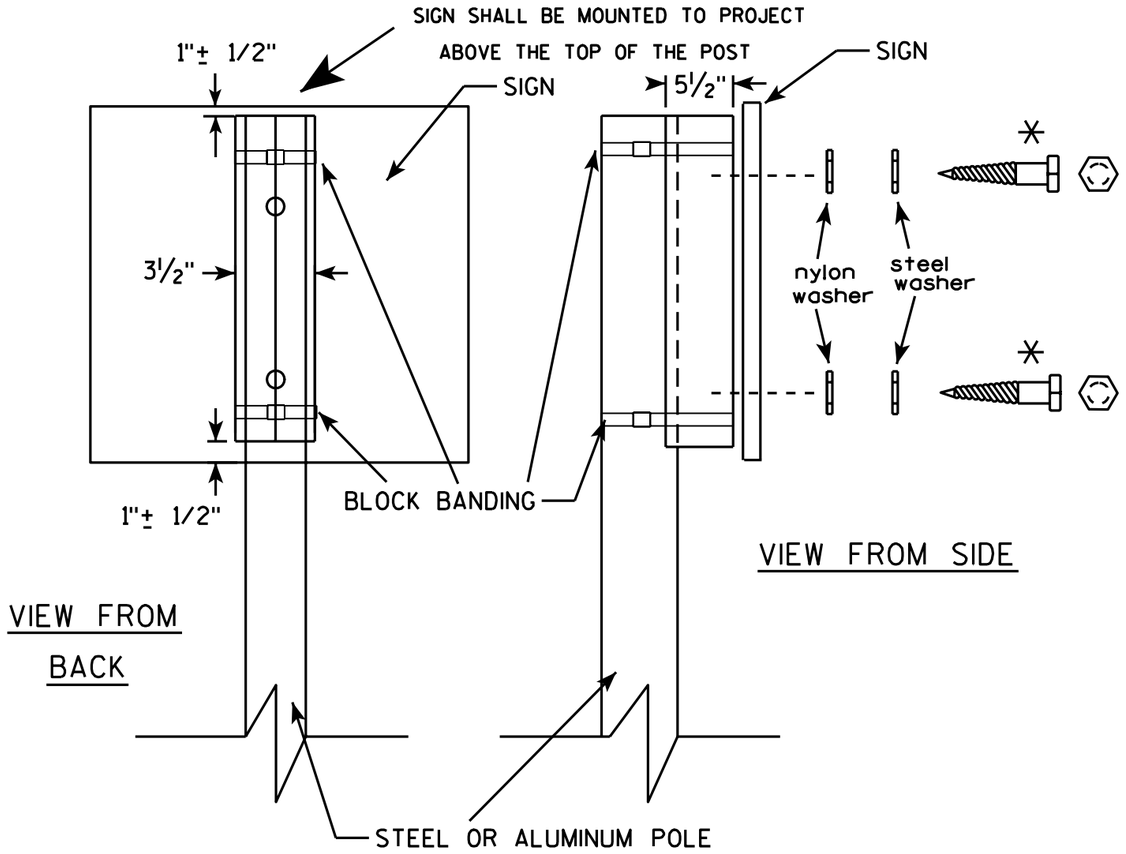
STANDARD SIGN
SIGN BANDING DETAILS

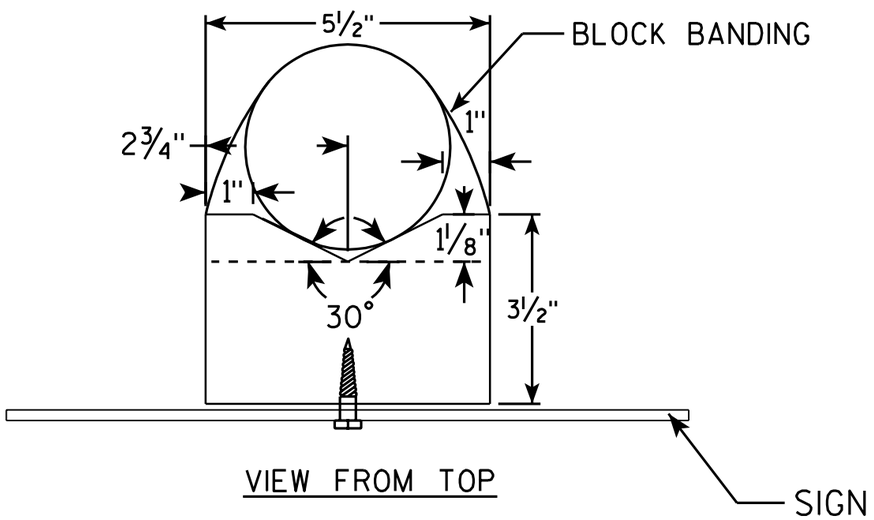
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/16/13 PLATE NO. A5-9.3

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 156	E





GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, ¾" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORNALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
   a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
   b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
   c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1¼" O.D. X ⅜" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✳ LAG BOLTS SHALL BE ⅜" X 2½"

BLOCK BANDING DETAIL (V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

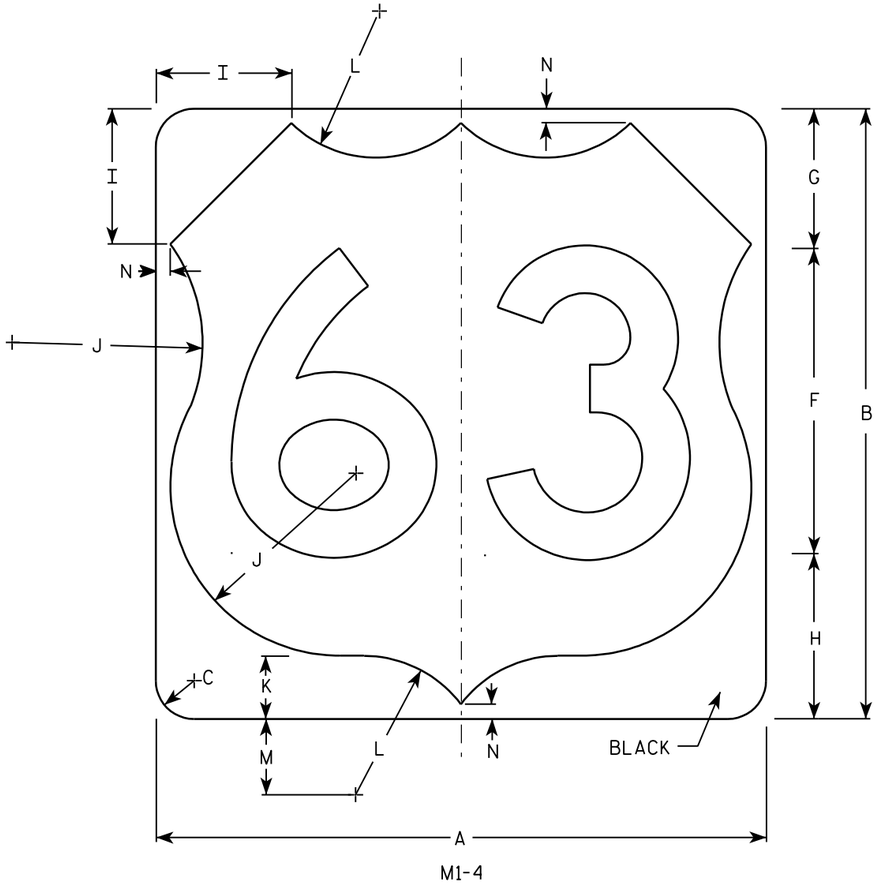
SHEET NO: 157 E

FILE NAME : C:\Users\Projects\tr_stdplate\A510.dgn PLOT DATE : 06-AUG-2007 13:37 PLOT BY : ditjph

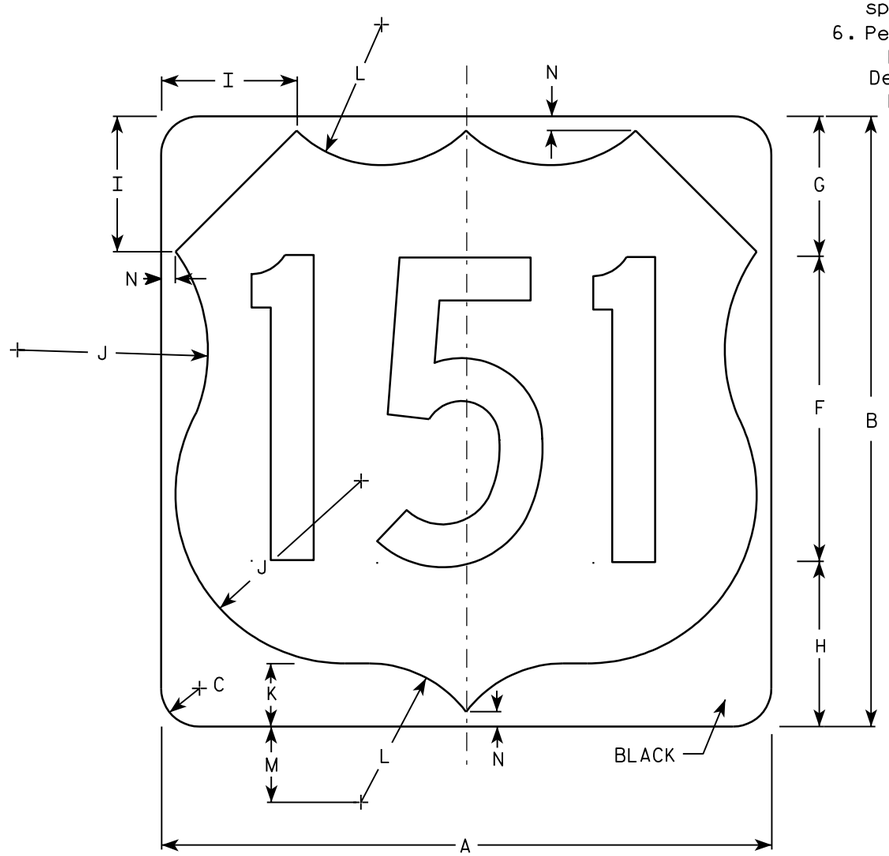
WISDOT/CADDS SHEET 42

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

7

7

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 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0	.36
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0	.81

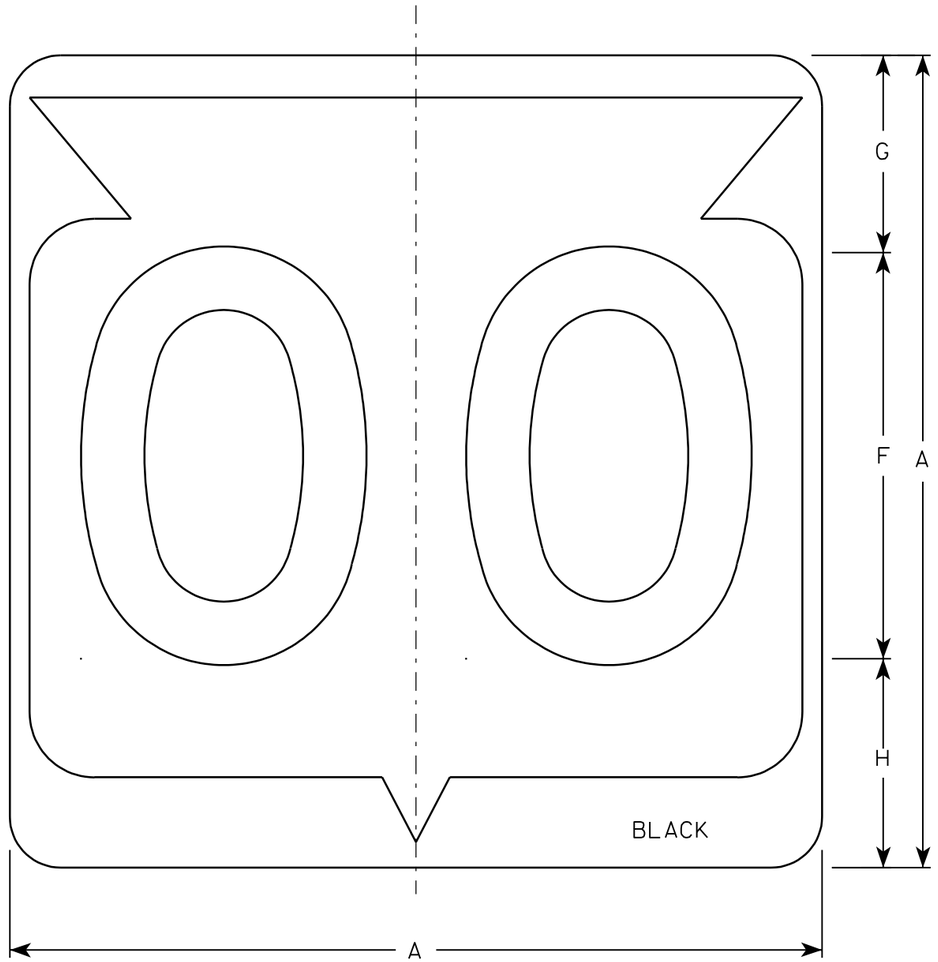
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 08/25/05 PLATE NO. M1-4.9

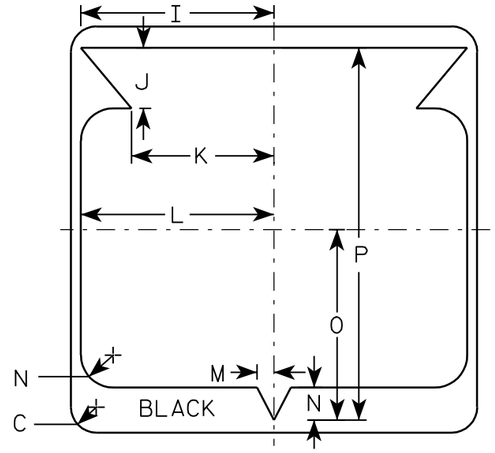
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 158	E



M1-6

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 Series numerals and adjust spacing as per plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective



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		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0	.36
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0	.81

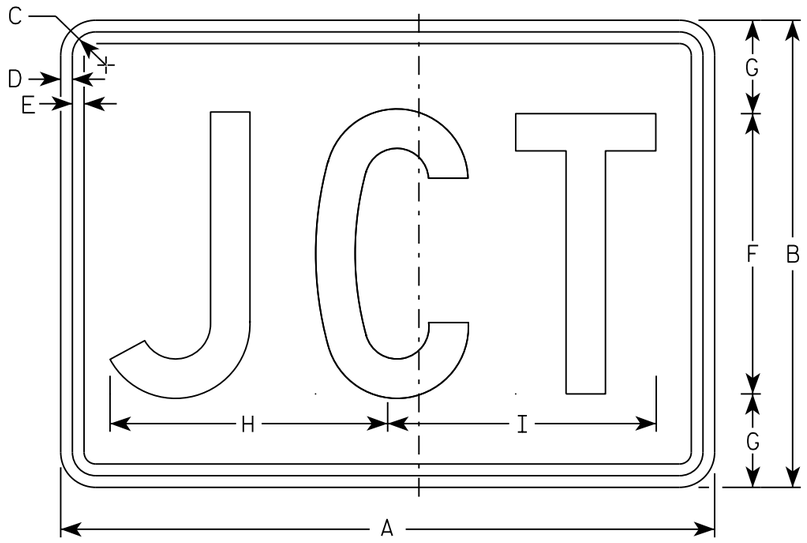
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

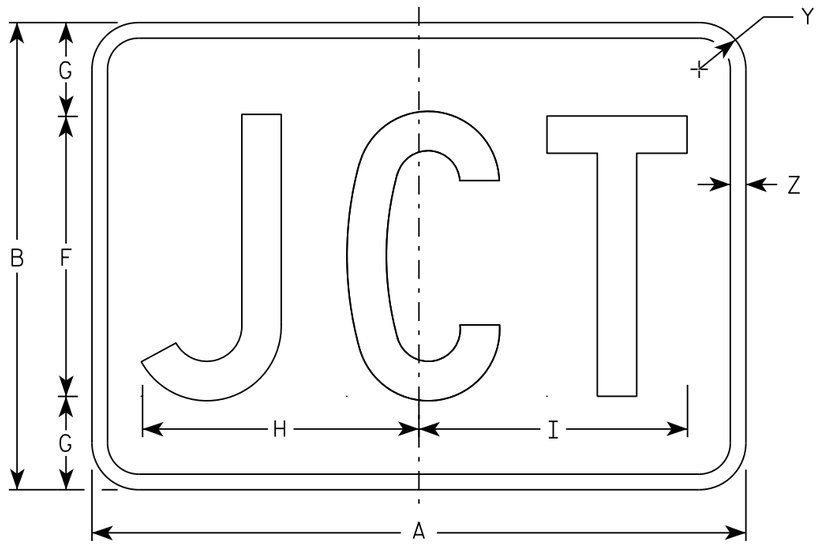
APPROVED Chester J Spang for State Traffic Engineer

DATE 3/20/02 PLATE NO. M1-6.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 159	E



M2-1
MM2-1
MP2-1



MB2-1
MK2-1
MN2-1
MR2-1

NOTES

1. Sign is Type II - Type H
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. M2-1 Background - White
   Message - Black
   MB2-1 Background - Blue
   Message - White
   MK2-1 Background - Green
   Message - White
   MM2-1 Background - White
   Message - Green
   MN2-1 Background - Brown
   Message - White
   MP2-1 Background - White
   Message - Blue
   MR2-1 Background - Brown
   Message - Yellow

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	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN
M2-1

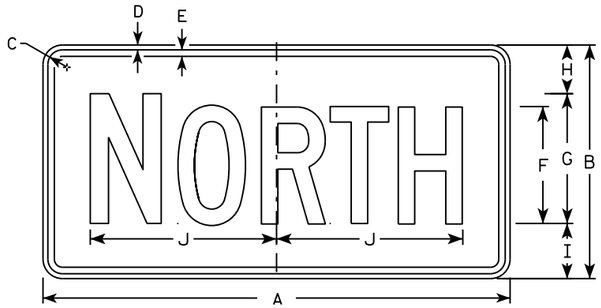
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

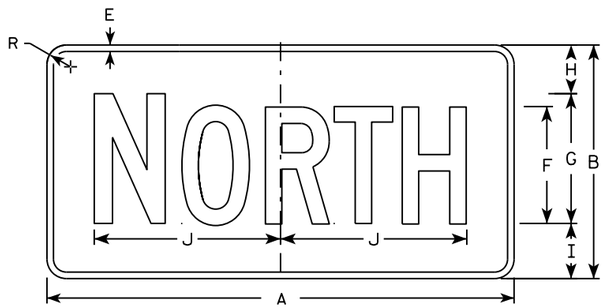
DATE 10/15/15 PLATE 160 12-1.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M21.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 4.864603:1.000000



M3-1
MM3-1
MP3-1



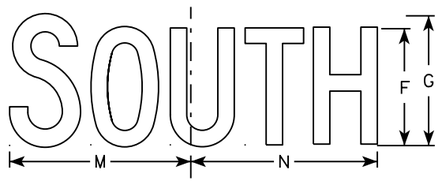
MB3-1
MK3-1
MN3-1



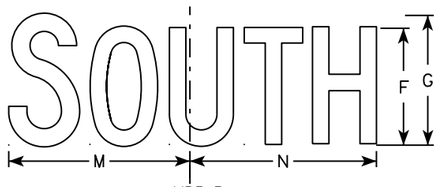
M3-2
MM3-2
MP3-2



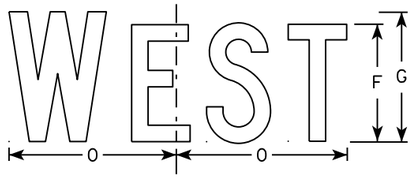
MB3-2
MK3-2
MN3-2



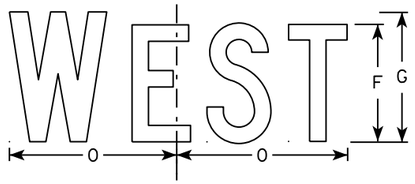
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

1. All Signs Type II - Type H
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
   Message - Black
   MB3-1 thru MB3-4 Background - Blue
   Message - White
   MK3-1 thru MK3-4 Background - Green
   Message - White
   MM3-1 thru MM3-4 Background - White
   Message - Green
   MN3-1 thru MN3-4 Background - Brown
   Message - White
   MP3-1 thru MP3-4 Background - White
   Message - Blue
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

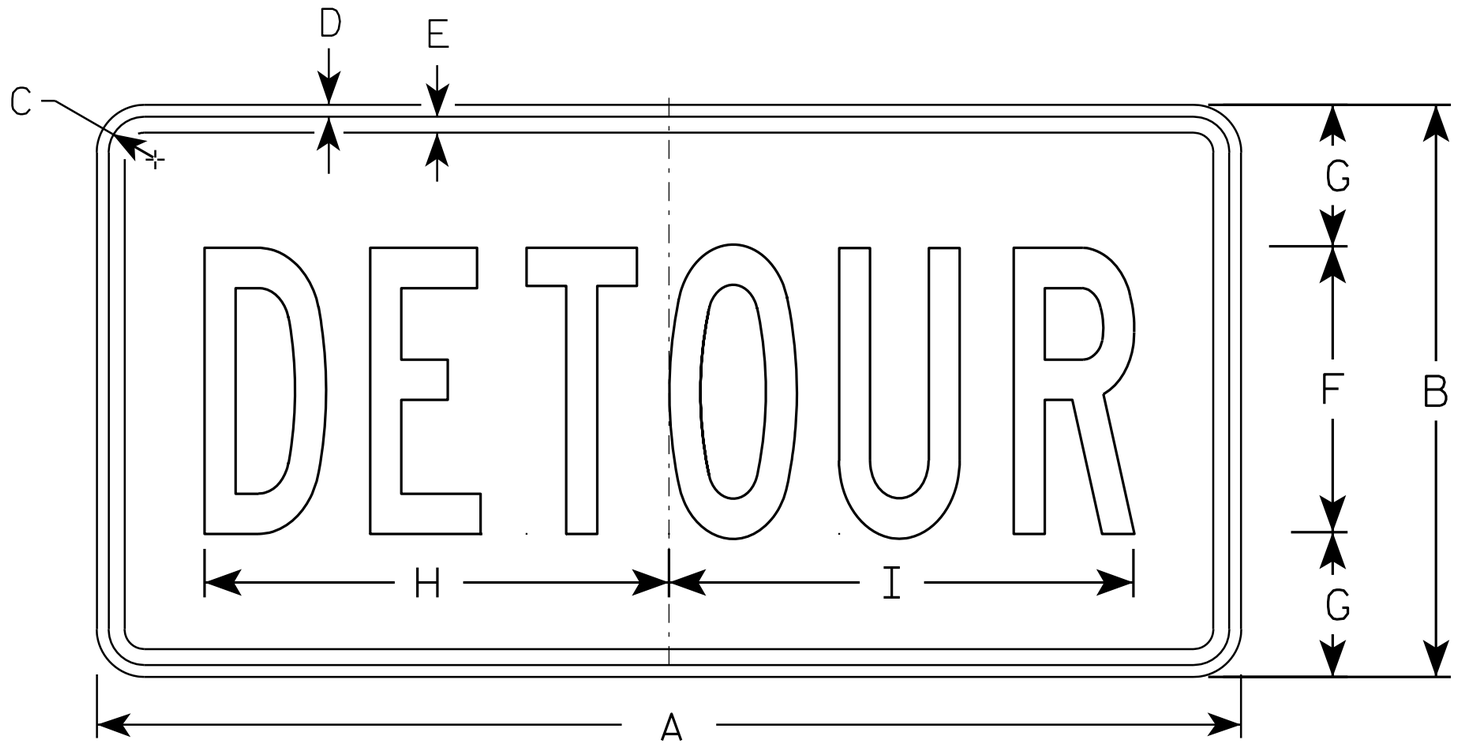
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew P Rauch for State Traffic Engineer

DATE 10/15/15 PLATE NO M3-1.14

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M31.DGN PLOT DATE : 01-DEC-2015 17:54 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



M4-8

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   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																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

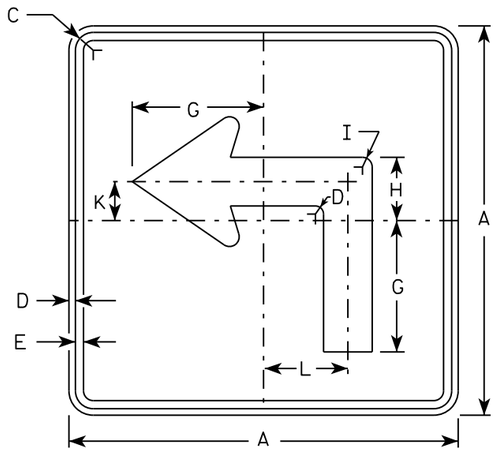
STANDARD SIGN
M4-8

WISCONSIN DEPT OF TRANSPORTATION

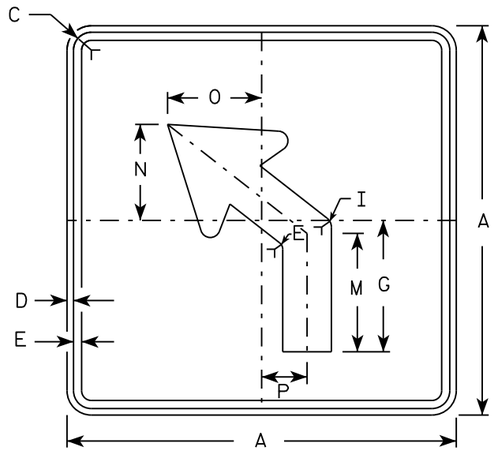
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-8.2

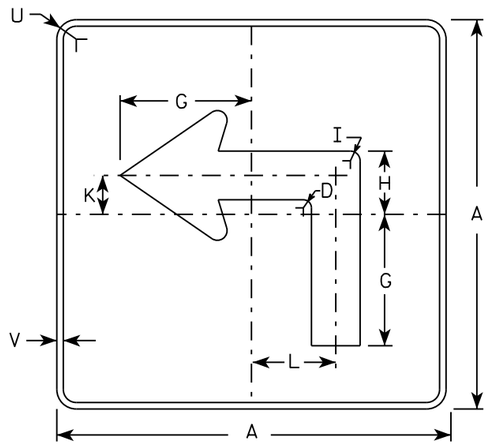
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 162	E



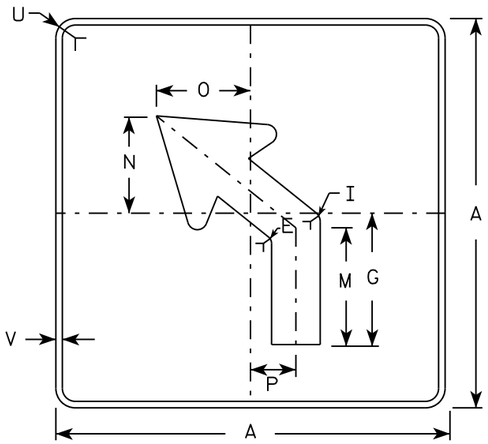
M5-1L
MM5-1L
MO5-1L
MP5-1L



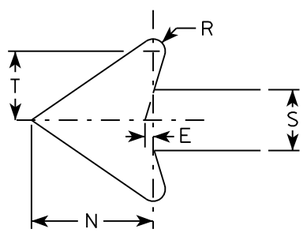
M5-2L
MM5-2L
MO5-2L
MP5-2L



MB5-1L
MK5-1L
MN5-1L
MR5-1L



MB5-2L
MK5-2L
MN5-2L
MR5-2L



NOTES

1. Signs are Type II - Type H reflective except as shown
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. M5-1 and M5-2 Background - White
   Message - Black
   MB5-1 and MB5-2 Background - Blue
   Message - White
   MK5-1 and MK5-2 Background - Green
   Message - White
   MM5-1 and MM5-2 Background - White
   Message - Green
   MN5-1 and MN5-2 Background - Brown
   Message - White
   MO5-1 and MO5-2 Background - Orange - Type F Reflective
   Message - Black
   MP5-1 and MP5-2 Background - White - Type H Reflective
   Message - Blue
   MR5-1 and MR5-2 Background - Brown
   Message - Yellow
5. M5-1R same as M5-1L except arrow points right.
6. M5-2R same as M5-2L except arrow tilts right.

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	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

STANDARD SIGN
M5-1 & M5-2

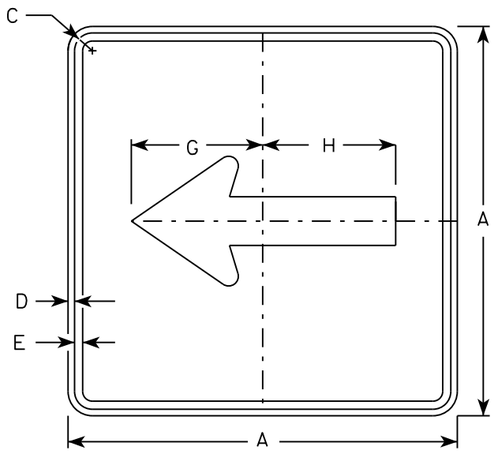
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

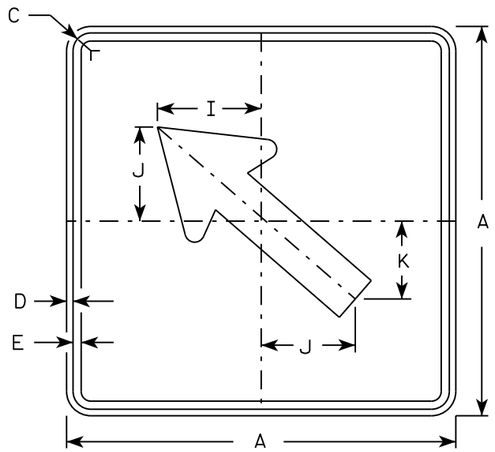
DATE 10/15/15 PLATE NO. M5-1.13

PROJECT NO: | HWY: | COUNTY: | SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M51.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



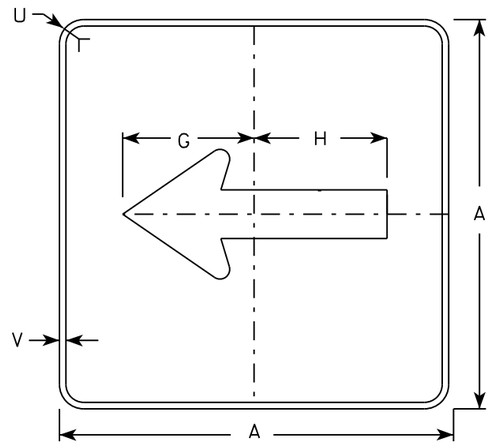
M6-1
MM6-1
MO6-1
MP6-1



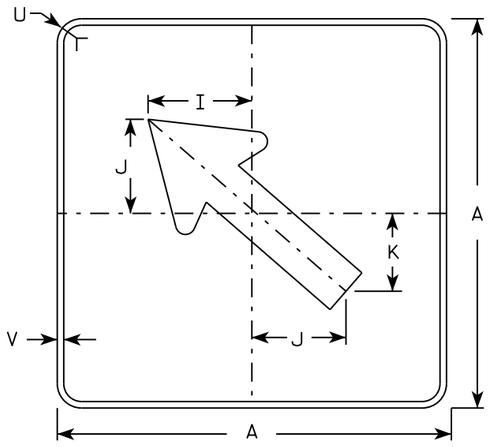
M6-2
MM6-2
MO6-2
MP6-2

NOTES

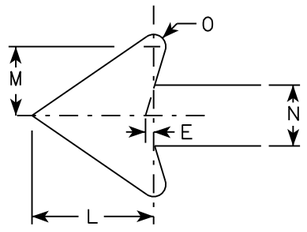
1. Signs are Type II - Type H except as Shown
2. Color:
   Background - See note 4
   Message - See note 4
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M6-1 and M6-2 Background - White
   Message - Black
   MB6-1 and MB6-2 Background - Blue
   Message - White
   MK6-1 and MK6-2 Background - Green
   Message - White
   MM6-1 and MM6-2 Background - White
   Message - Green
   MN6-1 and MN6-2 Background - Brown
   Message - White
   MO6-1 and MO6-2 Background - Orange - Type F Reflective
   Message - Black
   MP6-1 and MP6-2 Background - White
   Message - Blue
   MR6-1 and MR6-2 Background - Brown
   Message - Yellow



MB6-1
MK6-1
MN6-1
MR6-1



MB6-2
MK6-2
MN6-2
MR6-2



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	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
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
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
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

STANDARD SIGN
M6-1 & M6-2
SERIES

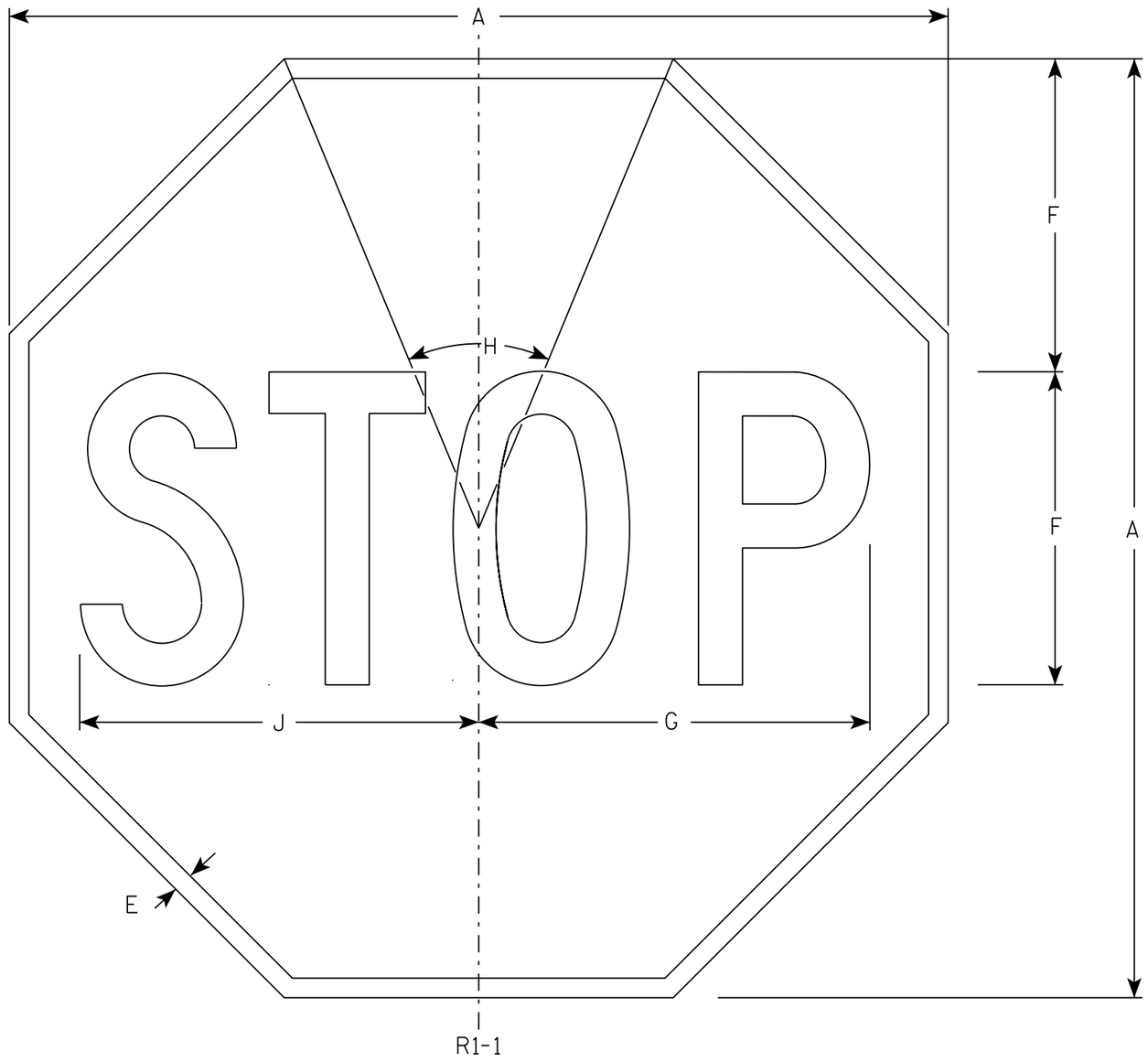
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 164 M6-1.15

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M61.DGN PLOT DATE : 01-DEC-2015 17:57 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 11.675051:1.000000



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	30				5/8	10	12 1/2	45°		12 3/4																	5.18
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

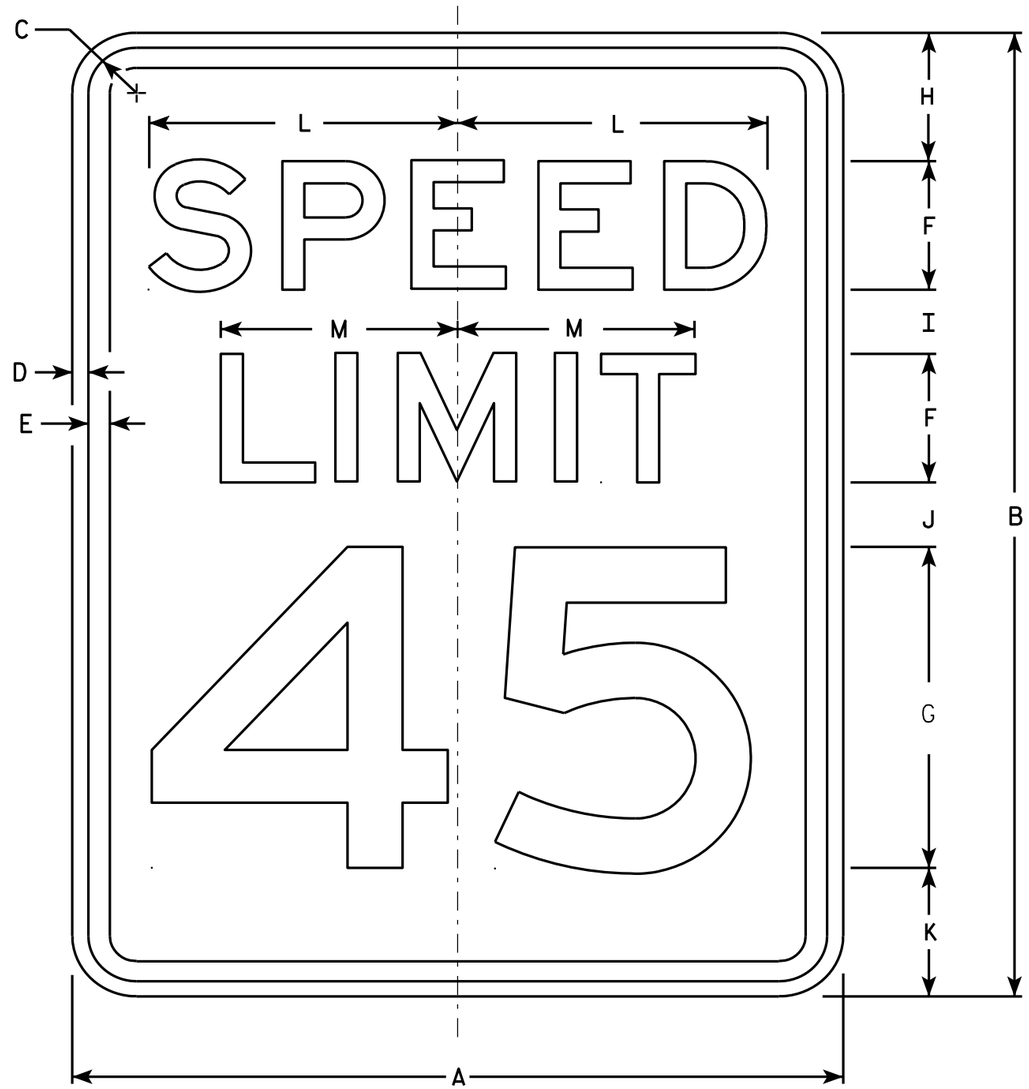
R1-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 165	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

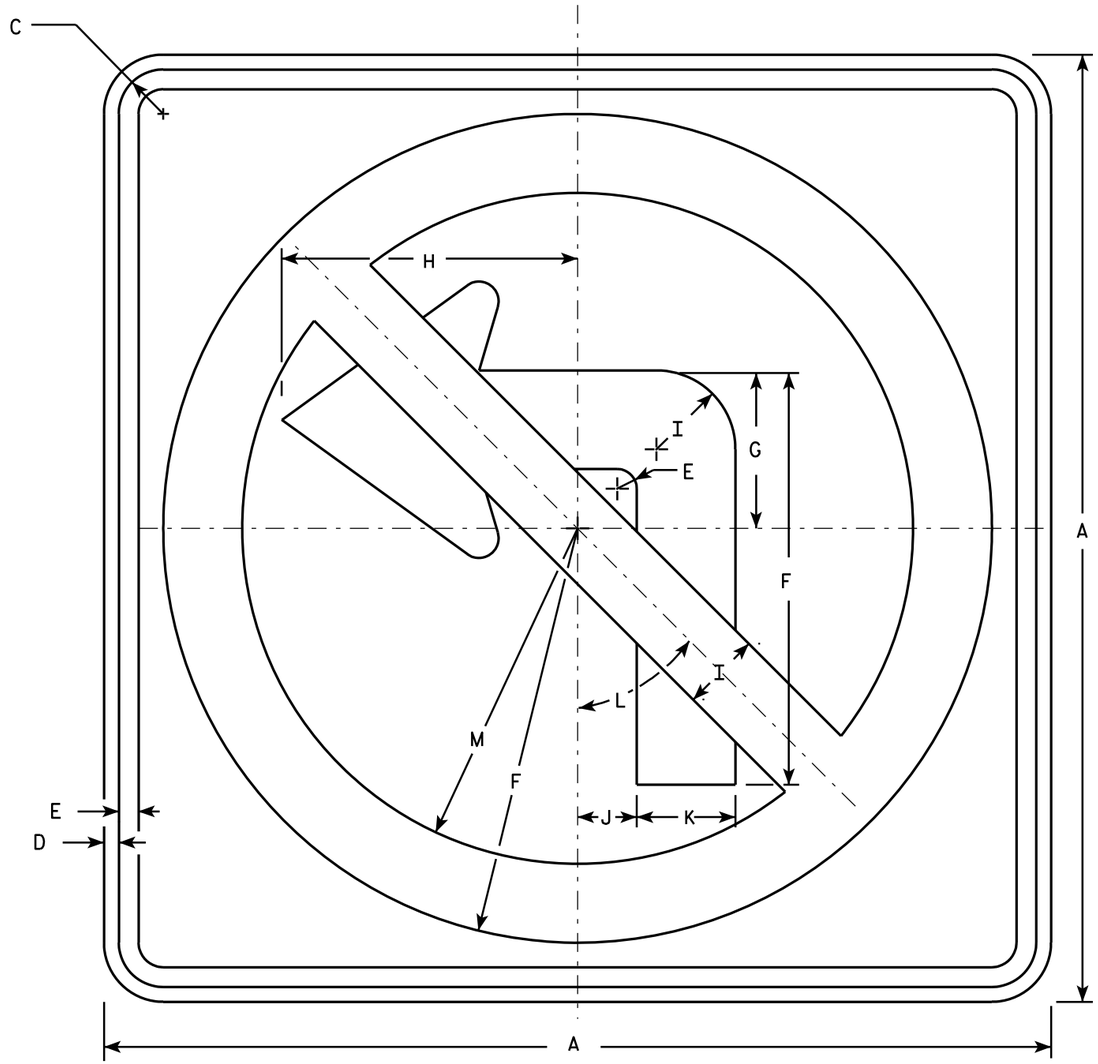
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/26/10 PLATE NO. R2-1.13

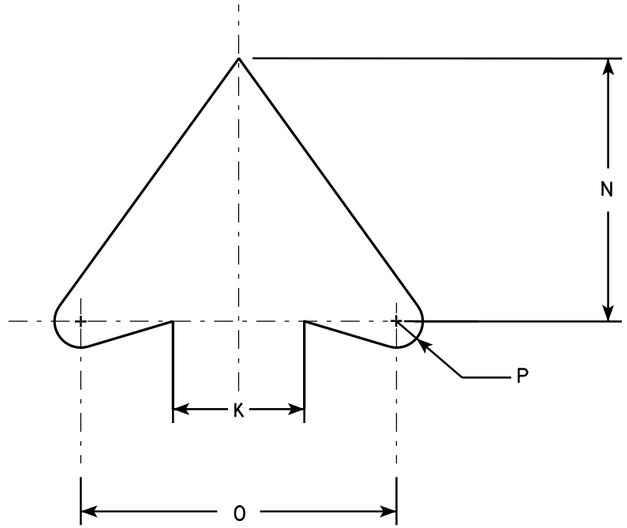
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 166 | E



R3-2

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. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

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	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

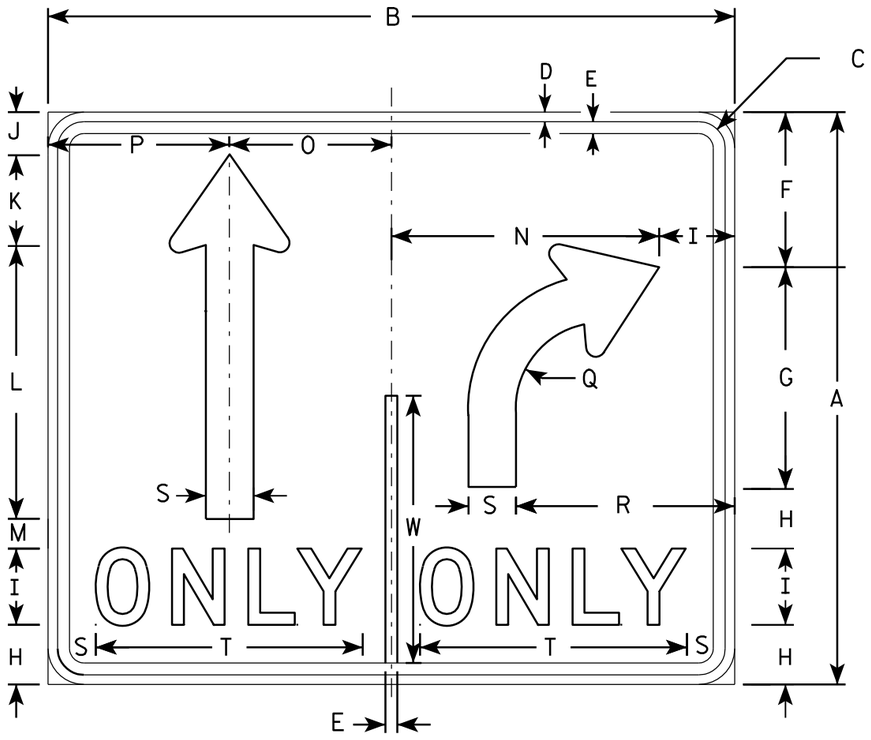
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

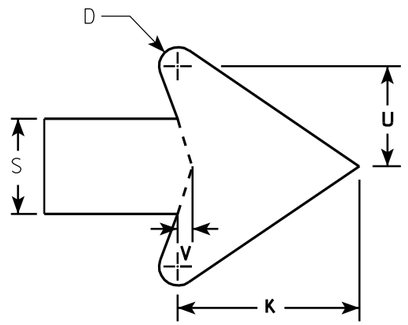
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-2.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 167 | E



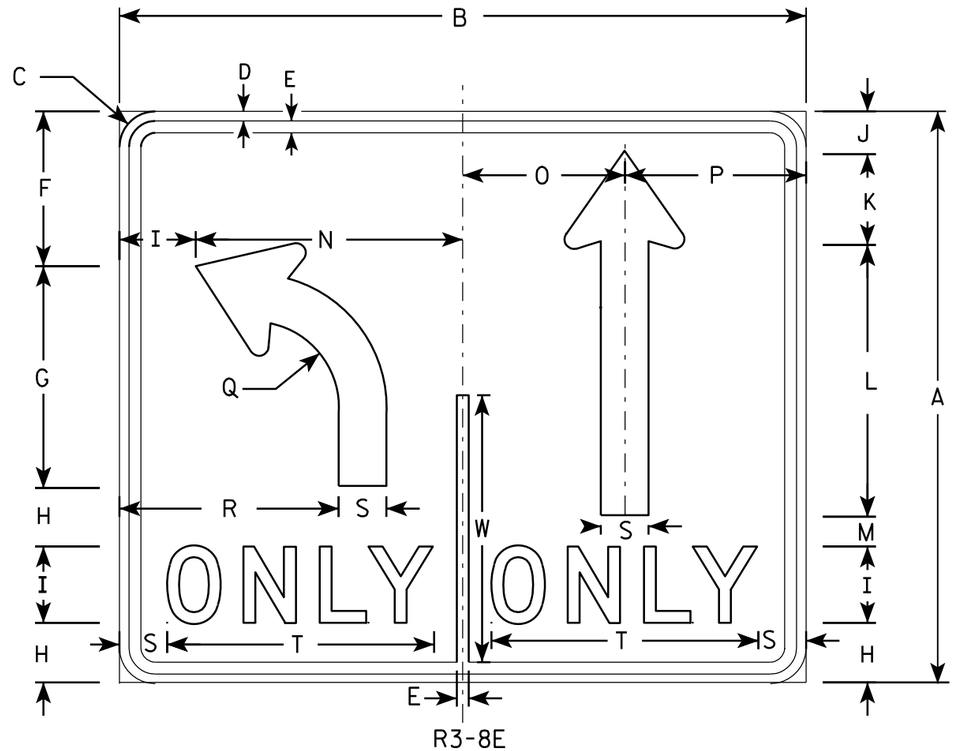
R3-8D



ARROW DETAIL

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 - 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.



R3-8E

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	36	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	2 1/4	4 3/4	14 1/4	1 5/8	14	8 1/2	9 1/2	4 1/2	11 1/2	2 1/2	14	2 5/8	3/8	14				7.5
2M	30	36	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	2 1/4	4 3/4	14 1/4	1 5/8	14	8 1/2	9 1/2	4 1/2	11 1/2	2 1/2	14	2 5/8	3/8	14				7.5
3																											
4	48	54	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	3 1/2	7 1/8	21 1/2	4 3/4	21	12 3/4	14 1/4	7 1/4	17 1/8	3 3/4	20 5/8	4	5/8	22 3/8				18.0
5	48	54	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	3 1/2	7 1/8	21 1/2	4 3/4	21	12 3/4	14 1/4	7 1/4	17 1/8	3 3/4	20 5/8	4	5/8	22 3/8				18.0

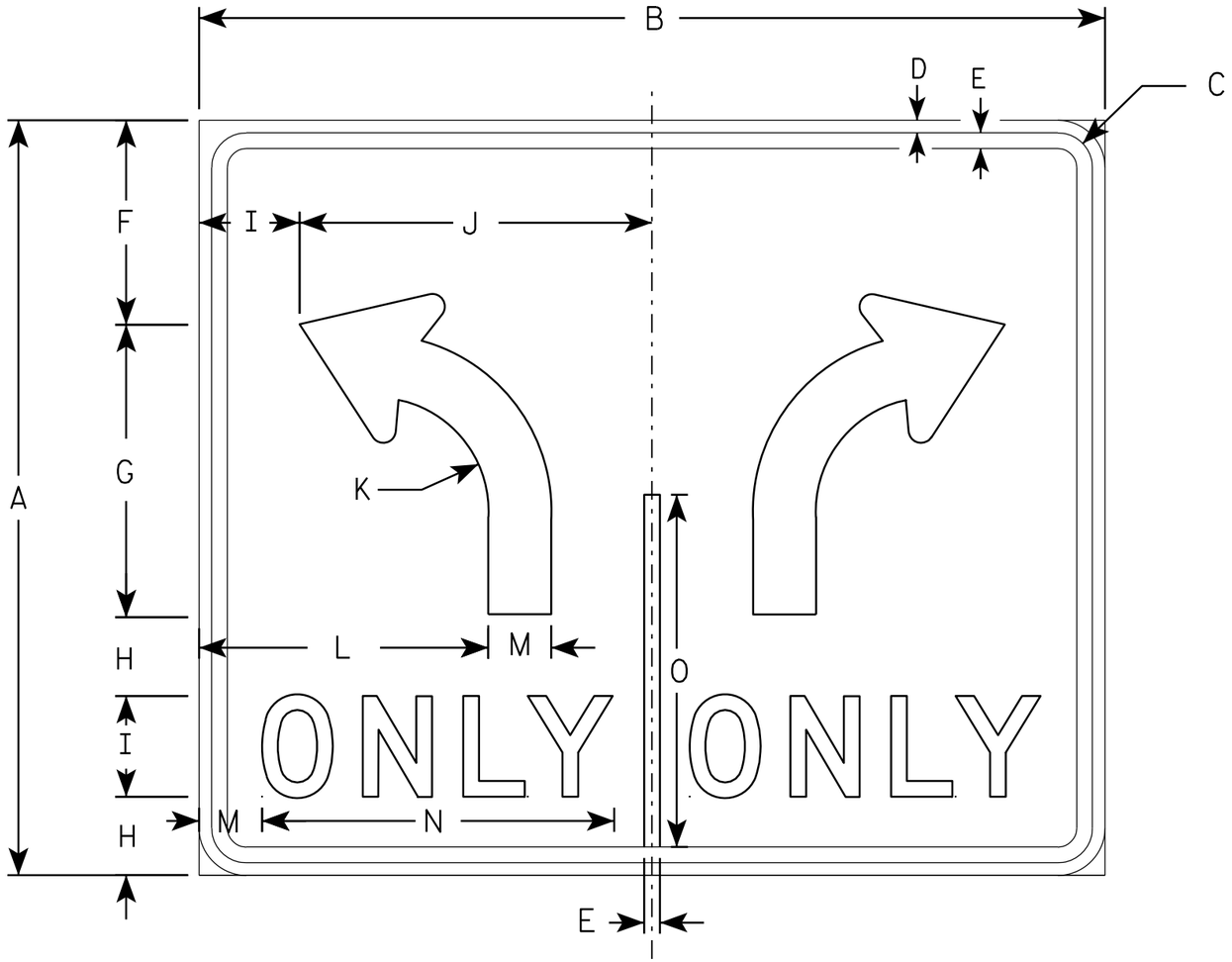
STANDARD SIGN
R3-8D & R3-8E

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-8D.2

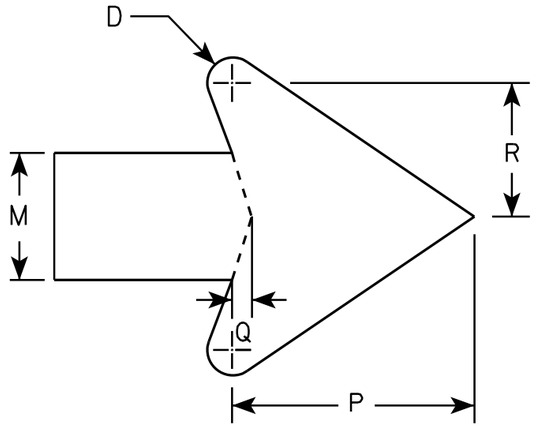
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 168	E



R3-8F

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 - 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.



ARROW DETAIL

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	36	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	14	4 1/2	11 1/2	2 1/2	14	14	4 3/4	3/8	2 5/8									7.5
2M	30	36	1 3/8	1/2	5/8	8 1/8	11 5/8	3 1/8	4	14	4 1/2	11 1/2	2 1/2	14	14	4 3/4	3/8	2 5/8									7.5
3																											
4	48	54	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	21	7 1/4	17 1/4	3 3/4	20 5/8	22 3/8	7 1/8	5/8	4									18.0
5	48	54	2 1/4	3/4	1	13 1/4	18 1/2	5 1/8	6	21	7 1/4	17 1/4	3 3/4	20 5/8	22 3/8	7 1/8	5/8	4									18.0

STANDARD SIGN
R3-8F

WISCONSIN DEPT OF TRANSPORTATION

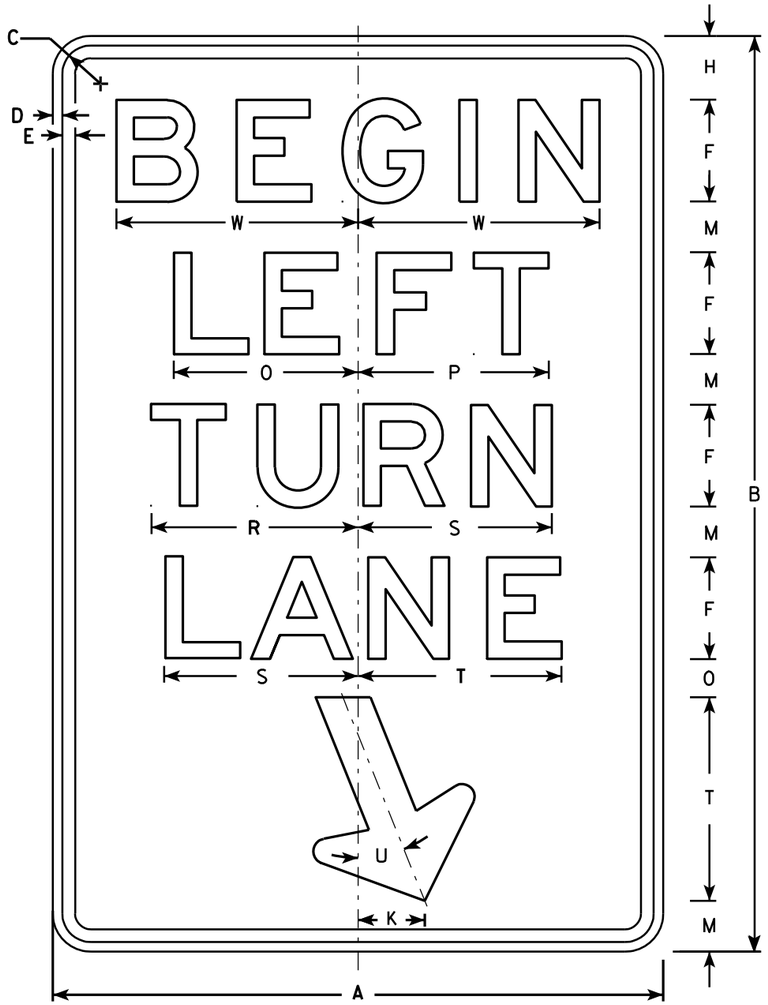
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-8F.2

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 169 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\R38F.DGN PLOT DATE : 18-MAR-2011 13:31 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.959043:1.000000

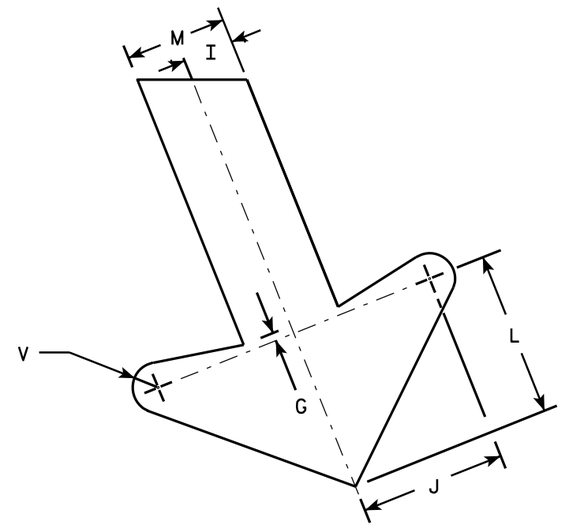
WISDOT/CADDS SHEET 42



R3-20L

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.



ARROW DETAIL

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	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

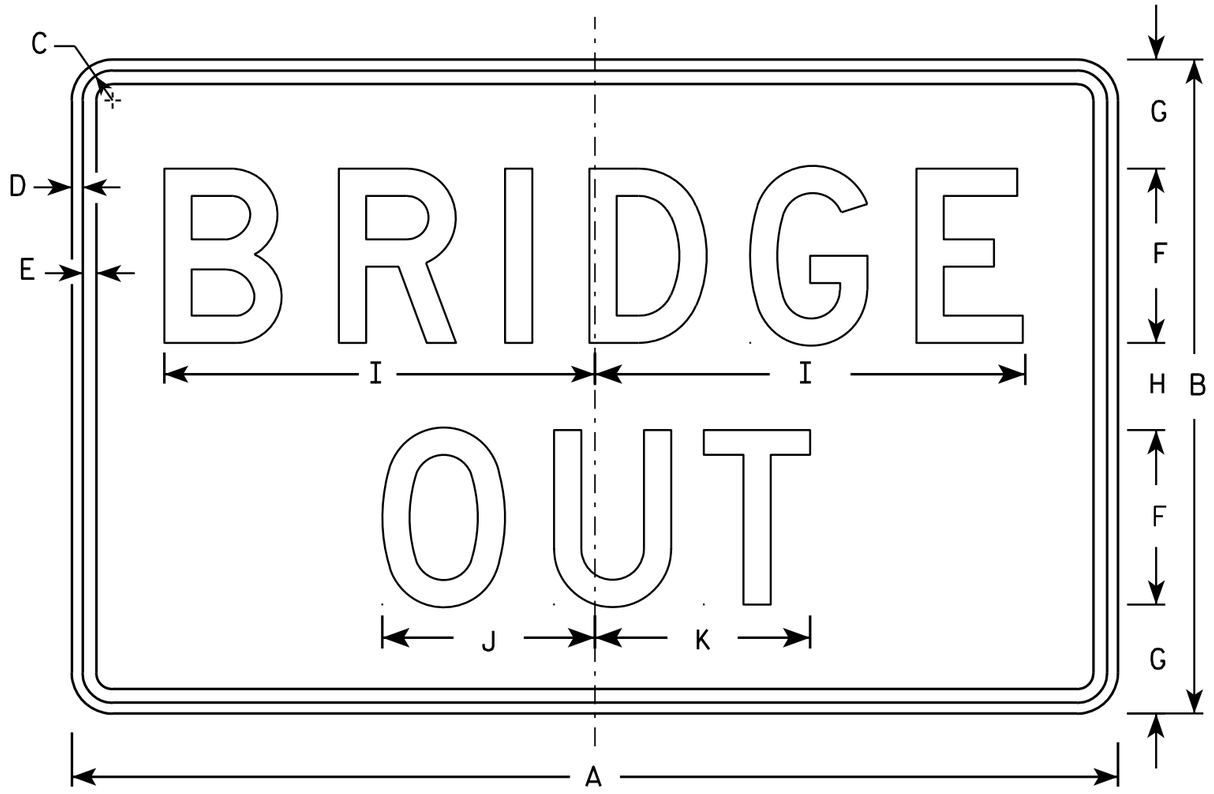
STANDARD SIGN
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/18/10 PLATE NO. R3-20L.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 170 | E



R11-2B

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 - 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																											
2S	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	19 3/4	9 3/4	9 7/8																10.0

STANDARD SIGN
R11-2B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2B.2

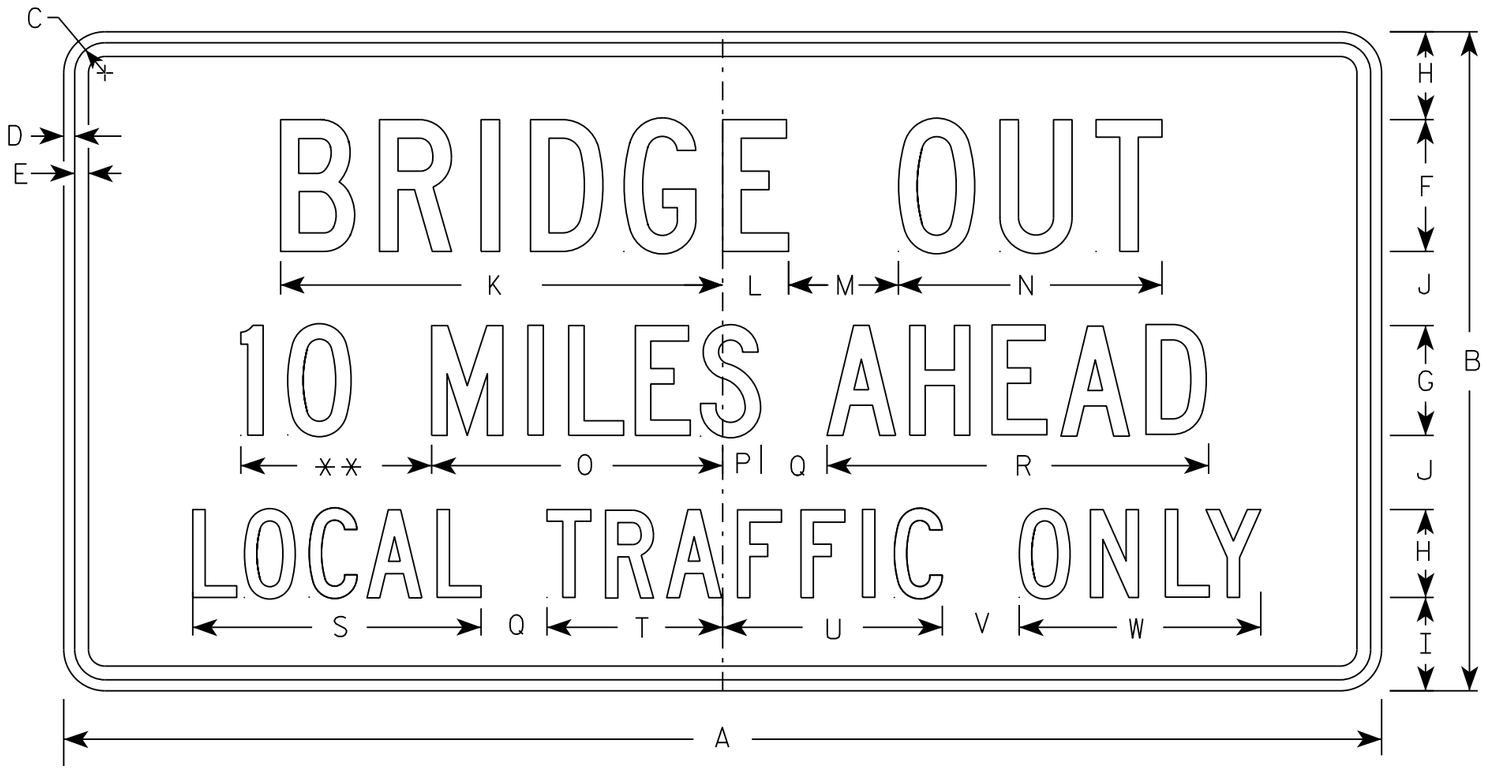
PROJECT NO:

SHEET NO: 171 E

7

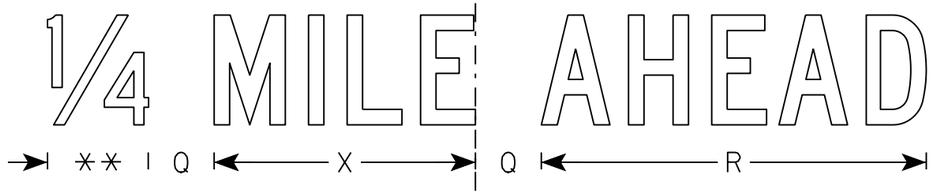
FILE NAME : C:\Users\PROJECTS\tr_stdplate\R112B.DGN PLOT DATE : 01-APR-2011 14:23 PLOT BY : mscj9h

WISDOT/CADDS SHEET 42



R11-3B

** See Note 5



NOTES

1. Sign is Type II - Type H Reflective
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 numerals to nearest quarter mile 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	36	18	1 3/8	1/2	5/8	4	3	2 1/2	2	2	13 1/4	2 1/4	3	8	8	1 1/2	2	10 3/4	8 3/8	4 3/4	6 1/2	2	6 3/4	7 1/8			4.5
2S	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8			12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	20 1/8	3	5	12	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11	11 7/8			12.5
3																											
4																											
5																											

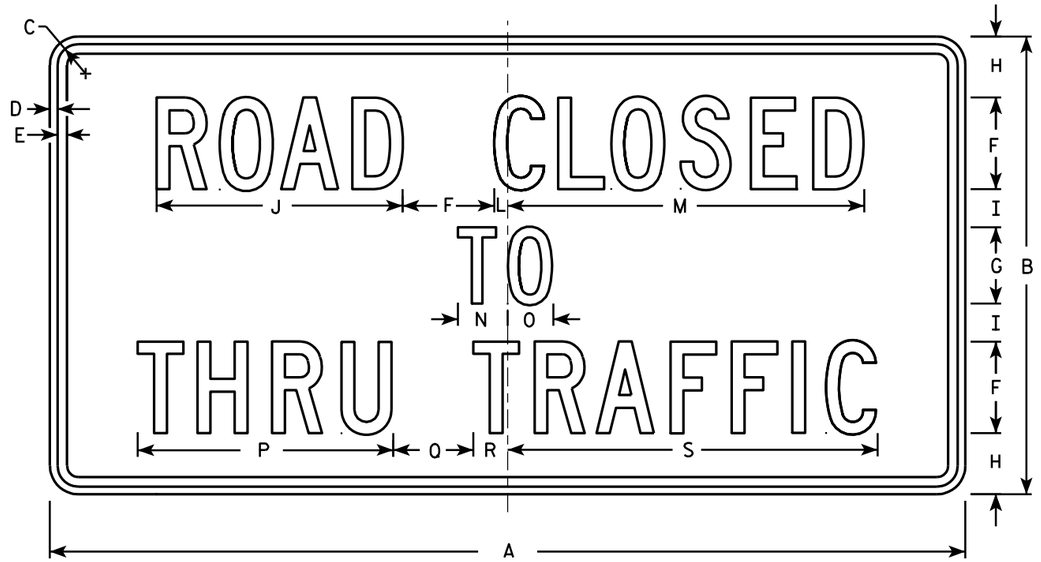
STANDARD SIGN
R11-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/17 PLATE NO. R11-3B.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 172 | E



R11-4

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.

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	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	2 1/2	16 1/8		7/8	23 3/8	3 1/4	3	16 3/4	5 1/4	2 1/4	24 1/4								12.5
3																											
4																											
5																											

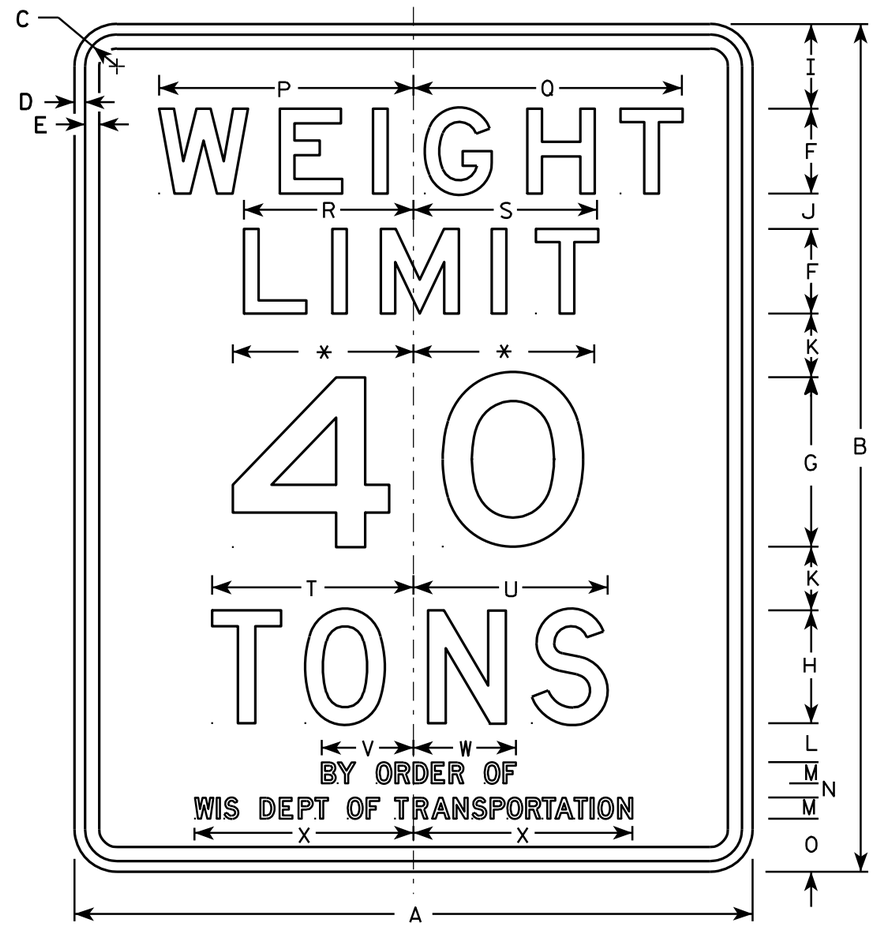
STANDARD SIGN
R11 - 4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-4.3

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 173 | 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																											

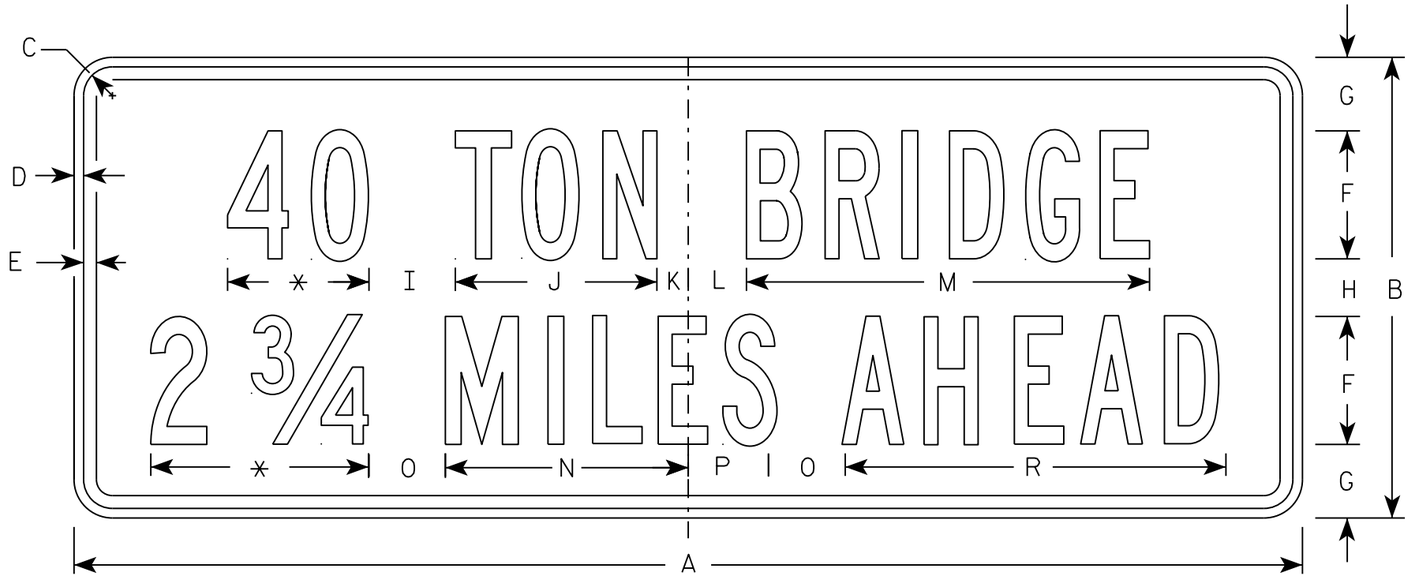
STANDARD SIGN
R12-1

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: 174 | E



* Varies

R12-55

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
   Background - White
   Message - Black
3. Message Series - B for Size 2, Series D for Sizes 3 & 4
4. Corners and border shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile 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																											
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									25.0
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									25.0

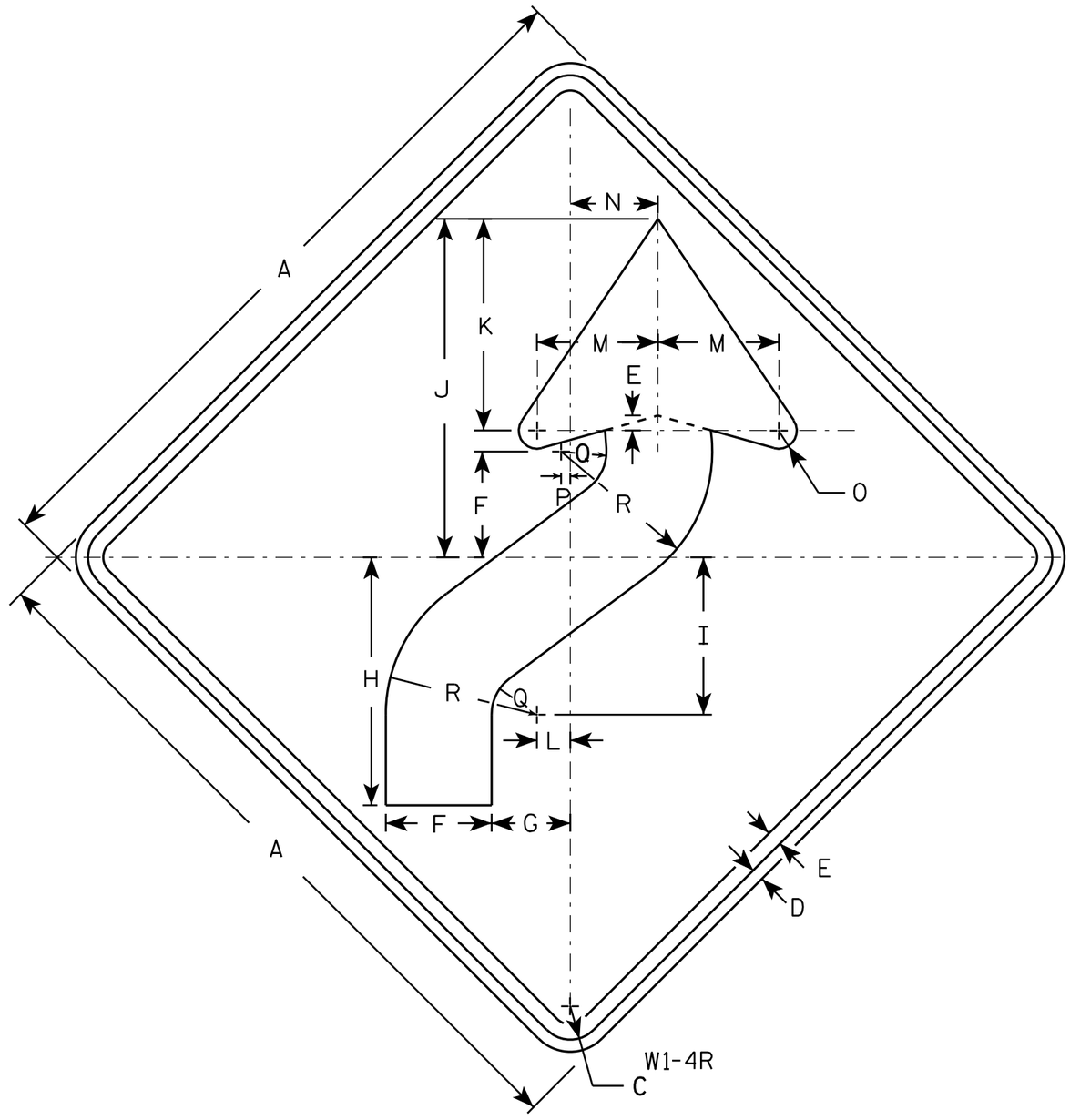
STANDARD SIGN
R12-55

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/22/17 PLATE NO. R12-55.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 175 | 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.
4. W1-4L is the same as W1-4R 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 1/2	2 5/8	8 1/4	5 1/4	11 1/4	7	1 1/8	4	3	5/8	1/4	1 1/2	5									4.0
2S	30		1 3/8	1/2	5/8	4 3/8	3 1/4	10 1/4	6 1/2	14	8 3/4	1 3/8	5	3 5/8	3/4	3/8	1 7/8	6 1/4									6.25
2M	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
3	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
4	36		1 5/8	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
5	48		2 1/4	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

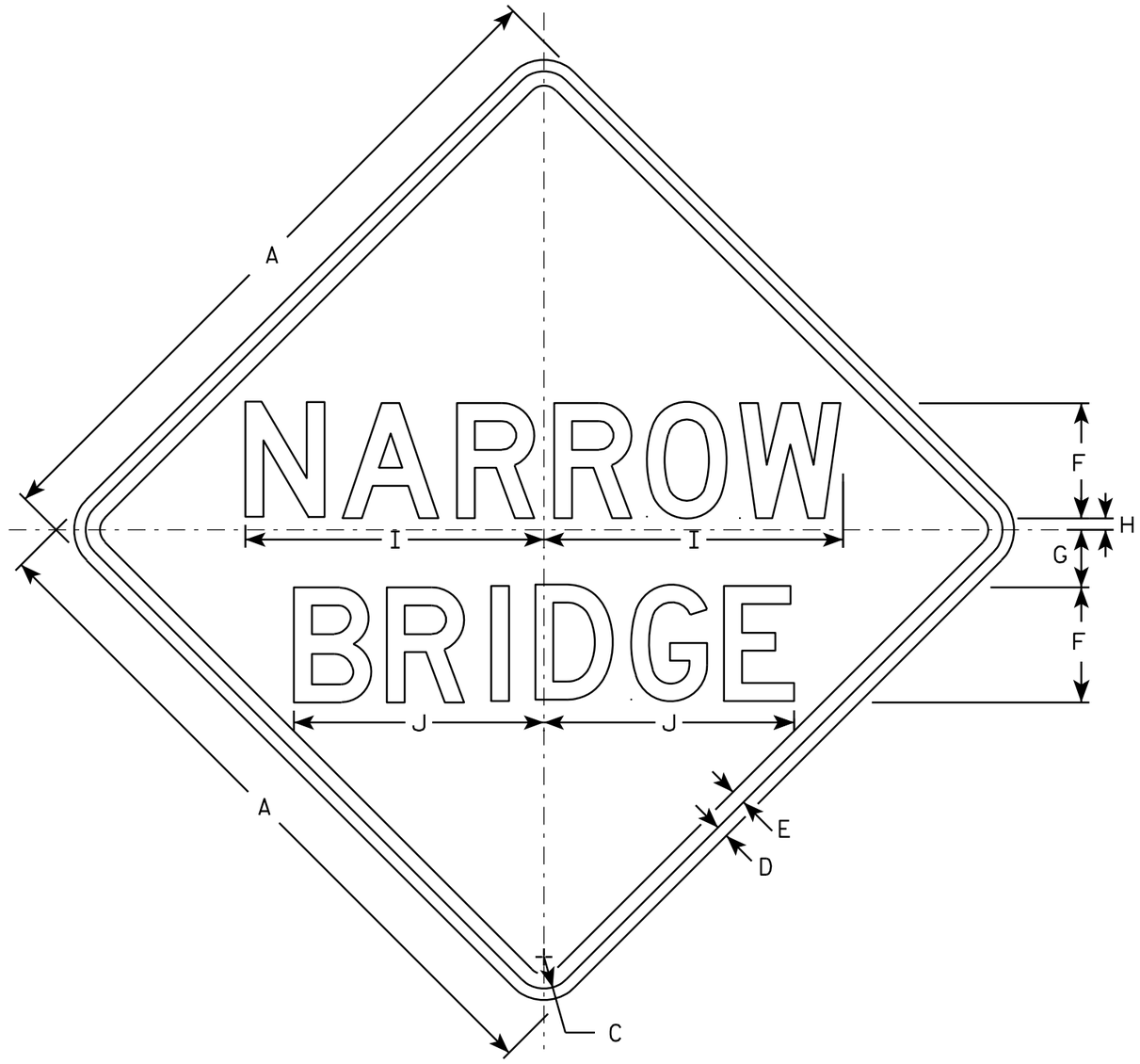
STANDARD SIGN
W1-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/17/12 PLATE NO. W1-4.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 176 | E



W5-2

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	30		1 3/8	1/2	5/8	5	2 1/2	1/2	13	10 7/8																	6.25
2S	36		1 5/8	5/8	3/4	6	3	3/4	15 5/8	13 1/8																	9.0
2M	36		1 5/8	5/8	3/4	6	3	3/4	15 5/8	13 1/8																	9.0
3	36		1 5/8	5/8	3/4	6	3	3/4	15 5/8	13 1/8																	9.0
4	48		2 1/4	3/4	1	8	4	3/4	20 3/4	17 3/8																	16.0
5																											

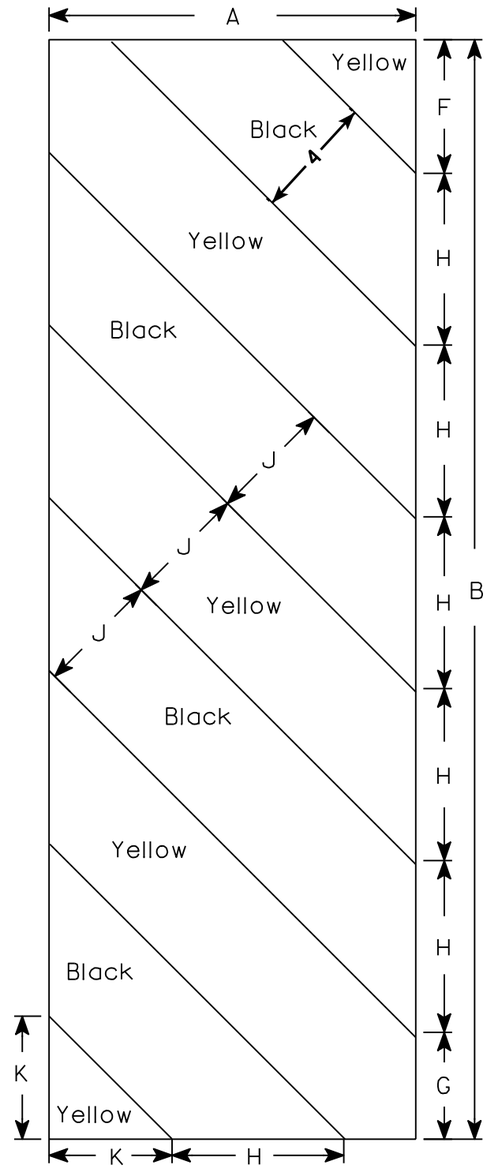
STANDARD SIGN
W5-2

WISCONSIN DEPT OF TRANSPORTATION

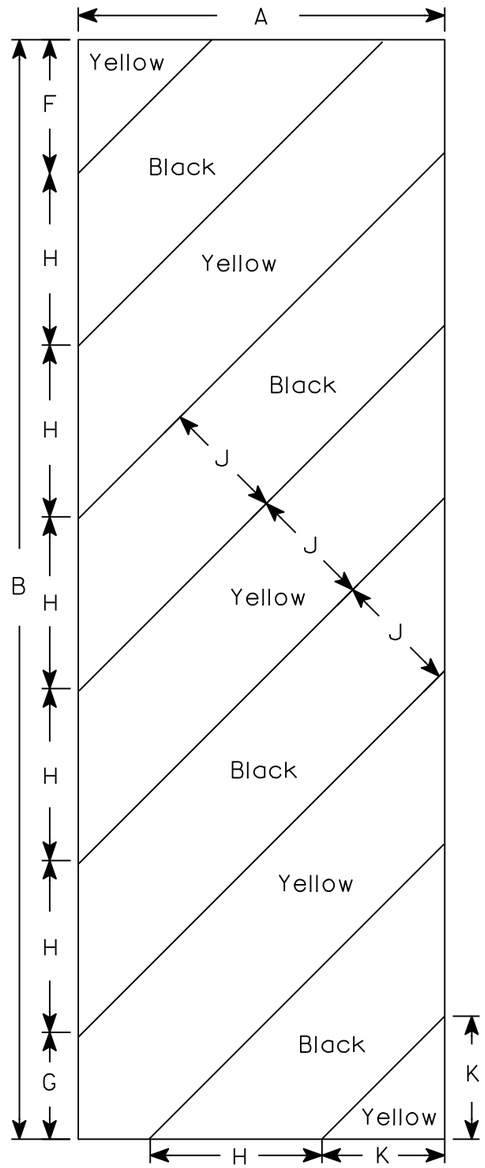
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 03/12/13 PLATE NO. W5-2.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 177	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

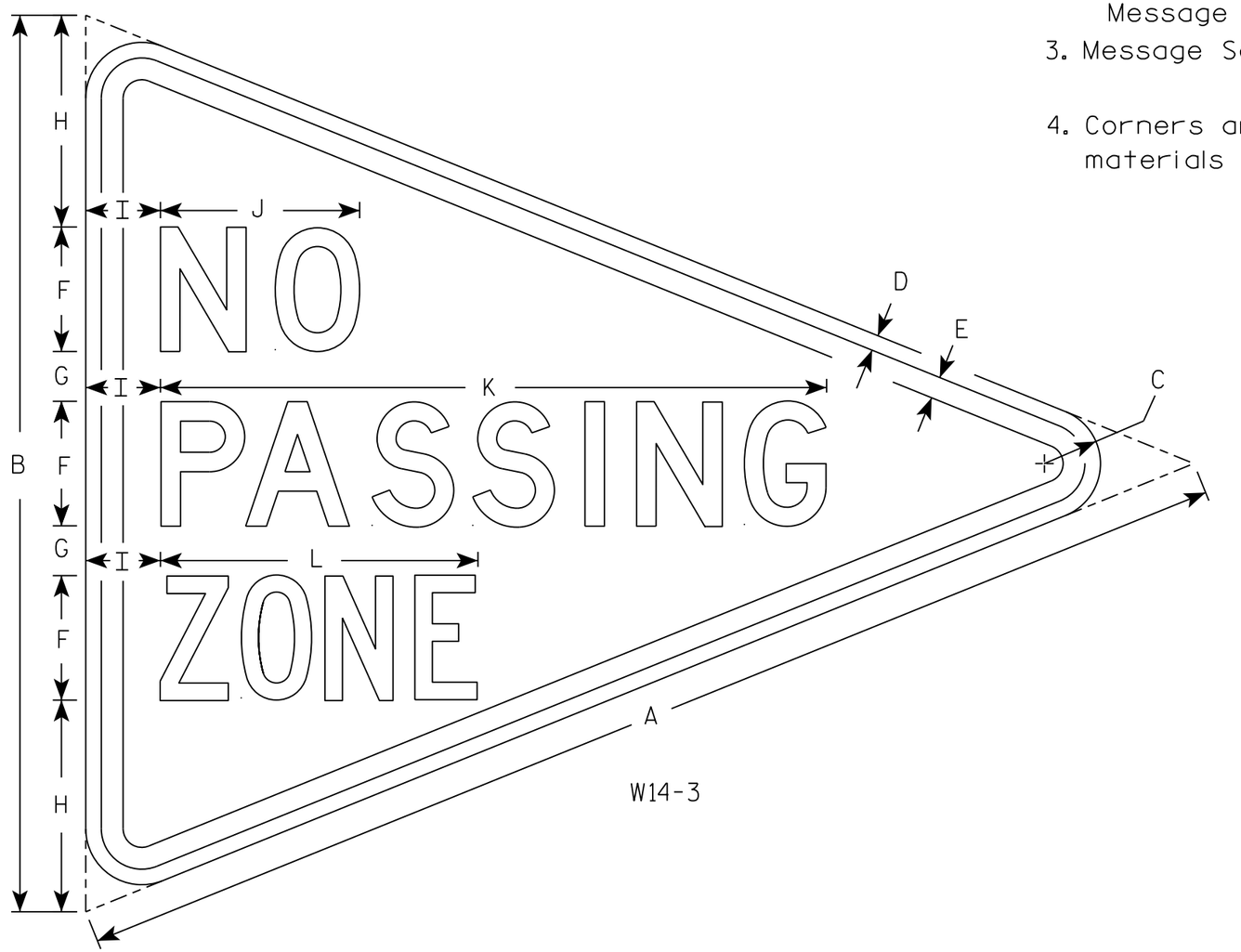
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W5-52.9

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 178 | E

NOTES

1. Sign is Type II- Type F Reflective
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - Lines 1 and 2 are Series D.
   Line 3 is series C.
4. Corners and borders shall be rounded on all base materials for this sign.



W14-3

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	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															5.56
2M																											
3																											
4																											
5																											

STANDARD SIGN
W14-3

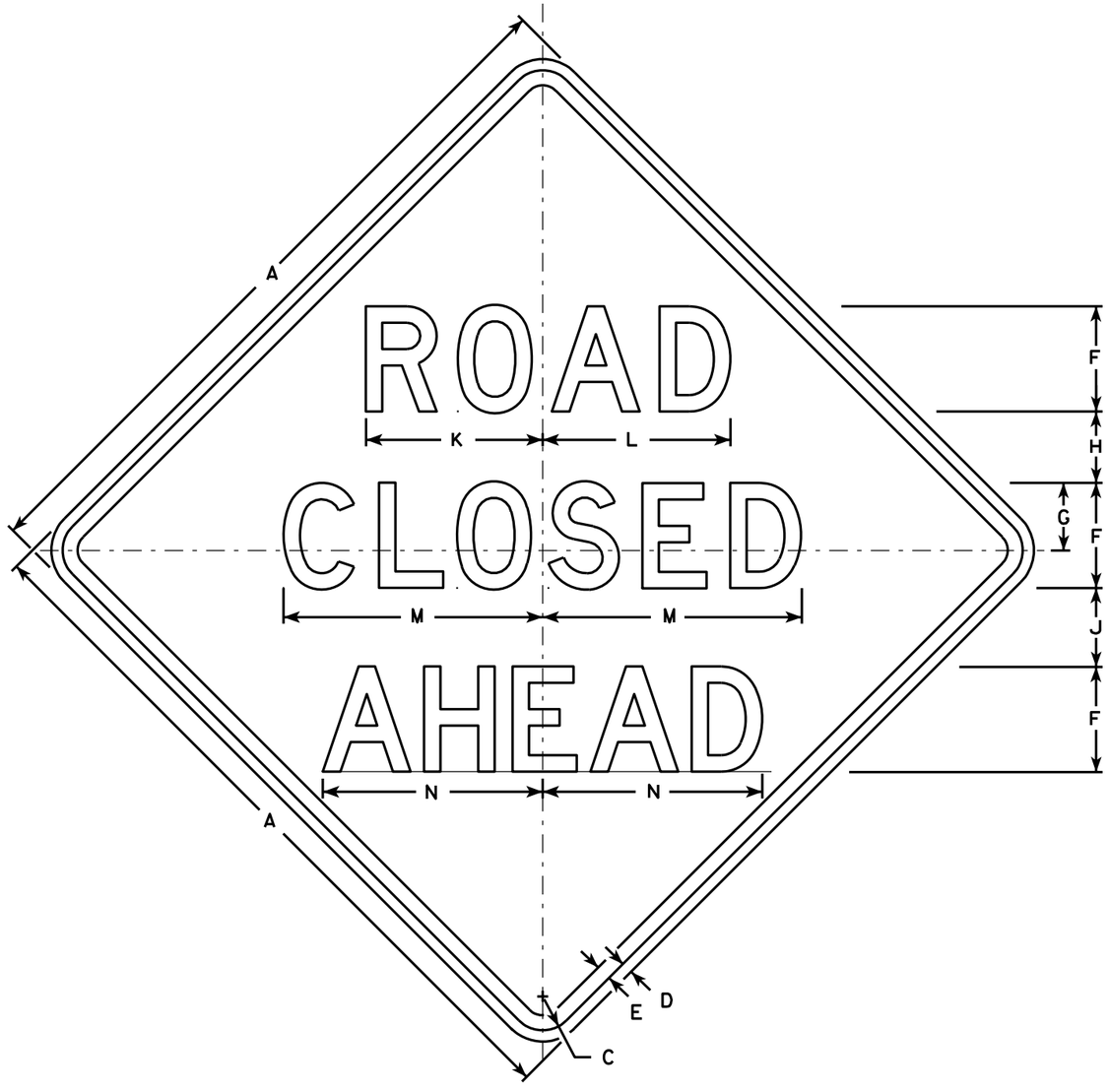
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

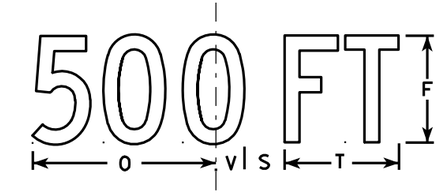
DATE 3/21/17 PLATE NO. W14-3.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 179 | E

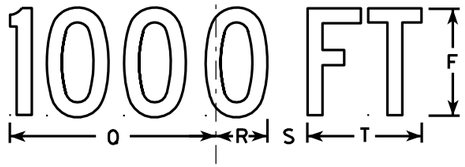
7



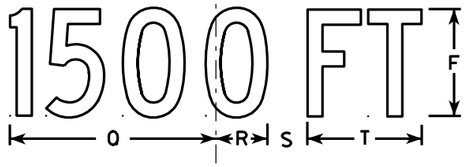
W20-3A



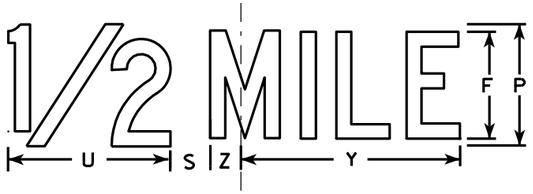
W20-3D



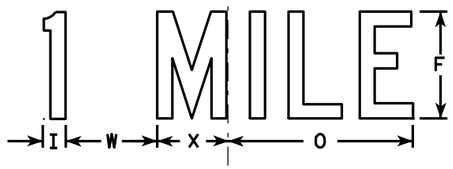
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   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 and 2 are Series D.
   Line 3 is Series D for AHEAD and Series C for all other distances.

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		1 5/8	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		2 1/4	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-3.7

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 180 | E

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W203.DGN PLOT DATE : 18-MAR-2011 12:08 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 9.931739:1.000000

WISDOT/CADDS SHEET 42

7

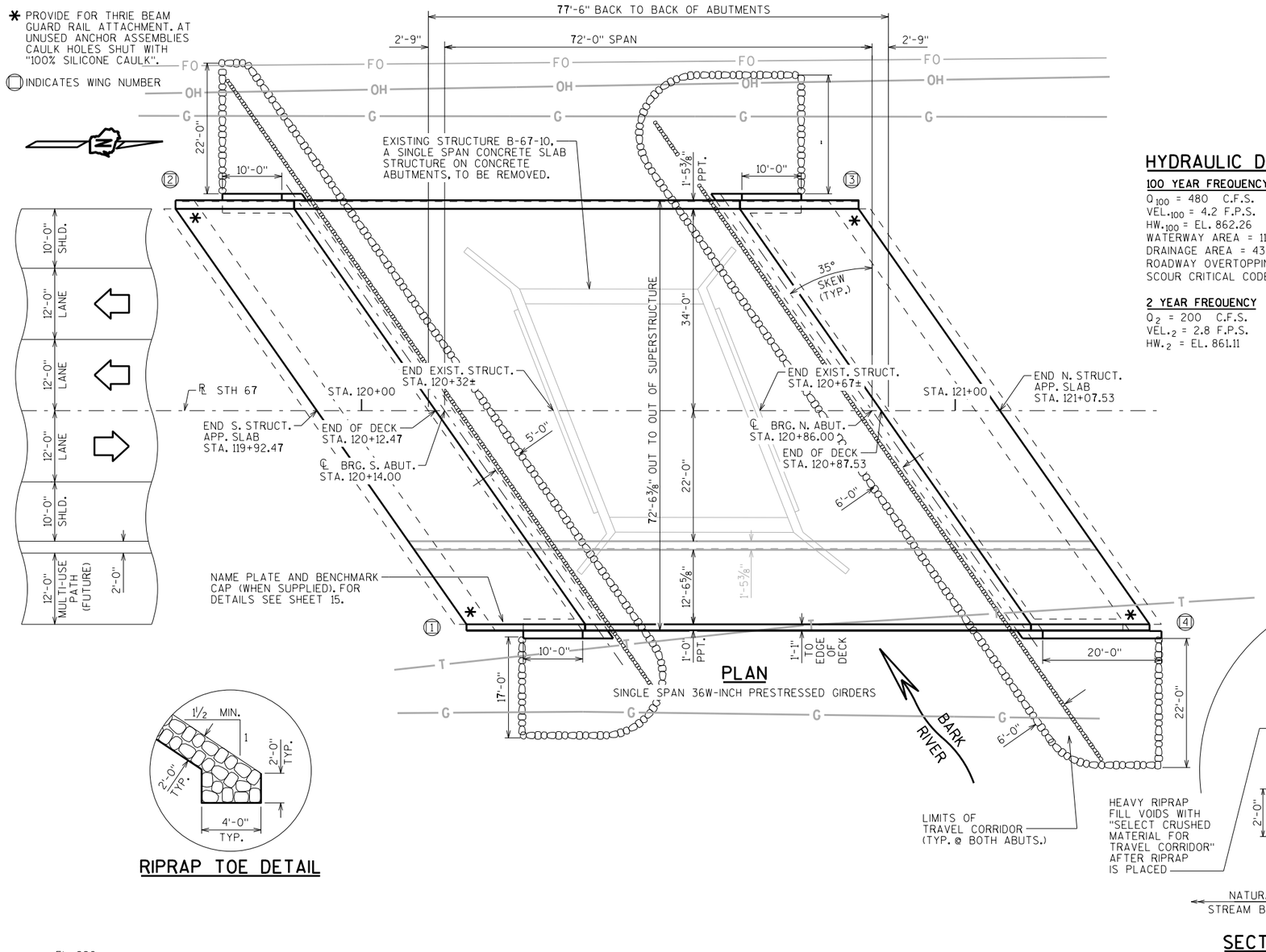
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STATE PROJECT NUMBER

3100-07-70

* PROVIDE FOR THRIE BEAM GUARD RAIL ATTACHMENT. AT UNUSED ANCHOR ASSEMBLIES CAULK HOLES SHUT WITH "100% SILICONE CAULK".

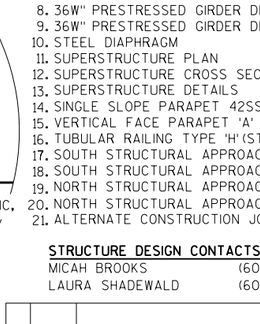
(2) INDICATES WING NUMBER



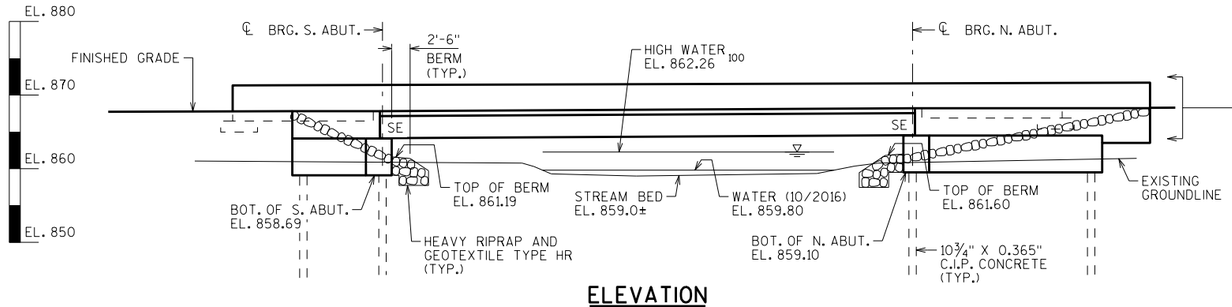
PLAN

SINGLE SPAN 36W-INCH PRESTRESSED GIRDERS

RIPRAP TOE DETAIL

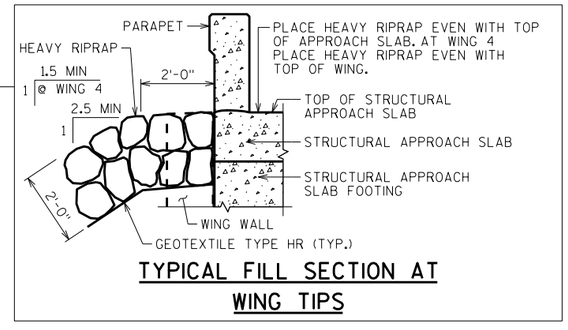


SECTION THRU TRAVEL CORRIDOR



ELEVATION

NORMAL TO BARK RIVER



TYPICAL FILL SECTION AT WING TIPS

DESIGN DATA

LIVE LOAD:

DESIGN LOADING: HL-93
INVENTORY RATING FACTOR: RF = 1.06
OPERATING RATING FACTOR: RF = 1.38
WISCONSIN STANDARD PERMIT VEHICLE (WIS.-SPV): 250 (KIPS)

STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

MATERIAL PROPERTIES:

CONCRETE MASONRY:
SUPERSTRUCTURE & STRUCTURAL APPROACH 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.
STAINLESS, GRADE 60 — fy = 60,000 P.S.I.

36W" 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.

HYDRAULIC DATA

100 YEAR FREQUENCY

Q_{100} = 480 C.F.S.
$VEL._{100}$ = 4.2 F.P.S.
$HW._{100}$ = EL. 862.26
WATERWAY AREA = 115 SQ. FT.
DRAINAGE AREA = 43.6 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8

2 YEAR FREQUENCY

Q_2 = 200 C.F.S.
$VEL._2$ = 2.8 F.P.S.
$HW._2$ = EL. 861.11

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON STEEL C.I.P. 10¾" X 0.365-INCH PILING DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 100 TONS ** PER PILE. AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
ESTIMATED 105 FEET LONG AT SOUTH ABUTMENT. PILE POINTS REQ'D.
ESTIMATED 115 FEET LONG AT NORTH ABUTMENT. PILE POINTS REQ'D.

** 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

STH 67

ADT = 11,100 (2037)
R.D.S. = 55 M.P.H.

LIST OF DRAWINGS

1. GENERAL PLAN
2. CROSS SECTION & QUANTITIES
3. SUBSURFACE EXPLORATION
4. SOUTH ABUTMENT
5. SOUTH ABUTMENT DETAILS
6. NORTH ABUTMENT
7. NORTH ABUTMENT DETAILS
8. 36W" PRESTRESSED GIRDER DETAILS 1
9. 36W" PRESTRESSED GIRDER DETAILS 2
10. STEEL DIAPHRAGM
11. SUPERSTRUCTURE PLAN
12. SUPERSTRUCTURE CROSS SECTION
13. SUPERSTRUCTURE DETAILS
14. SINGLE SLOPE PARAPET 42SS
15. VERTICAL FACE PARAPET 'A'
16. TUBULAR RAILING TYPE 'H' (STEEL)
17. SOUTH STRUCTURAL APPROACH SLAB
18. SOUTH STRUCTURAL APPROACH SLAB DETAILS
19. NORTH STRUCTURAL APPROACH SLAB
20. NORTH STRUCTURAL APPROACH SLAB DETAILS
21. ALTERNATE CONSTRUCTION JOINT

STRUCTURE DESIGN CONTACTS:

MICAH BROOKS (608) 266-5080
LAURA SHADEWALD (608) 267-9592

NO.	DATE	REVISION	BY

WISCONSIN DEPARTMENT OF TRANSPORTATION
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher LLS 12/4/17
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-67-376

STH 67 OVER BARK RIVER

COUNTY	VILLAGE
WAUKESHA	SUMMIT

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

DESIGNED BY	DESIGNED CK'D.	DRAWN BY	PLANS CK'D.
MWB	DMB	WWR	MWB

GENERAL PLAN

SHEET 1 OF 21

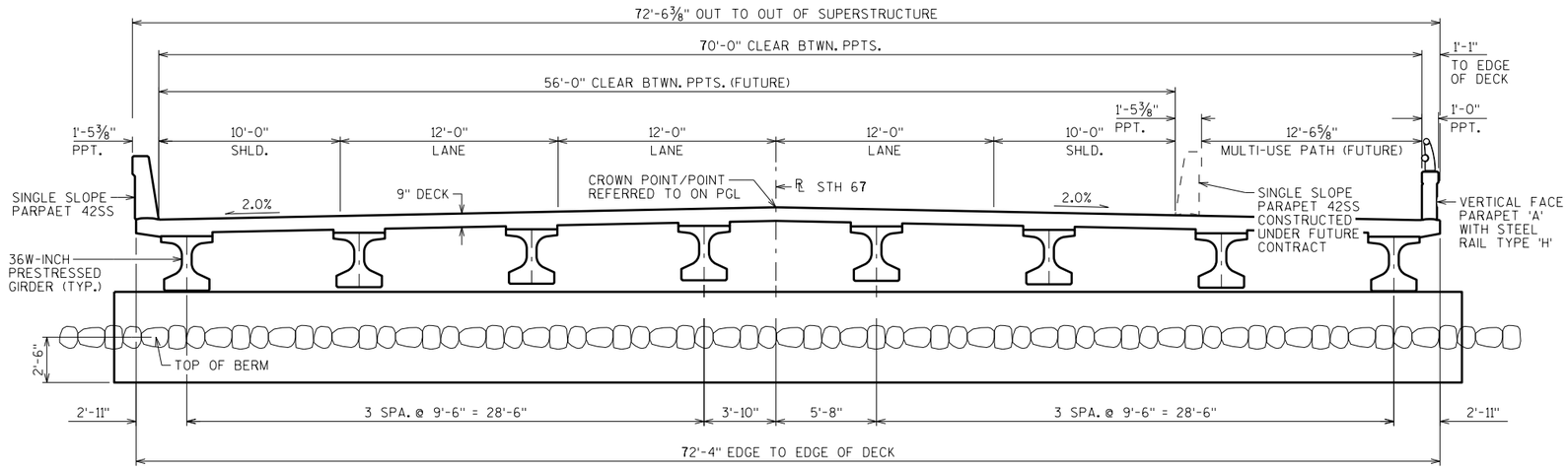
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I.D. 3100-07-00A DATE: NOV. 2017

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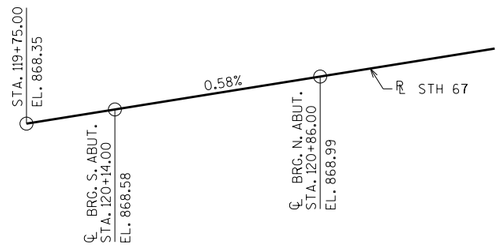
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8



CROSS SECTION THRU ROADWAY

LOOKING NORTH



PROFILE GRADE LINE - STH 67

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	SOUTH APPROACH	SOUTH ABUT.	NORTH ABUT.	NORTH APPROACH	TOTALS
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-67-376	LS	———	———	———	———	———	1
210.1500	BACKFILL STRUCTURE TYPE A	TON	———	———	207	207	———	414
305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	———	215	———	———	215	430
502.0100	CONCRETE MASONRY BRIDGES	CY	258	100	81	85	100	624
502.3200	PROTECTIVE SURFACE TREATMENT	SY	630	156	———	———	156	942
502.3210	PIGMENTED SURFACE SEALER	SY	68	18	———	———	18	104
503.0137	PRESTRESSED GIRDER TYPE I 36W-INCH	LF	584	———	———	———	———	584
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	———	———	6010	6220	———	12,230
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	37,770	17,460	1370	2000	17,460	76,060
505.0800.S	BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES	LB	———	———	1240	1240	———	2480
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	16	———	———	———	———	16
506.4000	STEEL DIAPHRAGMS B-67-376	EACH	7	———	———	———	———	7
513.4056	RAILING TUBULAR TYPE H B-67-376	LF	75	20	———	———	20	115
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	———	———	18	19	———	37
550.0500	PILE POINTS	EACH	———	———	25	25	———	50
550.2106	PILING CIP CONCRETE 10 3/4 X 0.365-INCH	LF	———	———	2625	2875	———	5500
606.0300	RIPRAP HEAVY	CY	———	———	134	174	———	308
612.0406	PIPE UNDERDRAIN WRAPPED 6-INCH	LF	———	———	124	127	———	251
614.0150	ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD	EACH	———	2	———	———	2	4
645.0111	GEOTEXTILE TYPE DF SCHEDULE A	SY	———	———	77	77	———	154
645.0120	GEOTEXTILE TYPE HR	SY	———	———	264	329	———	593
SPV.0105	REMOVING OLD STRUCTURE OVER WATERWAY WITH APPROVED METHOD STA. 120+50	LS	———	———	———	———	———	1
SPV.0195	SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR	TON	———	———	54	70	———	124
	NON-BID ITEMS							
	FILLER	SIZE	———	———	———	———	———	½", ¾", 1½"

GENERAL NOTES

STATE PROJECT NUMBER

3100-07-70

DRAWINGS SHALL NOT BE SCALED.

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

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES BRIDGES B-67-376" SHALL BE THE EXISTING GROUNDLINE.

AT THE BACK FACE 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. ALSO EXCLUDED IS THE "BASE AGGREGATE DENSE 1 1/4-INCH" AS DETAILED ON THE STRUCTURAL APPROACH SLAB SHEETS.

EXCAVATION BELOW THE ABUTMENT AND USE OF ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

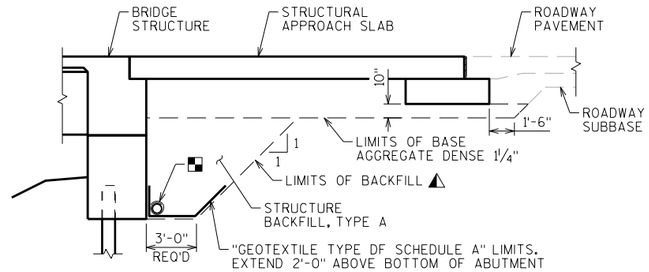
PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK AND APPROACH SLAB SURFACES AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.

PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS, INCLUDING PARAPETS ON APPROACH SLABS.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "36W PRESTRESSED GIRDER DETAILS 2" SHEET.

AT ABUTMENTS, CONCRETE POURED UNDER WATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.



TYPICAL SECTION THRU ABUTMENT

⚠ BACKFILL PAY LIMITS. BACKFILL BEYOND BACKFILL PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

▪ PIPE UNDERDRAIN WRAPPED (6 INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

CROSS SECTION & QUANTITIES

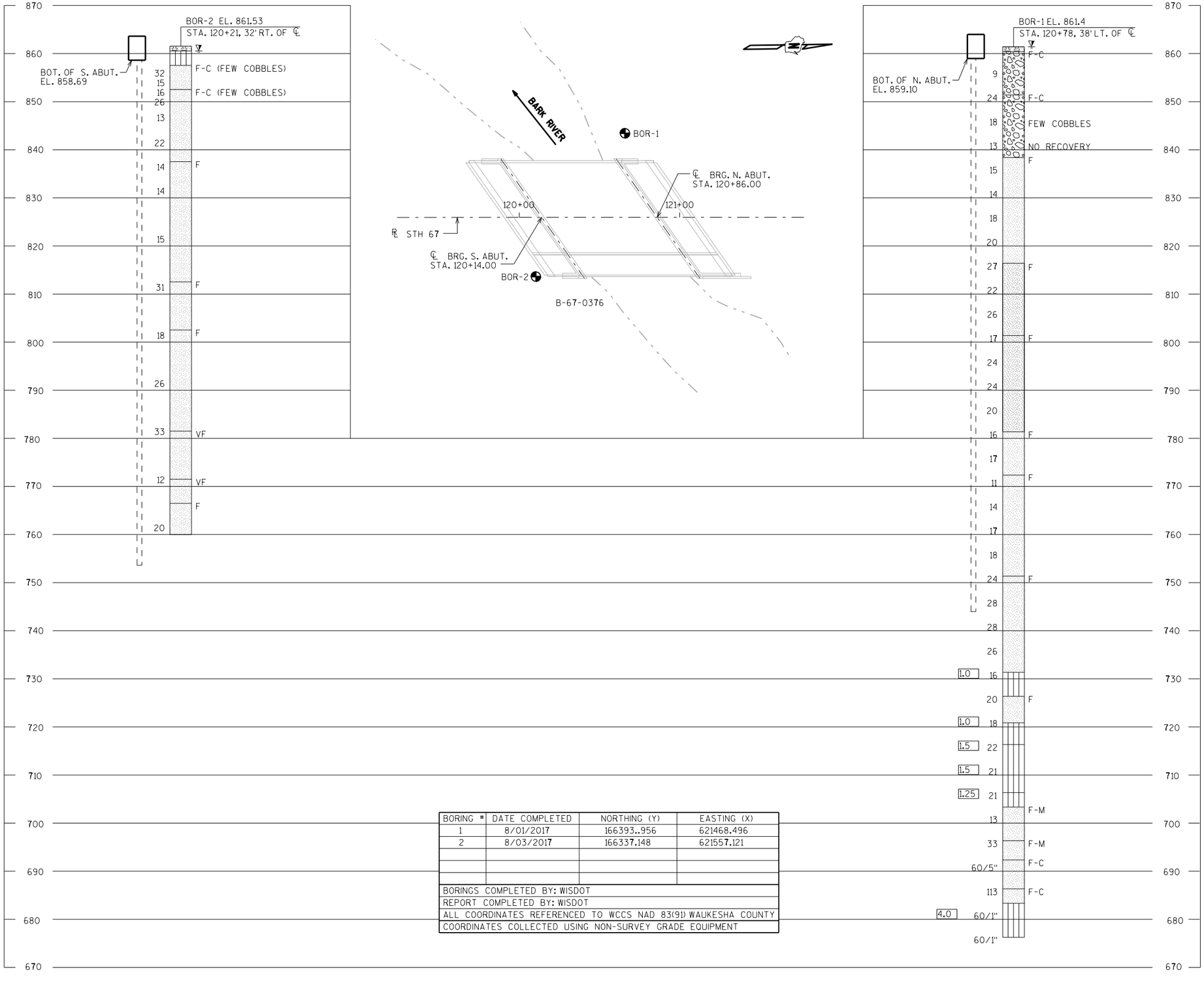
SHEET 2

182

SCALE = 4.00

8

8



BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	8/01/2017	166393..956	621468.496
2	8/03/2017	166337.148	621557.121

BORINGS COMPLETED BY: WISDOT
REPORT COMPLETED BY: WISDOT
ALL COORDINATES REFERENCED TO WCCS NAD 83(91) WAUKESHA COUNTY
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT

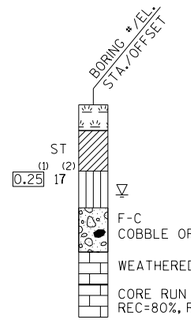
STATE PROJECT NUMBER

3100-07-70

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/ META

LEGEND OF BORING



(1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

(2) UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- AT TIME OF DRILLING
- END OF DRILLING
- AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY TLP/WWR | PLANS CK'D. MWB

SUBSURFACE EXPLORATION

SHEET 3

183

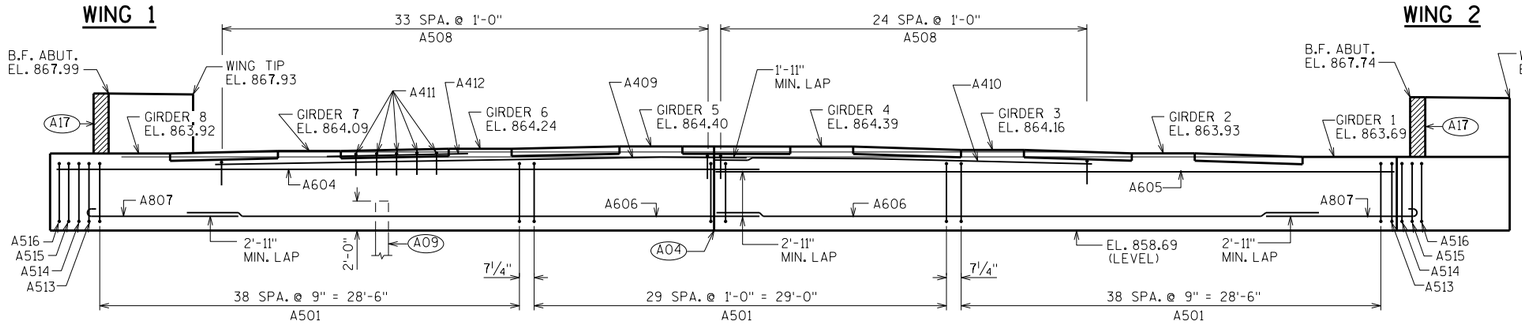
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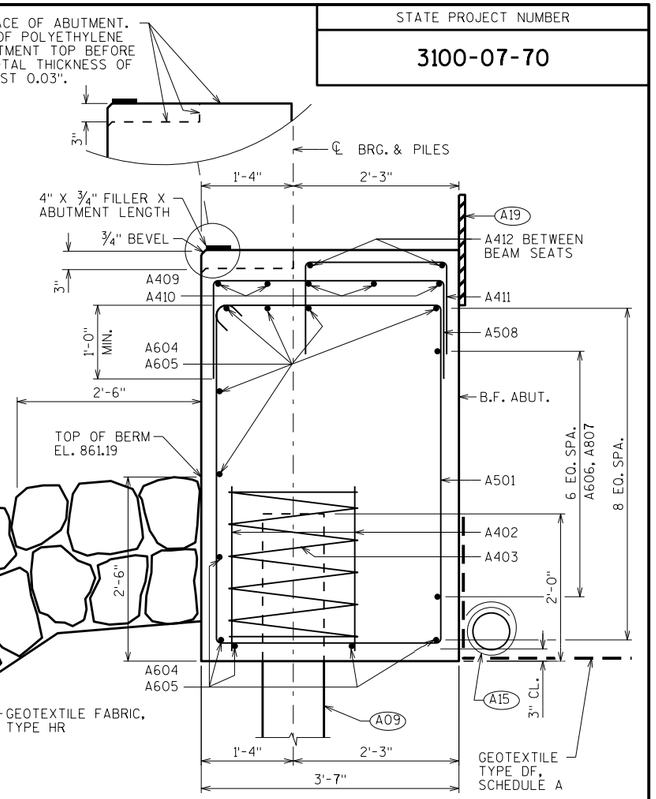
STATE PROJECT NUMBER

3100-07-70

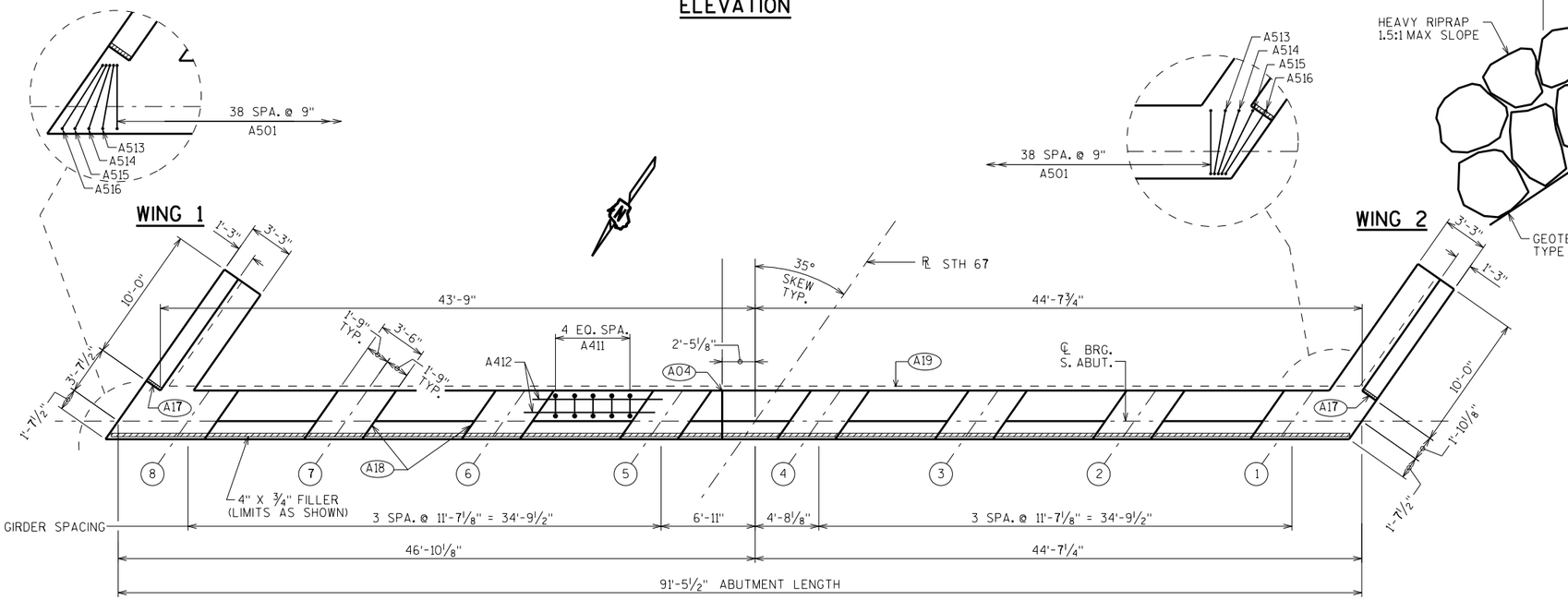


ELEVATION

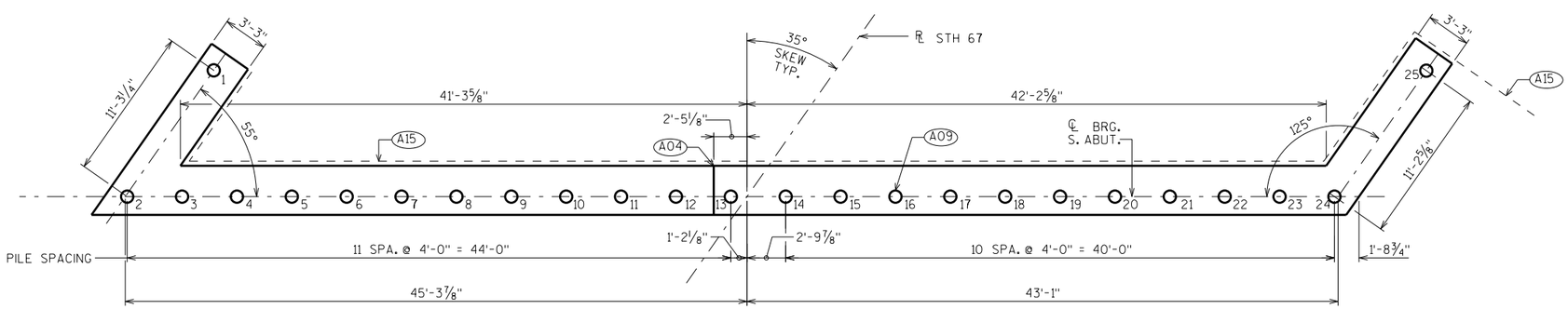
STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".



SECTION THRU BODY



PLAN



PILE PLAN

A04 VERT. CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 8. 3/4" "V" GROOVE @ THE FRONT FACE AND 18" RMW @ BACKFACE. FOR OPTIONAL DETAILS SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.

A09 SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.365" CIP CONCRETE PILING, ESTIMATED 105'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 100 TONS PER PILE. PILE POINTS REQ'D.

A15 PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD 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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

SOUTH ABUTMENT

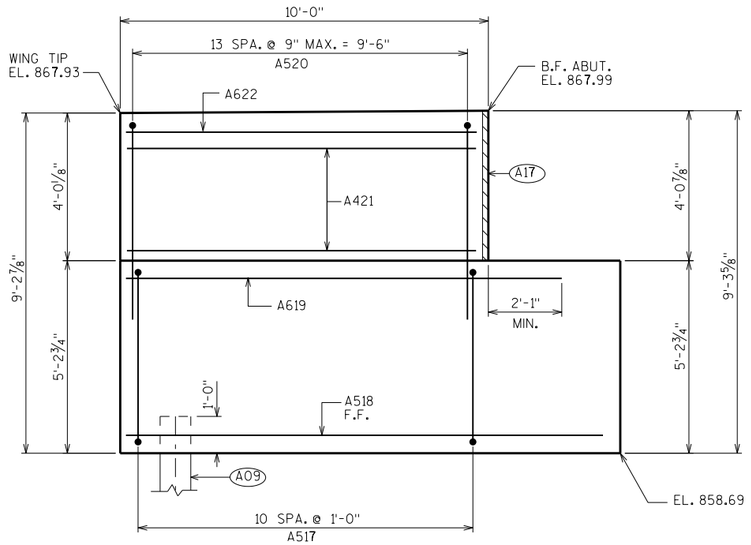
SHEET 4

184

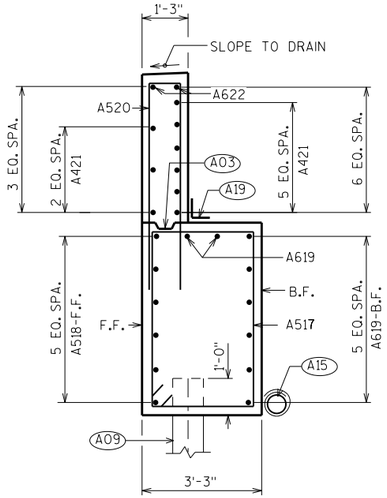
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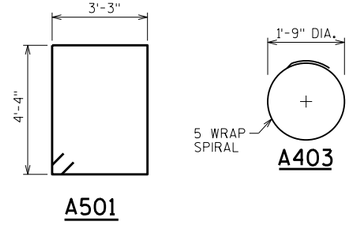
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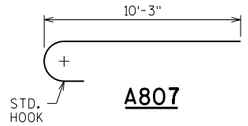


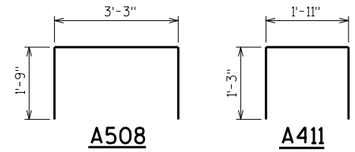
WING 1 ELEVATION

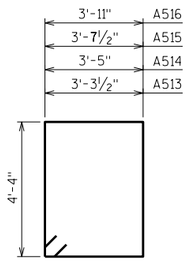


WING 1 SECTION

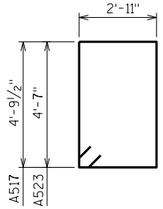




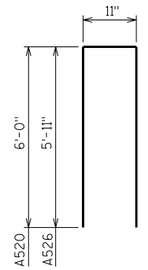




A501, A513, A514, A515, A516



A517, A523

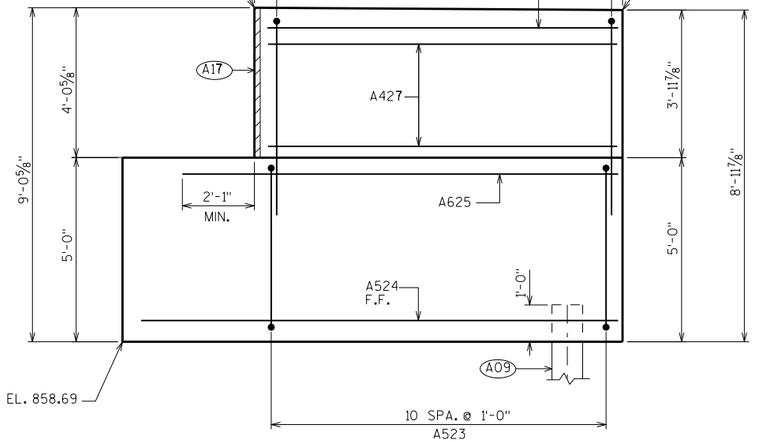


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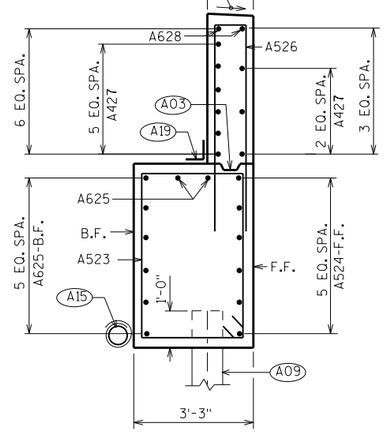
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

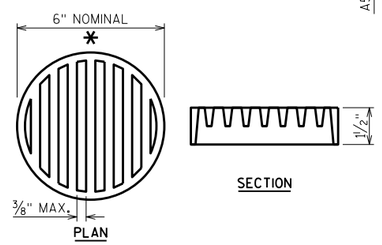
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
A501		108	15'-10"	X		BODY-VERT.-STIRRUPS
A402		46	2'-3"			BODY-VERT.-2 PER BODY PILE
A403		23	28'-0"	X		BODY-1 PER BODY PILE
A604		11	47'-10			BODY-HORIZ.
A605		11	46'-1"			BODY-HORIZ.
A606		14	39'-7"			BODY-HORIZ.-B.F.
A807		14	11'-2"	X		BODY-HORIZ.-B.F.
A508		59	6'-6"	X		BODY-VERT.-TOP
A409		5	35'-4"			BODY-HORIZ.-TOP
A410		5	24'-2"			BODY-HORIZ.-TOP
A411		35	4'-4"	X		BODY-VERT.-BTWN. BEAM SEATS
A412		14	9'-4"			BODY-HORIZ.-BTWN. BEAM SEATS
A513		2	15'-11"	X		BODY-VERT.-STIRRUP ENDS
A514		2	16'-2"	X		BODY-VERT.-STIRRUP ENDS
A515		2	16'-7"	X		BODY-VERT.-STIRRUP ENDS
A516		2	17'-2"	X		BODY-VERT.-STIRRUP ENDS
A517	X	11	16'-1"	X		WING BODY 1-VERT.-STIRRUP
A518	X	6	14'-11"			WING BODY 1- HORIZ.-F.F.
A619	X	8	11'-11"			WING BODY 1-HORIZ.
A520	X	14	12'-8"	X		WING BODY/WALL 1-VERT.
A421	X	9	9'-8"			WINGWALL 1-HORIZ.
A622	X	2	9'-8"			WINGWALL 1-HORIZ.
A523	X	11	15'-8"	X		WING BODY 2-VERT.-STIRRUP
A524	X	6	13'-1"			WING BODY 2- HORIZ.-F.F.
A625	X	8	11'-11"			WING BODY 2-HORIZ.
A526	X	14	12'-6"	X		WING BODY/WALL 2-VERT.
A427	X	9	9'-8"			WINGWALL 2-HORIZ.
A628	X	2	9'-8"			WINGWALL 2-HORIZ.



WING 2 ELEVATION



WING 2 SECTION

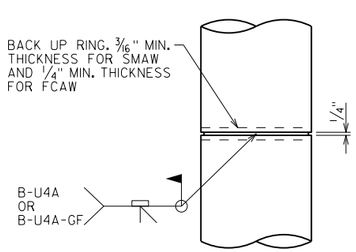


RODENT SHIELD DETAIL

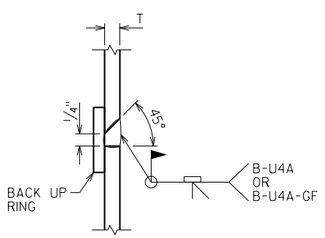
* DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD 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 SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



CAST-IN-PLACE 'PIPE PILE'



C.I.P. PILE WELD DETAIL

PILE DETAILS

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.365" CIP CONCRETE PILING, ESTIMATED 105'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 100 TONS PER PILE. PILE POINTS REQ'D.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD 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.

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

STATE PROJECT NUMBER

3100-07-70

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

SOUTH ABUTMENT DETAILS

SHEET 5

185

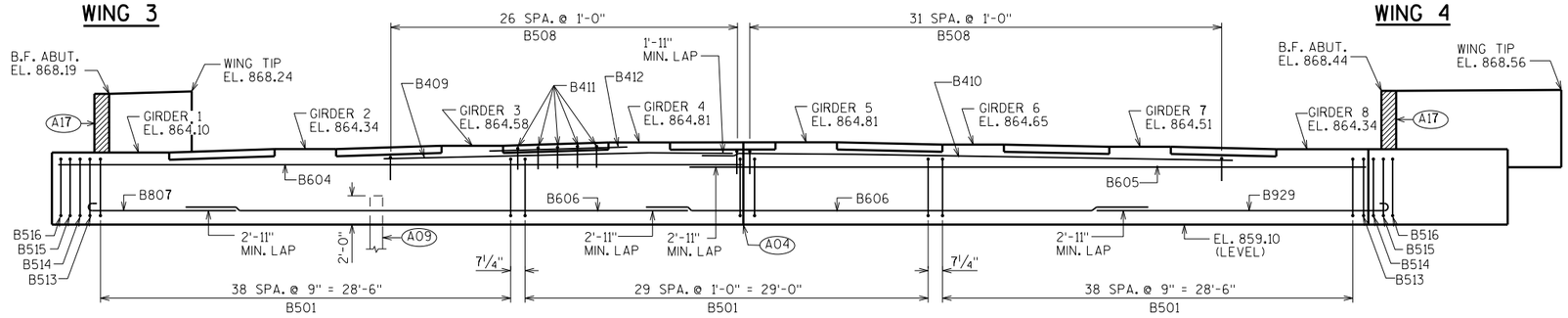
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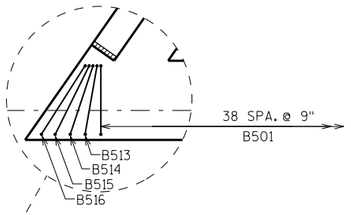
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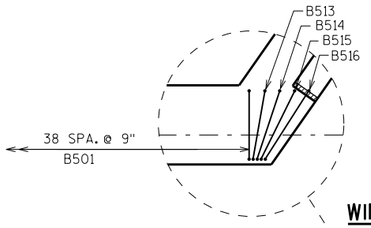
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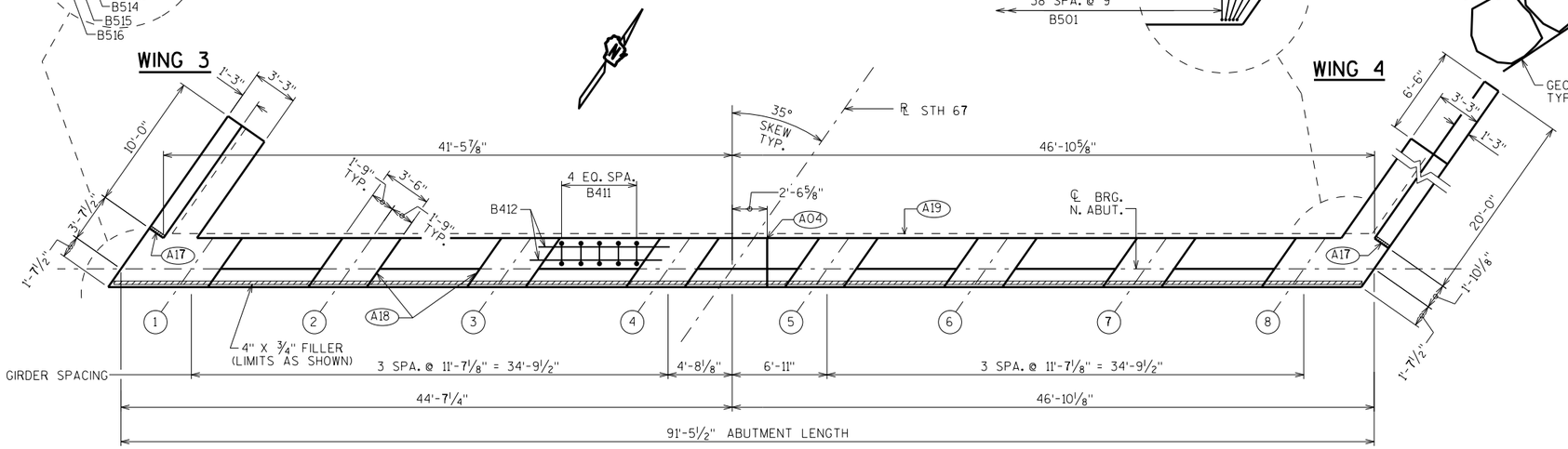
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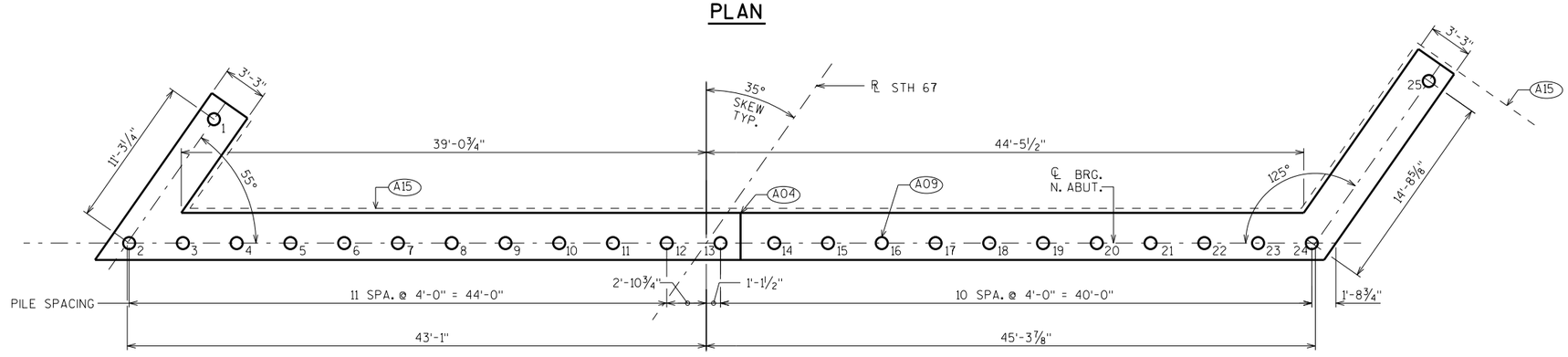
ELEVATION



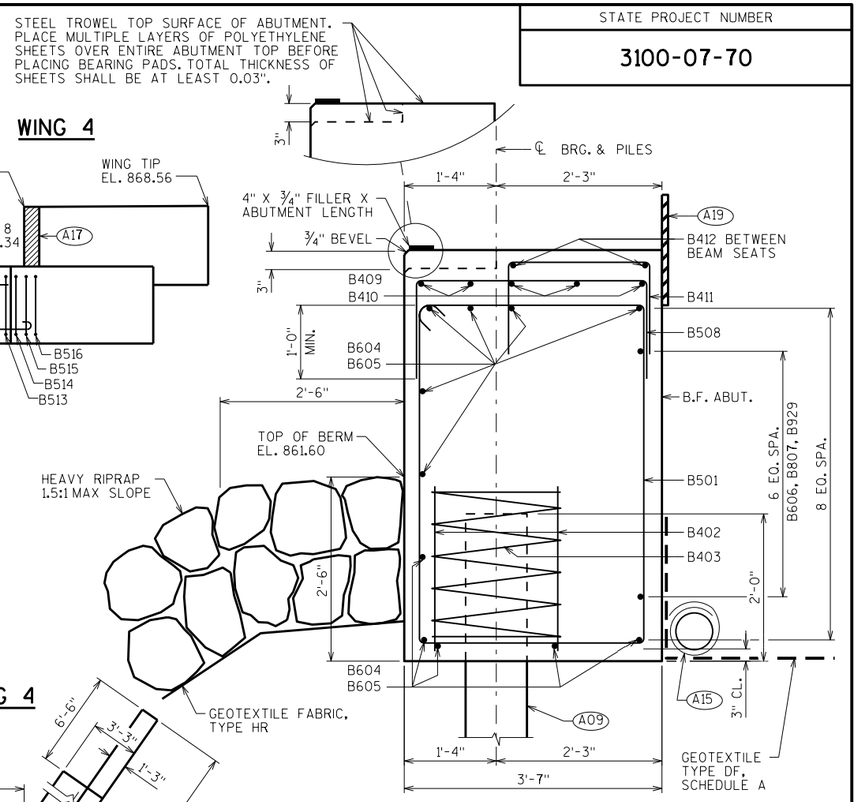




PLAN



PILE PLAN



SECTION THRU BODY

(A04) VERT. CONST. JOINT: KEYWAY FORMED BY A BEVELED 2 x 8. 3/4" "V" GROOVE @ THE FRONT FACE AND 18" RMW @ BACKFACE. FOR OPTIONAL DETAILS SEE "ALTERNATE CONSTRUCTION JOINT" SHEET.

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.365" CIP CONCRETE PILING, ESTIMATED 115'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 100 TONS PER PILE. PILE POINTS REQ'D.

(A15) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD 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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

NORTH ABUTMENT

SHEET 6

186

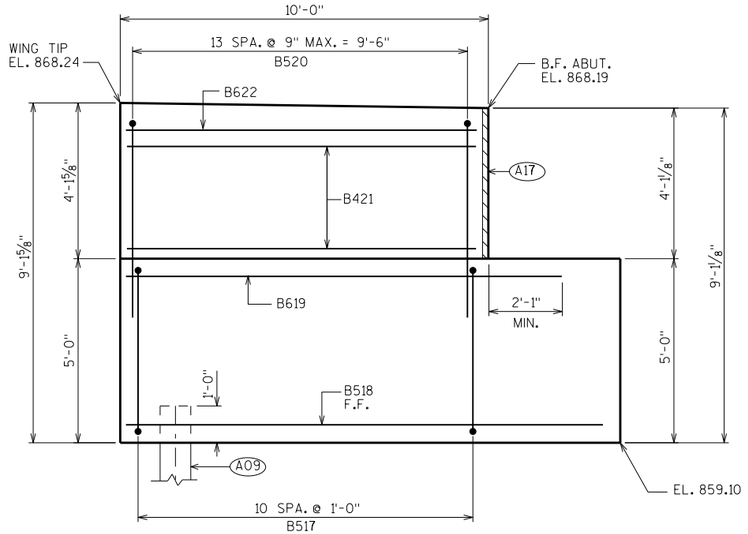
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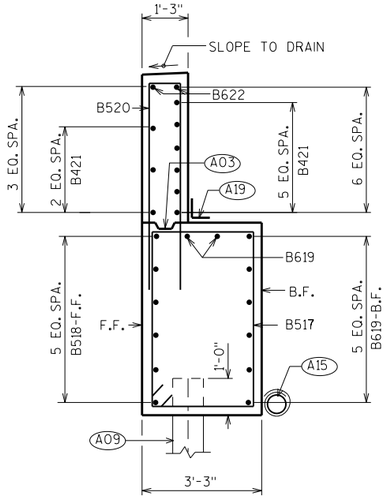
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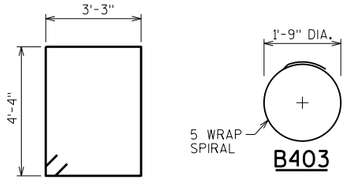
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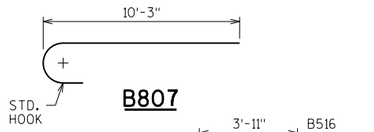


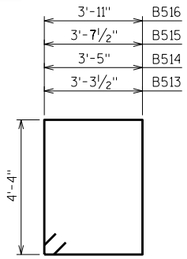
WING 3 ELEVATION



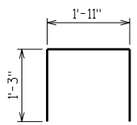
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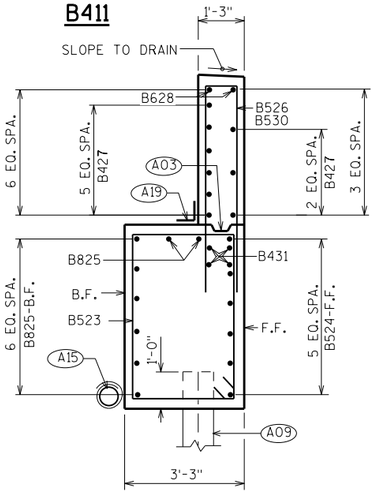




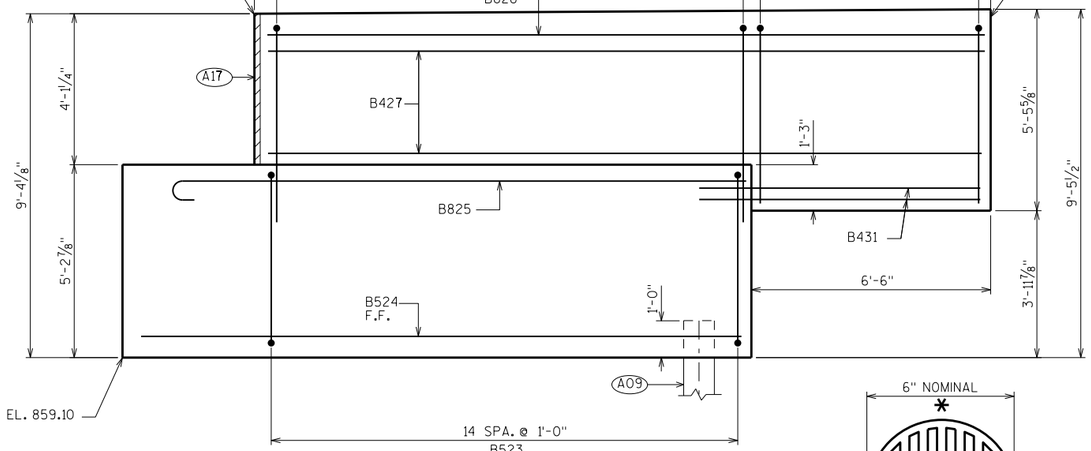


B513, B514, B515, B516

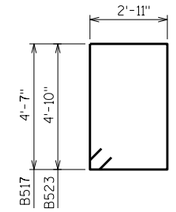




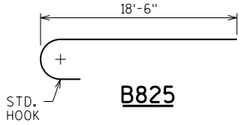
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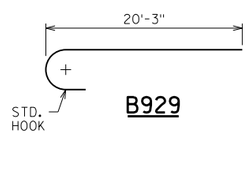


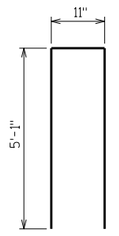
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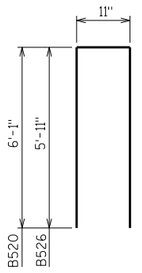


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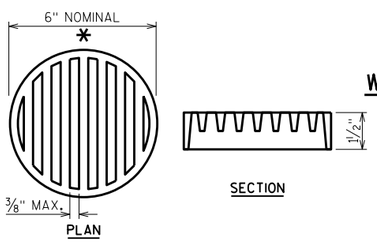








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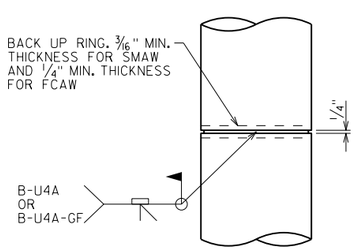


RODENT SHIELD DETAIL

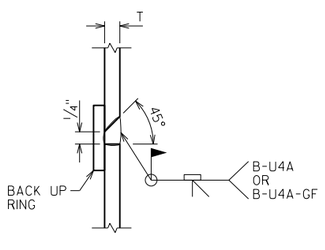
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THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD 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 SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



CAST-IN-PLACE 'PIPE PILE'



C.I.P. PILE WELD DETAIL

PILE DETAILS

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		108	15'-10"	X		BODY-VERT.-STIRRUPS
B402		46	2'-3"			BODY-VERT.-2 PER BODY PILE
B403		23	28'-0"	X		BODY-1 PER BODY PILE
B604		11	47'-9"			BODY-HORIZ.
B605		11	46'-1"			BODY-HORIZ.
B606		14	35'-0"			BODY-HORIZ.-B.F.
B807		7	11'-2"	X		BODY-HORIZ.-B.F.
B508		59	6'-6"	X		BODY-VERT.-TOP
B409		5	26'-2"			BODY-HORIZ.-TOP
B410		5	33'-9"			BODY-HORIZ.-TOP
B411		35	4'-4"	X		BODY-VERT.-BTWN. BEAM SEATS
B412		14	9'-4"			BODY-HORIZ.-BTWN. BEAM SEATS
B513		2	15'-11"	X		BODY-VERT.-STIRRUP ENDS
B514		2	16'-2"	X		BODY-VERT.-STIRRUP ENDS
B515		2	16'-7"	X		BODY-VERT.-STIRRUP ENDS
B516		2	17'-2"	X		BODY-VERT.-STIRRUP ENDS
B517	X	11	15'-8"	X		WING BODY 3-VERT.-STIRRUP
B518	X	6	13'-9"			WING BODY 3- HORIZ.-F.F.
B619	X	8	11'-11"			WING BODY 3-HORIZ.
B520	X	14	12'-10"	X		WING BODY/WALL 3-VERT.
B421	X	9	9'-8"			WINGWALL 3-HORIZ.
B622	X	2	9'-8"			WINGWALL 3-HORIZ.
B523	X	15	16'-2"	X		WING BODY 4-VERT.-STIRRUP
B524	X	6	16'-6"			WING BODY 4- HORIZ.-F.F.
B825	X	8	19'-5"	X		WING BODY 4-HORIZ.
B526	X	19	12'-6"	X		WING BODY/WALL 4-VERT.
B427	X	9	19'-8"			WINGWALL 4-HORIZ.
B628	X	2	19'-8"			WINGWALL 4-HORIZ.
B929		7	21'-6"	X		BODY-HORIZ.-B.F.
B530	X	9	10'-10"	X		WINGWALL 4-VERT.
B431	X	4	7'-9"			WINGWALL 4-HORIZ.

(A03) OPTIONAL CONST. JOINT: KEYWAY FORMED BY BEVELED 2 x 6. (18" RMW @ B.F. & 3/4" "V" GROOVE @ F.F. IF JOINT IS USED).

(A09) SUPPORT ABUTMENT ON 10 3/4" DIA. X 0.365" CIP CONCRETE PILING, ESTIMATED 115'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 100 TONS PER PILE. PILE POINTS REQ'D.

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(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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

NORTH ABUTMENT DETAILS

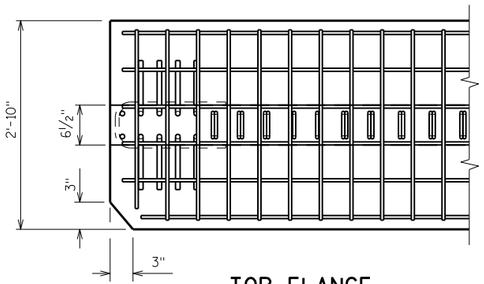
SHEET 7

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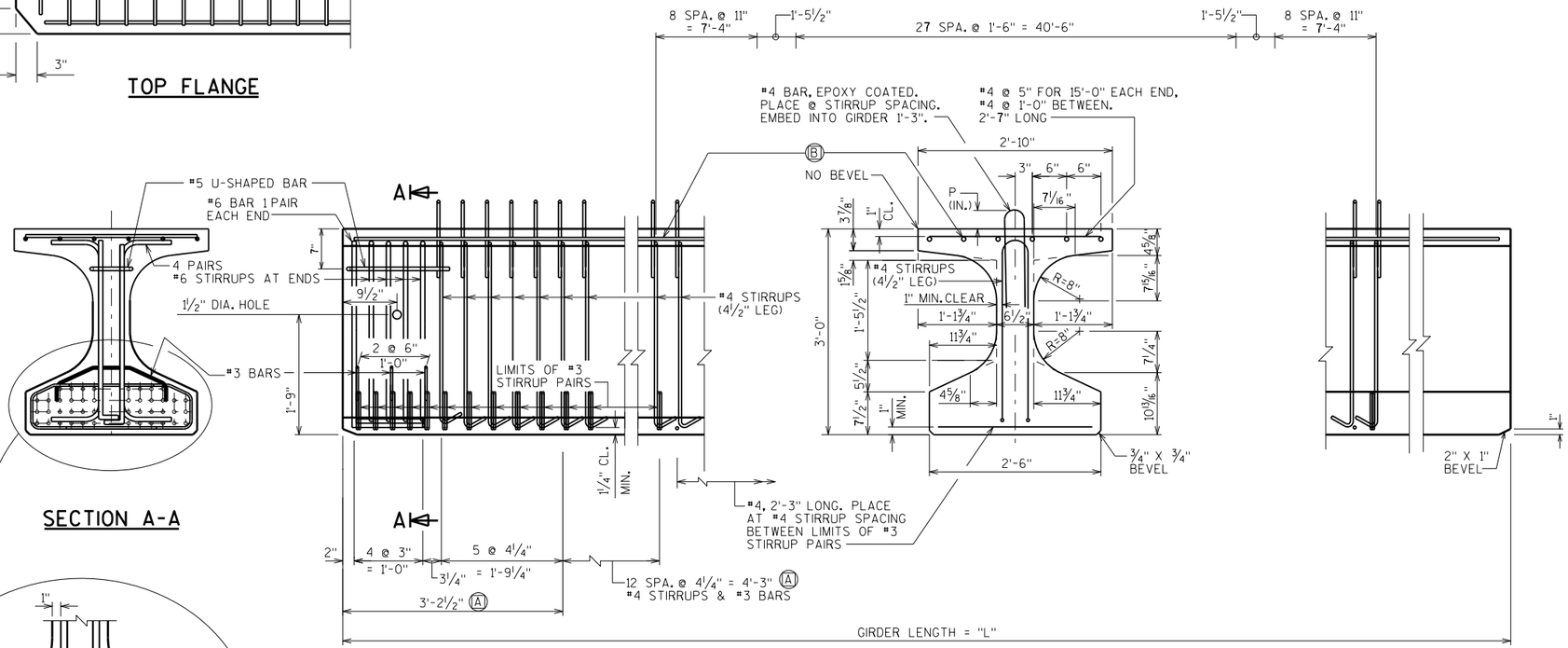
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STATE PROJECT NUMBER

3100-07-70



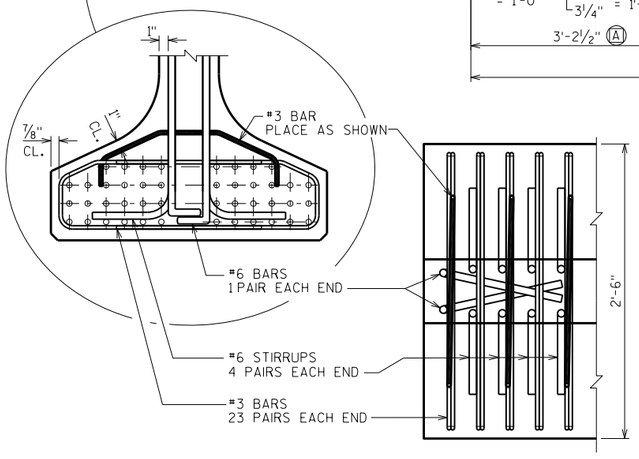
TOP FLANGE



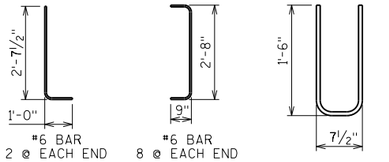
SIDE VIEW & TYPICAL SECTION IN SPAN

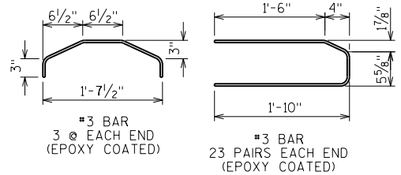
Ⓐ DETAIL TYP. AT EACH END

Ⓑ 6 #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"



BOTTOM FLANGE





NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE 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 OR EPOXY TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.3 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END 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, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

✳ 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" IST 1/3 OF GIRDER	"P" MID 1/3 OF GIRDER	"P" END 1/3 OF GIRDER	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	1, 8	73	0.3	0.6	0.8	1.0	1.0	1.0	0.8	0.6	0.3	8,000	7	7	7	0.6	26	6,400	32	11	14	4		
1	2-7	73	0.4	0.7	1.0	1.1	1.2	1.1	1.0	0.7	0.4	8,000	7	7	7	0.6	26	6,400	32	11	14	4		

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

36W" PRESTRESSED GIRDER DETAILS 1

SHEET 8

188

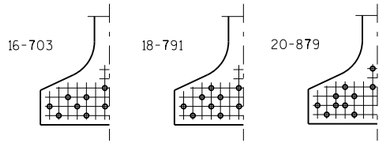
SCALE = 1.00

8

8

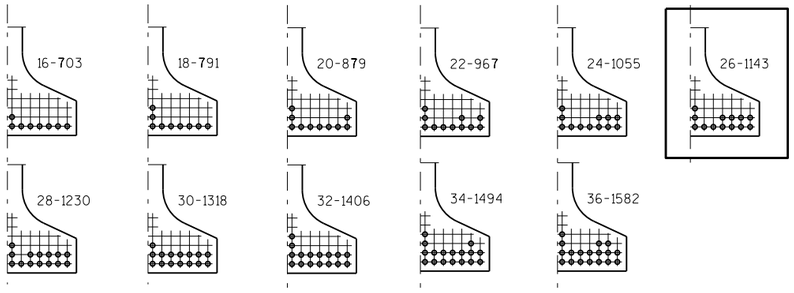
STATE PROJECT NUMBER

3100-07-70



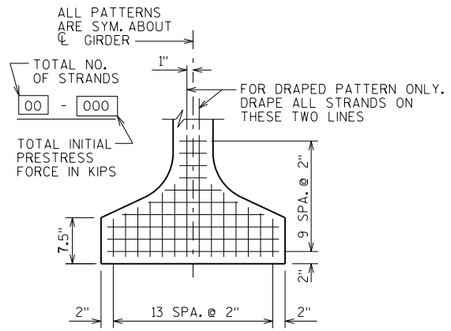
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6"Φ STRANDS

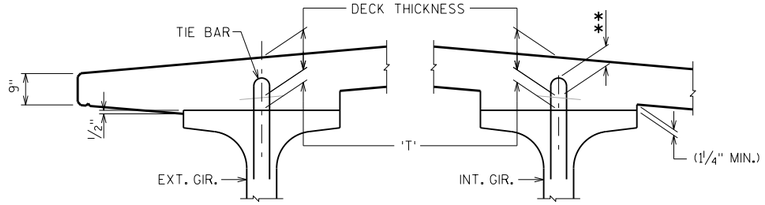


ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6"Φ STRANDS



TYP. STRAND PATTERN



DECK HAUNCH DETAIL

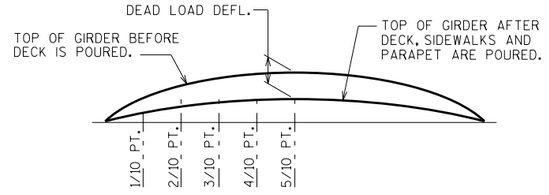
IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN ½" OR,

** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

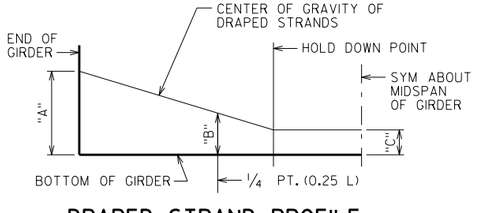
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- DECK THICKNESS
= HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 2⅞" 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	2.44

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

36W" PRESTRESSED GIRDER DETAILS 2

SHEET 9

189

8

8

SCALE = 1.00

STATE PROJECT NUMBER

3100-07-70

NOTES

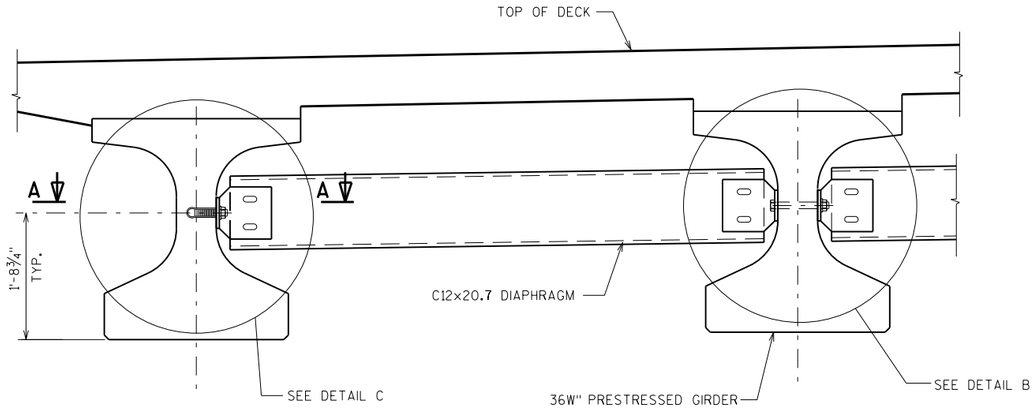
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-67-376", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

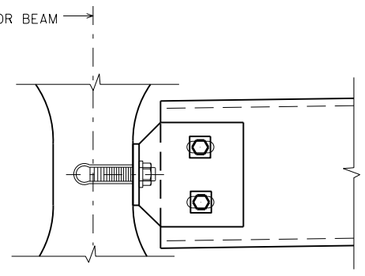
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



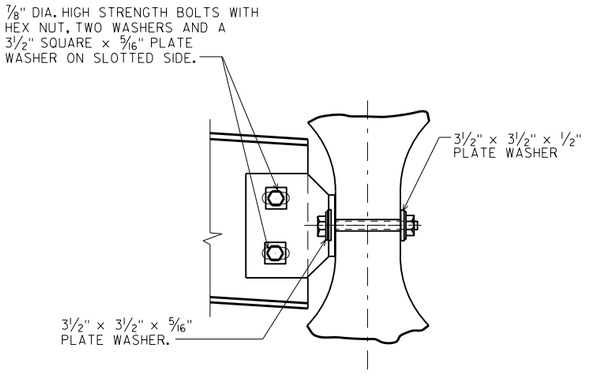
EXTERIOR GIRDER

INTERIOR GIRDER

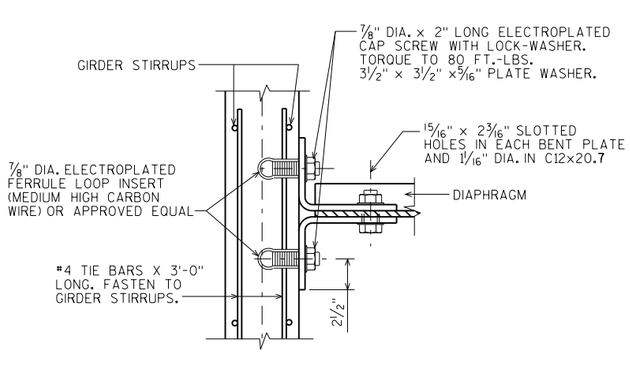
PART TRANSVERSE SECTION AT DIAPHRAGM



DETAIL C

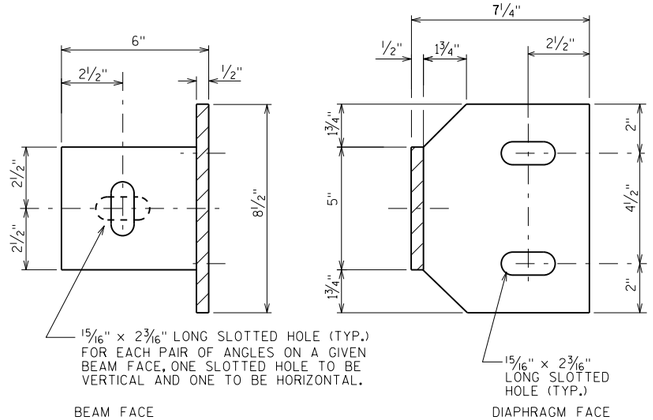


SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°



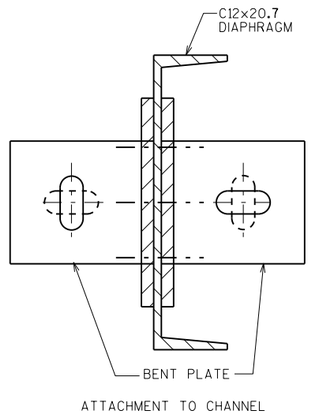
SECTION A-A

(FOR EXTERIOR ATTACHMENT)



BEAM FACE

DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

STEEL DIAPHRAGM

SHEET 10

190

SCALE =

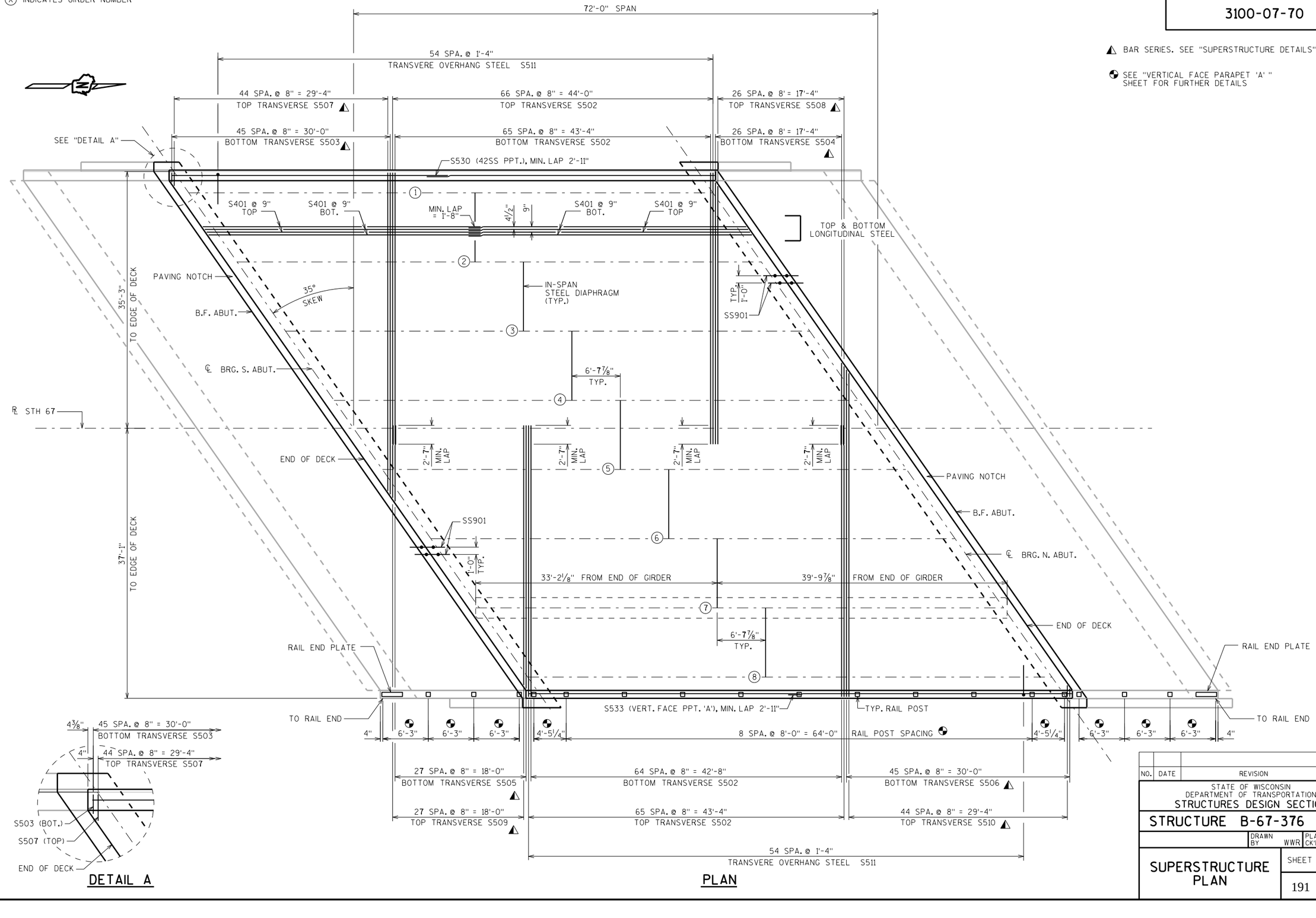
STATE PROJECT NUMBER

3100-07-70

Ⓧ INDICATES GIRDER NUMBER

△ BAR SERIES. SEE "SUPERSTRUCTURE DETAILS" SHEET.

◔ SEE "VERTICAL FACE PARAPET 'A' " SHEET FOR FURTHER DETAILS



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

SUPERSTRUCTURE PLAN

SHEET 11

191

SCALE = 6.00

8

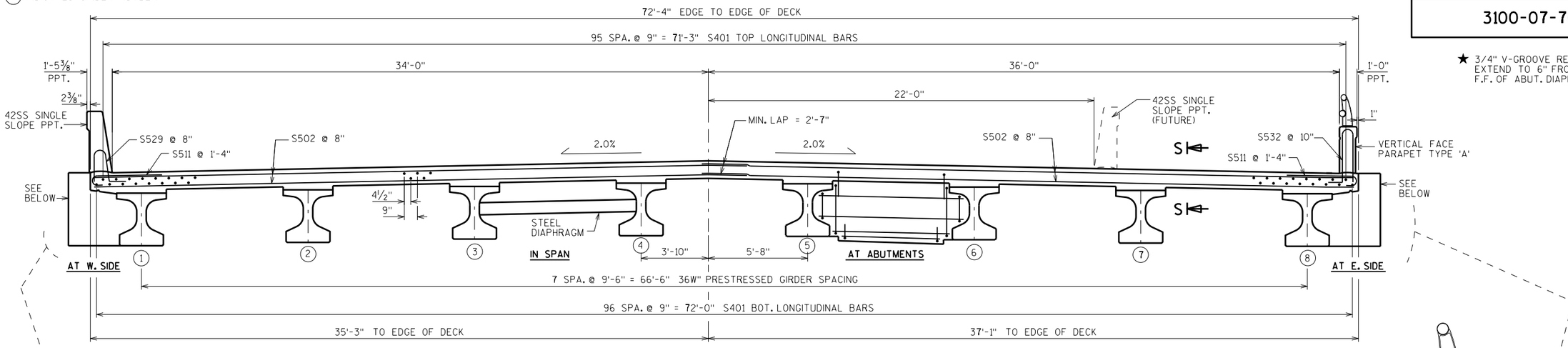
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STATE PROJECT NUMBER

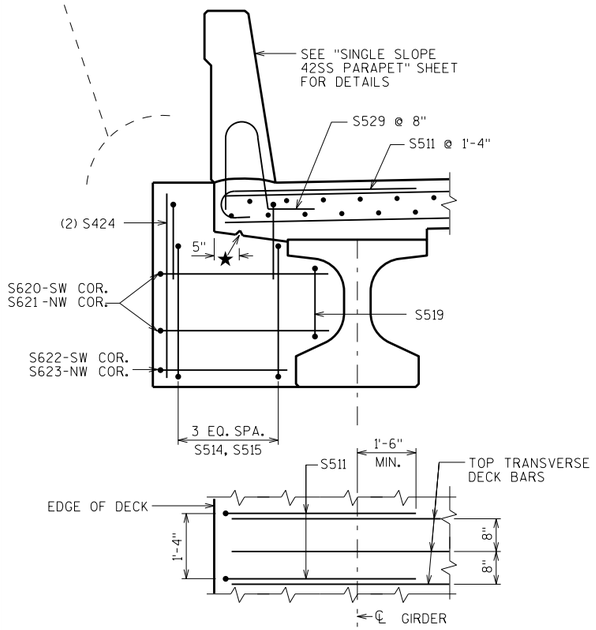
3100-07-70

(X) INDICATES GIRDER NUMBER

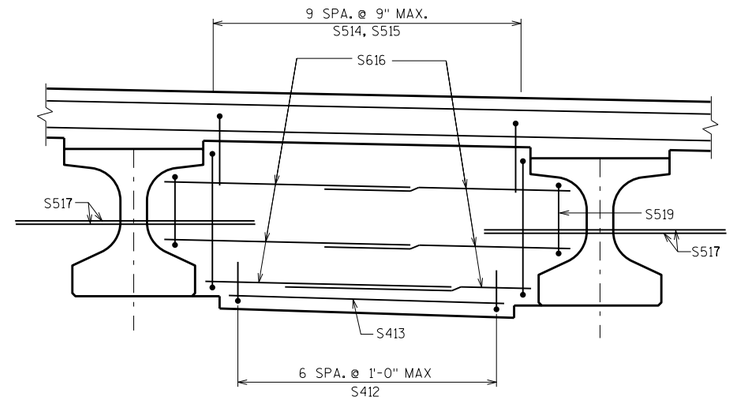
★ 3/4" V-GROOVE REQ'D. EXTEND TO 6" FROM F.F. OF ABUT. DIAPH.



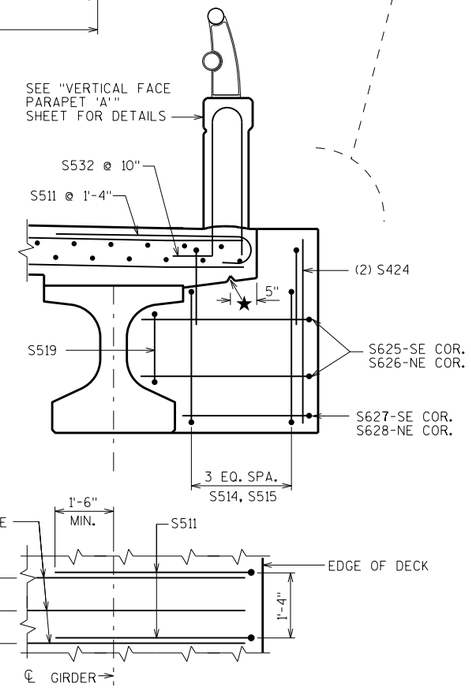
CROSS SECTION THRU ROADWAY



PLAN VIEW - ADDITIONAL OVERHANG DECK STEEL



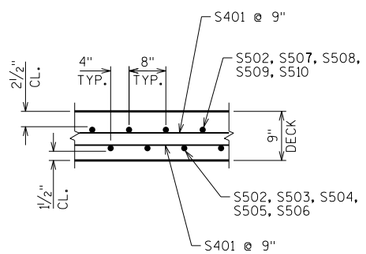
AT ABUTMENTS



PLAN VIEW - ADDITIONAL OVERHANG DECK STEEL

TOP OF DECK ELEVATIONS

	℄ BRG. S. ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	℄ BRG. N. ABUT.
L EOD	867.75	867.79	867.84	867.88	867.92	867.96	868.00	868.05	868.09	868.13	868.17
GIRDER 1	867.80	867.84	867.88	867.92	867.96	868.01	868.05	868.09	868.13	868.17	868.21
GIRDER 2	868.03	868.07	868.11	868.15	868.19	868.23	868.28	868.32	868.36	868.40	868.44
GIRDER 3	868.25	868.30	868.34	868.38	868.42	868.46	868.50	868.55	868.59	868.63	868.67
GIRDER 4	868.48	868.52	868.57	868.61	868.65	868.69	868.73	868.78	868.82	868.86	868.90
CROWN	868.58	868.62	868.66	868.70	868.74	868.78	868.83	868.87	868.91	868.95	868.99
GIRDER 5	868.49	868.53	868.57	868.61	868.65	868.70	868.74	868.78	868.82	868.86	868.90
GIRDER 6	868.34	868.38	868.42	868.46	868.50	868.54	868.59	868.63	868.67	868.71	868.75
GIRDER 7	868.18	868.23	868.27	868.31	868.35	868.39	868.43	868.48	868.52	868.56	868.60
GIRDER 8	868.03	868.07	868.12	868.16	868.20	868.24	868.28	868.32	868.37	868.41	868.45
R EOD	868.01	868.05	868.10	868.14	868.18	868.22	868.26	868.31	868.35	868.39	868.43



SECTION S-S

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

SUPERSTRUCTURE CROSS SECTION

SHEET 12

192

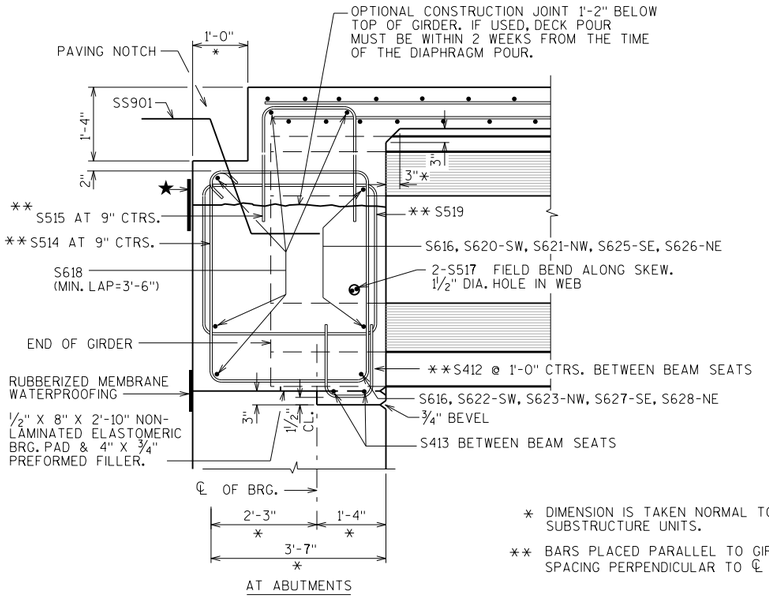
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8

STATE PROJECT NUMBER

3100-07-70

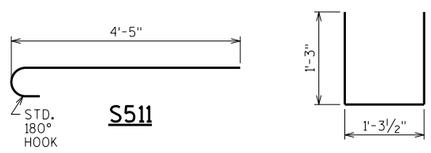


PART LONGIT. SECTION

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

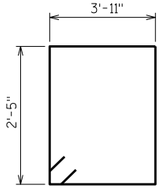
** BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO ℄ GIRDERS

★ RUBBERIZED MEMBRANE WATERPROOFING IF OPTIONAL CONST. JOINT IS USED.

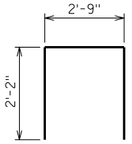


S511

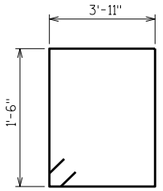
S412



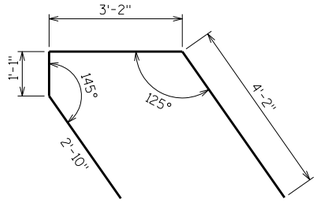
S514



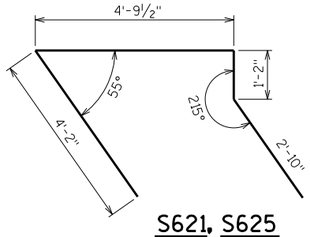
S515



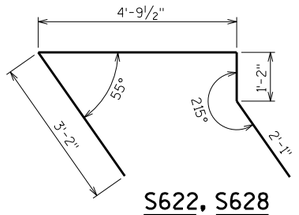
S519



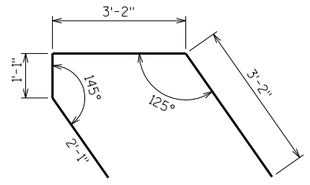
S620, S626



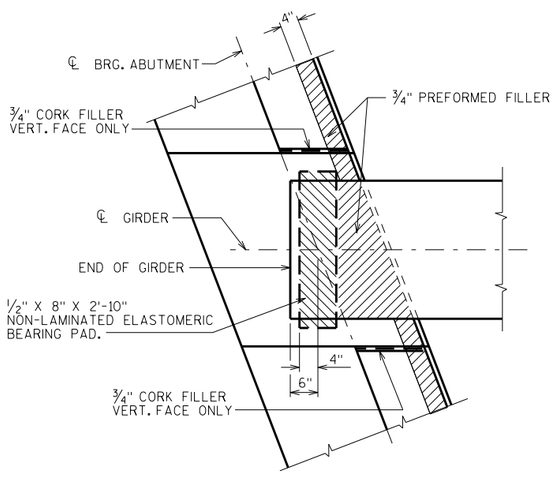
S621, S625



S622, S628



S623, S627



BEARING PAD DETAIL

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE

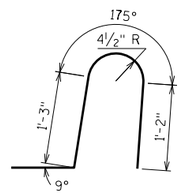
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	386	38'-2"			DECK-LONGIT.
S502	X	264	37'-4"			DECK-TRANSVERSE
S503	X	46	22'-9"		⚠	DECK-TRANSVERSE
S504	X	27	23'-7"		⚠	DECK-TRANSVERSE
S505	X	28	23'-4"		⚠	DECK-TRANSVERSE
S506	X	47	23'-5"		⚠	DECK-TRANSVERSE
S507	X	45	22'-9"		⚠	DECK-TRANSVERSE
S508	X	27	23'-1"		⚠	DECK-TRANSVERSE
S509	X	28	22'-10		⚠	DECK-TRANSVERSE
S510	X	46	23'-0"		⚠	DECK-TRANSVERSE
S511	X	110	5'-0"	X		DECK-TRANSVERSE-OVERHANG
S412	X	98	3'-8"	X		ABUT. DIAPH.-VERT.
S413	X	28	6'-11"			ABUT. DIAPH.-HORIZ.
S514	X	156	13'-4"	X		ABUT. DIAPH.-VERT.
S515	X	156	6'-10"	X		ABUT. DIAPH.-VERT.
S616	X	84	6'-7"			ABUT. DIAPH.-BTWN. GIRDERS
S517	X	32	6'-0"			ABUT. DIAPH.-HORIZ.@GIRDERS
S618	X	20	47'-5"			ABUT. DIAPH.-HORIZ.-F.F. & DECK
S519	X	32	11'-6"	X		ABUT. DIAPH.-VERT.
S620	X	2	10'-11	X		ABUT. DIAPH.-HORIZ. SW CORNER
S621	X	2	12'-8"	X		ABUT. DIAPH.-HORIZ. NW CORNER
S622	X	1	10'-11"	X		ABUT. DIAPH.-HORIZ. SW CORNER
S623	X	1	9'-2"	X		ABUT. DIAPH.-HORIZ. NW CORNER
S424	X	8	3'-4"			ABUT. DIAPH.-VERT. EXT. CORNERS
S625	X	2	12'-8"	X		ABUT. DIAPH.-HORIZ. SE CORNER
S626	X	2	10'-11	X		ABUT. DIAPH.-HORIZ. NE CORNER
S627	X	1	9'-2"	X		ABUT. DIAPH.-HORIZ. SE CORNER
S628	X	1	10'-11"	X		ABUT. DIAPH.-HORIZ. NE CORNER
S529	X	117	4'-5"	X		DECK/PPT. 42SS-VERT.
S530	X	16	38'-10"			PPT. 42SS- HORIZ.
S531	X	117	6'-8"	X		DECK/PPT. 42SS-VERT.
S532	X	91	6'-9"	X		DECK/PPT. A-VERT.
S533	X	16	38'-10"			PPT. A-HORIZ.
STAINLESS STEEL → SS901		146	5'-0"	X		ABUT. DIAPH. @ PAVING NOTCH

⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

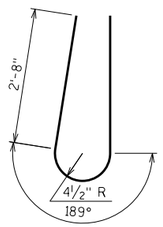
BAR SERIES TABLE

BAR MARK	NO. REQ'D.	LENGTH
S503	1 SERIES OF 46	1'-4" TO 44'-2"
S504	1 SERIES OF 27	11'-2" TO 35'-11"
S505	1 SERIES OF 28	10'-5" TO 36'-2"
S506	1 SERIES OF 47	1'-1" TO 44'-11"
S507	1 SERIES OF 45	1'-9" TO 43'-8"
S508	1 SERIES OF 27	10'-8" TO 35'-5"
S509	1 SERIES OF 28	9'-11" TO 35'-8"
S510	1 SERIES OF 46	1'-7" TO 44'-5"

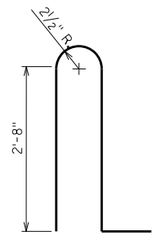
BUNDLE AND TAG EACH SERIES SEPARATELY.



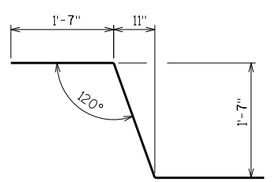
S529



S531



S532



SS901

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

SUPERSTRUCTURE DETAILS

SHEET 13

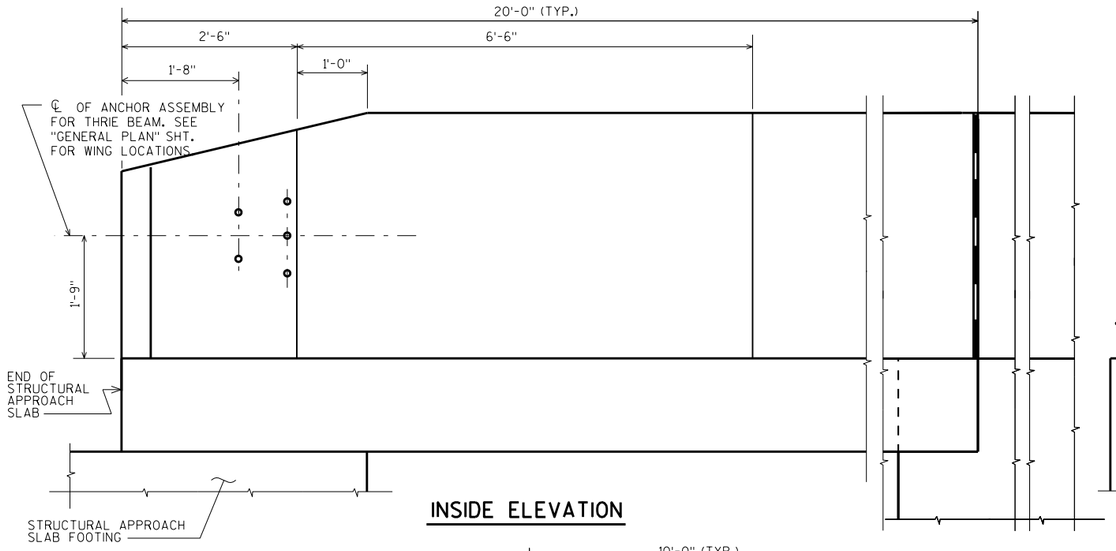
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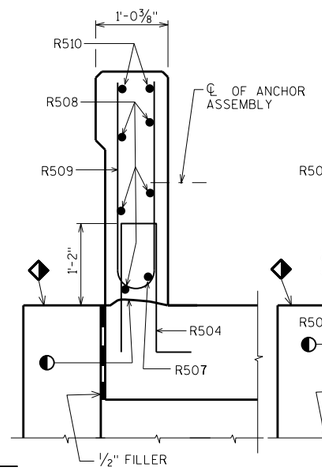
G36WDET
7-14

8

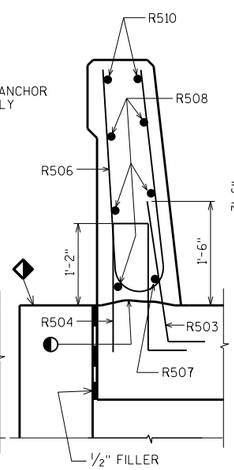
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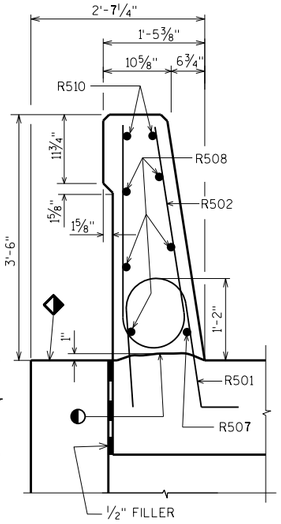
INSIDE ELEVATION



SECTION A



SECTION B



SECTION C

BILL OF BARS

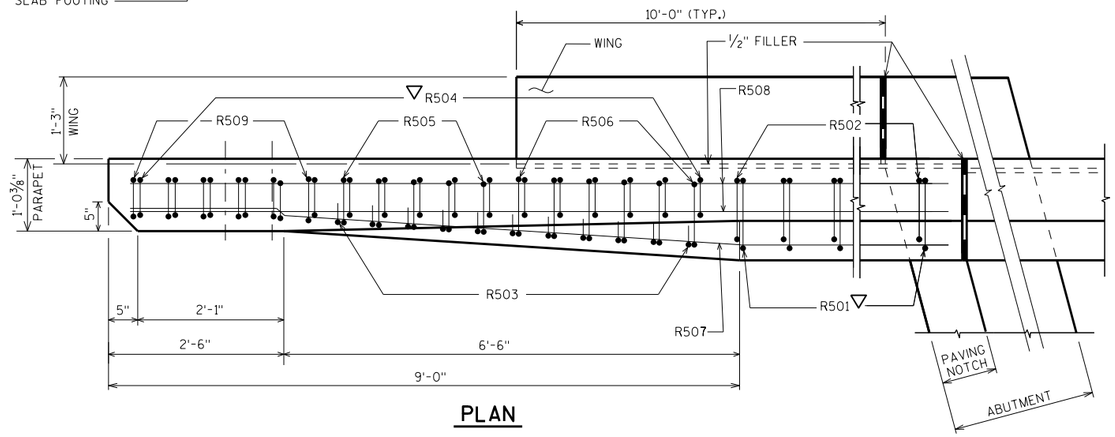
BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	17	17	4-5	X		PARAPET VERT.
R502	X	17	17	6-8	X		PARAPET VERT.
R503	X	11	11	2-9	X		PARAPET VERT.
R504	X	17	17	4-4	X		PARAPET VERT.
R505	X	5	5	6-5	X		PARAPET VERT.
R506	X	6	6	6-6	X		PARAPET VERT.
R507	X	1	1	19-6	X		PARAPET HORIZ.
R508	X	5	5	19-6			PARAPET HORIZ.
R509	X	6	6	5-5	X	◭	PARAPET VERT.
R510	X	2	2	19-6	X		PARAPET HORIZ

◭ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

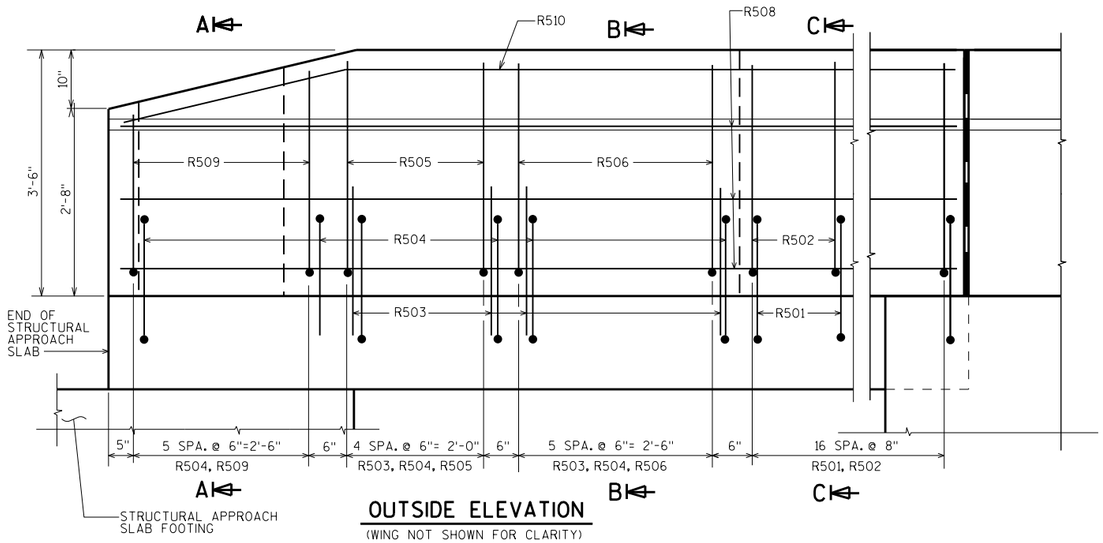
BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
R509	2 SERIES OF 6	4'-9" TO 6'-1"

BUNDLE AND TAG EACH SERIES SEPARATELY.

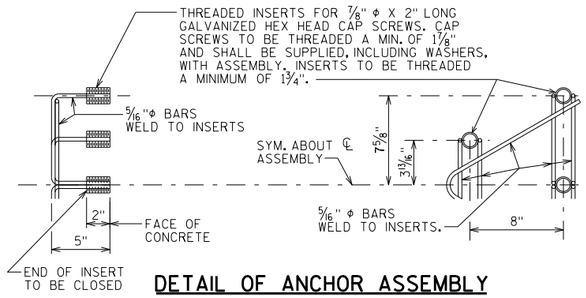


PLAN



OUTSIDE ELEVATION

(WING NOT SHOWN FOR CLARITY)



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.

◆ SLOPE FOR DRAINAGE

▽ R501 AND R504 BARS TO BE TIED TO STRUCTURAL APPROACH SLAB STEEL BEFORE STRUCTURAL APPROACH SLAB IS POURED.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY: WWR | PLANS CK'D.: MWB

SINGLE SLOPE PARAPET 42SS

SHEET 14

194

SCALE = 1:1

8

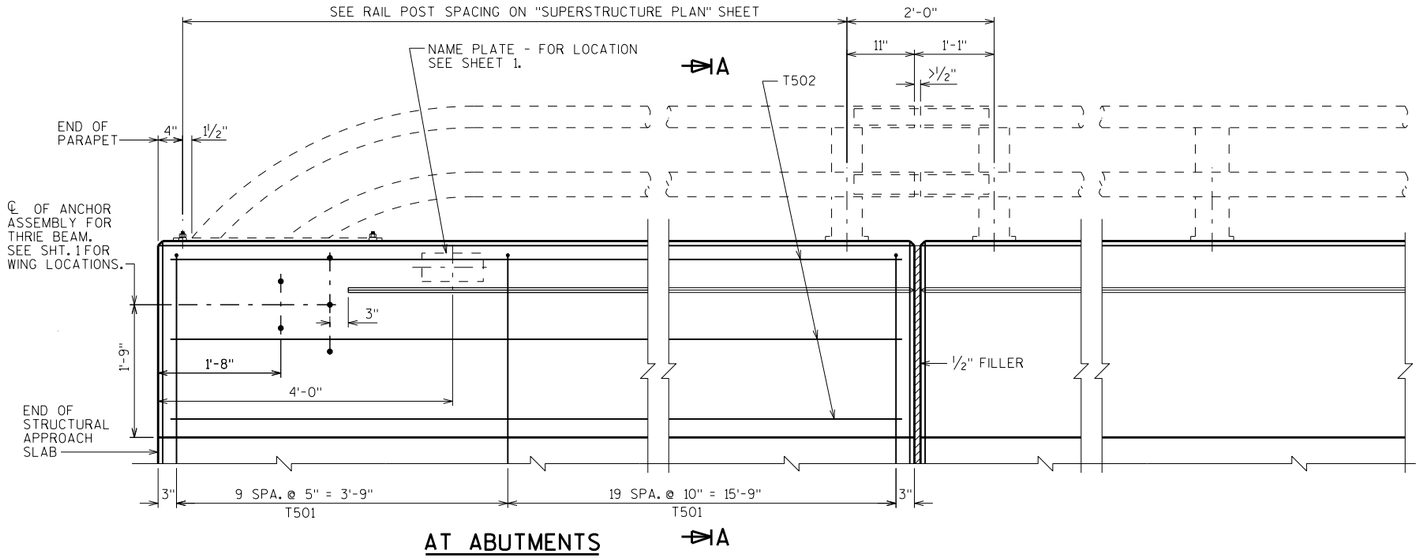
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STATE PROJECT NUMBER

3100-07-70

STATE PROJECT NUMBER

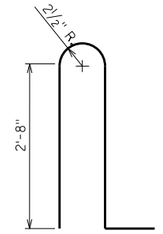
3700-07-70



AT ABUTMENTS

BILL OF BARS

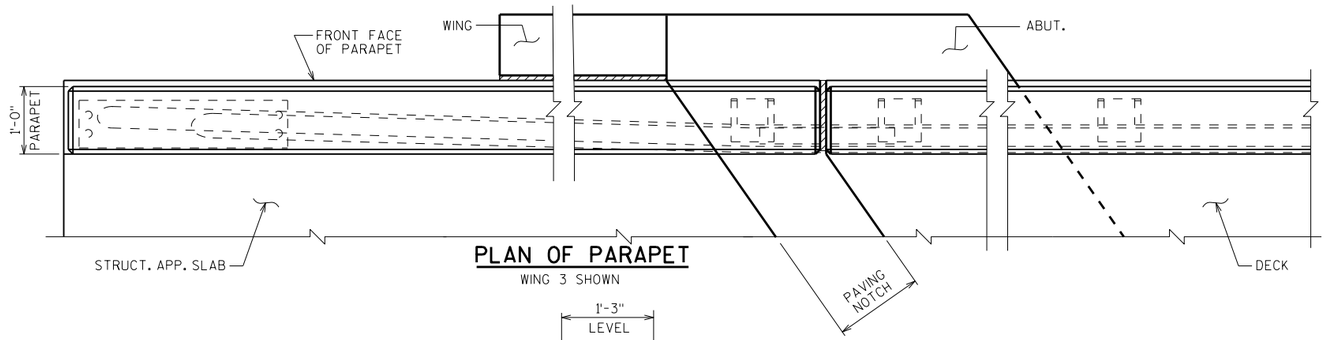
BAR MARK	COAT	S. ABUT.	N. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
T501	X	29	29	6-9	X		PARAPET VERT.
T502	X	8	8	19-6			PARAPET HORIZ.



T501

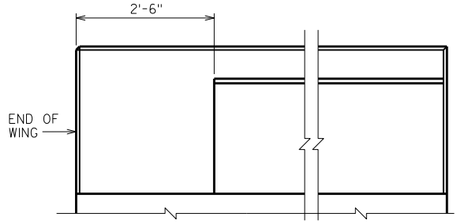
INSIDE ELEVATION AT NE CORNER

SE CORNER SIMILAR

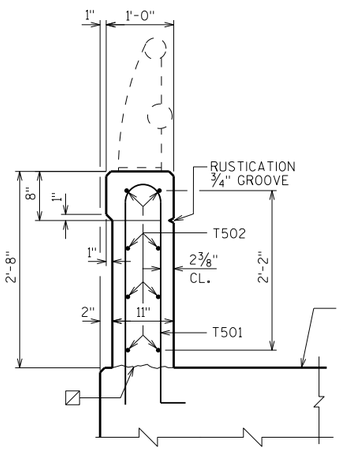


PLAN OF PARAPET

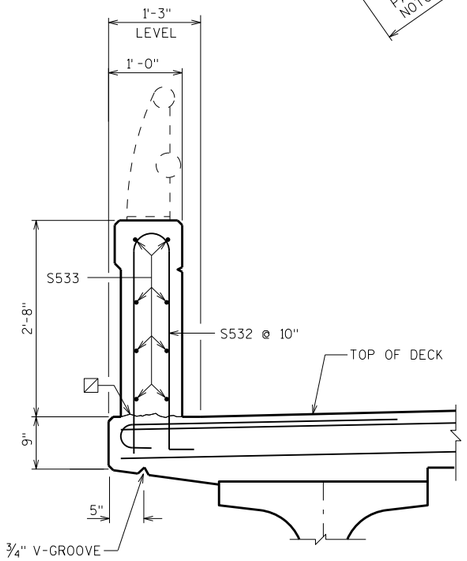
WING 3 SHOWN



FRONT FACE OF PARAPET

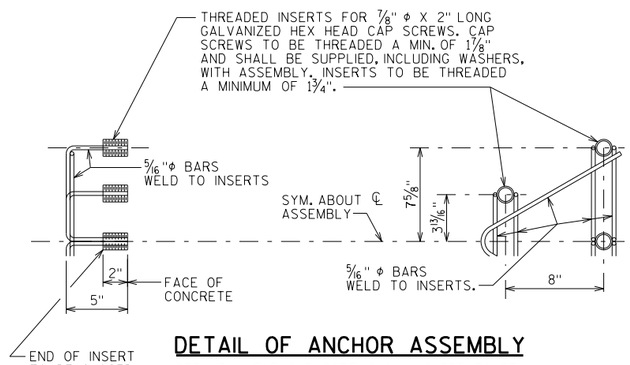


SECTION A-A



AT DECK

☒ CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH. FOR DECK POUR, MATCH BRIDGE X-SLOPE.



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.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

VERTICAL FACE PARAPET "A"

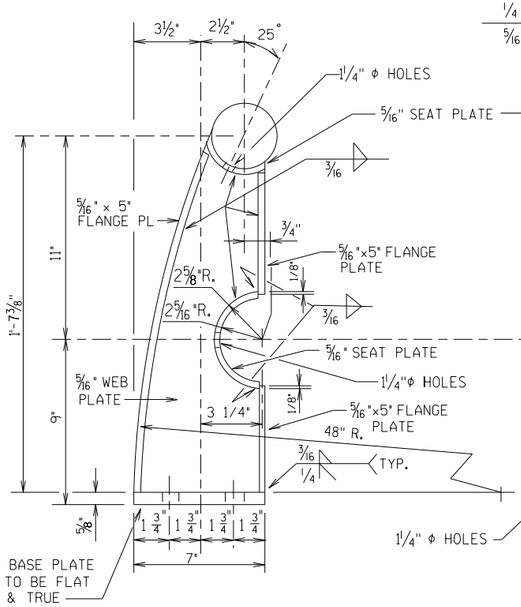
SHEET 15

195

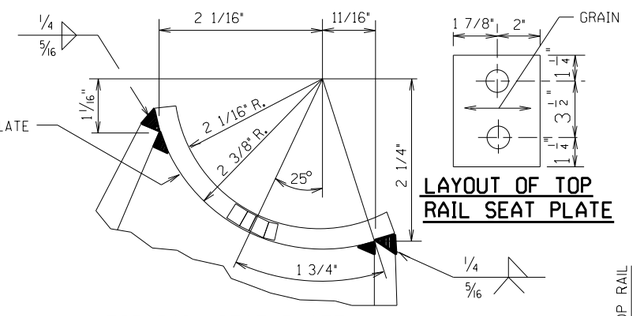
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STATE PROJECT NUMBER

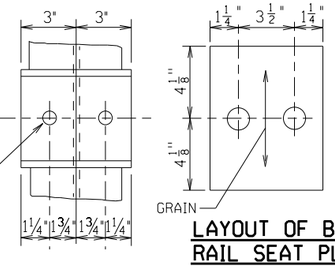
3100-07-70



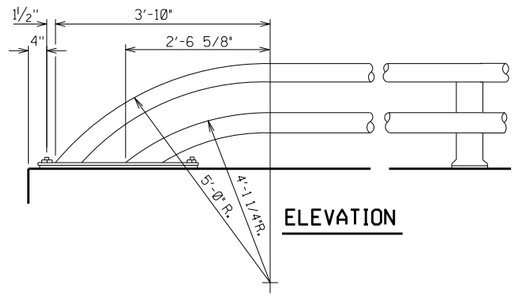
TOP RAIL SEAT PLATE



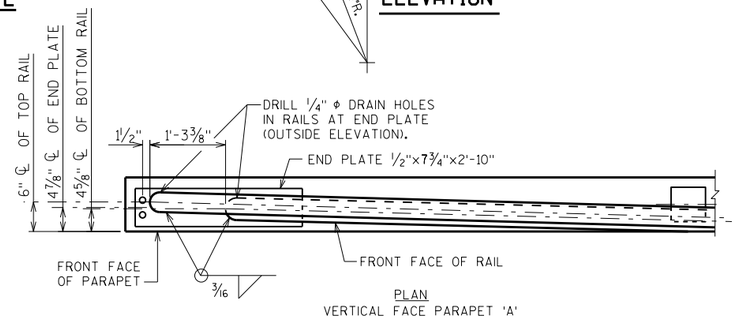
LAYOUT OF TOP RAIL SEAT PLATE



LAYOUT OF BOT. RAIL SEAT PLATE



ELEVATION



PLAN

VERTICAL FACE PARAPET 'A'

PLAN

DETAIL OF RAIL BEND AT ABUTMENTS

NOTES

BID ITEM SHALL BE "RAILING TUBULAR TYPE H B-67-376" WHICH INCLUDES ALL ITEMS SHOWN.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM A307. IF A307 IS USED ELECTRO-GALVANIZE NUTS, WASHERS & TOP 3½" OF ANCHOR BOLTS.

CLOSURE ENDS ON STEEL RAILING SHALL BE ¼" PLATE. WELD AND GRIND SMOOTH.

RAILINGS SHALL BE FABRICATED IN 2 AND 3 PANEL LENGTHS.

RAILING POSTS SHALL BE SET NORMAL TO GRADE LINE.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG CENTERLINE OF THE POST BASE.

SHIMS SHALL BE USED UNDER POSTS AND END PLATES WHERE REQ'D. FOR ALIGNMENT.

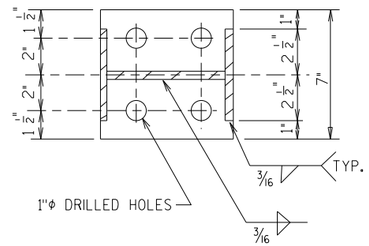
FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

RAILS, POSTS & SHIMS SHALL BE MADE FROM MATERIALS CONFORMING TO ASTM DESIGNATION A709, GRADE 36.

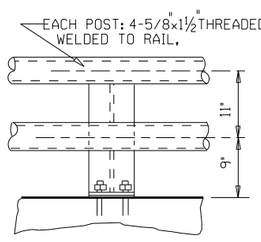
ALL MATERIALS, EXCEPT ANCHORAGES, SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.

LEGEND

- ○ 5/16" x 3/8" WELDED STUDS
- ⬡ 3" ϕ STD. PIPE x 1'-10 LONG
- □ 3" ϕ EXTRA STRONG PIPE x 1'-10 LONG
- △ 11" CIRCUMF. GRIND BEADS SO THAT ½" ϕ WELD BEADS AT 1/3 PTS. ON PIPE SLEEVE FITS FREELY IN THE I.D. OF 4" ϕ EXTRA STRONG PIPE.

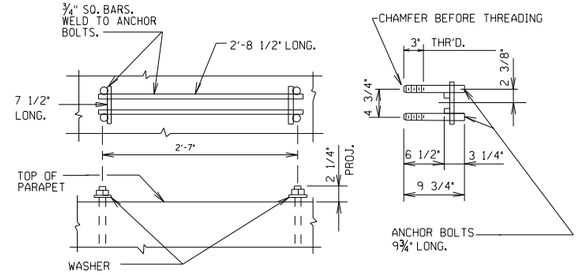


STEEL POST DETAILS

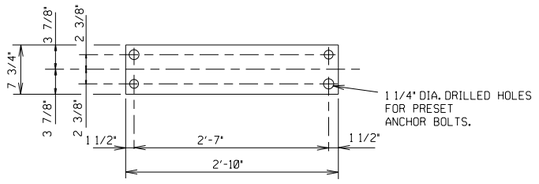


RAIL TO POST CONN.

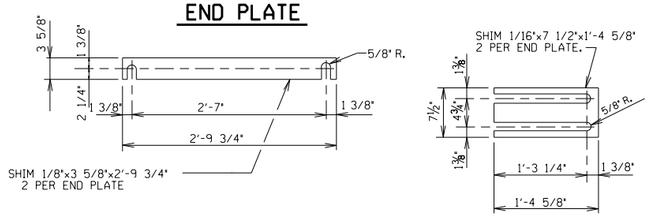
ALL SLEEVE DETAILS SAME AS "FIELD ERECTION JOINT DETAIL" UNLESS SHOWN OTHERWISE.



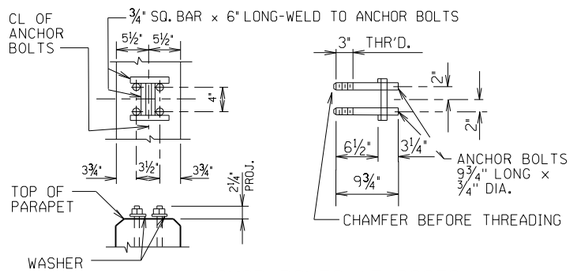
ANCHOR BOLTS AT END PLATE



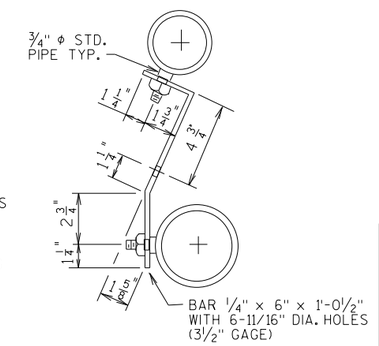
END PLATE



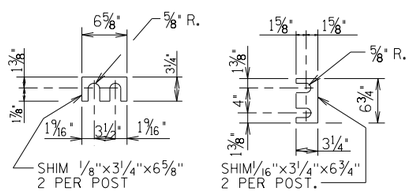
END PLATE SHIM DETAILS



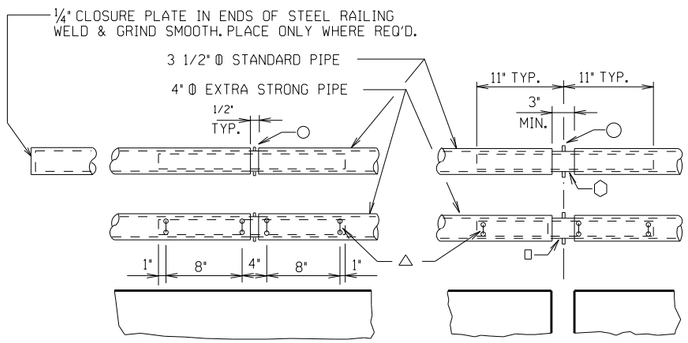
ANCHOR BOLTS AT POSTS



SHIPPING BAR



POST SHIM DETAILS



FIELD ERECTION JOINT DETAIL

DETAIL AT RAIL OPENING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

TUBULAR RAILING TYPE 'H' (STEEL)

SHEET 16

196

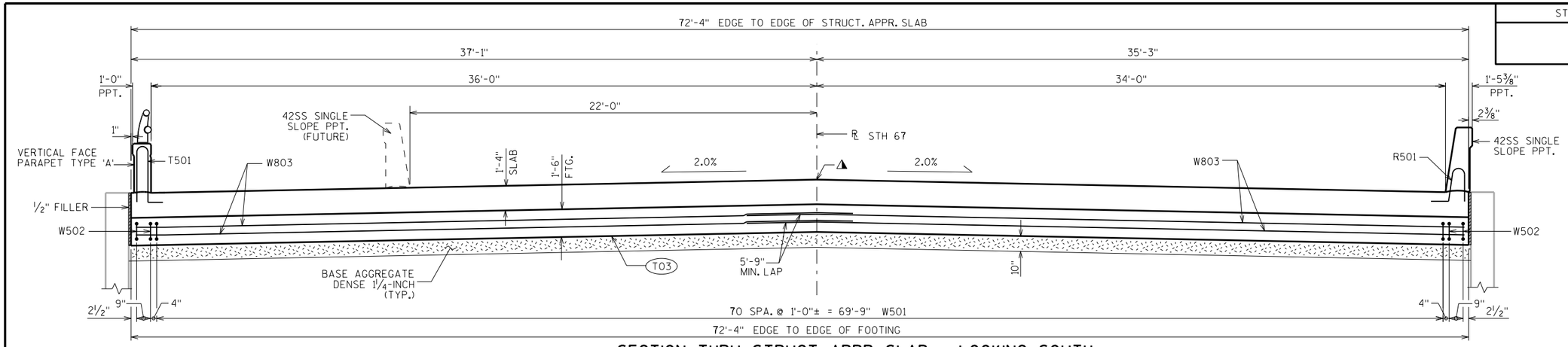
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8

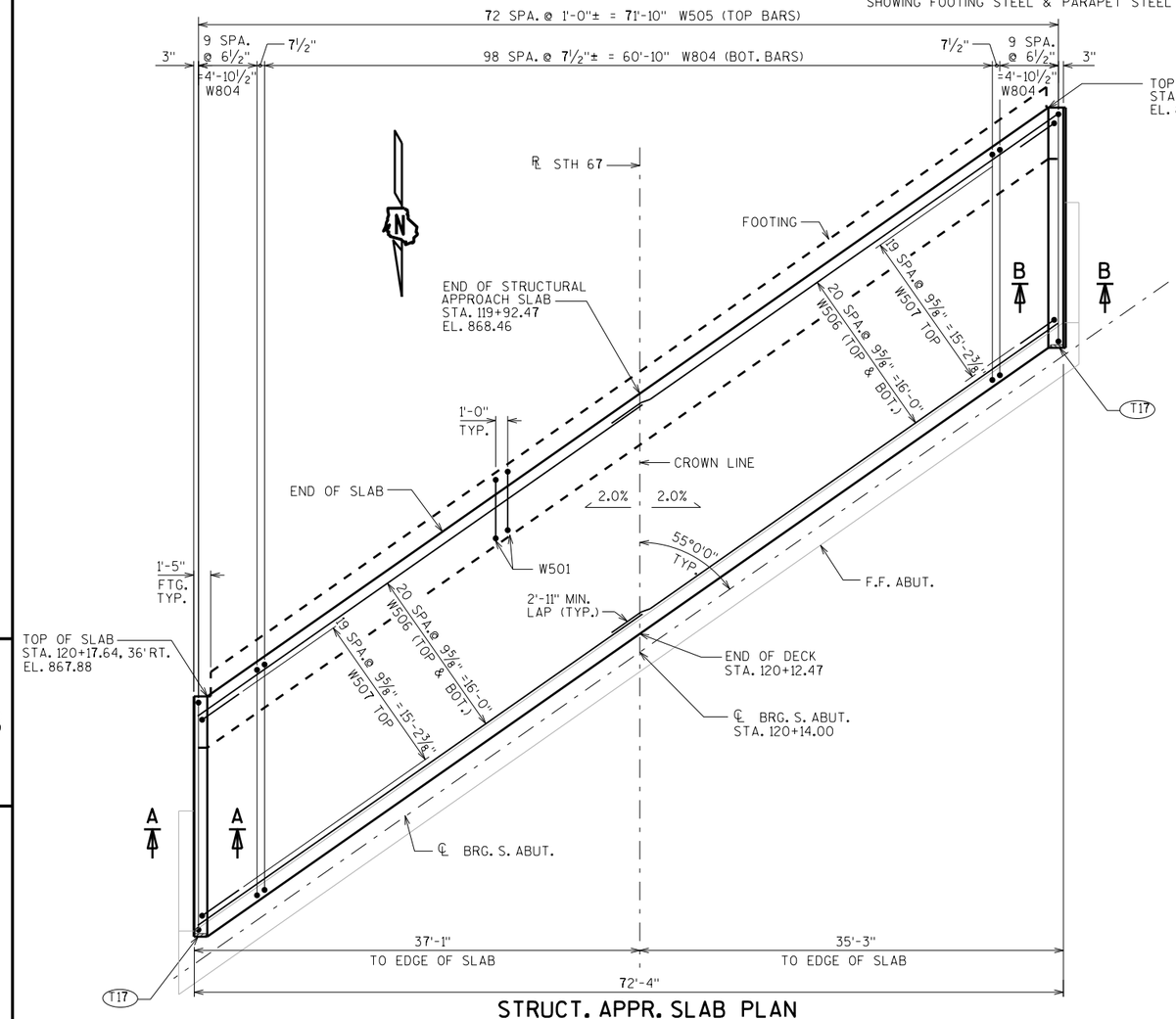
STATE PROJECT NUMBER

3100-07-70



SECTION THRU STRUCT. APPR. SLAB - LOOKING SOUTH

SHOWING FOOTING STEEL & PARAPET STEEL IN STRUCT. APPR. SLAB ONLY



STRUCT. APPR. SLAB PLAN

T03 PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.

T17 ½" FILLER (INCLUDED IN PARAPET LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

▲ CROWN POINT

NOTE: SEE "SOUTH STRUCTURAL APPROACH SLAB DETAILS" SHEET FOR SECTIONS A-A AND B-B.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

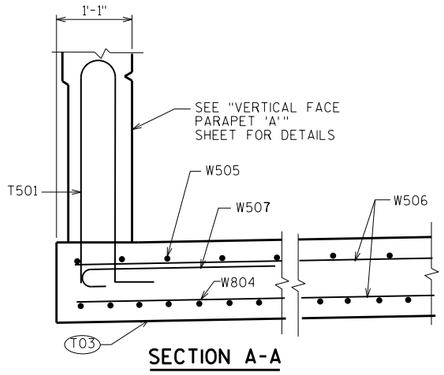
DRAWN BY WWR | PLANS CK'D. MWB

SOUTH STRUCTURAL APPROACH SLAB

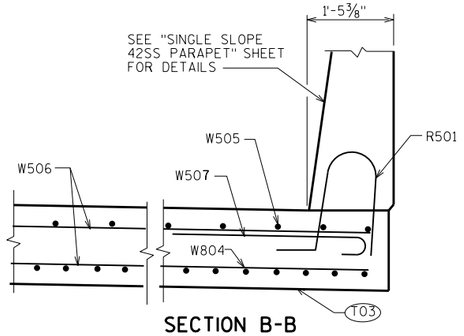
SHEET 17

197

SCALE = 6.00



SECTION A-A



SECTION B-B

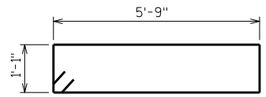
STATE PROJECT NUMBER

3100-07-70

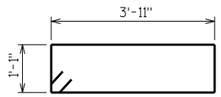
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

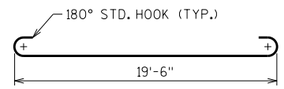
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
W501	X	71	14'-4"	X		FOOTING STIRRUP
W502	X	4	10'-8"	X		FOOTING STIRRUP
W803	X	24	46'-10"			FOOTING - TRANSVERSE-HORIZ.
W804	X	119	21'-4"	X		APPROACH SLAB - LONG. - BOT.
W505	X	73	19'-6"			APPROACH SLAB - LONG. - TOP
W506	X	84	45'-4"			APPROACH SLAB - TRANS. - TOP & BOT.
W507	X	40	4'-1"	X		APPROACH SLAB - TRANS. - TOP - EDGE



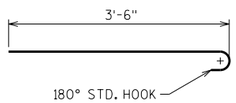
W501



W502



W804



W507

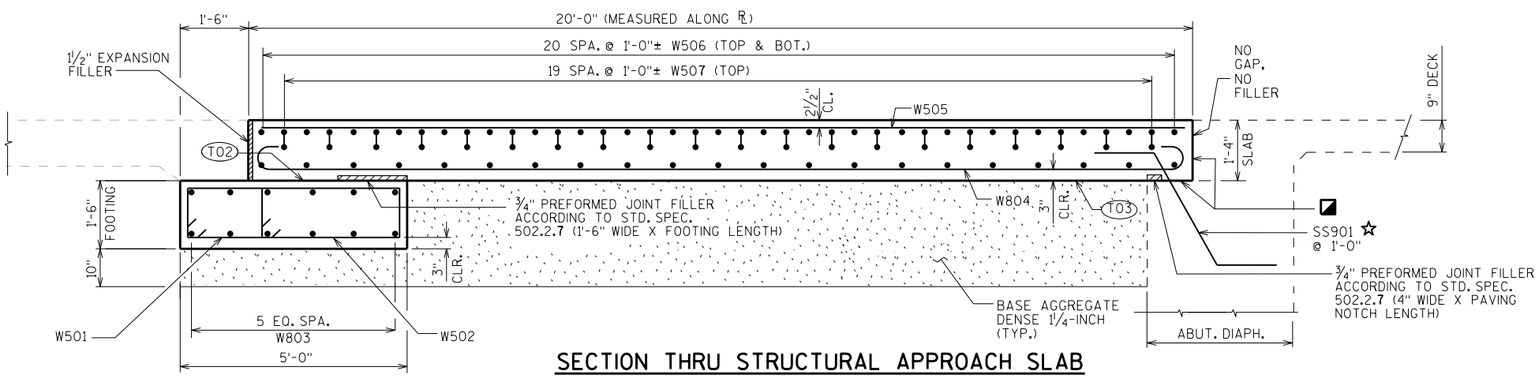
T02 STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE FOOTING.

T03 PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHLENE SHEETS OVER THE ENTIRE LENGTH OF THE SUBGRADE.

◪ APPLY PROTECTIVE SURFACE TREATMENT TO ENTIRE PAVING NOTCH SURFACE PRIOR TO POURING THE STRUCTURAL APPROACH SLAB.

☆ THE BID ITEM FOR SS901 BAR STEEL IS "BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES".

ALLOWABLE SOIL BEARING PRESSURE: 2,000 P.S.F.



SECTION THRU STRUCTURAL APPROACH SLAB

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

SOUTH STRUCTURAL APPROACH SLAB DETAILS

SHEET 18

198

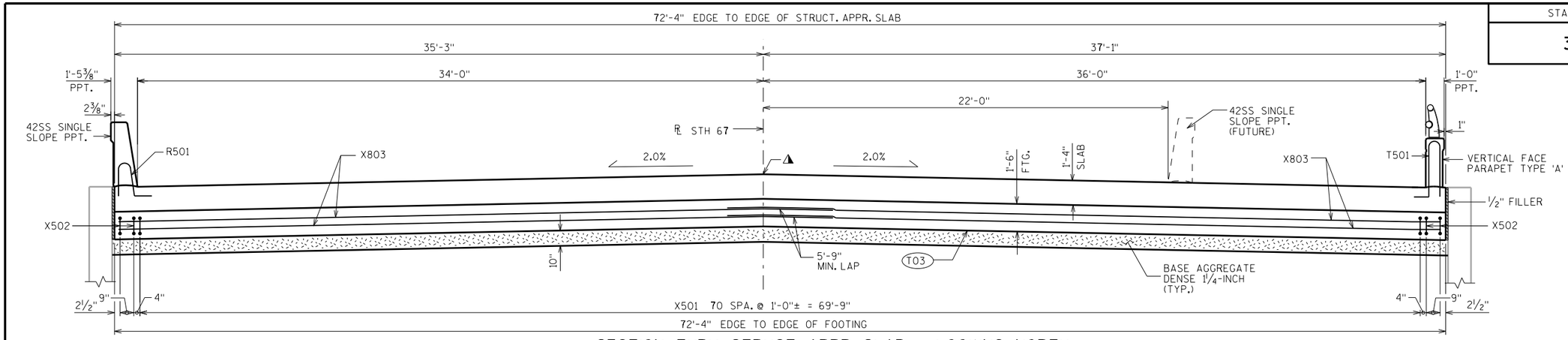
SCALE = 4.00

8

8

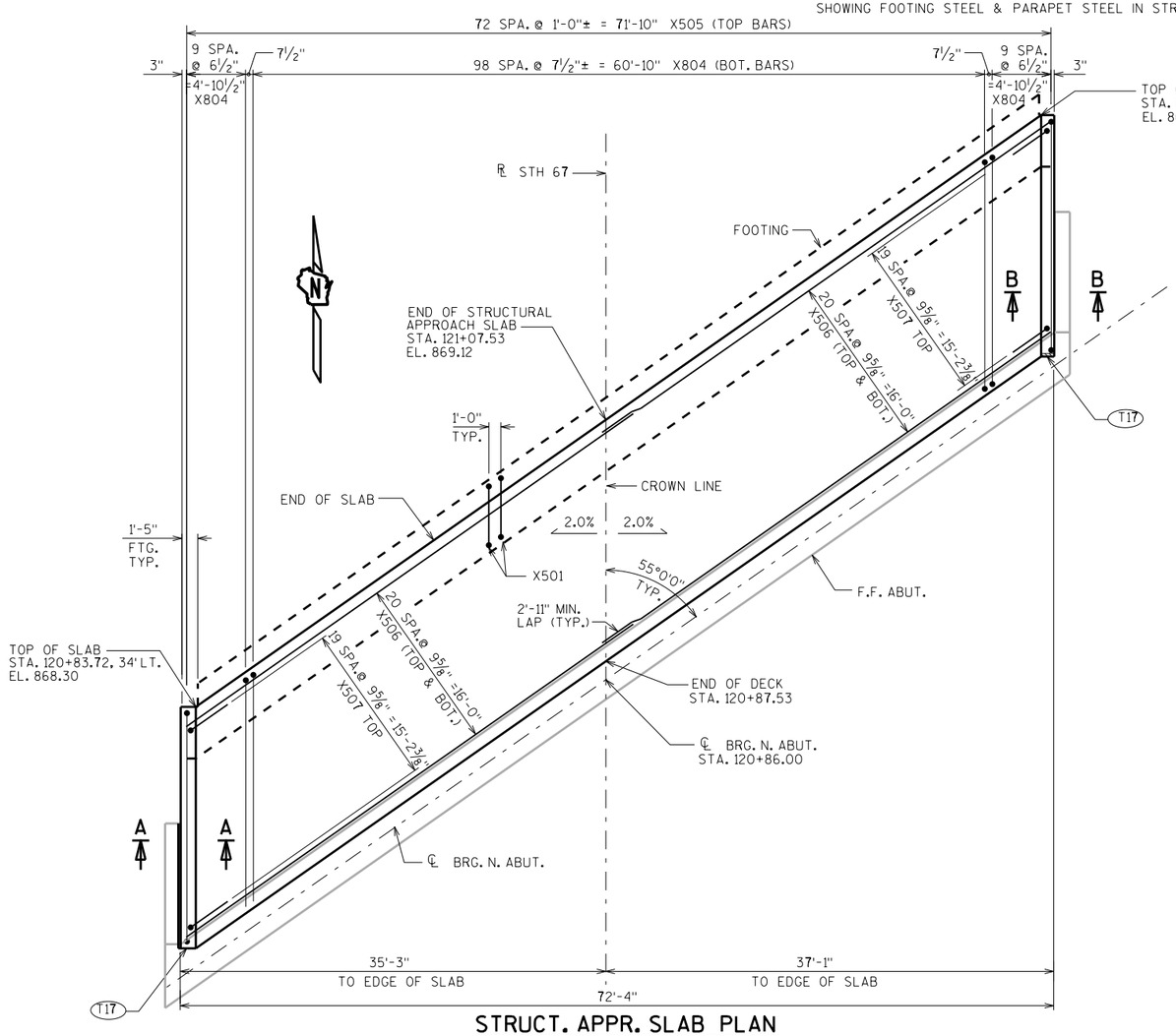
STATE PROJECT NUMBER

3100-07-70



SECTION THRU STRUCT. APPR. SLAB - LOOKING NORTH

SHOWING FOOTING STEEL & PARAPET STEEL IN STRUCT. APPR. SLAB ONLY



STRUCT. APPR. SLAB PLAN

(T03) PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE TOP OF SUBGRADE BENEATH SLAB.

(T17) ½" FILLER (INCLUDED IN PARAPET LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF ½" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD ⅛" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.

▲ CROWN POINT

NOTE: SEE "NORTH STRUCTURAL APPROACH SLAB DETAILS" SHEET FOR SECTIONS A-A AND B-B.

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

NORTH STRUCTURAL APPROACH SLAB

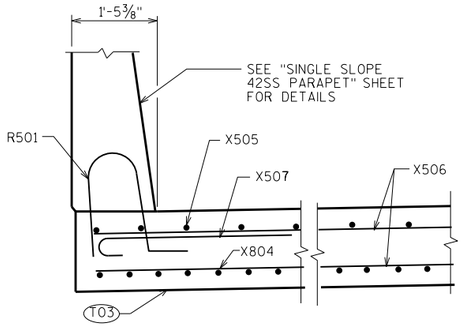
SHEET 19

199

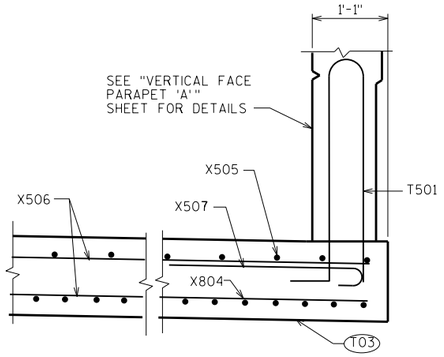
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STATE PROJECT NUMBER

3100-07-70



SECTION A-A

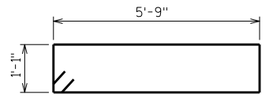


SECTION B-B

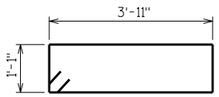
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

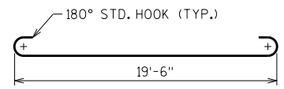
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
X501	X	71	14'-4"	X		FOOTING STIRRUP
X502	X	4	10'-8"	X		FOOTING STIRRUP
X803	X	24	46'-10"			FOOTING - TRANSVERSE-HORIZ.
X804	X	119	21'-4"	X		APPROACH SLAB - LONG. - BOT.
X505	X	73	19'-6"			APPROACH SLAB - LONG. - TOP
X506	X	84	45'-4"			APPROACH SLAB - TRANS. - TOP & BOT.
X507	X	40	4'-1"	X		APPROACH SLAB - TRANS. - TOP - EDGE



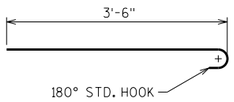
X501



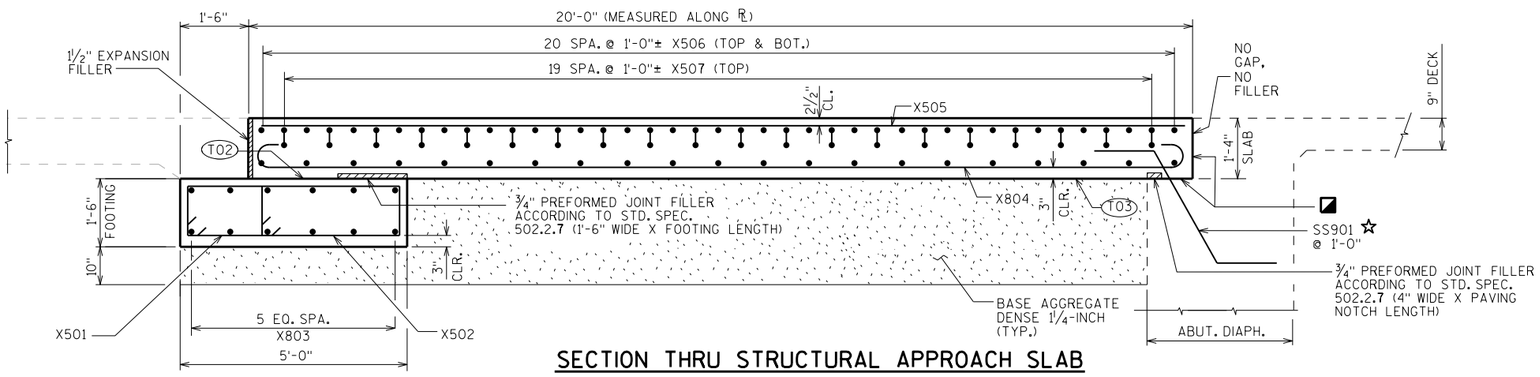
X502



X804



X507



SECTION THRU STRUCTURAL APPROACH SLAB

T02 STEEL TROWEL TOP SURFACE OF FOOTING AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE FOOTING.

T03 PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHLENE SHEETS OVER THE ENTIRE LENGTH OF THE SUBGRADE.

◪ APPLY PROTECTIVE SURFACE TREATMENT TO ENTIRE PAVING NOTCH SURFACE PRIOR TO POURING THE STRUCTURAL APPROACH SLAB.

☆ THE BID ITEM FOR SS901 BAR STEEL IS "BAR STEEL REINFORCEMENT HS STAINLESS STRUCTURES".

ALLOWABLE SOIL BEARING PRESSURE: 2,000 P.S.F.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

NORTH STRUCTURAL APPROACH SLAB DETAILS

SHEET 20

200

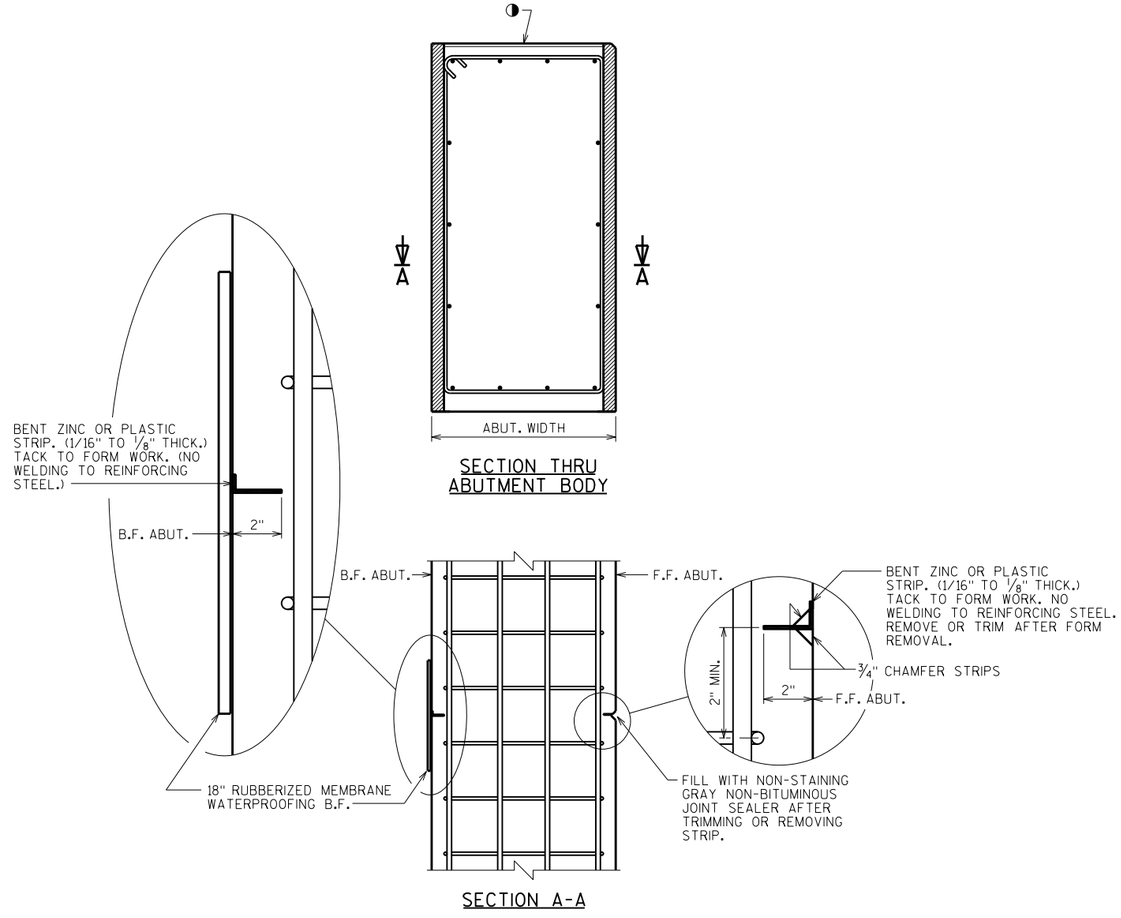
SCALE = 4.00

8

8

STATE PROJECT NUMBER

1071-02-71



SECTION THRU ABUTMENT BODY

SECTION A-A

ALTERNATE CONSTRUCTION JOINT AT ABUTMENT

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.

SAW CUTTING JOINT IS NOT ALLOWED.

◑ USE A JOINT TOOL TO CONSTRUCT A CONTRACTION JOINT APPROXIMATELY 1/2" DEEP.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-67-376

DRAWN BY WWR | PLANS CK'D. MWB

ALTERNATE CONSTRUCTION JOINT

SHEET 21

201

SCALE = 1.00

8

8

PROJECT ID 3100-07-70
DIVISION 1 - STH 67

STATION		Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			Mass Ordinate
			Cut	Fill	EBS	Cut	Fill	EBS	Cut	Fill	EBS	
110+00	AH	0.00	19.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110+50		50.00	25.60	0.00	3.25	41.78	0.00	3.01	41.78	0.00	3.01	41.78
111+00		50.00	24.25	0.00	7.00	46.16	0.00	9.49	87.94	0.00	12.50	87.94
111+50		50.00	28.36	2.10	10.00	48.71	1.94	15.74	136.65	1.94	28.24	134.70
112+00		50.00	58.22	0.00	3.50	80.17	1.94	12.50	216.81	3.89	40.74	212.93
112+50		50.00	31.75	4.60	11.00	83.31	4.26	13.43	300.12	8.15	54.17	291.97
113+00		50.00	22.59	0.00	9.25	50.31	4.26	18.75	350.44	12.41	72.92	338.03
113+50		50.00	14.18	0.00	7.00	34.05	0.00	15.05	384.48	12.41	87.97	372.07
114+00		50.00	16.50	0.00	7.25	28.41	0.00	13.19	412.89	12.41	101.16	400.48
114+50		50.00	17.85	0.00	7.00	31.81	0.00	13.19	444.69	12.41	114.35	432.29
115+00		50.00	103.80	0.00	7.50	112.64	0.00	13.43	557.33	12.41	127.78	544.93
115+50		50.00	60.10	0.90	9.50	151.76	0.83	15.74	709.09	13.24	143.52	695.85
116+00		50.00	40.10	5.20	11.50	92.78	5.65	19.44	801.87	18.89	162.96	782.98
116+50		50.00	25.00	17.10	13.25	60.28	20.65	22.92	862.15	39.54	185.88	822.61
117+00		50.00	31.30	50.10	12.00	52.13	62.22	23.38	914.28	101.76	209.26	812.52
117+50		50.00	32.50	87.70	10.50	59.07	127.59	20.83	973.35	229.35	230.09	744.00
118+00		50.00	27.70	184.20	10.50	55.74	251.76	19.44	1,029.09	481.11	249.53	547.98
118+29		29.00	32.00	207.60	10.50	32.06	210.41	11.28	1,061.15	691.52	260.81	369.63
118+50		21.00	30.50	208.90	10.50	24.31	161.97	8.17	1,085.46	853.49	268.98	231.96
118+54		4.00	30.90	208.80	10.50	4.55	30.94	1.56	1,090.01	884.44	270.54	205.57
118+79		25.00	30.00	192.20	10.50	28.19	185.65	9.72	1,118.20	1,070.08	280.26	48.12
119+00		21.00	29.80	198.10	10.50	23.26	151.78	8.17	1,141.46	1,221.87	288.43	-80.41
119+50		50.00	30.70	324.70	10.50	56.02	484.07	19.44	1,197.48	1,705.94	307.87	-508.46
119+69		19.00	27.70	392.40	10.50	20.55	252.31	7.39	1,218.02	1,958.25	315.26	-740.23
120+00		31.00	25.70	177.80	10.50	30.66	327.34	12.06	1,248.68	2,285.59	327.32	-1,036.91
120+18	BK	18.00	0.00	68.20	10.50	8.57	82.00	7.00	1,257.25	2,367.59	334.32	-1,110.34
					Column totals:	1,257.25	2,367.59	334.31				

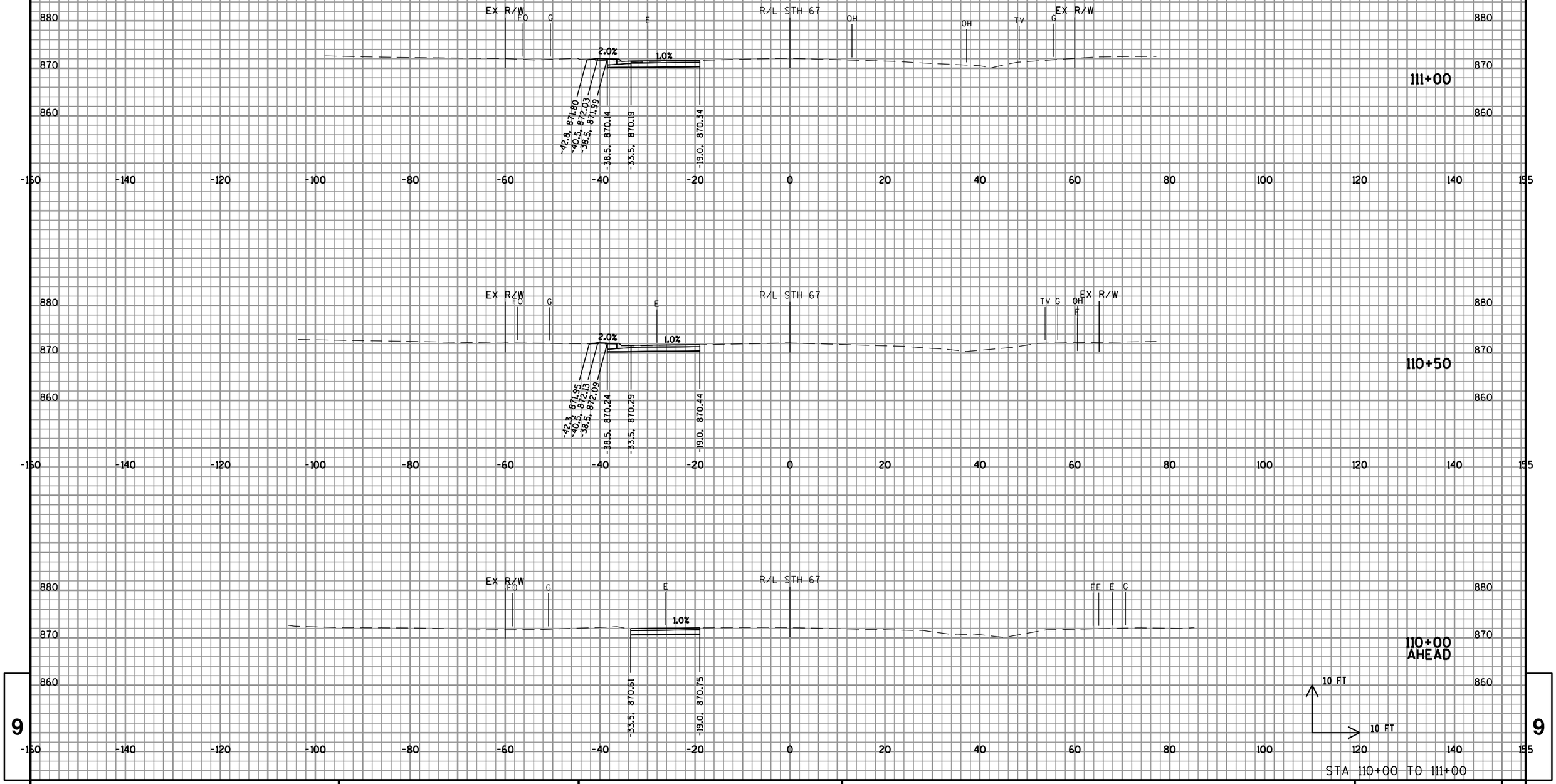
PROJECT ID 3100-07-70
DIVISION 1 - Whitaker Lane

STATION		Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			Mass Ordinate
			Cut	Fill	EBS	Cut	Fill	EBS	Cut	Fill	EBS	
10+50	AH	0.00	0.00	86.87	4.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11+00		50.00	8.06	5.79	0.00	7.47	85.80	4.17	7.47	85.80	4.17	-78.34
11+50		50.00	20.63	0.71	1.00	26.56	6.03	0.93	34.03	91.83	5.10	-57.80
11+90		40.00	36.30	0.01	2.00	42.17	0.54	2.22	76.19	92.36	7.32	-16.17
12+00		10.00	29.65	1.89	2.00	12.21	0.35	0.74	88.41	92.71	8.06	-4.31
12+50		50.00	56.29	0.00	1.50	79.57	1.75	3.24	167.97	94.46	11.30	73.51
13+00	BK	50.00	41.94	0.00	1.50	90.95	0.00	2.78	258.93	94.46	14.08	164.46
				Column totals:		258.93	94.46	14.07				

FILE NAME: \\milw00\ingrproj\1517-75-76\ti\cds\090101_ew.ppt PLOT DATE : 2/7/2018 11:04:56 PM PLOT BY : HNTB. CORP PLOT NAME : 090101_ew2 PLOT SCALE : 1:1

PROJECT ID 3100-07-70
DIVISION 2 - STH 67

STATION		Distance	AREA (SF)			Incremental Vol (CY) (Unadjusted)			Cumulative Vol (CY)			Mass Ordinate
			Cut	Fill	EBS	Cut	Fill	EBS	Cut	Fill	EBS	
120+84	AH	0.00	25.50	106.00	16.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
121+00		16.00	25.70	194.30	15.00	15.23	115.14	8.89	15.23	115.14	0.00	-99.91
121+33		33.00	26.10	454.90	15.00	31.66	396.73	18.33	46.89	511.87	18.33	-464.99
121+50		17.00	26.50	458.90	16.50	16.56	287.68	9.92	63.44	799.55	28.25	-736.11
122+00		50.00	28.60	436.00	20.00	51.02	828.61	33.80	114.46	1,628.16	62.05	-1,513.70
122+50		50.00	26.70	408.40	20.50	51.20	781.85	37.50	165.67	2,410.01	99.55	-2,244.35
122+61		11.00	26.00	396.90	22.00	10.74	164.04	8.66	176.40	2,574.06	108.21	-2,397.66
122+86		25.00	22.70	393.80	18.00	22.55	366.06	18.52	198.95	2,940.12	126.73	-2,741.17
123+00		14.00	21.90	384.10	16.00	11.56	201.68	8.81	210.51	3,141.80	135.54	-2,931.29
123+02		2.00	21.80	379.20	10.50	1.62	28.27	0.98	212.13	3,170.07	136.52	-2,957.94
123+11		9.00	21.80	365.70	8.00	7.27	124.15	3.08	219.40	3,294.22	139.60	-3,074.82
123+27		16.00	21.70	331.30	7.50	12.89	206.52	4.59	232.29	3,500.74	144.19	-3,268.45
123+50		23.00	21.60	314.80	7.50	18.44	275.19	6.39	250.73	3,775.93	150.58	-3,525.20
124+00		50.00	21.80	244.90	7.50	40.19	518.24	13.89	290.91	4,294.17	164.47	-4,003.26
124+50		50.00	21.80	183.90	7.50	40.37	397.04	13.89	331.28	4,691.21	178.36	-4,359.92
125+00		50.00	21.80	138.70	7.50	40.37	298.70	13.89	371.65	4,989.91	192.25	-4,618.26
125+50		50.00	21.90	101.80	7.75	40.46	222.69	13.89	412.12	5,212.60	206.14	-4,800.48
126+00		50.00	21.00	50.10	7.50	39.72	140.65	14.35	451.84	5,353.24	220.49	-4,901.41
126+50		50.00	21.90	50.00	7.50	39.72	92.69	14.12	491.56	5,445.93	234.61	-4,954.37
127+00		50.00	23.40	25.40	7.50	41.94	69.81	13.89	533.51	5,515.74	248.50	-4,982.24
127+36		36.00	42.60	0.00	7.50	44.00	16.93	10.00	577.51	5,532.68	258.50	-4,955.17
127+50		14.00	32.60	0.00	7.50	19.50	0.00	3.89	597.00	5,532.68	262.39	-4,935.68
128+00		50.00	47.70	0.00	4.00	74.35	0.00	13.89	671.35	5,532.68	276.28	-4,861.32
128+50		50.00	51.00	0.00	7.50	91.39	0.00	10.65	762.74	5,532.68	286.93	-4,769.94
129+00		50.00	40.90	0.00	7.50	85.09	0.00	10.65	847.84	5,532.68	297.58	-4,684.84
129+25	BK	25.00	41.50	0.00	5.50	38.15	0.00	6.94	885.98	5,532.68	304.52	-4,646.69
					Column totals:	885.98	5,532.68	313.41				



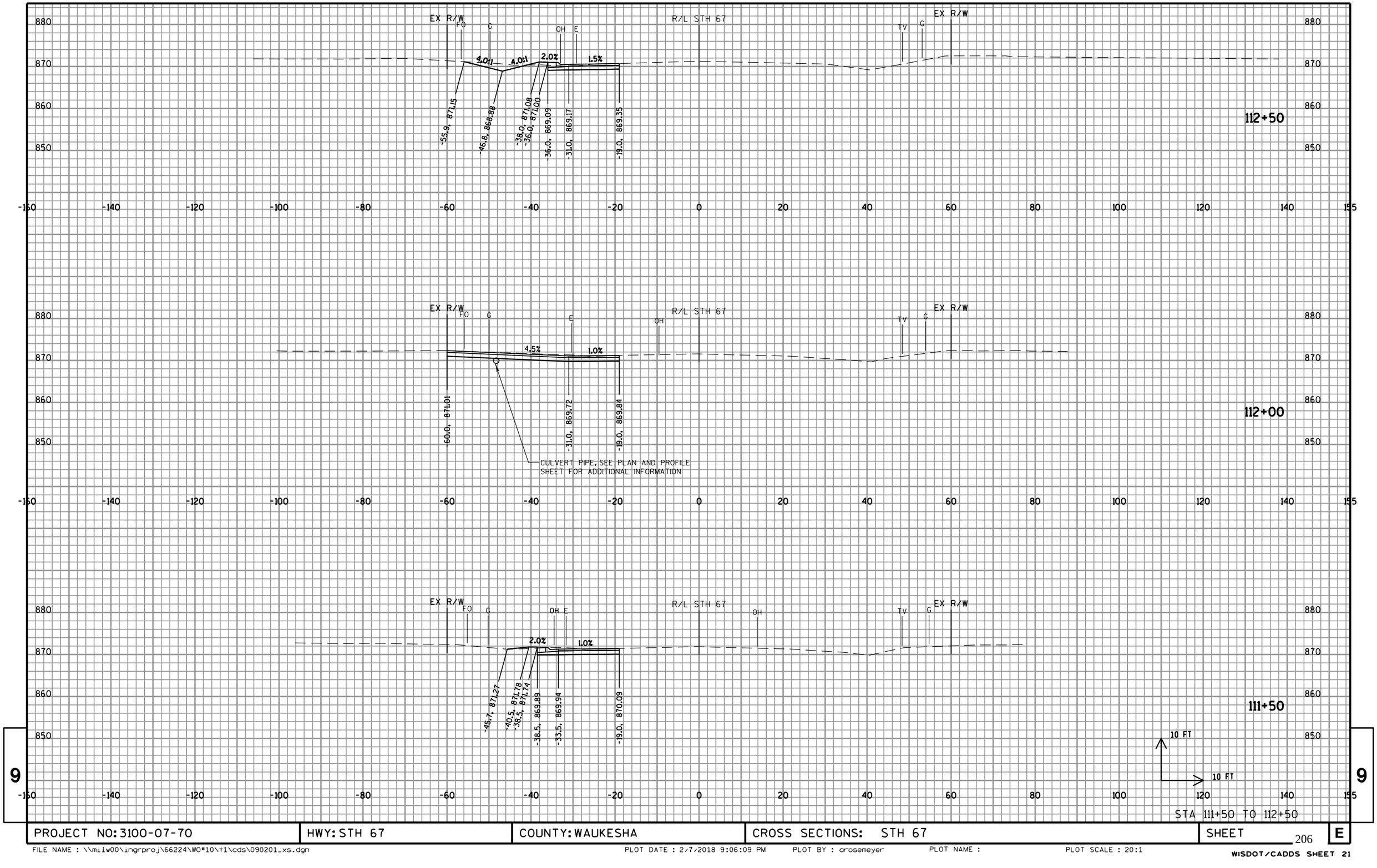
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9

STA 110+00 TO 111+00

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

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PLOT DATE : 2/7/2018 9:06:08 PM
PLOT BY : grosemeyer
PLOT NAME :
PLOT SCALE : 20:1
WISDOT/CADDS SHEET 21



9

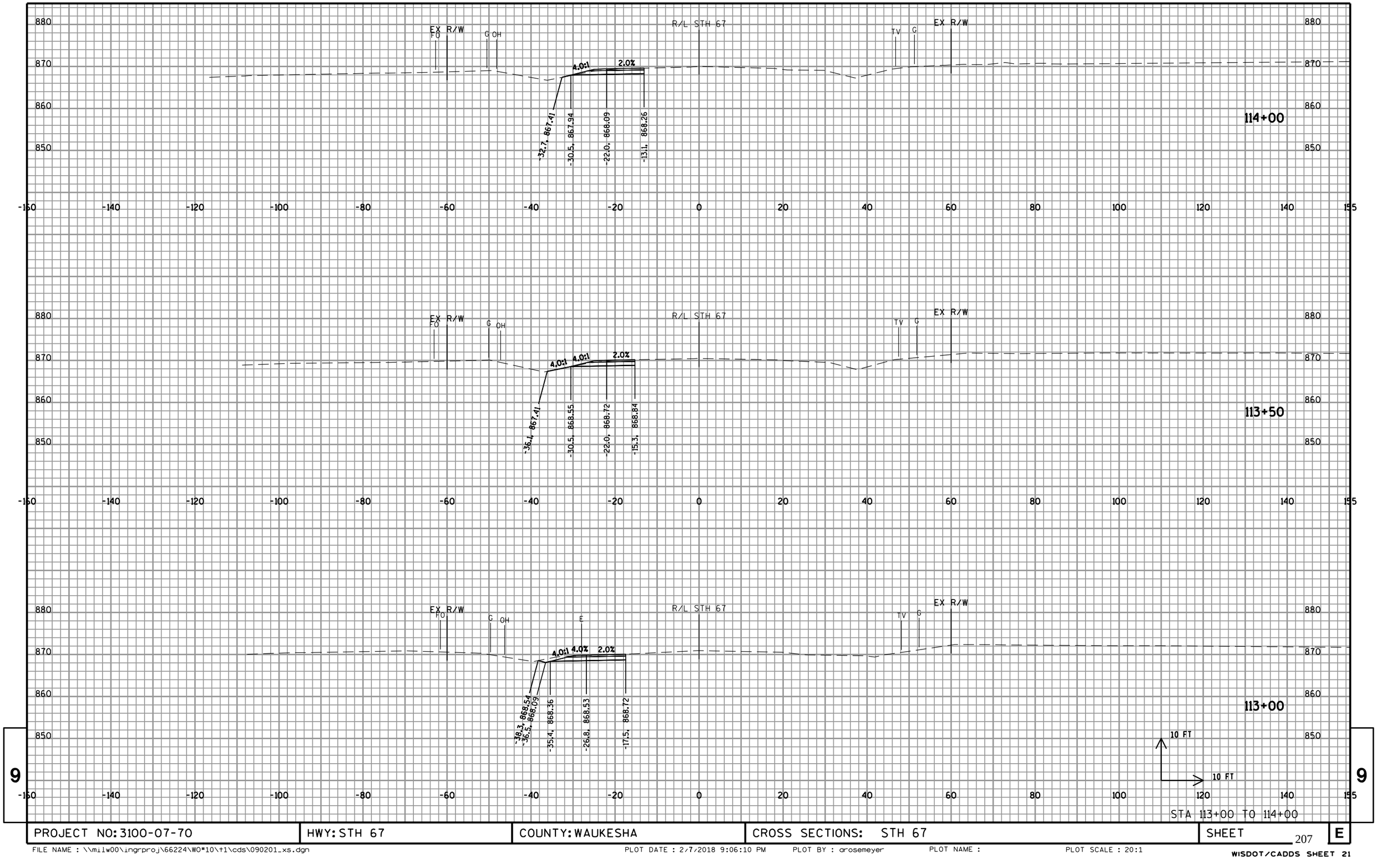
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STA 111+50 TO 112+50

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:09 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



9

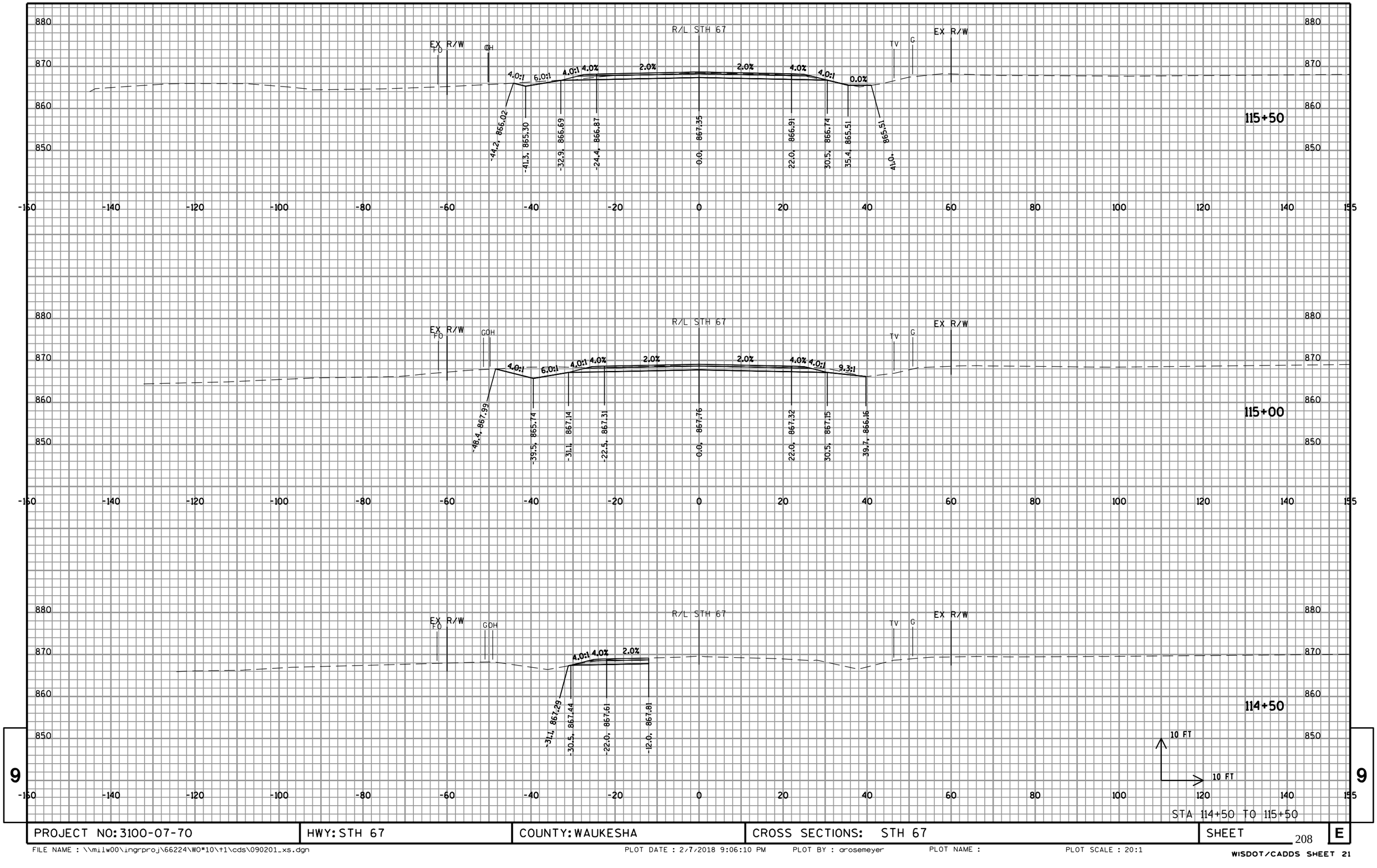
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STA 113+00 TO 114+00

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:10 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



9

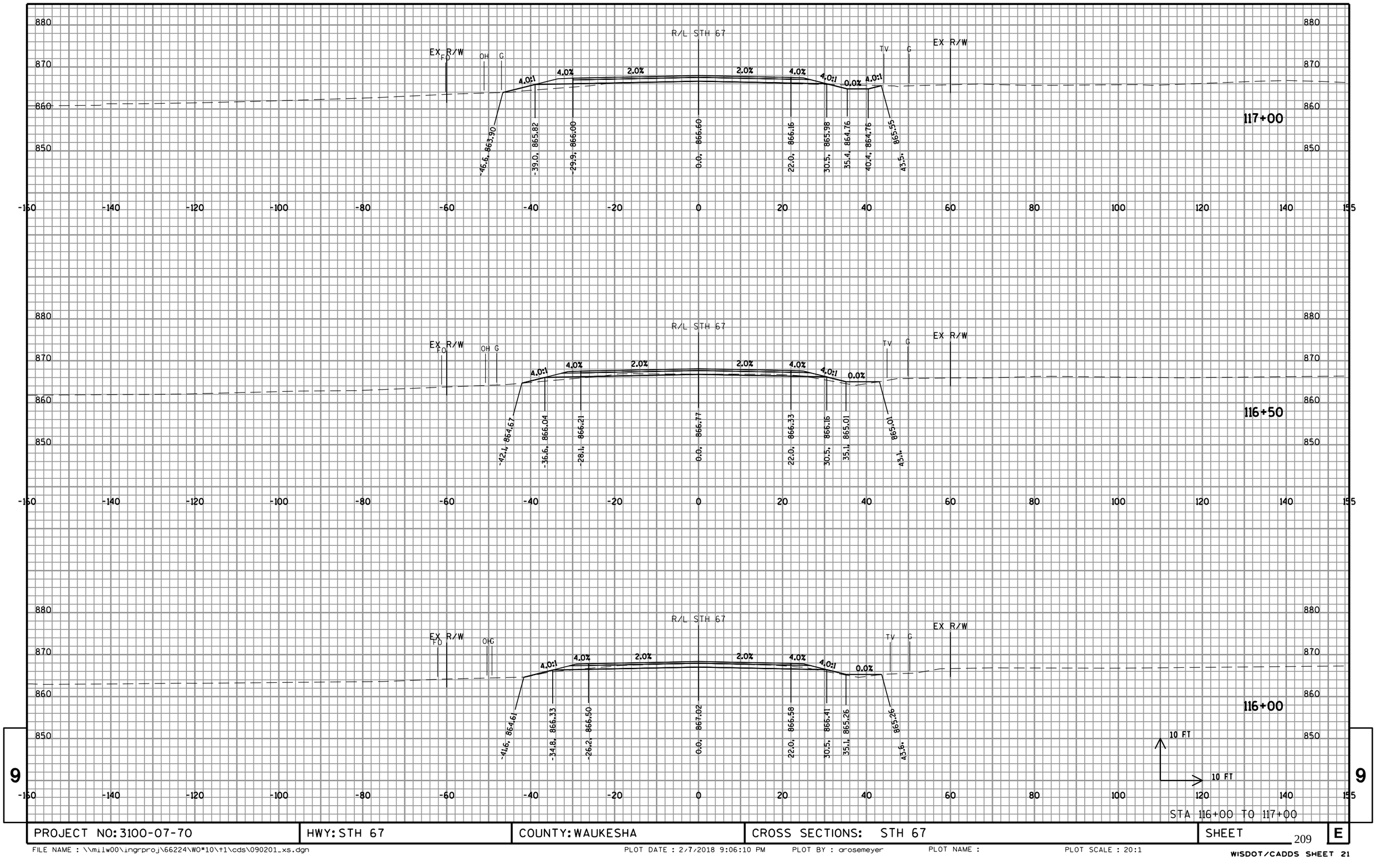
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STA 114+50 TO 115+50

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:10 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

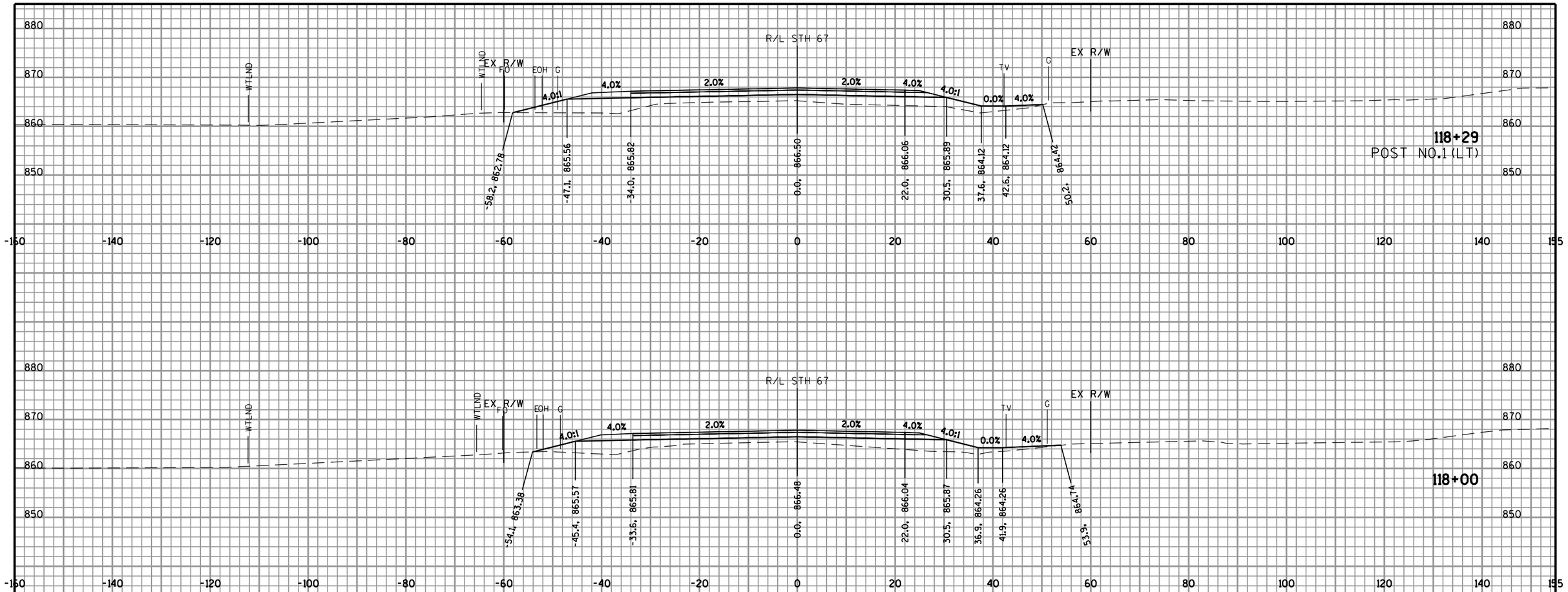


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PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:10 PM PLOT BY : grosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



9

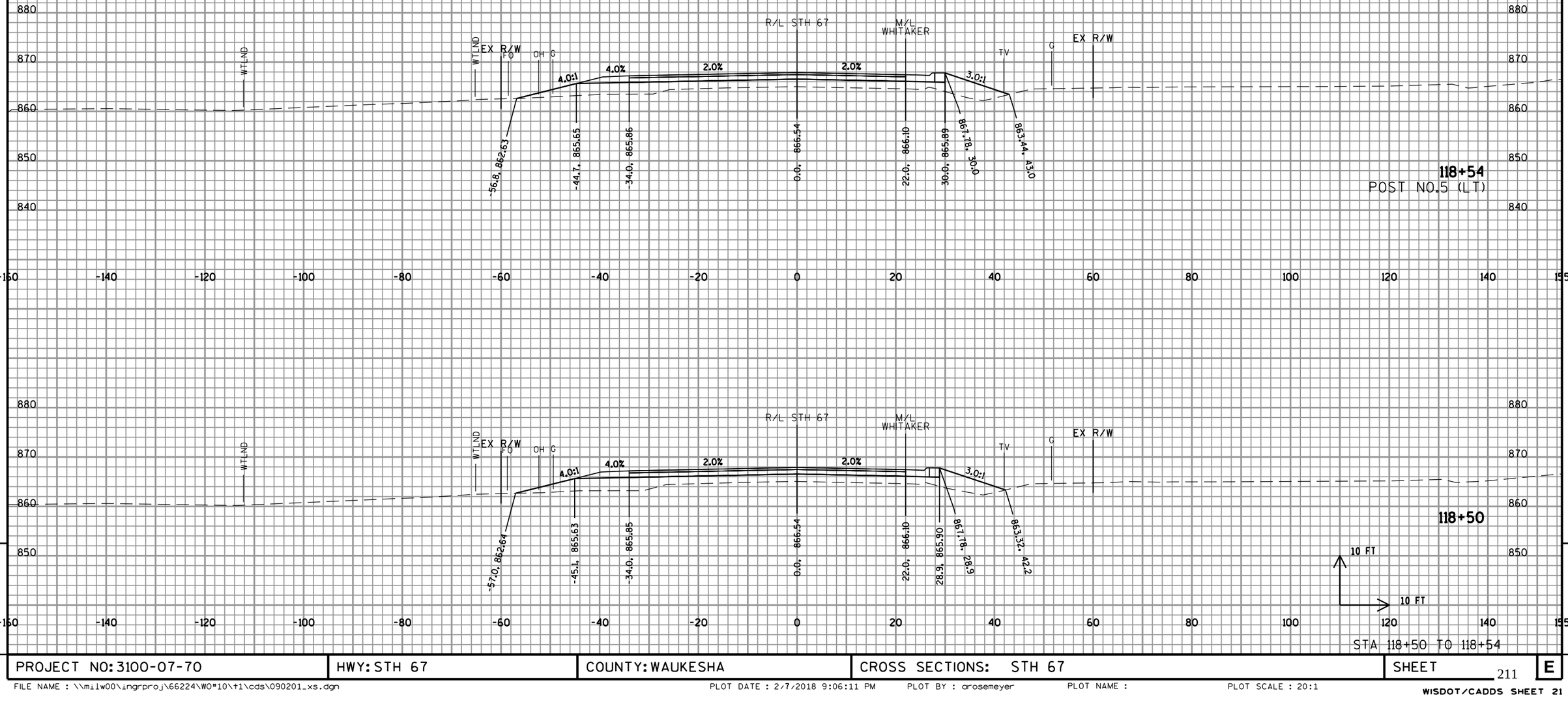
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STA 117+50 TO 118+29

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

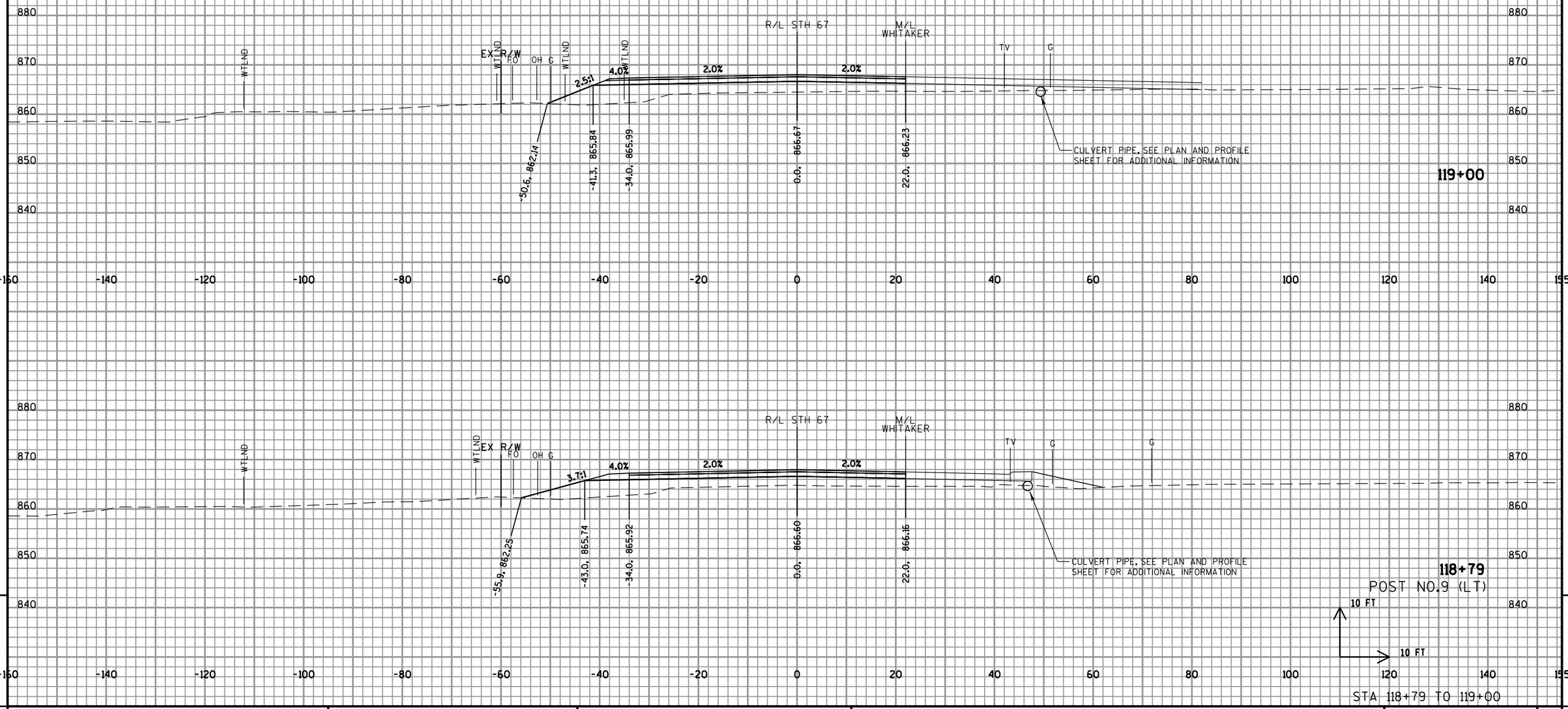
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WISDOT/CADDS SHEET 21



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:11 PM PLOT BY : crosemeyer PLOT NAME : PLOT SCALE : 20:1
WISDOT/CADDS SHEET 21



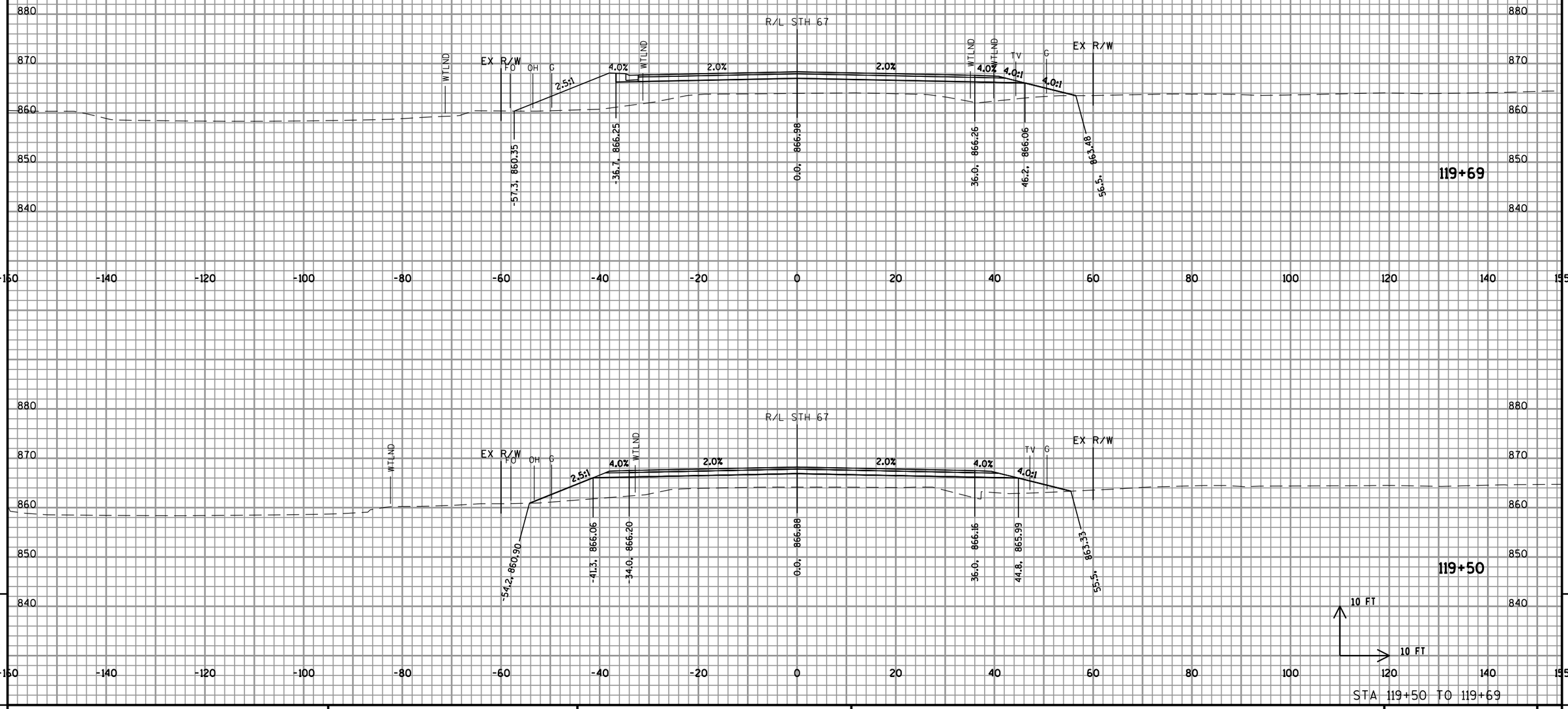
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PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:12 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



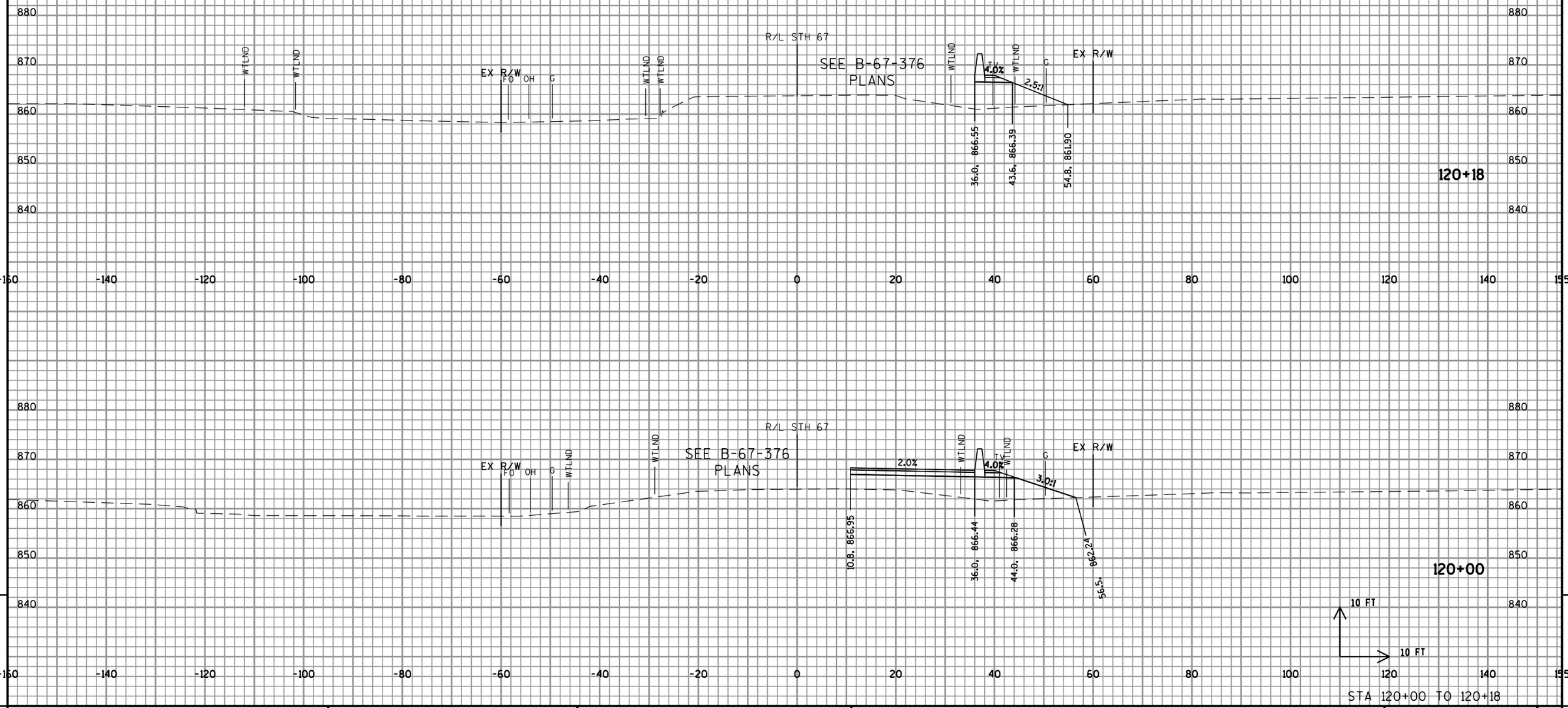
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PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:12 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



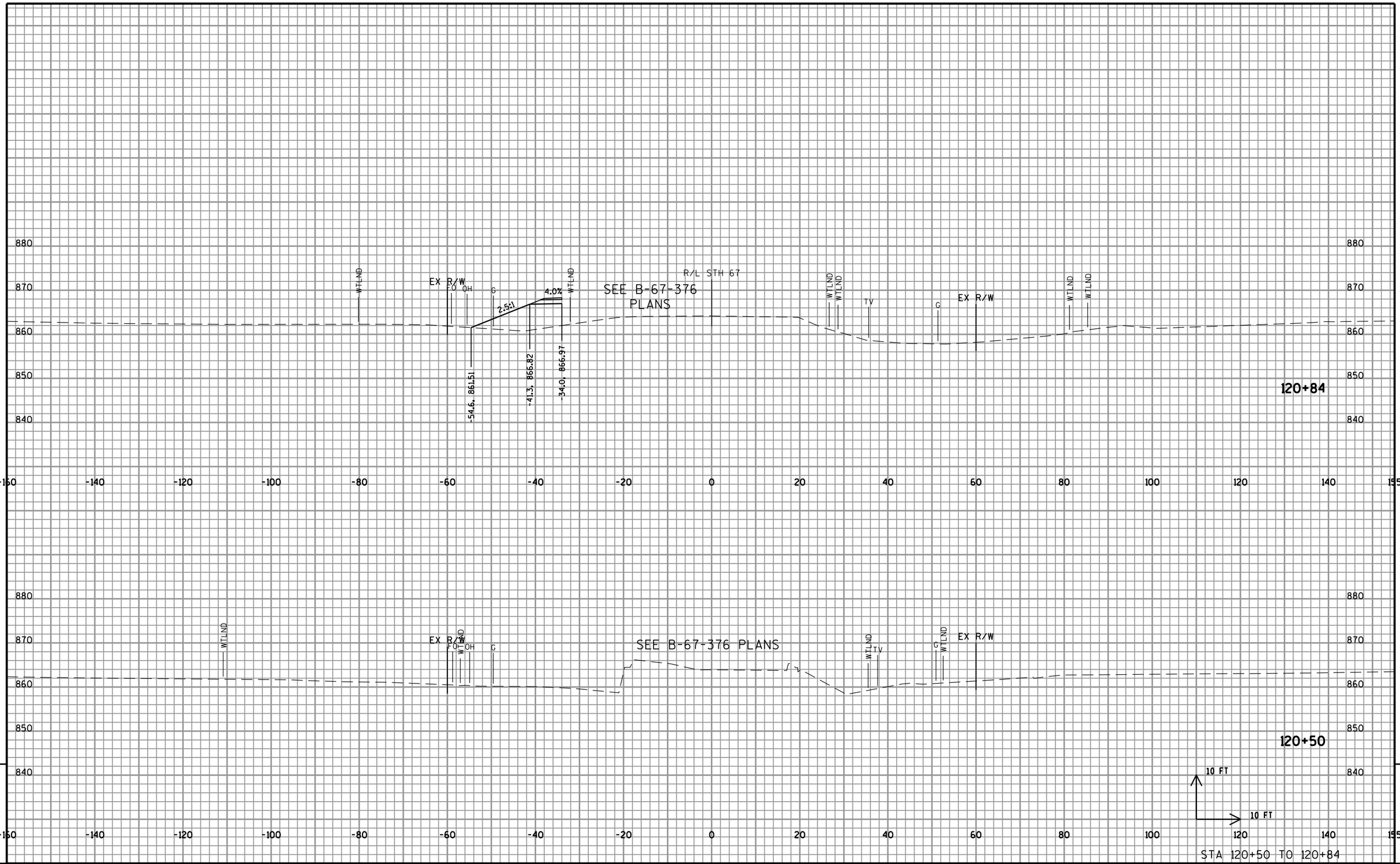
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PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:13 PM PLOT BY : crosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



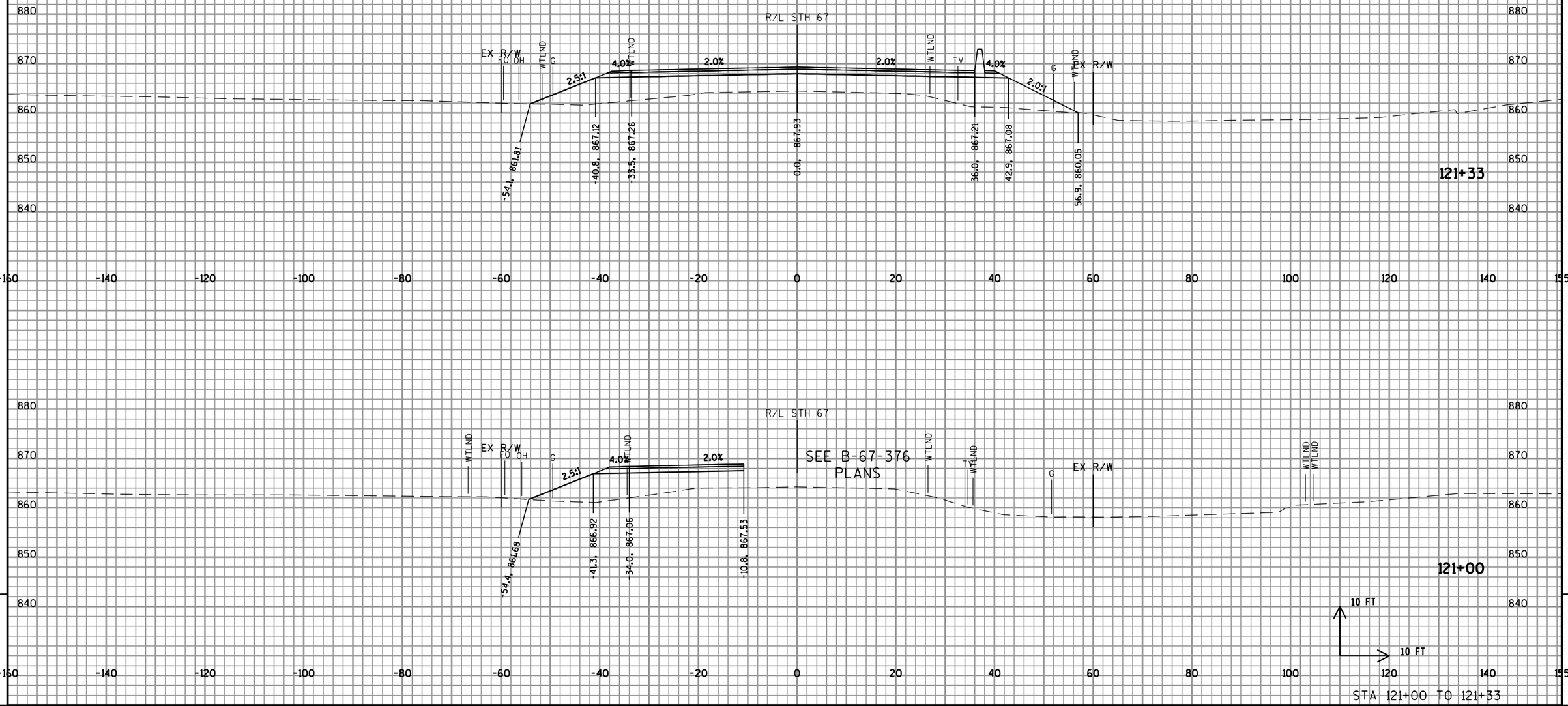
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PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:13 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

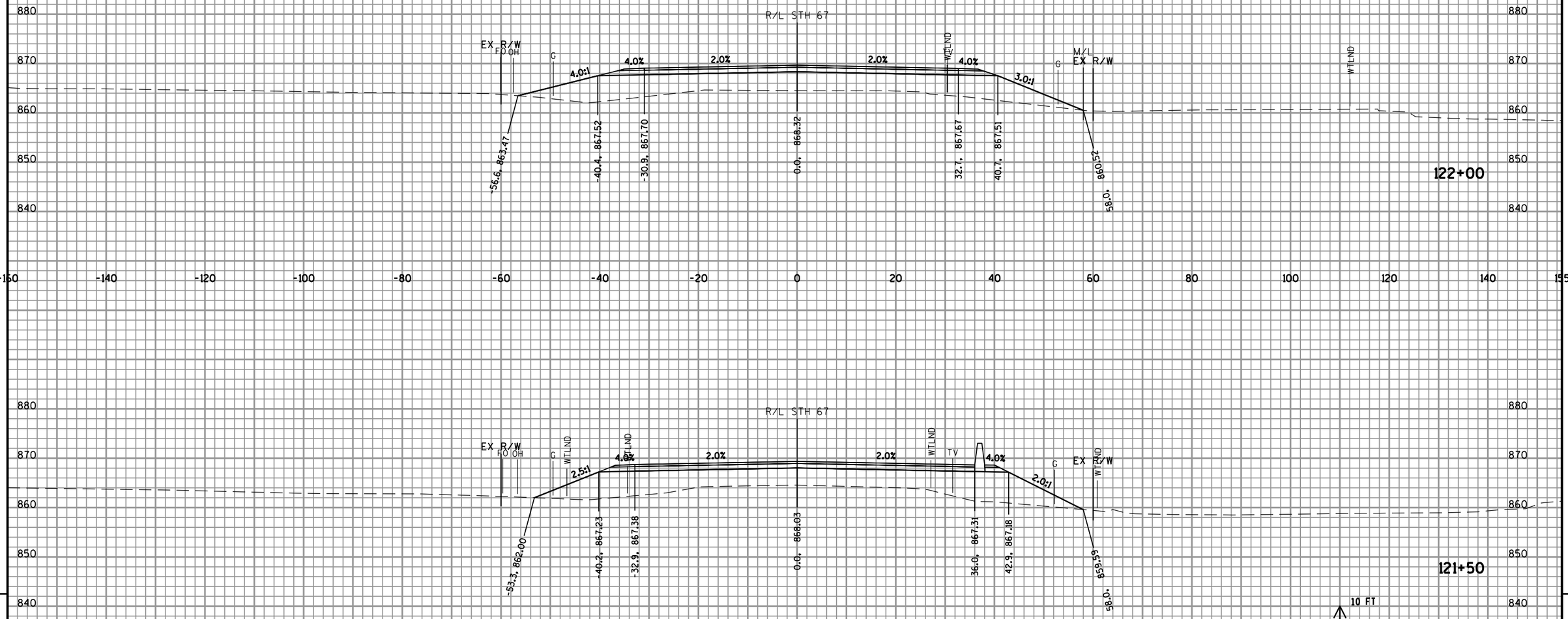
WISDOT/CADDS SHEET 21



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET E

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WISDOT/CADDS SHEET 21



9

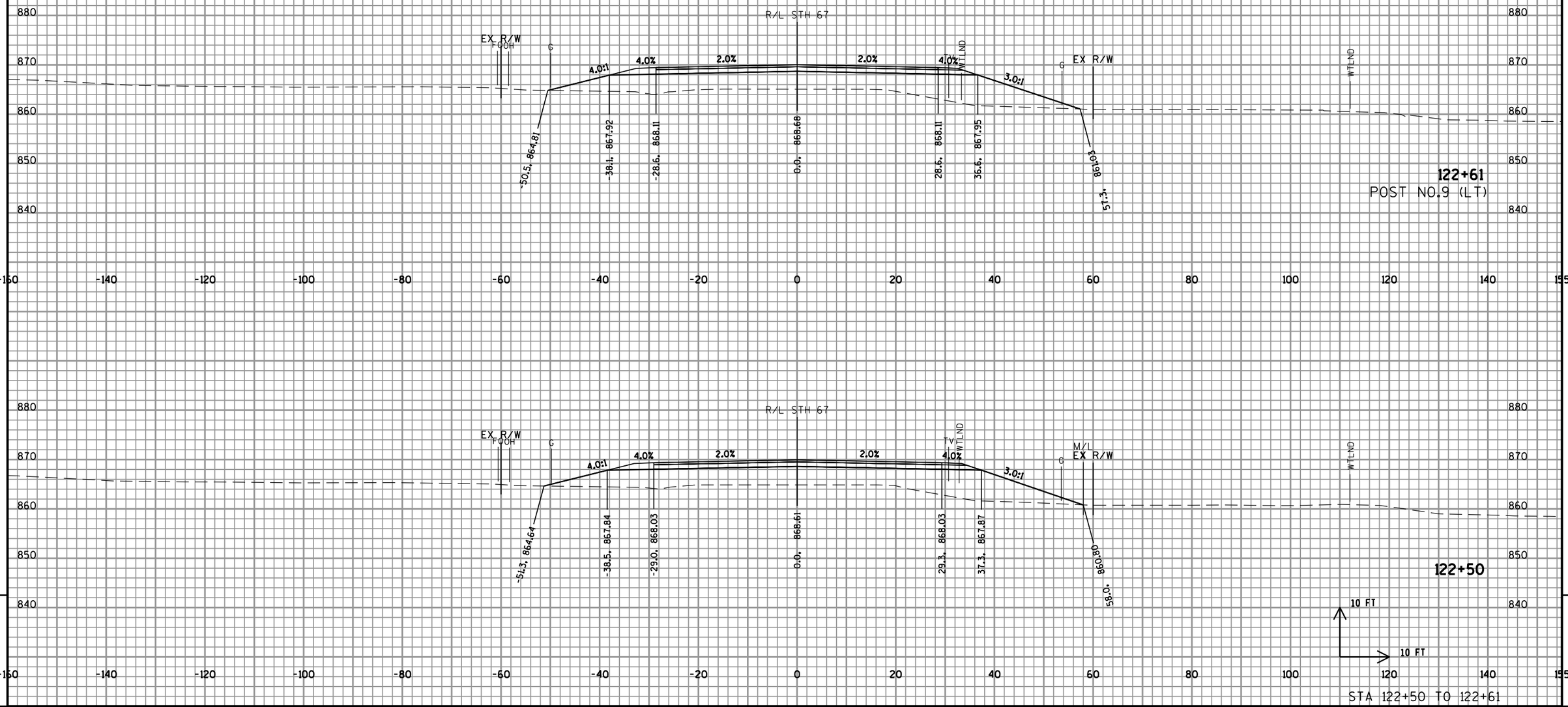
STA 121+50 TO 122+00

9

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:15 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



9

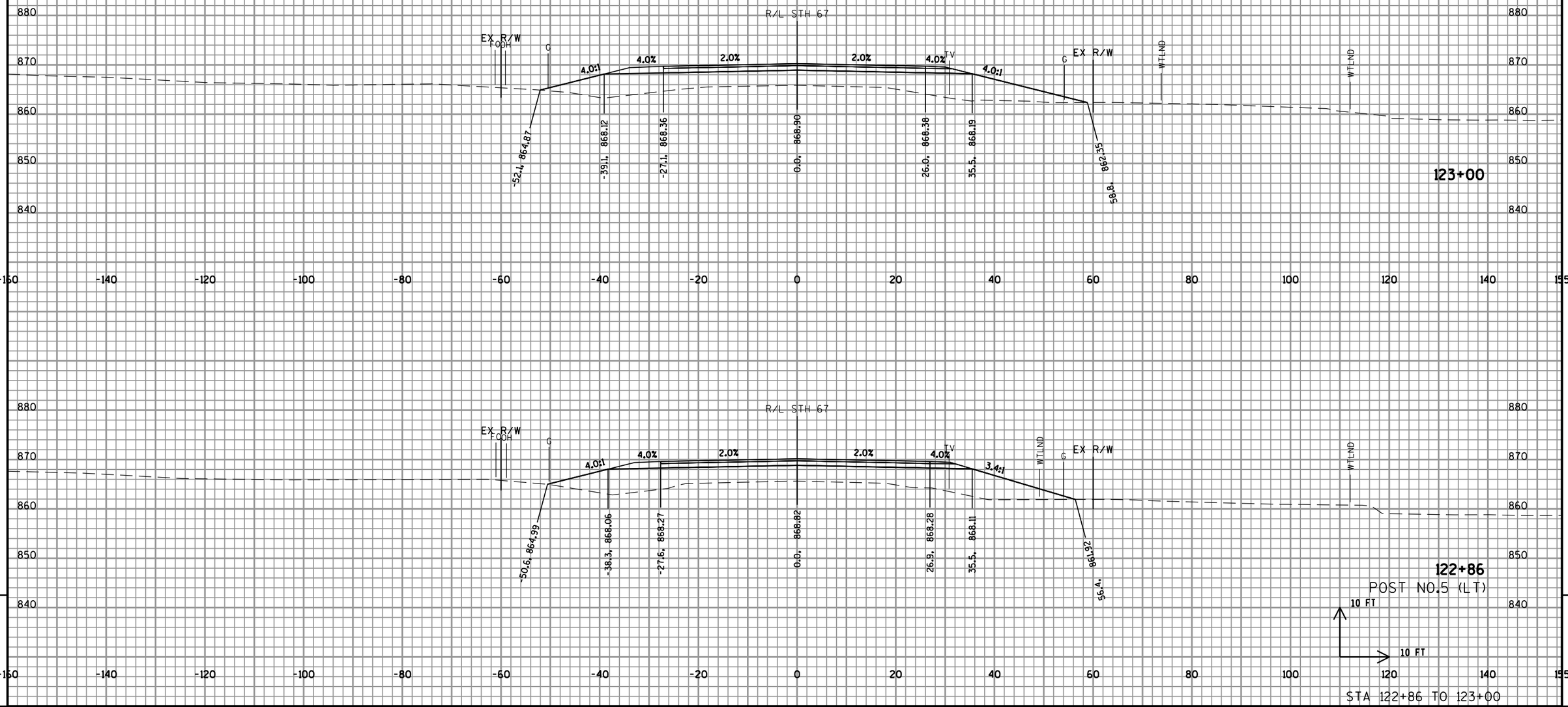
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STA 122+50 TO 122+61

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:15 PM PLOT BY : crosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



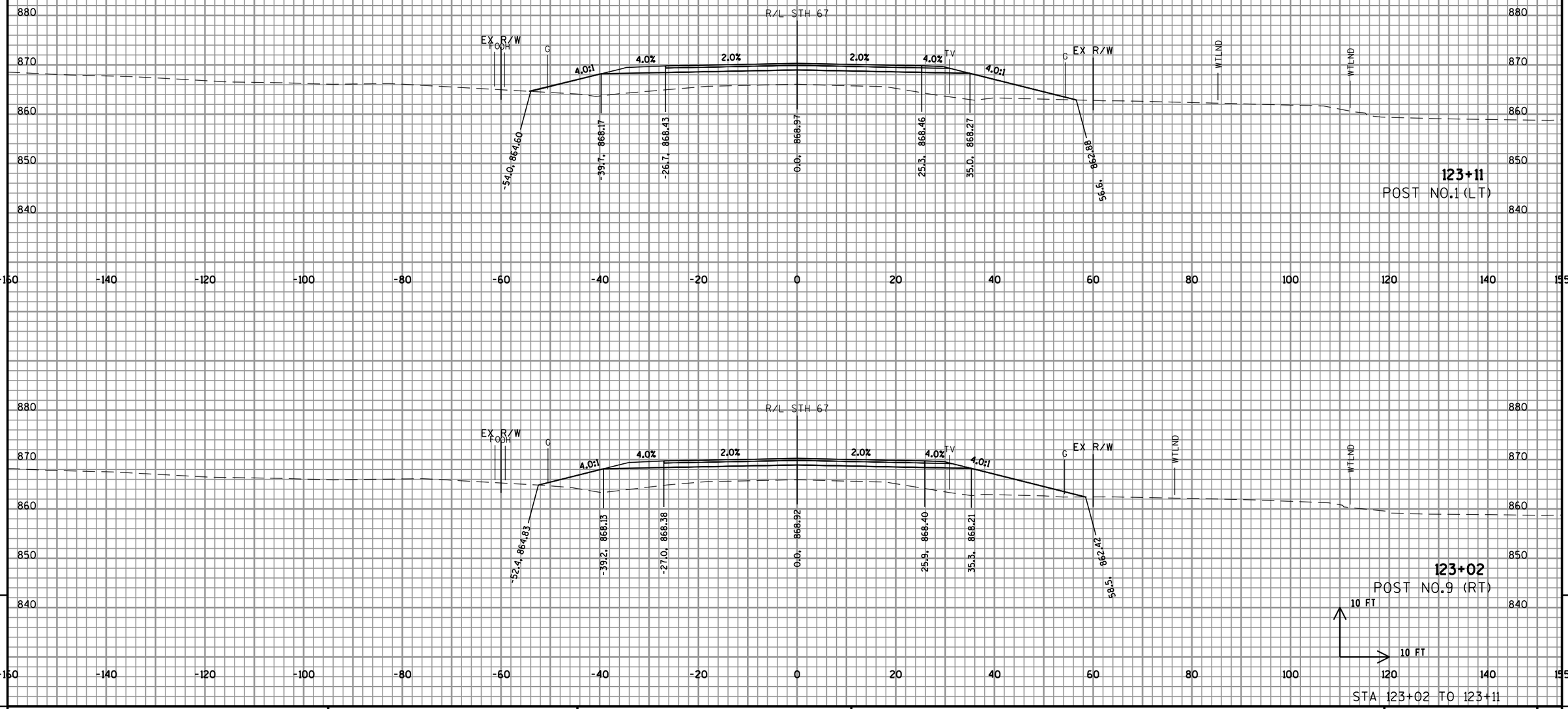
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PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:16 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



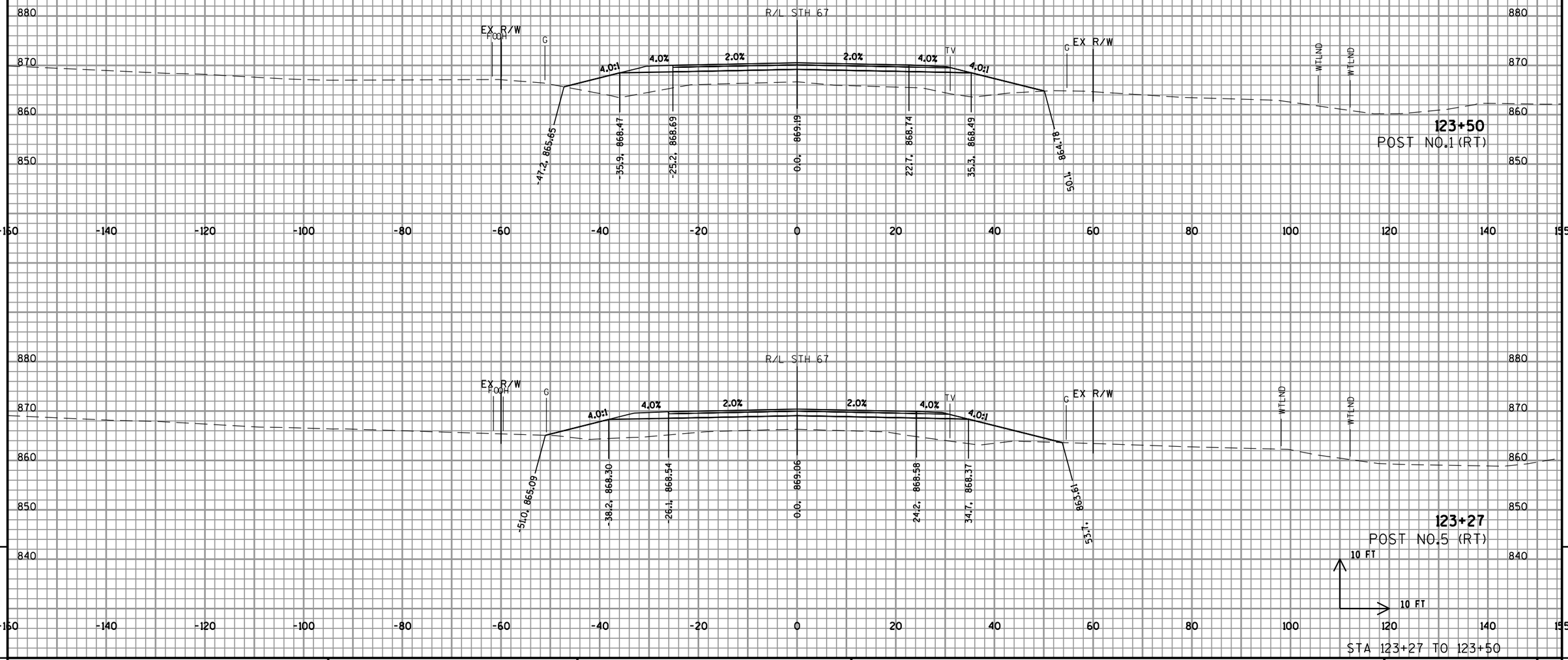
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PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:16 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

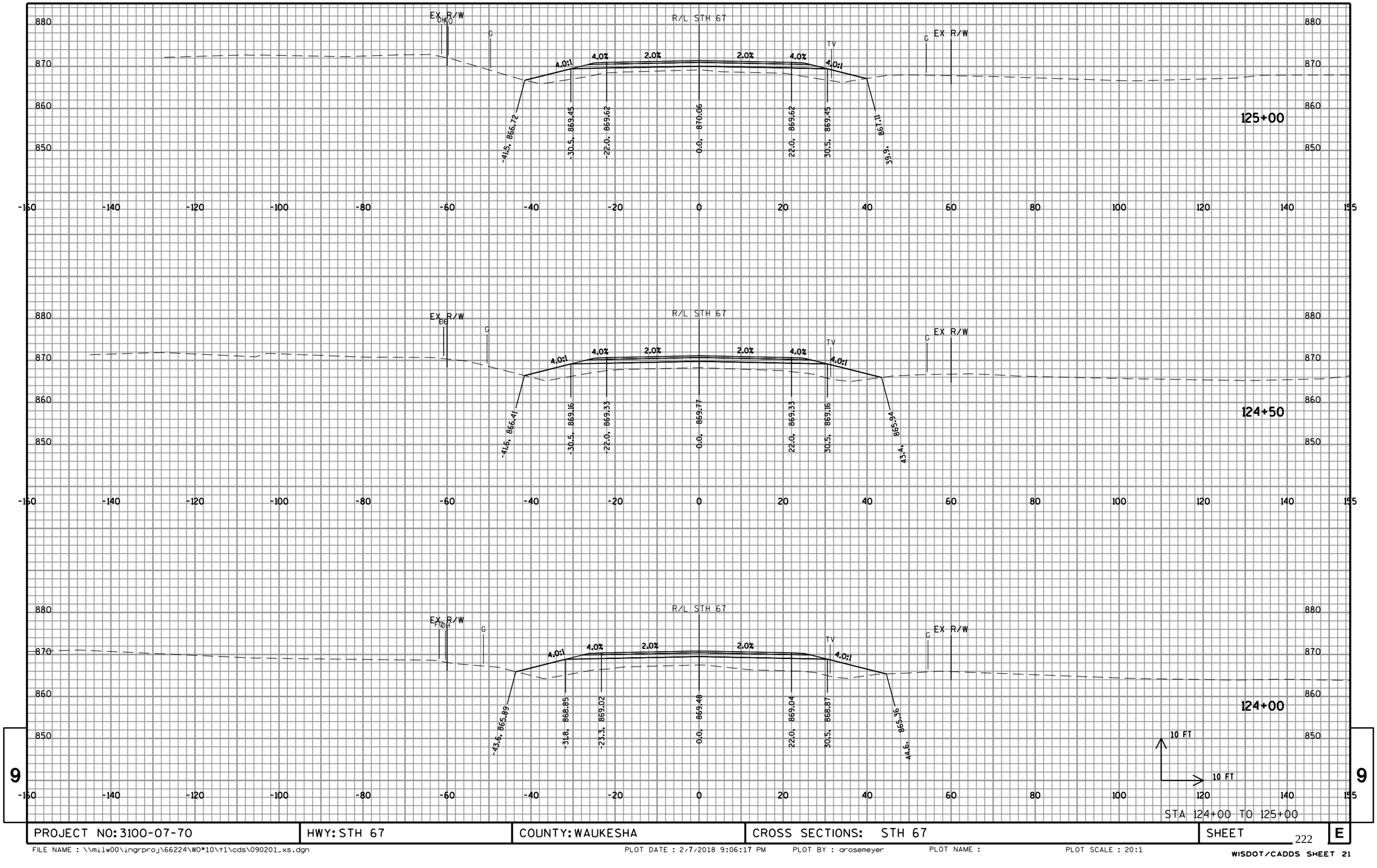
WISDOT/CADDS SHEET 21



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:17 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

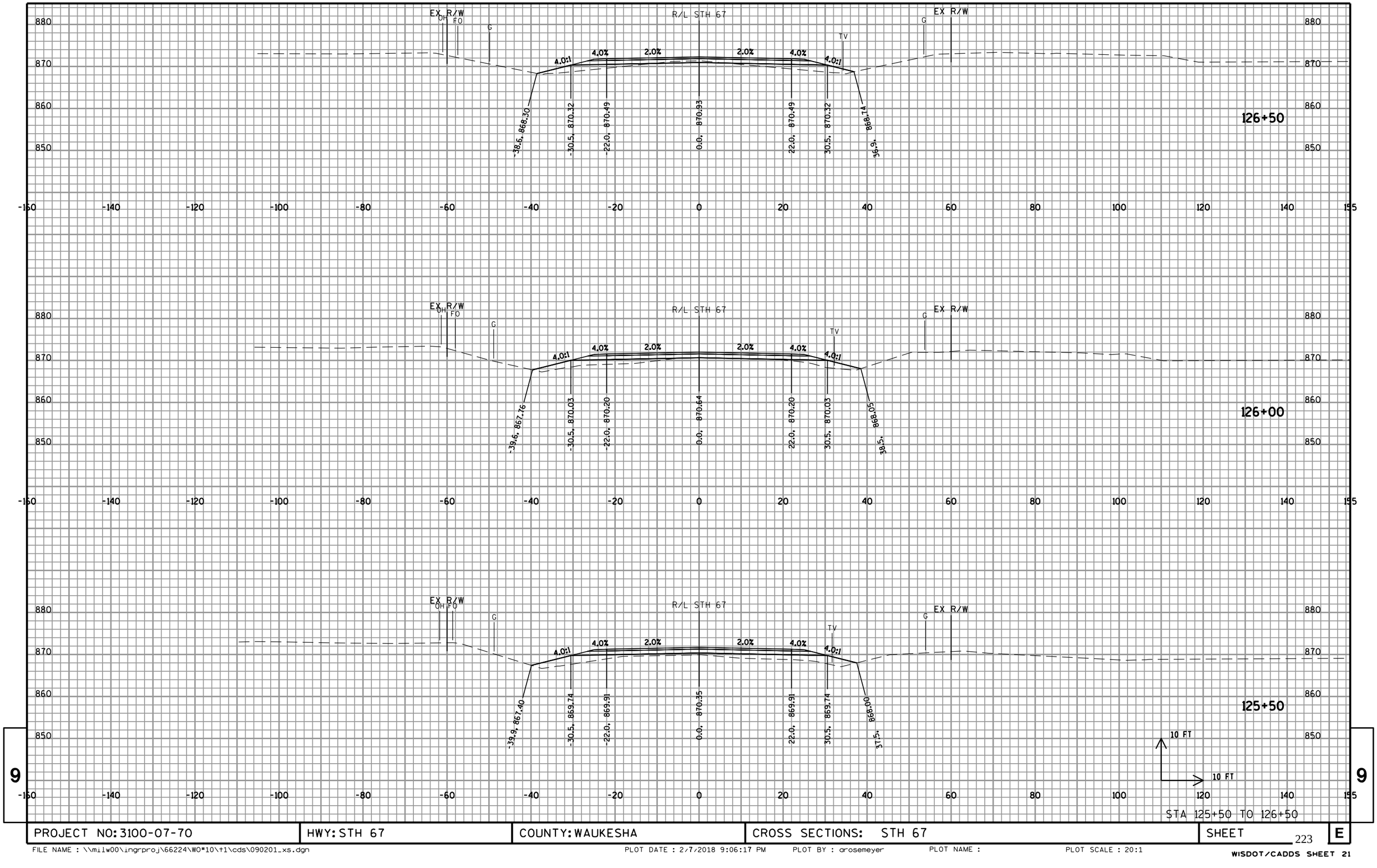


STA 124+00 TO 125+00

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:17 PM PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

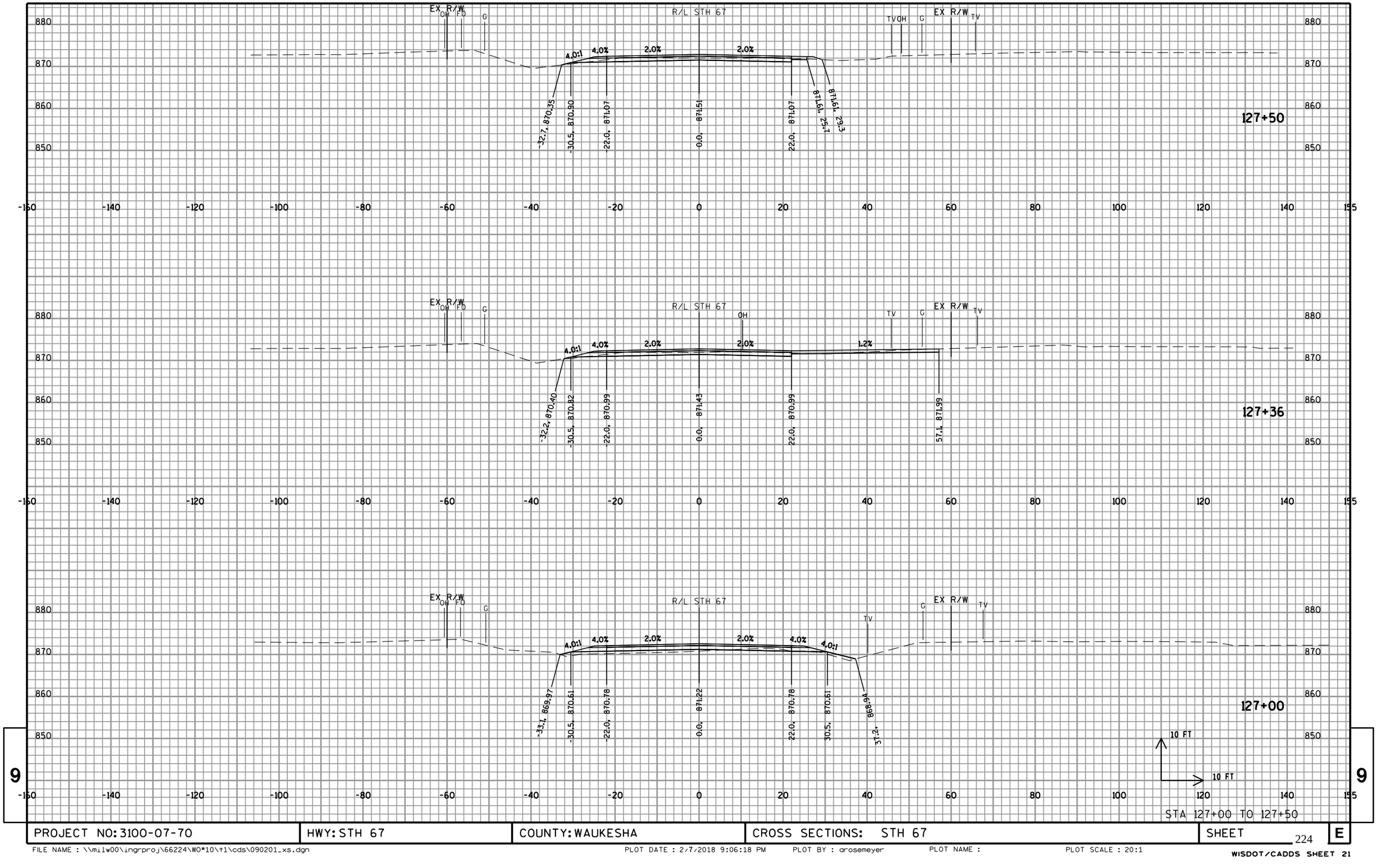
WISDOT/CADDS SHEET 21



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET E

STA 125+50 TO 126+50

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:17 PM PLOT BY : crosemeyer PLOT NAME : PLOT SCALE : 20:1
WISDOT/CADDS SHEET 21

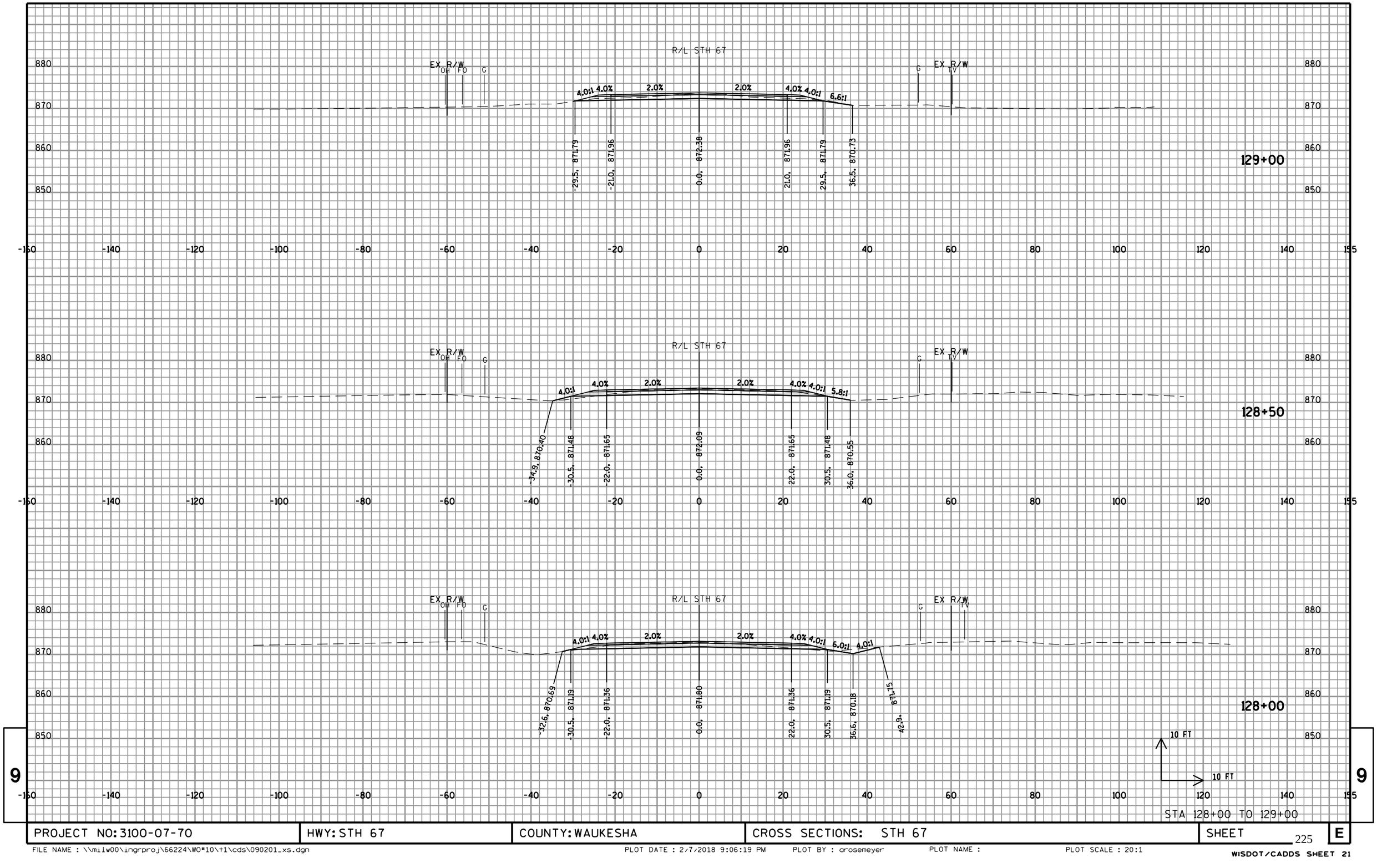


STA 127+00 TO 127+50

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET 224	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:18 PM PLOT BY : crosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



9

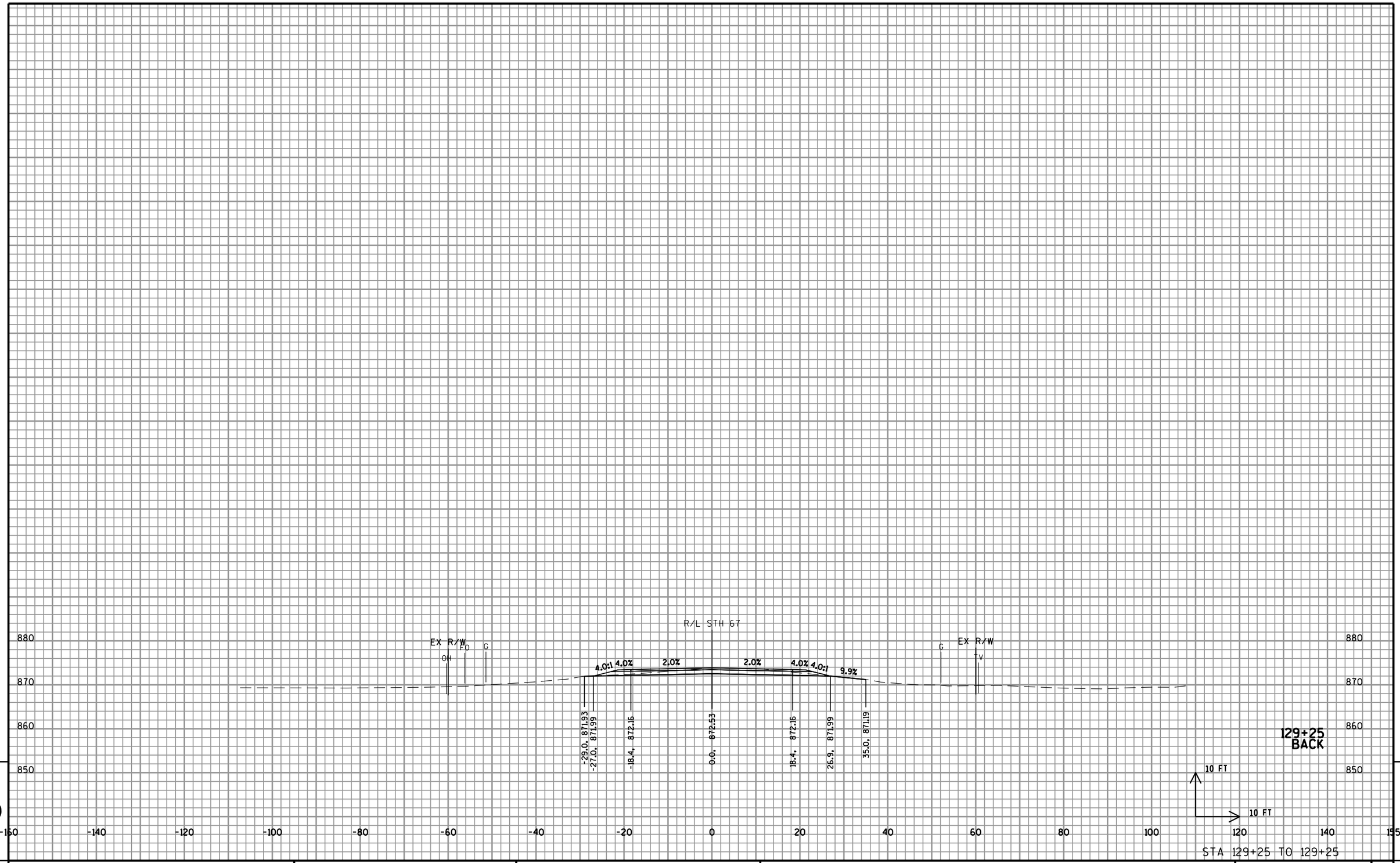
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STA 128+00 TO 129+00

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:19 PM PLOT BY : crosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



9

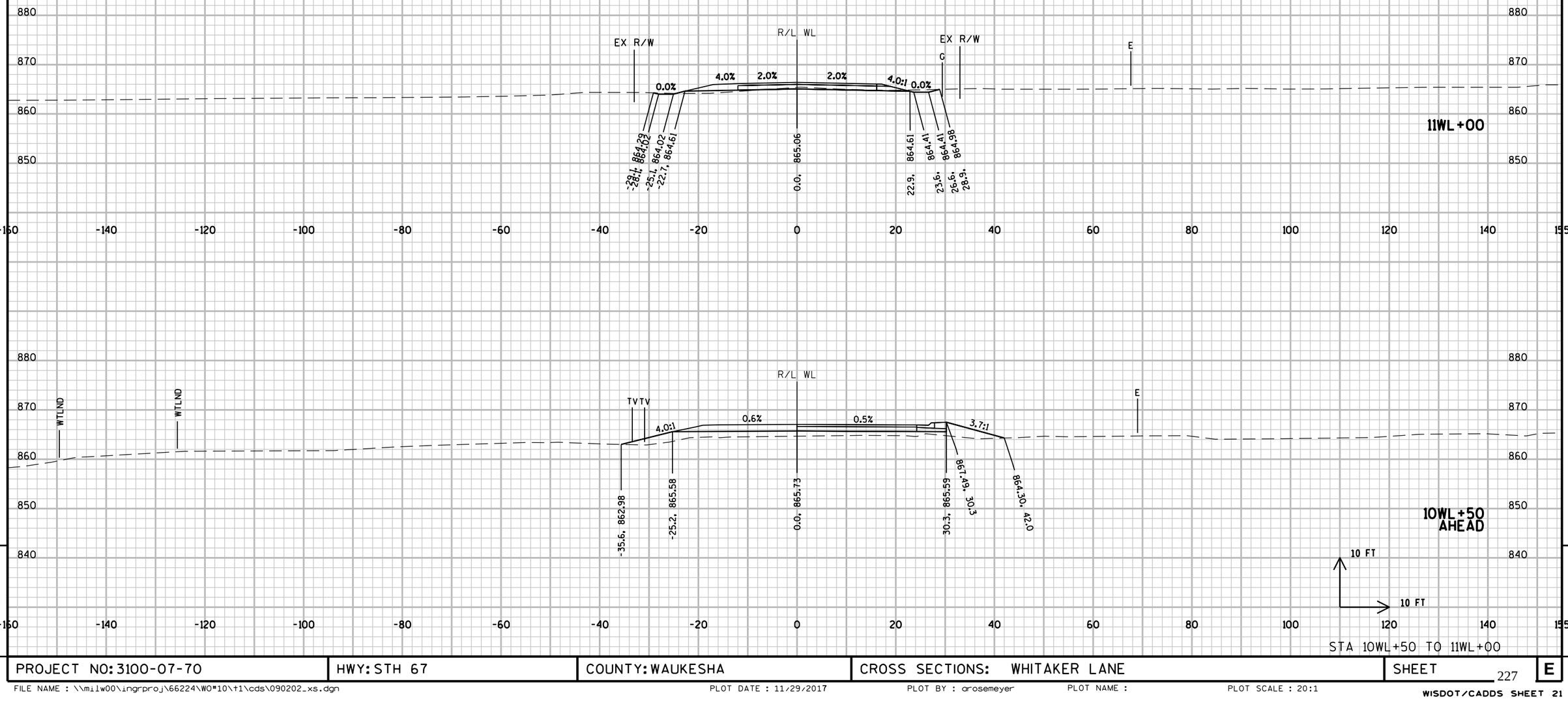
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STA 129+25 TO 129+25

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: STH 67	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090201_xs.dgn PLOT DATE : 2/7/2018 9:06:19 PM PLOT BY : crosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

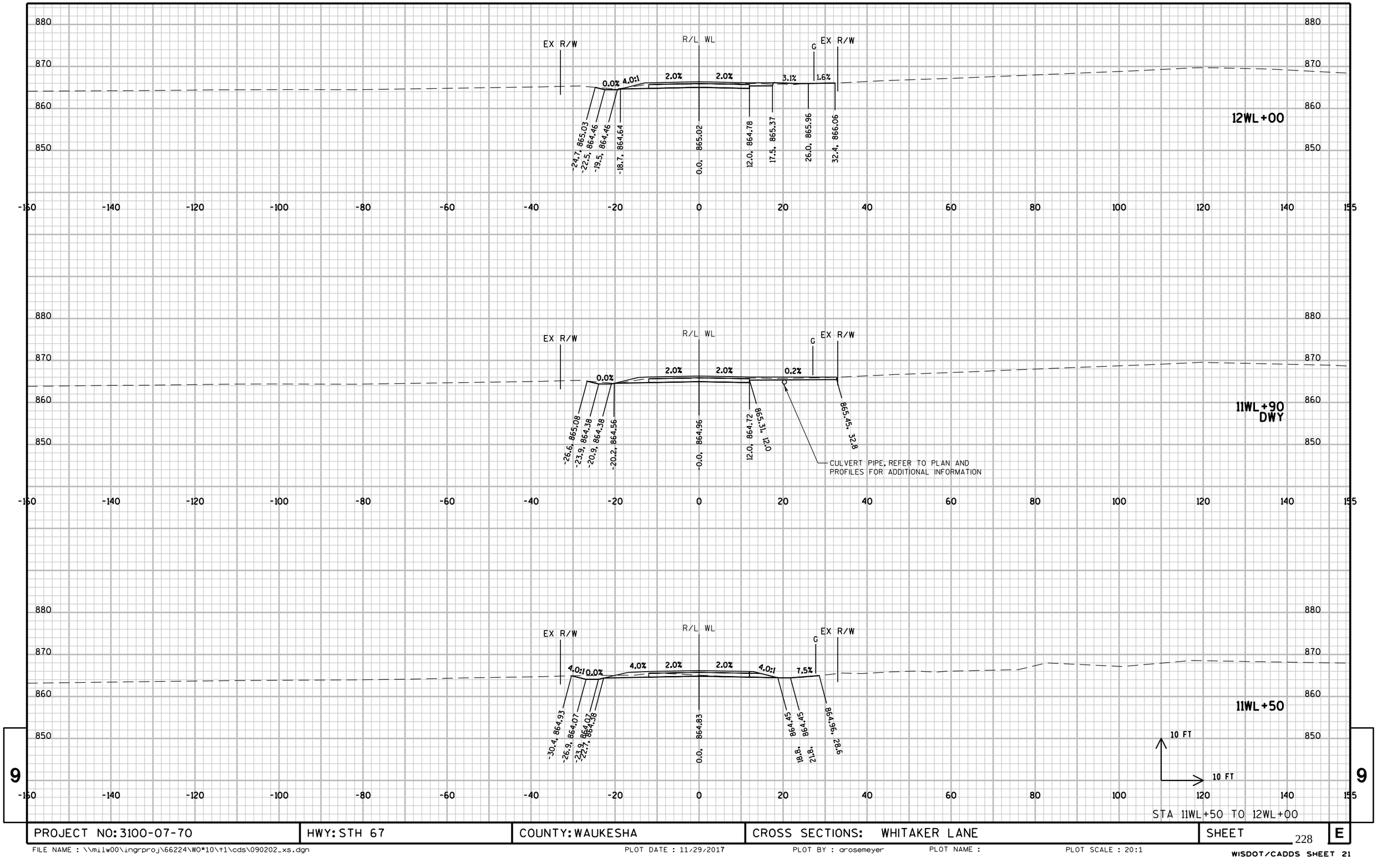


STA 10WL+50 TO 11WL+00

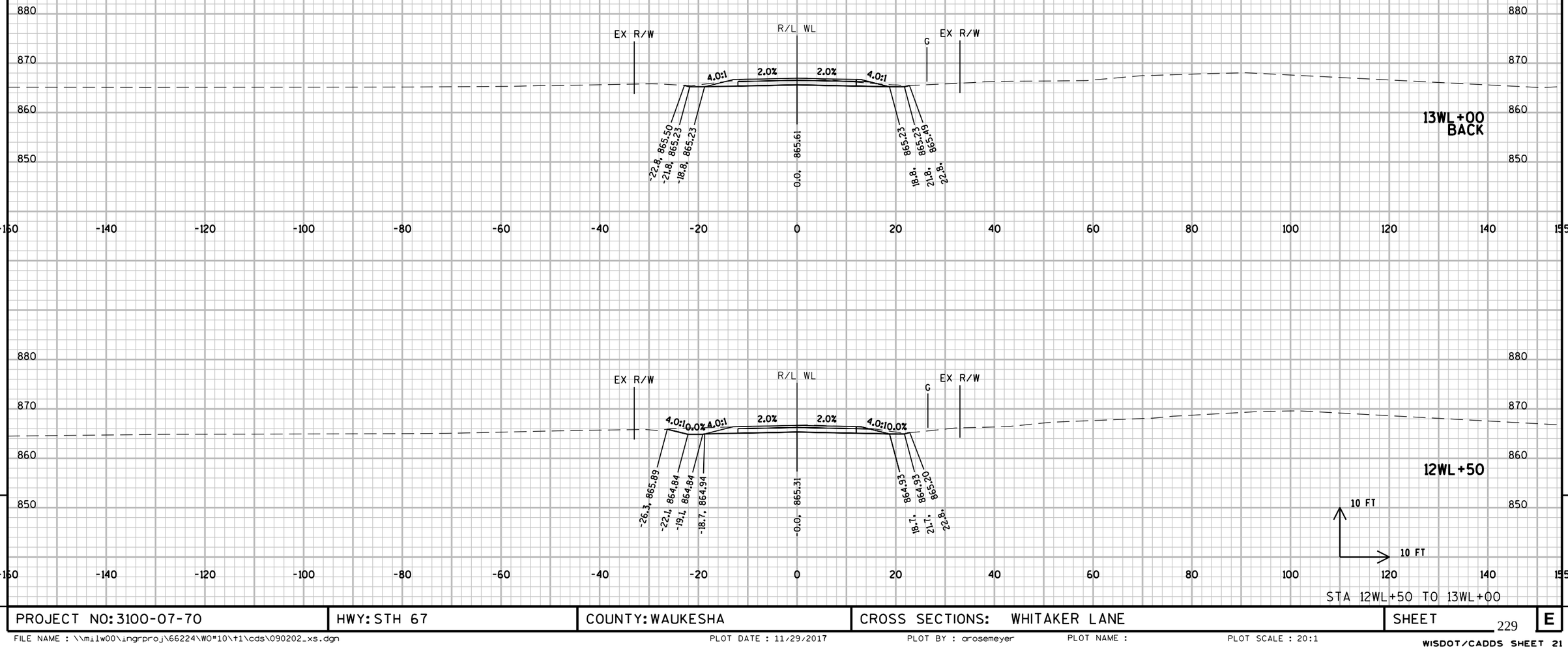
PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: WHITAKER LANE	SHEET	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090202_xs.dgn PLOT DATE : 11/29/2017 PLOT BY : arosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21



PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: WHITAKER LANE	SHEET	E



STA 12WL+50 TO 13WL+00

PROJECT NO: 3100-07-70	HWY: STH 67	COUNTY: WAUKESHA	CROSS SECTIONS: WHITAKER LANE	SHEET 229	E

FILE NAME : \\milw00\ingrproj\66224\WO*10\t1\cds\090202_xs.dgn PLOT DATE : 11/29/2017 PLOT BY : grosemeyer PLOT NAME : PLOT SCALE : 20:1

WISDOT/CADDS SHEET 21

Wisconsin Department of Transportation

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