EAU DEC 2016

PROJECT ID: 8610-02-72
WITH: N/A

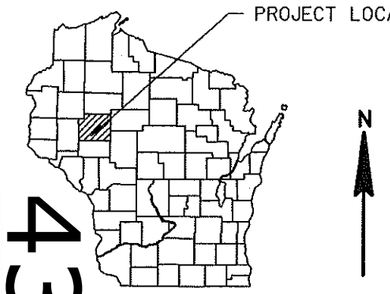
COUNTY: CHIPPEWA

43
13

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 = 212



STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

C CHIPPEWA FALLS, BRIDGE STREET

CHIPPEWA RIVER BRG B-09-0146 & 0147

STH 124

CHIPPEWA COUNTY

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
8610-02-72	WISC 2016502	1

STATE PROJECT NUMBER
8610-02-72

DESIGN DESIGNATION

A.A.D.T.	2017	= 17,700
A.A.D.T.	2037	= 21,100
D.H.V.		= 4.3
D.D.		= 58/42
T.		= 5.4 %
DESIGN SPEED		= 40 MPH
ESALS		= 5,577,200

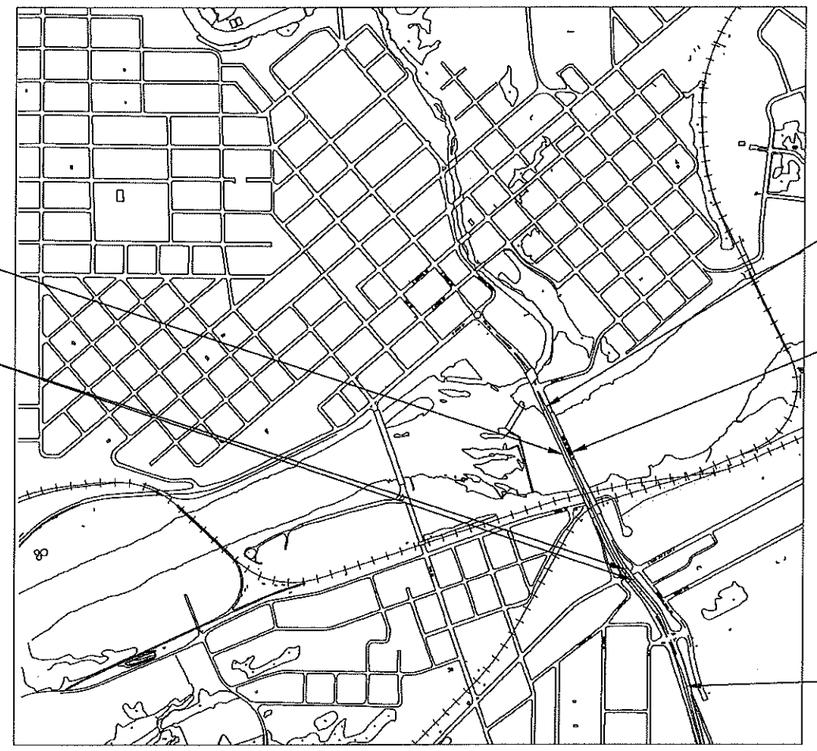
CONVENTIONAL SYMBOLS

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

R-8-W



LAYOUT
SCALE 0 500 FEET

TOTAL NET LENGTH OF CENTERLINE = 0.582 MI

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM, CHIPPEWA COUNTY

ACCEPTED FOR
CITY of CHIPPEWA FALLS
7/22/2016 (SIGNATURE)
DATE:

ORIGINAL PLANS PREPARED BY:
SEH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	SEH
Designer	SEH
Project Manager	TARA WEISS
Regional Examiner	TOU YANG
Regional Supervisor	TIMOTHY MASON
C.O. Examiner	

APPROVED FOR THE DEPARTMENT
DATE: 7/27/16 (Signature)

E

2

STANDARD ABBREVIATIONS:

ABUT	ABUTMENT
AC	ACRE
AGG	AGGREGATE
AECPRC	APRON ENDWALL FOR CULVERT PIPE REINFORCED CONCRETE
AECPCS	APRON ENDWALL FOR CULVERT PIPE CORRUGATED STEEL
ASPH	ASPHALTIC
AVG	AVERAGE
ADT	AVERAGE DAILY TRAFFIC
BF	BACK FACE
BM	BENCH MARK
BR	BRIDGE
CE	COMMERCIAL ENTRANCE
CL OR C/L OR ℄	CENTER LINE
Δ	CENTRAL ANGLE OR DELTA
CONC	CONCRETE
CPRC	CULVERT PIPE REINFORCED CONCRETE
CPCS	CULVERT PIPE CORRUGATED STEEL
CR	CREEK
CY	CUBIC YARD
C & G	CURB AND GUTTER
D	DEGREE OF CURVE
DHV	DESIGN HOUR VOLUME
DISCH	DISCHARGE
DG	DITCH GRADE
DWY	DRIVEWAY
X	EAST GRID COORDINATE
EAT	STEEL PLATE BEAM GUARD ENERGY ABSORBING TERMINAL
EOR	END POINT OF RADIUS
EL	ELEVATION
ENT	ENTRANCE
ESALS	EQUIVALENT SINGLE AXLE LOADS
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
EXIST	EXISTING
FC	FACE OF CURB
FF	FACE TO FACE
FERT	FERTILIZE
FE	FIELD ENTRANCE
FL	FLOW LINE
FO	FIBER OPTIC
CWT	HUNDREDWEIGHT
HYD	HYDRANT
ID	INSIDE DIAMETER
INV	INVERT
IP	IRON PIPE OR PIN
LHF	LEFT-HAND FORWARD
L	LENGTH OF CURVE
LF	LINEAR FOOT
LC	LONG CHORD OF CURVE
LS	LUMP SUM
MH	MANHOLE
MOR	MID POINT OF RADIUS
MCE	MARKERS CULVERT END
NC	NORMAL CROWN
NO	NUMBER
OBLIT	OBLITERATE
PAVT	PAVEMENT
PE	PRIVATE ENTRANCE
PVRC	POINT OF VERTICAL REVERSE CURVE
QOR	QUARTER POINT OF RADIUS
R	RADIUS
REQ'D	REQUIRED
RES	RESIDENCE OR RESIDENTIAL
RHF	RIGHT-HAND FORWARD
R/W	RIGHT-OF-WAY
R	RIVER
RDWY	ROADWAY
R/L OR ℄	REFERENCE LINE
SALV	SALVAGED
SAN	SANITARY SEWER
SF	SQUARE FEET
SY	SQUARE YARD
SDD	STANDARD DETAIL DRAWINGS
STA	STATION
SS	STORM SEWER
SSPRC	STORM SEWER PIPE REINFORCED CONCRETE
SE	SUPERELEVATION RATE
TC	TOP OF CURB
T OR TN	TOWN
T	TRUCKS (PERCENT OF)
TYP	TYPICAL
VAR	VARIABLE
VC	VERTICAL CURVE
Y	NORTH GRID COORDINATE
YD	YARD

GENERAL NOTES:

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).

WHEN THE QUANTITY OF BASE AGGREGATE OR ASPHALTIC SURFACE IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

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

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

THE EXACT LOCATION OF THE EROSION CONTROL DEVICES SHALL BE DETERMINED IN THE FIELD.

DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE 4-INCH SALVAGED TOPSOILED, FERTILIZED, SEEDED AND MULCHED. FINISHED SEEDED SURFACE SHALL BE 1-INCH BELOW THE TOP OF ADJACENT CONCRETE.

ALL CURB AND GUTTER RADII, PAVEMENT DIMENSIONS AND STATIONS ARE SHOWN TO THE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING DRIVEWAYS AND PAVEMENTS AT REMOVAL LIMITS.

TOP OF CASTING ELEVATIONS SHOWN FOR INLETS REFER TO THE CASTING ELEVATION AT THE FRONT EDGE OF CASTING/FLOWLINE OF GRATE/TOP OF CURB BOX.

ALL STORM SEWER INVERTS, ELEVATIONS, PIPE LENGTHS, AND GRADES ARE COMPUTED CENTER-TO-CENTER OF STRUCTURES.

UTILITY CONTACTS:

COMMUNICATION LINE

AT&T WISCONSIN
304 SOUTH DEWEY
EAU CLAIRE, WI 54701
TELEPHONE: 715.839.5565
ATTENTION: RICK PODOLAK
EMAIL: RP4514@ATT.COM

CHARTER COMMUNICATIONS
1201 MCCANN DRIVE
ALTOONA, WI 54720
TELEPHONE: 715.370.7870
ATTENTION: SHANE YODER
EMAIL: SHANE.YODER@CHARTERCOM.COM

ELECTRICITY - DISTRIBUTION

XCEL ENERGY
P.O. BOX 8
1400 WESTERN AVENUE
EAU CLAIRE, WI 54702
TELEPHONE: 715.737.4040
ATTENTION: CATHERINE VANGORDEN-DEUX
EMAIL: CATHERINE.VANGORDEN-DUEX@XCELENERGY.COM

ELECTRICITY - TRANSMISSION

XCEL ENERGY
8701 MONTICELLO LANE
MAPLE GROVE, MN 55369
TELEPHONE: 715.737.1576
ATTENTION: CHARLES DIENGER
EMAIL: CHARLES.G.DIENGER@XCELENERGY.COM

SEWER & WATER

CITY OF CHIPPEWA FALLS
30 W CENTRAL STREET
CHIPPEWA FALLS, WI 54729
TELEPHONE: 715.726.2736
ATTENTION: RICK RUBENZER
EMAIL:RRUBENZER@CHIPPEWAFALLS-WI.GOV

SIGNAL LIGHTS

WISDOT- NORTHWEST REGION
5009 USH 53 SOUTH
EAU CLAIRE, WI 54701
TELEPHONE: 715.577-3854
ATTENTION: BRENT MARKERT
EMAIL: BRENT.MARKERT@DOT.WI.GOV

TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN

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

NOTE: WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE.

DESIGN CONTACT
SEH
10 NORTH BRIDGE STREET
CHIPPEWA FALLS, WI 54729
TELEPHONE: 715.720.6291
ATTENTION: TARA KRISTA
EMAIL: TKRISTA@SEHINC.COM

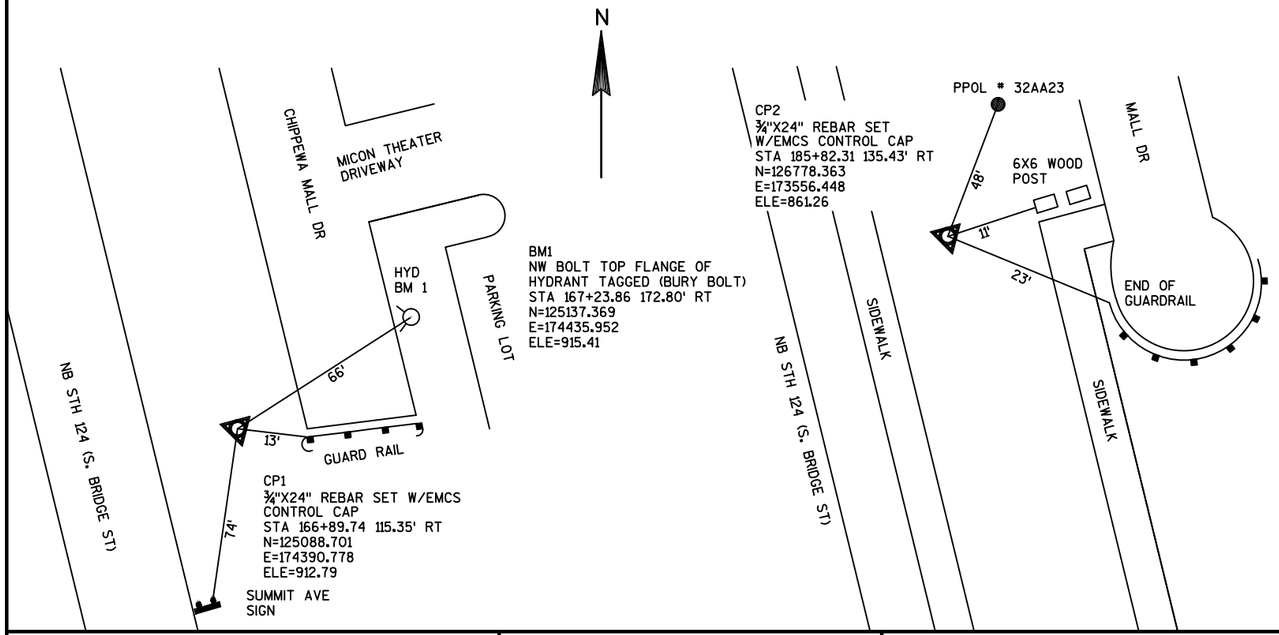
MUNICIPALITY CONTACT
CITY OF CHIPPEWA FALLS
30 WEST CENTRAL STREET
CHIPPEWA FALLS, WI 54729
TELEPHONE: 715.726.2736
ATTENTION: RICK RUBENZER
EMAIL: RRUBENZER@CHIPPEWAFALLS-WI.GOV

WDNR CONTACT
DNR WEST CENTRAL REGION HQ
1300 WEST CLAIREMONT AVENUE
EAU CLAIRE, WI 54702
TELEPHONE: 715.635.4229
ATTENTION: CHRIS WILLGER
EMAIL: CHRISTOPHERJ.WILLGER@WISCONSIN.GOV

RAILROAD CONTACTS
UNION PACIFIC RAILROAD
101 NNORTH WACKER DRIVE, SUITE 1920
CHICAGO, IL 60606
TELEPHONE: 312-777-2043
ATTENTION: JOHN VENICE, MANAGER OF SPECIAL PROJECTS
E-MAIL: JNVENICE@UP.COM

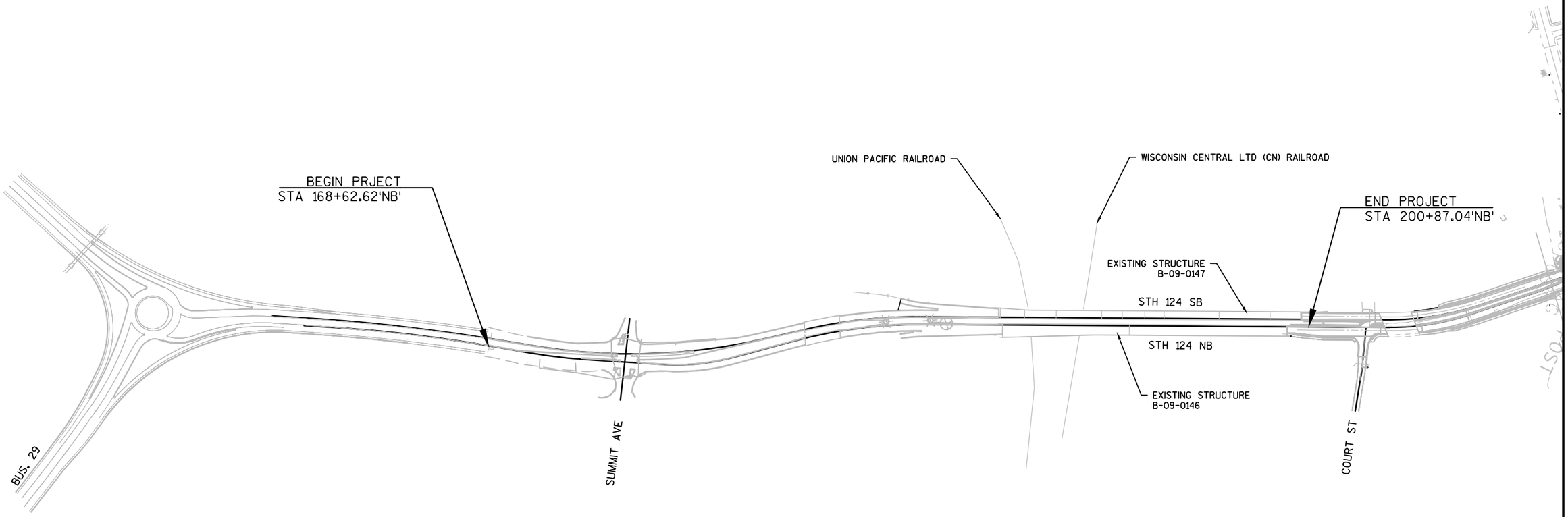
WISCONSIN CENTRAL LTD (CN)
1625 DEPOT STREET
STEVENS POINT, WI 54481
TELEPHONE: 715-345-2509
ATTENTION: JACKIE MACEWICZ, MANAGER PUBLIC WORKS
E-MAIL: JACKIE.MACEWICZ@CN.CA

ALIGNMENT TIES:

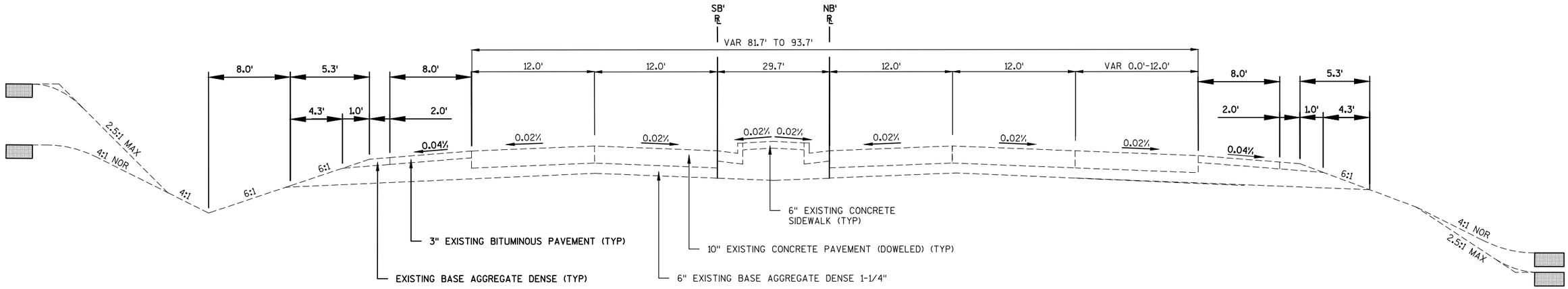


PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	GENERAL NOTES	SHEET 2	E

2

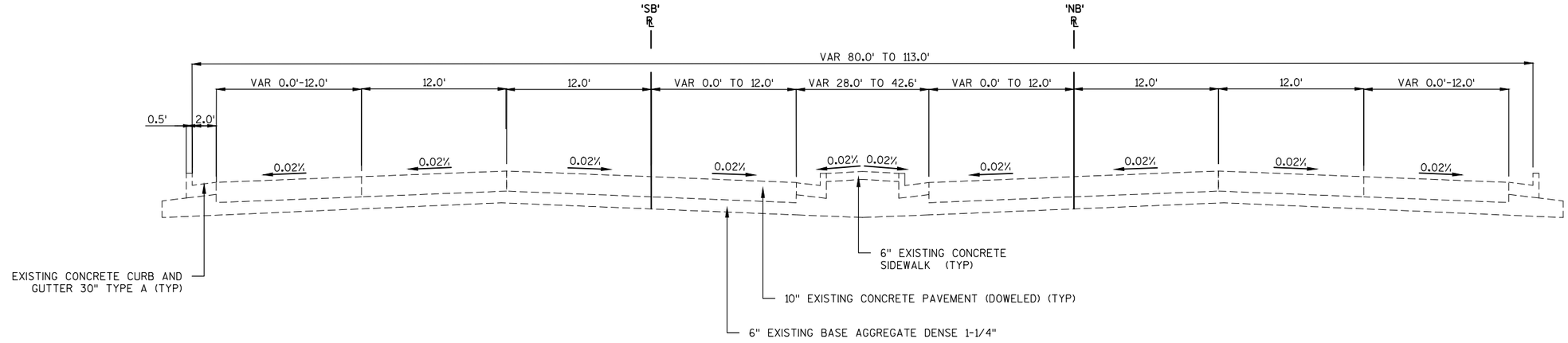


PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	PROJECT OVERVIEW	SHEET 3	E



TYPICAL EXISTING SECTION

STA 168+62.62'NB' TO STA 173+10.40'NB'

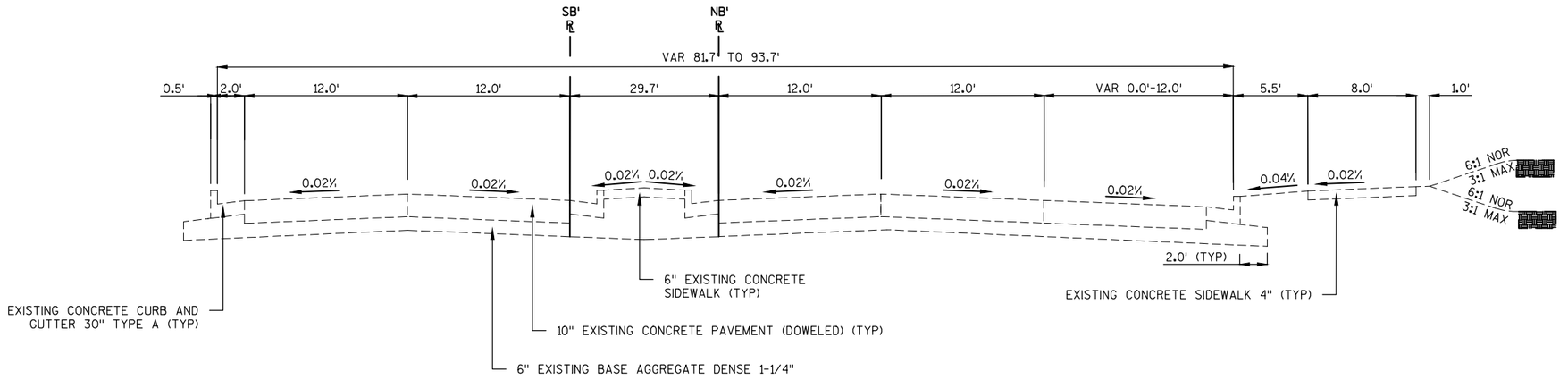


TYPICAL EXISTING SECTION

STA 173+10.40'NB' TO STA 181+16.13'NB'

STA 182+55.69'NB' TO STA 185+74.67'NB'

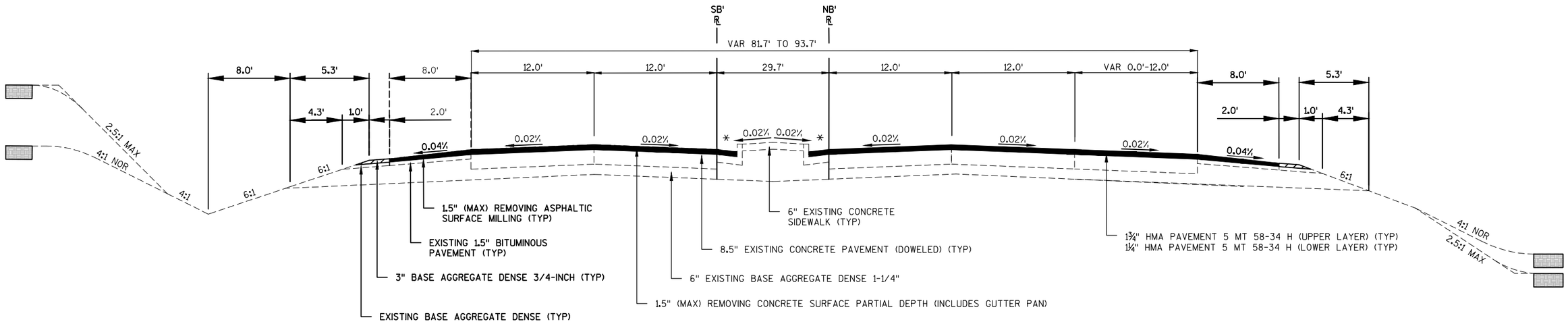
PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TYPICAL SECTIONS	SHEET 4	E



TYPICAL EXISTING SECTION

STA 200+05.53'NB' TO STA 200+87.04'NB'

*SEE DETAIL FOR GUTTER OVERLAY

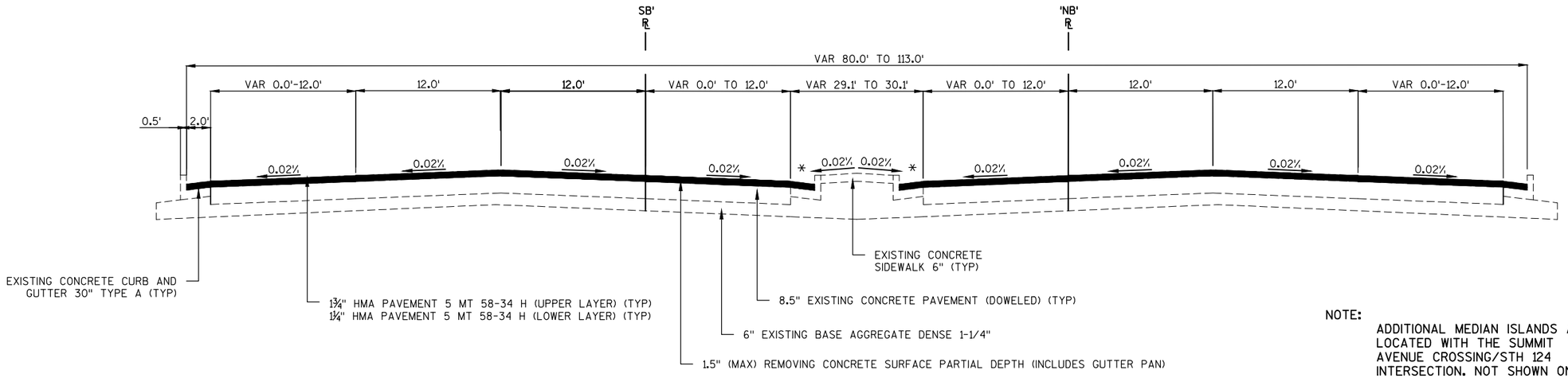


TYPICAL FINISHED SECTION

STA 168+62.62'NB' TO STA 173+10.40'NB'

*SEE DETAIL FOR GUTTER OVERLAY

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TYPICAL SECTIONS	SHEET 5	E

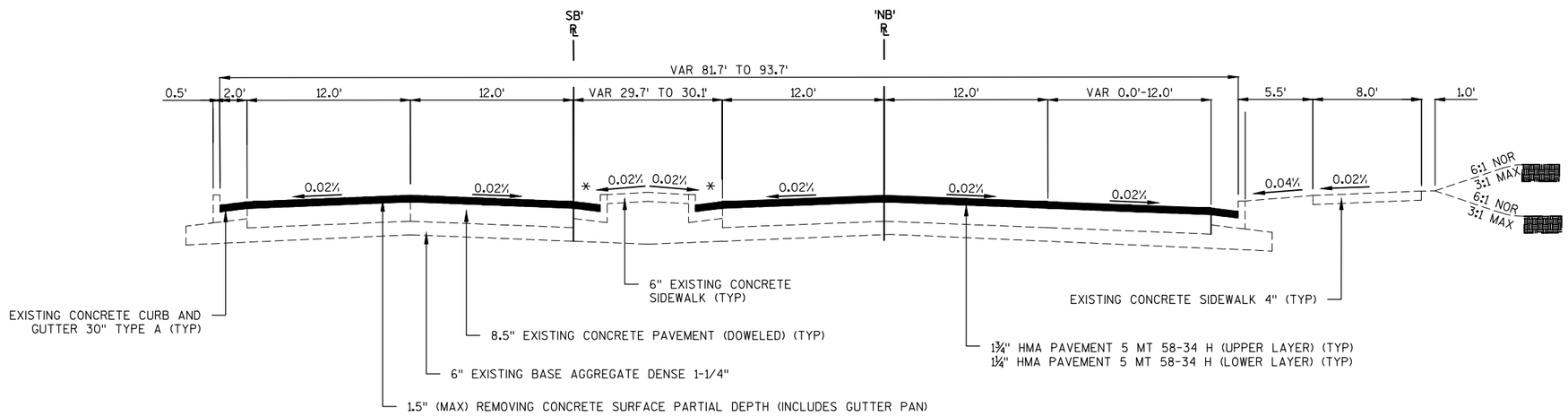


TYPICAL FINISHED SECTION

STA 173+10.40'NB' TO STA 181+16.13'NB'
STA 182+55.69'NB' TO STA 185+74.67'NB'

NOTE:
ADDITIONAL MEDIAN ISLANDS ARE LOCATED WITH THE SUMMIT AVENUE CROSSING/STH 124 INTERSECTION. NOT SHOWN ON TYPICAL SECTIONS.

*SEE DETAIL FOR GUTTER OVERLAY

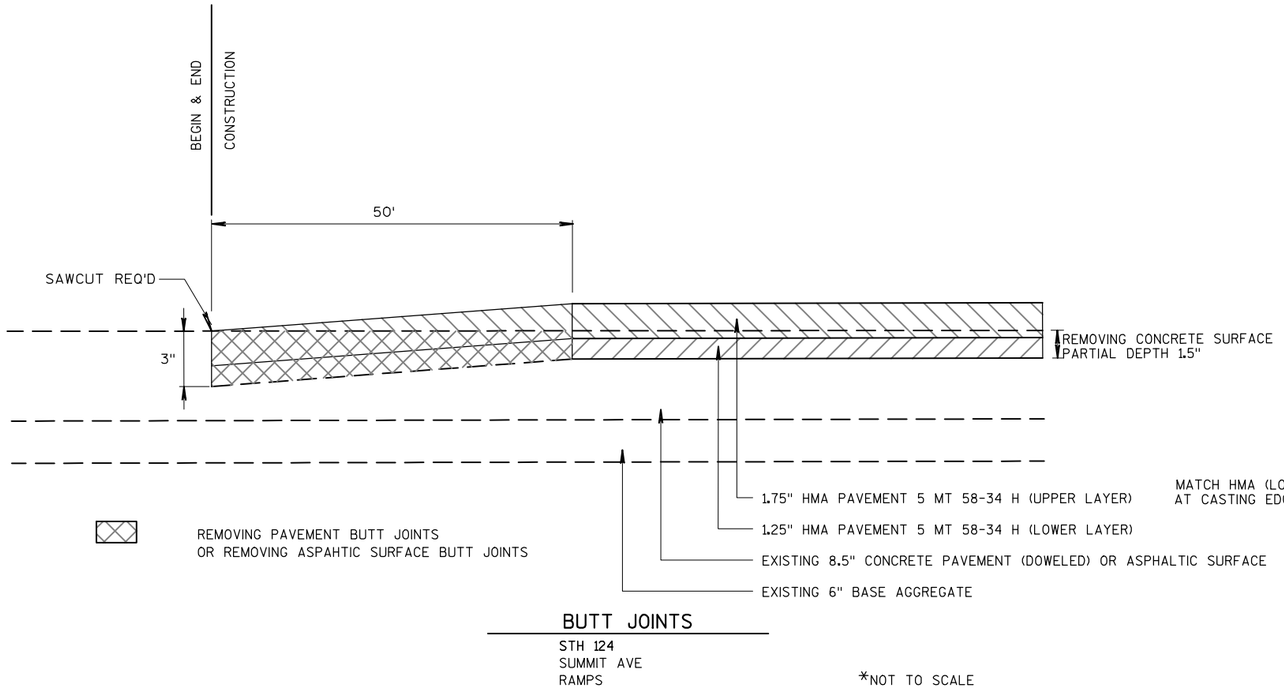


TYPICAL FINISHED SECTION

STA 200+05.53'NB' TO STA 200+87.04'NB'

*SEE DETAIL FOR GUTTER OVERLAY

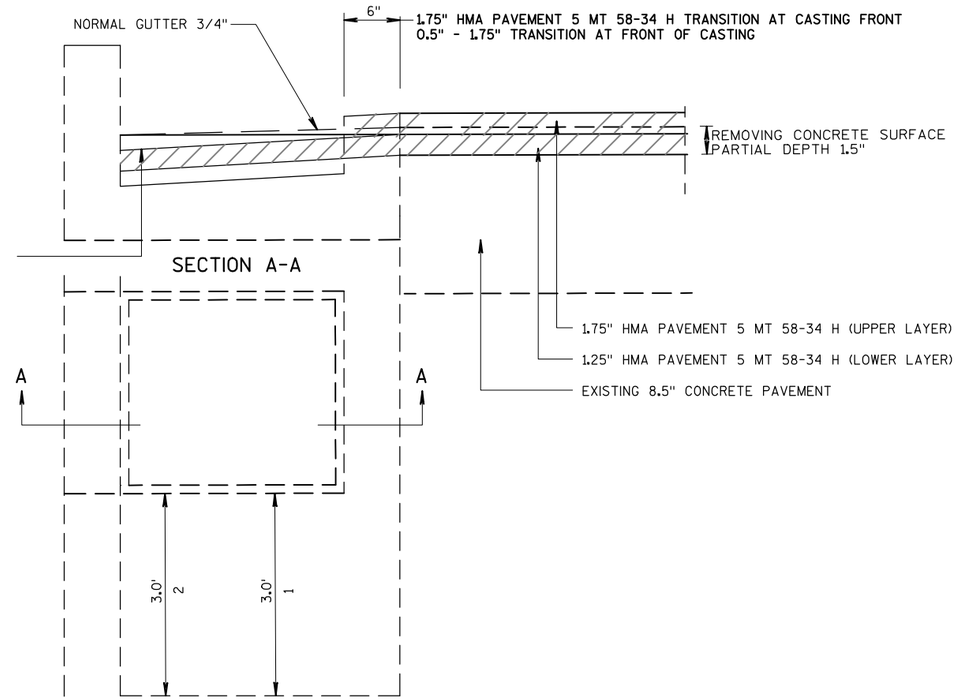
PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TYPICAL SECTIONS	SHEET 6	E



BUTT JOINTS

STH 124
SUMMIT AVE
RAMPS

*NOT TO SCALE

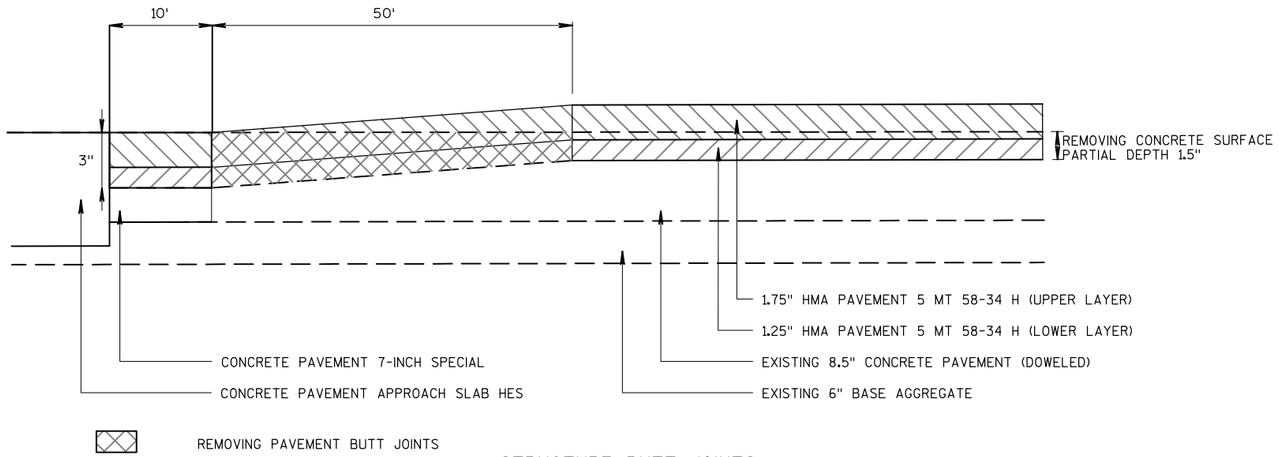


TOP VIEW

1. FROM GUTTER TRANSITION TO INLET CASTING, REMOVE CONCRETE SURFACE PARTIAL DEPTH 0" TO 1.25" DEPTH (INCIDENTAL TO REMOVING CONCRETE SURFACE PARTIAL DEPTH 1.5") INSTALL 1.25" HMA PAVEMENT 5 MT 58-34 H (LOWER LAYER) TO BUTT UP TO CASTINGS ON THREE SIDES.
2. INSTALL 1.75" HMA PAVEMENT 5 MT 58-34 H (UPPER LAYER) BY TRANSITIONING FULL DEPTH 1.75" TO 0.75" AT EDGE OF CASTING ALONG 3.0' GUTTER TRANSITION.

RESURFACING AT INLETS

STH 124

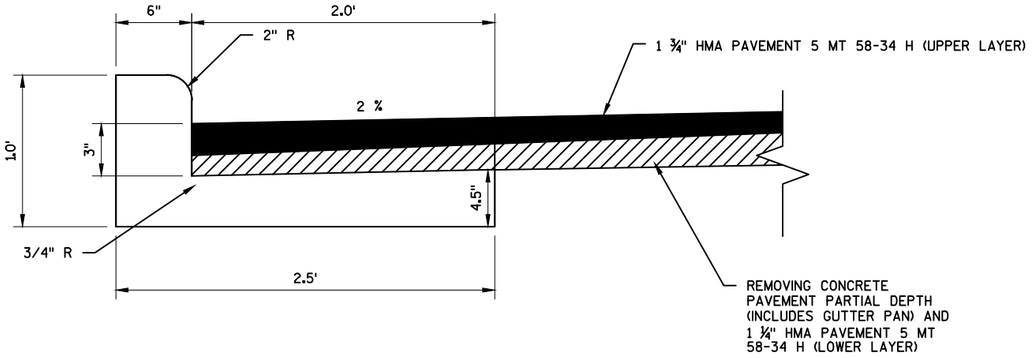


STRUCTURE BUTT JOINTS

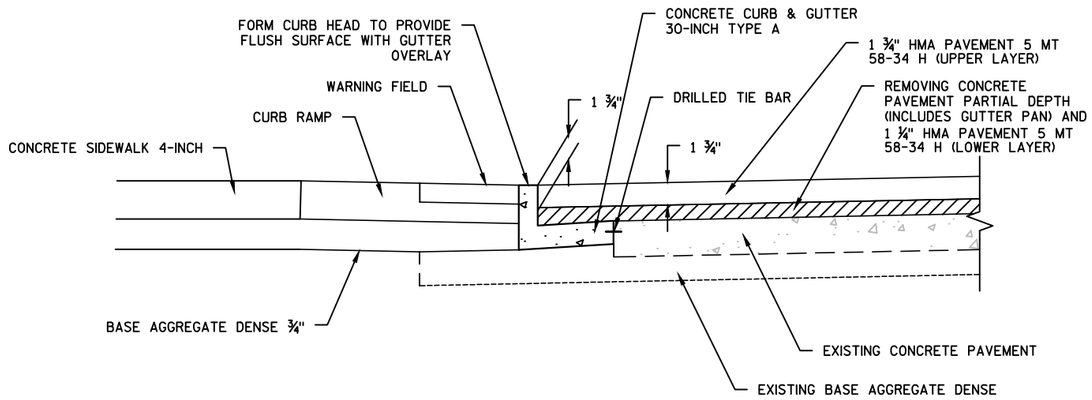
B-09-0169
B-09-0094
B-09-0146 (SOUTHEAST END ONLY)
B-09-0147 (SOUTHEAST END ONLY)

*NOT TO SCALE

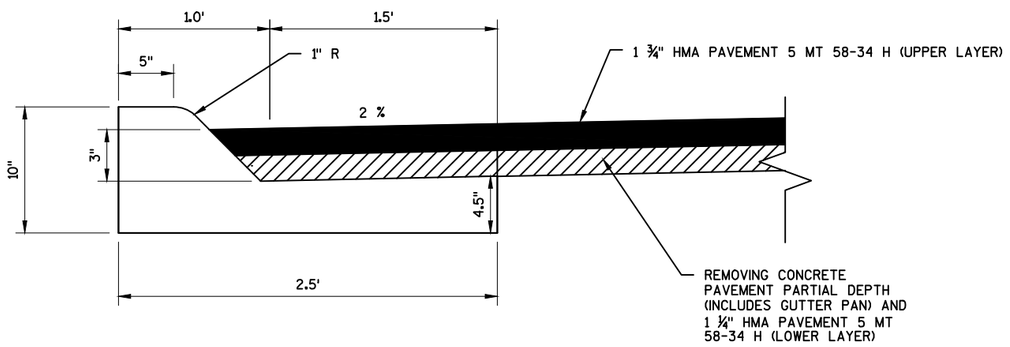
PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	PLAN: CONSTRUCTION DETAILS	SHEET 7	E



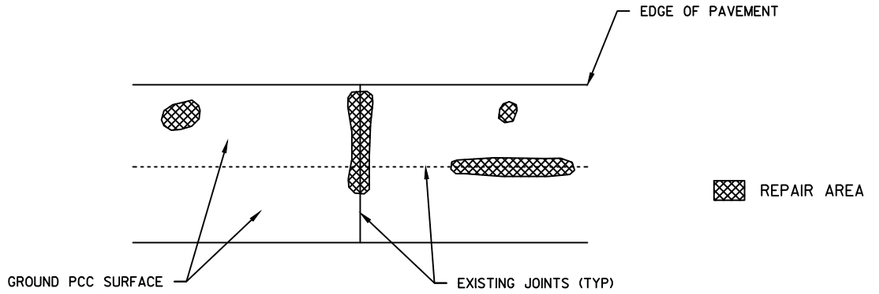
CONCRETE CURB AND GUTTER 30-INCH TYPE A



CURB RAMP DETAIL IN OVERLAY AREAS



CONCRETE CURB AND GUTTER 6-INCH SLOPED 30-INCH TYPE G

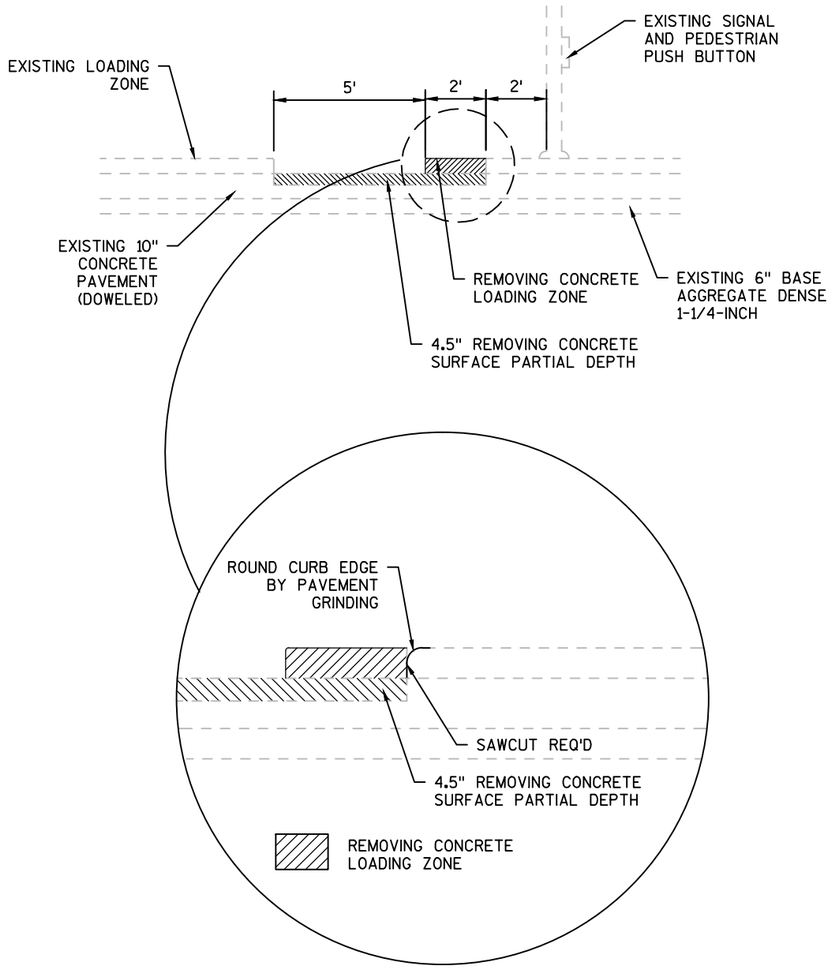


NOTES:

AFTER THE EXISTING PAVEMENT IS GROUND TO DEPTH SPECIFIED ON TYPICAL, REMOVE REMAINDER OF CRACKFILL, PATCHING AND UNSOUND PCC TO A MINIMUM DEPTH OF 4".

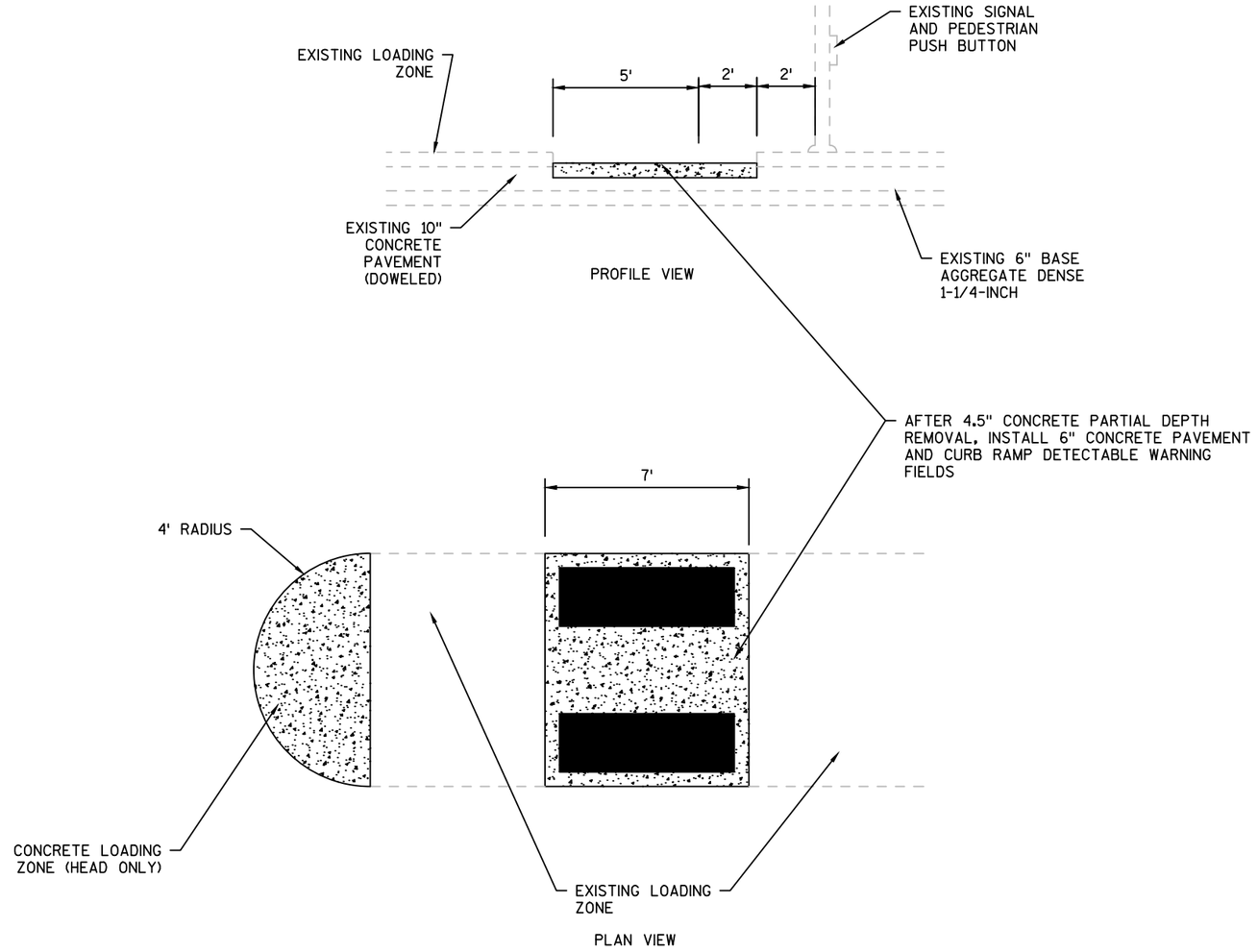
REPAVE AREAS WITH ASPHALTIC SURFACE PATCHING PAID SEPARATELY FROM THIS ITEM.

CLEANING AND REPAIRING DISTRESSED PCC AREAS
PREPARATION OF FOUNDATION FOR ASPHALTIC PAVING SPECIAL



CUT-THROUGH MODIFICATION DETAIL

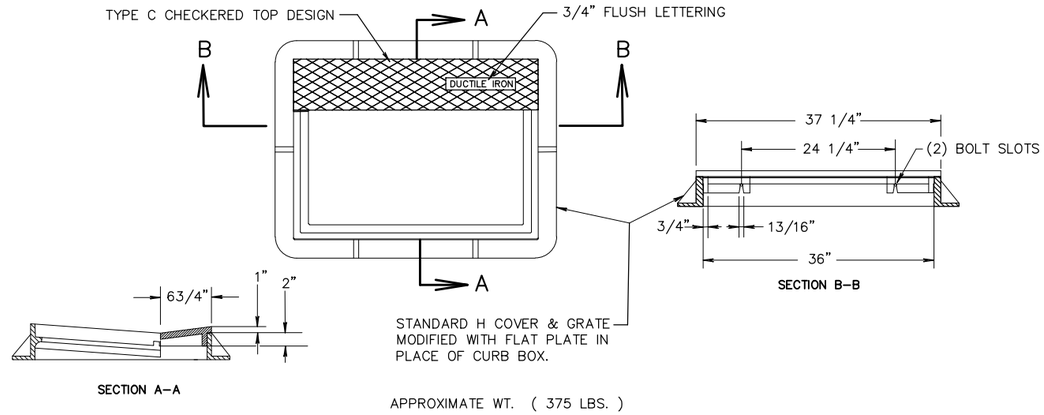
STA 174+37'NB' TO STA 174+44'NB' 25' LT



FINISHEWD CUT-THROUGH DETAIL

STA 174+37'NB' TO STA 174+44'NB' 25' LT

2



APPROXIMATE WT. (375 LBS.)

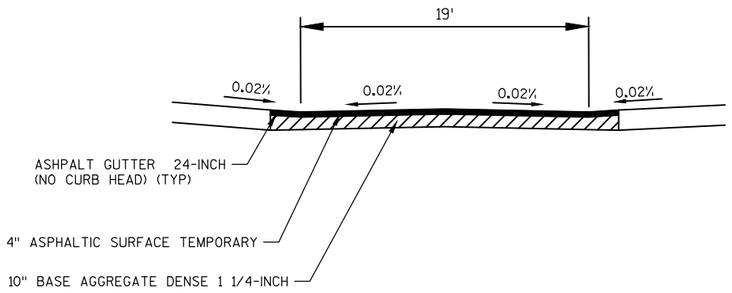
INLET COVERS TYPE HD

(WITH MOUNTABLE CURB PLATE)

FOR PLACEMENT IN AREAS WITH NO CURB HEAD

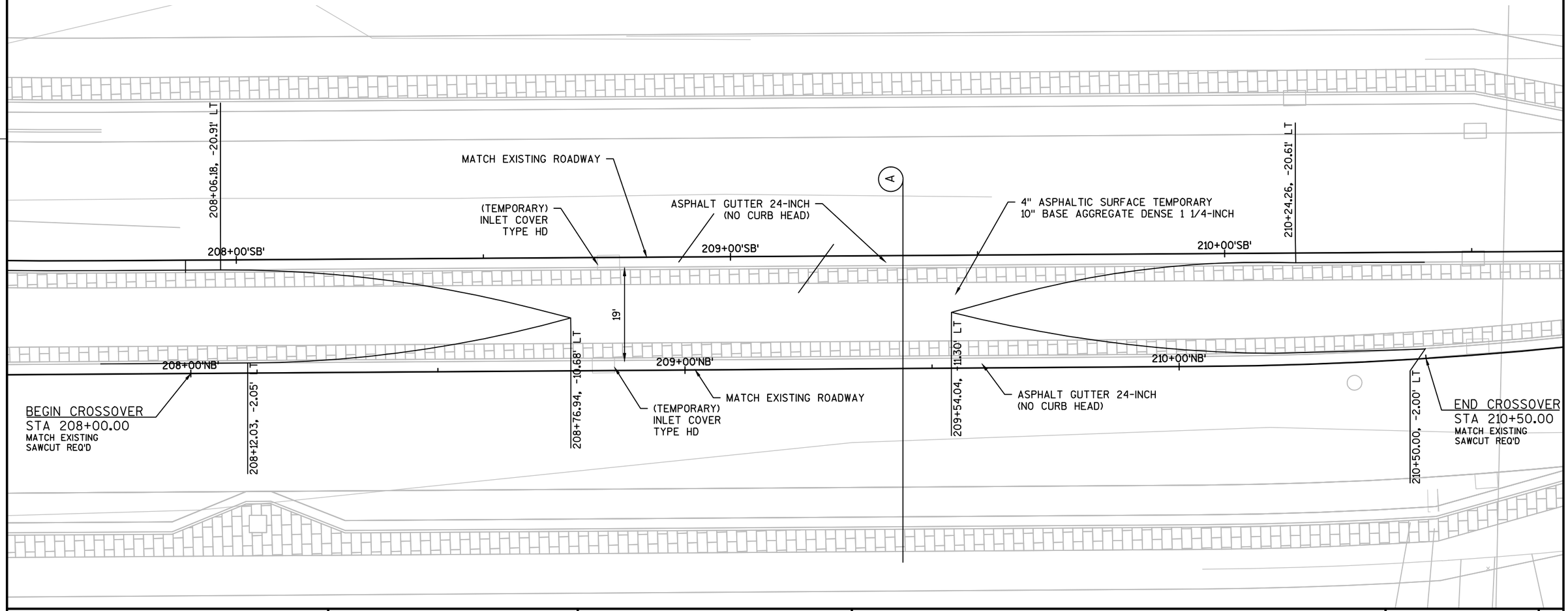
NOTE: FOR DETAILS NOT SHOWN, SEE SDD FOR INLET COVERS TYPE A, H, A-S, H-S & Z

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	CONSTRUCTION DETAILS	SHEET 10	E

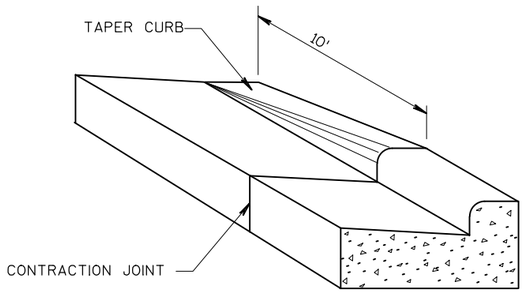


A TYPICAL SINGLE LANE TEMPORARY CROSSOVER SECTION FOR STAGE 1 & 2

STA 208+00 – STA 210+50



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	CROSSOVER DETAIL	SHEET 11	E



TAPER DETAIL CONCRETE CURB & GUTTER 30"

CONCRETE MEDIAN
SLOPED NOSE

4" HMA PAVEMENT 5 MT 58-34 H

186+00'SB'

187+00'SB'

CONCRETE PAVEMENT 8-INCH

185+00'NB'

186+00'NB'

187+00'NB'

STA 185+42.70'NB'
27.08' RT

4" HMA PAVEMENT
5 MT 58-34 H

STA 185+74.48'NB'
24.13' RT

STA 185+96.36'NB'
23.73' RT

ADJUSTING INLET COVERS

TAPER (SEE DETAIL)

4" HMA PAVEMENT 5 MT 58-34 H

STA 185+44.18'NB'
48.00' RT

CONCRETE CURB AND GUTTER 30-INCH
TYPE A

STA 186+08.74'NB'
45.39' RT

3.0'*

3.0'*

CONCRETE CURB AND GUTTER 30-INCH
TYPE A
(CONSTRUCT AS DRIVEWAY CURB)

*TRANSITION FROM FULL CURB
HEAD TO DRIVEWAY CURB

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	RAMP DETAIL	SHEET 12	E

LEGEND

(A) PAVEMENT MARKING 18-INCH STOP LINE

(B) PAVEMENT MARKING CROSSWALK 6-INCH EPOXY

NOTE: STANDARD PAVEMENT MARKINGS ARE NOT SHOWN AND ARE PER THE WISDOT STANDARD DETAIL DRAWINGS

* REMOVAL OF CONCRETE AROUND JUNCTION BOX IS INCIDENTAL TO REMOVING CONCRETE SURFACE PARTIAL DEPTH (TYP)

CONCRETE MEDIAN SLOPED NOSE

TYPE 1 CURB RAMP

ADJUSTING JUNCTION BOX REQ'D*

ADJUSTING MANHOLE COVER REQ'D

TYPE 6 CURB RAMP

9+00

ADJUSTING INLET COVER REQ'D

TYPE 1 CURB RAMP

CONCRETE CURB & GUTTER 30-INCH TYPE A

REMOVE AND REINSTALL EXISTING SIGNAL, SEE TRAFFIC SIGNAL PLAN

CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE G (NO CURB HEAD)

SUMMIT AVENUE CROSSING

CITY OF CHIPPEWA FALLS

BUSINESS STH 29/STH 124 SB

173+00'SB'

174+00'SB'

175+00'SB'

TYPE 5 CURB RAMP

ADJUSTING MANHOLE COVER REQ'D

ADJUSTING JUNCTION BOX REQ'D *

CONCRETE CURB & GUTTER 30-INCH TYPE A

ADJUSTING JUNCTION BOX REQ'D *

173+00'NB'

CONCRETE LOADING ZONE

EXISTING SIGNAL/BASE TO REMAIN

174+00'NB'

9+00

175+00'NB'

BUSINESS STH 29/STH 124 NB

CONCRETE MEDIAN SLOPED NOSE

CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE G (NO CURB HEAD)

ADJUSTING PULL BOX REQ'D*

EXISTING SIGNAL/BASE TO REMAIN

TYPE 6 CURB RAMP

ADJUSTING INLET COVER REQ'D

CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE G (NO CURB HEAD)

CONCRETE CURB & GUTTER 30-INCH TYPE A SAWCUT REQ'D (TYP)

CURB RAMP DETECTABLE WARNING FIELD YELLOW (TYP)

TYPE 1 CURB RAMP

TYPE 1 CURB RAMP

CONCRETE SIDEWALK 6-INCH (TYP)

CONCRETE CURB & GUTTER 30-INCH TYPE A

ADJUSTING INLET COVER REQ'D

ADJUSTING JUNCTION BOX REQ'D*

CONCRETE MEDIAN SLOPED NOSE

CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE G

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	INTERSECTION DETAIL	SHEET 13	E

LEGEND

- PROPOSED SIGN MOUNTED ON POST(S)
- * BANDED TO POLE
- (XXX) DENOTES SIGN NUMBER
- OVERHEAD SIGN SUPPORT

BEGIN PROJECT
STA 168+62.62'NB'

MATCHLINE STA 168+00'NB'

MATCHLINE STA 175+00'NB'

MATCHLINE STA 181+75'NB'

STH 124 SB

STH 124 NB

169+00'SB' 170+00'SB' 171+00'SB' 172+00'SB' 173+00'SB' 174+00'SB' 175+00'SB'

169+00'NB' 170+00'NB' 171+00'NB' 172+00'NB' 173+00'NB' 174+00'NB' 175+00'NB'

176+00'SB' 177+00'SB' 178+00'SB' 179+00'SB' 180+00'SB' 181+00'SB'

176+00'NB' 177+00'NB' 178+00'NB' 179+00'NB' 180+00'NB' 181+00'NB'

SUMMIT AVENUE CROSSING

1-1 REPLACE SOUTH / SOUTH BUSINESS 124 29 J4-2 48" X 36"

1-2 REPLACE STOP DIVIDED HIGHWAY R1-1F 30"X30" R6-3 30"X24"

1-3 REPLACE DO NOT ENTER R5-1 30"X30"

1-4 REPLACE ONE WAY R6-2L 24"X30"

1-5 REPLACE W3-3 36"X36"

1-6 REPLACE W3-3 36"X36"

1-7 REPLACE ONLY R3-5-R 42"X48"

1-8 REPLACE NORTHERN WIS CENTER / RIVERSIDE INDUSTRIAL PARK D1-4 96"X48"

1-9 REPLACE LEFT TURN LANE R3-56 24"X30"

1-10 REPLACE DO NOT ENTER R5-1 30"X30"

1-11 REPLACE ONE WAY R6-2L 24"X30"

1-12 INSTALL R4-7 24"X30"

1-13 REPLACE YIELD R1-2 36" X 31"

1-14 REPLACE STOP DIVIDED HIGHWAY R1-1F 30"X30" R6-3 30"X24"

1-15 REPLACE R4-7 24"X30"

1-16 REPLACE WRONG WAY R5-1A 36"X24"

1-17 REPLACE LEFT TURN LANE R3-56 24"X30"

1-18 REPLACE RIGHT LANE MUST TURN RIGHT R3-7R 30"X30"

1-19 REPLACE SPEED LIMIT 35 R2-1 24"X30"

1-20 REPLACE W3-3 36" X 36"

1-21 REPLACE W3-3 36" X 36"

1-22 REPLACE WEST / NORTH BUSINESS 124 29 J4-2 48" X 36"

1-23 REPLACE SPEED LIMIT 35 R2-1 24"X30"

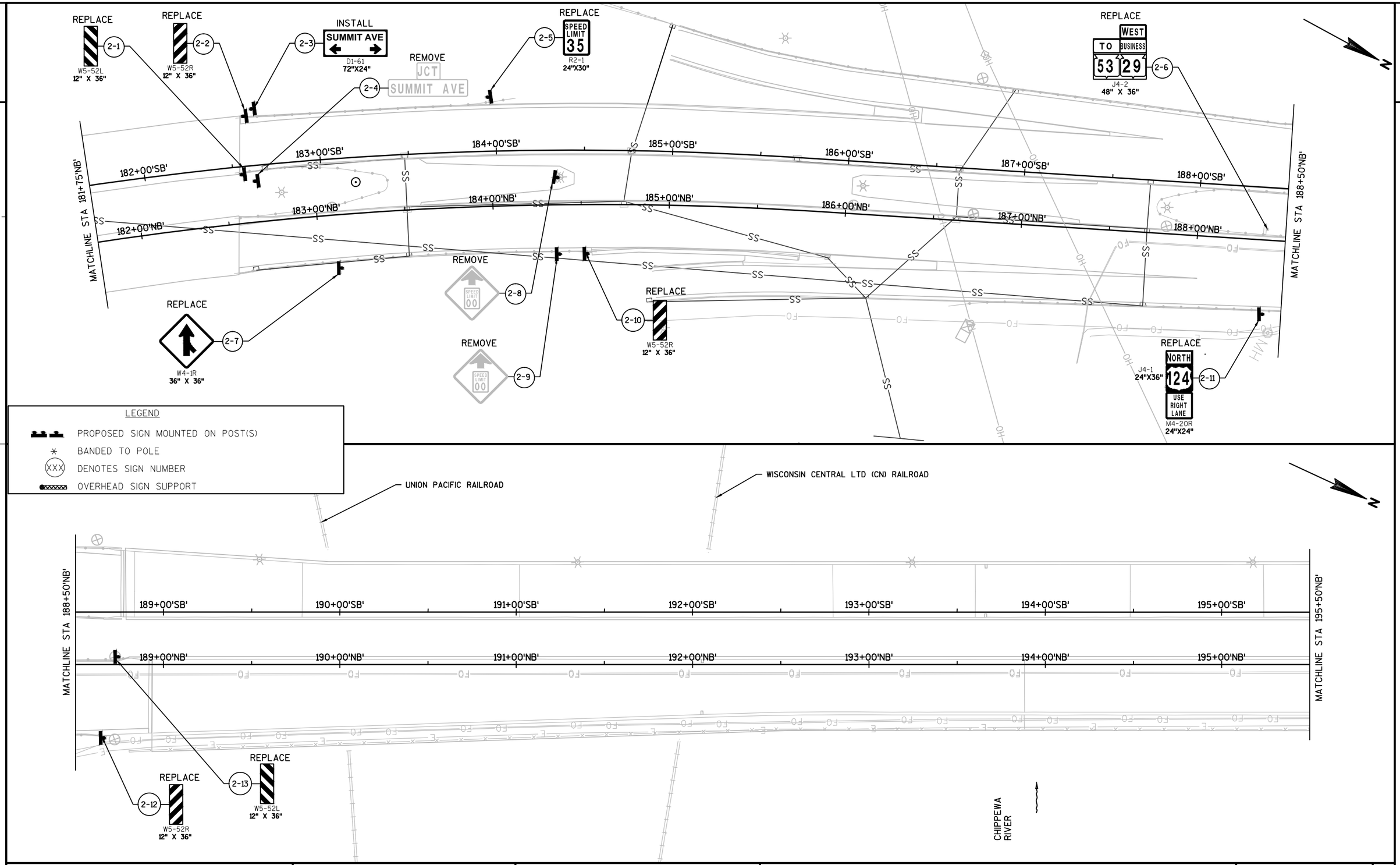
1-24 REPLACE W5-52L 12" X 36"

1-25 INSTALL W5-52R 12" X 36"

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	PERMANENT SIGNING	SHEET 14	E

FILE NAME : P:\UZ\W\WITNW\127359\CIVIL 3D\SHEETSPLAN\023201_PS.DWG PLOT DATE : 9/27/2016 3:49 PM PLOT BY : NICK ENGH PLOT NAME : PLOT SCALE : 1:50_XREF

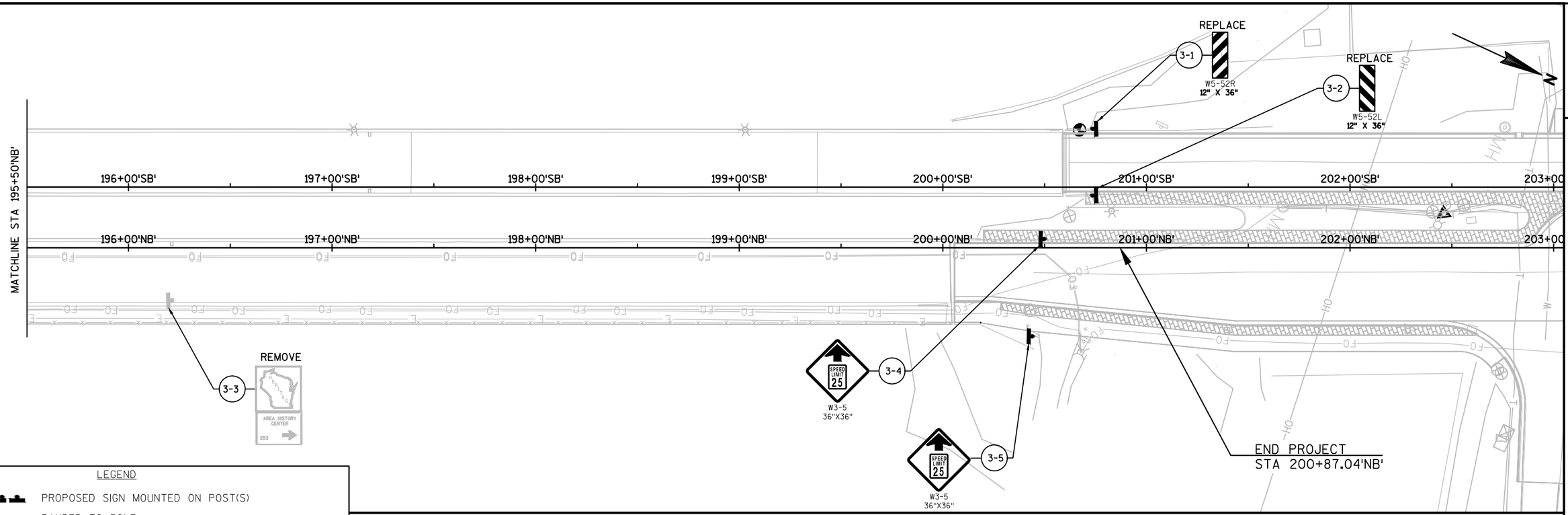
WISDOT/CADDS SHEET 44



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	PERMANENT SIGNING	SHEET	E

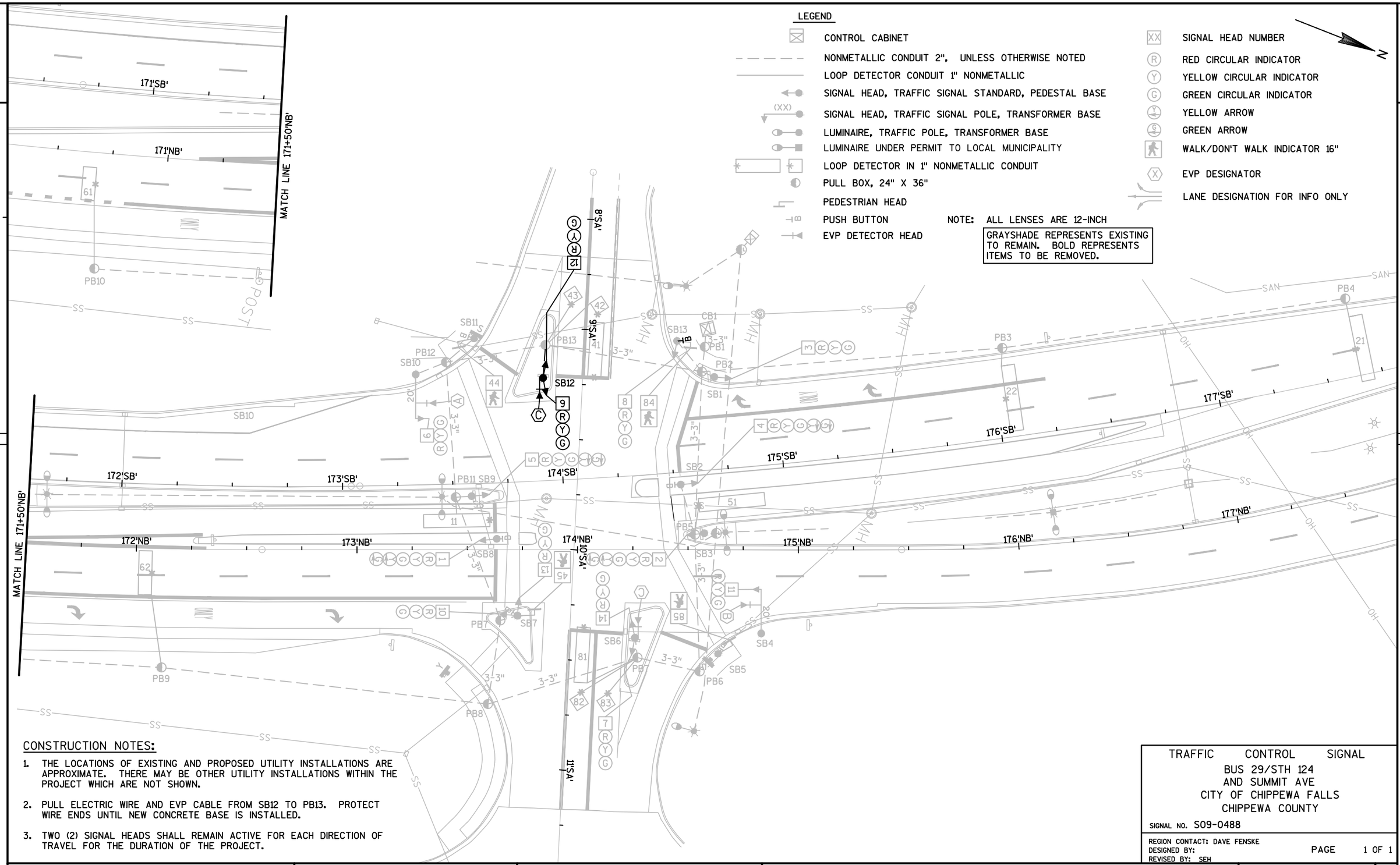
FILE NAME : P:\UZ\W\WITNW\127359\CIVIL 3D\SHEETSPLAN\023201_PS.DWG PLOT DATE : 9/27/2016 3:50 PM PLOT BY : NICK ENGH PLOT NAME : PLOT SCALE : 1:50_XREF

WISDOT/CADDS SHEET 44



LEGEND

- PROPOSED SIGN MOUNTED ON POST(S)
- BANDED TO POLE
- (XXX) DENOTES SIGN NUMBER
- OVERHEAD SIGN SUPPORT



CONSTRUCTION NOTES:

1. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
2. PULL ELECTRIC WIRE AND EVP CABLE FROM SB12 TO PB13. PROTECT WIRE ENDS UNTIL NEW CONCRETE BASE IS INSTALLED.
3. TWO (2) SIGNAL HEADS SHALL REMAIN ACTIVE FOR EACH DIRECTION OF TRAVEL FOR THE DURATION OF THE PROJECT.

TRAFFIC CONTROL SIGNAL
BUS 29/STH 124
AND SUMMIT AVE
CITY OF CHIPPEWA FALLS
CHIPPEWA COUNTY

SIGNAL NO. S09-0488

REGION CONTACT: DAVE FENSKE
DESIGNED BY:
REVISED BY: SEH

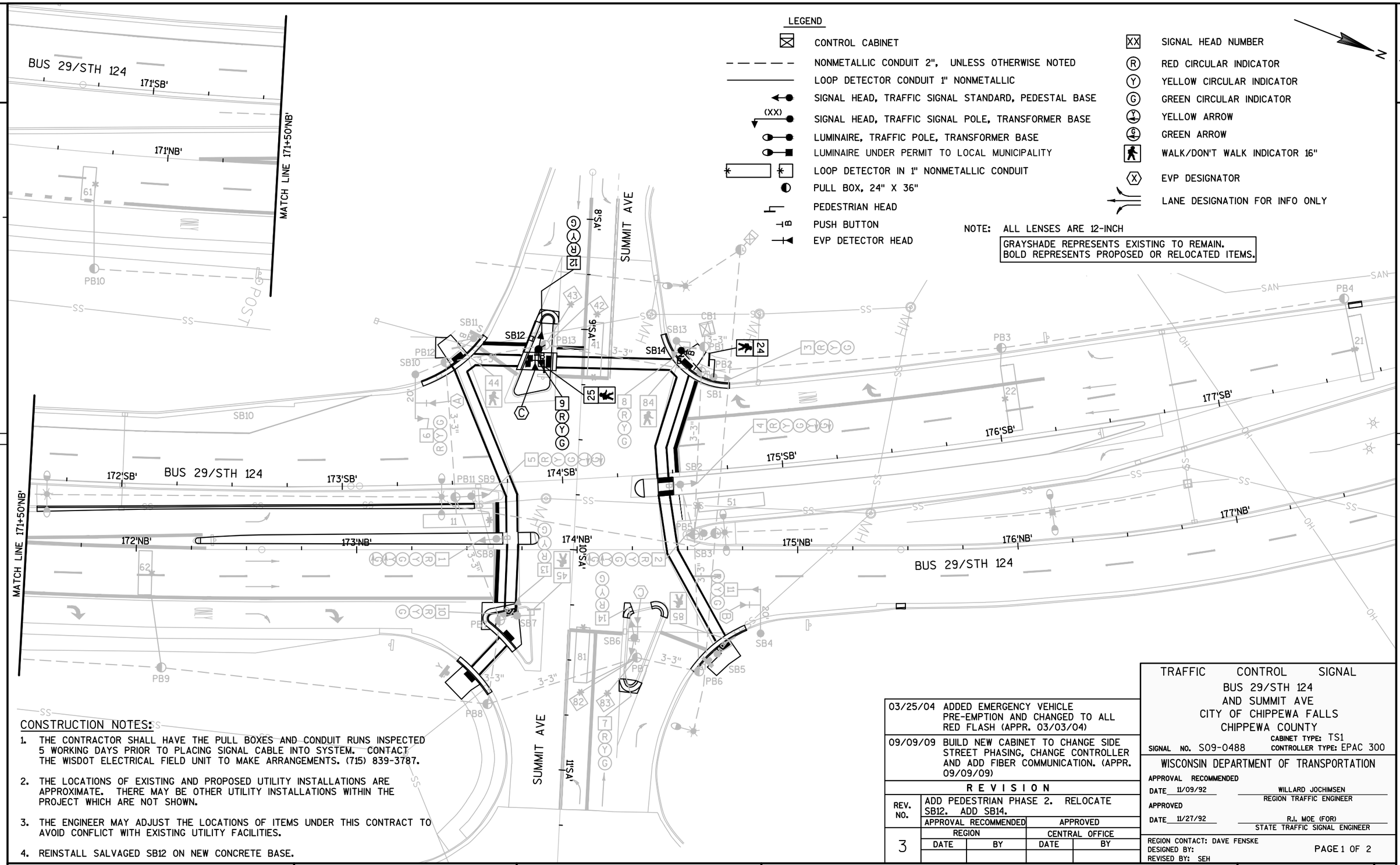
PAGE 1 OF 1

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC SIGNAL REMOVAL PLAN	SCALE, FEET 0 20 40	SHEET 17	E

FILE NAME : 024000_SP.DWG PLOT DATE : 9/27/2016 3:19 PM PLOT BY : SEH INC LAYOUT NAME : 024015_SP_RM PLOT SCALE : 1.0 IN = 40.0 FT

WISDOT/CADDS SHEET 42

SAVE FOLDER PATH: P:\UZ\WV\WITNW\127359\CIVIL 3D\SHEETSPLAN



CONSTRUCTION NOTES:

1. 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. (715) 839-3787.
2. THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT WHICH ARE NOT SHOWN.
3. THE ENGINEER MAY ADJUST THE LOCATIONS OF ITEMS UNDER THIS CONTRACT TO AVOID CONFLICT WITH EXISTING UTILITY FACILITIES.
4. REINSTALL SALVAGED SB12 ON NEW CONCRETE BASE.

03/25/04	ADDED EMERGENCY VEHICLE PRE-EMPTION AND CHANGED TO ALL RED FLASH (APPR. 03/03/04)
09/09/09	BUILD NEW CABINET TO CHANGE SIDE STREET PHASING, CHANGE CONTROLLER AND ADD FIBER COMMUNICATION. (APPR. 09/09/09)

REVISION

REV. NO.		APPROVAL RECOMMENDED		APPROVED	
		REGION		CENTRAL OFFICE	
		DATE	BY	DATE	BY
3	ADD PEDESTRIAN PHASE 2. RELOCATE SB12. ADD SB14.				

TRAFFIC CONTROL SIGNAL
BUS 29/STH 124
AND SUMMIT AVE
CITY OF CHIPPEWA FALLS
CHIPPEWA COUNTY

SIGNAL NO. S09-0488
CABINET TYPE: TS1
CONTROLLER TYPE: EPAC 300

WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVAL RECOMMENDED
DATE 11/09/92 — WILLARD JOCHIMSEN, REGION TRAFFIC ENGINEER

APPROVED
DATE 11/27/92 — R.I. MOE (FOR), STATE TRAFFIC SIGNAL ENGINEER

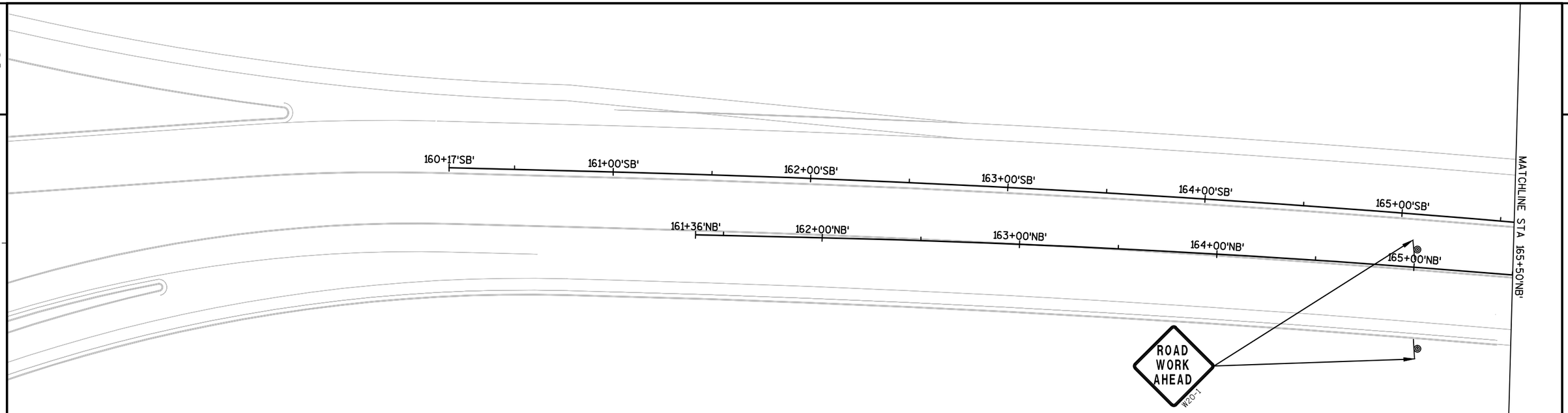
REGION CONTACT: DAVE FENSKE
DESIGNED BY:
REVISED BY: SEH

PAGE 1 OF 2

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC SIGNAL PLAN	SCALE, FEET 0 20 40	SHEET 18	E

FILE NAME : 024000_SP.DWG
PLOT DATE : 9/27/2016 3:19 PM
PLOT BY : SEH INC
LAYOUT NAME : 024001SP
PLOT SCALE : 1.0 IN = 40.0 FT
WISDOT/CADDS SHEET 42

SAVE FOLDER PATH: P:\NZ\WW\WITNW\127359\CIVIL 3D\SHEETSPLAN



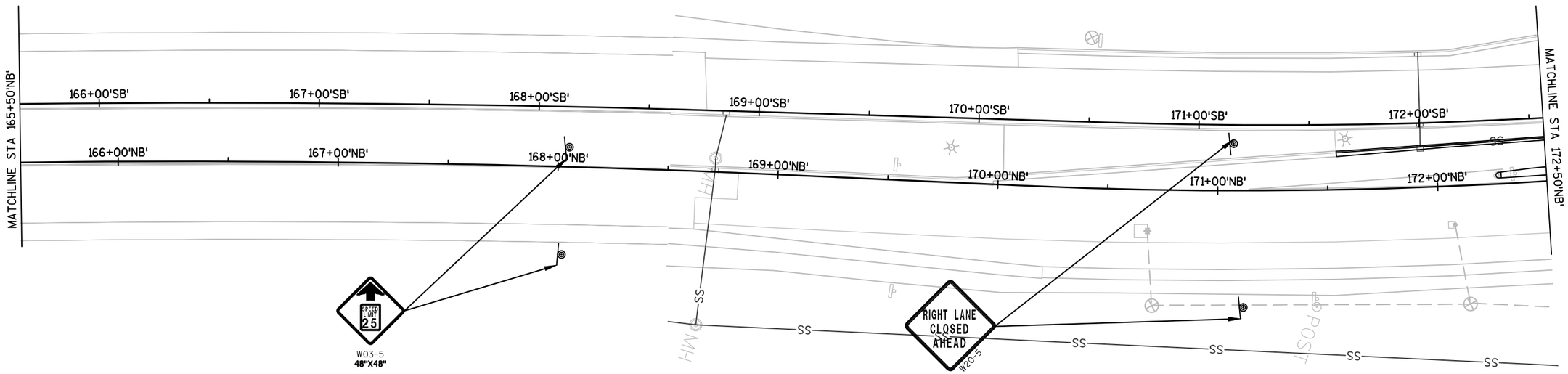
STAGE 1 NOTES:

TRAFFIC WILL UTILIZE TEMPORARY CROSSOVERS AND WILL BE SHIFTED ON THE SB LANES OF STH 124/BRIDGE ST. AT STATION 184+00.

NB LANES OF STH 124/BRIDGE ST WILL BE UNDER CONSTRUCTION.

LEGEND

- XXXX XXXX — REMOVE PAVEMENT MARKING
- TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
- TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- SIGN ON TEMPORARY SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- SIGN ON POST IN BARREL
- EXISTING SIGNS SHALL BE COVERED
- WORK AREA
- WORK AREA NIGHT TIME ONLY
- SAND BARREL ARRAYS



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 1	SHEET 19	E

2

SUMMIT AVENUE CROSSING

STH 124 (S. BRIDGE ST)

MATCHLINE STA 172+50

MATCHLINE STA 179+50'NB'

MATCHLINE STA 179+50'NB'

MATCHLINE STA 186+50'NB'

173+00'SB' 174+00'SB' 175+00'SB' 176+00'SB' 177+00'SB' 178+00'SB' 179+00'SB'

173+00'NB' 174+00'NB' 175+00'NB' 176+00'NB' 177+00'NB' 178+00'NB' 179+00'NB'

180+00'SB' 181+00'SB' 182+00'SB' 183+00'SB' 184+00'SB' 185+00'SB' 186+00'SB'

180+00'NB' 181+00'NB' 182+00'NB' 183+00'NB' 184+00'NB' 185+00'NB' 186+00'NB'

SPEED LIMIT 25 R2-1 24"X30"

SPEED LIMIT 35 R2-1 24"X30"

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

W4-2R 36"X36"

SPEED LIMIT 35

W01-6 48" X 24"

xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxx

25'

180'

25'

*STAGE 1 SEE RAMP DETOUR DETAIL SHEET

(BY OTHERS) R11-2 48" X 30" RAMP CLOSED

TYPE III BARRICADE

SIDEWALK CLOSED R9-9 30"X18" (BY OTHERS)

DETOUR M4-9BL 30"X24" (BY OTHERS)

CTH J / E. PARK ST

R11-2 48" X 30" LANE CLOSED

TYPE III BARRICADE

STH 124 ON RAMP (CLOSED)

CTH J / PARK ST EXIT RAMP

R11-2 48" X 30" ROAD CLOSED

TYPE III BARRICADE

STAGE 1 NOTES:

TRAFFIC WILL UTILIZE TEMPORARY CROSSOVERS AND WILL BE SHIFTED ON THE SB LANES OF STH 124/BRIDGE ST. AT STATION 184+00

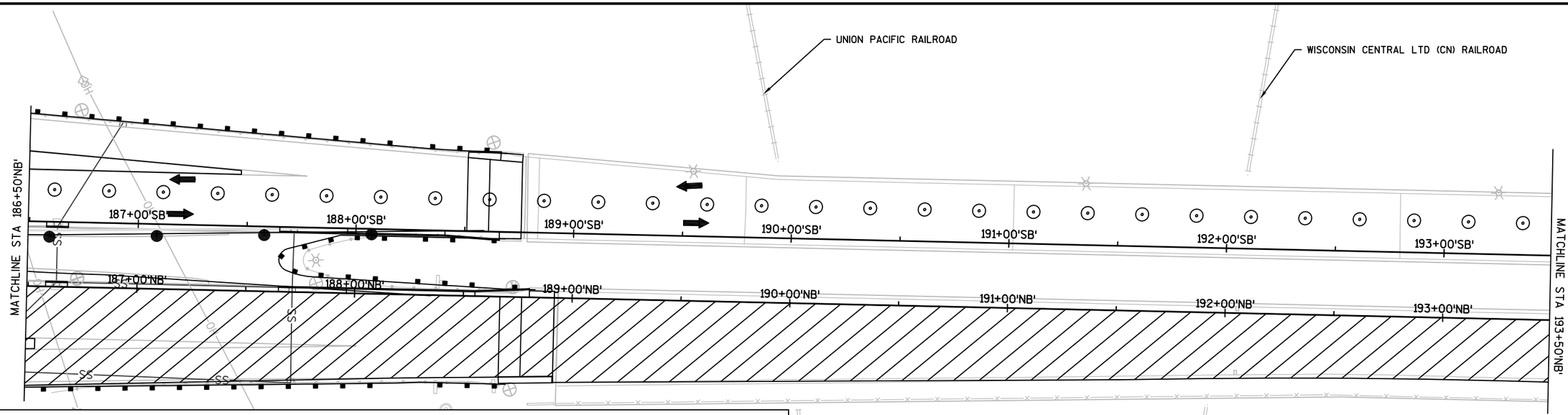
NB LANES OF STH 124/BRIDGE ST WILL BE UNDER CONSTRUCTION.

LEGEND

- XXXX XXXX — REMOVE PAVEMENT MARKING
- TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
- TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- SIGN ON TEMPORARY SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- SIGN ON POST IN BARREL
- EXISTING SIGNS SHALL BE COVERED
- WORK AREA
- WORK AREA NIGHT TIME ONLY
- SAND BARREL ARRAYS

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 1	SHEET 20	E

FILE NAME : P:\UZ\W\WITNW\127359\CIVIL 3D\SHEETSPLAN\025002_TC.DWG PLOT DATE : 9/27/2016 3:51 PM PLOT BY : NICK ENGH PLOT NAME : PLOT SCALE : 1" = 50'_XREF



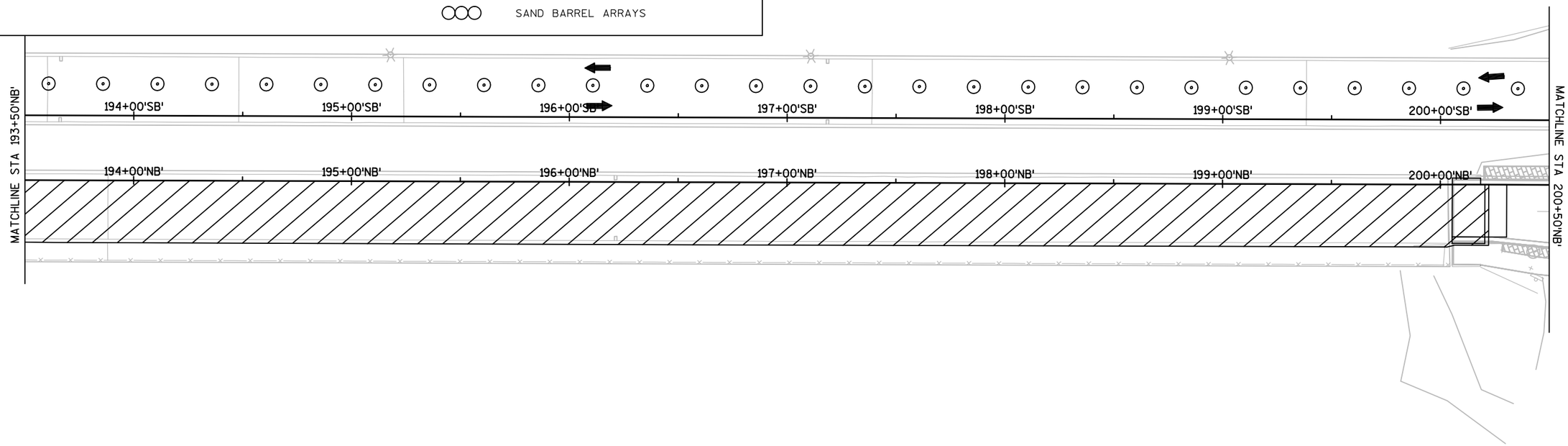
LEGEND

XXXX XXXX	REMOVE PAVEMENT MARKING
	TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
	TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	TRAFFIC CONTROL FLASHING ARROW BOARD
	DIRECTION OF TRAFFIC
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	SIGN ON POST IN BARREL
	EXISTING SIGNS SHALL BE COVERED
	WORK AREA
	WORK AREA NIGHT TIME ONLY
	SAND BARREL ARRAYS

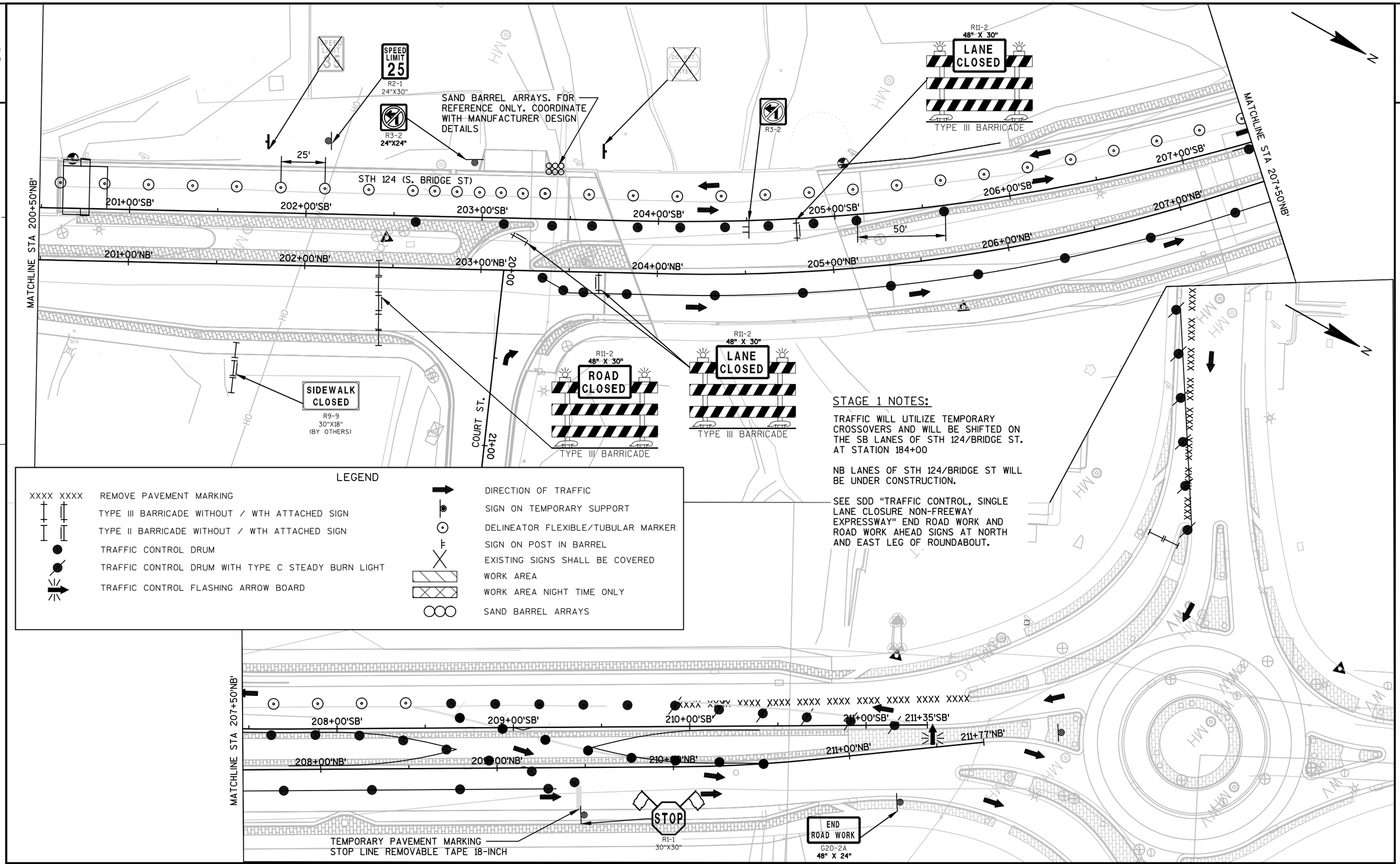
STAGE 1 NOTES:

TRAFFIC WILL UTILIZE TEMPORARY CROSSOVERS AND WILL BE SHIFTED ON THE SB LANES OF STH 124/BRIDGE ST. AT STATION 184+00.

NB LANES OF STH 124/BRIDGE ST WILL BE UNDER CONSTRUCTION.



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 1	SHEET 21	E



LEGEND

XXXX XXXX	REMOVE PAVEMENT MARKING
	TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
	TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	TRAFFIC CONTROL FLASHING ARROW BOARD
	DIRECTION OF TRAFFIC
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	SIGN ON POST IN BARREL
	EXISTING SIGNS SHALL BE COVERED
	WORK AREA
	WORK AREA NIGHT TIME ONLY
	SAND BARREL ARRAYS

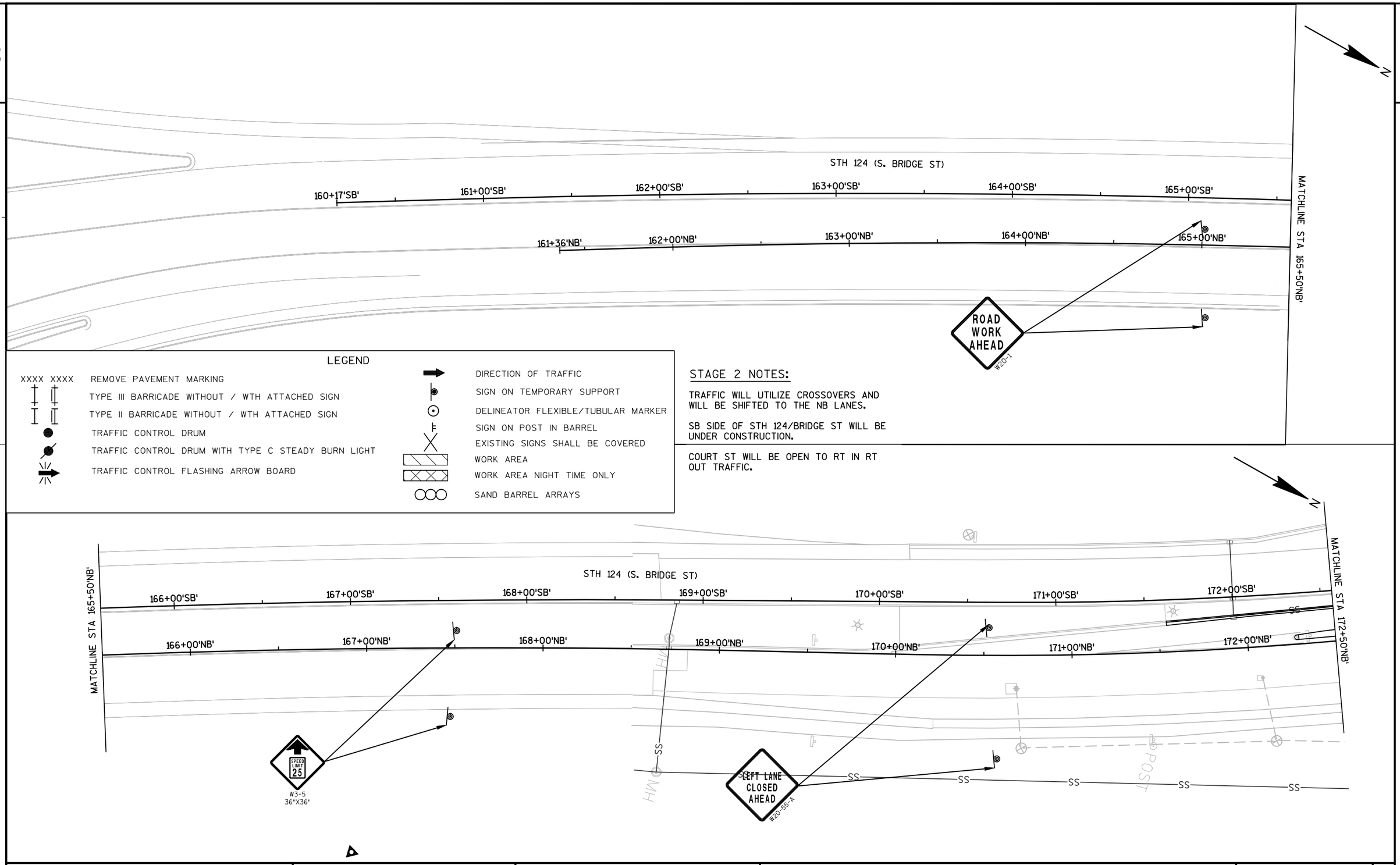
STAGE 1 NOTES:

TRAFFIC WILL UTILIZE TEMPORARY CROSSOVERS AND WILL BE SHIFTED ON THE SB LANES OF STH 124/BRIDGE ST. AT STATION 184+00

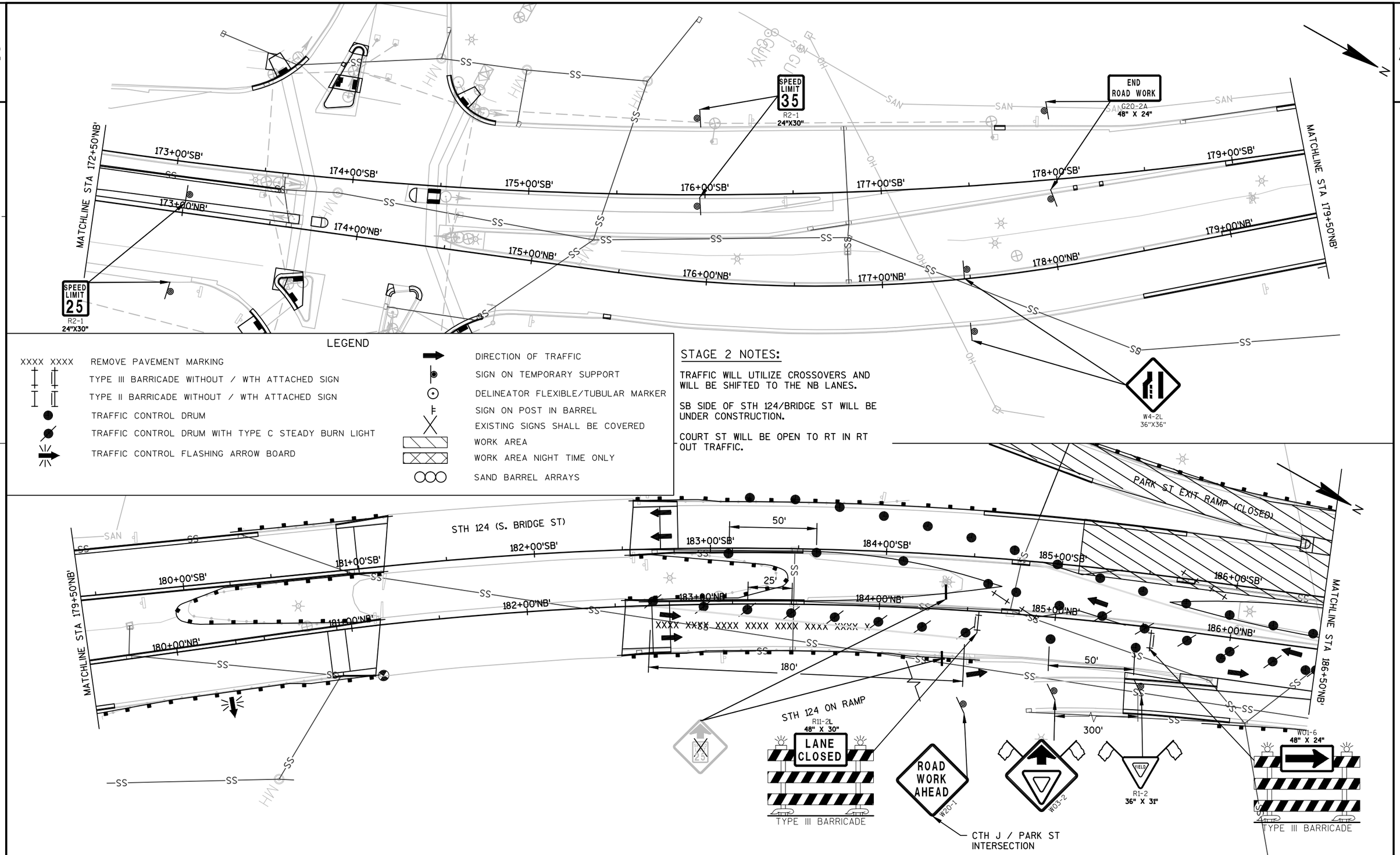
NB LANES OF STH 124/BRIDGE ST WILL BE UNDER CONSTRUCTION.

SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE NON-FREEWAY EXPRESSWAY" END ROAD WORK AND ROAD WORK AHEAD SIGNS AT NORTH AND EAST LEG OF ROUNDABOUT.

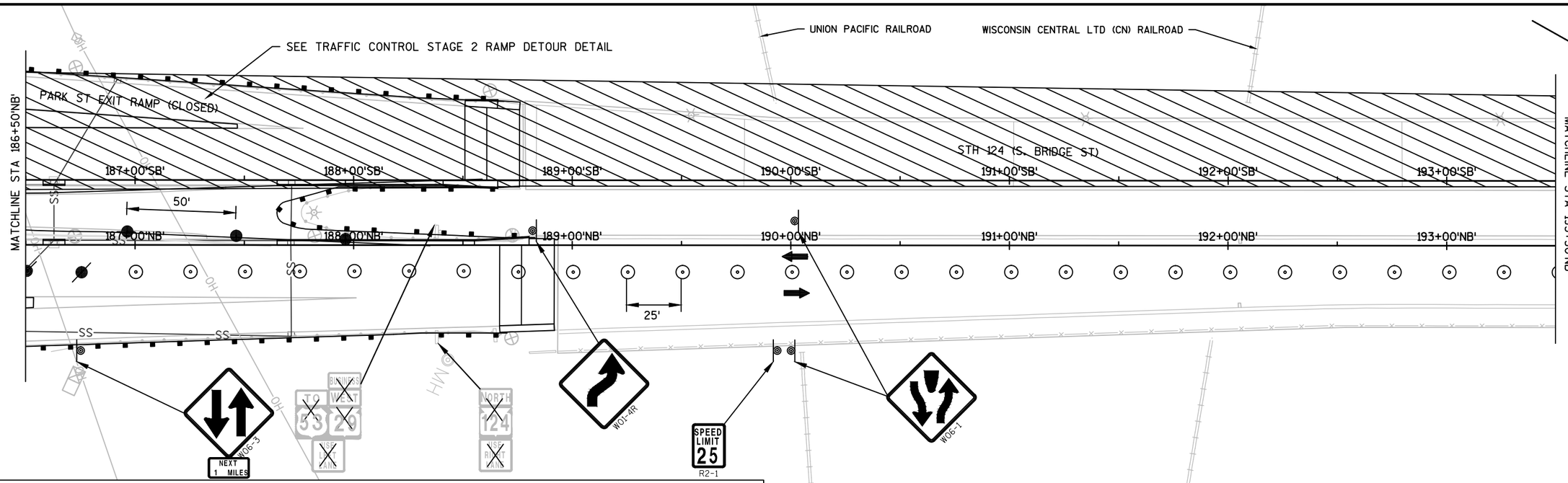
PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 1	SHEET 22	E



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 2	SHEET 23	E



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 2	SHEET 24	E



LEGEND

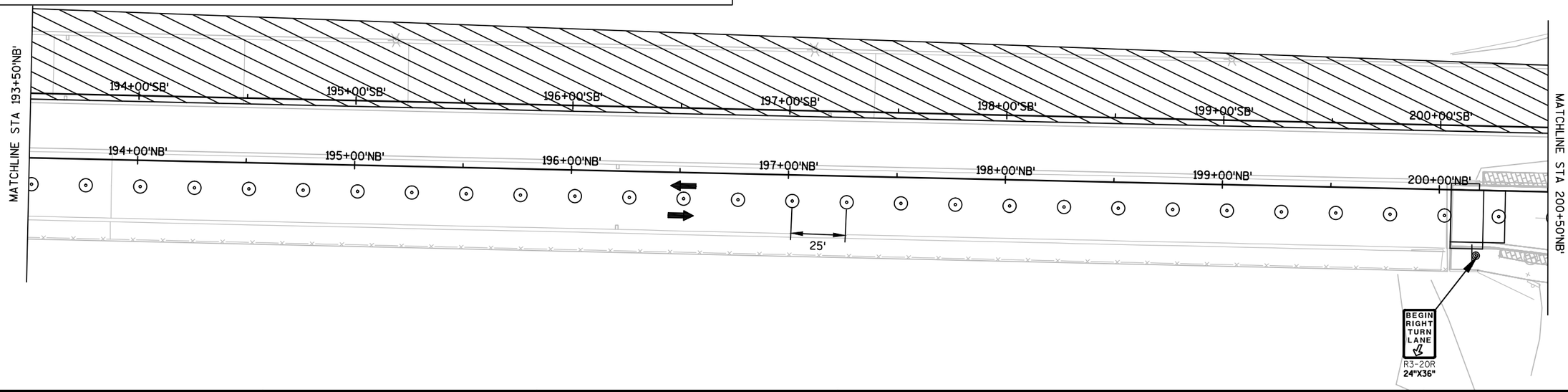
XXXX XXXX	REMOVE PAVEMENT MARKING
	TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
	TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	TRAFFIC CONTROL FLASHING ARROW BOARD
	DIRECTION OF TRAFFIC
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	SIGN ON POST IN BARREL
	EXISTING SIGNS SHALL BE COVERED
	WORK AREA
	WORK AREA NIGHT TIME ONLY
	SAND BARREL ARRAYS

STAGE 2 NOTES:

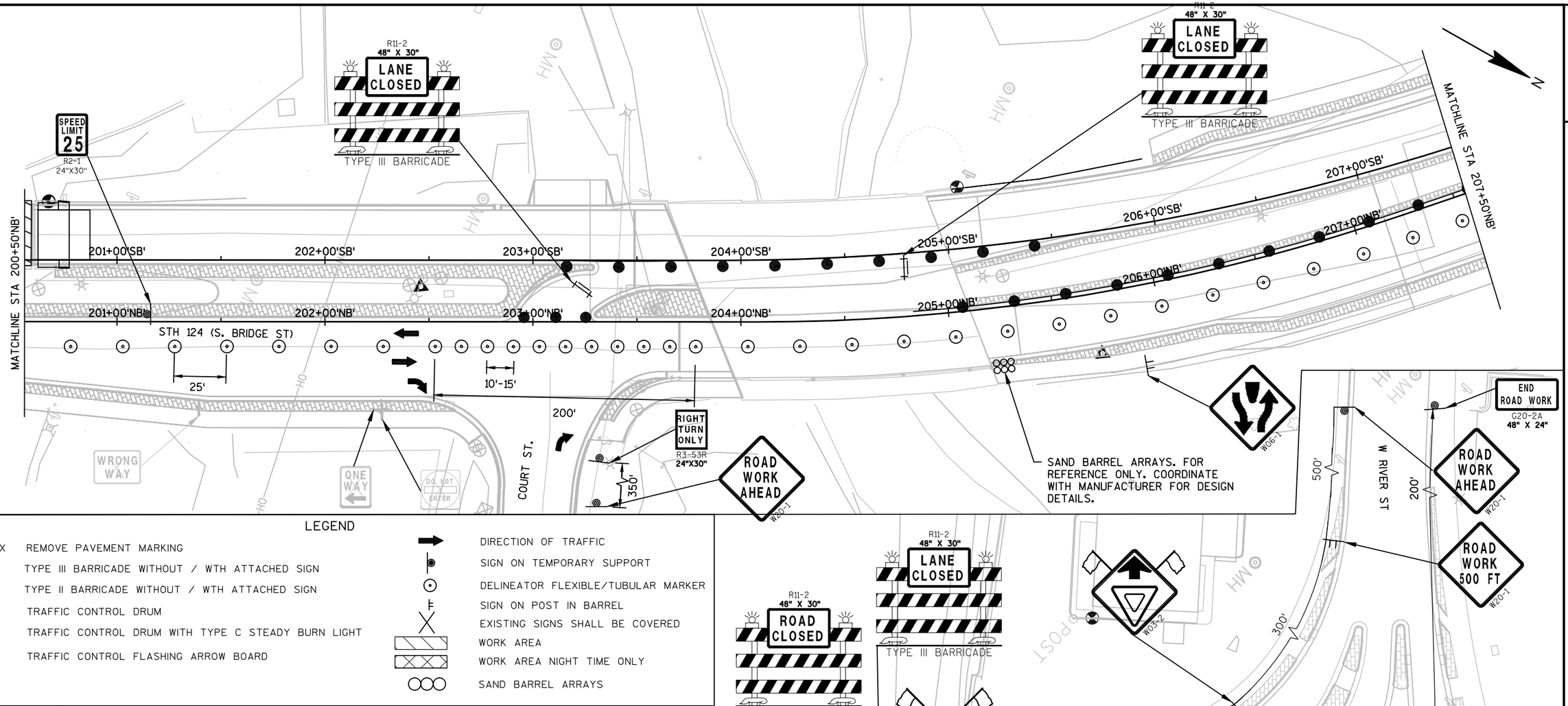
TRAFFIC WILL UTILIZE CROSSOVERS AND WILL BE SHIFTED TO THE NB LANES.

SB SIDE OF STH 124/BRIDGE ST WILL BE UNDER CONSTRUCTION.

COURT ST WILL BE OPEN TO RT IN RT OUT TRAFFIC.



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 2	SHEET 25	E



LEGEND

XXXX XXXX	REMOVE PAVEMENT MARKING
	TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
	TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	TRAFFIC CONTROL FLASHING ARROW BOARD
	DIRECTION OF TRAFFIC
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	SIGN ON POST IN BARREL
	EXISTING SIGNS SHALL BE COVERED
	WORK AREA
	WORK AREA NIGHT TIME ONLY
	SAND BARREL ARRAYS

STAGE 2 NOTES:

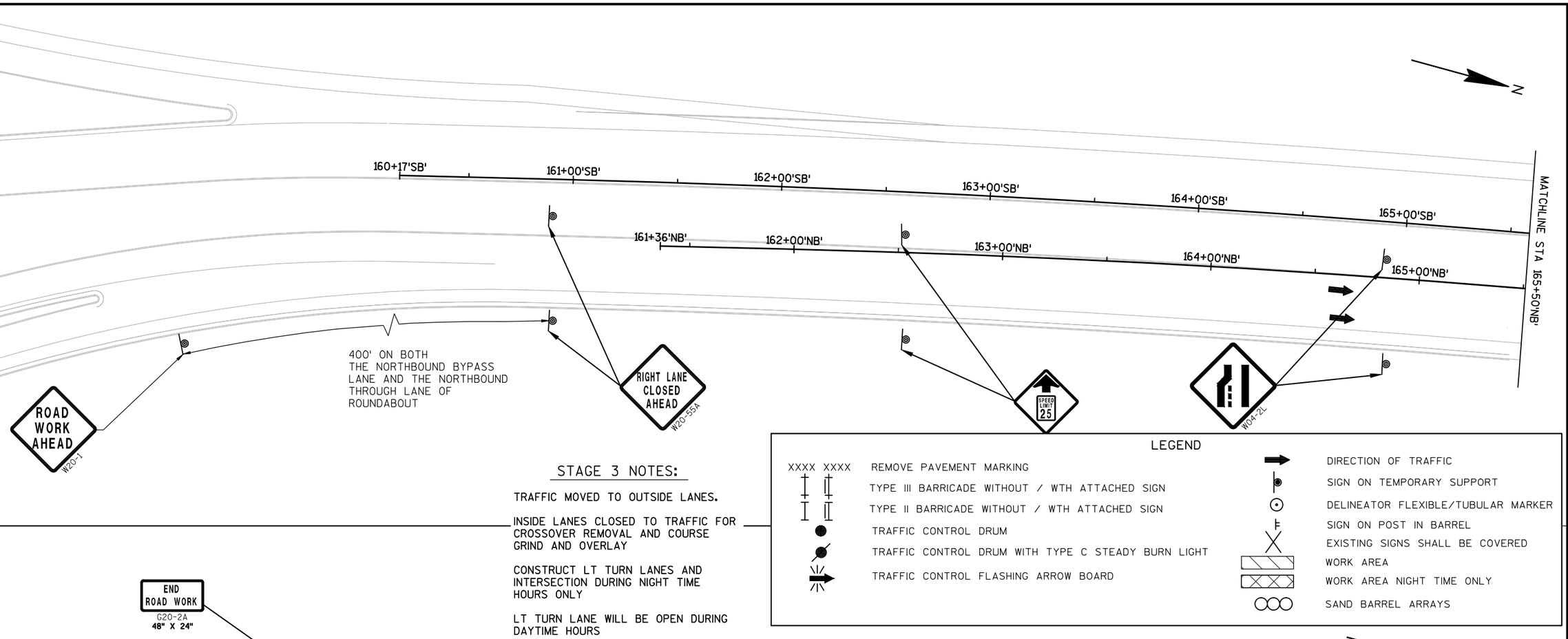
TRAFFIC WILL UTILIZE CROSSOVERS AND WILL BE SHIFTED TO THE NB LANES.

SB SIDE OF STH 124/BRIDGE ST WILL BE UNDER CONSTRUCTION.

COURT ST WILL BE OPEN TO RT IN RT OUT TRAFFIC.

SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE NON-FREEWAY EXPRESSWAY" END ROAD WORK AND ROAD WORK AHEAD SIGNS AT NORTH AND EAST LEG OF ROUNDABOUT.

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 2	SHEET 26	E



STAGE 3 NOTES:

TRAFFIC MOVED TO OUTSIDE LANES.

INSIDE LANES CLOSED TO TRAFFIC FOR CROSSOVER REMOVAL AND COURSE GRIND AND OVERLAY

CONSTRUCT LT TURN LANES AND INTERSECTION DURING NIGHT TIME HOURS ONLY

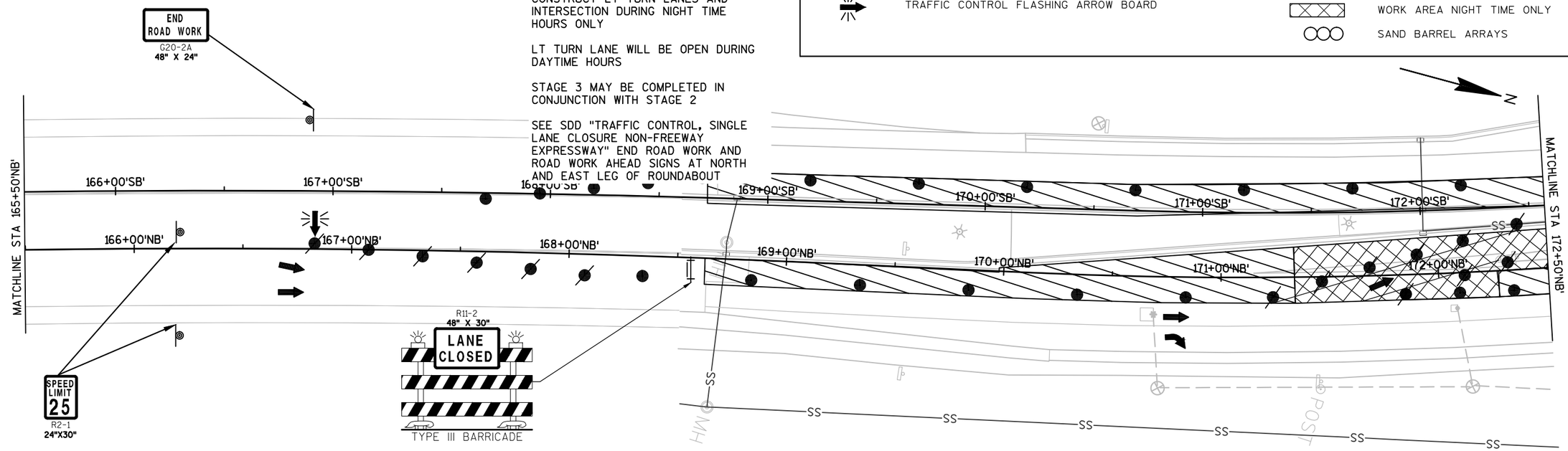
LT TURN LANE WILL BE OPEN DURING DAYTIME HOURS

STAGE 3 MAY BE COMPLETED IN CONJUNCTION WITH STAGE 2

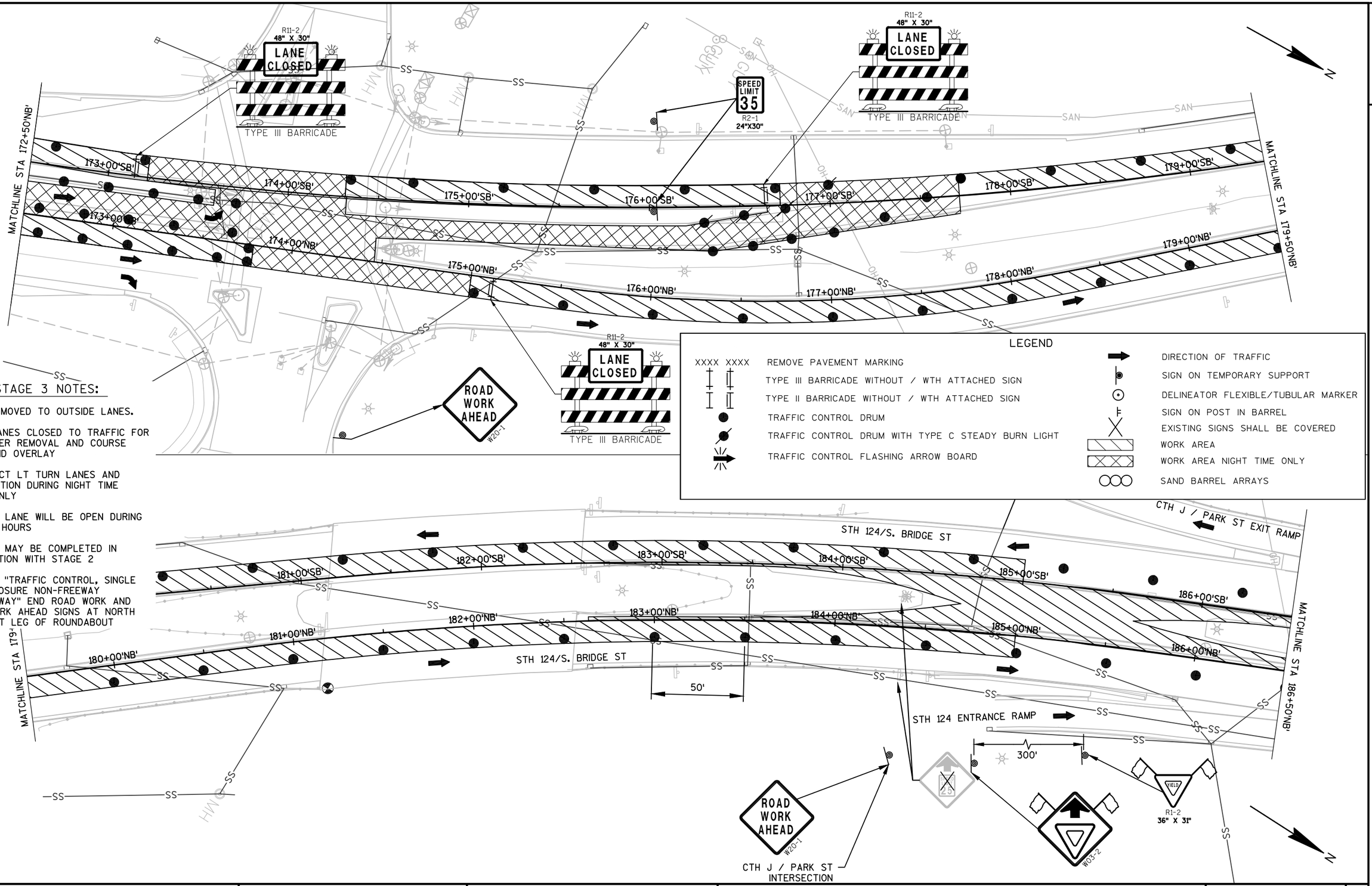
SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE NON-FREEWAY EXPRESSWAY" END ROAD WORK AND ROAD WORK AHEAD SIGNS AT NORTH AND EAST LEG OF ROUNDABOUT

LEGEND

- XXXX XXXX — REMOVE PAVEMENT MARKING
- TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
- TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- SIGN ON TEMPORARY SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- SIGN ON POST IN BARREL
- EXISTING SIGNS SHALL BE COVERED
- WORK AREA
- WORK AREA NIGHT TIME ONLY
- SAND BARREL ARRAYS



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 3	SHEET 27	E



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 3	SHEET 28	E

2

UNION PACIFIC RAILROAD

WISCONSIN CENTRAL LTD (CN) RAILROAD

W04-2L

MATCHLINE STA 186+50'NB'

MATCHLINE STA 193+50'NB'

187+00'SB' 188+00'SB' 189+00'SB' XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XX 190+00'SB' 191+00'SB' 192+00'SB' 193+00'SB'

187+00'NB' 188+00'NB' 189+00'NB' 190+00'NB' 191+00'NB' 192+00'NB' 193+00'NB'

SS SS SS SS OH OH OH HW

STAGE 3 NOTES:

TRAFFIC MOVED TO OUTSIDE LANES.

INSIDE LANES CLOSED TO TRAFFIC FOR CROSSOVER REMOVAL AND COURSE GRIND AND OVERLAY

CONSTRUCT LT TURN LANES AND INTERSECTION DURING NIGHT TIME HOURS ONLY

LT TURN LANE WILL BE OPEN DURING DAYTIME HOURS

STAGE 3 MAY BE COMPLETED IN CONJUNCTION WITH STAGE 2

SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE NON-FREEWAY EXPRESSWAY" END ROAD WORK AND ROAD WORK AHEAD SIGNS AT NORTH AND EAST LEG OF ROUNDABOUT

LEGEND

- XXXX XXXX — REMOVE PAVEMENT MARKING
- TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
- TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- SIGN ON TEMPORARY SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- SIGN ON POST IN BARREL
- EXISTING SIGNS SHALL BE COVERED
- WORK AREA
- WORK AREA NIGHT TIME ONLY
- SAND BARREL ARRAYS

LEFT LANE CLOSED AHEAD W20-55-A

ROAD WORK AHEAD W20-1-A

MATCHLINE STA 193+50'NB'

194+00'SB' 195+00'SB' 196+00'SB' 197+00'SB' 198+00'SB' 199+00'SB' 200+00'SB'

194+00'NB' 195+00'NB' 196+00'NB' 197+00'NB' 198+00'NB' 199+00'NB' 200+00'NB'

STH 124/S. BRIDGE ST

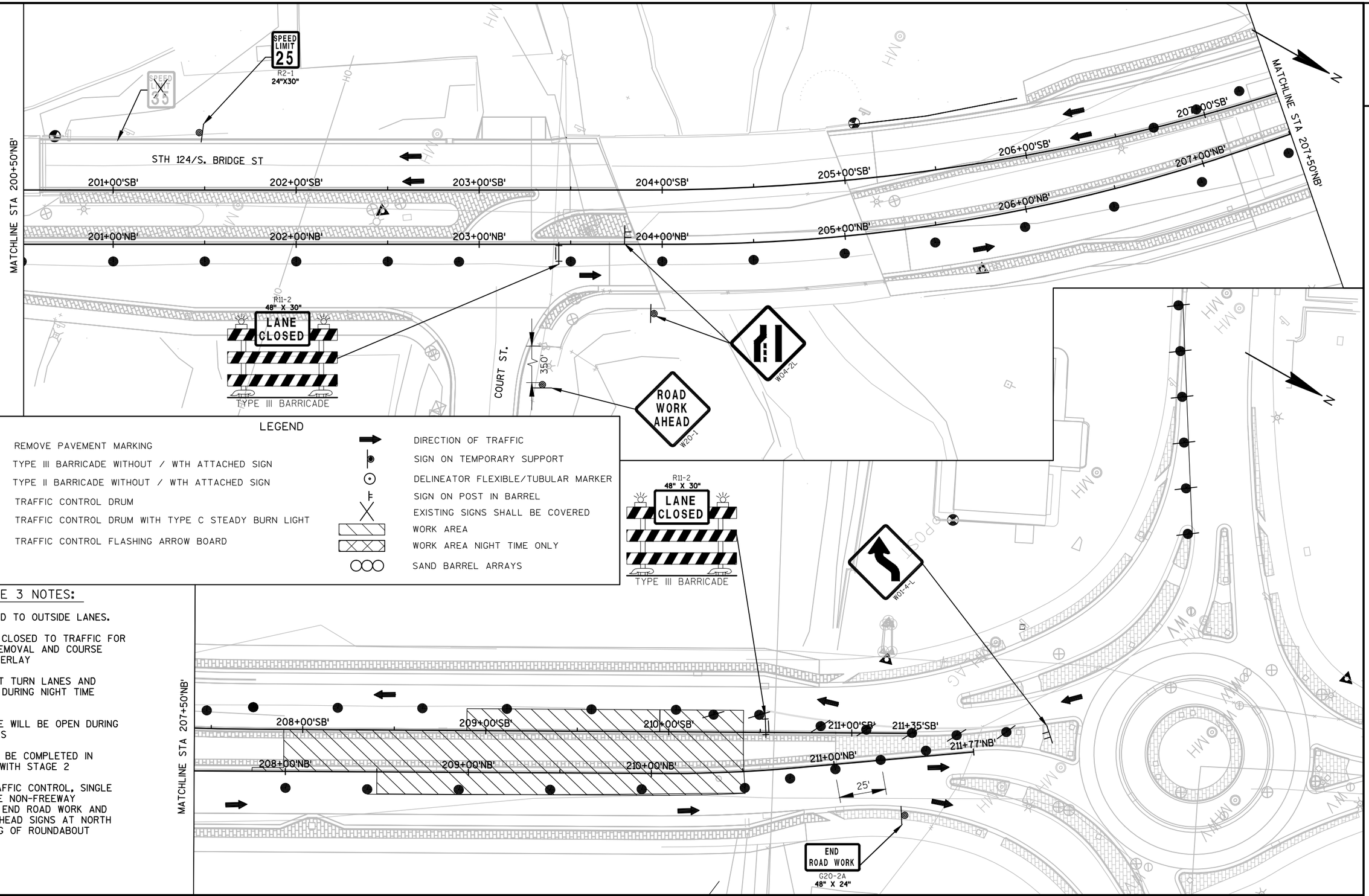
ROAD WORK AHEAD W20-1-A

LEFT LANE CLOSED AHEAD W20-55-A

MATCHLINE STA 200+50'NB'

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 3	SHEET 29	E

2



LEGEND

- XXXX XXXX — REMOVE PAVEMENT MARKING
- TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
- TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- SIGN ON TEMPORARY SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- SIGN ON POST IN BARREL
- EXISTING SIGNS SHALL BE COVERED
- WORK AREA
- WORK AREA NIGHT TIME ONLY
- SAND BARREL ARRAYS

STAGE 3 NOTES:

TRAFFIC MOVED TO OUTSIDE LANES.

INSIDE LANES CLOSED TO TRAFFIC FOR CROSSOVER REMOVAL AND COURSE GRIND AND OVERLAY

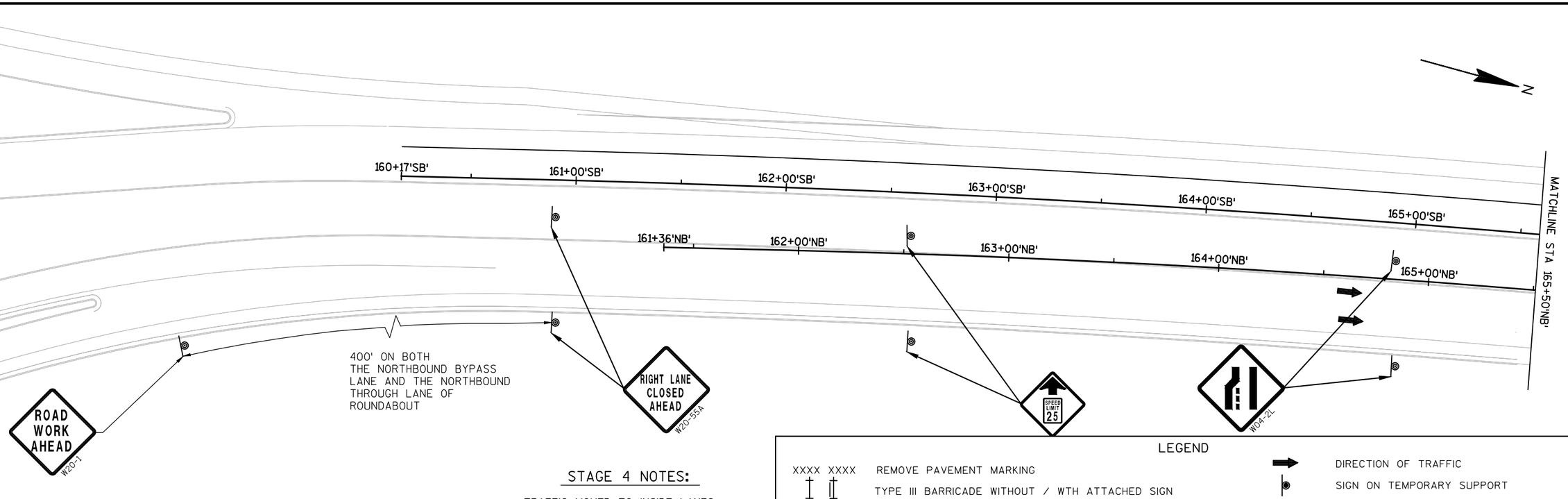
CONSTRUCT LT TURN LANES AND INTERSECTION DURING NIGHT TIME HOURS ONLY

LT TURN LANE WILL BE OPEN DURING DAYTIME HOURS

STAGE 3 MAY BE COMPLETED IN CONJUNCTION WITH STAGE 2

SEE SDD "TRAFFIC CONTROL, SINGLE LANE CLOSURE NON-FREEWAY EXPRESSWAY" END ROAD WORK AND ROAD WORK AHEAD SIGNS AT NORTH AND EAST LEG OF ROUNDABOUT

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 3	SHEET 30	E



STAGE 4 NOTES:

TRAFFIC MOVED TO INSIDE LANES.

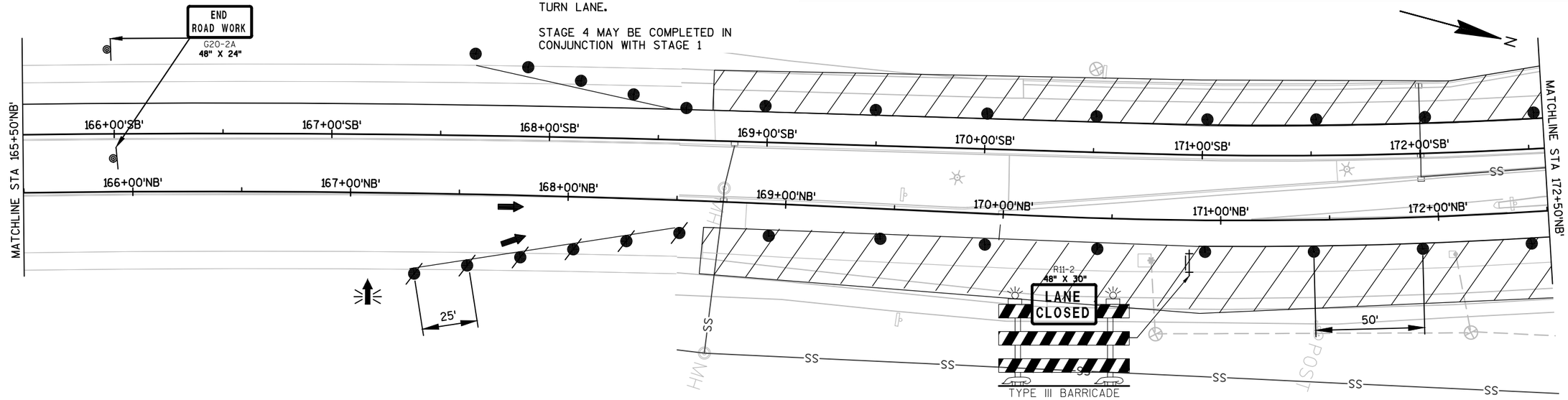
OUTSIDE LANES CLOSED TO TRAFFIC FOR COURSE GRIND AND OVERLAY CONSTRUCT RIGHT TURN LANES AND INTERSECTION DURING NIGHT TIME HOURS ONLY.

RIGHT TURN LANE WILL BE ALLOWED WITH FLAGGING BEING UTILIZED AS NECESSARY IN ORDER TO OVERLAY THE TURN LANE.

STAGE 4 MAY BE COMPLETED IN CONJUNCTION WITH STAGE 1

LEGEND

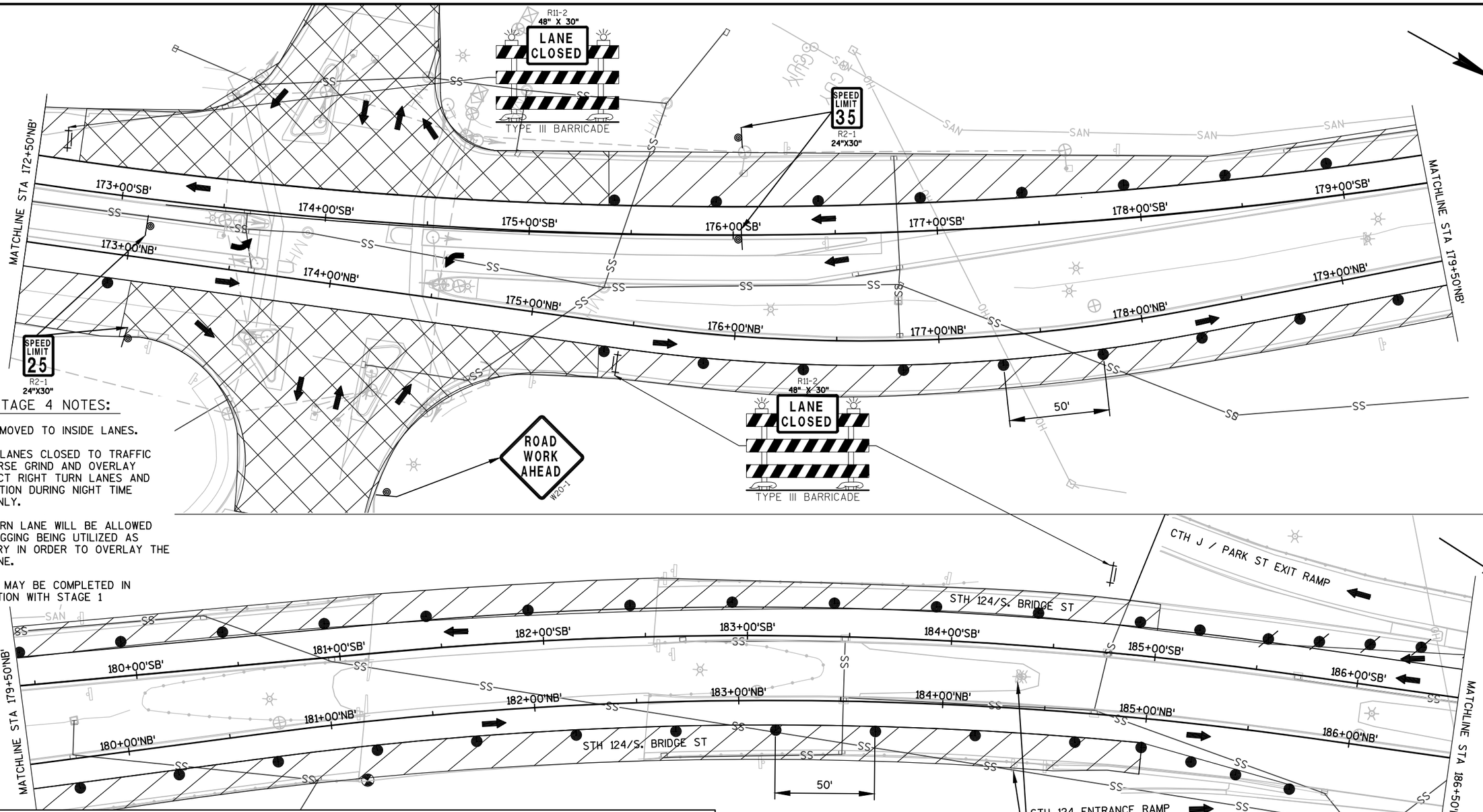
- XXXX XXXX — REMOVE PAVEMENT MARKING
- TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
- TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- SIGN ON TEMPORARY SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- SIGN ON POST IN BARREL
- EXISTING SIGNS SHALL BE COVERED
- WORK AREA
- WORK AREA NIGHT TIME ONLY
- SAND BARREL ARRAYS



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 4	SHEET	E

FILE NAME : P:\UZ\W\WITNW\127359\CIVIL 3D\SHEETSPLAN\025005_TC.DWG PLOT DATE : 9/27/2016 3:58 PM PLOT BY : NICK ENGH PLOT NAME : PLOT SCALE : *********

2



STAGE 4 NOTES:

TRAFFIC MOVED TO INSIDE LANES.

OUTSIDE LANES CLOSED TO TRAFFIC FOR COURSE GRIND AND OVERLAY CONSTRUCT RIGHT TURN LANES AND INTERSECTION DURING NIGHT TIME HOURS ONLY.

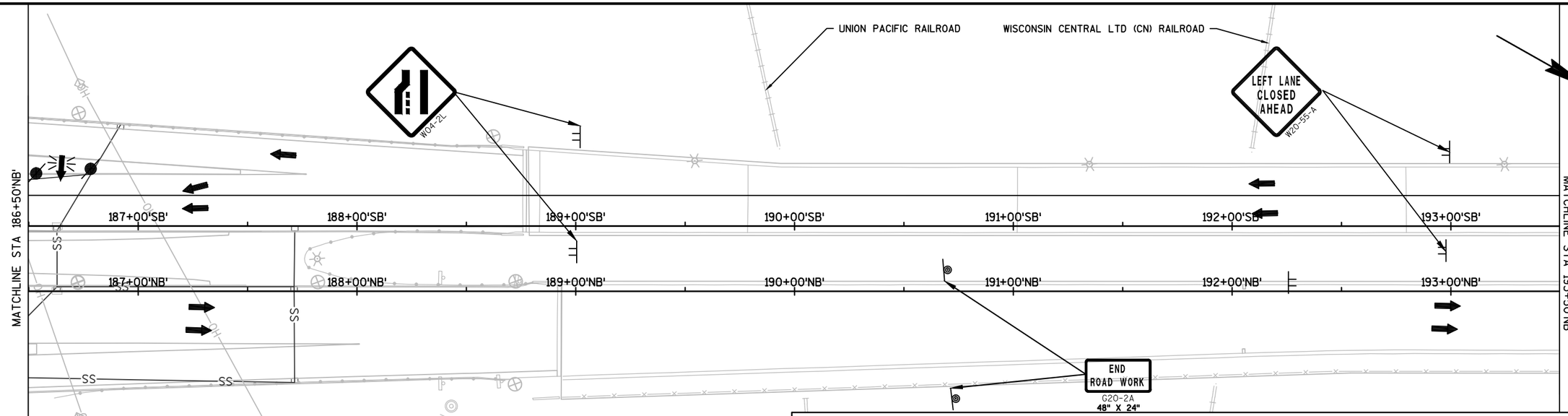
RIGHT TURN LANE WILL BE ALLOWED WITH FLAGGING BEING UTILIZED AS NECESSARY IN ORDER TO OVERLAY THE TURN LANE.

STAGE 4 MAY BE COMPLETED IN CONJUNCTION WITH STAGE 1

LEGEND

- XXXX XXXX — REMOVE PAVEMENT MARKING
- TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
- TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- SIGN ON TEMPORARY SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- SIGN ON POST IN BARREL
- EXISTING SIGNS SHALL BE COVERED
- WORK AREA
- WORK AREA NIGHT TIME ONLY
- SAND BARREL ARRAYS

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 4	SHEET 32	E



STAGE 4 NOTES:

TRAFFIC MOVED TO INSIDE LANES.

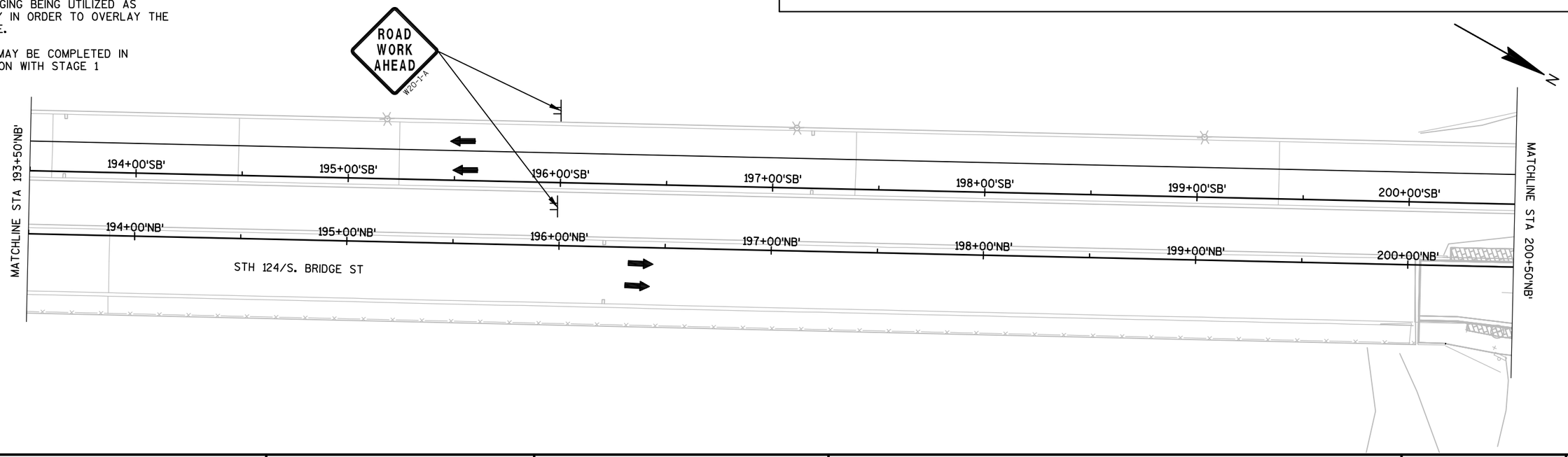
OUTSIDE LANES CLOSED TO TRAFFIC FOR COURSE GRIND AND OVERLAY CONSTRUCT RIGHT TURN LANES AND INTERSECTION DURING NIGHT TIME HOURS ONLY.

RIGHT TURN LANE WILL BE ALLOWED WITH FLAGGING BEING UTILIZED AS NECESSARY IN ORDER TO OVERLAY THE TURN LANE.

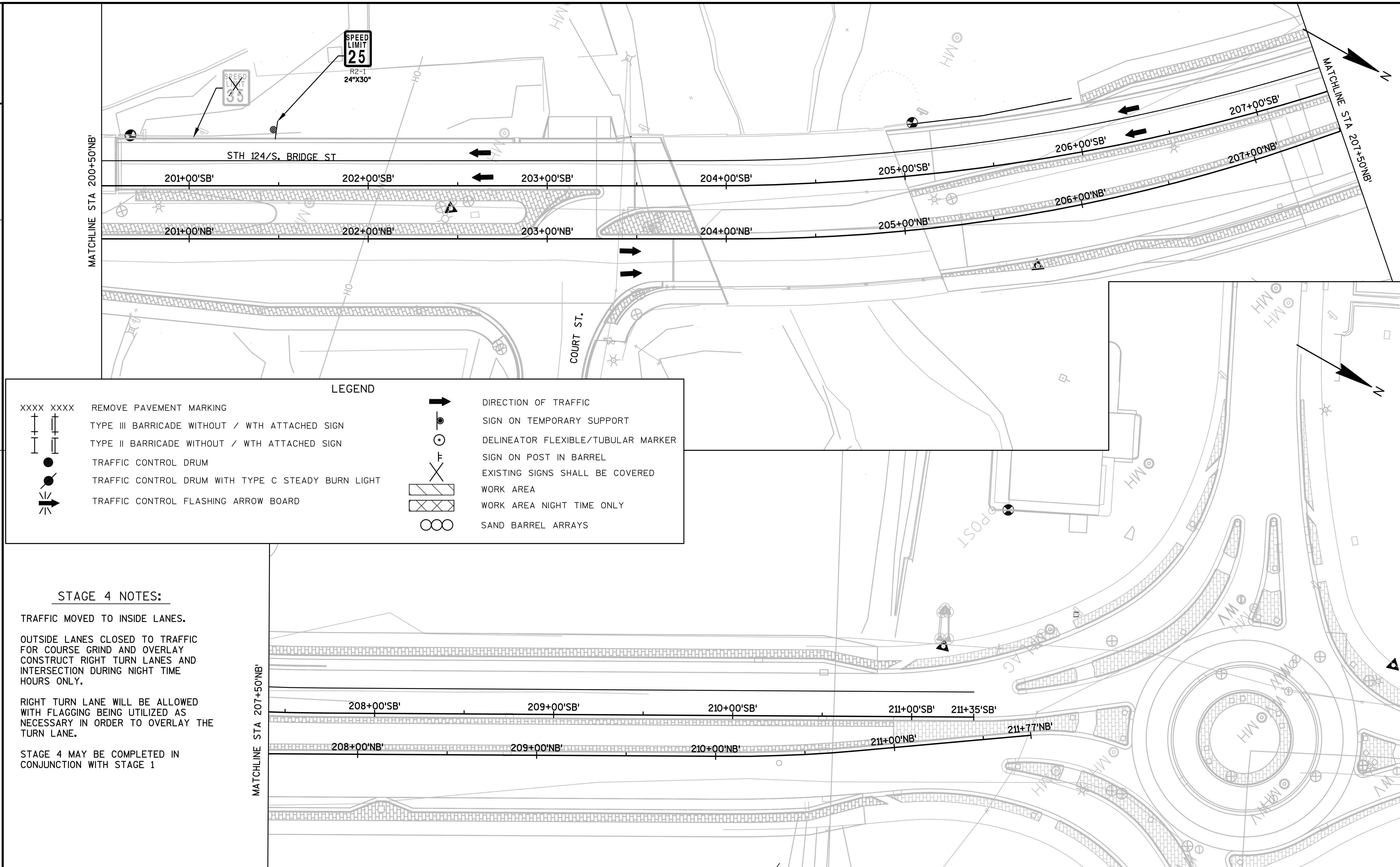
STAGE 4 MAY BE COMPLETED IN CONJUNCTION WITH STAGE 1

LEGEND

- XXXX XXXX — REMOVE PAVEMENT MARKING
- TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
- TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- TRAFFIC CONTROL FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- SIGN ON TEMPORARY SUPPORT
- DELINEATOR FLEXIBLE/TUBULAR MARKER
- SIGN ON POST IN BARREL
- EXISTING SIGNS SHALL BE COVERED
- WORK AREA
- WORK AREA NIGHT TIME ONLY
- SAND BARREL ARRAYS



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 4	SHEET 33	E



LEGEND

XXXX XXXX	REMOVE PAVEMENT MARKING
	TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
	TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	TRAFFIC CONTROL FLASHING ARROW BOARD
	DIRECTION OF TRAFFIC
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	SIGN ON POST IN BARREL
	EXISTING SIGNS SHALL BE COVERED
	WORK AREA
	WORK AREA NIGHT TIME ONLY
	SAND BARREL ARRAYS

STAGE 4 NOTES:

TRAFFIC MOVED TO INSIDE LANES.

OUTSIDE LANES CLOSED TO TRAFFIC FOR COURSE GRIND AND OVERLAY CONSTRUCT RIGHT TURN LANES AND INTERSECTION DURING NIGHT TIME HOURS ONLY.

RIGHT TURN LANE WILL BE ALLOWED WITH FLAGGING BEING UTILIZED AS NECESSARY IN ORDER TO OVERLAY THE TURN LANE.

STAGE 4 MAY BE COMPLETED IN CONJUNCTION WITH STAGE 1

CITY OF CHIPPEWA FALLS TO SIGN AND MAINTAIN DETOUR (BY OTHERS)

FOR VEHICLE DETOUR ROUTE SIGNING UTILIZE SDD:
"BARRICADES AND SIGNS FOR MAINLINE CLOSURES"

RAMP DETOUR ROUTE
PEDESTRIAN DETOUR ROUTE

IRVINE ST
SUMMIT AVE.
WOODWARD AVE
S MAIN ST
A ST.
SUMMIT AVE.
CTH J / E. PARK AVE
UNION PACIFIC RAILROAD
WISCONSIN CENTRAL LTD (CN) RAILROAD
IRVINE ST
STH 124 / S. BRIDGE ST SB
STH 124 / S. BRIDGE ST NB
CHIPPEWA MALL DR
CHIPPEWA MALL DR
SUMMIT AVE
CTH J / E. PARK AVE
W RIVER ST

M4-9BL 30"X24"
M4-9BR 30"X24"
M4-9BR 30"X24"
M4-9BL 30"X24"

SIDEWALK CLOSED
R9-9 30"X18"
AT PARK ST

M4-8A 24"X18" END DETOUR
M3-1 24"X12" NORTH
M1-6 24"X24" 124
M06-1 21"X21"

M4-8 24"X12" DETOUR
M3-1 24"X12" NORTH
M1-6 24"X24" 124
M06-1 21"X21"

M4-8 24"X12" DETOUR
M3-1 24"X12" NORTH
M1-6 24"X24" 124
M06-1 21"X21"

R11-2R 48"X30"
RAMP CLOSED
TYPE III BARRICADE

SIDEWALK CLOSED
R9-9 30"X18"
DETOUR
M4-9BL 30"X24"

M4-8 24"X12" DETOUR
M3-1 24"X12" NORTH
M1-6 24"X24" 124
M06-1 21"X21"

SIDEWALK CLOSED
R9-9 30"X18"

SIDEWALK CLOSED
R9-9 30"X18"
AT COURT ST
DETOUR
M4-9BR 30"X24"

LEGEND

XXXX XXXX	REMOVE PAVEMENT MARKING
	TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN
	TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
	TRAFFIC CONTROL FLASHING ARROW BOARD
	DIRECTION OF TRAFFIC
	SIGN ON TEMPORARY SUPPORT
	DELINEATOR FLEXIBLE/TUBULAR MARKER
	SIGN ON POST IN BARREL
	EXISTING SIGNS SHALL BE COVERED
	WORK AREA
	WORK AREA NIGHT TIME ONLY
	SAND BARREL ARRAYS

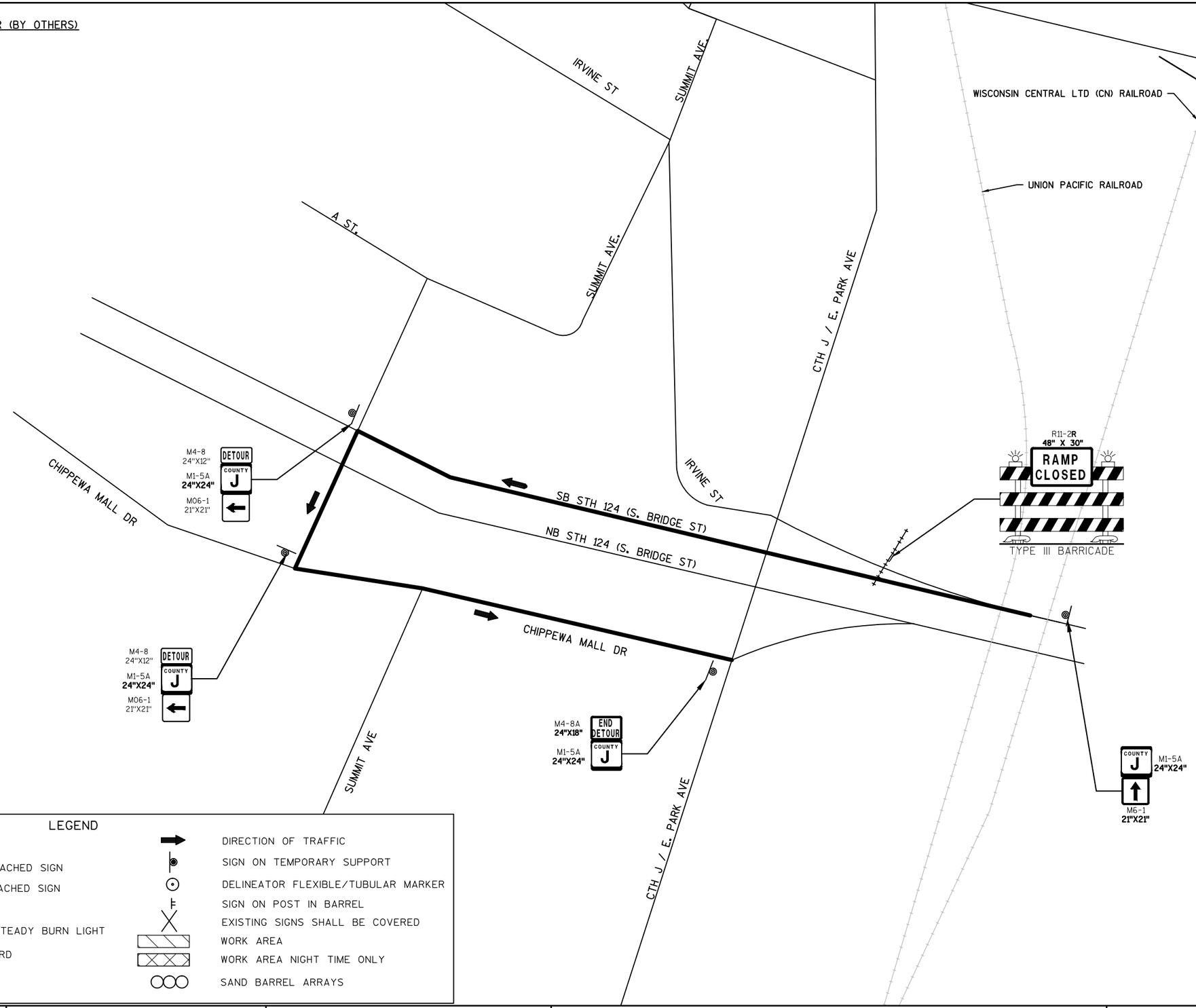
PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 1 RAMP/PEDESTRIAN DETOUR DETAIL	SHEET 35	E

2

CITY OF CHIPPEWA FALLS TO SIGN AND MAINTAIN DETOUR (BY OTHERS)

FOR VEHICLE DETOUR ROUTE SIGNING UTILIZE SDD:
"BARRICADES AND SIGNS FOR MAINLINE CLOSURES"

RAMP DETOUR ROUTE

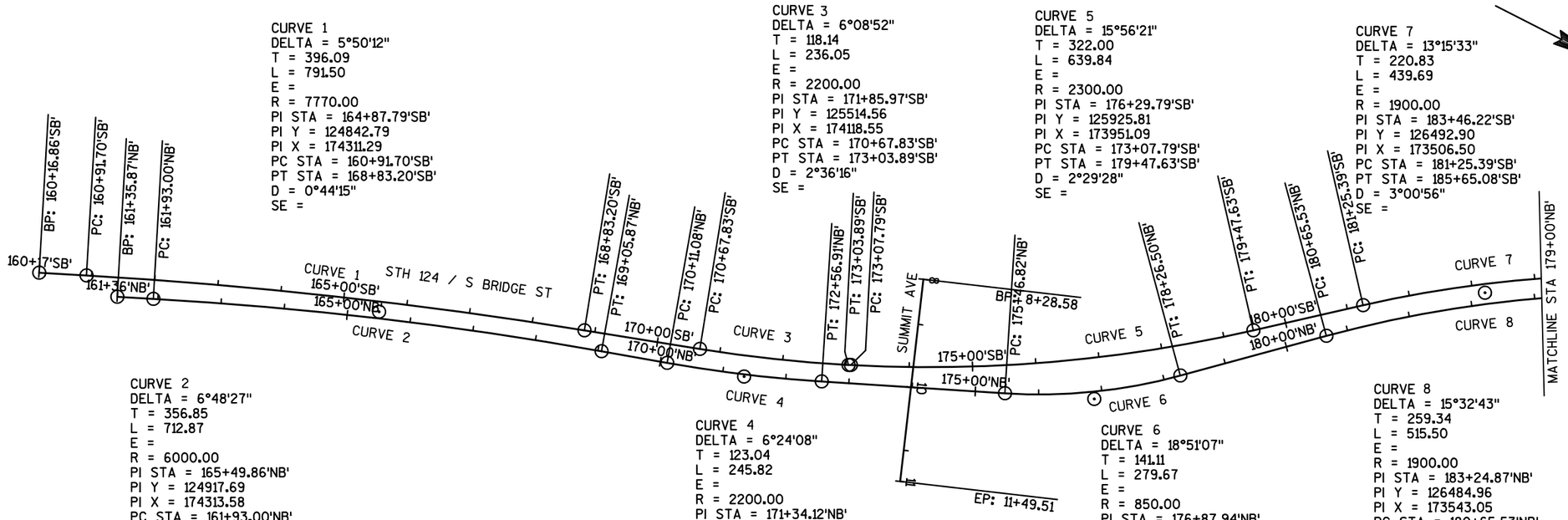


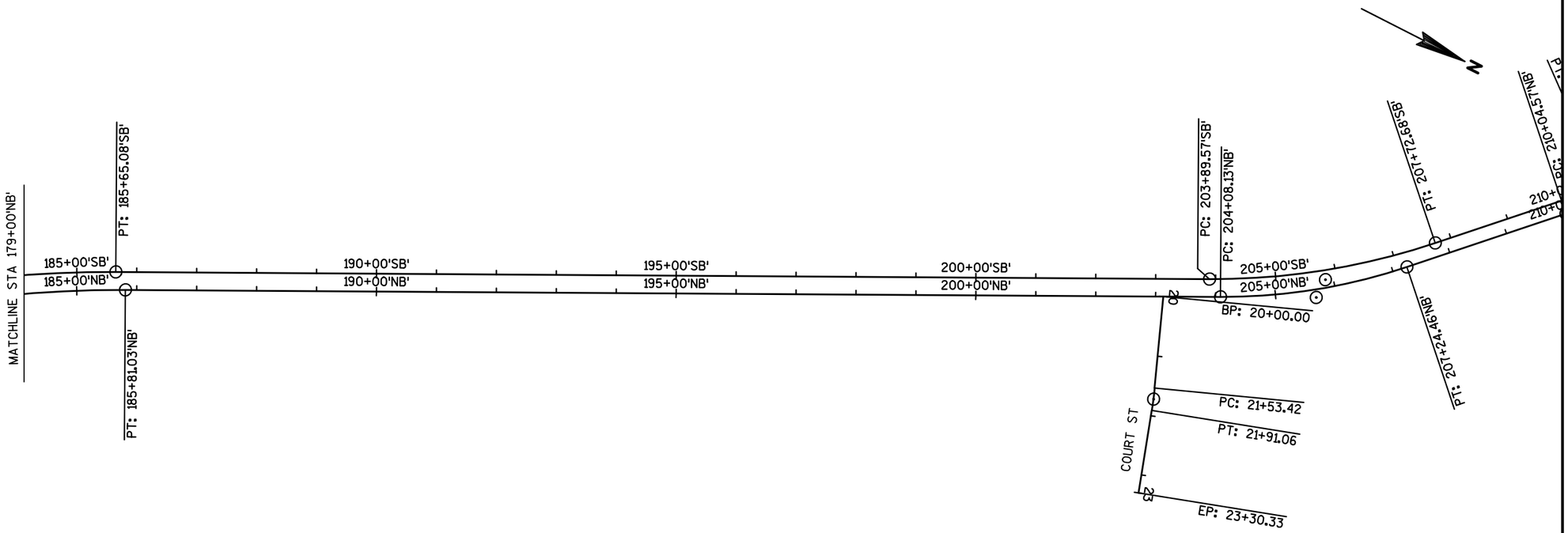
LEGEND

XXXX XXXX REMOVE PAVEMENT MARKING	DIRECTION OF TRAFFIC
TYPE III BARRICADE WITHOUT / WTH ATTACHED SIGN	SIGN ON TEMPORARY SUPPORT
TYPE II BARRICADE WITHOUT / WTH ATTACHED SIGN	DELINEATOR FLEXIBLE/TUBULAR MARKER
TRAFFIC CONTROL DRUM	SIGN ON POST IN BARREL
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT	EXISTING SIGNS SHALL BE COVERED
TRAFFIC CONTROL FLASHING ARROW BOARD	WORK AREA
	WORK AREA NIGHT TIME ONLY
	SAND BARREL ARRAYS

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	TRAFFIC CONTROL STAGE 2 RAMP DETOUR DETAIL	SHEET 36	E

2





PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA FALLS	ALIGNMENT	SHEET 37	E

8610-02-72

Line	Item	Item Description	Unit	Total	Qty
0010	203.0200	Removing Old Structure (station) 01. B-9-146	LS	1.000	1.000
0020	203.0200	Removing Old Structure (station) 02. B-9-147	LS	1.000	1.000
0030	204.0100	Removing Pavement	SY	666.000	666.000
0040	204.0105	Removing Pavement Butt Joints	SY	2,330.000	2,330.000
0050	204.0109.S	Removing Concrete Surface Partial Depth	SF	127,820.000	127,820.000
0060	204.0110	Removing Asphaltic Surface	SY	1,973.000	1,973.000
0070	204.0115	Removing Asphaltic Surface Butt Joints	SY	100.000	100.000
0080	204.0120	Removing Asphaltic Surface Milling	SY	304.000	304.000
0090	204.0150	Removing Curb & Gutter	LF	2,296.000	2,296.000
0100	204.0155	Removing Concrete Sidewalk	SY	87.000	87.000
0110	204.0195	Removing Concrete Bases	EACH	1.000	1.000
0120	204.9165.S	Removing (item description) 01. Concrete Loading Zone	SF	862.000	862.000
0130	204.9165.S	Removing (item description) 02. Concrete Median Sloped Nose	SF	63.000	63.000
0140	205.0100	Excavation Common	CY	139.000	139.000
0150	206.1000	Excavation for Structures Bridges (structure) 01. B-9-146	LS	1.000	1.000
0160	206.1000	Excavation for Structures Bridges (structure) 02. B-9-147	LS	1.000	1.000
0170	211.0200	Prepare Foundation for Concrete Pavement (project) 01. 8610-02-72	LS	1.000	1.000
0180	213.0100	Finishing Roadway (project) 01. 8610-02-72	EACH	1.000	1.000
0190	305.0110	Base Aggregate Dense 3/4-Inch	TON	35.000	35.000
0200	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	554.000	554.000
0210	405.1000	Stamping Colored Concrete	CY	28.000	28.000
0220	415.0060	Concrete Pavement 6-Inch	SY	6.000	6.000
0230	415.0080	Concrete Pavement 8-Inch	SY	49.000	49.000
0240	415.0100	Concrete Pavement 10-Inch	SY	54.000	54.000
0250	415.0410	Concrete Pavement Approach Slab	SY	194.000	194.000
0260	415.1410	Concrete Pavement Approach Slab HES	SY	179.000	179.000
0270	416.0610	Drilled Tie Bars	EACH	935.000	935.000
0280	416.0620	Drilled Dowel Bars	EACH	225.000	225.000
0290	455.0605	Tack Coat	GAL	1,828.500	1,828.500
0300	460.2000	Incentive Density HMA Pavement	DOL	1,100.000	1,100.000
0310	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	3,546.000	3,546.000
0320	460.6445	HMA Pavement 5 MT 58-34 H	TON	2,891.000	2,891.000
0330	465.0110	Asphaltic Surface Patching	TON	100.000	100.000
0340	465.0125	Asphaltic Surface Temporary	TON	143.000	143.000
0350	502.0100	Concrete Masonry Bridges	CY	89.000	89.000
0360	502.3110.S	Expansion Device Modular (structure) 01. B-9-146	LS	1.000	1.000
0370	502.3110.S	Expansion Device Modular (structure) 02. B-9-147	LS	1.000	1.000

8610-02-72

Line	Item	Item Description	Unit	Total	Qty
0380	502.3210	Pigmented Surface Sealer	SY	2,165.000	2,165.000
0390	502.4205	Adhesive Anchors No. 5 Bar	EACH	186.000	186.000
0400	502.4206	Adhesive Anchors No. 6 Bar	EACH	482.000	482.000
0410	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	12,665.000	12,665.000
0420	506.2605	Bearing Pads Elastomeric Non-Laminated	EACH	8.000	8.000
0430	506.7050.S	Removing Bearings (structure) 01. B-9-146	EACH	4.000	4.000
0440	506.7050.S	Removing Bearings (structure) 02. B-9-147	EACH	4.000	4.000
0450	509.0301	Preparation Decks Type 1	SY	21.000	21.000
0460	509.0302	Preparation Decks Type 2	SY	2.000	2.000
0470	509.1000	Joint Repair	SY	65.000	65.000
0480	509.1500	Concrete Surface Repair	SF	10.000	10.000
0490	509.5100.S	Polymer Overlay	SY	8,935.000	8,935.000
0500	516.0500	Rubberized Membrane Waterproofing	SY	36.000	36.000
0510	517.1800.S	Structure Repainting Recycled Abrasive (structure) 01. B-9-146	LS	1.000	1.000
0520	517.1800.S	Structure Repainting Recycled Abrasive (structure) 02. B-9-147	LS	1.000	1.000
0530	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 01. B-9-146	LS	1.000	1.000
0540	517.4500.S	Negative Pressure Containment and Collection of Waste Materials (structure) 02. B-9-147	LS	1.000	1.000
0550	517.6001.S	Portable Decontamination Facility	EACH	2.000	2.000
0560	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	2,404.000	2,404.000
0570	601.0413	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type G	LF	56.000	56.000
0580	602.0415	Concrete Sidewalk 6-Inch	SF	2,140.000	2,140.000
0590	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	104.000	104.000
0600	602.1000	Concrete Loading Zone	SF	639.000	639.000
0610	611.8110	Adjusting Manhole Covers	EACH	2.000	2.000
0620	611.8115	Adjusting Inlet Covers	EACH	10.000	10.000
0630	611.9710	Salvaged Inlet Covers	EACH	2.000	2.000
0640	614.0010	Barrier System Grading Shaping Finishing	EACH	8.000	8.000
0650	614.0200	Steel Thrie Beam Structure Approach	LF	86.400	86.400
0660	614.0220	Steel Thrie Beam Bullnose Terminal	EACH	3.000	3.000
0670	614.0230	Steel Thrie Beam	LF	242.500	242.500
0680	614.0700	Sand Barrels Arrays	EACH	2.000	2.000
0690	614.0920	Salvaged Rail	LF	2,010.000	2,010.000
0700	614.2300	MGS Guardrail 3	LF	1,027.200	1,027.200
0710	614.2500	MGS Thrie Beam Transition	LF	275.800	275.800
0720	614.2610	MGS Guardrail Terminal EAT	EACH	4.000	4.000
0730	614.2620	MGS Guardrail Terminal Type 2	EACH	1.000	1.000
0740	619.1000	Mobilization	EACH	1.000	1.000

8610-02-72

Line	Item	Item Description	Unit	Total	Qty
0750	620.0200	Concrete Median Blunt Nose	SF	26.000	26.000
0760	620.0300	Concrete Median Sloped Nose	SF	266.000	266.000
0770	624.0100	Water	MGAL	59.000	59.000
0780	625.0500	Salvaged Topsoil	SY	1,909.000	1,909.000
0790	628.1504	Silt Fence	LF	425.000	425.000
0800	628.1520	Silt Fence Maintenance	LF	425.000	425.000
0810	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0820	628.1910	Mobilizations Emergency Erosion Control	EACH	2.000	2.000
0830	628.2008	Erosion Mat Urban Class I Type B	SY	2,098.000	2,098.000
0840	628.7005	Inlet Protection Type A	EACH	36.000	36.000
0850	628.7015	Inlet Protection Type C	EACH	36.000	36.000
0860	629.0210	Fertilizer Type B	CWT	1.300	1.300
0870	630.0140	Seeding Mixture No. 40	LB	34.000	34.000
0880	630.0200	Seeding Temporary	LB	34.000	34.000
0890	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	32.000	32.000
0900	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	3.000	3.000
0910	637.2210	Signs Type II Reflective H	SF	193.630	193.630
0920	637.2215	Signs Type II Reflective H Folding	SF	10.360	10.360
0930	637.2230	Signs Type II Reflective F	SF	90.000	90.000
0940	638.2602	Removing Signs Type II	EACH	43.000	43.000
0950	638.3000	Removing Small Sign Supports	EACH	33.000	33.000
0960	642.5001	Field Office Type B	EACH	1.000	1.000
0970	643.0100	Traffic Control (project) 01. 8610-02-72	EACH	1.000	1.000
0980	643.0300	Traffic Control Drums	DAY	22,282.000	22,282.000
0990	643.0420	Traffic Control Barricades Type III	DAY	2,142.000	2,142.000
1000	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	207.000	207.000
1010	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	207.000	207.000
1020	643.0705	Traffic Control Warning Lights Type A	DAY	3,228.000	3,228.000
1030	643.0715	Traffic Control Warning Lights Type C	DAY	5,148.000	5,148.000
1040	643.0800	Traffic Control Arrow Boards	DAY	404.000	404.000
1050	643.0900	Traffic Control Signs	DAY	6,599.000	6,599.000
1060	643.0920	Traffic Control Covering Signs Type II	EACH	14.000	14.000
1070	643.1051	Traffic Control Signs PCMS with Cellular Communications	DAY	418.000	418.000
1080	644.1420.S	Temporary Pedestrian Surface Plywood	SF	1,800.000	1,800.000
1090	646.0106	Pavement Marking Epoxy 4-Inch	LF	4,585.000	4,585.000
1100	646.0126	Pavement Marking Epoxy 8-Inch	LF	1,427.000	1,427.000
1110	646.0600	Removing Pavement Markings	LF	800.000	800.000
1120	647.0456	Pavement Marking Curb Epoxy	LF	270.000	270.000
1130	647.0566	Pavement Marking Stop Line Epoxy 18-Inch	LF	206.000	206.000

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Line	Item	Item Description	Unit	Total	Qty
1140	647.0606	Pavement Marking Island Nose Epoxy	EACH	5.000	5.000
1150	647.0766	Pavement Marking Crosswalk Epoxy 6-Inch	LF	504.000	504.000
1160	649.0400	Temporary Pavement Marking Removable Tape 4-Inch	LF	14,295.000	14,295.000
1170	649.1200	Temporary Pavement Marking Stop Line Removable Tape 18-Inch	LF	12.000	12.000
1180	650.8000	Construction Staking Resurfacing Reference	LF	3,606.000	3,606.000
1190	650.9910	Construction Staking Supplemental Control (project) 01. 8610-02-72	LS	1.000	1.000
1200	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	17.000	17.000
1210	652.0700.S	Install Conduit into Existing Item	EACH	2.000	2.000
1220	653.0900	Adjusting Pull Boxes	EACH	13.000	13.000
1230	654.0101	Concrete Bases Type 1	EACH	2.000	2.000
1240	655.0230	Cable Traffic Signal 5-14 AWG	LF	30.000	30.000
1250	655.0240	Cable Traffic Signal 7-14 AWG	LF	143.000	143.000
1260	655.0260	Cable Traffic Signal 12-14 AWG	LF	154.000	154.000
1270	655.0515	Electrical Wire Traffic Signals 10 AWG	LF	75.000	75.000
1280	657.0100	Pedestal Bases	EACH	1.000	1.000
1290	657.0405	Traffic Signal Standards Aluminum 3.5-FT	EACH	1.000	1.000
1300	658.0416	Pedestrian Signal Face 16-Inch	EACH	2.000	2.000
1310	658.0500	Pedestrian Push Buttons	EACH	3.000	3.000
1320	658.0635	Led Modules Pedestrian Countdown Timer 16-Inch	EACH	2.000	2.000
1330	658.5069	Signal Mounting Hardware (location) 01. STH 124 & Summit Avenue	LS	1.000	1.000
1340	690.0150	Sawing Asphalt	LF	25.000	25.000
1350	690.0250	Sawing Concrete	LF	2,943.000	2,943.000
1360	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
1370	715.0502	Incentive Strength Concrete Structures	DOL	1,000.000	1,000.000
1380	ASP.1T0A	On-the-Job Training Apprentice at $5.00/HR	HRS	2,000.000	2,000.000
1390	ASP.1T0G	On-the-Job Training Graduate at $5.00/HR	HRS	630.000	630.000
1400	SPV.0035	Special 01. Concrete Masonry Deck Patching	CY	3.000	3.000
1410	SPV.0035	Special 02. Scour Repair Grout	CY	6.000	6.000
1420	SPV.0035	Special 03. Scour Repair Grout Bags	CY	58.000	58.000
1430	SPV.0060	Special 01. Cleaning and Painting Bearings	EACH	10.000	10.000
1440	SPV.0060	Special 02. Remove, Salvage, and Reinstall Traffic Signal Standards	EACH	1.000	1.000
1450	SPV.0060	Special 03. Inlet Covers Type HD	EACH	13.000	13.000
1460	SPV.0090	Special 01. Sawing Pavement Deck Preparation Areas	LF	46.000	46.000
1470	SPV.0090	Special 02. Concrete Curb & Gutter Cure and Seal Treatment	LF	2,460.000	2,460.000
1480	SPV.0105	Special 01. Bridge Jacking and Restraint B-9-146	LS	1.000	1.000
1490	SPV.0105	Special 02. Bridge Jacking and Restraint B-9-147	LS	1.000	1.000

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Line	Item	Item Description	Unit	Total	Qty
1500	SPV.0105	Special 03. Removing and Resetting Steel Railing B-9-146 Special	LS	1.000	1.000
1510	SPV.0105	Special 04. Preparation of Foundation for Asphaltic Paving Special	LS	1.000	1.000
1520	SPV.0105	Special 05. Construction Staking Concrete Pavement Joint Layout	LS	1.000	1.000
1530	SPV.0105	Special 06. Milling and Removing Temporary Joint Special	LS	1.000	1.000
1540	SPV.0105	Special 07. Salvage Above Ground Traffic Signal Equipment, STH 124 & Summit Avenue	LS	1.000	1.000
1550	SPV.0165	Special 01. Concrete Cure And Seal Treatment	SF	3,010.000	3,010.000
1560	SPV.0180	Special 01. Concrete Pavement 7-Inch Special	SY	186.000	186.000

REMOVALS

STATION	LOCATION	204.0100 REMOVING PAVEMENT SY	204.0105 REMOVING PAVEMENT BUTT JOINTS SY	204.0109.S REMOVING CONCRETE SURFACE PARTIAL DEPTH SF	204.0110 REMOVING ASPHALTIC SURFACE SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	204.0150 REMOVING CURB & GUTTER LF	204.0155 REMOVING CONCRETE SIDEWALK SY	204.9165.S.01 REMOVING CONCRETE LOADING ZONE SF	204.9165.S.02 REMOVING CONCRETE MEDIAN SLOPED NOSE SF	614.0920 SALVAGED RAIL LF	REMARKS
STH 124 NB													
168+62 - 169+32	RT	-	255	-	-	51	-	-	-	-	-	-	
169+32 - 180+36	RT	-	-	-	-	-	219	-	-	-	-	-	ASPHALT SHOULDER
169+32 - 180+36	RT	-	-	44844	-	-	-	-	-	-	-	-	INCLUDES GUTTER PAN
168+65 - 169+16	33' LT	-	192	-	-	49	-	-	-	-	-	-	
169+16 - 180+48	33' LT	-	-	-	-	-	85	-	-	-	-	-	ASPHALT SHOULDER
169+16 - 180+48	33' LT	-	-	45840	-	-	-	-	-	-	-	-	INCLUDES GUTTER PAN
171+54 - 173+54	18' LT	-	-	-	-	-	-	200	-	-	-	-	TURN LANE
172+27 - 173+83	2.5' LT	-	-	-	-	-	-	-	-	703	-	-	ISLAND REPLACEMENT
173+30 - 173+58	76' LT	-	-	-	3	-	-	36	10	-	-	-	SIDEWALK & CURB & GUTTER REPAIR
173+46 - 173+60	50' RT	-	-	-	-	-	-	21	13	-	-	-	SIDEWALK & CURB & GUTTER REPAIR
173+64 - 173+73	26' RT	-	-	-	-	-	-	35	17	-	-	-	ISLAND
174+26 - 174+31	25' LT	-	-	-	-	-	-	-	-	26	-	-	ISLAND NOSE REPLACEMENT
174+37 - 174+44	25' LT	-	-	56	-	-	-	-	-	16	-	-	ISLAND CUT-THROUGH MODIFICATIONS
174+40 - 174+69	75' LT	-	-	-	-	-	-	40	9	-	-	-	SIDEWALK & CURB & GUTTER REPAIR
174+53 - 174+77	36' RT	-	-	-	-	-	-	31	12	-	-	-	SIDEWALK & CURB & GUTTER REPAIR
175+45 - 175+49	24' RT	-	-	-	-	-	-	4	-	-	-	-	CURB & GUTTER REPAIR
177+75 - 177+81	84' LT	-	-	-	-	-	-	6	-	-	-	-	CURB & GUTTER REPAIR
178+17 - 178+19	42' LT	-	-	-	-	-	-	2	-	-	-	-	CURB & GUTTER REPAIR
178+32 - 178+34	42' LT	-	-	-	-	-	-	2	-	-	-	-	CURB & GUTTER REPAIR
178+45 - 179+60	24' RT	-	-	-	-	-	-	116	-	-	-	-	CURB & GUTTER REPLACEMENT
178+95 - 180+86	LT	-	-	-	-	-	-	191	-	-	-	-	CURB & GUTTER REPLACEMENT
179+05 - 180+97	42' LT	-	-	-	-	-	-	192	-	-	-	-	CURB & GUTTER REPLACEMENT
179+39 - 180+55	63' LT	-	-	-	-	-	-	116	-	-	-	-	CURB & GUTTER REPLACEMENT
179+53 - 181+19	LT & RT	-	-	-	-	-	-	-	-	-	-	480	INCLUDES END TERMINALS
180+36 - 180+86	RT	-	156	-	-	-	-	-	-	-	-	-	
180+48 - 180+97	33' LT	-	157	-	-	-	-	-	-	-	-	-	
180+86 - 181+16	RT	90	-	-	-	-	-	-	-	-	-	-	APPROACH SLAB + 1 PANEL + CURB & GUTTER
180+97 - 181+26	33' LT	89	-	-	-	-	-	-	-	-	-	-	APPROACH SLAB + 1 PANEL + CURB & GUTTER
182+50 - 188+83	LT & RT	-	-	-	-	-	-	-	-	-	-	1530	INCLUDES END TERMINALS
182+53 - 182+81	RT	85	-	-	-	-	-	-	-	-	-	-	APPROACH SLAB + 1 PANEL + CURB & GUTTER
182+60 - 182+86	32' LT	87	-	-	-	-	-	-	-	-	-	-	APPROACH SLAB + 1 PANEL + CURB & GUTTER
182+60 - 183+56	32' LT	-	-	-	-	-	-	98	-	-	-	-	CURB & GUTTER REPLACEMENT
182+81 - 183+31	RT	-	156	-	-	-	-	-	-	-	-	-	
182+81 - 183+57	LT	-	-	-	-	-	-	76	-	-	-	-	CURB & GUTTER REPLACEMENT
182+86 - 183+36	32' LT	-	157	-	-	-	-	-	-	-	-	-	
182+86 - 183+56	32' LT	-	-	-	-	-	-	70	-	-	-	-	CURB & GUTTER REPLACEMENT
183+31 - 188+17	RT	-	-	17810	-	-	-	-	-	-	-	-	
183+36 - 188+01	30' LT	-	-	19270	-	-	-	-	-	-	-	-	
183+59 - 187+41	LT	-	-	-	660	-	-	-	-	-	-	-	ASPHALT REMOVAL AT CROSSOVER
184+56 - 185+13	94' LT	-	-	-	-	-	-	62	-	-	-	-	CURB & GUTTER REPLACEMENT
184+56 - 185+68	54' LT	-	-	-	-	-	-	116	-	-	-	-	CURB & GUTTER REPLACEMENT
184+69 - 184+79	2' LT	-	-	-	-	-	-	10	-	-	-	-	INLET COVER REPLACEMENT
184+73 - 184+83	28' LT	-	-	-	-	-	-	10	-	-	-	-	INLET COVER REPLACEMENT
185+43 - 186+54	24' RT	-	-	-	23	-	-	-	-	-	-	-	ASPHALT REMOVAL AT ON-RAMP
185+44 - 186+06	48' RT	-	-	-	-	-	-	61	-	-	-	-	CURB & GUTTER REPLACEMENT
185+66 - 185+76	28' LT	-	-	-	-	-	-	10	-	-	-	-	INLET COVER REPLACEMENT
185+75 - 185+96	24' RT	12	-	-	-	-	-	-	-	-	-	-	
186+36	54' LT	-	-	-	-	-	-	-	-	-	63	-	
186+40 - 187+47	54' LT	-	-	-	582	-	-	-	-	-	-	-	ASPHALT REMOVAL BETWEEN GORE
186+58 - 186+68	2' LT	-	-	-	-	-	-	10	-	-	-	-	INLET COVER REPLACEMENT
186+58 - 186+68	28' LT	-	-	-	-	-	-	10	-	-	-	-	INLET COVER REPLACEMENT
187+65- 188+66	30' LT	-	-	-	-	-	-	101	-	-	-	-	CURB & GUTTER REPLACEMENT
187+65- 188+80	LT	-	-	-	-	-	-	115	-	-	-	-	CURB & GUTTER REPLACEMENT
188+01 - 188+51	30' LT	-	221	-	-	-	-	-	-	-	-	-	
188+17 - 183+67	RT	-	231	-	-	-	-	-	-	-	-	-	
188+51 - 188+76	30' LT	108	-	-	-	-	-	-	-	-	-	-	APPROACH SLAB + 1 PANEL + CURB & GUTTER
188+67 - 188+92	RT	116	-	-	-	-	-	-	-	-	-	-	APPROACH SLAB + 1 PANEL + CURB & GUTTER
200+06 - 200+31	LT & 24' RT	-	-	-	65	-	-	-	-	-	-	-	APPROACH SLAB + 1 PANEL
200+62 - 200+87	30' LT	79	-	-	-	-	-	-	-	-	-	-	APPROACH SLAB + 1 PANEL + CURB & GUTTER
208+00 - 210+50	2' LT	-	-	-	-	-	-	250	13	-	-	-	TEMPORARY CROSSOVER INSTALL
208+00 - 210+50	24' LT	-	-	-	-	-	-	250	13	-	-	-	TEMPORARY CROSSOVER INSTALL
208+00 - 210+50	2' LT	-	-	-	640	-	-	-	-	-	-	-	TEMPORARY CROSSOVER REMOVAL
SUMMIT AVE													
8+67 - 9+17	LT & RT	-	403	-	-	-	-	-	-	-	-	-	
8+93 - 8+98	12' RT	-	-	-	-	-	-	12	-	17	-	-	ISLAND NOSE REPLACEMENT
9+05 - 9+07	23' RT	-	-	-	-	-	-	2	-	-	-	-	ISLAND
9+17 - 9+12	12' RT	-	-	-	-	-	-	17	-	92	-	-	ISLAND CUT THROUGH MODIFICATION
10+24 - 10+28	39' LT	-	-	-	-	-	-	9	-	-	-	-	ISLAND
10+26 - 10+30	26' LT	-	-	-	-	-	-	5	-	8	-	-	ISLAND
10+57 - 10+61	26' LT	-	-	-	-	-	-	10	-	-	-	-	ISLAND NOSE REPLACEMENT
10+68 - 11+18	LT & RT	-	402	-	-	-	-	-	-	-	-	-	
ITEM TOTALS		666	2330	127820	1973	100	304	2296	87	862	63	2010	

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED

EXCAVATION

STATION	LOCATION	205.0100 COMMON CY	AIR FILL CY	EXPANDED FILL CY	WASTE BORROW CY	REMARKS
STH 124						
208+00 - 210+50	2' LT	139	-	-	-139	TEMPORARY CROSSOVER INSTALL
ITEM TOTALS		139	0	0	-139	

NOTES:
1) SALVAGED/UNUSABLE PAVEMENT MATERIAL IS INCLUDED IN COMMON EXCAVATION.
2) FILL DOES NOT INCLUDE UNUSABLE PAVEMENT EXCAVATION VOLUME.
3) FILL WILL BE BACKFILLED WITH CUT OR BORROW.
4) POSITIVE BORROW INDICATES A SHORTAGE OF MATERIAL.
5) EXPANSION FACTOR = 1.3

PREPARE FOUNDATION FOR CONCRETE PAVEMENT (8610-02-72)

STATION	211.0200.01 LS	REMARKS
STH 124 NB	1	APPROACH SLAB + 1 PANEL REPLACEMENT
ITEM TOTAL	1	

FINISHING ROADWAY (8610-02-72)

STATION	213.0100 EACH
STH 124 NB	1
ITEM TOTAL	1

BASE AGGREGATE DENSE

STATION	LOCATION	304.0110 3/4-INCH TON	305.0120 1 1/4-INCH TON	624.0100 WATER MGAL	REMARKS
STH 124 NB					
168+62 - 173+10	LT & RT	35	-	4	SHOULDER
168+62 - 200+87	LT & RT	-	75	8	CURB & GUTTER BASE, SEE TABLE FOR LOCATIONS
168+62 - 200+87	LT & RT	-	8	1	SIDEWALK REPLACEMENT, SEE TABLE FOR LOCATIONS
168+62 - 200+87	LT & RT	-	68	7	CONCRETE APPROACH SLAB & PANEL REPLACEMENT, SEE TABLE FOR LOCATIONS
185+43 - 186+54	24' RT	-	24	2	ON RAMP
186+39 - 187+47	54' LT	-	24	2	OFF RAMP
208+00 - 210+50	LT	-	355	36	TEMPORARY CROSSOVER INSTALL
ITEM TOTALS		35	554	59	

CONCRETE PAVEMENT

STATION	LOCATION	415.0060 CONCRETE PAVEMENT 6-INCH SY	415.0080 CONCRETE PAVEMENT 8-INCH SY	415.0100 CONCRETE PAVEMENT 10-INCH SY	415.0410 CONCRETE PAVEMENT APPROACH SLAB SY	416.0610* DRILLED TIE BARS EACH	416.0620 DRILLED DOWEL BARS EACH	415.1410 CONCRETE PAVEMENT APPROACH SLAB HES SY	SPV.0180.01 CONCRETE PAVEMENT 7-INCH SPECIAL SY	REMARKS
STH 124 NB										
174+37 - 174+44	25' LT	6	-	-	-	4	4	-	-	ISLAND CUT-THROUGH MODIFICATIONS
180+86 - 181+16	RT	-	-	-	-	-	25	47	27	APPROACH SLAB + 1 PANEL
180+97 - 181+07	33' LT	-	-	-	-	-	25	46	27	APPROACH SLAB + 1 PANEL
182+56 - 182+81	RT	-	-	-	-	-	25	43	27	APPROACH SLAB + 1 PANEL
182+60 - 182+86	32' LT	-	-	-	-	-	25	43	27	APPROACH SLAB + 1 PANEL
185+75 - 185+96	24' RT	-	12	-	-	12	-	-	-	PAVED SHOULDER
188+51 - 188+76	30' LT	-	8	-	54	-	34	-	37	APPROACH SLAB + 1 PANEL+PAVED SHOULDER
188+67 - 188+92	RT	-	12	-	60	-	37	-	41	APPROACH SLAB + 1 PANEL+PAVED SHOULDER
200+06 - 200+31	RT	-	9	27	40	22	25	-	-	APPROACH SLAB + 1 PANEL+PAVED SHOULDER
200+62 - 200+87	30' LT	-	8	27	40	22	25	-	-	APPROACH SLAB + 1 PANEL+PAVED SHOULDER
ITEM TOTALS		6	49	54	194	60	225	179	186	

*ITEM LOCATED ELSEWHERE IN PLANS

ASPHALTIC PAVEMENT ITEMS

STATION	LOCATION	455.0605 TACK COAT GAL	460.4110.S REHEATING HMA PAVEMENT LONGITUDINAL JOINTS LF	460.6445 HMA PAVEMENT 5 MT 58-34H TON	465.0110 ASPHALTIC SURFACE PATCHING TON	465.0125 ASPHALTIC SURFACE TEMPORARY TON	SPV.0105.04 PREPARATION OF FOUNDATION FOR ASPHALTIC PAVING SPECIAL LS	SPV.0105.06 MILLING AND REMOVING TEMPORARY JOINT SPECIAL LS	REMARKS
STH 124 NB							1	1	
168+62 - 200+87	LT & RT	-	-	-	100	-	-	-	FOR DETERIORATED PAVEMENT AND C&G JOINTS & CRACKS
168+62 - 180+36	RT	339	-	395	-	-	-	-	1.25-INCH LEVELING LAYER
168+62 - 180+36	RT	339	1174	553	-	-	-	-	1.75-INCH UPPER LAYER
168+65 - 180+47	33' LT	195	-	389	-	-	-	-	1.25-INCH LEVELING LAYER
168+65 - 180+47	33' LT	195	1182	544	-	-	-	-	1.75-INCH UPPER LAYER
173+36 - 173+41	87' RT	0.5	-	1	-	-	-	-	PATH
182+71 - 188+77	RT	150	-	172	-	-	-	-	1.25-INCH LEVELING LAYER
182+71 - 188+77	RT	150	606	241	-	-	-	-	1.75-INCH UPPER LAYER
182+77 - 188+61	30' LT	160	-	181	-	-	-	-	1.25-INCH LEVELING LAYER
182+77 - 188+61	30' LT	160	584	254	-	-	-	-	1.75-INCH UPPER LAYER
185+43 - 186+54	24' RT	2.0	-	10	-	-	-	-	ON RAMP
186+39 - 187+47	54' LT	4	-	15	-	-	-	-	OFF RAMP
208+00 - 210+50	LT	38	-	-	-	143	-	-	TEMPORARY CROSSOVER INSTALL
SUMMIT AVE									
8+67 - 9+17	LT & RT	24	-	28	-	-	-	-	1.25-INCH LEVELING LAYER
8+67 - 9+17	LT & RT	24	-	40	-	-	-	-	1.75-INCH UPPER LAYER
10+68 - 11+18	LT & RT	24	-	28	-	-	-	-	1.25-INCH LEVELING LAYER
10+68 - 11+18	LT & RT	24	-	40	-	-	-	-	1.75-INCH UPPER LAYER
ITEM TOTALS		1828.5	3546	2891	100	143	1	1	

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED

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CONCRETE CURB & GUTTER

STATION	LOCATION	416.0610* DRILLED TIE BARS EACH	601.0409 30-INCH TYPE A LF	601.0413 6-INCH SLOPED 30-INCH TYPE G LF	SPV.0090.02 CURE AND SEAL TREATMENT LF	REMARKS
STH 124 NB						
171+54 - 173+54	18' LT	68	200	-	200	TURN LANE
173+30 - 173+58	76' LT	13	36	-	36	
173+46 - 173+60	49' RT	8	21	-	21	
173+64 - 173+73	26' RT	12	-	23	23	ISLAND CUT THROUGH MODIFICATION
174+40 - 174+69	75' LT	15	40	-	40	
174+53 - 174+77	36' RT	12	31	-	31	
175+45 - 175+49	26' RT	2	4	-	4	
177+75 - 177+81	84' LT	4	6	-	6	
178+17 - 178+19	42' LT	2	2	-	2	
178+32 - 178+34	42' LT	2	2	-	2	
178+45 - 179+60	26' RT	40	116	-	116	DRIVEWAY CURB REQ'D
178+95 - 180+86	2' LT	65	191	-	191	DRIVEWAY CURB REQ'D TO STA 180+34
179+05 - 180+97	42' LT	66	192	-	192	DRIVEWAY CURB REQ'D TO STA 180+34
179+39 - 180+55	63' LT	40	116	-	116	DRIVEWAY CURB REQ'D
180+86 - 181+16	2' LT	-	30	-	30	APPROACH SLAB + 1 PANEL INSIDE CURB & GUTTER
180+86 - 181+10	26' RT	-	25	-	25	APPROACH SLAB + 1 PANEL OUTSIDE CURB & GUTTER
180+97 - 181+22	33' LT	-	25	-	25	APPROACH SLAB + 1 PANEL INSIDE CURB & GUTTER
180+98 - 181+27	60' LT	-	30	-	30	APPROACH SLAB + 1 PANEL OUTSIDE CURB & GUTTER
182+52 - 182+81	26' RT	-	28	-	28	APPROACH SLAB + 1 PANEL OUTSIDE CURB & GUTTER
182+56 - 182+81	2' LT	-	25	-	25	APPROACH SLAB + 1 PANEL INSIDE CURB & GUTTER
182+60 - 182+86	29' LT	-	27	-	27	APPROACH SLAB + 1 PANEL INSIDE CURB & GUTTER
182+62 - 182+87	59' LT	-	25	-	25	APPROACH SLAB + 1 PANEL OUTSIDE CURB & GUTTER
182+81 - 183+57	2' LT	27	77	-	77	
182+86 - 183+56	32' LT	25	70	-	70	
184+56 - 185+13	94' LT	22	62	-	62	
184+56 - 185+68	56' LT	40	116	-	116	
184+69 - 184+79	2' LT	4	10	-	10	
184+73 - 184+83	28' LT	4	10	-	10	
185+43 - 185+96	31' RT	19	53	-	53	
185+44 - 186+06	48' RT	22	61	-	61	
185+66 - 185+76	28' LT	4	10	-	10	
186+58 - 186+68	2' LT	4	10	-	10	
186+58 - 186+68	28' LT	4	10	-	10	
187+65- 188+51	28' LT	30	87	-	87	DRIVEWAY CURB REQ'D TO STA 188+01
187+65- 188+67	2' LT	36	102	-	102	DRIVEWAY CURB REQ'D TO STA 187+96
188+51 - 188+66	26' LT	-	15	-	15	APPROACH SLAB INSIDE CURB & GUTTER
188+51 - 188+66	66' LT	-	15	-	15	APPROACH SLAB OUTSIDE CURB & GUTTER
188+67 - 188+80	2' LT	-	14	-	14	APPROACH SLAB INSIDE CURB & GUTTER
200+72 - 200+77	26' LT	-	5	-	5	APPROACH SLAB INSIDE CURB & GUTTER
200+72 - 200+77	57' LT	-	5	-	5	APPROACH SLAB OUTSIDE CURB & GUTTER
208+00 - 210+50	2' LT	85	250	-	250	TEMPORARY CROSSOVER REMOVAL
208+00 - 210+50	24' LT	85	250	-	250	TEMPORARY CROSSOVER REMOVAL
SUMMIT AVE						
9+05 - 9+07	23' RT	2	-	2	2	ISLAND
9+17 - 9+12	12' RT	6	-	17	17	ISLAND CUT THROUGH MODIFICATION
10+24 - 10+28	39' LT	4	-	9	9	ISLAND NOSE
10+26 - 10+30	26' LT	3	-	5	5	ISLAND NOSE
ITEM TOTALS		775	2404	56	2460	

*ITEM LOCATED ELSEWHERE IN PLANS

CONCRETE SIDEWALK

STATION	LOCATION	405.1000 STAMPING COLORED CONCRETE CY	602.0415 CONCRETE SIDEWALK 6-INCH SF	602.0505 CURB RAMP DETECTABLE WARNING FIELD YELLOW SF	SPV.0165.01* CONCRETE CURE AND SEAL TREATMENT SF	REMARKS
STH 124 NB						
173+30 - 173+58	85' LT	-	90	10	90	
173+46 - 173+60	53' RT	-	118	10	118	
173+64 - 173+73	26' RT	-	150	20	150	
174+37 - 174+44	25' LT	-	-	24	-	
174+46 - 174+59	87' LT	-	82	10	82	
174+59 - 174+74	40' RT	-	108	10	108	
208+00 - 210+20	2' LT	14	750	-	750	TEMPORARY CROSSOVER REMOVAL
208+00 - 210+50	24' LT	14	750	-	750	TEMPORARY CROSSOVER REMOVAL
SUMMIT AVE						
9+17 - 9+12	12' RT	-	92	20	92	
ITEM TOTALS		28	2140	104	2140	

*ITEM LOCATED ELSEWHERE IN PLANS

STORM SEWER STRUCTURE ITEMS

STATION	LOCATION	611.8110 ADJUSTING MANHOLE COVERS EACH	611.8110 ADJUSTING INLET COVERS EACH	611.9710 SALVAGED INLET COVERS EACH	SPV.0060.03 INLET COVERS TYPE HD EACH	REMARKS
STH 124 NB						
171+93	18' LT	-	1	-	-	
173+37	79' LT	-	1	-	-	
173+53	92' LT	-	1	-	-	
173+58	63' RT	-	1	-	-	
173+86	23' LT	1	-	-	-	
174+73	38' RT	-	1	-	-	
179+73	2' LT	-	-	-	1	
180+45	61' LT	-	-	-	1	
180+91	26' RT	-	1	-	-	
181+04	31' LT	-	1	-	-	
182+63	27' RT	-	1	-	-	
182+74	30' LT	-	1	-	-	
183+52	2' LT	-	-	-	1	
183+52	30' LT	-	-	-	1	
184+74	2' LT	-	-	-	1	
184+78	28' LT	-	-	-	1	
185+71	28' LT	-	-	-	1	
185+91	24' RT	-	1	-	-	
186+63	2' LT	-	-	-	1	
186+63	28' LT	-	-	-	1	
187+72	2' LT	-	-	-	1	
187+72	28' LT	-	-	-	1	
208+83	2' LT	-	-	1	1	SALVAGE EXISTING COVER AND INSTALL TYPE HD COVER DURING TEMPORARY CROSSOVER ONLY
208+83	23' LT	-	-	1	1	SALVAGE EXISTING COVER AND INSTALL TYPE HD COVER DURING TEMPORARY CROSSOVER ONLY
SUMMIT AVE						
8+93	7' RT	1	-	-	-	
ITEM TOTALS		2	10	2	13	

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED

BARRIER SYSTEM GRADING SHAPING FINISHING

STATION	LOCATION	614.0010 EACH	*** COMMON EXCAVATION CY	*** BORROW CY	*** SALVAGED TOPSOIL SY	*** EROSION MAT URBAN CLASS 1 TYPE B SY	*** FERTILIZER TYPE B CWT	*** SEEDING MIXTURE NO. 20 LB	*** 630.0200 TEMPORARY SEEDING LB	REMARKS
STH 124 NB										
179+44.91 - 179+97.99	26.42' RT	1	-	-	15	15	0.01	0.30	0.30	EAT
180+39.20 - 180+91.45	61.25' LT	1	-	-	15	15	0.01	0.30	0.30	EAT
180+55.31 - 180+55.96	8.74' LT	1	-	10	15	15	0.01	0.30	0.30	BULLNOSE
182+94.83 - 182+95.12	3.49' LT	1	-	10	15	15	0.01	0.30	0.30	BULLNOSE
183+30.98	159.08' LT	1	-	5	5	5	0.01	0.10	0.10	TYPE 2
184+19.42 - 184+70.99	57.52' LT	1	-	-	15	15	0.01	0.30	0.30	EAT
185+90.40 - 186+43.38	50.42' RT	1	-	10	15	15	0.01	0.30	0.30	EAT
188+18.55 - 188+18.00	5.60' LT	1	-	-	15	15	0.01	0.30	0.30	BULLNOSE
ITEM TOTALS		8	0	35	110	110	0	2.2	2.2	

***ITEMS & QUANTITIES LISTED FOR BID INFORMATION ONLY

MEDIAN ITEMS

STATION	LOCATION	416.0610* DRILLED TIE BARS EACH	602.1000 CONCRETE LOADING ZONE SF	620.0200 CONCRETE MEDIAN BLUNT NOSE SF	620.0300 CONCRETE MEDIAN SLOPED NOSE SF	SPV.0165.01* CONCRETE CURE AND SEAL TREATMENT SF	REMARKS
STH 124 NB							
172+27	2.5' LT	3	-	-	6	6	ISLAND NOSE REPLACEMENT
172+29 - 173+80	2.5' LT	64	639	-	-	639	ISLAND REPLACEMENT
173+59	31' RT	12	-	-	87	26	ISLAND NOSE REPLACEMENT
174+26 - 174+31	25' LT	3	-	26	-	26	ISLAND NOSE REPLACEMENT
186+36	54' LT	6	-	-	63	63	ISLAND NOSE REPLACEMENT
SUMMIT AVE							
8+96	12' RT	6	-	-	56	56	ISLAND NOSE REPLACEMENT
10+61	24' LT	6	-	-	54	54	ISLAND NOSE REPLACEMENT
ITEM TOTALS		100	639	26	266	870	

*ITEM LOCATED ELSEWHERE IN PLANS

GUARDRAIL

STATION	LOCATION	614.0200 STEEL THRIE BEAM STRUCTURE APPROACH LF	614.0220 STEEL THRIE BEAM BULLNOSE TERMINAL EACH	614.0230 STEEL THRIE BEAM LF	614.2300 MGS GUARDRAIL 3 LF	614.2500 MGS THRIE BEAM TRANSITION LF	614.2610 MGS GUARDRAIL TERMINAL EAT EACH	614.2620 MGS GUARDRAIL TERMINAL TYPE 2 EACH
STH 124 NB								
179+44.91 - 179+97.99	26.42' RT	-	-	-	-	-	1	-
179+97.99 - 180+60.49	26.42' RT	-	-	-	62.5	-	-	-
180+39.20 - 180+91.45	61.25' LT	-	-	-	-	-	1	-
180+55.31 - 180+55.96	8.74' LT	-	1	-	-	-	-	-
180+55.31 - 181+04.85	2.86' LT	-	-	50	-	-	-	-
180+55.96 - 181+09.65	29.92' LT	-	-	54.4	-	-	-	-
180+60.49 - 180+72.99	28.12' RT	-	-	-	12.5	-	-	-
180+72.99 - 181+12.88	28.12' RT	-	-	-	-	39.4	-	-
180+91.45 - 181+29.62	60.61' LT	-	-	-	-	39.4	-	-
181+04.85 - 181+19.23	2.86' LT	14.4	-	-	-	-	-	-
181+09.65 - 181+23.83	29.73' LT	14.4	-	-	-	-	-	-
182+49.92 - 182+89.97	27.58' RT	-	-	-	-	39.4	-	-
182+53.59 - 182+67.97	3.45' LT	14.4	-	-	-	-	-	-
182+56.44 - 182+70.69	28.97' LT	14.4	-	-	-	-	-	-
182+60.09 - 182+98.19	59.81' LT	-	-	-	-	39.4	-	-
182+67.97 - 182+94.83	3.45' LT	-	-	26.9	-	-	-	-
182+70.62 - 182+95.12	28.89' LT	-	-	25.0	-	-	-	-
182+89.98 - 183+02.60	27.51' RT	-	-	-	12.5	-	-	-
182+94.83 - 182+95.12	3.49' LT	-	1	-	-	-	-	-
182+98.19 - 183+10.18	59.59' LT	-	-	-	12.5	-	-	-
183+02.60 - 184+06.27	26.35' RT	-	-	-	102.2	-	-	-
183+10.18 - 184+19.42	58.19' LT	-	-	-	112.5	-	-	-
183+30.98	159.08' LT	-	-	-	-	-	-	1
183+30.98 - 188+29.34	159.08' LT	-	-	-	525	-	-	-
184+06.15 - 184+18.78	26.42' RT	-	-	-	12.5	-	-	-
184+18.78 - 184+58.83	27.50' RT	-	-	-	-	39.4	-	-
184+19.42 - 184+70.99	57.52' LT	-	-	-	-	-	1	-
185+90.40 - 186+43.38	50.42' RT	-	-	-	-	-	1	-
186+43.38 - 188+30.77	46.66' RT	-	-	-	175	-	-	-
188+18.00 - 188+54.19	26.59' LT	-	-	36.2	-	-	-	-
188+18.55 - 188+18.00	5.60' LT	-	1	-	-	-	-	-
188+18.55 - 188+68.51	5.60' LT	-	-	50	-	-	-	-
188+29.34 - 188+68.70	67.46' LT	-	-	-	-	39.4	-	-
188+30.77 - 188+70.17	40.17' RT	-	-	-	-	39.4	-	-
188+54.19 - 188+68.70	26.59' LT	14.4	-	-	-	-	-	-
188+68.51 - 188+82.91	3.52' LT	14.4	-	-	-	-	-	-
ITEM TOTALS		86.40	3	242.50	1027.20	275.80	4	1

MOBILIZATION

STATION	619.1000 EACH
STH 124 NB	
CATEGORY 0010	0.5
CATEGORY 0020	0.25
CATEGORY 0030	0.25
ITEM TOTAL	1

SALVAGED TOPSOIL, MULCHING AND SEEDING

STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	628.2008 EROSION MAT URBAN CLASS 1 TYPE B SY	629.0210 FERTILIZER TYPE B CWT	630.0140 SEEDING MIXTURE NO. 40 LB	630.0200 TEMPORARY SEEDING LB	REMARKS
STH 124 NB							
168+62 - 200+87	LT & RT	400	440	0.3	7	7	CURB & GUTTER, SEE TABLE FOR LOCATIONS
183+59 - 187+41	LT	1174	1288	0.8	21	21	CROSSOVER 1 REMOVAL
208+00 - 210+50	LT	335	370	0.2	6	6	CROSSOVER 2 REMOVAL
ITEM TOTALS		1909	2098	1.3	34	34	

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED

EROSION CONTROL ITEMS

STATION	LOCATION	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.7005 INLET PROTECTION TYPE A EACH	628.7015 INLET PROTECTION TYPE C EACH
STH 124 NB					
168+62 - 200+87	LT & RT	-	-	36	36
178+45 - 179+60	30' RT	120	120	-	-
179+39 - 180+55	65' LT	120	120	-	-
185+44 - 186+06	55' RT	65	65	-	-
184+56 - 185+68	60' LT	120	120	-	-
ITEM TOTALS		425	425	36	36

MOBILIZATIONS EROSION CONTROL

STATION	628.1905 EROSION CONTROL EACH	628.1910 EMERGENCY EROSION CONTROL EACH
STH 124 NB	2	2
ITEM TOTALS	2	2

PERMANENT SIGNING

SIGN GROUP CODE	SIGN CODE	MESSAGE	SIGN SIZE (INCHES) W	X	H	634.0614 POSTS WOOD 4X6-INCH 14-FT EACH	634.0616 POSTS WOOD 4X6-INCH 16-FT EACH	637.2210 SIGNS TYPE II REFLECTIVE H SF	637.2215 SIGNS TYPE II REFLECTIVE H FOLDING SF	637.2230 SIGNS TYPE II REFLECTIVE F SF	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	COMMENTS
1-1	J4-2	SOUTH 124	48	36		1	-	12.00	-	-	1	1	
		SOUTH BUSINESS 29	-	-		-	-	-	-	-	-	-	
1-2	R1-1F	STOP (FOLDING)	30	30		-	-	-	5.18	-	1	-	BANDED TO POLE
	R6-3	DIVIDED HIGHWAY	30	24		-	-	5.00	-	-	1	-	BANDED TO POLE
1-3	R5-1	DO NOT ENTER	30	30		-	-	6.25	-	-	1	-	BANDED TO POLE
1-4	R6-2L	ONE WAY	24	30		-	-	5.00	-	-	1	-	BANDED TO POLE
1-5	W3-3	SIGNAL AHEAD	36	36		1	-	-	-	9.00	1	1	
1-6	W3-4	SIGNAL AHEAD	36	36		2	-	-	-	9.00	1	1	
1-7	R3-5-R	RIGHT ONLY	42	48		-	-	14.00	-	-	1	-	OVERHEAD SIGN SUPPORT
1-8	D1-4	NORTHERN WIS CENTER	96	48		-	2	32.00	-	-	1	2	
		RIVERSIDE INDUSTRIAL PARK											
	R5-1A	WRONG WAY	36	24		1	-	6.00	-	-	1	1	
1-9	R3-56	LEFT TURN LANE	24	30		1	-	5.00	-	-	1	1	
1-10	R6-2L	ONE WAY	24	30		-	-	5.00	-	-	1	-	
1-11	R5-1	DO NOT ENTER	30	30		1	-	6.25	-	-	1	-	
1-12	R4-7	KEEP RIGHT	24	30		-	-	5.00	-	-	-	-	BANDED TO POLE
1-13	R1-2	YIELD	36	31		1	-	3.88	-	-	1	1	
1-14	R1-1F	STOP (FOLDING)	30	30		-	-	-	5.18	-	1	-	BANDED TO POLE
	R6-3	DIVIDED HIGHWAY	30	24		-	-	5.00	-	-	1	-	BANDED TO POLE
1-15	R4-7	KEEP RIGHT	24	30		-	-	5.00	-	-	-	-	BANDED TO POLE
1-16	R5-1A	WRONG WAY	36	24		1	-	6.00	-	-	-	-	
1-17	R3-56	LEFT TURN LANE	24	30		1	-	5.00	-	-	1	1	
1-18	R3-7R	RIGHT TURN MUST TURN RIGHT	30	30		1	-	6.25	-	-	1	1	
1-19	R2-1	SPEED LIMIT 35	24	30		1	-	5.00	-	-	1	1	
1-20	W3-3	TRAFFIC SIGNALS AHEAD	36	36		1	-	-	-	9.00	1	1	
1-21	W3-3	TRAFFIC SIGNALS AHEAD	36	36		1	-	-	-	9.00	1	1	
1-22	J4-2	NORTH 124	48	36		1	-	12.00	-	-	1	1	
		WEST BUSINESS 29	-	-		-	-	-	-	-	-	-	
1-23	R2-1	SPEED LIMIT 35	24	30		1	-	5.00	-	-	1	1	
1-24	W5-52L	CLEARANCE STRIPER	12	36		1	-	-	-	3.00	1	1	
1-25	W5-52R	CLEARANCE STRIPER	12	36		1	-	-	-	3.00	-	-	
2-1	W5-52L	CLEARANCE STRIPER	12	36		1	-	-	-	3.00	1	1	
2-2	W5-52R	CLEARANCE STRIPER	12	36		1	-	-	-	3.00	1	1	
2-3	D1-61	SUMMIT AVE	72	24		2	-	12.00	-	-	-	-	
2-4		JCT	-	-		-	-	-	-	-	1	1	REMOVE
		SUMMIT AVE	-	-		-	-	-	-	-	1	-	REMOVE
2-5	R2-1	SPEED LIMIT 35	24	30		1	-	5.00	-	-	1	1	
2-6	J4-2	TO 53	48	36		1	-	12.00	-	-	1	1	
		WEST BUSINESS 29	-	-		-	-	-	-	-	-	-	
2-7	W4-1R	THRU TRAFFIC MERGE RIGHT	36	36		1	-	-	-	9.00	1	1	
2-8	W3-5	SPEED LIMIT 25 AHEAD	-	-		-	-	-	-	-	1	1	REMOVE
2-9	W3-5	SPEED LIMIT 25 AHEAD	-	-		-	-	-	-	-	1	1	REMOVE
2-10	W5-52R	CLEARANCE STRIPER	12	36		1	-	-	-	3.00	1	1	
2-11	J4-1	NORTH 124	24	36		-	1	6.00	-	-	1	1	
	M4-20R	USE RIGHT LANE	24	24		-	-	4.00	-	-	1	-	
2-12	W5-52L	CLEARANCE STRIPER	12	36		1	-	-	-	3.00	1	1	
2-13	W5-52R	CLEARANCE STRIPER	12	36		1	-	-	-	3.00	1	1	
3-1	W5-52L	CLEARANCE STRIPER	12	36		1	-	-	-	3.00	1	1	
3-2	W5-52R	CLEARANCE STRIPER	12	36		1	-	-	-	3.00	1	1	
3-3		HERITAGE	-	-		-	-	-	-	-	1	1	REMOVE
		AREA HISTORY CENTER	-	-		-	-	-	-	-	-	-	REMOVE
3-4	W3-5	SPEED LIMIT 25 AHEAD	36	36		1	-	-	-	9.00	1	1	
3-5	W3-5	SPEED LIMIT 25 AHEAD	36	36		1	-	-	-	9.00	1	1	
ITEM TOTALS						32	3	193.63	10.36	90.00	43	33	

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED

FIELD OFFICE TYPE B

STATION	642.5001 EACH
STH 124 NB	1
ITEM TOTAL	1

TRAFFIC CONTROL (8610-02-72)

STATION	LOCATION	614.0700 SAND BARREL ARRAYS EACH	643.0100 EACH	643.0300 DRUMS DAY	643.0420 BARRICADES TYPE III DAY	643.0500 FLEXIBLE TUBULAR MARKER POSTS EACH	643.0600 FLEXIBLE TUBULAR MARKER BASES EACH	643.0705 WARNING LIGHTS TYPE A DAY	643.0715 WARNING LIGHTS TYPE C DAY	643.0800 ARROW BOARDS DAY	643.0900 SIGNS DAY	643.0920 COVERING SIGNS TYPE II EACH	643.1051 SIGNS PCMS WITH CELLULAR COMMUNICATIONS DAY	644.1420.S TEMPORARY PEDESTRIAN SURFACE PLYWOOD SF	646.0600 REMOVING PAVEMENT MARKINGS LF	649.0400 REMOVABLE TAPE 4-INCH YELLOW LF	649.0400 REMOVABLE TAPE 4-INCH WHITE LF	649.1200 STOP LINE REMOVABLE TAPE 18-INCH DAY	REMARKS
STH 124			1																
168+62.62 - 211+77	LT & RT	1	-	6270	990	106	106	924	1914	132	1584	4	146	900	495	4400	1925	12	STAGE 1
168+62.62 - 211+77	LT & RT	1	-	5130	798	101	101	1596	1311	114	2451	4	114	900	125	4300	2070	-	STAGE 2
168+62.62 - 211+77	LT & RT	-	-	7722	234	-	-	468	1443	78	1404	3	78	-	180	-	1325	-	STAGE 3*
168+62.62 - 211+77	LT & RT	-	-	3160	120	-	-	240	480	80	1160	3	80	-	-	-	275	-	STAGE 4*
ITEM TOTALS		2	1	22282	2142	207	207	3228	5148	404	6599	14	418	1800	800	8700	5595	12	

*MOST OF STAGE 4 MAY OCCUR DURING STAGE 1. IF STAGES ARE COMBINED, SLIGHTLY LESS QTY'S WILL BE REQUIRED IN OVERLAPPING AREAS.
*MOST OF STAGE 3 MAY OCCUR DURING STAGE 2. IF STAGES ARE COMBINED, SLIGHTLY LESS QTY'S WILL BE REQUIRED IN OVERLAPPING AREAS.

PAVEMENT MARKING

STATION	LOCATION	646.0106 EPOXY 4-INCH LF	646.0126 EPOXY 8-INCH LF	647.0456 CURB EPOXY EACH	647.0566 STOP LINE EPOXY 18-INCH LF	647.0606 ISLAND NOSE EPOXY EACH	647.0766 CROSSWALK EPOXY 6-INCH LF	REMARKS
STH 124 NB								
168+62.62 - 200+87.04	12' RT	1850	-	-	-	-	-	YELLOW EDGE
168+62.62 - 200+87.04	12' RT	750	-	-	-	-	-	WHITE SKIP
168+62.62 - 200+87.04	12' RT	1850	-	-	-	-	-	WHITE EDGE
171+14 - 172+32	LT	-	232	-	-	-	-	WHITE CHANNELIZING
172+27	LT	-	-	-	-	1	-	YELLOW
173+63	LT & RT	-	-	-	56	-	252	WHITE
173+52 - 173+63	21' LT	-	-	25	-	-	-	YELLOW
173+64 - 173+80	26' RT	-	-	60	-	-	-	YELLOW
173+80	LT	-	-	-	-	1	-	YELLOW
174+26 - 174+31	25' LT	-	-	-	-	1	-	YELLOW
174+50	LT & RT	-	-	-	56	-	252	WHITE
174+50 - 174+58	2' LT	-	-	25	-	-	-	YELLOW
174+50 - 176+20	78' LT	-	170	-	-	-	-	WHITE CHANNELIZING
174+70	68' LT	-	-	-	-	-	-	WHITE (RIGHT)
175+10	72' LT	-	-	-	-	-	-	WHITE (ONLY)
175+50	76' LT	-	-	-	-	-	-	WHITE (RIGHT)
175+90	80' LT	-	-	-	-	-	-	WHITE (ONLY)
176+30 - 177+80	54' LT	-	150	-	-	-	-	WHITE CHANNELIZING
185+75 - 188+00	24' RT	-	465	-	-	-	-	WHITE CHANNELIZING
186+33 - 187+77	54' LT	-	280	-	-	-	-	WHITE CHANNELIZING
SUMMIT AVE								
8+67 - 8+90	12' RT	-	65	-	-	-	-	WHITE CHANNELIZING
8+67 - 9+20	12' LT	54	-	-	-	-	-	DOUBLE YELLOW
8+90	LT & RT	-	-	-	-	-	-	WHITE (LEFT, AHEAD, RIGHT)
8+96 - 9+30	12' RT	-	-	80	-	1	-	ISLAND, YELLOW
9+20	LT & RT	-	-	-	47	-	-	WHITE
10+25 - 10+61	LT	-	-	80	-	1	-	ISLAND, YELLOW
10+36	LT	-	-	-	47	-	-	WHITE
10+36 - 11+17	~	81	-	-	-	-	-	DOUBLE YELLOW
10+60	LT	-	-	-	-	-	-	WHITE (LEFT, AHEAD)
10+60	LT	-	65	-	-	-	-	WHITE CHANNELIZING
10+75	33' LT	-	-	-	-	-	-	WHITE (RIGHT)
ITEM TOTALS		4585	1427	270	206	5	504	

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED

3

CONSTRUCTION STAKING

STATION	650.8000 RESURFACING REFERENCE LF	650.9910 SUPPLEMENTAL CONTROL (8610-02-72) LS	SPV.0105.05 CONCRETE PAVEMENT JOINT LAYOUT LS
STH 124 NB			
168+62.62 - 200+87.04	3606	1	1
ITEM TOTALS	3606	1	1

UTILITY ITEMS

STATION	LOCATION	653.0900 ADJUSTING PULL BOXES EACH	REMARKS
STH 124 NB			
170+68	14' RT	1	JUNCTION BOX
172+07	11' RT	1	JUNCTION BOX
173+60	14' LT	1	JUNCTION BOX
173+60	32' RT	1	PULL BOX
174+60	15' LT	1	JUNCTION BOX
175+98	67' LT	1	JUNCTION BOX
177+72	63' LT	1	JUNCTION BOX
SUMMIT AVE			
8+89	7' RT	1	JUNCTION BOX
8+93	5' LT	1	JUNCTION BOX
9+21	5' LT	1	JUNCTION BOX
10+35	6' LT	1	JUNCTION BOX
10+64	7' LT	1	JUNCTION BOX
10+65	19' LT	1	JUNCTION BOX
ITEM TOTALS		13	

SAWING

STATION	LOCATION	690.0150 ASPHALT LF	690.0250 CONCRETE LF	REMARKS
STH 124 NB				
168+62.62	RT	8	45	BUTT JOINT
168+64	26' LT	7	25	BUTT JOINT
171+54 - 173+54	18' LT	-	205	TURN LANE CURB & GUTTER REPAIR
173+36	87' LT	10	-	PATH REPAIR
173+30 - 173+58	76' LT	-	41	CURB & GUTTER REPAIR
173+46 - 173+60	49' RT	-	27	CURB & GUTTER REPAIR
173+64 - 173+73	26' RT	-	60	ISLAND AND SIDEWALK REPAIR
174+31	25' LT	-	8	ISLAND NOSE REPLACEMENT
174+40 - 174+69	75' LT	-	48	CURB & GUTTER AND SIDEWALK REPAIR
174+44	25' LT	-	8	ISLAND CUT-THROUGH MODIFICATION
174+53 - 174+77	36' RT	-	37	CURB & GUTTER AND SIDEWALK REPAIR
175+45 - 175+49	26' RT	-	9	CURB & GUTTER REPAIR
177+75 - 177+81	84' LT	-	11	CURB & GUTTER REPAIR
178+17 - 178+19	42' LT	-	7	CURB & GUTTER REPAIR
178+32 - 178+34	42' LT	-	7	CURB & GUTTER REPAIR
178+45 - 179+60	24' RT	-	121	CURB & GUTTER REPAIR
178+95 - 181+16	LT	-	226	CURB & GUTTER REPLACEMENT
179+05 - 181+22	42' LT	-	223	CURB & GUTTER REPLACEMENT
179+39 - 180+55	63' LT	-	121	CURB & GUTTER REPLACEMENT
180+86	RT	-	29	CONCRETE REPLACEMENT
180+97	33' LT	-	29	CONCRETE REPLACEMENT
182+56 - 183+57	LT	-	105	CURB & GUTTER REPLACEMENT
182+60 - 183+56	32' LT	-	101	CURB & GUTTER REPLACEMENT
182+81	RT	-	29	CONCRETE REPLACEMENT
182+86	33' LT	-	29	CONCRETE REPLACEMENT
184+56	97' LT	-	15	PROJECT LIMITS - PARTIAL DEPTH
184+56 - 185+13	94' LT	-	67	CURB & GUTTER REPLACEMENT
184+56 - 185+68	54' LT	-	121	CURB & GUTTER REPLACEMENT
185+43	33' RT	-	15	PROJECT LIMITS - PARTIAL DEPTH
185+44 - 186+06	48' RT	-	66	CURB & GUTTER REPLACEMENT
186+36	54' LT	-	32	MEDIAN NOSE REMOVAL
187+65 - 188+66	30' LT	-	108	CURB & GUTTER REPLACEMENT
187+65 - 188+80	LT	-	120	CURB & GUTTER REPLACEMENT
200+30	RT	-	40	CONCRETE REPLACEMENT
200+87	30' LT	-	37	CONCRETE REPLACEMENT
200+19 - 200+31	LT	-	46	CONCRETE REPLACEMENT
200+77 - 200+87	30' LT	-	52	CONCRETE REPLACEMENT
208+00 - 210+50	2' LT	-	261	TEMPORARY CROSSOVER INSTALL
208+00 - 210+50	24' LT	-	261	TEMPORARY CROSSOVER INSTALL
SUMMIT AVE				
8+93 - 8+98	12' RT	-	31	ISLAND NOSE REPLACEMENT
9+05 - 9+07	23' RT	-	7	ISLAND
9+17 - 9+12	12' RT	-	50	ISLAND CUT THROUGH MODIFICATION
10+24 - 10+28	39' LT	-	20	ISLAND
10+26 - 10+30	26' LT	-	13	ISLAND
10+57 - 10+61	26' LT	-	30	ISLAND NOSE REPLACEMENT
ITEM TOTALS		25	2943	

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED

3

CONCRETE BASE REMOVALS

EXISTING BASE NUMBER	204.0195 REMOVING CONCRETE BASES EACH
SB12	1
ITEM TOTAL	1

TRAFFIC SIGNAL CABLE NO. 14 (ABOVE GROUND)

FROM	TO	655.0230 CABLE TRAFFIC SIGNAL 5 - 14 AWG LF
SB12	HEAD 25	15
SB14	HEAD 24	15
ITEM TOTAL		30

TRAFFIC SIGNAL AND PEDESTRIAN FACES, AND BACKPLATES

SIGNAL HEAD NUMBER	SIGNAL BASE NUMBER	658.0416 PEDESTRIAN SIGNAL FACE 16-INCH EACH	658.0635 LED MODULES PEDESTRIAN COUNTDOWN TIMER 16-INCH EACH
24	SB1	1	1
25	SB12	1	1
ITEM TOTALS		2	2

3

CONDUIT

FROM	TO	652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH LF
PB2	SB14	13
PB13	SB12	4
ITEM TOTAL		17

TRAFFIC SIGNAL CABLE NO. 14 (BELOW GROUND)

FROM	TO	655.0240 CABLE TRAFFIC SIGNAL 7 - 14 AWG LF	655.0260 CABLE TRAFFIC SIGNAL 12 - 14 AWG LF
CB1	SB1	68	-
CB1	SB12	-	154
CB1	SB14	75	-
ITEM TOTALS		143	154

SIGNAL MOUNTING HARDWARE STH 124 & SUMMIT AVENUE

LOCATION	658.5069.01 SIGNAL MOUNTING HARDWARE LS
STH 124 & SUMMIT AVENUE	1
ITEM TOTAL	1

INSTALL CONDUIT INTO EXISTING ITEM

STRUCTURE NUMBER	652.0700.S INSTALL CONDUIT INTO EXISTING ITEM EACH
PB2	1
PB13	1
ITEM TOTAL	2

ELECTRIC WIRE TRAFFIC SIGNALS, NO. 10

FROM	TO	655.0515 ELECTRICAL WIRE TRAFFIC SIGNALS 10 AWG LF
CB1	SB14	75
ITEM TOTAL		75

REMOVE, SALVAGE, AND REINSTALL TRAFFIC SIGNAL STANDARDS

BASE NUMBER	SPV.0060.02 REMOVE, SALVAGE, AND REINSTALL TRAFFIC SIGNAL STANDARDS EACH
SB12	1
ITEM TOTAL	1

CONCRETE BASES

BASE NUMBER	STATION	LOCATION	654.0101 CONCRETE BASES TYPE 1 EACH
SB12	173+91.9	59.7' LT	1
SB14	174+58.1	55.1' LT	1
ITEM TOTAL			2

CAST BASES, POLES, MONOTUBE ARMS, PUSH BUTTONS, AND LUMINAIRES

SIGNAL BASE NUMBER	657.0100 PEDESTAL BASES EACH	657.0405 TRAFFIC SIGNAL STANDARDS ALUMINUM 3.5 - FT EACH	658.0500 PEDESTRIAN PUSH BUTTONS EACH
SB12	-	-	1
SB14	1	1	2
ITEM TOTALS	1	1	3

SALVAGE ABOVE GROUND TRAFFIC SIGNAL EQUIPMENT, STH 124 & SUMMIT AVENUE

LOCATION	SPV.0105.07 LS
STH 124 & SUMMIT AVENUE	1
ITEM TOTAL	1

NOTE: ALL ITEMS AND QUANTITIES ON THIS SHEET ARE FOR ENGINEER ESTIMATE CATEGORY 0010, UNLESS OTHERWISE NOTED

ALL UTILITIES ARE APPROXIMATE
ACTUAL LOCATION MUST BE FIELD VERIFIED

PI STA = 171+85.97
Y = 125514.555
X = 174118.551
DELTA = 6°08'52"
D = 2°36'16"
T = 118.14'
L = 236.05'
R = 2200.00'
PC STA = 170+67.83
PT STA = 173+03.89
SE = MATCH EXISTING

BEGIN CONSTRUCTION
STA 8+67.19
MATCH EXISTING
BUTT JOINT REQ'D

REMOVE AND REINSTALL SIGNAL,
SEE SIGNAL PLAN SETAIL

STA 174+06.53'SB' STH 124 =
STA 9+67.90 SUMMIT AVE

MATCH EXISTING
BUTT JOINT REQ'D

PT: 168+83.20'SB'
PT: 169+05.87'NB'
PC: 170+11.08'NB'
PC: 170+67.83'SB'
PT: 172+56.91'NB'
PT: 173+03.89'SB'
PC: 173+07.79'SB'

CONCRETE CURB & GUTTER
30-INCH TYPE A (TYP)

168+00'SB'
169+00'SB'
N16° 00' 31"W
170+00'SB'
171+00'SB'
172+00'SB'
173+00'SB'
174+00'SB'
175+00'SB'

168+00'NB'
169+00'NB'
N15° 08' 05"W
170+00'NB'
171+00'NB'
172+00'NB'
173+00'NB'
174+00'NB'

12'
STH 124 SB
STH 124 NB

STA 172+53.73'NB'
6.67' LT
STA 172+26.88'NB'
4.09' LT
STA 173+82.63'NB'
5.28' LT
STA 173+65.19'NB'
7.68' LT
STA 173+73.35'NB'
7.85' LT

SUMMIT AVE
9+00
10+00
11+00
N71° 22' 49"E

SEE
CUT-THROUGH
MODIFICATION
DETAIL

STA 174+44.15'NB'
25.04' LT
STA 174+36.87'NB'
24.26' LT

MATCHLINE STA 175+00'NB'

CONCRETE CURB & GUTTER
6-INCH SLOPED 30-INCH
TYPE A (ISLAND TYP)

END CONSTRUCTION
STA 11+17.84
MATCH EXISTING
BUTT JOINT REQ'D

BEGIN PROJECT
STA 168+62.62'NB'
Y = 125550.455
X = 174231.855
MATCH EXISTING
BUTT JOINT REQ'D

CITY OF CHIPPEWA FALLS

MGS GUARDRAIL 3
STA 179+97.99'NB' 26.42'RT TO STA 180+60.49'NB' 26.42'RT
STA 180+60.49'NB' 26.42'RT TO STA 180+72.99'NB' 28.12'RT

MGS GUARDRAIL TERMINAL EAT
STA 179+44.91'NB' 28.42'RT TO STA 179+97.99'NB' 26.42'RT
STA 180+39.20'NB' 63.2'LT TO STA 180+91.45'NB' 61.25'LT

STEEL THRIE BEAM STRUCTURE APPROACH
STA 181+04.85'NB' 2.86'LT TO STA 181+19.23'NB' 2.86'LT
STA 181+09.65'NB' 29.92'LT TO STA 181+23.83'NB' 29.73'LT

MGS THRIE BEAM TRANSITION
STA 180+72.99'NB' 28.12'RT TO STA 181+12.88'NB' 28.12'RT
STA 180+91.45'NB' 61.25'LT TO STA 181+29.62'NB' 60.61'LT

STEEL THRIE BEAM BULLNOSE TERMINAL
STA 180+55.31'NB' 8.74'LT TO STA 180+55.96'NB' 31.58'LT

STEEL THRIE BEAM
STA 180+55.31'NB' 8.74'LT TO STA 181+04.85'NB' 2.86'LT
STA 180+55.96'NB' 31.58'LT TO STA 181+09.65'NB' 29.92'LT

PI STA = 171+34.12
Y = 125482.501
X = 174160.817
DELTA = 6°24'08"
D = 2°36'16"
T = 123.04'
L = 245.82'
R = 2200.00'
PC STA = 170+11.08
PT STA = 172+56.91
SE = MATCH EXISTING

STA 173+98.28'NB' STH 124 =
STA 10+00 SUMMIT AVE
SEE INTERSECTION DETAIL SHEET

CURB RAMP DETECTABLE
WARNING FIELD YELLOW (TYP)

CONCRETE SIDEWALK 6-INCH (TYP)

PI STA = 176+29.79
Y = 125925.807
X = 173951.088
DELTA = 15°56'21"
D = 2°29'28"
T = 322.00'
L = 639.84'
R = 2300.00'
PC STA = 173+07.79
PT STA = 179+47.63
SE = MATCH EXISTING

CONCRETE CURB & GUTTER 30-INCH TYPE A
(CONSTRUCT AS DRIVEWAY CURB)

STA 180+39.20
63.20' LT
STA 180+91.45'NB'
61.25' LT
STA 181+29.62'NB'
60.61' LT

CONCRETE
CURB & GUTTER
30-INCH TYPE A

STRUCTURE BUTT JOINT REQ'D
SEE DETAIL

CONCRETE PAVEMENT
APPROACH SLAB HES

PT: 179+47.63'SB'
PC: 181+25.39'SB'

STA 180+55.96'NB'
31.58' LT
STA 180+65.53'NB'
8.74' LT

MATCHLINE STA 175+00'NB'
MATCHLINE STA 181+75'NB'

176+00'SB'
177+00'SB'
178+00'SB'
179+00'SB'
180+00'SB'
181+00'SB'

176+00'NB'
177+00'NB'
178+00'NB'
179+00'NB'
180+00'NB'
181+00'NB'

N38° 05' 44"W
N40° 23' 20"W

PC: 175+46.82'NB'
PT: 178+26.50'NB'

STA 181+23.83'NB'
29.73' LT
STA 181+09.65'NB'
29.92' LT
STA 181+19.23'NB'
2.86' LT
STA 181+04.85'NB'
2.86' LT

CONCRETE CURB & GUTTER 30-INCH TYPE A
(CONSTRUCT AS DRIVEWAY CURB TO STA 180+34)

CONCRETE CURB & GUTTER 30-INCH TYPE A
(CONSTRUCT AS DRIVEWAY CURB)

BM 2

CONCRETE PAVEMENT
APPROACH SLAB HES

CONCRETE PAVEMENT
7-INCH SPECIAL & 3"
HMA PAVEMENT

STA 179+44.91'NB
28.42' RT
STA 179+97.99'NB
26.42' RT
STA 180+60.49'NB
26.42' RT
STA 180+72.99'NB
28.12' RT
STA 181+12.98'NB
28.12' RT

STRUCTURE BUTT JOINT REQ'D
SEE DETAIL

CONCRETE CURB & GUTTER
30-INCH TYPE A

XCEL ENERGY

PI STA = 175+46.82
PT STA = 178+26.50
SE = MATCH EXISTING

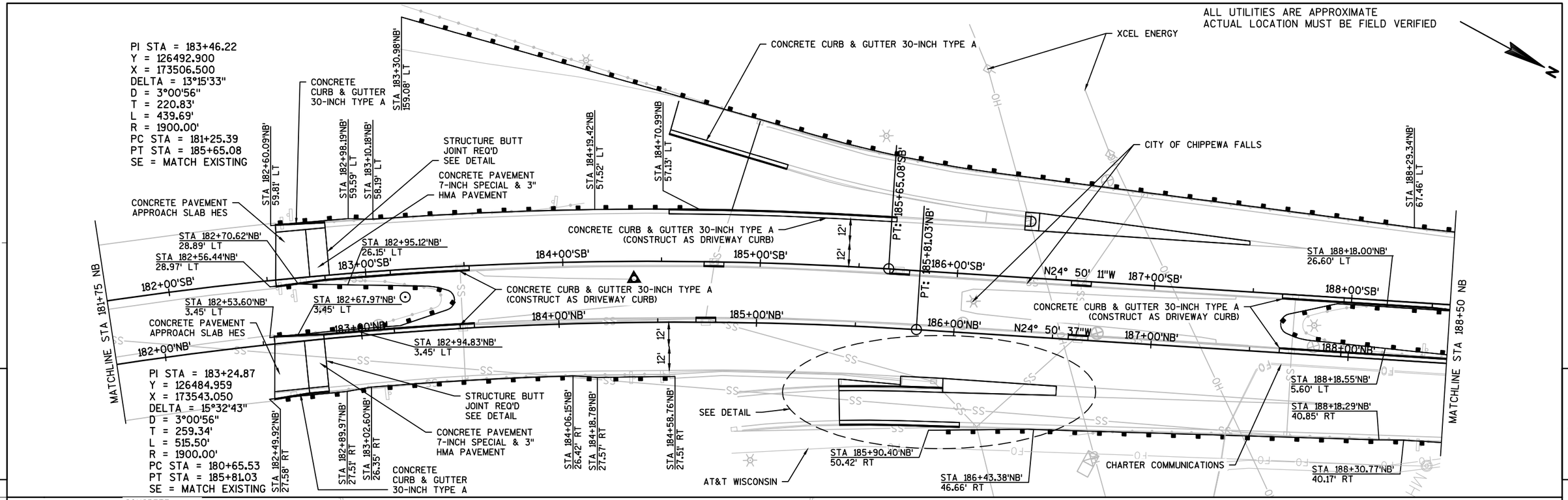
PI STA = 176+87.94
Y = 125997.886
X = 173957.419
DELTA = 18°51'07"
D = 6°44'26"
T = 141.11'
L = 279.67'
R = 850.00'
PC STA = 175+46.82
PT STA = 178+26.50
SE = MATCH EXISTING

ALL UTILITIES ARE APPROXIMATE
ACTUAL LOCATION MUST BE FIELD VERIFIED

BENCHMARK TABLE

NO.	STATION	DESCRIPTION	ELEV
BM 1	167+23.86'NB' 172.80' RT	NW BOLT TOP FLANGE OF HYDRANT TAGGED (BURY BOLT)	915.41
BM 2	181+14.83'NB' 28.72' RT	ALUMINUM CAP SE PARAPET OF STRUCTURESCTURE B-9-169-92	897.58

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	PLAN:	SHEET 51	E



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	PLAN:	SHEET 52	E

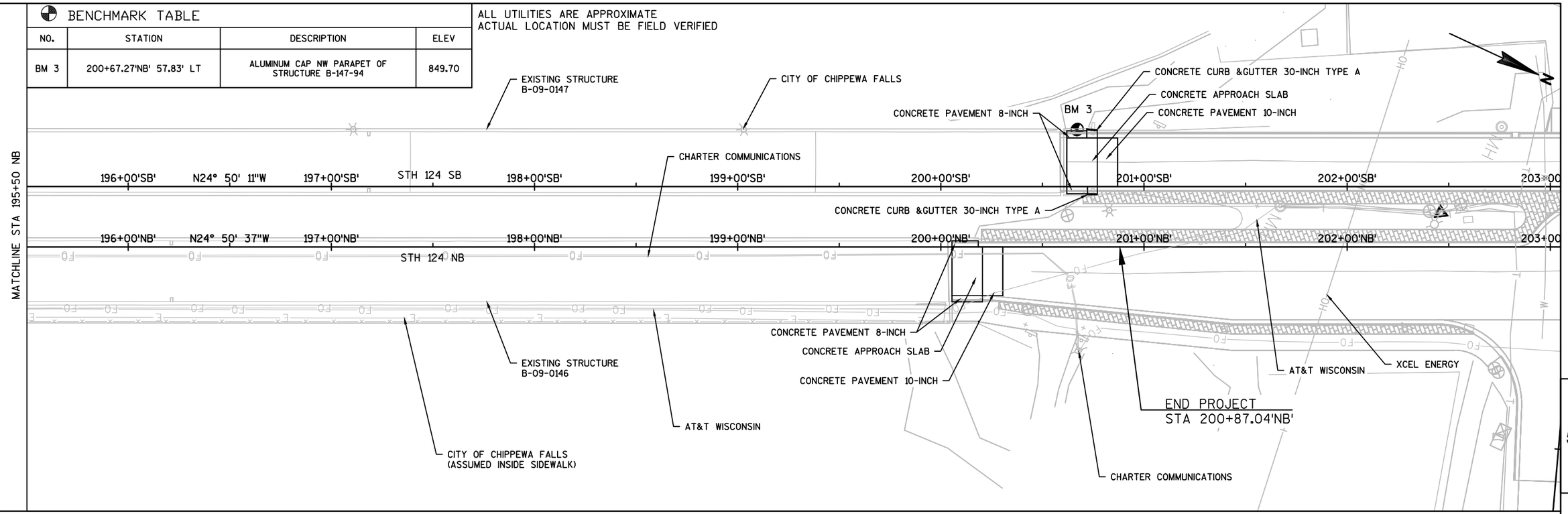
FILE NAME : P:\UZ\W\WITNW\127359\CIVIL 3D\SHEETSPLAN\050101_PP.DWG PLOT DATE : 9/27/2016 3:36 PM PLOT BY : NICK ENGH PLOT NAME : _____ PLOT SCALE : 1:50_XREF

WISDOT/CADDS SHEET 44

BENCHMARK TABLE

NO.	STATION	DESCRIPTION	ELEV
BM 3	200+67.27'NB' 57.83' LT	ALUMINUM CAP NW PARAPET OF STRUCTURE B-147-94	849.70

ALL UTILITIES ARE APPROXIMATE
ACTUAL LOCATION MUST BE FIELD VERIFIED



PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	PLAN:	SHEET 53	E

FILE NAME : P:\UZ\W\WITNW\127359\CIVIL 3D\SHEETSPLAN\050101_PP.DWG PLOT DATE : 9/27/2016 3:36 PM PLOT BY : NICK ENGH PLOT NAME : ---------- PLOT SCALE : 1:50_XREF

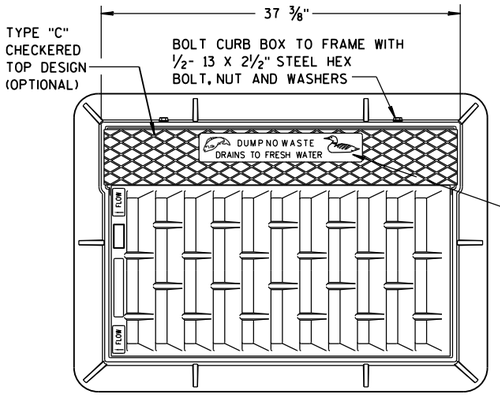
Standard Detail Drawing List

08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08D01-19	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D05-17A	CURB RAMPS TYPES 1 AND 1-A
08D05-17B	CURB RAMPS TYPES 2 AND 3
08D05-17C	CURB RAMPS TYPES 4A AND 4A1
08D05-17D	CURB RAMPS TYPE 4B AND 4B1
08D05-17E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
09B02-09	CONDUIT
09B04-11	PULL BOX
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09E07-05	TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS
11B02-02	CONCRETE MEDIAN NOSE
13B02-08A	CONCRETE PAVEMENT APPROACH SLAB
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C13-08	URBAN DOWELED CONCRETE PAVEMENT
13C18-03A	CONCRETE PAVEMENT JOINTING
13C18-03B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-03C	CONCRETE PAVEMENT JOINT TIES
13C18-03D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
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
14B15-09A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-09B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-09C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11A	STEEL THRIE BEAM STRUCTURE APPROACH
14B20-11B	STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS
14B26-03A	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-03B	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-03C	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-03D	STEEL THRIE BEAM BULLNOSE TERMINAL
14B26-03E	STEEL THRIE BEAM BULLNOSE TERMINAL
14B42-04A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-04C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-02A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-02C	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)
14B45-04E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B47-02A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-02C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C06-08	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
15C08-16F	PAVEMENT MARKING (ISLANDS)
15C11-06	FLEXIBLE TUBULAR MARKER POST

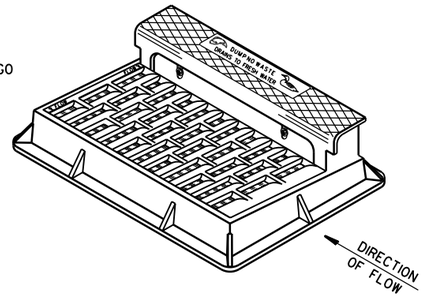
6

Standard Detail Drawing List

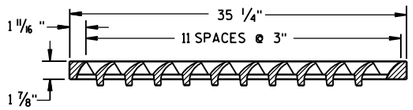
15C19-03C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C31-01A	PAVEMENT MARKING (RAMPS AND GORES)
15C33-02	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D11-06	TRAFFIC CONTROL, SINGLE LANE CROSSOVER
15D12-06A	TRAFFIC CONTROL, LANE CLOSURE
15D12-06B	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D20-04	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D21-04	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE
15D30-03A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-03B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-03C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

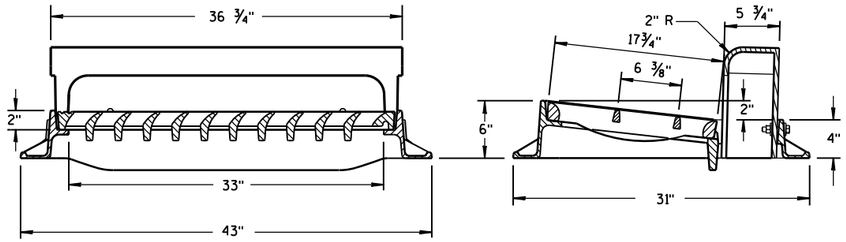


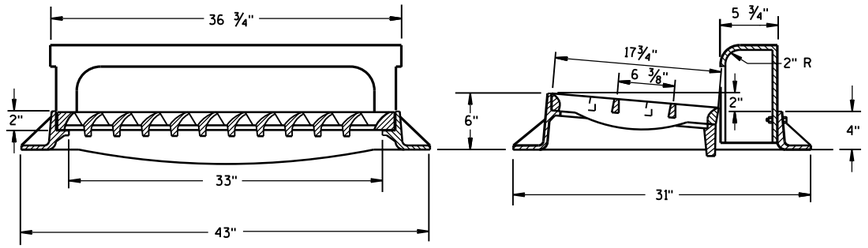
NOTE:
GRATE IS REVERSIBLE.



NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"

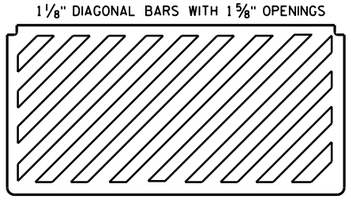






TYPE "H"

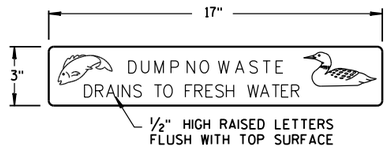
NOTE: EITHER CASTING IS ACCEPTABLE



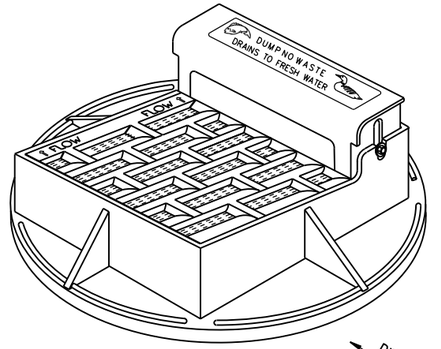
SPECIAL GRATE FOR TYPE "H" COVER

(MEASURES 35 1/4" X 17 3/4" X 2")

(NOTED AS TYPE H-S ON DRAINAGE TABLE)



LOGO DETAIL



NOTE: CURB BOX ADJUSTABLE 4" TO 9"

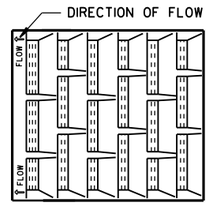
NOTE:
GRATE IS REVERSIBLE.

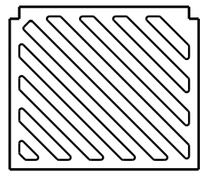
GENERAL NOTES

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

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

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

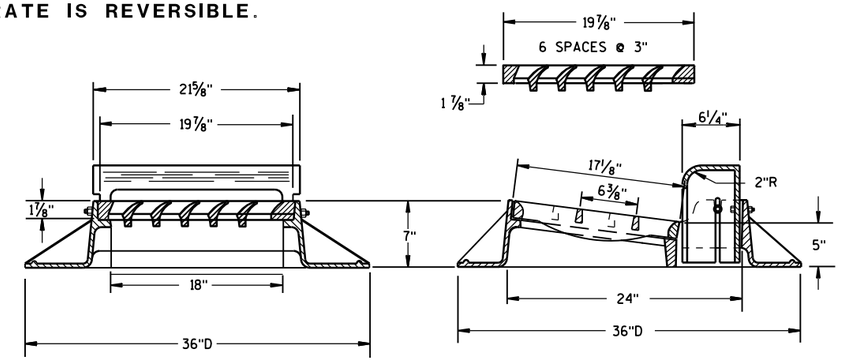




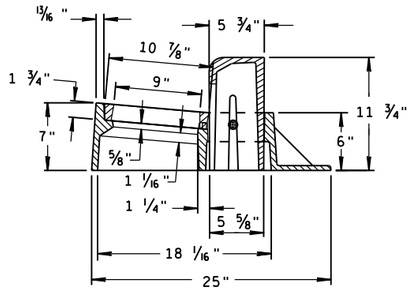
SPECIAL GRATE FOR TYPE "A" COVER

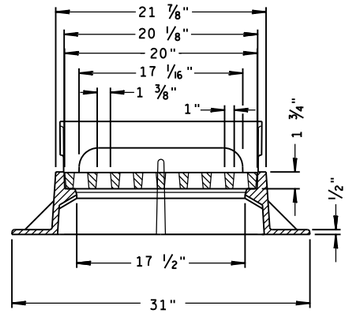
(MEASURES 19 3/4" X 17" X 1 7/8")

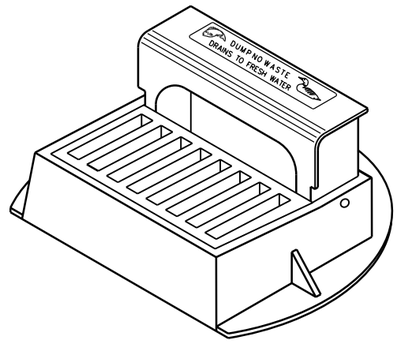
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



TYPE "A"







TYPE "Z"

INLET COVERS
TYPE A, H, A-S, H-S & Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11-27-13 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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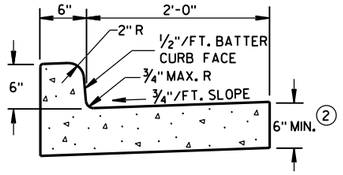
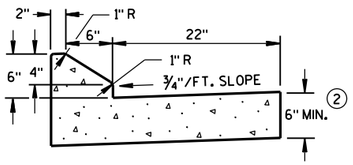
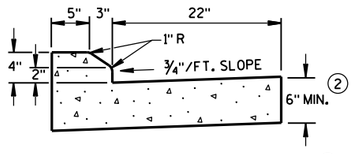
S.D.D. 8 A 5-19a



TYPES A & D ①

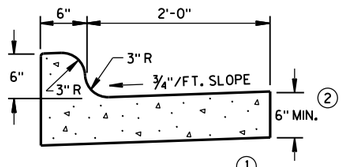


6" SLOPED CURB TYPES G & J ①

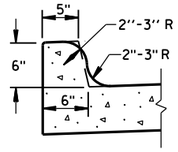


4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"

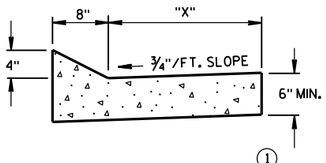


TYPES K & L ①



OPTIONAL CURB SHAPE FOR TYPES K & L ①

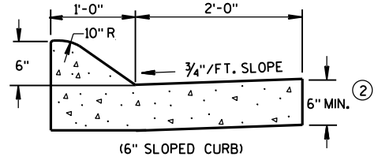
CONCRETE CURB & GUTTER 30"



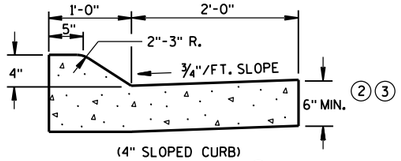
TYPES TBT & TBTT ①

CONCRETE CURB & GUTTER

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

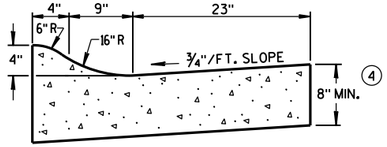


(6" SLOPED CURB)



(4" SLOPED CURB)

TYPES A & D ①



4" SLOPED CURB TYPES R & T ①⑤

CONCRETE CURB & GUTTER 36"

GENERAL NOTES

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

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

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

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

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

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

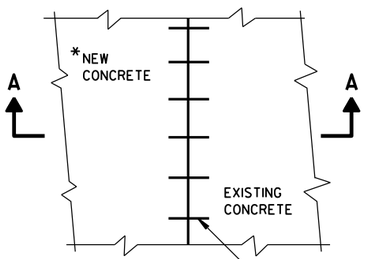
② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

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.

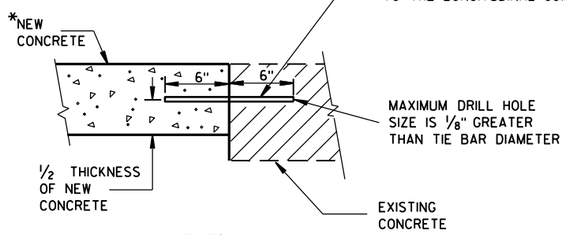
⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

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



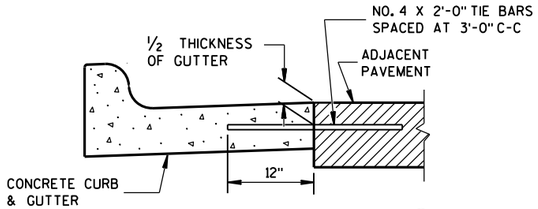
PLAN VIEW

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

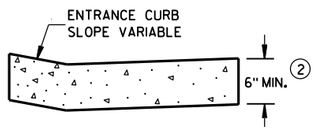


SECTION A-A

TIE BARS DRILLED INTO EXISTING PAVEMENT

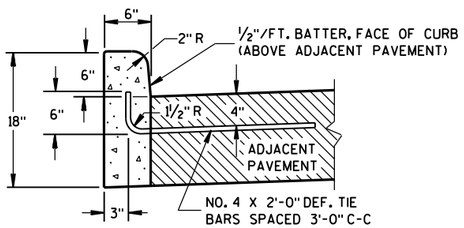


TYPICAL TIE BAR LOCATION ①

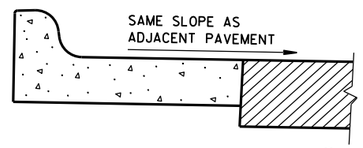


DRIVEWAY ENTRANCE CURB

(WHEN DIRECTED BY THE ENGINEER)

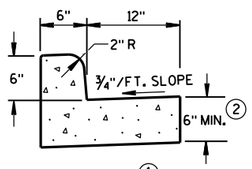


① TYPES A & D



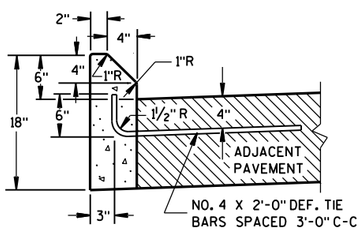
⑥ REVERSE SLOPE GUTTER

(TYPICAL FOR ALL CURB & GUTTER TYPES)



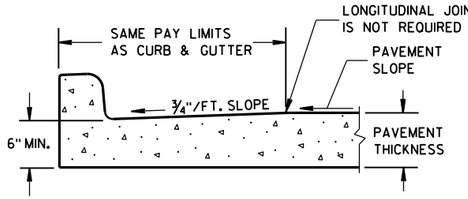
① TYPES A & D

CONCRETE CURB & GUTTER 18"

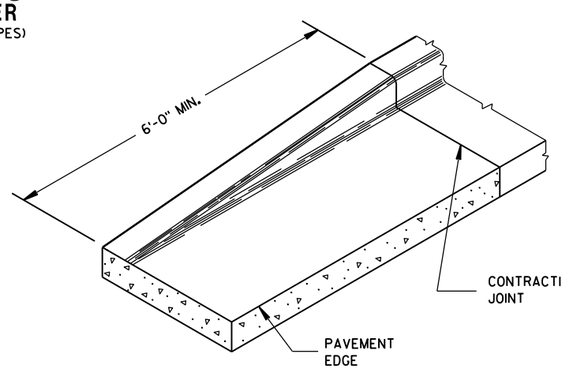


① TYPES G & J

CONCRETE CURB



PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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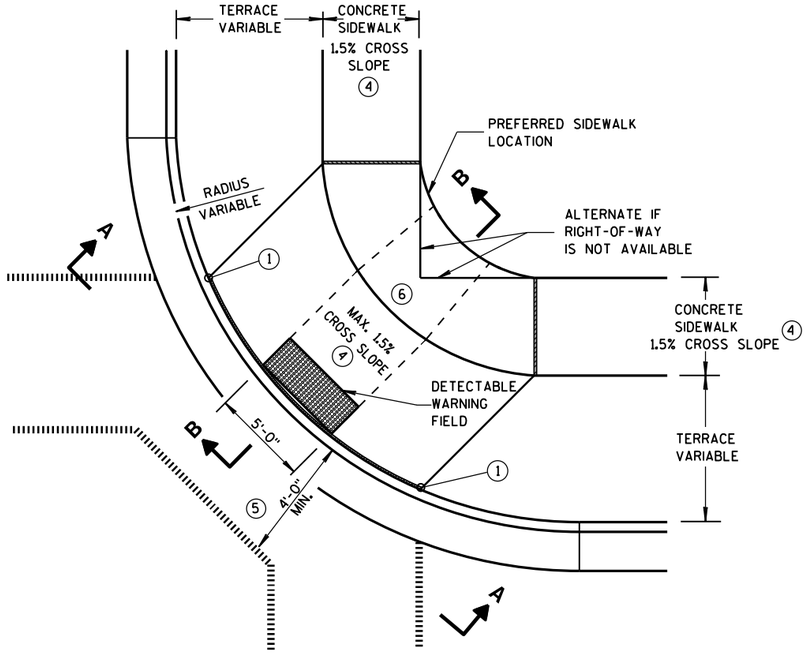
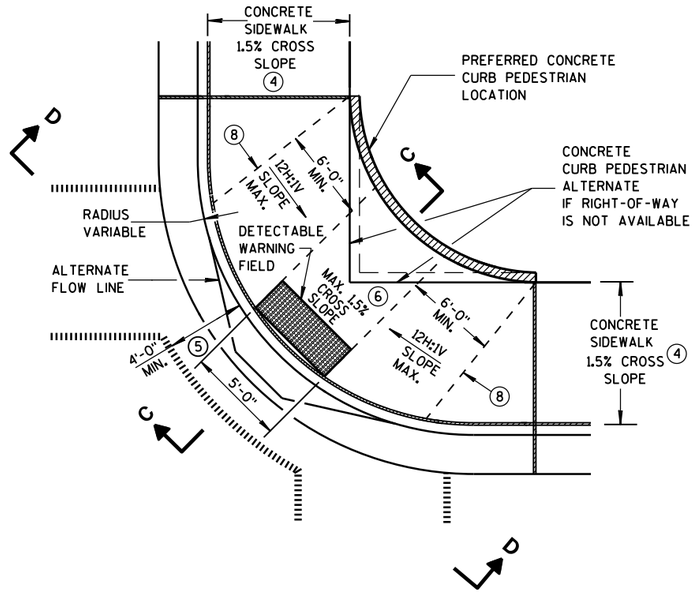
S.D.D. 8 D 1-19



PLAN VIEW

TYPE 1 RAMP

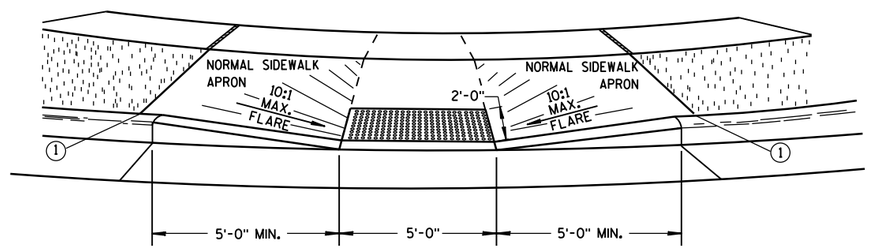
(CENTER OF CORNER RADIUS)



PLAN VIEW

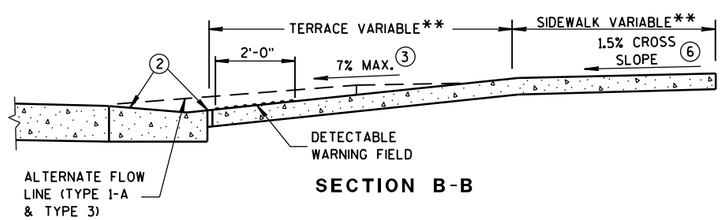
TYPE 1-A RAMP

(NO TERRACE)

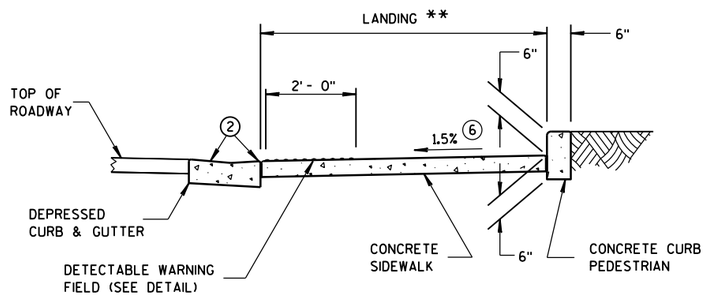


VIEW A-A

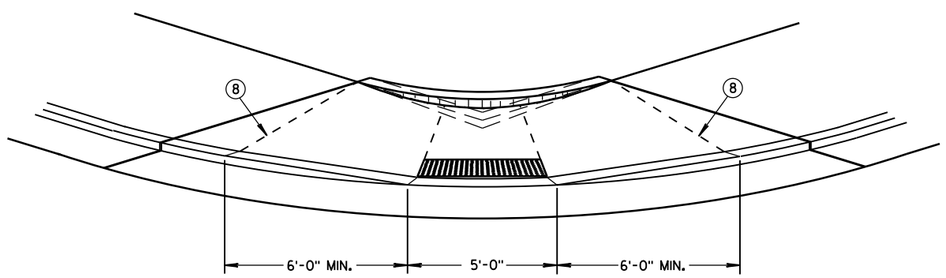
** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B



SECTION C-C



VIEW D-D

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.

WHEN NECESSARY, THE SIDEWALK ELEVATION MAY BE LOWERED TO MEET THE HIGH POINT ON THE RAMP.

TYPE 1 RAMPS SHALL HAVE A NORMAL SIDEWALK APRON AND CURB ON BOTH SIDES OF RAMP.

DETECTABLE WARNING FIELD SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS "CURB RAMP DETECTABLE WARNING FIELD". THE CONCRETE PEDESTRIAN CURB, IF NEEDED, SHALL BE MEASURED AND PAID BY THE LINEAL FOOT AS "CONCRETE CURB PEDESTRIAN". CONCRETE SIDEWALK IN THE CURB RAMP AREA SHALL BE MEASURED AND PAID BY THE SQUARE FOOT AS CONCRETE SIDEWALK, INCLUDING THE AREA UNDER THE DETECTABLE WARNING FIELD.

SELECT CURB RAMP DETECTABLE WARNING FIELD MATERIALS AND DEVICES FROM THE DEPARTMENT'S APPROVED MATERIALS LIST. THE COLOR OF THE DETECTABLE WARNING FIELD IS SPECIFIED ELSEWHERE AND IS INCIDENTAL TO THE BID ITEM OF "CURB RAMP DETECTABLE WARNING FIELD".

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP.

(1) THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(5) PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA. (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

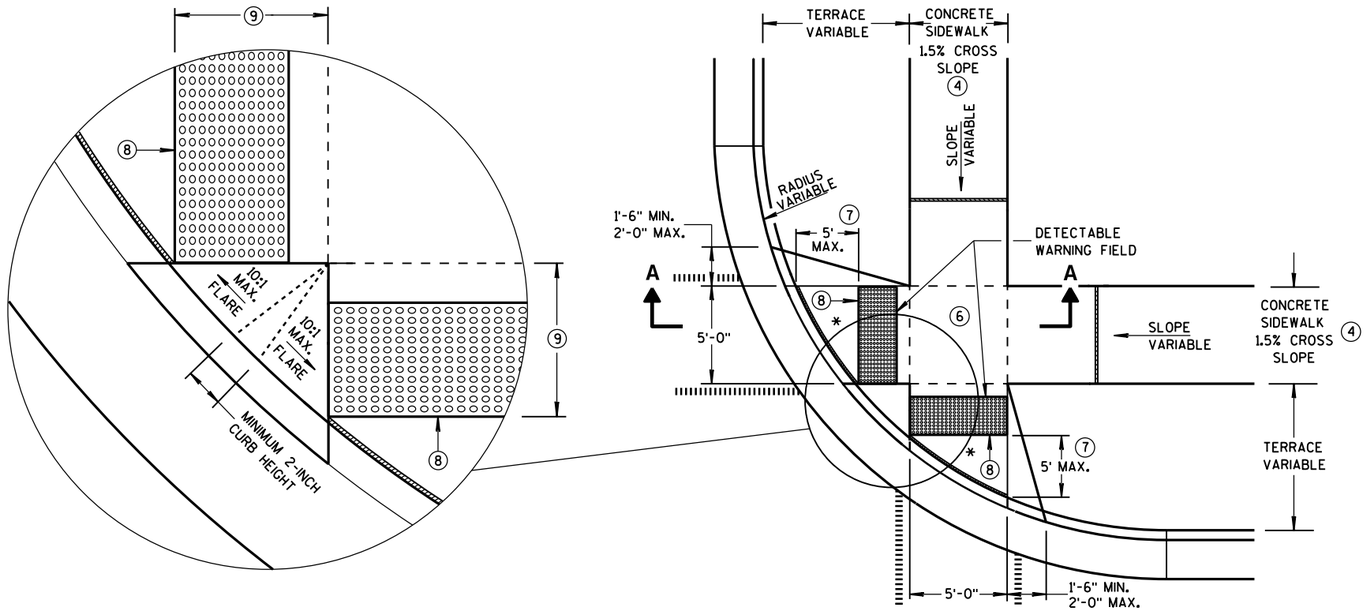
- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT

CURB RAMPS TYPES 1 AND 1-A

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 8 D 5-17a

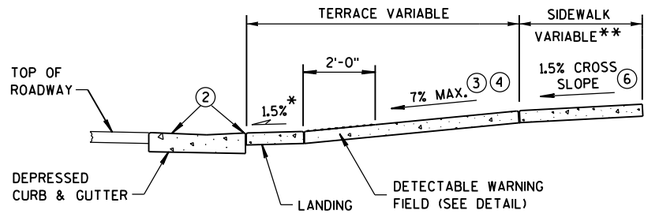


PLAN VIEW

TYPE 2 RAMP

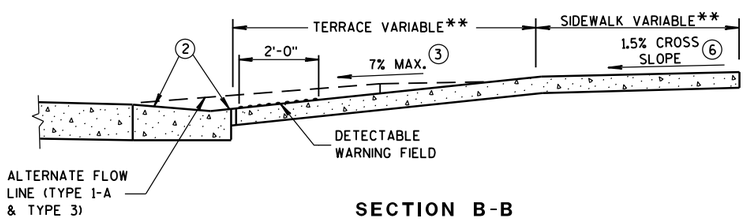
(ON LINE WITH SIDEWALK)

* MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK



SECTION A-A

** WIDTH SHOWN ELSEWHERE IN THE PLANS



SECTION B-B

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

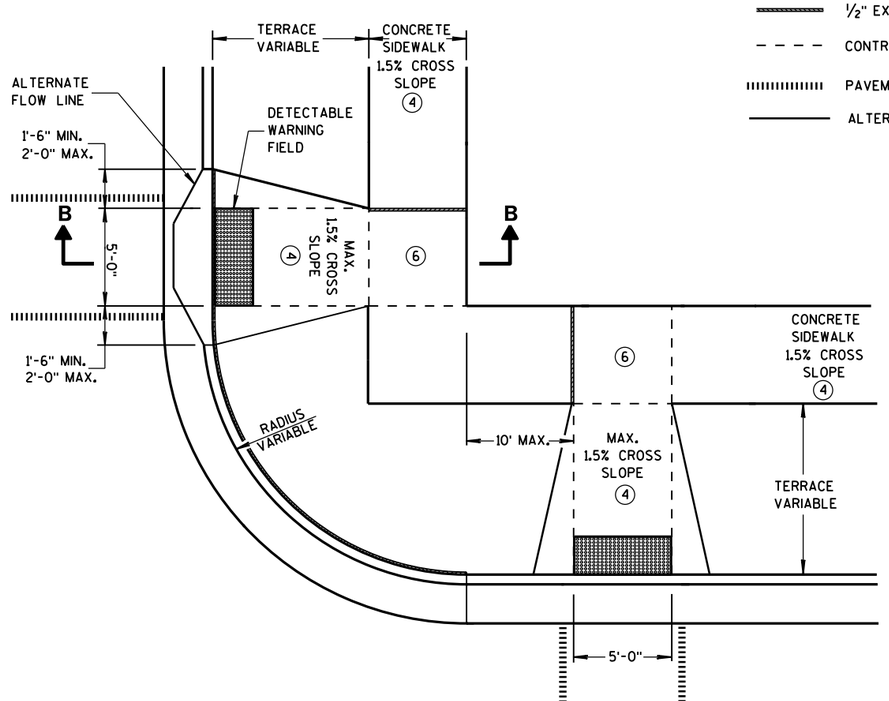
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(9) WHEN THIS DISTANCE IS LESS THAN 6'-0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

LEGEND

- ½" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)
- ALTERNATIVE LAYOUT



PLAN VIEW

TYPE 3 RAMP

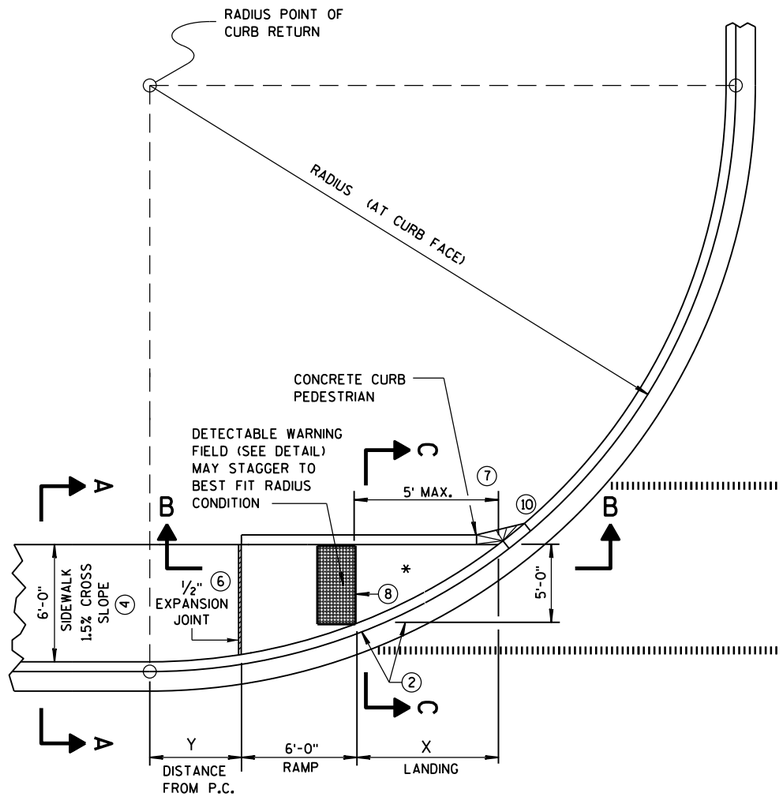
(OUTSIDE OF CROSSWALK AREA)

CURB RAMPS TYPES 2 AND 3

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6

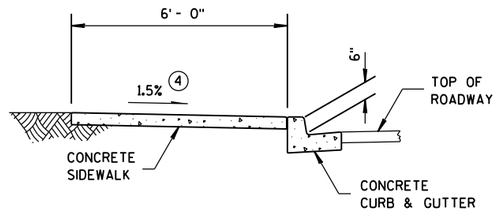
S.D.D. 8 D 5-17b



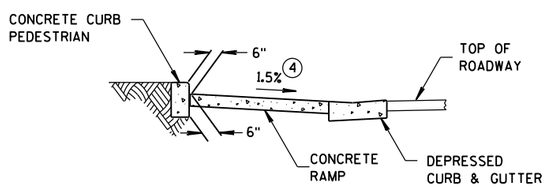
CURB RAMP TYPE 4A
PLAN VIEW

RADIUS (AT CURB FACE)	X	Y
20 FEET	7'-11"	0'-2"
30 FEET	10'-2¾"	1'-7½"
40 FEET	12'-1¼"	2'-10"
50 FEET	13'-8¾"	3'-10¾"
60 FEET	15'-2"	4'-10¼"

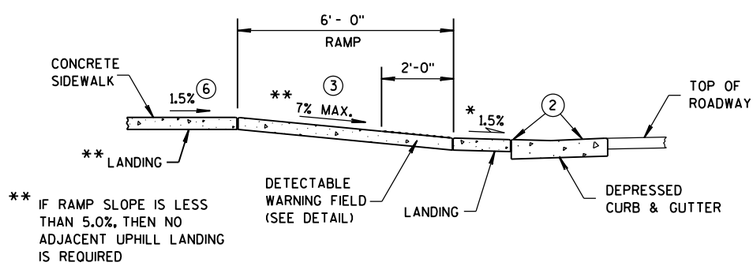
INTERMEDIATE RADII CAN BE INTERPOLATED



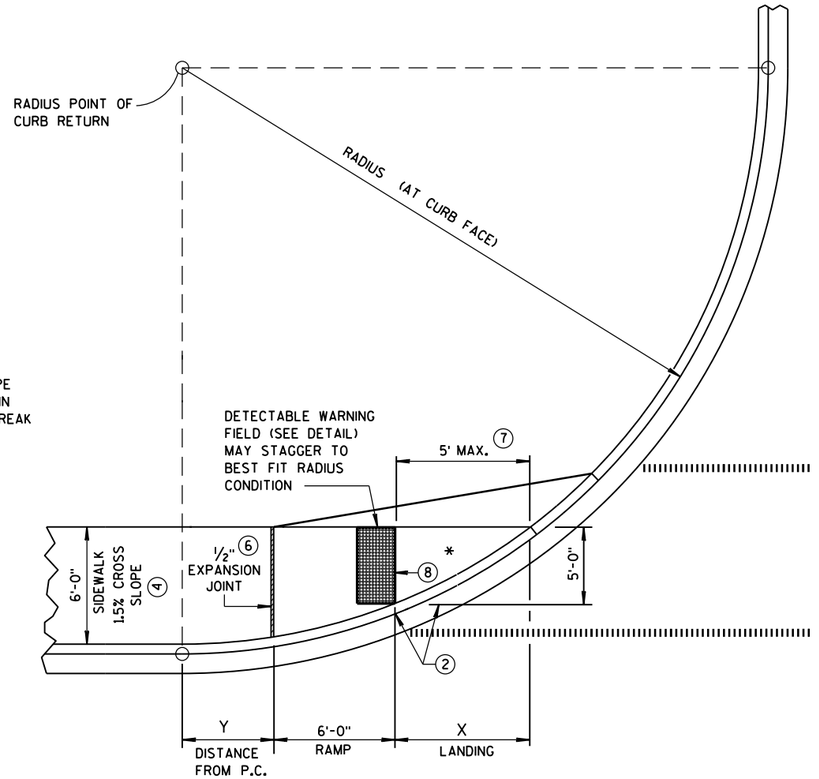
SECTION A-A FOR TYPE 4A



SECTION C-C FOR TYPE 4A



SECTION B-B FOR TYPE 4A



* MAXIMUM 2.0% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE BREAK

CURB RAMP TYPE 4A1
PLAN VIEW

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

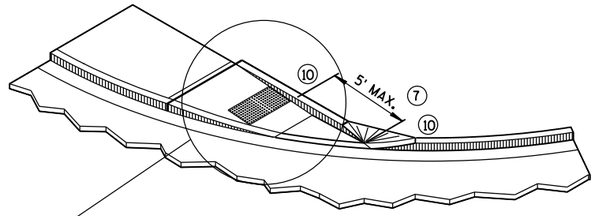
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

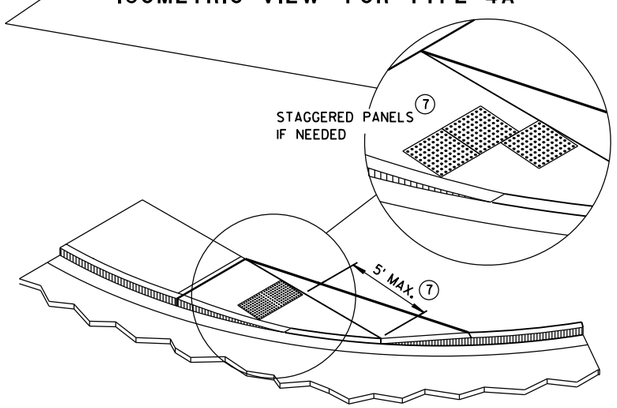
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4A



ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

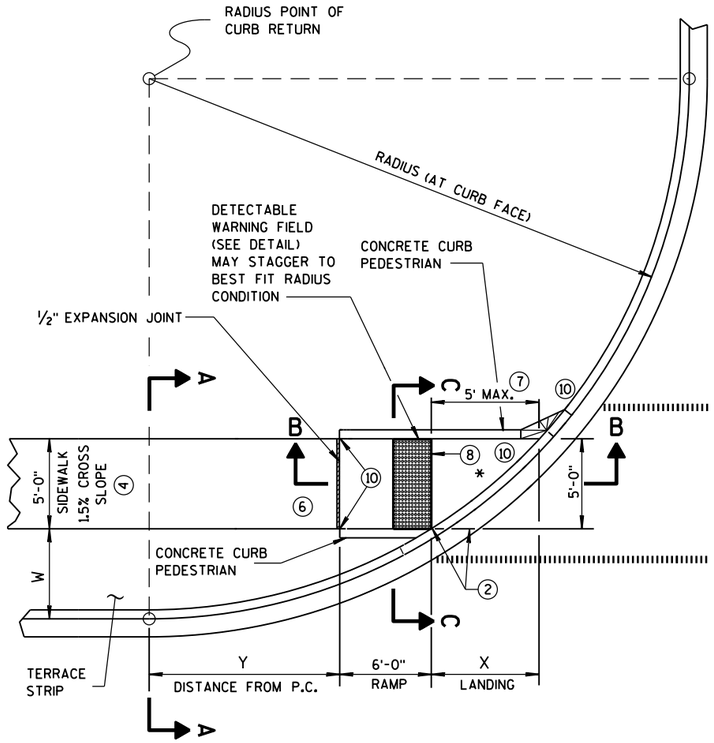
PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

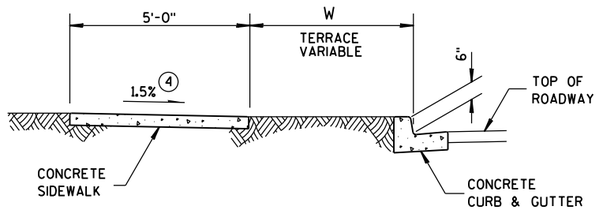
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

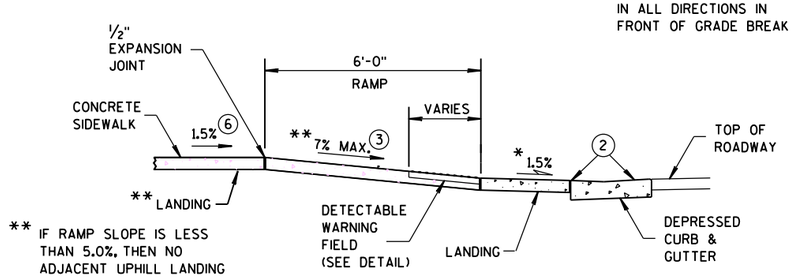
S.D.D. 8 D 5-17c



CURB RAMP TYPE 4B
PLAN VIEW



SECTION A-A FOR TYPE 4B



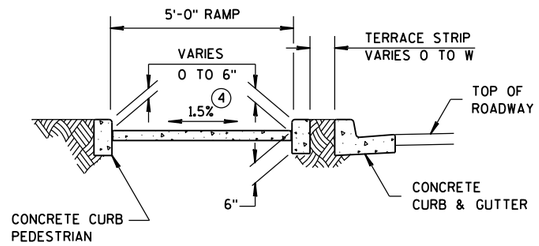
SECTION B-B FOR TYPE 4B

LEGEND

½" EXPANSION JOINT-SIDEWALK

CONTRACTION JOINT FIELD LOCATED

PAVEMENT MARKING CROSSWALK (WHITE)



SECTION C-C FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3'-0"		W = 4'-0"		W = 5'-0"		W = 6'-0"		W = 7'-0"	
	X	Y	X	Y	X	Y	X	Y	X	Y
20 FEET	5'-9¾"	3'-6½"	4'-11½"	5'-1¾"	4'-3¼"	6'-5½"	3'-8¾"	7'-6¾"	3'-3"	8'-6¼"
30 FEET	7'-9¼"	5'-10½"	6'-9½"	7'-11¼"	6'-0¼"	9'-8"	5'-5"	11'-1¾"	4'-10¾"	12'-5¾"
40 FEET	9'-4"	7'-10"	8'-2¾"	10'-3"	7'-4¾"	12'-3¾"	6'-8½"	14'-1¼"	6'-1¾"	15'-8½"
50 FEET	10'-8"	9'-6½"	9'-5½"	12'-3¼"	8'-6½"	14'-7½"	7'-9¾"	16'-8¼"	7'-2½"	18'-6¼"
60 FEET	11'-10¼"	11'-0¾"	10'-6½"	14'-1¼"	9'-6½"	16'-8½"	8'-9¼"	18'-11¾"	8'-1½"	21'-0½"

INTERMEDIATE RADII CAN BE INTERPOLATED

GENERAL NOTES

AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN ¼-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

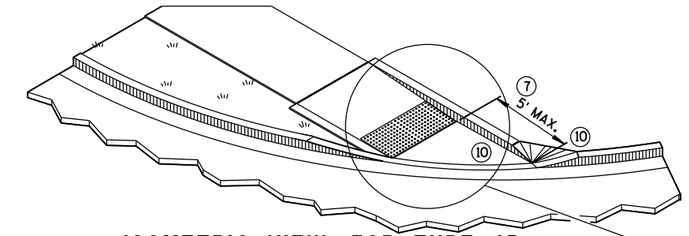
(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

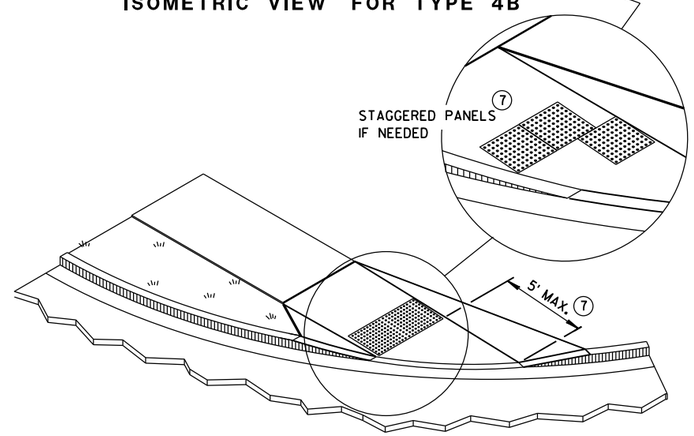
(7) WHEN THIS DISTANCE EXCEEDS 5 FEET, STAGGER ADDITIONAL DETECTABLE WARNING PANEL FORWARD TO REDUCE THIS DISTANCE. PROVIDE MINIMUM 12-INCH ROW OVERLAP TO AVOID SIDESTEP OF DOME DETECTION. ALIGN DOMES BETWEEN OVERLAPPING ROWS AND IN DIRECTION OF PEDESTRIAN TRAVEL.

(8) PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

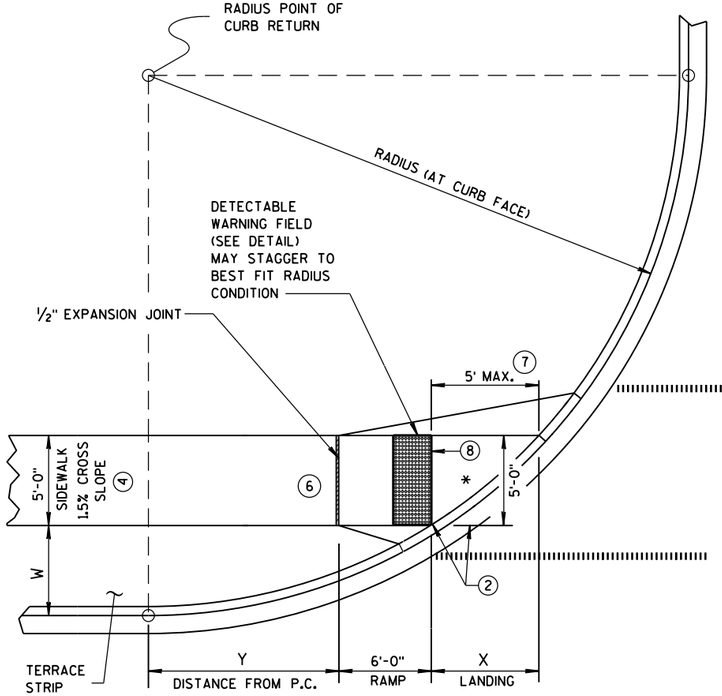
(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1



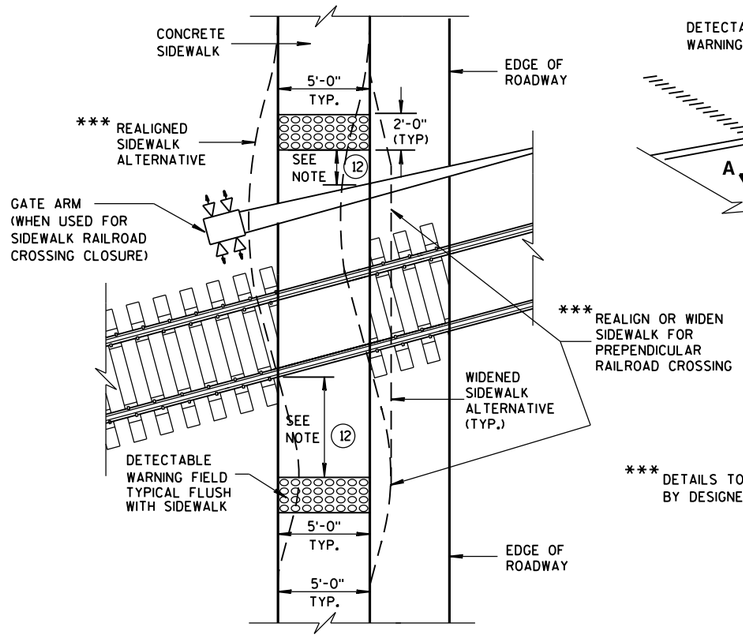
CURB RAMP TYPE 4B1
PLAN VIEW

CURB RAMPS
TYPE 4B AND 4B1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

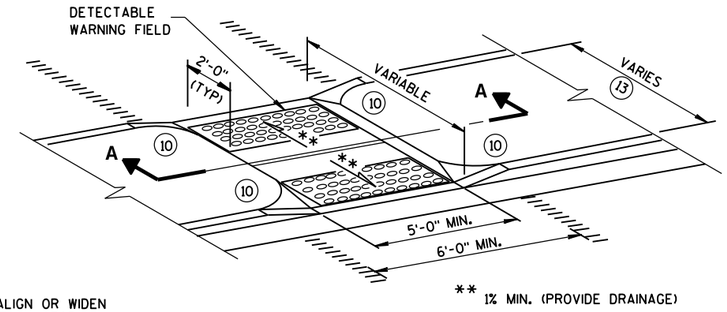
6

S.D.D. 8 D 5-17d



*** DETAILS TO BE DETERMINED BY DESIGNER

TYPE 8
DETECTABLE WARNINGS AT RAILROAD CROSSING



** 1% MIN. (PROVIDE DRAINAGE)

MEDIAN ISLAND NON-ELEVATED CROSSING
TYPE 5

GENERAL NOTES

SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

(2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL NOT EXCEED 7%.

(3) ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.

(4) ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.

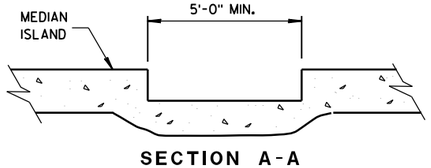
(6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET (MINIMUM 4 FEET X 4 FEET).

(10) INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

(11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.

(12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET ± 0.1' FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD CROSSING SHALL BE 15 FEET FROM THE NEAREST RAIL.

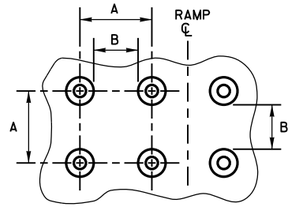
(13) DO NOT INSTALL DETECTABLE WARNING FIELDS IF MEDIAN WIDTH BETWEEN BACK OF CURBS IS LESS THAN 6 FEET.



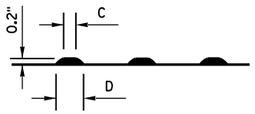
SECTION A-A

	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

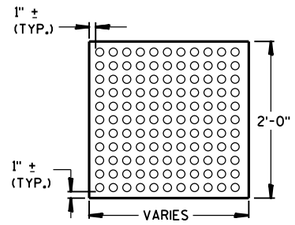


PLAN VIEW

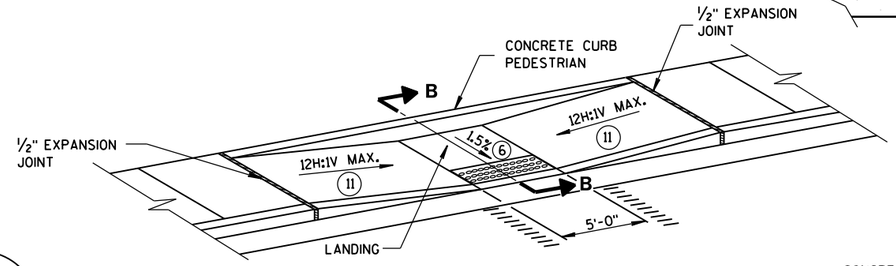


ELEVATION VIEW

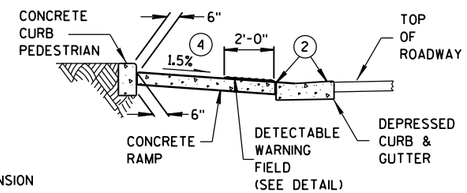
TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



PLAN VIEW
DETECTABLE WARNING FIELD (TYPICAL)

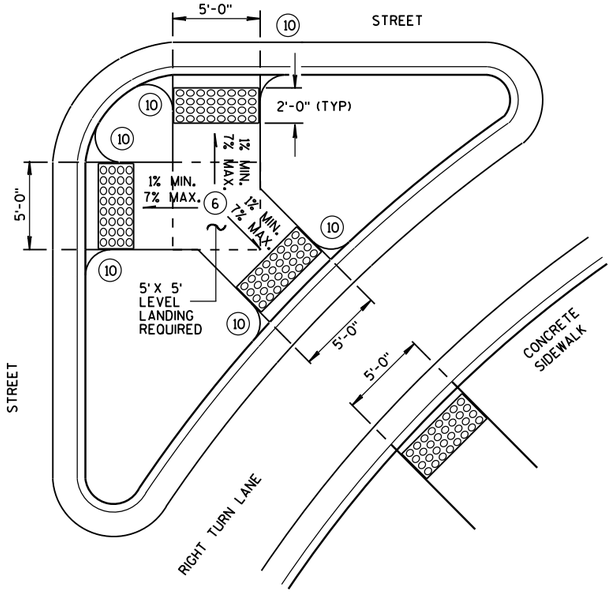


MID-BLOCK CROSSING
TYPE 7A

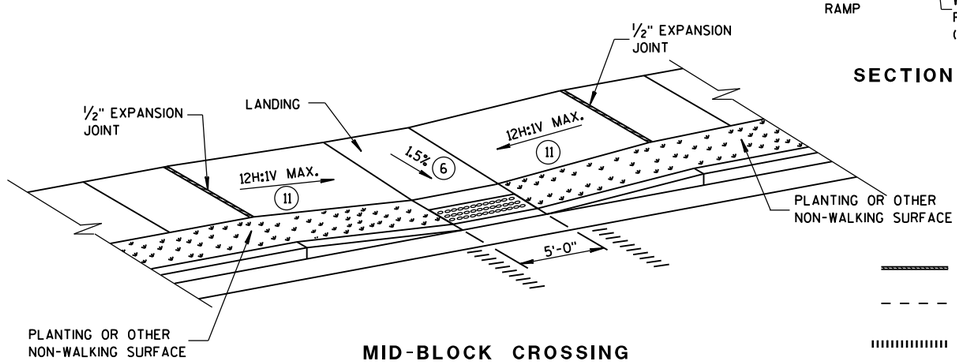


SECTION B-B

REFER TO GENERAL NOTES (2) AND (3) FOR ALL ISLAND CURB RAMPS



TYPE 6
DETECTABLE WARNING AT ISLANDS



MID-BLOCK CROSSING
TYPE 7B

NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMPS MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

LEGEND

- 1/2" EXPANSION JOINT-SIDEWALK
- CONTRACTION JOINT FIELD LOCATED
- PAVEMENT MARKING CROSSWALK (WHITE)

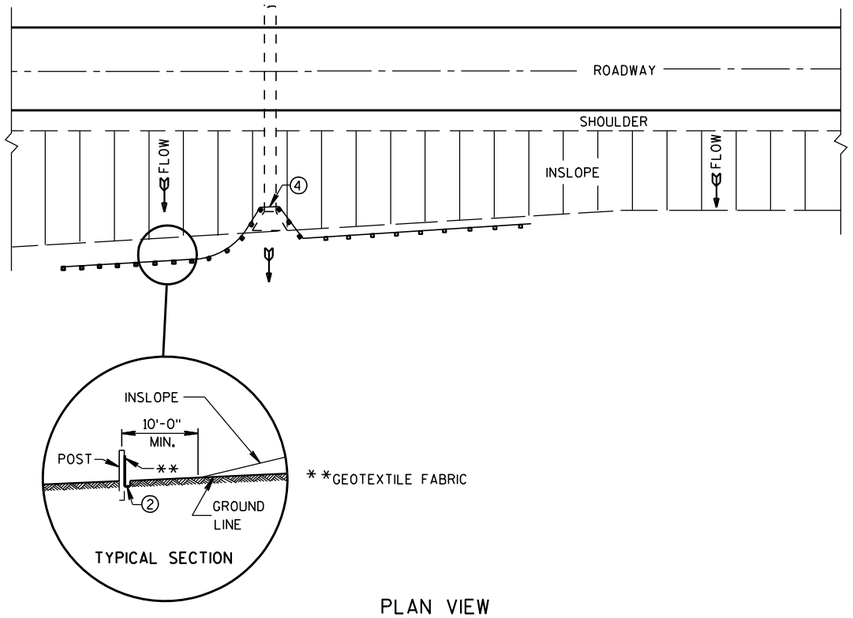
CURB RAMPS TYPES 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

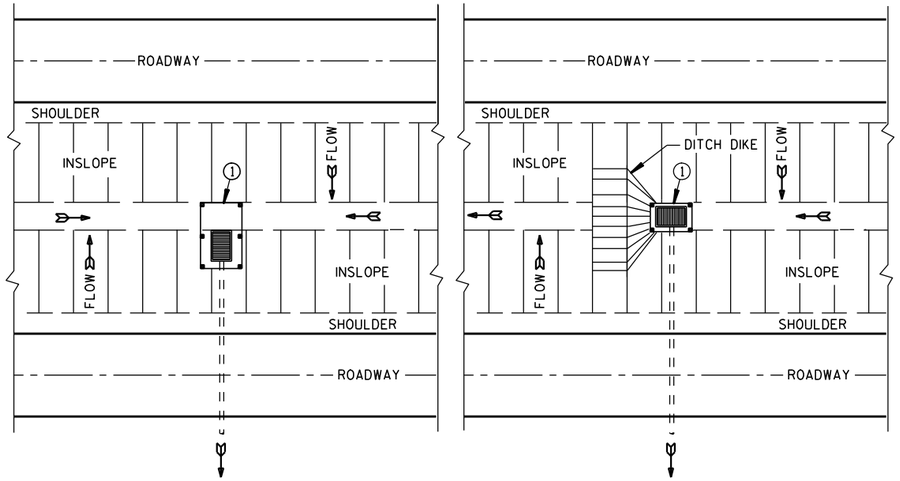
6

S.D.D. 8 D 5-17e



PLAN VIEW

TYPICAL APPLICATION OF SILT FENCE



PLAN VIEW

SILT FENCE AT MEDIAN SURFACE DRAINS

GENERAL NOTES

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

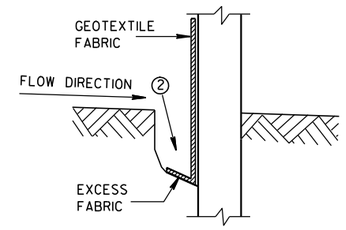
① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.

② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.

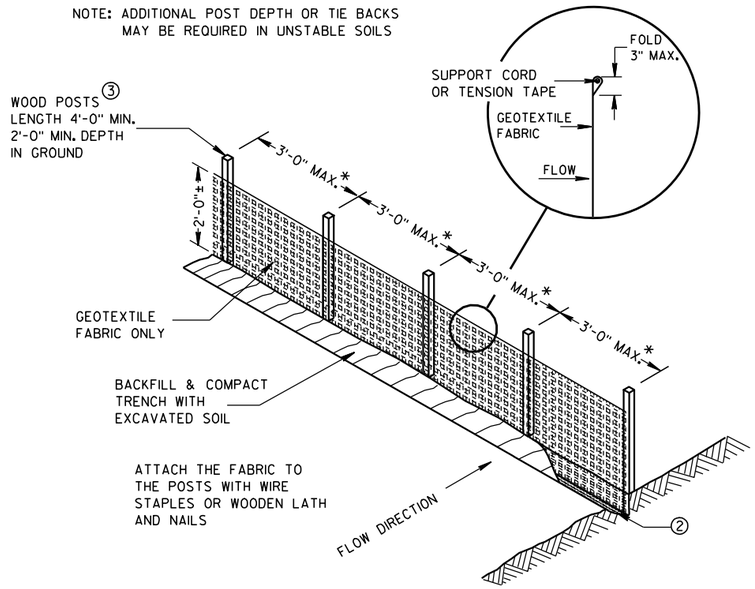
③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1⅛" X 1⅛" OF OAK OR HICKORY.

④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.

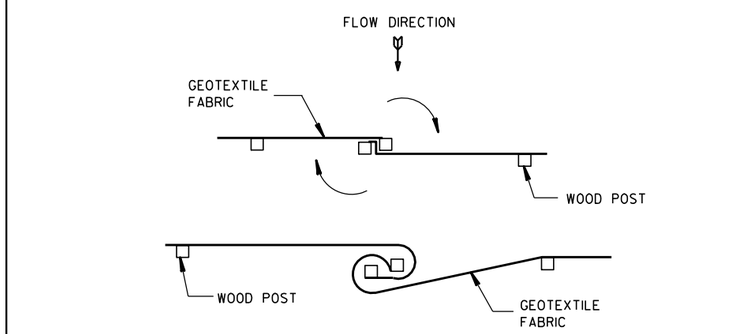
⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



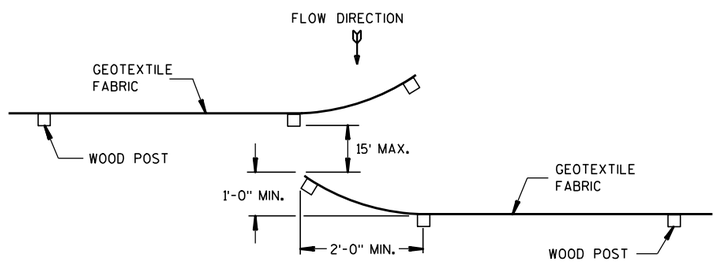
TRENCH DETAIL



SILT FENCE

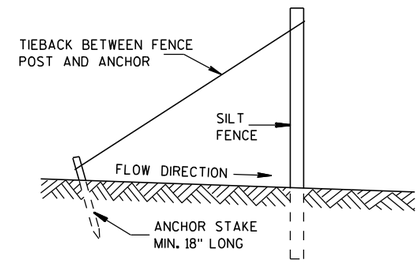


TWIST METHOD



HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK

(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

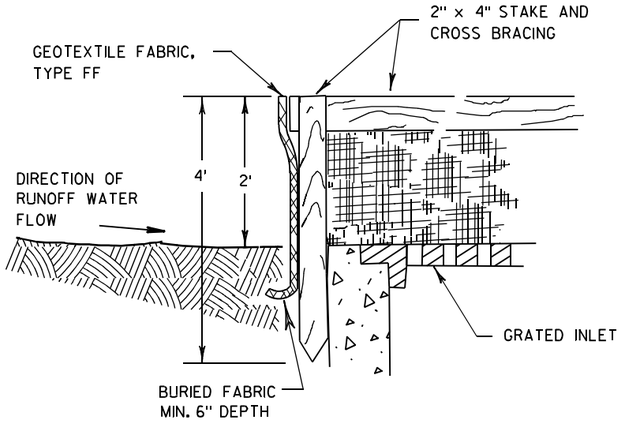
APPROVED
4-29-05 DATE
/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA

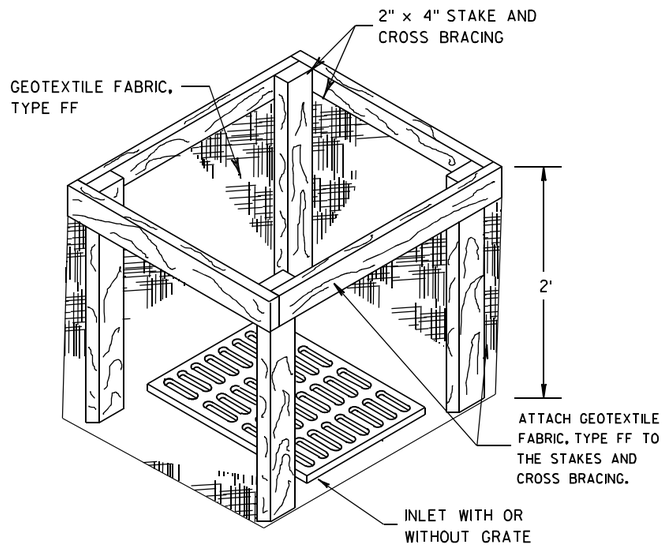
6

S.D.D. 8 E 9-6

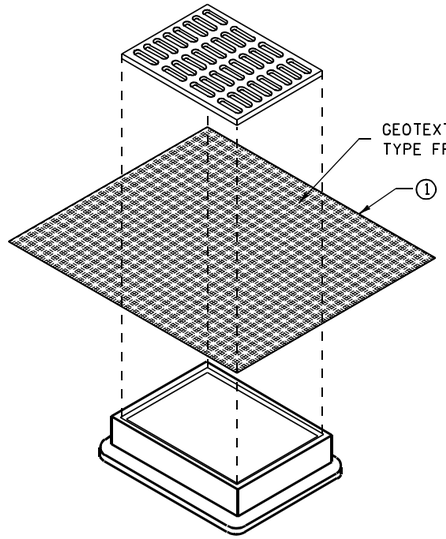
6

S.D.D. 8 E 9-6



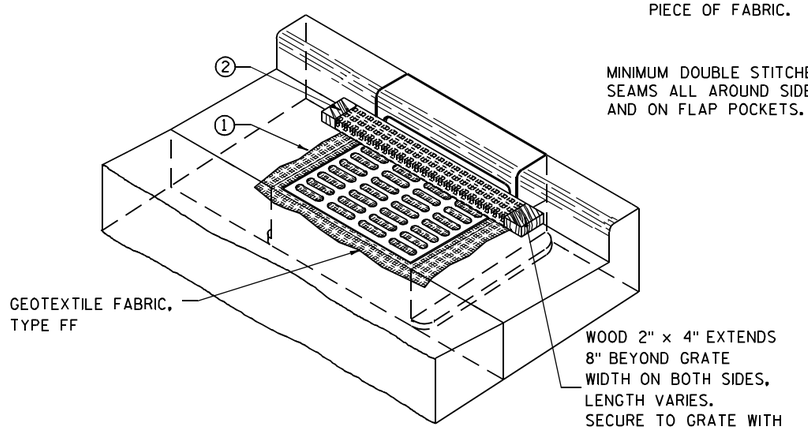


INLET PROTECTION, TYPE A

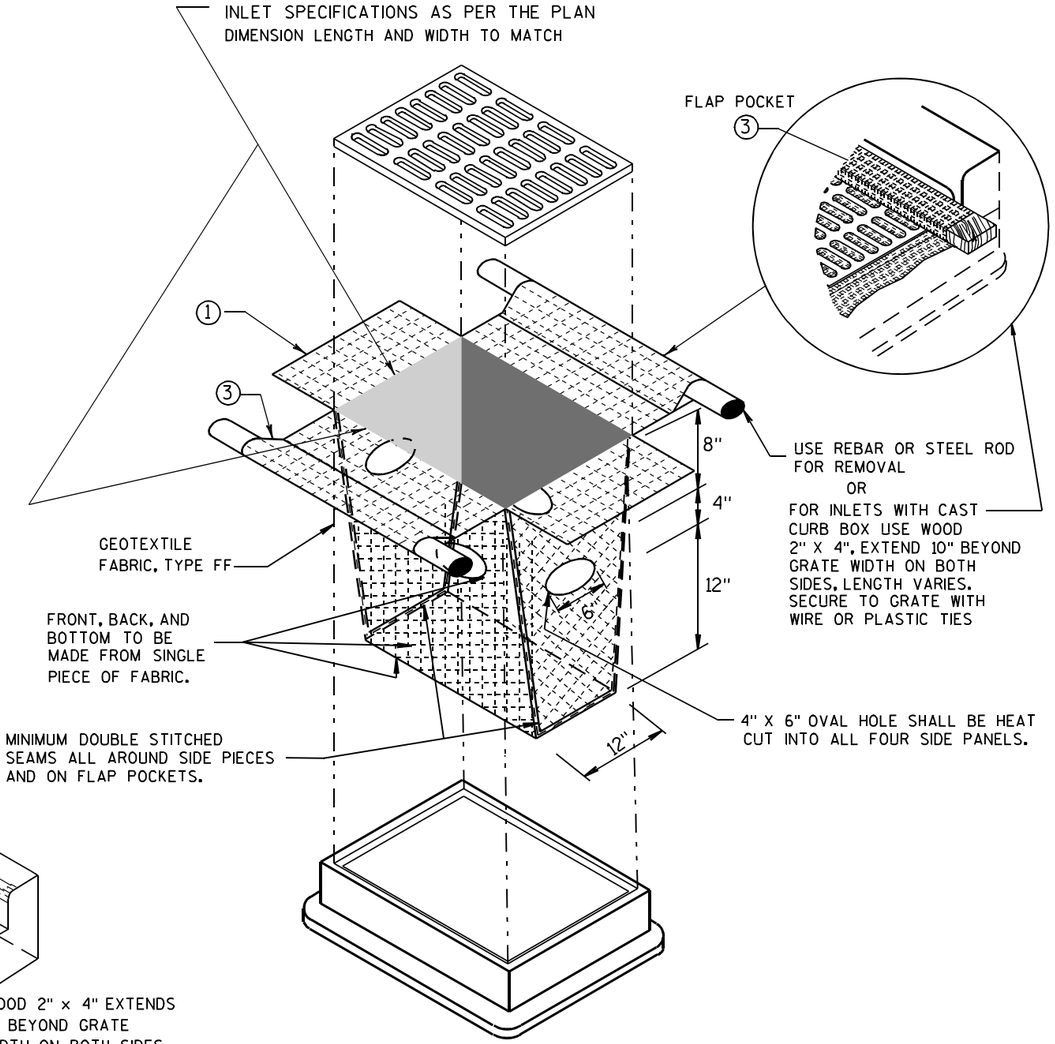


INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)

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



INLET PROTECTION, TYPE C (WITH CURB BOX)



INLET PROTECTION, TYPE D

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

GENERAL NOTES

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

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

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

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

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

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

INSTALLATION NOTES

TYPE B & C

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

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

TYPE D

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

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

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

INLET PROTECTION
TYPE A, B, C, AND D

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

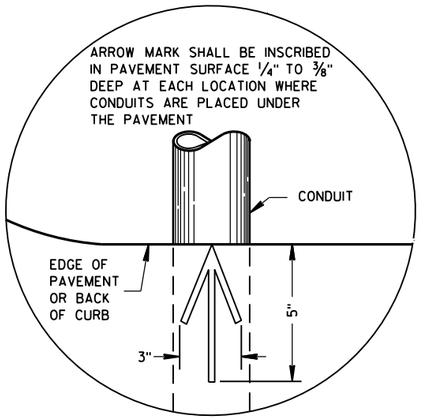
10/16/02
DATE

/S/ Beth Cannestra
CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA

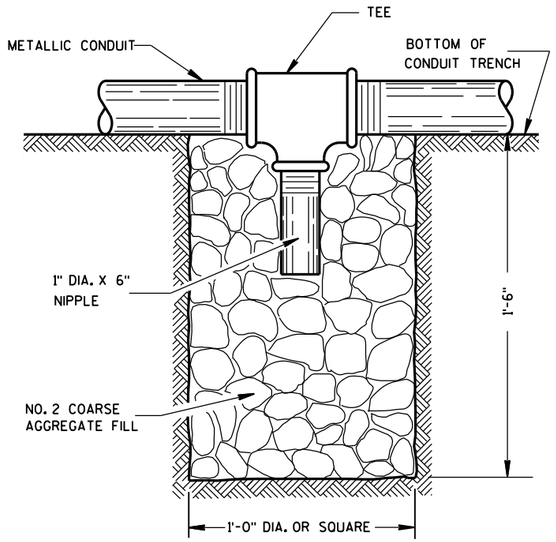
6

S.D.D. 8 E 10-2



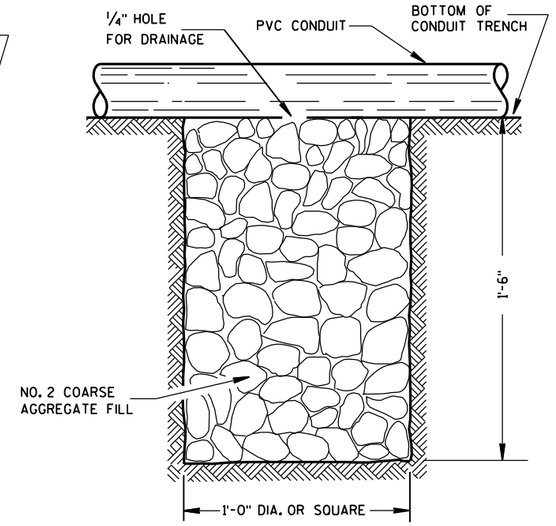
PLAN VIEW

ARROW MARK



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

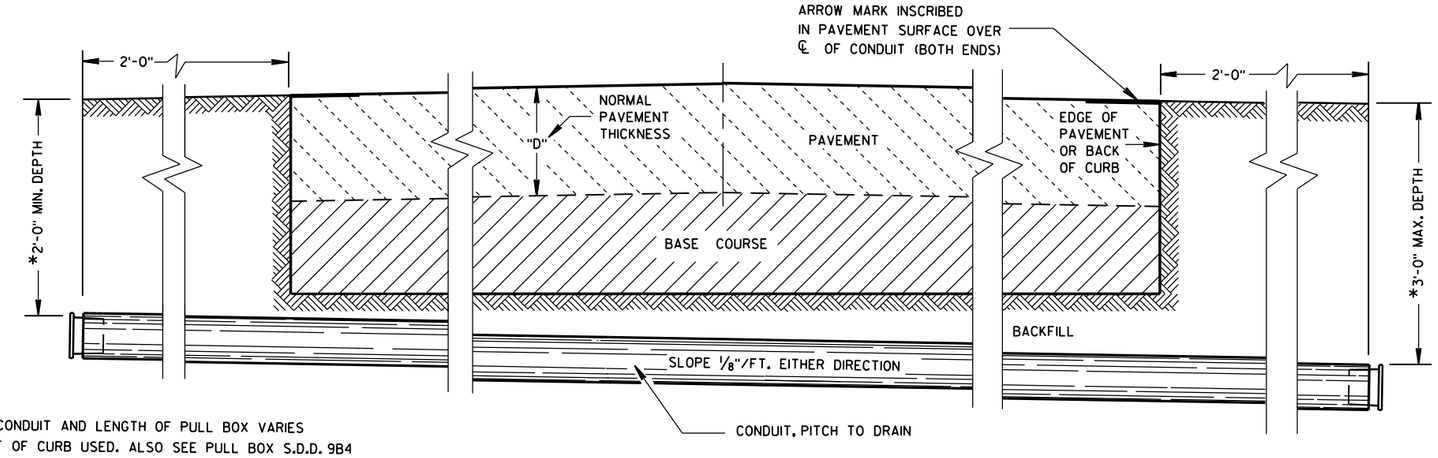
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

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.



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

SIDE ELEVATION

DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015 — DATE
/S/ Ahmet Demirbilek — STATE ELECTRICAL
FHWA

6

S.D.D. 9 B 2-9

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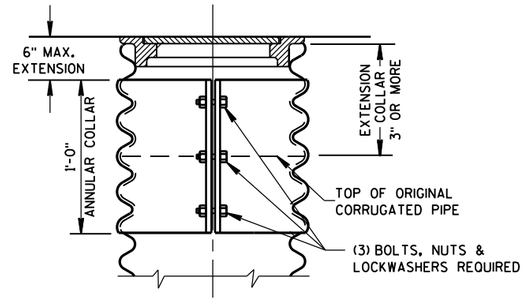
S.D.D. 9 B 2-9

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

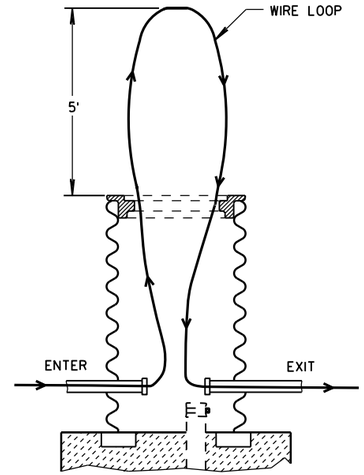
DIMENSION IN INCHES		CORRUGATED STEEL PIPE								
PIPE DIAMETER (INSIDE)	A	12	12	12	18	18	18	24	24	24
PIPE LENGTH **	B	24	30	36	24	30	36	36	42	48
WALL THICKNESS	C	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064	0.064
COVER	D	10 1/4	10 1/4	10 1/4	16 1/4	16 1/4	16 1/4	22 1/4	22 1/4	22 1/4
FRAME	E	14 1/2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

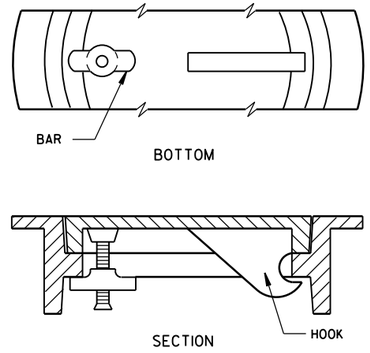
** NORMALLY USED LENGTHS. THE PROJECT ENGINEER SHALL DETERMINE IF PIPE LENGTHS, OTHER THAN THOSE SPECIFIED, SHALL BE USED, TO A MAXIMUM OF 48" (CONTINUOUS LENGTH, NON-SPLICED). THE ADDITIONAL LENGTH SHALL BE INCIDENTAL TO THE PULL BOX BID PRICE.



CORRUGATED PIPE EXTENDER

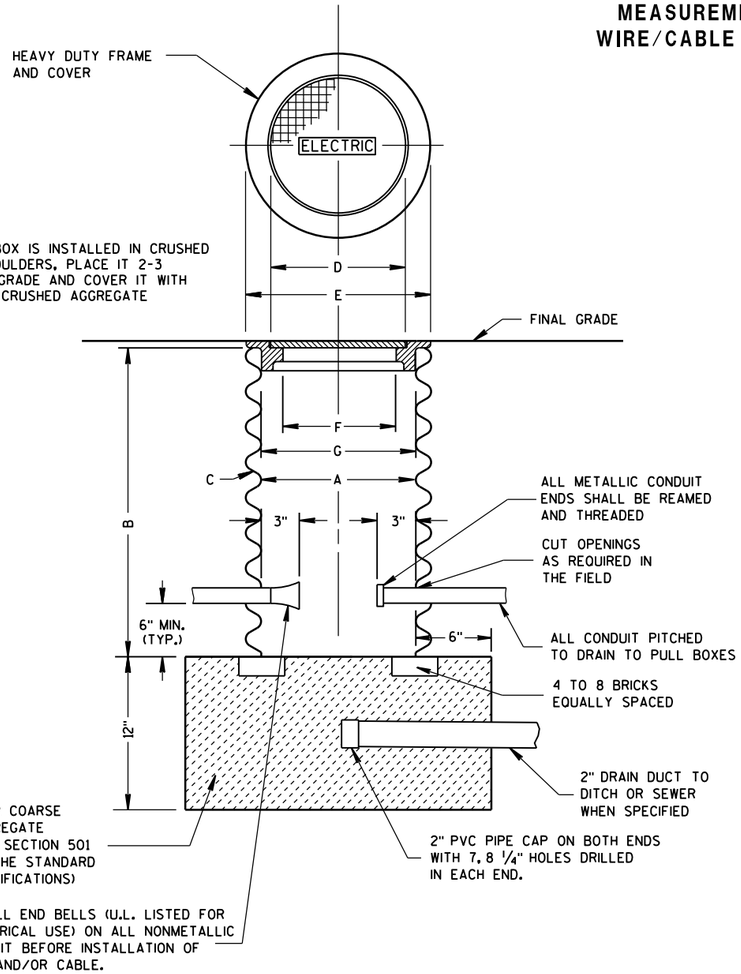


MEASUREMENT DETAIL FOR WIRE/CABLE IN THE PULL BOX



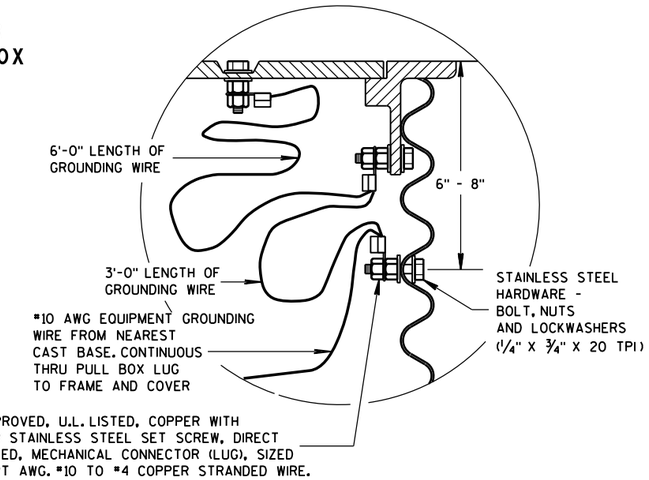
ALTERNATE COVER (LOCKING)

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.

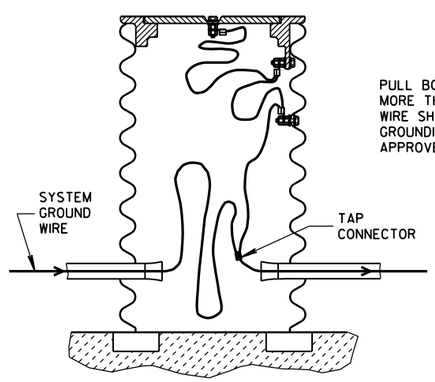
ENTRANCE HOLES INTO PULL BOXES SHALL BE CUT WITH A CIRCULAR HOLE SAW OR HYDRAULIC CONDUIT PUNCH. HOLE SIZE SHALL BE THE OUTSIDE DIAMETER OF THE CONDUIT THAT IS TO FIT IN THE OPENING PLUS NO MORE THAN 1/4".

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

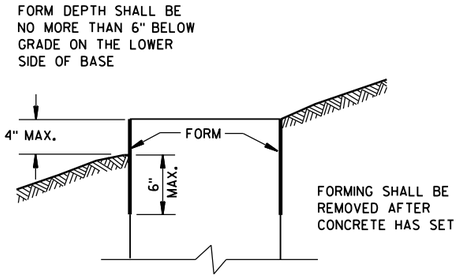
PULL BOX

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 9 B 4-11



FORMING DETAIL

QUANTITY REQUIREMENTS	CONCRETE BASE TYPE		
	1	2	5 & 6
APPROX. CUBIC YARDS OF CONCRETE	0.40	0.57	0.40
LBS. OF HOOP BAR STEEL	NONE	23	16
LBS. OF VERTICAL BAR STEEL	NONE	60	18

GENERAL NOTES

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

BASES SHALL BE EXCAVATED BY USE OF A CIRCULAR AUGER.

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

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

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

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

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

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

GENERAL NOTES (CONTINUED)

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

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

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

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

A NO. 4 AWG, STRANDED COPPER EQUIPMENT GROUNDING CONDUCTOR SHALL BE EXOTHERMICALLY WELDED TO THE EQUIPMENT GROUNDING ELECTRODE (GROUND ROD) FOR TYPE 1, TYPE 2, TYPE 5, AND TYPE 6 BASES.

THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED TO ENTER THE BASE OF THE TYPE 2 AND TYPE 5 BASES THROUGH A 1 INCH CONDUIT INSTALLED FOR GROUNDING PURPOSES, LEAVING A 4 FOOT COIL OF WIRE ABOVE THE CONCRETE BASE. THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE NEATLY COILED AND THE COILS TIED TOGETHER.

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

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

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

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

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

(2) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(3) (4) 1" DIA. X 5'-0" ANCHOR RODS.

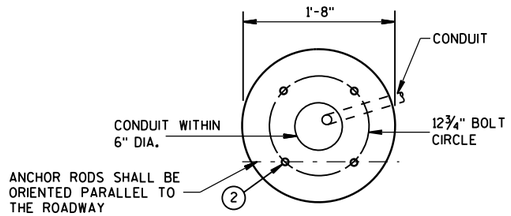
(4) (6) NO. 6 X 6'-8" BAR STEEL REINFORCEMENT.

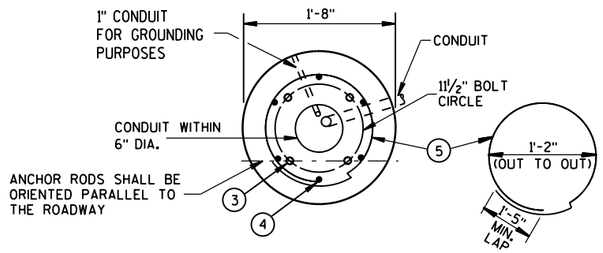
(5) (7) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

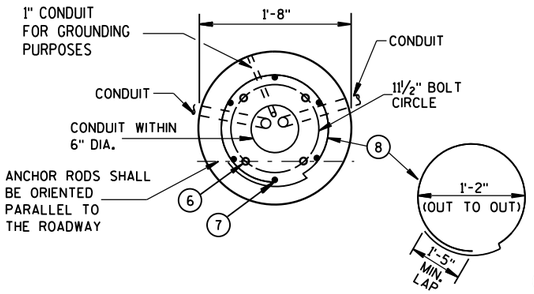
(6) (4) 1" DIA. X 3'-6" ANCHOR RODS.

(7) (6) NO.4 X 4'-8" BAR STEEL REINFORCEMENT.

(8) (5) NO. 4 X 5'-1" BAR STEEL REINFORCEMENT @ 1'-0" C-C.

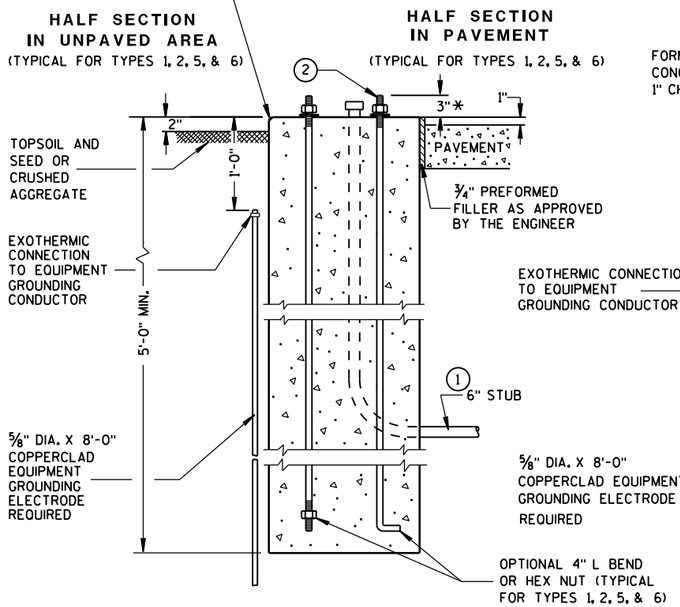






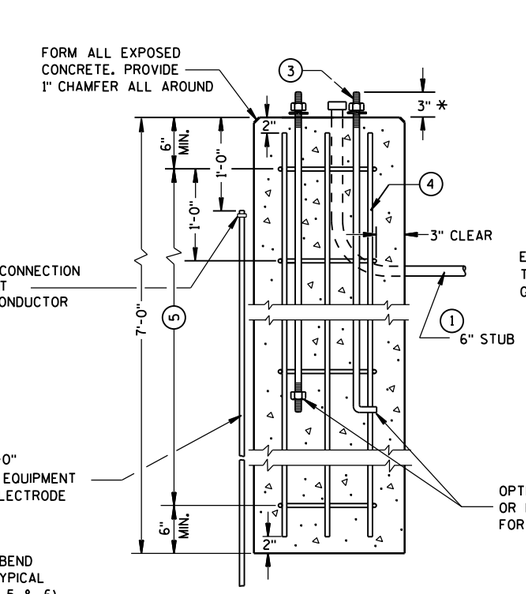
HALF SECTION IN UNPAVED AREA

(TYPICAL FOR TYPES 1, 2, 5, & 6)

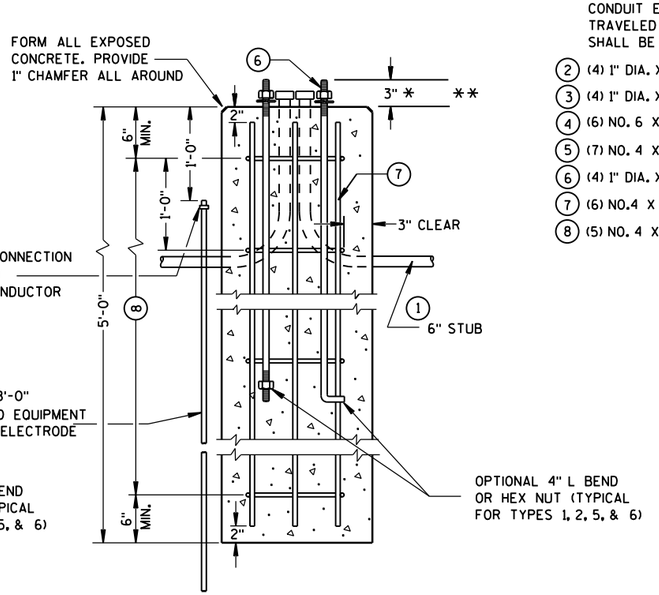


HALF SECTION IN PAVEMENT

(TYPICAL FOR TYPES 1, 2, 5, & 6)



TYPE 2



TYPE 5 & 6

CONCRETE BASES

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

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

CONCRETE BASES, TYPES 1, 2, 5, & 6

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 9 C 2-7

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS.

LEVELING SHIMS, IF NEEDED, SHALL BE DESIGNED FOR THE PURPOSE AND USED UNDER CAST BASES WHEN PLUMBING POLES OR STANDARDS DURING INSTALLATION. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE.

SHIM LENGTH SHALL BE LONG ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED, U.L. LISTED, COPPER WITH BRASS OR STAINLESS STEEL SET SCREW, DIRECT BURY RATED, MECHANICAL CONNECTOR (LUG), SIZED TO ACCEPT AWG. #10 TO #4 COPPER STRANDED WIRE SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

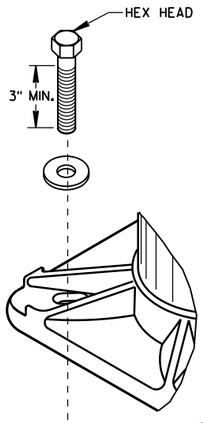
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

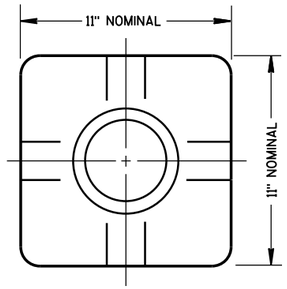
SHOULD THE MANNER OF ATTACHMENT OF THE LUG REQUIRE WASHERS, HEX NUTS, LOCK WASHER - THEY SHALL BE STAINLESS STEEL AS IS THE BOLT. THE MANNER OF ATTACHMENT SHALL NOT BLOCK ACCESSIBILITY TO WIRE PLACEMENT IN THE CONNECTOR.

PEDESTAL BASE COLLAR THREADING SHALL BE TAPERED AND IN ACCORDANCE WITH NATIONAL PIPE THREADING DIMENSIONS.

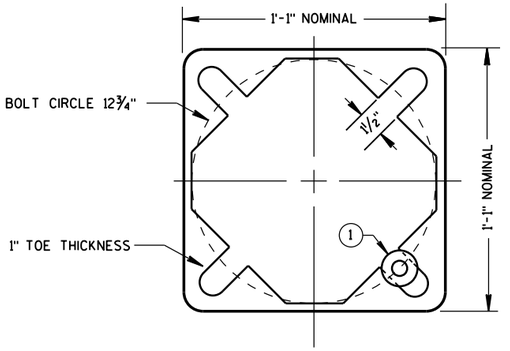
BASE COLLAR THREADING SHALL EXTEND INTO THE BASE COLLAR WITH SUFFICIENT DEPTH TO ACCEPT THE INSTALLATION OF TRAFFIC SIGNAL STANDARDS TO A DEPTH OF 1 1/2", THEN TIGHTENING TO A POINT OF BEING IMMOVABLE.

THE ACCESS DOOR SHALL BE OF THE SAME MATERIAL AS THE BASE.

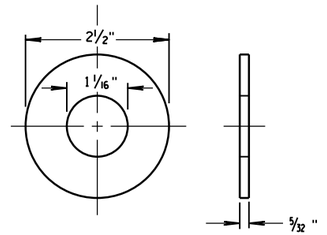




TOP VIEW
(PEDESTAL BASE)

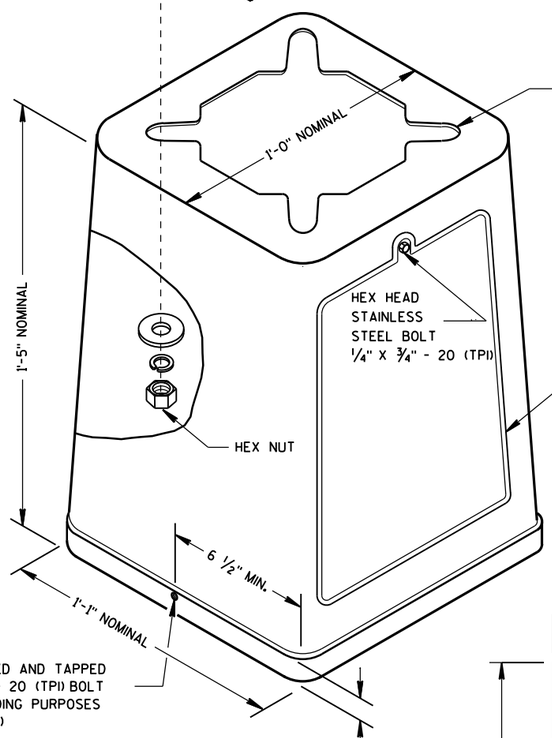


BOTTOM VIEW
(PEDESTAL BASE)

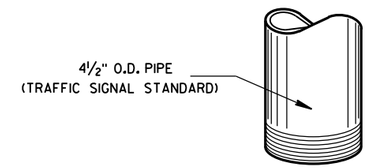


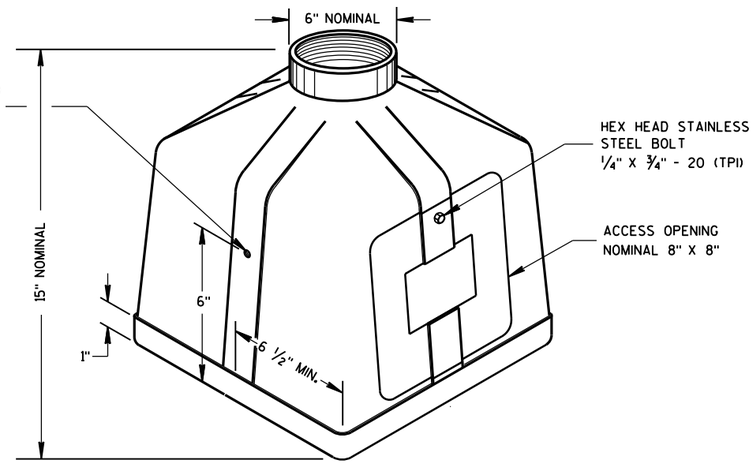
ZINC COATED STEEL WASHER
TO BE PROVIDED BY THE CONTRACTOR

PEDESTAL BASE WASHER (1)



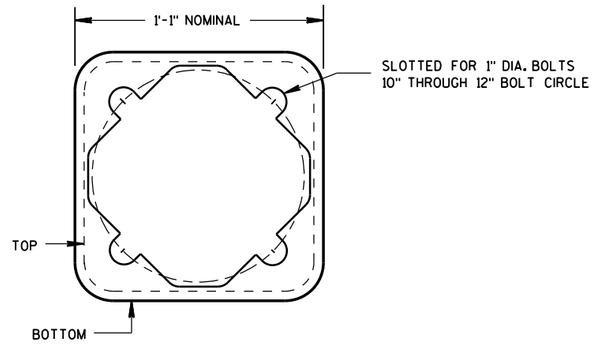
ISOMETRIC VIEW



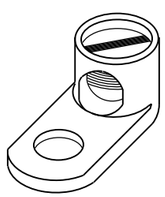


ISOMETRIC VIEW

PEDESTAL BASE



BOTTOM VIEW
(TRANSFORMER BASE)

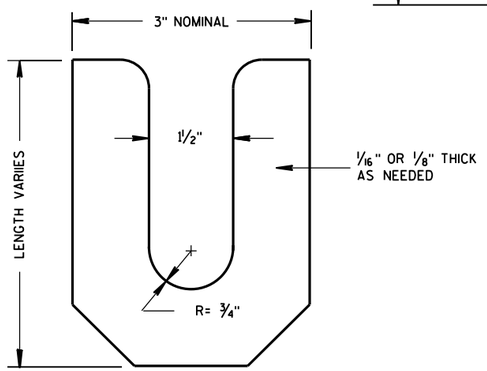


TYPICAL MECHANICAL CONNECTOR LUG

TO BE FURNISHED WITH EACH BASE

TRANSFORMER BASE

INTENDED FOR USE WITH TYPE 2, 3, 4, 5 & 6 POLES



LEVELING SHIM

TRANSFORMER/PEDESTAL BASES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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S.D.D. 9 C 3-4

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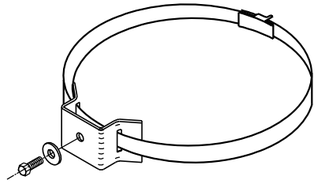
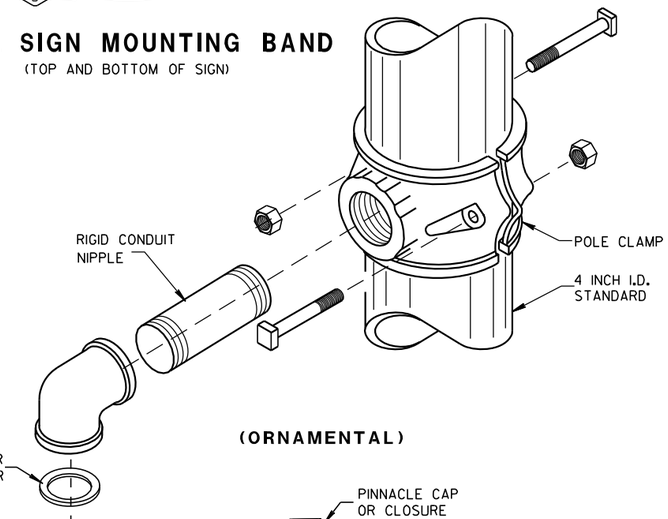
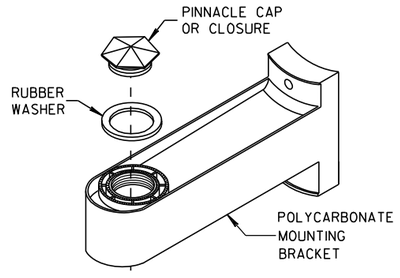
S.D.D. 9 C 3-4



TYPICAL SIGN MOUNTING BAND
(TOP AND BOTTOM OF SIGN)



(ORNAMENTAL)



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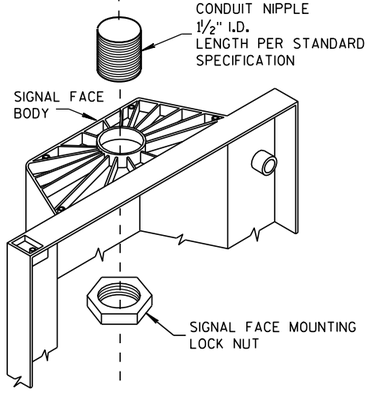
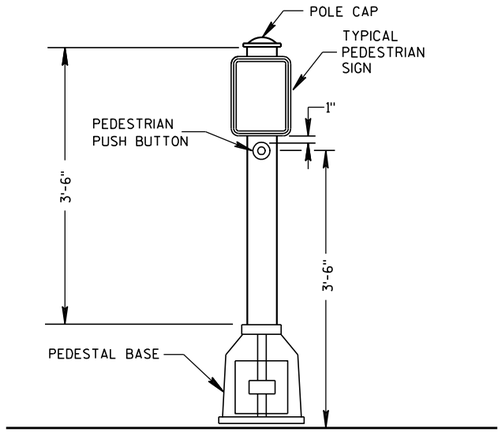
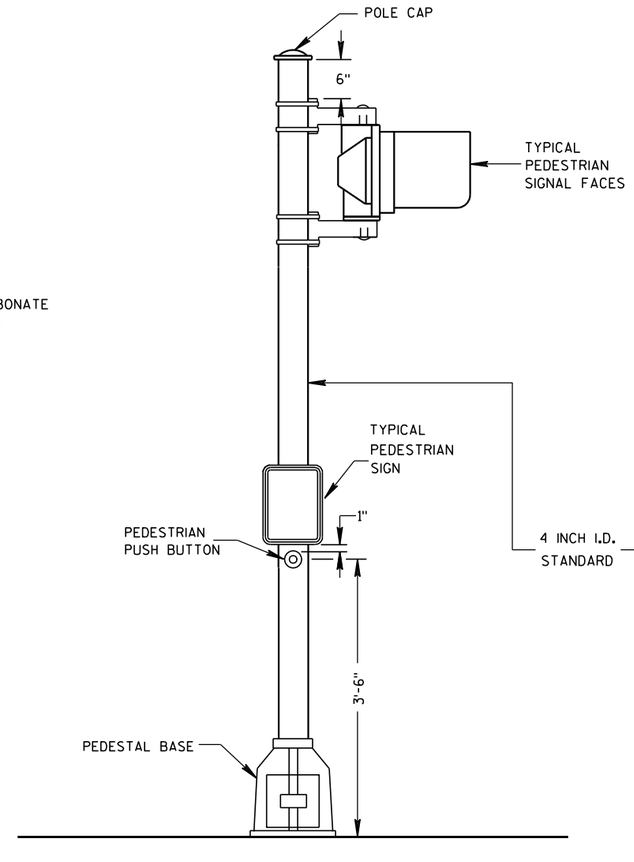


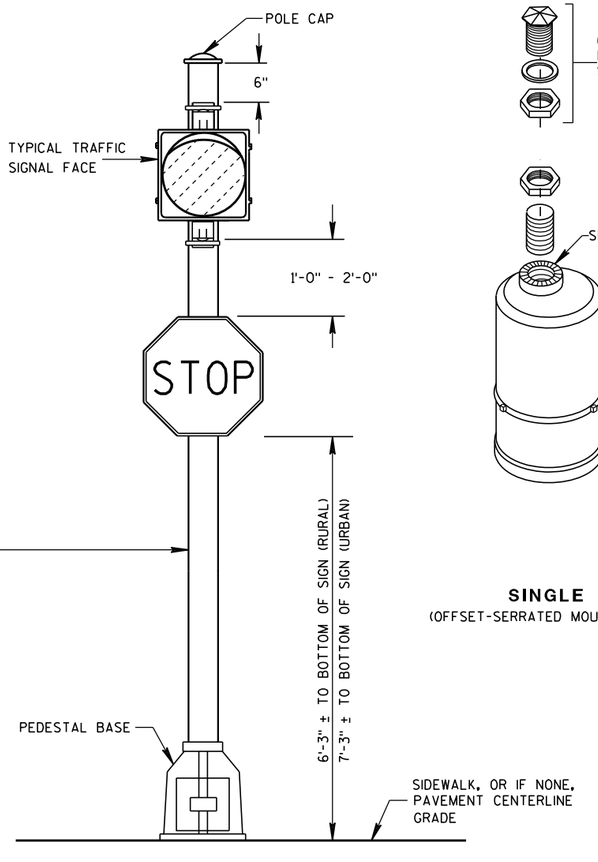
SIGNAL FACE MOUNTING DETAILS



PEDESTRIAN PUSH BUTTON TYPICAL MOUNTING



PEDESTRIAN FACE STANDARD-10 FT.
(WALK-DON'T WALK)



STANDARD FLASHER.
10 FOOT, 13 FOOT OR 15 FOOT AS REQUIRED

GENERAL NOTES

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

SEE THE SIGNAL PLAN FOR REQUIRED SIGNAL FACE SIZES.

LOCATIONS SHALL BE AS SHOWN ON THE PLANS.

ALL PEDESTAL BASES SHALL BE MOUNTED ON CONCRETE BASE - TYPE 1.

FOR APPROVED MOUNTING HARDWARE, SEE THE CONTRACT SPECIFICATIONS.

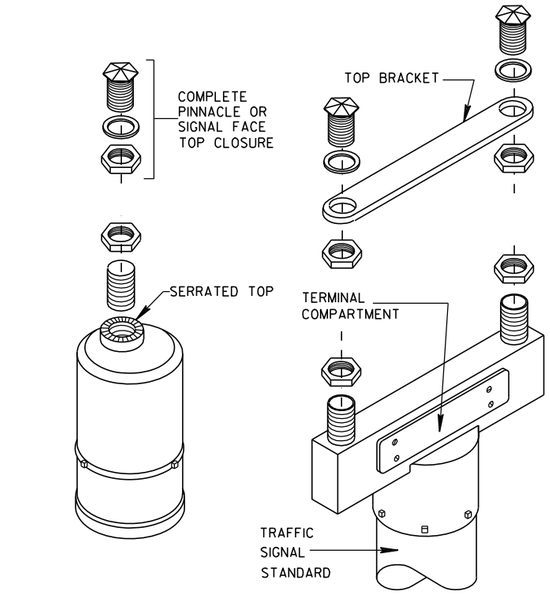
POLYCARBONATE SIGNAL FACE MOUNTING BRACKETS SHALL BE USED UNLESS ORNAMENTAL POLE CLAMPS ARE SPECIFIED.

LENGTH OF TRAFFIC STANDARDS SHALL BE AS SHOWN ON THE PLANS.

MOUNTINGS AND BRACKETS SHALL BE AS SHOWN ON THE PLANS OR DESCRIBED IN THE SPECIAL PROVISIONS (BY THE DISTRICT TRAFFIC ENGINEER).

PEDESTRIAN SIGNS SHALL BE AS DESIGNATED IN THE PLANS.

FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) ¼" X ¾" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.



SINGLE
(OFFSET-SERRATED MOUNTING)

DOUBLE
(SERRATED MOUNTING)

SLIPFITTERS

TRAFFIC SIGNAL STANDARD PEDESTRIAN AND FLASHER TYPICAL MOUNTING DETAILS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/11/10
DATE

/S/ John Corbin
STATE ELECTRICAL ENGI

HWYS

FHWA

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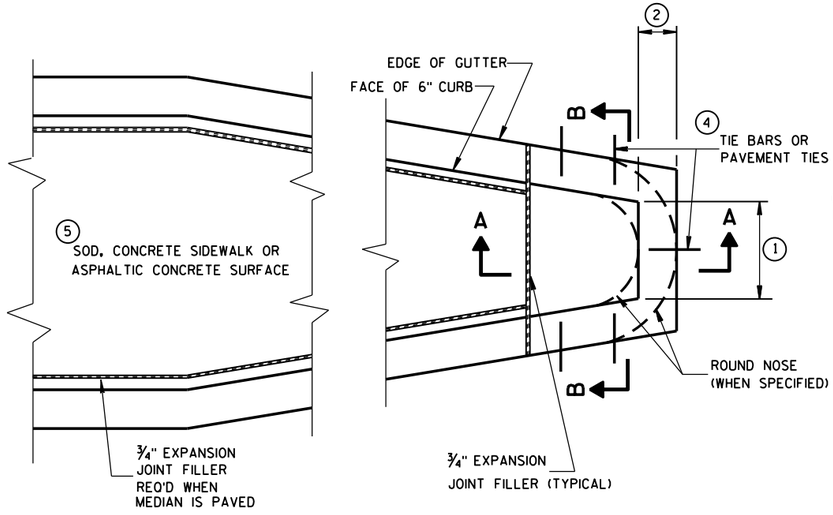
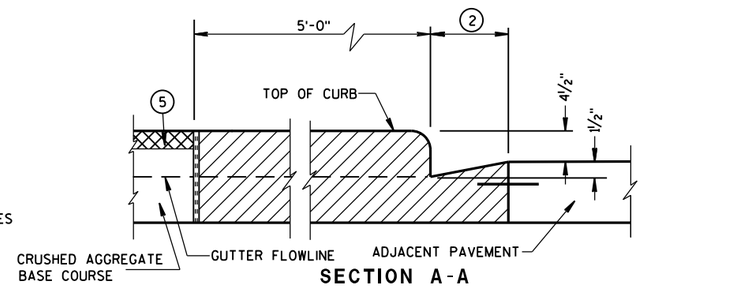
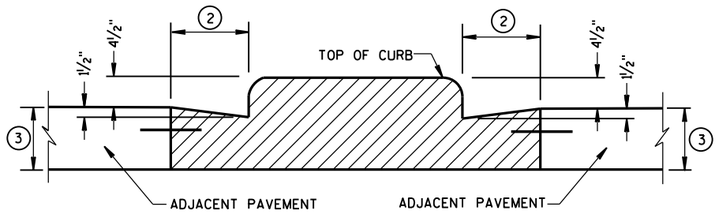
S.D.D. 9 E 7-5







CONCRETE MEDIAN BLUNT NOSE DETAIL

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) SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).

(2) WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.

(3) DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:

(1) NEW OR EXISTING CONCRETE PAVEMENT.

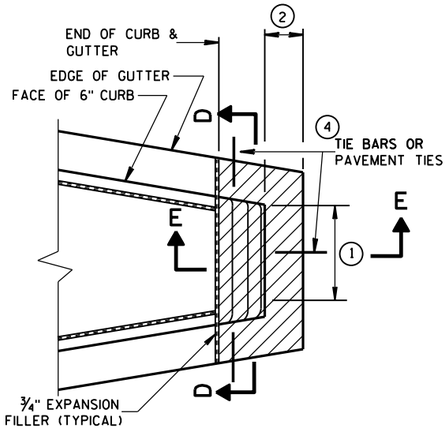
(2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.

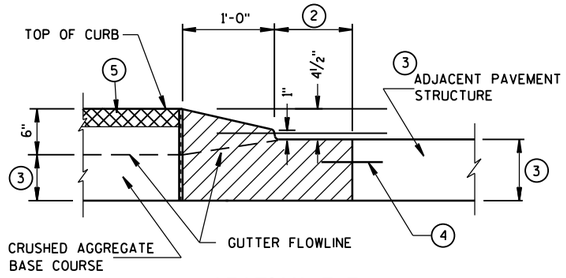
(3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

(4) TIE BARS OR PAVEMENT TIES REQUIRED IN NEW CONCRETE PAVEMENT OR CONCRETE BASE COURSE. TIE BARS SHALL BE NO. 4 X 2'-0" SPACED AT 2'-0" C-C.

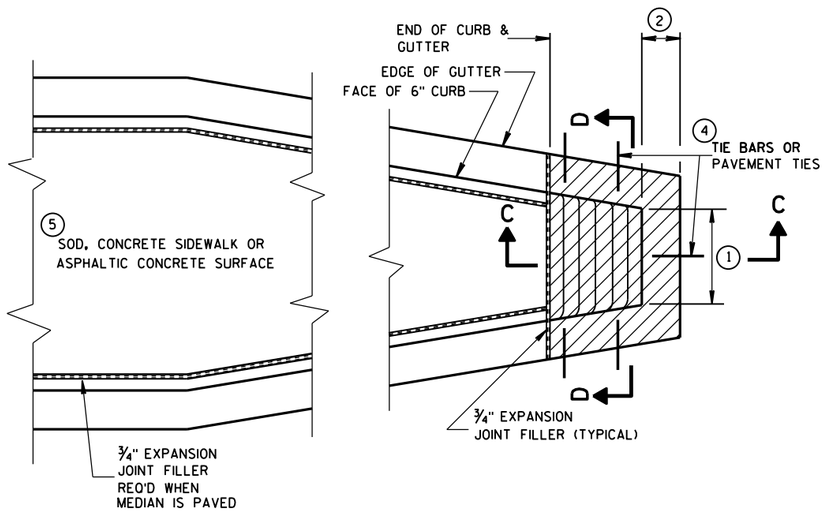
PAVEMENT TIES REQUIRED IN EXISTING CONCRETE BASE COURSE. PAVEMENT TIES SHALL BE NO. 6 X 1'-0" SPACED AT 3'-0" C-C INSTALLED ON A HORIZONTAL SKEW OF 6:1. THE DIRECTION OF SKEW SHALL ALTERNATE AFTER EVERY ONE OR TWO BARS.

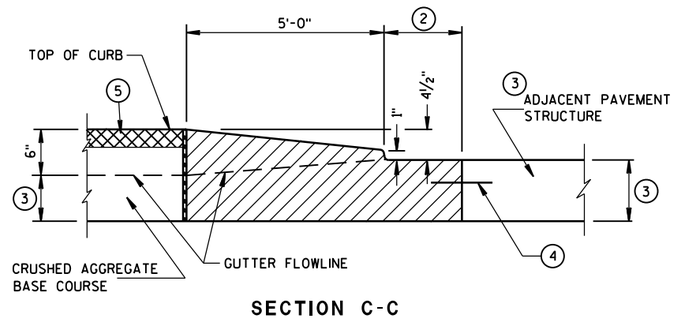
(5) SURFACE TYPE AND DETAILS ARE SHOWN ELSEWHERE IN THE PLAN.



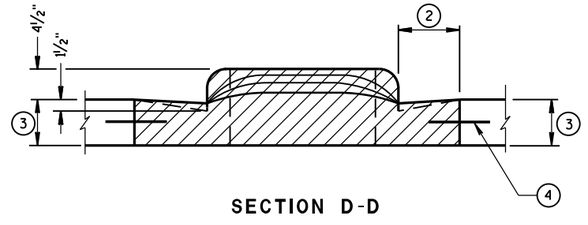


CONCRETE MEDIAN SLOPED NOSE TYPE 2





CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/8/2006
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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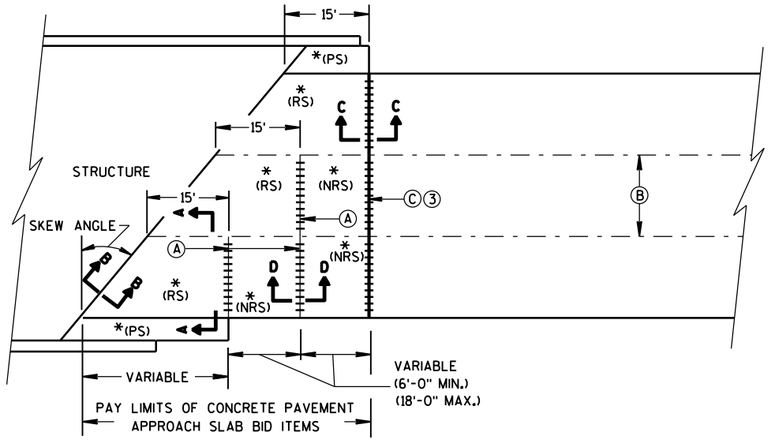
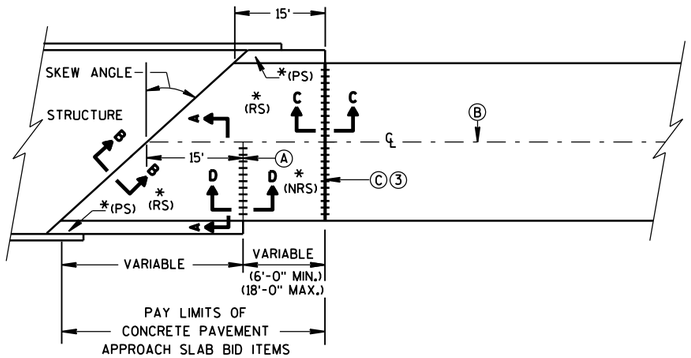
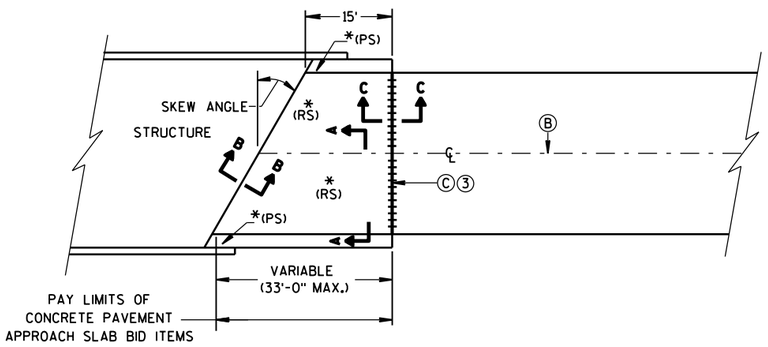
S.D.D. 11 B 2-2



SKEWED APPROACH
(PAVEMENT MORE THAN 2 LANES)



SKEWS >20°
(PAVEMENT WIDTH ≤30')



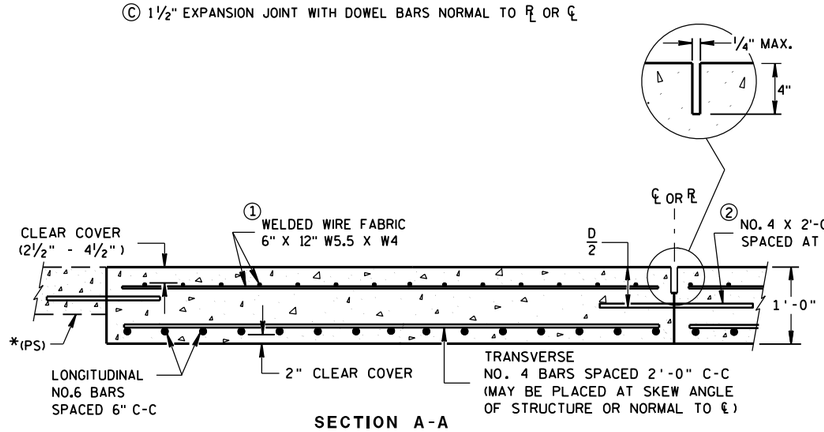
SKEWS ≤20°
(PAVEMENT WIDTH ≤30')

APPROACH SLAB AND ADJACENT PAVEMENT

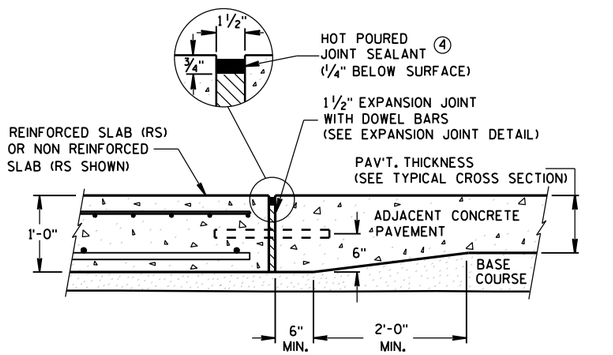
*(RS) = REINFORCED CONCRETE SLAB
*(PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
(SEE DETAILS ELSEWHERE IN THE PLAN)
*(NRS) = NON-REINFORCED CONCRETE SLAB

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

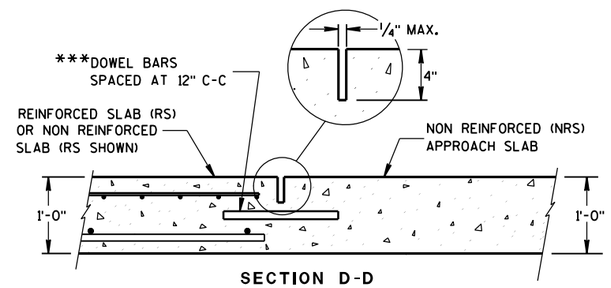
Ⓐ STANDARD CONTRACTION JOINT NORMAL TO ℄ OR ℄
Ⓑ STANDARD LONGITUDINAL JOINT WITH TIE BARS.
Ⓒ 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO ℄ OR ℄



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.

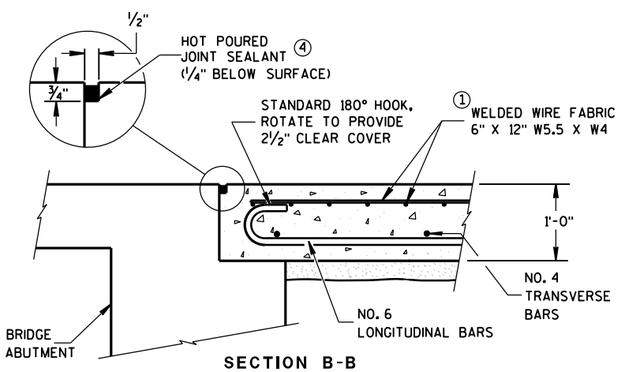
① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.

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

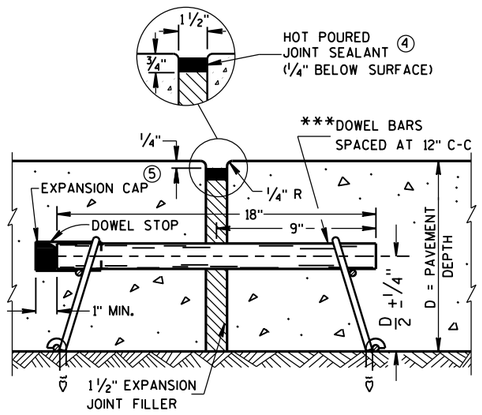
③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.

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

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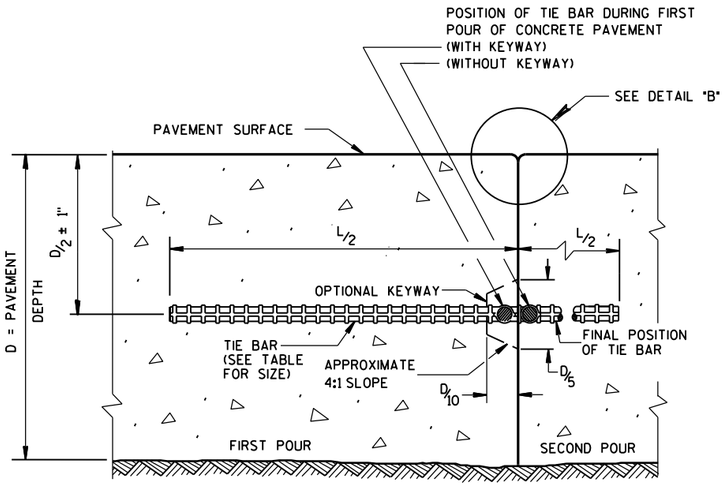
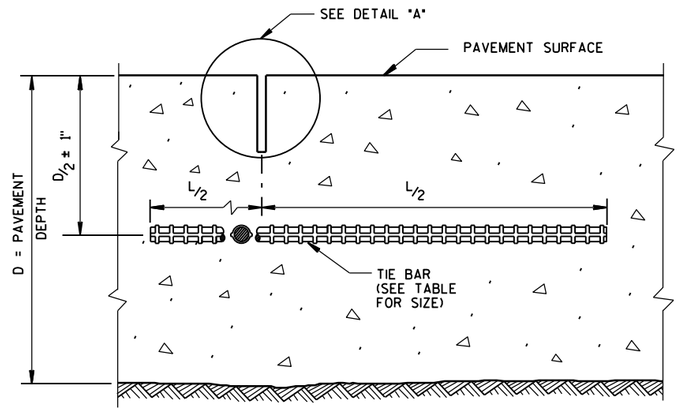
S.D.D. 13 B 2-8a



CONSTRUCTION JOINT



SAWED JOINT

GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

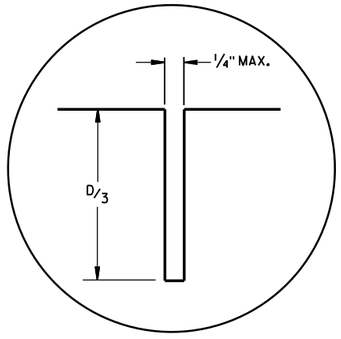
(1) ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

(2) PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

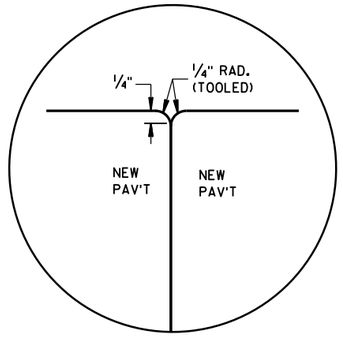
PLAN VIEW

SECTION A-A

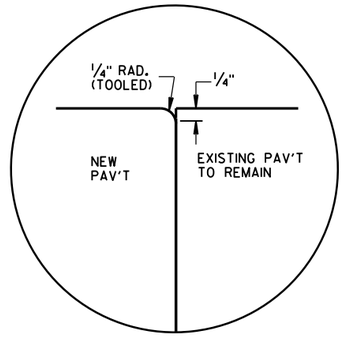
LONGITUDINAL CONSTRUCTION JOINT TIE BARS ANCHORED INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



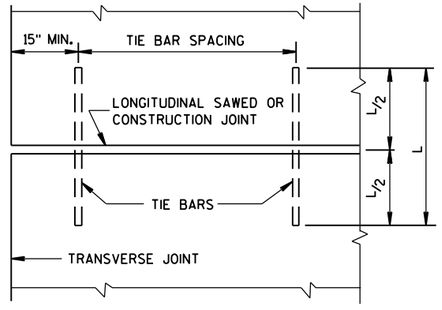
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24"**

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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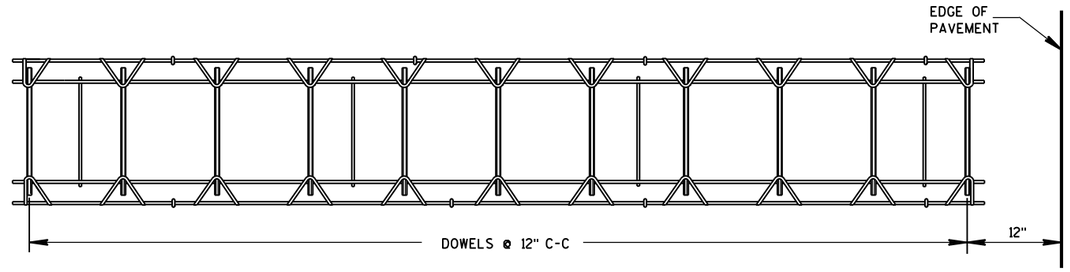
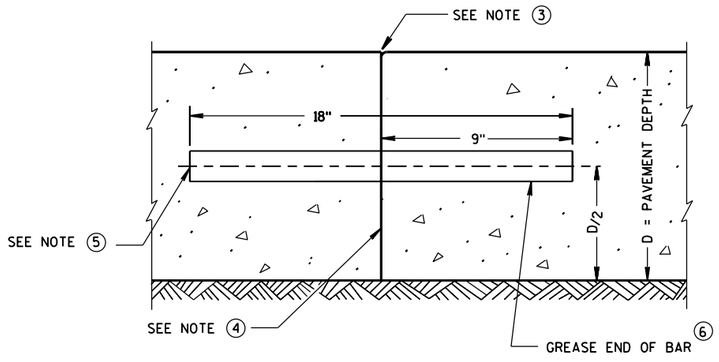
S.D.D. 13 C 1-18



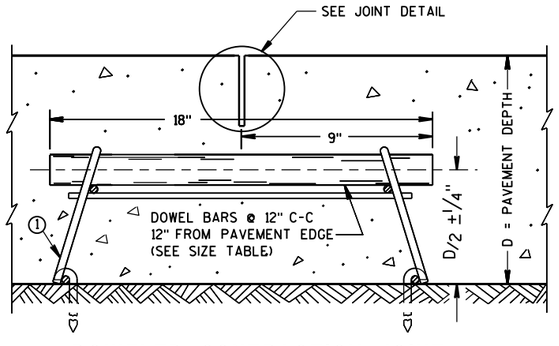
PLAN VIEW

SIDE VIEW

CONTRACTION JOINT DOWEL ASSEMBLY ①



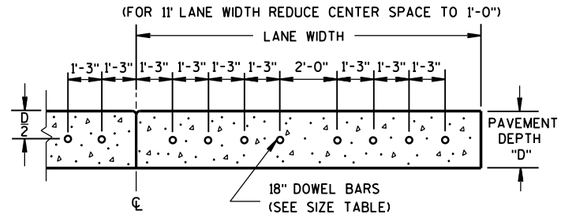
TRANSVERSE CONSTRUCTION JOINT



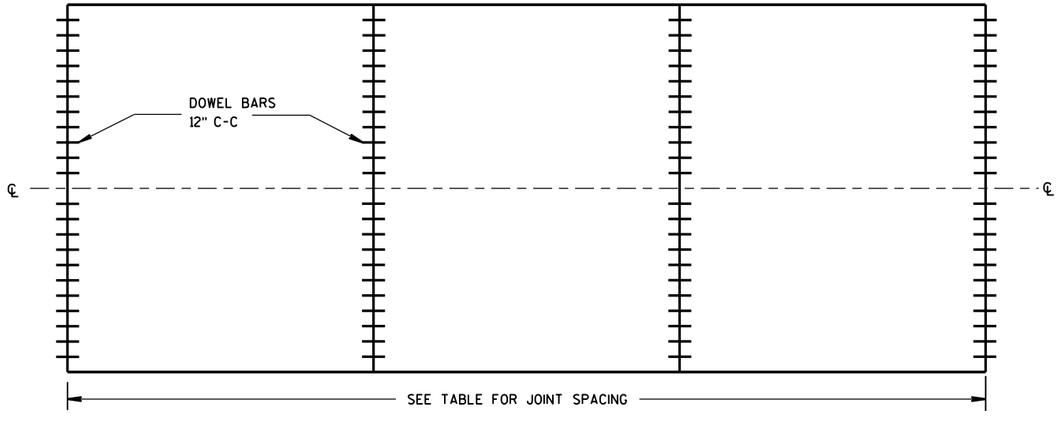
DOWELED CONTRACTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 ½", 6", 6 ½"	NONE	12'
7", 7 ½"	1"	14'
8", 8 ½"	1 ¼"	15'
9", 9 ½"	1 ¼"	15'
10" & ABOVE	1 ½"	15'



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



CONTRACTION JOINT LOCATIONS

GENERAL NOTES

CONTRACTION JOINTS

CONSTRUCT TRANSVERSE CONTRACTION JOINTS NORMAL TO THE CENTERLINE. SHOW THE LOCATION OF CONTRACTION JOINTS THROUGH INTERSECTIONS ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT SEAL OR FILL CONTRACTION JOINTS.

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

FOR PAVEMENT SLABS OF VARYING WIDTHS, LOCATE THE OUTER MOST DOWEL BAR SO THAT THE CENTER OF THE BAR IS A MINIMUM OF 6 INCHES AND A MAXIMUM OF 18 INCHES FROM THE LONGITUDINAL JOINT AND THE FREE EDGE OF PAVEMENT.

CONSTRUCTION JOINTS

LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.

① **OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.**

② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.

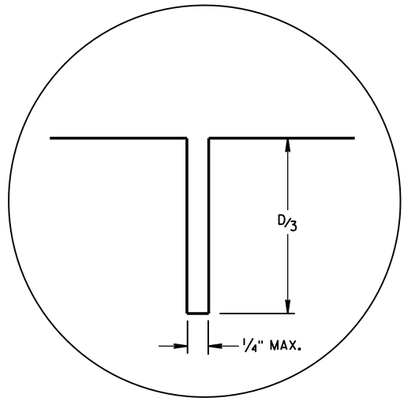
③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A ¼-INCH RADIUS AT FORMED JOINTS.

④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.

⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.

⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS ⅛-INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.



JOINT DETAIL

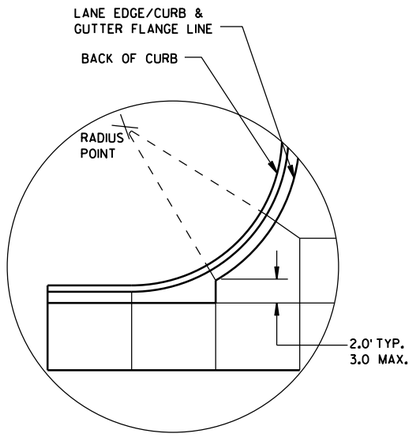
URBAN DOWELED CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

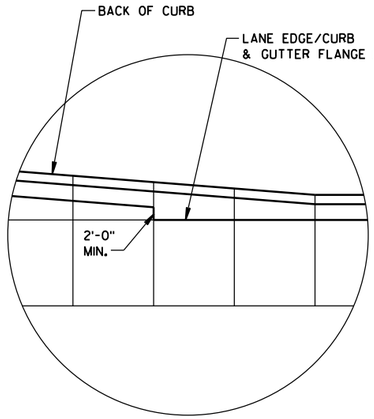
APPROVED
5/3/2013 DATE
/S/ Deb Bischoff
PAVEMENT POLICY & DE ENGINEER
FHWA

6

S.D.D. 13 C 13-8



DETAIL "A"



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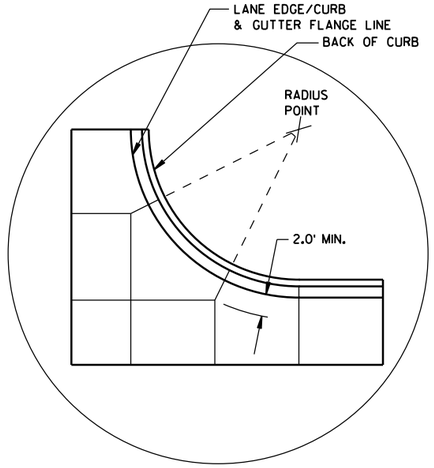
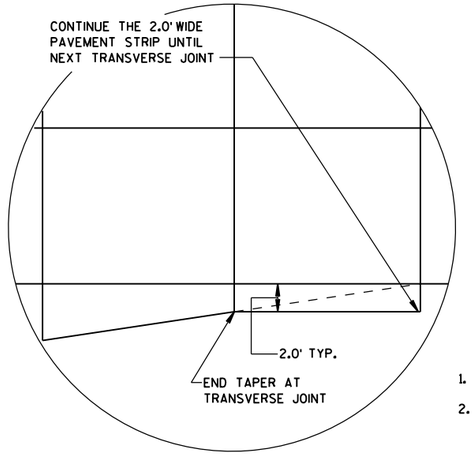


DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G. MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.

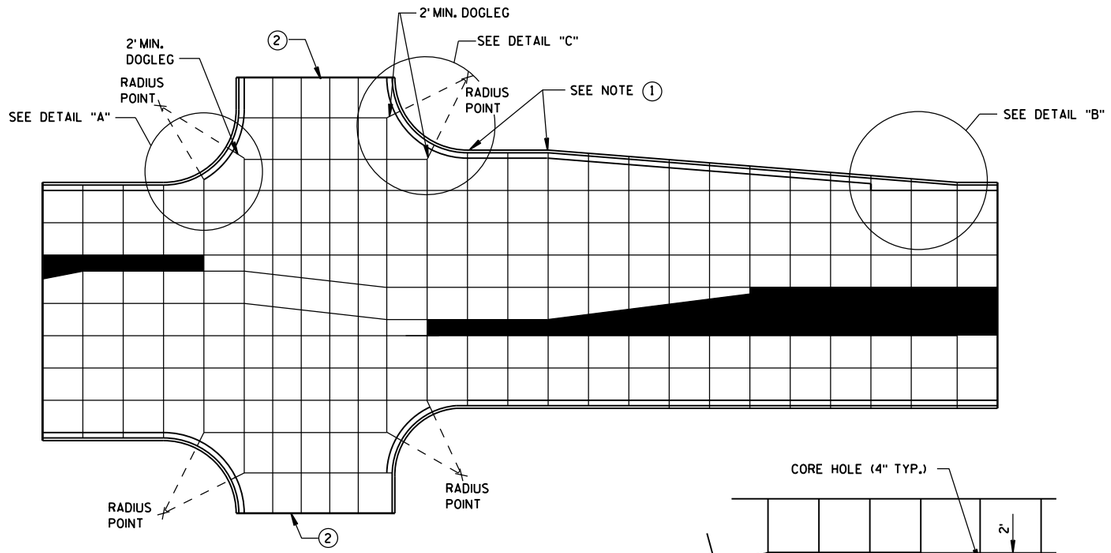
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.

AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

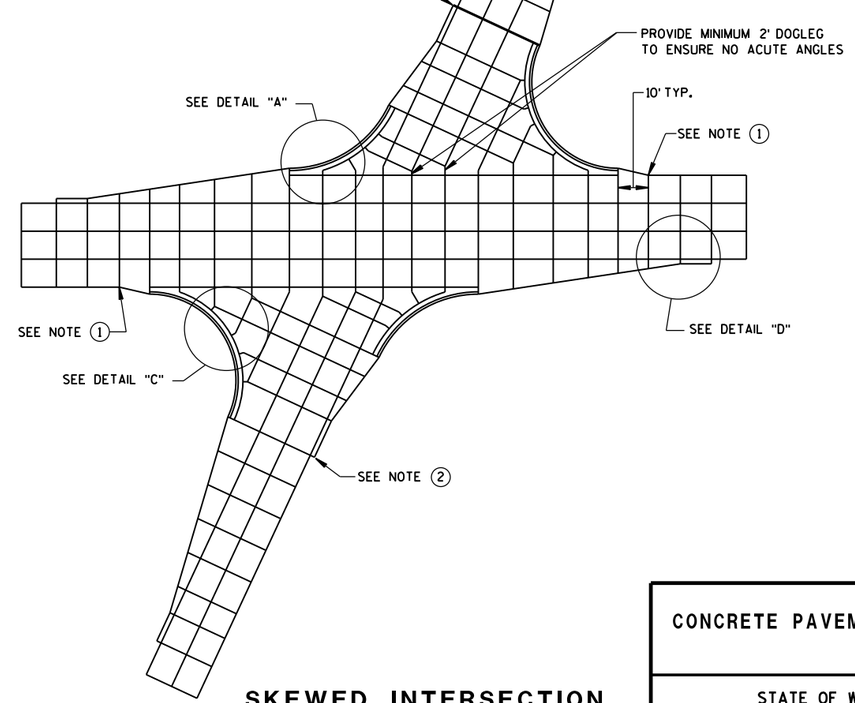
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.



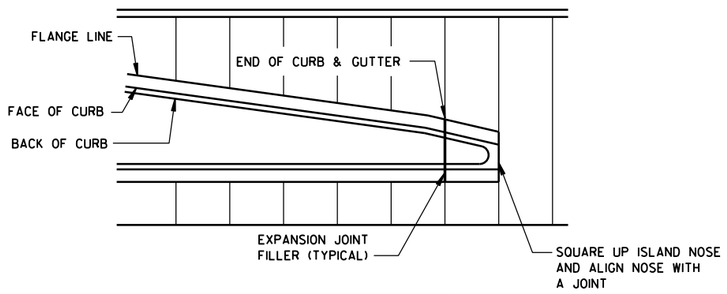
STANDARD INTERSECTION

PAVEMENT DEPTH AND JOINT SPACING TABLE

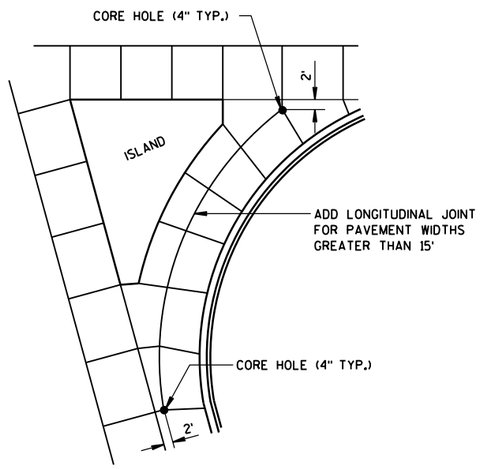
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6½"	12'
7", 7½"	14'
8" & ABOVE	15'



SKEWED INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

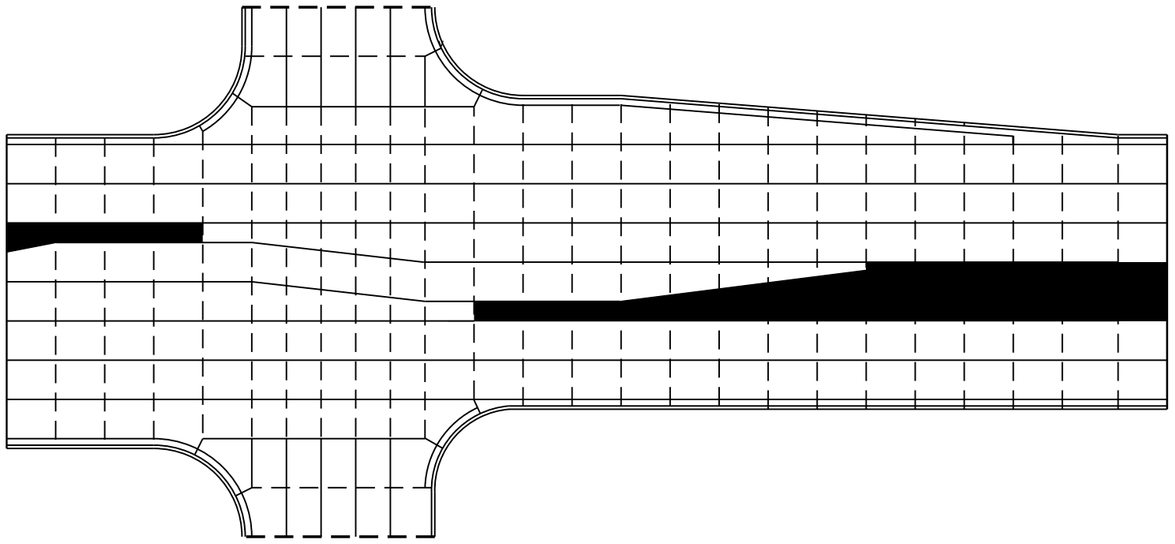
6
S.D.D. 13 C 18-3a

LEGEND

POTENTIAL DOWELED EXPANSION JOINT

DOWELED JOINT

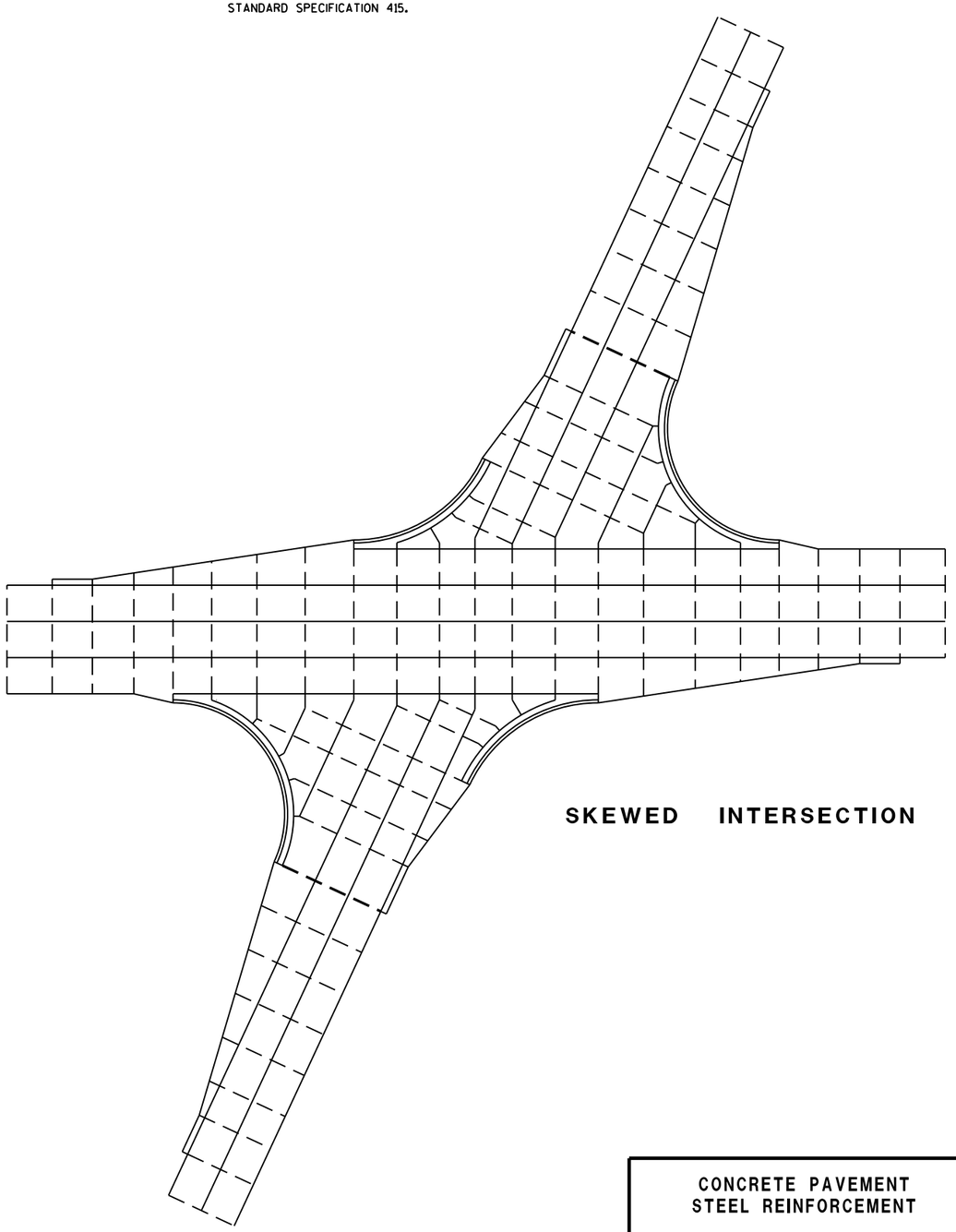
TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

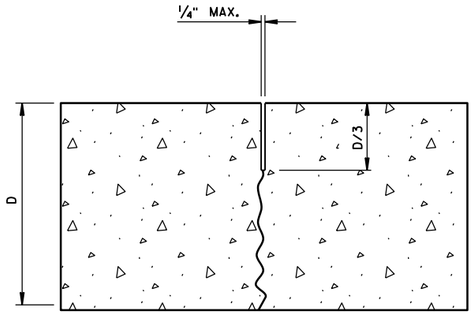
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

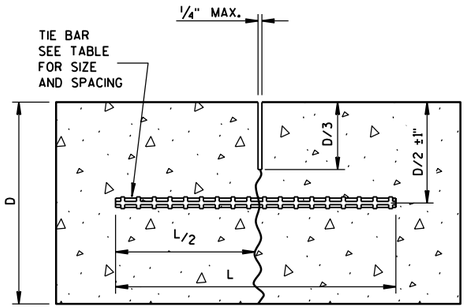
S.D.D. 13 C 18-3b

6

S.D.D. 13 C 18-3b



UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

TIE BAR TABLE

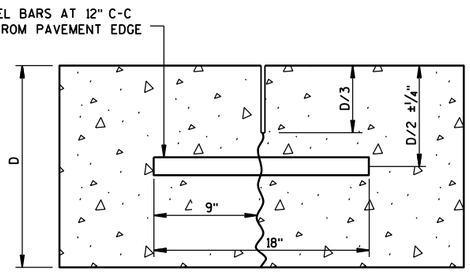
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24"**

* SUBSTITUTE BENT BARS AT LONGITUDINAL JOINTS WHEN EQUIPMENT LIMITATIONS DURING CONSTRUCTION WARRANT (e.g. AUXILIARY LANES OR TURN LANES)

** CONFORM TO 15" MINUMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

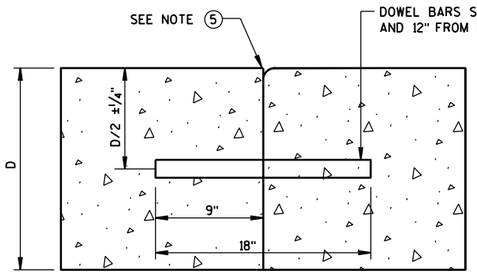
1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
5. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.
6. ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



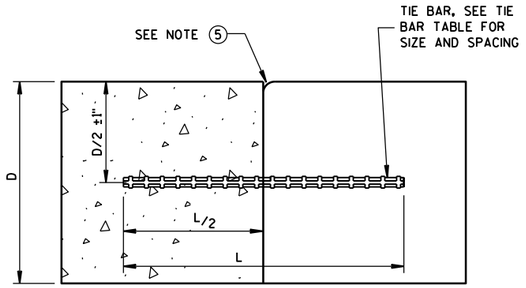
DOWELED-TRANSVERSE

CONTRACTION JOINTS

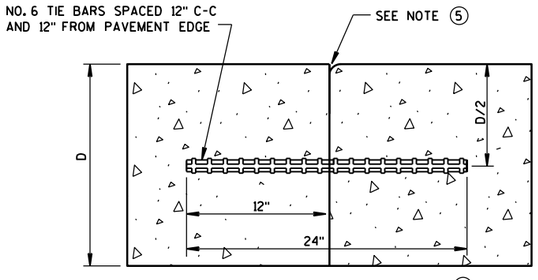
SEE NOTE (2)



DOWELED TRANSVERSE (3)

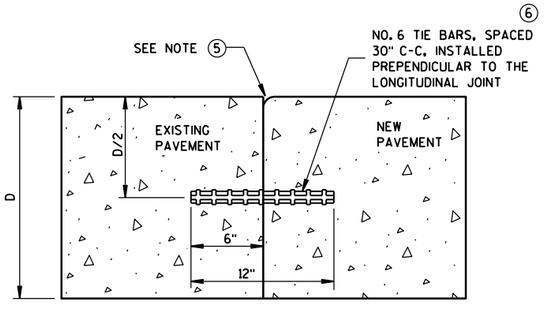


TIED LONGITUDINAL



TIED TRANSVERSE (3)

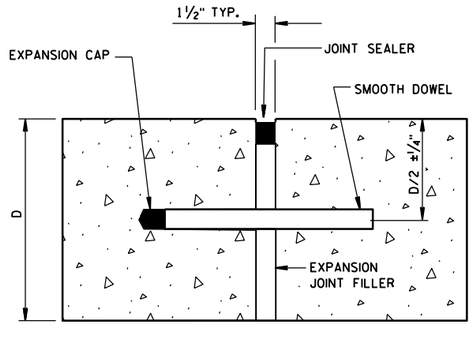
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)



TIED LONGITUDINAL TO EXISTING

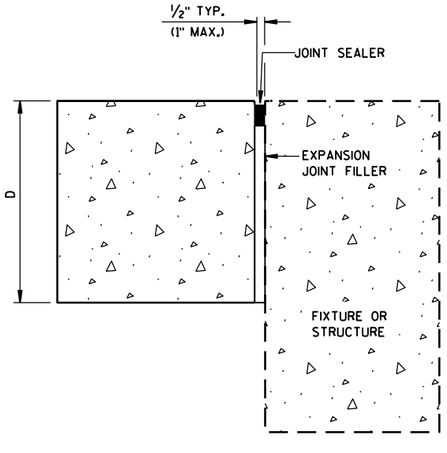
CONSTRUCTION JOINTS

SEE NOTE (4)



DOWELED-TRANSVERSE

SEE NOTE (1)



UNTIED-LONGITUDINAL

EXPANSION JOINTS

6

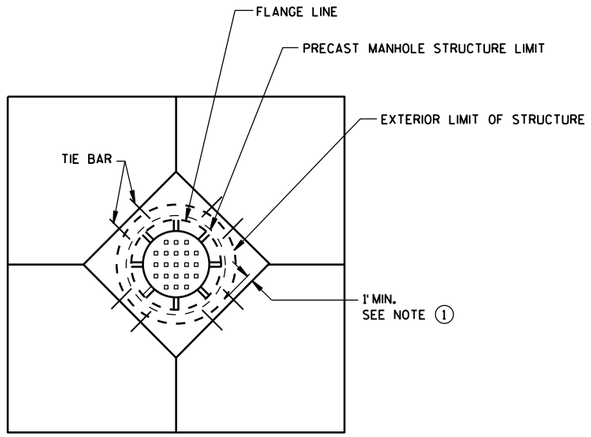
6

S.D.D. 13 C 18-3c

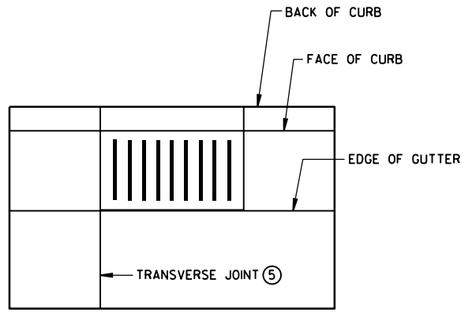
S.D.D. 13 C 18-3c

CONCRETE PAVEMENT
JOINT TYPES

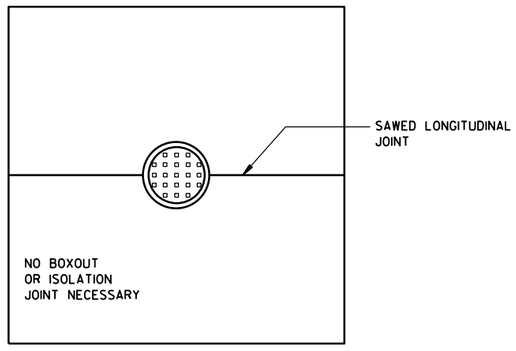
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI



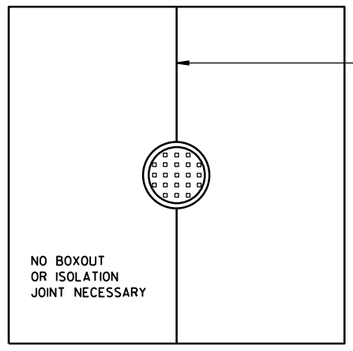
DIAGONAL MANHOLE BOXOUT FOR CONSTRUCTION JOINTS



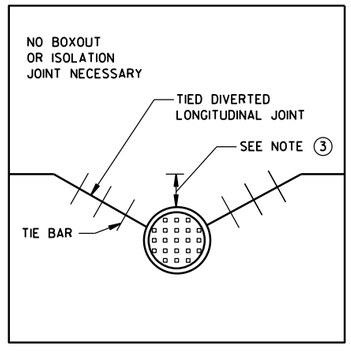
INLET WITH TRANSVERSE JOINT



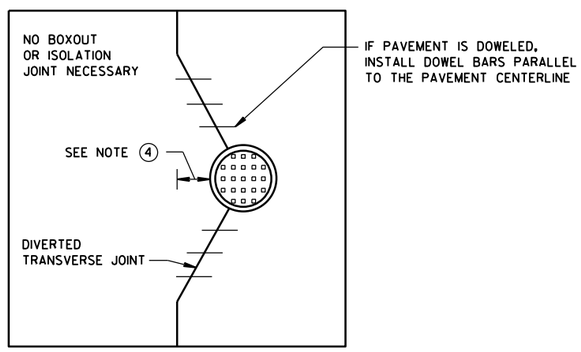
MANHOLE WITH LONGITUDINAL JOINT



MANHOLE WITH TRANSVERSE JOINT



MANHOLE WITH DIVERTED LONGITUDINAL CONTRACTION JOINT



MANHOLE WITH DIVERTED TRANSVERSE CONTRACTION JOINT

GENERAL NOTES

(1) USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.

(2) ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.

(3) IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDIAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(4) IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.

(5) ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

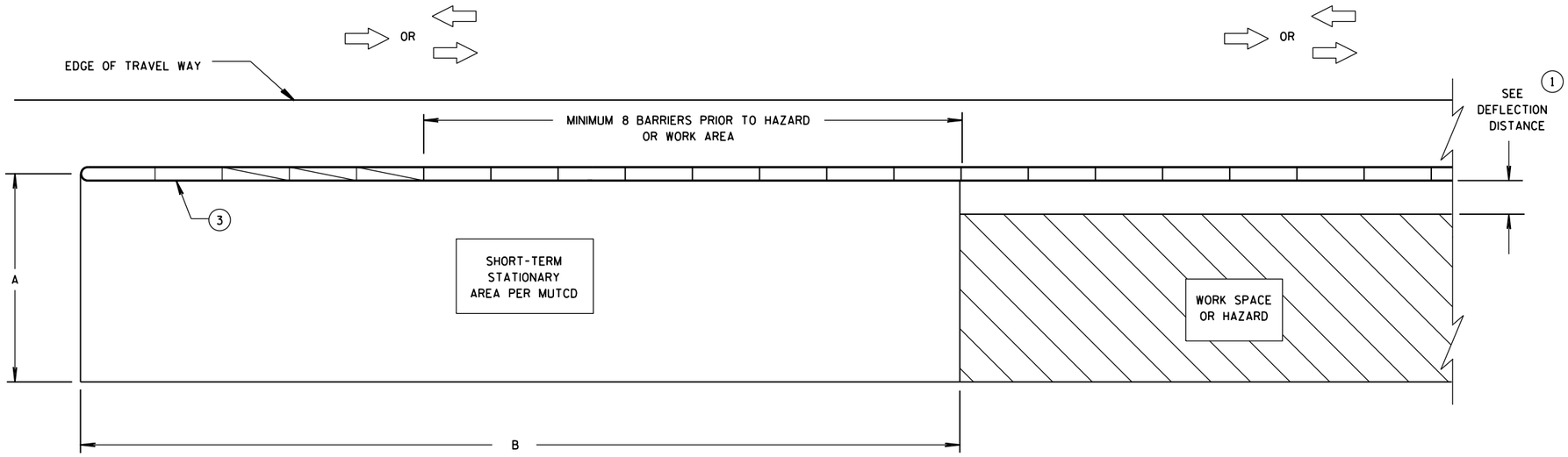
CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

6

S.D.D. 13 C 18-3d



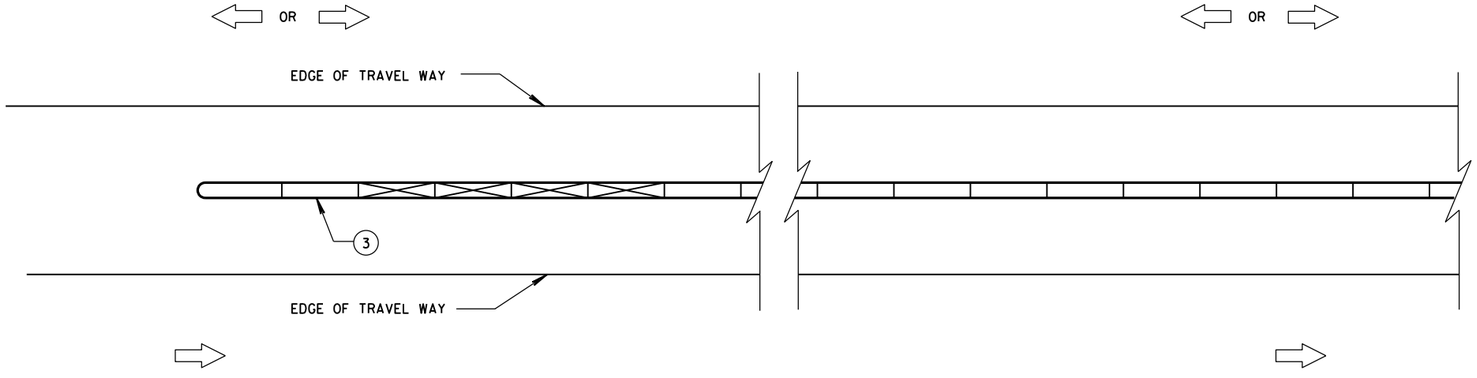
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

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 TRANSPOI

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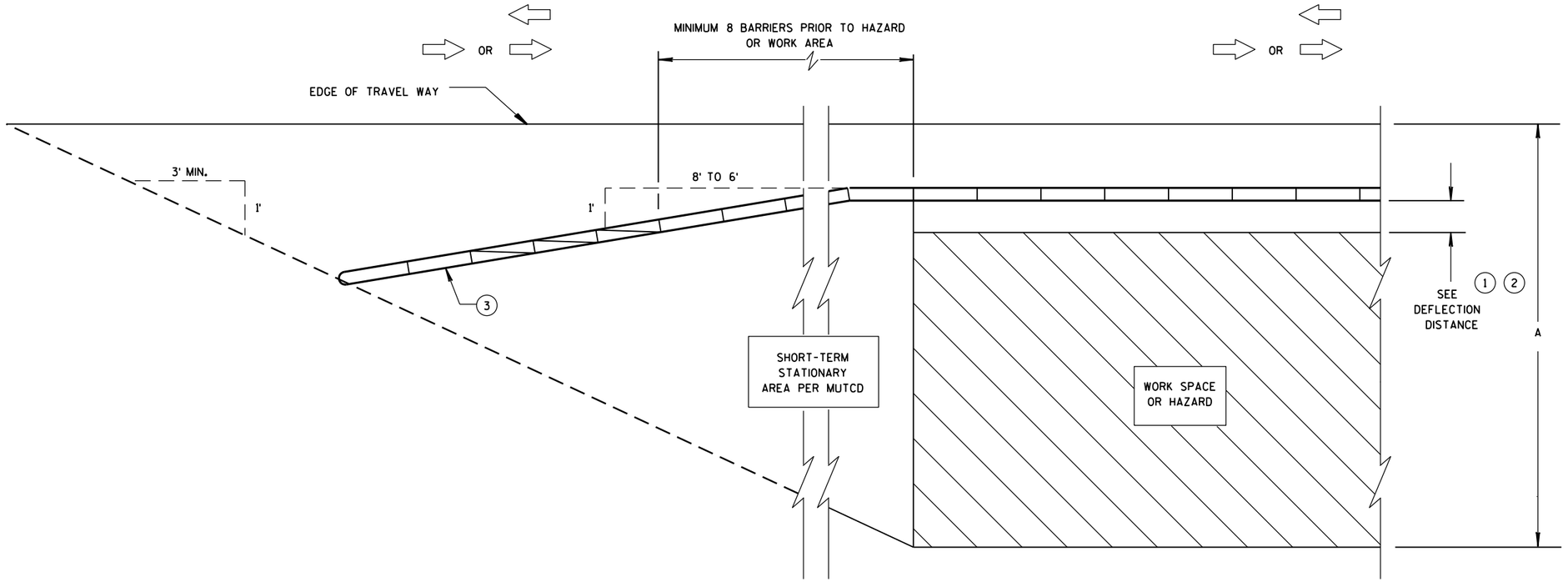
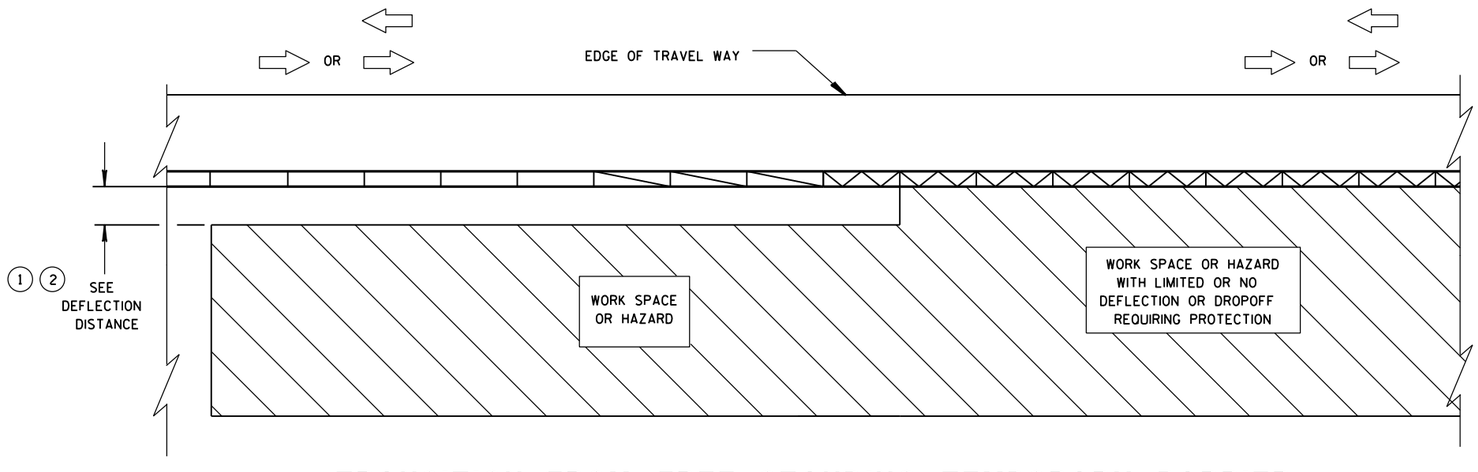
S.D.D. 14 B 8-2a



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

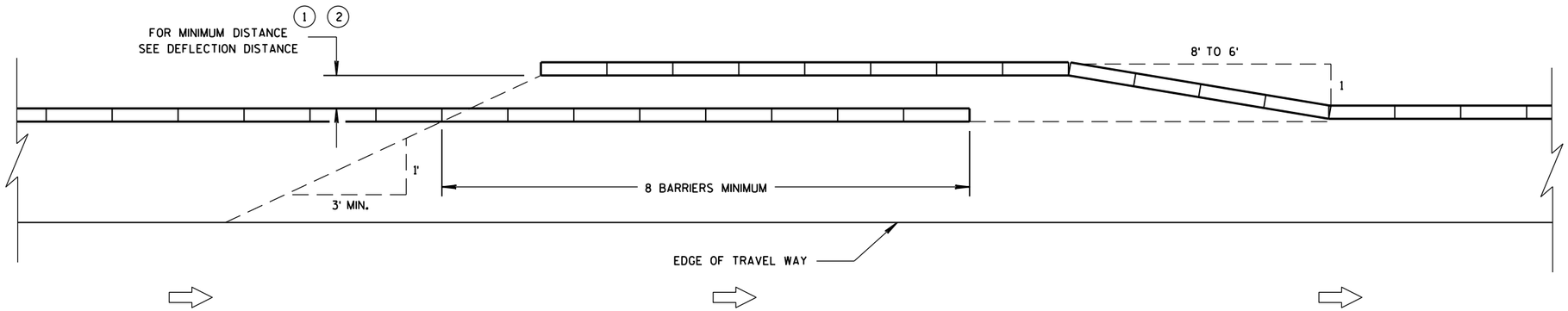
- DIRECTION OF TRAVEL
- CRASH CUSHION OR SAND BARREL ARRAY
- SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS
- SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS
- 3 PINS PLACED ON TRAFFIC SIDE OF BARRIER
- PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET
- FREE STANDING TEMPORARY BARRIER

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

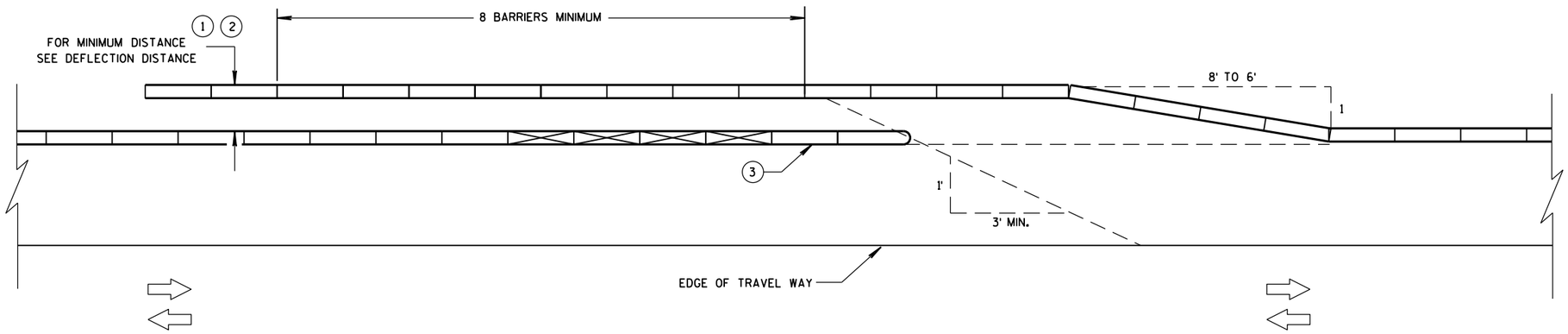
STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

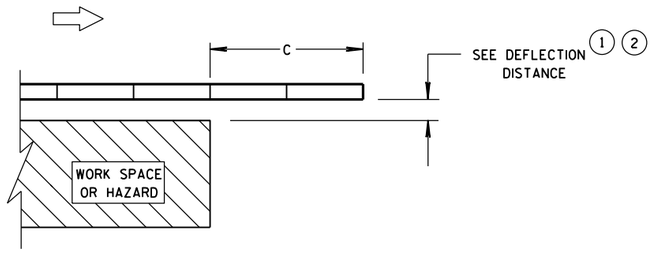
S.D.D. 14 B 8-2b



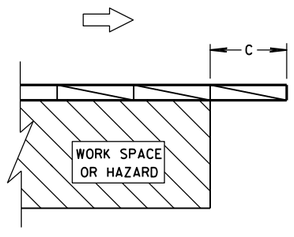
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



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 TRANSPO

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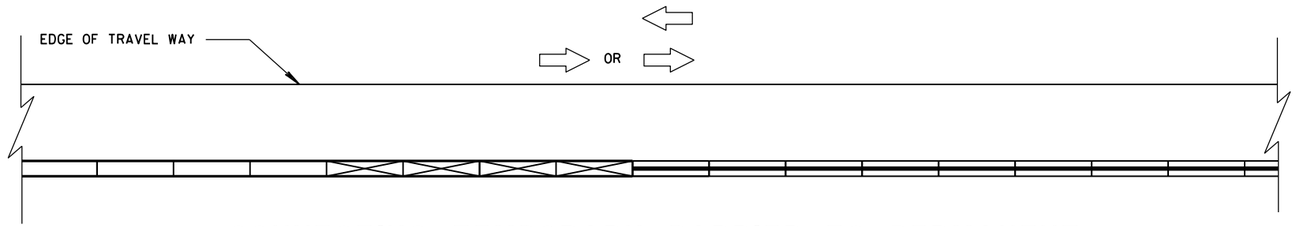
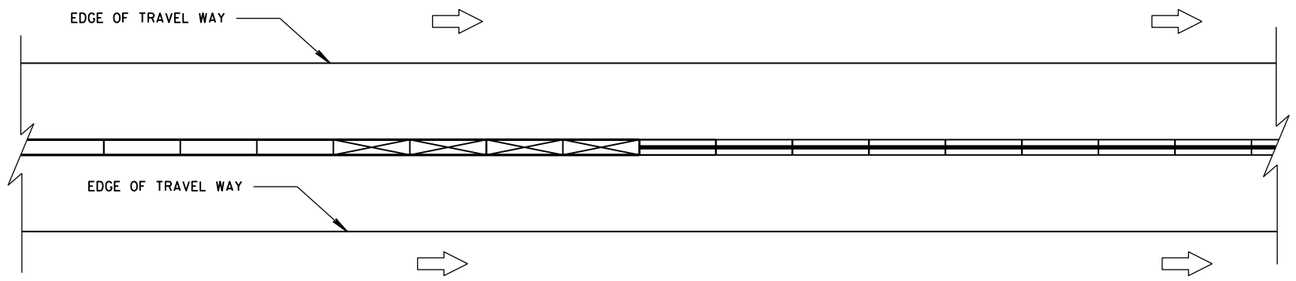


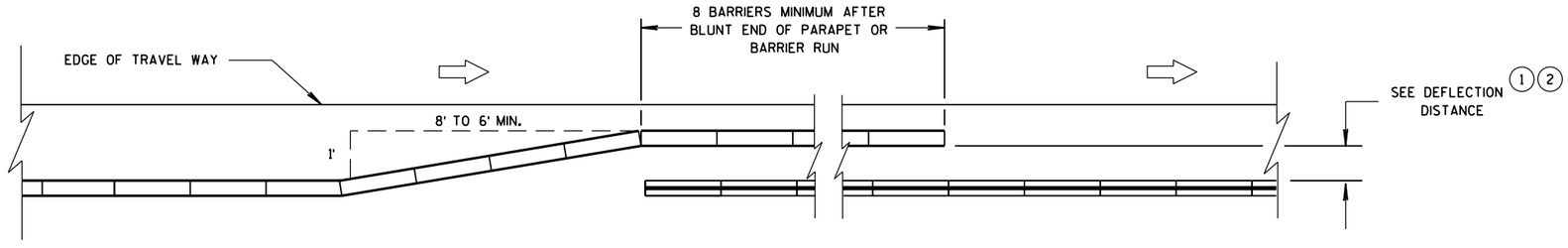
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE



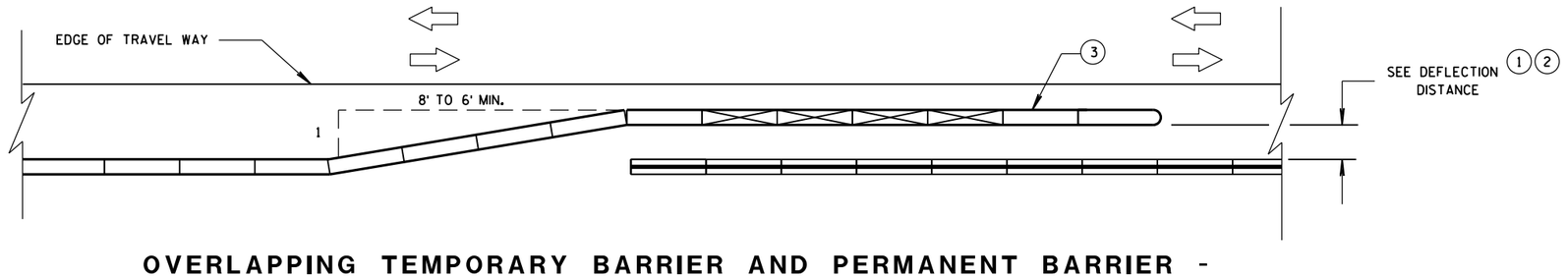
CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

LEGEND

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



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
ONE WAY TRAFFIC



OVERLAPPING TEMPORARY BARRIER AND PERMANENT BARRIER -
TWO WAY TRAFFIC

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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LEGEND

DIRECTION OF TRAVEL

CRASH CUSHION OR SAND BARREL ARRAY

SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS

SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS

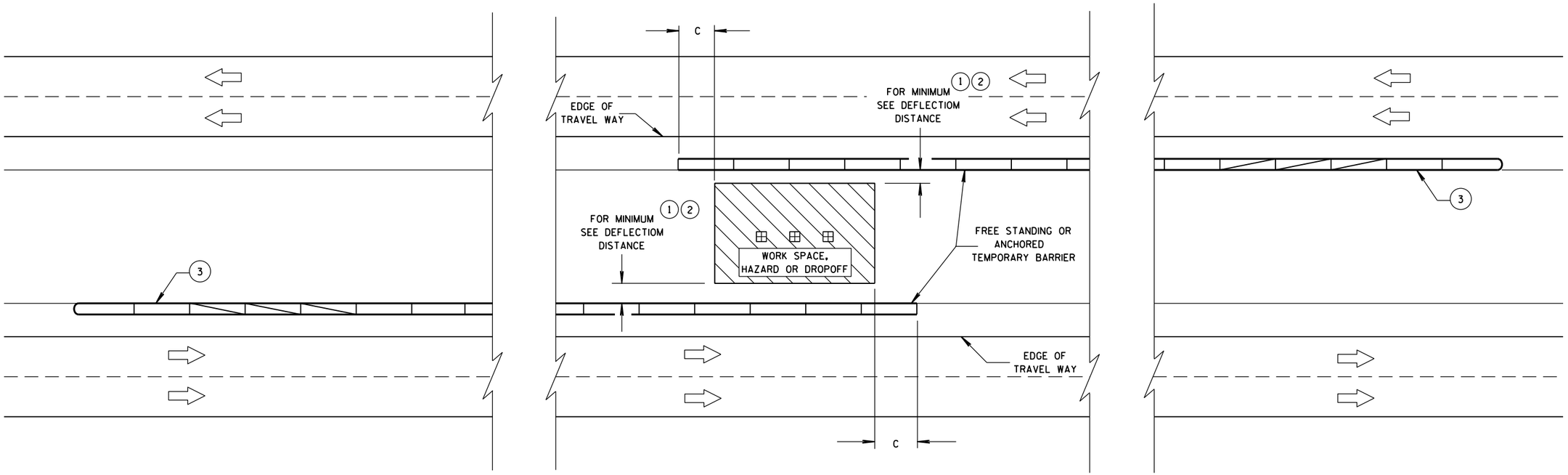
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER

PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET

FREE STANDING TEMPORARY BARRIER

DIMENSION C TABLE (2)

AVAILABLE DEFLECTION DISTANCE	MINIMUM LENGTH OF BARRIER BEYOND HAZARD FT
GREATER THAN 8'	12.5
LESS THAN OR EQUAL TO 8' BUT GREATER THAN 4'	50
LESS THAN OR EQUAL TO 4'	100



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

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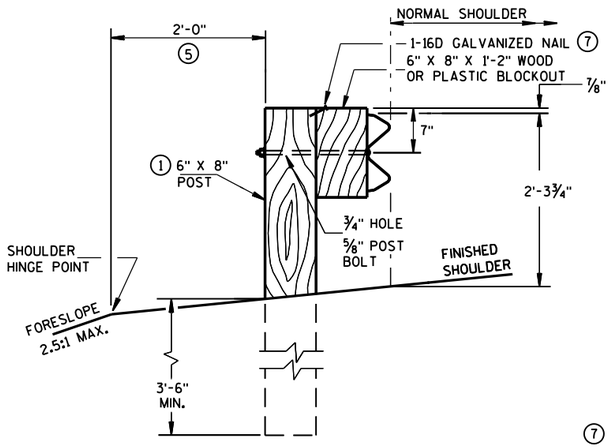
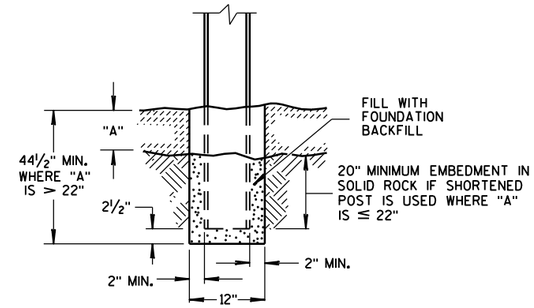
GENERAL NOTES

1. W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS. APPROVED PLASTIC BLOCKOUT DESIGNS MAY VARY FROM THIS TYPICAL DETAIL WHEN USED IN CONJUNCTION WITH STEEL POSTS.
   DO NOT MIX STEEL POSTS AND WOOD POSTS IN A SINGLE INSTALLATION.
2. USE STRUCTURAL STEEL POSTS CONFORMING TO ASTM A 36. GALVANIZED POSTS ACCORDING TO AASHTO M 111. EITHER SET THE POSTS IN DRILLED HOLES OR DRIVE TO GRADE. REMOVE MUSHROOMING CAUSED BY DRIVING AND REPAIR DAMAGED SPELTER COATING ON GALVANIZED POSTS.
3. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
4. USE EITHER WOOD OR APPROVED PLASTIC BLOCKOUTS ON WOOD POSTS.
5. IF THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING, W BEAM (LHW).
6. IF ROCK IS ENCOUNTERED DURING EXCAVATION, THE ENGINEER MAY APPROVE USING A 12 INCH DIAMETER POST HOLE EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE APPROXIMATELY 2½ INCHES DEEP. CUT THE POSTS TO LENGTH AND PLACE IN YHE HOLE. BACKFILL WITH MATERIAL EXCAVATED FROM THE HOLE AND COMPACT ADEQUATEY.
7. 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.

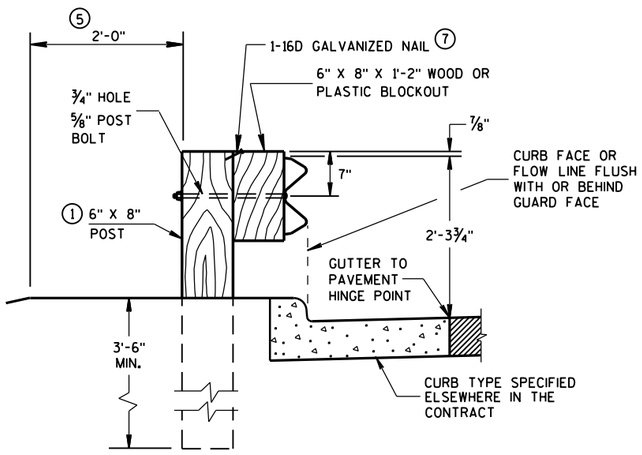
INSTALL BEAM GUARD SECTIONS AND ALL NECESSARY HARDWARE ACCORDING TO THE APPLICABLE PLAN AND CURRENT STANDARD AND SUPPLEMENTAL SPECIFICATIONS.
ALL DIMENSIONS ARE SUBJECT TO MANUFACTURER'S TOLERANCES EXCEPT WHERE ALLOWABLE TOLERANCES ARE SHOWN.



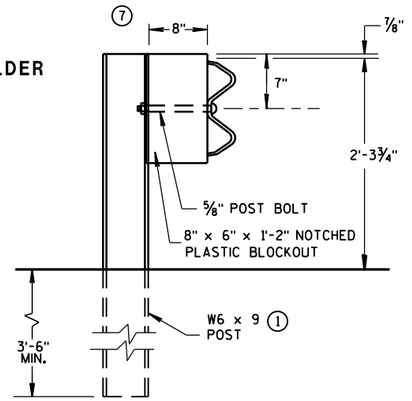
END VIEW
LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



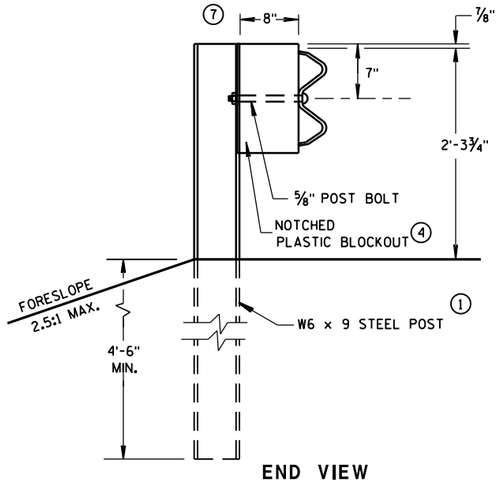
END VIEW
SETTING STEEL OR WOOD POST IN ROCK ⑥



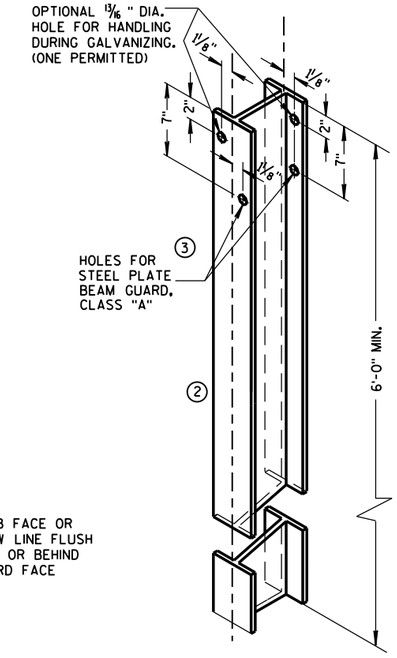
END VIEW
LOCATED ALONG A CURBED ROADWAY



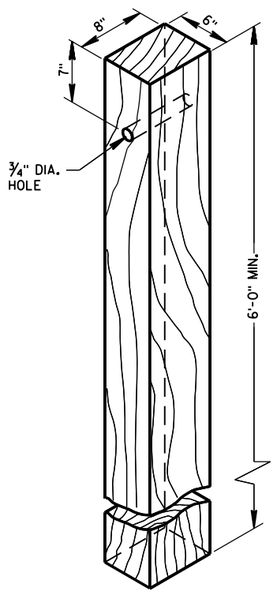
END VIEW
STEEL POST & NOTCHED
PLASTIC BLOCKOUT ALTERNATIVE
STANDARD INSTALLATION



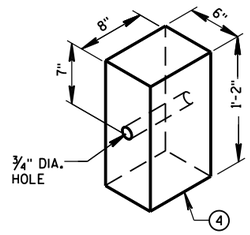
END VIEW
LONGER POST AT HALF
POST SPACING W BEAM
(LHW)



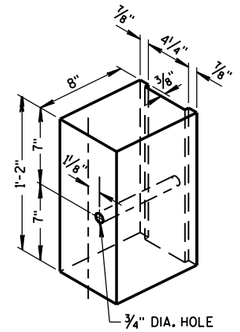
STEEL POST &
HOLE PUNCHING DETAIL
(W6 X 9) ①
ALL HOLES 13/16" DIAMETER EXCEPT AS NOTED



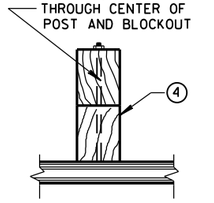
WOOD POST
(6"X8") NOMINAL



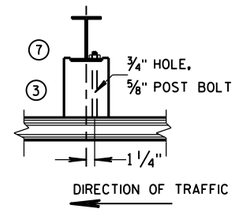
WOOD OR PLASTIC
BLOCKOUT FOR
WOOD POSTS



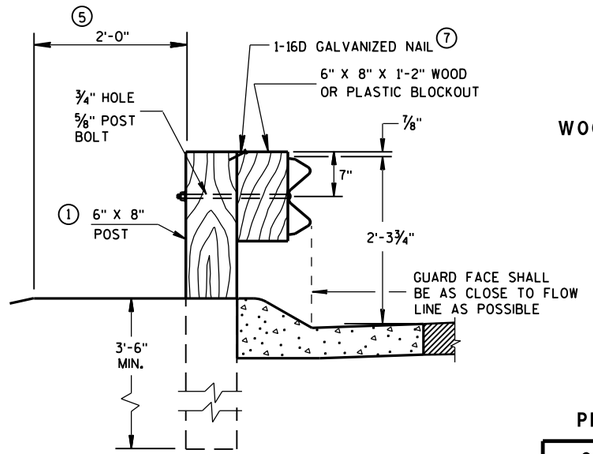
TYPICAL NOTCHED ①
PLASTIC BLOCKOUT
FOR STEEL POSTS



PLAN VIEW
WOOD POST, BLOCKOUT & BEAM



PLAN VIEW
STEEL POST, NOTCHED
PLASTIC BLOCKOUT & BEAM



END VIEW
LOCATED ALONG A
MOUNTABLE CURBED ROADWAY

STEEL PLATE BEAM GUARD,
CLASS "A"
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
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TYPICAL INSTALLATION OF STEEL PLATE BEAM GUARD

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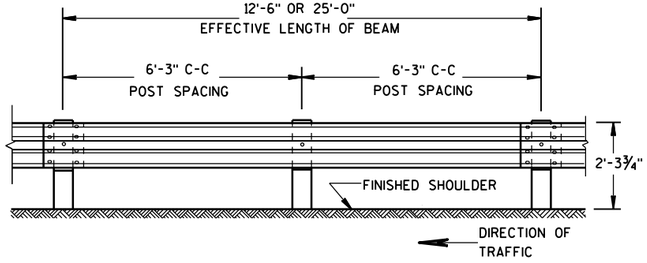
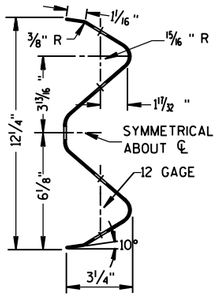
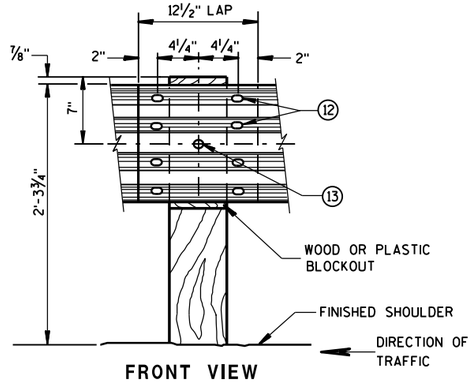


FRONT VIEW

POST SPACING STANDARD INSTALLATION



SECTION THRU W BEAM



FRONT VIEW

BEAM SPLICE AT WOOD POST AND POST MOUNTING DETAIL

GENERAL NOTES

(8) PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

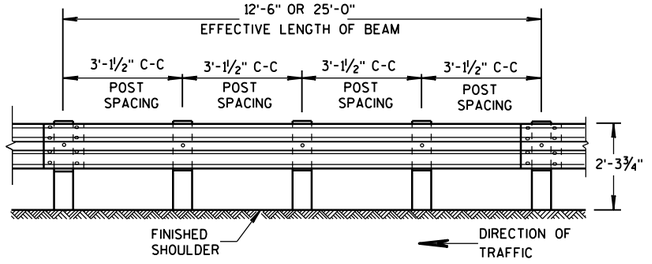
(9) DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

(10) REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

(11) PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

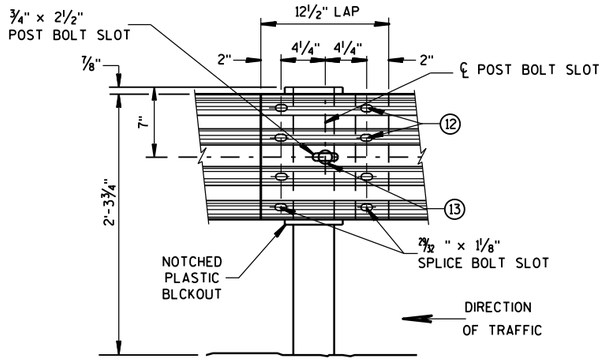
(12) 8 -⅝" ϕ X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.

(13) ⅝" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH ⅝" DIA. F844 FLAT WASHER UNDER NUT.



FRONT VIEW

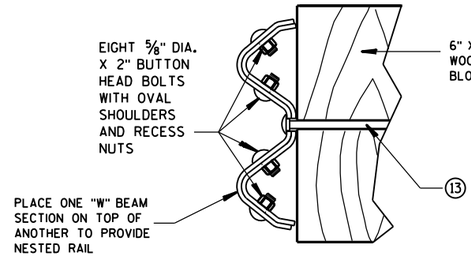
POST SPACING FOR LONGER POST AT HALF POST SPACING W BEAM (LHW)



FRONT VIEW

BEAM SPLICE AT STEEL POST

TYPICAL SPLICING DETAILS OF STEEL PLATE BEAM GUARD

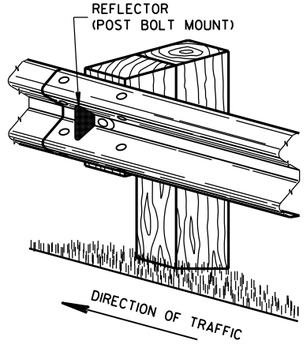


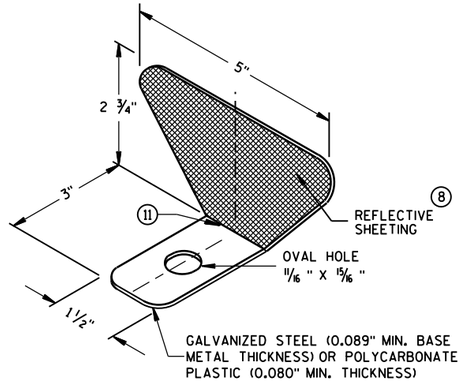
NESTED W BEAM (NW)

USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR CONSTRUCTING NESTED W BEAM (NW)

REFLECTOR SPACING (9)

	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (10)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2 (11)	3
	> 200'	100' C-C	2	





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (8)

STEEL PLATE BEAM GUARD,
CLASS "A",
INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

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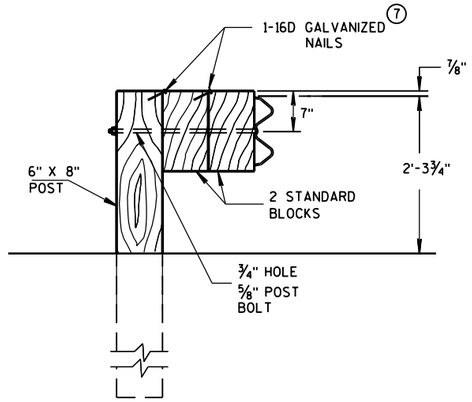
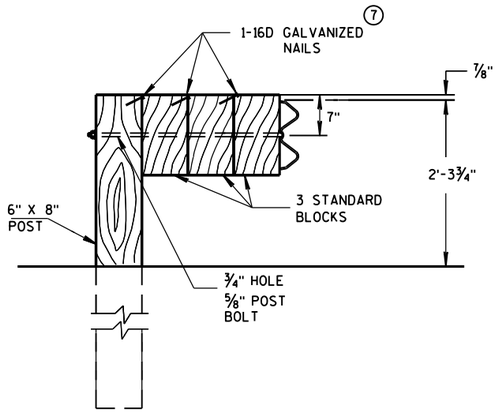


DETAIL FOR DOUBLE BLOCKS

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

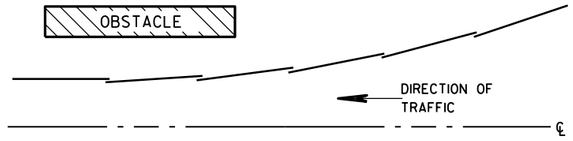


DETAIL FOR TRIPLE BLOCKS

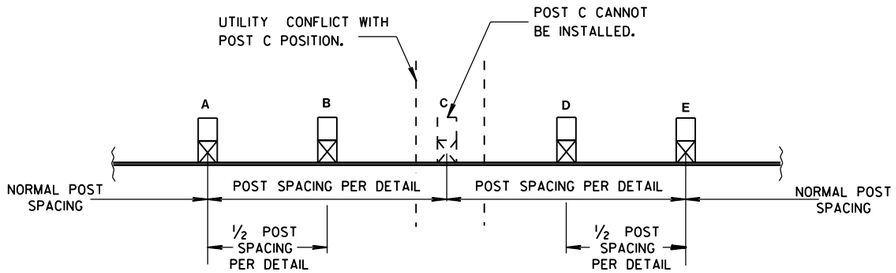
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

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



PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION

STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016
DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA

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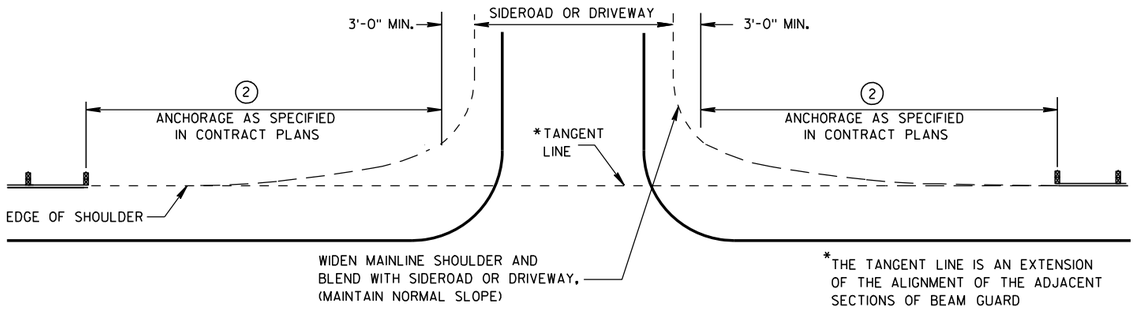
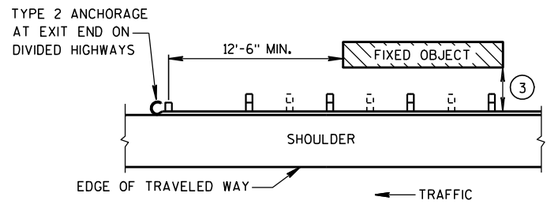


BEAM GUARD AT SIDEROADS OR DRIVEWAYS



BEAM GUARD AT OBSTACLES EXIT END - ONE WAY TRAFFIC

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

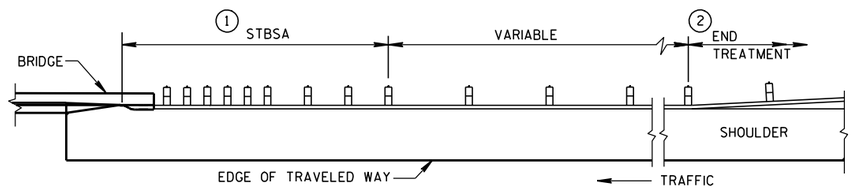
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

(1) STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.

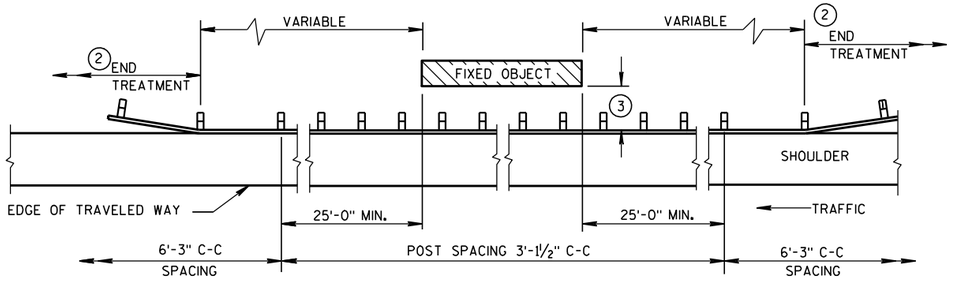
(2) USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

(3)

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1½"
4'-6"	6' - 3"

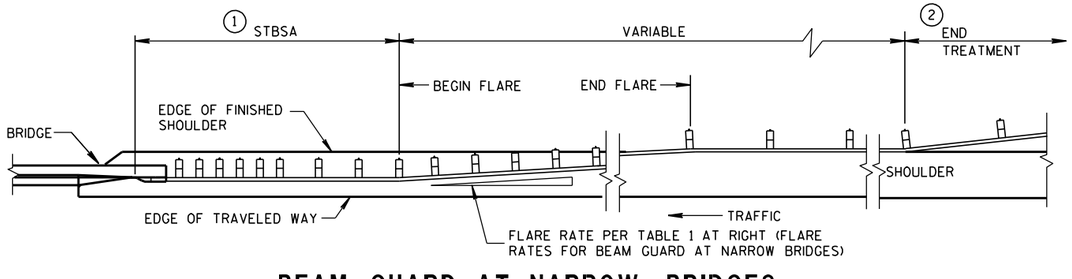


BEAM GUARD AT FULL WIDTH BRIDGES



BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")



BEAM GUARD AT NARROW BRIDGES
(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)

TABLE 1
FLARE RATES FOR BEAM GUARD AT NARROW BRIDGES

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1

STEEL PLATE BEAM GUARD CLASS "A" AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS

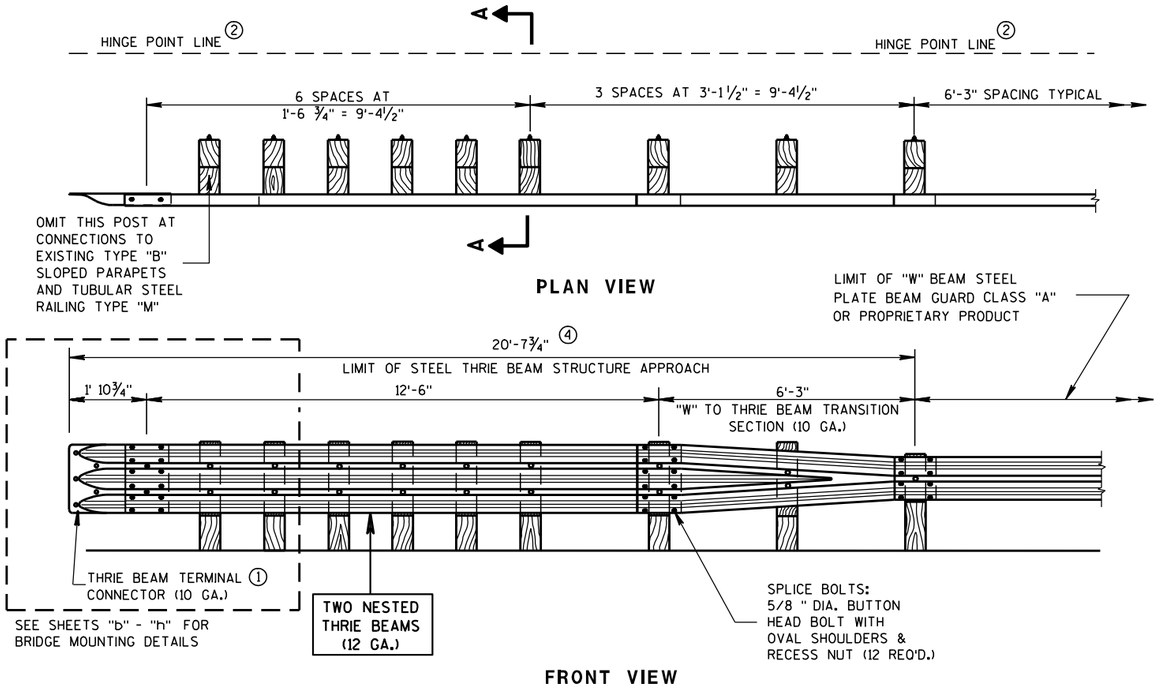
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8-21-07 DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

FHWA



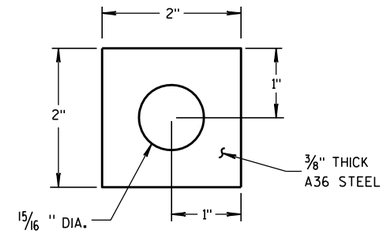


PLATE WASHER DETAIL

GENERAL NOTES

BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS. DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.

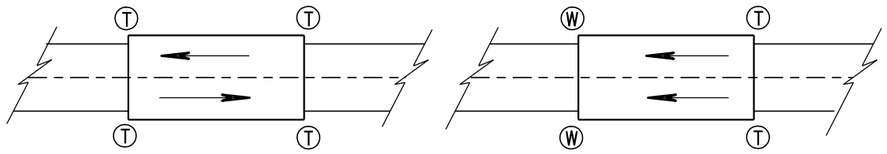
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2" , AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.

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

② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.

③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.

④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



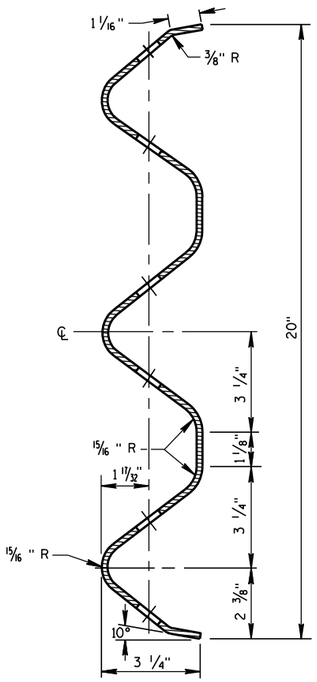
TWO WAY TRAFFIC

ONE WAY TRAFFIC

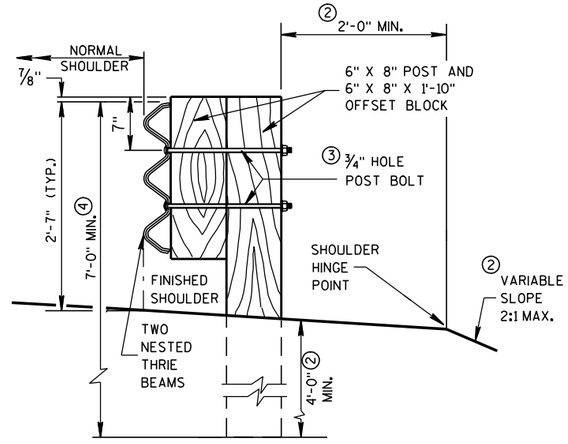
T THRIE BEAM CONNECTION

W W-BEAM CONNECTION WHEN REQUIRED

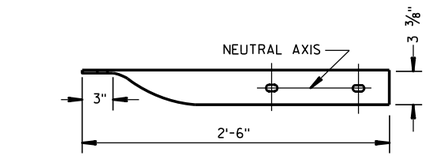
TYPICAL LOCATIONS OF THRIE BEAM AND W-BEAM CONNECTIONS TO BRIDGE

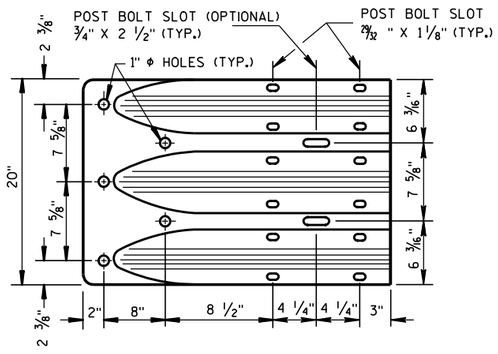


SECTION THRU THRIE BEAM RAIL ELEMENT

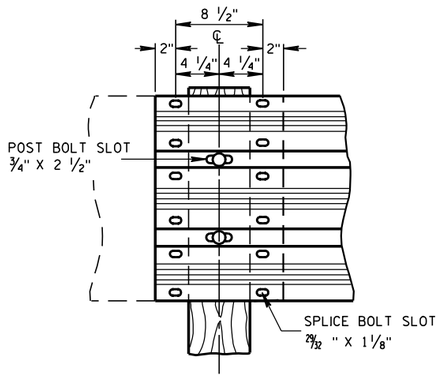


SECTION A-A





THRIE BEAM TERMINAL CONNECTOR



THRIE BEAM SPLICE

STEEL THRIE BEAM STRUCTURE APPROACH

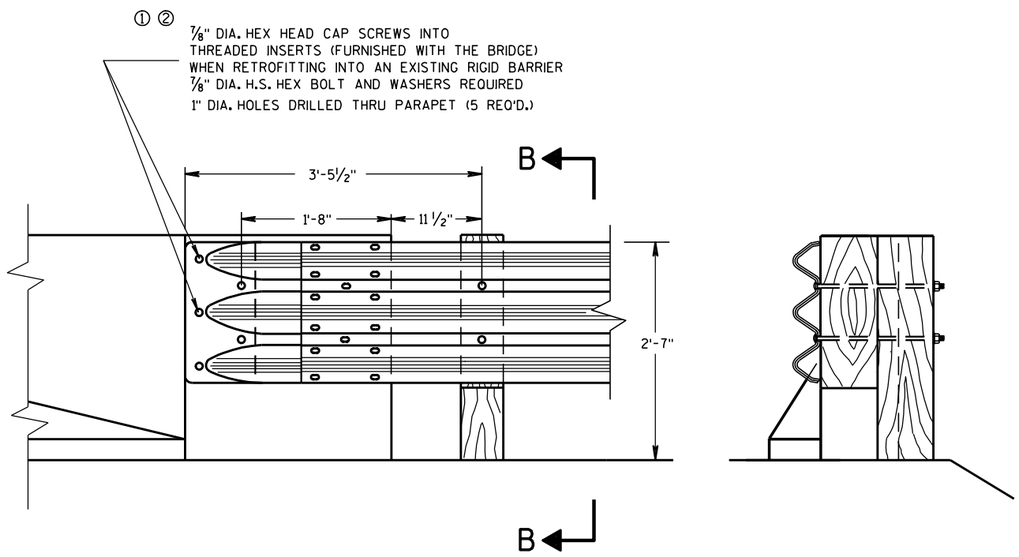
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012 DATE

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

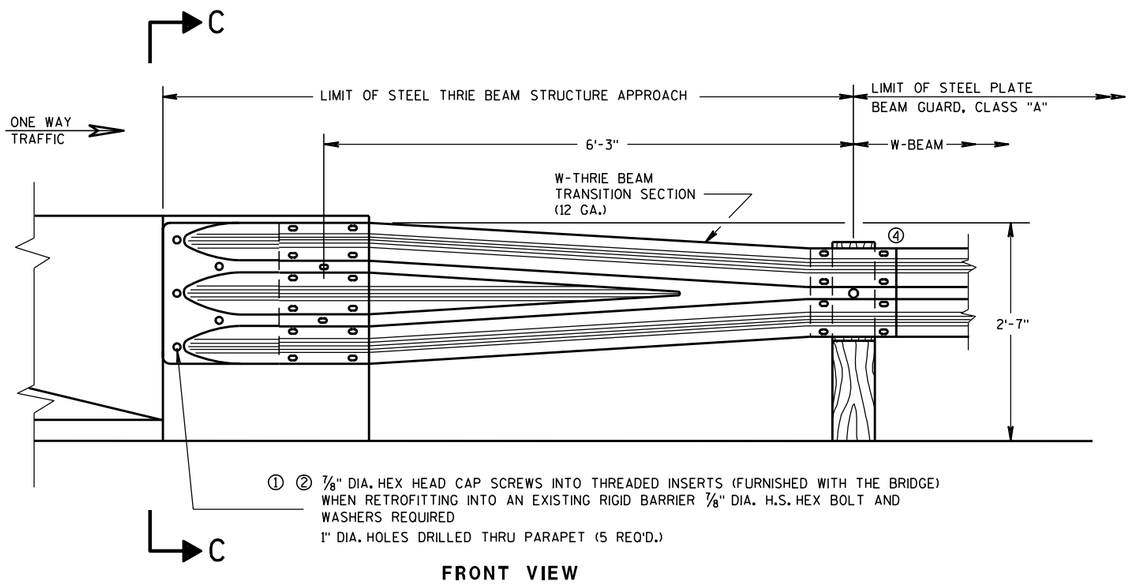
FHWA



FRONT VIEW

SECTION B-B

THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS



① ② ⅞" DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER ⅞" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET (5 REQ'D.)

FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS

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

GENERAL NOTES

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

BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A325, A449 AND GALVANIZED PER STANDARD SPECIFICATIONS 614.

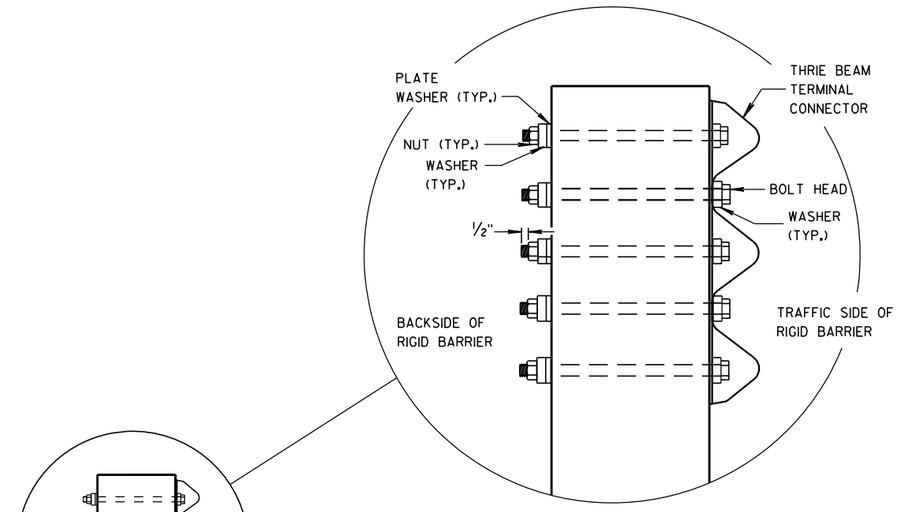
① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

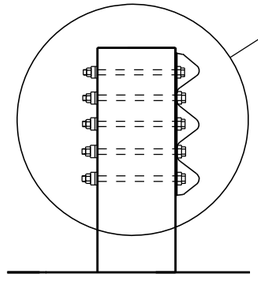
② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM TERMINAL CONNECTOR. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X ⅝" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 ½".

④ W6 X 9 OR W6 X 8.5 STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POST WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.



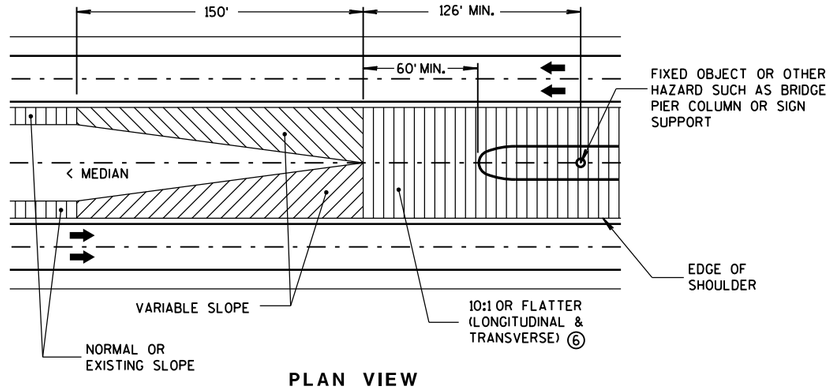


SECTION C-C

STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO SQUARE END PARAPETS

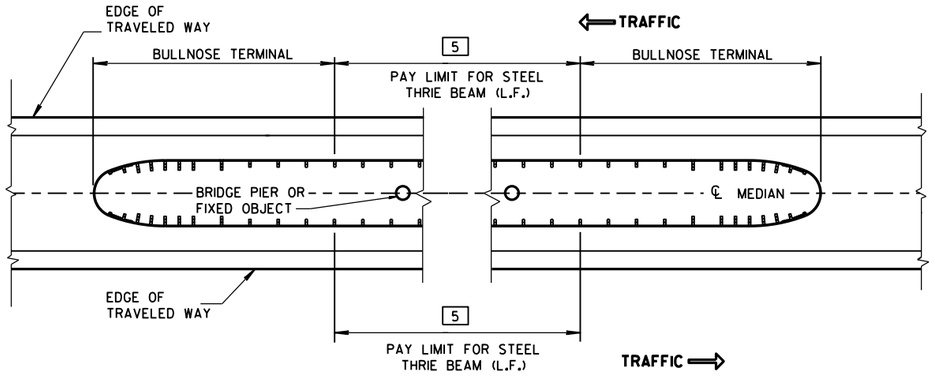
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012
DATE
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

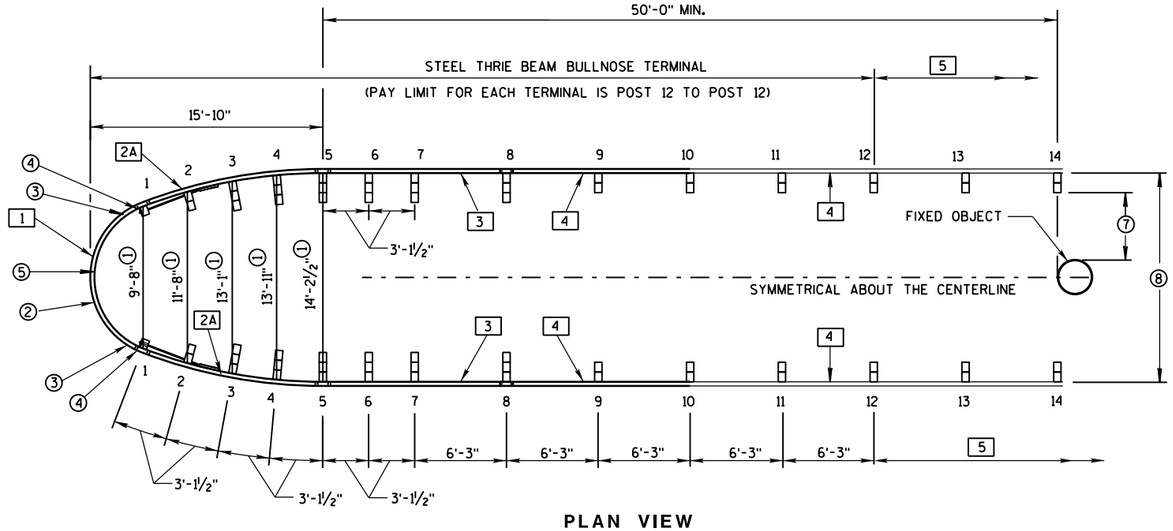


PLAN VIEW

GRADING AT BULLNOSE
(ALL INSTALLATIONS)

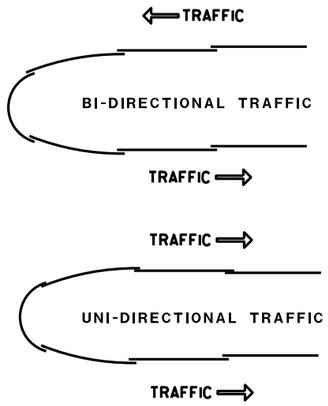


MEDIAN HAZARD PROTECTION PAY LIMITS



PLAN VIEW

TYPICAL BULLNOSE LAYOUT



LAPPING DETAIL
(ALL INSTALLATIONS)

GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.

PUNCHING, DRILLING, CUTTING OR WELDING IS NOT PERMITTED ON ANY GALVANIZED THRIE BEAM ACCESSORY OR TERMINAL ACCESSORY.

OTHER ANCHOR CABLE ASSEMBLIES HAVING 40,000 LBS. MIN. BREAKING STRENGTH MAY BE USED.

FOR POSTS 2 THROUGH 14, IF POST CANNOT BE INSTALLED AT SPECIFIED LOCATION 1 EXTRA STANDARD WOOD BLOCK MAY BE ADDED.

THE USE OF STEEL POSTS ON THE BULLNOSE IS NOT ALLOWED.

BOLTS AND ALL NECESSARY HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

ALL THRIE BEAM SHALL BE 12-GAUGE.

IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½" AND 12" DIAMETER AROUND POST. SEE SDD 14B15 OR SDD 14B42 FOR MORE INFORMATION.

[1] SLOTTED THRIE BEAM RAIL NO. 1. (POST 1 TO POST 1)

[2A] SLOTTED THRIE BEAM RAIL NO. 2A. (POST 1 TO POST 5)

[3] SLOTTED THRIE BEAM RAIL NO. 3. (POST 5 TO POST 8)

[4] UNBENT STANDARD THRIE-BEAM RAIL NO.4. (POST 8 TO POST 10 & POST 10 TO POST 12)

[5] BEYOND POST 12: CONSTRUCT STEEL THRIE BEAM - USE UNBENT STANDARD THRIE BEAM RAIL NO. 5.

① DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO POST OR BLOCK.

② U-BOLT CABLE CLIPS (3 PER CABLE) SPACED OUT ON NOSE, TO HOLD CABLE TO BACKSIDE OF THE RAIL.

③ NOSE CABLE W/SWAGGED END BUTTONS.

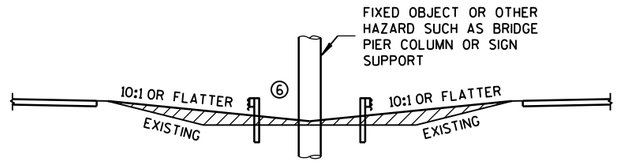
④ NOSE CABLE ANCHOR PLATE (BACKSIDE OF SPLICE).

⑤ THE SLACK IN THE NOSE CABLES SHALL BE EVENLY DISTRIBUTED BETWEEN THE CABLE CLIP FASTENERS AND POST NO. 1 ON EITHER SIDE OF THE NOSE.

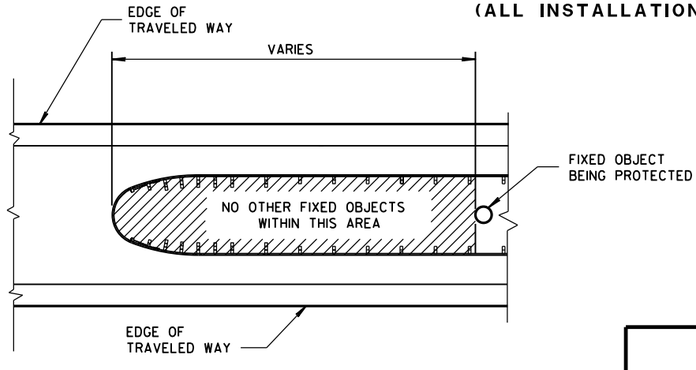
⑥ PROVIDE SUITABLE DRAINAGE WHEN MEDIAN GRADING IMPEDES NORMAL FLOW.

⑦ 2'-6" MINIMUM LATERAL DISTANCE BETWEEN BACK OF POST AND FACE OF FIXED OBJECT.

⑧ MAXIMUM WIDTH OF SYSTEM IS 14'-2½" MEASURED FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO A POST OR BLOCK.



MEDIAN GRADING SECTION
(ALL INSTALLATIONS)

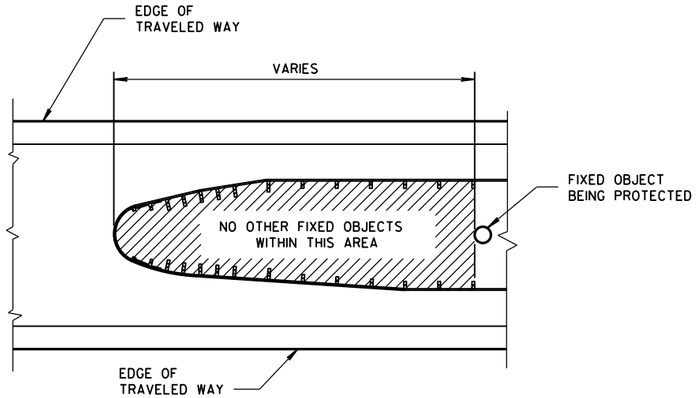


HAZARD FREE AREA INSIDE BULLNOSE

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

6
S.D.D. 14 B 26-3a



HAZARD FREE
AREA INSIDE BULLNOSE

GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.

FOR POSTS 2 THROUGH 14, IF POST CANNOT BE INSTALLED AT SPECIFIED LOCATION 1 EXTRA STANDARD WOOD BLOCK MAY BE ADDED.

[1] SLOTTED THRIE BEAM RAIL NO. 1. (POST 1 TO POST 1)

[2A] SLOTTED THRIE BEAM RAIL NO. 2A, (POST 1 TO POST 5)

[2B] SLOTTED THRIE BEAM RAIL NO. 2B, (POST 1 TO POST 5)

[3] SLOTTED THRIE BEAM RAIL NO. 3. (POST 5 TO POST 8)

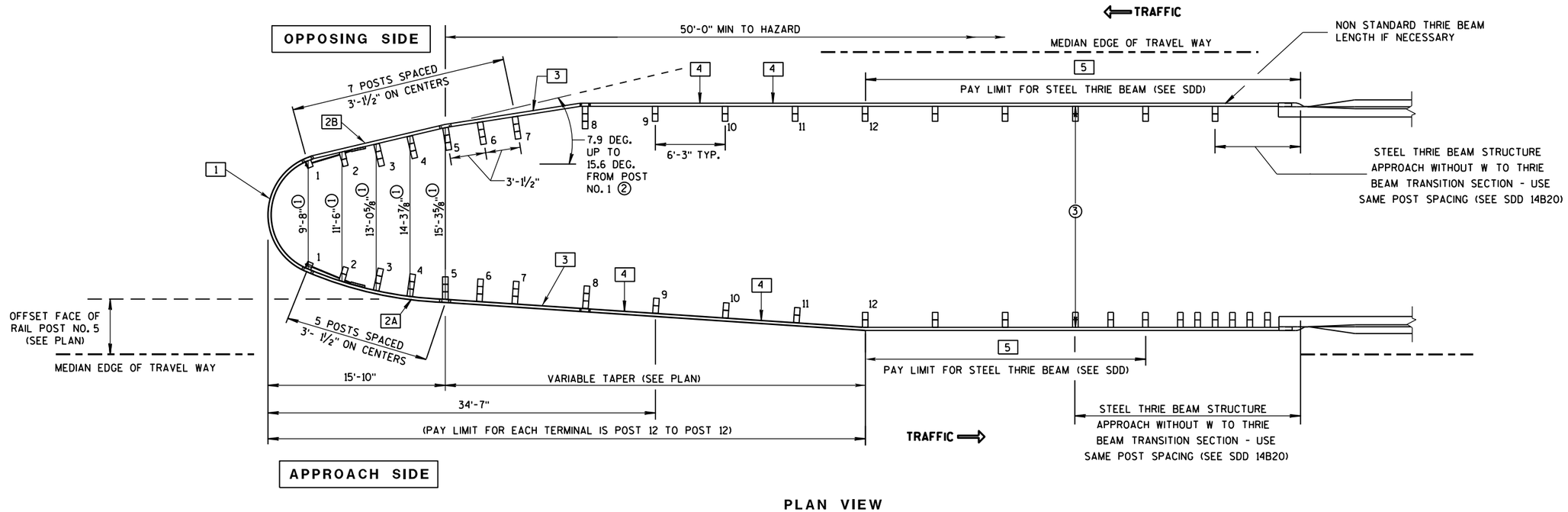
[4] UNBENT STANDARD THRIE-BEAM RAIL NO. 4, (POST 8 TO POST 10 & POST 10 TO POST 12)

[5] BEYOND POST 12: CONSTRUCT STEEL THRIE BEAM - USE UNBENT STANDARD THRIE BEAM RAIL NO. 5.

① DIMENSIONS ARE FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO POST.

② TAPER BEGINNING AT POST NO. 1 MUST CONTINUE TO POST NO. 5. PAST POST NO. 5 TAPER MAY END OR BE EXTENDED UP TO 15.6 DEGREES TO FIT VARIABLE MEDIAN WIDTHS. (SEE PLAN)

③ FOR MEDIANS WIDER THAN 14'-2½" MEASURED FROM BACK OF RAIL TO BACK OF RAIL WHERE RAIL IS BOLTED TO A POST OR BLOCK.



PLAN VIEW

WIDENED BULLNOSE DESIGN

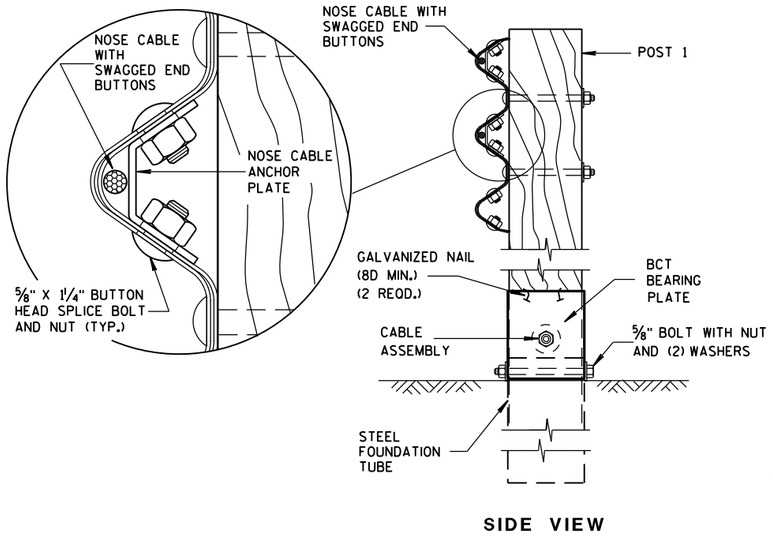
(INSTALLATION AT TWIN BRIDGES WITH BI-DIRECTIONAL TRAFFIC SHOWN)

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

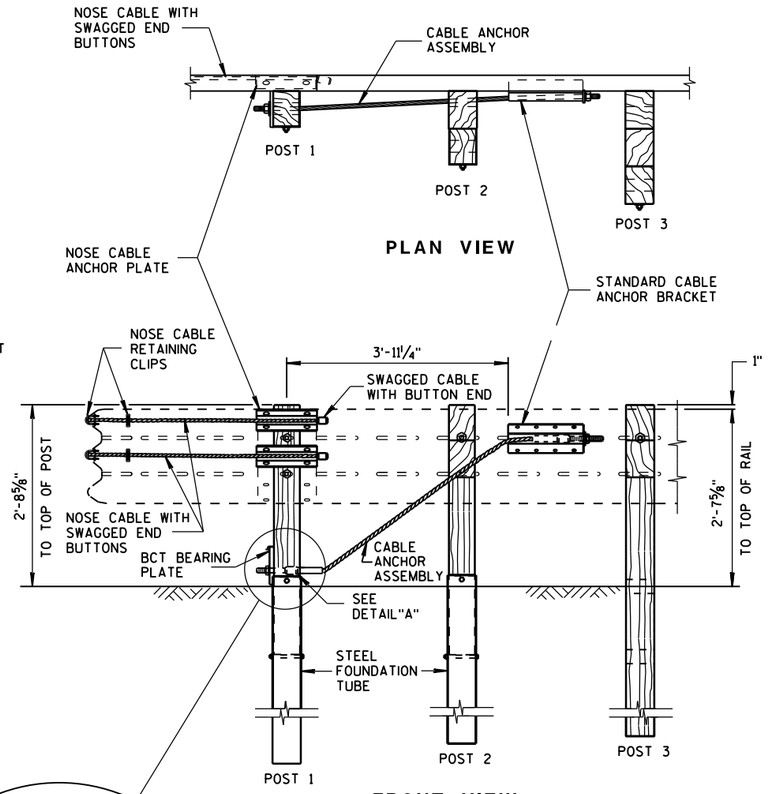
6

S.D.D. 14 B 26-3b



SIDE VIEW

NOSE CABLE ASSEMBLY AT POST NO. 1



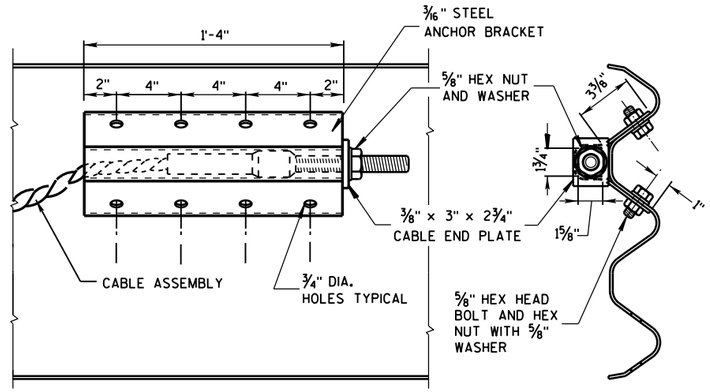
PLAN VIEW

FRONT VIEW

NOSE CABLE ANCHOR AND STANDARD BRACKET ASSEMBLY

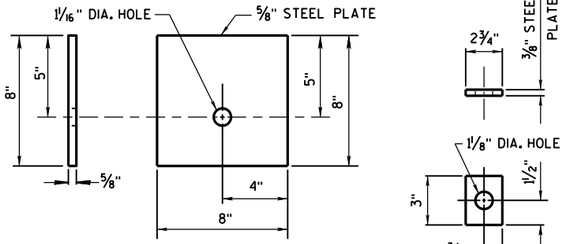
GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.



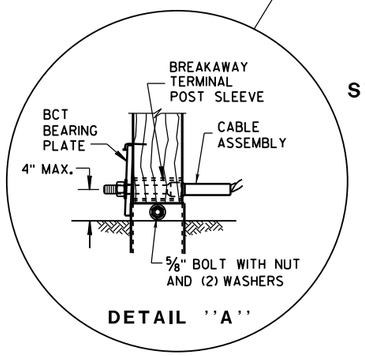
FRONT VIEW END VIEW

DETAILS OF CABLE ANCHOR BRACKET

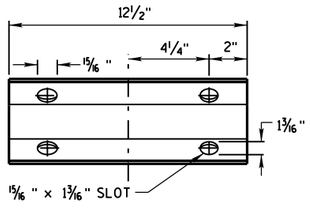


BCT BEARING PLATE

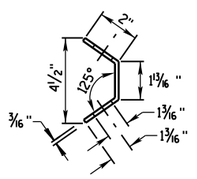
CABLE END PLATE



DETAIL ''A''



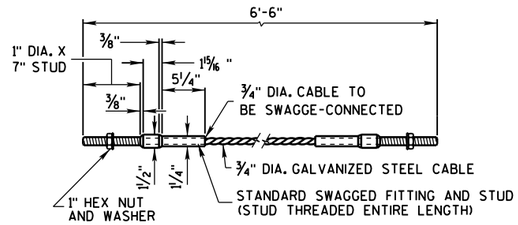
ELEVATION VIEW



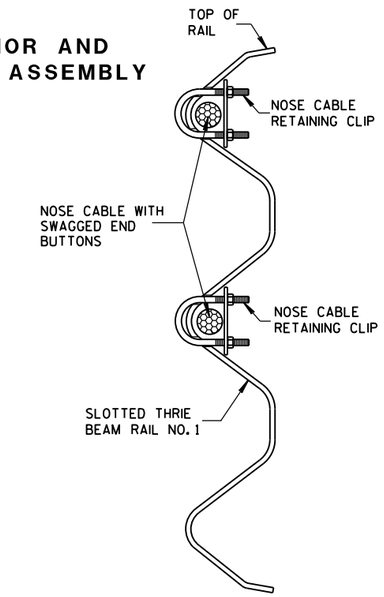
END VIEW

NOSE CABLE ANCHOR PLATE

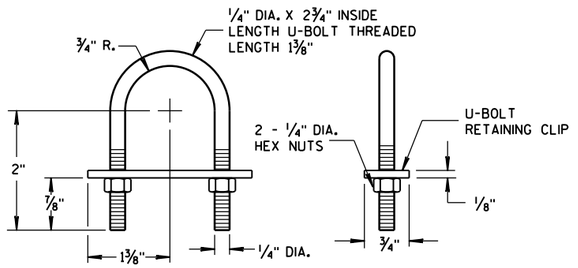
NOTE: 12 1/2" x 5 13/16" x 3/16" STEEL PLATE (A306)



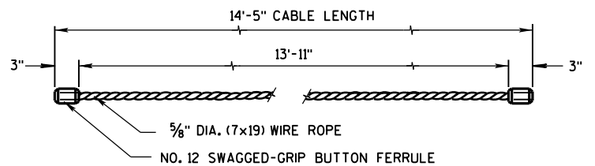
DETAILS OF CABLE ANCHOR ASSEMBLY



PLACEMENT OF NOSE CABLE RETAINING CLIP



NOSE CABLE RETAINING CLIP



NOSE CABLE WITH SWAGGED END BUTTONS

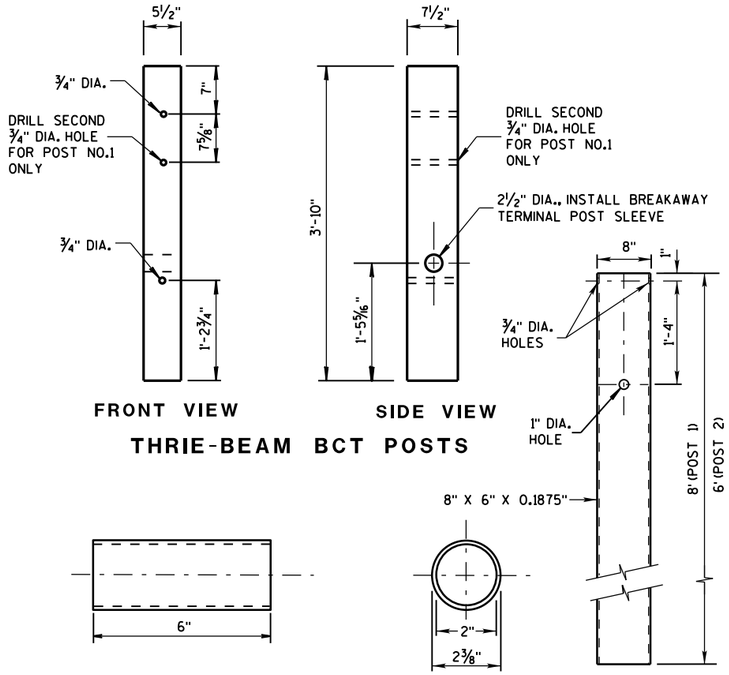
TO PULL OFF SWAGGED GRIP BUTTON FERRULE FROM WIRE ROPE REQUIRES A FORCE EQUAL TO 98% OF THE WIRE ROPE'S BREAKING STRENGHT.

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 14 B 26-3c

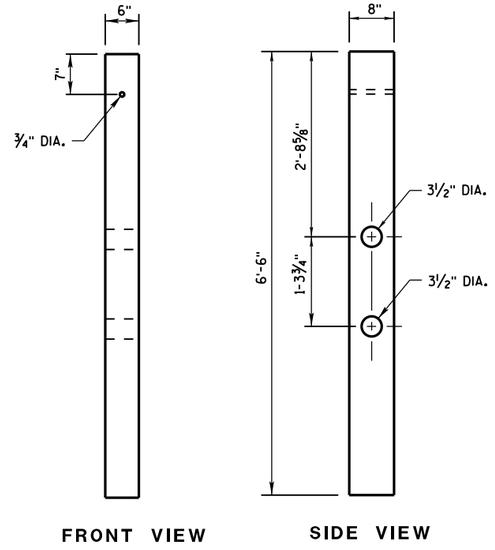


FRONT VIEW SIDE VIEW

THRIE-BEAM BCT POSTS

BREAKAWAY TERMINAL POST SLEEVE

STEEL FOUNDATION TUBE

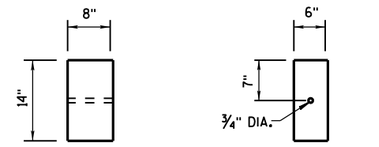


FRONT VIEW SIDE VIEW

THRIE-BEAM CRT WOOD POSTS

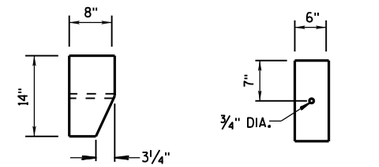
GENERAL NOTES

SEE STANDARD DETAIL DRAWINGS 14 B 26a-e.



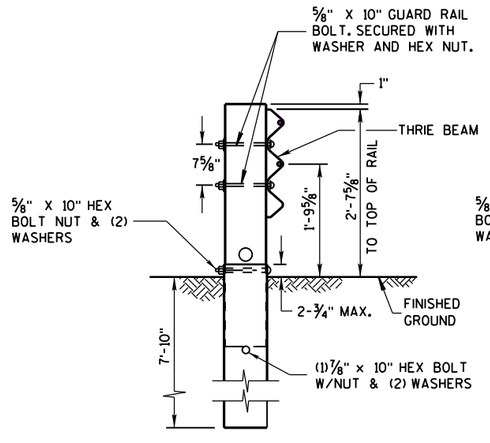
SIDE VIEW FRONT VIEW

STANDARD WOOD BLOCK



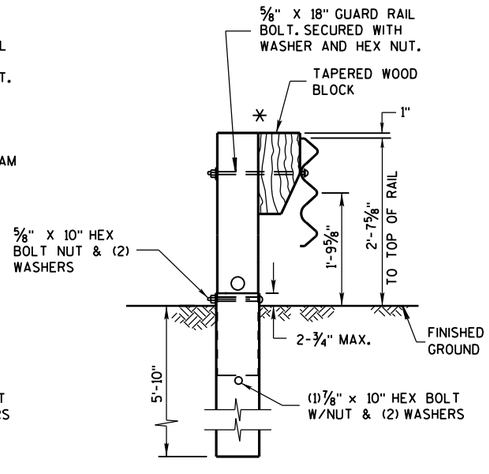
SIDE VIEW FRONT VIEW

TAPERED WOOD BLOCK



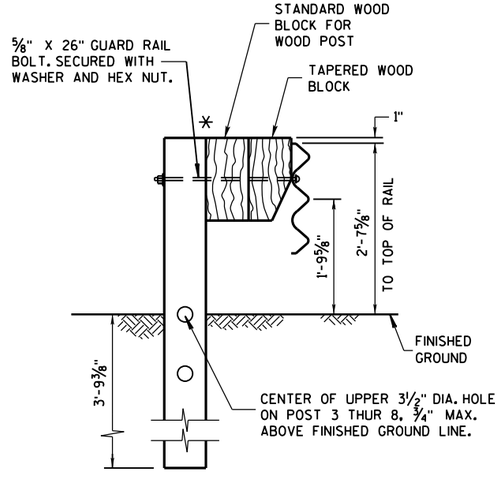
THRIE-BEAM BCT POST
(WITH 8'-0" FOUNDATION TUBE)

POST NO. 1



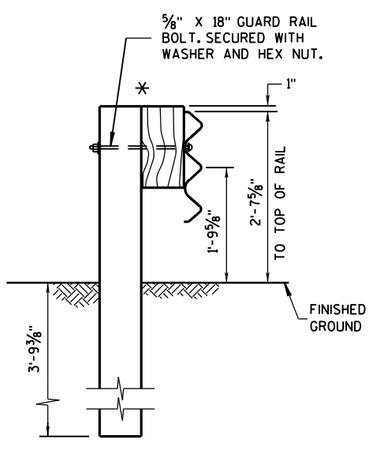
THRIE-BEAM BCT POST
(WITH 6'-0" FOUNDATION TUBE AND 1'-2" TAPERED BLOCK)

POST NO. 2



THRIE-BEAM CRT POST
(6'-6" LONG POST WITH 1'-2" BLOCK AND 1'-2" TAPERED BLOCK)

POST NO. 3,4,5,6,7, & 8



THRIE-BEAM POST
(6'-6" LONG POST WITH 1'-2" BLOCK)

POST NO. 9,10,11,& 12
(ALSO USE FOR STEEL THRIE BEAM BEYOND POST 12)

* IF NEEDED DUE TO AN UNDERGROUND OBSTACLE ADD 1 ADDITIONAL STANDARD BLOCKOUT TO POST.

STEEL THRIE BEAM BULLNOSE TERMINAL

STATE OF WISCONSIN
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S.D.D. 14 B 26-3d

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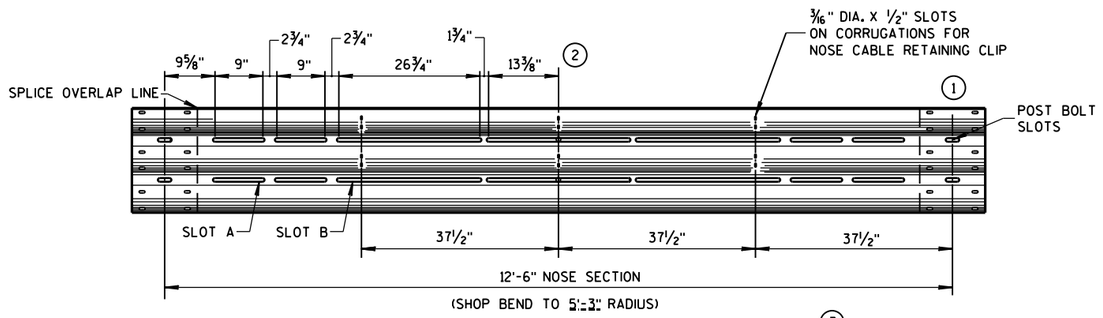
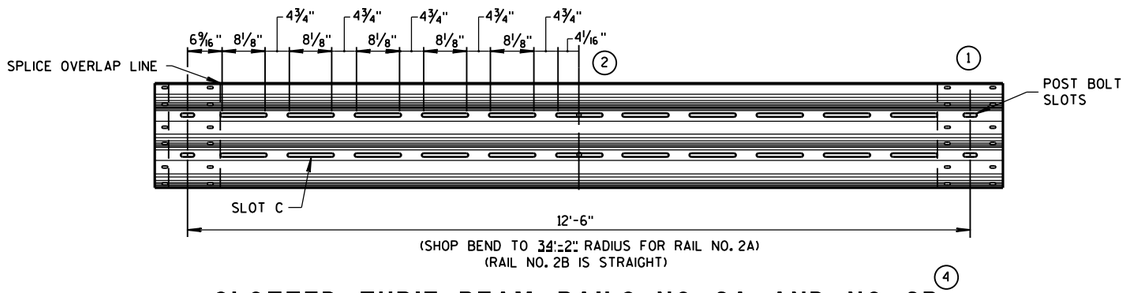
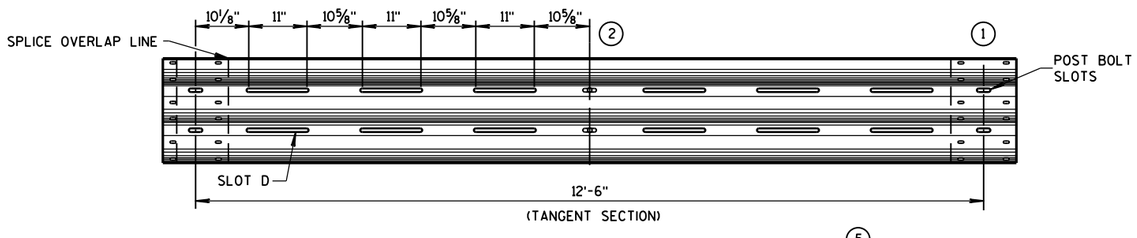
S.D.D. 14 B 26-3d



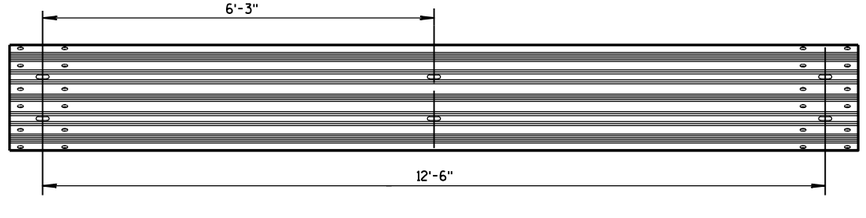
SLOTTED THRIE BEAM RAIL NO. 1 (3)



SLOTTED THRIE BEAM RAILS NO. 2A AND NO. 2B (4)



SLOTTED THRIE BEAM RAIL NO. 3 (5)



UNBENT STANDARD THRIE BEAM RAIL NO. 4 AND NO. 5

GENERAL NOTES

SEE STANADRD DETAIL DRAWINGS 14 B 26a-e.

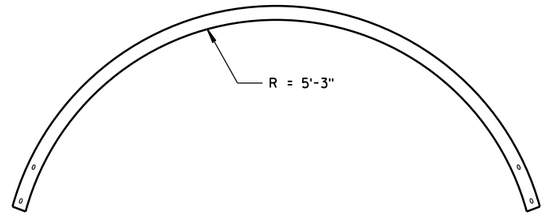
(1) SLOTTED THRIE BEAM RAIL DIMENSIONS SHOWN ARE BEFORE BENDING TO THE RADIUS SHOWN.

(2) SLOT SIZE AND SPACING SYMMETRIC.

(3) SLOTTED THRIE BEAM RAIL NO. 1, 12'-6", SHOP BEND TO R=5'-3".

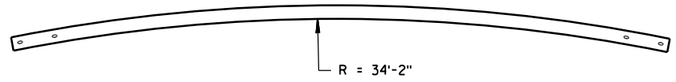
(4) SLOTTED THRIE BEAM RAIL NO. 2A, 12'-6", SHOP BEND TO R=34'-2".
SLOTTED THRIE BEAM RAIL NO. 2B, 12'-6", RAIL IS STRAIGHT.

(5) SLOTTED THRIE BEAM RAIL NO. 3, 12'-6", TANGENT.



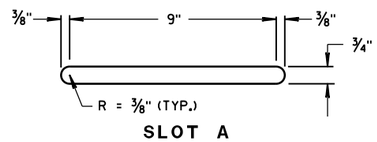
PLAN VIEW

SLOTTED THRIE BEAM RAIL NO. 1

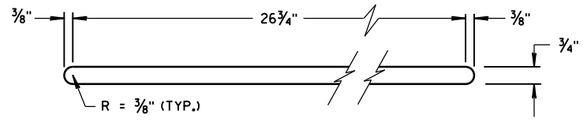


PLAN VIEW

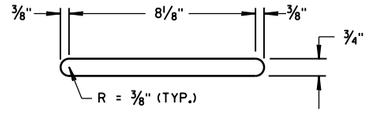
SLOTTED THRIE BEAM RAIL NO. 2A



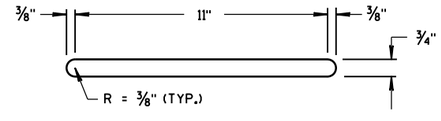
SLOT A



SLOT B



SLOT C



SLOT D

SLOT DETAILS

STEEL THRIE BEAM
BULLNOSE TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2014 — DATE

/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER

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FHWA

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S.D.D. 14 B 26-3e

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.

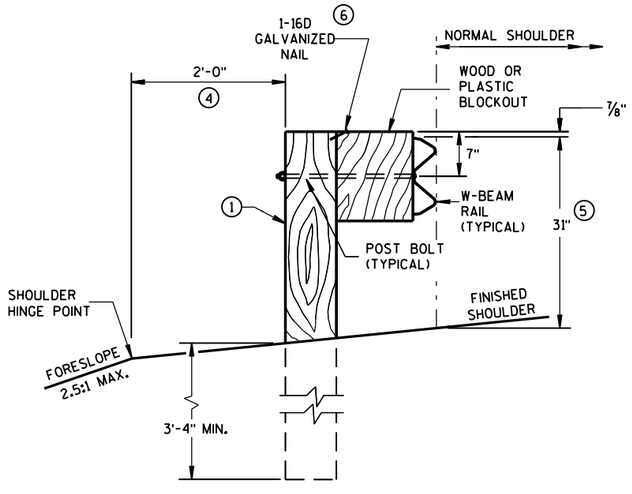
② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.

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).

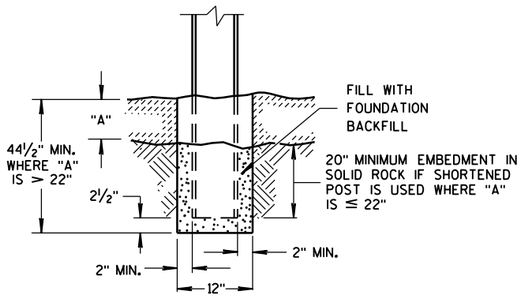
⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ± 1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27¾" TO 32".

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.



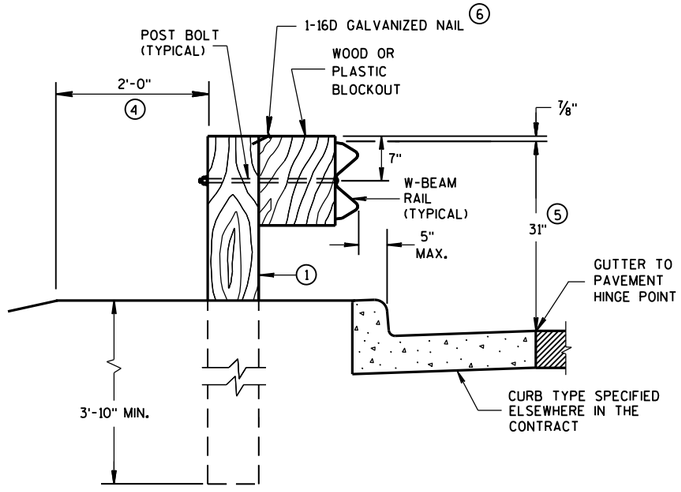
END VIEW

LOCATED ALONG A ROADWAY SHOULDER
STANDARD INSTALLATION



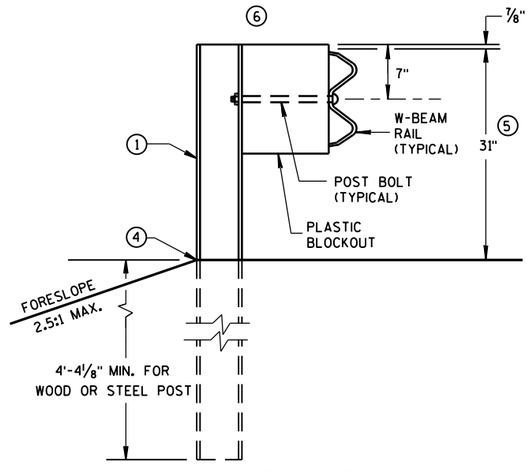
END VIEW

SETTING STEEL OR WOOD POST IN ROCK ③



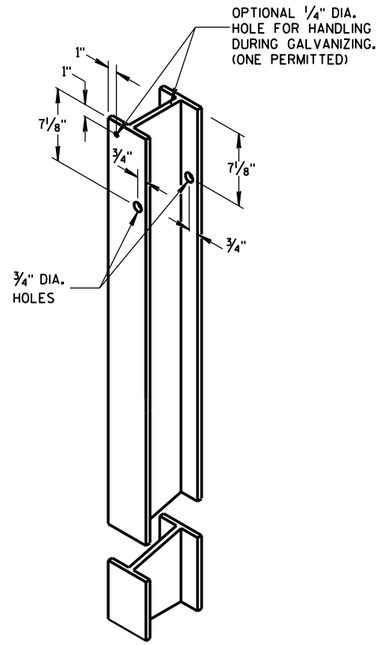
END VIEW

LOCATED ALONG A CURBED ROADWAY

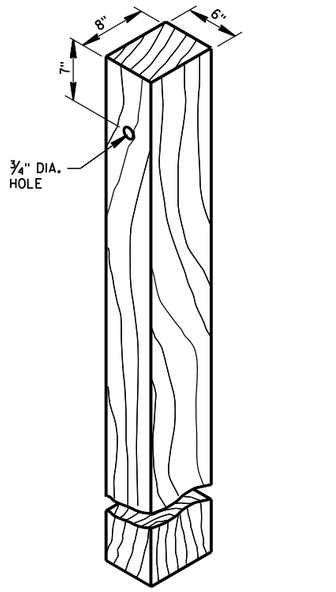


END VIEW

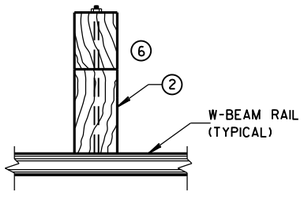
MGS LONGER POST AT HALFPOST SPACING W BEAM (K)



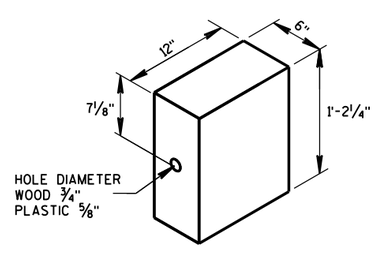
STEEL POST &
HOLE PUNCHING DETAIL
(w6X9) ①



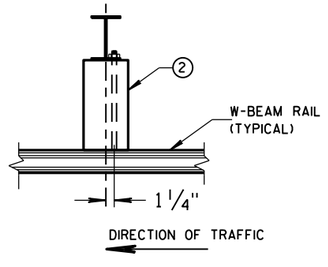
WOOD POST
(6" X 8") NOMINAL ①



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 TRANSPO

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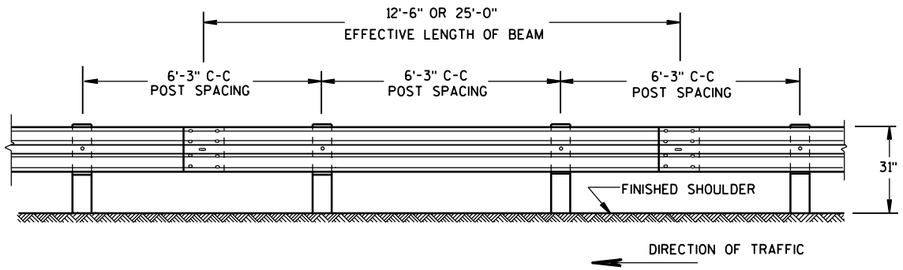
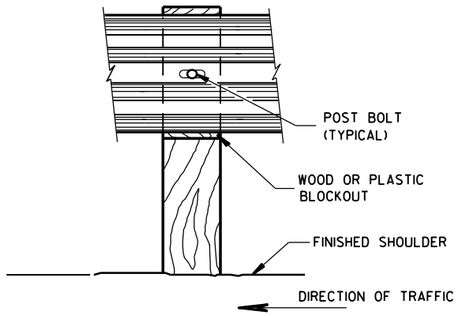
S.D.D. 14 B 42-4a



FRONT VIEW

POST SPACING STANDARD INSTALLATION



FRONT VIEW AT WOOD POST

7. PROVIDE SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH YELLOW REFLECTIVE SHEETING. SHEETING IS TYPE H. SEE STANDARD SPECIFICATION 637.

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.

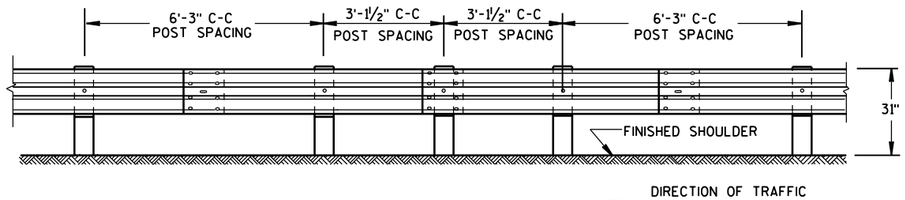
9. REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.

10. PROVIDE AN ANGLE OF BEND OF 90° ± 1° FOR TWO-SIDED REFLECTORS.

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

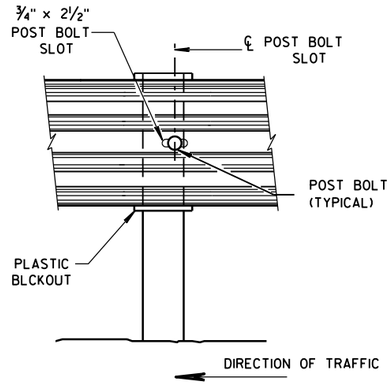
POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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.

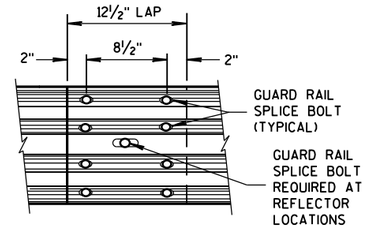


FRONT VIEW

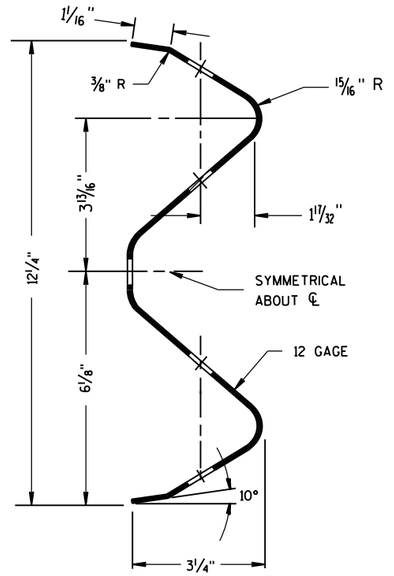
HALF POST SPACING (HS) AND HALF POST SPACING WITH LONGER POSTS (K)



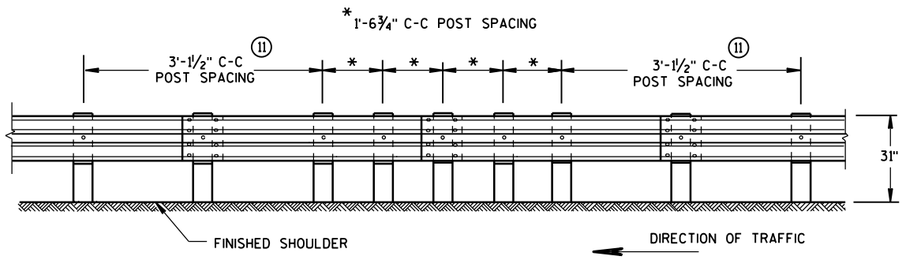
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE

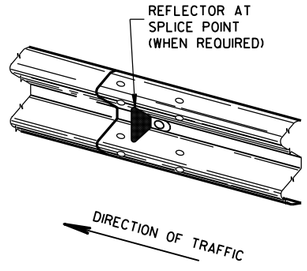


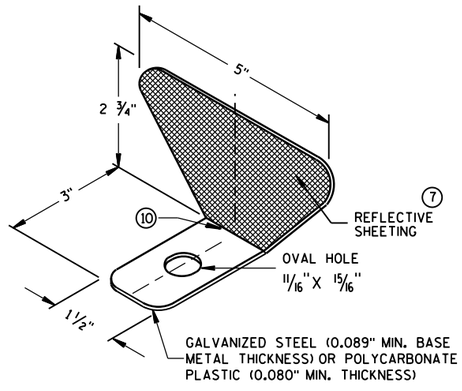
SECTION THRU W-BEAM RAIL



FRONT VIEW

QUARTER POST SPACING (QS)





ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION (7)

REFLECTOR SPACING (8)

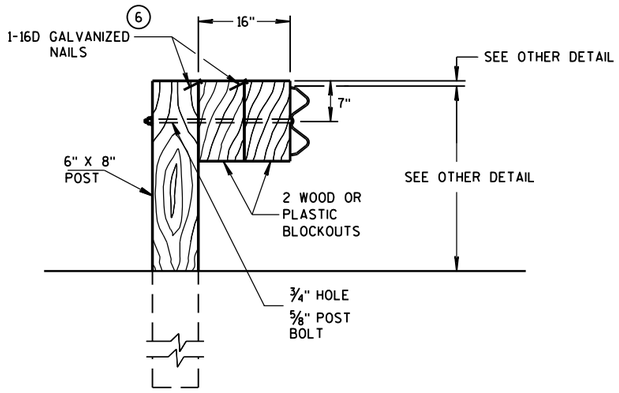
	BEAM GUARD LENGTH	REFLECTOR SPACING	NO. SURFACES REFLECTORIZED	MIN. NO. REFLECTORS
ONE WAY TRAFFIC	< 200'	50' C-C	1	3
	> 200'	100' C-C	1	
TWO WAY TRAFFIC	< 200'	25' C-C	1 (9)	6
	> 200'	50' C-C	1	
TWO WAY TRAFFIC	< 200'	50' C-C	2	3
	> 200'	100' C-C	2 (10)	

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

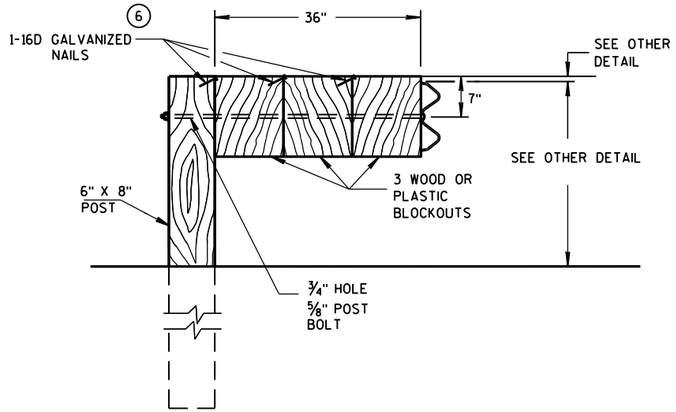
6

S.D.D. 14 B 42-4b



DETAIL FOR 16" BLOCKOUT DEPTH

IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.

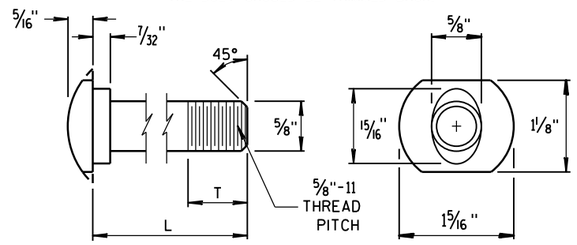


DETAIL FOR 36" BLOCKOUT DEPTH

NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

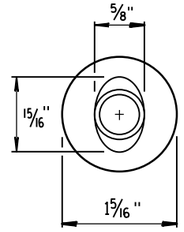
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE: 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 1/16".
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

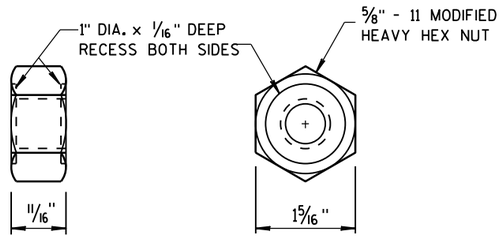


POST BOLT TABLE

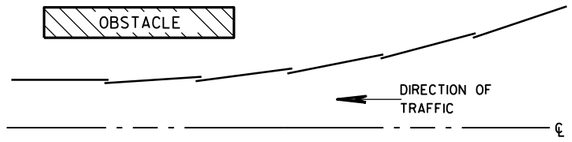
L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/16"
18"	4"
21"	4 1/16"
25"	4"



ALTERNATE BOLT HEAD

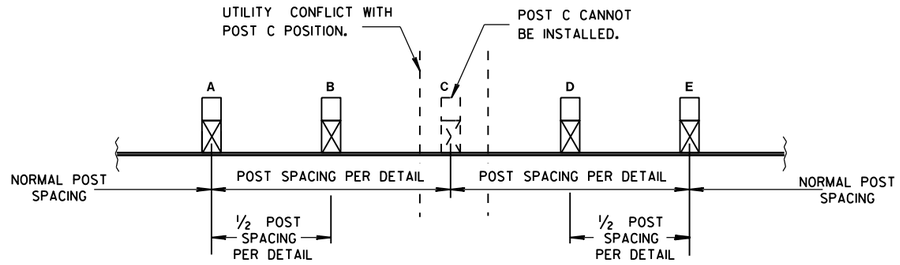


POST BOLT, SPLICE BOLT AND RECESS NUT

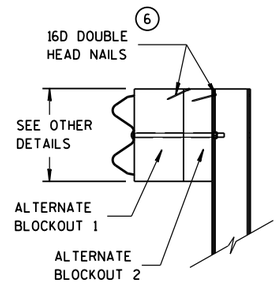


PLAN VIEW

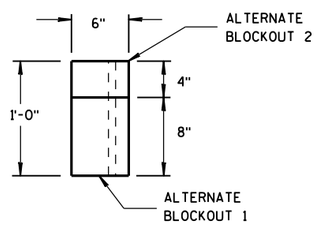
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



TOP VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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.

(D) THE TOP OF THE STEEL TUBE ON POST 1 AND POST 2 SHALL NOT BE MORE THAN 3" ABOVE THE FINISH GROUND ELEVATION.

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

(G) ½" DIAMETER X 3" LONG LAG BOLT AND WASHER.

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

(I) DIMENSIONS MAY VARY. SEE MANUFACTURE'S INFORMATION.

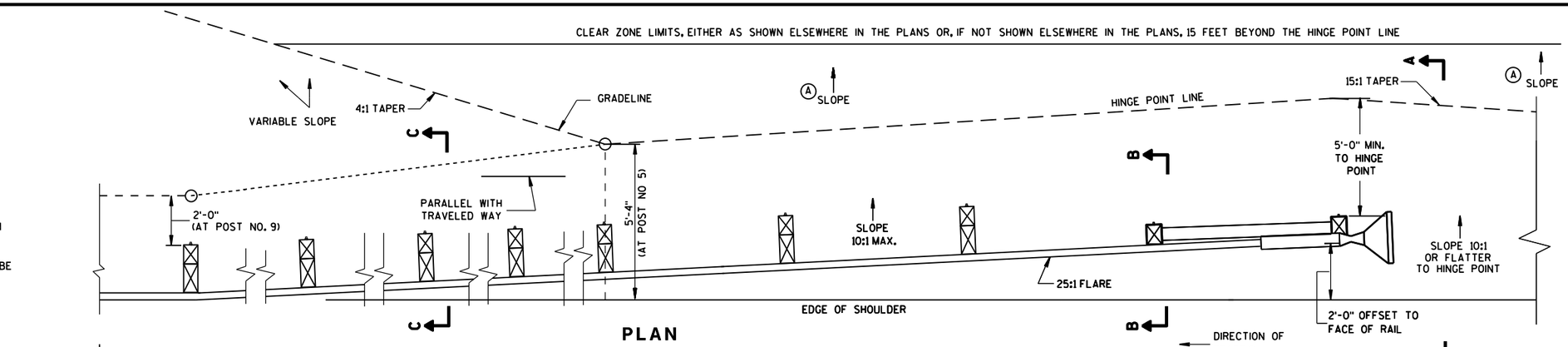
SEE SDD 14B42 FOR MORE INFORMATION.

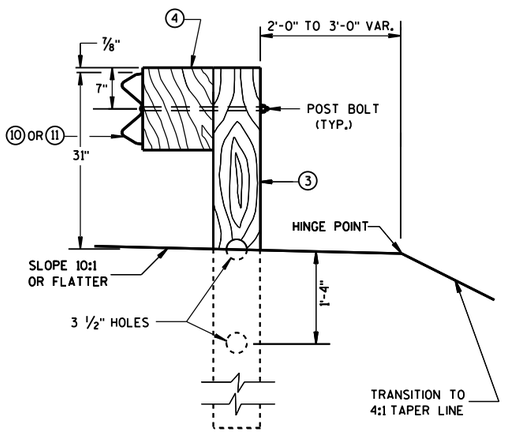
* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

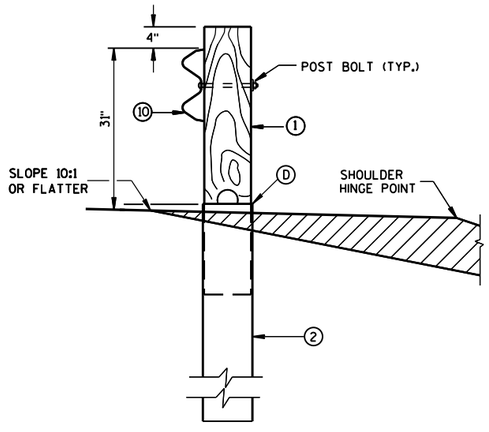
W-BEAM RAIL SPLICES ARE LOCATED AT POST NUMBER 3, AND BETWEEN POST 5 AND 6, BETWEEN POSTS 7 AND 8, AND MIDDLE OF THE SPAN AFTER POST 9.

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.

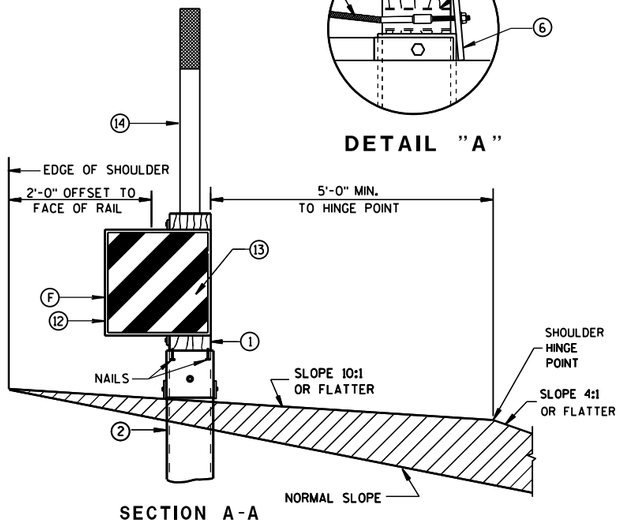




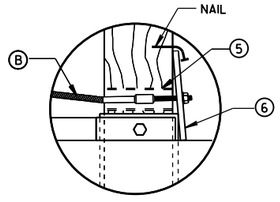
SECTION C-C
TYPICAL AT POST NOS. 3-9



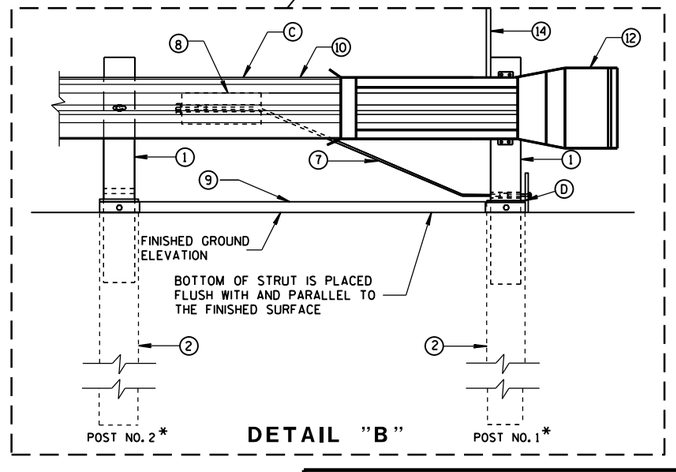
SECTION B-B
TYPICAL AT POST NO. 2*



SECTION A-A
TYPICAL AT POST NO. 1*



DETAIL "A"



DETAIL "B"

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR 97

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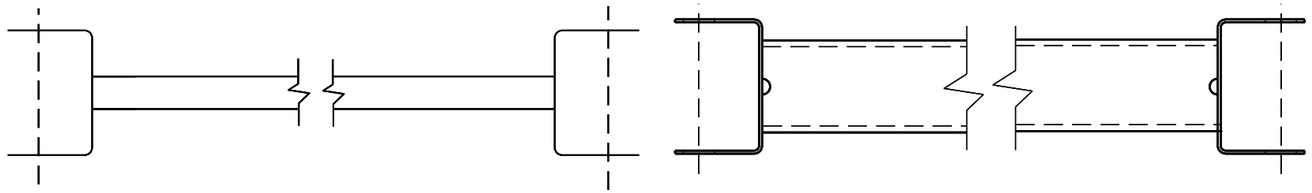
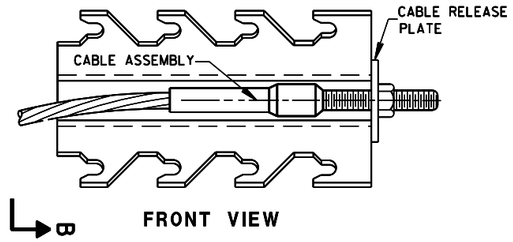


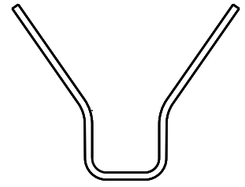
GENERIC GROUND STRUT (9) (H)

BILL OF MATERIALS

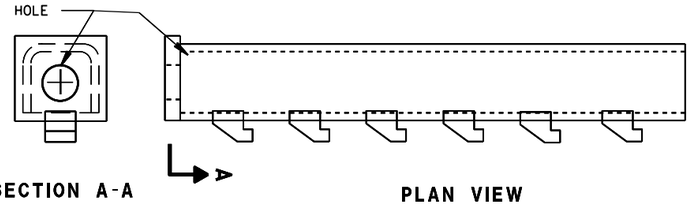
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR CABLE BOX
(9)	GROUND STRUT
(10)	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
(11)	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
(12)	END SECTION EAT
(13)	0.040" ALUMINUM SHEET WITH REFLECTIVE SHEETING TYPE F PER SECTION 637 OF THE STANDARD SPECIFICATIONS
(14)	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)



FRONT VIEW



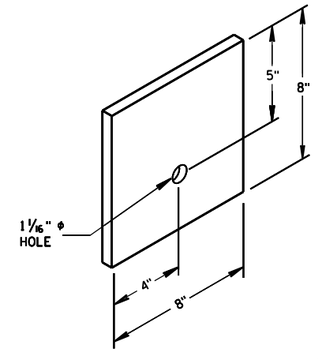
SECTION B-B



SECTION A-A

PLAN VIEW

GENERIC ANCHOR CABLE BOX (8) (H)



BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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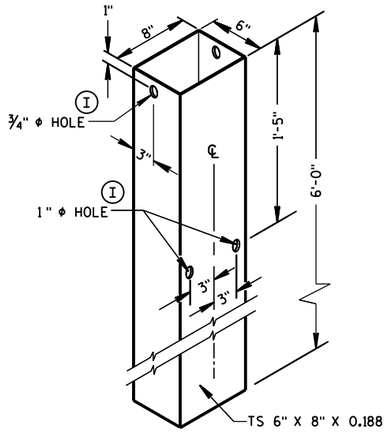
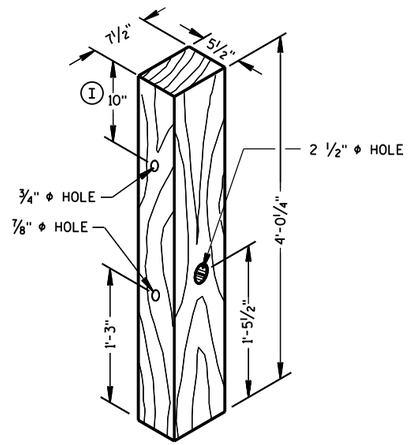
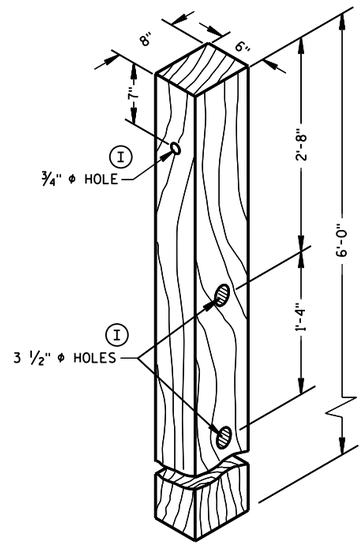


FOUNDATION TUBE (2)



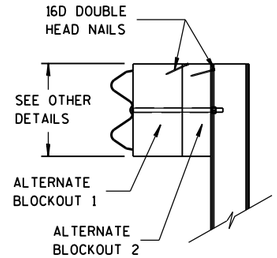
POSTS NUMBER 1 AND 2

WOOD BREAKAWAY POST (1)

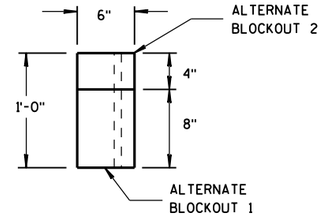


POSTS NUMBER 3-9

WOOD CRT POST (3)

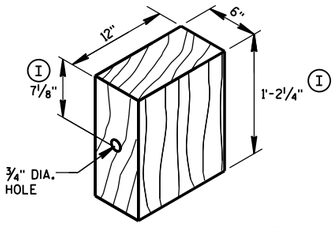


SIDE VIEW



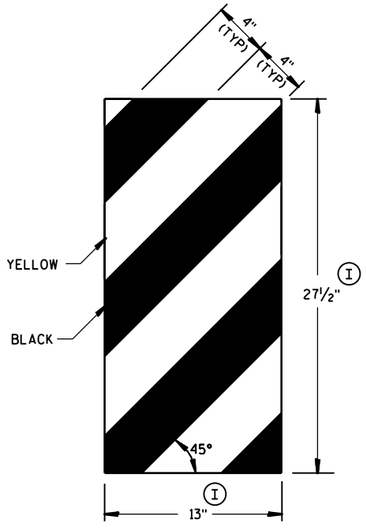
TOP VIEW

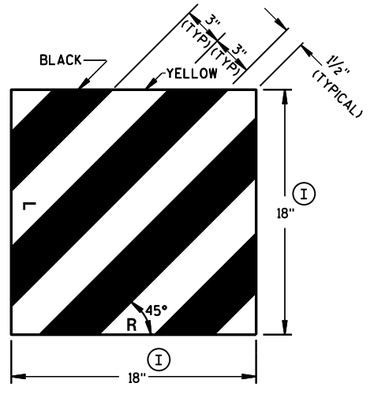
ALTERNATE WOOD BLOCKOUT DETAIL



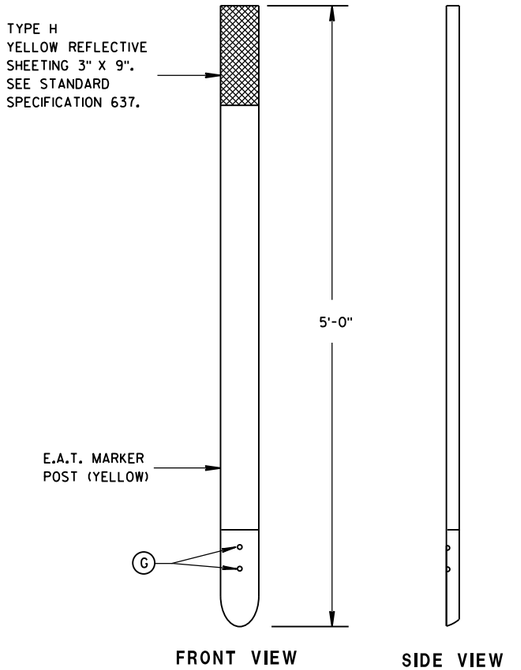
WOOD BLOCKOUT (4)

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





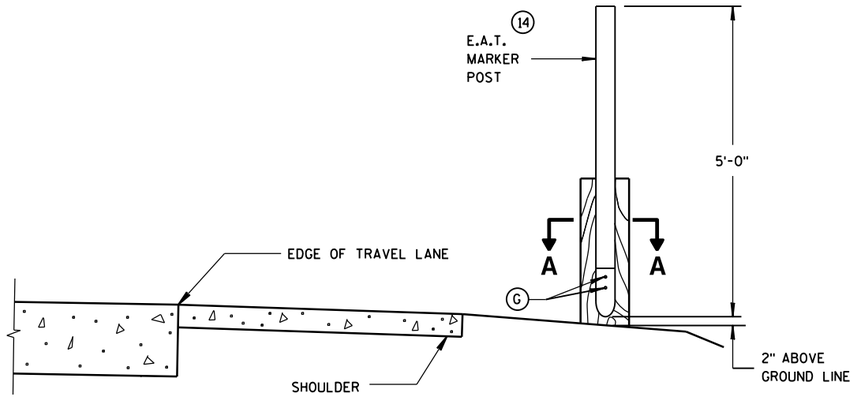
GENERIC REFLECTIVE SHEETING (13) (H)



FRONT VIEW

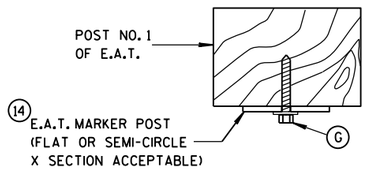
SIDE VIEW

E.A.T. MARKER POST (14)



TYPICAL INSTALLATION OF E.A.T. MARKER POST BACKSIDE OF POST NO. 1

(E.A.T. AND RAIL REMOVED FOR CLARITY)



SECTION A-A

MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA

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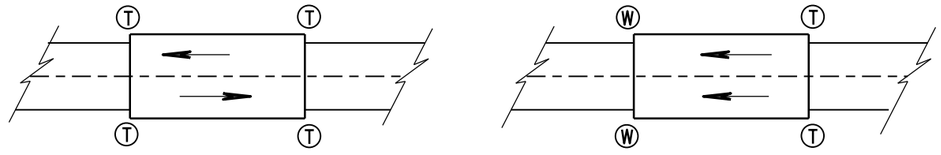
S.D.D. 14 B 44-2c



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

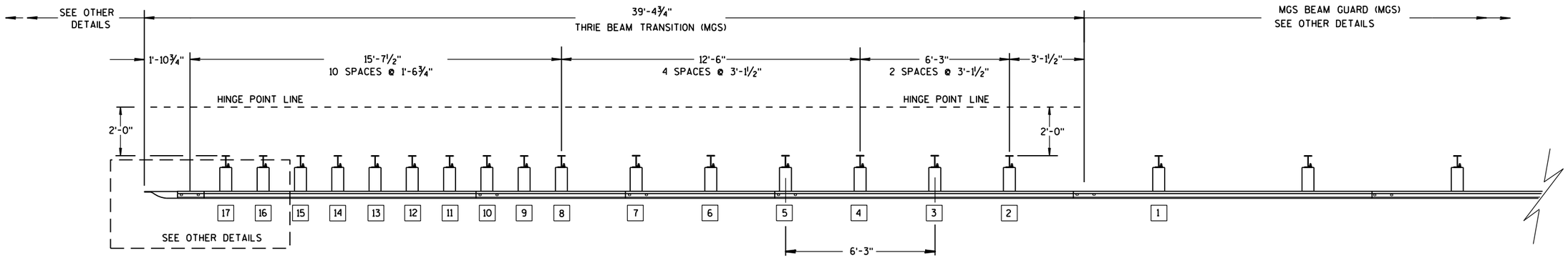
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

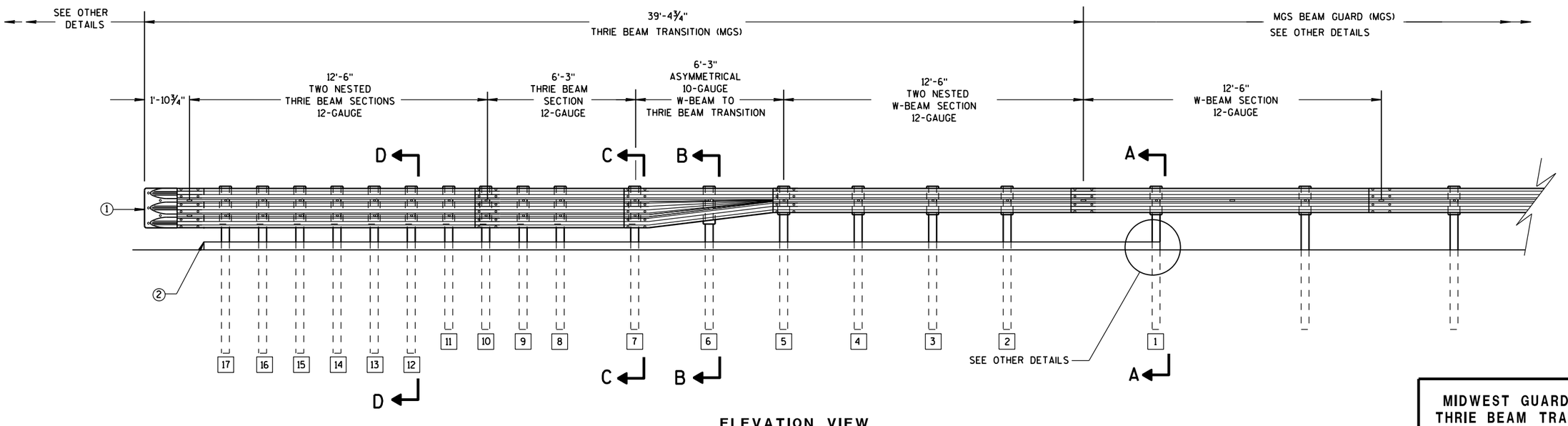
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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
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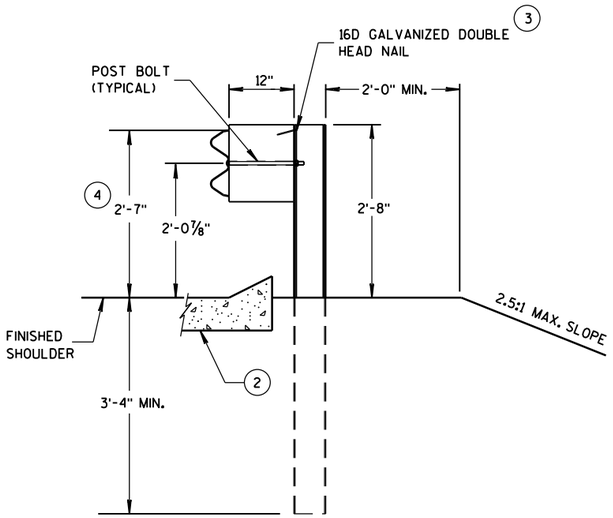
GENERAL NOTES

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

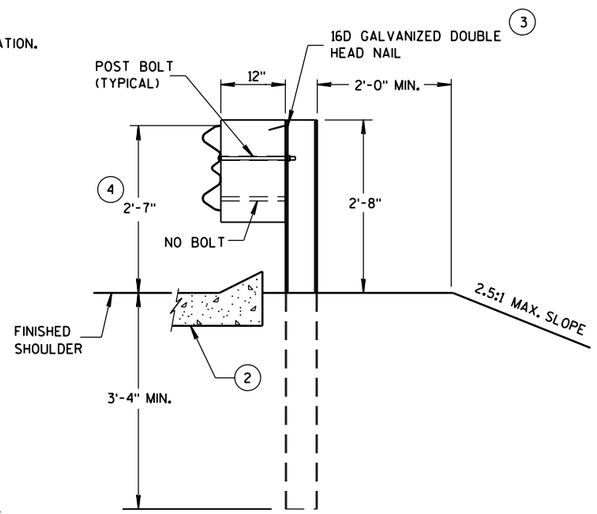
(3) WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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



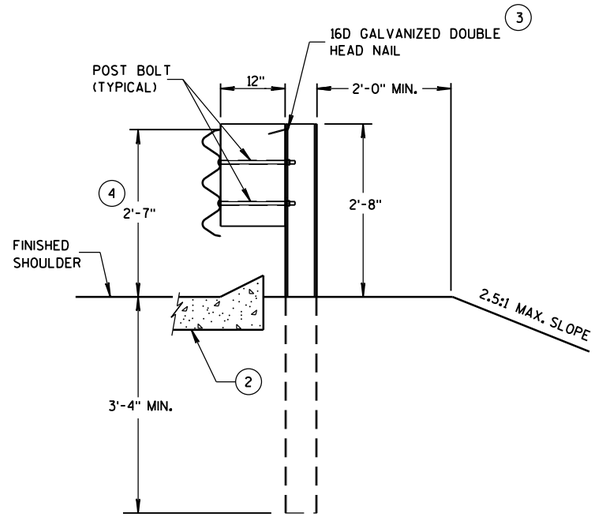
SECTION A-A

POSTS 1-5



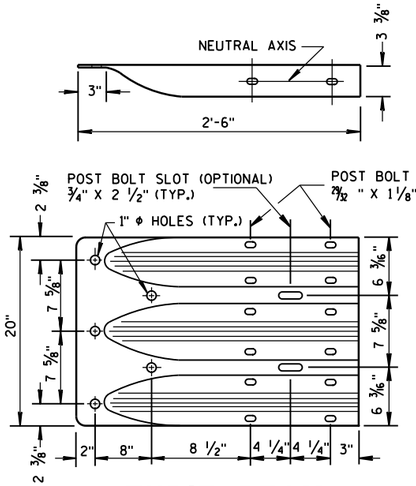
SECTION B-B

POST 6



SECTION C-C

POSTS 7-11



THRIE BEAM TERMINAL CONNECTOR

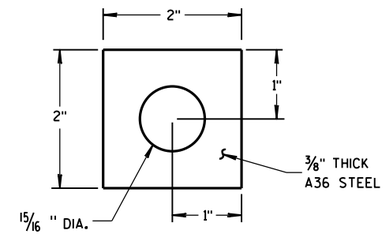
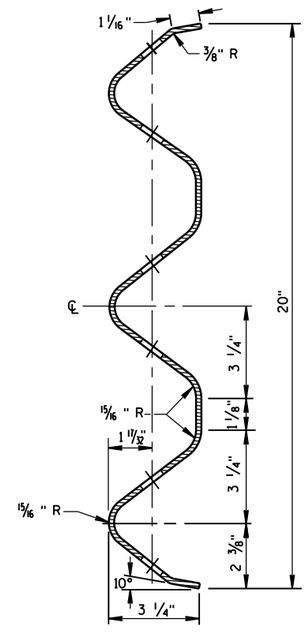
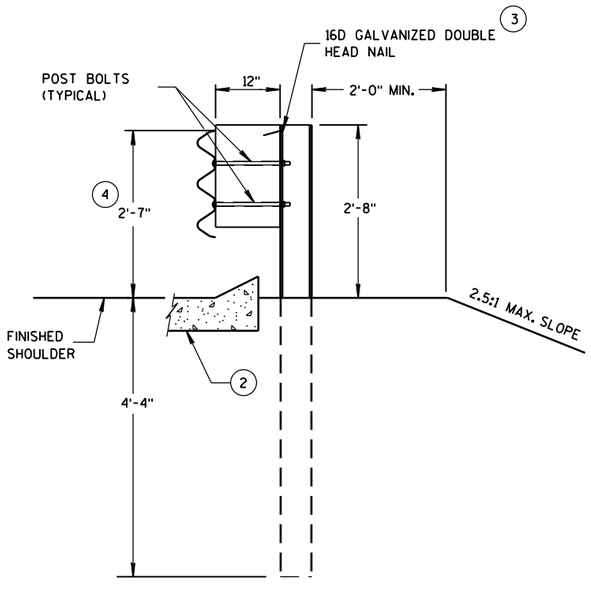


PLATE WASHER DETAIL

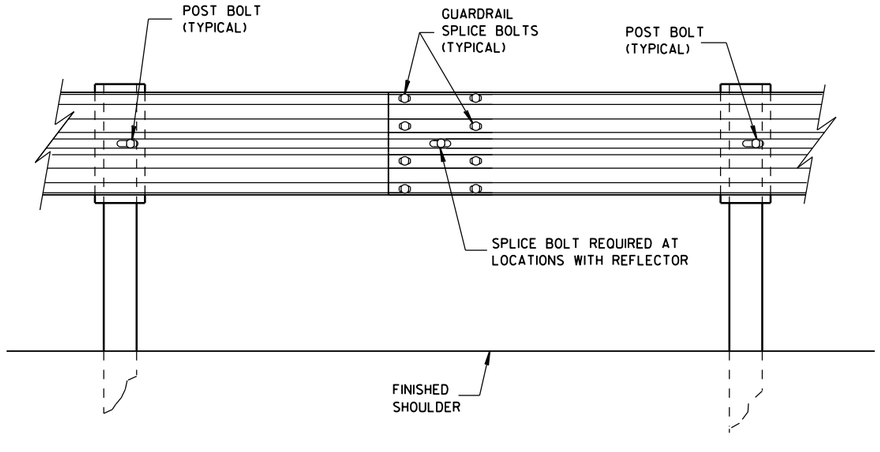


SECTION THRU THRIE BEAM RAIL ELEMENT



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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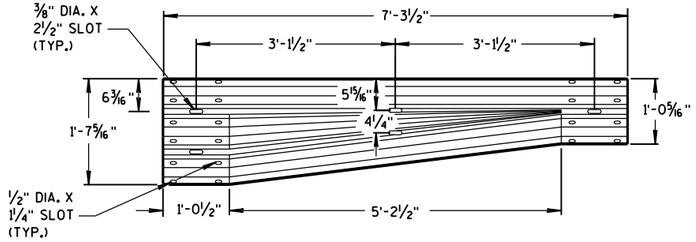
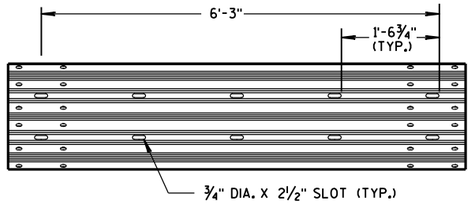
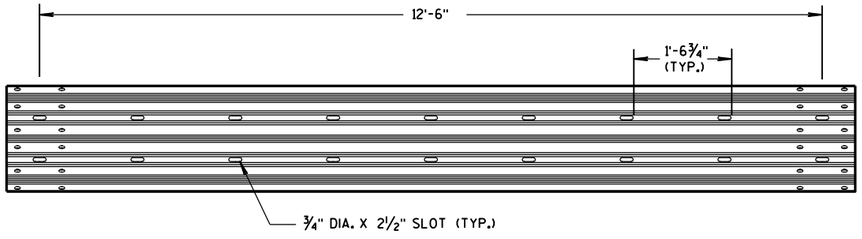


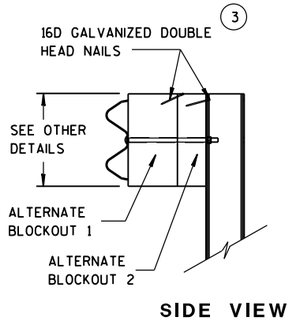
W-BEAM TO THRIE BEAM TRANSITION SECTION



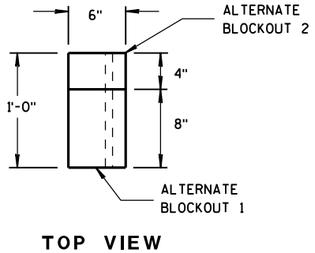
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

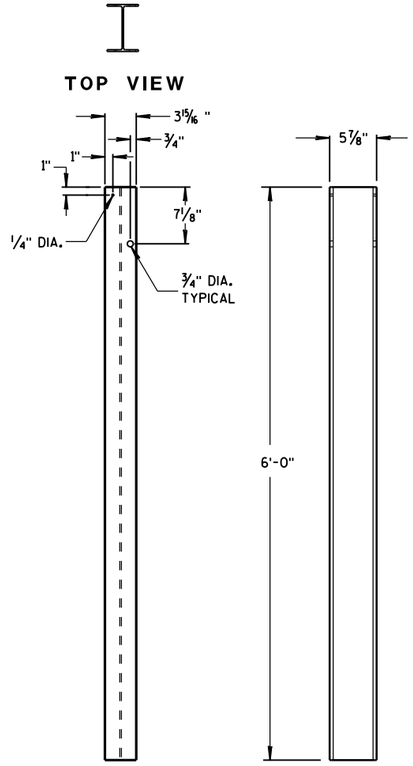


SIDE VIEW

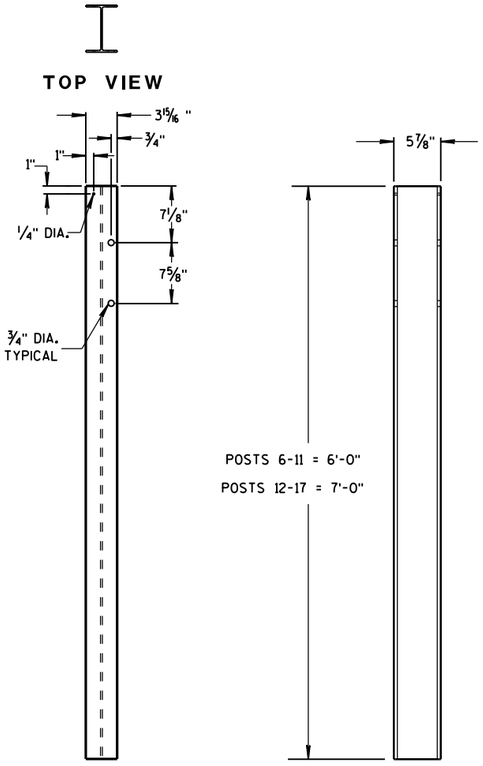


TOP VIEW

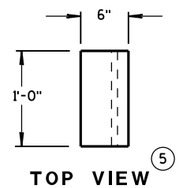
ALTERNATE WOOD BLOCKOUT DETAIL



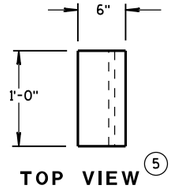
STEEL POSTS 1-5



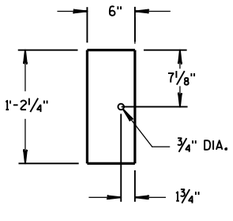
STEEL POSTS 6-17



TOP VIEW (5)

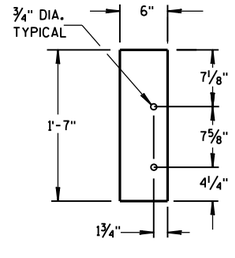


TOP VIEW (5)



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 TRANSPOI

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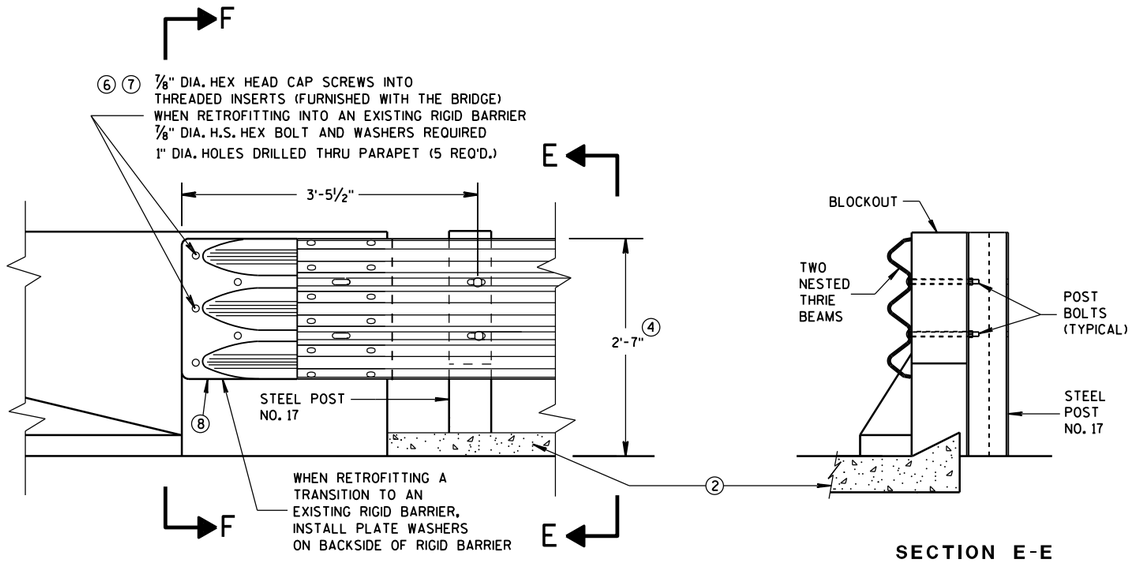
S.D.D. 14 B 45-4c



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.

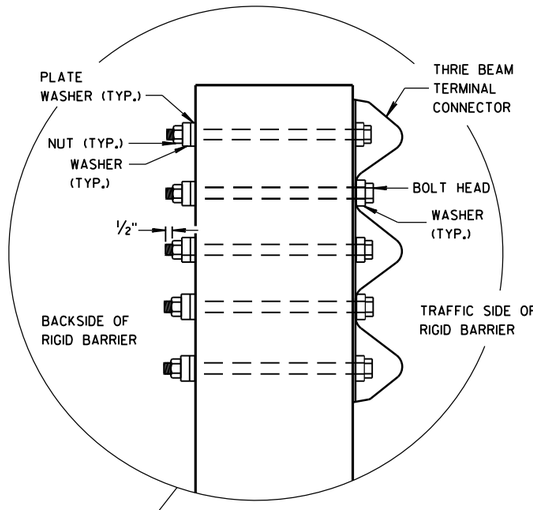
② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.

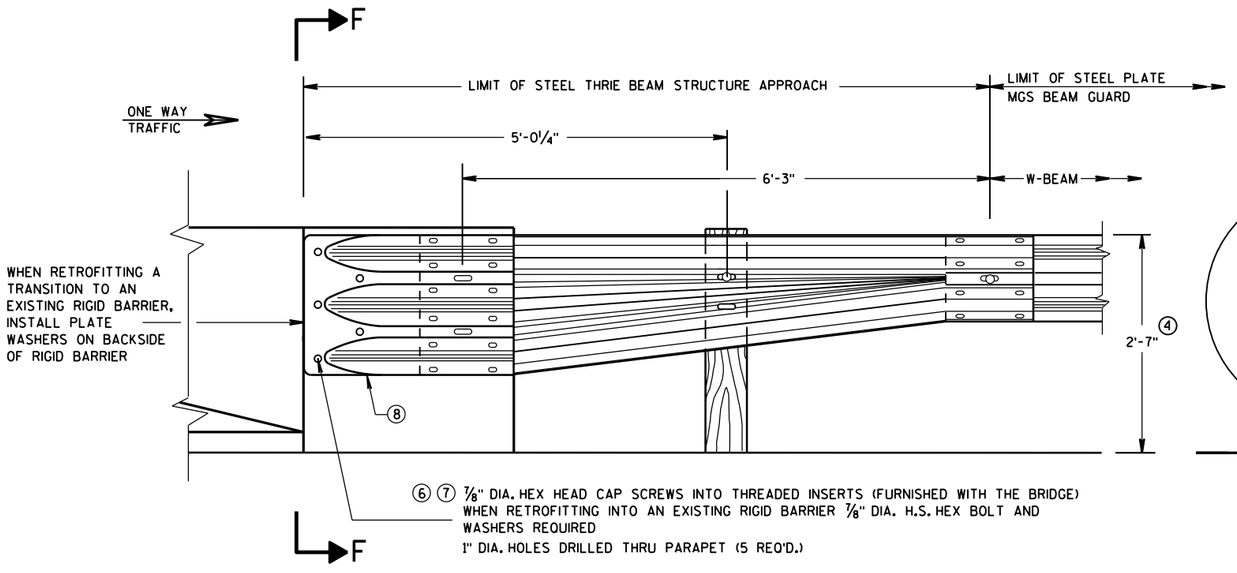
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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

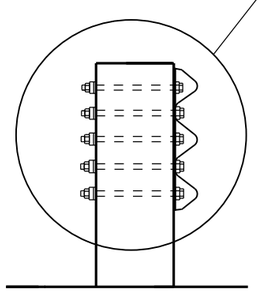
⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE.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

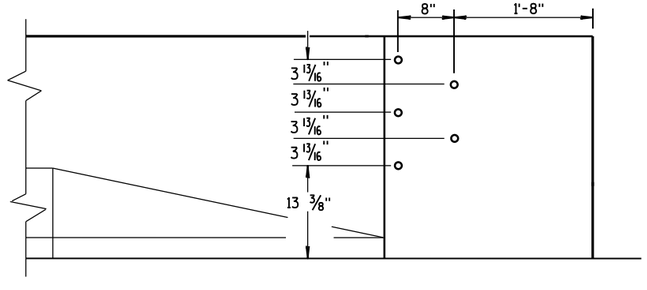




FRONT VIEW



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
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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.

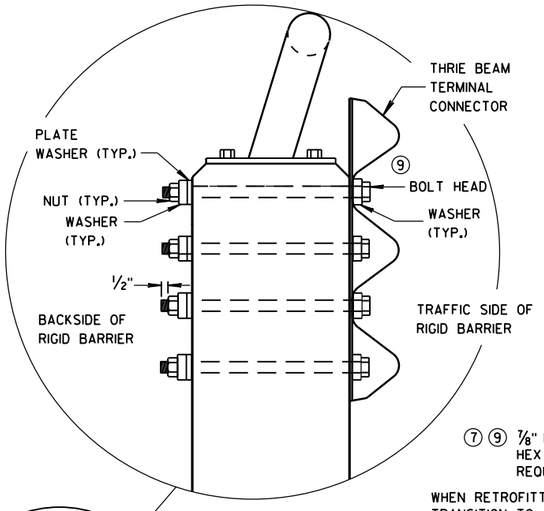
(4) TOLERANCE FOR TOP OF BEAM IS ± 1".

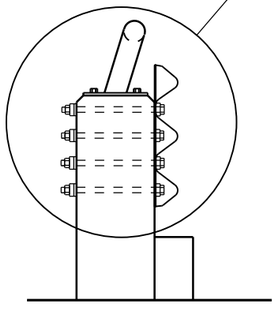
(6) DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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.

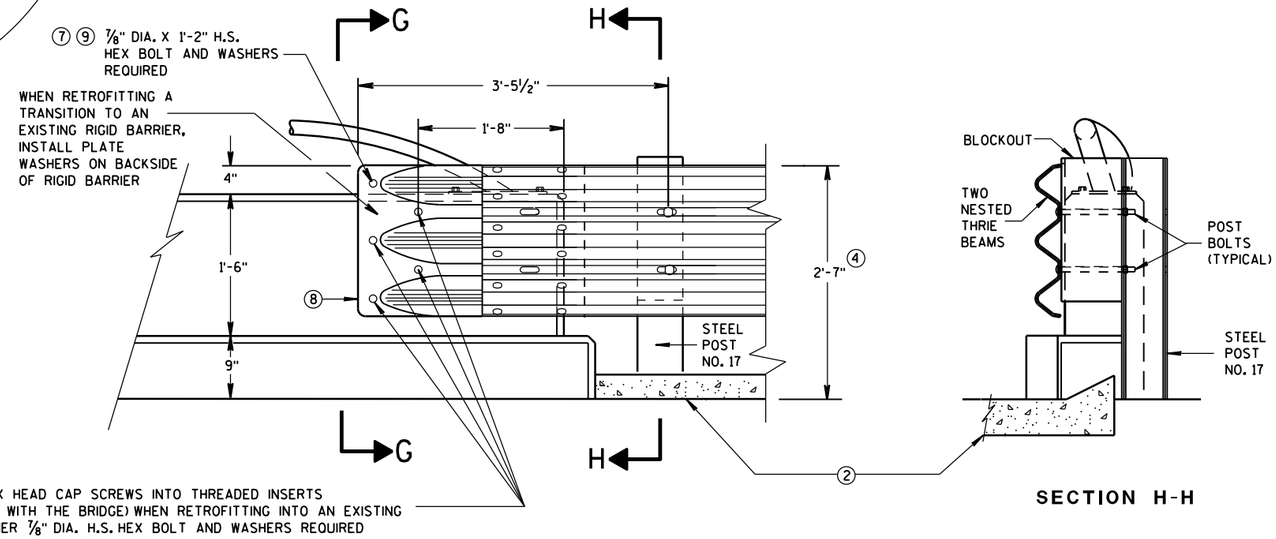
(8) THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".

(9) BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.





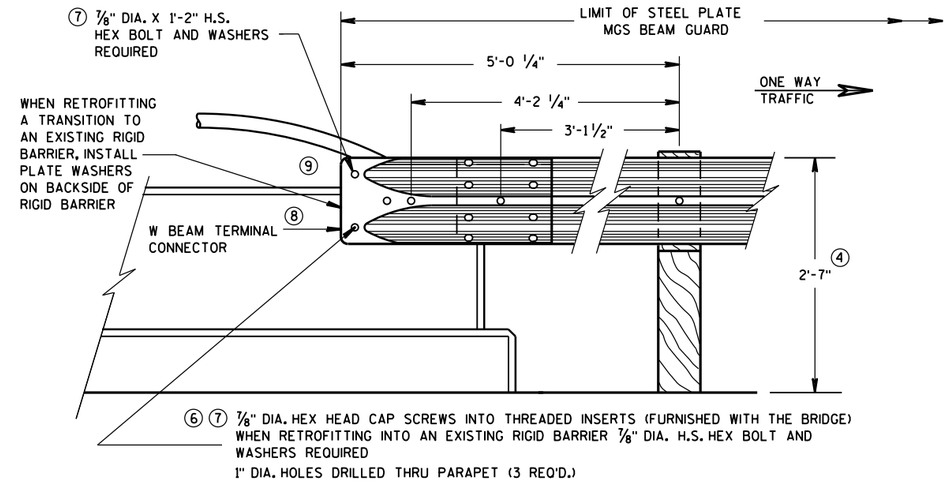
SECTION G-G



FRONT VIEW

SECTION H-H

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

W BEAM CONNECTION TO VERTICAL FACE PARAPET

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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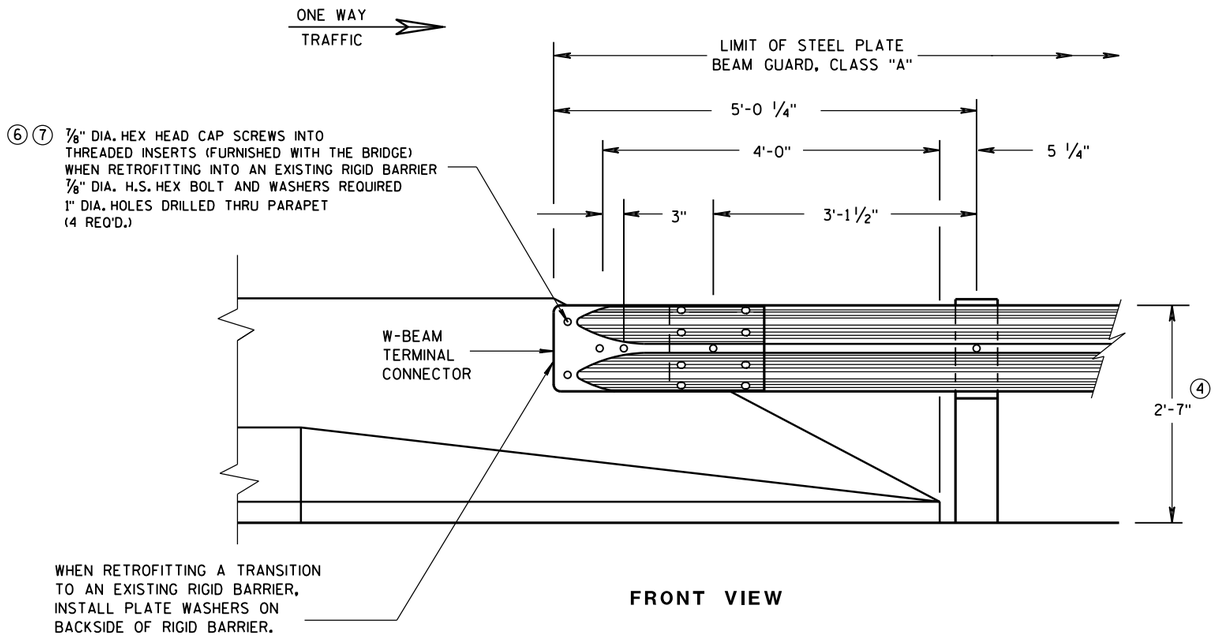


FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

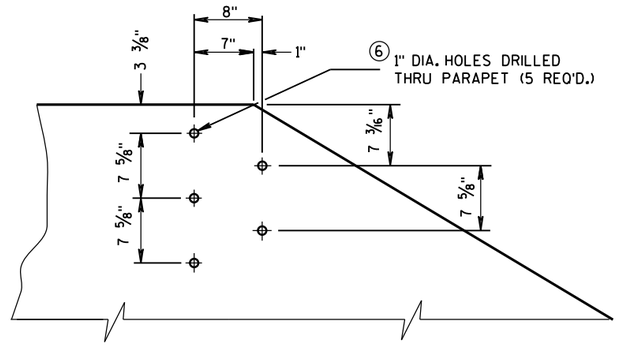
GENERAL NOTES

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

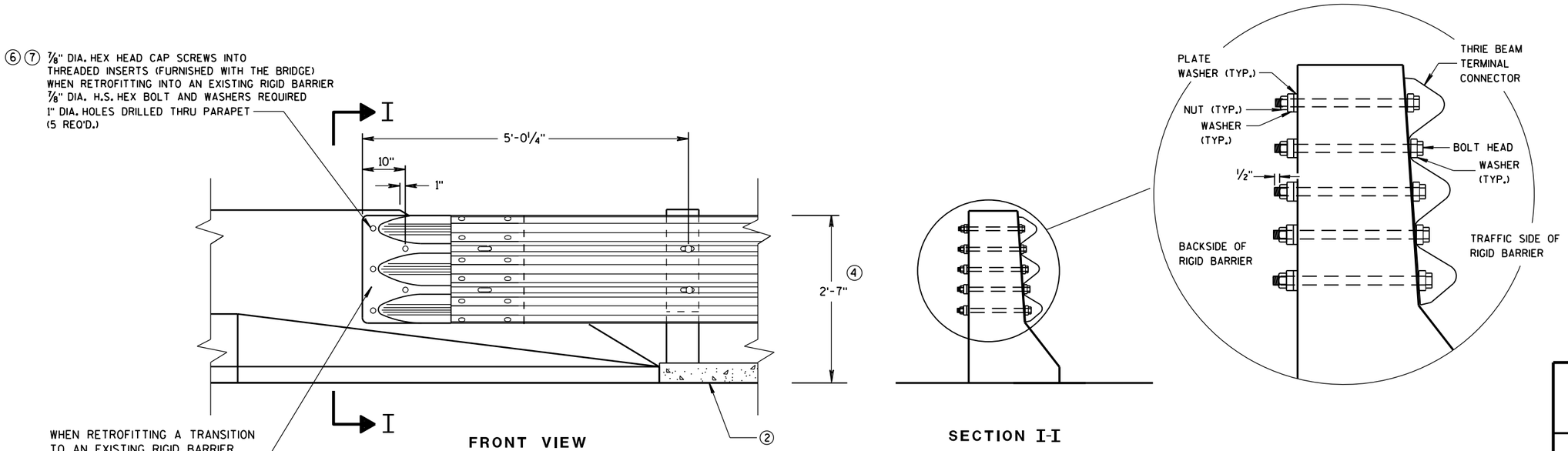
④ TOLERANCE FOR TOP OF BEAM IS ± 1".

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.



DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



FRONT VIEW

SECTION I-I

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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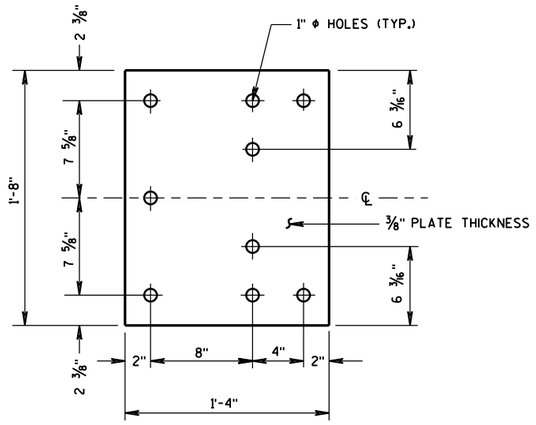
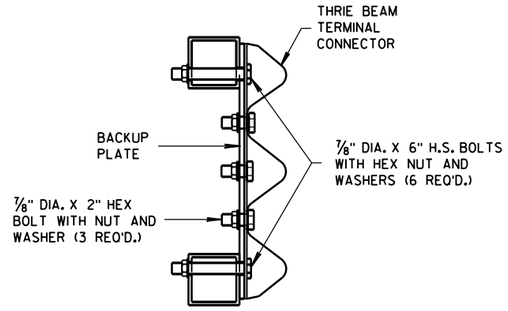
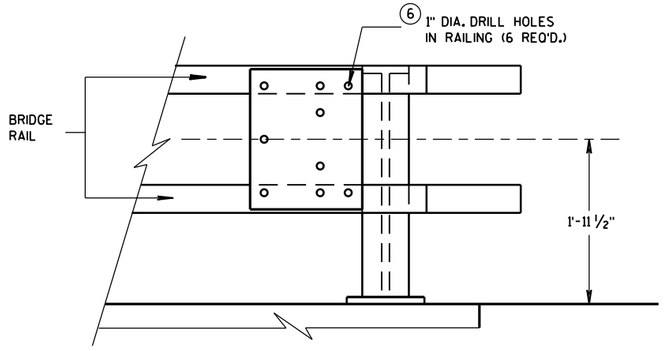


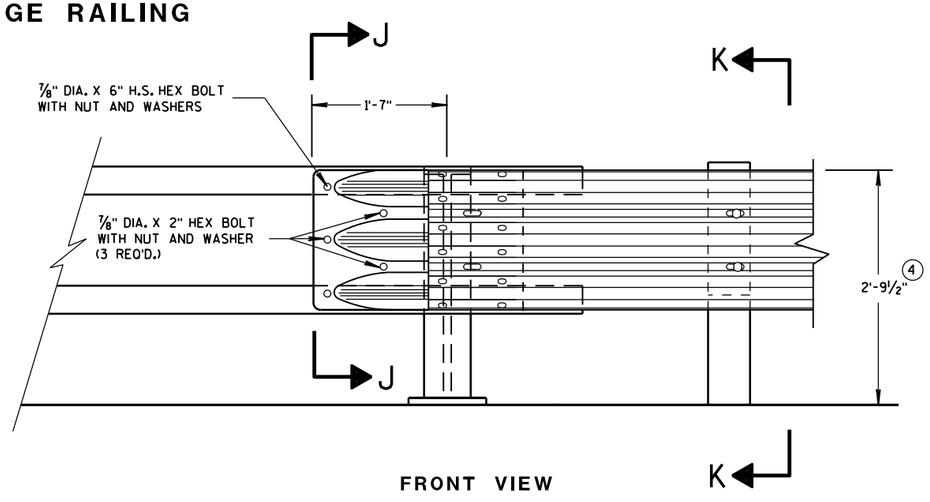
BACK-UP PLATE DETAIL



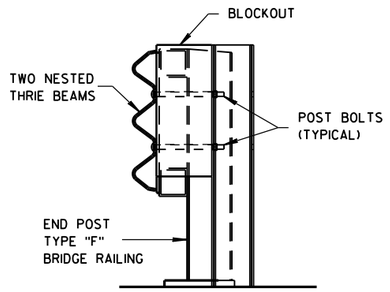
SECTION J-J



BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW



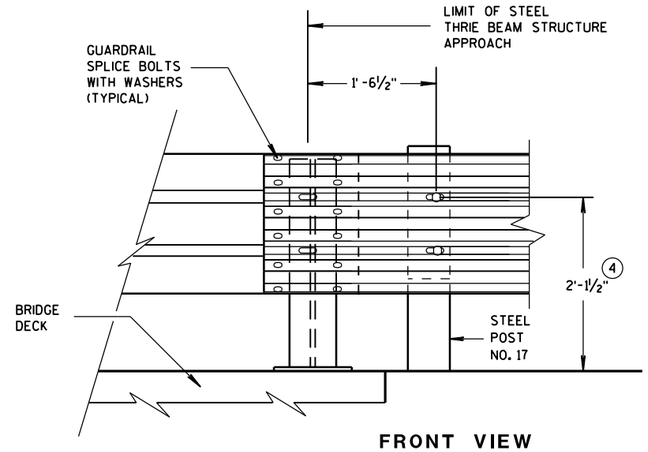
SECTION K-K

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"

GENERAL NOTES

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

(6) DRILLING HOLES THROUGH THE PAPRPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

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MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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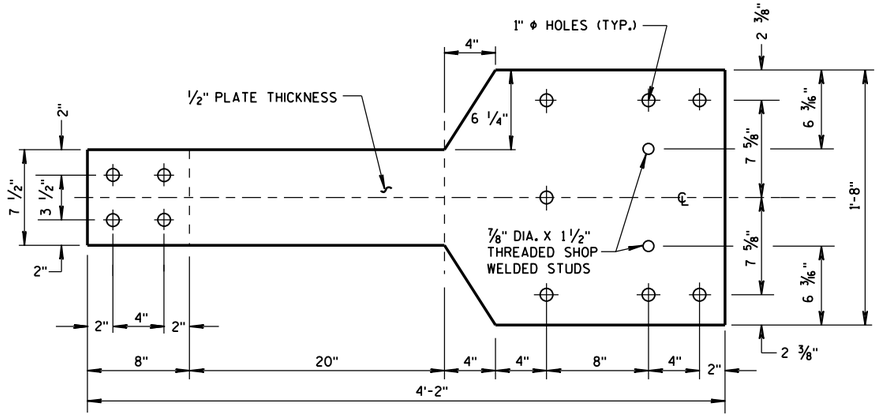
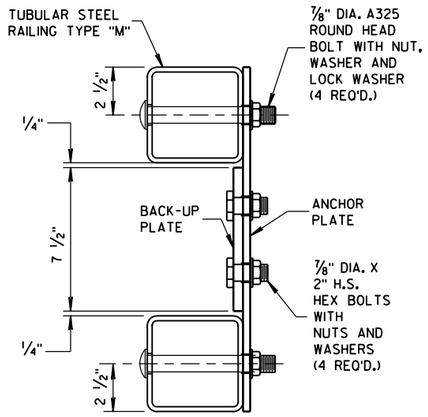
GENERAL NOTES

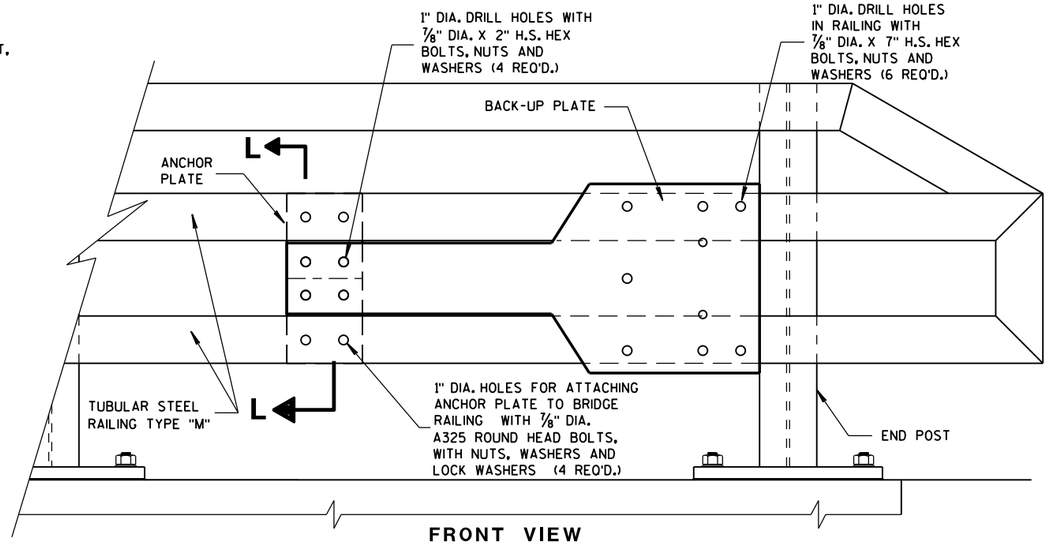
(4) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



FRONT VIEW

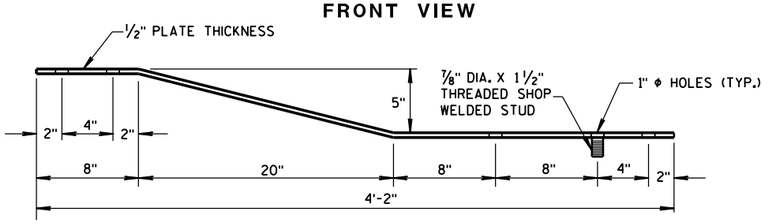


SECTION L-L



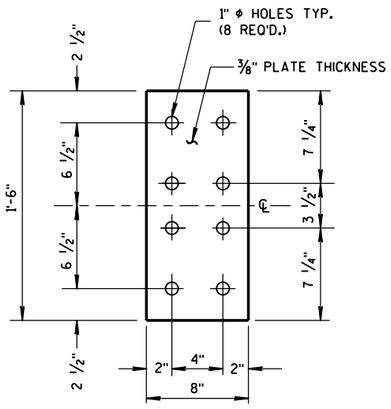
FRONT VIEW

ANCHOR AND BACK-UP PLATE MOUNTING TO BRIDGE RAILING, TYPE "M"



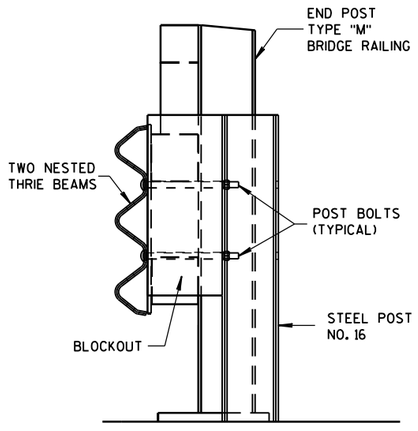
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

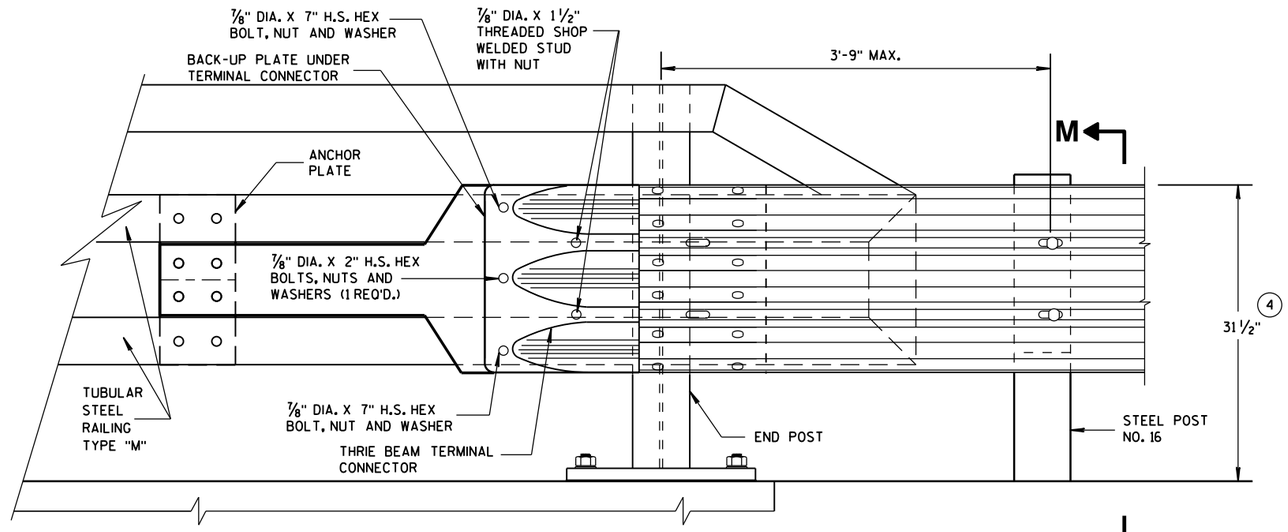


FRONT VIEW

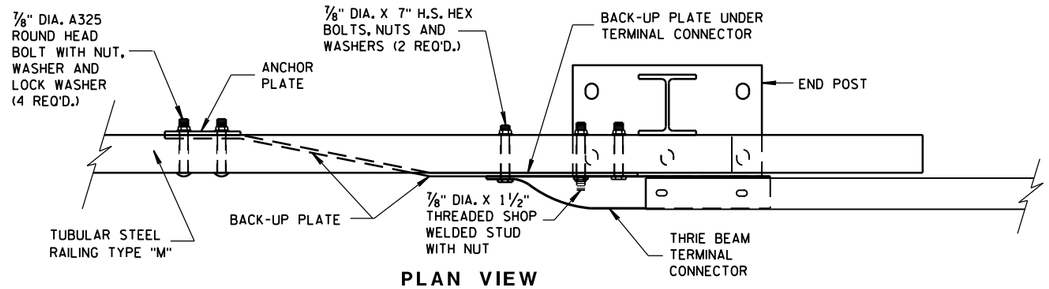
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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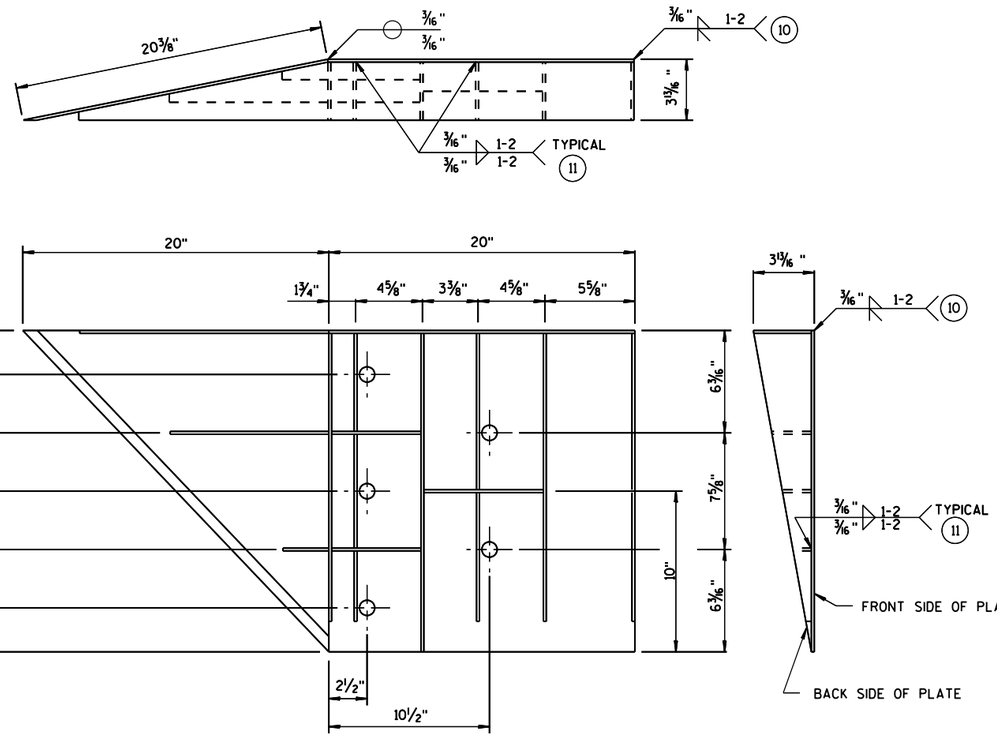

WELDING INSTRUCTION

(VIEWED FROM BACK SIDE OF PLATE)

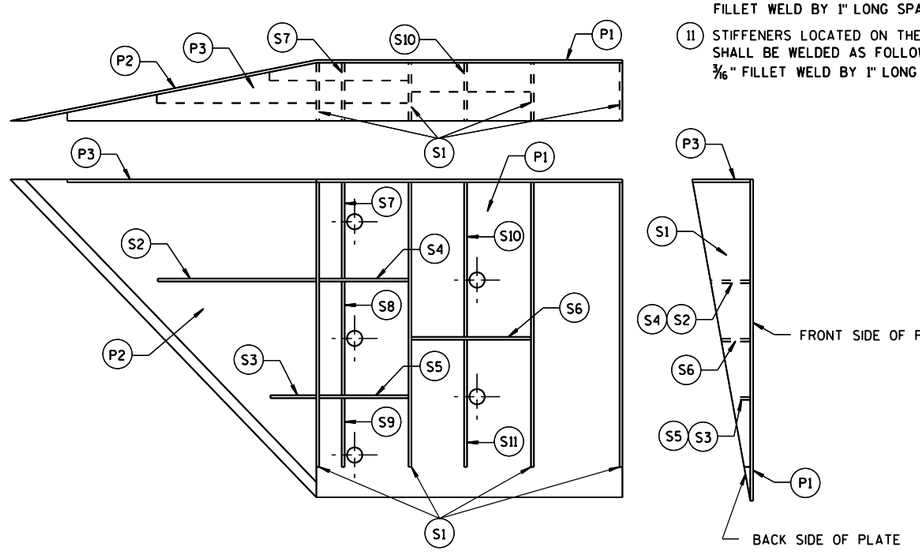

PLATE AND STIFFENER IDENTIFICATION

(VIEWED FROM BACK SIDE OF PLATE)

GENERAL NOTES

COVER PLATE PANELS ARE 3/16" THICK.

ALL STIFFENERS ARE 1/4" THICK.

CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.

FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.

ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

(10) STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND 3/16" FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.

(11) STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
3/16" FILLET WELD BY 1" LONG SPACED AT 2".

CONNECTOR PLATE DIMENSION (PER ASSEMBLY)

PLATE	QUANTITY	SHAPE	SIZE (A x B x C x D)	THICKNESS
P1	1		20" x 20"	3/16"
P2	1		20" x 20" x 28 9/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 7/16" x 3 3/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 7/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1 1/16" x 3 1/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 7/16"	1/4"
S5	1		6 1/8" x 1 1/16"	1/4"
S6	1		7 3/4" x 1 3/4"	1/4"
S7	1		2 9/16" x 6" x 3 5/16" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 1/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/16" x 9 11/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 13/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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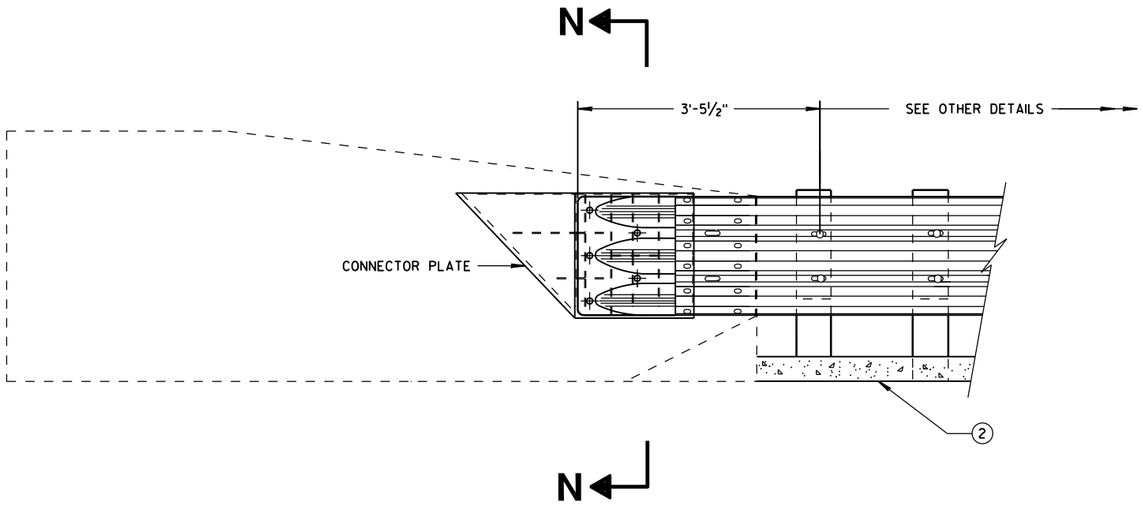
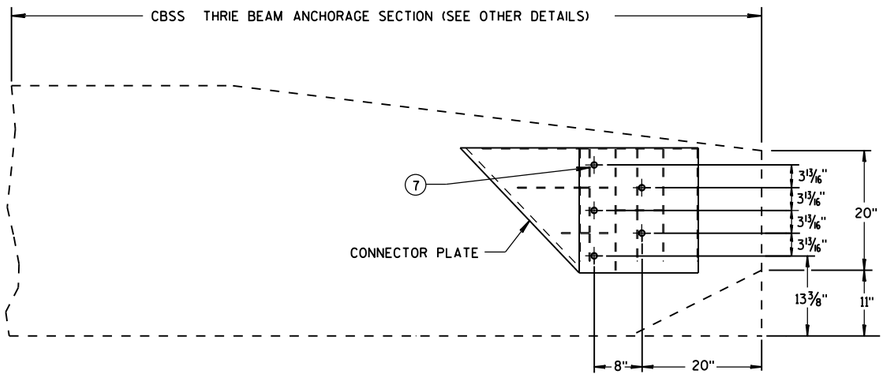


THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



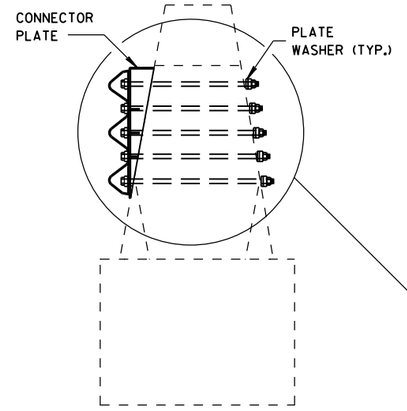
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

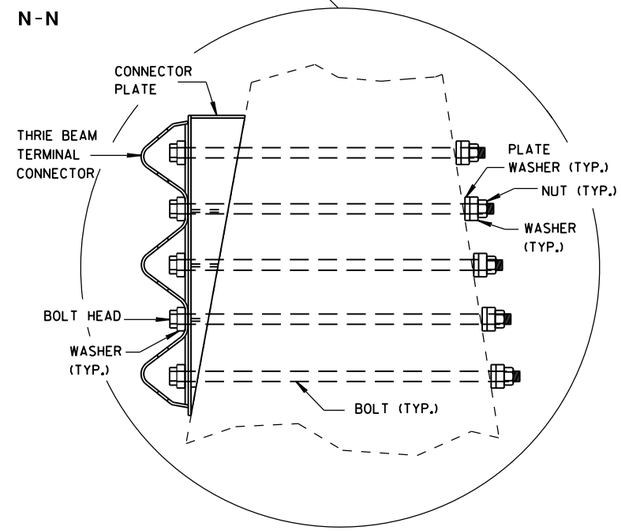
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

(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.



SECTION N-N



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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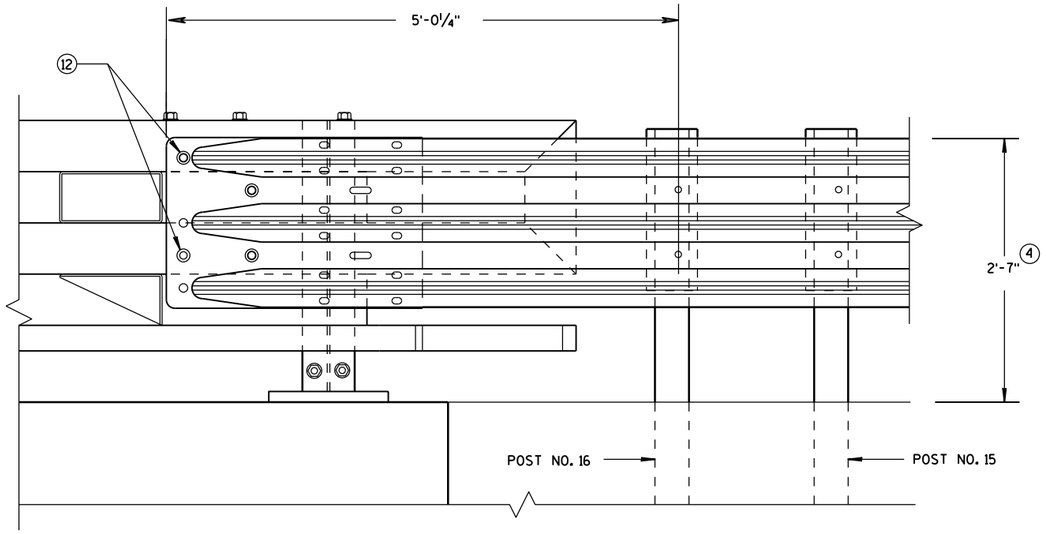
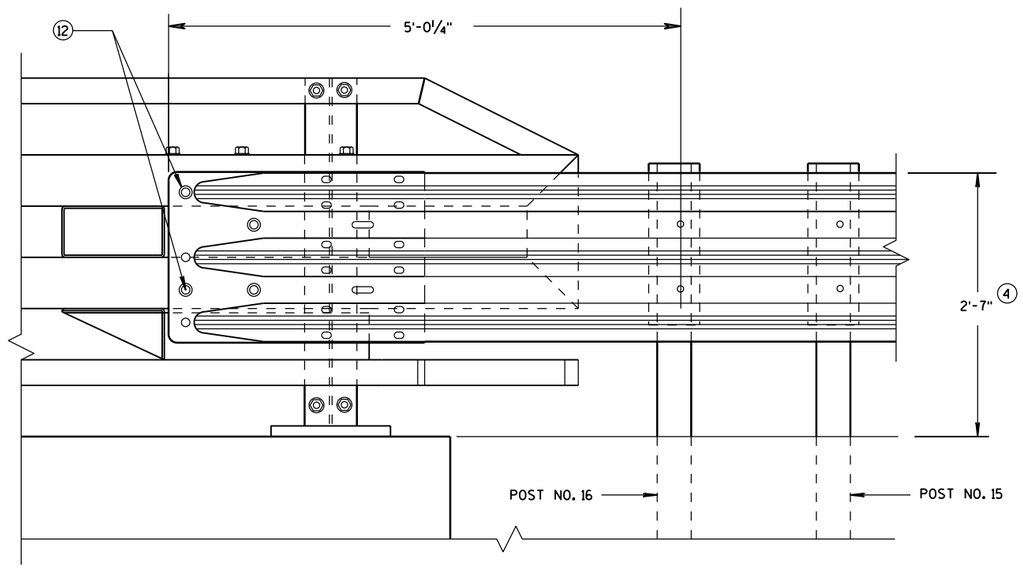


ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

GENERAL NOTES

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

(12) 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. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND ½-INCH BEYOND NUT.

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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ROADWAY STANDARDS D ENGINEER

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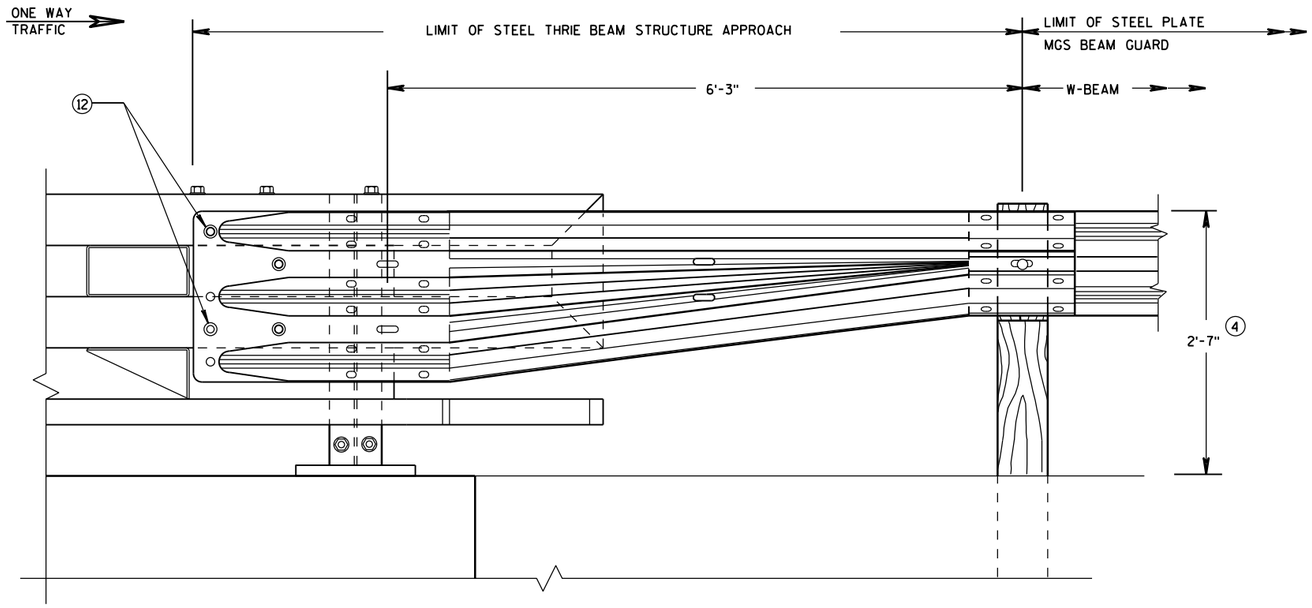


FRONT VIEW

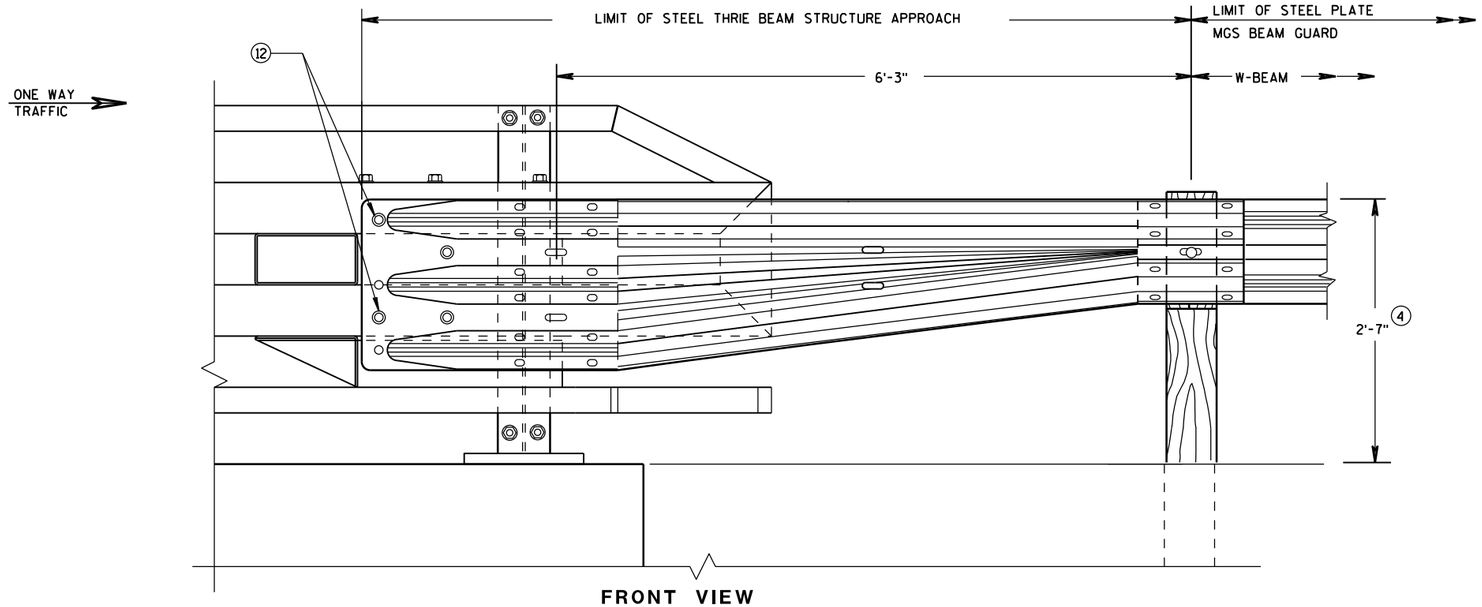
W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY3"

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

GENERAL NOTES

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

(12) 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. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND ½-INCH BEYOND NUT.



FRONT VIEW

W BEAM TRANSITION AND CONNECTION TO BRIDGE RAILING TYPE "NY4"

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

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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DEPARTMENT OF TRANSPORTATION

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

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

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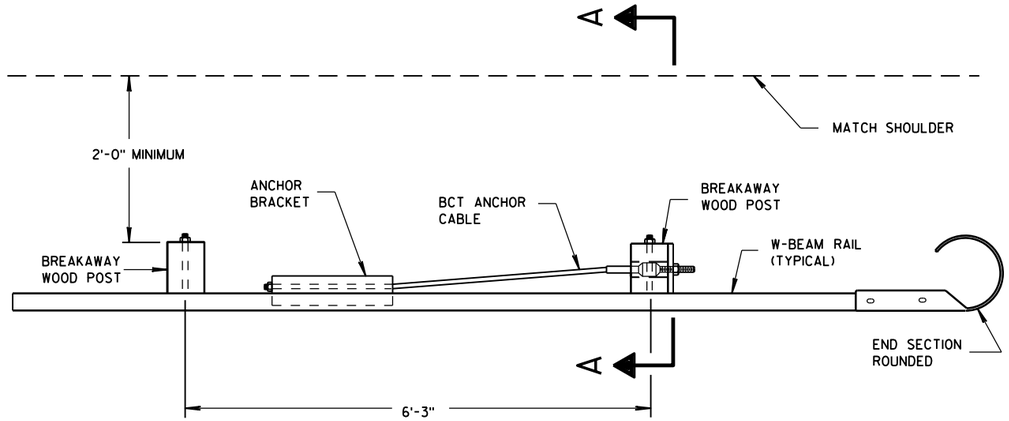
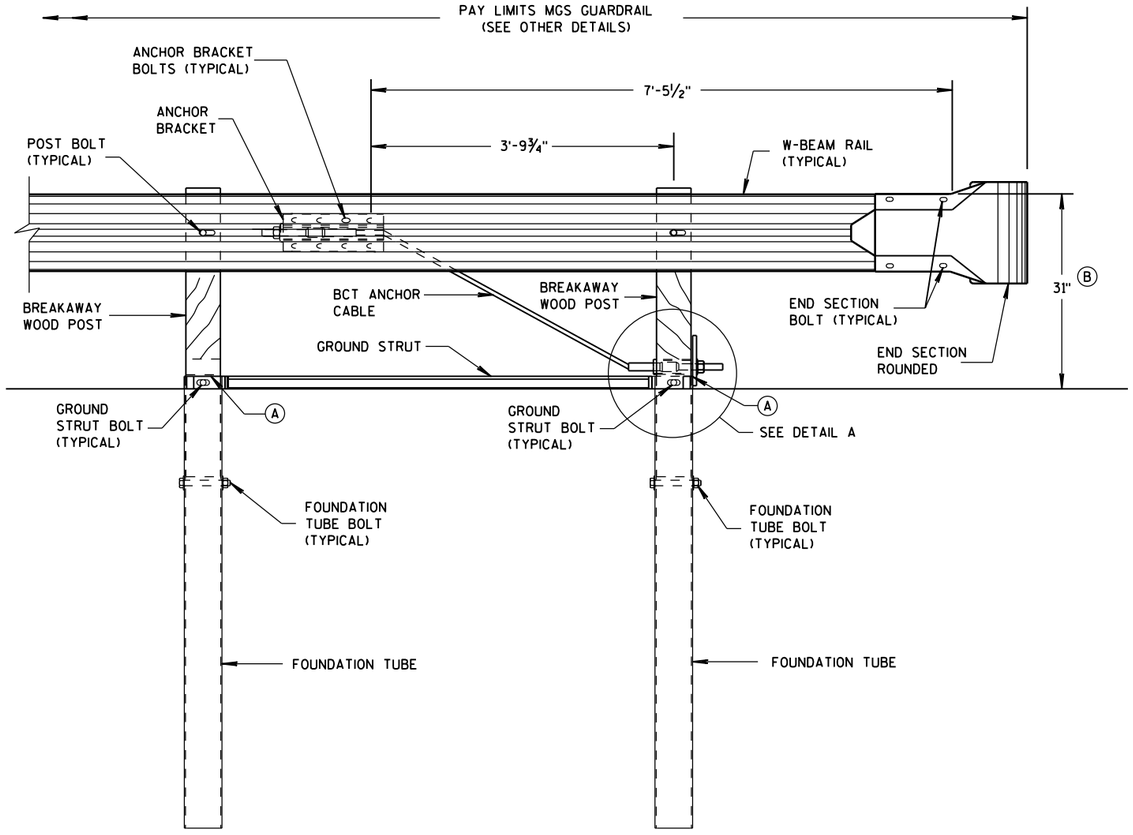
S.D.D. 14 B 45-4L

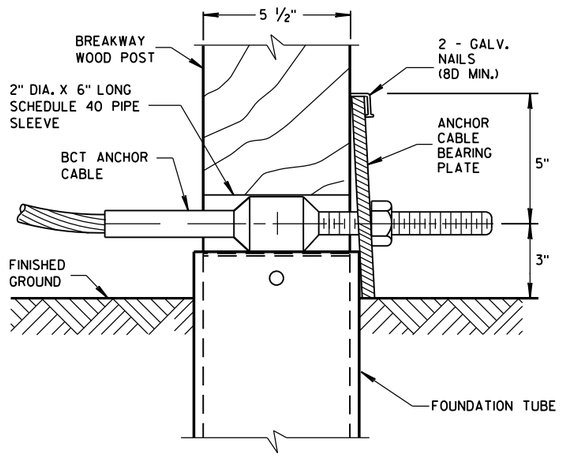


PLAN VIEW



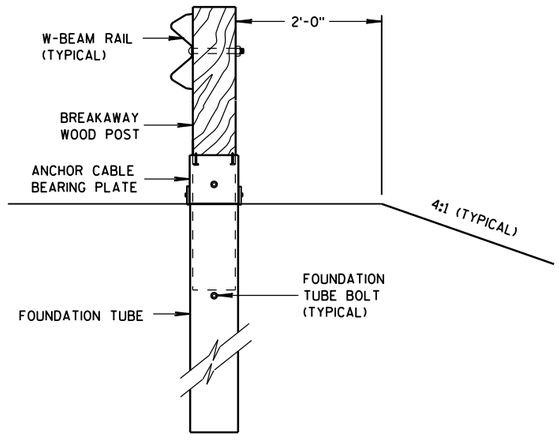
FRONT VIEW

END RAIL DETAIL



DETAIL A

POST NO. 1
GROUNG STRUT NOT SHOWN FOR CLARITY.



SECTION A-A

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

END SECTION BOLTS AND NUTS HAVE THE SAME MATERIAL REQUIREMENTS AS SPLICE BOLTS.

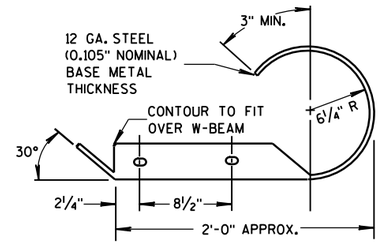
FOUNDATION TUBE BOLTS ARE ⅞" DIAMETER ASTM A307 HEX HEAD BOLT. FOUNDATION TUBE BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅞" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

ANCHOR BRACKET AND GROUND STRUT BOLTS ARE A ⅝" DIAMETER ASTM A307 HEX HEAD BOLT. ANCHOR BRACKET BOLTS REQUIRE ASTM A563 A NUT AND TWO ASTM F844 ⅝" DIAMETER FLAT WASHERS. INSTALL ONE WASHER UNDER BOLT HEAD AND ONE WASHER UNDER NUT.

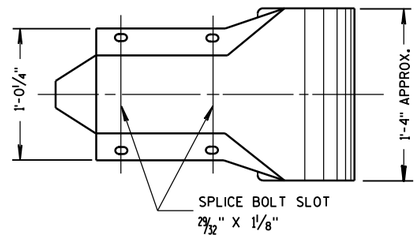
W-BEAM END SECTION ROUNDED HAS THE SAME MATERIAL PROPERTIES AS STANDARD STEEL RAIL.

(A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.

(B) FOR NEW CONSTRUCTION TOP OF RAIL IS 31" ± 1".
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN 27¾" TO 32" ± 1".



PLAN VIEW



FRONT VIEW

W BEAM END SECTION ROUNDED

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPO

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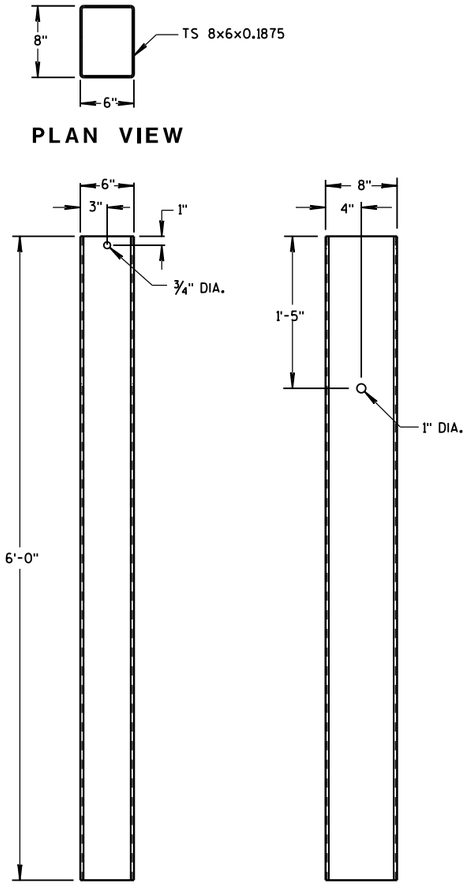
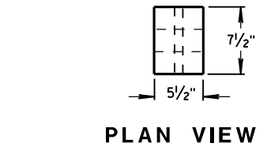
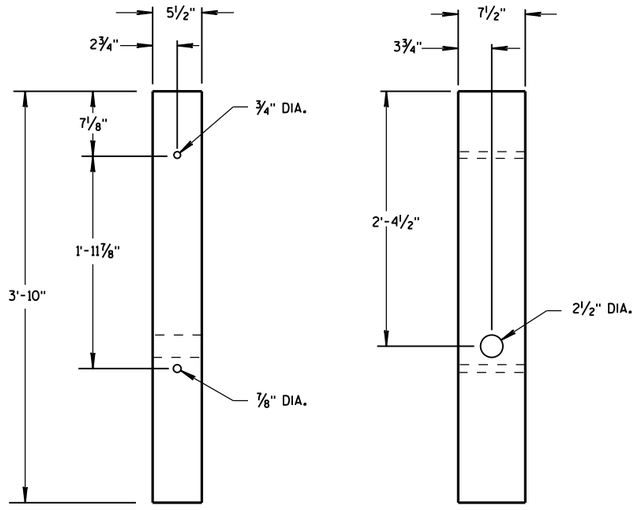
S.D.D. 14 B 47-2a



FOUNDATION TUBE

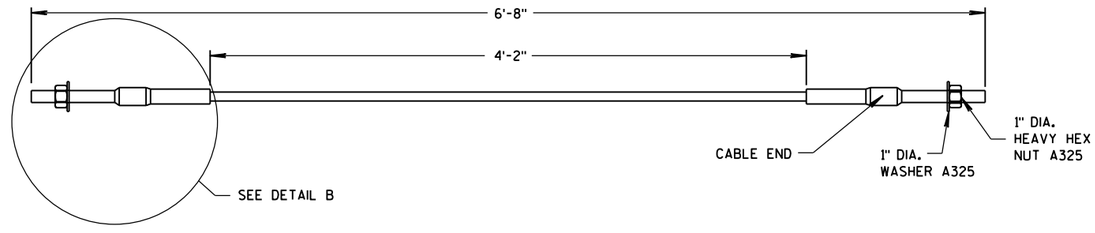




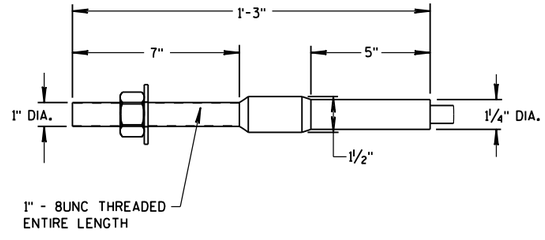
BREAKAWAY WOOD POST

GENERAL NOTES

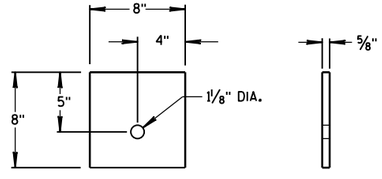
BCT ANCHOR CABLE IS A ¾" DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. TREADED STUD SHALL CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.



BCT ANCHOR CABLE



DETAIL B



ANCHOR CABLE
BEARING PLATE

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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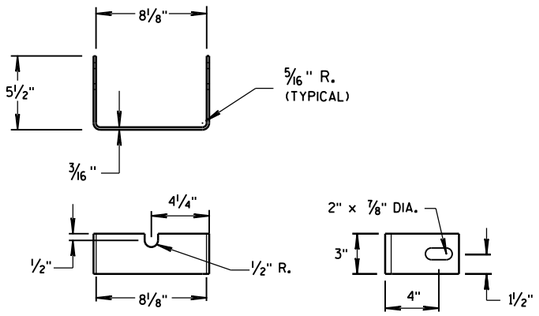
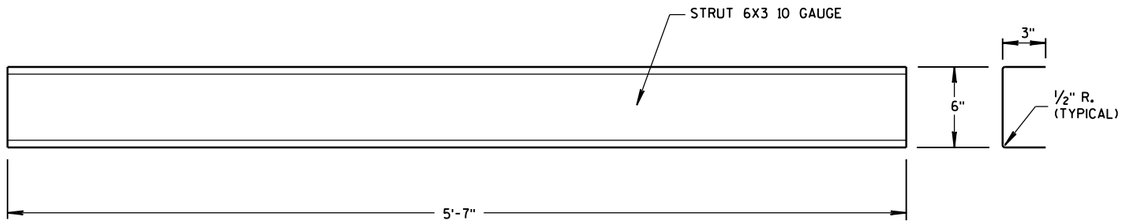
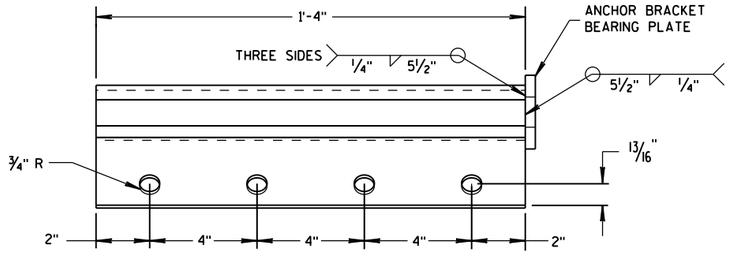
S.D.D. 14 B 47-2b

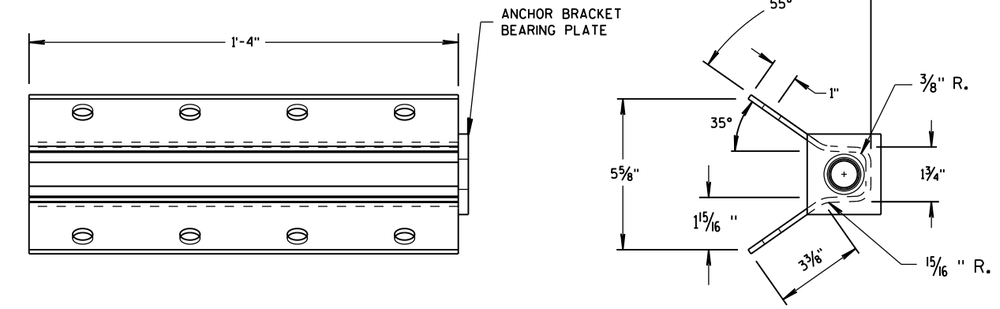


YOKE DETAIL

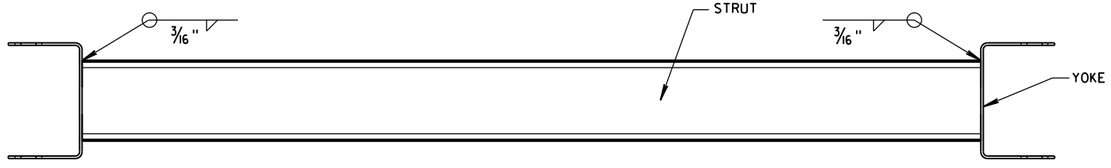


STRUT DETAIL

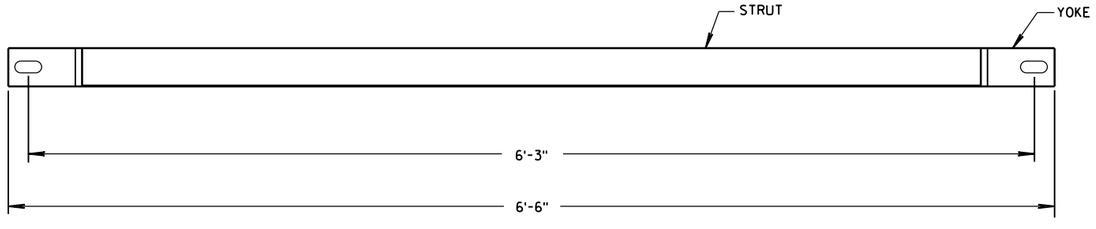




ANCHOR BRACKET

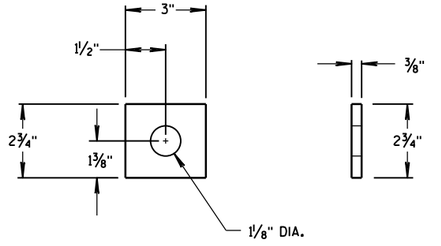


PLAN VIEW



FRONT VIEW

GROUND STRUT DETAIL

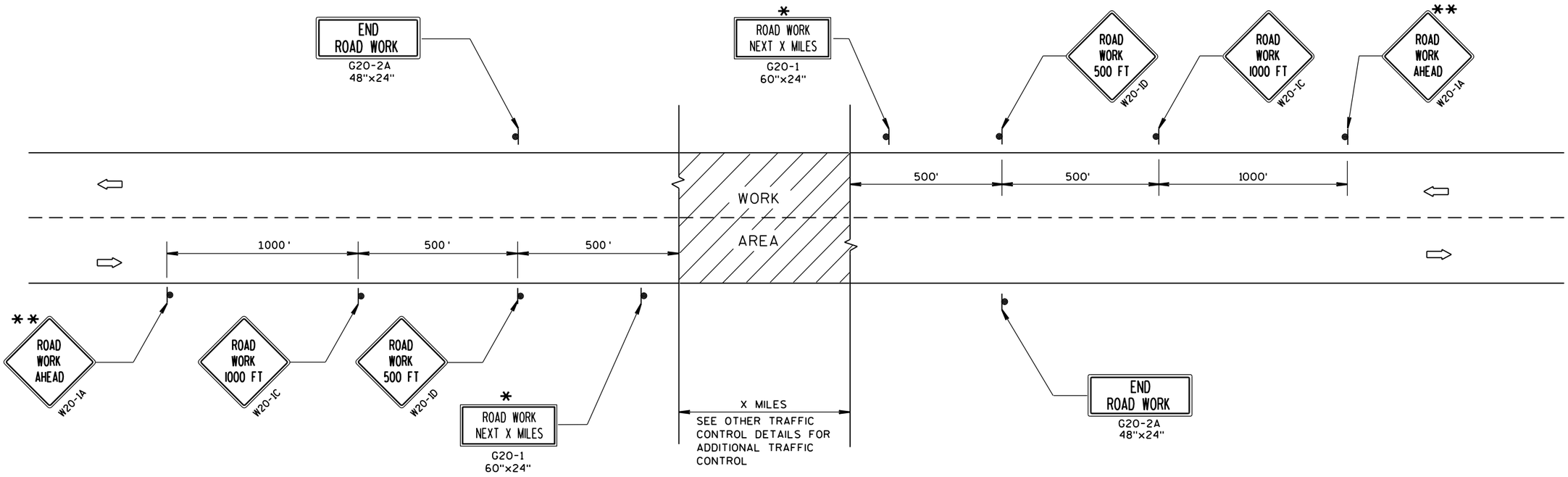


ANCHOR BRACKET BEARING PLATE

MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2014 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS ENGINEER
FHWA



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

GENERAL NOTES

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

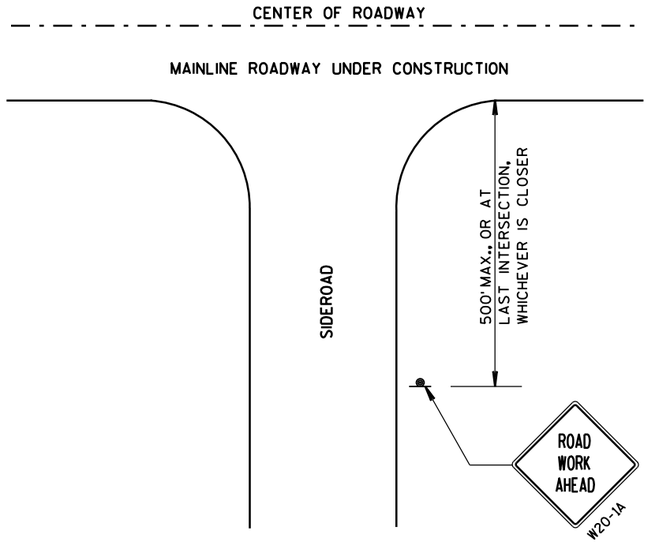
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2015 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZOI SAFETY ENGIN IC

FHWA

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S.D.D. 15 C 4-3

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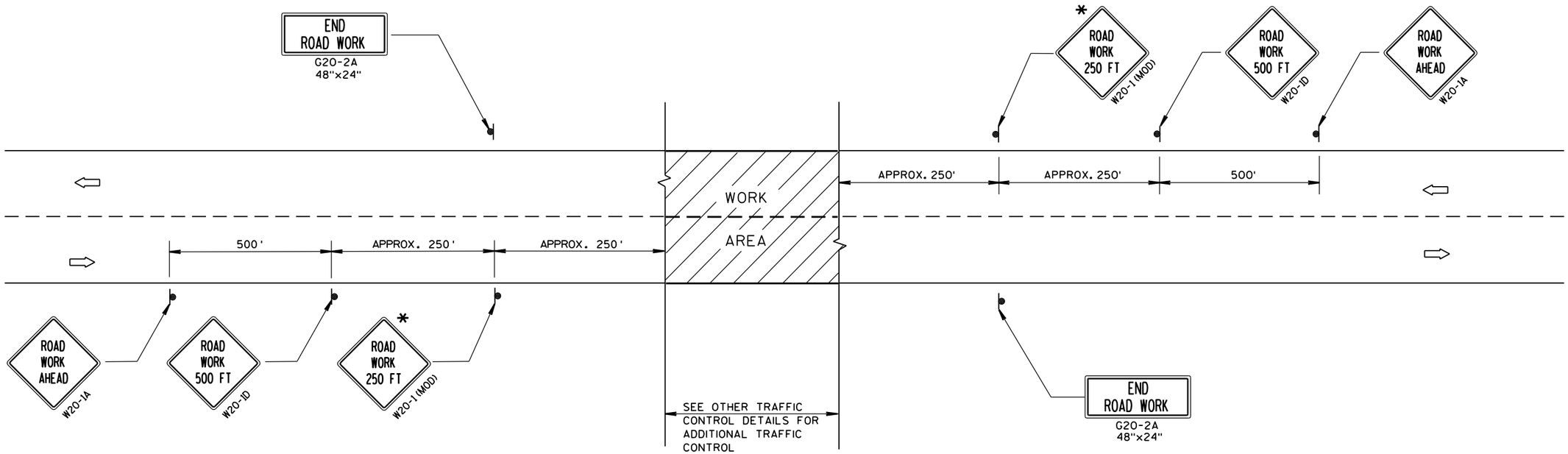
S.D.D. 15 C 4-3

TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL



GENERAL NOTES

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

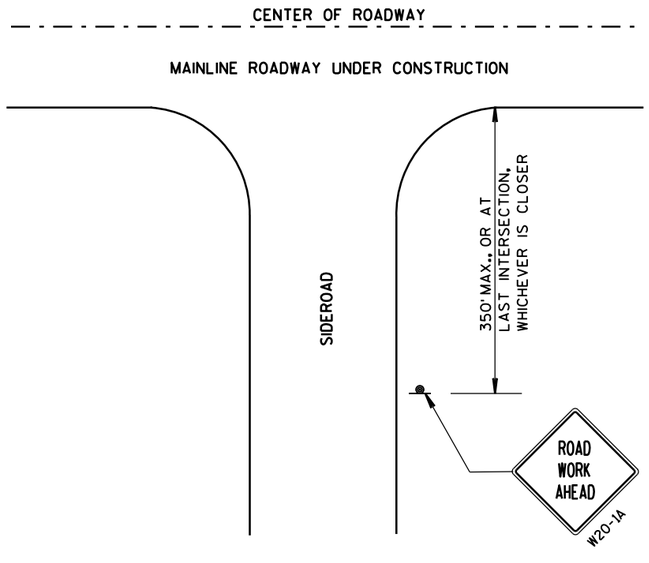
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"x36" SIGNS MAY BE USED INSTEAD OF 48"x48" SIGNS.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS RE-ESTABLISHED.

* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FT" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.



LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZOI SAFETY ENGIN IC
FHWA

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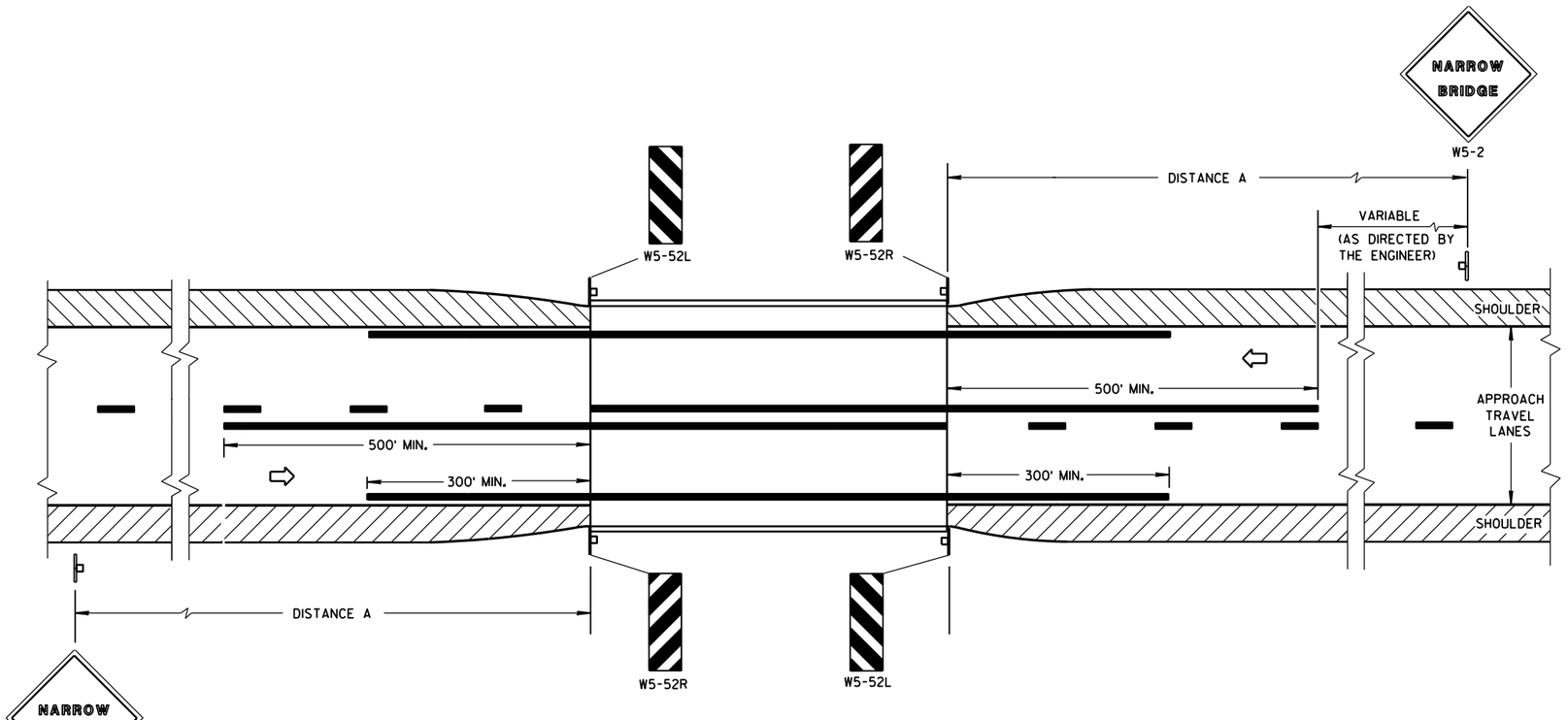
S.D.D. 15 C 5-3



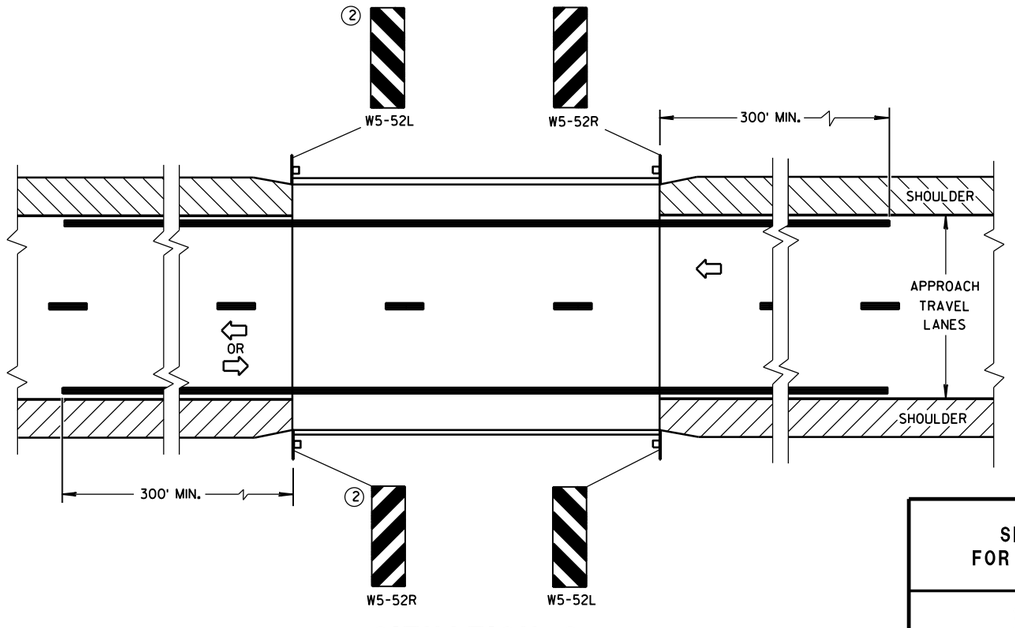
SITUATION 1

WARRANTING CRITERIA:

BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.

DISTANCE TABLE

POSTED OR 85th PERCENTILE SPEED	DISTANCE "A"
25	150'
30	200'
35	250'
40	300'
45	400'
50	550'
55	750'



SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

GENERAL NOTES

DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

① LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

② OMIT ON ONE-WAY TRAVELLED WAYS.

③ EDGE OF W5-52 SIGN SHALL BE PLACED IN LINE WITH FACE OF CURB OR PARAPET.

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-18-16 — DATE
/S/ Matthew R. Rauch — STATE SIGNING AND MAR ... EER
FHWA

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S.D.D. 15 C 6-8

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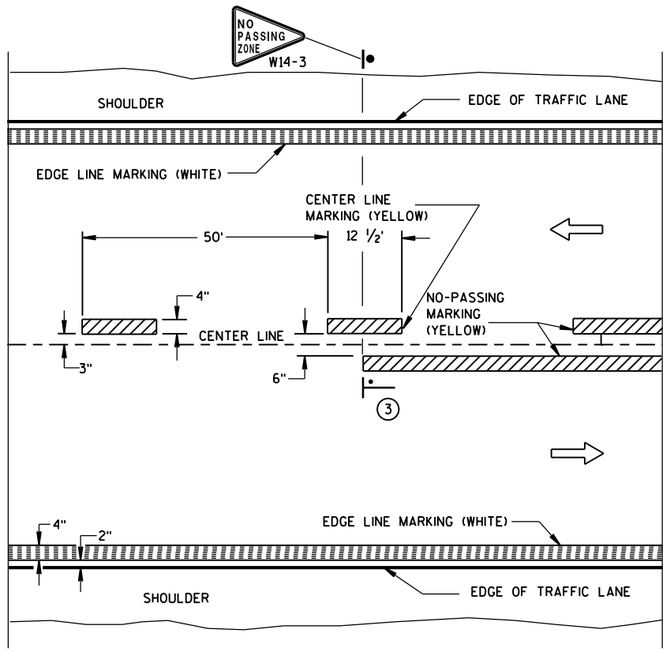
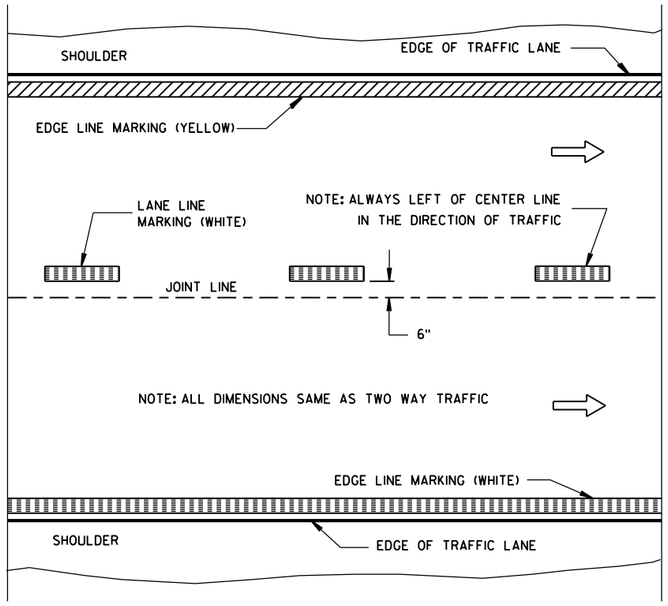
S.D.D. 15 C 6-8

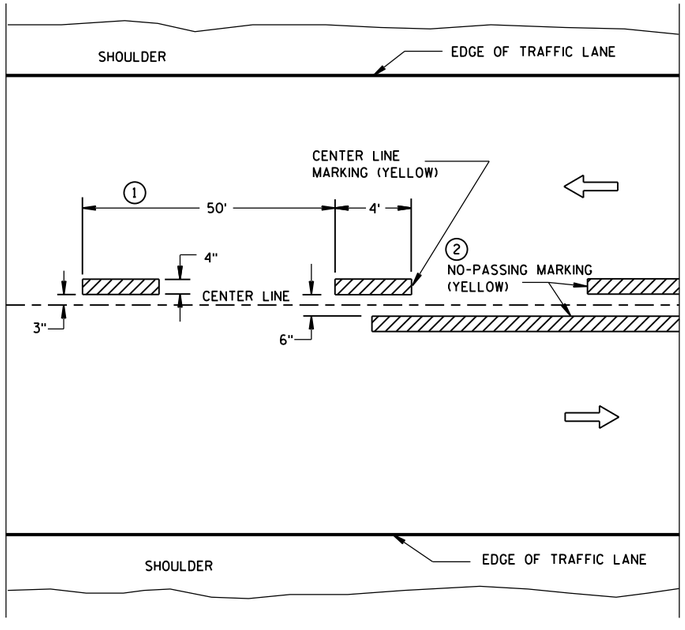


TWO WAY TRAFFIC

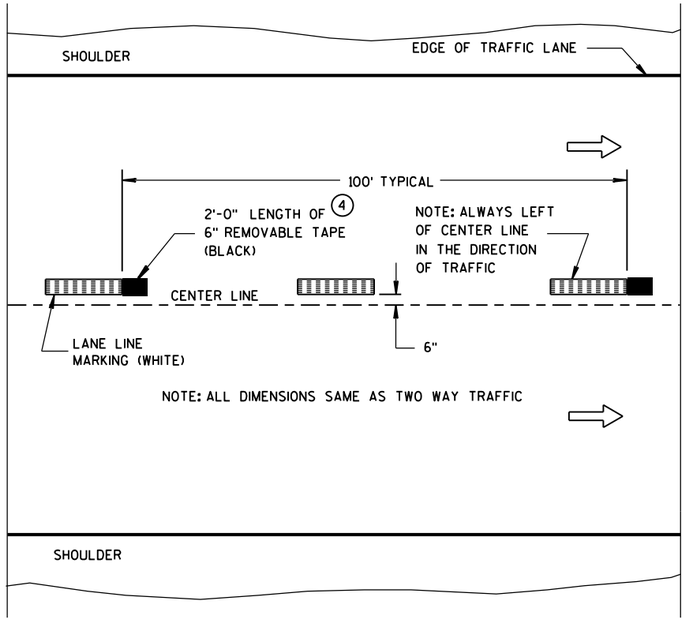


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING

(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

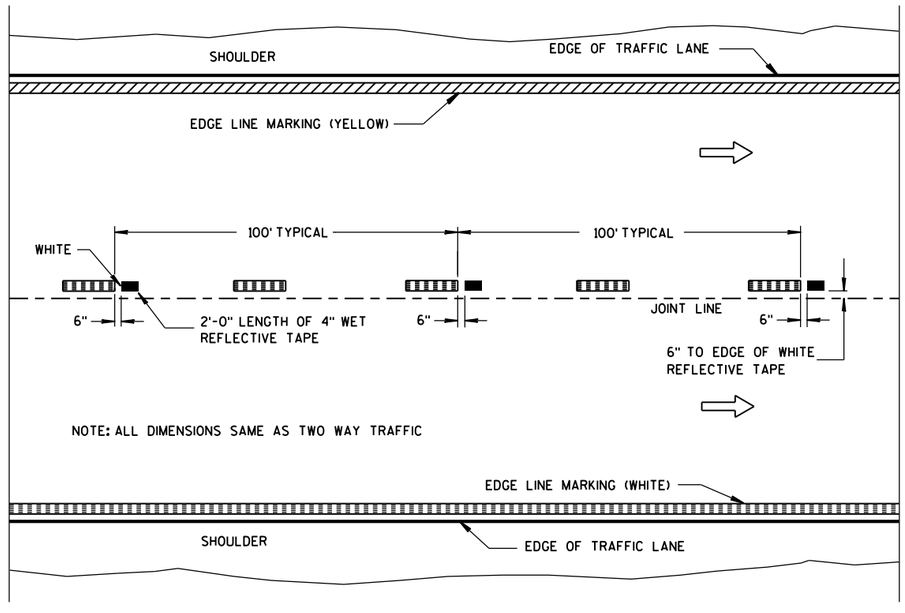
GENERAL NOTES

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

1. HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
2. NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
3. NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
4. CONCRETE ONLY.

NOTE

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

LEGEND

"T" MARKING

POST MOUNTED SIGN

PAVEMENT MARKING (MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-2013 — DATE

/S/ Travis Feltes — STATE TRAFFIC E

FHWA

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S.D.D. 15 C 8-16a

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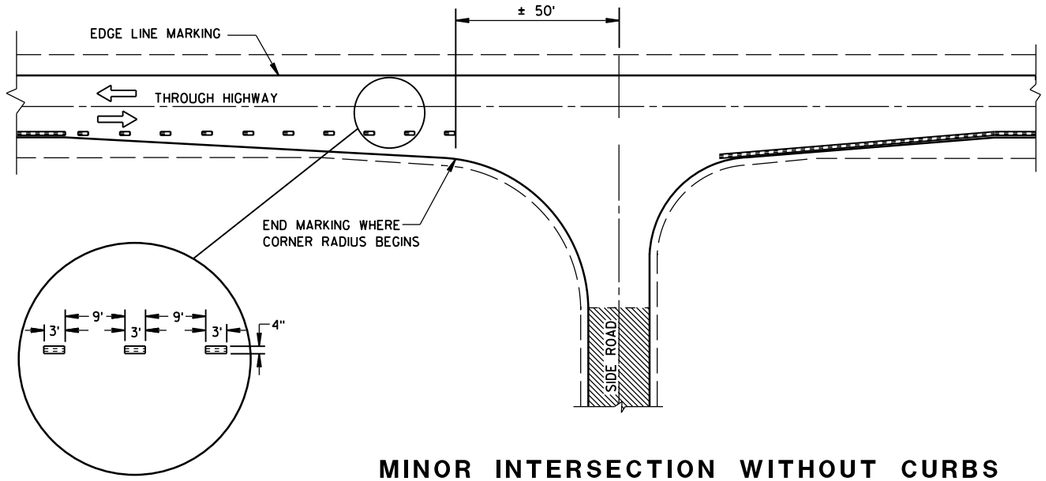
S.D.D. 15 C 8-16a



MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.

(1) WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.

(2) WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.

(3) ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.

(4) THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.

(5) BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.

(6) BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

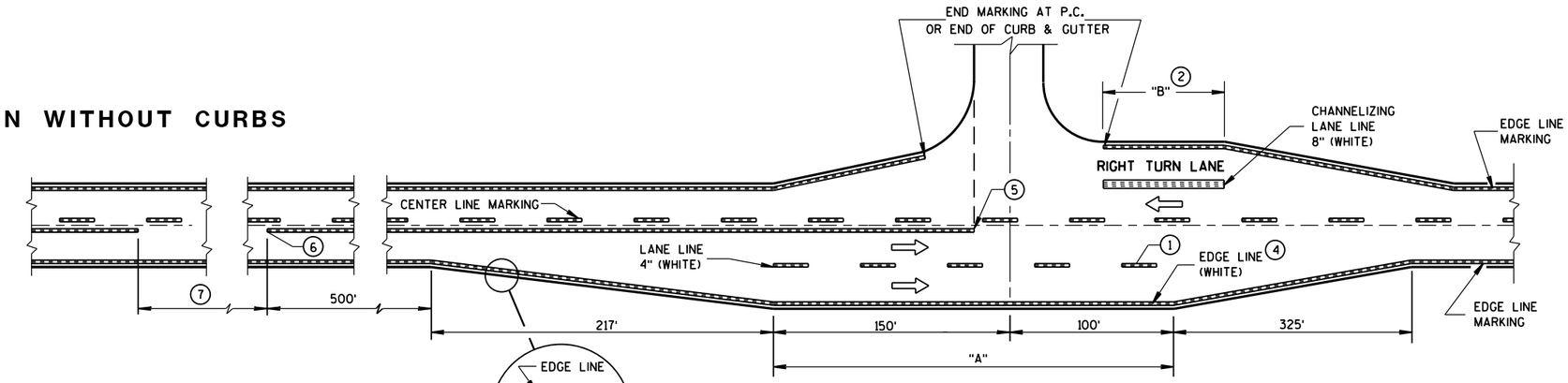
(7) IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.

(8) 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

ARROW SYMBOL (⇨) SHOWS DIRECTION OF TRAVEL

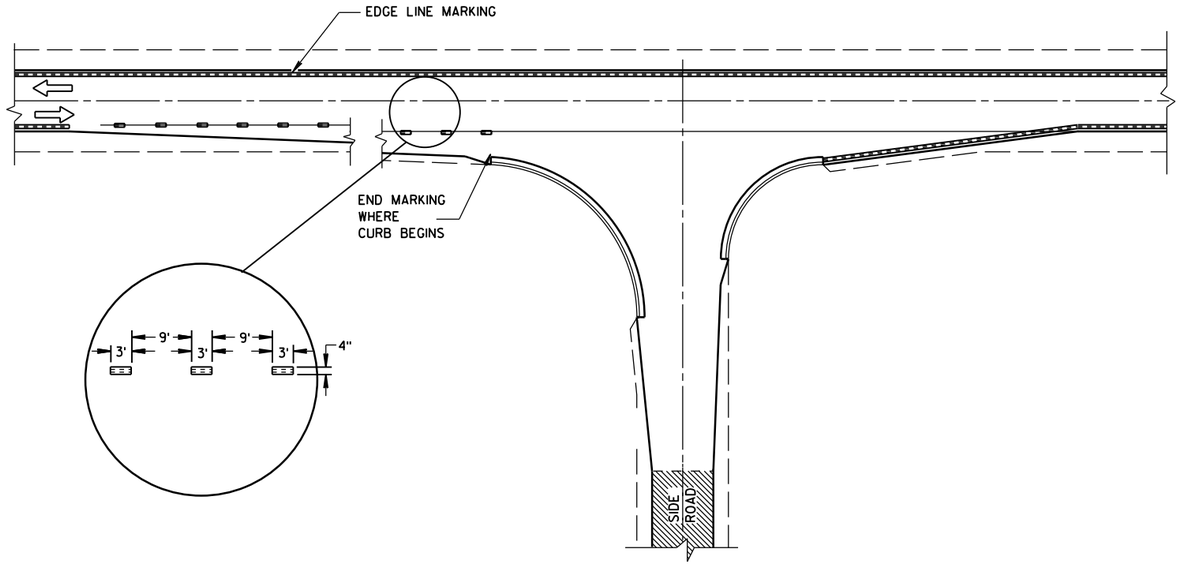
(7)

POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



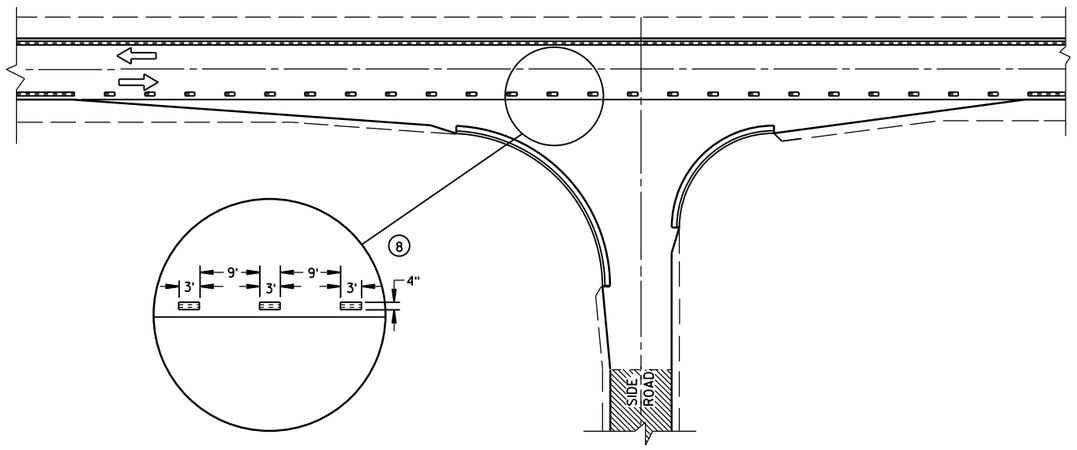
MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANES)



MINOR INTERSECTION WITH CURBS

(TYPICAL MARKING)



MINOR INTERSECTION WITH CURBS

(3) (FOR SPECIAL CONDITIONS AS SPECIFIED)

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOR

6

S.D.D. 15 C 8-16b

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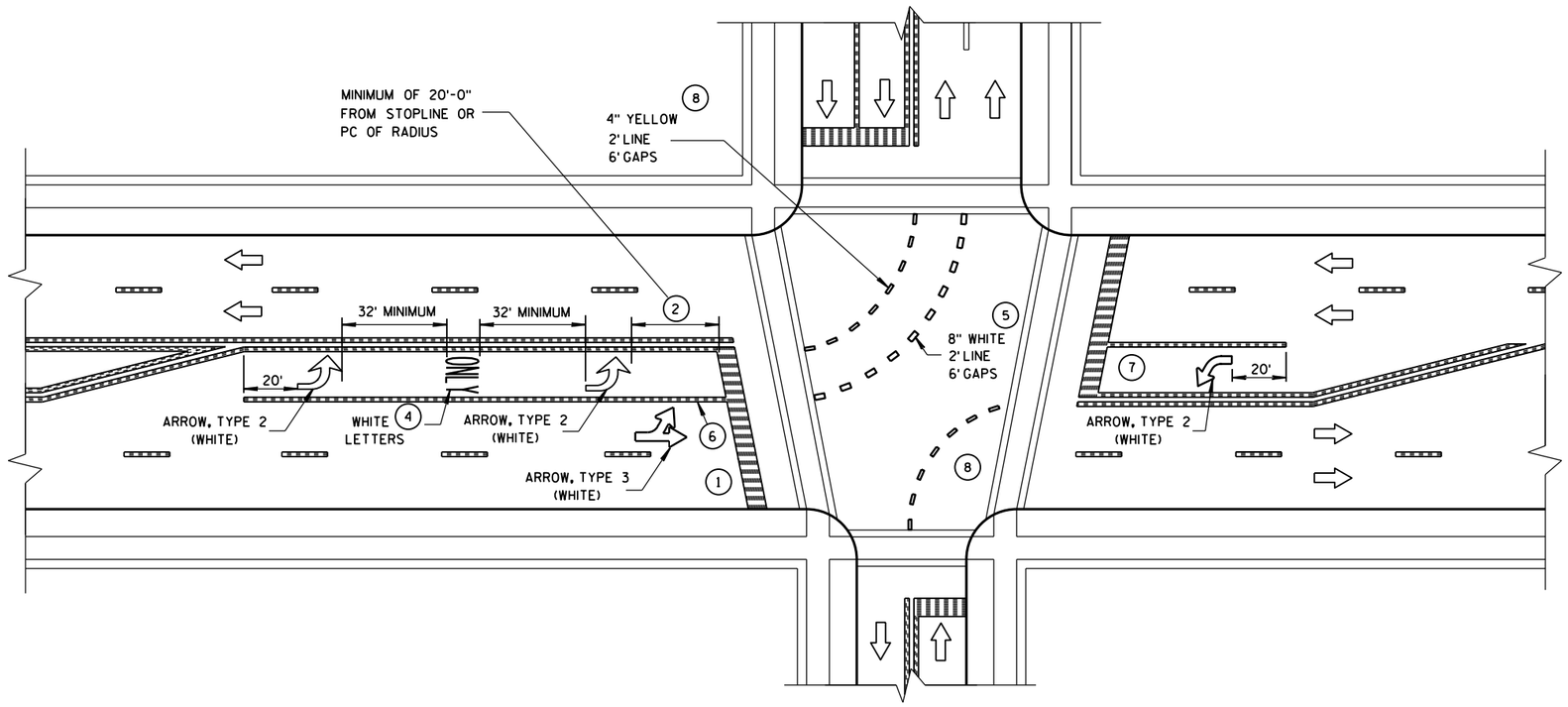
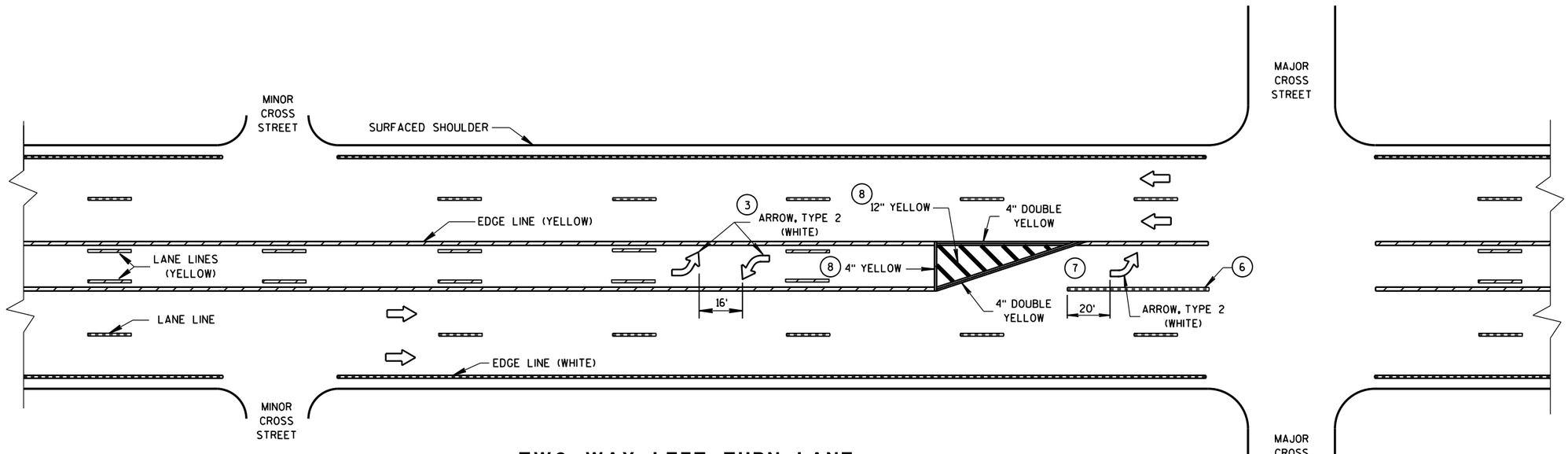
S.D.D. 15 C 8-16b



GENERAL NOTES

1. STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
2. DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
3. A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
4. ADD EXTRA SETS OF ONE ARROW AND ONE ONLY PER 160 FEET OR WHEN ON A CURVE.
5. 8" WHITE WITH 2' LINE 6' GAPS FOR DUAL TURN LANE.
6. 8" WHITE
7. ADD SECOND ARROW WHEN TURN BAY IS GREATER THAN OR EQUAL TO 108 FEET.
8. REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.

NOTE:
ARROW SYMBOL (⇨)
SHOWS DIRECTION OF TRAVEL



TWO WAY LEFT TURN LANE

PAVEMENT MARKING (LEFT TURN LANE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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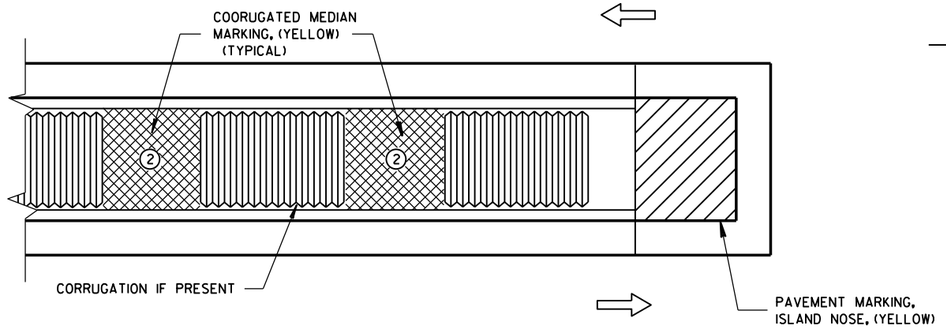
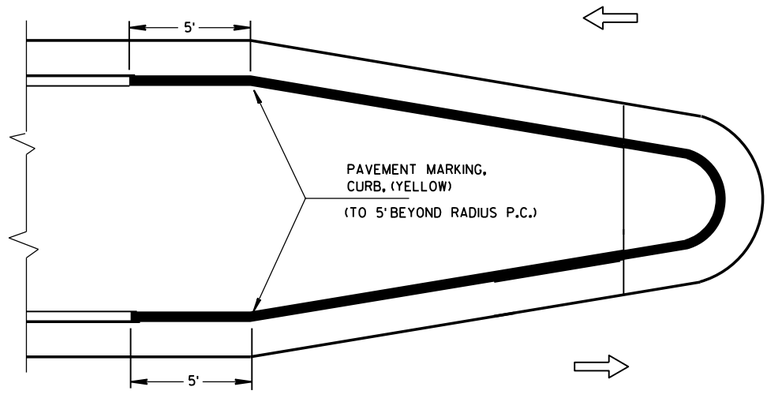
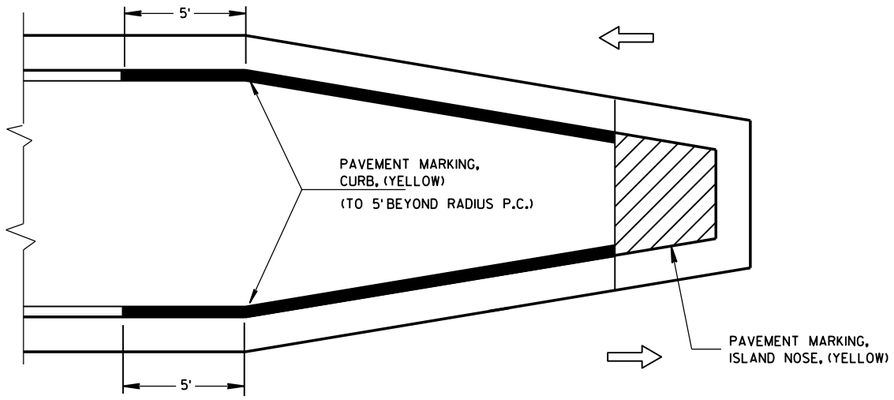
S.D.D. 15 C 8-16e



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

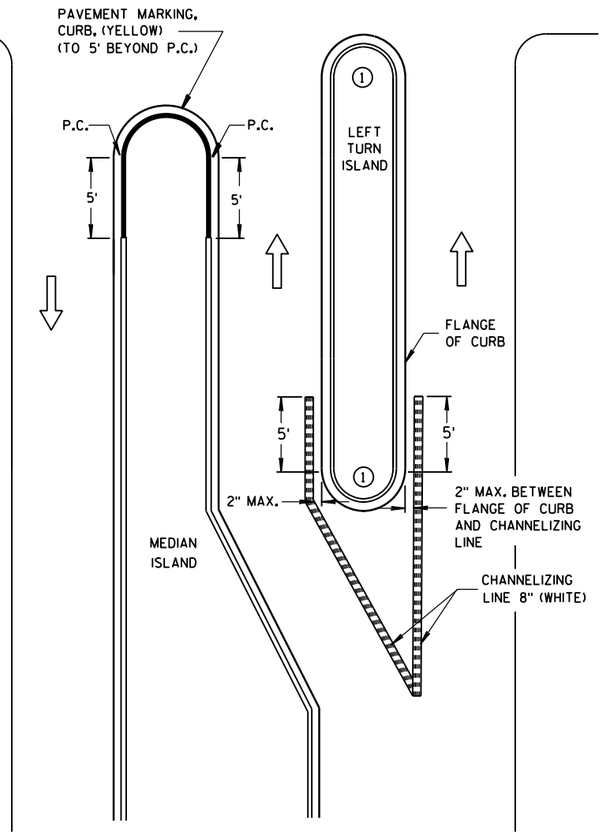


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

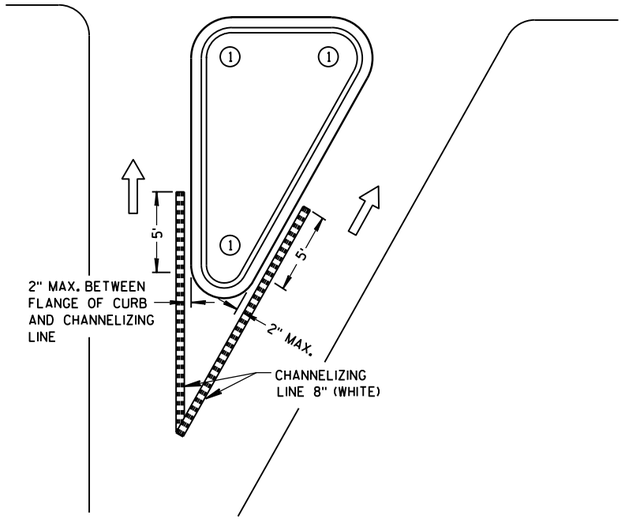


LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

1. DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.

2. WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



RIGHT TURN ISLAND

LEGEND

- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING
(ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

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S.D.D. 15 C 8-16f

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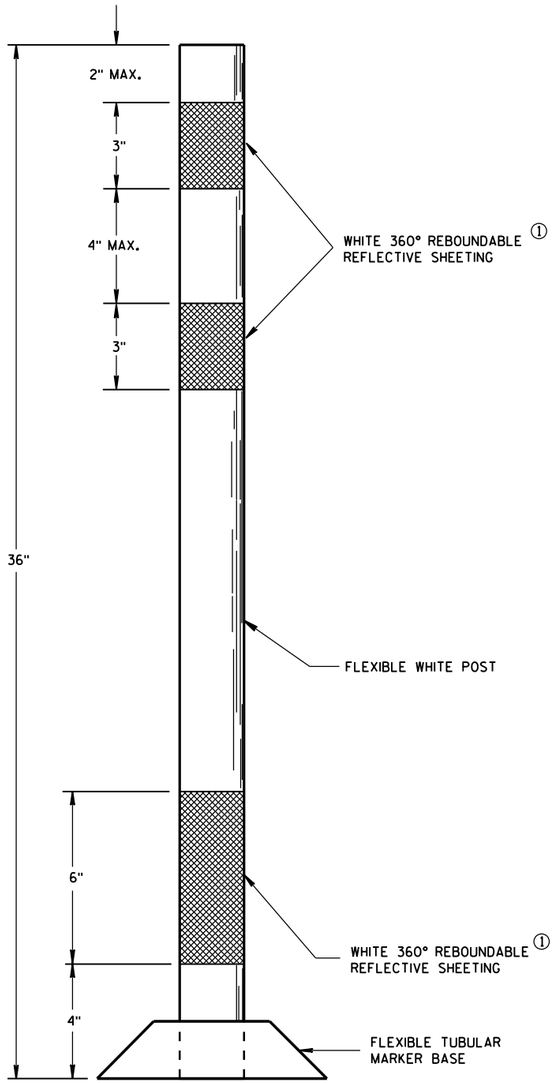
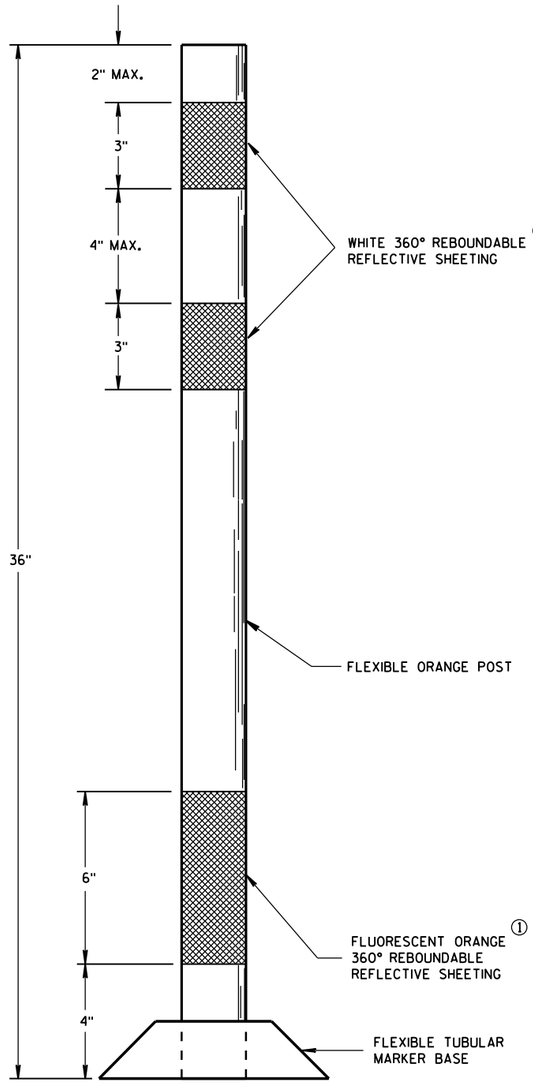


FLEXIBLE
TUBULAR MARKER POST
PERMANENT CROSSOVER



FLEXIBLE
TUBULAR MARKER POST
WORK ZONE

GENERAL NOTES

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

SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

FLEXIBLE TUBULAR MARKER POST	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10-16-2015 DATE FHWA	/S/ Peter Amakobe Atepe STATEWIDE WORK ZON SAFETY ENGINE

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S.D.D. 15 C 11-6

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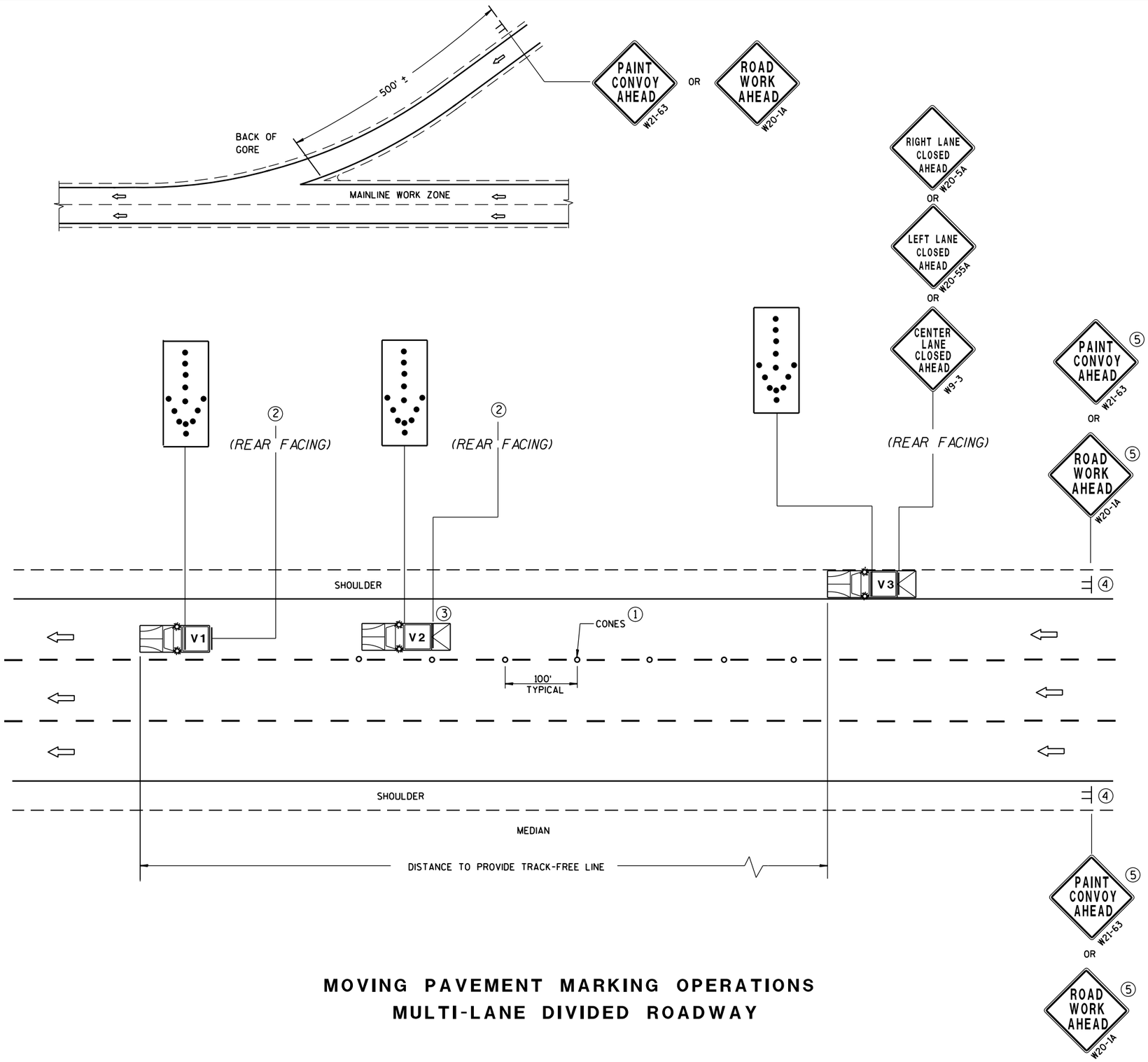
S.D.D. 15 C 11-6



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE DIVIDED ROADWAY

GENERAL NOTES

ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.

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

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.

ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.

WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.

WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.

USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

FOR EDGELINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH. USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

THIS DRAWING SHALL BE USED FOR EDGELINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT W21-64 OR WET PAINT W21-64

③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

④ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.

⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

V1	LEAD VEHICLE
V2	SHADOW VEHICLE
V3	TRAIL VEHICLE WITH TMA
TMA	TRUCK-MOUNTED ATTENUATOR
	SIGN ON TEMPORARY SUPPORT
	DIRECTION OF TRAFFIC
	CONES
	FLASHING ARROW PANEL (MERGE)

MOVING PAVEMENT MARKING OPERATION
MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2015 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZON SAFETY ENGINI
FHWA

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S.D.D. 15 C 19-3c

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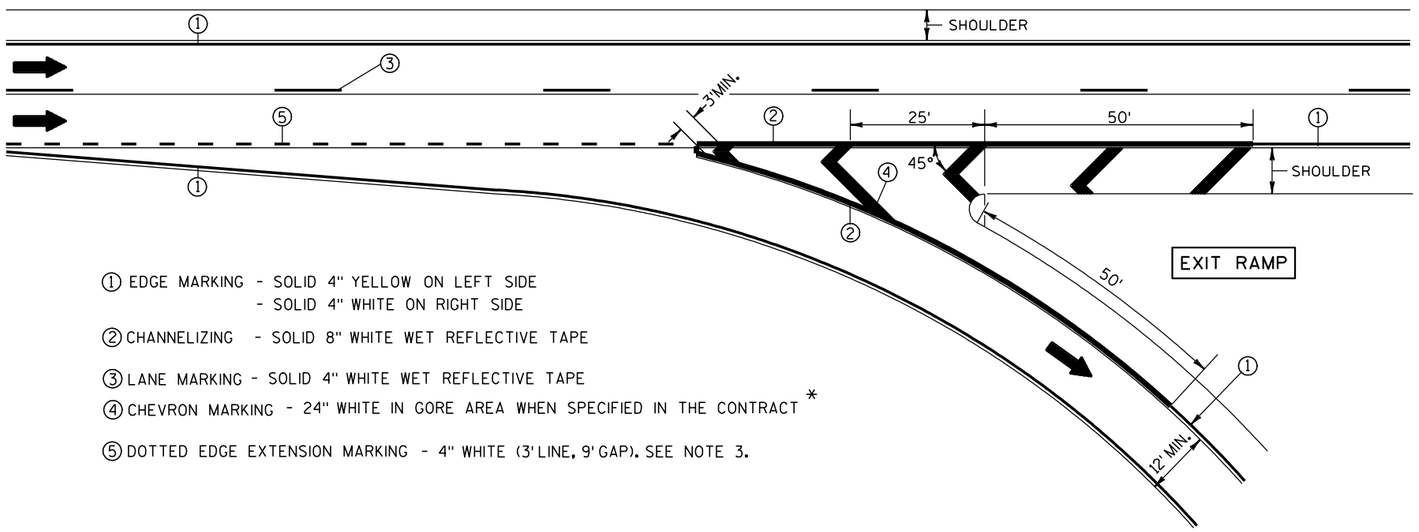
S.D.D. 15 C 19-3c



① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE

② CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE

③ LANE MARKING - SOLID 4" WHITE WET REFLECTIVE TAPE

④ CHEVRON MARKING - 24" WHITE IN GORE AREA WHEN SPECIFIED IN THE CONTRACT *

⑤ DOTTED EDGE EXTENSION MARKING - 4" WHITE (3' LINE, 9' GAP). SEE NOTE 3.

NOTES:

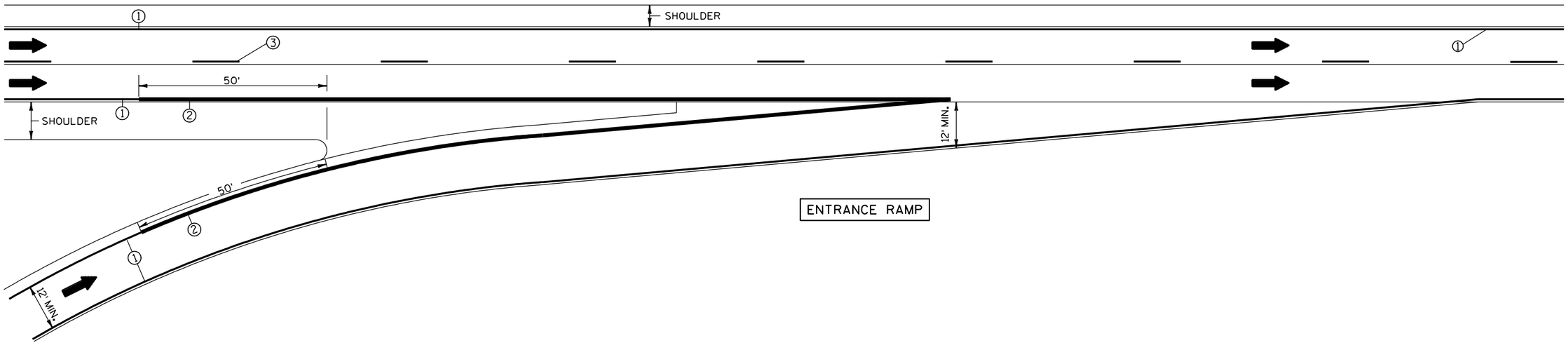
1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.

2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.

3. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.

4. RETRACE EXISTING DIAGONAL MARKINGS.

* REFER TO DESIGN NOTES.



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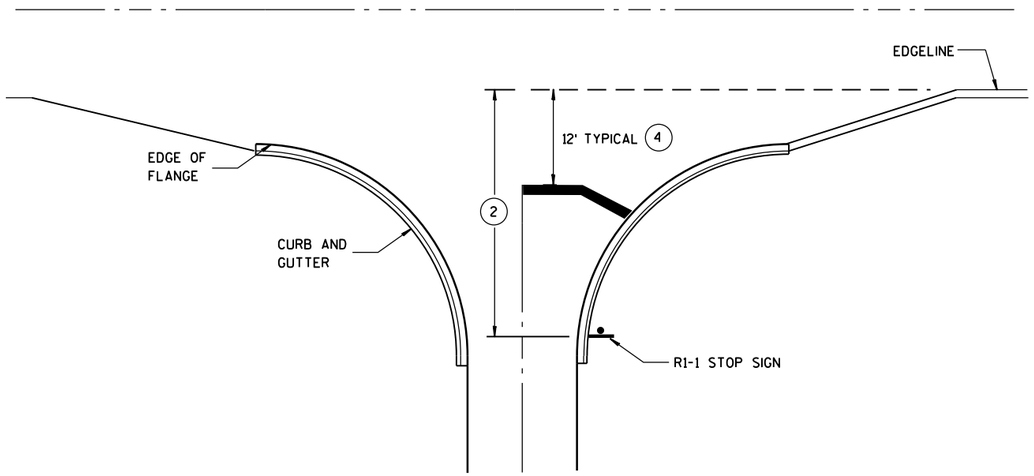
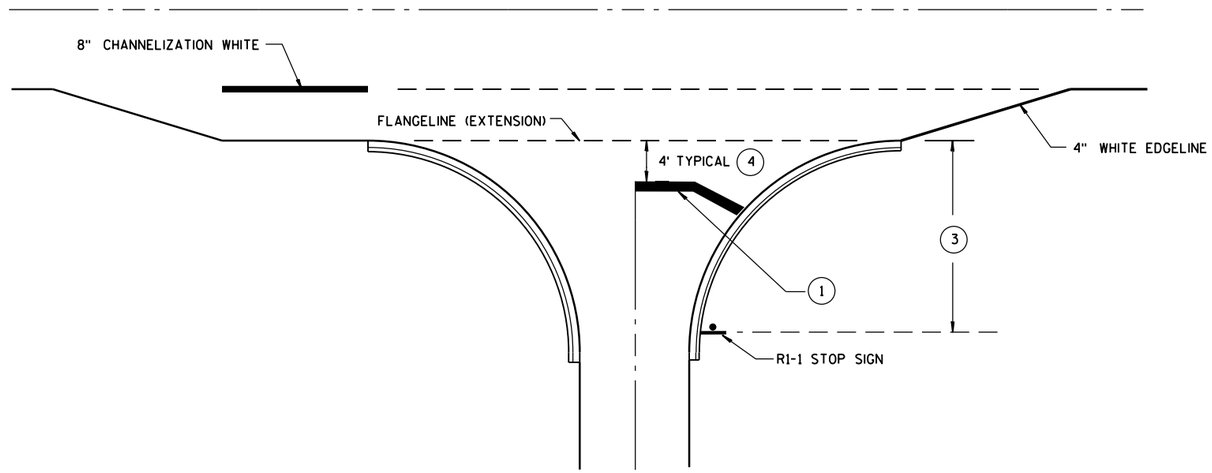
PAVEMENT MARKING
(RAMPS AND GORES)

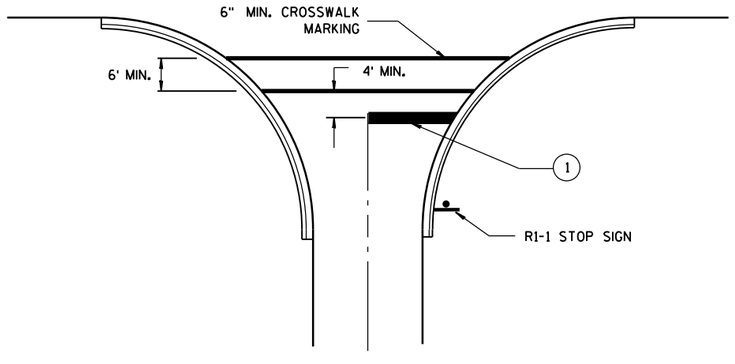
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



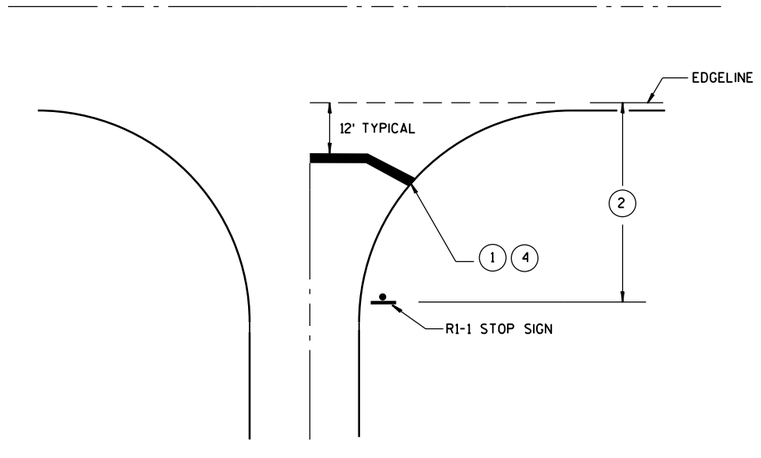
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



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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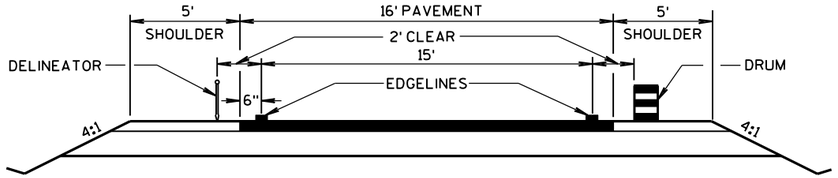
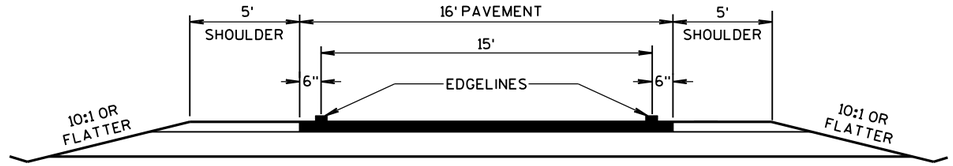
S.D.D. 15 C 33-2



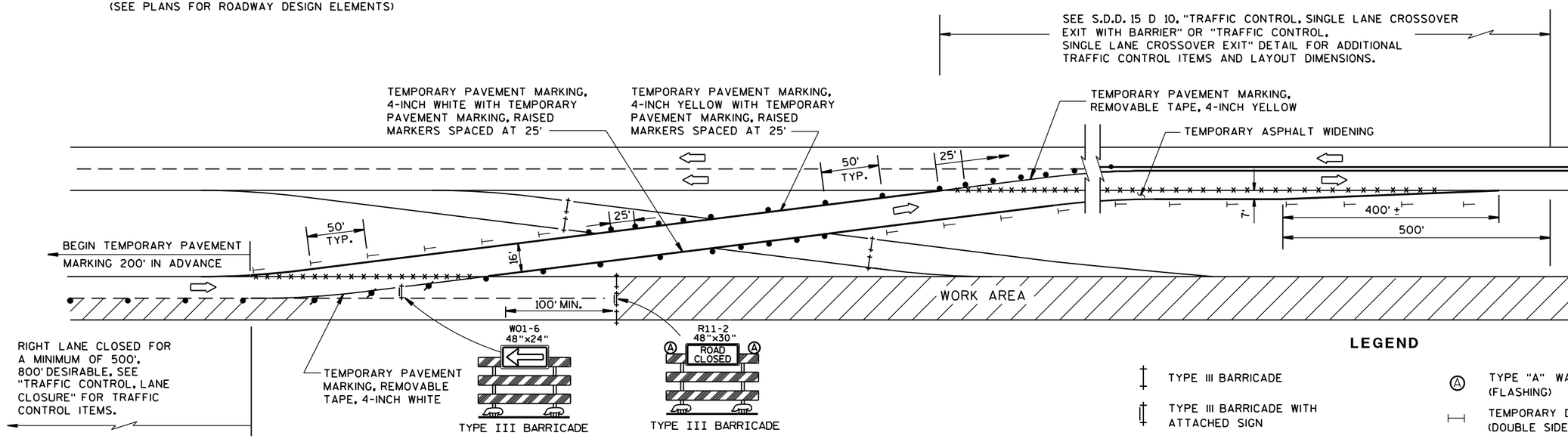
TYPICAL TEMPORARY CROSSOVER ROADWAY DIMENSIONS

(SEE PLANS FOR ROADWAY DESIGN ELEMENTS)



TYPICAL CROSSOVER TO REMAIN IN PLACE ROADWAY DIMENSIONS

(SEE PLANS FOR ROADWAY DESIGN ELEMENTS)



LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- TEMPORARY DELINEATOR (STEEL POST W/SINGLE DELINEATOR) COLOR OF DELINEATOR SHALL MATCH THE COLOR OF THE RESPECTIVE EDGELINE MARKING
- TYPE "A" WARNING LIGHT (FLASHING)
- TEMPORARY DELINEATOR (DOUBLE SIDED)
- REMOVING PAVEMENT MARKINGS
- DELINEATOR FLEXIBLE/ TUBULAR MARKER
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

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

TEMPORARY PAVEMENT MARKING REMOVABLE TAPE SHALL BE USED WHEN CROSSING PERMANENT ROADWAY SURFACES THAT WILL REMAIN AFTER USE OF CROSSOVER AND TEMPORARY PAVEMENT MARKING WHERE USED.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

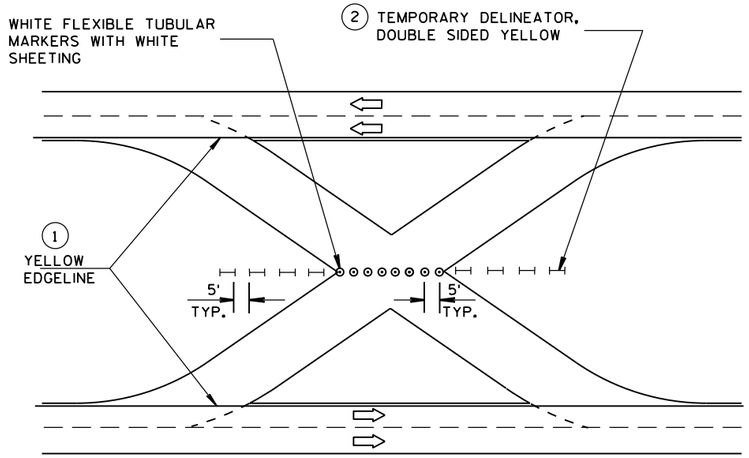
"WO" IS THE SAME AS "W" EXCEPT THE BACKGROUND IS ORANGE.

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

REVERSE DEVICES WHEN OTHER LEG OF CROSSOVER IS IN USE.

(1) FOR PERMANENT CROSSOVER, PAVEMENT MARKING SHOULD CONFORM TO SECTION 646 OF THE STANDARD SPECIFICATIONS.

(2) FOR PERMANENT CROSSOVER, INSTALL PERMANENT DELINEATORS ACCORDING TO SECTION 633 OF THE STANDARD SPECIFICATIONS.



TRAFFIC CONTROL FOR CROSSOVER THAT IS NOT IN USE

TRAFFIC CONTROL, SINGLE LANE CROSSOVER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10-16-2015 DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZON SAFETY ENGINI IC
FHWA

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S.D.D. 15 D 11-6

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

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

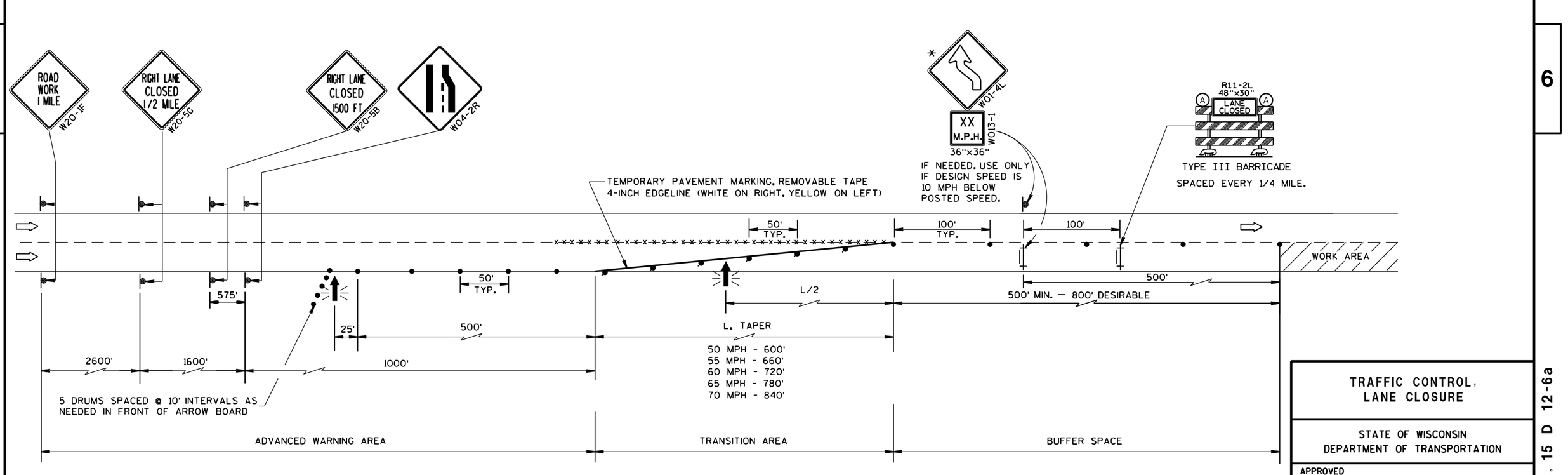
REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (WO1-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.



TRAFFIC CONTROL, LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2016 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

6

S.D.D. 15 D 12-6a

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMENENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKING
- DIRECTION OF TRAFFIC
- WORK AREA

GENERAL NOTES

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

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

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

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

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

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

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

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

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

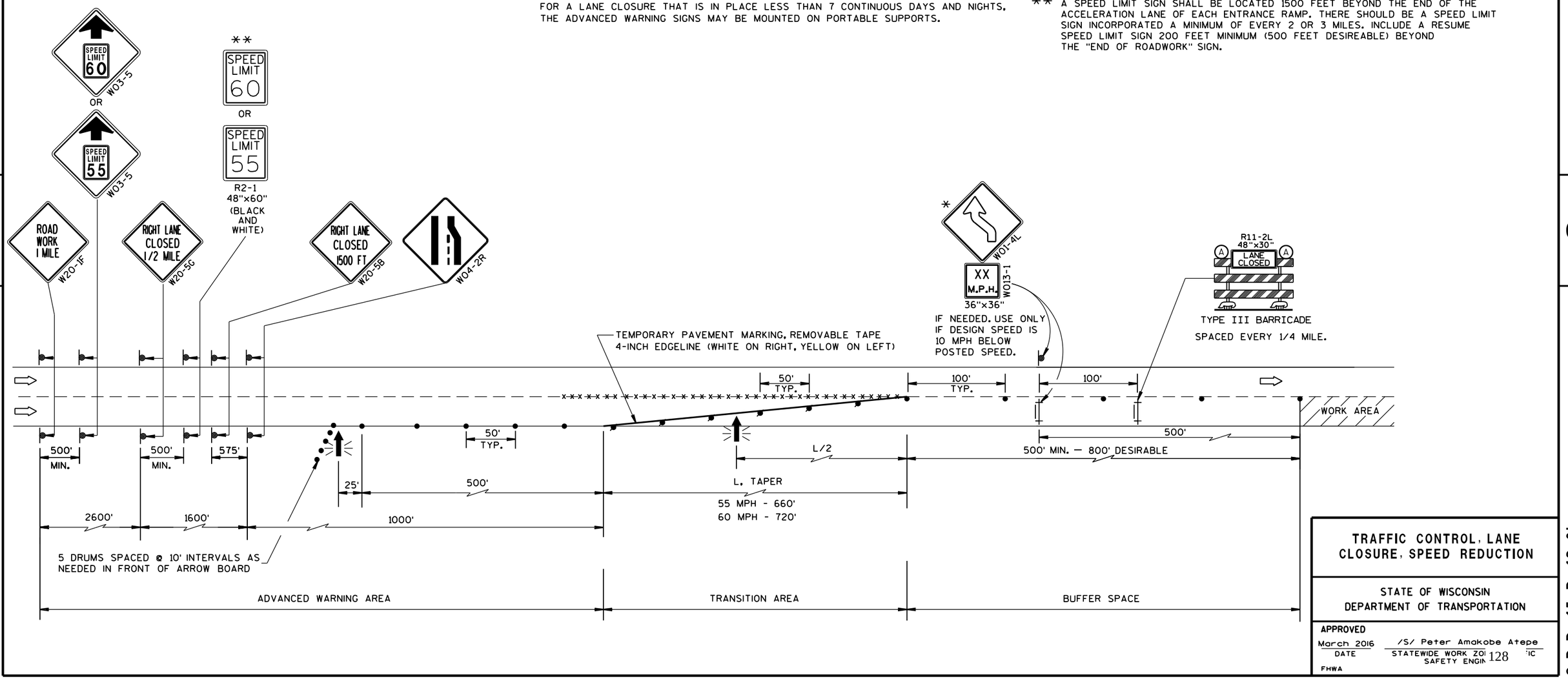
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

** A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. THERE SHOULD BE A SPEED LIMIT SIGN INCORPORATED A MINIMUM OF EVERY 2 OR 3 MILES. INCLUDE A RESUME SPEED LIMIT SIGN 200 FEET MINIMUM (500 FEET DESIREABLE) BEYOND THE "END OF ROADWORK" SIGN.



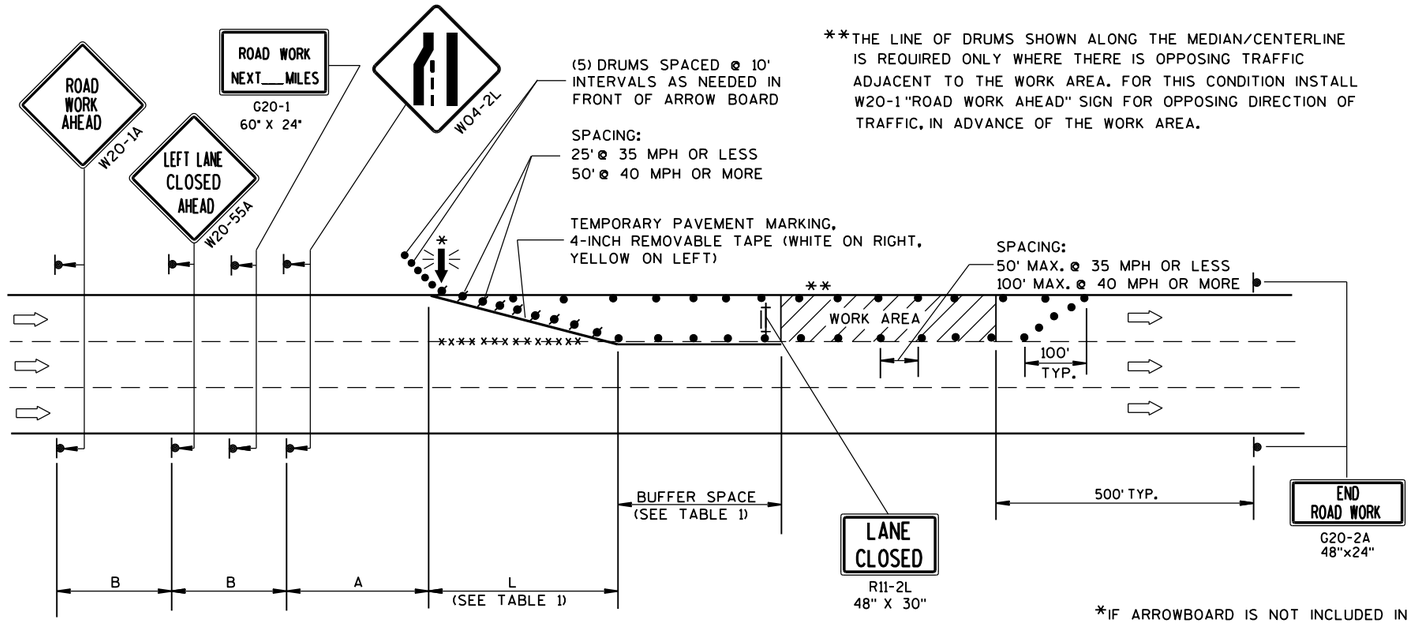
TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2016 — DATE
/S/ Peter Amakobe Atepe
STATEWIDE WORK ZONE TRAFFIC ENGINEER
FHWA

6

S.D.D. 15 D 12-6b



**THE LINE OF DRUMS SHOWN ALONG THE MEDIAN/CENTERLINE IS REQUIRED ONLY WHERE THERE IS OPPOSING TRAFFIC ADJACENT TO THE WORK AREA. FOR THIS CONDITION INSTALL W20-1 "ROAD WORK AHEAD" SIGN FOR OPPOSING DIRECTION OF TRAFFIC, IN ADVANCE OF THE WORK AREA.

B=400' AT 25-30 MPH
700' AT 35-40 MPH
1000' AT 45-55 MPH

A=200' AT 25-30 MPH
350' AT 35-40 MPH
500' AT 45-55 MPH

(PLACE BARRICADE AND SIGN APPROX. EVERY 1000' ACROSS THE CLOSED LANE)

*IF ARROWBOARD IS NOT INCLUDED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE A TYPE III BARRICADE WITH W01-6 SIGN IN THE LANE CLOSURE TAPER.

W01-6
48"x24"

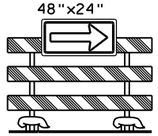


TABLE 1
TAPER AND BUFFER SPACE FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

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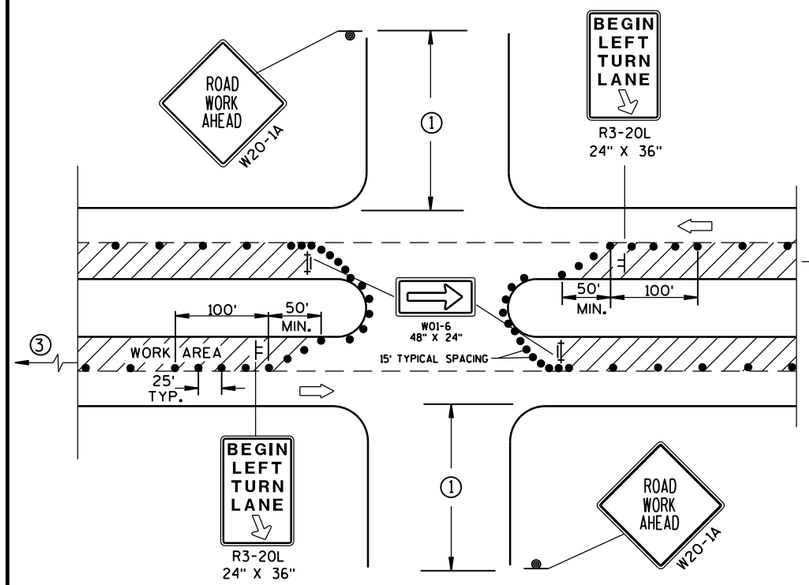
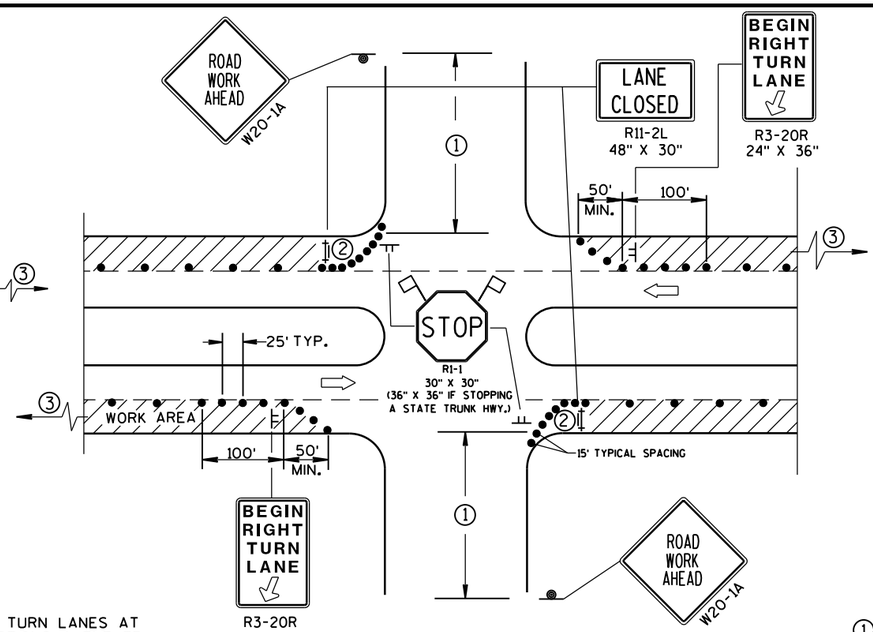


DETAIL A

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING

PROVIDE TURN LANES AT INTERSECTIONS WHENEVER STAGING OF WORK ALLOWS. TAPER AND TURN LANE LENGTHS BASED ON FIELD CONDITIONS AS APPROVED BY THE ENGINEER.



DETAIL B

FOR RIGHT LANE CLOSURE AT INTERSECTION

GENERAL NOTES

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

THE SPACING BETWEEN SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

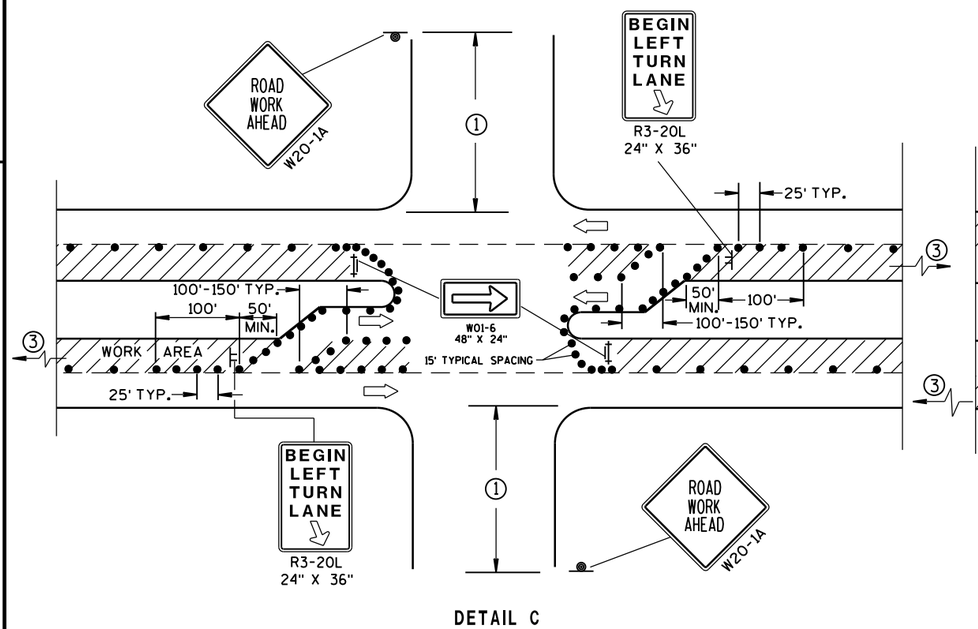
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

BARRICADES IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35-40 MPH.
200' IF 25-30 MPH.

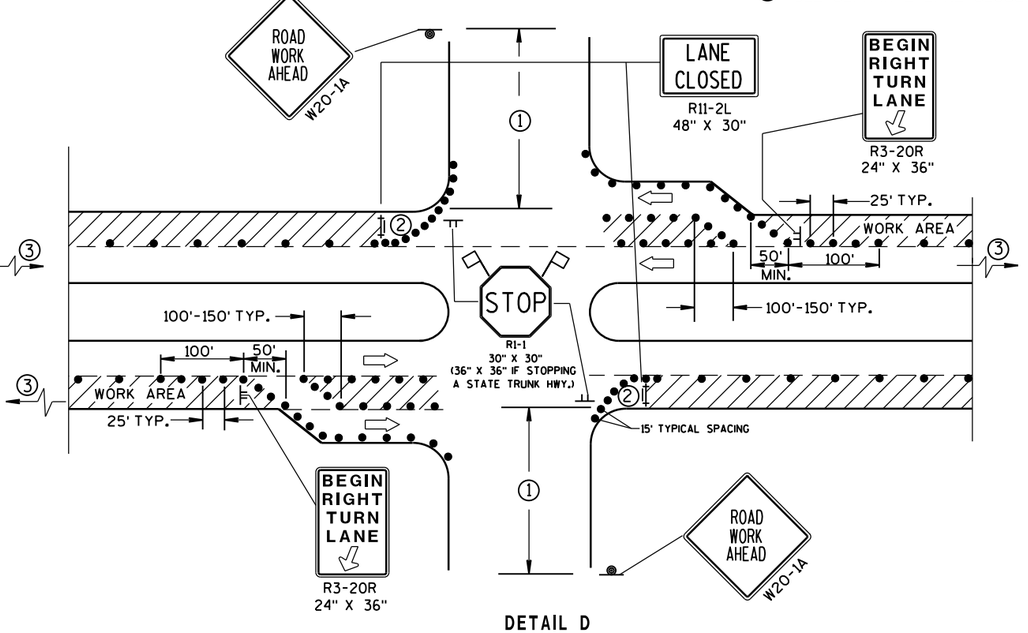
② ALSO USE BARRICADE AND 15-FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS.

③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.



DETAIL C

FOR LEFT LANE CLOSURE AT INTERSECTION OR MEDIAN OPENING (WITH LEFT TURN BAY OPEN)



DETAIL D

FOR RIGHT LANE CLOSURE AT INTERSECTION (WITH RIGHT TURN BAY OPEN)

LEGEND

- TRAFFIC CONTROL DRUM
- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT (5' MIN. MOUNTING HEIGHT)
- TYPE III BARRICADE WITH ATTACHED SIGN AND TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- FLAGS, 16" X 16" MIN., (ORANGE)
- WORK AREA

TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 — DATE
/S/ Peter Anakobe Atepe
STATEWIDE WORK ZO SAFETY ENGI FIC
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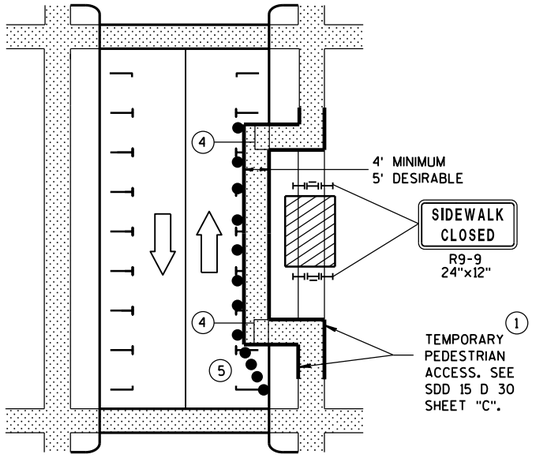
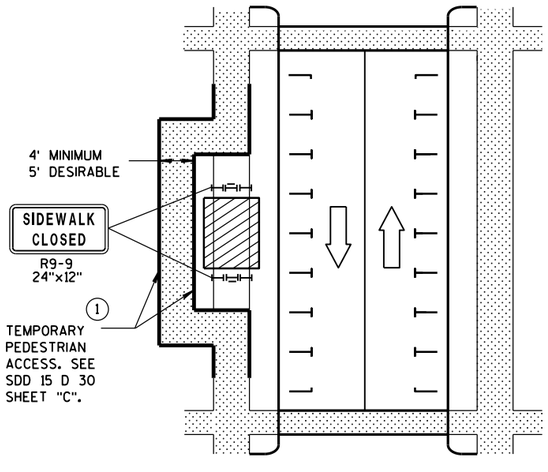
NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.

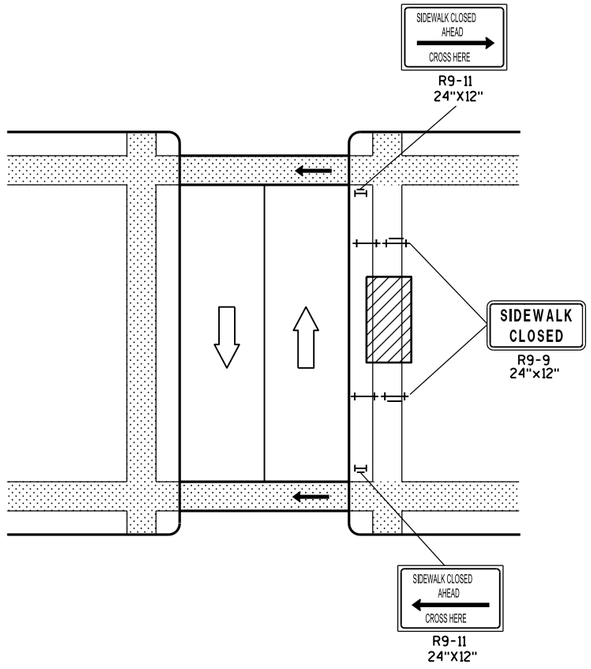


MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

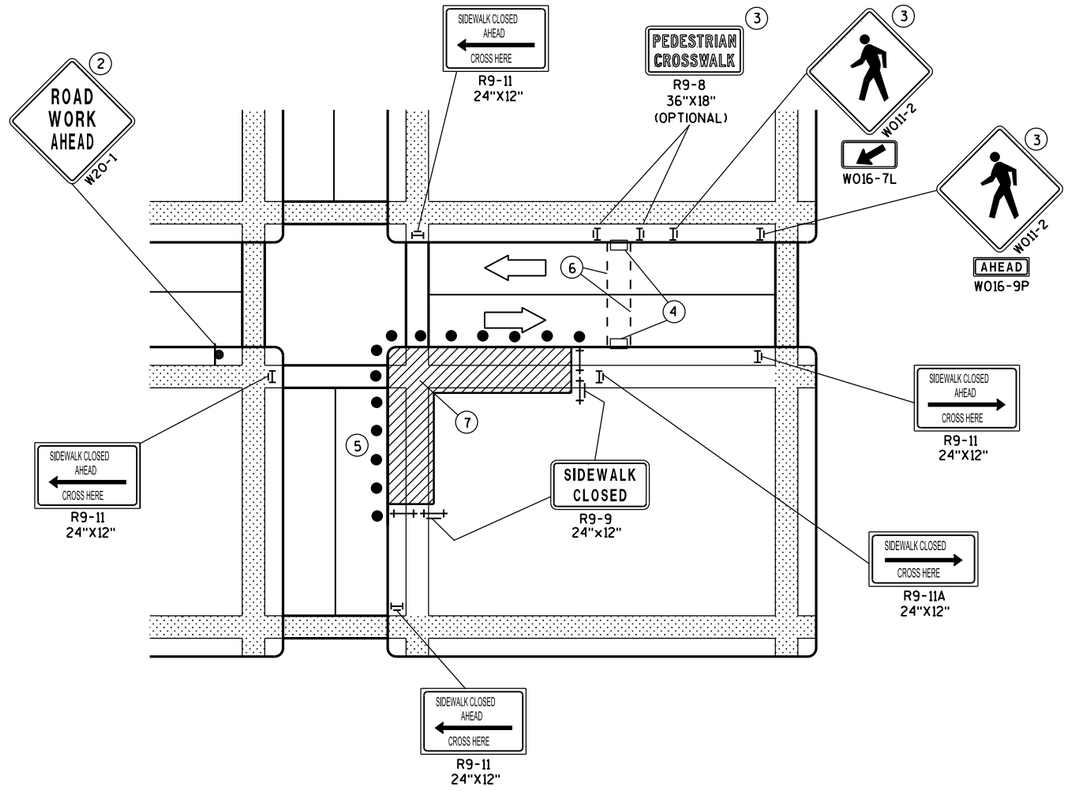
NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION



MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE A TEMPORARY PEDESTRIAN ACCESS ROUTE AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE DETOURS, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

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

FOR NIGHTTIME CLOSURE USE TYPE "A" FLASHING WARNING LIGHTS ON BARRICADES, SUPPORTING SIGNS AND CLOSING SIDEWALK. USE TYPE "C" STEADY BURN LIGHTS ON CHANNELIZING DEVICES SEPARATING THE WORK AREA FROM VEHICULAR TRAFFIC.

PEDESTRIAN TRAFFIC SIGNAL DISPLAY CONTROLLING CLOSED CROSSWALK SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

(1) IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.

(2) "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, OR IF THE WORK AREA AND EQUIPMENT ARE MORE THAN 2 FEET BEHIND THE CURB.

(3) IF TEMPORARY PEDESTRIAN CROSSWALK IS NOT PROVIDED, OMIT R9-8 AND W011-2 SIGN ASSEMBLIES. IF PROVIDED INCLUDE ON BOTH SIDES OF THE CROSSWALK.

(4) TEMPORARY CURB RAMPS. SEE SDD 15 D 30 SHEET "B".

(5) DRUMS OR BARRICADES AT 25 FOOT SPACING. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.

(6) TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.

(7) LIMIT WORK TO ONE QUADRANT AT A TIME TO MINIMIZE PEDESTRIAN DISRUPTION.

LEGEND

- SIGN ON PERMANENT SUPPORT
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- TYPE II BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- TYPE III BARRICADE WITH/WITHOUT SIGN (ALL WITH ONE WARNING LIGHT, TYPE A, LOW-INTENSITY FLASHING)
- DIRECTION OF TRAFFIC
- TRAFFIC CONTOL DRUM

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPOI

6

S.D.D. 15 D 30-3a

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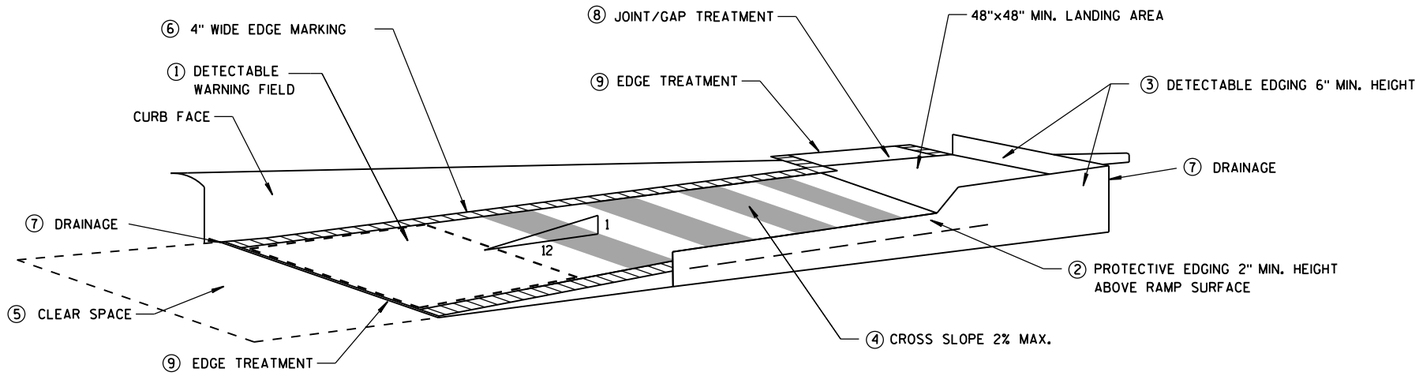
S.D.D. 15 D 30-3a



TEMPORARY CURB RAMP PARALLEL TO CURB

GENERAL NOTES

NOTIFY THE BUS COMPANY 7 DAYS IN ADVANCE OF THE BUS STOP RELOCATION.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

① CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE. INSTALL CONTRASTING DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS. REFER TO SDD 8D5 SHEET "E".

② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

④ CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

⑤ CLEAR SPACE OF 48"X48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

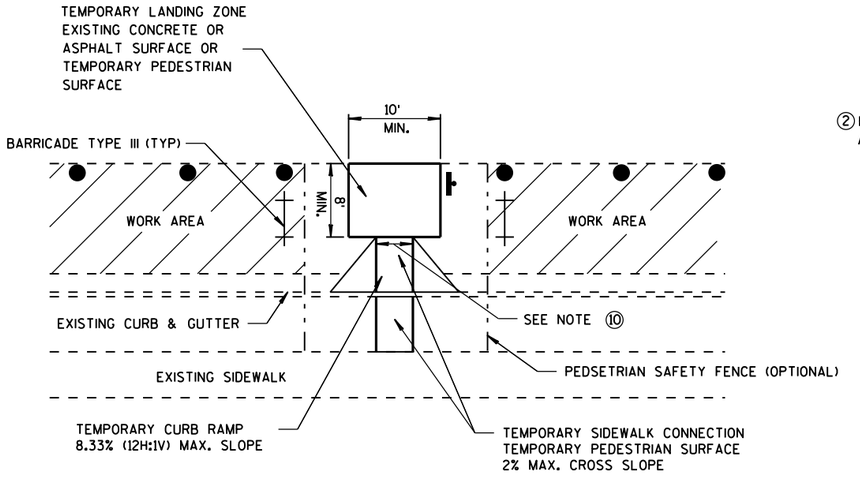
⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A YELLOW COLOR, 4" WIDE MARKING, UNLESS A CONTRASTING DETECTABLE WARNING FIELD IS PROVIDED.

⑦ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.

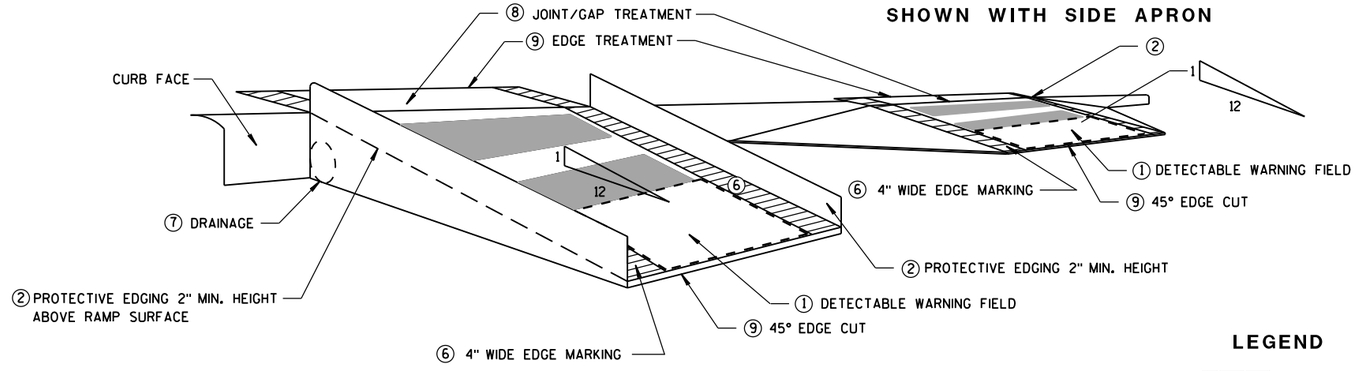
⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHALL BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

⑩ 5' WIDE MIN. WITH PEDSETRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.



TEMPORARY BUS STOP PAD



SHOWN WITH PROTECTIVE EDGE

SHOWN WITH SIDE APRON

TEMPORARY CURB RAMP PERPENDICULAR TO CURB

LEGEND

WORK AREA

TYPE III BARRICADE

TRAFFIC CONTOL DRUM

TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2016 — DATE

/S/ Peter Amakobe Atepe — STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA

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S.D.D. 15 D 30-3b

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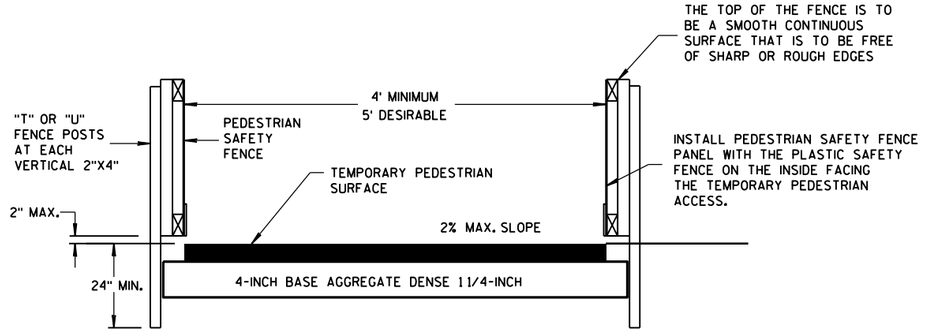
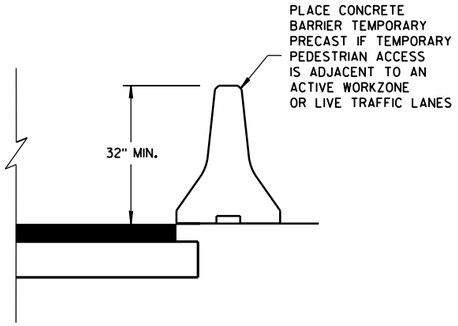
S.D.D. 15 D 30-3b

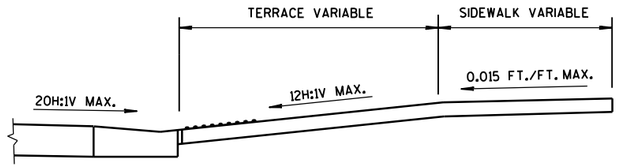




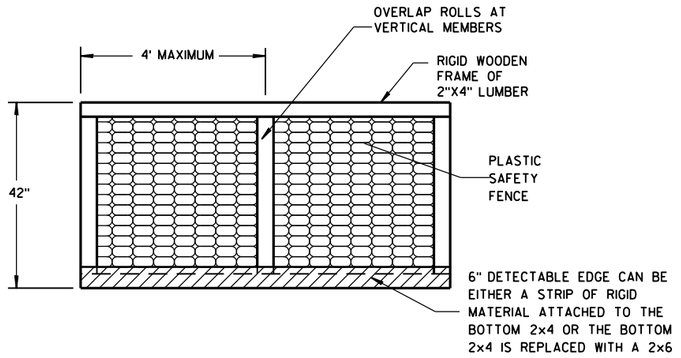
TEMPORARY PEDESTRIAN ACCESS

GENERAL NOTES

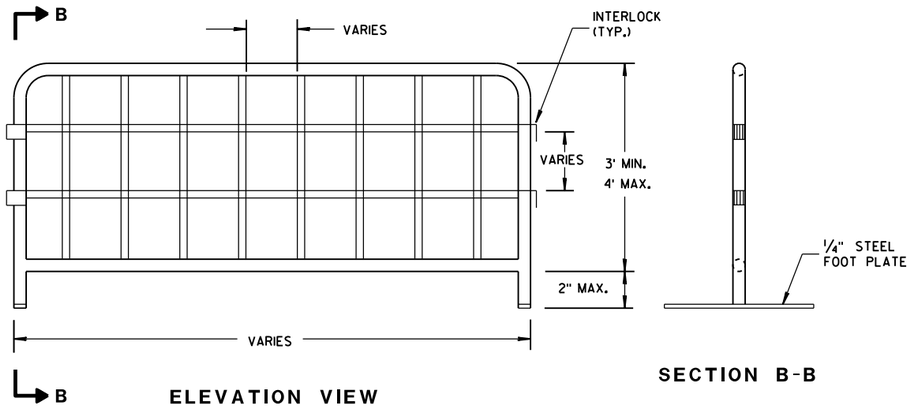
(1) INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



SECTION A-A



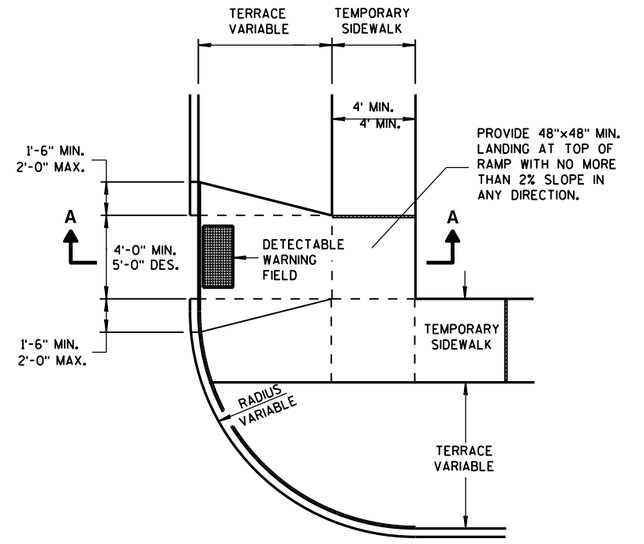
PEDESTRIAN SAFETY FENCE



ELEVATION VIEW

SECTION B-B

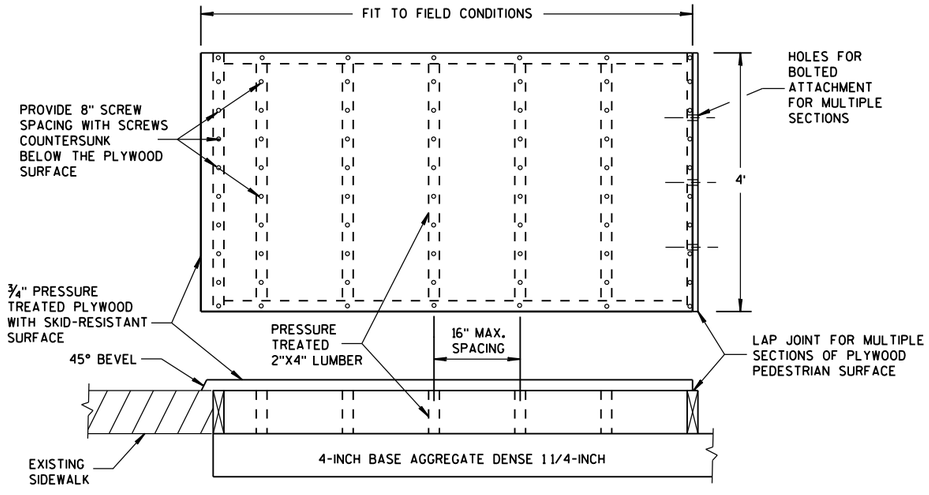
TEMPORARY PEDESTRIAN STEEL BARRICADE (1)



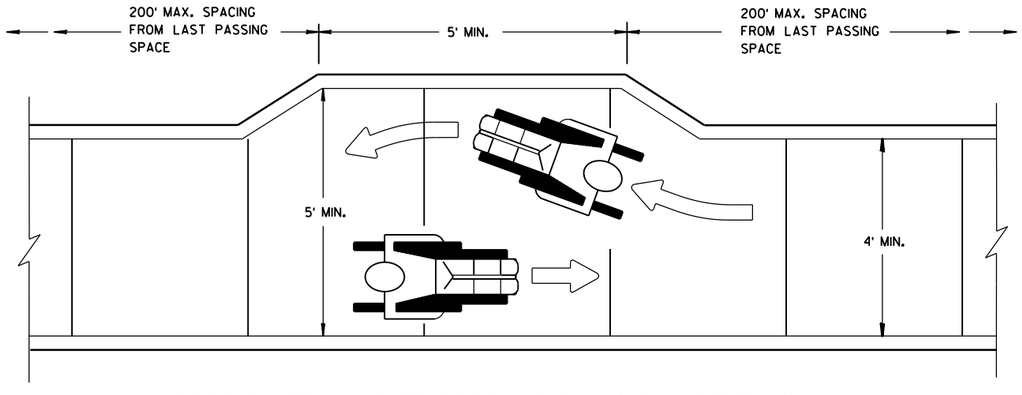
PLAN VIEW

TEMPORARY TYPE 3 RAMP

(OUTSIDE OF CROSSWALK AREA)



TEMPORARY PEDESTRIAN SURFACE PLYWOOD



NARROW SIDEWALK PASSING DETAIL

TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016
DATE
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FHWA

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S.D.D. 15 D 30-3c

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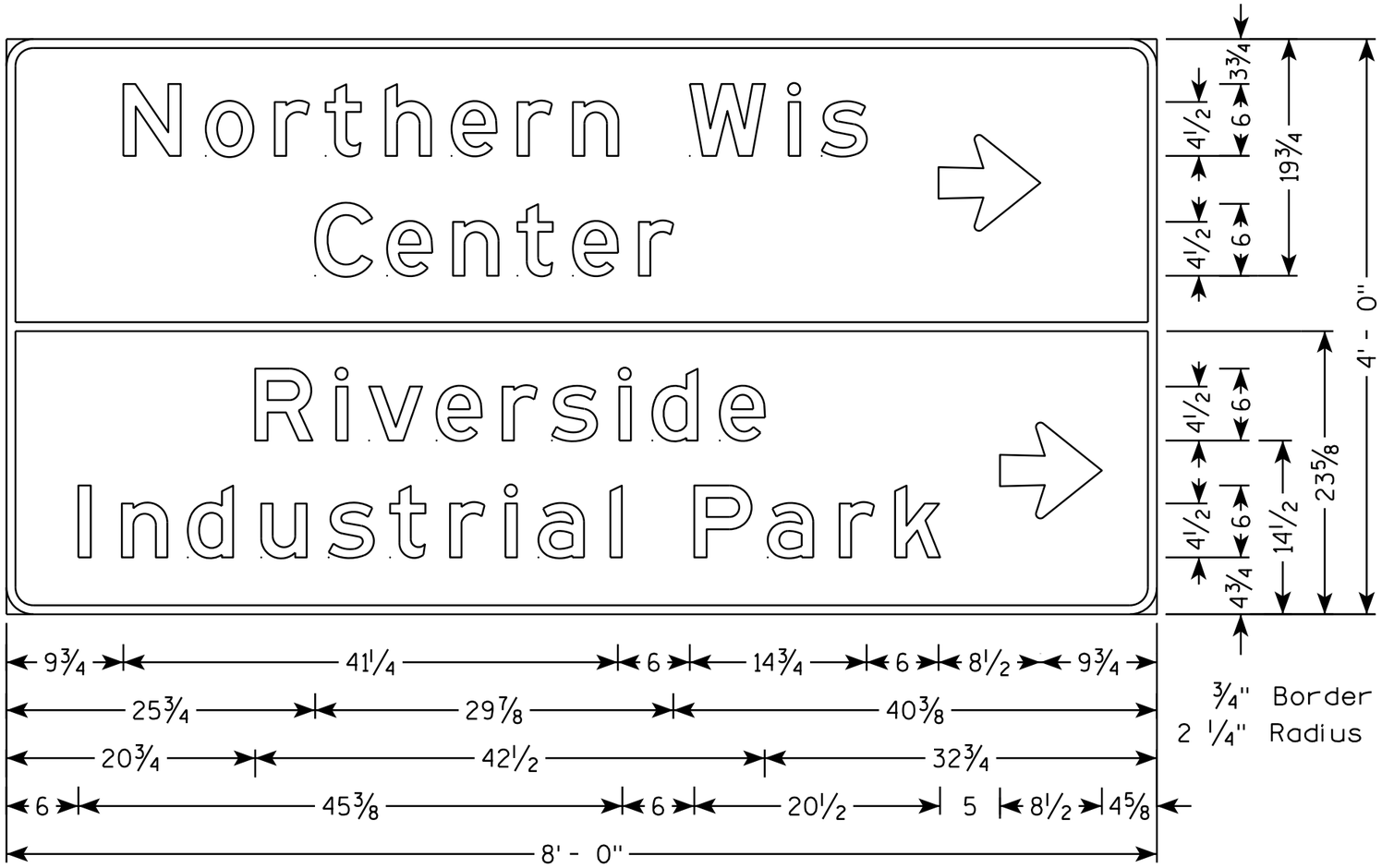
S.D.D. 15 D 30-3c

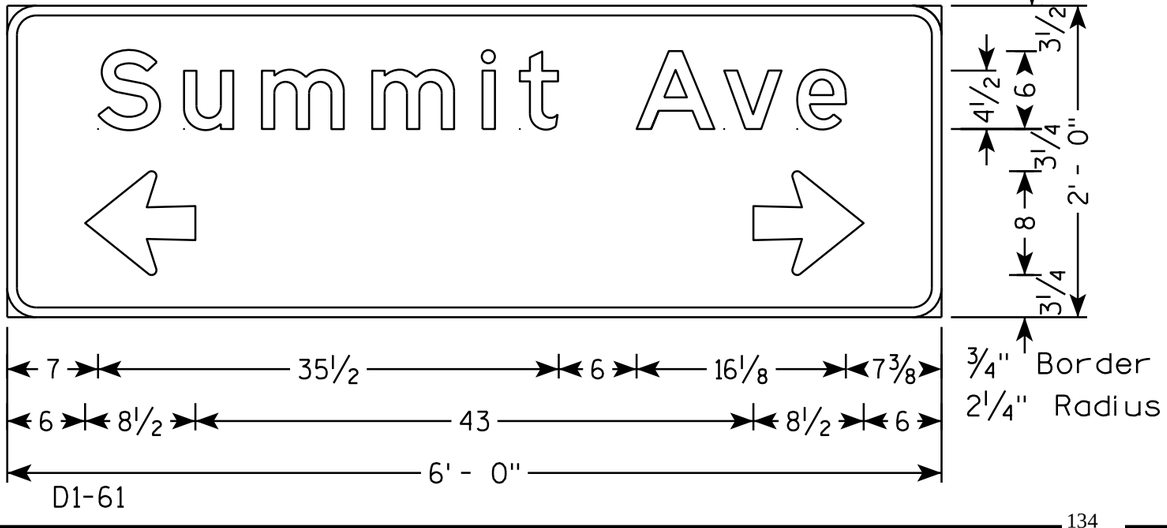


D1-4

¾" Border
2 ¼" Radius

NOTES

1. All Signs Type II - Type H Reflective
2. Color:
   Background - GREEN
   Message - WHITE
3. Message Series - E



D1-61

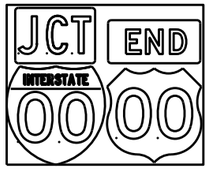
¾" Border
2¼" Radius

PROJECT NO: 8610-02-72	HWY: STH 124	COUNTY: CHIPPEWA	PERMANENT SIGNING	SHEET NO:	E

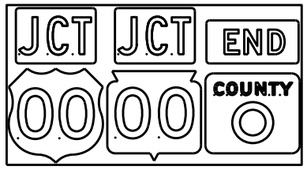
FILE NAME : C:\CAEFiles\Projects\tr_d6\6093AD14.dgn PLOT DATE : 29-DEC-2014 14:24 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 11.675051:1.000000 WISDOT/CADDS SHEET 42

TYPICAL ASSEMBLIES

J1-1

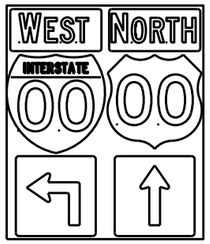


J1-2

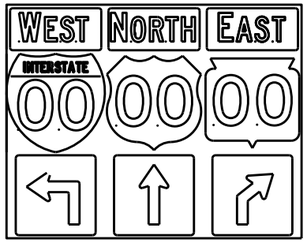


J1-3

J2-1



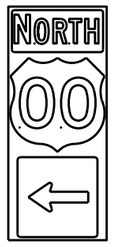
J2-2



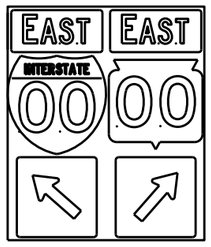
J2-3

JV

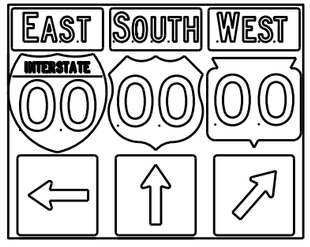
(Typical Vertical J-Assembly
See Note 10 and 11)



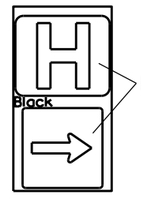
J3-1



J3-2



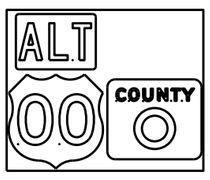
J3-3



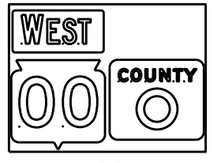
Blue Background

JH-1

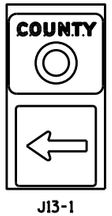
J4-1



J4-2



J4-2



J13-1

J12-1

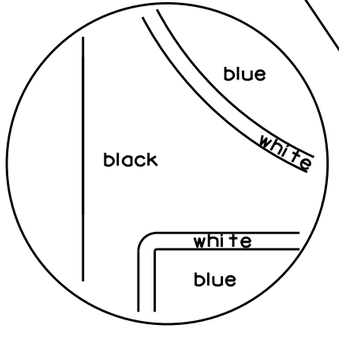
J32-1

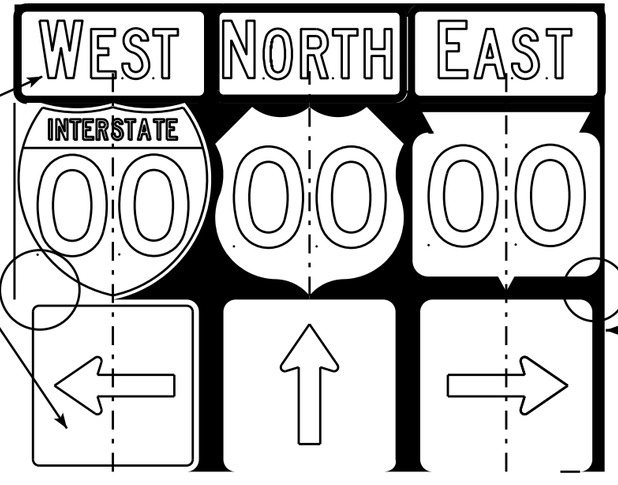
J33-1

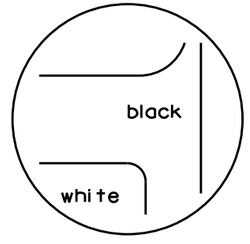
J23-1

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

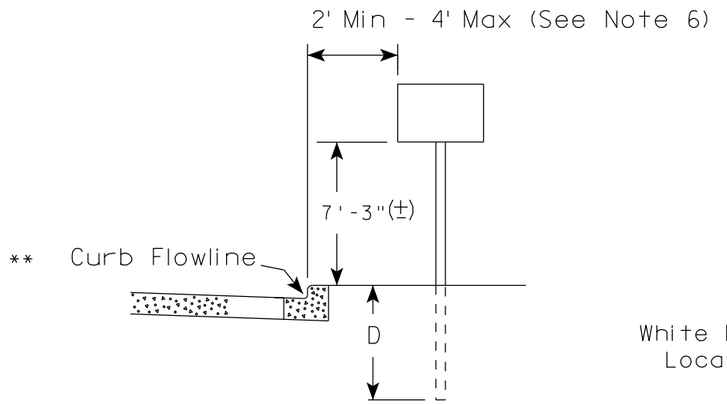
APPROVED Matthew R Rauch
for State Traffic Engineer

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

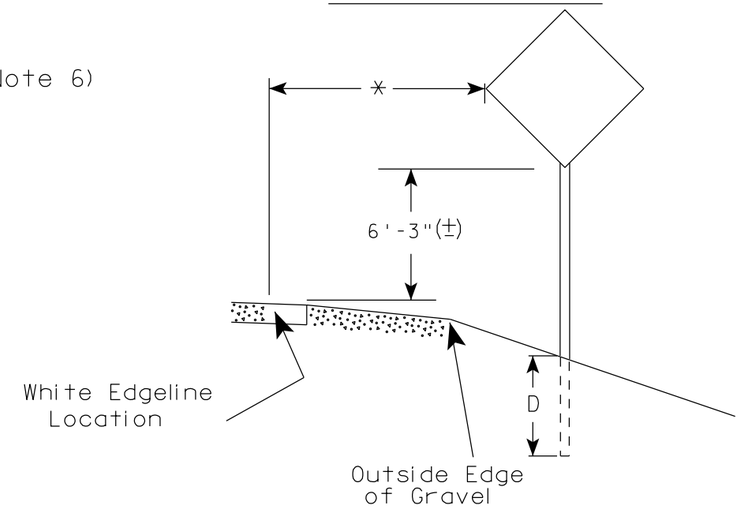
PROJECT NO: | SHEET NO: E

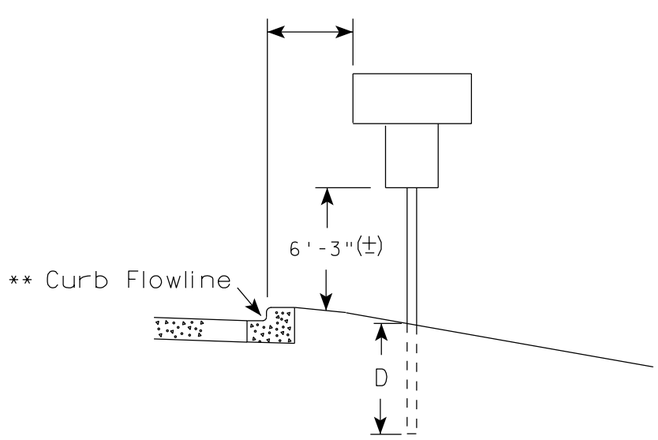
FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A21S.DGN PLOT DATE : 06-FEB-2014 14:10 PLOT BY : mscsja PLOT NAME :
WISDOT/CADDS SHEET 42

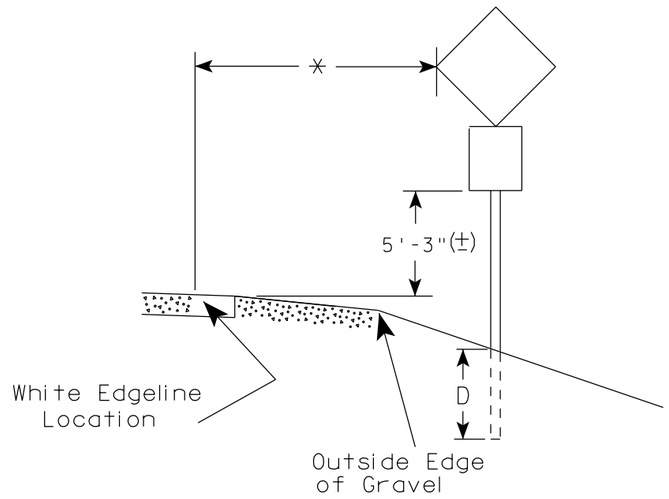
URBAN AREA



RURAL AREA (See Note 2)







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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding 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'

** 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.

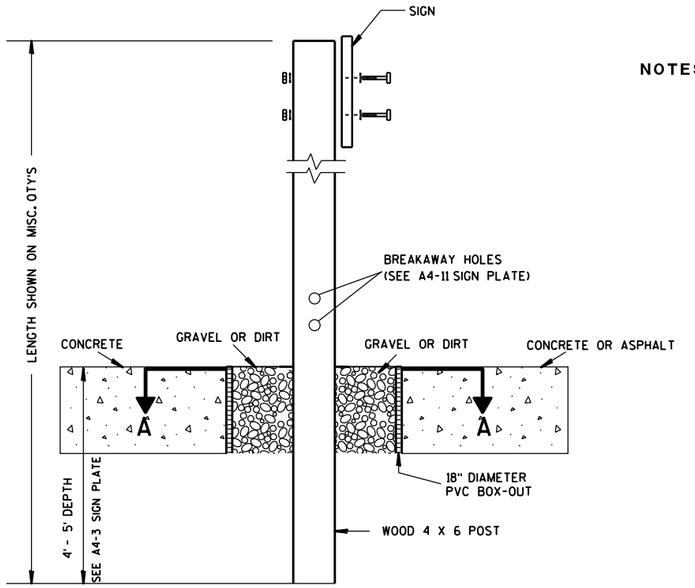
TYPICAL INSTALLATION OF PERMANENT TYPE II SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-3.20

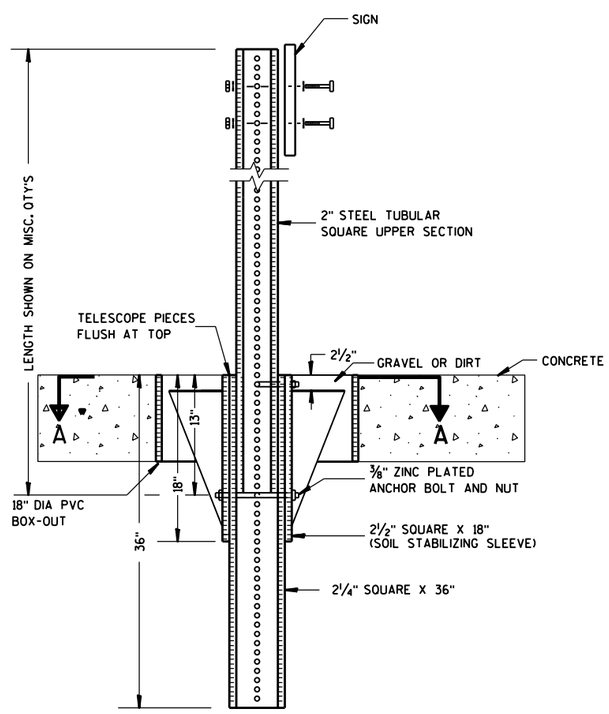
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



ELEVATION VIEW

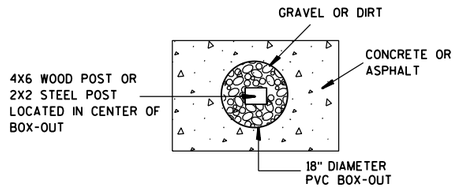
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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

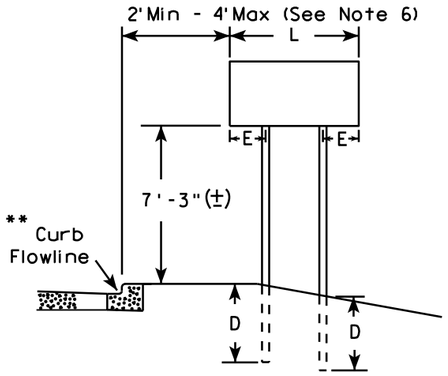
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

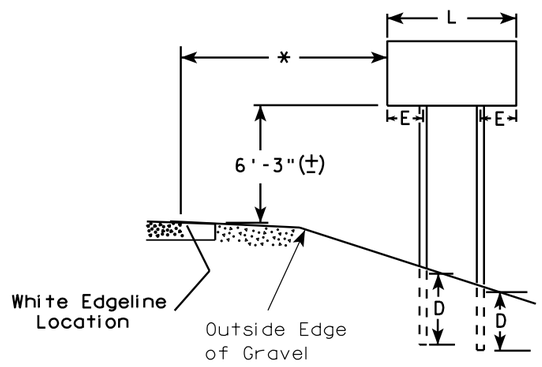
DATE 1/27/14 PLATE NO. A4-3B.1

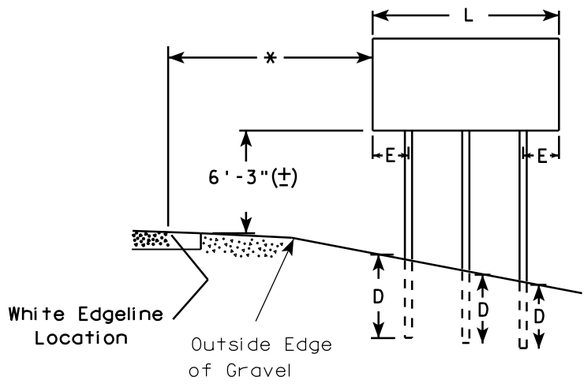
PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

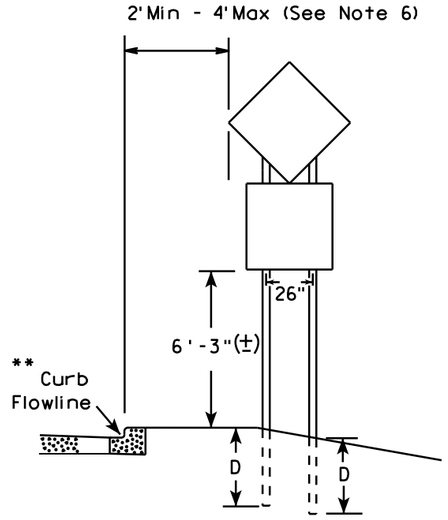
URBAN AREA



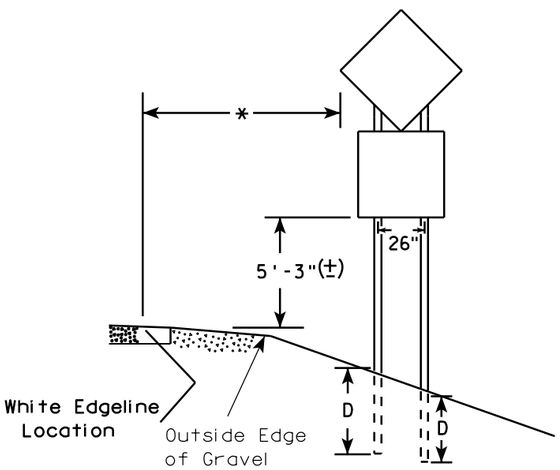
RURAL AREA (See Note 3)







48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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. Minimum mounting height for J assemblies (A2-1S) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding 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.

***

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

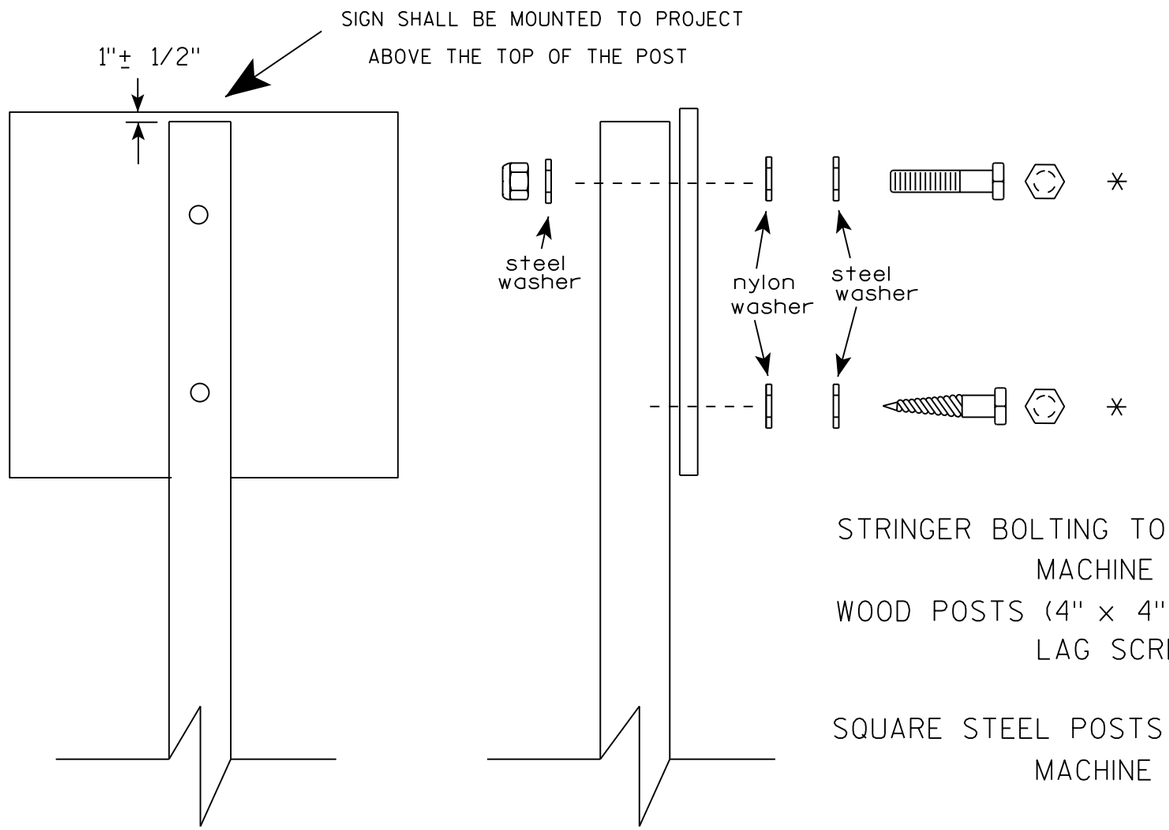
TYPICAL INSTALLATION OF TYPE II SIGNS ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 7/23/15 PLATE NO. A4-4 14

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	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

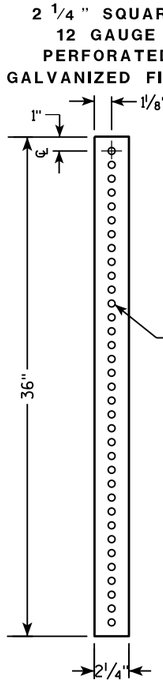
7

PROJECT NO:

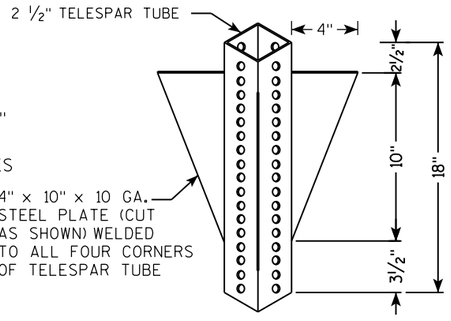
SHEET NO: E

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

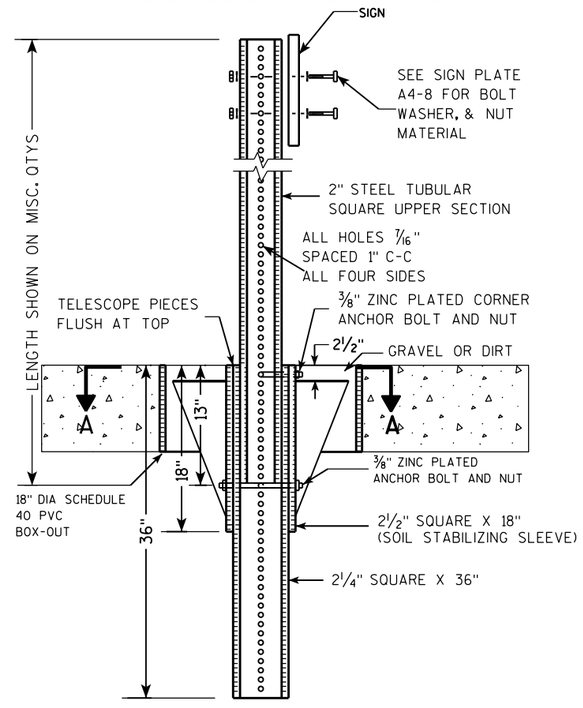
2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



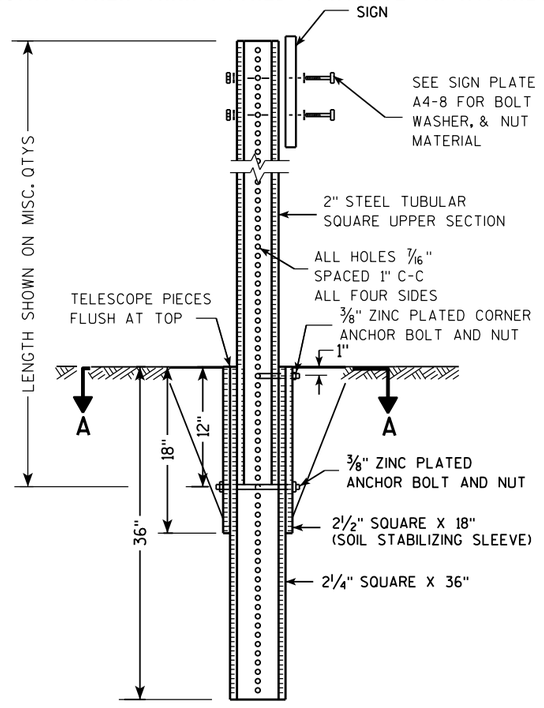
2 1/2 " SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH

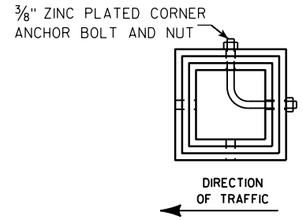


DETAIL OF TUBULAR STEEL SIGN POST
(IN POURED CONCRETE OR ASPHALT)



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

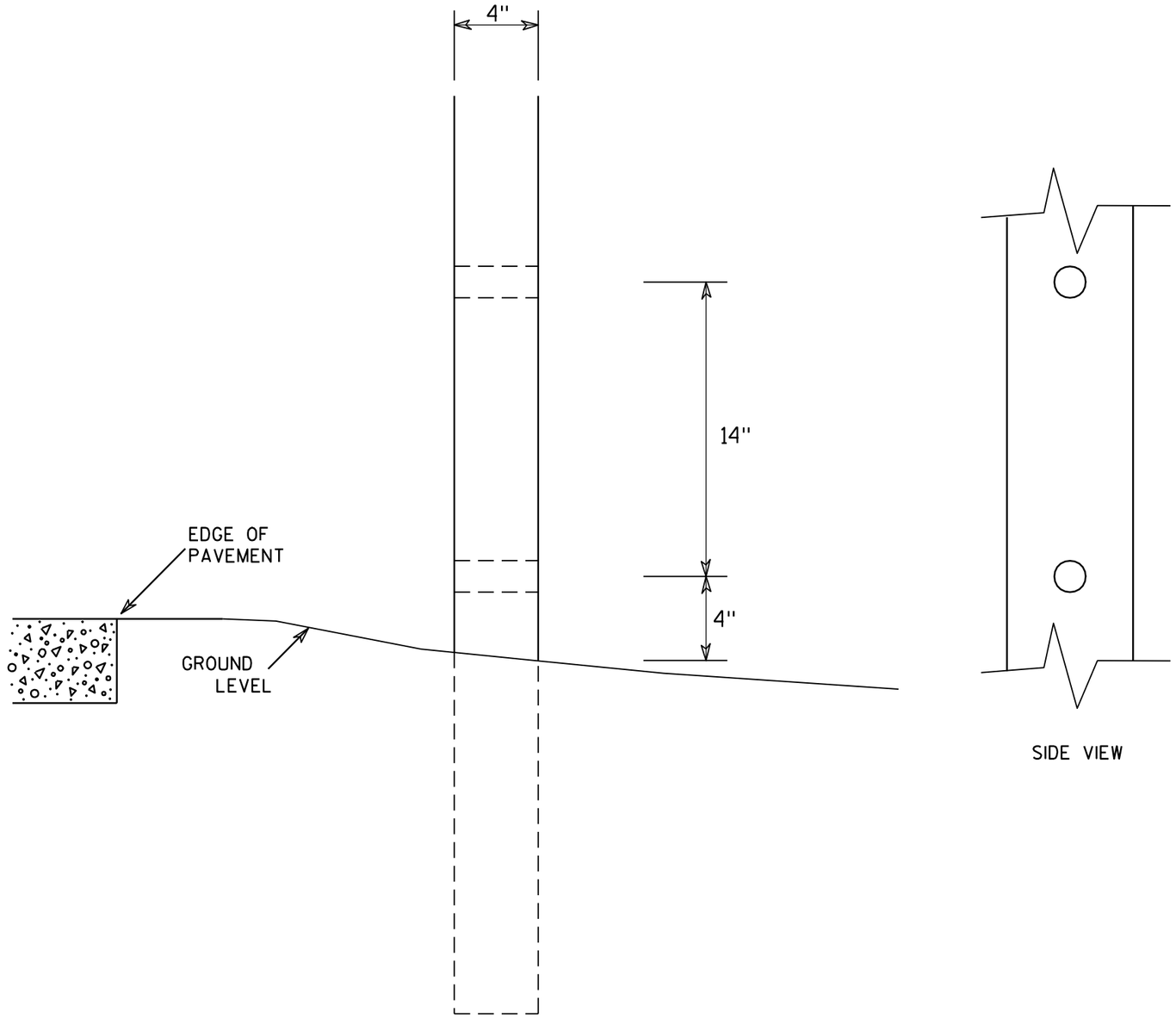
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/05/15 PLATE A4-9.9

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\A49.DGN PLOT DATE : 05-FEB-2015 17:09 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 13.659812:1.000000 WISDOT/CADDS SHEET 42



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

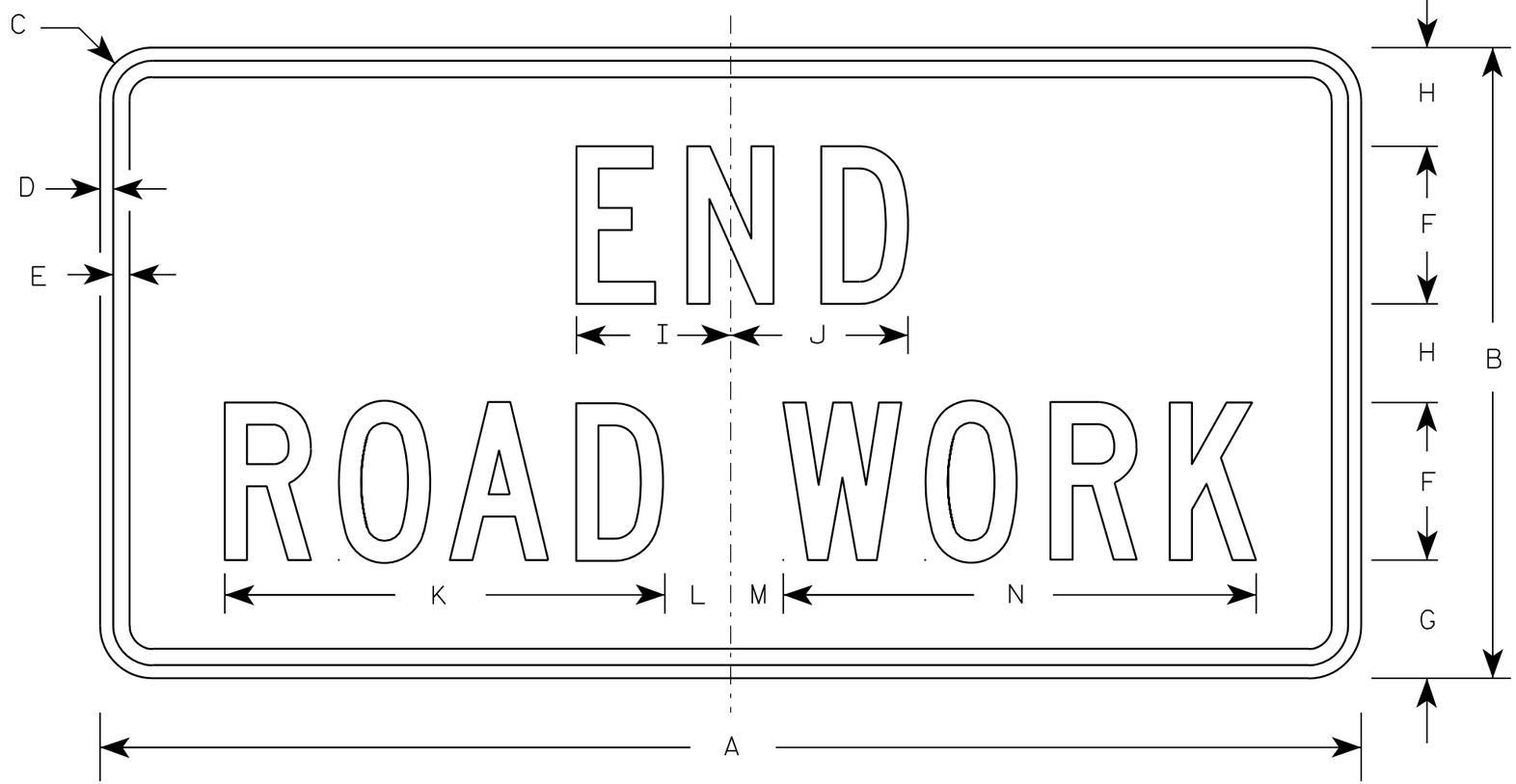
4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 141	E



G20-2A

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 - 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.

Metric equivalent for this sign is:

SIZE	
1	900 mm X 450 mm
2	1200 mm X 600 mm
3	1200 mm X 600 mm
4	1200 mm X 600 mm
5	1200 mm X 600 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	36	18	1 1/8	3/8	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5	0.41
2	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
3	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
4	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72
5	48	24	1 1/2	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0	0.72

STANDARD SIGN
G20-2A

WISCONSIN DEPT OF TRANSPORTATION

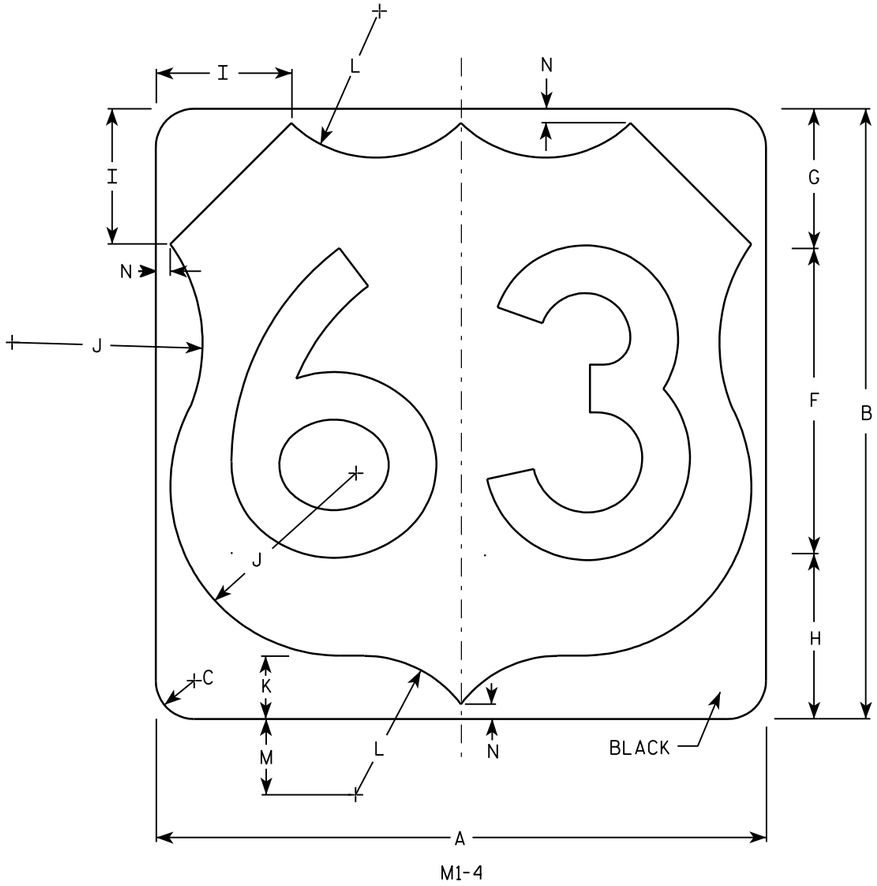
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/30/09 PLATE NO. G20-2A.8

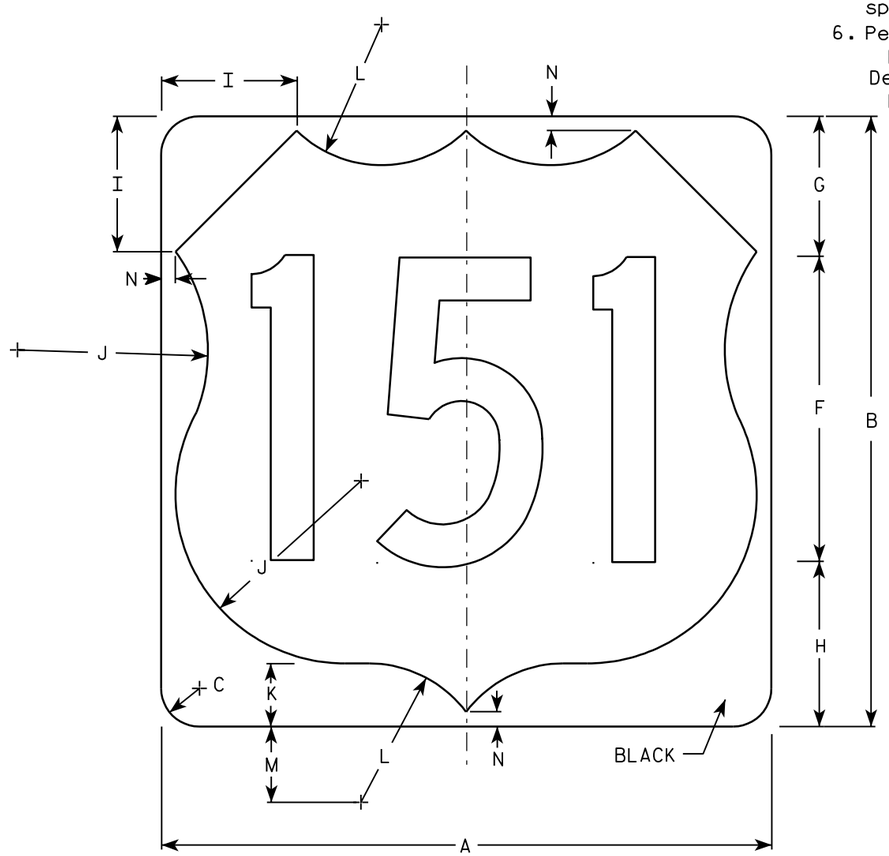
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 142	E

NOTES

1. Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 6
   Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals and adjust spacing as per Plate A10-1.
6. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary signs
   Background - Reflective



M1-4



M1-4

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

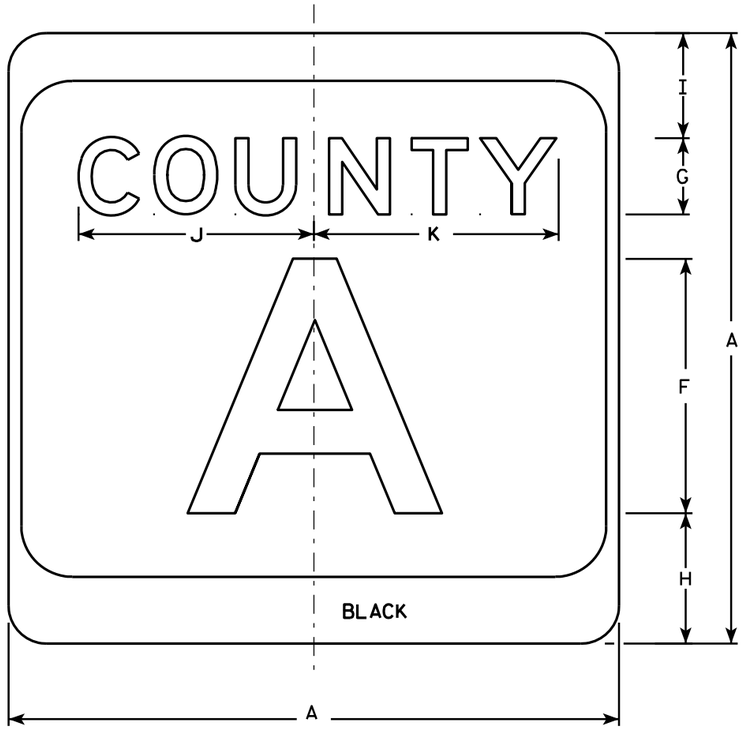
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

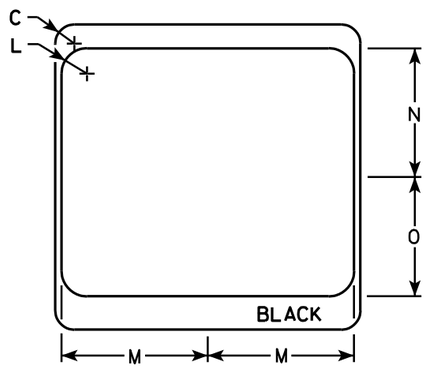
APPROVED Matthew R Rauch
for State Traffic Engineer

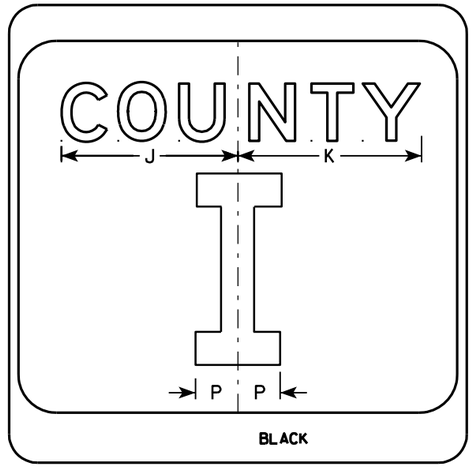
DATE 08/25/05 PLATE NO. M1-4.9

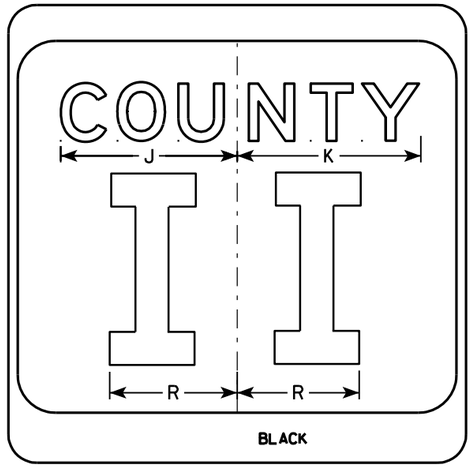
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 143	E



M1-5A







NOTES

1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White & Black - See Note 7
   Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
   Message Series D for 2 letters unless message is too big then Series C.
   Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
   Background - Type H Reflective
   Detour or temporary Signs
   Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

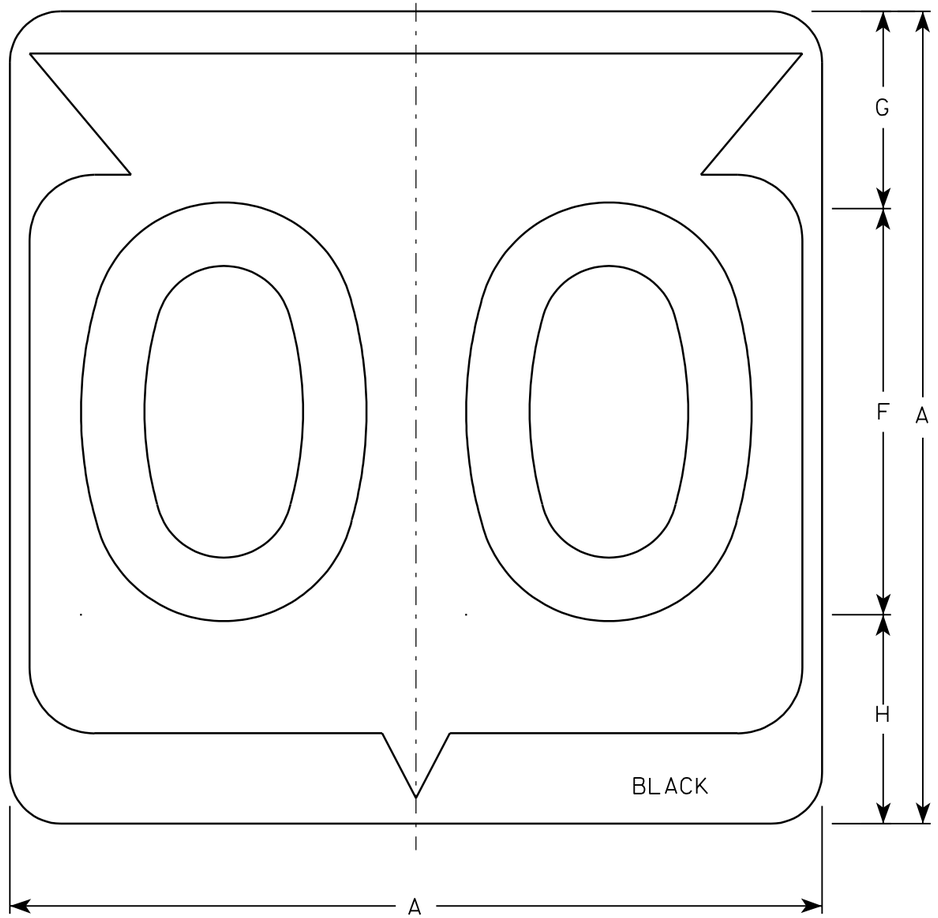
CTH MARKER
M1-5A FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 9/27/11 PLATE NO. M1-5A.8

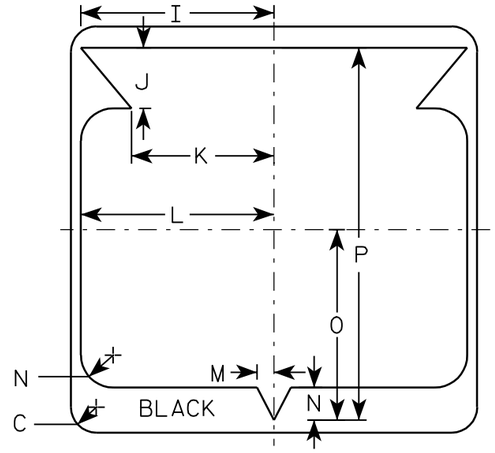
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 144	E



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

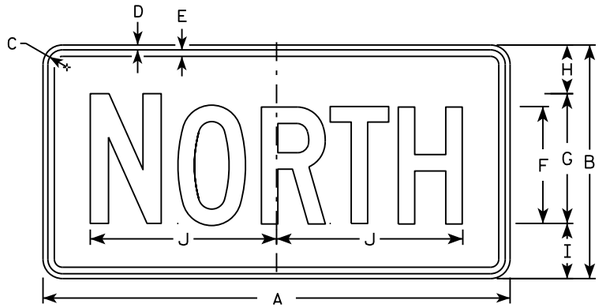
STATE ROUTE MARKER M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

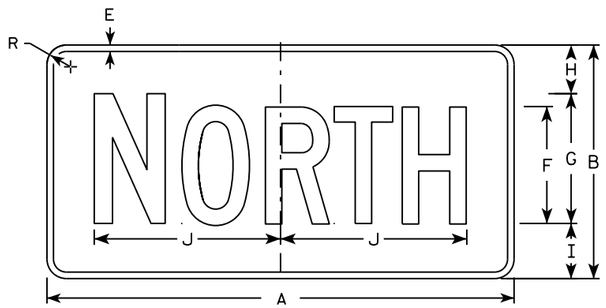
APPROVED Chester J Spang for State Traffic Engineer

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

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 145	E



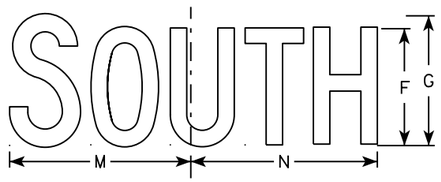
M3-1
MM3-1
MP3-1



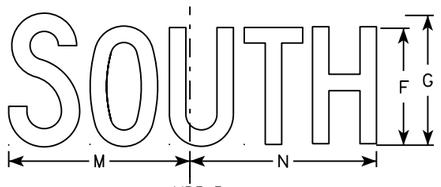
MB3-1
MK3-1
MN3-1

M3-2
MM3-2
MP3-2

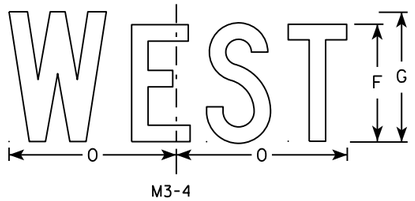
MB3-2
MK3-2
MN3-2



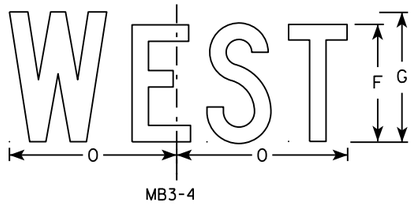
M3-3
MM3-3
MP3-3



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

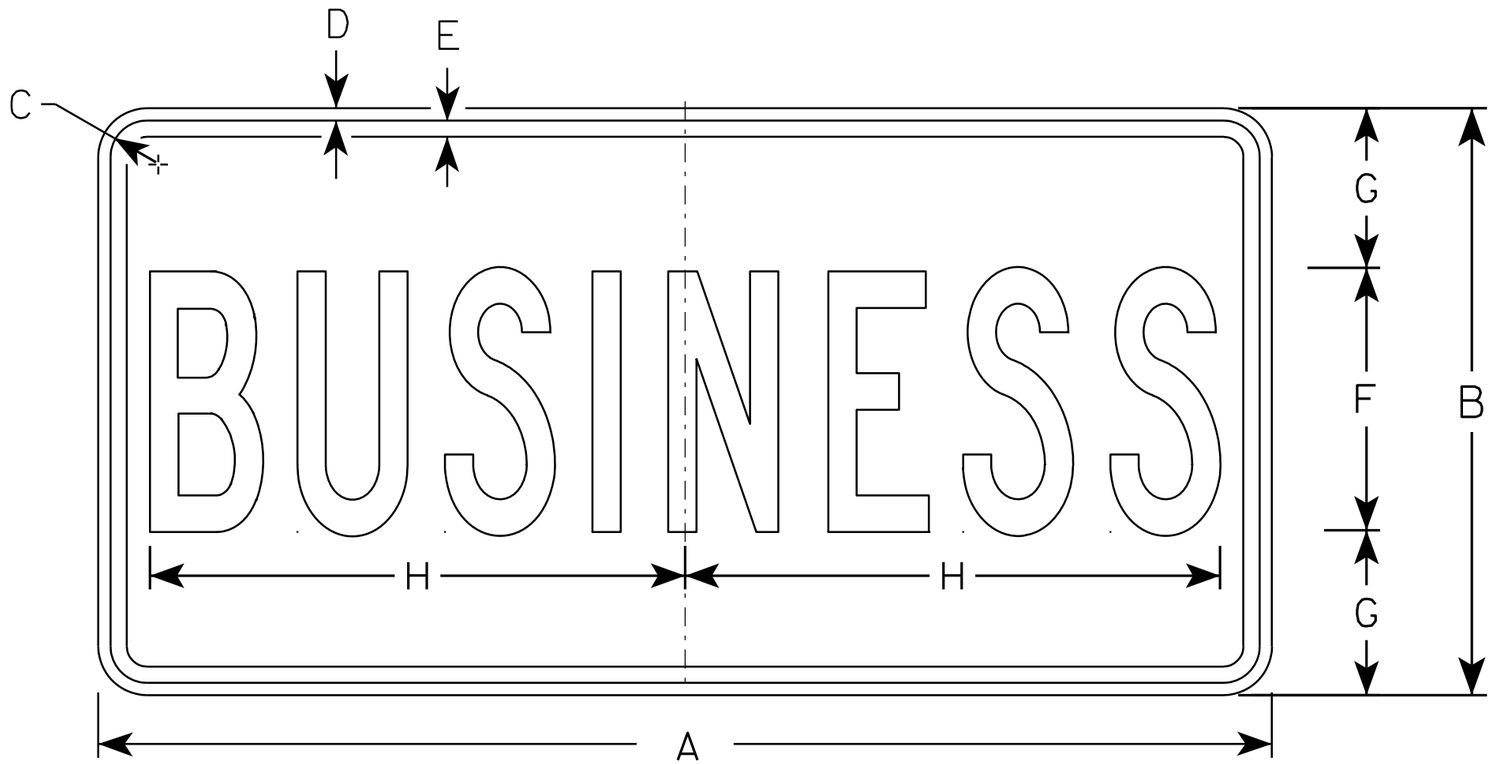
WISCONSIN DEPT OF TRANSPORTATION

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



M4-3

NOTES

1. Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White - See Note 5
   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.
5. Permanent Signs
   Background - Type H Reflective
   Detour or other temporary Signs
   Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	5	3 1/2	9 5/8																			2.0
3	36	18	1 1/8	3/8	1/2	8	5	16 3/8																			4.5
4																											
5																											

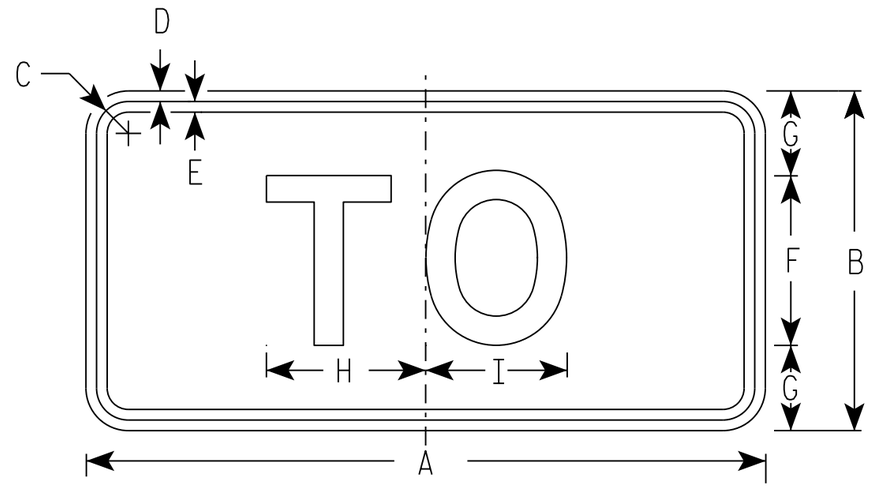
STANDARD SIGN
M4-3

WISCONSIN DEPT OF TRANSPORTATION

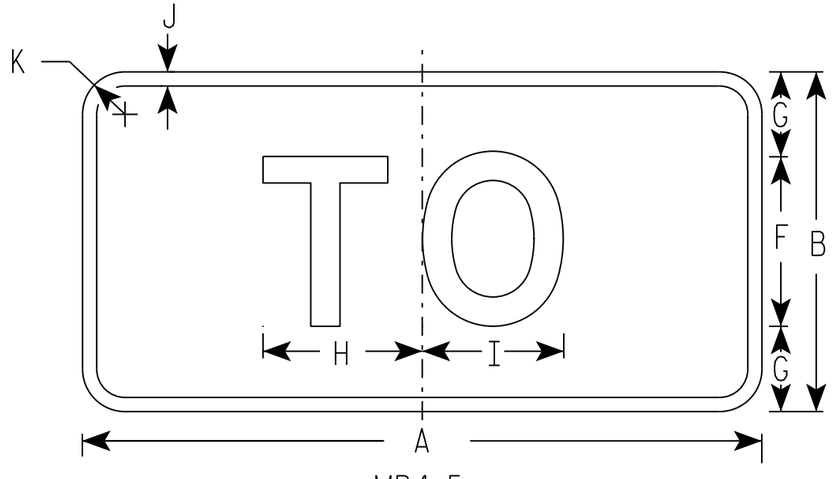
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-3.5

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 147 | E



M4-5
MM4-5
MP4-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H
2. Color:
   Background - See note 5
   Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
   Message - Black

   MB4-5 Background - Blue
   Message - White

   MK4-5 Background - Green
   Message - White

   MM4-5 Background - White
   Message - Green

   MN4-5 Background - Brown
   Message - White

   MP4-5 Background - White
   Message - Blue

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	5 3/8	5 1/4	1/2	1 1/2																2.00
3	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
4	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5
5	36	18	1 3/8	3/8	1/2	9	4 1/2	8 1/4	8 3/8	1/2	1 1/2																4.5

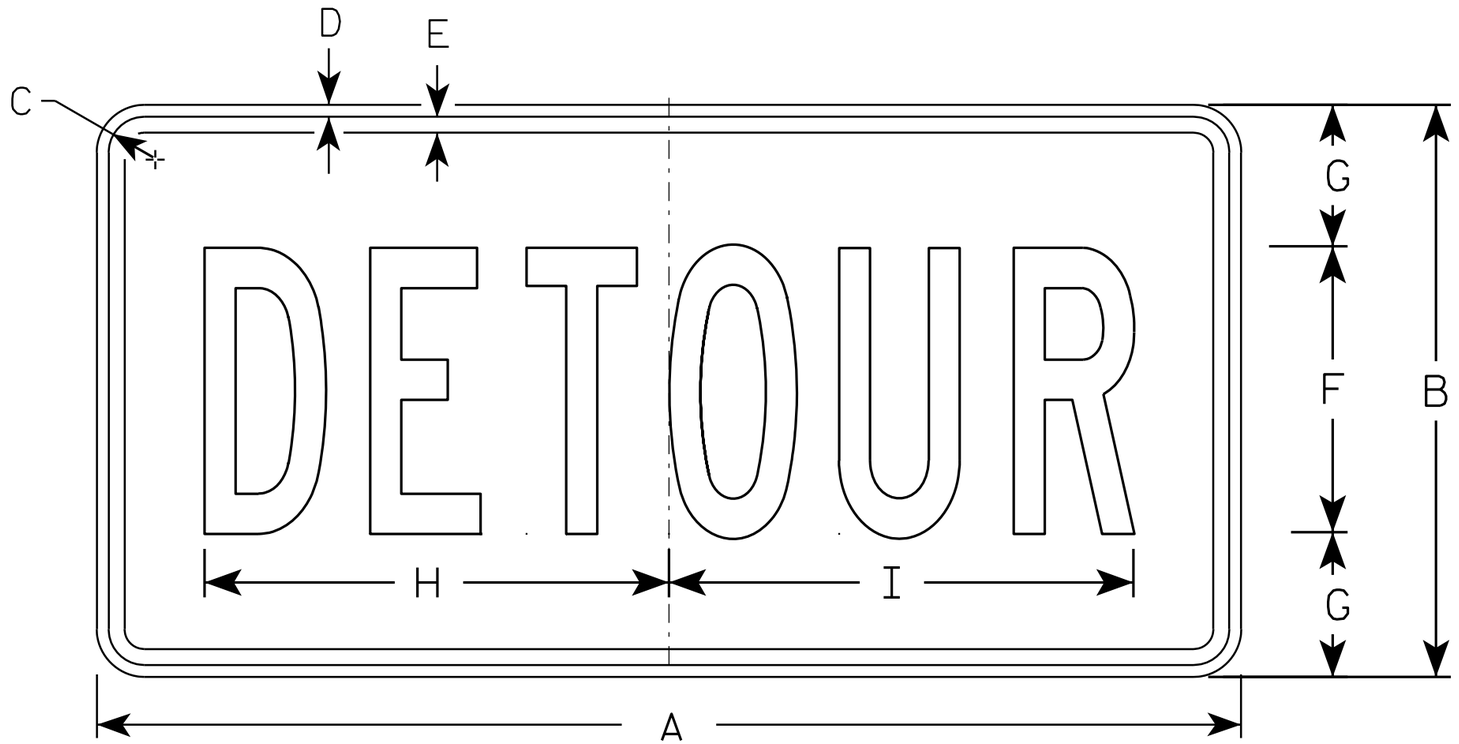
STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/15/15 PLATE 148 M4-5.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E



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																											

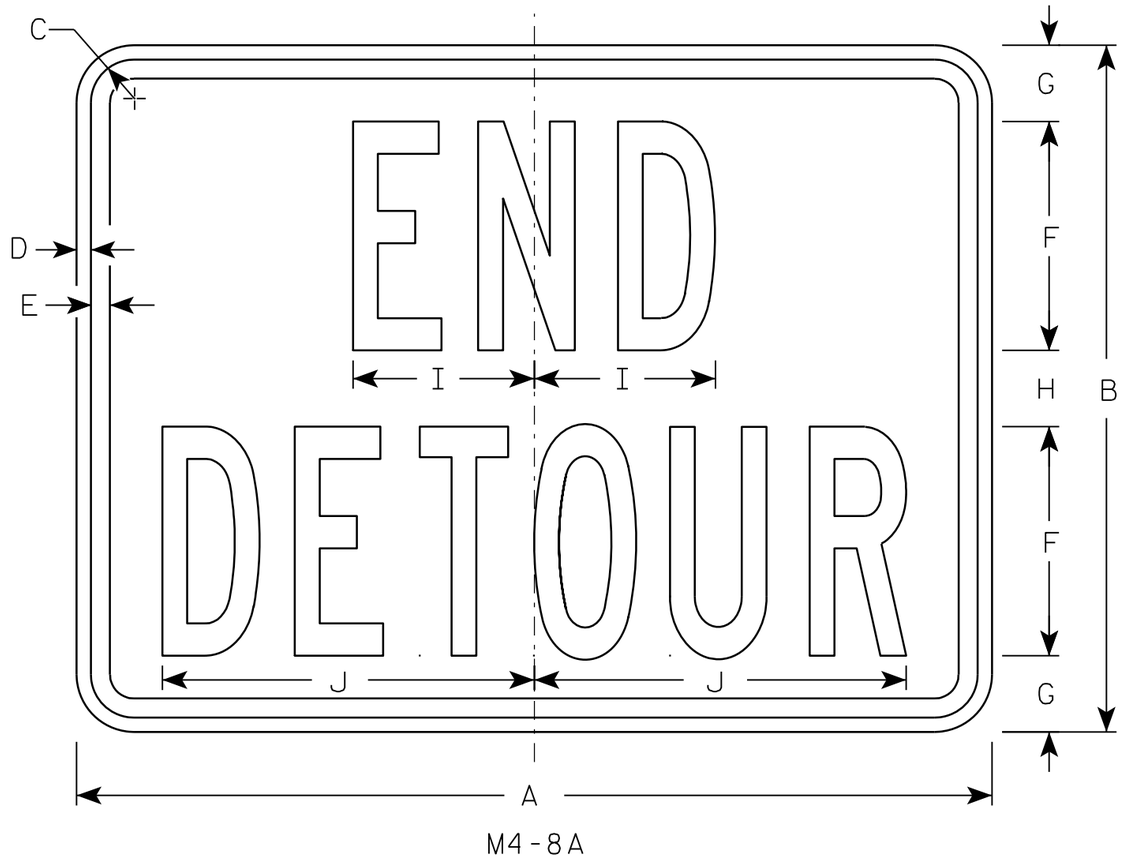
STANDARD SIGN
M4-8

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: 149	E



M4-8A

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	18	1 1/8	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/8	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4																											
5																											

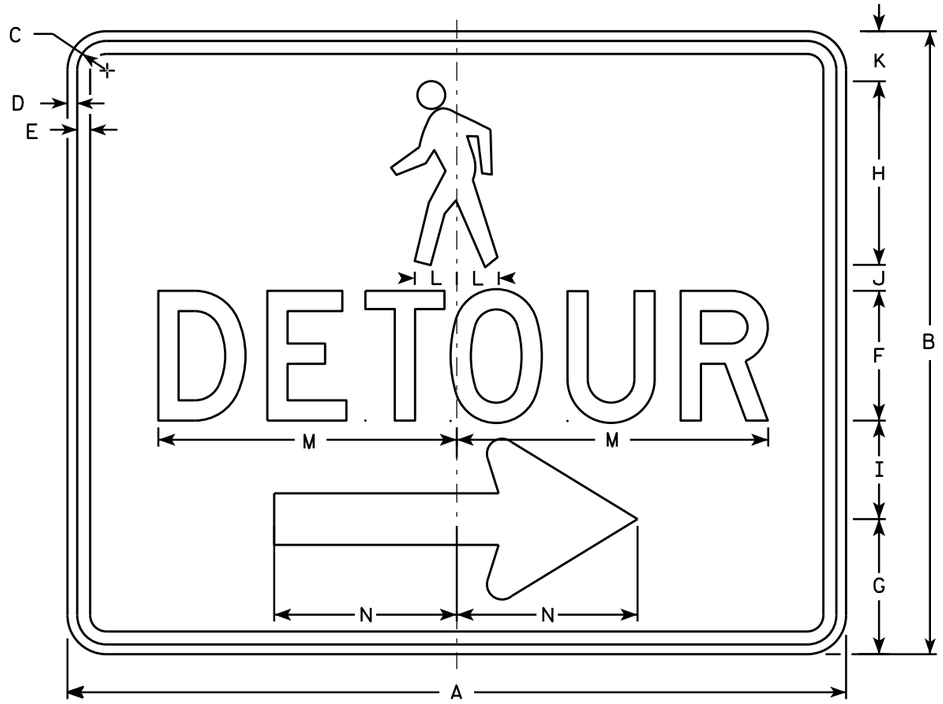
STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/9/11 PLATE NO. M4-8A.2

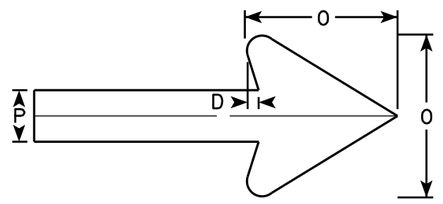
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 150	E



M4-9BR

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 - 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.
5. M4-9BL is the same as M4-9BR except the arrow is reversed.



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																											
2	30	24	1 1/8	3/8	1/2	5	5 1/4	7 1/8	3 3/4	1	1 1/8	1 5/8	11 3/4	7	6	2											5.00
3																											
4																											
5																											

STANDARD SIGN
M4-9B L&R

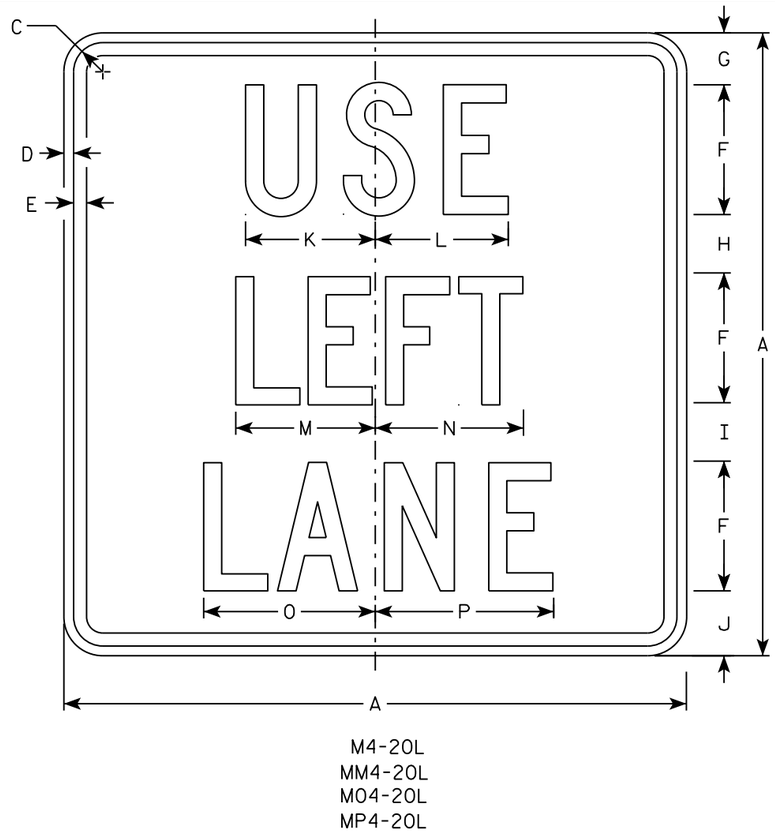
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

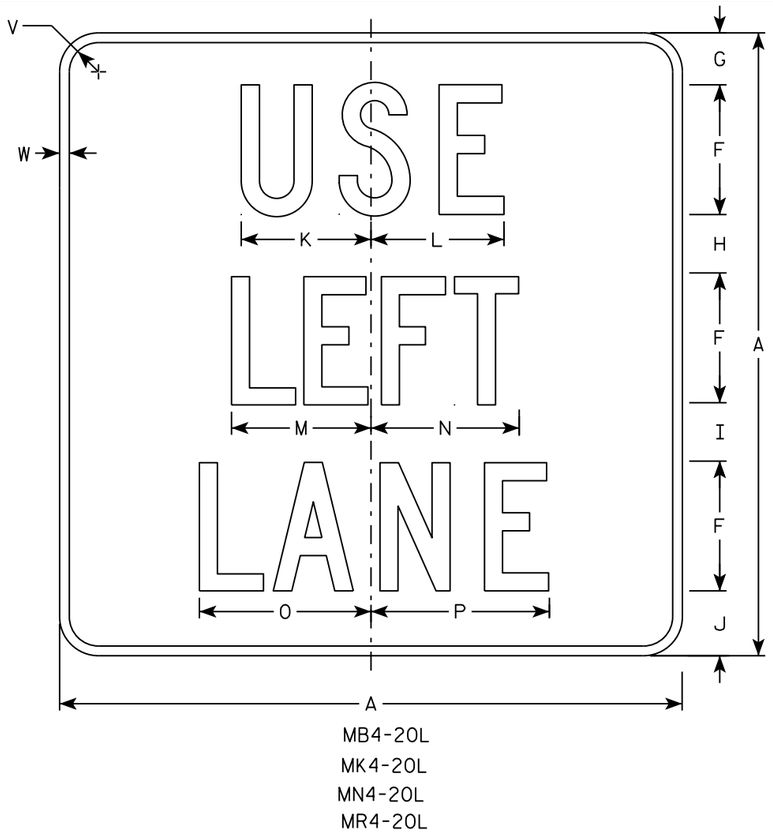
DATE 9/30/13 PLATE NO. M4-9B.1

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

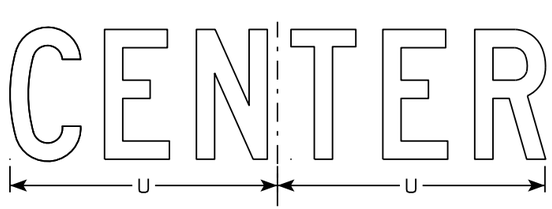
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\M49B.DGN PLOT DATE : 01-OCT-2013 13:44 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000 WISDOT/CADDS SHEET 42



M4-20L
MM4-20L
M04-20L
MP4-20L



MB4-20L
MK4-20L
MN4-20L
MR4-20L



M4-20C
MB4-20C
MK4-20C
MM4-20C
MN4-20C
M04-20C
MP4-20C
MR4-20C

M4-20R
MB4-20R
MK4-20R
MM4-20R
MN4-20R
M04-20R
MP4-20R
MR4-20R

NOTES

1. Sign is Type II - Type H except as Shown
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. M4-20 Background - White
   Message - Black
   MB4-20 Background - Blue
   Message - White
   MK4-20 Background - Green
   Message - White
   MM4-20 Background - White
   Message - Green
   MN4-20 Background - Brown
   Message - White
   M04-20 Background - Orange - Type F Reflective
   Message - Black
   MP4-20 Background - White
   Message - Blue
   MR4-20 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	24		1 1/8	3/8	1/2	5	2	2 1/4	2 1/4	2 1/2	5	5 1/8	5 3/8	5 3/4	6 5/8	6 7/8			7	7 5/8	10 1/4	1 1/2	1/2				4.0
3	36		1 5/8	5/8	3/4	7	4	3	3 1/2	4 1/2	7 1/2	7 3/4	8	8 5/8	9 7/8	10 1/4			10 3/8	11 3/8	14 3/8	1 7/8	1/2				9.0
4																											
5																											

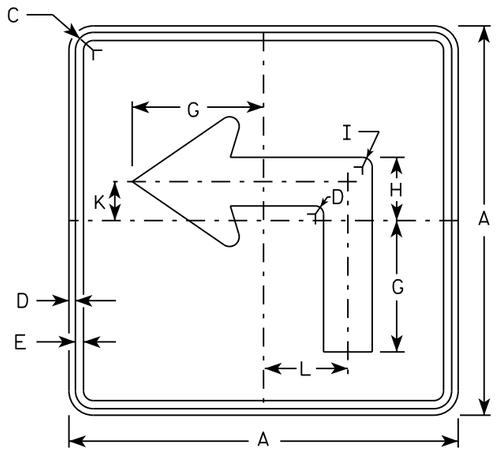
STANDARD SIGN
M4-20

WISCONSIN DEPT OF TRANSPORTATION

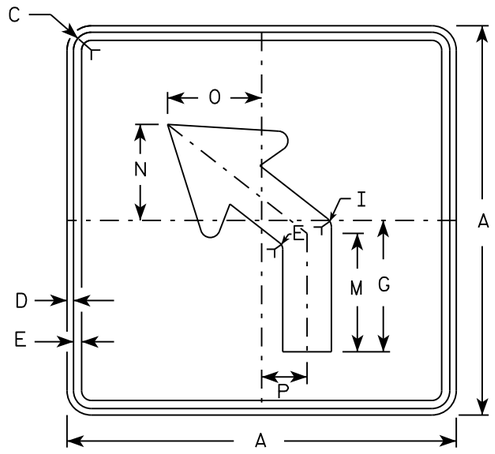
APPROVED Matthew R Rauch
For State Traffic Engineer

DATE 10/15/15 PLATE NO M4-20.5

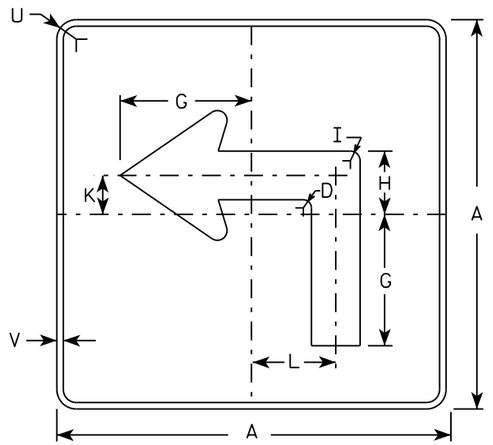
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



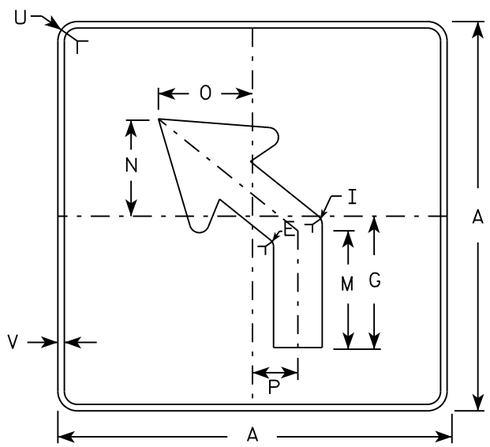
M5-1L
MM5-1L
MO5-1L
MP5-1L



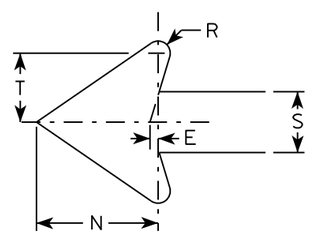
M5-2L
MM5-2L
MO5-2L
MP5-2L



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

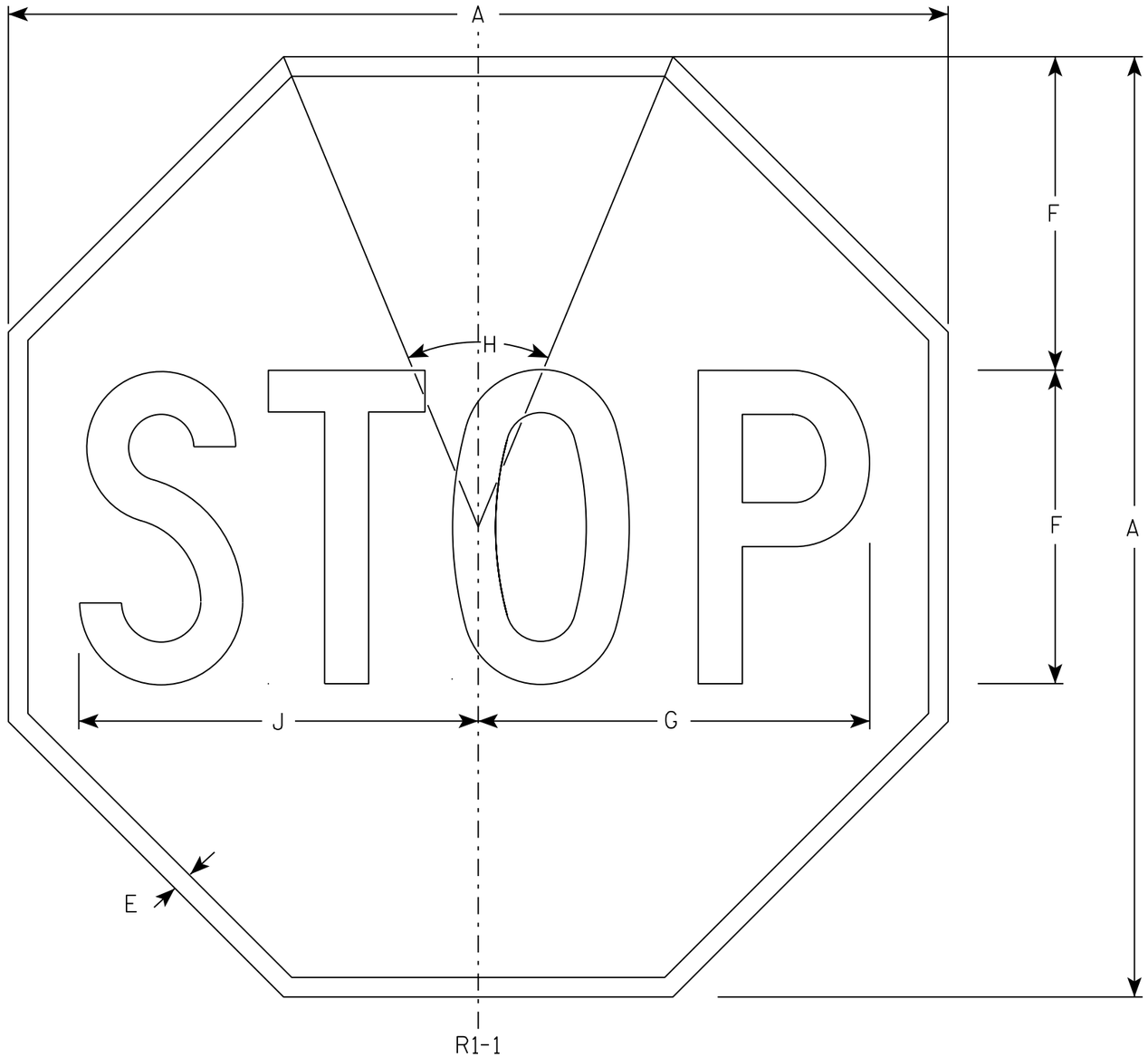
WISCONSIN DEPT OF TRANSPORTATION

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



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

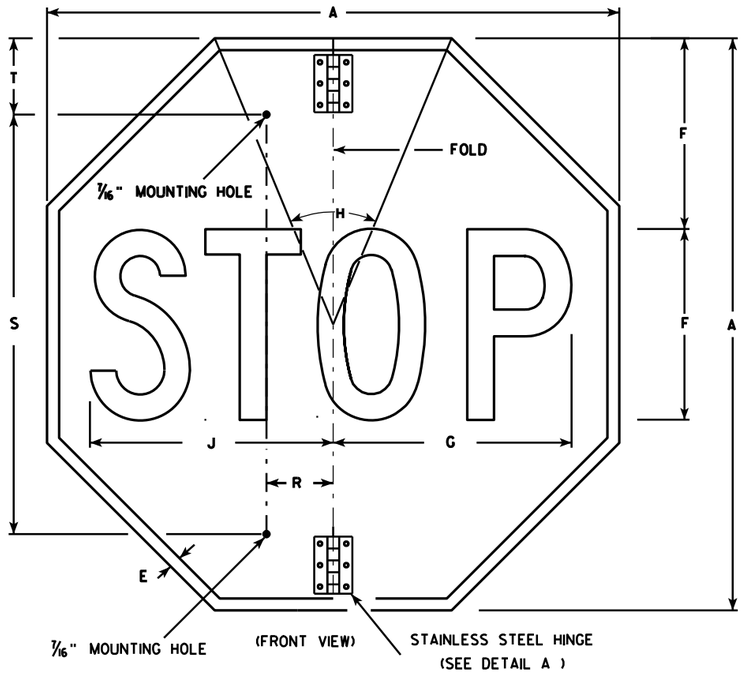
WISCONSIN DEPT OF TRANSPORTATION

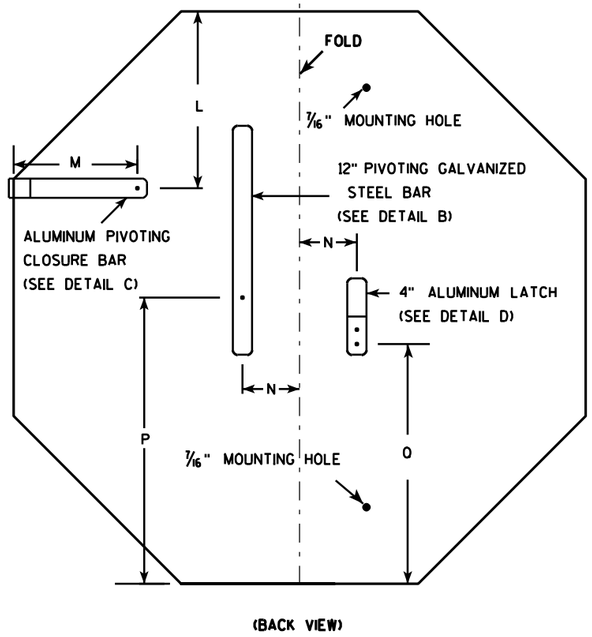
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/12/15 PLATE 154 R1-1.13

PROJECT NO:	HWY:	COUNTY:		SHEET NO: E

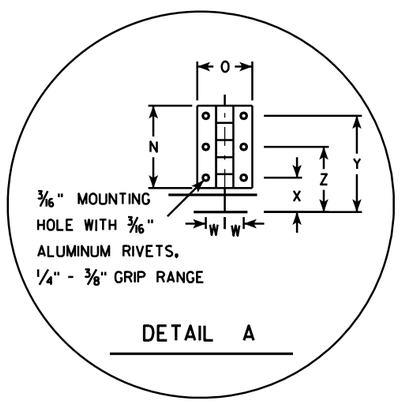
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\R11.DGN PLOT DATE : 01-DEC-2015 18:07 PLOT BY : $$ plotuser $$ PLOT NAME : PLOT SCALE : 4.378143:1.000000



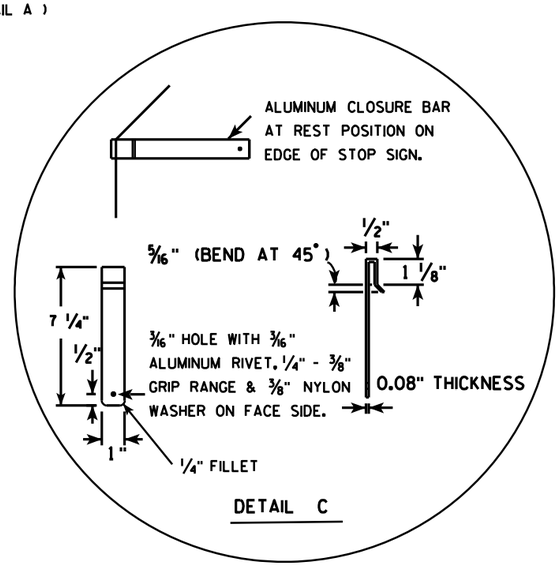


NOTES

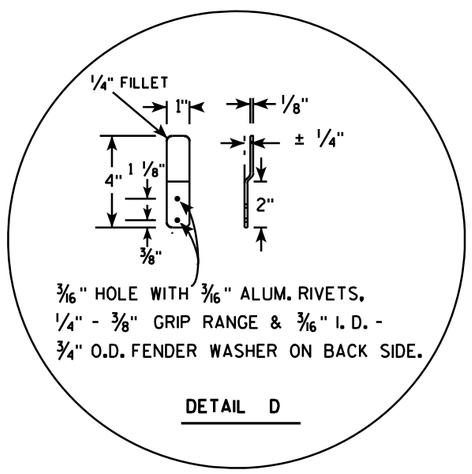
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Red
   Message - White
3. Message Series - C
4. All hardware used on the folding STOP sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.



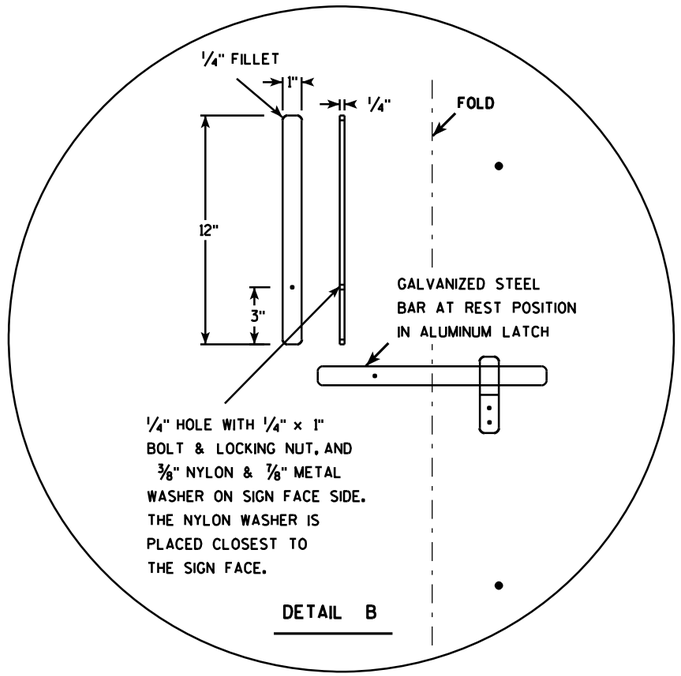
DETAIL A



DETAIL C



DETAIL D



DETAIL B

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30				5/8	10	12 1/2	45		12 3/4		9 1/4	6 1/2	3	2	15	12 3/8	2 1/2	22	5			11/16	1 1/4	3 1/2	2 3/8	5.18
2M	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
3	36				3/4	12	15	45		15 3/8		11	6 1/2	3	2	18	15 3/8	2 1/2	26	5			11/16	1 1/4	3 1/2	2 3/8	7.46
4																											
5																											

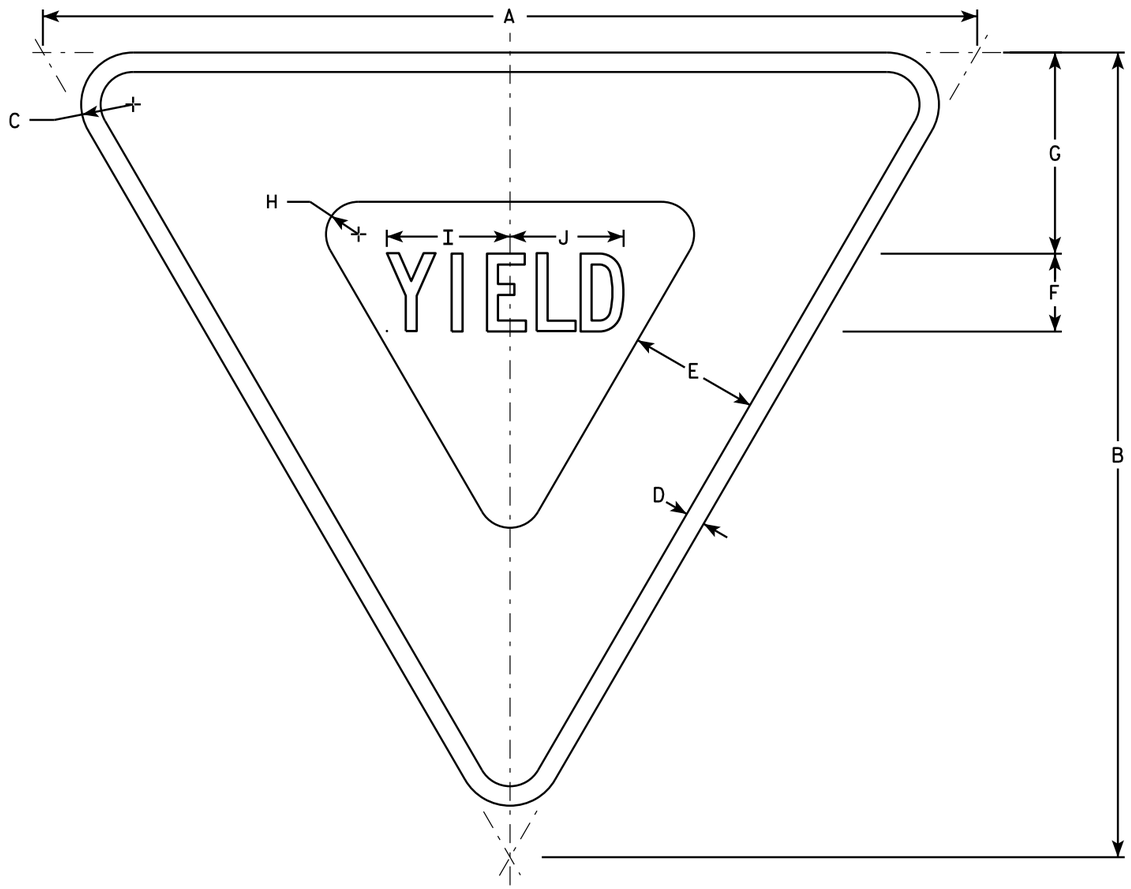
STANDARD SIGN
R1-1F

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1F.3

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



R1-2

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 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. The border strip and word message are reflectorized red.

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	26	1 1/2	5/8	4	2 1/2	6 3/8	7/8	4	3 5/8																	2.71
2S	36	31	2	3/4	5	3	7 3/4	1 1/4	4 3/4	4 3/8																	3.88
2M	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
3	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
4	48	42	3	1	6	4	9 3/4	2	6 1/4	5 7/8																	7.00
5	60	52	3	1 1/2	8	5	13	2 1/2	7 7/8	7 1/4																	10.83
6																											
7	18	15 1/2	1	3/8	2 1/2	1 1/2	3 7/8	5/8	2 3/8	2 1/4																	0.97

STANDARD SIGN
R1-2

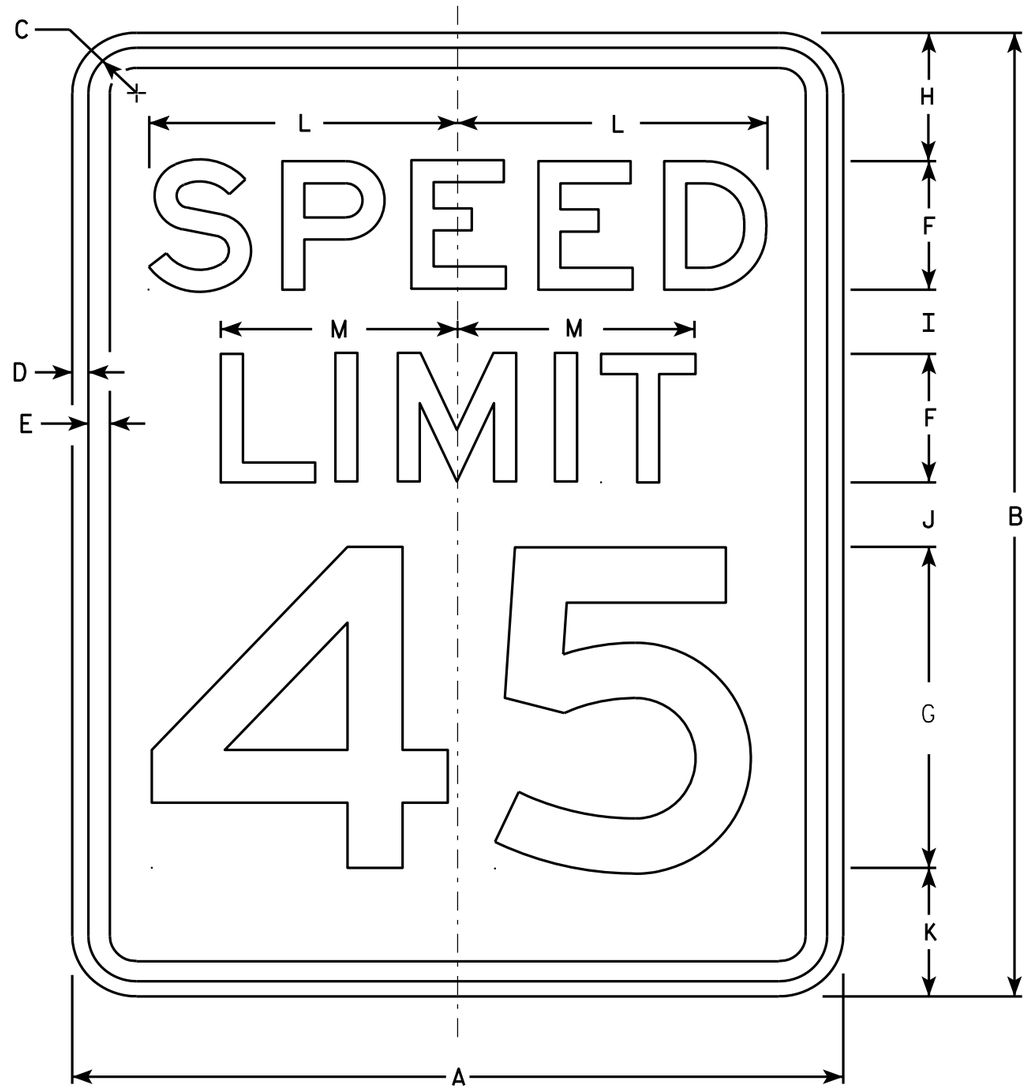
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 10/13/14 PLATE R1-2.12

PROJECT NO:	HWY:	COUNTY:		SHEET NO:	E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\R12.DGN PLOT DATE : 13-OCT-2014 15:12 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 5.837526:1.000000
WISDOT/CADDS SHEET 42



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

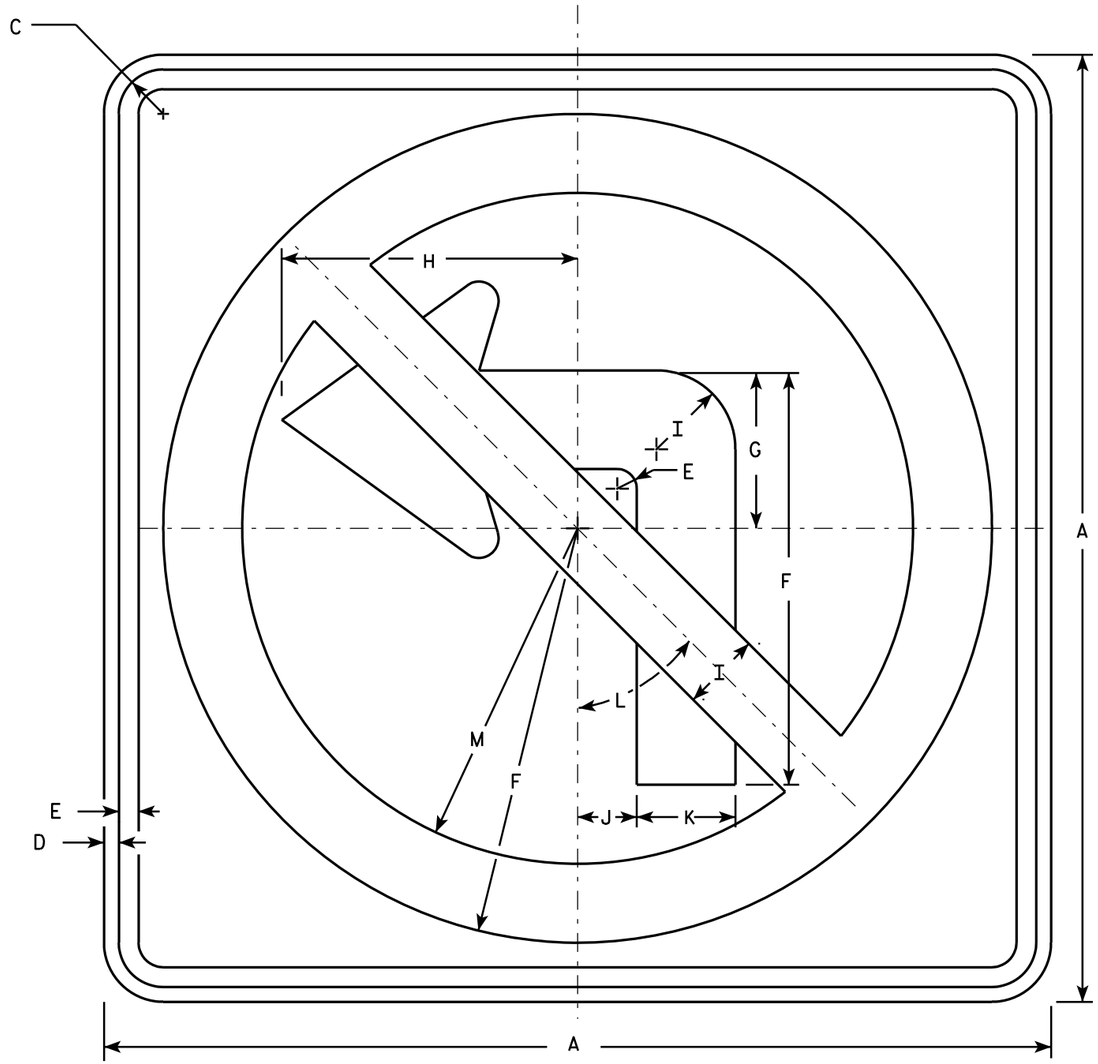
STANDARD SIGN
R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

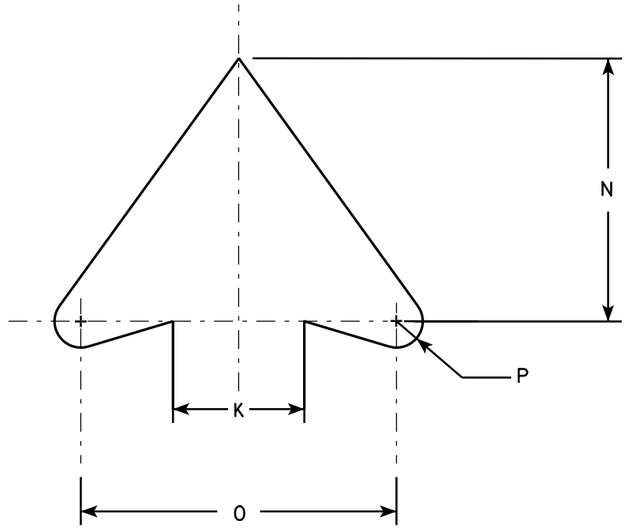
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 157 | E



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

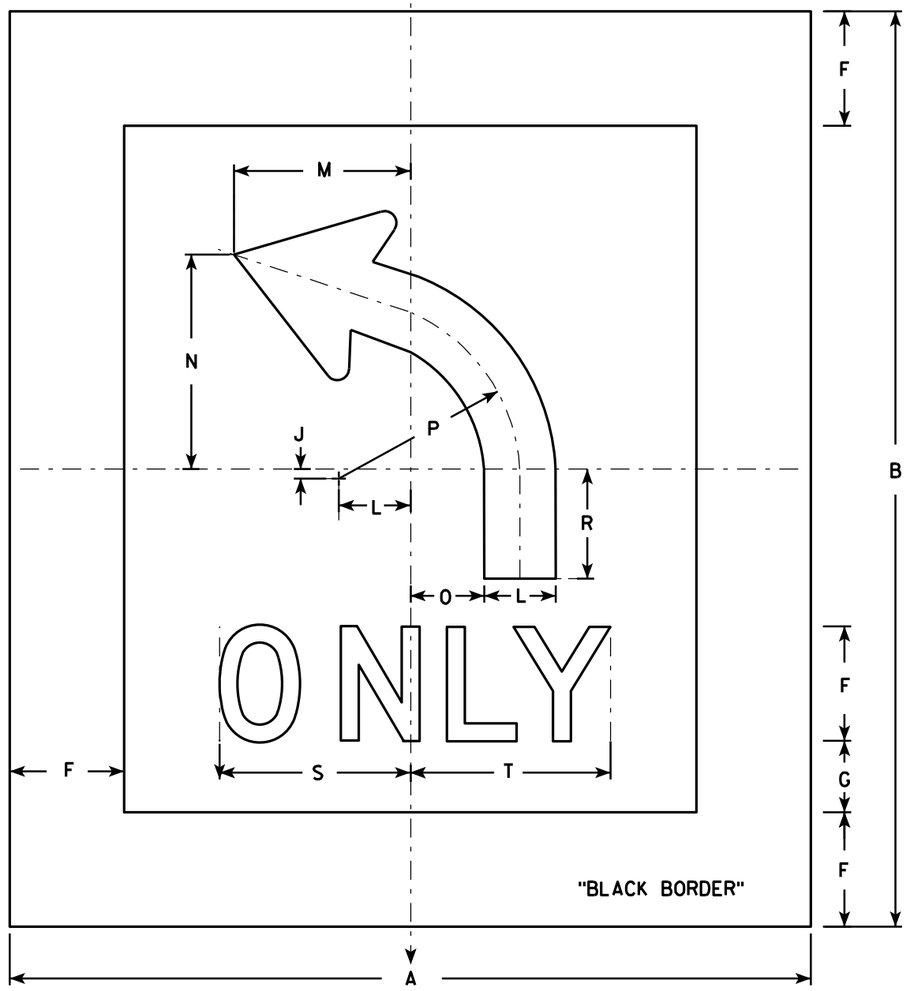
STANDARD SIGN
R3-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

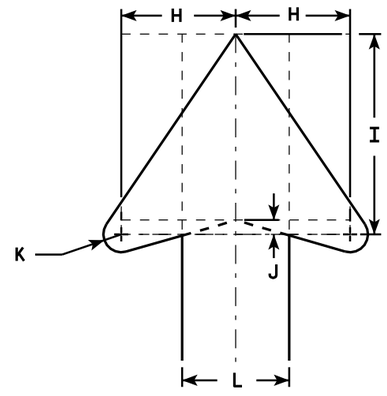
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 158	E



R3-5L

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. When base material is metal, the corners shall be rounded.
5. R3-5R is the same as R3-5L except curved portion of arrow points right.
6. The 6" border is non-reflective black.



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	42	48				6	3 3/4	4	7	1/2	5/8	3 3/4	9 1/4	11 1/4	3 7/8	9 1/2		5 3/4	10	10 1/2							1.26
2M	42	48				6	3 3/4	4	7	1/2	5/8	3 3/4	9 1/4	11 1/4	3 7/8	9 1/2		5 3/4	10	10 1/2							1.26
3																											
4																											
5																											

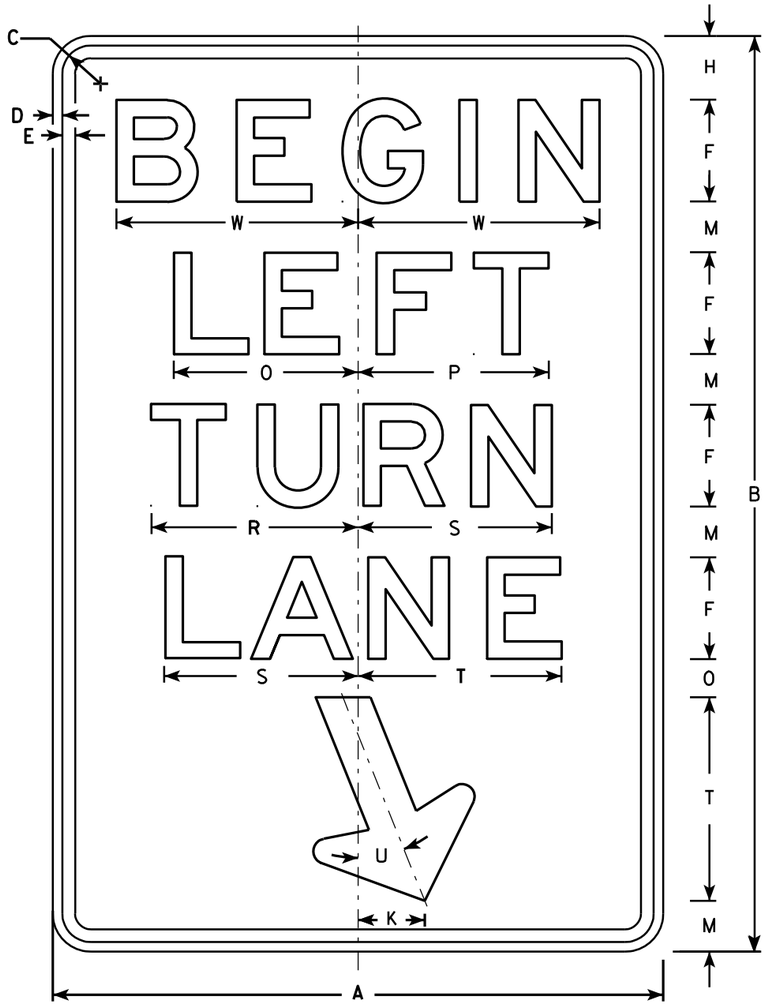
STANDARD SIGN
R3-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 2/24/11 PLATE NO. R3-5.6

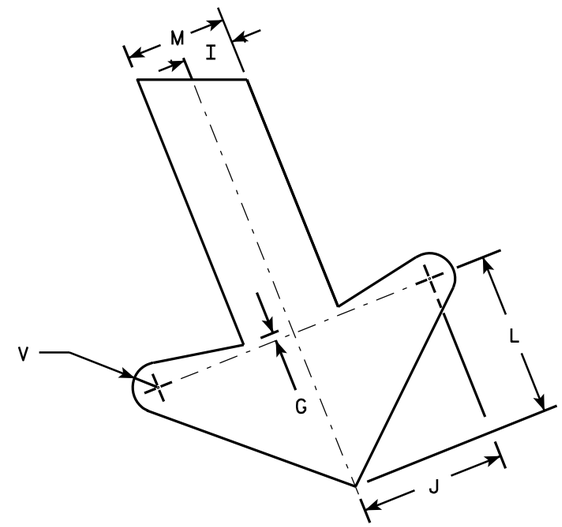
PROJECT NO: | HWY: | COUNTY: | SHEET NO: 159 | E



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																											

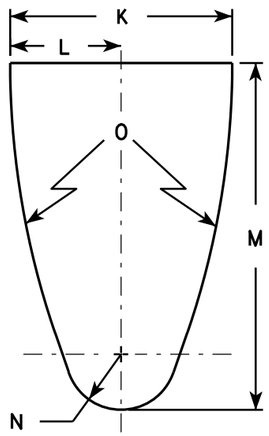
STANDARD SIGN
R3-20L

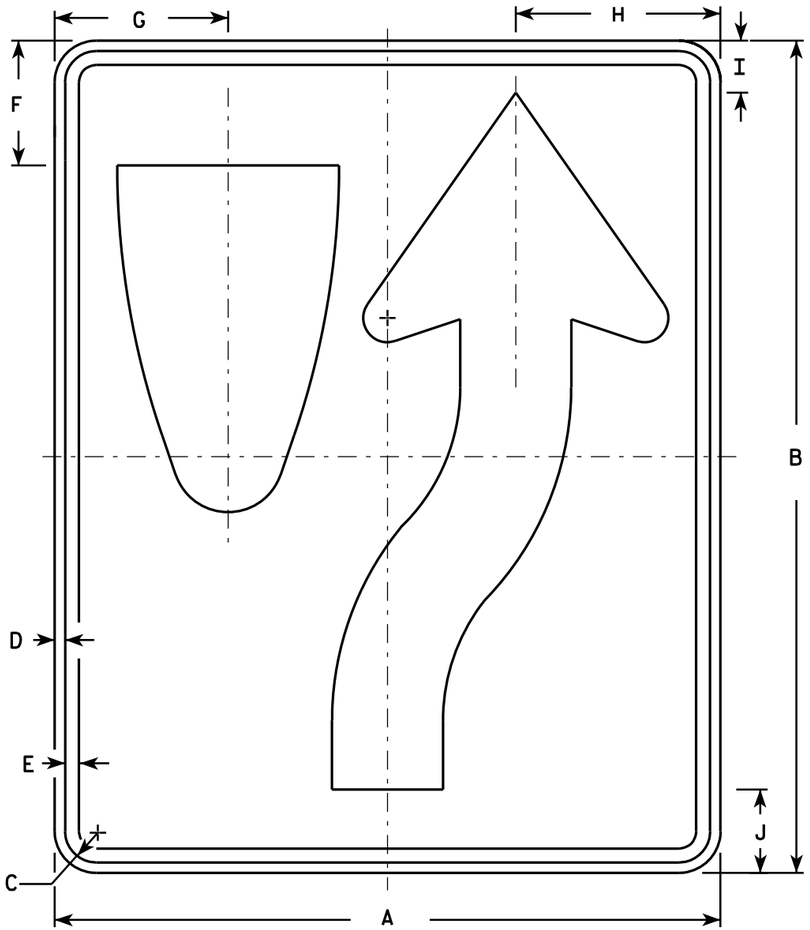
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

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

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 160 | E

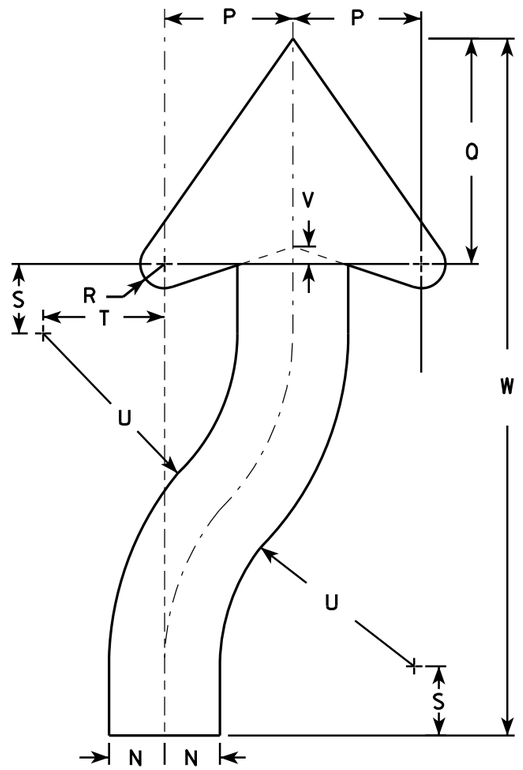




R4-7

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
   Background - White
   Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



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	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

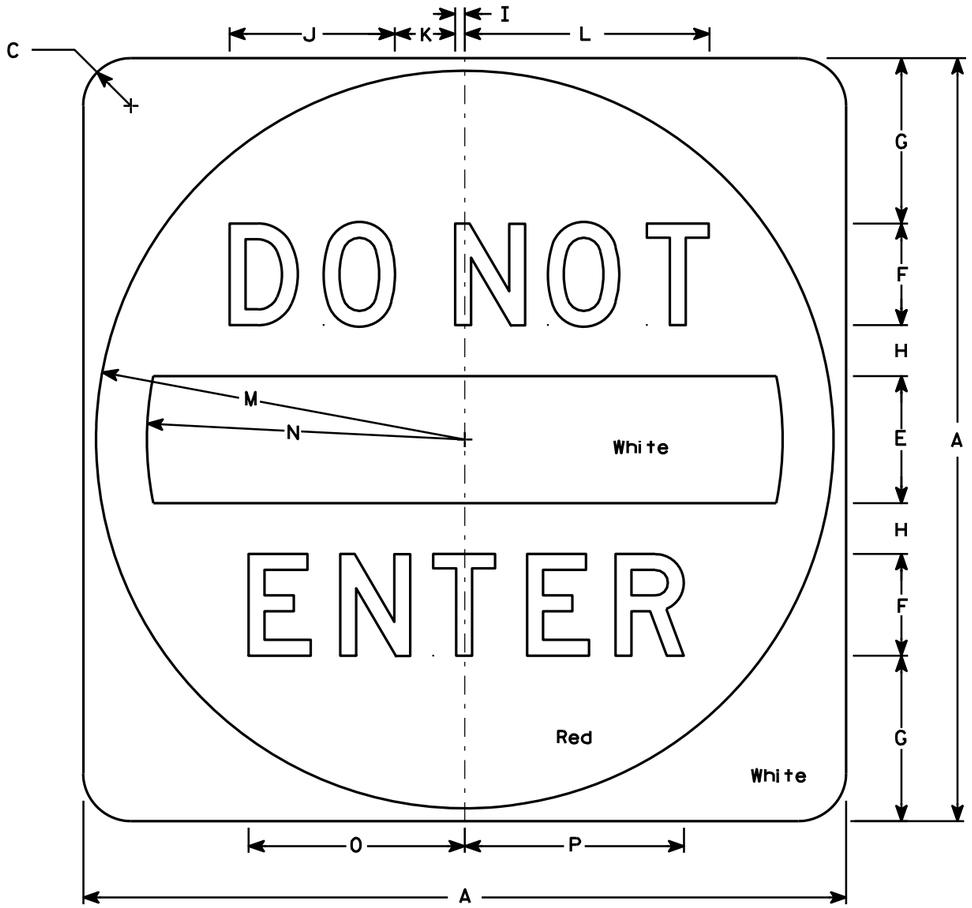
STANDARD SIGN
R4-7 & R4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

PROJECT NO:	HWY:	COUNTY:		SHEET NO: 161	E



R5-1

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - See detail
   Message - White - Type H Reflective
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but when base material is metal, the cornors shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7/8		5	4	6 1/2	2	3/8	6 1/2	2 3/8	9 5/8	14 1/2	12 1/2	8 1/2	8 5/8											6.26
2M	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
3	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
4	36		2 1/4		6	5	7 1/2	2 1/2	1/2	8 1/8	3	12 1/8	17 1/2	15	10 5/8	10 3/4											9.0
5	48		3		8	6	11	3	5/8	9 3/4	3 5/8	14 1/2	23 1/2	20	12 3/4	12 7/8											16.0

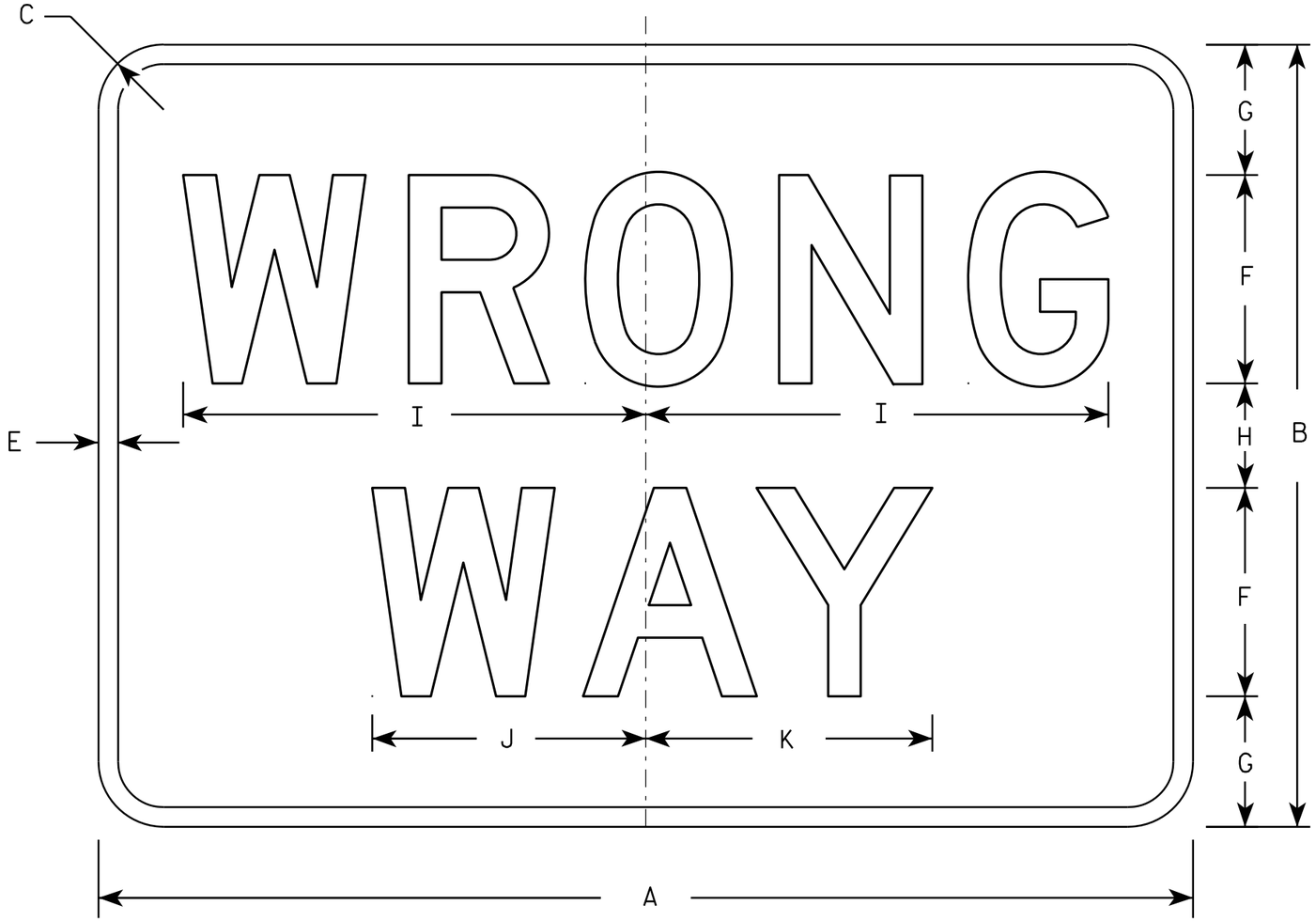
STANDARD SIGN
R5-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15

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



R5-1A

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 - 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	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75

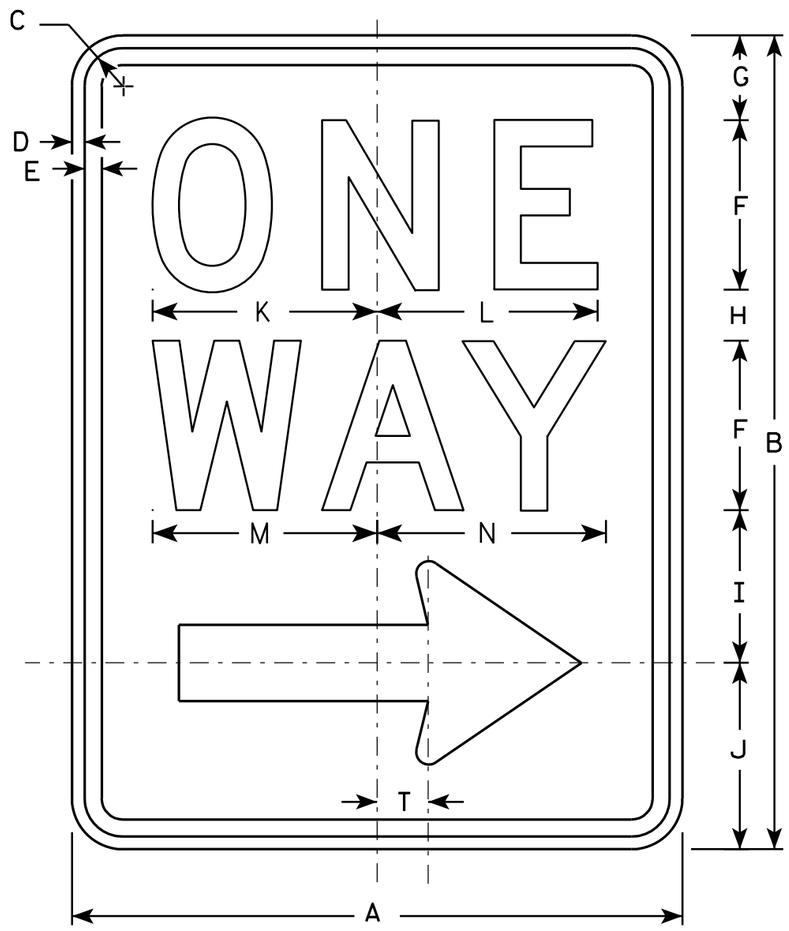
STANDARD SIGN
R5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1A.2

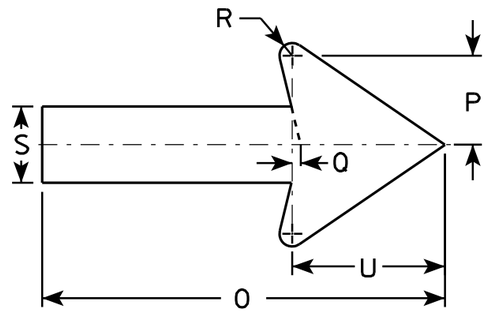
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 163	E



R6-2R

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.
5. R6-2L same as R6-2R except arrow points to the left.



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
1	18	24	1 1/8	3/8	1/2	5	2 1/2	1 1/2	4 1/2	5 1/2	6 5/8	6 1/2	6 5/8	6 3/4	11 7/8	2 5/8	1/4	3/8	2 1/4	1 1/2	4 1/2					
2S	24	30	1 1/8	3/8	1/2	6	3	2 1/2	5 1/2	7	8 1/8	8 1/8	8 1/2	8 5/8	16	3 1/2	3/8	1/2	3	2	6					
2M	30	36	1 3/8	1/2	5/8	8	2 1/2	2 5/8	6 7/8	8	10 1/2	10 1/2	11 1/4	11 1/4	20	4 3/8	1/2	5/8	3 3/4	2 1/2	7 1/2					
3	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
4	36	48	1 7/8	1/2	5/8	10	5 1/4	3 1/4	9	10 1/2	12 3/4	12 3/4	13 1/4	13 1/2	24	5 5/8	1/2	3/4	4 3/4	3	9					
5																										

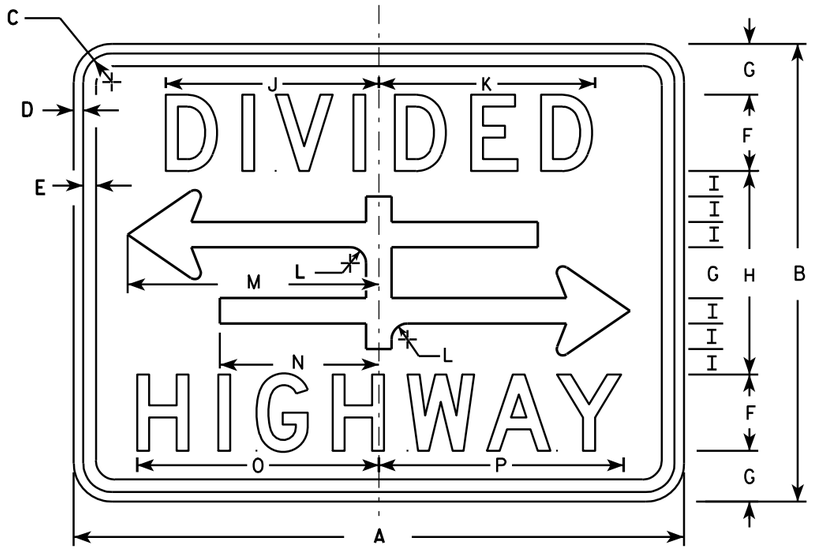
STANDARD SIGN
R6-2 R&L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/2/10 PLATE NO. R6-2.8

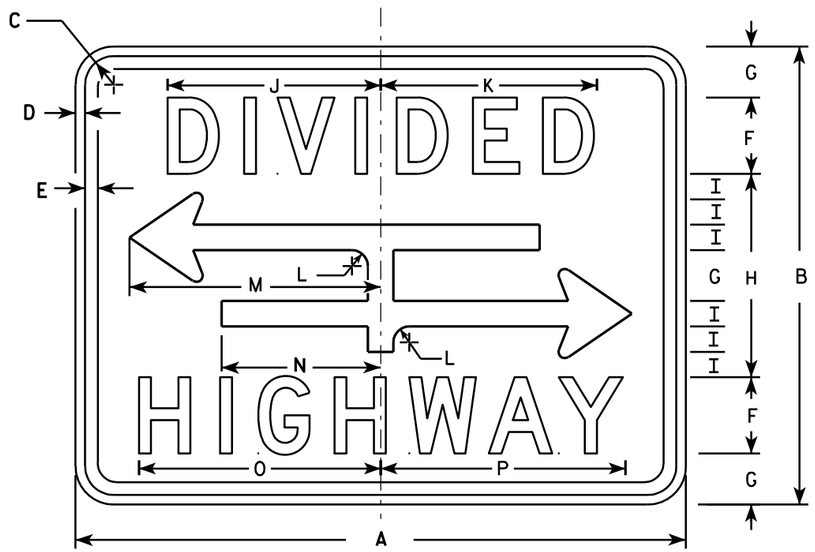
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 164	E



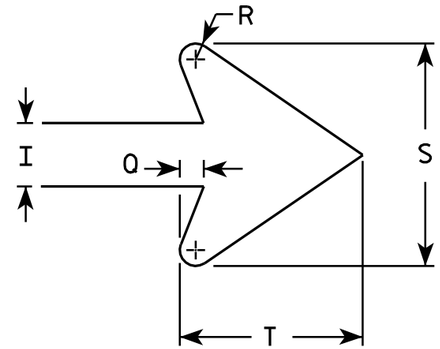
R6-3

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.



R6-3A



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	18	1 1/8	3/8	3/8	3	2	8	1	8 3/8	8 1/2	5/8	9 7/8	6 1/4	9 1/2	9 5/8	3/8	1/4	3 1/2	2 3/4							3.0
2S	30	24	1 1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
2M	30	24	1 1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
3																											
4																											
5																											

STANDARD SIGN
R6-3 & R6-3A

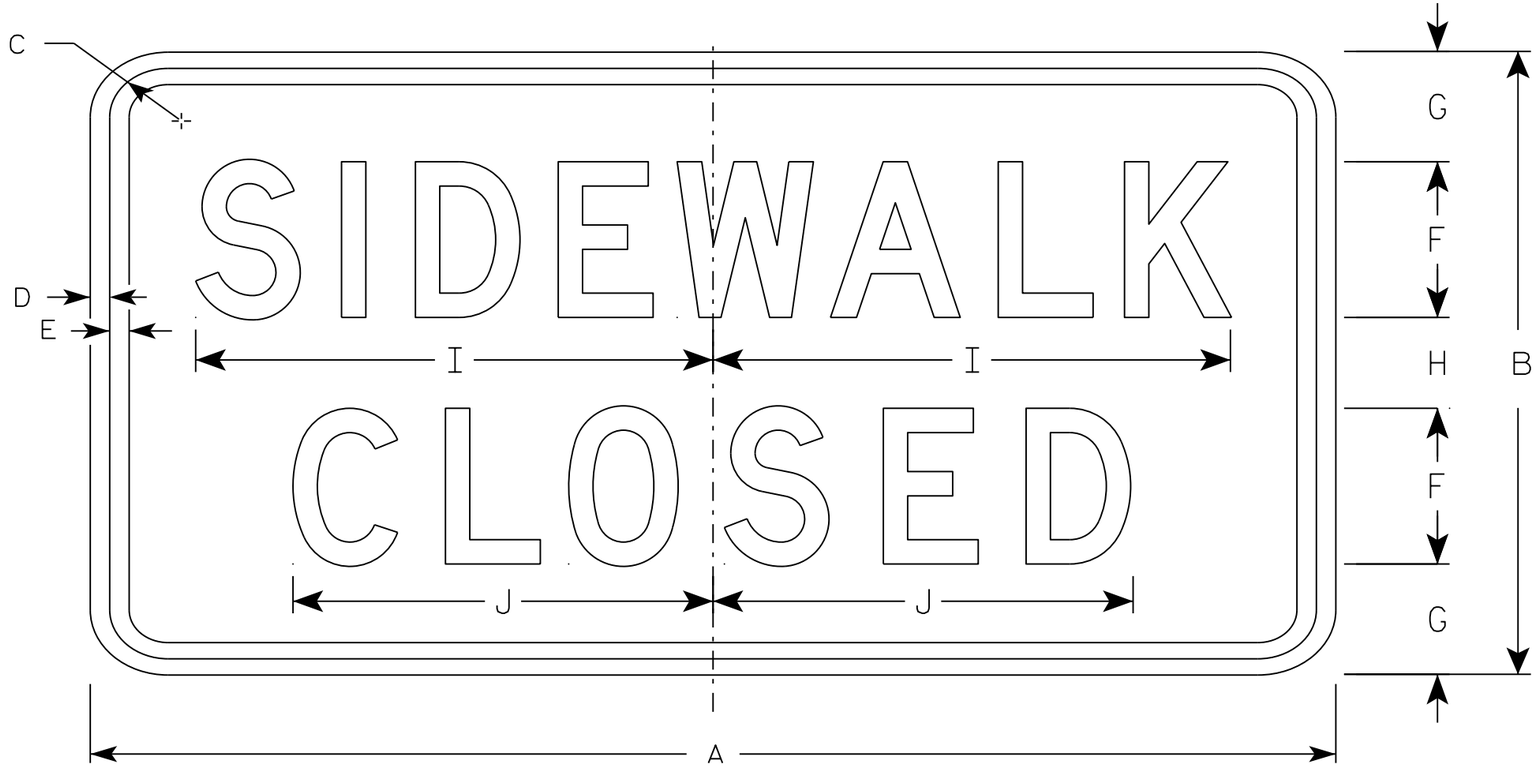
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R6-3.5

PROJECT NO:

SHEET NO: 165 E



R9-9

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - White
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 3/4	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

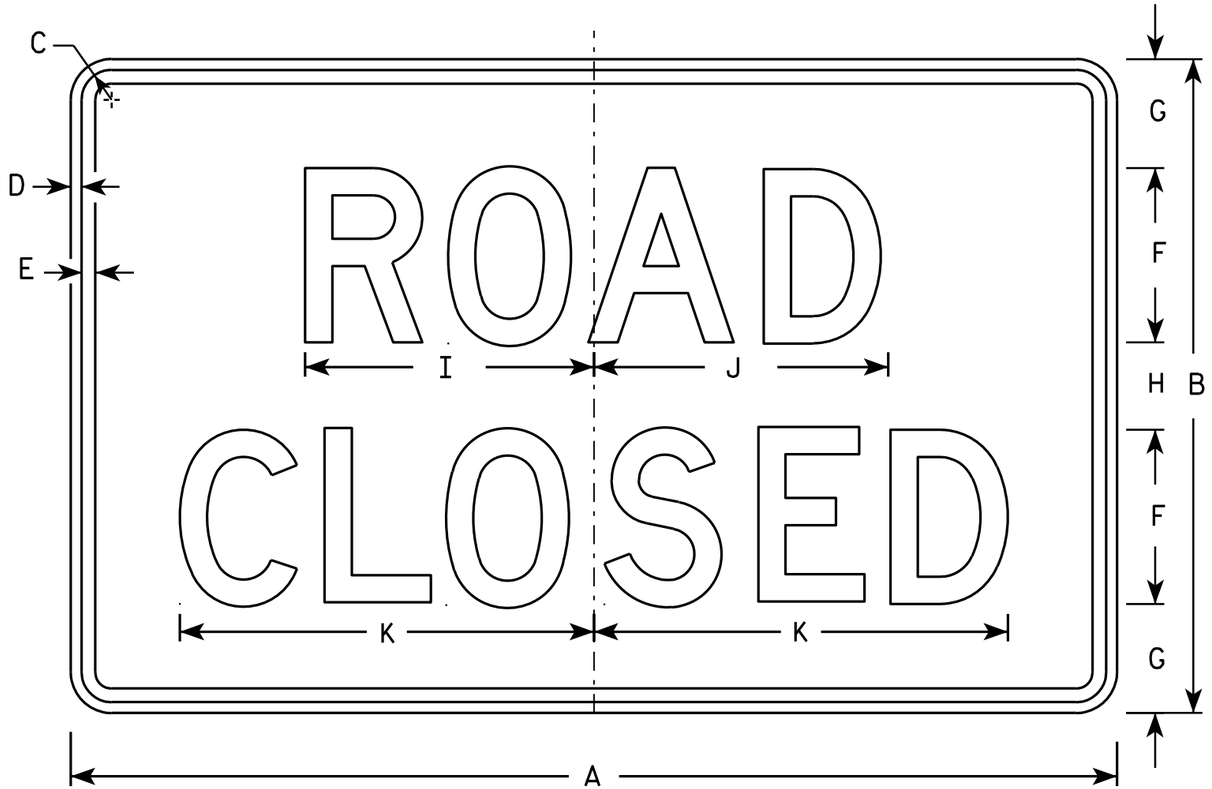
STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 8/11/16 PLATE 166 R9-9.6

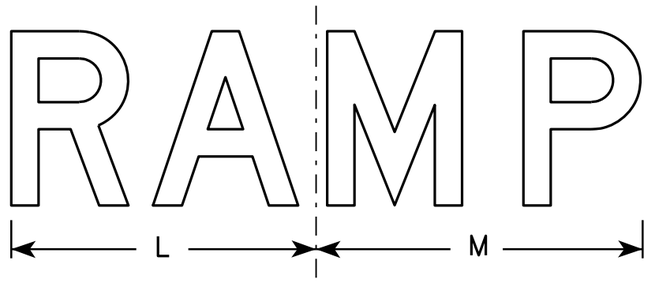
PROJECT NO: | HWY: | COUNTY: | SHEET NO: E



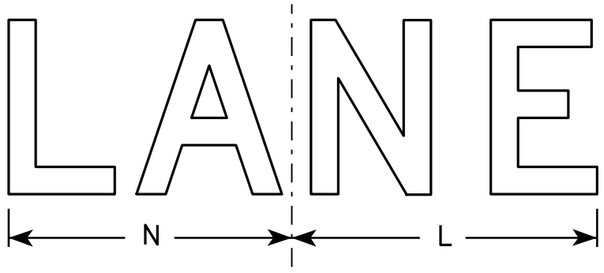
R11-2

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 - 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.
5. Modify the message as required.



R11-2R



R11-2L

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	13 1/4	13 1/2	19	14	15	13													10.0
2M	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
3	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
4	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0
5	48	30	1 3/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13													10.0

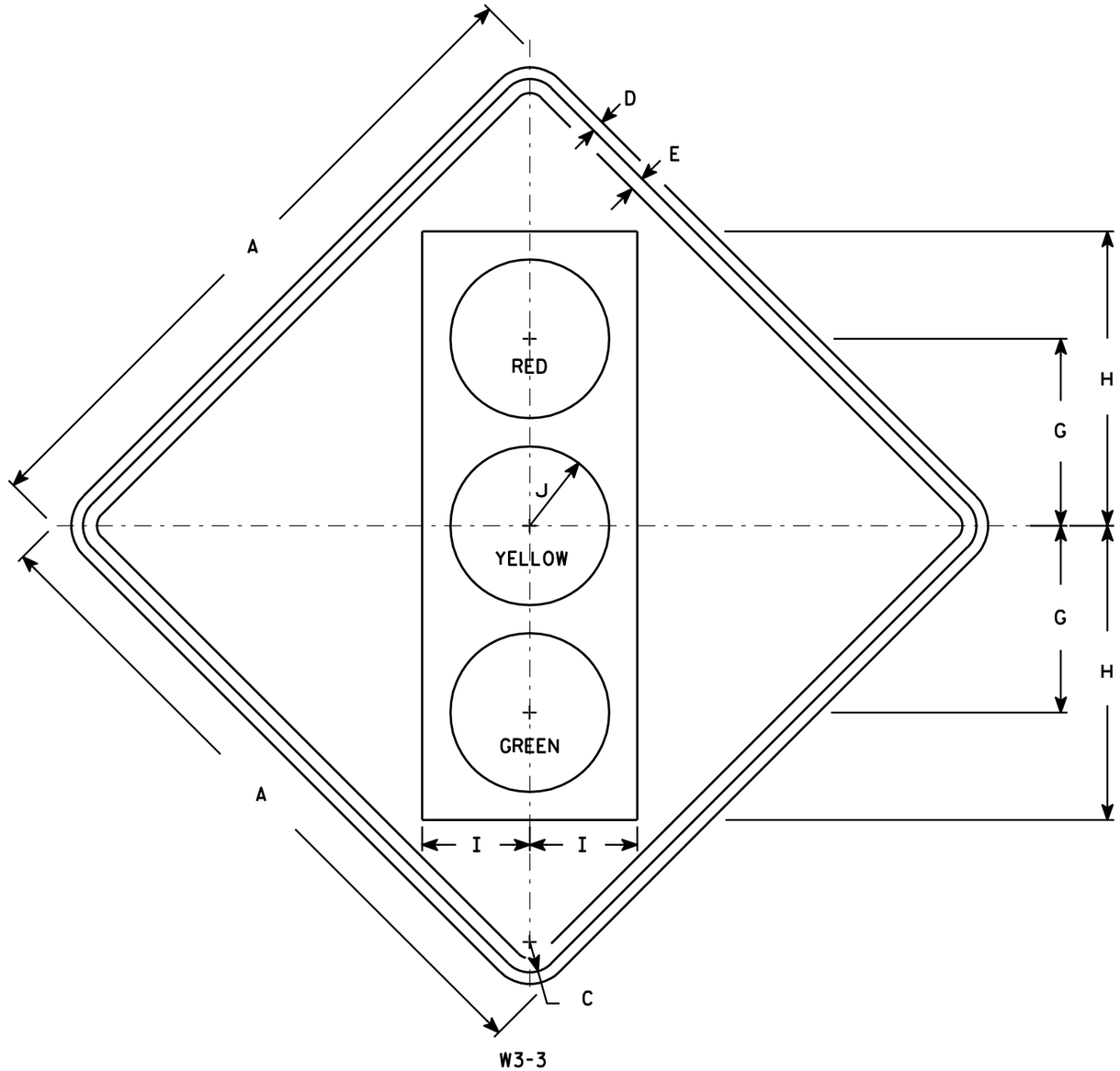
STANDARD SIGN
R11-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-2.10

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 167 | 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 - 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. Symbol and border are non-reflective black.
   Top circle - Type H Reflectorized Red
   Center circle - Same as background
   Bottom circle - Type H Reflectorized Green

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		8 3/4	13 3/4	5	3 3/4																	6.25
2S	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
2M	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
3	36		1 5/8	5/8	3/4		10	15 3/4	5 3/4	4 1/4																	9.0
4	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0
5	48		2 1/4	3/4	1		12 1/2	20	7 1/2	5																	16.0

STANDARD SIGN
W3-3

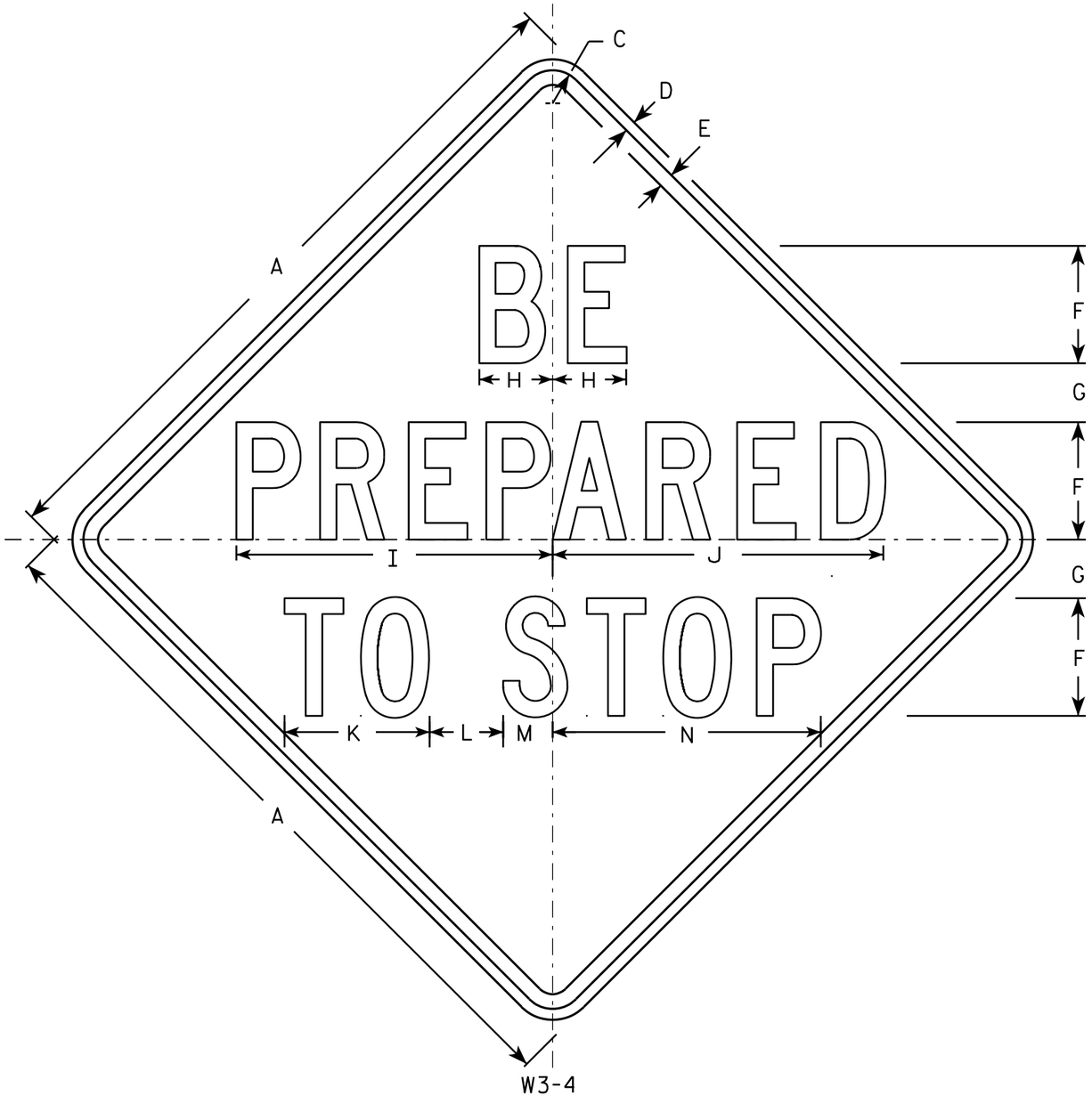
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch for State Traffic Engineer

DATE 6/7/10 PLATE NO. W3-3.11

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

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W33.DGN PLOT DATE : 07-JUN-2010 13:07 PLOT BY : ditjph PLOT NAME : PLOT SCALE : 7.448805:1.000000



NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Yellow
   Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 1/8	3/8	1/2	5	2 1/8	3 1/8	13 1/4	14 1/8	6 1/8	3 3/8	2	11 1/2													6.25
2S	36		1 3/8	1/2	5/8	6	2 1/2	3 3/4	15 7/8	16 7/8	7 3/8	4	2 3/8	13 3/4													9.0
2M	36		1 3/8	1/2	5/8	6	2 1/2	3 3/4	15 7/8	16 7/8	7 3/8	4	2 3/8	13 3/4													9.0
3	36		1 3/8	1/2	5/8	6	2 1/2	3 3/4	15 7/8	16 7/8	7 3/8	4	2 3/8	13 3/4													9.0
4	48		2 1/4	3/4	1	8	4	5	21 1/2	22 1/2	9 7/8	5	3 3/8	18 1/4													16.0
5	48		2 1/4	3/4	1	8	4	5	21 1/2	22 1/2	9 7/8	5	3 3/8	18 1/4													16.0

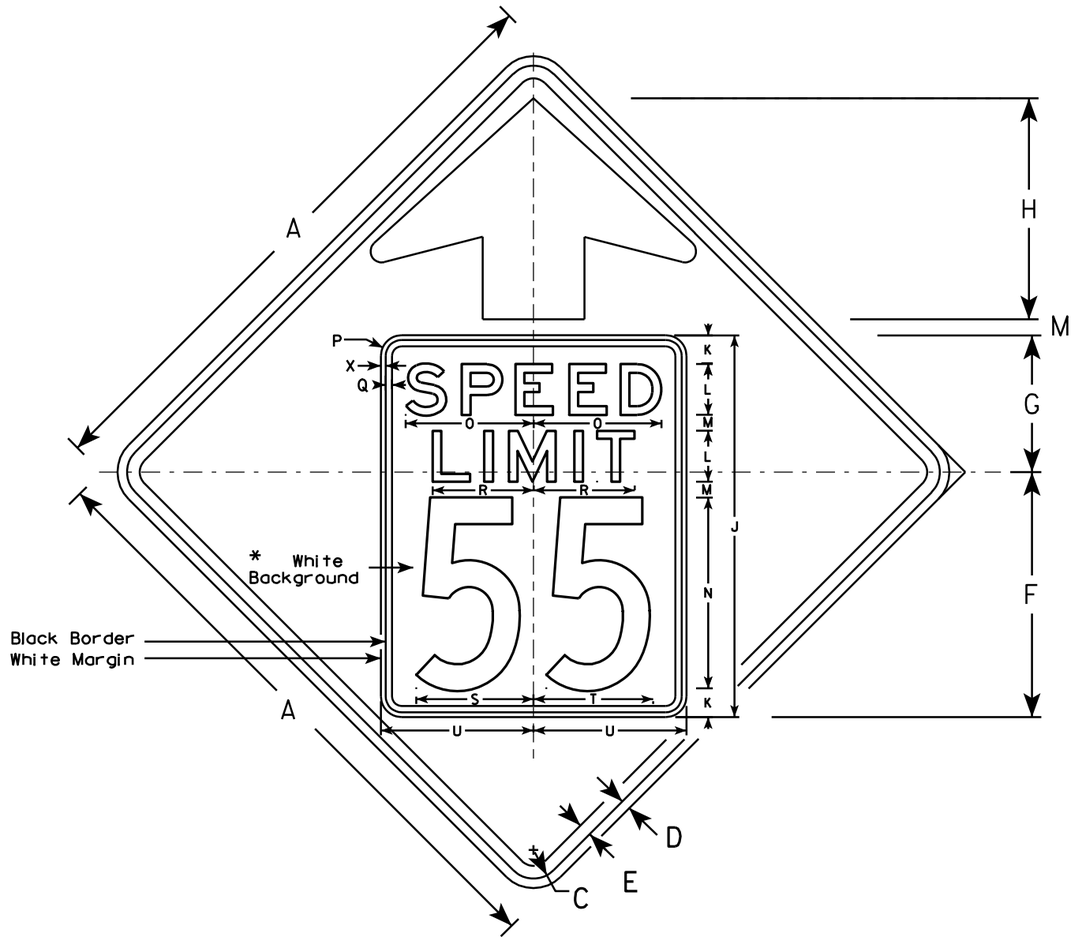
STANDARD SIGN
W3-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/21/11 PLATE NO. W3-4.4

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

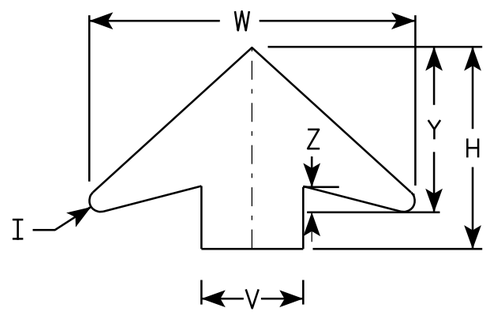


W3-5

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color: *
   Background - YELLOW*
   Message - BLACK
3. Message Series - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



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	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2M	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
3	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
4	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

STANDARD SIGN
W3-5

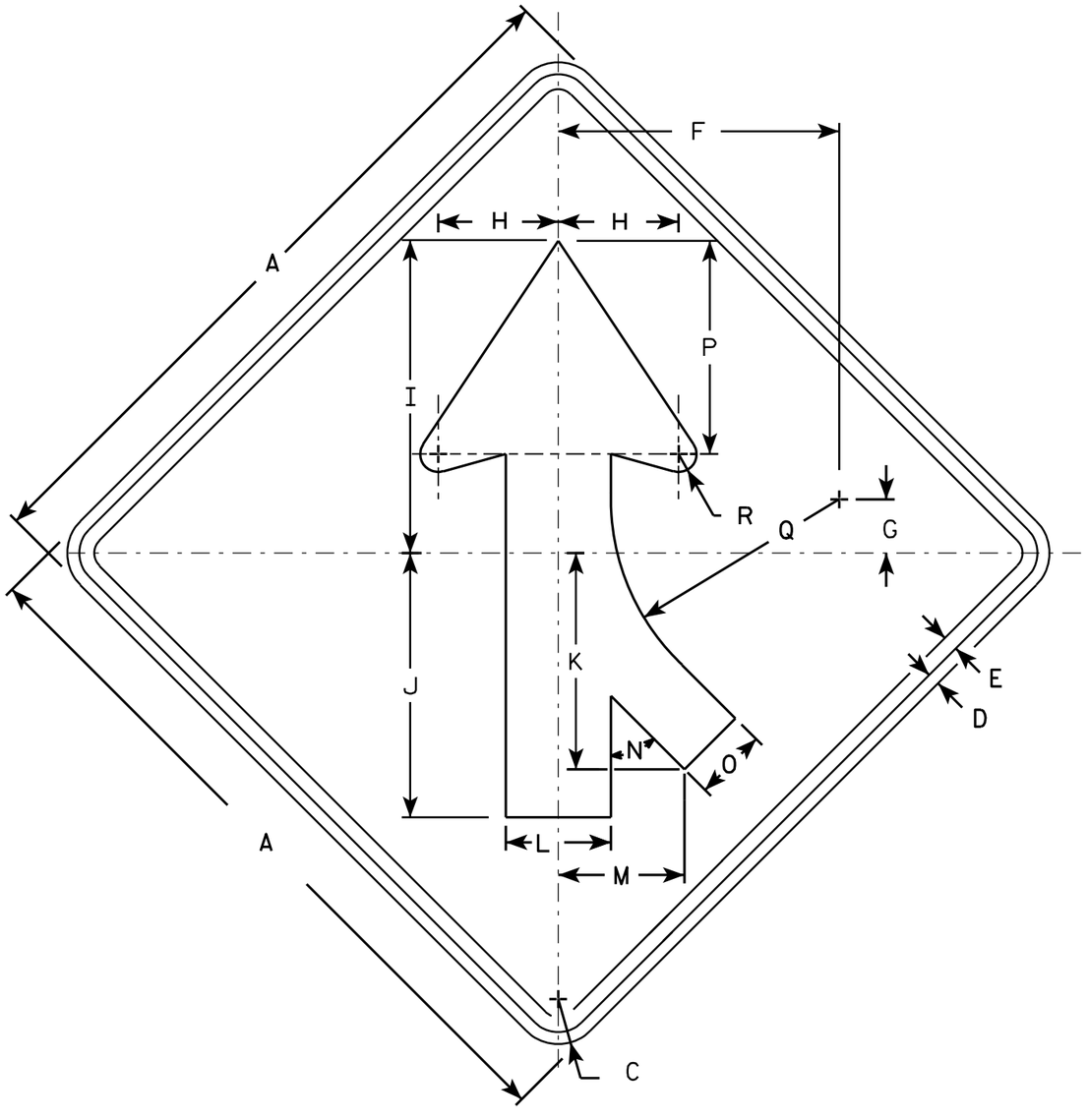
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 5/29/12 PLATE NO. W3-5.5

PROJECT NO:

SHEET NO: 170 E



W4-1 R

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	11 5/8	2 1/2	5	13	11	9	4 3/8	5 1/4	45°	3	8 7/8	9 1/2	3/4									6.25
2S	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
2M	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
3	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
4	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
5	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0

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. W4-1L is the same as W4-1R except the arrow is reversed along the vertical centerline.

STANDARD SIGN
W4-1

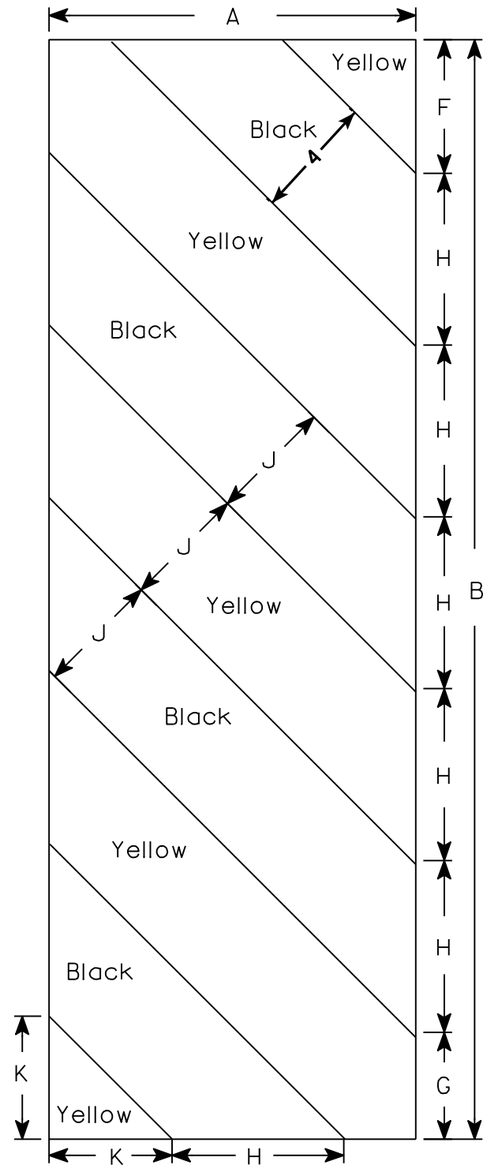
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rausch for State Traffic Engineer

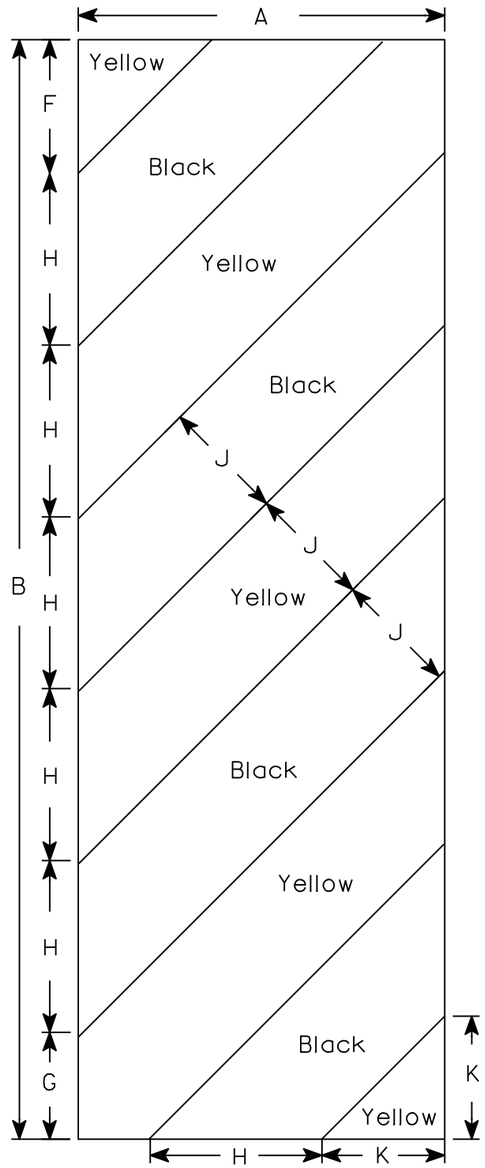
DATE 03/12/13 PLATE NO. W4-1.14

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 171 | E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W41.DGN PLOT DATE : 12-MAR-2013 11:06 PLOT BY : mscsja PLOT NAME : PLOT SCALE : 6.202372:1.000000
WISDOT/CADDS SHEET 42



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

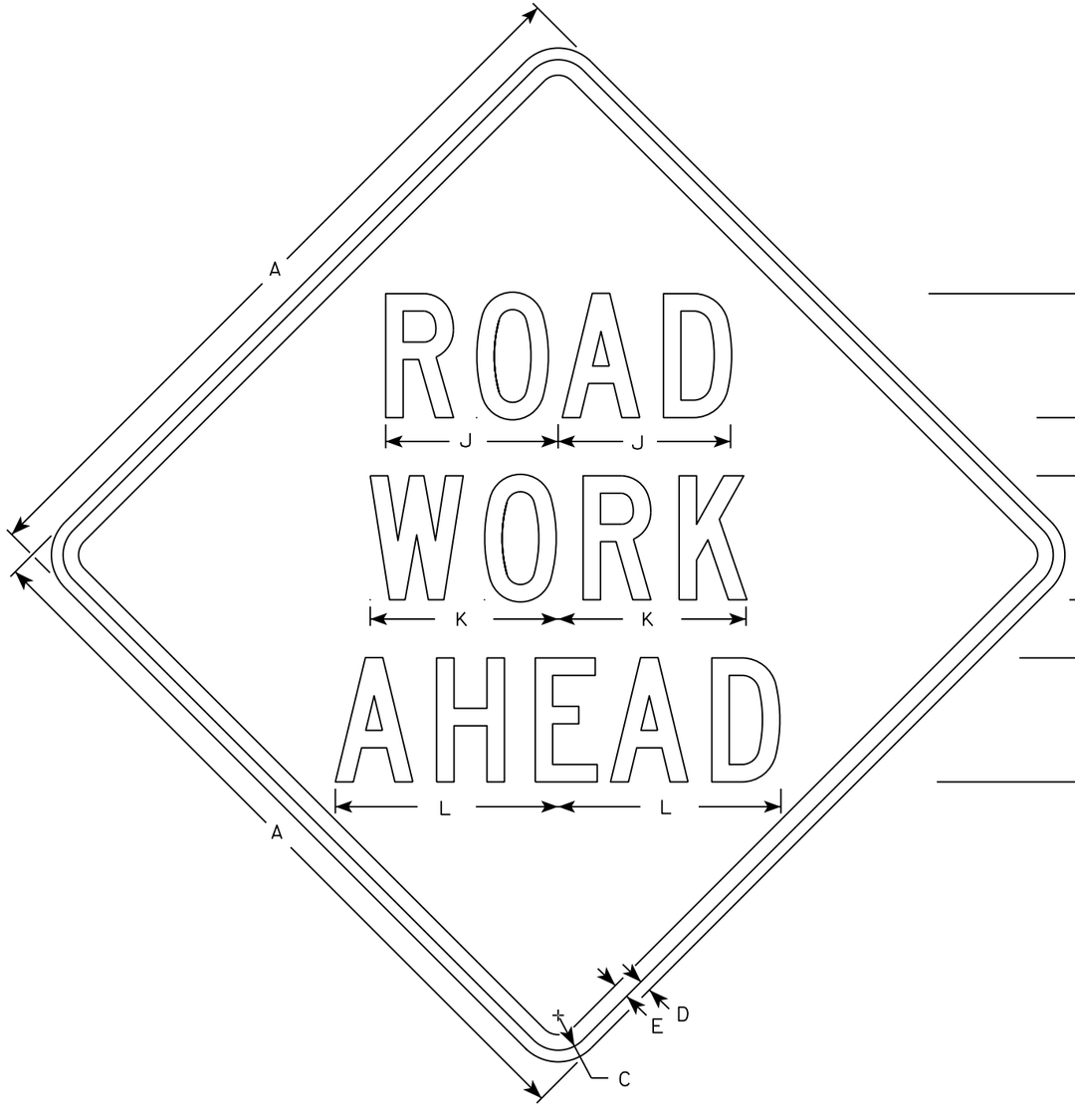
W5-52L & W5-52R

WISCONSIN DEPT OF TRANSPORTATION

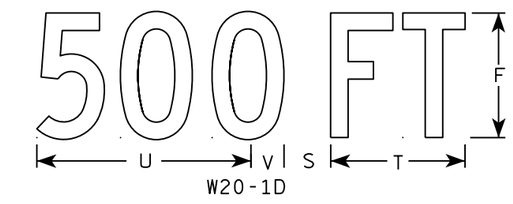
APPROVED Matthew R Rauch
for State Traffic Engineer

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

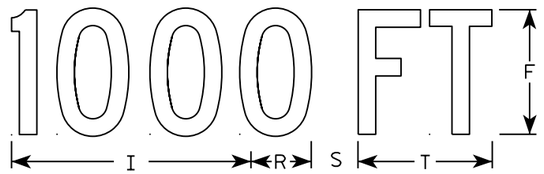
PROJECT NO:	HWY:	COUNTY:		SHEET NO: 172	E



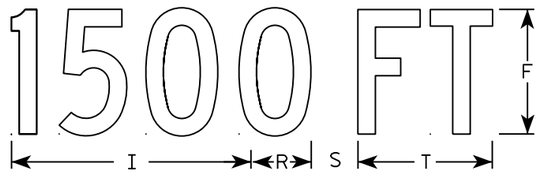
W20-1A



W20-1D

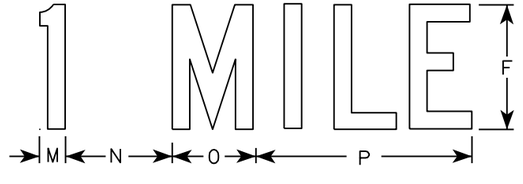


W20-1C

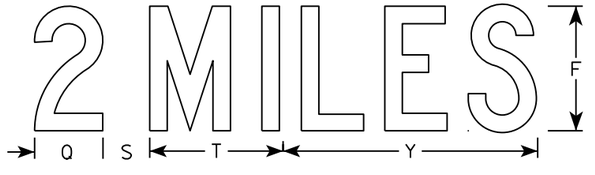


W20-1B

W20-1G



W20-1F



W20-1E

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
   Background - Orange
   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	36		1 3/8	1/2	5/8	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9		2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		2 1/4	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
For State Traffic Engineer

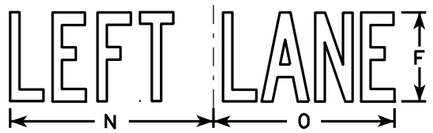
DATE 5/07/15 PLATE NO. W20-1.10

PROJECT NO:

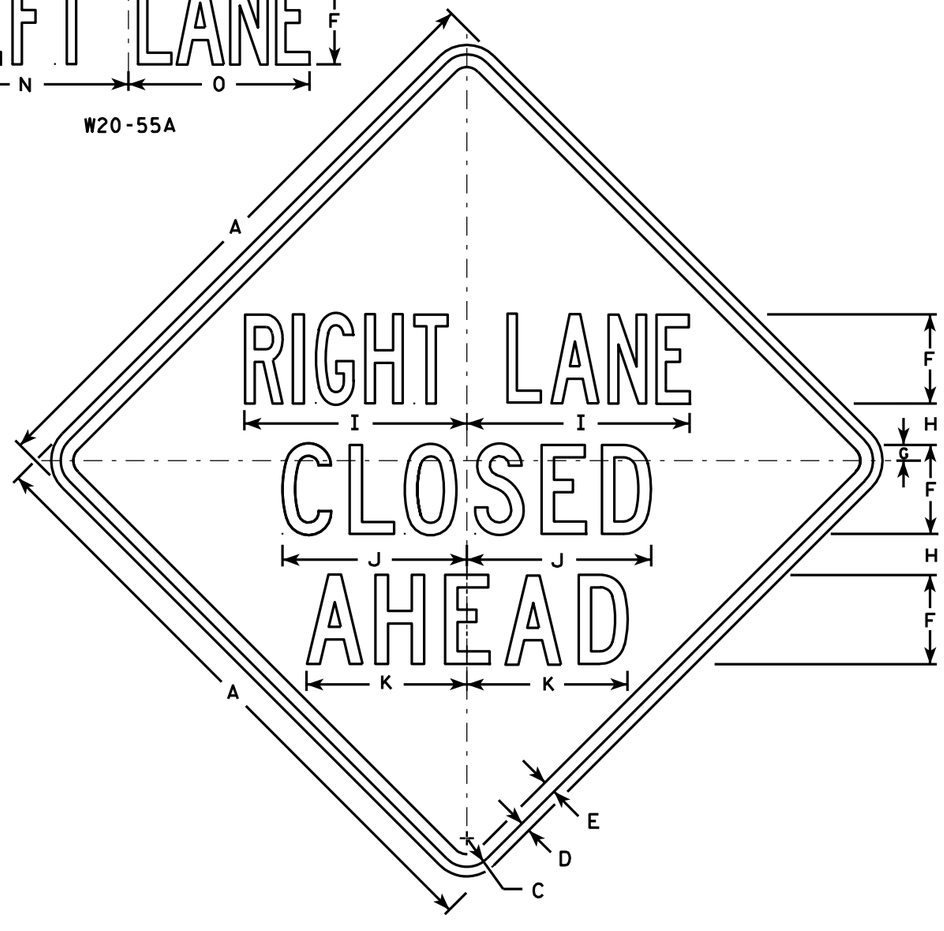
SHEET NO: E

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W201.DGN PLOT DATE : 01-DEC-2015 18:24 PLOT BY : $$ plotuser $$

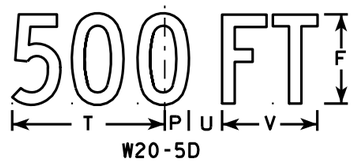
W20-56A



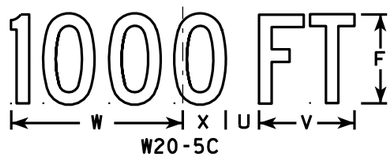
W20-55A



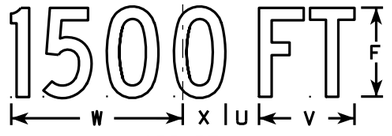
W20-5A



W20-5D



W20-5C



W20-5B

W20-5G

W20-5F

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. " _____ LANE" is Series B.
   All other copy is 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	36	6	1 5/8	5/8	3/4	5	1/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 1/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	2 1/4	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

STANDARD SIGN
W20-5A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

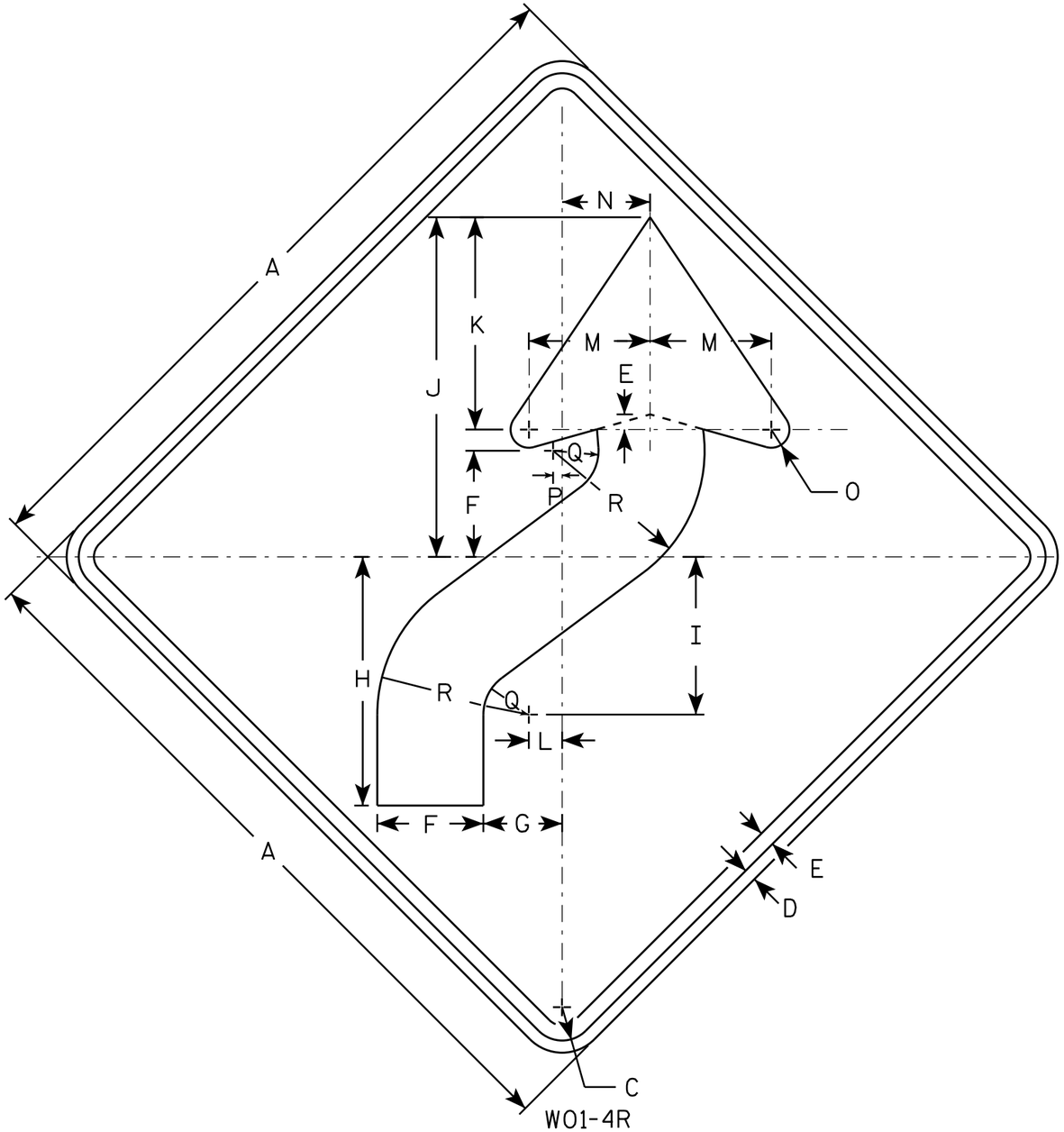
APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-5.11

PROJECT NO: | HWY: | COUNTY: | SHEET NO: 174 | E

7

FILE NAME : C:\Users\PROJECTS\tr_stdplate\W205.DGN PLOT DATE : 18-MAR-2011 12:15 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 11.918087:1.000000
WISDOT/CADDS SHEET 42



W01-4R

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. 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. W01-4L is the same as W01-4R 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	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
2S	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
2M	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
3	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
4	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
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
W01-4

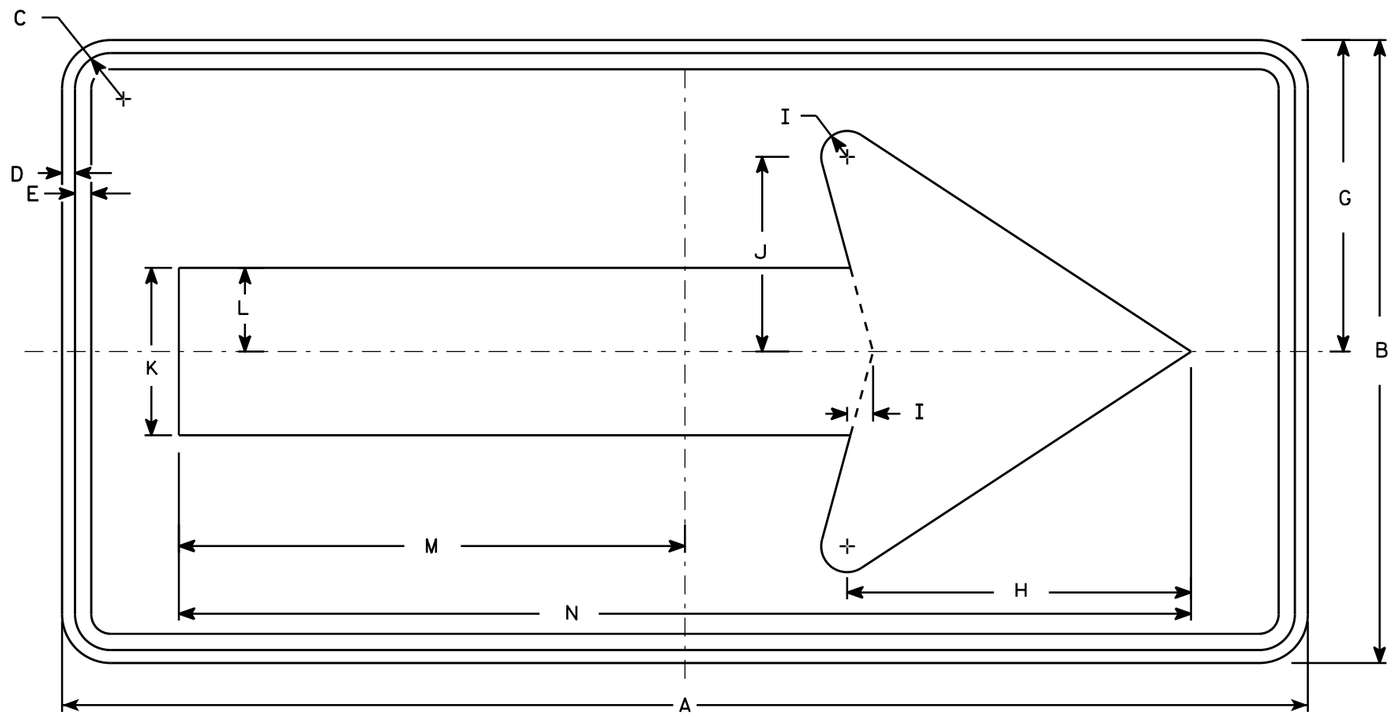
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO W01-4.1

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W014.DGN PLOT DATE : 28-FEB-2014 11:35 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 6.755110:1.000000
WISDOT/CADDS SHEET 42



W01-6

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - Orange
   Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

STANDARD SIGN
W01-6

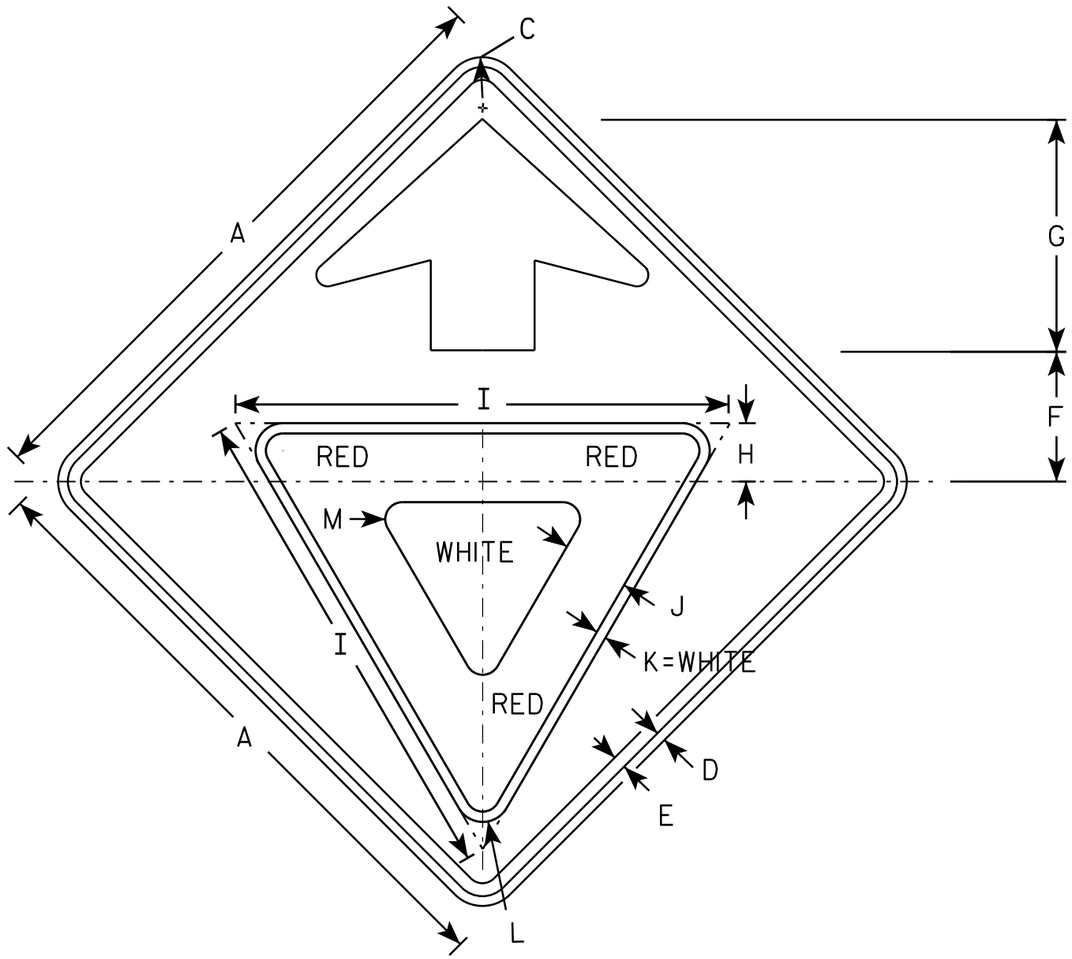
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE W01-6.1

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

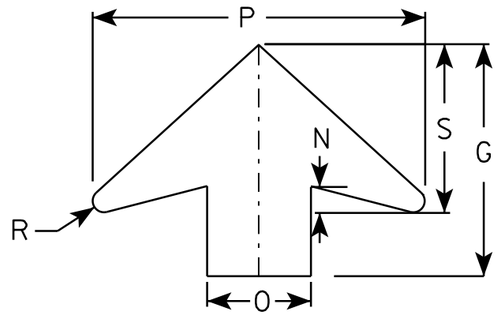
FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W016.DGN PLOT DATE : 28-FEB-2014 11:37 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 5.837526:1.000000 WISDOT/CADDS SHEET 42



W03-2

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
   Background - ORANGE
   Arrow & Border - BLACK
   Yield Symbol - WHITE BORDER ON RED BACKGROUND



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	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 3/8	28	3 3/4	5/8	1 1/2	1	1 5/8	6	19 1/4		5/8	9 3/4								9.0
2S	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
2M	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
3	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	38	5	3/4	2 1/8	1 3/8	2	8	25 5/8		7/8	13								16.0

STANDARD SIGN
W03-2

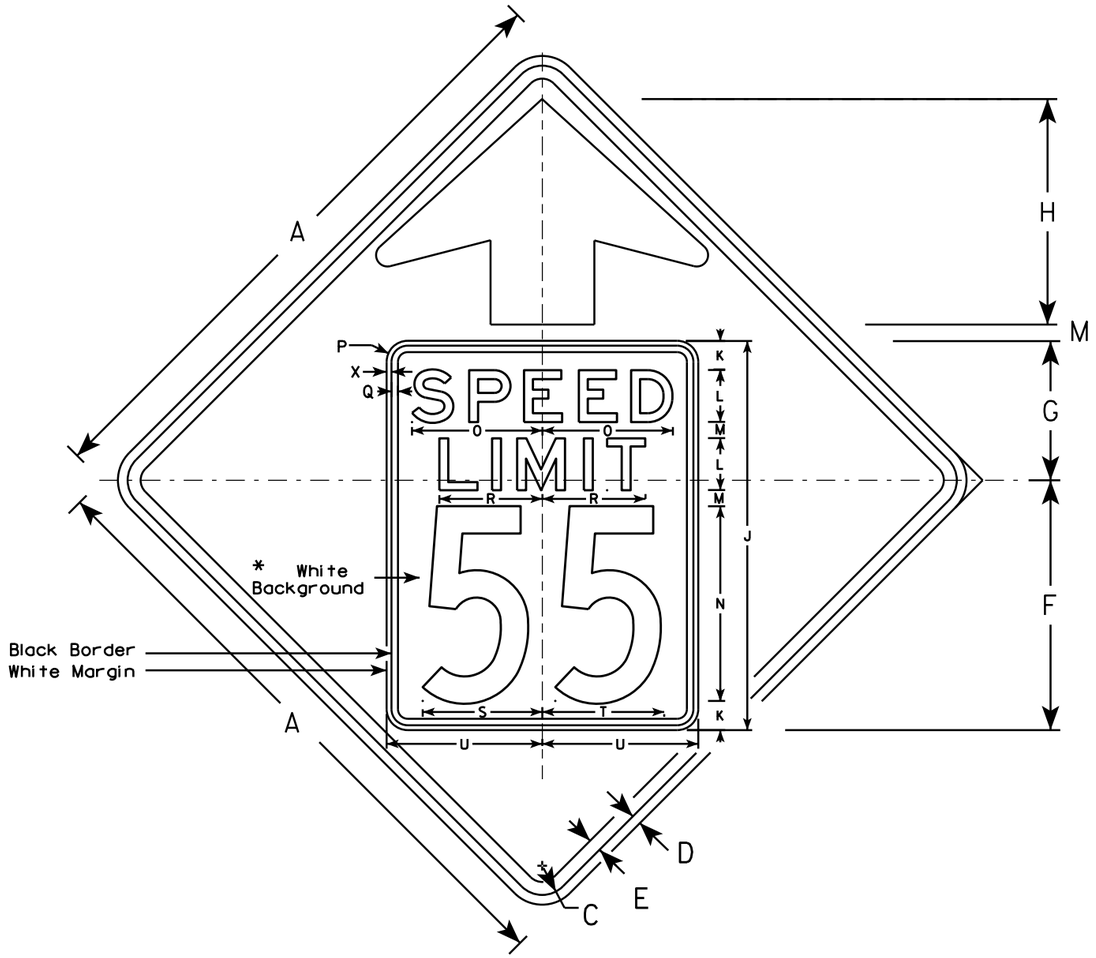
WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE W03-2.1

PROJECT NO:

SHEET NO: E

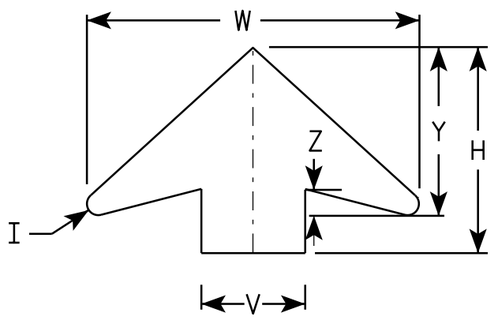


W03-5

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 - C for numbers Series E for wording
4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance

*Speed Limit Sign shall have a White Background



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	36		1 5/8	5/8	3/4	14 1/2	9 1/2	11 1/2	5/8	24	2	3	1	12	7 1/8	1 1/2	3/8	5 3/4	7 1/4	7 1/8	9	6	19 1/4	3/8	9 3/4	1 5/8	9.0
2S	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
2M	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
3	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
4	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0
5	48		2 1/4	3/4	1	19 1/4	10 3/4	17 3/8	7/8	30	2 1/4	4	1 1/4	15	10	1 5/8	1/2	8	9 1/4	9 3/8	12	8	25 5/8	3/8	13	2	16.0

STANDARD SIGN
W03-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

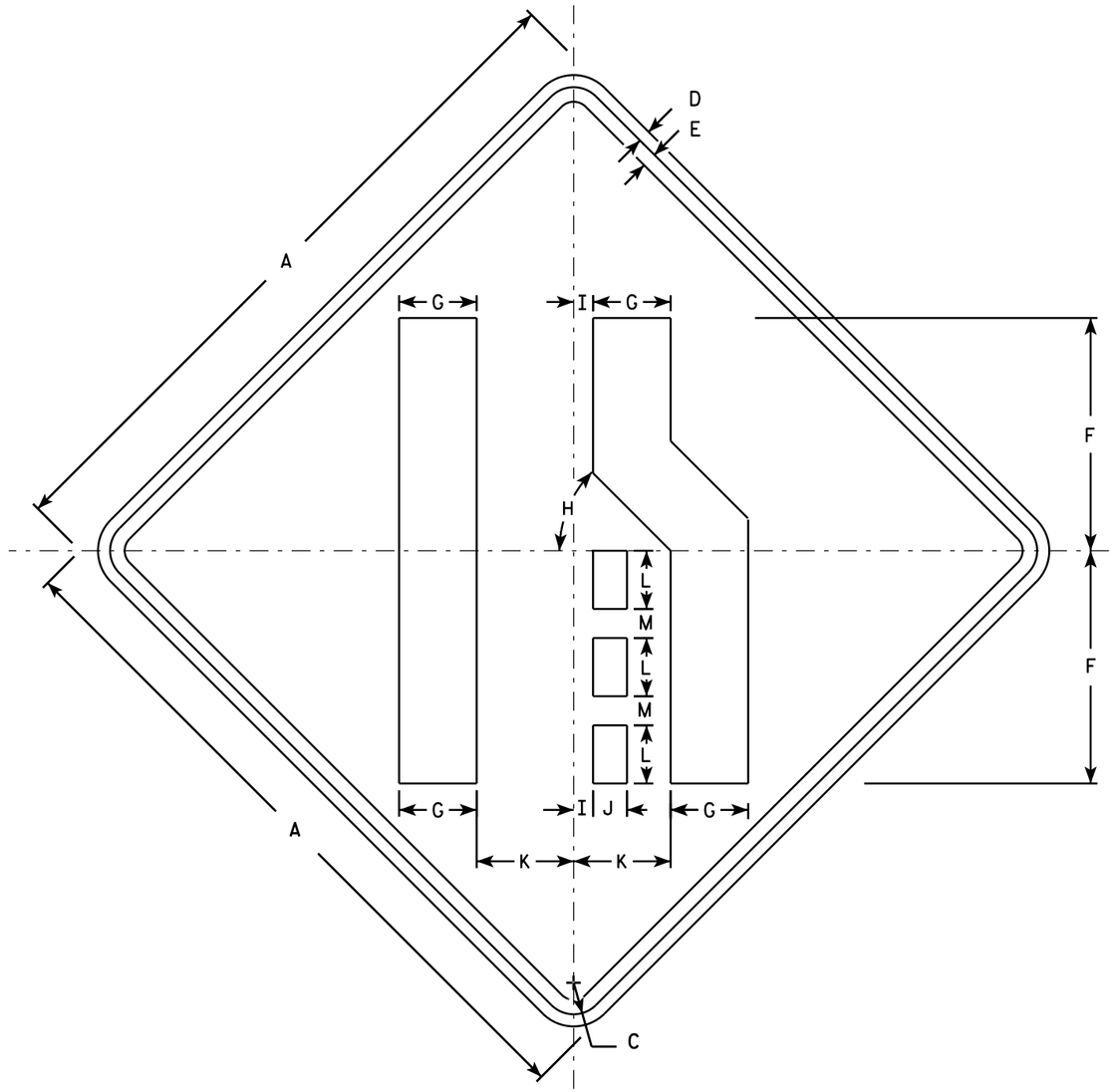
DATE 11/20/13 PLATE W03-5.1

PROJECT NO: SHEET NO: E

FILE NAME : C:\CAEFiles\Projects\tr_stdplate\W035.DGN PLOT DATE : 20-NOV-2013 11:32 PLOT BY : mscsja

WISDOT/CADDS SHEET 42

7 7



W04-2R

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. 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. W04-2L is the same as W04-2R except the symbol 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	36		1 5/8	5/8	3/4	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		2 1/4	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

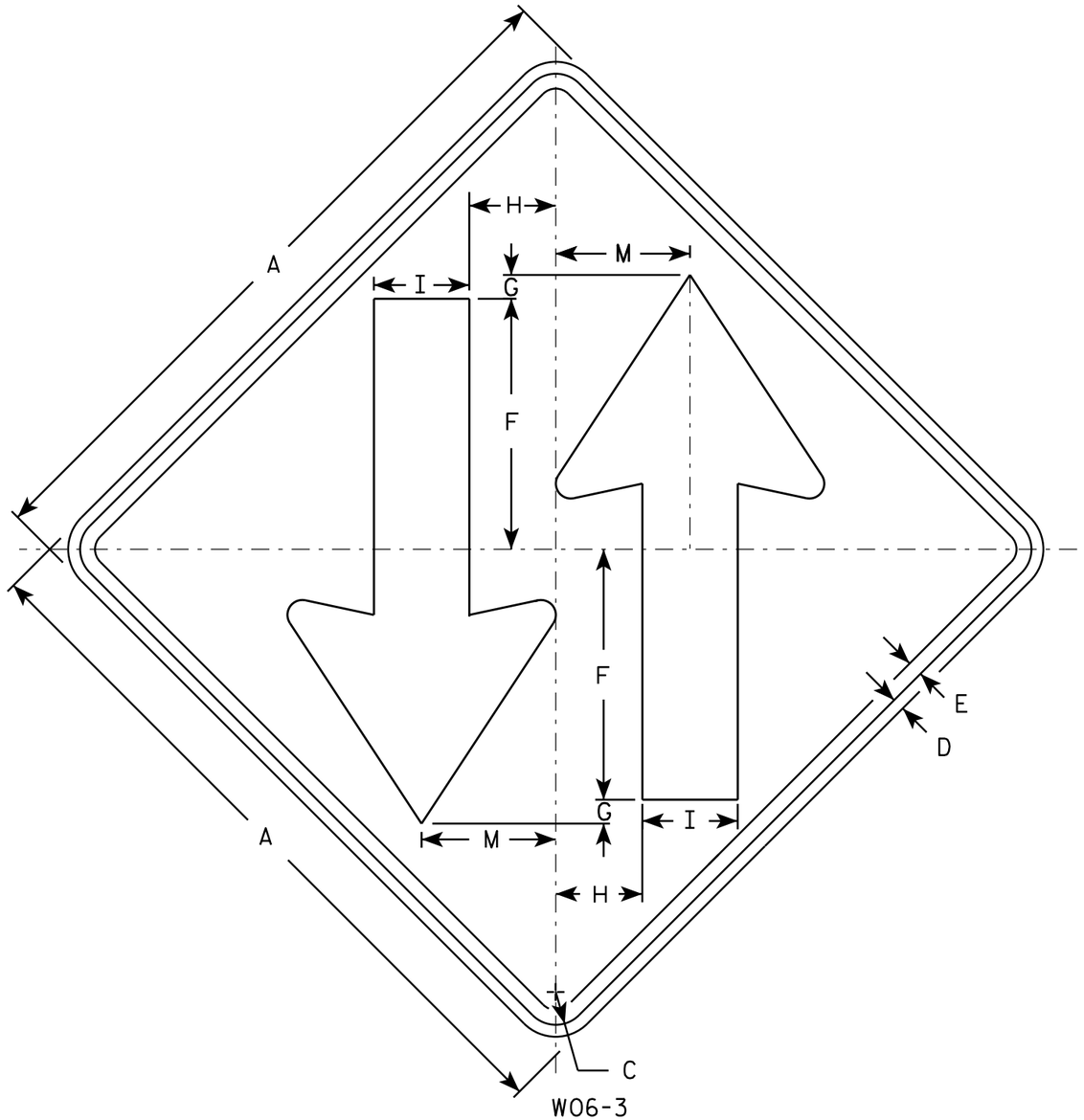
STANDARD SIGN
W04-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 179 W04-2.1

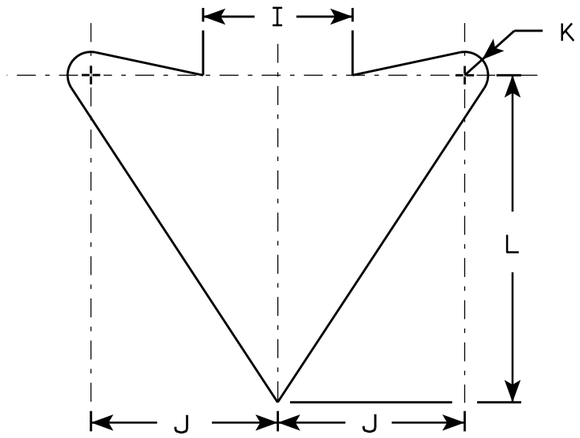
PROJECT NO: | SHEET NO: E



W06-3

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. 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	36		1 5/8	5/8	3/4	12	1	4 1/4	5	6	3/4	10 1/2	6 3/4														9.0
2S	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
2M	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
3	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
4	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0
5	48		2 1/4	3/4	1	15 1/2	1	6	6	8	1	14	9														16.0

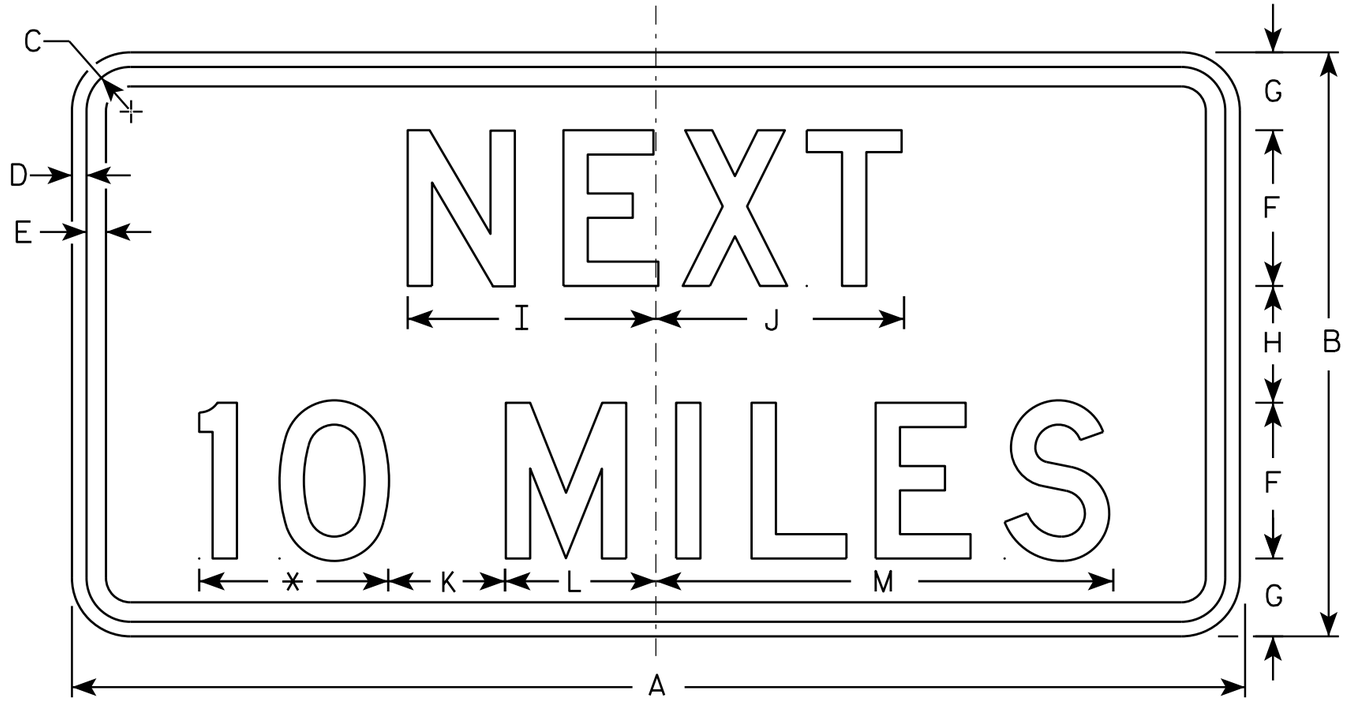
STANDARD SIGN
W06-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R Rauch
for State Traffic Engineer

DATE 11/20/13 PLATE 180 W06-3.1

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



W057-51

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 - 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.
5. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

* See note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 5/8	2 3/4	7 7/8	8	5	4 1/8	15 3/8														4.5
2S	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0
2M	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0
3	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0
4	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0
5	48	24	1 3/8	1/2	5/8	6	3 1/2	5	10	10 1/8	6	5 5/8	19														8.0

STANDARD SIGN
W057-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew L Rauch
for State Traffic Engineer

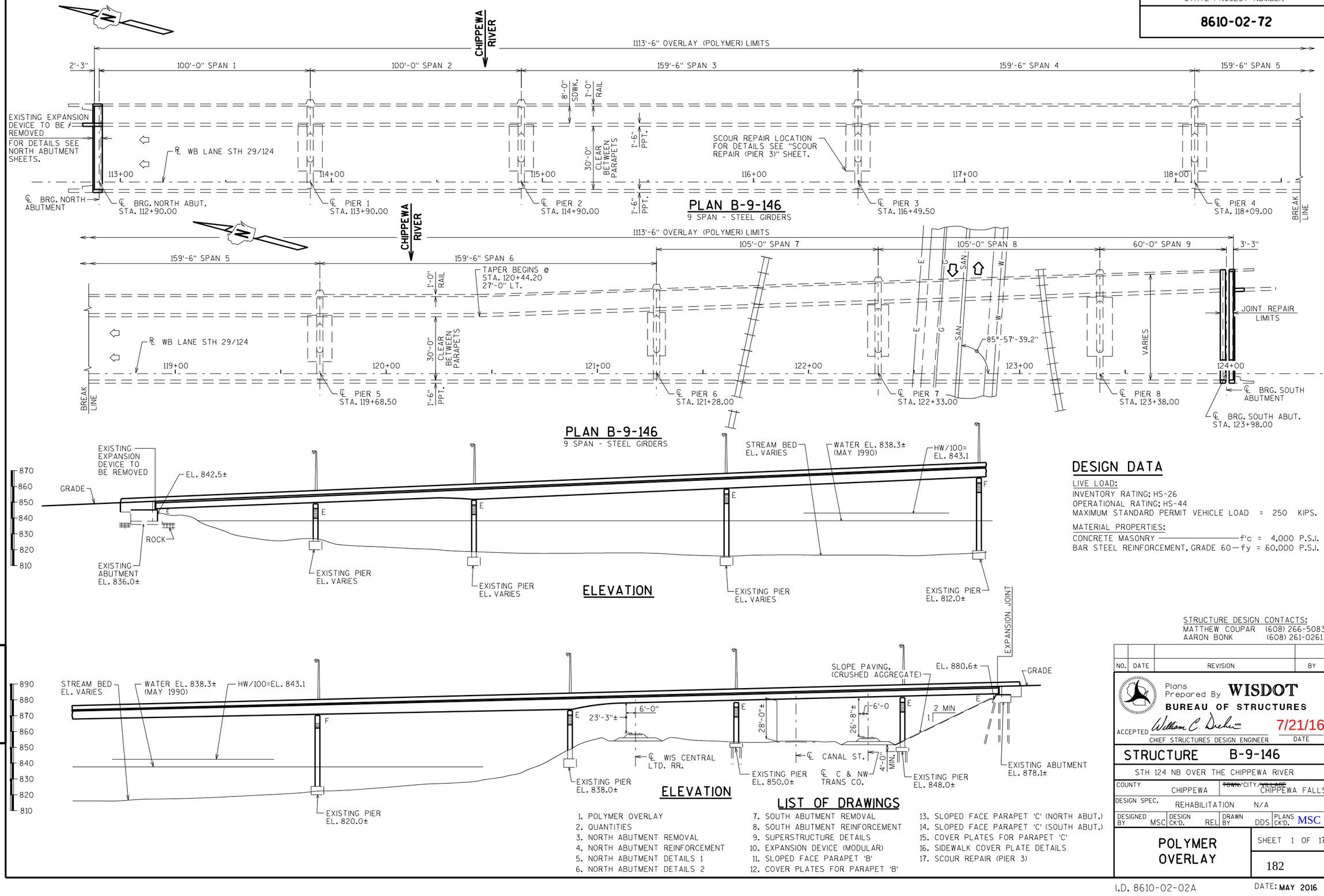
DATE 11/20/13 PLATE W057-51.1

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

FILE NAME : C:\CAEfiles\Projects\tr_stdplate\W05751.DGN PLOT DATE : 28-FEB-2014 11:42 PLOT BY : mscj9h PLOT NAME : PLOT SCALE : 3.891684:1.000000
WISDOT/CADDS SHEET 42

STATE PROJECT NUMBER

8610-02-72



DESIGN DATA

LIVE LOAD:
INVENTORY RATING; HS-26
OPERATIONAL RATING; HS-44
MAXIMUM STANDARD PERMIT VEHICLE LOAD = 250 KIPS.

MATERIAL PROPERTIES:
CONCRETE MASONRY — f'c = 4,000 P.S.I.
BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

LIST OF DRAWINGS

1. POLYMER OVERLAY
2. QUANTITIES
3. NORTH ABUTMENT REMOVAL
4. NORTH ABUTMENT REINFORCEMENT
5. NORTH ABUTMENT DETAILS 1
6. NORTH ABUTMENT DETAILS 2
7. SOUTH ABUTMENT REMOVAL
8. SOUTH ABUTMENT REINFORCEMENT
9. SUPERSTRUCTURE DETAILS
10. EXPANSION DEVICE (MODULAR)
11. SLOPED FACE PARAPET 'B'
12. COVER PLATES FOR PARAPET 'B'
13. SLOPED FACE PARAPET 'C' (NORTH ABUT.)
14. SLOPED FACE PARAPET 'C' (SOUTH ABUT.)
15. COVER PLATES FOR PARAPET 'C'
16. SIDEWALK COVER PLATE DETAILS
17. SCOUR REPAIR (PIER 3)

STRUCTURE DESIGN CONTACTS:
MATTHEW COUPAR (608) 266-5083
AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**
BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 7/21/16
CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-9-146

STH 124 NB OVER THE CHIPPEWA RIVER

COUNTY	TOWN/CITY/~~VILLAGE~~
CHIPPEWA	CHIPPEWA FALLS

DESIGN SPEC.	
REHABILITATION	N/A

DESIGNED BY	DESIGN CK'D.	DRAWN BY	PLANS CK'D.
MSC	REL	DDS	MSC

POLYMER OVERLAY

SHEET 1 OF 17

182

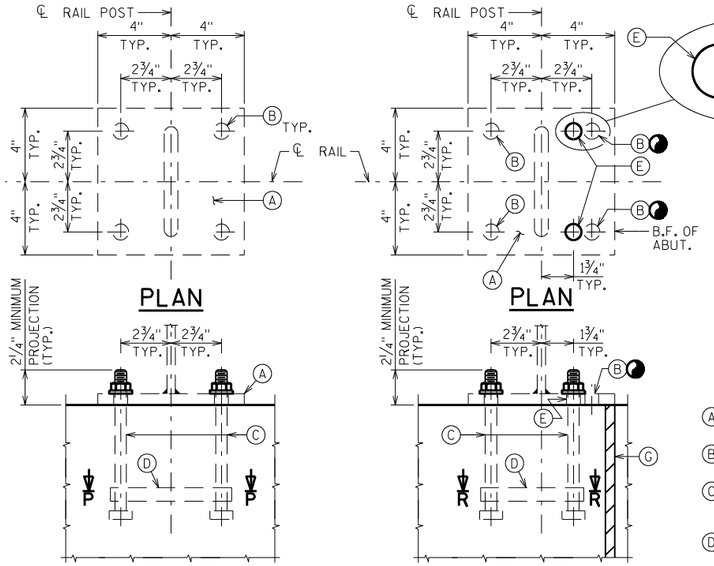
I.D. 8610-02-02A

DATE: MAY 2016

SCALE = 20

8

8



SECTIONS THRU RAIL ANCHORAGE DETAILS

ALL ITEMS SHOWN ABOVE SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "REMOVING AND RESETTING TUBULAR STEEL RAILING B-9-146 SPECIAL"
(ONLY AT SOUTH ABUTMENT & NORTH ABUTMENT WORK)

◐ EXISTING 1" DIA. HOLE TO BE FILLED WITH SILICONE CAULK (TYP.)

NOTE:
ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE THE CORRECT ALIGNMENT OF THE RAILING. SET NORMAL TO GRADE.

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM 307, IF 307 IS USED, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVAIZED.

Ⓐ SALVAGE AND REUSE EXISTING ¾" THK. STEEL PLATE. (TYP.)

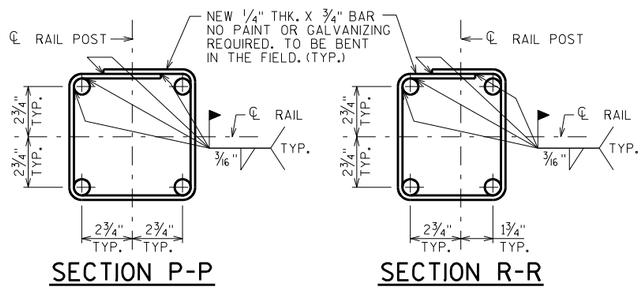
Ⓑ EXISTING 1" DIA. HOLES. (TYP. - 4 PER BASE PLATE)

Ⓒ NEW ¾" DIA. X 8½" LONG BOLT WITH ONE NUT AND CUT WASHER PER BOLT. (TYP. - 4 PER RAIL POST)

Ⓓ NEW ¼" THK. X ¾" BAR - NO PAINT OR GALVANIZING REQUIRED. (TYP.)

Ⓔ REDRILL NEW ⅞" DIA. HOLES IN EXISTING PLATE. (TYP. - 2 PER BASE PLATE)

Ⓖ NEW ½" THK. FILLER AT FRONT FACE OF WING/BACK FACE OF ABUTMENT AT NORTH ABUTMENT ONLY.



NOTE TO CONTRACTOR:

DURING THE ORIGINAL CONSTRUCTION OF THIS BRIDGE THE BRIDGE MOVED DOWNGRADE TO THE NORTH AND CLOSED THE NORTH ABUTMENT JOINT DUE TO THE BRIDGE'S STEEP GRADE AND FLEXIBLE PIERS.

SINCE THEN THERE HAVE BEEN STEEL PLATES INSERTED BETWEEN THE GIRDER ENDS AND THE ABUTMENT BACKWALL. THE GIRDERS ARE CURRENTLY IN THE CORRECT POSITION. AT THE NORTH ABUTMENT THE CONTRACTOR SHALL SUPPORT THE SUPERSTRUCTURE SO IT REMAINS IN THE CURRENT HORIZONTAL LOCATION AND DOES NOT MOVE DOWNGRADE DURING THE DURATION OF THE WORK. THE WORK INCLUDES REMOVING STEEL PLATES BETWEEN THE GIRDERS AND THE BACKWALL, REMOVING BEARINGS, REBUILDING THE BEAM SEATS AND POURING THE ABUTMENT CONCRETE DIAPHRAGM. THE SUPERSTRUCTURE SHALL NOT BE RELEASED UNTIL THE NORTH ABUTMENT CONCRETE DIAPHRAGM HAS CURED. THIS WORK IS PAID BY BID ITEM "BRIDGE JACKING AND RESTRAINT B-9-146".

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	NORTH ABUT.	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7	PIER 8	SOUTH ABUT.	TOTALS
203.0200	REMOVING OLD STRUCTURE STA. 112+90.00	LS	—	—	—	—	—	—	—	—	—	—	—	1
206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-9-146	LS	—	—	—	—	—	—	—	—	—	—	—	1
502.0100	CONCRETE MASONRY BRIDGES	CY	8	32	—	—	—	—	—	—	—	—	11	51
502.3110.S	EXPANSION DEVICE MODULAR B-9-146	LS	—	—	—	—	—	—	—	—	—	—	—	1
502.3210	PIGMENTED SURFACE SEALER	SY	1,245	—	—	—	—	—	—	—	—	—	—	1,245
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	—	—	—	—	—	—	—	—	—	—	106	106
502.4206	ADHESIVE ANCHORS NO. 6 BAR	EACH	—	170	—	—	—	—	—	—	—	—	104	274
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,435	4,490	—	—	—	—	—	—	—	—	1,370	7,295
506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	—	4	—	—	—	—	—	—	—	—	—	4
506.7050.S	REMOVING BEARINGS B-9-146	EACH	—	4	—	—	—	—	—	—	—	—	—	4
509.0301	PREPARATION DECKS TYPE 1	SY	6	—	—	—	—	—	—	—	—	—	—	6
509.0302	PREPARATION DECKS TYPE 2	SY	2	—	—	—	—	—	—	—	—	—	—	2
509.1000	JOINT REPAIR	SY	—	—	—	—	—	—	—	—	—	—	37	37
509.1500	CONCRETE SURFACE REPAIR	SF	5	—	—	—	—	—	—	—	—	—	—	5
509.5100.S	POLYMER OVERLAY	SY	4,930	—	—	—	—	—	—	—	—	—	—	4,930
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	12	—	—	—	—	—	—	—	—	10	22
517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE B-9-146	LS	—	—	—	—	—	—	—	—	—	—	—	1
517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-9-146	LS	—	—	—	—	—	—	—	—	—	—	—	1
517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1	—	—	—	—	—	—	—	—	—	—	1
** SPV.0035	CONCRETE MASONRY DECK PATCHING	CY	1	—	—	—	—	—	—	—	—	—	—	1
SPV.0035	SCOUR REPAIR GROUT	CY	—	—	—	—	1	—	—	—	—	—	—	1
SPV.0035	SCOUR REPAIR GROUT BAGS	CY	—	—	—	—	20	—	—	—	—	—	—	20
SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	—	—	—	—	—	—	—	—	—	—	5	5
SPV.0090	SAWING PAVEMENT DECK PREPARATION AREAS	LF	30	—	—	—	—	—	—	—	—	—	—	30
SPV.0105	REMOVING AND RESETTING STEEL RAILING B-9-146 SPECIAL	LS	—	—	—	—	—	—	—	—	—	—	—	1
SPV.0105.01	BRIDGE JACKING AND RESTRAINT B-9-146	LS	—	—	—	—	—	—	—	—	—	—	—	1
	NON-BID ITEMS													
	BRIDGE SEAT PROTECTION	LS	—	—	—	—	—	—	—	—	—	—	1	1
	FILLER	SIZE	—	—	—	—	—	—	—	—	—	—	½", ¾", 1½"	½", ¾", 1½"
			—	—	—	—	—	—	—	—	—	—	—	—

** = INCLUDES CONCRETE FOR BID ITEMS "PREPARATION DECKS TYPE 1", "PREPARATION DECKS TYPE 2" AND "CONCRETE SURFACE REPAIR".

STATE PROJECT NUMBER

8610-02-72

GENERAL NOTES

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.

APPLY "POLYMER OVERLAY" TO ENTIRE DECK AND SIDEWALK INCLUDING NEW AND EXISTING CONCRETE THAT ARE TO BE COMPLETED PRIOR TO APPLYING POLYMER OVERLAY.

APPLY "PIGMENTED SURFACE SEALER" TO THE ENTIRE LENGTH OF EXISTING AND NEW PARAPETS INCLUDING THE EXISTING WING PARAPETS. APPLY TO THE FRONT FACE AND TOP OF WEST PARAPET AND THE FRONT FACE, TOP AND BACK FACE OF INTERIOR PARAPET.

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

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF THE SOUTH ABUTMENT BELOW EXPANSION DEVICE.

CLEAN AND PAINT THE EXISTING STEEL GIRDERS AT THE ABUTMENTS 6' FROM THE GIRDER ENDS ALONG WITH THE DIAPHRAGMS, STIFFENERS AND EXPOSED HARDWARE. THE COLOR OF THE FINISH EPOXY TOP COAT SHALL BE BROWN SIMILAR TO RUSTED STEEL, (FEDERAL STANDARD COLOR NO. 20059) OR SIMILAR COLOR PREAPPROVED BY THE ENGINEER. TO BE PAID FOR UNDER BID ITEM "STRUCTURE REPAINTING RECYCLED ABRASIVE B-9-146".

ALL BEARINGS AT THE SOUTH ABUTMENT MUST BE CLEANED AND REPAINTED. THE COLOR OF THE TOP COAT SHALL BE BROWN (FEDERAL COLOR NO. 20059) OR SIMILAR COLOR PREAPPROVED BY THE ENGINEER, TO BE PAID FOR UNDER BID ITEM "CLEANING AND REPAINTING BEARINGS".

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1992.

REMOVE AND RESET THE EXISTING RAILING AT THE JOINT REPAIR LOCATIONS ONLY AND PROVIDE NEW GALVANIZED AND STAINLESS STEEL HARDWARE (SEE SECTION THRU ANCHORAGE DETAILS) ALL OF WHICH SHALL BE INCLUDED IN THE BID ITEM STSP "REMOVING AND RESETTING STEEL RAILING B-9-146 SPECIAL".

ANY EXCAVATION NECESSARY TO COMPLETE THE JOINT REMOVAL (NORTH ABUT.) AND THE JOINT REPAIR (SOUTH ABUT.) AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-9-146".

PREPARATION DECKS TYPE 1, PREPARATION DECKS TYPE 2 AND CONCRETE SURFACE REPAIR AREAS ARE TO BE DETERMINED BY THE ENGINEER. DECK PREPARATION AND CONCRETE SURFACE REPAIR SHALL BE FILLED WITH "CONCRETE MASONRY DECK PATCHING".

THE BRIDGE STATIONING PROVIDED IS BASED OFF OF THE ORIGINAL STRUCTURE PLANS AND DOES NOT CORRELATE WITH THE PROPOSED ROADWAY PLANS.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

QUANTITIES

SHEET 2

183

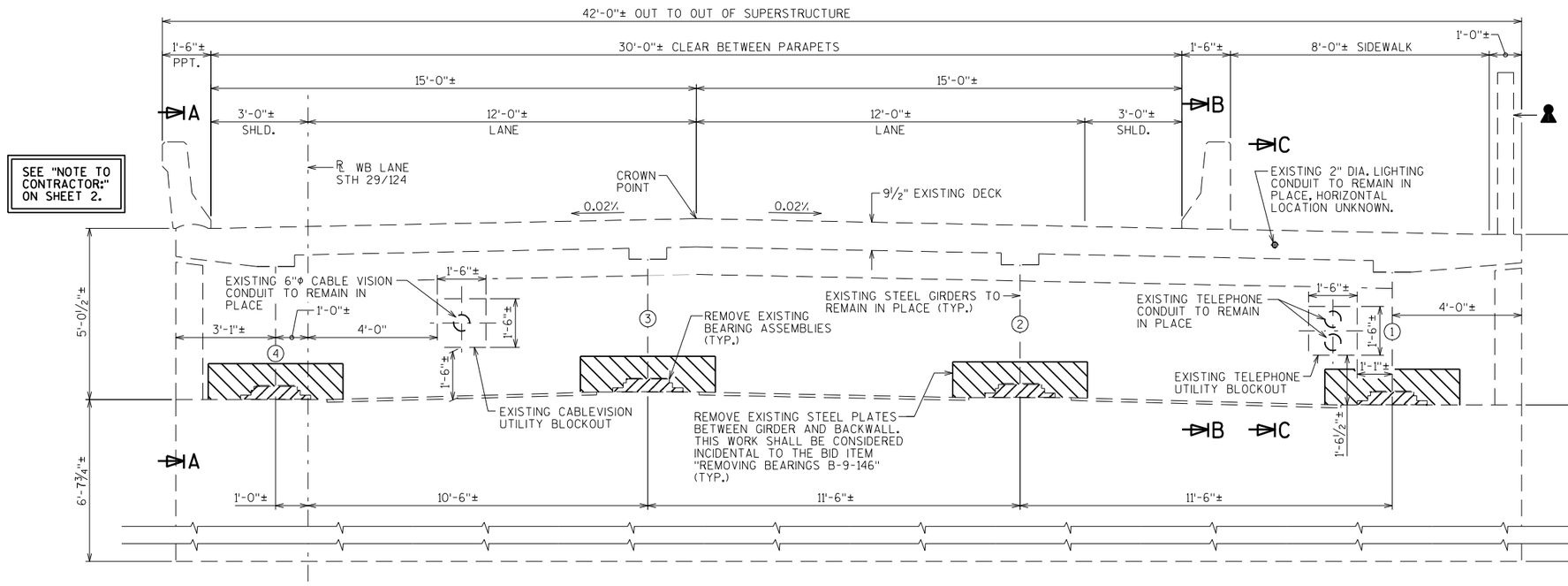
SCALE = 1

8

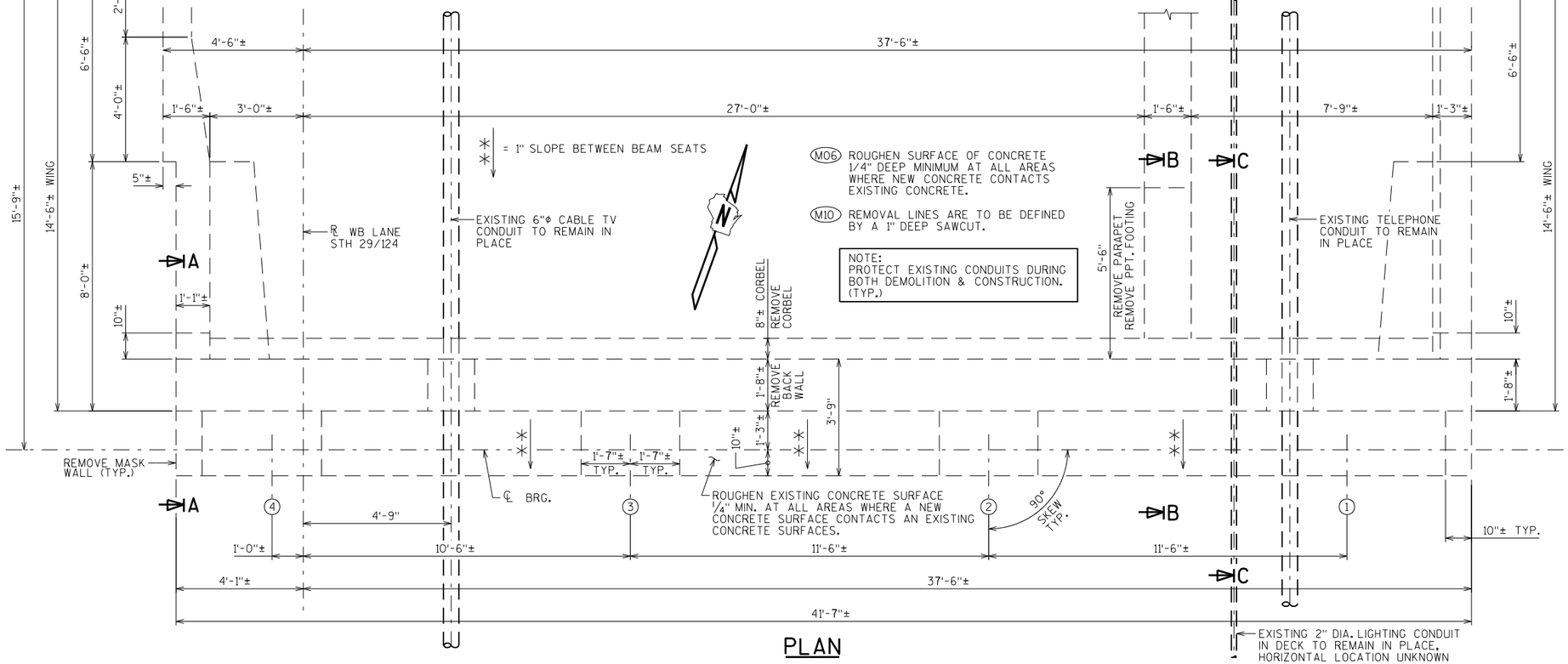
8

STATE PROJECT NUMBER

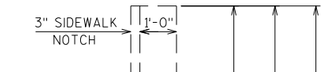
8610-02-72

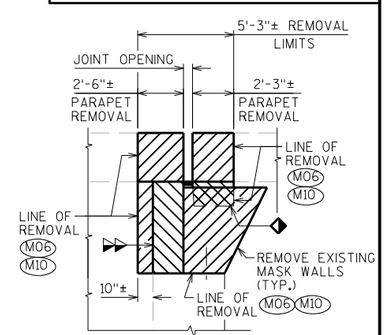


CROSS SECTION OF ROADWAY AT NORTH ABUTMENT - LOOKING NORTH

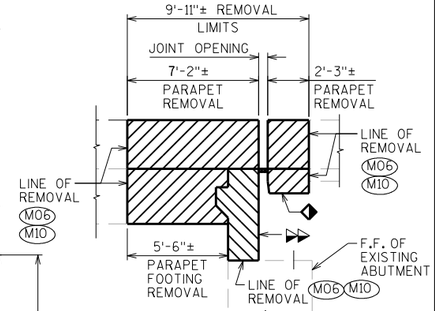


PLAN

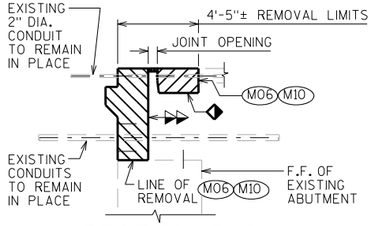




SECTION A-A



SECTION B-B



SECTION C-C

EXISTING STEEL SIDEWALK RAILING TO REMAIN IN PLACE. **EXCEPT AT ABUTMENT, WHERE A PORTION OF THE RAILING SHALL BE REMOVED AND RESET** (AS REQ'D. TO FACILITATE THE REHABILITATION WORK AT THE ABUTMENTS) AS PER THE BID ITEM "REMOVING AND RESETTING STEEL SIDEWALK RAILING B-9-146" WITH PRIOR APPROVAL FROM THE ENGINEER.

REMOVE EXISTING BACKWALL.

REMOVE EXISTING CONCRETE DIAPHRAGM.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

NORTH ABUTMENT REMOVAL

SHEET 3

184

SCALE = 2.0

STATE PROJECT NUMBER

8610-02-72

AFTER THE CONCRETE DIAPHRAGMS HAVE CURED AND THE UTILITIES ARE IN PLACE, THE BLOCKOUTS ARE TO BE GROUT CLOSED AND AN 18" RUBBERIZED WATERPROOF MEMBRANE SHALL BE APPLIED TO THE BACK FACE OF THE ABUTMENT DIAPHRAGM AT EACH BLOCKOUT LOCATION.

VERTICAL DIAPHRAGM BARS MAY BE DISPLACED TO ACCOMODATE THE BLOCKOUTS, BUT **NOT** CUT. HORIZONTAL BARS MAY BE DISPLACED OR CUT.

GRIND SLOPED SURFACE LEVEL AND SMOOTH.

STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER THE ENTIRE ABUTMENT BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. TOTAL THICKNESS OF THE SHEETS SHALL BE AT LEAST 0.03".

EXISTING STEEL GIRDERS TO REMAIN IN PLACE. CLEAN AND PAINT LAST 6'-0" OF GIRDERS AT ABUTMENT ENDS INCLUDING GIRDERS, DIAPHRAGMS, STIFFENERS, AND ANY EXPOSED/ ASSOCIATED HARDWARE.

CUT EXISTING WING REINFORCEMENT 2" CLEAR FROM B.F. OF ABUTMENT.

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.

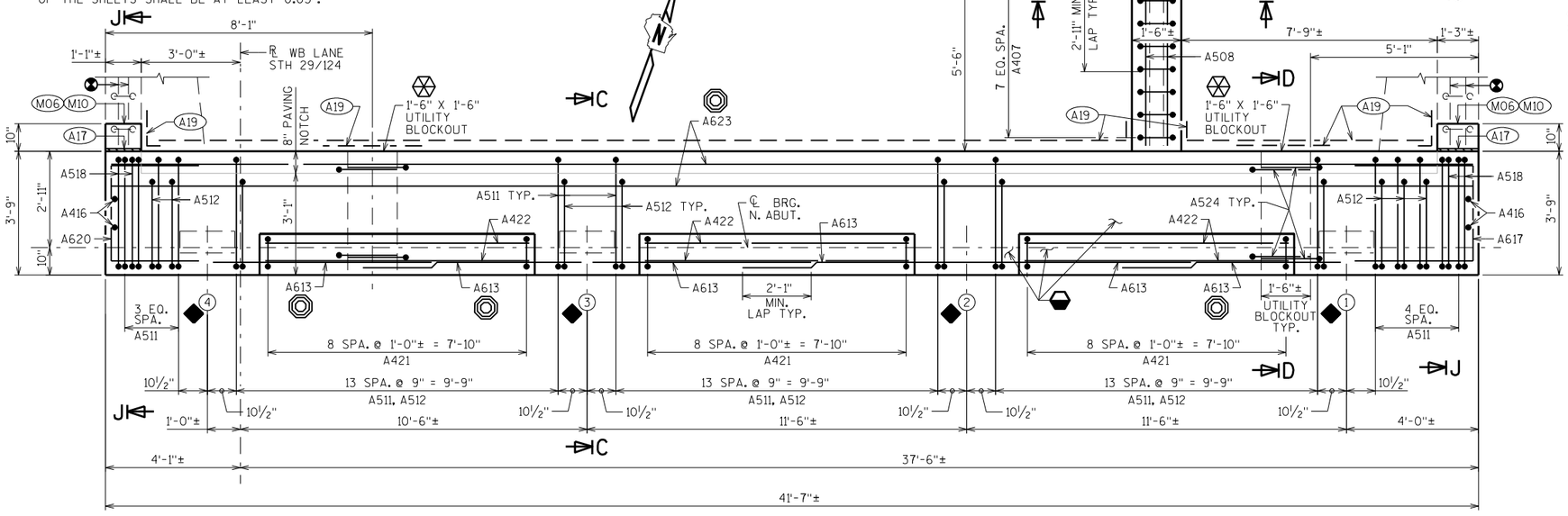
A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

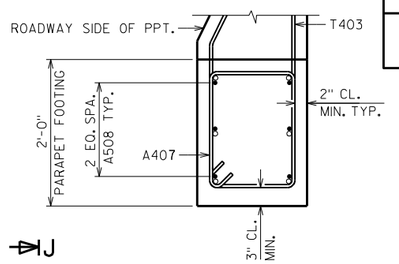
A24 MASONRY ANCHORS TYPE L NO. 6 BARS, EMBED 1'-3" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE

A25 SALVAGE EXISTING REINFORCEMENT AND EXTEND FULL LENGTH INTO NEW WORK.

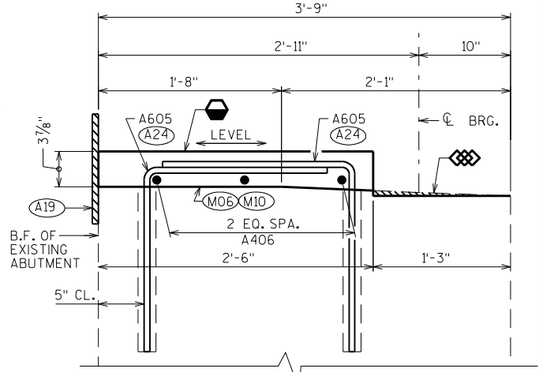
M06 ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

M10 REMOVAL LINES ARE TO BE DEFINED BY A 1" MIN. DEEP SAW CUT.





SECTION H-H

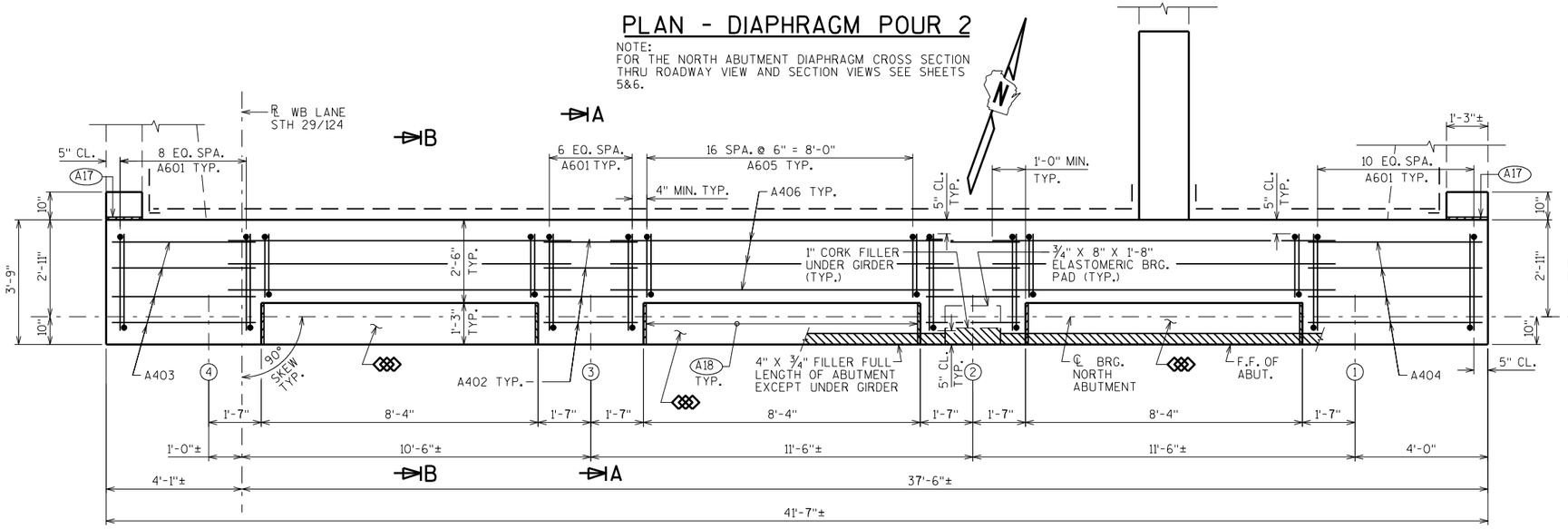


SECTION B-B

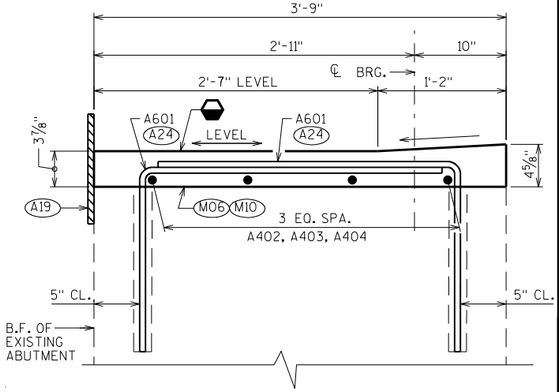
POUR 1

PLAN - DIAPHRAGM POUR 2

NOTE:
FOR THE NORTH ABUTMENT DIAPHRAGM CROSS SECTION THRU ROADWAY VIEW AND SECTION VIEWS SEE SHEETS 5&6.



PLAN - DIAPHRAGM POUR 1



SECTION A-A

POUR 1

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

NORTH ABUTMENT REINFORCEMENT

SHEET 4

185

SCALE = 2.0

8

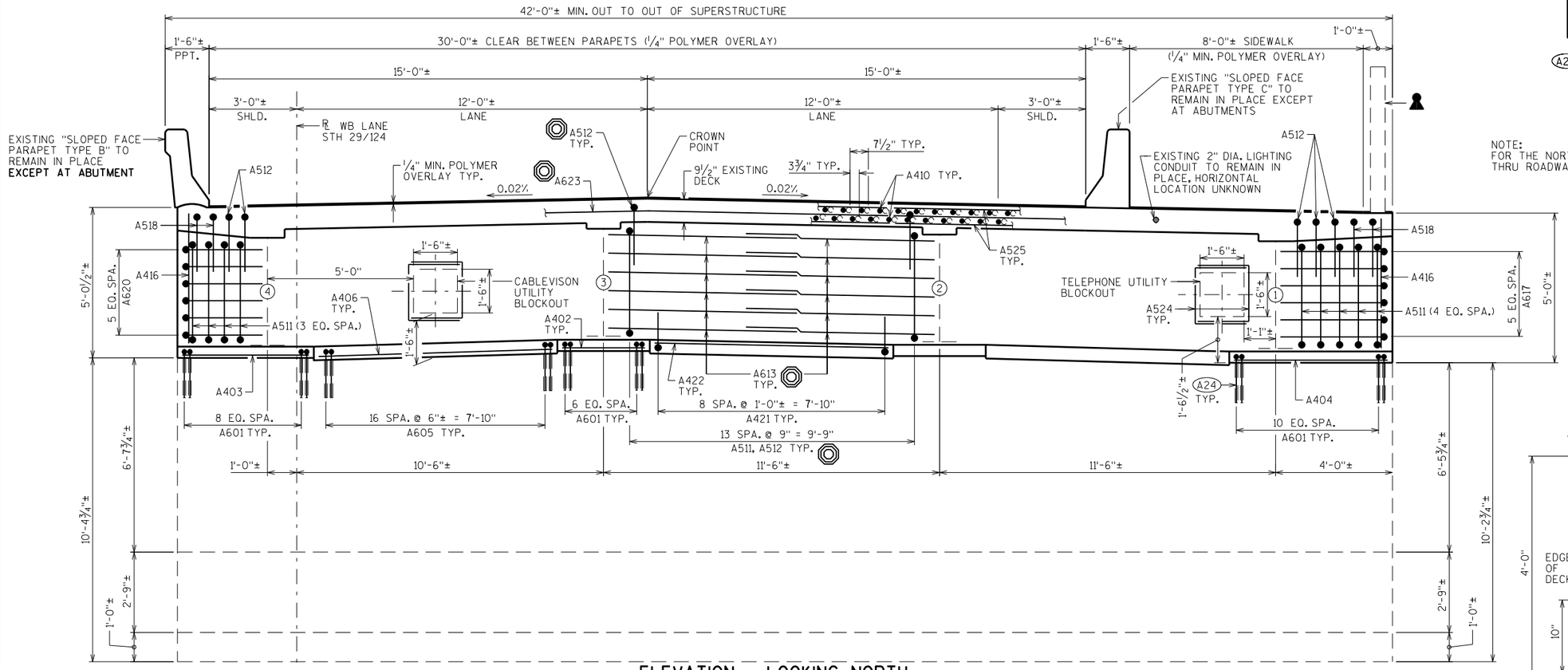
8

STATE PROJECT NUMBER

8610-02-72

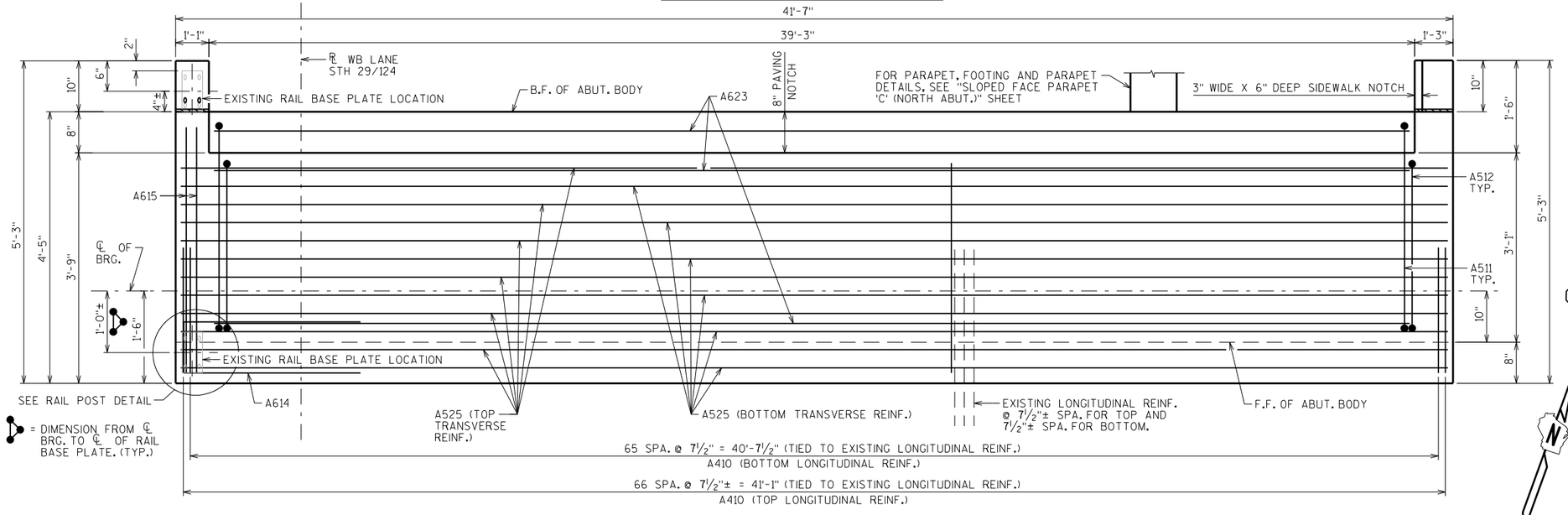
A24 MASONRY ANCHORS TYPE L NO. 6 BARS, EMBED 1'-3" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE

NOTE:
FOR THE NORTH ABUTMENT DIAPHRAGM CROSS SECTION THRU ROADWAY VIEW AND SECTION VIEWS SEE SHEET 6.



ELEVATION - LOOKING NORTH

RAIL POST DETAIL



PLAN

EXISTING STEEL SIDEWALK RAILING TO REMAIN IN PLACE. **EXCEPT AT ABUTMENT, WHERE A PORTION OF THE RAILING SHALL BE REMOVED AND RESET** (AS REQUIRED TO FACILITATE THE REHABILITATION WORK AT THE ABUTMENTS) AS PER THE BID ITEM "REMOVING AND RESETTING STEEL SIDEWALK RAILING B-9-146" WITH PRIOR APPROVAL FROM THE ENGINEER.

VERTICAL DIAPHRAGM BARS MAY BE DISPLACED TO ACCOMODATE THE BLOCKOUTS, BUT **NOT** CUT. HORIZONTAL BARS MAY BE DISPLACED OR CUT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

NORTH ABUTMENT DETAILS 1

SHEET 5

186

8

8

SCALE = 2.0

STATE PROJECT NUMBER

8610-02-72

AFTER THE CONCRETE DIAPHRAGMS HAVE CURED AND THE UTILITIES ARE IN PLACE, THE BLOCKOUTS ARE TO BE GROUT CLOSED AND AN 18" RUBBERIZED WATERPROOF MEMBRANE SHALL BE APPLIED TO THE BACK FACE OF THE ABUTMENT DIAPHRAGM AT EACH BLOCKOUT LOCATION.

VERTICAL DIAPHRAGM BARS MAY BE DISPLACED TO ACCOMODATE THE BLOCKOUTS, BUT **NOT** CUT. HORIZONTAL BARS MAY BE DISPLACED OR CUT.

STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER THE ENTIRE ABUTMENT BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. TOTAL THICKNESS OF THE SHEETS SHALL BE AT LEAST 0.03".

EXISTING STEEL GIRDERS TO REMAIN IN PLACE. CLEAN AND PAINT LAST 6'-0" OF GIRDERS AT ABUTMENT ENDS INCLUDING GIRDERS, DIAPHRAGMS, STIFFENERS, AND ANY EXPOSED/ASSOCIATED HARDWARE.

CUT EXISTING WING REINFORCEMENT 2" CLEAR FROM B.F. OF ABUTMENT.

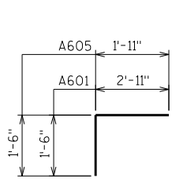
(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A24) MASONRY ANCHORS TYPE L NO. 6 BARS, EMBED 1'-3" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE

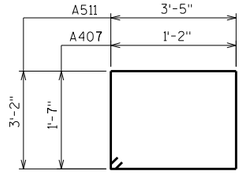
(A25) SALVAGE EXISTING REINFORCEMENT AND EXTEND FULL LENGTH INTO NEW WORK.

(M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

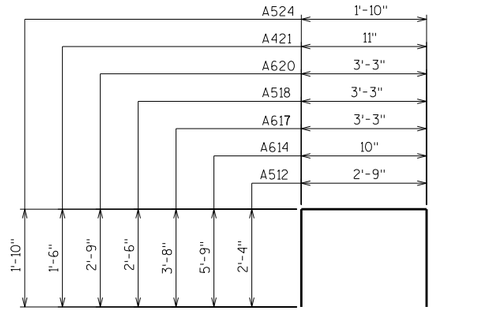
(M10) REMOVAL LINES ARE TO BE DEFINED BY A 1" MIN. DEEP SAW CUT.



A601, A605



A407, A511

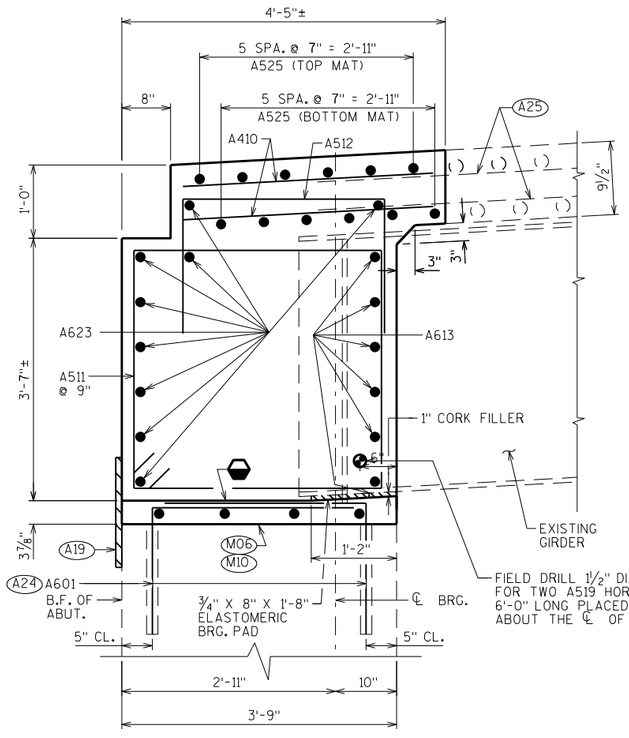


A512, A614, A617, A518, A620, A421, A524

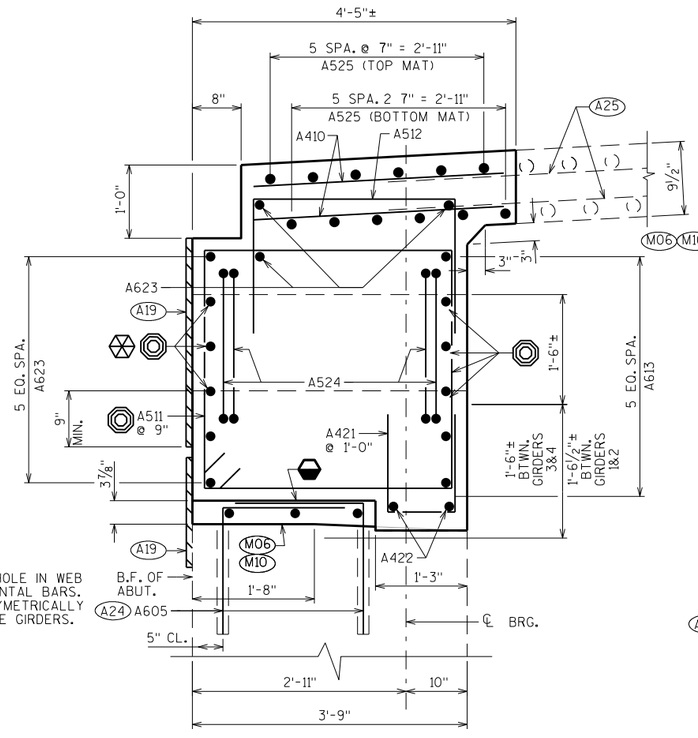
BILL OF BARS

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

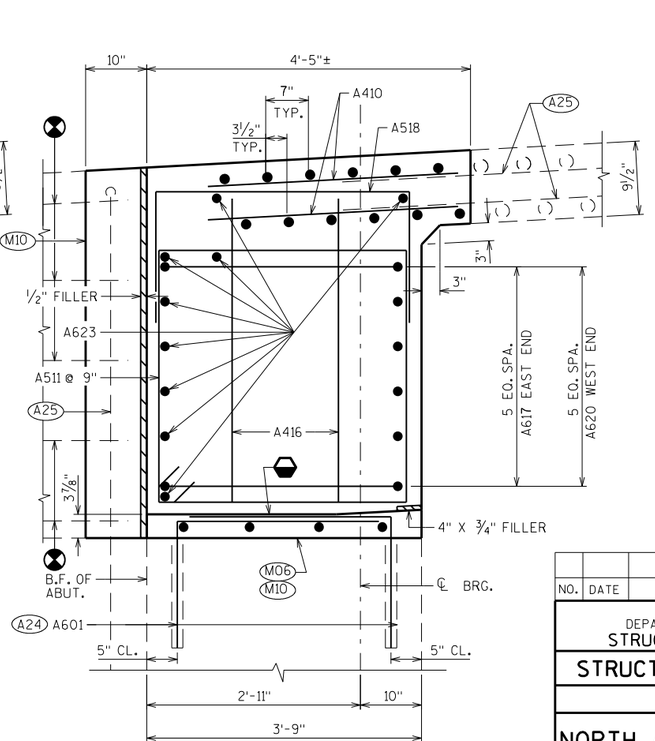
	BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
(A24)	A601	X	68	4'-3"	X		BEAM SEAT - VERT.
	A402	X	8	2'-10"			BEAM SEAT - HORIZ.
	A403	X	4	4'-4"			BEAM SEAT - HORIZ.
	A404	X	4	5'-3"			BEAM SEAT - HORIZ.
(A24)	A605	X	102	3'-3"	X		BETWEEN BEAM SEATS - VERT.
	A406	X	9	10'-4"			BETWEEN BEAM SEATS - HORIZ.
	A407	X	8	6'-0"	X		PARAPET FOOTING - STIRRUP
	A508	X	4	5'-2"			PARAPET FOOTING - HORIZ.
	A509	X	2	5'-10"			PARAPET FOOTING - HORIZ.
	A410	X	133	3'-5"			SUPER - LONGITUDINAL BAR STEEL
	A511	X	51	13'-10"	X		ABUT. DIAPH. - STIRRUP
	A512	X	47	7'-2"	X		ABUT. DIAPH. - VERT.
	A613	X	36	6'-8"			ABUT. DIAPH. - HORIZ.
	A614	X	1	12'-0"	X		DECK - HORIZ. - RAIL POST REINF.
	A615	X	2	4'-0"			DECK - HORIZ. - RAIL POST REINF.
	A416	X	4	4'-1"			ABUT. DIAPH. - VERT. - ENDS
	A617	X	6	10'-3"	X		ABUT. DIAPH. - HORIZ. - END
	A518	X	4	14'-10"	X		ABUT. DIAPH. - VERT. - ENDS
	A519	X	8	6'-0"			ABUT. DIAPH. - THRU GIRDERS
	A620	X	6	8'-5"	X		ABUT. DIAPH. - HORIZ. - END
	A421	X	27	3'-9"	X		ABUT. DIAPH. - VERT. - BTWN. GIRDERS
	A422	X	6	8'-0"			ABUT. DIAPH. - HORIZ. - BTWN. GIRDERS
	A623	X	9	41'-3"			ABUT. DIAPH. - HORIZ. - B.F.
	A524	X	8	5'-3"	X		ABUT. DIAPH. - VERT. - AT UTILTY BLOCKOUTS
	A525	X	12	41'-3"			SUPER - TRANSVERSE BAR STEEL



SECTION C-C
POURS 1&2



SECTION D-D
POURS 1&2



SECTION J-J
POURS 1&2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

NORTH ABUTMENT DETAILS 2

SHEET 6

187

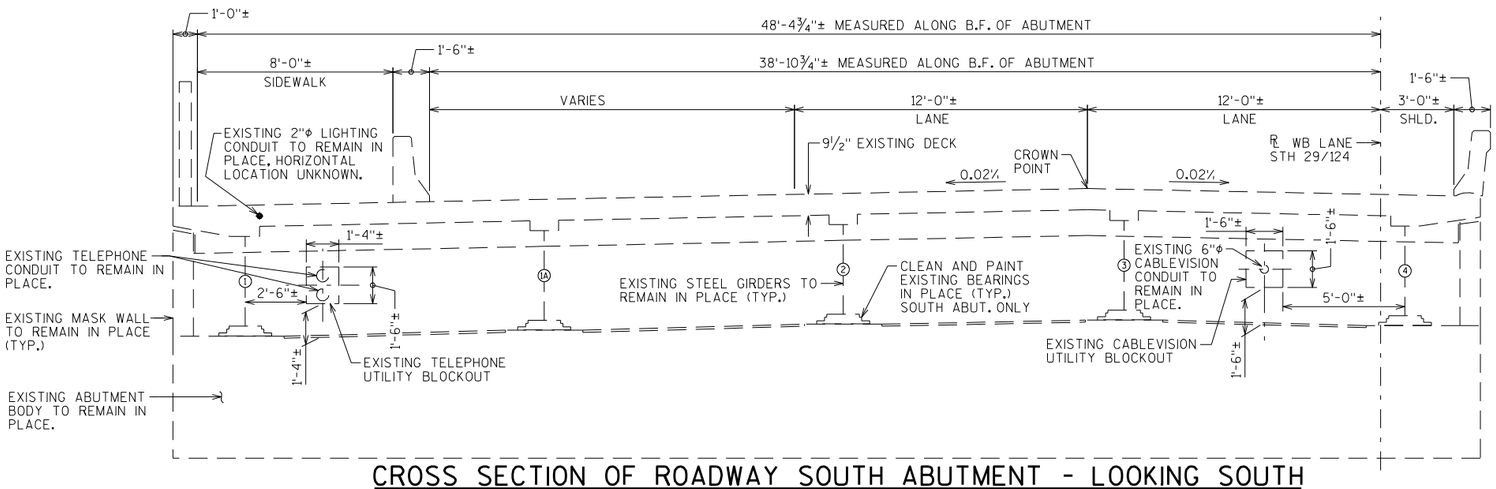
SCALE = 2

8

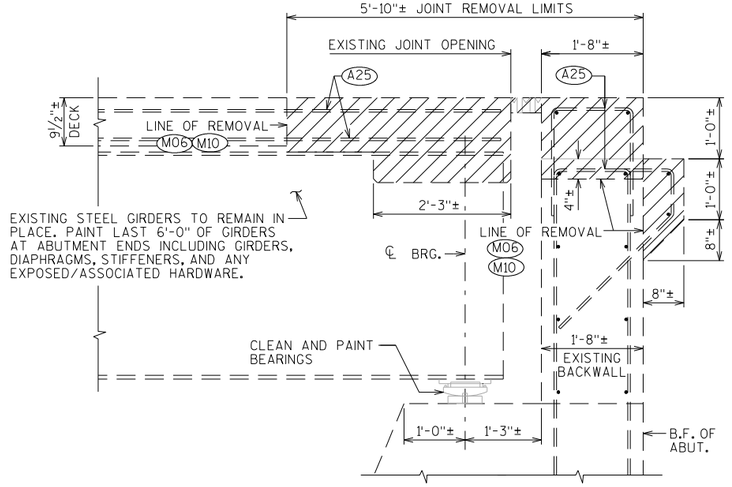
8

STATE PROJECT NUMBER

8610-02-72



CROSS SECTION OF ROADWAY SOUTH ABUTMENT - LOOKING SOUTH



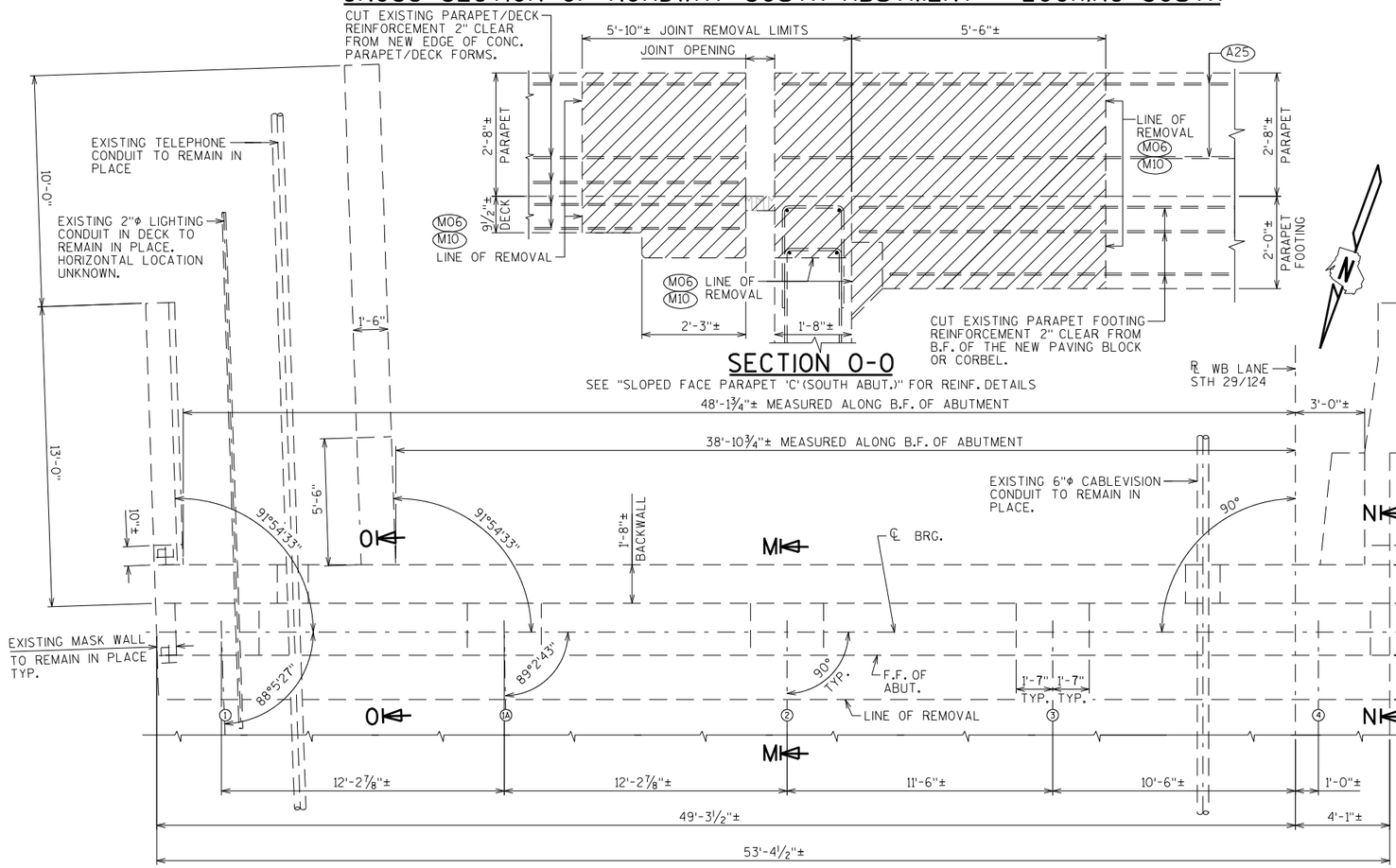
SECTION M-M THRU SOUTH ABUTMENT BODY

SHOWING REMOVALS

(A25) SALVAGE EXISTING REINFORCEMENT AND EXTEND FULL LENGTH INTO NEW WORK.

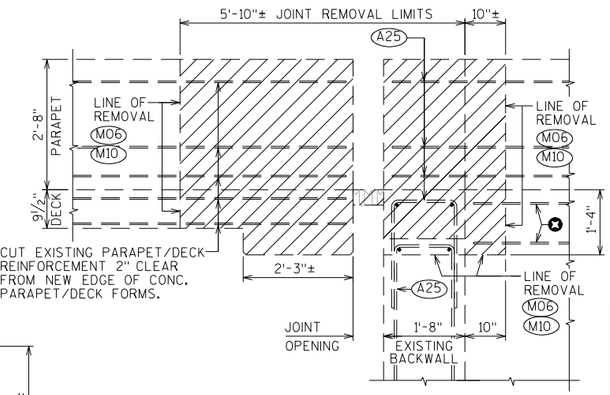
(M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

(M10) REMOVAL LINES ARE TO BE DEFINED BY A 1" MIN. DEEP SAW CUT.



SECTION N-N

SHOWING REMOVALS



⊗ CUT EXISTING WING REINFORCEMENT 2" CLEAR FROM B.F. OF THE NEW PAVING BLOCK.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

SOUTH ABUTMENT REMOVAL

SHEET 7

188

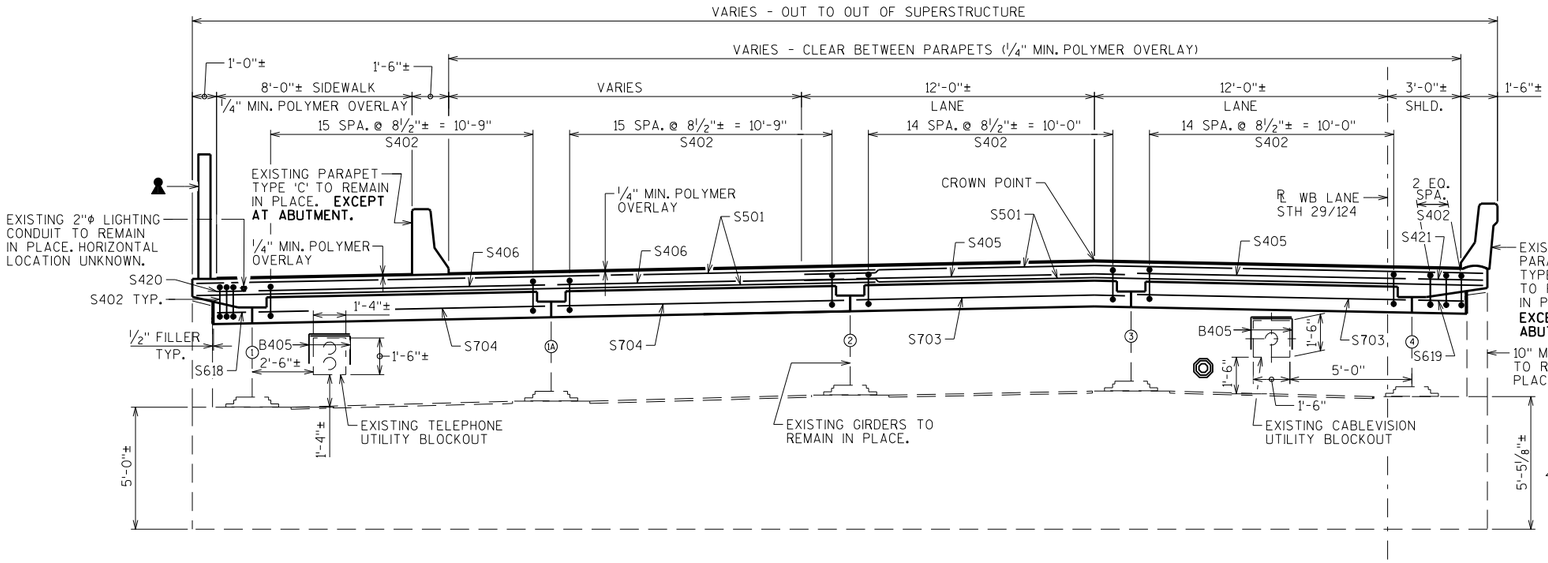
SCALE = 3.0

8

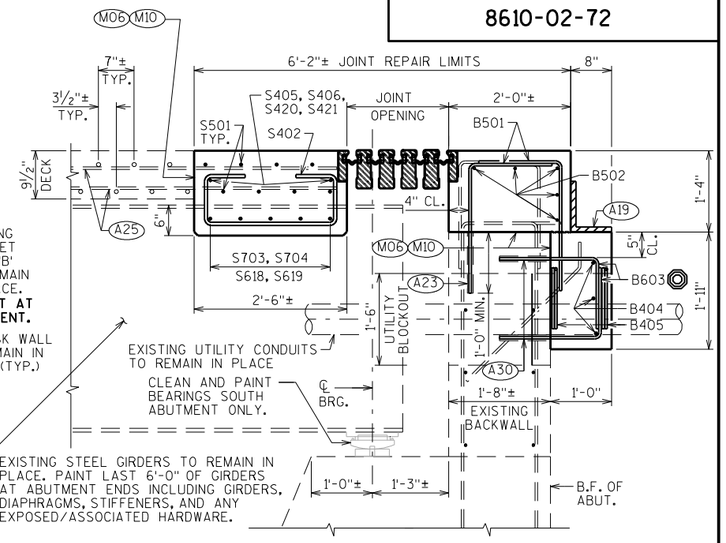
8

STATE PROJECT NUMBER

8610-02-72



CROSS SECTION OF ROADWAY SOUTH ABUTMENT - LOOKING SOUTH



SECTION THRU SOUTH ABUTMENT BODY

SHOWING BAR STEEL REINFORCEMENT

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
A23	B501	X	106	3'-6"	X		PAVING BLOCK - VERT.
	B502	X	32	7'-6"			PAVING BLOCK - HORIZ.
A30	B603	X	104	2'-9"	X		CORBEL - VERT.
	B404	X	6	26'-7"			CORBEL - HORIZ.
	B405	X	8	2'-9"	X		UTILITY BLOCKOUT - VERT.
	B406	X	7	6'-0"	X		PARAPET FOOTING - STIRRUP
	B507	X	2	4'-2"			PARAPET FOOTING - HORIZ.
	B508	X	4	4'-10"			PARAPET FOOTING - HORIZ.

FOR SUPERSTRUCTURE BARS SEE "SUPERSTRUCTURE DETAILS" SHEET

A19 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

A23 MASONRY ANCHORS TYPE L NO. 5 BARS, EMBED 1'-0" MIN. IN CONCRETE ANCHOR SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

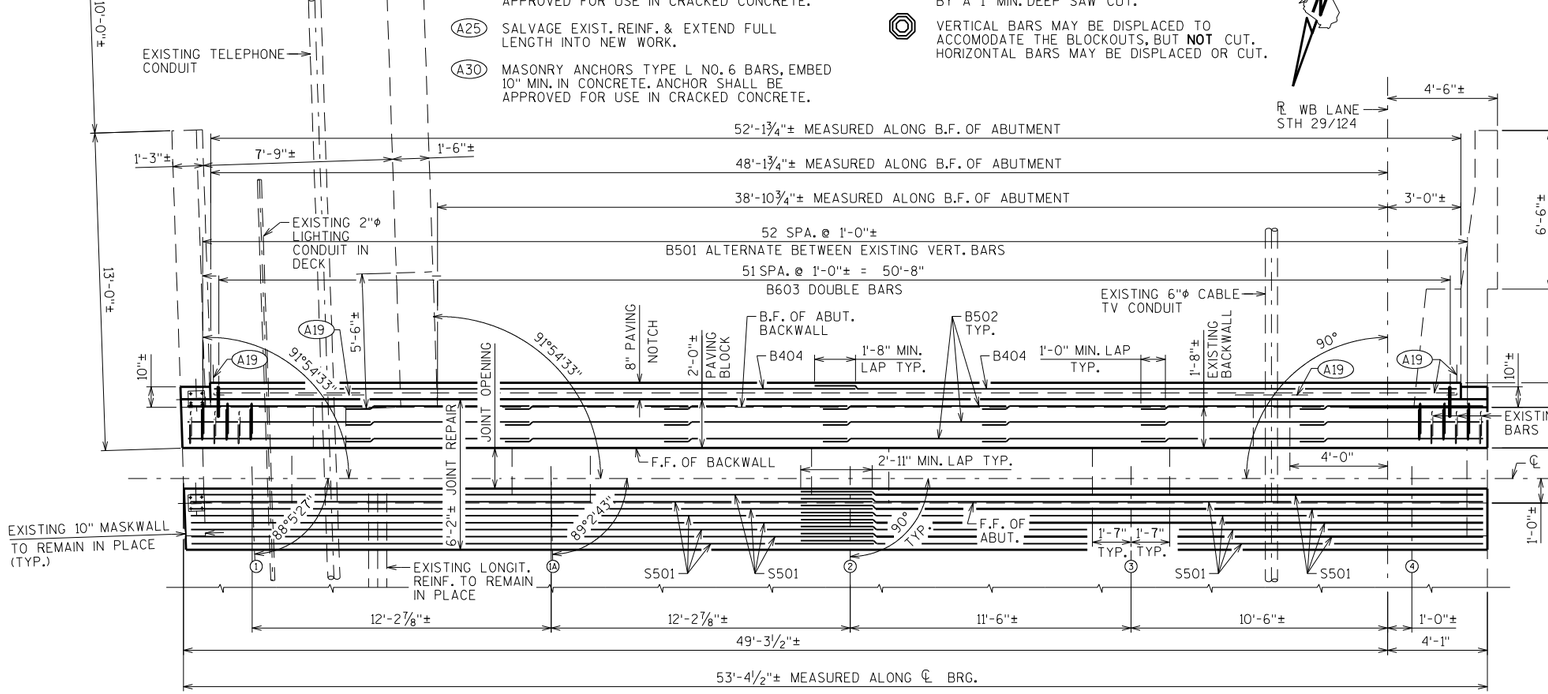
A25 SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

A30 MASONRY ANCHORS TYPE L NO. 6 BARS, EMBED 10" MIN. IN CONCRETE. ANCHOR SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

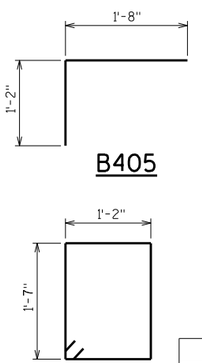
M06 ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

M10 REMOVAL LINES ARE TO BE DEFINED BY A 1" MIN. DEEP SAW CUT.

VERTICAL BARS MAY BE DISPLACED TO ACCOMODATE THE BLOCKOUTS, BUT **NOT** CUT. HORIZONTAL BARS MAY BE DISPLACED OR CUT.



PLAN



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

SOUTH ABUTMENT REINFORCEMENT

SHEET 8

189

SCALE = 3.0

8

8

STATE PROJECT NUMBER
8610-02-72

BILL OF BARS

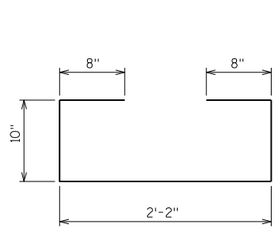
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	16	28'-0"			DECK - TRANSVERSE REINF. - TOP & BOT.
S402	X	68	4'-10"	X		S. ABUT. DIAPH. - VERT. BTWN. GIRDERS
S703	X	10	11'-0"			S. ABUT. DIAPH. - HORIZ. BTWN. GIRDERS 2-4
S704	X	10	11'-9"			S. ABUT. DIAPH. - HORIZ. BTWN. GIRDERS 1-2
S405	X	4	11'-0"			S. ABUT. DIAPH. - HORIZ. BTWN. GIRDERS 2-4
S406	X	4	11'-9"			S. ABUT. DIAPH. - HORIZ. BTWN. GIRDERS 1-2
S507	X	5	3'-5"			N. PARAPET TYPE C - HORIZ
S408	X	6	4'-9"	X		N. PARAPET TYPE C - VERT.
S409	X	6	4'-8"	X		N. PARAPET TYPE C - VERT.
S510	X	NOT	USED			———
S411	X	4	4'-9"	X		S. PARAPET TYPE C - VERT.
S412	X	4	4'-8"	X		S. PARAPET TYPE C - VERT.
S513	X	5	2'-0"			S. PARAPET TYPE C - HORIZ.
S514	X	5	2'-2"			S. PARAPET TYPE B - HORIZ.
S415	X	11	4'-10"	X		S.&N. ABUT. PARAPET TYPE B - VERT.
S416	X	11	4'-3"	X		S.&N. ABUT. PARAPET TYPE B - VERT.
S517	X	5	4'-1"			N. PARAPET TYPE B - HORIZ.
S618	X	5	1'-6"			S. ABUT DIAPH. - HORIZ. - OUTSIDE GIRDER 1
S619	X	5	1'-10"			S. ABUT DIAPH. - HORIZ. - OUTSIDE GIRDER 4
S420	X	2	1'-6"			S. ABUT DIAPH. - HORIZ. - OUTSIDE GIRDER 1
S421	X	2	1'-10"			S. ABUT DIAPH. - HORIZ. - OUTSIDE GIRDER 4

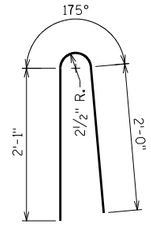
SEE "SLOPED FACE PARAPET 'C' (NORTH ABUT.)" SHEET

SEE "SLOPED FACE PARAPET 'C' (SOUTH ABUT.)" SHEET

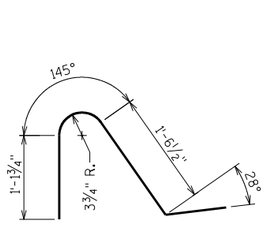
SEE "SLOPED FACE PARAPET 'B'" SHEET



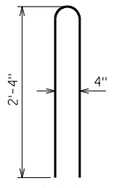
S402



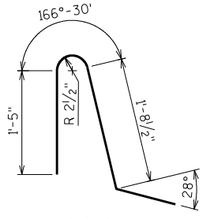
S408, S411



S409, S412



S415



S416

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

SUPERSTRUCTURE DETAILS

SHEET 9

190

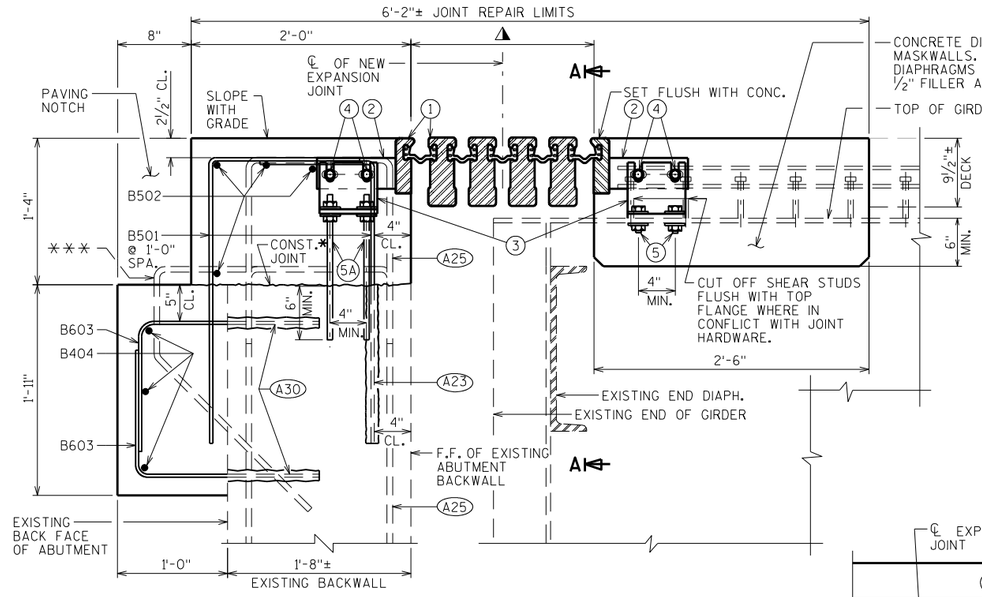
SCALE = 3.0

8

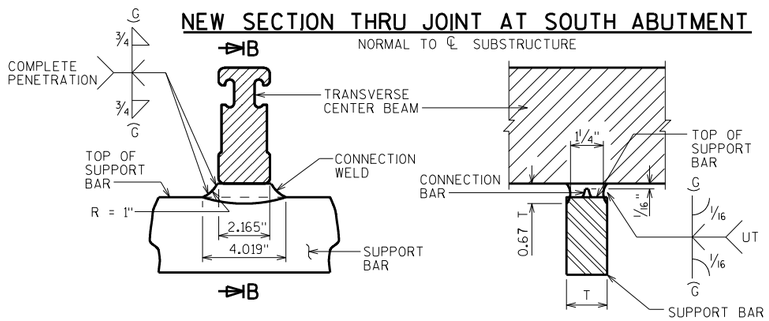
8

STATE PROJECT NUMBER

8610-02-72

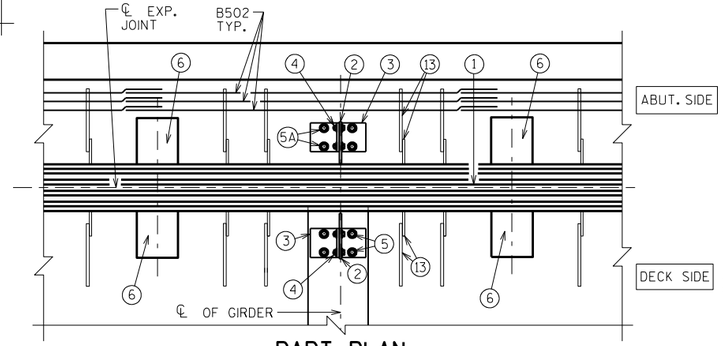


NEW SECTION THRU JOINT AT SOUTH ABUTMENT



MODULAR EXPANSION JOINT CONNECTION DETAIL AND WELD SPECIFICATION

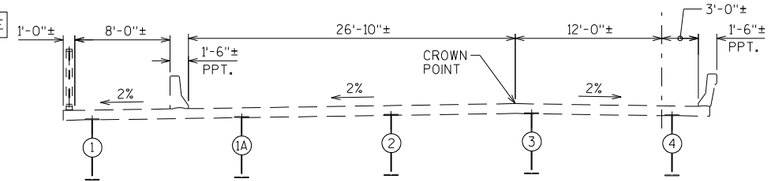
SECTION B-B



PART PLAN

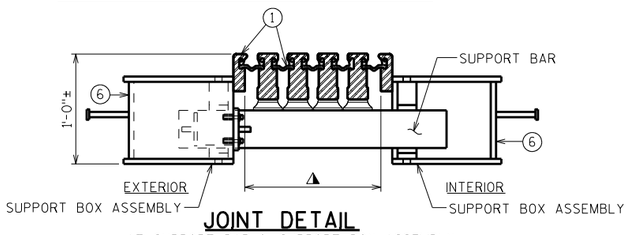
NOTE:
MODULAR EXPANSION DEVICE DESIGN AND DETAILS ARE SPECIFIC TO THE MANUFACTURER SELECTED FROM THOSE LISTED IN THE SPECIAL PROVISIONS. FABRICATION DRAWING IS SUBJECT TO THE APPROVAL OF THE BUREAU OF STRUCTURES.

SUPPORT BOXES ARE SHOWN FOR GENERAL INFORMATION AND LOCATION MAY VARY ACCORDING TO FABRICATOR DESIGN. SPACE SUPPORT BOXES TO MISS GIRDER TOP FLANGES WHEN POSSIBLE, BUT NOT TO EXCEED MAXIMUM SPACING PER SPECIAL PROVISIONS.



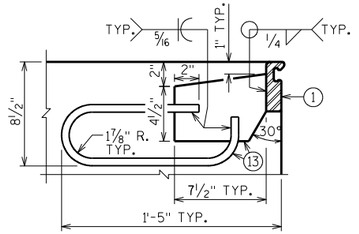
SECTION THRU ROADWAY AT SOUTH ABUT. - LOOKING SOUTH

MEASURED ALONG F.F. OF BACKWALL



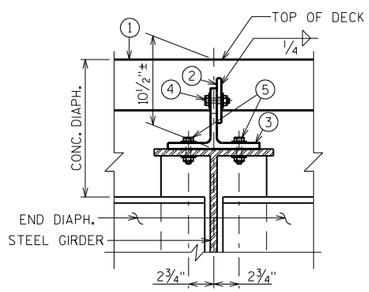
JOINT DETAIL

AT SUPPORT BAR & SUPPORT BOX ASSEMBLY



ANCHORAGE DETAIL

PLACE ADJACENT TO SUPPORT BOXES IN PAVING BLOCK @ ABUT. & IN DECK @ CONC. DIAPH.



SECTION A-A

LEGEND

1. MODULAR EXPANSION JOINT DEVICE, 5 CELLS.
2. ½" PLATE, ONE PER GIRDER MIN. PROVIDE 2 - 1" X 2" MIN. SLOTTED HOLES PLACED HORIZONTALLY FOR NO. 4.
3. WT 6 X 29 (OR EQUIVALENT BUILT UP T-SECTION). ONE PER GIRDER. PROVIDE 2 - 1" X 3" MIN. SLOTTED HOLES PLACED VERTICALLY IN WEB OF WT FOR BOLTS NO. 4.
4. ¾" Φ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. (A325 GALV.)
5. ¾" Φ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. FIELD DRILL HOLES IN GIRDER TOP FLANGE. (A325 GALV.)
5A. ¾" Φ THREADED ROD WITH 2 NUTS & WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES. (GALV.)
6. SUPPORT BOX ASSEMBLY FOR SUPPORT BAR (SPA. PER MANUFACTURER). FABRICATE BOX FROM ½" PLATES.
7. ⅜" BULKHEAD PLATE. WELD TO NO. 1, NO. 8 AND NO. 14. WHEN CONDUIT IS PRESENT IN PARAPET OR SIDEWALK, ACCOMMODATE FOR BY PROVIDING OPENING IN NO. 7.
8. INSIDE PLATE. FABRICATE FROM ⅜" PLATE.
9. OUTSIDE PLATE. FABRICATE FROM ⅝" PLATE.
10. ⅞" SQUARE BAR. WELD TO NO. 8 AS SHOWN.
11. ¾" Φ X 4" LONG STUDS. WELD TO NO. 8 , NO. 7 & NO. 14 AS SHOWN.
12. ¾" Φ X 2" STAINLESS STEEL FLAT CTSK. SLOTTED HEAD CAP SCREWS WITH ANTI-SEIZE LUBRICANT. RECESS 1/16" BELOW PLATE SURFACE.
13. ½" PLATE WITH ⅝" Φ LOOP ANCHOR FABRICATED AS SHOWN. SPACED AT MANUFACTURER'S SPEC.
14. INSIDE PLATE. FABRICATE FROM ⅝" PLATE.
15. ADIPRENE BUTTON. SEE DETAIL. SET IN OUTSIDE PLATE.

* POUR CONC. ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONC. IS IN PLACE. STRIKE OFF & LEAVE ROUGH.

⚠ MANUFACTURER'S RECOMMENDED JOINT OPENING BASED ON THE TEMPERATURE ON THE DAY OF PLACEMENT PER TEMPERATURE TABLE. THE MODULAR EXPANSION DEVICE SHALL HAVE THE NUMBER OF CELLS AS INDICATED IN ①.

GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE GLAND.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

NO EXPANSION JOINT PROTRUSIONS PERMITTED ABOVE ROADWAY SURFACE, ON PARAPET ROADWAY FACE OR ABOVE SIDEWALK SURFACE (FOR RAISED SIDEWALK).

THE EXPANSION JOINT SEALS SHALL BE PLACED, BONDED & SEALED AS RECOMMENDED BY THE MANUFACTURER. FORM WORK SHALL BE PLACED BETWEEN THE SUPPORT BOXES TO PREVENT CONCRETE INTRUSION INTO THE SUPPORT BOX. A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER SHALL BE PRESENT DURING INSTALLATION. PRIOR TO SETTING THE JOINT ASSEMBLY INTO POSITION, THE PROJECT ENGINEER SHALL DETERMINE THE PROPER JOINT OPENING.

EXPANSION JOINT EXTRUSIONS SHALL BE FABRICATED TO CONFORM TO ROADWAY CROWN & GRADE. FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST BARS, PLATES, WT-SECTION, ANCHORAGE LOOP, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERICAL BLAST CLEANING". AFTER BLAST CLEANING, THIS ASSEMBLY SHALL BE HOT DIPPED GALVANIZED. SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

COST OF FURNISHING & PLACING OF THE EXPANSION JOINTS COMPLETE WITH PARAPET PLATES & SIDEWALK PLATES SHALL BE PAID FOR UNDER THE PRICE BID FOR "EXPANSION DEVICE MODULAR B-9-146".

BAR STEEL REINF. IN DECK AND CONC. DIAPHRAGM SHALL BE RESPACED AS NECESSARY TO ALLOW PLACEMENT OF JOINT ASSEMBLY. TOP TRANSVERSE BARS, ADJACENT TO MOD. JT., TO BE CUT AND PLACED BETWEEN JT. SUPPORT SYSTEM.

TEMP. TABLE

TEMPERATURE TABLE FOR SETTING JOINT OPENINGS TO BE DETERMINED BY JOINT MANUFACTURER WITH THE FOLLOWING DESIGN DATA:

1. 0.86 IN. OF MOVEMENT PER 10° F
2. MEDIAN TEMPERATURE OF 45° F
3. TEMP. RANGE IN TABLE FROM (-5)°F) TO (+95°F).

A TABLE OF JOINT OPENINGS BASED ON ABOVE DATA SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

EXPANSION DEVICE (MODULAR)

SHEET 10

191

JTMODDETAILS
1-14

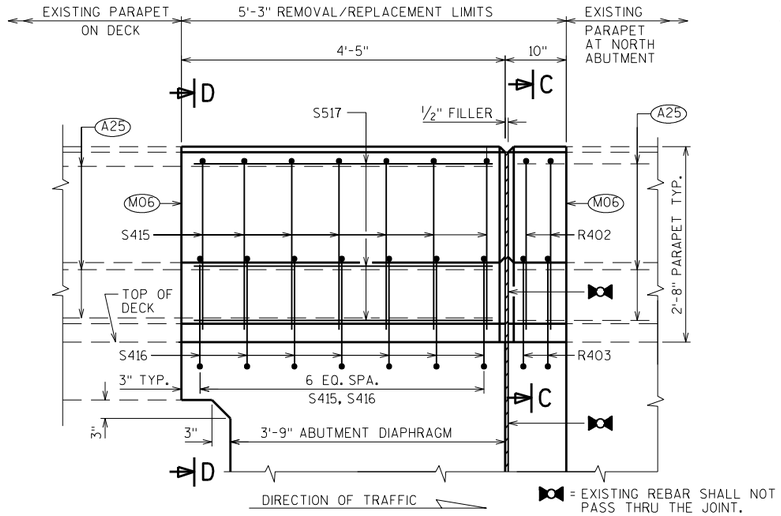
SCALE = 1

8

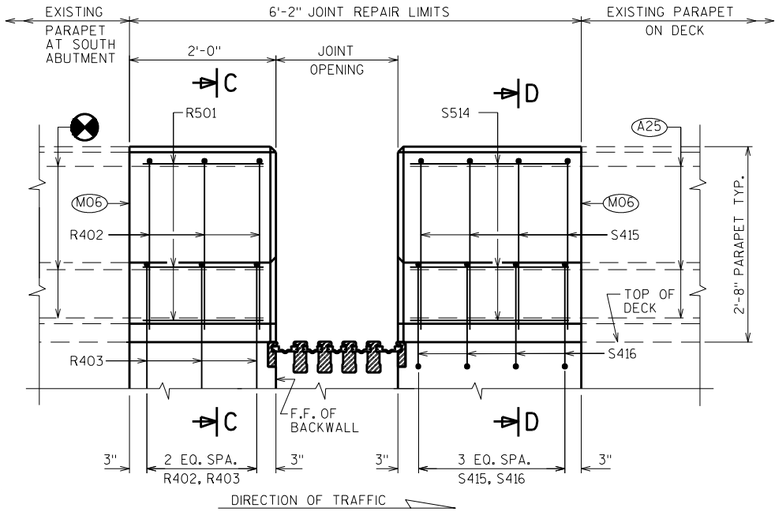
8

STATE PROJECT NUMBER

8610-02-72



INSIDE ELEVATION AT NORTH ABUT.



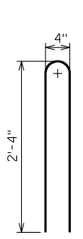
INSIDE ELEVATION AT SOUTH ABUT.

BILL OF BARS

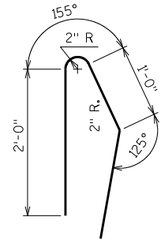
FOR ABUTMENT PARAPETS

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.

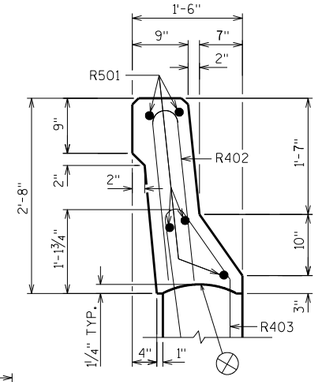
BAR MARK	COAT	N. ABUT.	S. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	—	5	1-8			S. PARAPET - HORIZ.
R402	X	2	3	4-10	X		S. & N. PARAPET - VERT.
R403	X	2	3	4-7	X		S. & N. PARAPET - VERT.



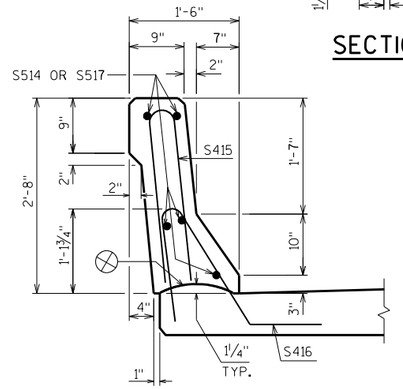
R402



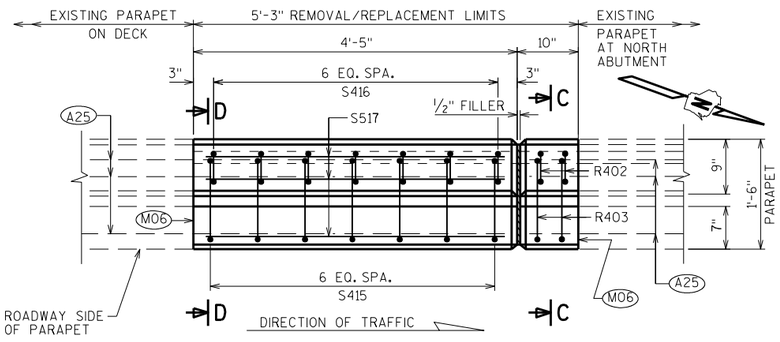
R403



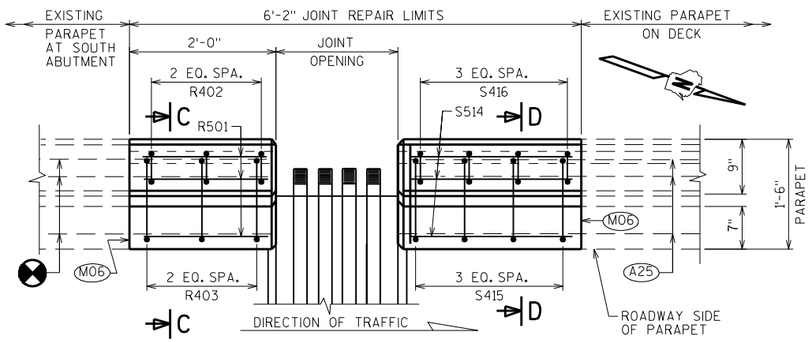
SECTION C-C



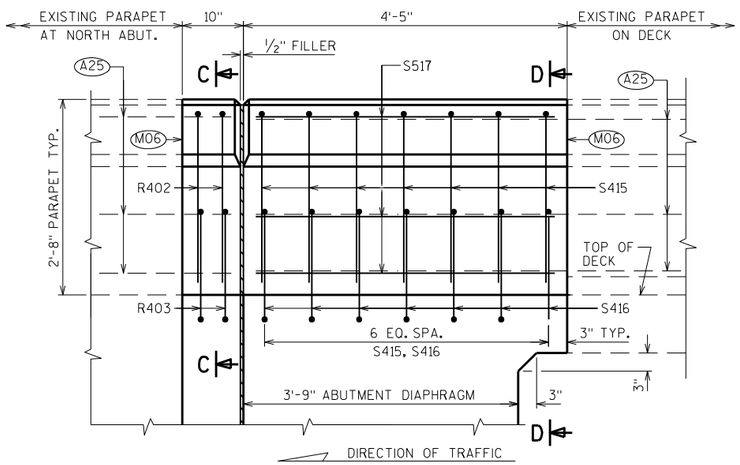
SECTION D-D



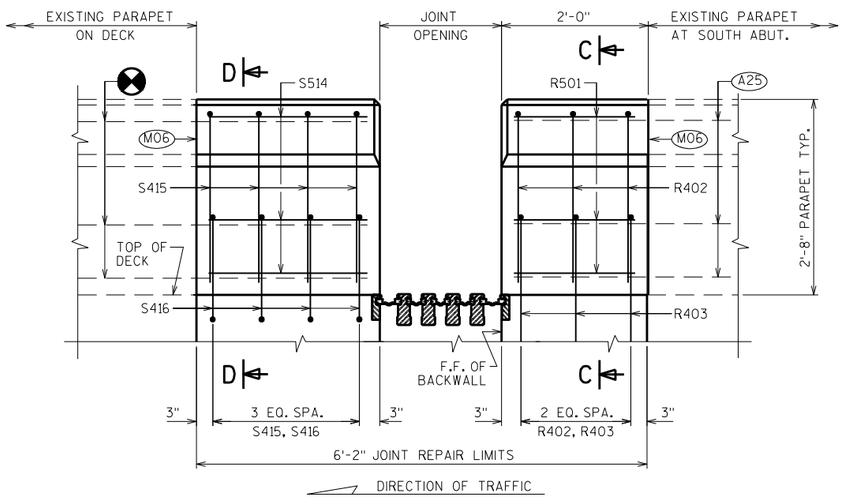
PLAN AT NORTH ABUT.



PLAN AT SOUTH ABUT.



OUTSIDE ELEVATION AT NORTH ABUT.



OUTSIDE ELEVATION AT SOUTH ABUT.

CUT PARAPET REINFORCEMENT 2" CLEAR FROM NEW EDGE OF CONCRETE FORMS

CONST. JOINT - STRIKE OFF AS SHOWN.

(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

(M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

SLOPED FACE PARAPET 'B'

SHEET 11

192

SCALE = 1

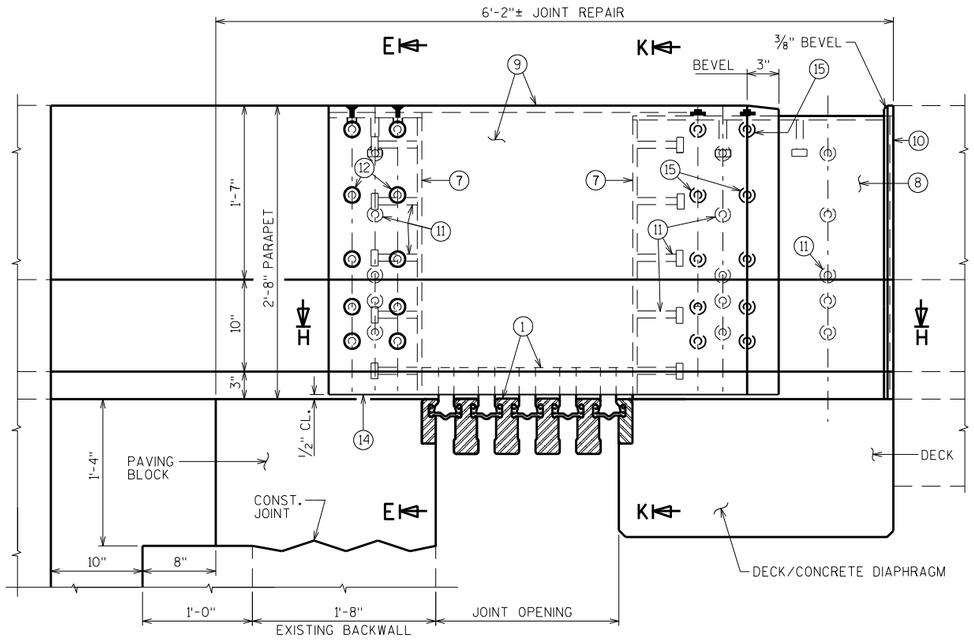
8

8

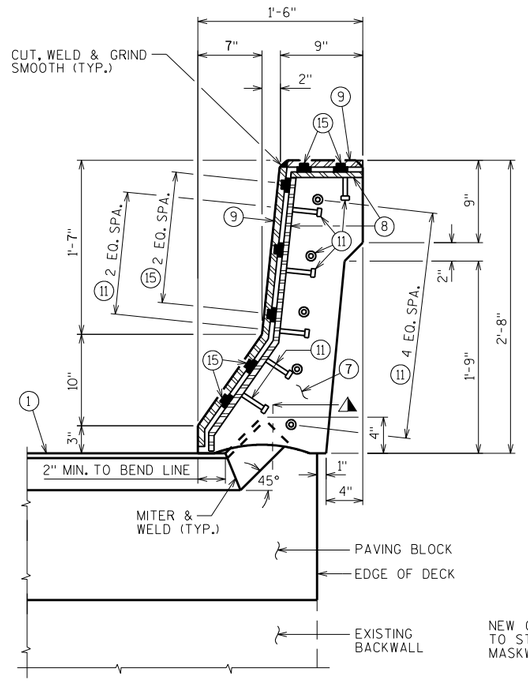
PPTB
07.11

STATE PROJECT NUMBER

8610-02-72

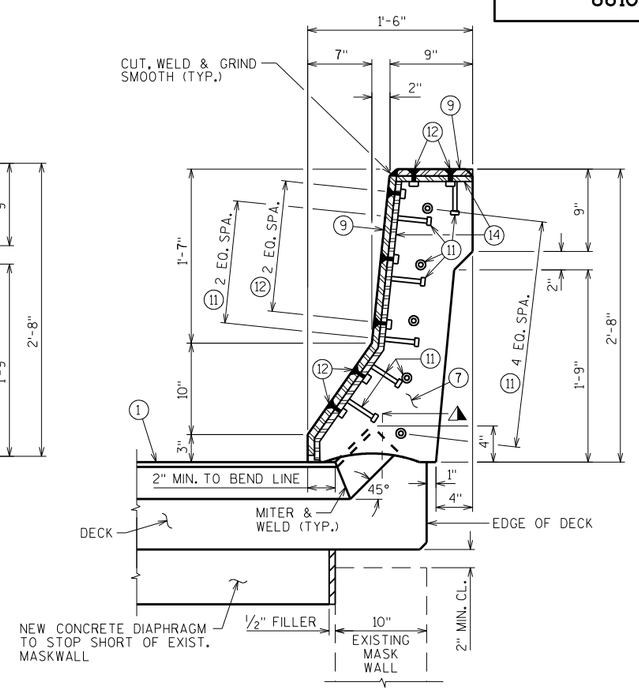


INSIDE ELEVATION OF PARAPET
(AT SOUTH ABUTMENT)



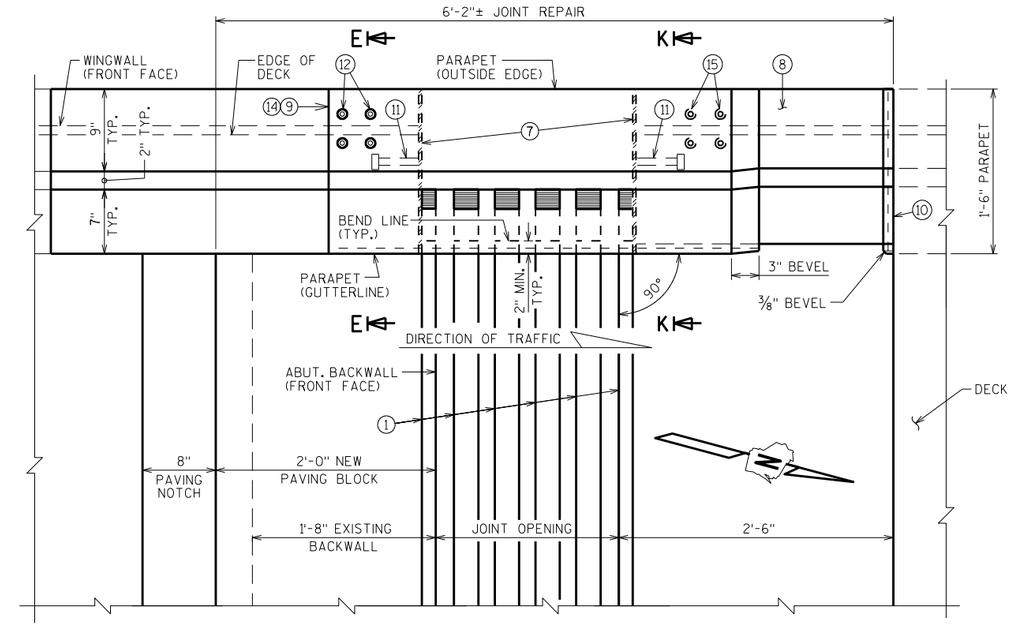
SECTION E-E

CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER TO VERIFY THE EXISTING PARARPET DIMENSION/SIZES PRIOR TO MANUFACTURING THE NEW COVER PLATES.

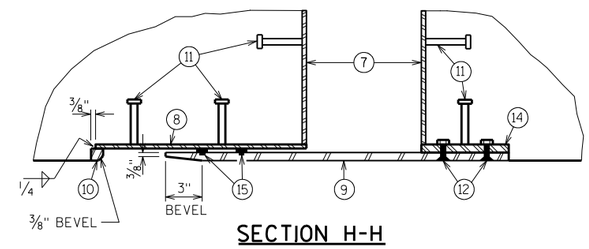


SECTION K-K

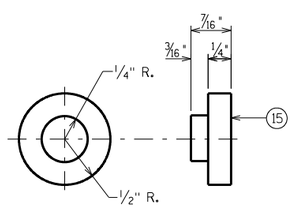
CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER TO VERIFY THE EXISTING PARARPET DIMENSION/SIZES PRIOR TO MANUFACTURING THE NEW COVER PLATES.



PLAN OF PARAPET
(AT SOUTH ABUTMENT)



SECTION H-H



ADIPRENE BUTTON DETAIL

⚠ MITER EXTRUSION ENDS AS REQ'D TO PROVIDE CLEARANCE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

COVER PLATES FOR PARAPET 'B'

SHEET 12

193

JTMODCVR2
7-15

SCALE = 1

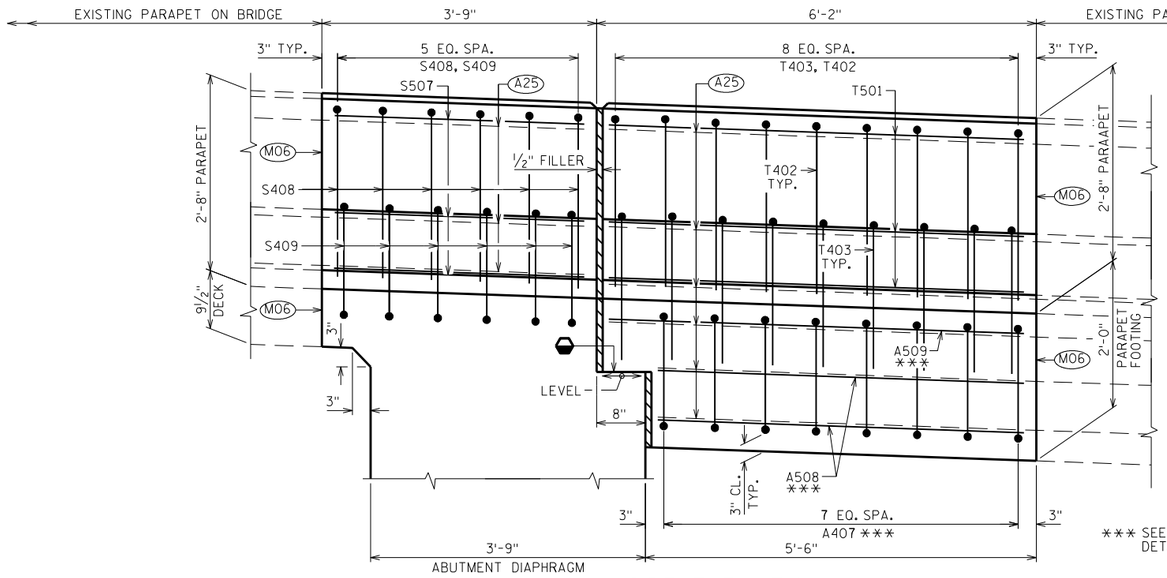
8

8

1 2 3 4 5

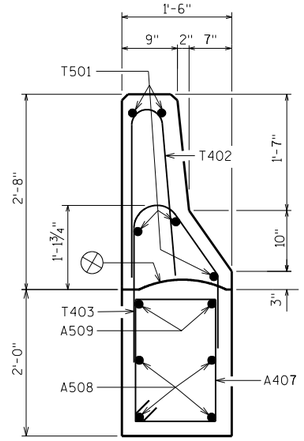
STATE PROJECT NUMBER

8610-02-72



INSIDE ELEVATION

*** SEE "NORTH ABUTMENT DETAILS 2" SHEET

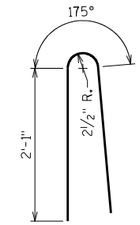


SECTION A-A

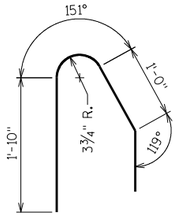
BILL OF BARS

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
T501	X	5	5'-10"			PARAPET - HORIZ.
T402	X	9	4'-9"	X		PARAPET - VERT.
T403	X	9	4'-7"	X		PARAPET - VERT.



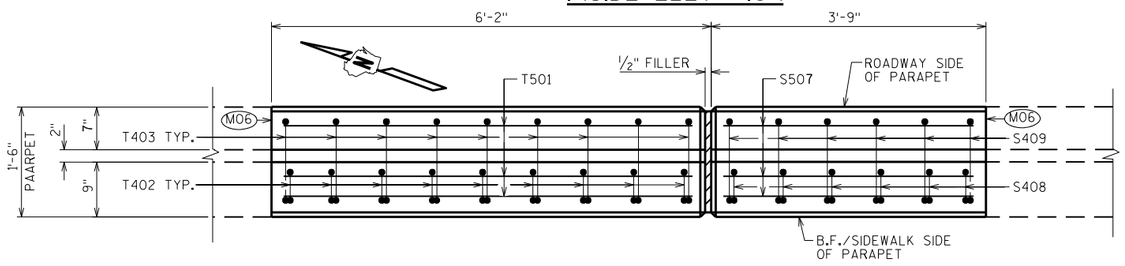
T402



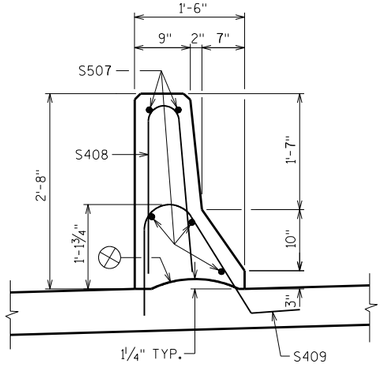
T403

A25 SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

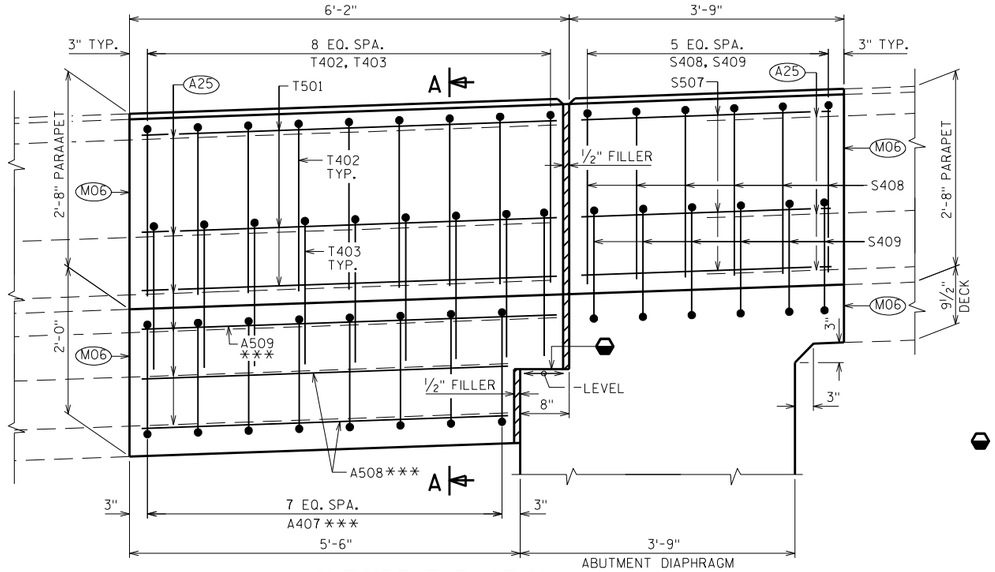
M06 ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.



PLAN



SECTION THRU PARAPET ON BRIDGE



OUTSIDE ELEVATION

= STEEL TROWEL HORIZONTAL SURFACE OF PAVING NOTCH. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS BETWEEN PARAPET FOOTING AND HORIZONTAL SURFACE OF PAVING NOTCH. TOTAL THICKNESS OF THE SHEETS SHALL BE AT LEAST 0.03".

⊗ CONST. JOINT - STRIKE OFF AS SHOWN.

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

SLOPED FACE PARAPET 'C' (NORTH ABUT.)

SHEET 13

194

SCALE = 1

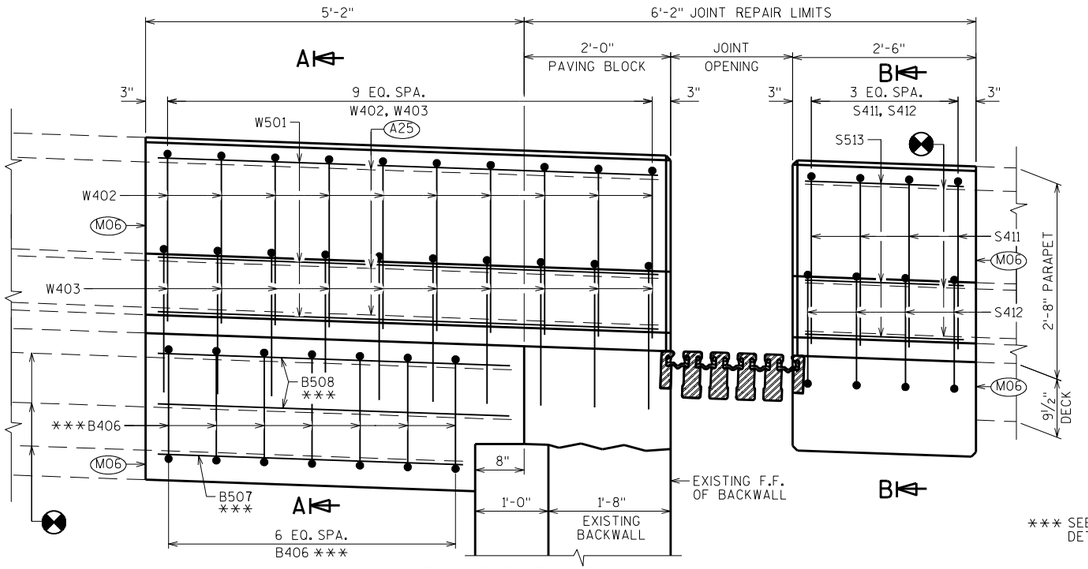
PPTC 9-1-94

8

8

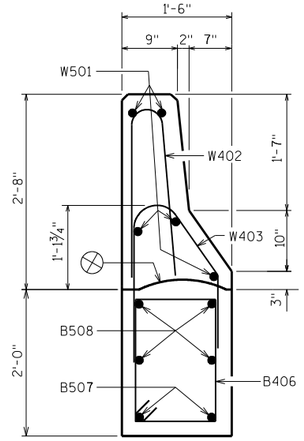
STATE PROJECT NUMBER

8610-02-72



OUTSIDE ELEVATION

*** SEE "SOUTH ABUTMENT DETAILS" SHEET

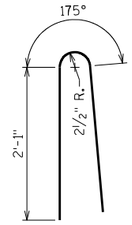


SECTION A-A

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	5	6'-10"			PARAPET - HORIZ.
W402	X	10	4'-9"	X		PARAPET - VERT.
W403	X	10	4'-7"	X		PARAPET - VERT.



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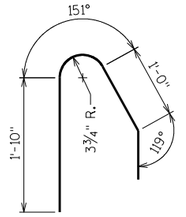
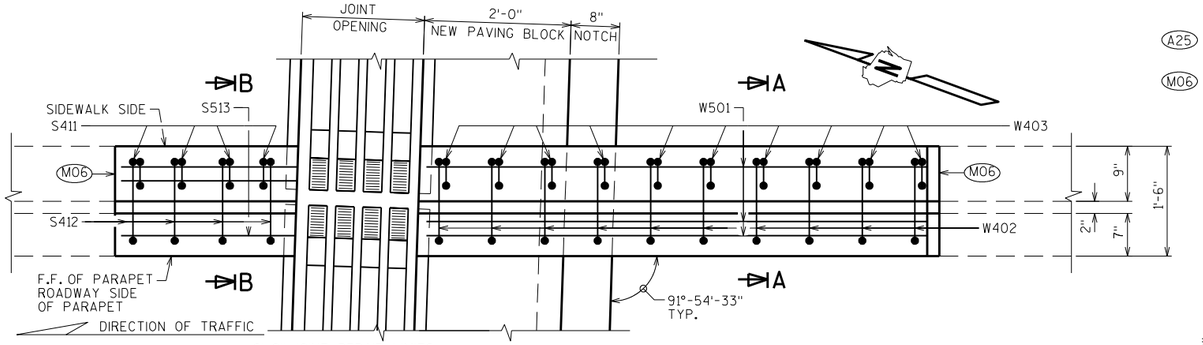
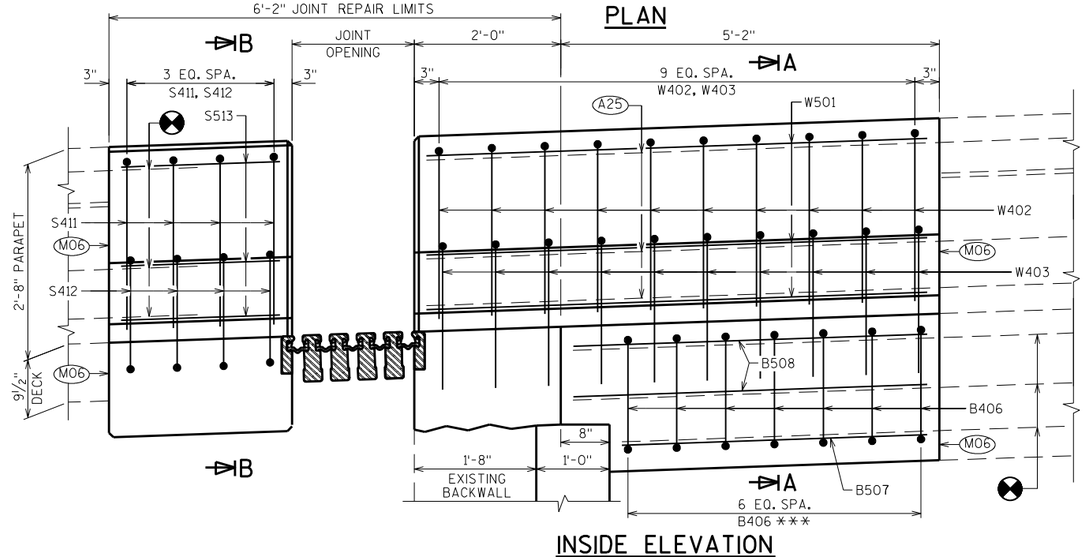


W403



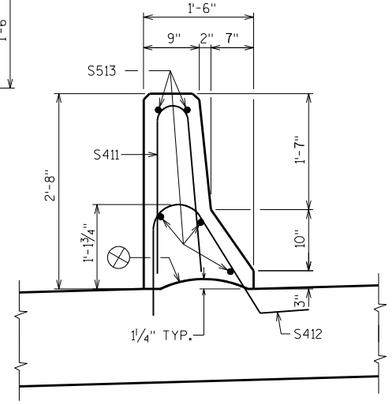
PLAN



INSIDE ELEVATION

(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

(M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.



SECTION B-B

CUT PARAPET REINFORCEMENT 2" CLEAR FROM NEW EDGE OF CONCRETE FORMS

CONST. JOINT - STRIKE OFF AS SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

SLOPED FACE PARAPET 'C' (SOUTH ABUT.)

SHEET 14

195

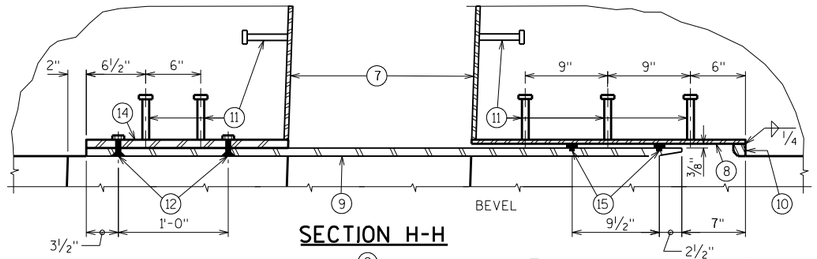
SCALE = 1

8

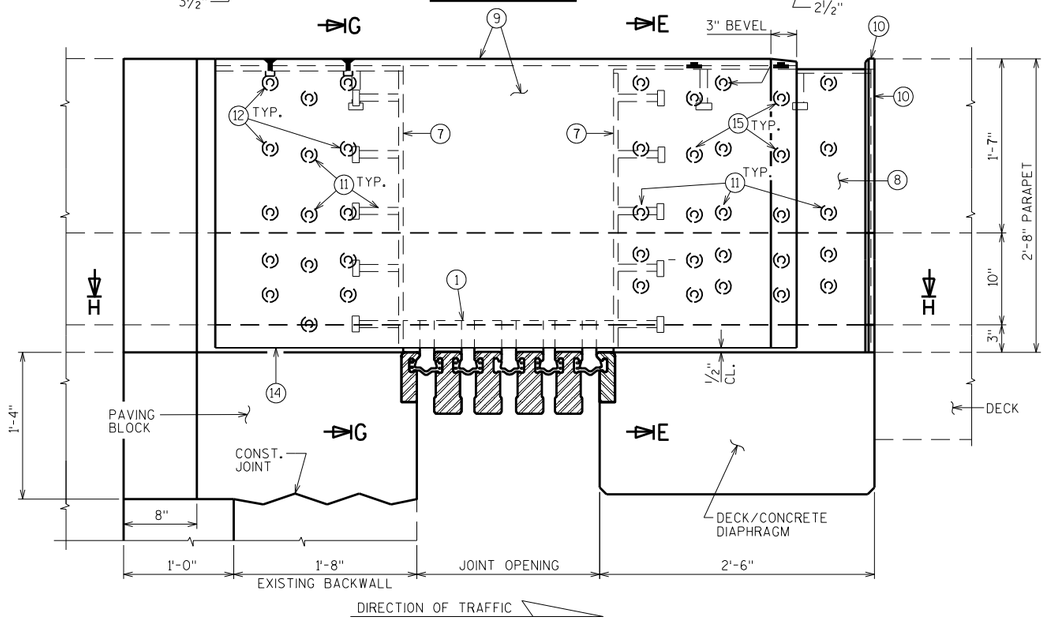
8

STATE PROJECT NUMBER

8610-02-72

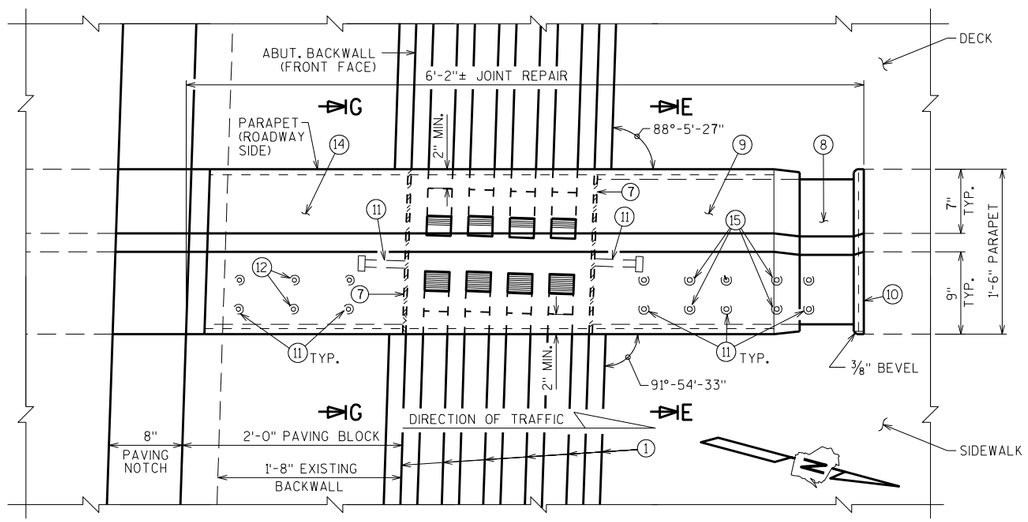


SECTION H-H



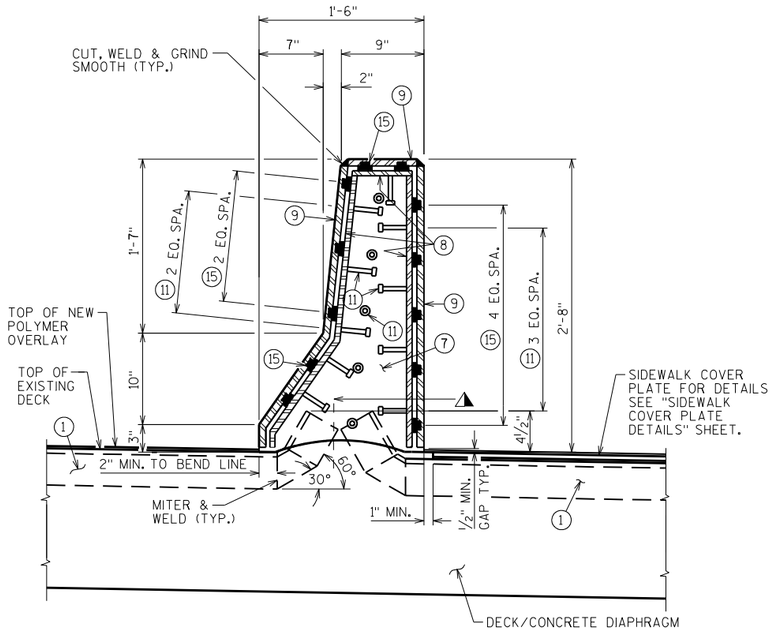
ELEVATION OF PARAPET

(SOUTH ABUTMENT)



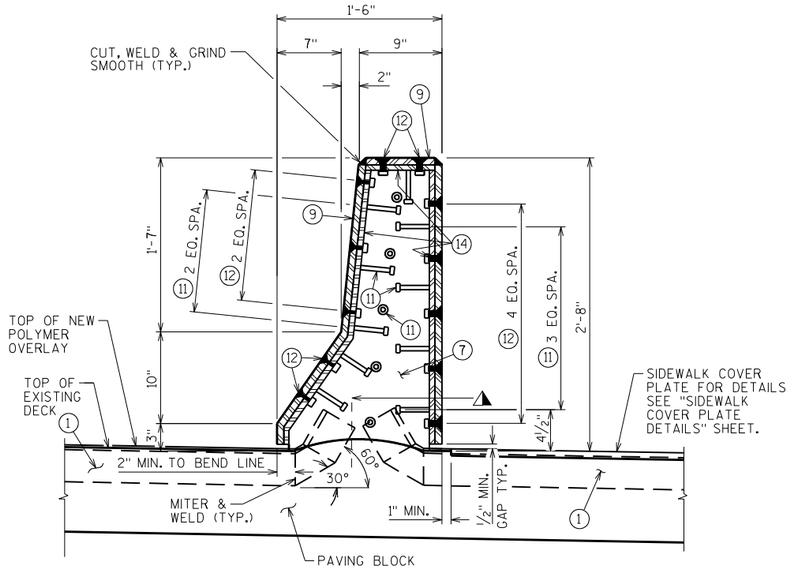
PLAN OF PARAPET

(SOUTH ABUTMENT)



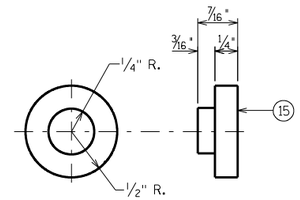
SECTION E-E

CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER TO VERIFY THE EXISTING PARARPET DIMENSION/SIZES PRIOR TO MANUFACTURING THE NEW COVER PLATES.



SECTION G-G

CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER TO VERIFY THE EXISTING PARARPET DIMENSION/SIZES PRIOR TO MANUFACTURING THE NEW COVER PLATES.



ADIPRENE BUTTON DETAIL

⚠ MITER EXTRUSION ENDS AS REQUIRED TO PROVIDE CLEARANCE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

COVER PLATES FOR PARAPET 'C'

SHEET 15

196

8

8

12345

SCALE = 1

STATE PROJECT NUMBER

8610-02-72

LEGEND

(1) MODULAR EXPANSION JOINT DEVICE, 5 CELLS.

(8) INSIDE PLATE, FABRICATE FROM 3/8" PLATE.

(9) OUTSIDE PLATE, FABRICATE FROM 5/8" PLATE.

(10) 7/8" SQUARE BAR. WELD TO NO. 8 AS SHOWN.

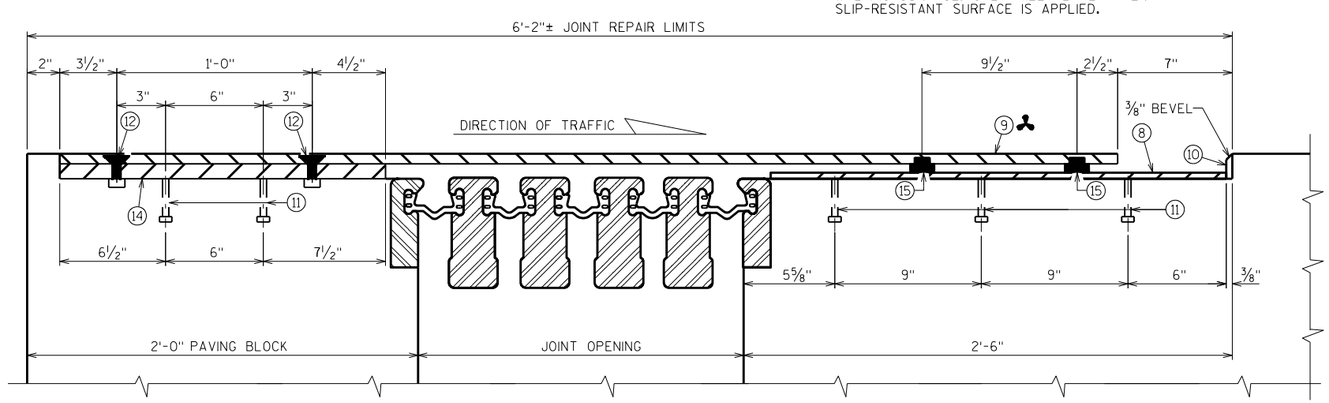
(11) 3/4" Φ X 4" LONG STUDS. WELD TO NO. 7, NO. 8 & NO. 14 AS SHOWN.

(12) 3/4" X 2" STAINLESS STEEL FLAT CTSK. SLOTTED HEAD CAP SCREWS. WITH ANTI-SEIZE LUBRICANT, RECESS 1/16" BELOW PLATE SURFACE.

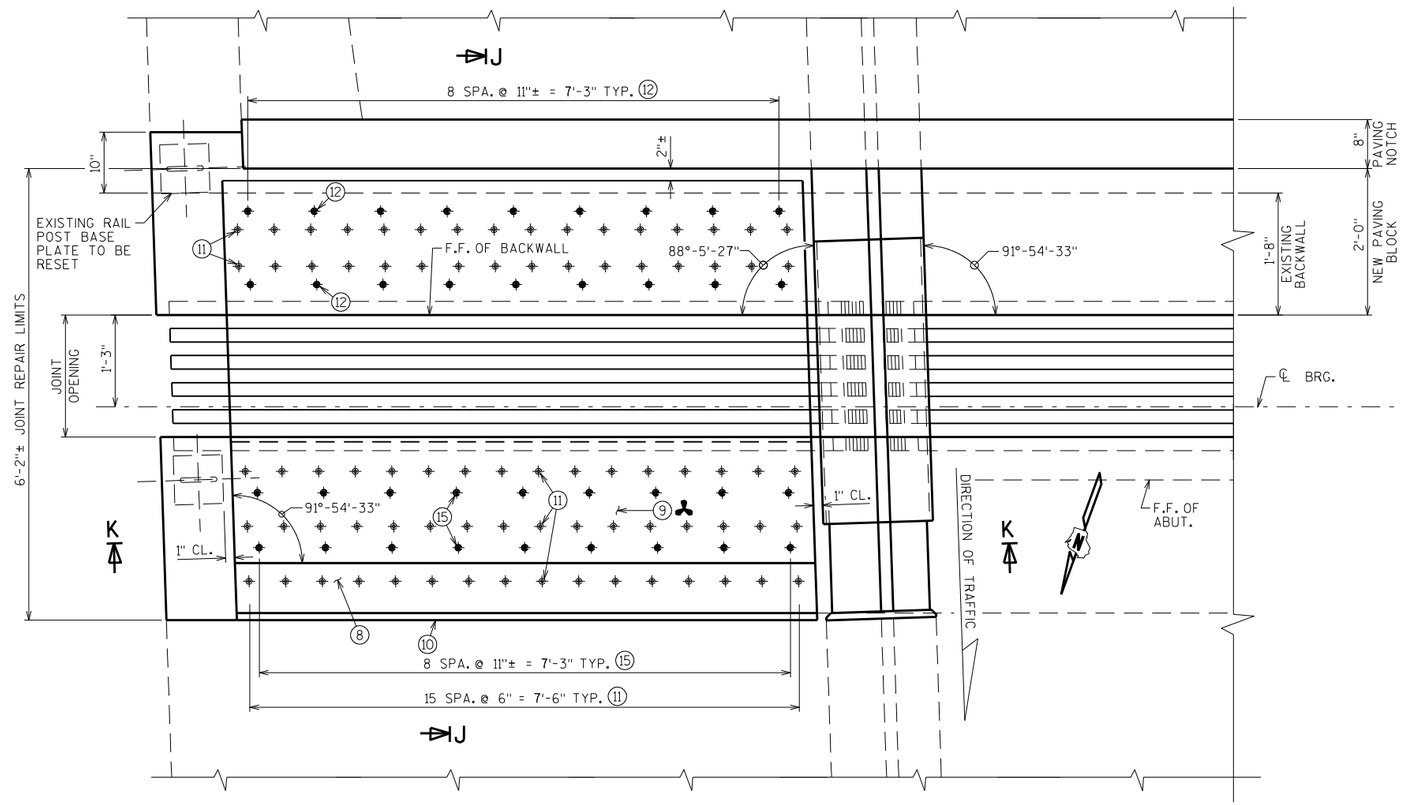
(14) INSIDE PLATE, FABRICATE FROM 5/8" PLATE.

(15) ADIPRENE BUTTON. SEE DETAIL. SET IN OUTSIDE PLATE.

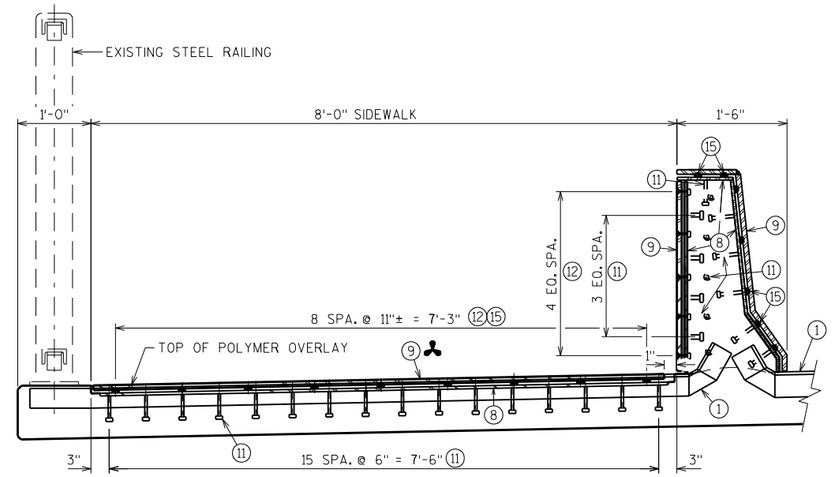
PLACE SLIP-RESISTANT SURFACE ON TOP OF WALKING SURFACE. GALVANIZE PLATE AFTER SLIP-RESISTANT SURFACE IS APPLIED.



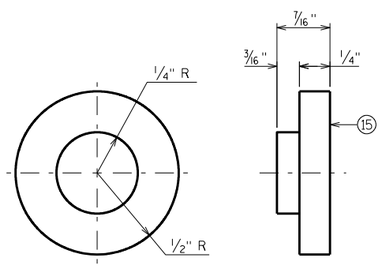
SECTION J-J



PLAN



SECTION K-K



ADIPRENE BUTTON DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

SIDEWALK COVER PLATE DETAILS

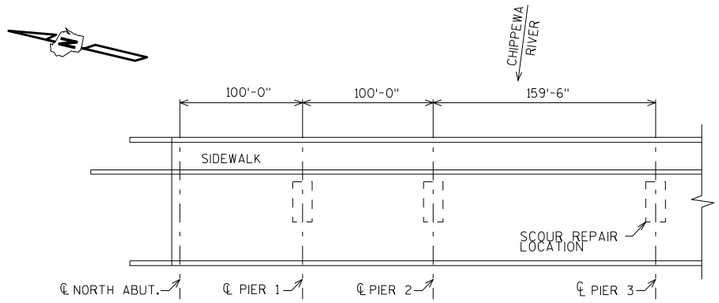
SHEET 16

197

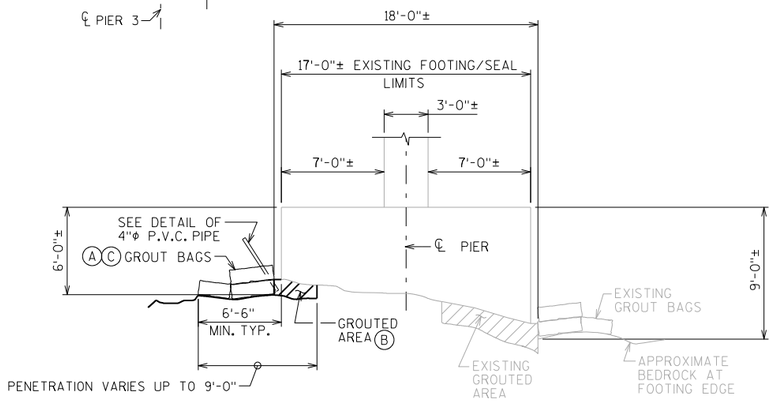
SCALE = 1.5

STATE PROJECT NUMBER

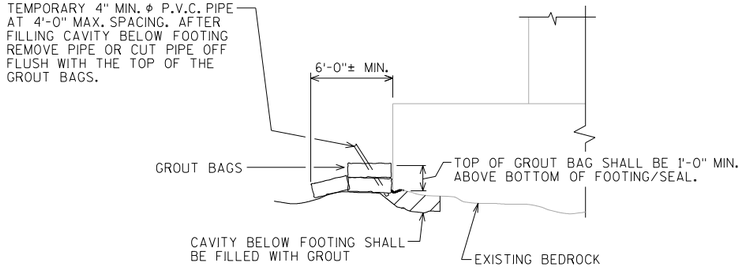
8610-02-72



PLAN
WB LANE STH 29/124



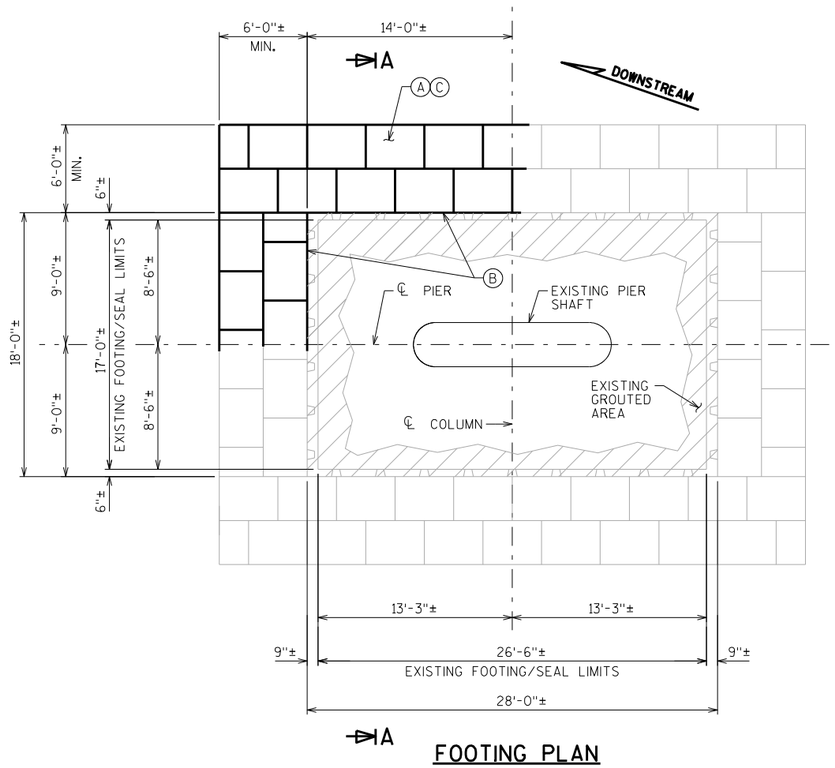
SECTION A-A THRU FOOTING



4" ϕ P.V.C. PIPE DETAIL

NOTES:

1. STACK BAGS AS REQUIRED. JOINTS BETWEEN BAGS IN SUCESSIVE ROWS SHALL BE STAGGERED.
2. PIN ROWS TOGETHER WITH #5 BARS @ 4'-0" MAX. SPACING.
3. PLACE TOP BAG TIGHT AGAINST THE FACE OF FOOTING. FOOTING MAY HAVE A JAGGED EDGE.
4. GROUT BAGS SHALL BE A MIN. OF 3'-0" WIDE X 4'-0" LONG X 1'-0" THK., AND A MAXIMUM OF 3'-6" WIDE X 8'-0" LONG X 2'-6" THICK.
5. DEPTH OF WATER VARIES TO 26'-0" DEEP.
6. ALL DIMENSIONS SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLANS.



FOOTING PLAN

REPAIR PROCESS

(A) - REMOVE EXISTING GROUT BAGS THAT ARE UNDERMINED. REMOVE MATERIAL DOWN TO BEDROCK AS DIRECTED BY THE ENGINEER. WORK TO BE INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-9-146".

(B) - INSPECT GROUTED AREA. REMOVE UNSOUND GROUT AND MATERIAL DOWN TO BEDROCK UNDER FOOTING/SEAL, AS DIRECTED BY THE ENGINEER.

(C) - PLACE NEW GROUT BAGS ON BEDROCK IN AREA OF REMOVAL. TOP LAYER OF GROUT BAGS TO MATCH ELEVATION OF ADJOINING EXISTING GROUT BAGS. GROUT UNDER FOOTING/SEAL AS DIRECTED BY THE ENGINEER.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-146

DRAWN BY DDS | PLANS CK'D. MSC

SCOUR REPAIR (PIER 3)

SHEET 17

198

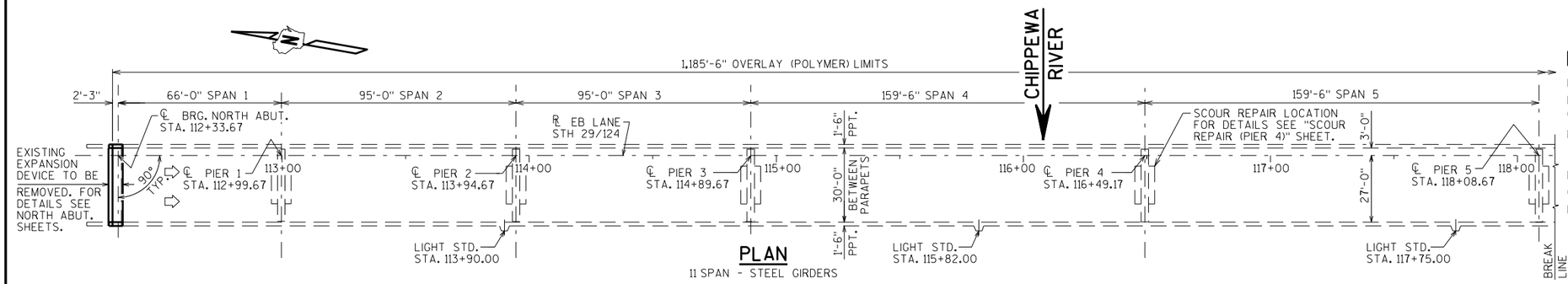
SCALE = 5

8

8

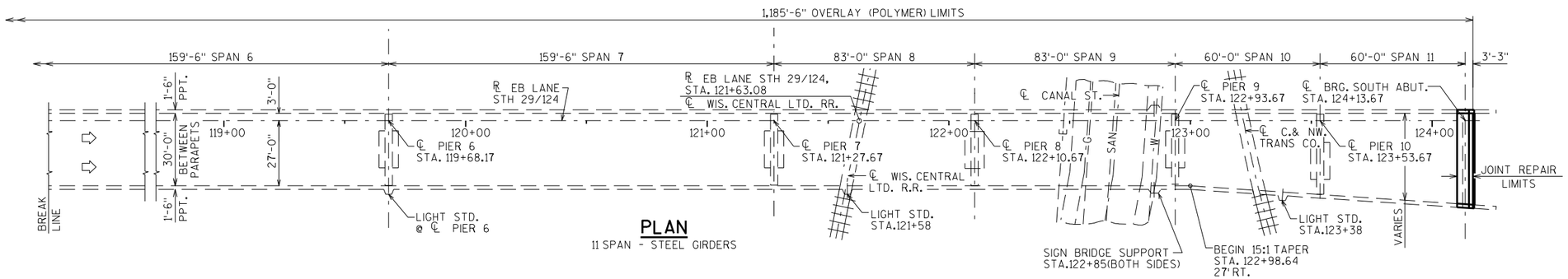
STATE PROJECT NUMBER

8610-02-72



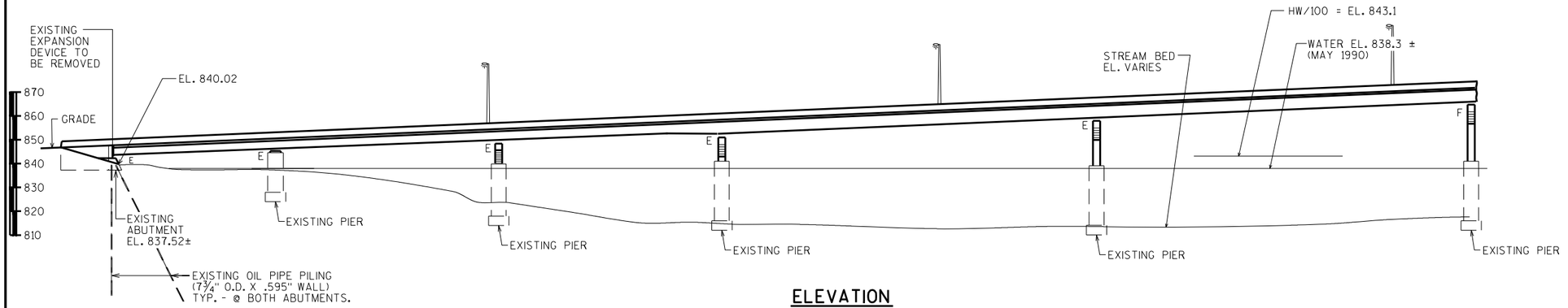
PLAN

11 SPAN - STEEL GIRDERS

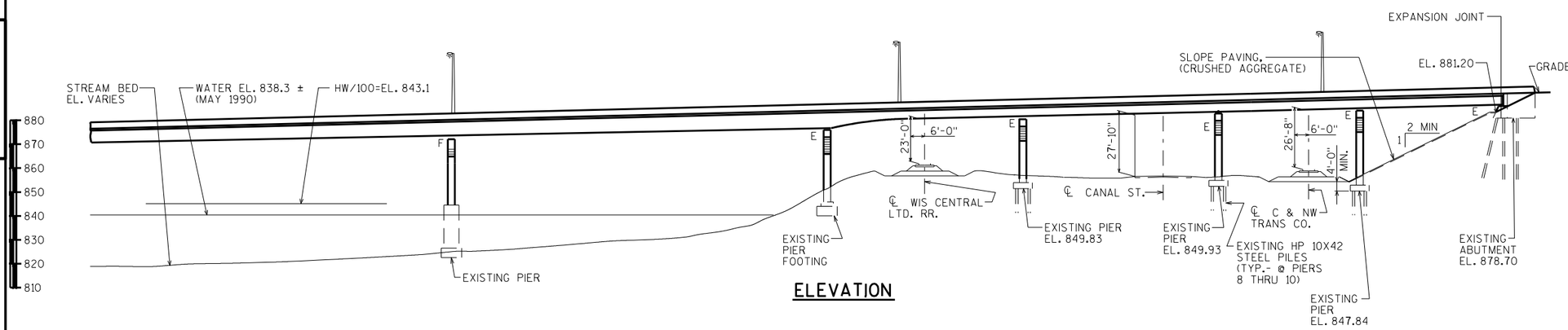


PLAN

11 SPAN - STEEL GIRDERS



ELEVATION



ELEVATION

DESIGN DATA

LIVE LOAD:

INVENTORY RATING; HS-26

OPERATIONAL RATING; HS-44

MAXIMUM STANDARD PERMIT VEHICLE LOAD = 250 KIPS.

MATERIAL PROPERTIES:

CONCRETE MASONRY SUPERSTRUCTURE — f'c = 4,000 P.S.I.

BAR STEEL REINFORCEMENT, GRADE 60 — fy = 60,000 P.S.I.

LIST OF DRAWINGS

1. POLYMER OVERLAY
2. QUANTITIES
3. NORTH ABUTMENT REMOVAL
4. NORTH ABUTMENT REINFORCEMENT
5. NORTH ABUTMENT DETAILS 1
6. NORTH ABUTMENT DETAILS 2
7. SOUTH ABUTMENT REMOVAL
8. SOUTH ABUTMENT REINFORCEMENT
9. SUPERSTRUCTURE DETAILS
10. EXPANSION DEVICE (MODULAR)
11. SLOPED FACE PARAPET 'B'
12. COVER PLATES FOR PARAPET 'B'
13. SCOUR REPAIR (PIER 4)

STRUCTURE DESIGN CONTACTS:
MATTHEW COUPAR (608) 266-5083
AARON BONK (608) 261-0261

NO.	DATE	REVISION	BY

Plans Prepared By **WISDOT**

BUREAU OF STRUCTURES

ACCEPTED William C. Dreher 7/21/16

CHIEF STRUCTURES DESIGN ENGINEER — DATE

STRUCTURE B-9-147

STH 124 SB OVER THE CHIPPEWA RIVER

COUNTY	CHIPPEWA	~~TOWN~~/CITY ~~VILLAGE~~	CHIPPEWA FALLS
DESIGN SPEC.	REHABILITATION		N/A
DESIGNED BY	MSC	DESIGN CK'D.	REL
DRAWN BY	DDS	PLANS CK'D.	MSC

POLYMER OVERLAY

SHEET 1 OF 13

199

I.D. 8610-02-02B

DATE: MAY 2016

SCALE = 25.0

STATE PROJECT NUMBER

8610-02-72

GENERAL NOTES

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.

APPLY "POLYMER OVERLAY" TO ENTIRE DECK INCLUDING NEW AND EXISTING CONCRETE THAT ARE TO BE COMPLETED PRIOR TO APPLYING POLYMER OVERLAY.

APPLY "PIGMENTED SURFACE SEALER" TO THE ENTIRE LENGTH OF EXISTING AND NEW PARAPETS INCLUDING THE EXISTING WING PARAPETS. APPLY TO THE FRONT FACE AND TOP OF PARAPETS.

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

THE GRADATION OF THE STRUCTURE BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 209.2.2 OF THE STANDARD SPECIFICATIONS FOR GRADE 1 MATERIAL.

APPLY BRIDGE SEAT PROTECTION, AS PER SECTION 502.3.12 OF THE STANDARD SPECIFICATIONS, TO THE TOP SURFACES OF THE SOUTH ABUTMENT BELOW EXPANSION DEVICE.

CLEAN AND PAINT THE EXISTING STEEL GIRDERS AT THE ABUTMENTS 6' FROM THE GIRDER ENDS ALONG WITH THE DIAPHRAGMS, STIFFENERS AND EXPOSED HARDWARE. THE COLOR OF THE FINISH EPOXY TOP COAT SHALL BE BROWN SIMILAR TO RUSTED STEEL, (FEDERAL STANDARD COLOR NO. 20059) OR SIMILAR COLOR PREAPPROVED BY THE ENGINEER. TO BE PAID FOR UNDER BID ITEM "STRUCTURE REPAINTING RECYCLED ABRASIVE B-9-147".

ALL BEARINGS AT THE SOUTH ABUTMENT MUST BE CLEANED AND REPAINTED. THE COLOR OF THE TOP COAT SHALL BE BROWN (FEDERAL COLOR NO. 20059) OR SIMILAR COLOR PREAPPROVED BY THE ENGINEER, TO BE PAID FOR UNDER BID ITEM "CLEANING AND REPAINTING BEARINGS".

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

THE CONTRACTOR SHALL SUPPLY A NEW NAME PLATE IN ACCORDANCE WITH SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS AND THE STANDARD DETAIL DRAWINGS. NAME PLATE TO SHOW ORIGINAL CONSTRUCTION YEAR 1994.

ANY EXCAVATION NECESSARY TO COMPLETE THE JOINT REMOVAL (NORTH ABUT.) AND THE JOINT REPAIR (SOUTH ABUT.) AT THE ABUTMENTS IS TO BE CONSIDERED INCIDENTAL TO THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-9-147".

PREPARATION DECKS TYPE 1 AND CONCRETE SURFACE REPAIR AREAS ARE TO BE DETERMINED BY THE ENGINEER. DECK PREPARATION AND CONCRETE SURFACE REPAIR AREAS SHALL BE FILLED WITH "CONCRETE MASONRY DECK PATCHING".

THE BRIDGE STATIONING PROVIDED IS BASED OFF OF THE ORIGINAL STRUCTURE PLANS AND DOES NOT CORRELATE WITH THE PROPOSED ROADWAY PLANS.

NOTE TO CONTRACTOR:

DURING THE ORIGINAL CONSTRUCTION OF THIS BRIDGE THE BRIDGE MOVED DOWNGRADE TO THE NORTH AND CLOSED THE NORTH ABUTMENT JOINT DUE TO THE BRIDGE'S STEEP GRADE AND FLEXIBLE PIERS.

SINCE THEN THERE HAVE BEEN STEEL PLATES INSERTED BETWEEN THE GIRDER ENDS AND THE ABUTMENT BACKWALL. THE GIRDERS ARE CURRENTLY IN THE CORRECT POSITION. AT THE NORTH ABUTMENT THE CONTRACTOR SHALL SUPPORT THE SUPERSTRUCTURE SO IT REMAINS IN THE CURRENT HORIZONTAL LOCATION AND DOES NOT MOVE DOWNGRADE DURING THE DURATION OF THE WORK. THE WORK INCLUDES REMOVING STEEL PLATES BETWEEN THE GIRDERS AND THE BACKWALL, REMOVING BEARINGS, REBUILDING THE BEAM SEATS AND POURING THE ABUTMENT CONCRETE DIAPHRAGM. THE SUPERSTRUCTURE SHALL NOT BE RELEASED UNTIL THE NORTH ABUTMENT CONCRETE DIAPHRAGM HAS CURED. THIS WORK IS PAID BY BID ITEM "BRIDGE JACKING AND RESTRAINT B-9-147".

TOTAL ESTIMATED QUANTITIES

	BID ITEM NUMBER	BID ITEMS	UNIT	SUPER.	NORTH ABUT.	PIER 1	PIER 2	PIER 3	PIER 4	PIER 5	PIER 6	PIER 7	PIER 8	SOUTH ABUT.	TOTALS
	203.0200	REMOVING OLD STRUCTURE STA. 112+33.00	LS	—	—	—	—	—	—	—	—	—	—	—	1
	206.1000	EXCAVATION FOR STRUCTURES BRIDGES B-9-147	LS	—	—	—	—	—	—	—	—	—	—	—	1
	502.0100	CONCRETE MASONRY BRIDGES	CY	6	24	—	—	—	—	—	—	—	—	8	38
	502.3110.S	EXPANSION DEVICE MODULAR B-9-147	LS	—	—	—	—	—	—	—	—	—	—	—	1
	502.3210	PIGMENTED SURFACE SEALER	SY	920	—	—	—	—	—	—	—	—	—	—	920
	502.4205	ADHESIVE ANCHORS NO. 5 BAR	EACH	—	—	—	—	—	—	—	—	—	—	80	80
	502.4206	ADHESIVE ANCHORS NO. 6 BAR	EACH	—	132	—	—	—	—	—	—	—	—	76	208
	505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,015	3,455	—	—	—	—	—	—	—	—	900	5,370
	506.2605	BEARING PADS ELASTOMERIC NON-LAMINATED	EACH	—	4	—	—	—	—	—	—	—	—	—	4
	506.7050.S	REMOVING BEARINGS B-9-147	EACH	—	4	—	—	—	—	—	—	—	—	—	4
	509.0301	PREPARATION DECKS TYPE 1	SY	15	—	—	—	—	—	—	—	—	—	—	15
	509.1000	JOINT REPAIR	SY	—	—	—	—	—	—	—	—	—	—	28	28
	509.1500	CONCRETE SURFACE REPAIR	SF	5	—	—	—	—	—	—	—	—	—	—	5
	509.5100.S	POLYMER OVERLAY	SY	4,005	—	—	—	—	—	—	—	—	—	—	4,005
	516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	—	7	—	—	—	—	—	—	—	—	7	14
	517.1800.S	STRUCTURE REPAINTING RECYCLED ABRASIVE B-9-147	LS	—	—	—	—	—	—	—	—	—	—	—	1
	517.4500.S	NEGATIVE PRESSURE CONTAINMENT AND COLLECTION OF WASTE MATERIALS B-9-147	LS	—	—	—	—	—	—	—	—	—	—	—	1
	517.6001.S	PORTABLE DECONTAMINATION FACILITY	EACH	1	—	—	—	—	—	—	—	—	—	—	1
**	SPV.0035	CONCRETE MASONRY DECK PATCHING	CY	2	—	—	—	—	—	—	—	—	—	—	2
	SPV.0035	SCOUR REPAIR GROUT	CY	—	—	—	—	—	5	—	—	—	—	—	5
	SPV.0035	SCOUR REPAIR GROUT BAGS	CY	—	—	—	—	—	38	—	—	—	—	—	38
	SPV.0060	CLEANING AND PAINTING BEARINGS	EACH	—	—	—	—	—	—	—	—	—	—	5	5
	SPV.0090	SAWING PAVEMENT DECK PREPARATION AREAS	LF	16	—	—	—	—	—	—	—	—	—	—	16
	SPV.0105.02	BRIDGE JACKING AND RESTRAINT B-9-147	LS	—	—	—	—	—	—	—	—	—	—	—	1
		NON-BID ITEMS													
		BRIDGE SEAT PROTECTION	LS	—	—	—	—	—	—	—	—	—	—	1	1
		FILLER	SIZE	—	—	—	—	—	—	—	—	—	—	½", ¾", 1½"	½", ¾", 1½"
				—	—	—	—	—	—	—	—	—	—	—	—

** = INCLUDES CONCRETE FOR BID ITEMS: "PREPARATION DECKS TYPE 1" AND "CONCRETE SURFACE REPAIR"

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

DRAWN BY DDS | PLANS CK'D. MSC

QUANTITIES

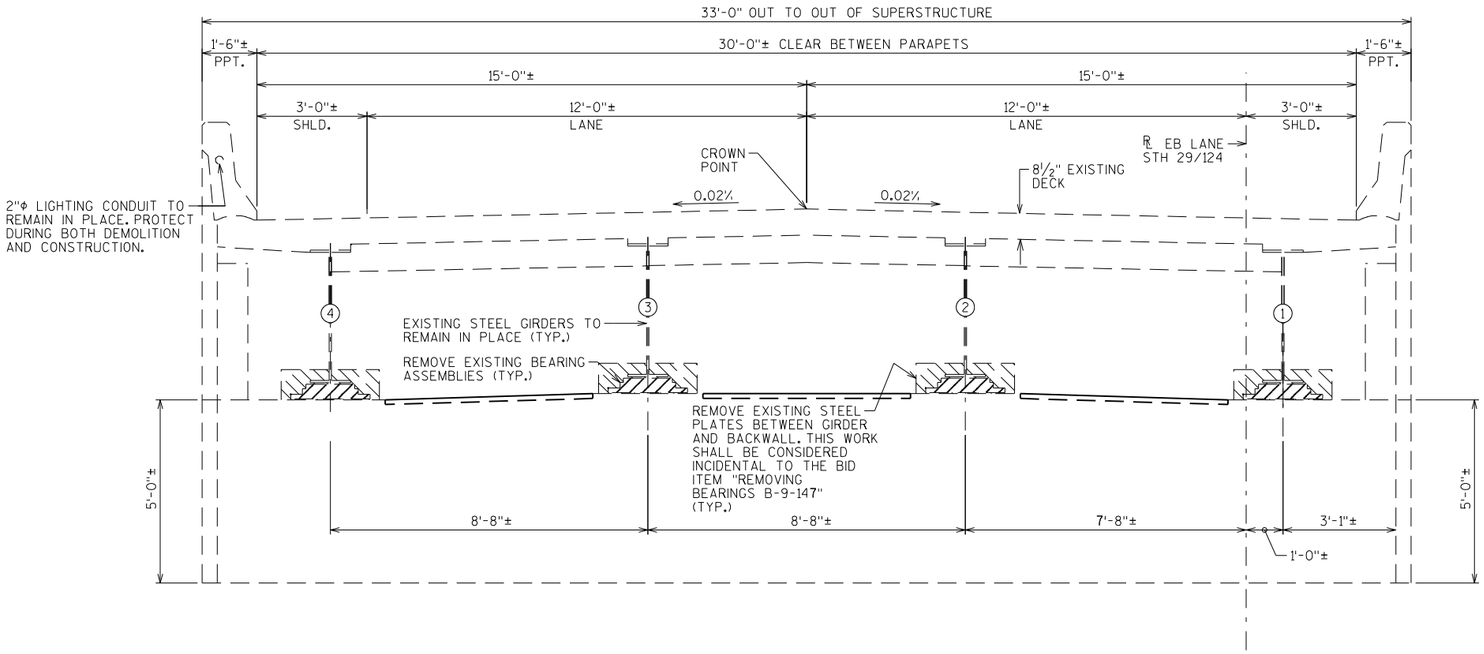
SHEET 2

200

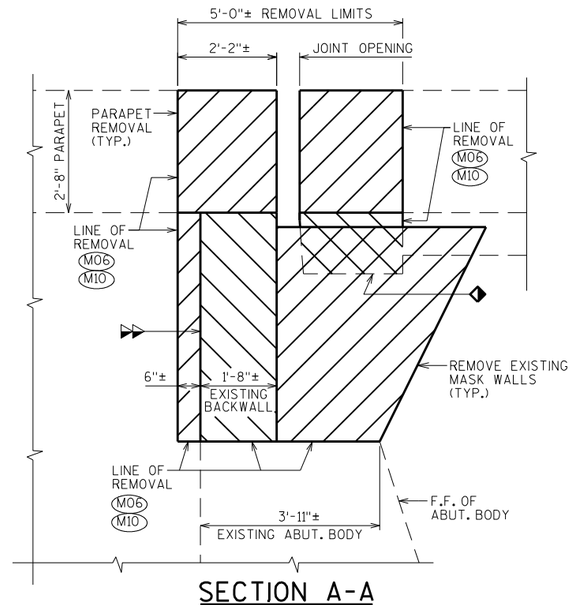
SCALE = 1

STATE PROJECT NUMBER

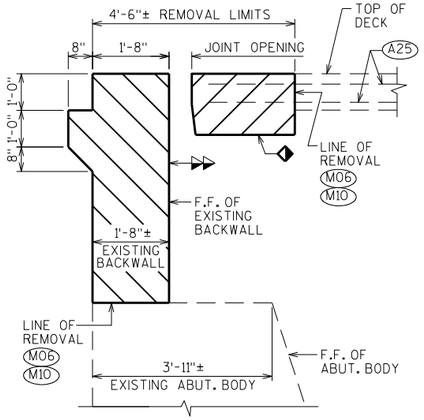
8610-02-72



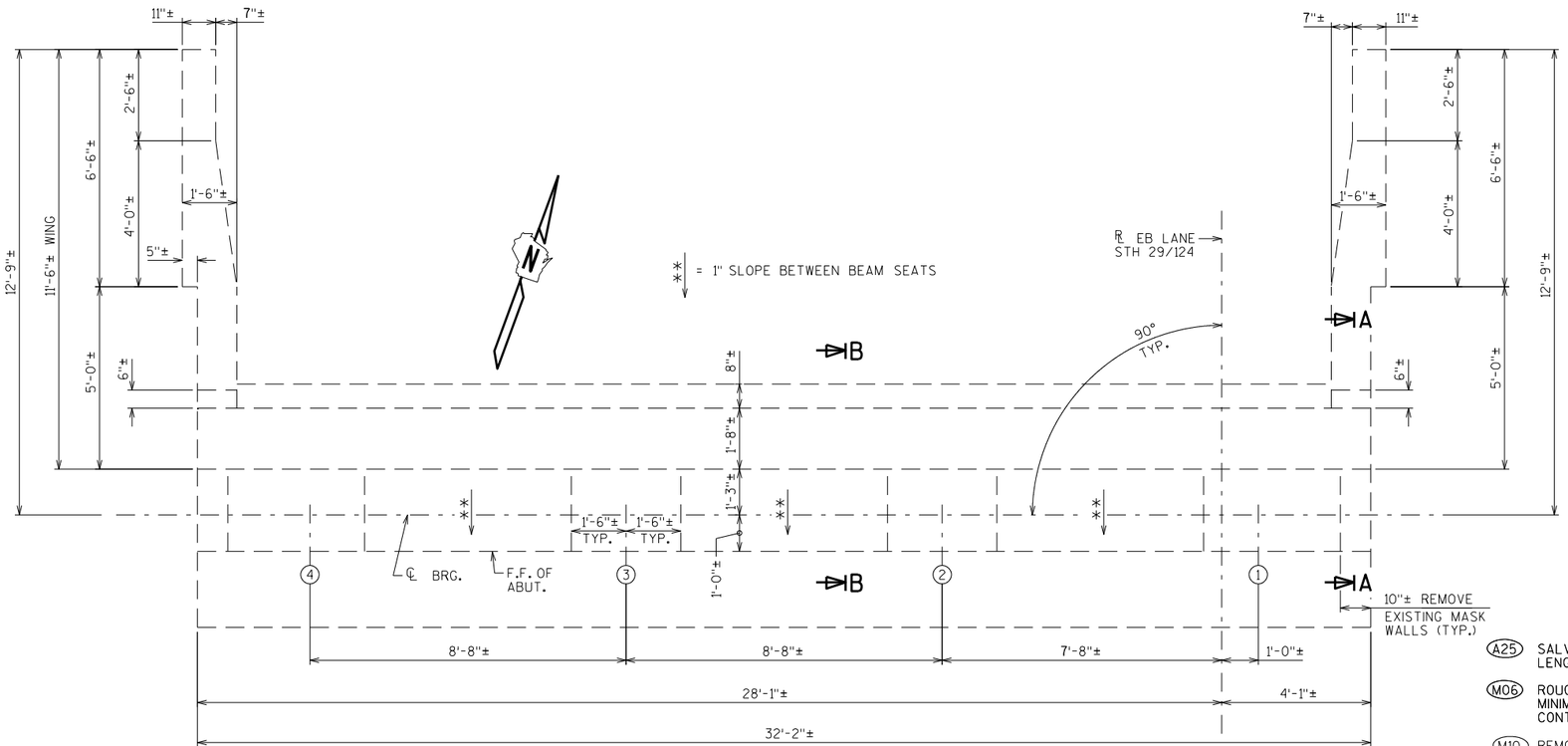
CROSS SECTION OF ROADWAY AT NORTH ABUTMENT - LOOKING NORTH



SECTION A-A



SECTION B-B



PLAN

REMOVE EXISTING BACKWALL.

REMOVE CONCRETE DIAPHRAGM.

A25 SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

M06 ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

M10 REMOVAL LINES ARE TO BE DEFINED BY A 1" DEEP SAWCUT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

DRAWN BY DDS | PLANS CK'D. MSC

NORTH ABUTMENT REMOVAL

SHEET 3

201

SCALE = 2.0

8

8

STATE PROJECT NUMBER

8610-02-72

GRIND SLOPED SURFACE LEVEL AND SMOOTH.

STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER THE ENTIRE ABUTMENT BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. TOTAL THICKNESS OF THE SHEETS SHALL BE AT LEAST 0.03".

EXISTING STEEL GIRDERS TO REMAIN IN PLACE. CLEAN AND PAINT LAST 6'-0" OF GIRDERS AT ABUTMENT ENDS INCLUDING GIRDERS, DIAPHRAGMS, STIFFENERS, AND ANY EXPOSED/ASSOCIATED HARDWARE.

CUT EXISTING WING REINFORCEMENT 2" CLEAR FROM B.F. OF ABUTMENT.

(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.

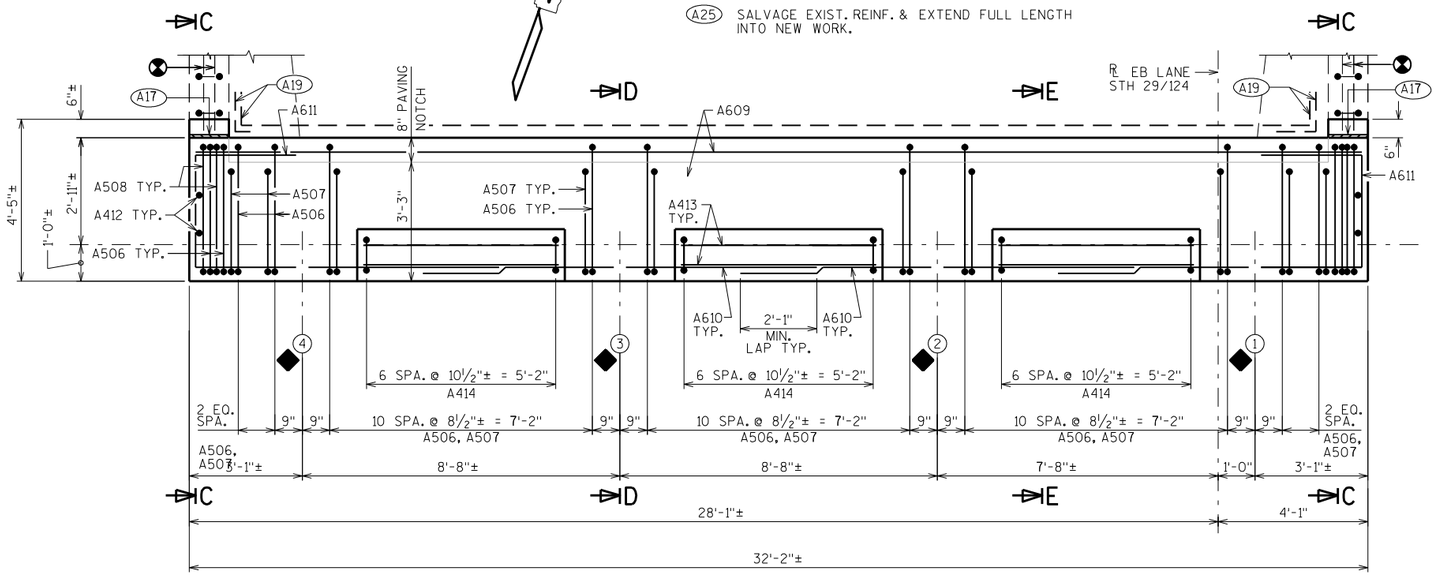
(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A24) MASONRY ANCHORS TYPE L NO. 6 BARS, EMBED 1'-3" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

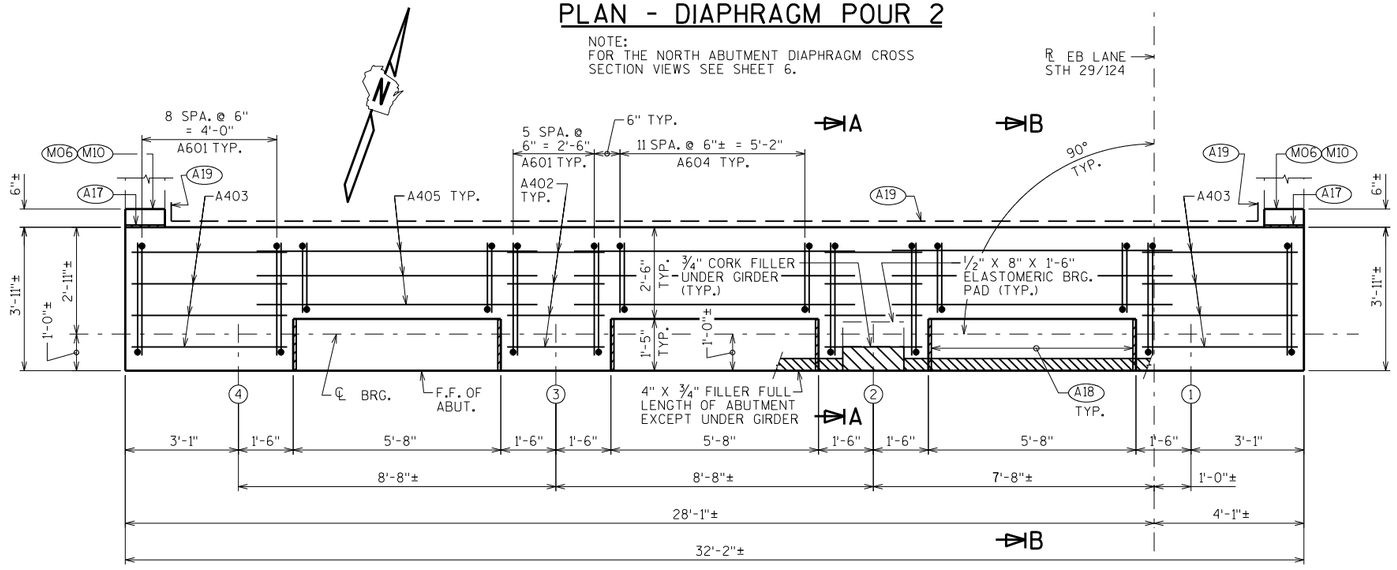
(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

(M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

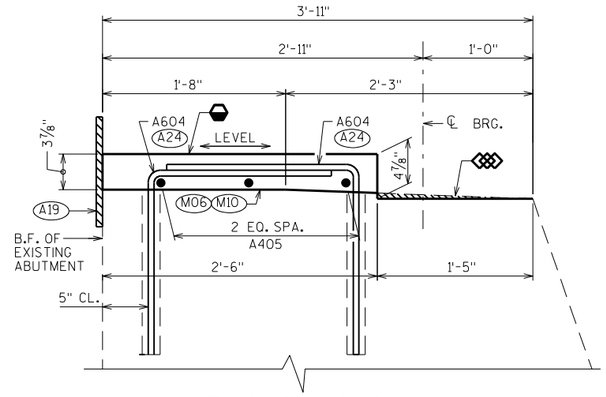
(M10) REMOVAL LIMITS ARE TO BE DEFINED BY A 1" DEEP SAWCUT.



PLAN - DIAPHRAGM POUR 2

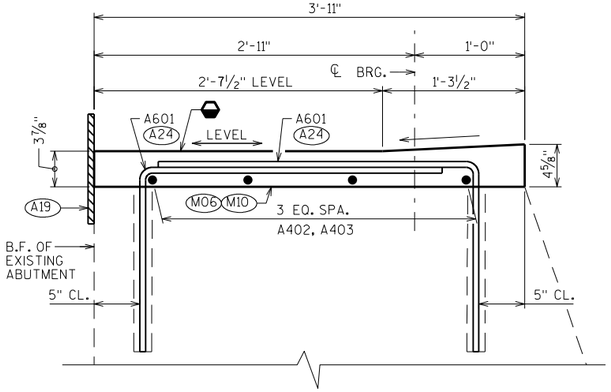


PLAN - DIAPHRAGM POUR 1



SECTION B-B

POUR 1



SECTION A-A

POUR 1

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

DRAWN BY DDS | PLANS CK'D. MSC

NORTH ABUTMENT REINFORCEMENT

SHEET 4

202

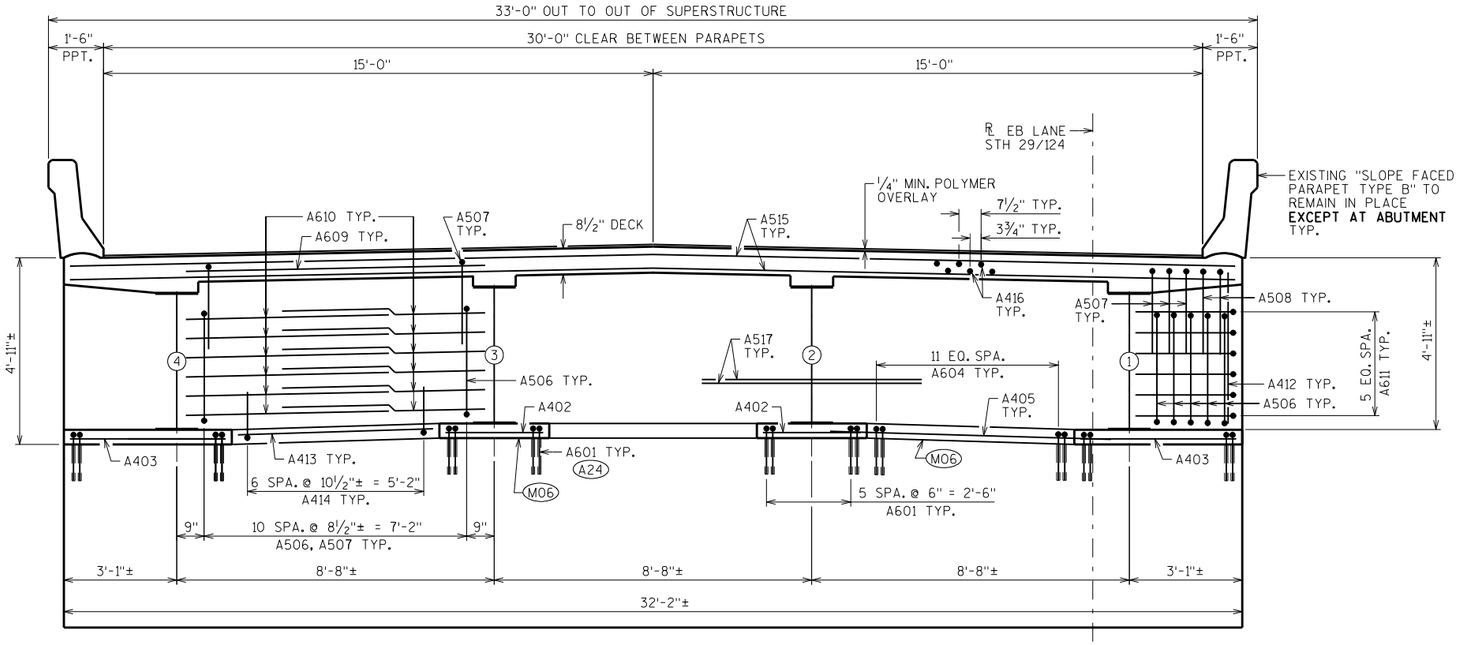
SCALE = 2.0

8

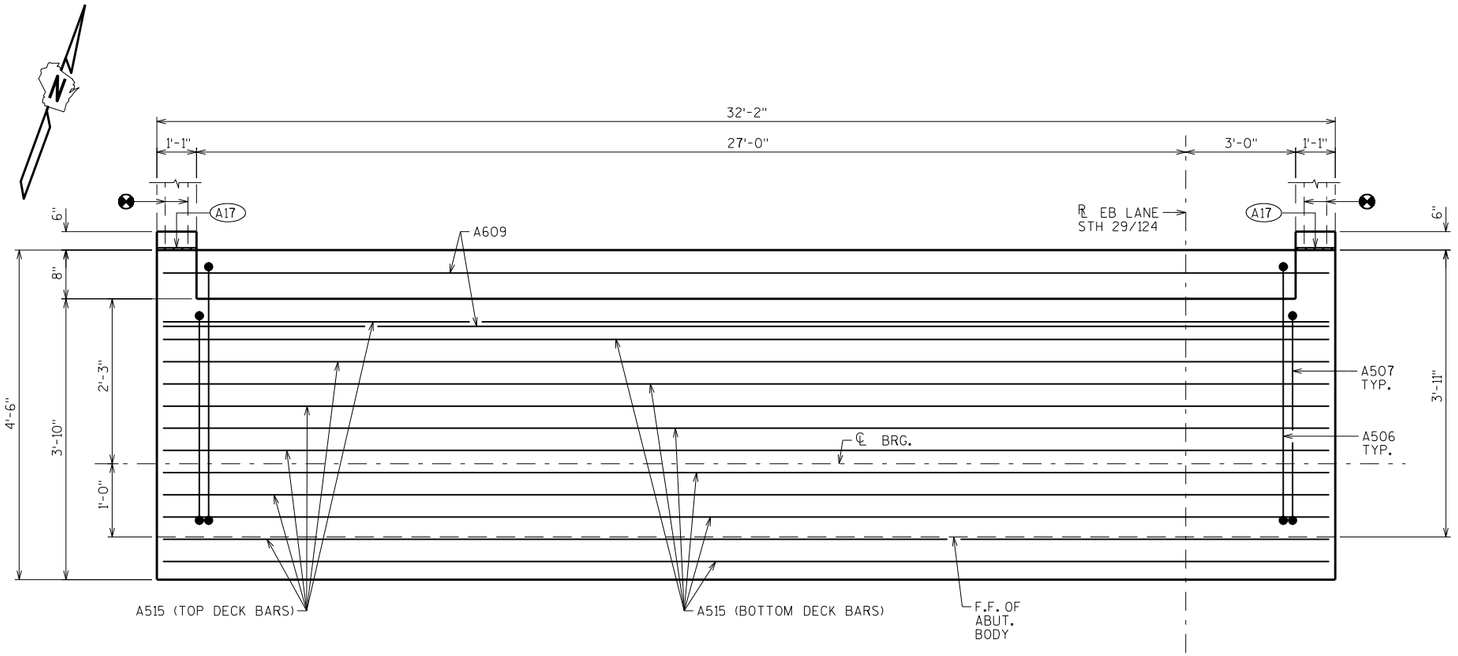
8

STATE PROJECT NUMBER

8610-02-72



ELEVATION - LOOKING NORTH



PLAN

⊗ CUT EXISTING WING REINFORCEMENT 2" CLEAR FROM B.F. OF ABUTMENT.

(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.

(A24) MASONRY ANCHORS TYPE L NO. 6 BARS, EMBED 1'-3" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

(M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

DRAWN BY DDS | PLANS CK'D. MSC

NORTH ABUTMENT DETAILS 1

SHEET 5

203

SCALE = 2

8

8

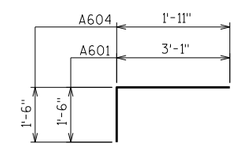
STATE PROJECT NUMBER
8610-02-72

BILL OF BARS

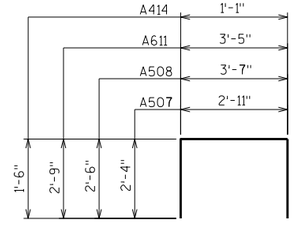
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

	BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
(A24)	A601	X	60	4'-5"	X		ABUT. DIAPH. - POUR 1 - VERT.
	A402	X	8	2'-8"			ABUT. DIAPH. - POUR 1 - HORIZ.
	A403	X	8	4'-3"			ABUT. DIAPH. - POUR 1 - HORIZ.
(A24)	A604	X	72	3'-3"	X		ABUT. DIAPH. - POUR 1 - VERT.
	A405	X	9	7'-8"			ABUT. DIAPH. - POUR 1 - HORIZ.
	A506	X	43	14'-2"	X		ABUT. DIAPH. - POUR 2 - STIRRUP
	A507	X	39	7'-4"	X		ABUT. DIAPH. - POUR 2 - VERT.
	A508	X	4	8'-4"	X		ABUT. DIAPH. - POUR 2 - VERT.
	A609	X	9	31'-10"			ABUT. DIAPH. - POUR 2 - HORIZ. - B.F.
	A610	X	36	5'-3"			ABUT. DIAPH. - POUR 2 - HORIZ.
	A611	X	12	8'-7"	X		ABUT. DIAPH. - POUR 2 - HORIZ. - ENDS
	A412	X	4	4'-1"			ABUT. DIAPH. - POUR 2 - VERT. - ENDS
	A413	X	6	5'-4"			ABUT. DIAPH. - POUR 2 - HORIZ.
	A414	X	21	3'-11"	X		ABUT. DIAPH. - POUR 2 - VERT.
	A515	X	12	31'-10"			DECK - TRANSVERSE - TOP & BOTTOM
	A416	X	103	3'-6"			DECK - LONGITUDINAL - TOP AND BOTTOM
	A517	X	8	6'-0"			ABUT. DIAPH. - POUR 2 HORIZ.

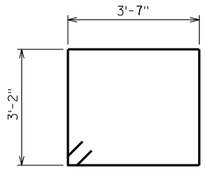
STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03"



A601, A604



A507, A508, A611, A414



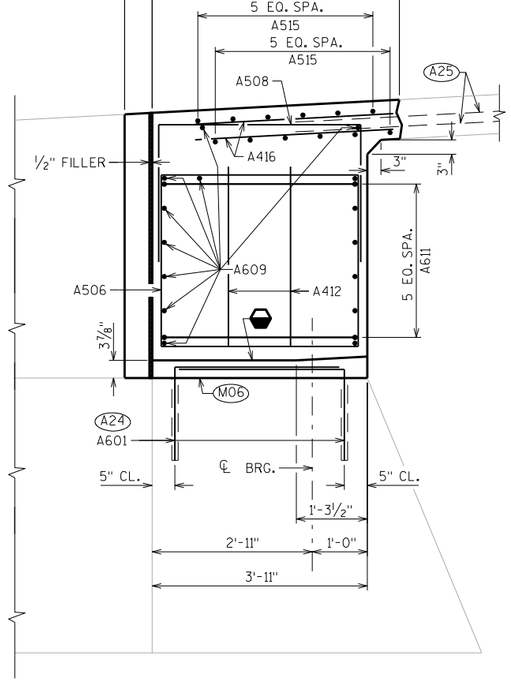
A506

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

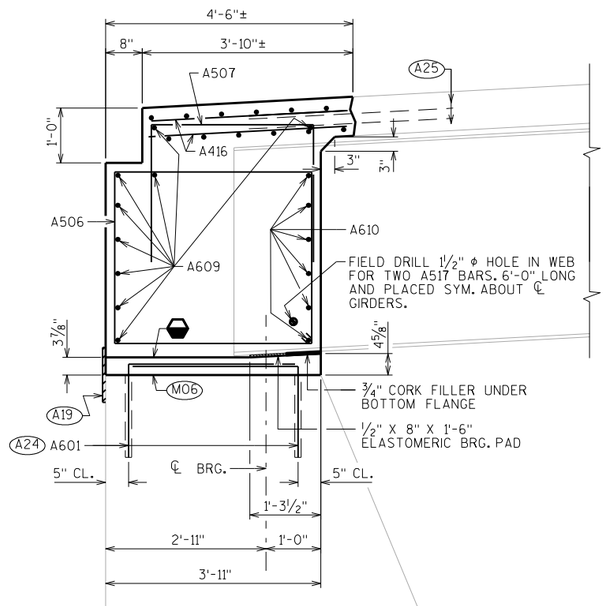
(A24) MASONRY ANCHORS TYPE L NO. 6 BARS, EMBED 1'-3" IN CONCRETE. ANCHJORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

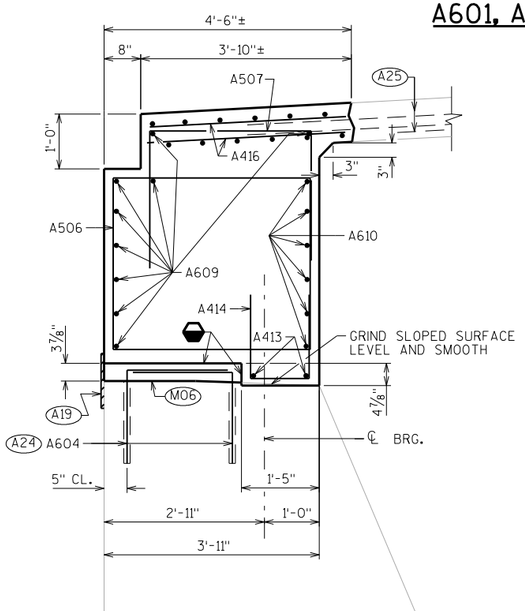
(M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.



SECTION C-C
POURS 1&2



SECTION D-D
POURS 1&2



SECTION E-E
POURS 1&2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

DRAWN BY DDS | PLANS CK'D. MSC

NORTH ABUTMENT DETAILS 2

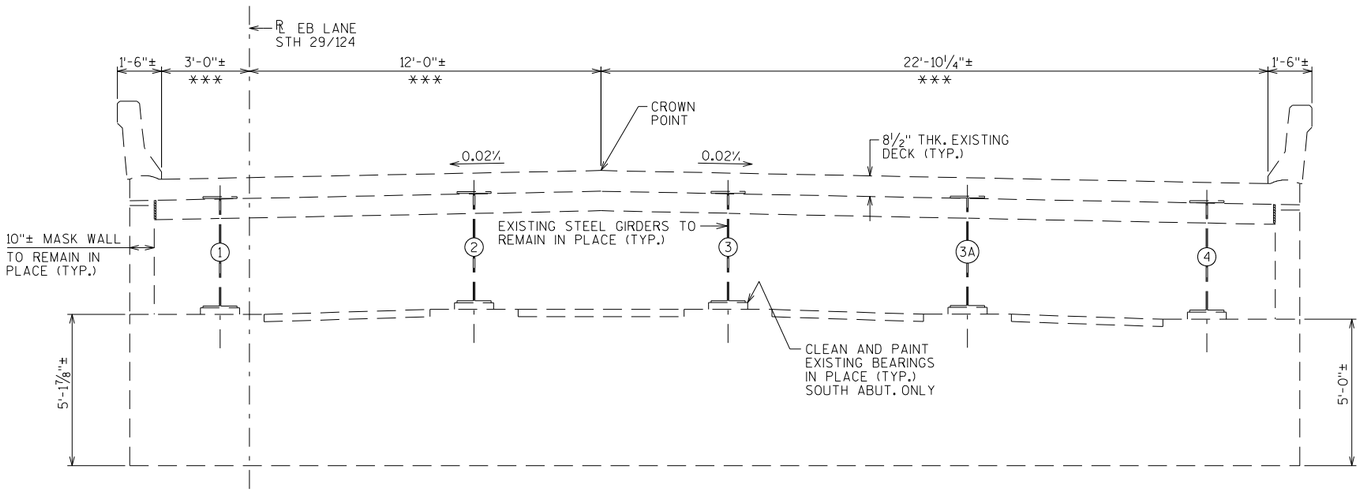
SHEET 6

204

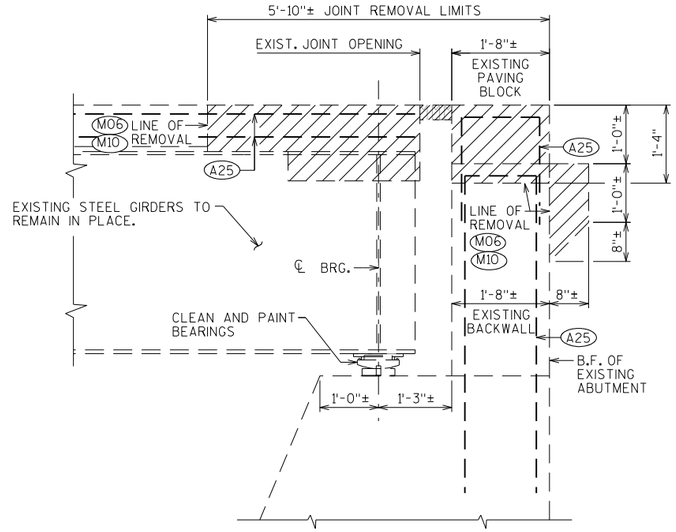
SCALE = 2.0

STATE PROJECT NUMBER
8610-02-72

*** = MEASURED ALONG B.F. OF ABUTMENT



ELEVATION - LOOKING SOUTH

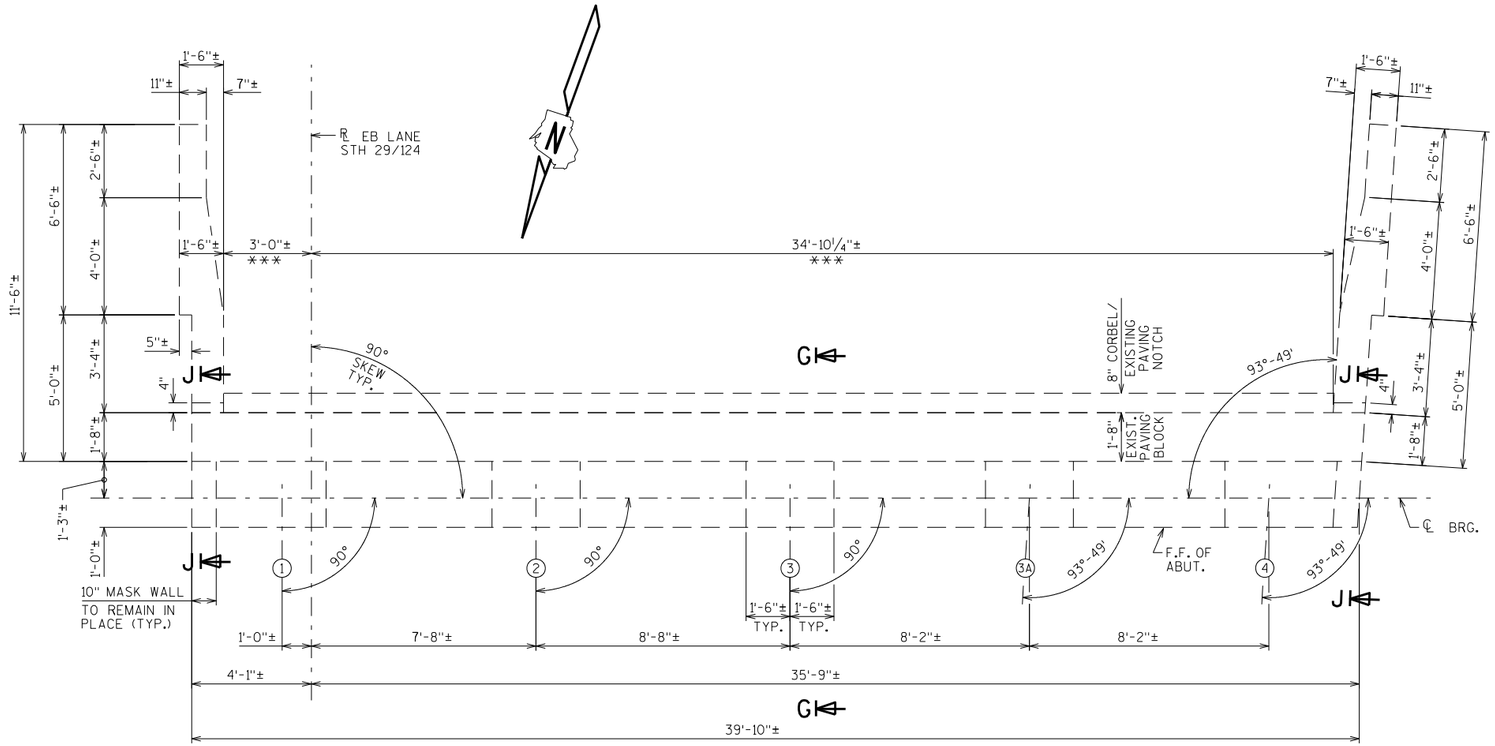


SECTION G-G

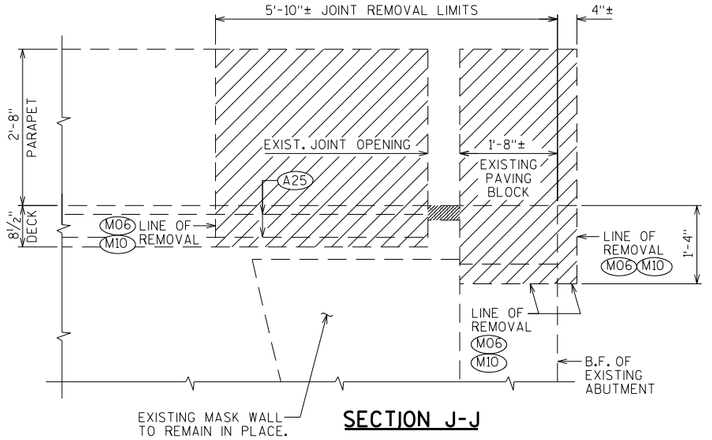
(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

(M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

(M10) REMOVAL LINES ARE TO BE DEFINED BY A 1" MIN. DEEP SAW CUT.



PLAN



SECTION J-J

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

DRAWN BY DDS | PLANS CK'D. MSC

SOUTH ABUTMENT REMOVAL

SHEET 7

205

8

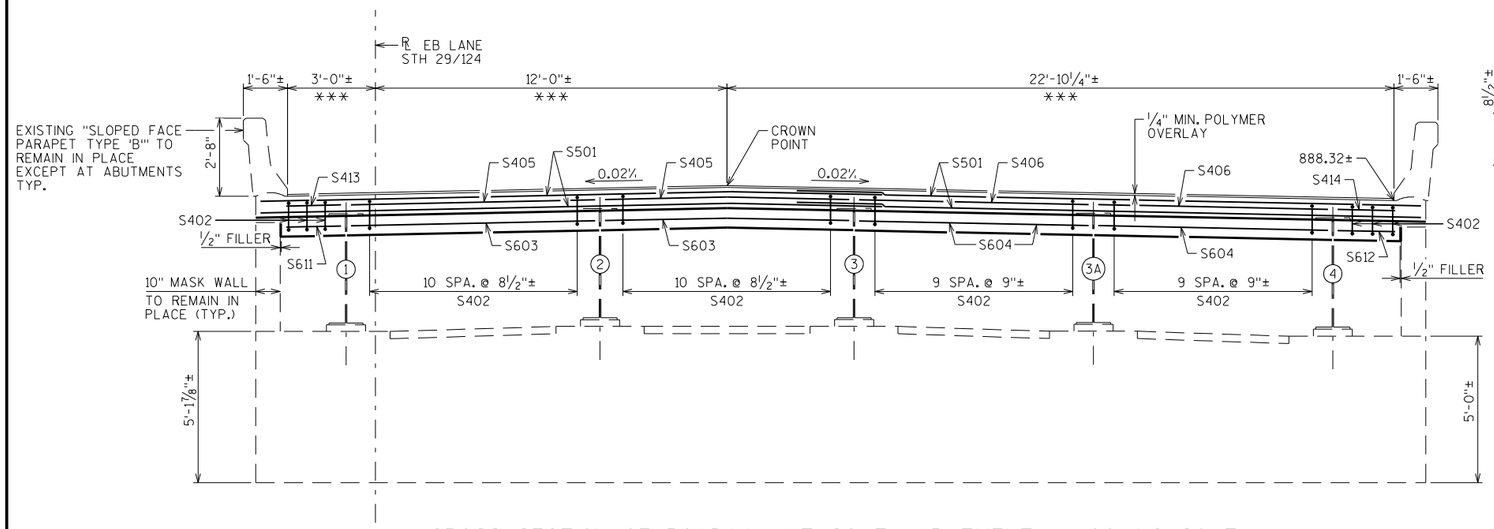
8

SCALE = 2.5

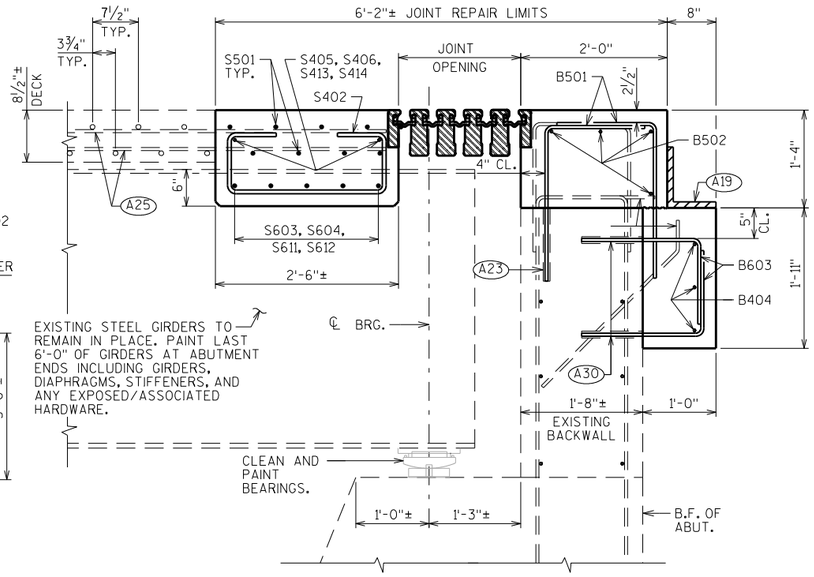
STATE PROJECT NUMBER

8610-02-72

*** = MEASURED ALONG B.F. OF ABUTMENT



CROSS SECTION OF ROADWAY AT SOUTH ABUTMENT - LOOKING SOUTH



SECTION THRU SOUTH ABUTMENT BODY

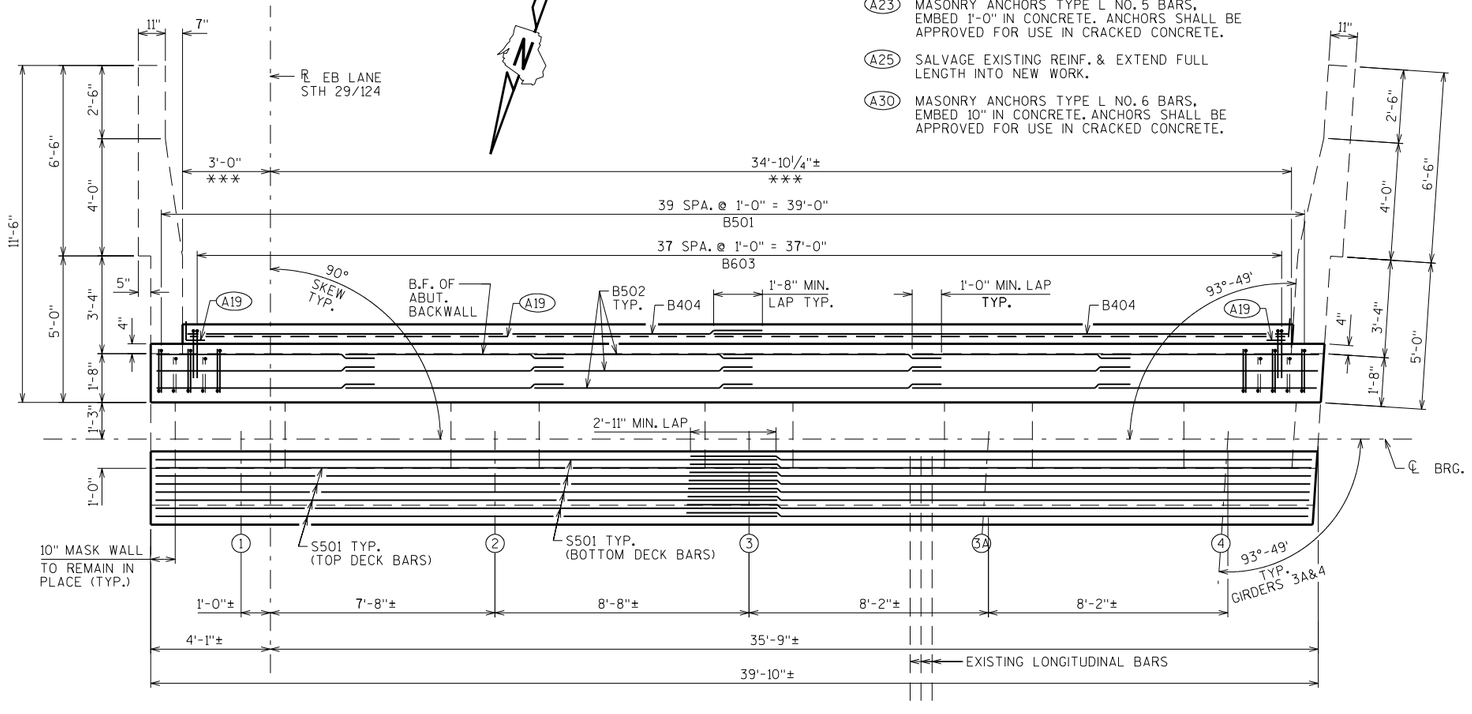
SHOWING BAR STEEL REINFORCEMENT

(A19) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.

(A23) MASONRY ANCHORS TYPE L NO. 5 BARS, EMBED 1'-0" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

(A25) SALVAGE EXISTING REINF. & EXTEND FULL LENGTH INTO NEW WORK.

(A30) MASONRY ANCHORS TYPE L NO. 6 BARS, EMBED 10" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.



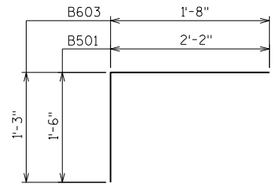
PLAN

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
(A23)	B501	X	80	3'-6"	X		PAVING BLOCK - VERT.
	B502	X	24	7'-6"			PAVING BLOCK - HORIZ.
(A30)	B603	X	76	2'-9"	X		CORBEL - VERT.
	B404	X	6	19'-8"			CORBEL - HORIZ.

FOR SUPERSTRUCTURE BARS SEE "SUPERSTRUCTURE DETAILS" SHEET



B501, B603

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

DRAWN BY DDS | PLANS CK'D. MSC

SOUTH ABUTMENT REINFORCEMENT

SHEET 8

206

8

8

SCALE = 2.5

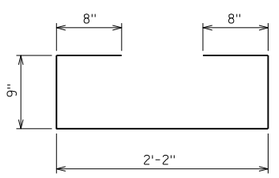
STATE PROJECT NUMBER
8610-02-72

BILL OF BARS

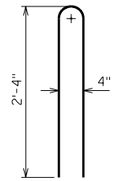
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
S501	X	16	21'-3"			DECK - TRANSVERSE REINF. - TOP & BOT.
S402	X	48	4'-8"	X		S. ABUT. DIAPH. - VERT. BTWN. GIRDERS
S603	X	10	8'-2"			S. ABUT. DIAPH. - HORIZ. BTWN. GIRDERS 1-3
S604	X	10	7'-8"			S. ABUT. DIAPH. - HORIZ. BTWN. GIRDERS 3-4
S405	X	4	8'-2"			S. ABUT. DIAPH. - HORIZ. BTWN. GIRDERS 1-3
S406	X	4	7'-8"			S. ABUT. DIAPH. - HORIZ. BTWN. GIRDERS 3-4
S407	X	22	4'-10"	X		S.&N. PARAPET TYPE B - VERT.
S408	X	22	4'-3"	X		S.&N. PARAPET TYPE B - VERT.
S509	X	10	2'-2"			S. PARAPET TYPE B - HORIZ.
S510	X	10	4'-0"			S. PARAPET TYPE B - HORIZ.
S611	X	5	1'-10"			S. ABUT. DIAPH. - HORIZ. - OUTSIDE GIRDER 1
S612	X	5	1'-8"			S. ABUT. DIAPH. - HORIZ. - OUTSIDE GIRDER 4
S413	X	2	1'-10"			S. ABUT. DIAPH. - HORIZ. - OUTSIDE GIRDER 1
S414	X	2	1'-8"			S. ABUT. DIAPH. - HORIZ. - OUTSIDE GIRDER 4

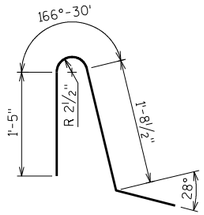
SEE "SLOPED FACE PARAPET 'B'" SHEET



S402



S407



S408

8

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

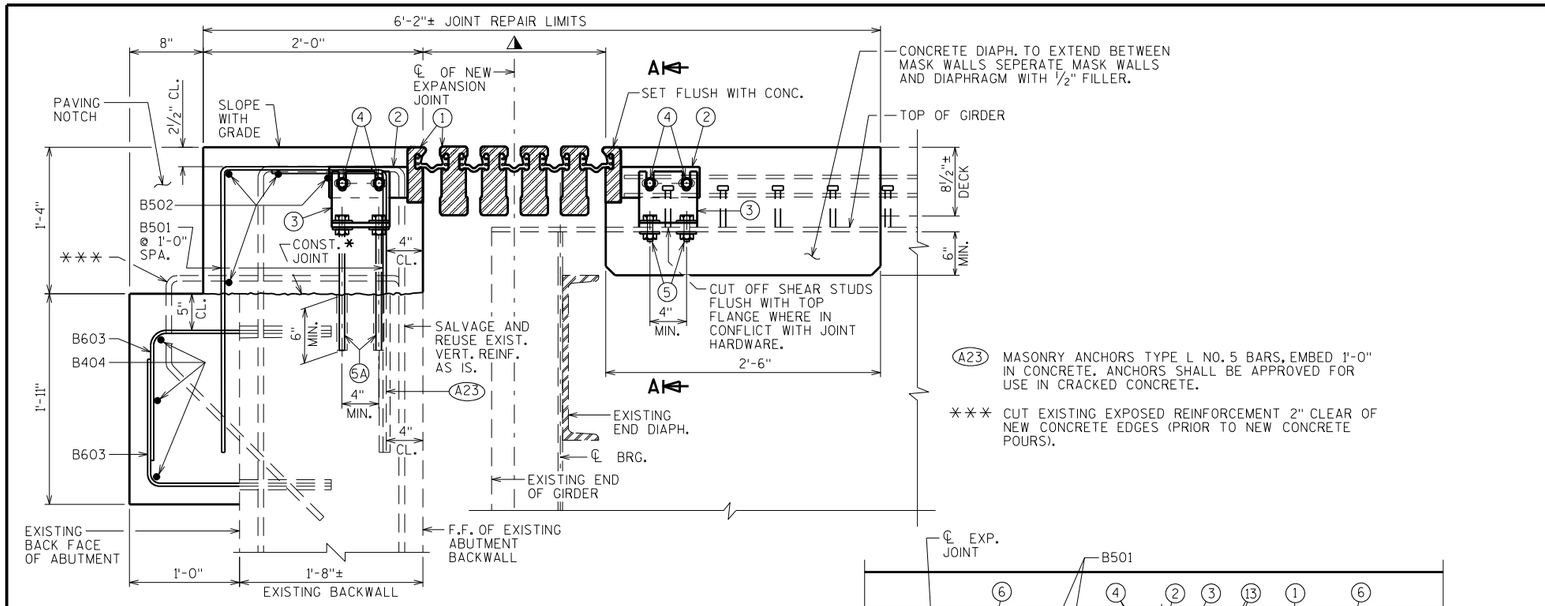
DRAWN BY DDS | PLANS CK'D. MSC

SUPERSTRUCTURE DETAILS

SHEET 9

207

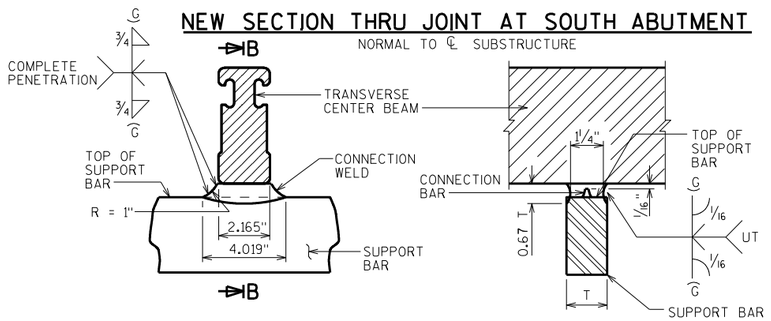
SCALE = 3.0



A23 MASONRY ANCHORS TYPE L NO. 5 BARS, EMBED 1'-0" IN CONCRETE. ANCHORS SHALL BE APPROVED FOR USE IN CRACKED CONCRETE.

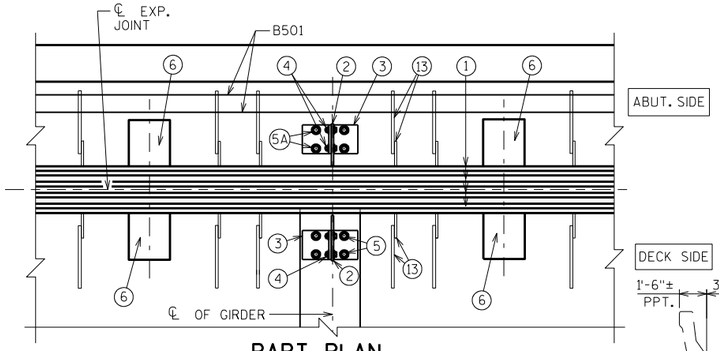
*** CUT EXISTING EXPOSED REINFORCEMENT 2" CLEAR OF NEW CONCRETE EDGES (PRIOR TO NEW CONCRETE POURS).

NEW SECTION THRU JOINT AT SOUTH ABUTMENT



MODULAR EXPANSION JOINT CONNECTION DETAIL AND WELD SPECIFICATION

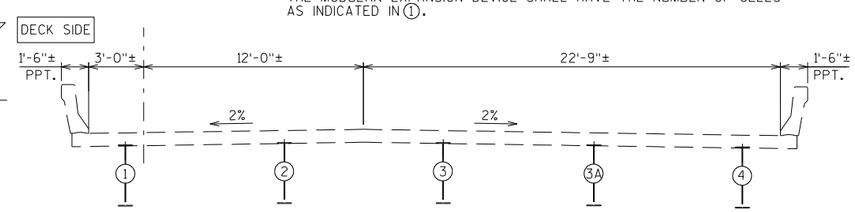
SECTION B-B



PART PLAN

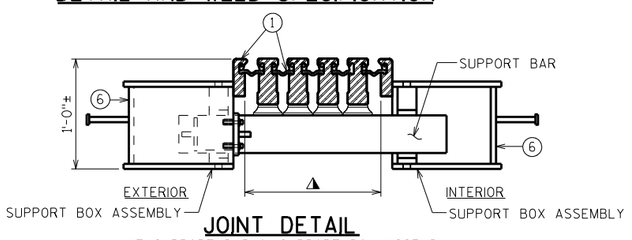
NOTE:
MODULAR EXPANSION DEVICE DESIGN AND DETAILS ARE SPECIFIC TO THE MANUFACTURER SELECTED FROM THOSE LISTED IN THE SPECIAL PROVISIONS. FABRICATION DRAWING IS SUBJECT TO THE APPROVAL OF THE BUREAU OF STRUCTURES.

SUPPORT BOXES ARE SHOWN FOR GENERAL INFORMATION AND LOCATION MAY VARY ACCORDING TO FABRICATOR DESIGN. SPACE SUPPORT BOXES TO MISS GIRDER TOP FLANGES WHEN POSSIBLE, BUT NOT TO EXCEED MAXIMUM SPACING PER SPECIAL PROVISIONS.



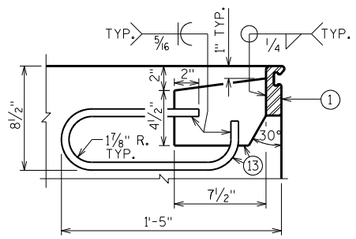
SECTION THRU ROADWAY AT SOUTH ABUT. - LOOKING SOUTH

MEASURED ALONG F.F. OF BACKWALL



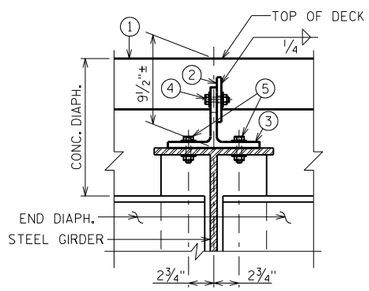
JOINT DETAIL

AT SUPPORT BAR & SUPPORT BOX ASSEMBLY



ANCHORAGE DETAIL

PLACE ADJACENT TO SUPPORT BOXES IN PAVING BLOCK @ ABUT. & IN DECK @ CONC. DIAPH.



SECTION A-A

GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE GLAND.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

NO EXPANSION JOINT PROTRUSIONS PERMITTED ABOVE ROADWAY SURFACE, ON PARAPET ROADWAY FACE OR ABOVE SIDEWALK SURFACE (FOR RAISED SIDEWALK).

THE EXPANSION JOINT SEALS SHALL BE PLACED, BONDED & SEALED AS RECOMMENDED BY THE MANUFACTURER. FORM WORK SHALL BE PLACED BETWEEN THE SUPPORT BOXES TO PREVENT CONCRETE INTRUSION INTO THE SUPPORT BOX. A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER SHALL BE PRESENT DURING INSTALLATION. PRIOR TO SETTING THE JOINT ASSEMBLY INTO POSITION, THE PROJECT ENGINEER SHALL DETERMINE THE PROPER JOINT OPENING.

EXPANSION JOINT EXTRUSIONS SHALL BE FABRICATED TO CONFORM TO ROADWAY CROWN & GRADE. FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST BARS, PLATES, WT-SECTION, ANCHORAGE LOOP, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERICAL BLAST CLEANING". AFTER BLAST CLEANING, THIS ASSEMBLY SHALL BE HOT DIPPED GALVANIZED. SLIP-RESISTANT SURFACE IS APPLIED TO SIDEWALK COVER PLATES BY THE MANUFACTURER AND THEN HOT DIPPED GALVANIZED TO THEIR RECOMMENDATIONS TO MAINTAIN THE INTEGRITY OF THIS SURFACE.

COST OF FURNISHING & PLACING OF THE EXPANSION JOINTS COMPLETE WITH PARAPET PLATES & SIDEWALK PLATES SHALL BE PAID FOR UNDER THE PRICE BID FOR "EXPANSION DEVICE MODULAR B-9-147".

BAR STEEL REINF. IN DECK AND CONC. DIAPHRAGM SHALL BE RESPACED AS NECESSARY TO ALLOW PLACEMENT OF JOINT ASSEMBLY. TOP TRANSVERSE BARS, ADJACENT TO MOD. JT., TO BE CUT AND PLACED BETWEEN JT. SUPPORT SYSTEM.

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LEGEND

1. MODULAR EXPANSION JOINT DEVICE, 5 CELLS.
2. 1/2" PLATE, ONE PER GIRDER MIN. PROVIDE 2 - 1" X 2" MIN. SLOTTED HOLES PLACED HORIZONTALLY FOR NO. 4.
3. WT 6 X 29 (OR EQUIVALENT BUILT UP T-SECTION). ONE PER GIRDER. PROVIDE 2 - 1" X 3" MIN. SLOTTED HOLES PLACED VERTICALLY IN WEB OF WT FOR BOLTS NO. 4.
4. 3/4" Φ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. (A325 GALV.)
5. 3/4" Φ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. FIELD DRILL HOLES IN GIRDER TOP FLANGE. (A325 GALV.)
5A. 3/4" Φ THREADED ROD WITH 2 NUTS & WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES. (GALV.)
6. SUPPORT BOX ASSEMBLY FOR SUPPORT BAR (SPA. PER MANUFACTURER). FABRICATE BOX FROM 1/2" PLATES.
7. 3/8" BULKHEAD PLATE. WELD TO NO. 1, NO. 8 AND NO. 14. WHEN CONDUIT IS PRESENT IN PARAPET OR SIDEWALK, ACCOMMODATE FOR BY PROVIDING OPENING IN NO. 7.
8. INSIDE PLATE. FABRICATE FROM 3/8" PLATE.
9. OUTSIDE PLATE. FABRICATE FROM 5/8" PLATE.
10. 7/8" SQUARE BAR. WELD TO NO. 8 AS SHOWN.
11. 3/4" Φ X 4" LONG STUDS. WELD TO NO. 8 , NO. 7 & NO. 14 AS SHOWN.
12. 3/4" Φ X 2" STAINLESS STEEL FLAT CTSK. SLOTTED HEAD CAP SCREWS WITH ANTI-SEIZE LUBRICANT. RECESS 1/16" BELOW PLATE SURFACE.
13. 1/2" PLATE WITH 5/8" Φ LOOP ANCHOR FABRICATED AS SHOWN. SPACED AT MANUFACTURER'S SPEC.
14. INSIDE PLATE. FABRICATE FROM 5/8" PLATE.
15. ADIPRENE BUTTON. SEE DETAIL. SET IN OUTSIDE PLATE.

* POUR CONC. ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONC. IS IN PLACE. STRIKE OFF & LEAVE ROUGH.

⚠ MANUFACTURER'S RECOMMENDED JOINT OPENING BASED ON THE TEMPERATURE ON THE DAY OF PLACEMENT PER TEMPERATURE TABLE. THE MODULAR EXPANSION DEVICE SHALL HAVE THE NUMBER OF CELLS AS INDICATED IN ①.

TEMP. TABLE

TEMPERATURE TABLE FOR SETTING JOINT OPENINGS TO BE DETERMINED BY JOINT MANUFACTURER WITH THE FOLLOWING DESIGN DATA:

1. 0.92 IN. OF MOVEMENT PER 10° F
2. MEDIAN TEMPERATURE OF 45° F
3. TEMP. RANGE IN TABLE FROM (-5)°F) TO (+95°F).

A TABLE OF JOINT OPENINGS BASED ON ABOVE DATA SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

DRAWN BY DDS | PLANS CK'D. MSC

EXPANSION DEVICE (MODULAR)

SHEET 10

208

JTMODDETAILS
1-14

SCALE = 1

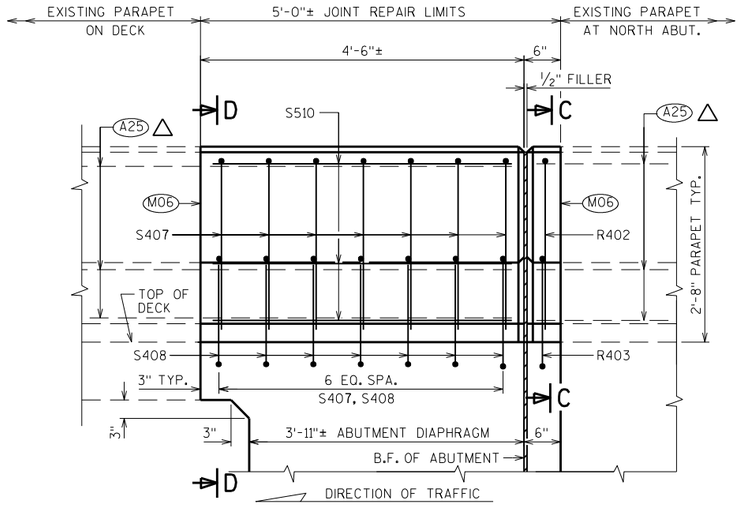
8

8

12 5

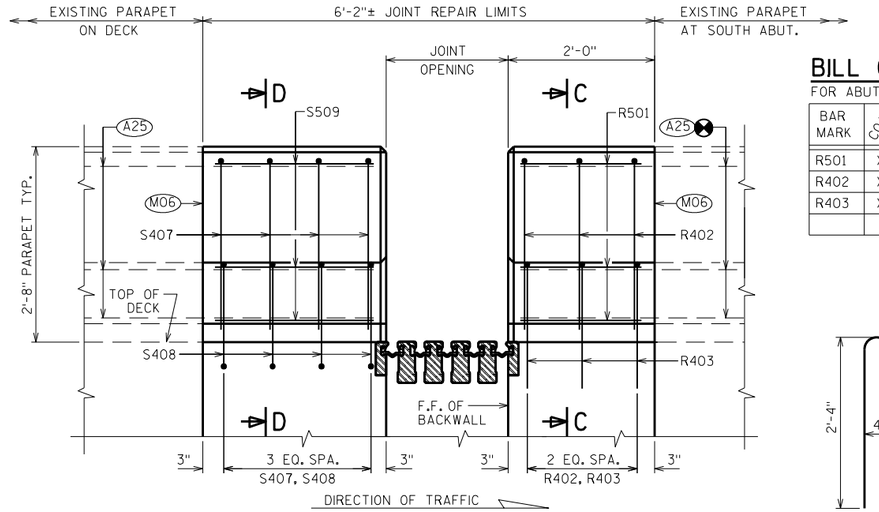
STATE PROJECT NUMBER

8610-02-72



INSIDE ELEVATION AT NORTH ABUT.

NW CORNER SHOWN - NE CORNER SIMILAR



INSIDE ELEVATION AT SOUTH ABUT.

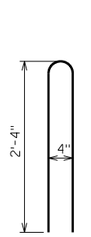
SE CORNER SHOWN - SW CORNER SIMILAR

BILL OF BARS

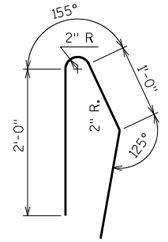
FOR ABUTMENT PARAPETS

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.

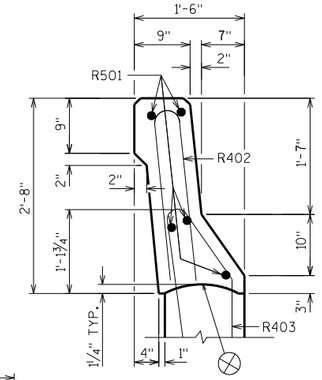
BAR MARK	COAT	N. ABUT.	S. ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X	—	5	1-8			S. PARAPET - HORIZ.
R402	X	1	3	4-10	X		S.&N. PARAPET - VERT.
R403	X	1	3	4-7	X		S.&N. PARAPET - VERT.



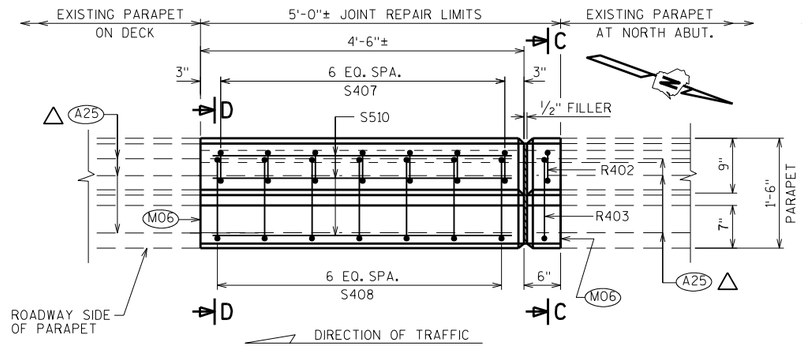
R402



R403

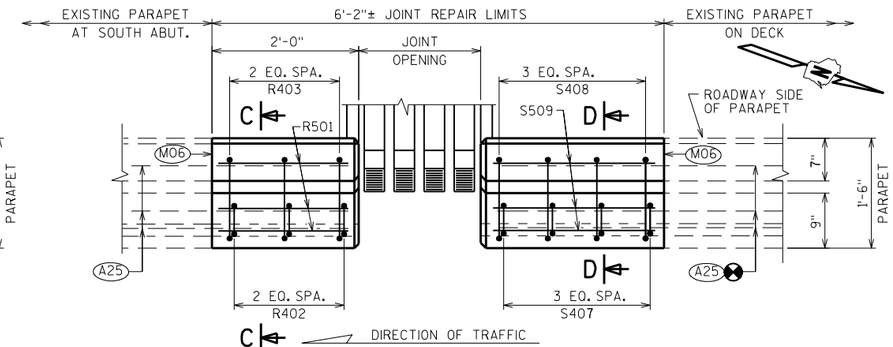


SECTION C-C



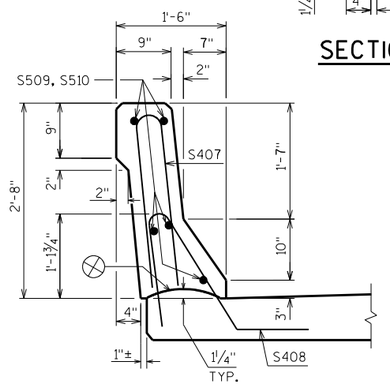
PLAN AT NORTH ABUT.

NW CORNER SHOWN - NE CORNER SIMILAR

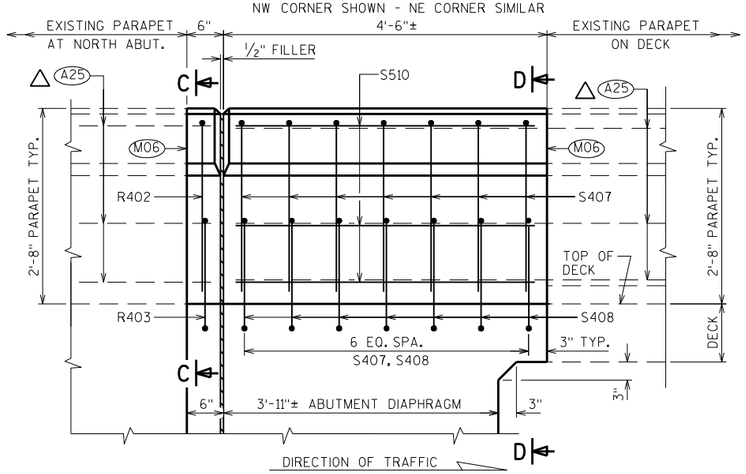


PLAN AT SOUTH ABUT.

SE CORNER SHOWN - SW CORNER SIMILAR

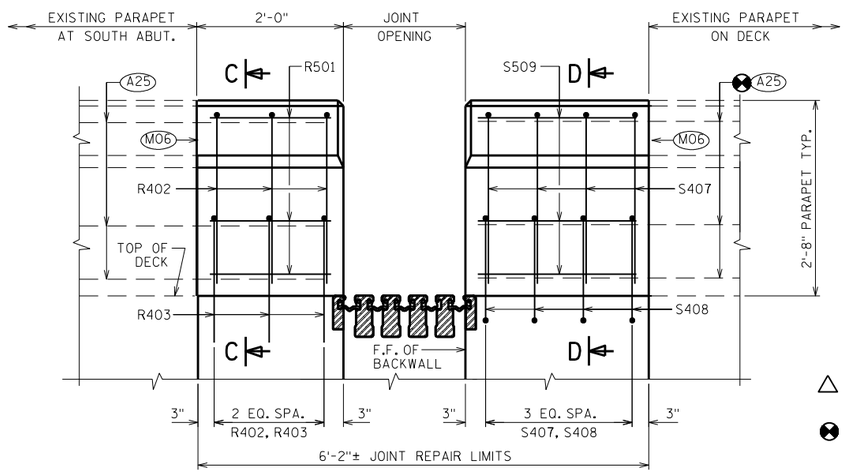


SECTION D-D



OUTSIDE ELEVATION AT NORTH ABUT.

NW CORNER SHOWN - NE CORNER SIMILAR



OUTSIDE ELEVATION AT SOUTH ABUT.

SE CORNER SHOWN - SW CORNER SIMILAR

(A25) SALVAGE EXIST. REINF. & EXTEND FULL LENGTH INTO NEW WORK.

(M06) ROUGHEN SURFACE OF CONCRETE 1/4" DEEP MINIMUM AT ALL AREAS WHERE NEW CONCRETE CONTACTS EXISTING CONCRETE.

△ CUT PARAPET REINFORCEMENT 2" CLEAR FROM B.F. OF ABUT.

⊗ CUT PARAPET REINFORCEMENT 2" CLEAR FROM NEW EDGE OF CONCRETE FORMS

⊗ CONST. JOINT - STRIKE OFF AS SHOWN.

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STRUCTURE B-9-147

DRAWN BY DDS | PLANS CK'D. MSC

SLOPED FACE PARAPET 'B'

SHEET 11

209

SCALE = 1

8

8

PPTB

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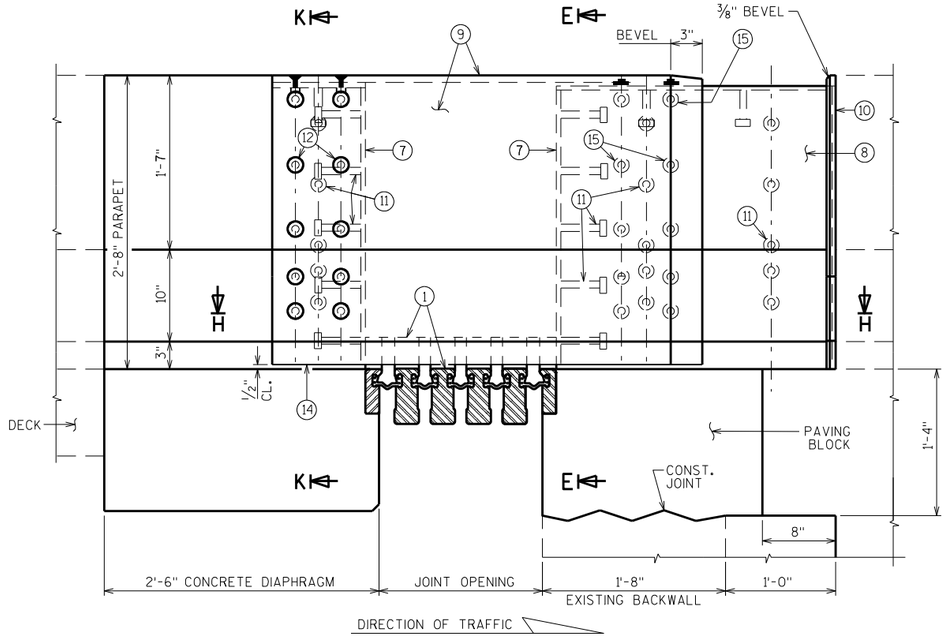
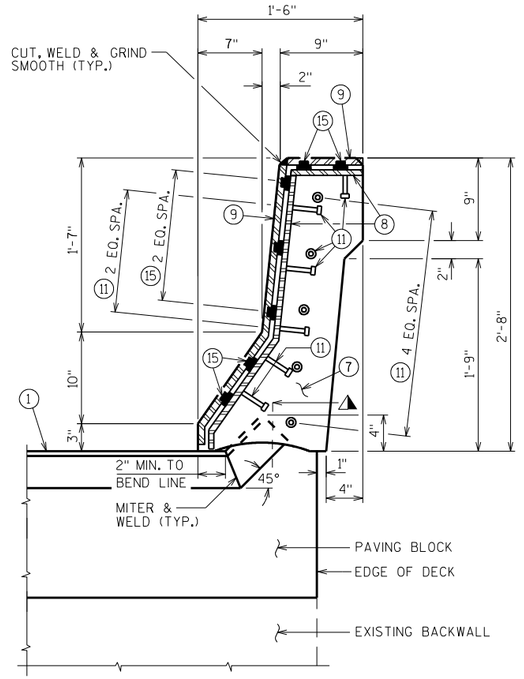
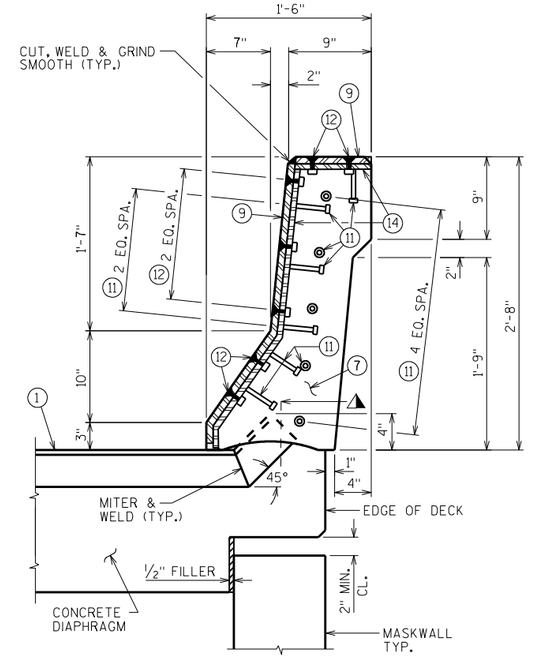


INSIDE ELEVATION OF PARAPET



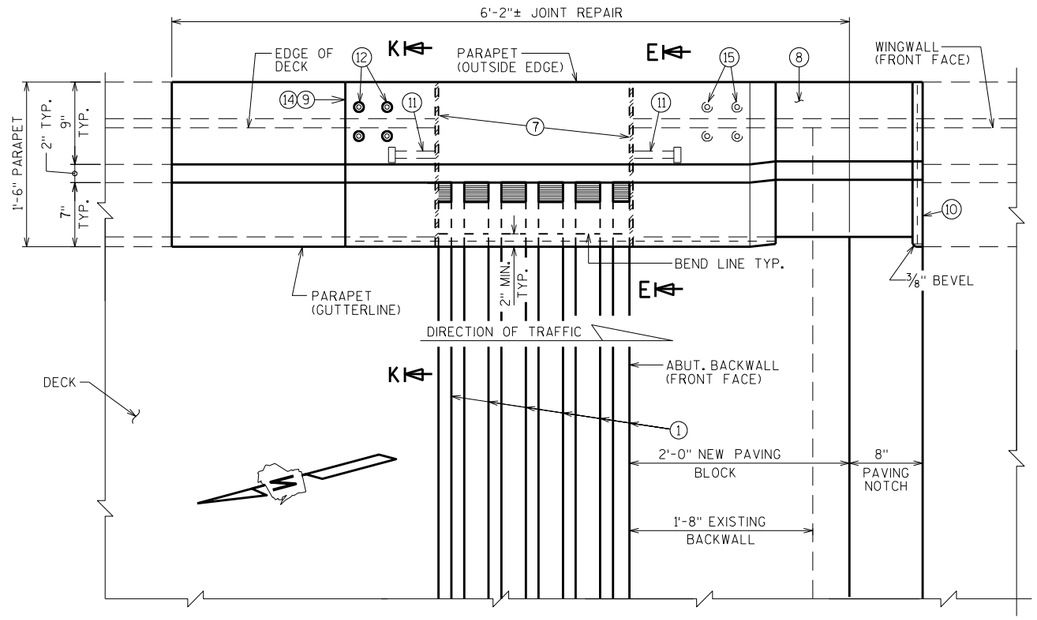
SECTION E-E

CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER TO VERIFY THE EXISTING PARARPET DIMENSION/SIZES PRIOR TO MANUFACTURING THE NEW COVER PLATES.



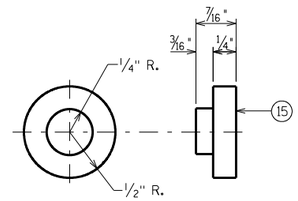
SECTION K-K

CONTRACTOR SHALL COORDINATE WITH THE MANUFACTURER TO VERIFY THE EXISTING PARARPET DIMENSION/SIZES PRIOR TO MANUFACTURING THE NEW COVER PLATES.

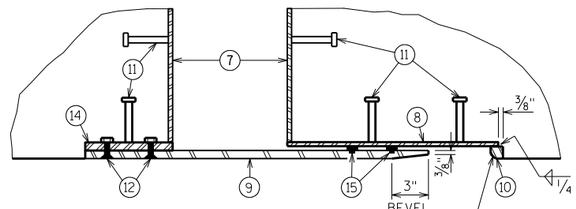


PLAN OF PARAPET AT SOUTH ABUTMENT

SOUTHEAST CORNER SHOWN - SOUTHWEST CORNER SIMILAR



ADIPRENE BUTTON DETAIL



SECTION H-H

⚠ MITER EXTRUSION ENDS AS REQ'D TO PROVIDE CLEARANCE

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

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COVER PLATES FOR PARAPET 'B'

SHEET 12

210

8

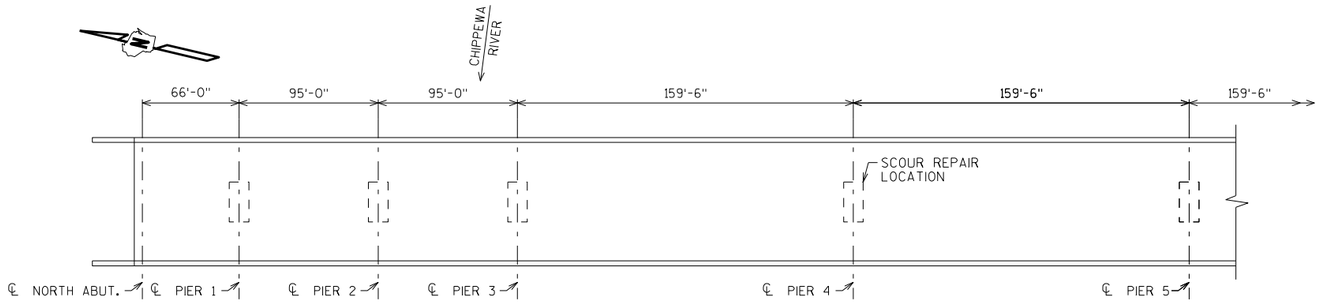
8

12345

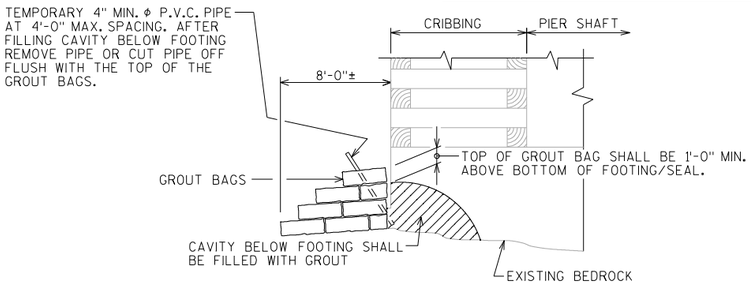
SCALE =

JTMODCVR2
7-10

STATE PROJECT NUMBER
8610-02-72



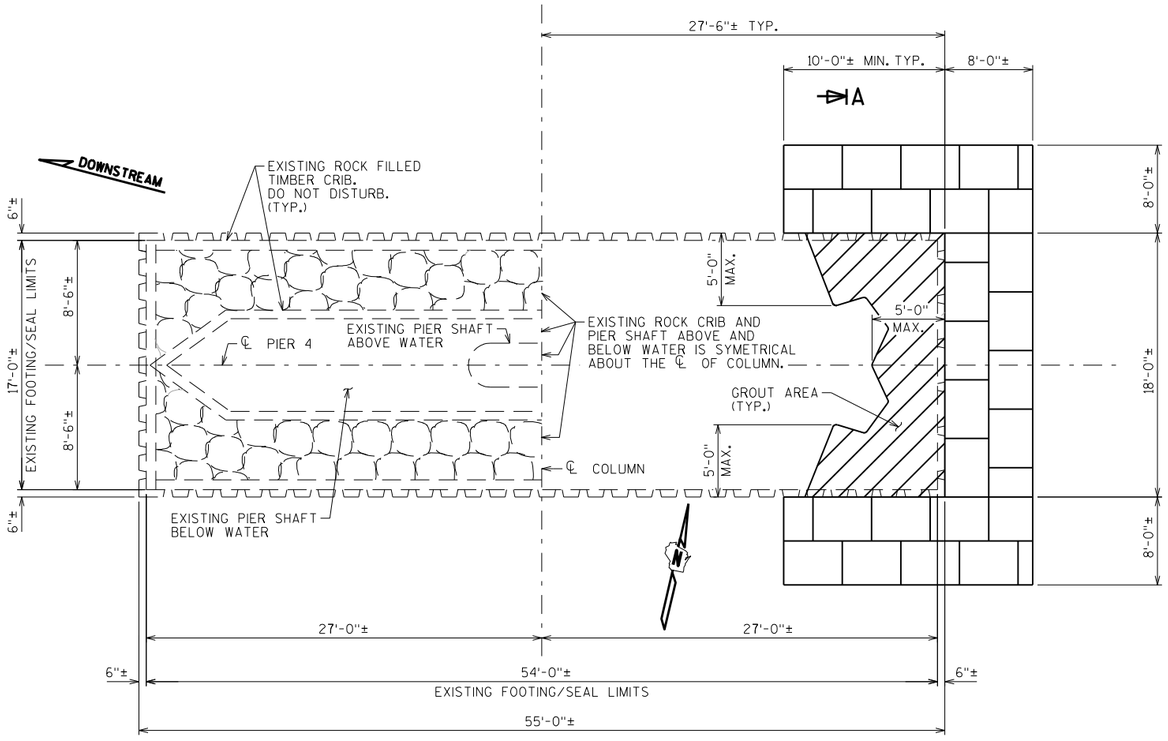
PLAN
EB LANE STH 29/124



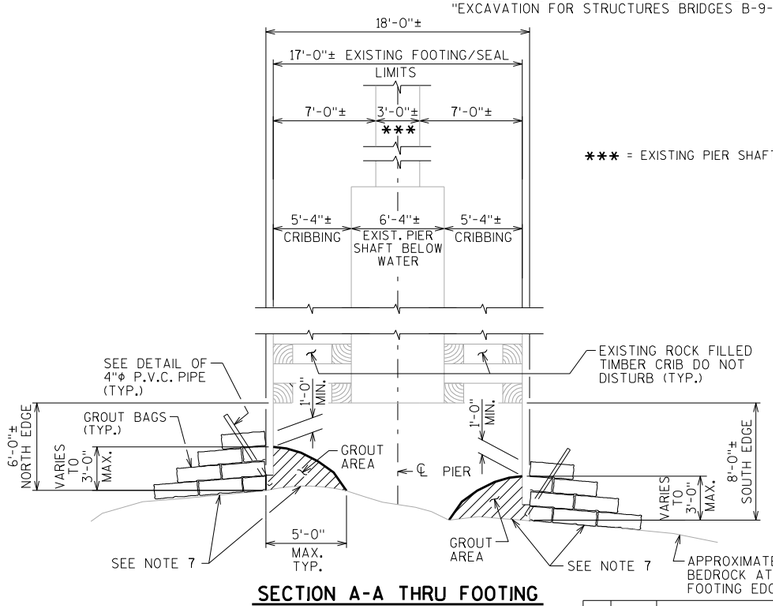
4" ϕ P.V.C. PIPE DETAIL

NOTES:

1. STACK BAGS AS REQUIRED. JOINTS BETWEEN BAGS IN SUCESSIVE ROWS SHALL BE STAGGERED.
2. PIN ROWS TOGETHER WITH #5 BARS @ 4'-0" MAX. SPACING.
3. PLACE TOP BAG TIGHT AGAINST THE FACE OF FOOTING. FOOTING MAY HAVE A JAGGED EDGE.
4. GROUT BAGS SHALL BE A MIN. OF 3'-0" WIDE X 4'-0" LONG X 1'-0" THK., AND A MAXIMUM OF 3'-6" WIDE X 8'-0" LONG X 2'-6" THICK.
5. DEPTH OF WATER VARIES TO 26'-0" DEEP.
6. ALL DIMENSIONS SHOWN ARE BASED ON THE EXISTING ORIGINAL STRUCTURE PLANS AND UNDERWATER DIVE INFORMATION.
7. REMOVE MATERIAL DOWN TO BEDROCK AS DIRECTED BY THE ENGINEER. WORK TO BE INCLUDED IN THE BID ITEM "EXCAVATION FOR STRUCTURES BRIDGES B-9-147".



FOOTING PLAN



SECTION A-A THRU FOOTING

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE B-9-147

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SCOUR REPAIR (PIER 4)

SHEET 13

211

SCALE = 5

8

8

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