

GRE

MAY 2017

WITH: N/A

PROJECT ID:

1470-24-71

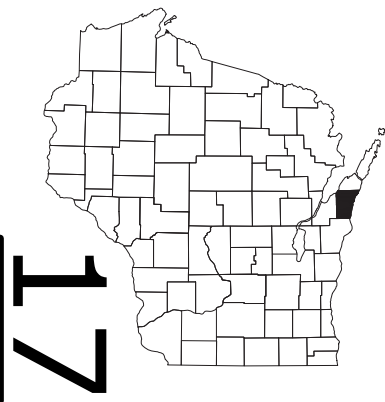
COUNTY:

KEWAUNEE

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details (Includes Erosion Control)
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 = 234



DESIGN DESIGNATION 1470-24-71

A.A.D.T.	2018	=	5,850
A.A.D.T.	2038	=	6,800
D.H.V.		=	1,090
D.D.		=	62/38
T.		=	6.7%
DESIGN SPEED		=	25MPH-45MPH
ESALS		=	850,000

CONVENTIONAL SYMBOLS

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

PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	

	ROCK
	LABEL
	95.36
	E
	FO
	G
	SAN
	SS
	T
	W

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

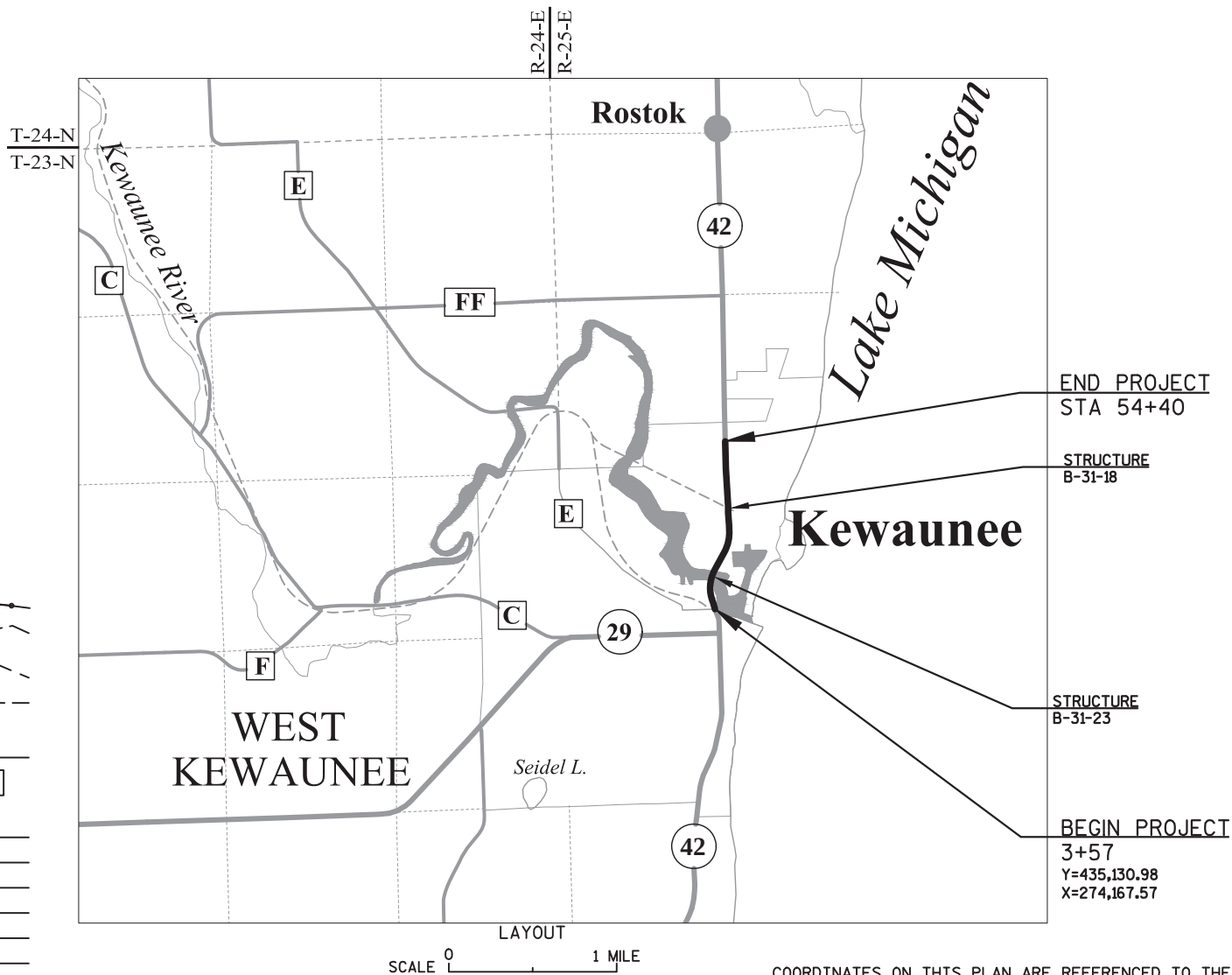
C KEWAUNEE, MAIN STREET

MILLER STREET - DUVALL STREET

STH 42

KEWAUNEE COUNTY

STATE PROJECT NUMBER
1470-24-71



TOTAL NET LENGTH OF CENTERLINE = 0.963 MI

COORDINATES ON THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), KEWAUNEE COUNTY (NAD 83) 2007 ADJUSTMENT.
ALL ELEVATIONS ON THIS PROJECT ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), 2012 ADJUSTMENT.

STATE PROJECT

1470-24-71

FEDERAL PROJECT

PROJECT

WISC 2018245

CONTRACT

1

emcs inc

500 North 17th Avenue
Wausau, WI 54401
715.845.1081 Fax 715.845.1099



11-21-17 Scott Kaiser
(Date) (Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	EMCS, INC.
Designer	EMCS, INC.
Project Manager	JEREMY ASHAUER
Regional Examiner	JODI MARSH
Regional Supervisor	JAMES THOMPSON

APPROVED FOR THE DEPARTMENT
DATE: 11/20/2017
(Signature)

E

GENERAL NOTES

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

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

EXISTING RIGHT-OF-WAY SHOWN NORTH OF STATION 12+50 IS APPROXIMATE AND IS BASED ON AVAILABLE RIGHT-OF-WAY PLATS.

AS-BUILTS USED FOR PLAN DEVELOPMENT

PROJECT NO: 1473-03-71, CONSTRUCTION YEAR: 1977
PROJECT NO: 1475-05-71, CONSTRUCTION YEAR: 1984
PROJECT NO: 1475-05-72, CONSTRUCTION YEAR: 1985
PROJECT NO: 1470-05-73, CONSTRUCTION YEAR: 1986
PROJECT NO: 1470-06-72, CONSTRUCTION YEAR: 1995

ORDER OF SECTION 2 SHEETS

- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PAVING DETAILS
- EROSION CONTROL
- STORM SEWER
- PERMANENT SIGNING
- LIGHTING PLAN
- PAVEMENT MARKING
- TRAFFIC CONTROL

PAVEMENT CORE LOG

CORE #	APPROX. STATION	OFFSET	ASPHALTIC PAVEMENT THICKNESS (IN)
1	5+00	17' RT	6
2	7+00	18' LT	6
3	8+56	9' RT	5.5
4	9+15	9' RT	10
5	10+00	9' RT	10
6	11+00	9' RT	10
7	20+00	9' RT	8
8	32+50	6' RT	6
9	44+50	6' RT	10
10	51+75	17.5' LT	6

UTILITIES

COMMUNICATIONS

AT&T WISCONSIN
JOE KASSAB
205 S JEFFERSON ST
GREEN BAY, WI 54301
PHONE: (920) 433-4200
MOBILE: (920) 202-4002
JK572K@ATT.COM

CHARTER COMMUNICATIONS
BRUCE HENRY
1623 BROADWAY AVE
SHEBOYGAN, WI 53081
PHONE: (920) 263-0074
BRUCE.HENRY@CHARTER.COM

ELECTRIC

WISCONSIN PUBLIC SERVICE CORPORATION
CURT BRADLEY
800 COLUMBUS ST
TWO RIVERS, WI 54241
PHONE: (920) 657-1830
MOBILE: (920) 639-5866
CMBRADLEY@WISCONSINPUBLICSERVICE.COM

ELECTRIC TRANSMISSION

ATC MANAGEMENT, INC.
GERALD RHODE
801 O KEEFE ROAD
DEPERE, WI 54115
PHONE: (920) 338-6523
GRHODE@ATCLLC.COM

GAS/PETROLEUM

WISCONSIN PUBLIC SERVICE CORPORATION
DON CONNER
800 COLUMBUS ST
P.O. BOX 236
TWO RIVERS, WI 54241-0236
PHONE: (920) 657-1862
MOBILE: (920) 655-6042
DJCONNER@WISCONSINPUBLICSERVICE.COM

SEWER

CITY OF KEWAUNEE
MATT MURPHY
401 FIFTH ST
KEWAUNEE, WI 54216
PHONE: (920) 388-5000
MOBILE: (920) 255-2306
MMURPHY@CITYOFKEWAUNEE.ORG

WATER

KEWAUNEE MUNICIPAL WATER UTILITY
MATT MURPHY
401 FIFTH ST
KEWAUNEE, WI 54216
PHONE: (920) 388-5000
MOBILE: (920) 255-2306
MMURPHY@CITYOFKEWAUNEE.ORG



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

OTHER CONTACTS

DNR LIAISON
MATT SCHAEVE
2984 SHAWANO AVE
GREEN BAY, WI 54313
(920) 366-1544
MATTHEW.SCHAEVE@WISCONSIN.GOV

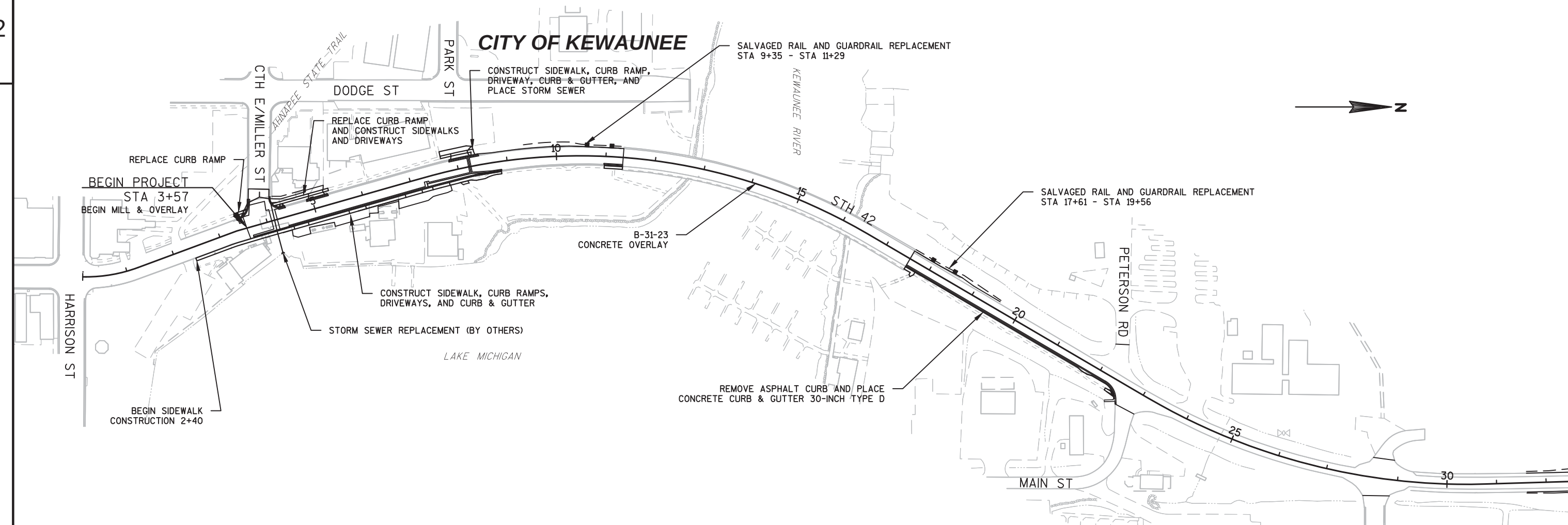
US ARMY CORPS OF ENGINEERS
RYAN HUBER
OLD FORT SQUARE
211 N. BROADWAY, SUITE 221
GREEN BAY, WI 54303
(651) 290-5859
RYAN.J.HUBER@USACE.ARMY.MIL

WISDOT DESIGN CONTACT
JEREMY ASHAUER
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920) 412-6381
JEREMY.ASHAUER@DOT.WI.GOV

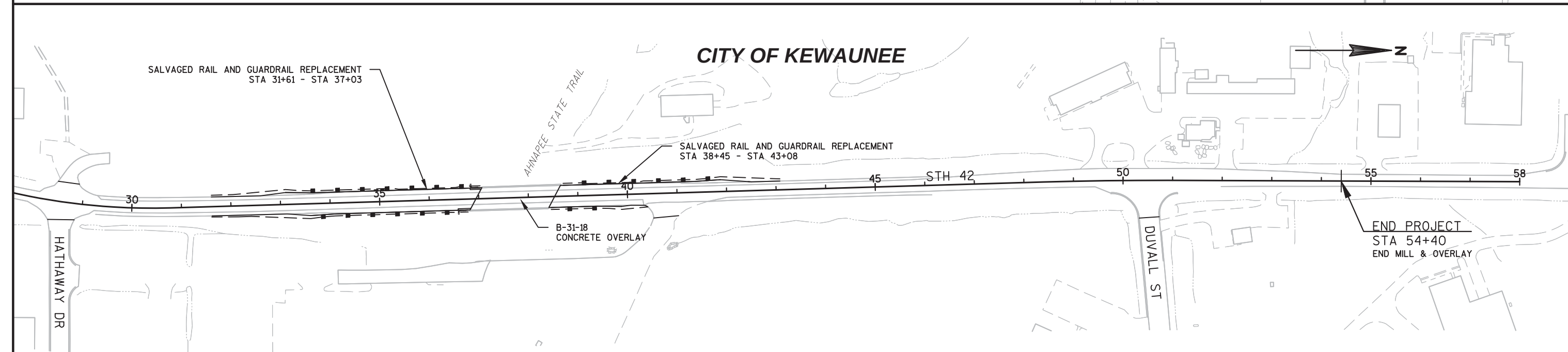
US COAST GUARD
SCOT STRIFFLER
1240 EAST 9TH ST
CLEVELAND, OH 44199-2060
(216) 902-6085
SCOT.M.STRIFFLER@USGC.MIL

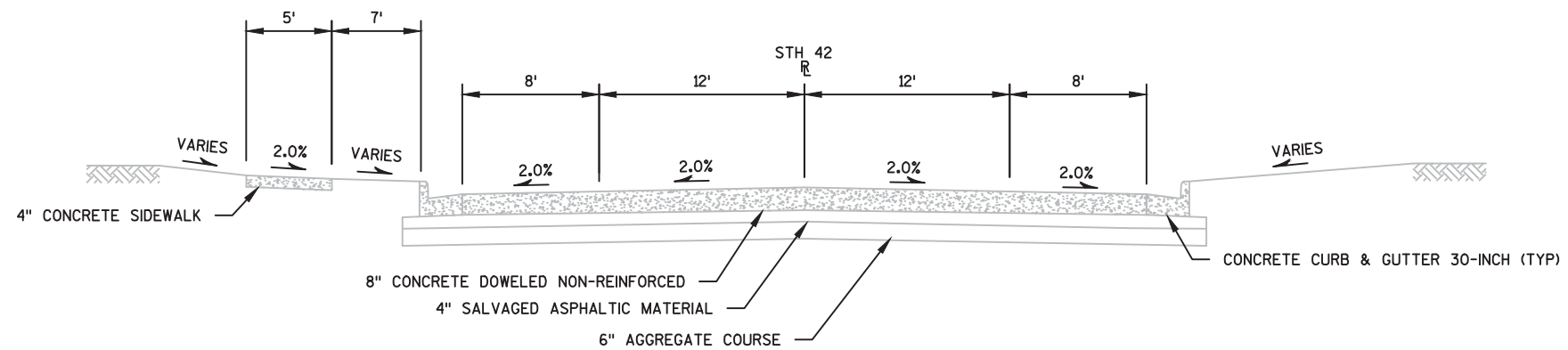
WISDOT SURVEY COORDINATOR
CORMAC MCINNIS, PLS
944 VANDERPERREN WAY
GREEN BAY, WI 54304
(920) 492-5638
CORMAC.MCINNIS@DOT.GOV.WI

CITY OF KEWAUNEE

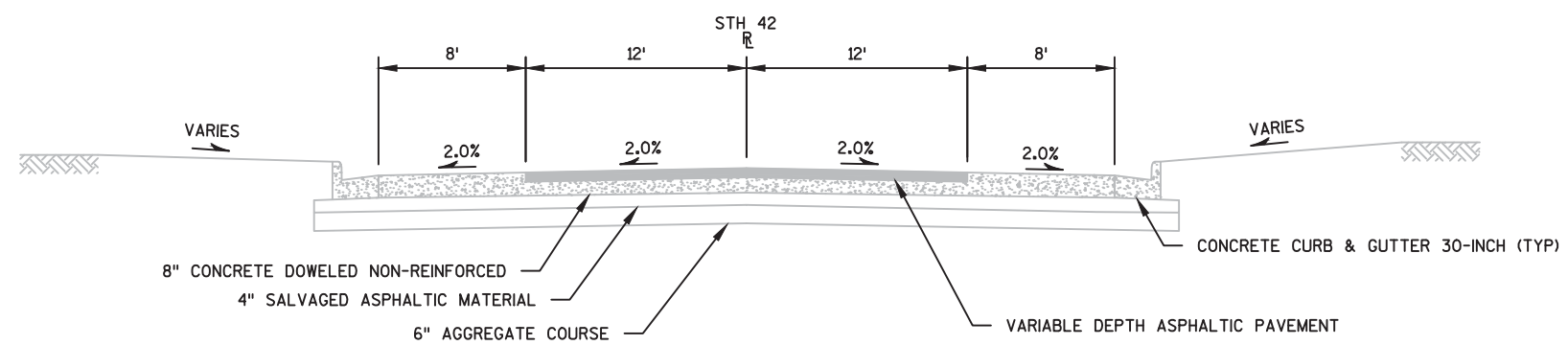


CITY OF KEWAUNEE

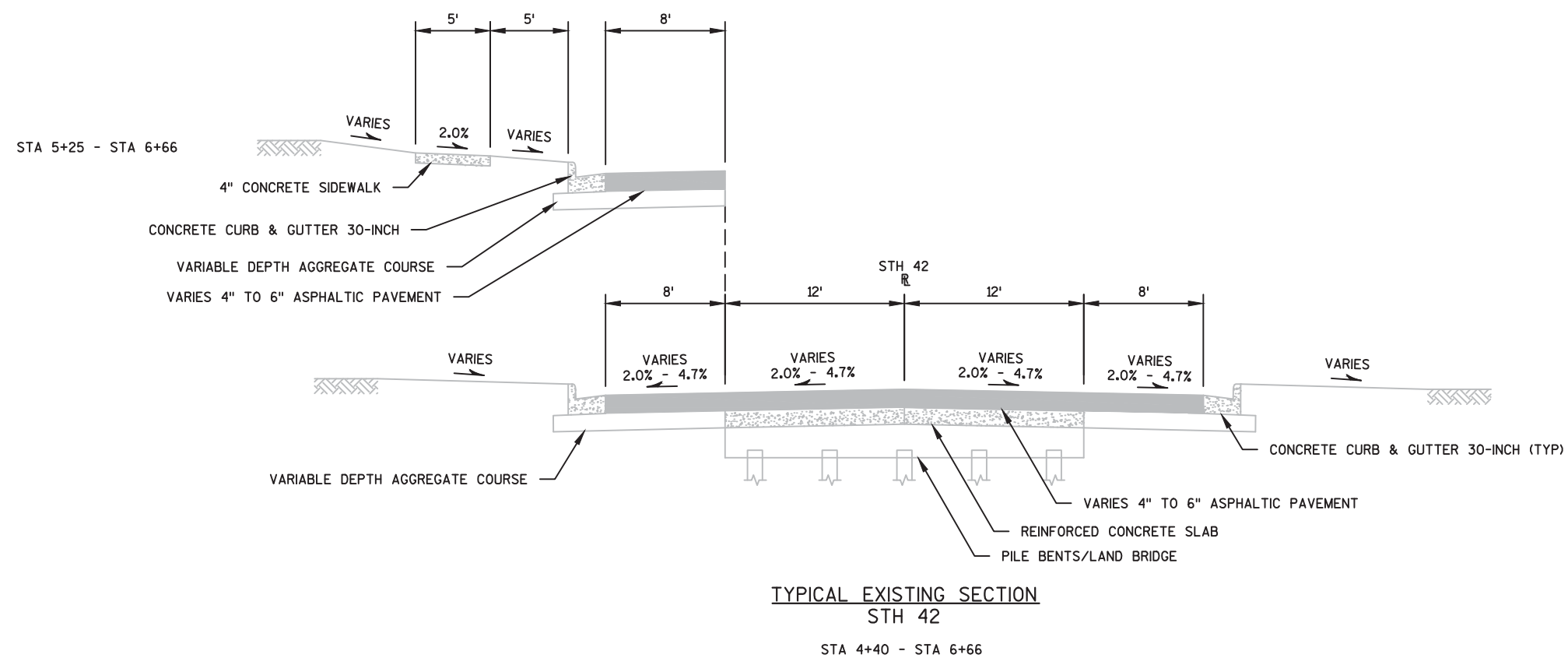


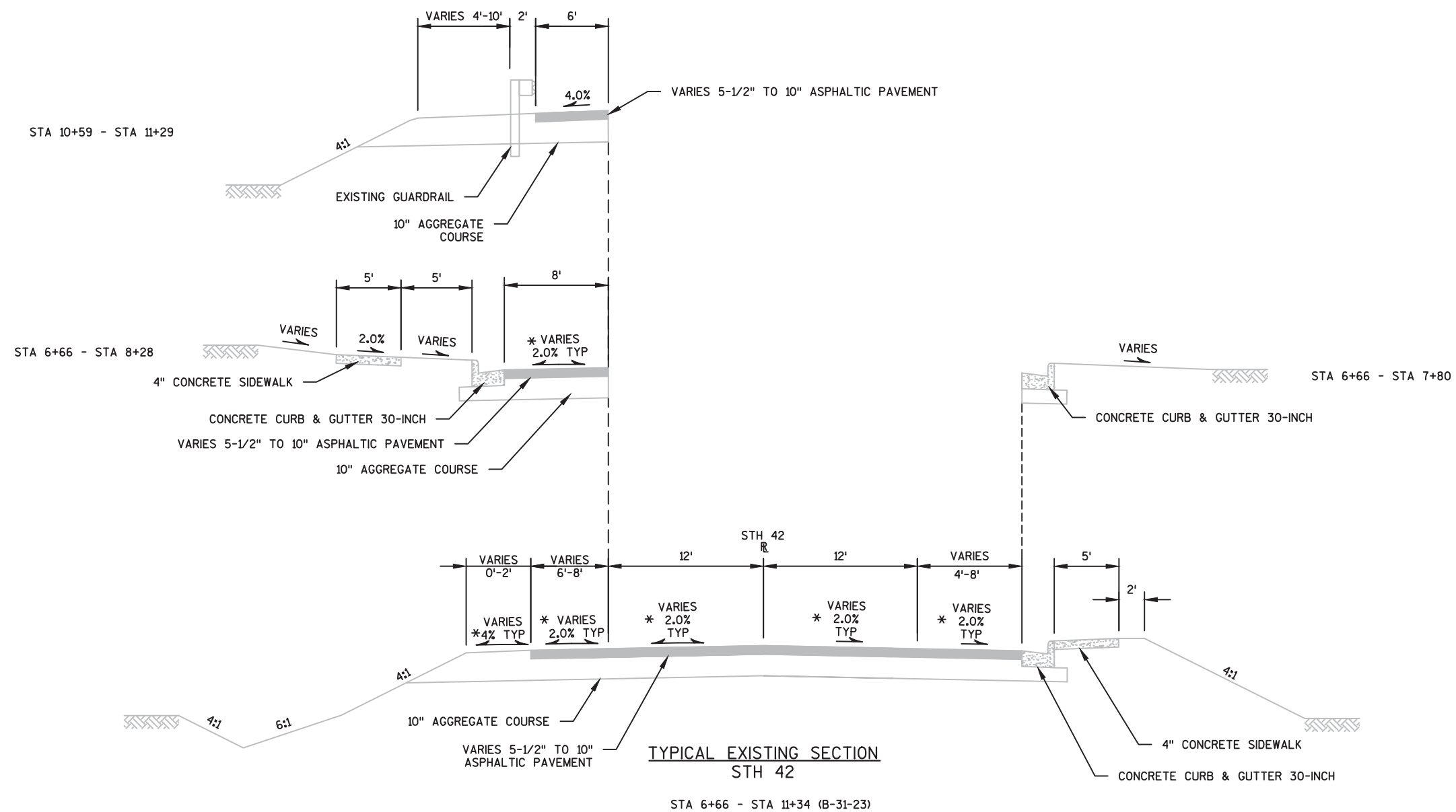


TYPICAL EXISTING SECTION
STH 42
STA 2+40 - STA 3+87



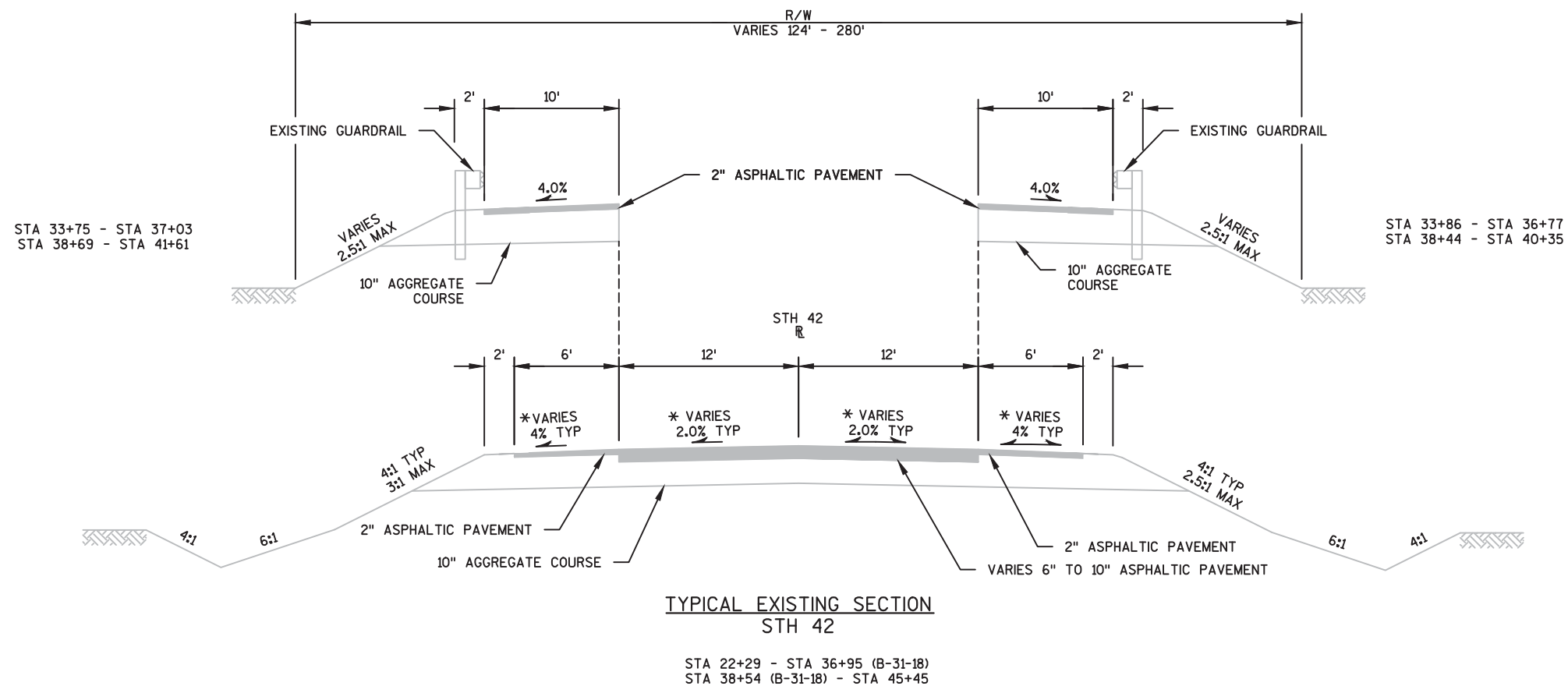
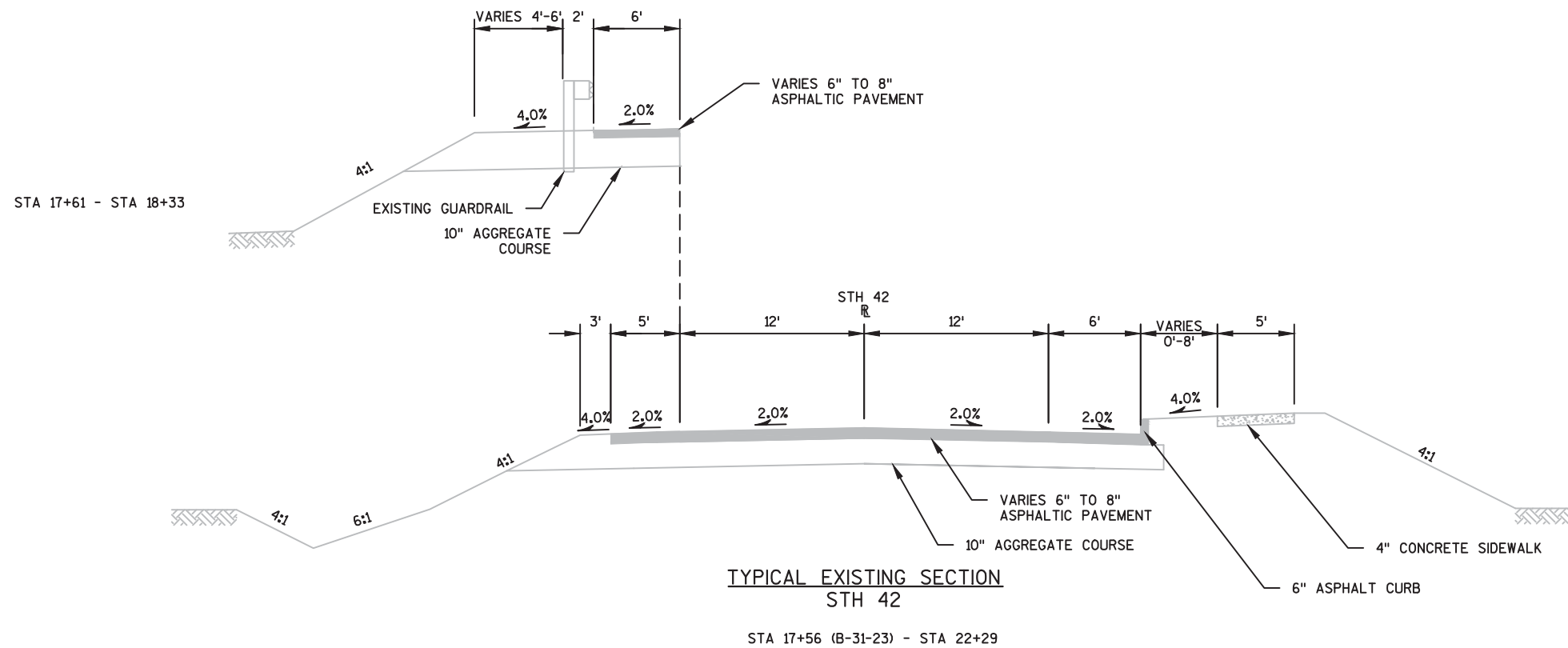
TYPICAL EXISTING SECTION
STH 42
STA 3+87 - STA 4+40





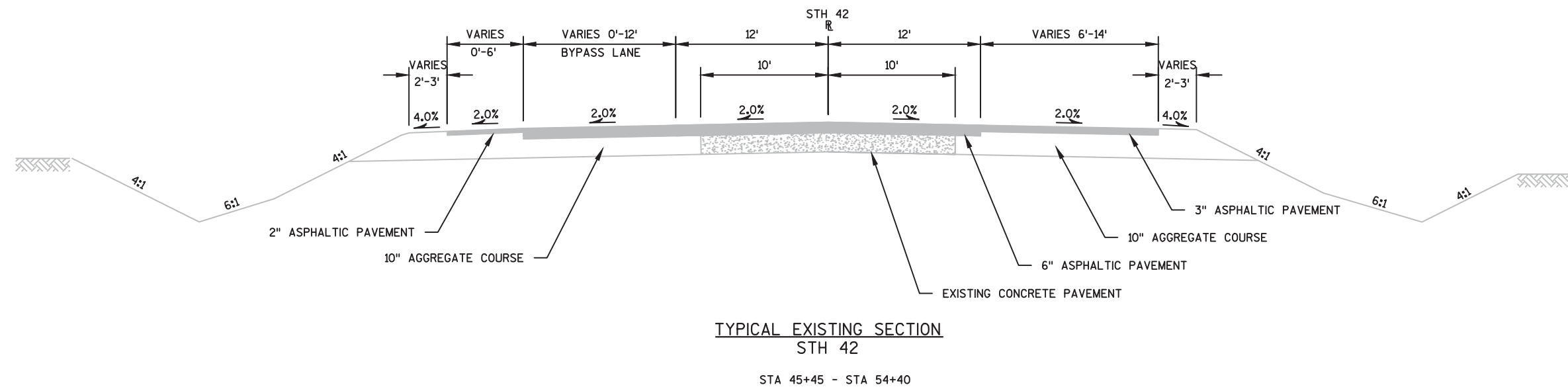
NOTE

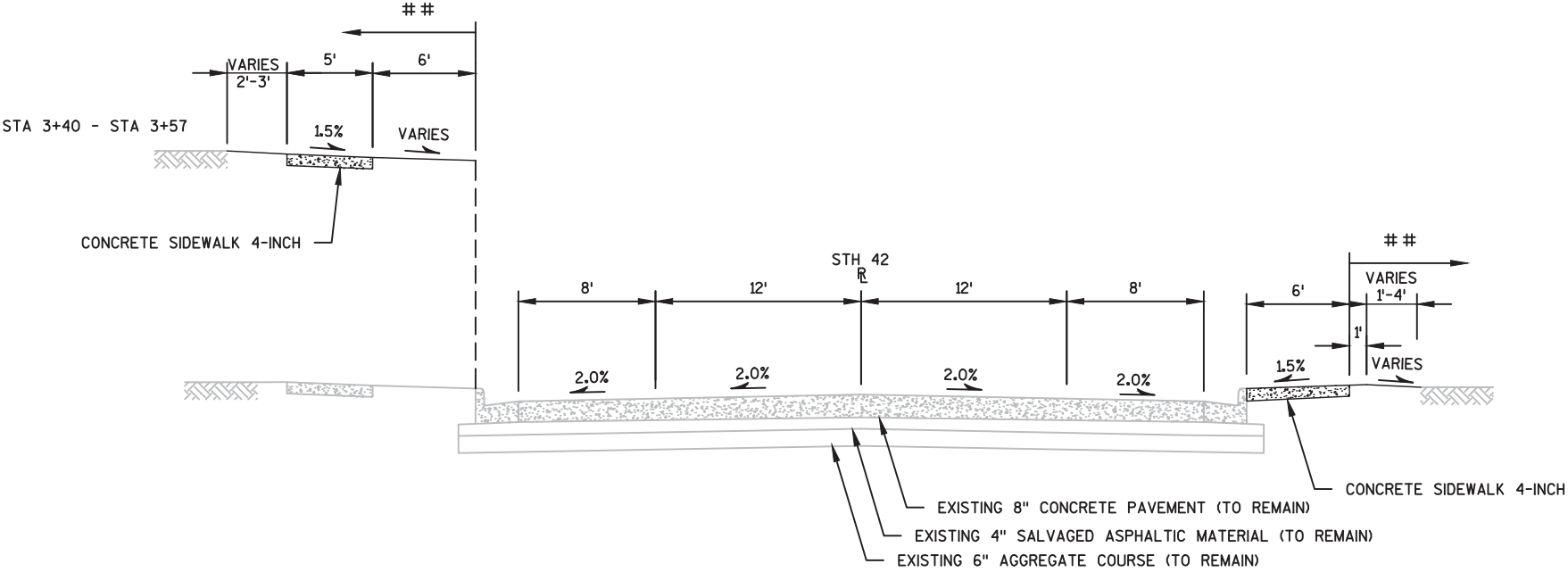
*CROSS SLOPE VARIES DUE TO SUPER ELEVATION



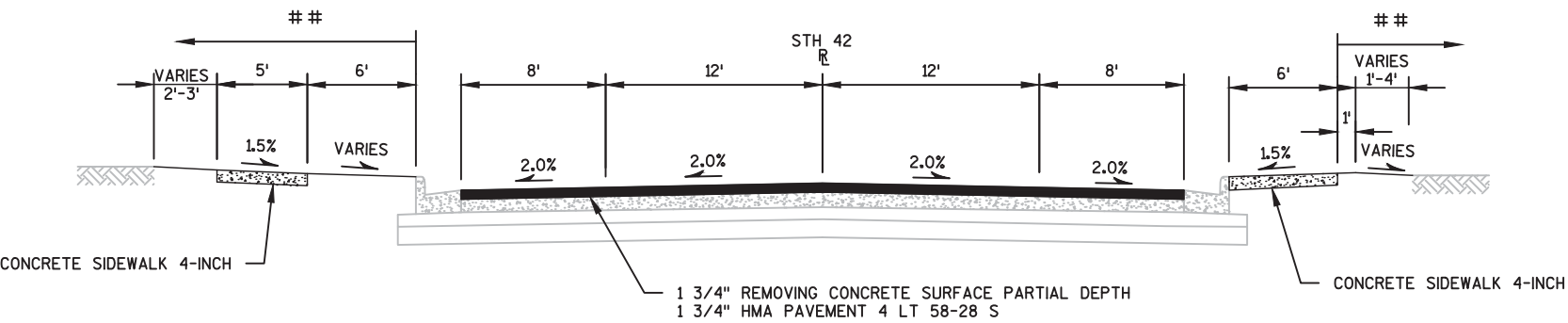
NOTE

*CROSS SLOPE VARIES DUE TO SUPER ELEVATION





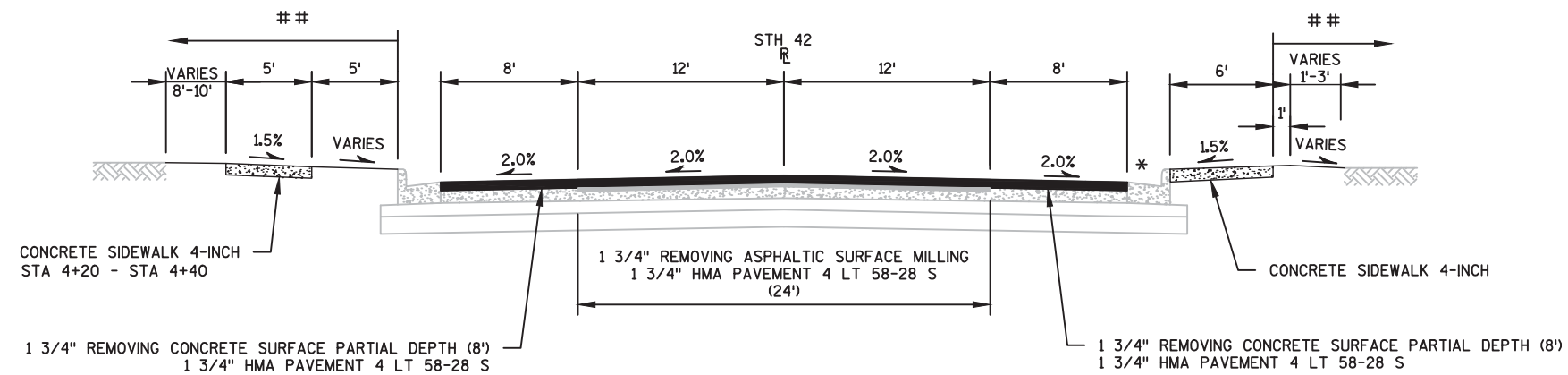
TYPICAL FINISHED SECTION
STH 42
STA 2+40 - STA 3+57



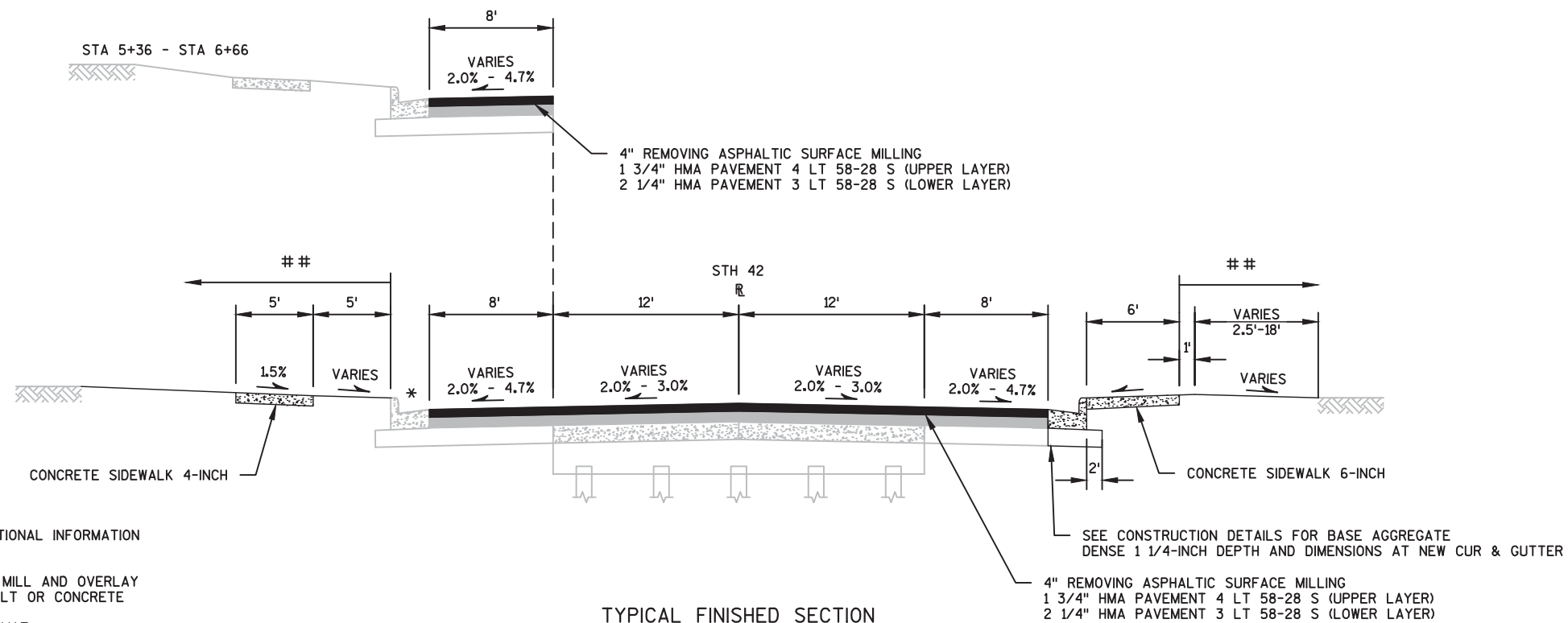
TYPICAL FINISHED SECTION
STH 42
STA 3+57 - STA 3+87

NOTE
PREPARE FOUNDATION FOR ASPHALTIC PAVING IN AREAS OF MILL AND OVERLAY
WHERE HMA PAVEMENT WILL BE PLACED ON EXISTING ASPHALT OR CONCRETE

SOD LAWN OR TOPSOIL, SEEDING, FERTILIZER, AND EROSION MAT;
SEE EROSION CONTROL DETAILS AND SECTION 5 PLAN FOR LOCATIONS



TYPICAL FINISHED SECTION
STH 42
STA 3+87 - STA 4+40



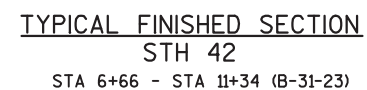
TYPICAL FINISHED SECTION
STH 42
STA 4+40 - STA 6+66

NOTES

* SEE CONSTRUCTION DETAILS AND PAVING DETAILS FOR ADDITIONAL INFORMATION AND LOCATIONS OF CURB & GUTTER REPLACEMENTS

PREPARE FOUNDATION FOR ASPHALTIC PAVING IN AREAS OF MILL AND OVERLAY WHERE HMA PAVEMENT WILL BE PLACED ON EXISTING ASPHALT OR CONCRETE

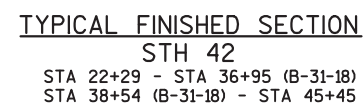
SOD LAWN OR TOPSOIL, SEEDING, FERTILIZER, AND EROSION MAT;
SEE EROSION CONTROL DETAILS AND SECTION 5 PLAN FOR LOCATIONS



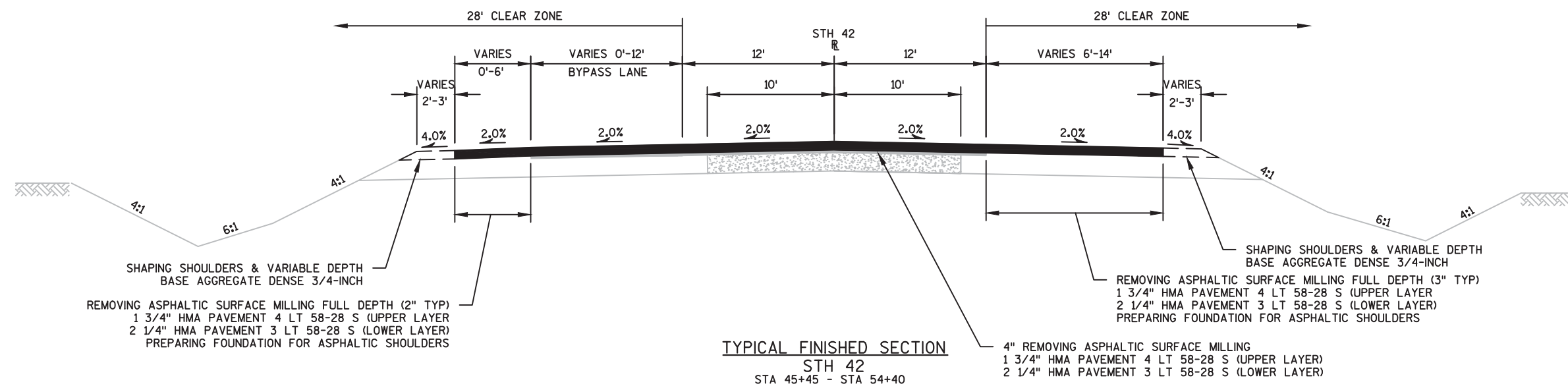
TYPICAL FINISHED SECTION
STH 42
 STA 6+66 - STA 11+34 (B-31-23)

STA 6+66 - STA 11+34 (B-31-23)

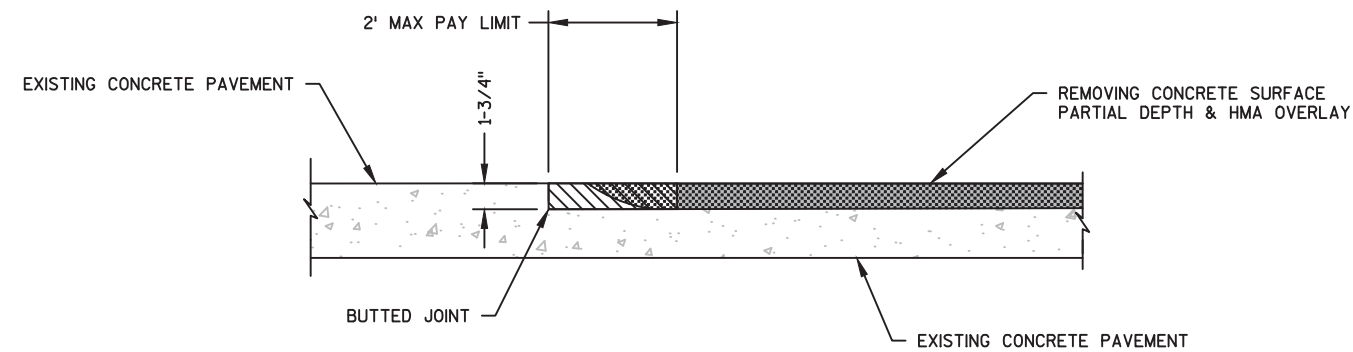
PREPARE FOUNDATION FOR ASPHALTIC PAVING IN AREAS OF MILL AND OVERLAY
WHERE HMA PAVEMENT WILL BE PLACED ON EXISTING ASPHALT OR CONCRETE



REMOVING ASPHALTIC SURFACE MILLING FULL DEPTH (2" TYP)
1 3/4" HMA PAVEMENT 4 LT 58-28 S (UPPER LAYER)
2 1/4" HMA PAVEMENT 3 LT 58-28 S (LOWER LAYER)
PREPARING FOUNDATION FOR ASPHALTIC SHOULDERS

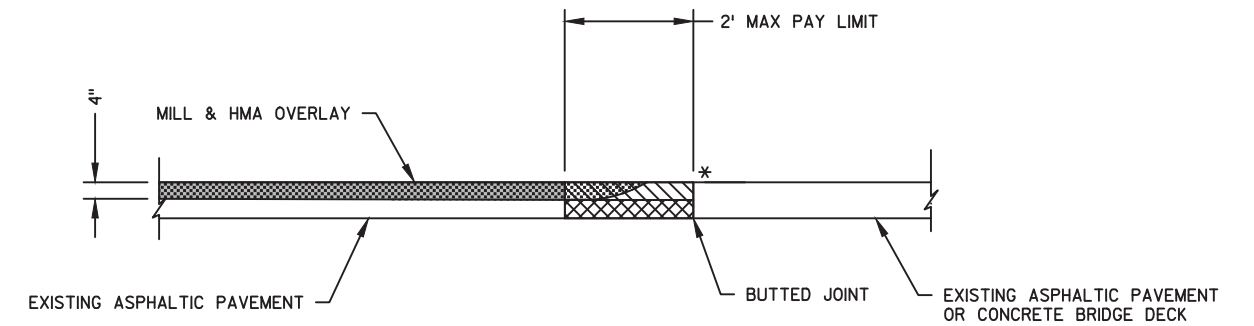
**NOTE**

PREPARE FOUNDATION FOR ASPHALTIC PAVING IN AREAS OF MILL AND OVERLAY
WHERE HMA PAVEMENT WILL BE PLACED ON EXISTING ASPHALT OR CONCRETE



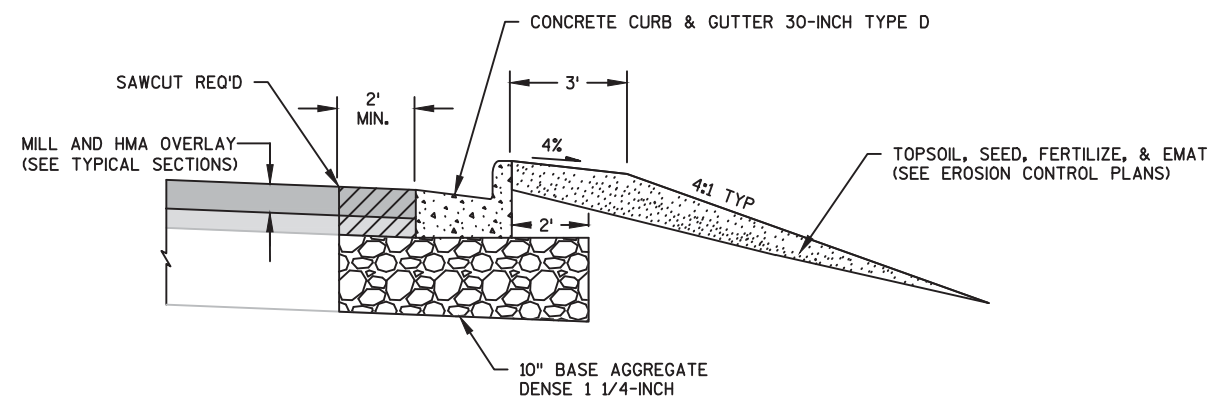
- REMOVING PAVEMENT BUTT JOINTS
DO NOT REMOVE MATERIAL UNDER THIS ITEM UNTIL 24 HOURS BEFORE PAVING
- REMOVING CONCRETE SURFACE PARTIAL DEPTH
- HMA OVERLAY

PAVEMENT BUTT JOINT DETAIL
BEGIN PROJECT STA 3+57



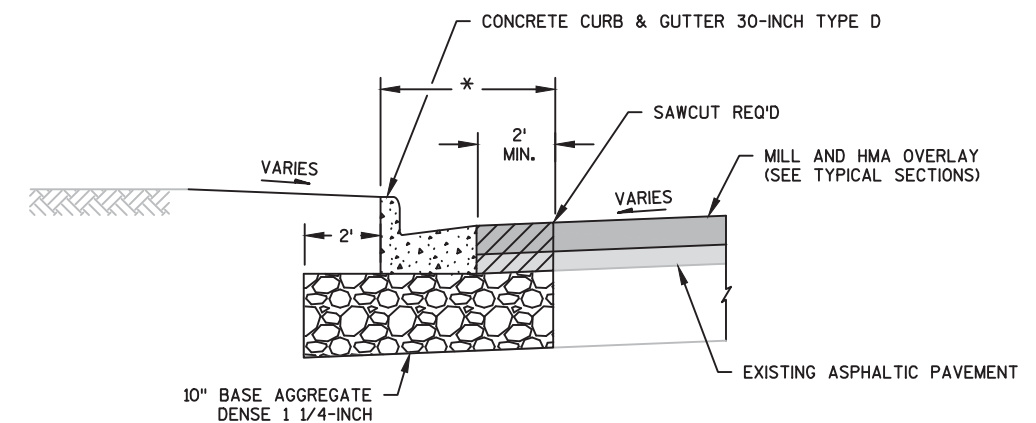
- ASPHALTIC WEDGING
(FULL DEPTH REMOVAL OPTIONAL)
- REMOVING ASPHALTIC SURFACE BUTT JOINTS
DO NOT REMOVE MATERIAL UNDER THIS ITEM UNTIL 24 HOURS BEFORE PAVING
- REMOVING ASPHALTIC SURFACE MILLING
- HMA OVERLAY
- * SAWCUT REQ'D

ASPHALTIC SURFACE BUTT JOINT DETAIL
REQUIRED AT END PROJECT LIMITS, INTERSECTIONS, AND BRIDGE DECKS
(SEE PLAN SHEETS FOR LOCATIONS)



DETAIL OF CURB & GUTTER INSTALLATION
AT INTERSECTION RADII
MAIN ST

NOTE
COMPLETE CURB & GUTTER REPLACEMENTS AND ASPHALTIC SURFACE PATCHING TO MATCH THE EXISTING SURFACE PRIOR TO THE MILL AND OVERLAY OF STH 42



6" MINIMUM ASPHALTIC SURFACE PATCHING
(MATCH EXISTING PAVEMENT DEPTH)

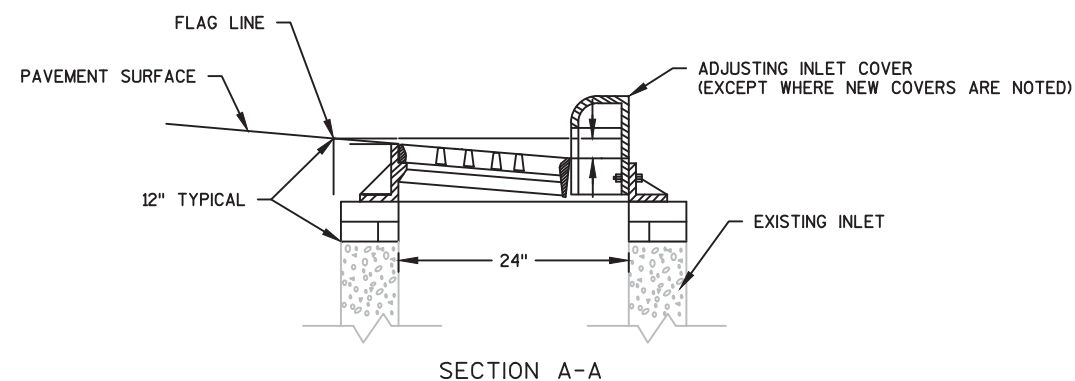
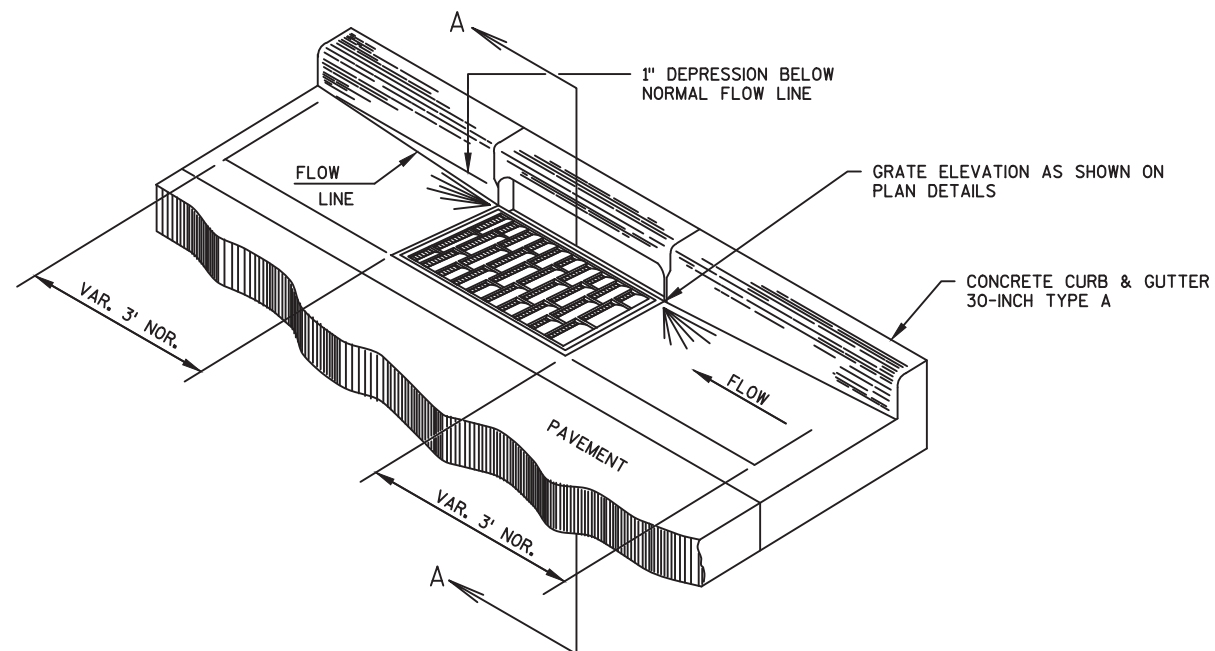
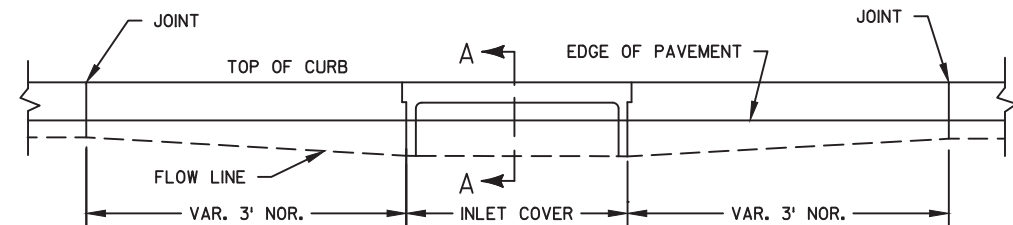
CONCRETE CURB & GUTTER REPLACEMENT DETAIL

STA 4+17 - STA 4+42 LT
STA 4+40 - STA 8+86 RT
STA 4+89 - STA 5+32 LT
STA 7+85 - STA 8+45 LT
STA 10+97 - STA 11+35 RT
STA 17+55 - STA 22+29 RT *

NOTES
COMPLETE CURB & GUTTER REPLACEMENTS AND ASPHALTIC SURFACE PATCHING TO MATCH THE EXISTING SURFACE PRIOR TO THE MILL AND OVERLAY OF STH 42

FOR DETAILS NOT SHOWN, SEE SDD "CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES"

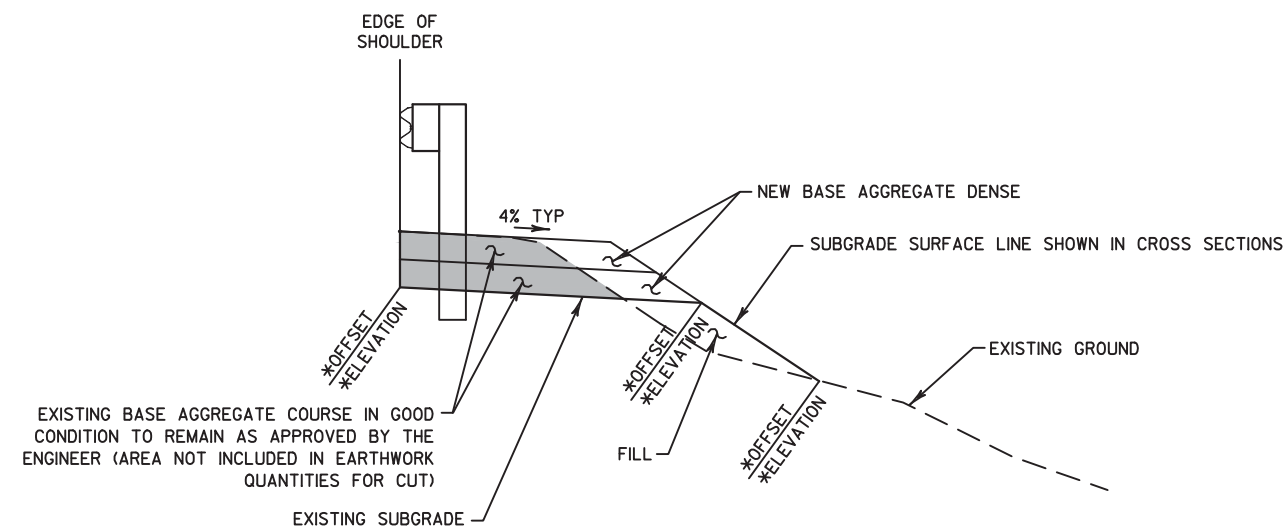
* REMOVAL OF THE ASPHALTIC SURFACE IS INCLUDED IN THE ITEM REMOVING ASPHALTIC CURB



DETAIL OF CURB & GUTTER AT INLETS

(TYPE 3-H INLET SHOWN)
 STA 7+32 RT
 * STA 8+24 LT
 * STA 8+71 RT
 STA 11+23 RT
 STA 17+68 RT
 STA 21+75 RT

NOTE
 *PROPOSED INLET AND INLET COVER

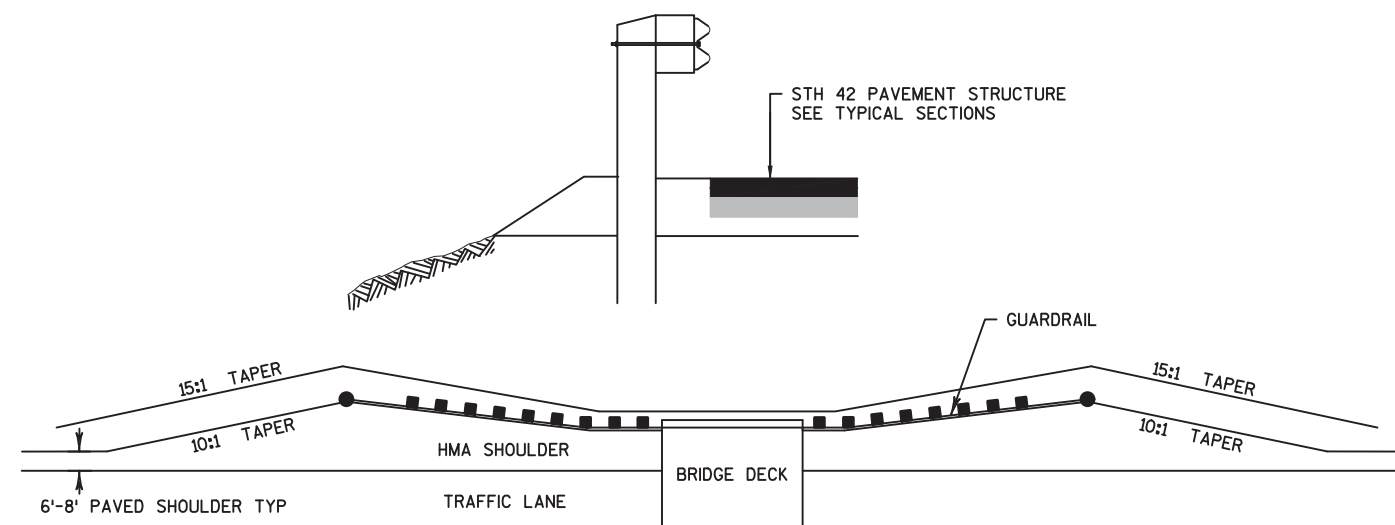


SHOULDER WIDENING EARTHWORK & BASE AGGREGATE FOR GUARDRAIL DETAIL

NOTES

ANY CUT AND FILL REQUIRED IS INCIDENTAL TO THE BARRIER SYSTEM GRADING SHAPING FINISHING ITEM

* OFFSET AND ELEVATION PROVIDED TO THESE POINTS ON THE CROSS SECTIONS



DETAIL FOR HMA SHOULDER AT GUARDRAIL

SEE SECTION 5 PLAN SHEETS FOR GUARDRAIL LOCATIONS

NOTE

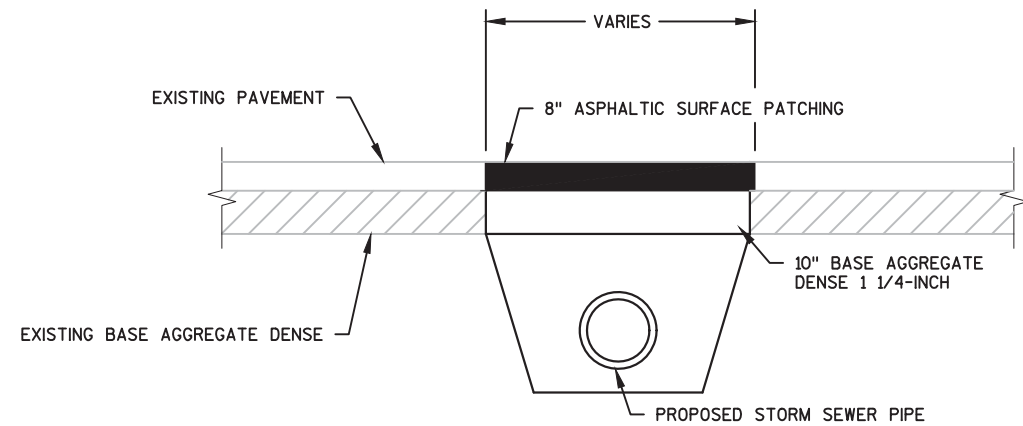
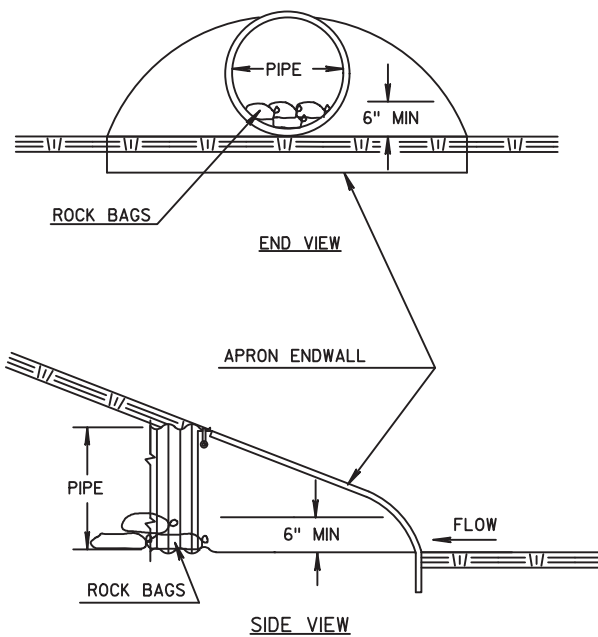
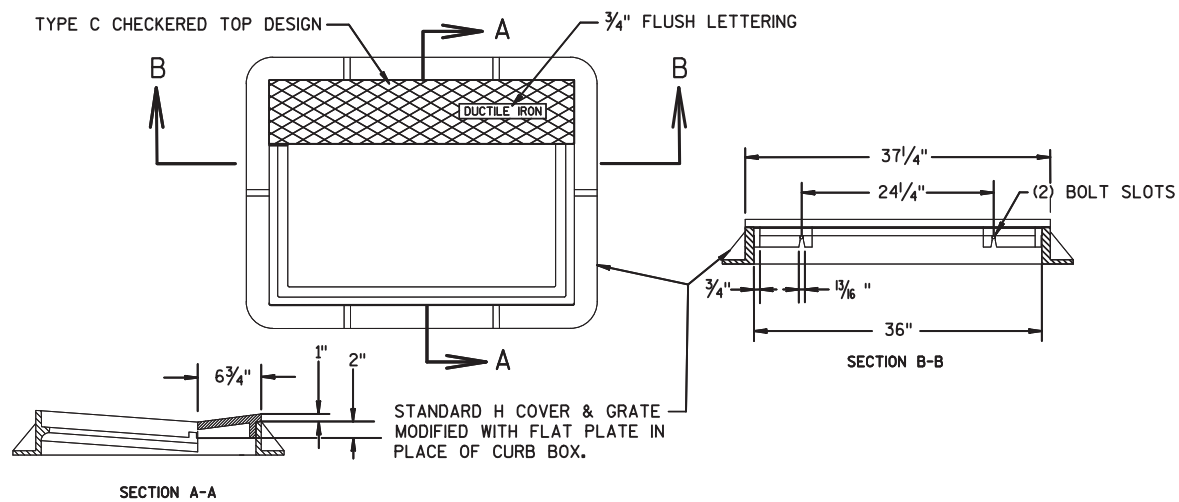
SEE GUARDRAIL SDDS FOR FOR ADDITIONAL DETAILS

RUNOFF COEFFICIENT TABLE

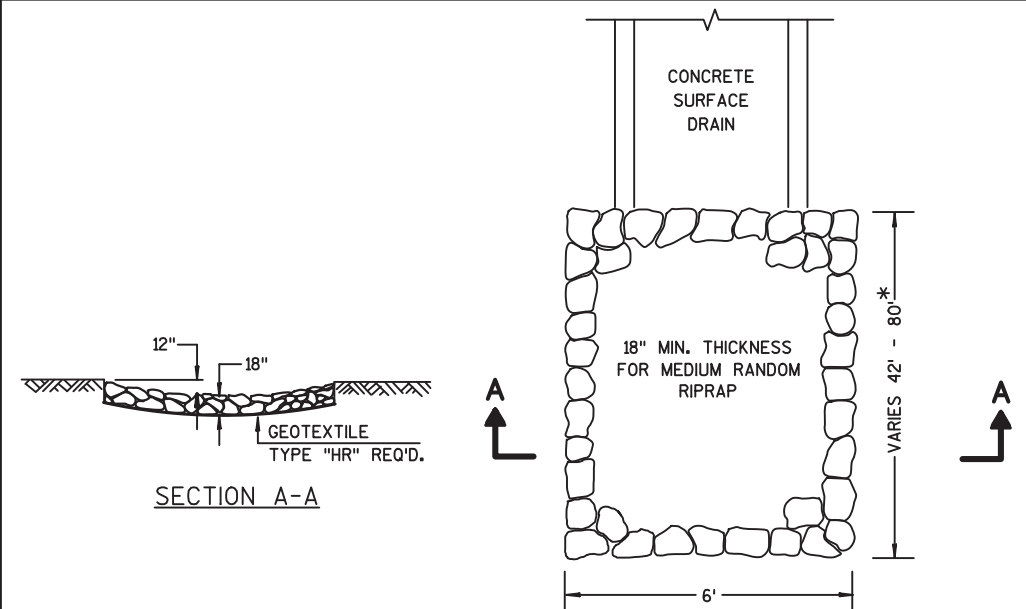
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
LAND USE:	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS	.08 .22	.16 .30	.22 .38	.12 .26	.20 .34	.27 .44	.15 .30	.24 .37	.33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

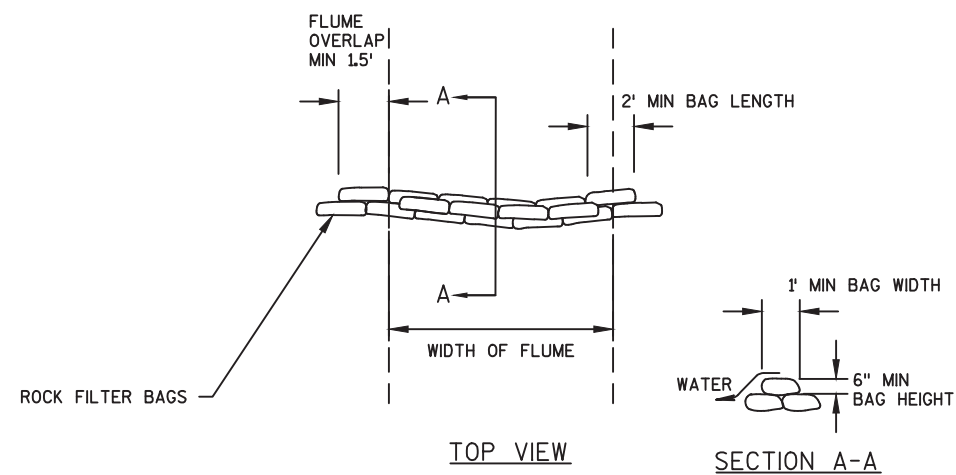
TOTAL PROJECT AREA = 20.2 ACRES

TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 7.7 ACRES

**DETAIL OF ASPHALTIC SURFACE PATCHING AT STORM SEWER INSTALLATION LOCATIONS**STA 3+65 - STA 4+19, LT & RT
STA 7+27 - STA 8+81, LT & RT**CULVERT PIPE CHECKS DETAIL**INSTALL ON INLET END
EACH ROCK BAG PAID AS CULVERT PIPE CHECKS

APPROXIMATE WT. (375 LBS.)

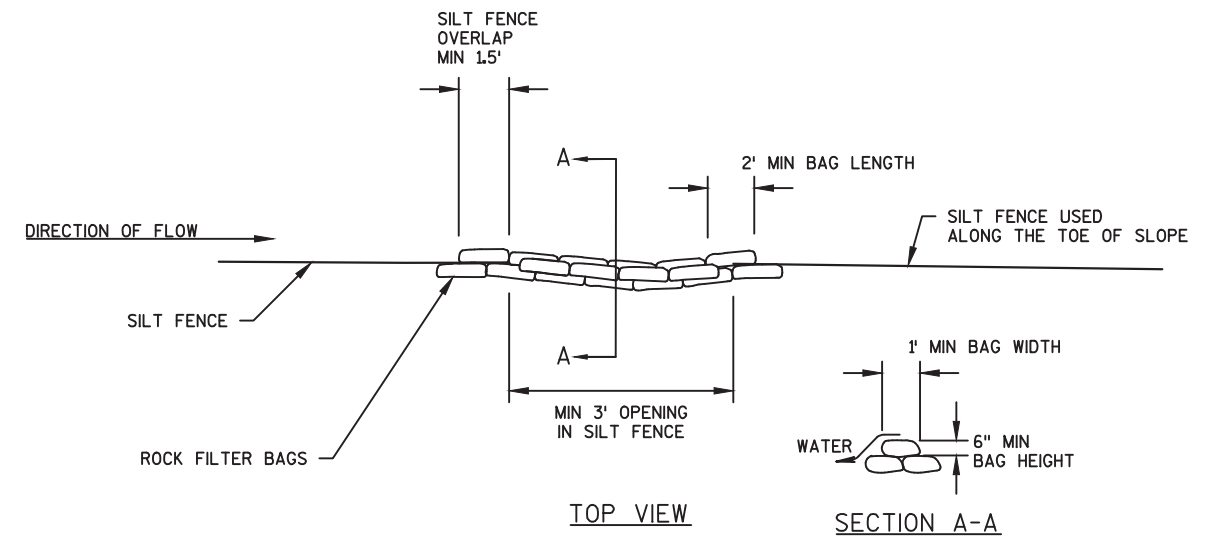
INLET COVER TYPE H-D(WITH MOUNTABLE CURB PLATE)
STA 8+24, LT**MEDIUM RIPRAP TREATMENT DETAIL AT CONCRETE SURFACE DRAINS**STA 36+59, RT
STA 36+84, LT**NOTES**
VERIFY PROPOSED GUARDRAIL POST
LOCATIONS PRIOR TO INSTALLING CONCRETE SURFACE DRAINS
*SEE EROSION CONTROL PLANS FOR ADDITIONAL INFORMATION
REGARDING RIPRAP DIMENSIONS



ROCK BAGS USED FOR TEMPORARY DITCH CHECKS

STA 8+15 RT

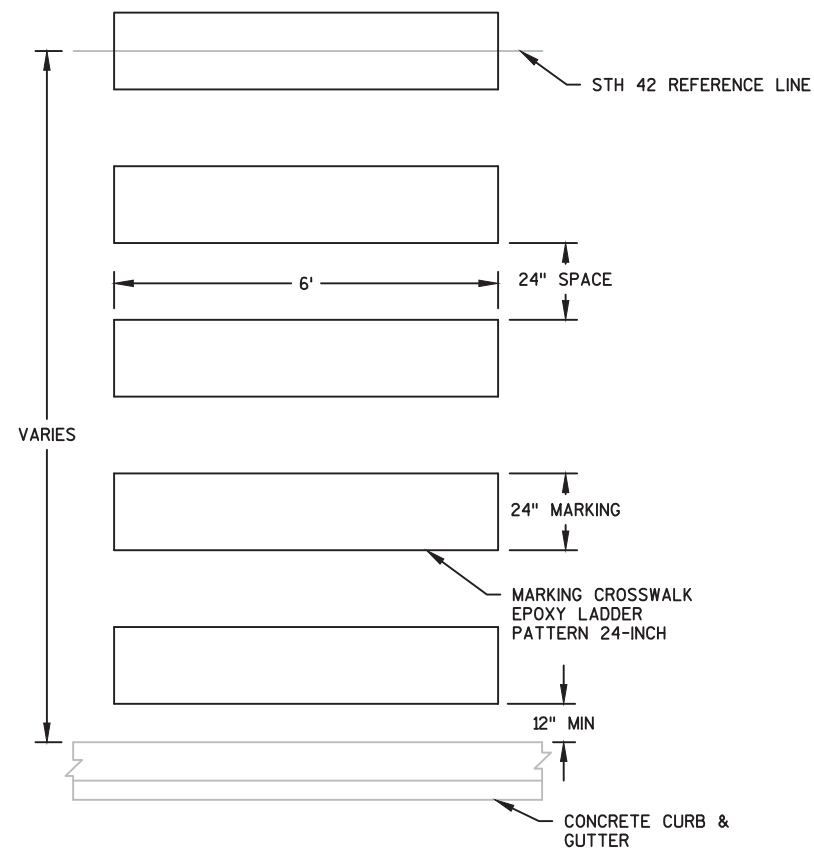
NOTE
SEE EROSION CONTROL PLANS
FOR ADDITIONAL INFORMATION



ROCK BAGS USED FOR SILT FENCE RELIEF

PAID AS ROCK BAGS

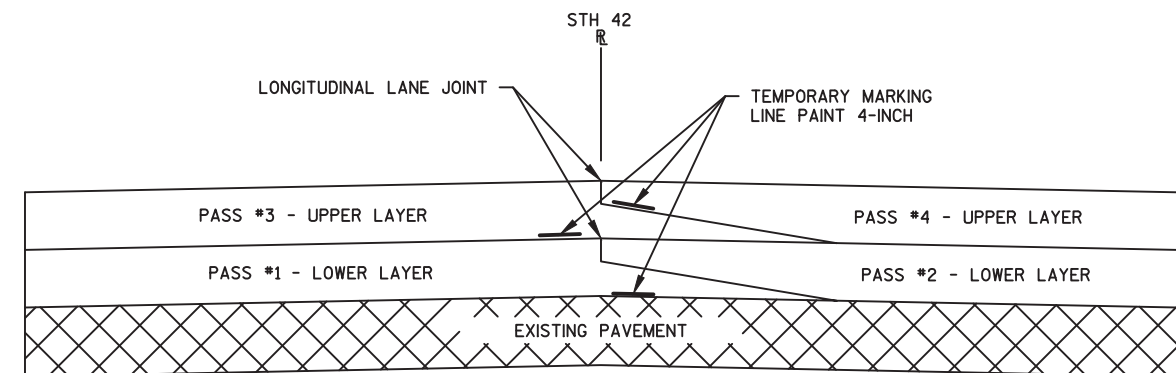
NOTE
SEE EROSION CONTROL PLANS
FOR ADDITIONAL INFORMATION



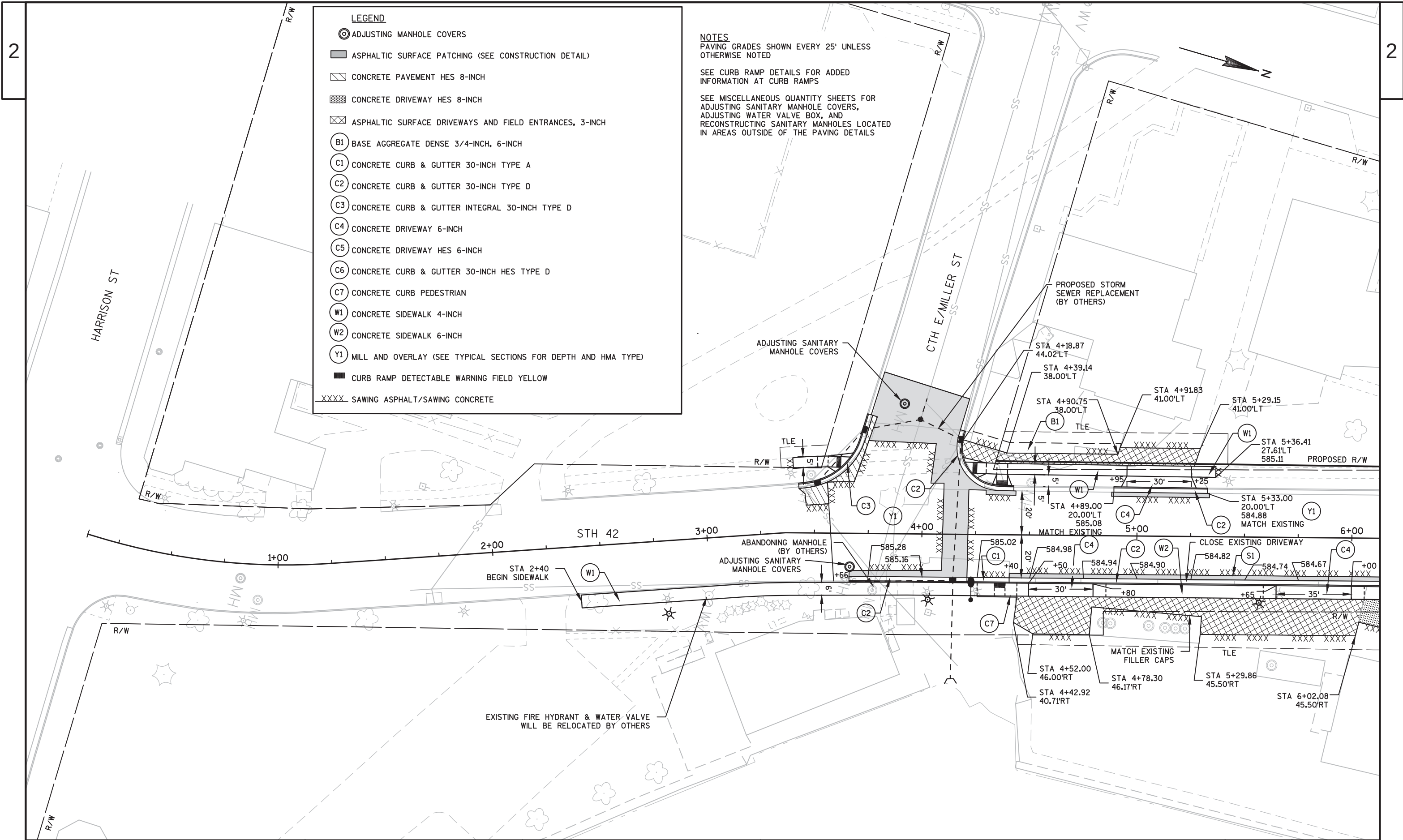
CROSSWALK MARKING DETAIL (HALF DETAIL)

STA 8+35, LT & RT

NOTE
PLACE MARKING LINES IN A LOCATION
TO AVOID WHEEL PATHS



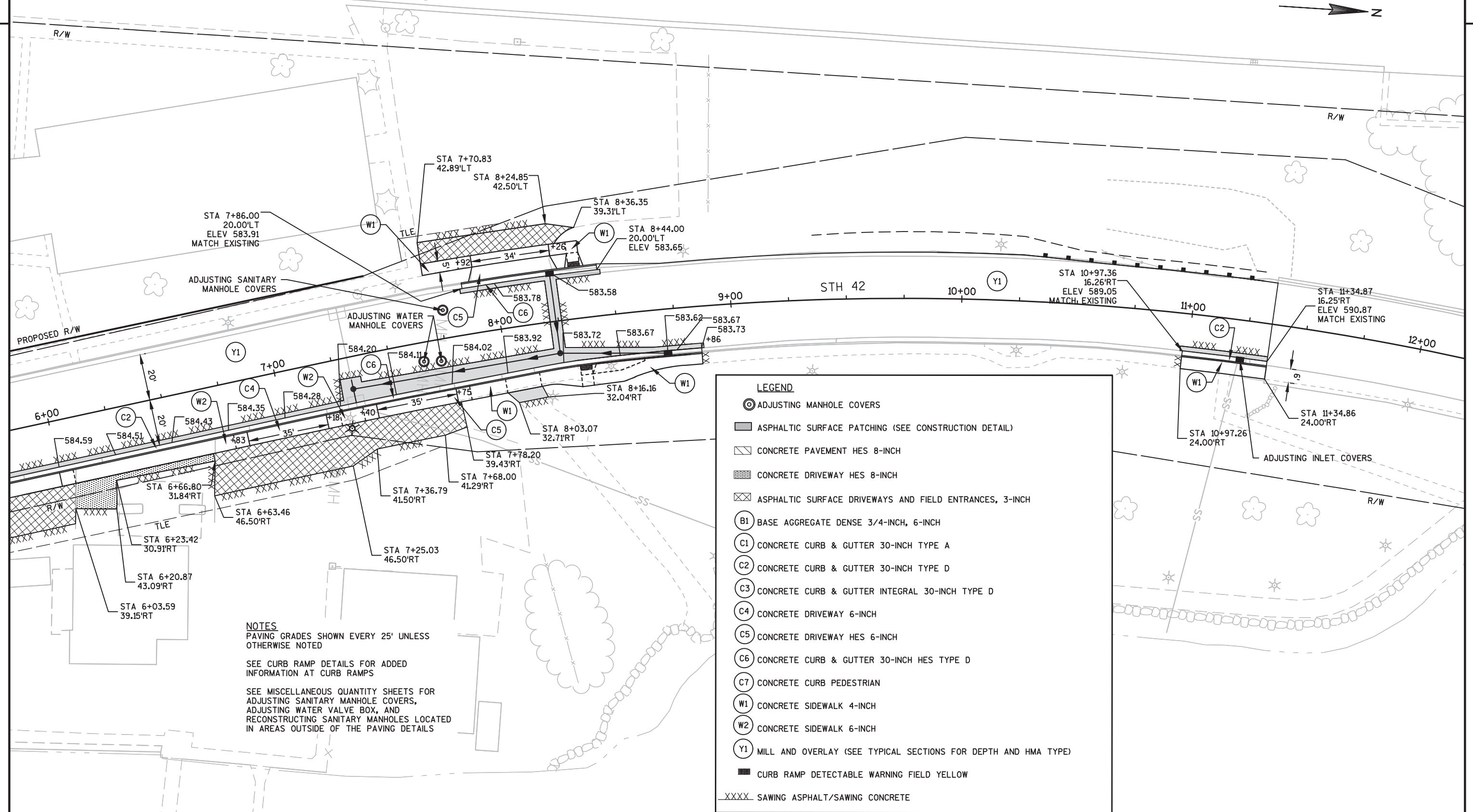
MARKING DETAIL FOR TAPERED OVERLAPPING JOINTS IN HMA PAVEMENTS



DODGE ST

2

2



PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

PAVING DETAILS

SHEET

19

E

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETS\PLAN\021201-PD.DWG
LAYOUT NAME - *****

PLOT DATE : 11/22/2017 8:27 AM

PLOT BY : MICHAEL HIGGINS

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADD SHEET 44

LEGEND

- ⊙ ADJUSTING MANHOLE COVERS
- ▬ ASPHALTIC SURFACE PATCHING (SEE CONSTRUCTION DETAIL)
- ▨ CONCRETE PAVEMENT HES 8-INCH
- ▩ CONCRETE DRIVEWAY HES 8-INCH
- ⊠ ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES, 3-INCH
- (B1) BASE AGGREGATE DENSE 3/4-INCH, 6-INCH
- (C1) CONCRETE CURB & GUTTER 30-INCH TYPE A
- (C2) CONCRETE CURB & GUTTER 30-INCH TYPE D
- (C3) CONCRETE CURB & GUTTER INTEGRAL 30-INCH TYPE D
- (C4) CONCRETE DRIVEWAY 6-INCH
- (C5) CONCRETE DRIVEWAY HES 6-INCH
- (C6) CONCRETE CURB & GUTTER 30-INCH HES TYPE D
- (C7) CONCRETE CURB PEDESTRIAN
- (W1) CONCRETE SIDEWALK 4-INCH
- (W2) CONCRETE SIDEWALK 6-INCH
- (Y1) MILL AND OVERLAY (SEE TYPICAL SECTIONS FOR DEPTH AND HMA TYPE)
- CURB RAMP DETECTABLE WARNING FIELD YELLOW
- XXXX SAWING ASPHALT/SAWING CONCRETE

NOTES

PAVING GRADES SHOWN EVERY 25'
UNLESS OTHERWISE NOTED

STATION, OFFSET, AND ELEVATION
INFORMATION IS PROVIDED AT THE
BACK OF CURB AT CURB RAMP
LOCATIONS

R/W

STA 17+55.14
16.00', RT
ELEV 591.94
MATCH EXISTING 18+00

591.12

590.31

588.84

588.29

587.81

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587.04

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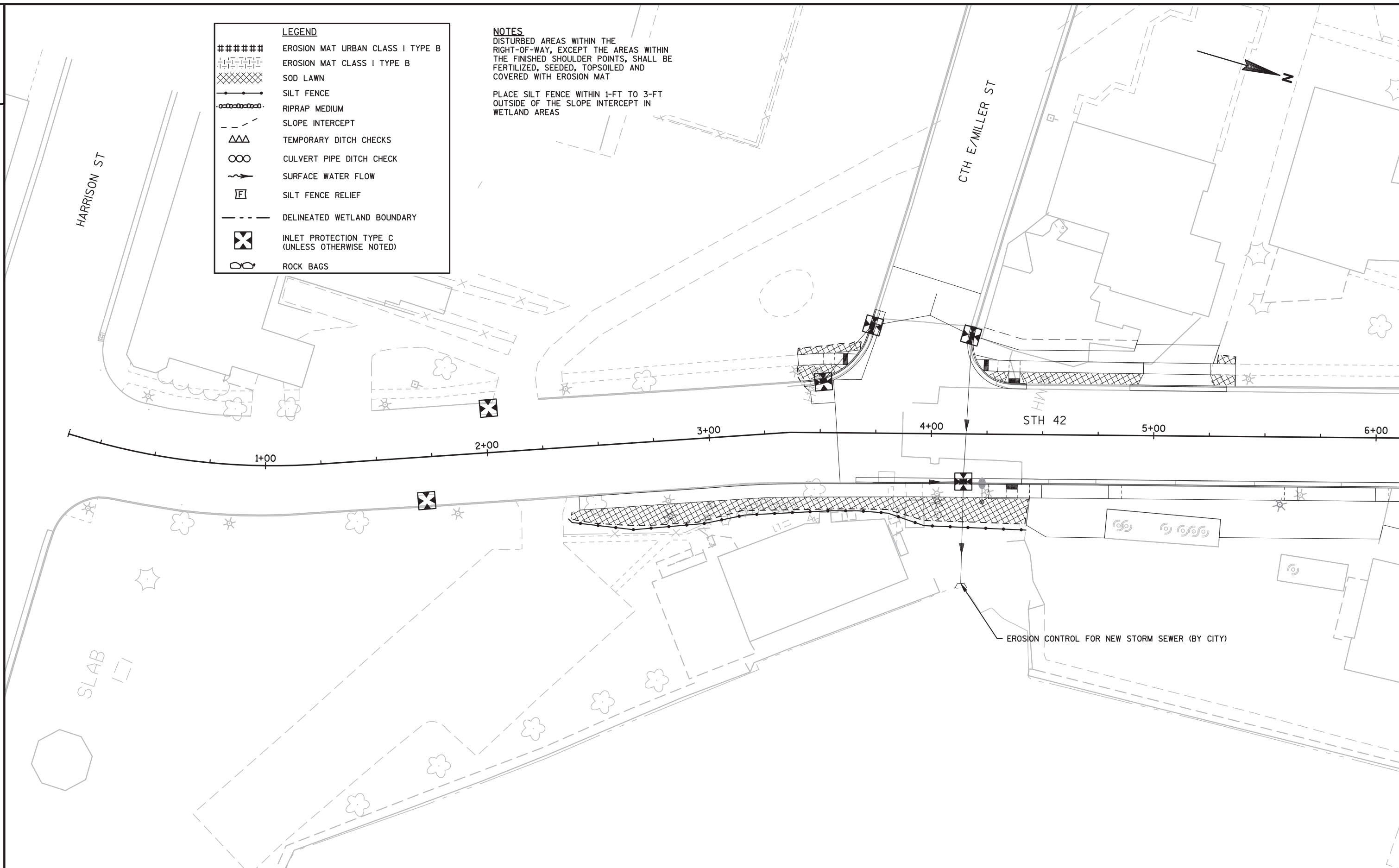
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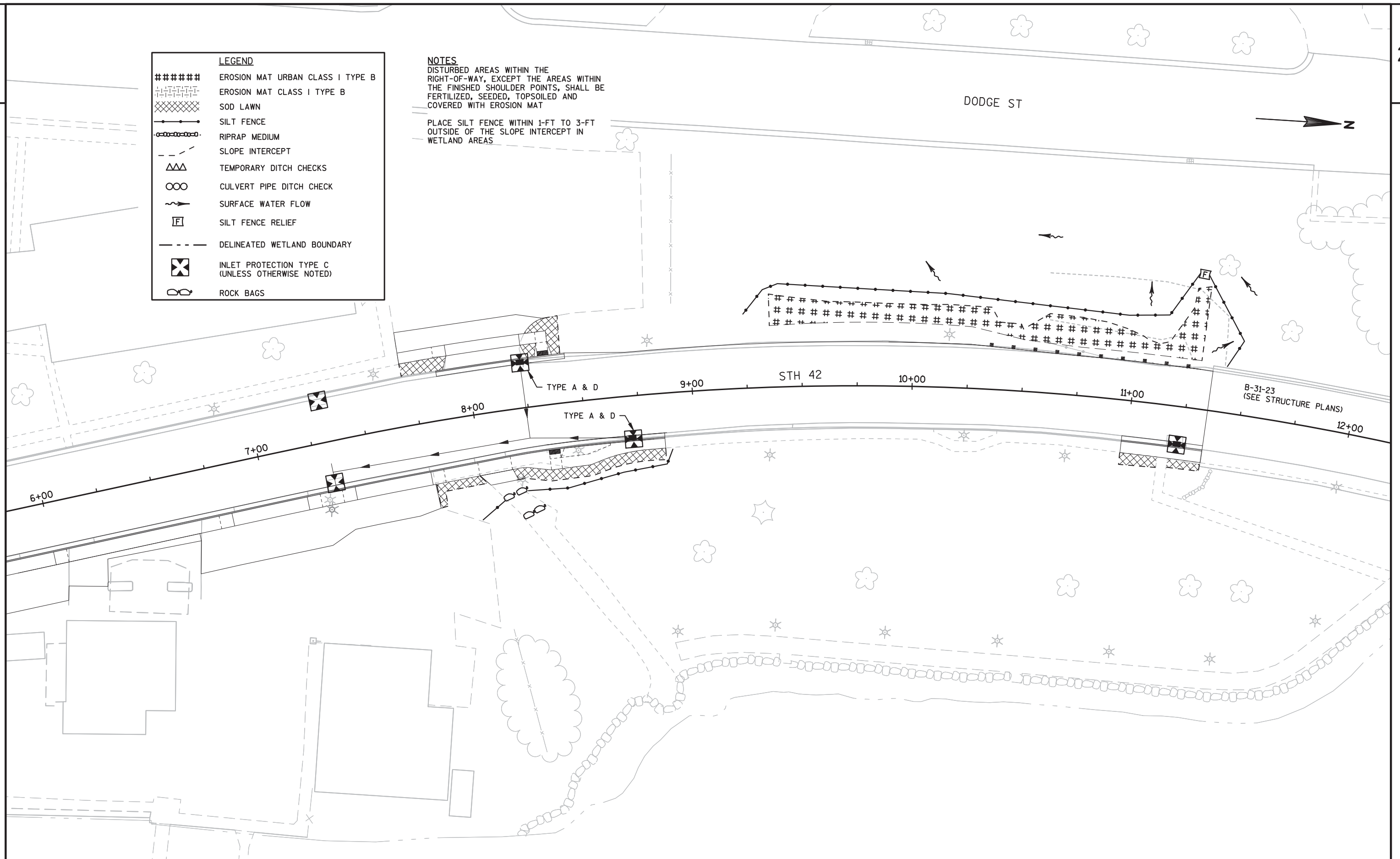
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LEGEND	
#####	EROSION MAT URBAN CLASS I TYPE B
	EROSION MAT CLASS I TYPE B
XXXXXX	SOD LAWN
—●—●—●—●—	SILT FENCE
—○—○—○—○—	RIPRAP MEDIUM
- - - - -	SLOPE INTERCEPT
ΔΔΔ	TEMPORARY DITCH CHECKS
○○○	CULVERT PIPE DITCH CHECK
~>	SURFACE WATER FLOW
[F]	SILT FENCE RELIEF
- - - - -	DELINEATED WETLAND BOUNDARY
⊗	INLET PROTECTION TYPE C (UNLESS OTHERWISE NOTED)
⊖	ROCK BAGS

NOTES
DISTURBED AREAS WITHIN THE
RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN
THE FINISHED SHOULDER POINTS, SHALL BE
FERTILIZED, SEEDED, TOPSOILED AND
COVERED WITH EROSION MAT

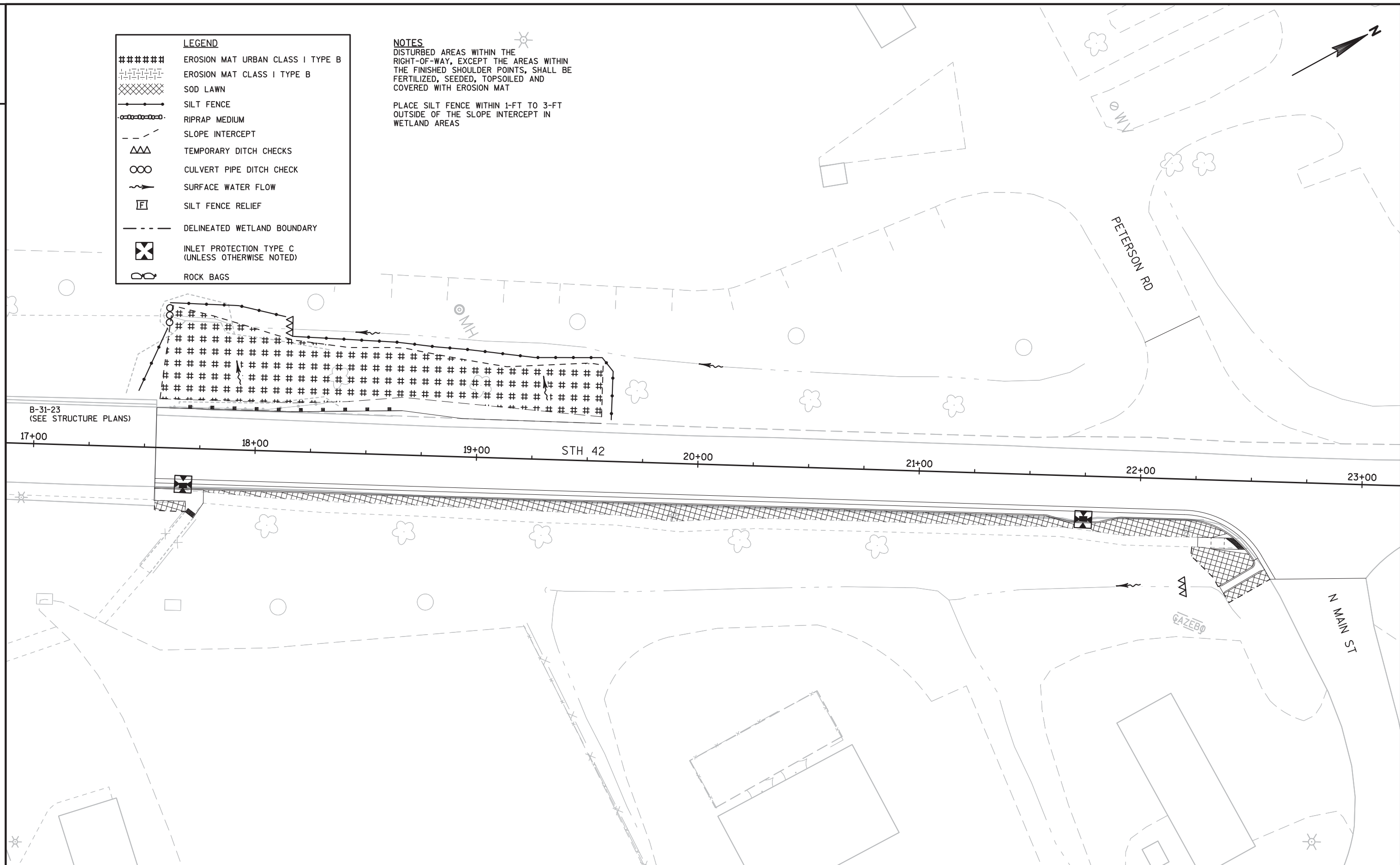
PLACE SILT FENCE WITHIN 1-FT TO 3-FT
OUTSIDE OF THE SLOPE INTERCEPT IN
WETLAND AREAS



LEGEND	
#####	EROSION MAT URBAN CLASS I TYPE B
	EROSION MAT CLASS I TYPE B
XXXXXX	SOD LAWN
—●—●—●—	SILT FENCE
—○—○—○—	RIPRAP MEDIUM
- - -	SLOPE INTERCEPT
△△△	TEMPORARY DITCH CHECKS
○○○	CULVERT PIPE DITCH CHECK
~>	SURFACE WATER FLOW
[F]	SILT FENCE RELIEF
- - -	DELINEATED WETLAND BOUNDARY
⊗	INLET PROTECTION TYPE C (UNLESS OTHERWISE NOTED)
○	ROCK BAGS

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PLACE SILT FENCE WITHIN 1-FT TO 3-FT
OUTSIDE OF THE SLOPE INTERCEPT IN
WETLAND AREAS



PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

EROSION CONTROL

SHEET 24

E

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETSPLAN\022001-EC.DWG
LAYOUT NAME - *****

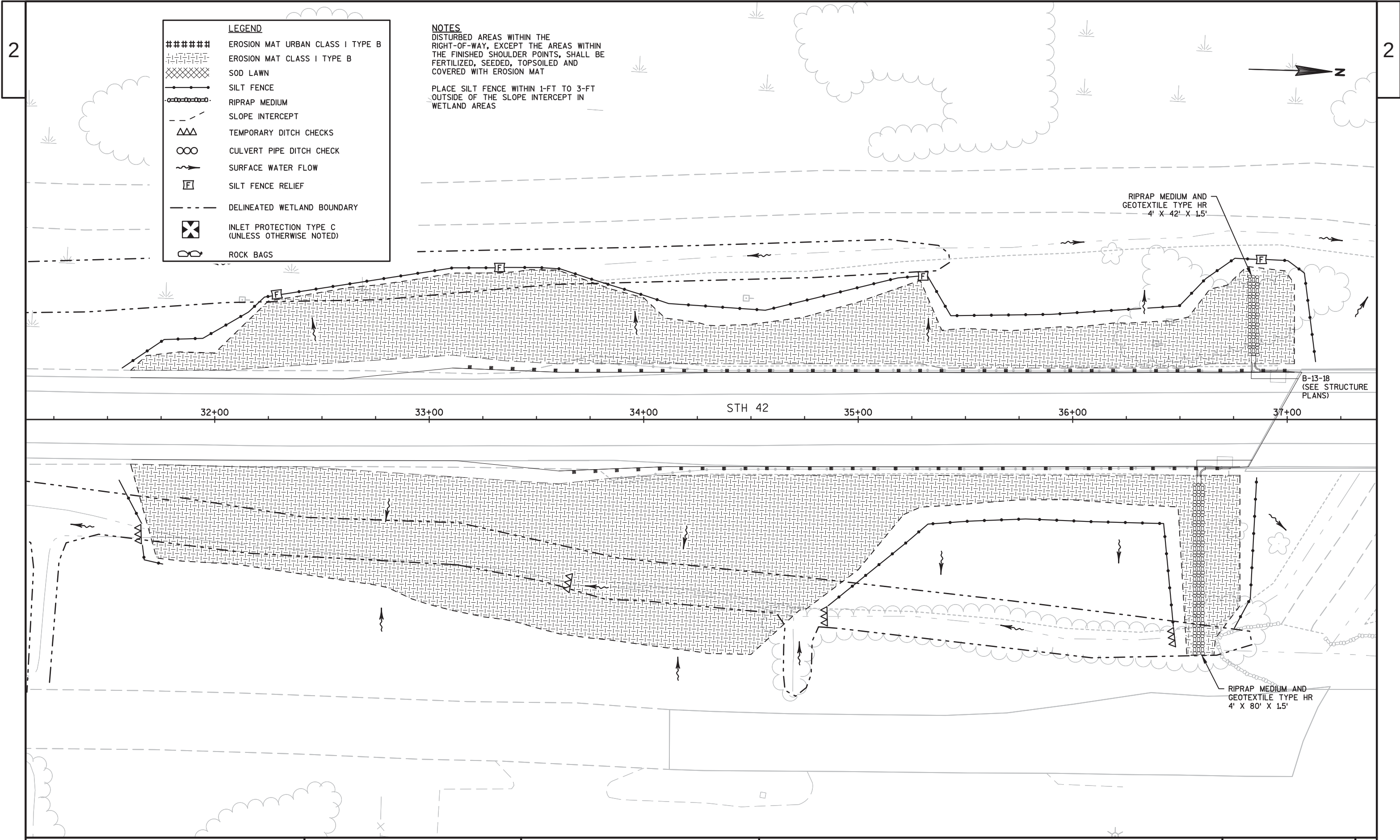
PLOT DATE : 11/21/2017 1:56 PM

PLOT BY : SCOTT KAISER

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDs SHEET 44



LEGEND

EROSION MAT URBAN CLASS I TYPE B

||||| EROSION MAT CLASS I TYPE B

XXXXX SOD LAWN

—●— SILT FENCE

—○— RIPRAP MEDIUM

- - - SLOPE INTERCEPT

△△△ TEMPORARY DITCH CHECKS

○○○ CULVERT PIPE DITCH CHECK

~> SURFACE WATER FLOW

[F] SILT FENCE RELIEF

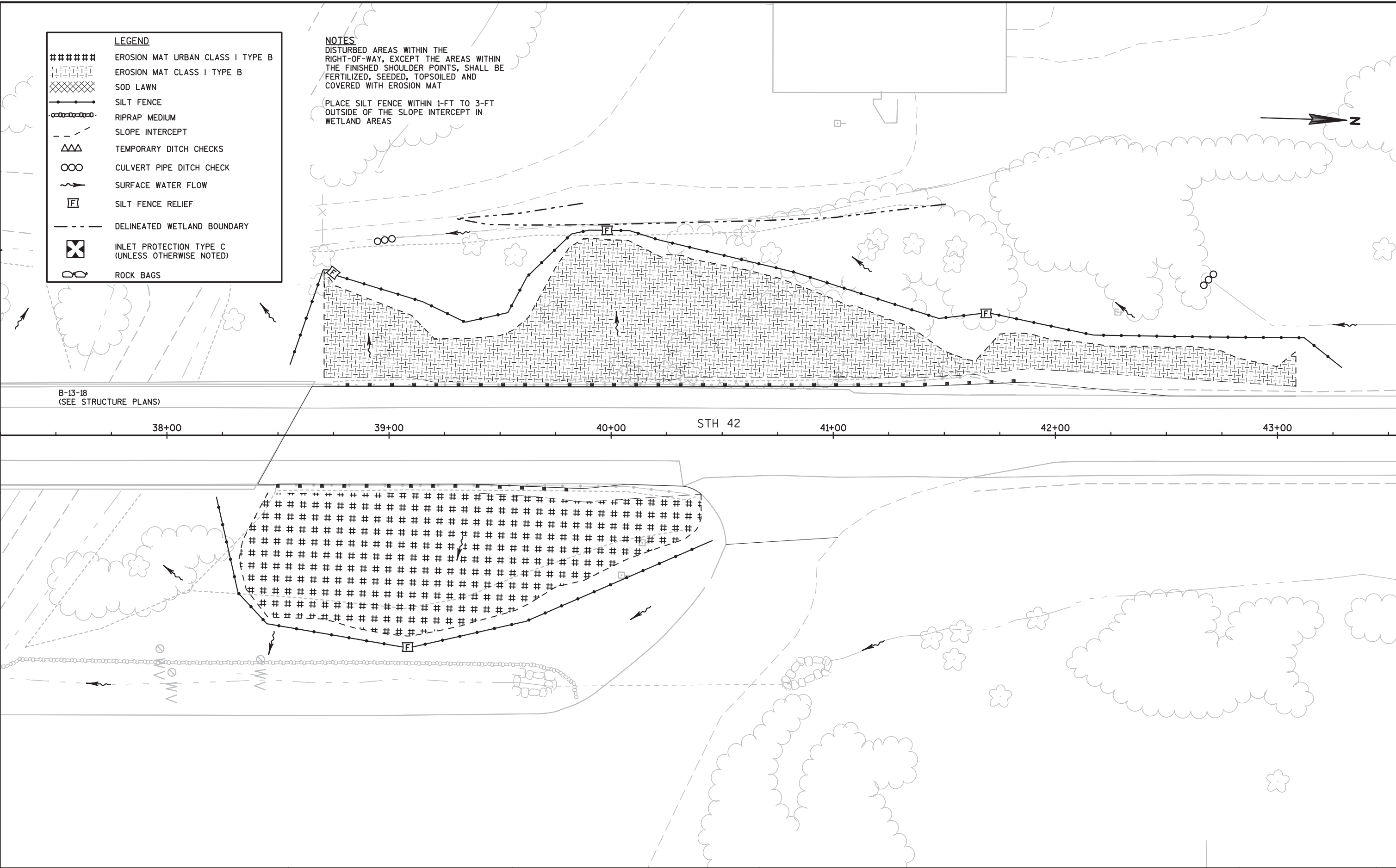
- - - DELINEATED WETLAND BOUNDARY

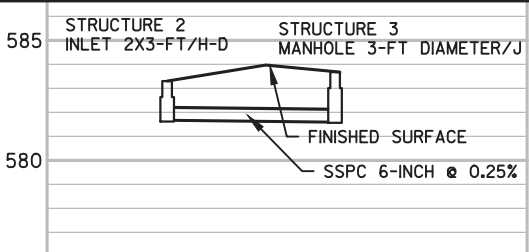
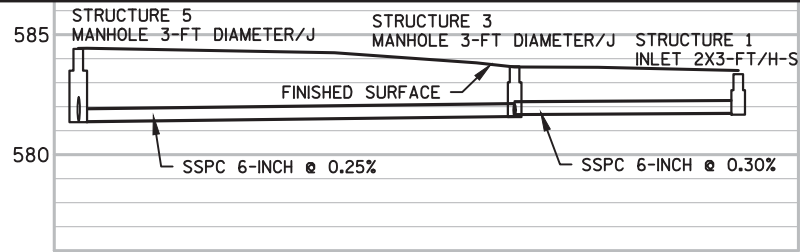
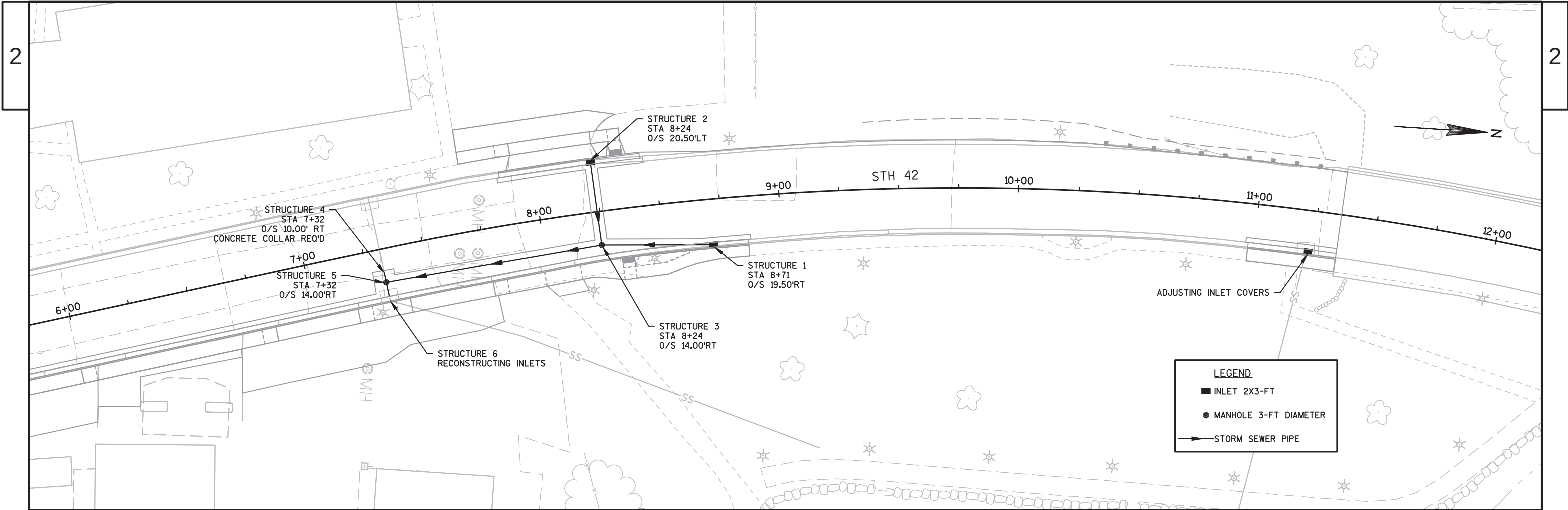
⊗ INLET PROTECTION TYPE C (UNLESS OTHERWISE NOTED)

⊖ ROCK BAGS

NOTES
DISTURBED AREAS WITHIN THE RIGHT-OF-WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE FERTILIZED, SEEDED, TOPSOILED AND COVERED WITH EROSION MAT

(PLACE SILT FENCE WITHIN 1-FT TO 3-FT OUTSIDE OF THE SLOPE INTERCEPT IN WETLAND AREAS)





STORM SEWER SCHEDULE

STRUCT NO.	STATION	(1) OFFSET	C-C (FT)	TO STRUCTURE	INLET OR MANHOLE TYPE / COVER	(2) RIM/ GRATE ELEV.	(3) T.O.S. ELEV.	(4) DEPTH (FT)	DISCHARGE PIPE				
									MATERIAL	SIZE (IN)	INLET ELEV.	DISCHARGE ELEV.	(5) SLOPE (%)
1	8+71	19.50' RT	46.6	3	INLET 2x3-FT / H-S	583.47	582.63	0.89	COMPOSITE	6	581.74	581.61	0.30
2	8+24	20.50' LT	34.5	3	INLET 2x3-FT / H-D	583.42	582.58	0.89	COMPOSITE	6	581.69	581.61	0.25
3	8+24	14.00' RT	90.9	5	MANHOLE 3-FT DIAMETER / J	583.82	582.57	0.96	COMPOSITE	6	581.61	581.39	0.25
4	7+32	10.00' RT	4.0	5	CONCRETE COLLAR	---	---	---	CONCRETE CLASS IV	12	581.42	581.39	1.00
5	7+32	14.00' RT	7.5	6	MANHOLE 3-FT DIAMETER / J	584.41	583.16	1.77	CONCRETE CLASS IV	12	581.39	581.34	1.00

(1) STRUCTURE OFFSET IS TO CENTER OF STRUCTURE.
(2) RIM ELEVATION FOR MANHOLE IS TO CENTER OF CASTING. RIM ELEVATION FOR INLET H-S AND H-D IS 1-INCH BELOW NORMAL CURB AND GUTTER FLOW LINE ELEVATION.
(3) TOP OF STRUCTURE ELEVATION (T.O.S.) IS DETERMINED BY SUBTRACTING CASTING HEIGHT AND 6-INCHES, FOR ADJUSTMENT, FROM RIM ELEVATION. A TYPE H-S AND H-D INLET CASTING IS 4-INCHES IN HEIGHT, A TYPE J MANHOLE CASTING IS 9-INCHES
(4) DEPTH OF STRUCTURE MEASURED BY SUBTRACTING INLET ELEVATION FROM T.O.S.
(5) PIPE SLOPE IS CALCULATED USING PIPE LENGTH BETWEEN THE INSIDE WALL OF STRUCTURE TO THE INSIDE WALL OF STRUCTURE.



SIGNING NOTES

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

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

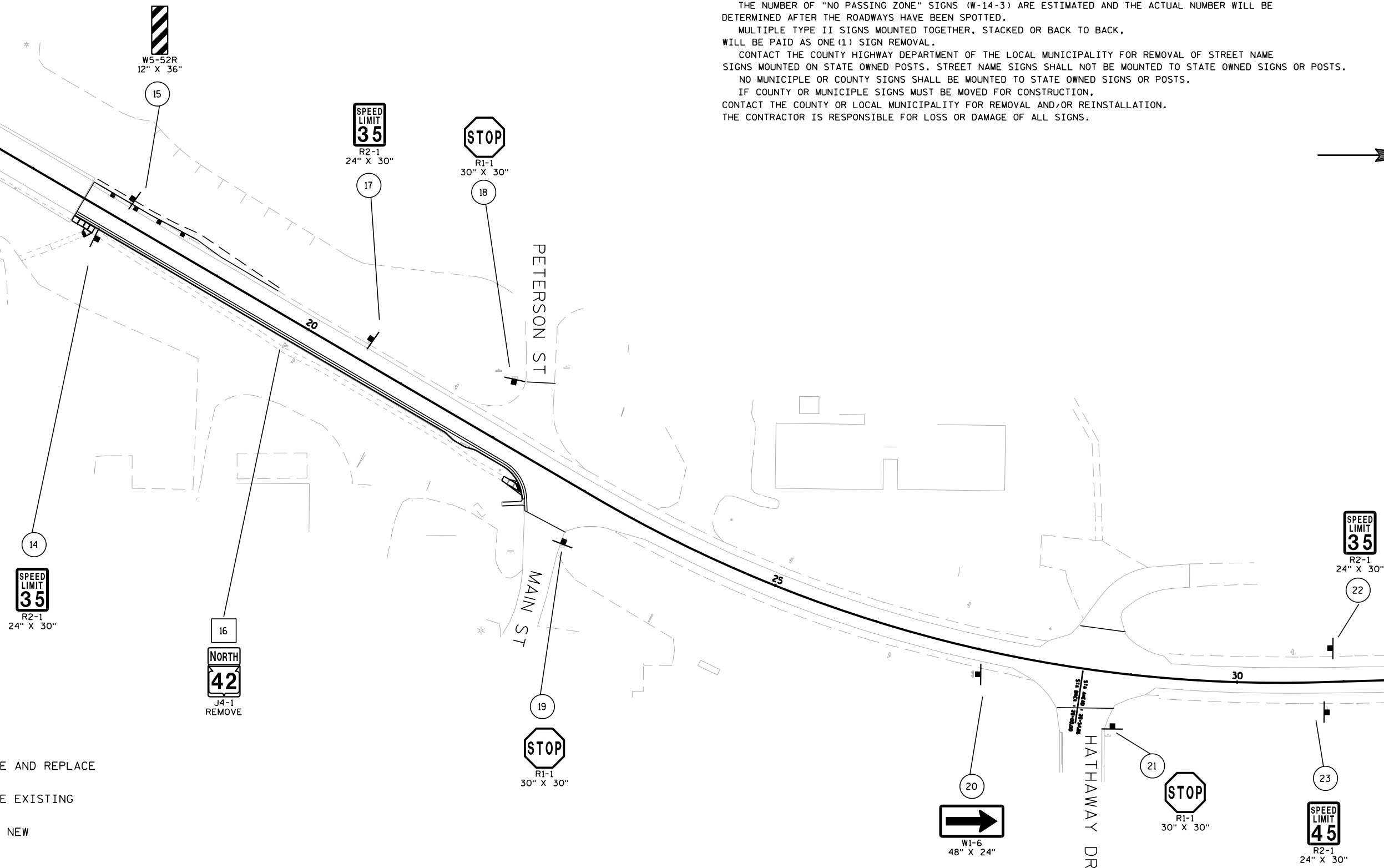
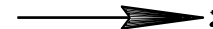
THE NUMBER OF "NO PASSING ZONE" SIGNS (W-14-3) ARE ESTIMATED AND THE ACTUAL NUMBER WILL BE DETERMINED AFTER THE ROADWAYS HAVE BEEN SPOTTED.

MULTIPLE TYPE II SIGNS MOUNTED TOGETHER, STACKED OR BACK TO BACK, WILL BE PAID AS ONE (1) SIGN REMOVAL.

CONTACT THE COUNTY HIGHWAY DEPARTMENT OF THE LOCAL MUNICIPALITY FOR REMOVAL OF STREET NAME SIGNS MOUNTED ON STATE OWNED POSTS. STREET NAME SIGNS SHALL NOT BE MOUNTED TO STATE OWNED SIGNS OR POSTS.

NO MUNICIPAL OR COUNTY SIGNS SHALL BE MOUNTED TO STATE OWNED SIGNS OR POSTS.

IF COUNTY OR MUNICIPAL SIGNS MUST BE MOVED FOR CONSTRUCTION, CONTACT THE COUNTY OR LOCAL MUNICIPALITY FOR REMOVAL AND/OR REINSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR LOSS OR DAMAGE OF ALL SIGNS.





SIGNING NOTES

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

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

THE NUMBER OF "NO PASSING ZONE" SIGNS (W-14-3) ARE ESTIMATED AND THE ACTUAL NUMBER WILL BE DETERMINED AFTER THE ROADWAYS HAVE BEEN SPOTTED.

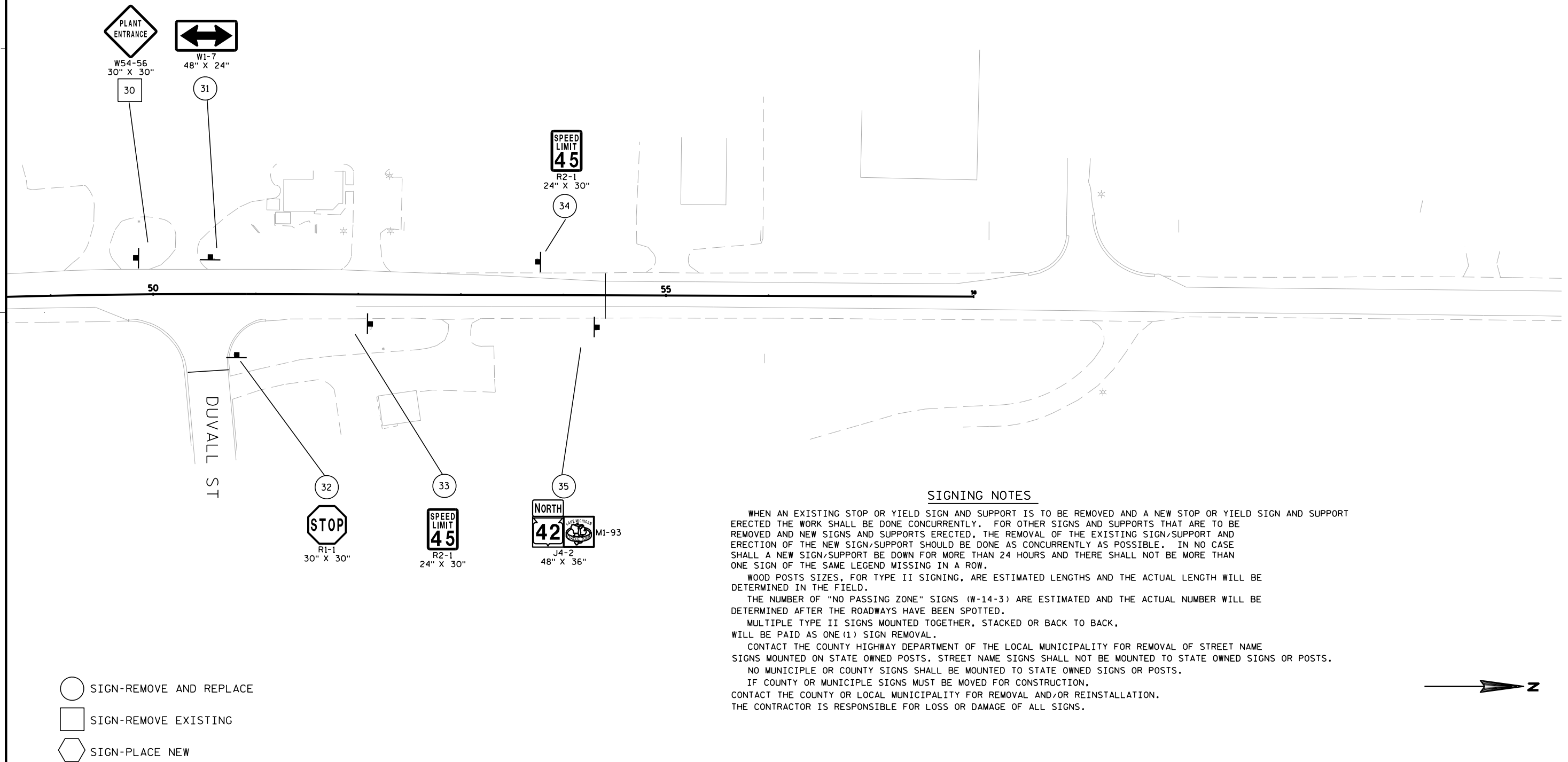
MULTIPLE TYPE II SIGNS MOUNTED TOGETHER, STACKED OR BACK TO BACK, WILL BE PAID AS ONE (1) SIGN REMOVAL.

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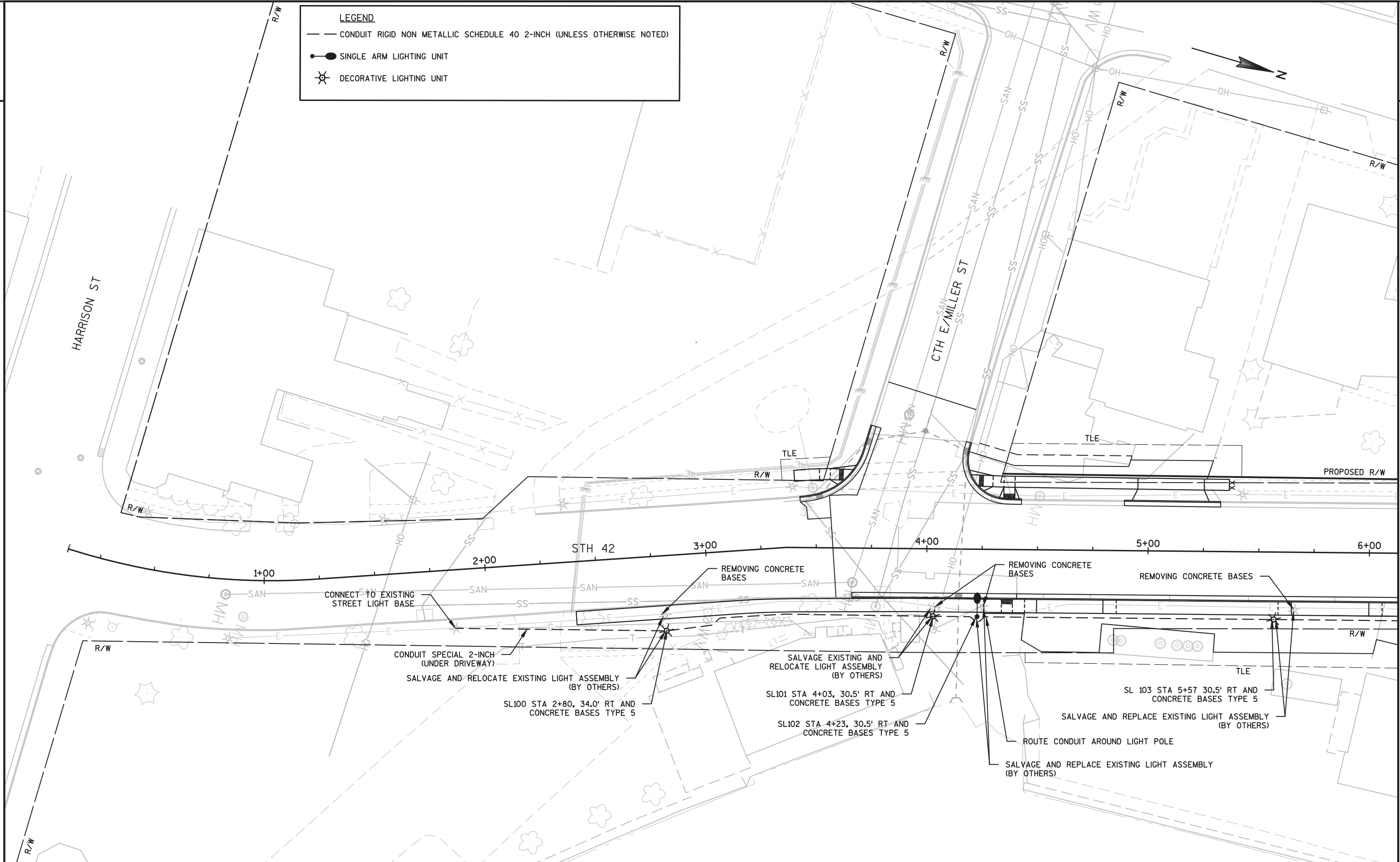
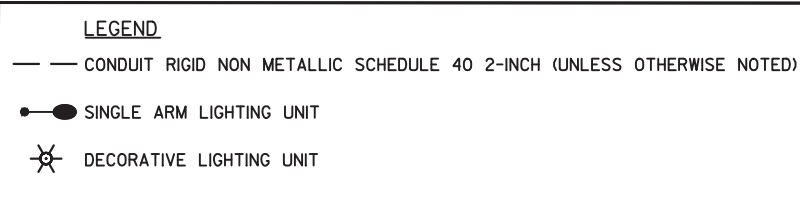
IF COUNTY OR MUNICIPAL SIGNS MUST BE MOVED FOR CONSTRUCTION, CONTACT THE COUNTY OR LOCAL MUNICIPALITY FOR REMOVAL AND/OR REINSTALLATION.

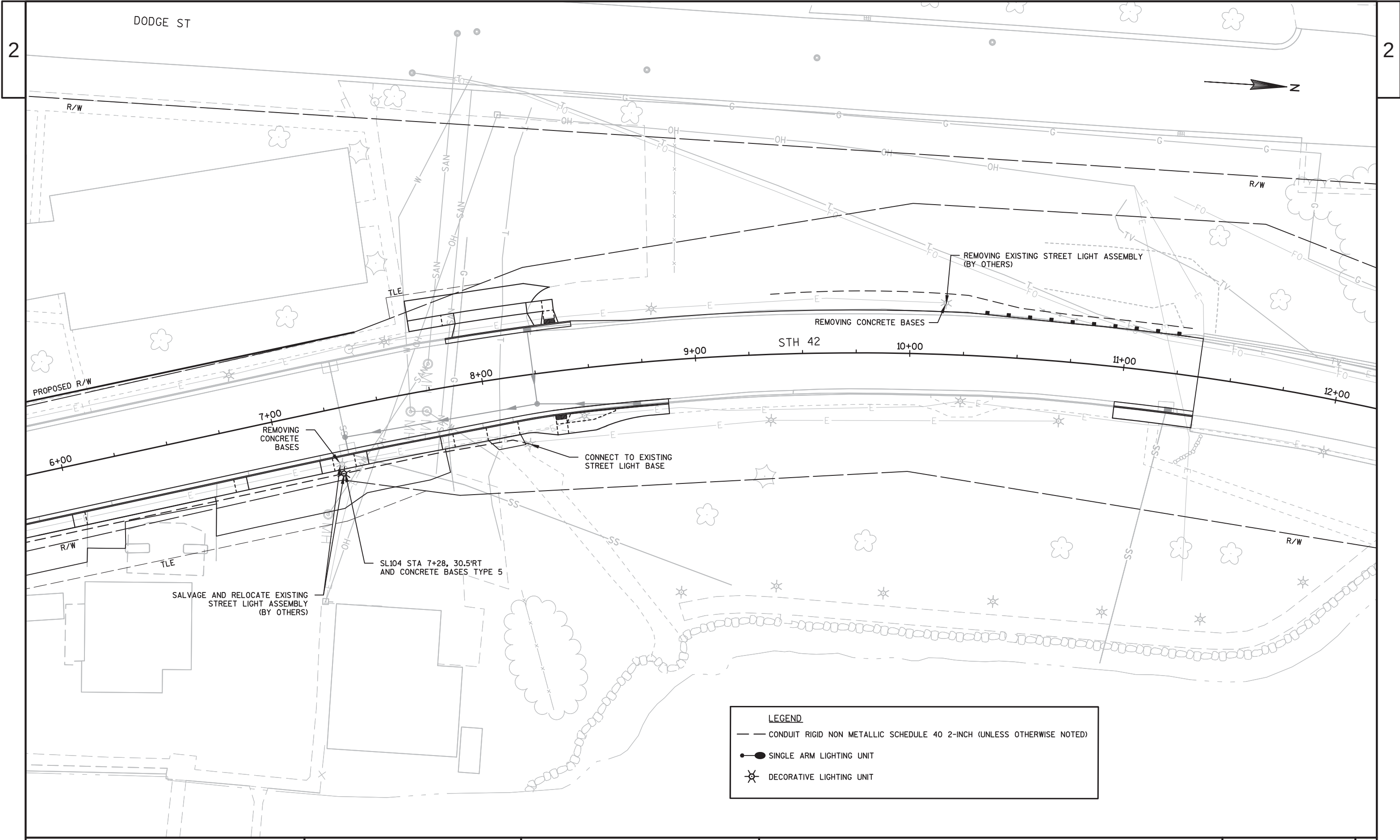
THE CONTRACTOR IS RESPONSIBLE FOR LOSS OR DAMAGE OF ALL SIGNS.

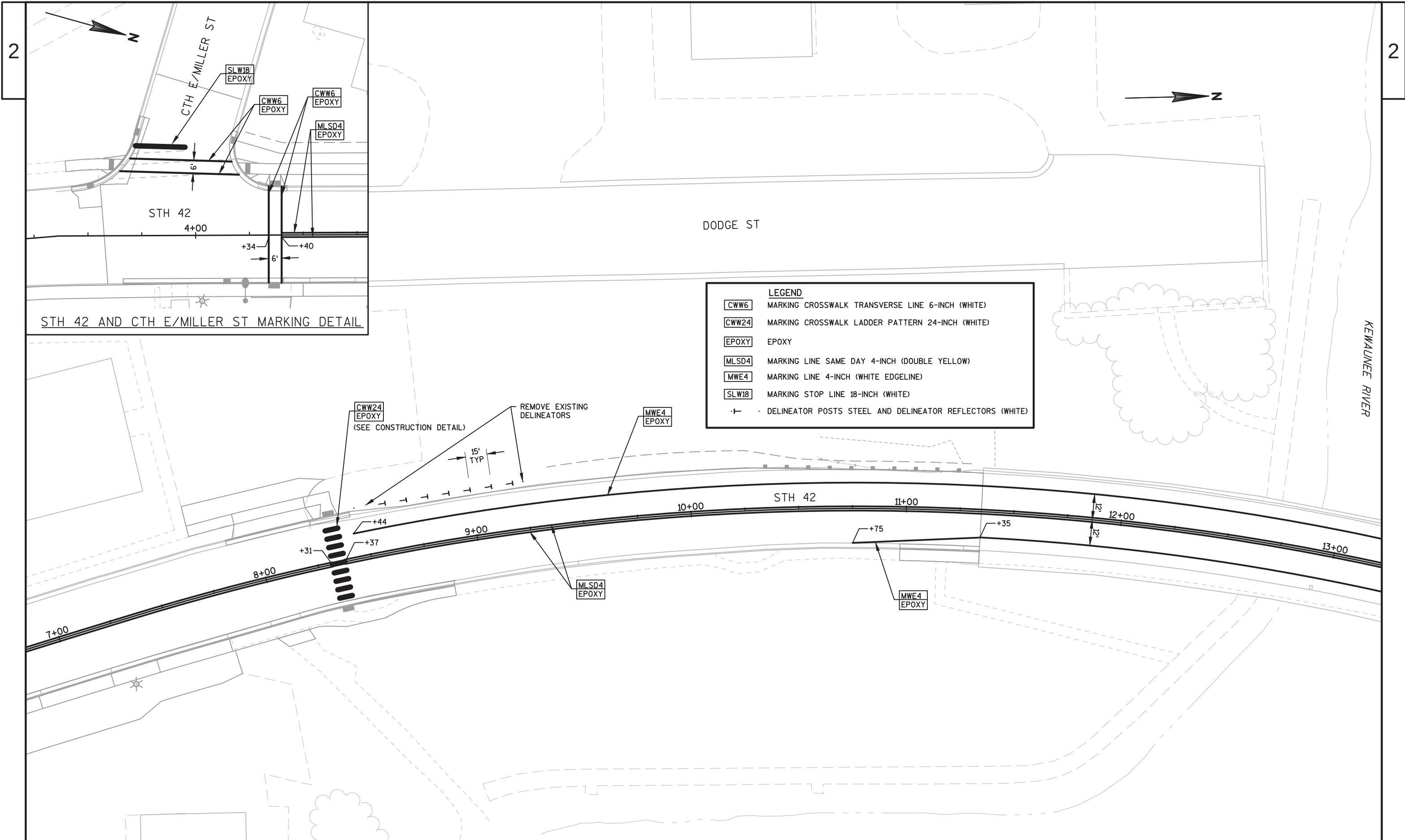


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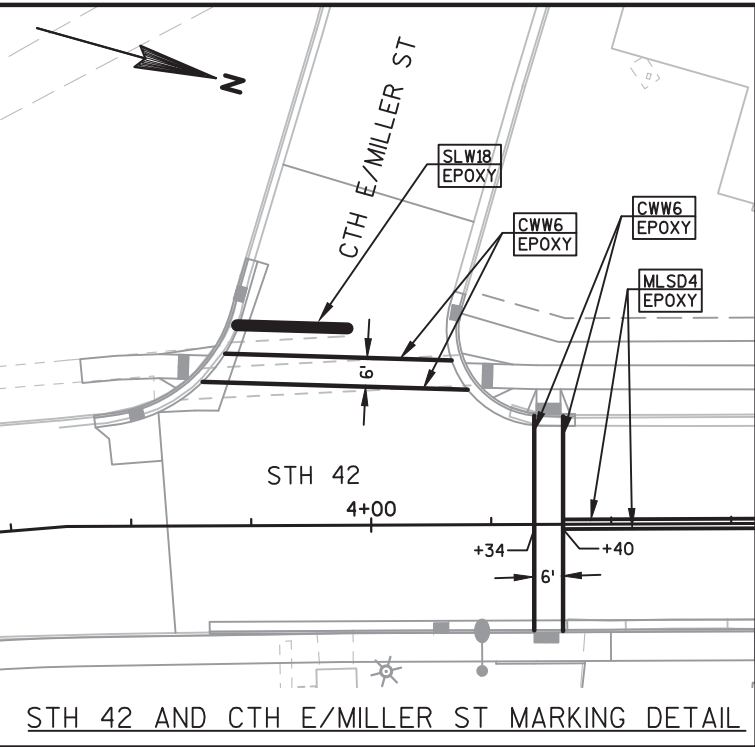
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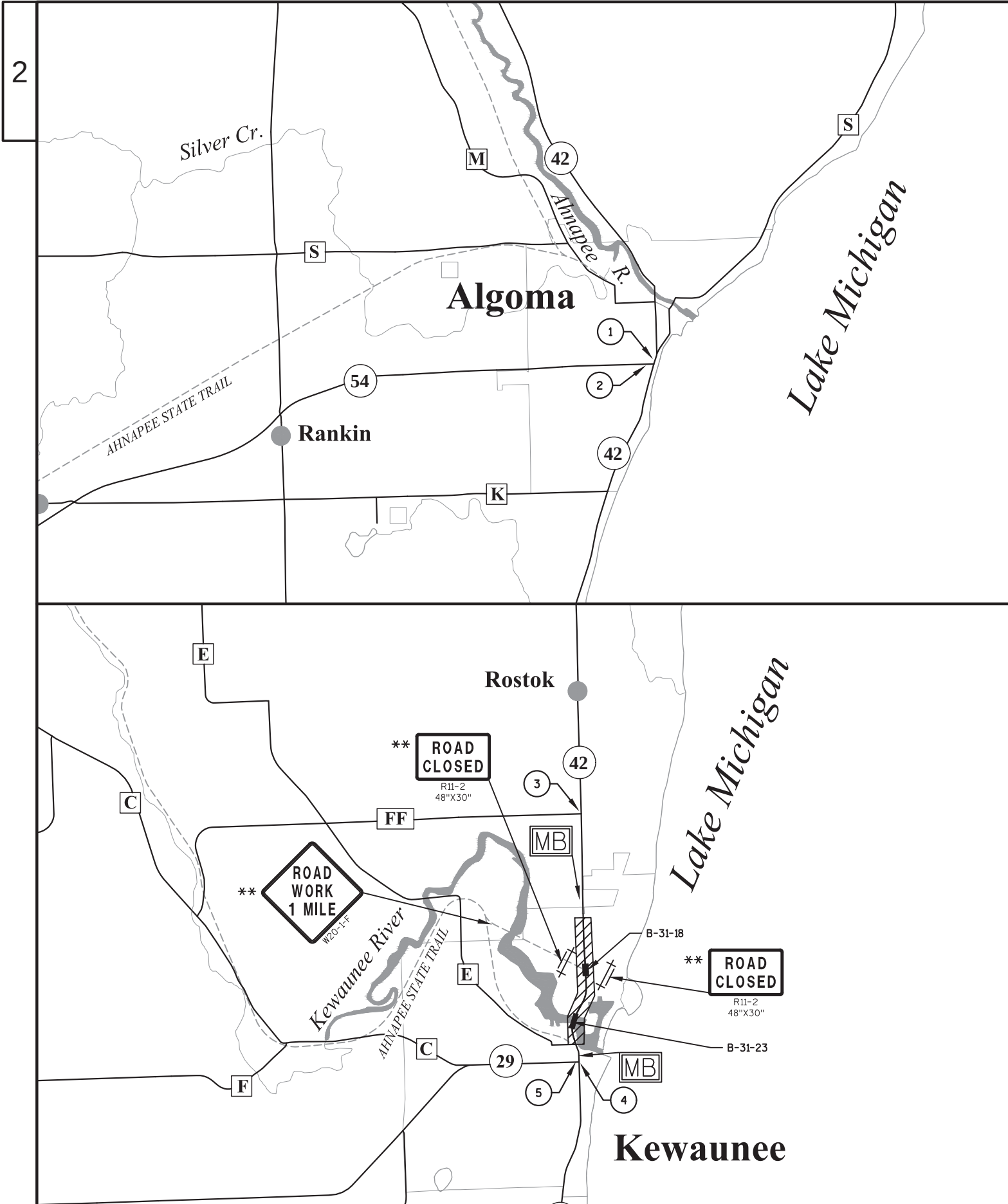




STH 42 AND CTH E/MILLER ST MARKING DETAIL

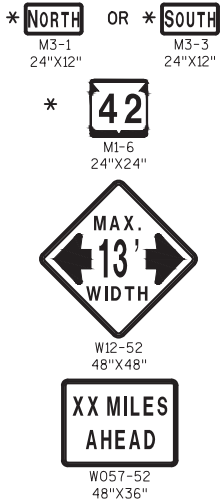


LEGEND	
CWW6	MARKING CROSSWALK TRANSVERSE LINE 6-INCH (WHITE)
CWW24	MARKING CROSSWALK LADDER PATTERN 24-INCH (WHITE)
EPOXY	EPOXY
MLSD4	MARKING LINE SAME DAY 4-INCH (DOUBLE YELLOW)
MWE4	MARKING LINE 4-INCH (WHITE EDGELINE)
SLW18	MARKING STOP LINE 18-INCH (WHITE)
·-·	DELINEATOR POSTS STEEL AND DELINEATOR REFLECTORS (WHITE)



NOTES

- POST THE WIDTH RESTRICTION ADVANCED WARNING SIGNS AT THE LOCATIONS PROVIDED
- ALL TRAFFIC CONTROL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE
- FOR NIGHTTIME OPERATION ALL DRUMS IN TAPERS SHALL HAVE A TYPE C WARNING LIGHT
- # ADJUST TRAFFIC CONTROL PCMS MESSAGE AS NEEDED BASED ON THE CONSTRUCTION SCHEDULE
- * PLACE SIGN M1-6 AND M3-1 OR M3-3 WHEN ASSEMBLY IS MOUNTED ON ALL ROADWAYS OTHER THAN STH 42
- ** PLACE SIGN W20-1-F "ROAD WORK 1 MILE" AND SIGN R11-2 "ROAD CLOSED" ON AHNAPEE STATE TRAIL WHEN WORK IS BEING COMPLETED ON STRUCTURE B-31-18



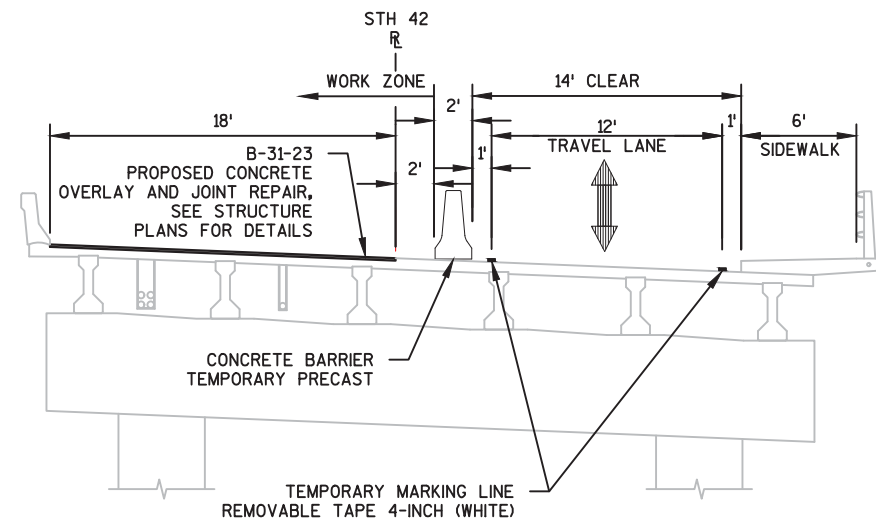
PLACE ABOVE SIGNS AT ALL LOCATIONS DURING CONSTRUCTION ON STRUCTURE B-31-23 AND PROPOSED STORM SEWER WORK OPERATIONS

- 1 STH 42/STH 54 INTERSECTION - 11 MILES AHEAD
- 2 STH 54/STH 42 INTERSECTION - 11 MILES AHEAD
- 3 STH 42/CTH FF INTERSECTION - 1 3/4 MILES AHEAD
- 4 STH 42/STH 29 INTERSECTION - 1/4 MILES AHEAD
- 5 STH 29/STH 42 INTERSECTION - 1/4 MILES AHEAD

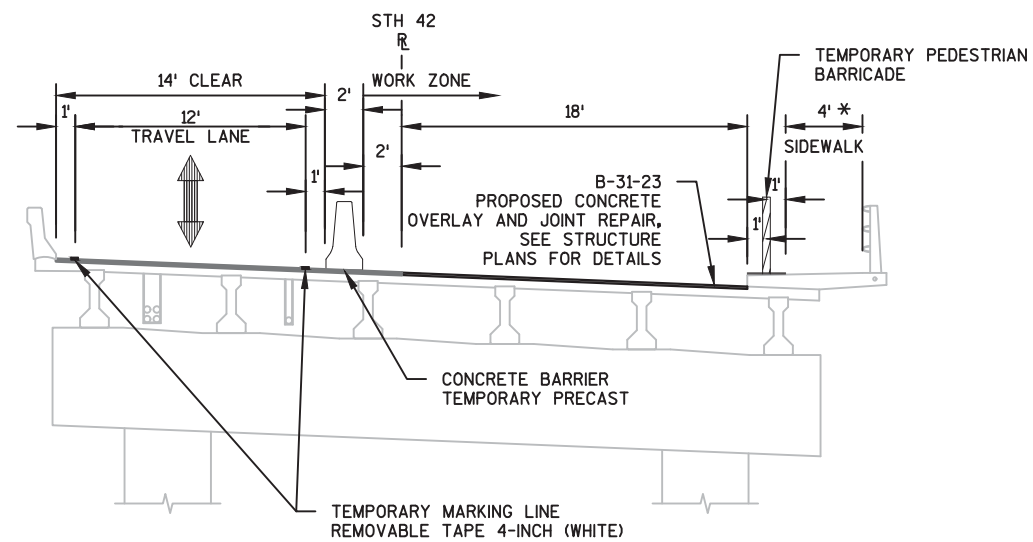
LEGEND

- WORK AREA
- PORTABLE CHANGEABLE MESSAGE SIGN
- TRAFFIC CONTROL BARRICADE TYPE III

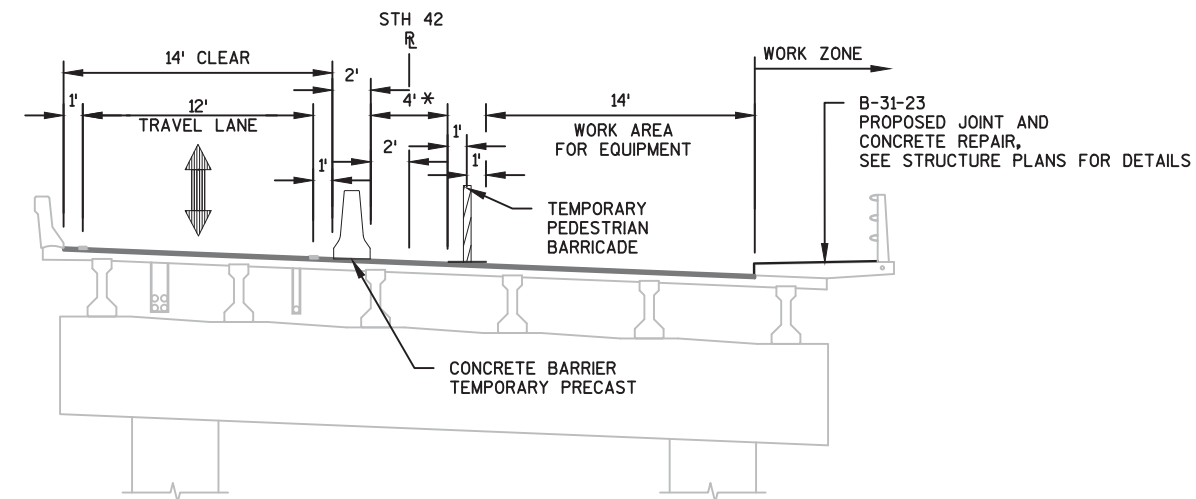
TRAFFIC CONTROL SIGNS PCMS MESSAGES				
	7 DAYS PRIOR TO CONSTRUCTION		FIRST 3 DAYS DURING BRIDGE CONSTRUCTION	
PCMS SIGN LOCATION	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)	PHASE 1 (2 SEC)	PHASE 2 (2 SEC)
STH 42 NB 0.1 MILES NORTH OF STH 29 INTERSECTION	WIS 42 ROADWORK BEGINS	# STARTING DATE	TRAFFIC SIGNAL AHEAD	BE PREPARED TO STOP
STH 42 SB 0.2 MILES NORTH OF DUVALL ST INTERSECTION	WIS 42 ROADWORK BEGINS	# STARTING DATE	TRAFFIC SIGNAL AHEAD	BE PREPARED TO STOP



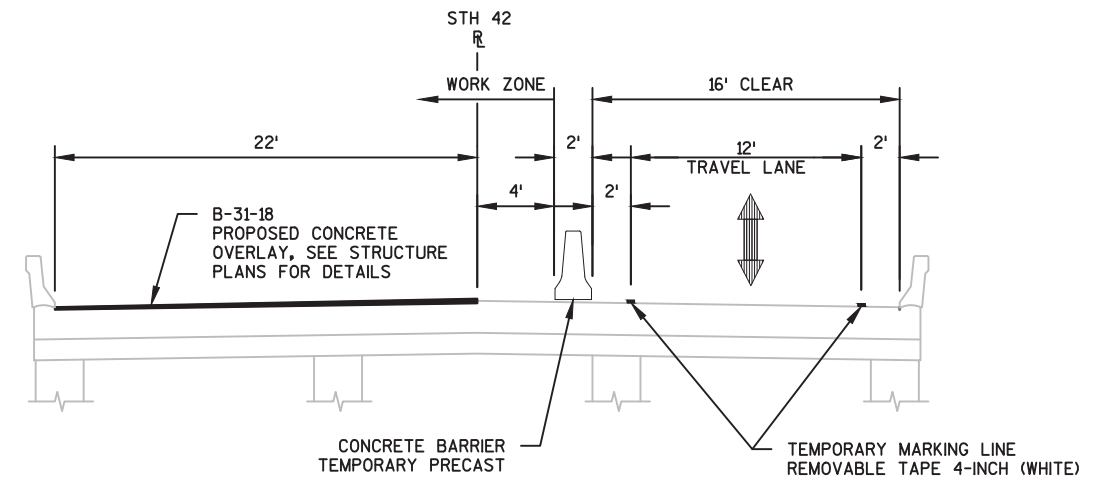
B-31-23 TRAFFIC CONTROL TYPICAL SECTION - STAGE 1K
CONSTRUCT LT CONCRETE OVERLAY AND JOINT REPAIR



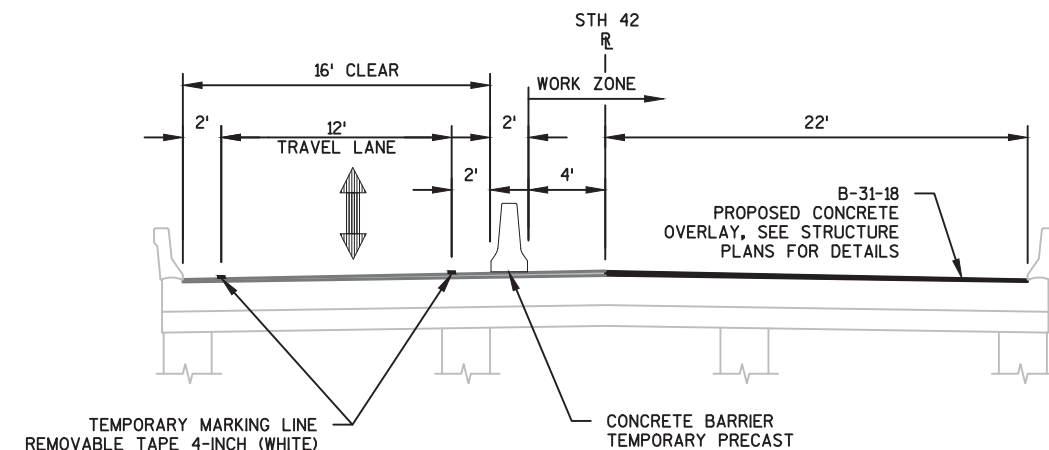
B-31-23 TRAFFIC CONTROL TYPICAL SECTION - STAGE 2K
CONSTRUCT RT CONCRETE OVERLAY AND JOINT REPAIR



B-31-23 TRAFFIC CONTROL TYPICAL SECTION - STAGE 3K
CONSTRUCT SIDEWALK, JOINT AND CONCRETE REPAIR AND SIDEWALK APPROACHES



B-31-18 TRAFFIC CONTROL TYPICAL SECTION - STAGE 1A
CONSTRUCT LT CONCRETE OVERLAY



B-31-18 TRAFFIC CONTROL TYPICAL SECTION - STAGE 2A
CONSTRUCT RT CONCRETE OVERLAY

NOTES

TRAFFIC WILL BE MAINTAINED WITH THE USE OF TEMPORARY TRAFFIC SIGNALS AT STRUCTURE B-31-18 AND B-31-23

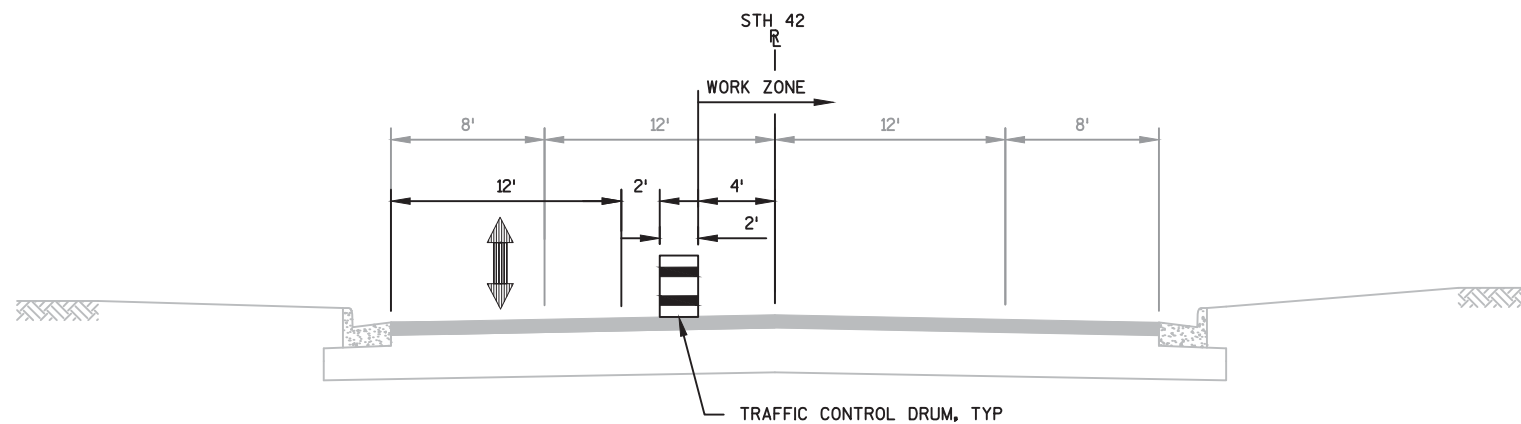
SEE TRAFFIC CONTROL PLAN SHEETS FOR PROPOSED WORK AND ADDITIONAL INFORMATION ON STRUCTURE B-31-18 AND B-31-23 TO COMPLETE STRUCTURE WORK

ALL OTHER WORK WILL BE COMPLETED UNDER FLAGGING OPERATIONS, SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS), OR SHOULDER CLOSURES, SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY", MAINTAIN 16' CLEAR

* MINIMUM 36" CLEAR TO ANY TEMPORARY PEDESTRIAN BARRIER BASE

THE "K" STAGING DESIGNATOR REFERS TO STAGING OF WORK ON STRUCTURE B-31-23 OVER THE KEWAUNEE RIVER

THE "A" STAGING DESIGNATOR REFERS TO STAGING OF WORK ON STRUCTURE B-31-18 OVER THE ANNAPEE STATE TRAIL



TRAFFIC CONTROL TYPICAL SECTION CROSSING STORM SEWER

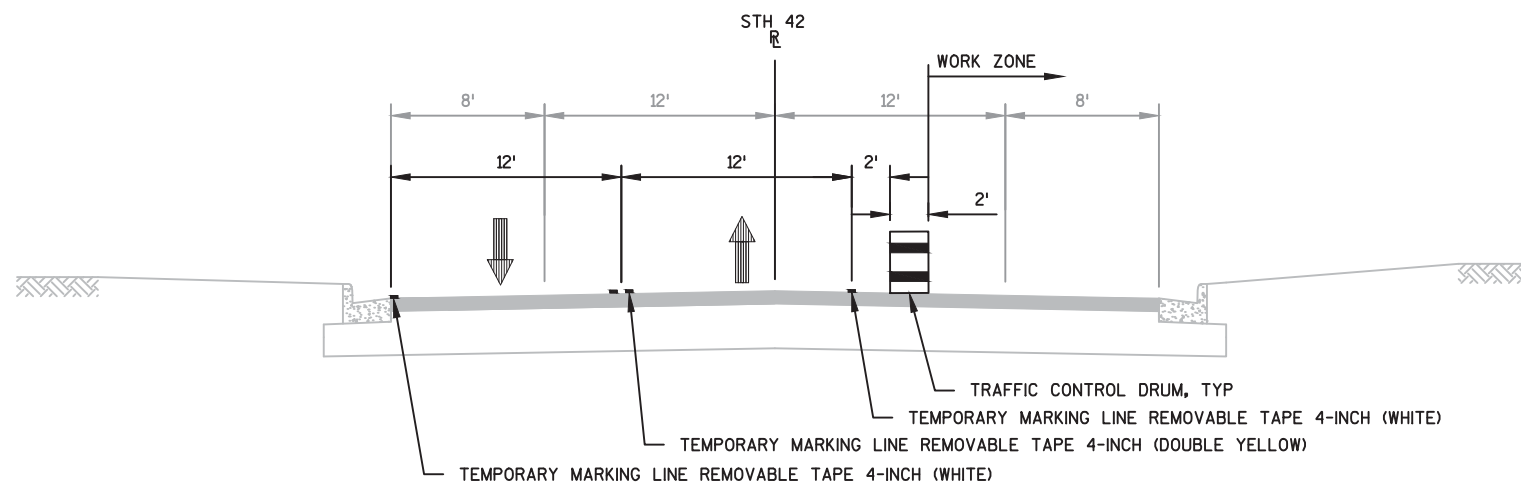
STH 42
COMPLETE THE PROPOSED STORM SEWER INSTALLATION
PRIOR TO THE MILL AND HMA OVERLAY
MIRROR TRAFFIC FOR WORK LEFT OF THE $\mathcal{R}$
STA 3+50 - STA 9+80

NOTES

TRAFFIC WILL BE MAINTAINED WITH THE USE OF FLAGGERS
DURING WORK HOURS, REOPEN LANES DURING NON-WORKING HOURS

SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR
MOVING OPERATIONS)", MAINTAIN 16' CLEAR

INLET AND SIDEWALK REPLACEMENTS MAY BE COMPLETED WITH
SHOULDER CLOSURES, SEE SDD "WORK ON SHOULDER OR PARKING
LANE, UNDIVIDED ROADWAY" FOR ADDITIONAL INFORMATION



TRAFFIC CONTROL TYPICAL SECTION PARALLEL STORM SEWER

STH 42
COMPLETE THE PROPOSED STORM SEWER INSTALLATION
PRIOR TO THE MILL AND HMA OVERLAY
STA 6+25 - STA 9+80

NOTES

PROVIDE A 100' BUFFER SPACE PRIOR TO THE
STORM SEWER INSTALLATION WORK

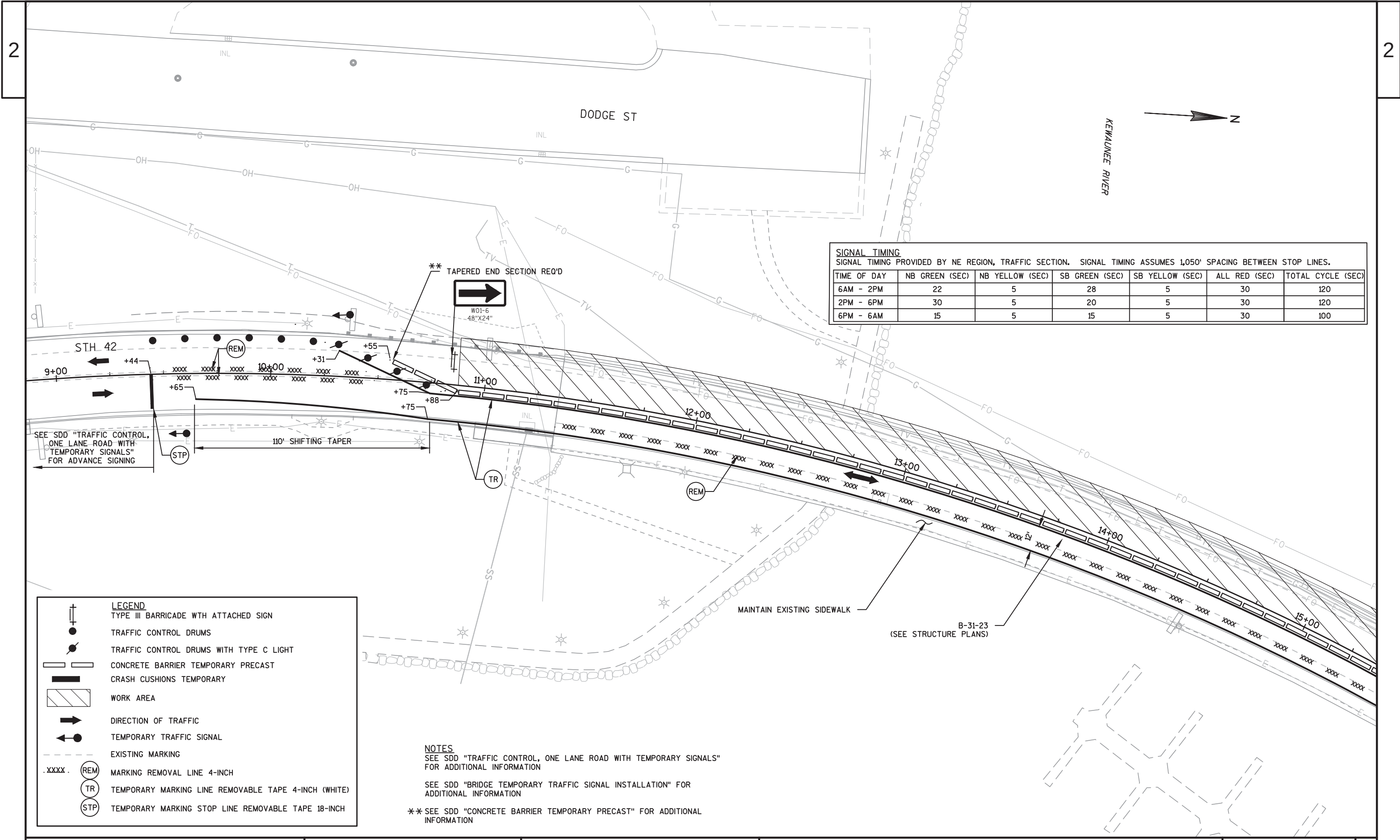
PROVIDE A 120' LANE SHIFTING TAPER LENGTH
PRIOR TO THE BUFFER SPACE

DRUM SPACING IS TO BE 25'

PLACE TRAFFIC CONTROL WARNING LIGHTS TYPE C
ON ALL DRUMS LOCATED IN A TAPER

DO NOT COMPLETE THE STORM SEWER WORK
BETWEEN STATION 6+25 AND STATION 9+80 AT THE
SAME TIME WORK OCCURS ON STRUCTURE B-31-23

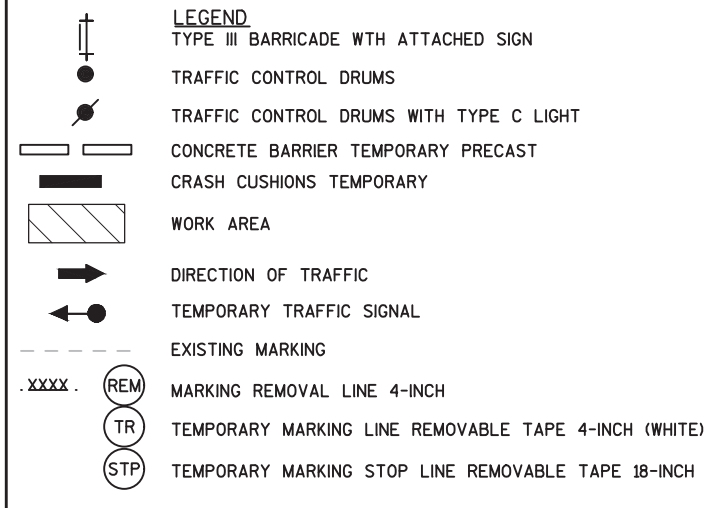
TRAFFIC MAY BE MAINTAINED WITH THE USE OF
FLAGGERS DURING WORKING HOURS, REOPEN LANES
DURING NON-WORKING HOURS



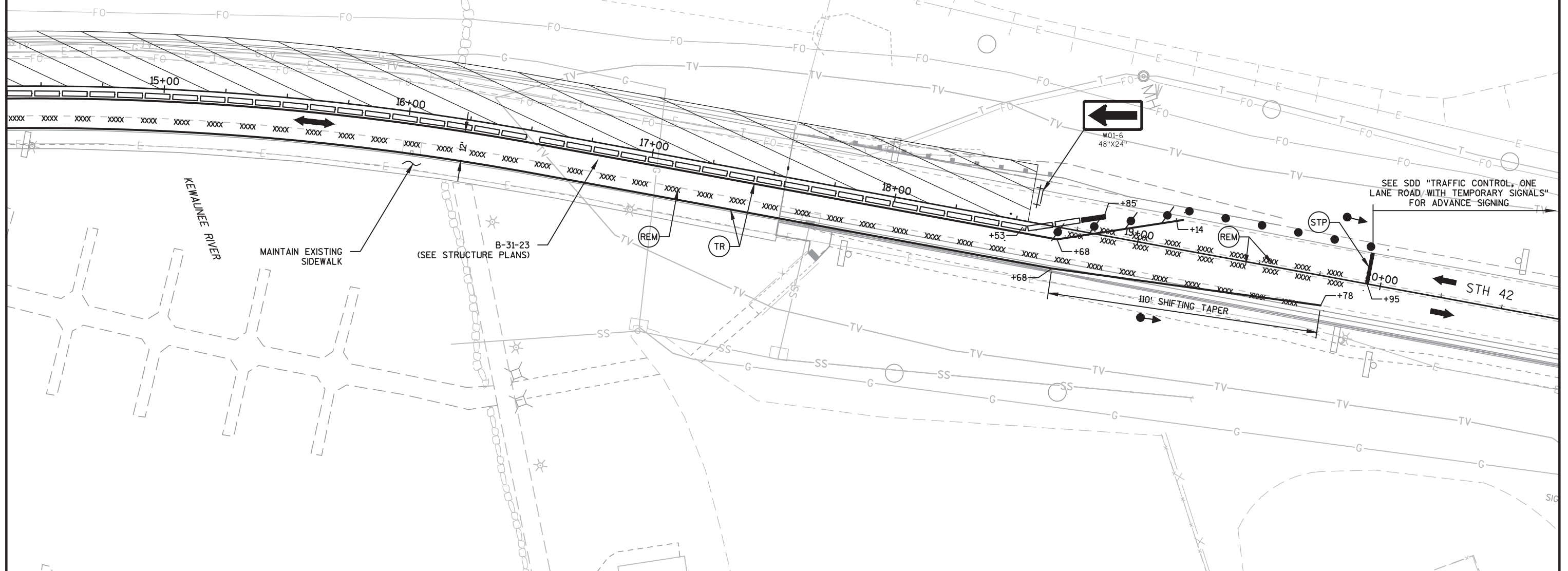
SIGNAL TIMING						
SIGNAL TIMING PROVIDED BY NE REGION, TRAFFIC SECTION. SIGNAL TIMING ASSUMES 1,050' SPACING BETWEEN STOP LINES.						
TIME OF DAY	NB GREEN (SEC)	NB YELLOW (SEC)	SB GREEN (SEC)	SB YELLOW (SEC)	ALL RED (SEC)	TOTAL CYCLE (SEC)
6AM - 2PM	22	5	28	5	30	120
2PM - 6PM	30	5	20	5	30	120
6PM - 6AM	15	5	15	5	30	100

LEGEND	
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUMS
	TRAFFIC CONTROL DRUMS WITH TYPE C LIGHT
	CONCRETE BARRIER TEMPORARY PRECAST
	CRASH CUSHIONS TEMPORARY
	WORK AREA
	DIRECTION OF TRAFFIC
	TEMPORARY TRAFFIC SIGNAL
	EXISTING MARKING
	MARKING REMOVAL LINE 4-INCH
	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH

NOTES
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL INFORMATION
SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION
** SEE SDD "CONCRETE BARRIER TEMPORARY PRECAST" FOR ADDITIONAL INFORMATION



NOTES
SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL INFORMATION
SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION



PROJECT NO: 1470-24-71

HWY: STH 42

COUNTY: KEWAUNEE

TRAFFIC CONTROL - STAGE 1K - STRUCTURE B-31-23

SHEET 39

E

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETPLAN\025002-TC-S1.DWG
LAYOUT NAME - *****

PLOT DATE : 1/23/2018 5:31 PM

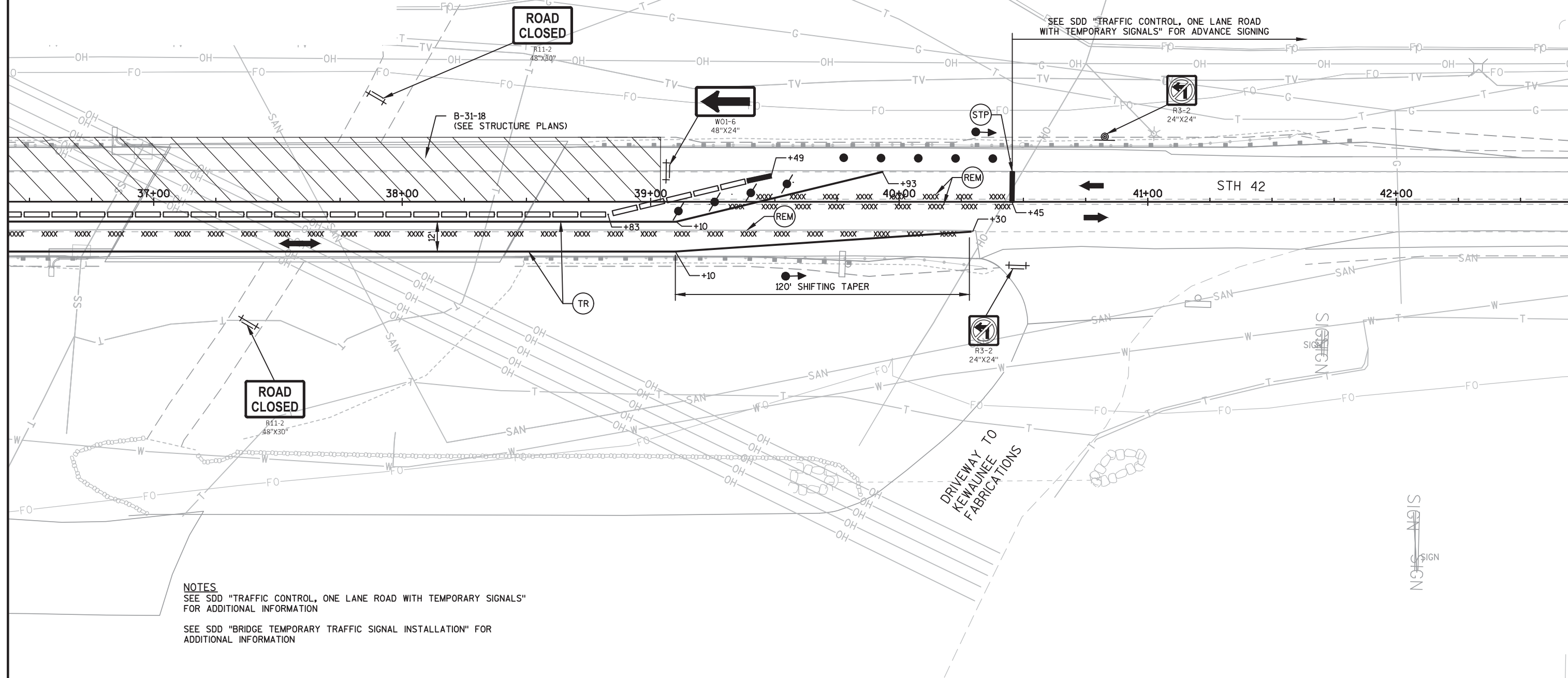
PLOT BY : SCOTT KAISER

PLOT NAME :

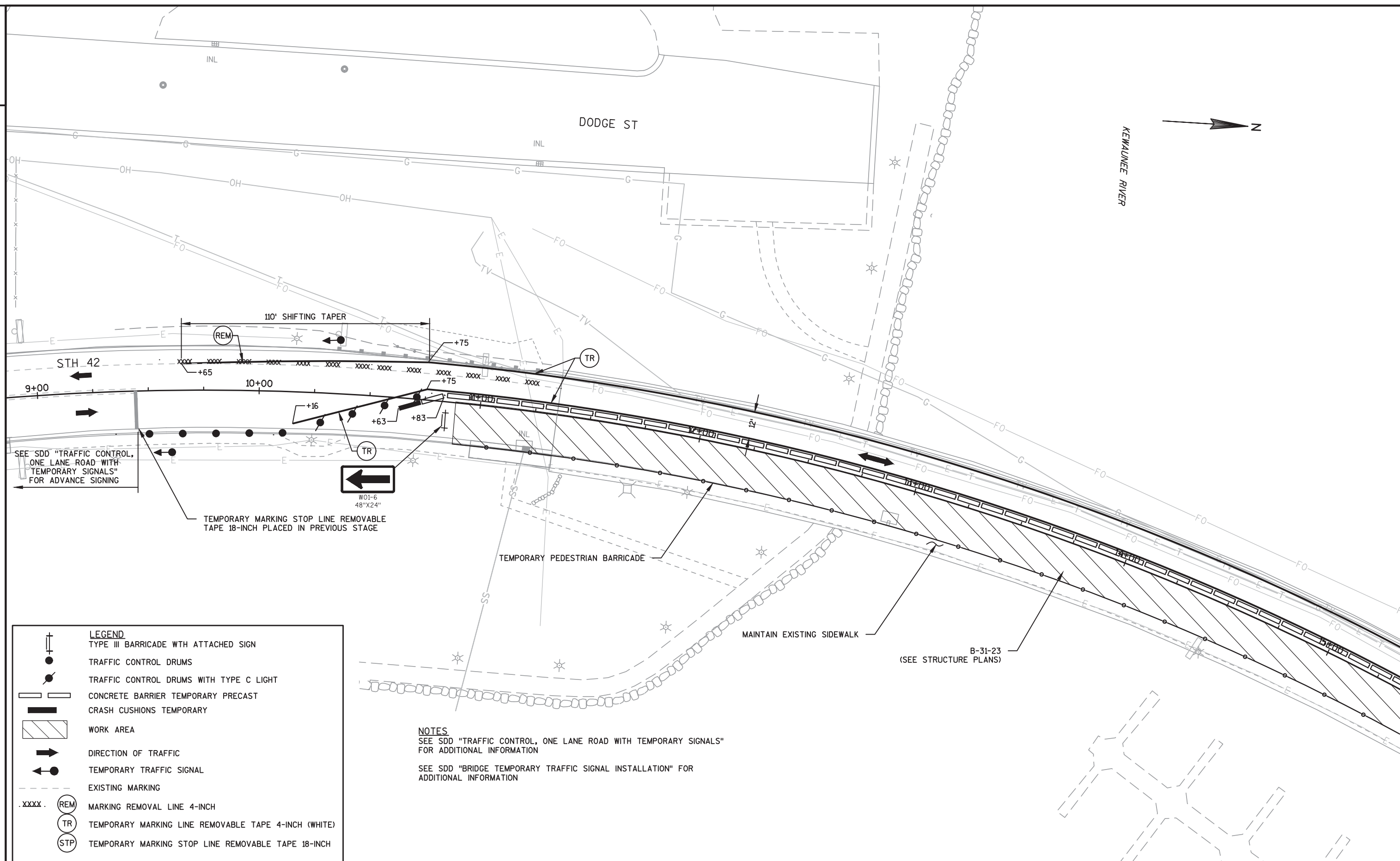
PLOT SCALE : 1 IN:40 FT

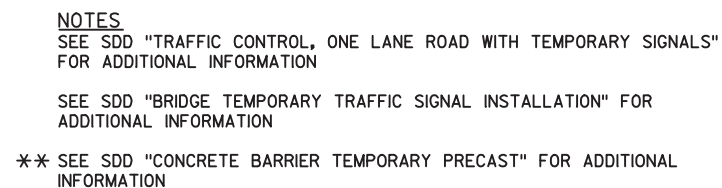
WISDOT/CADD SHEET 42

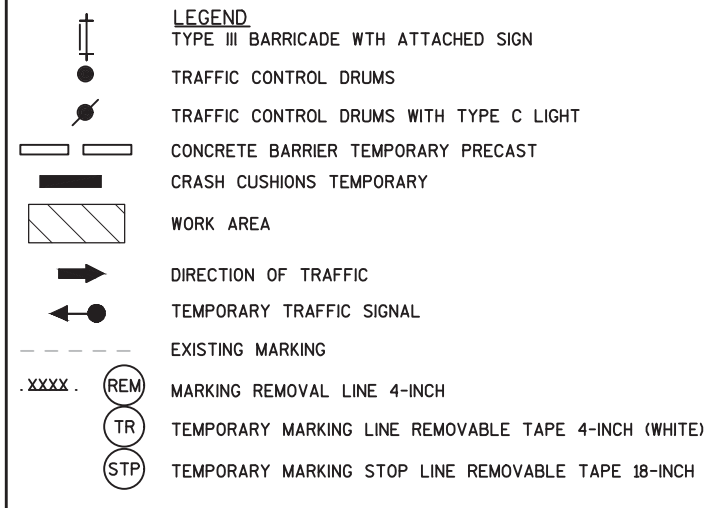
SIGNAL TIMING						
SIGNAL TIMING PROVIDED BY NE REGION, TRAFFIC SECTION. SIGNAL TIMING ASSUMES 600' SPACING BETWEEN STOP LINES.						
TIME OF DAY	NB GREEN (SEC)	NB YELLOW (SEC)	SB GREEN (SEC)	SB YELLOW (SEC)	ALL RED (SEC)	TOTAL CYCLE (SEC)
6AM - 2PM	31	5	39	5	20	120
2PM - 6PM	41	5	29	5	20	120
6PM - 6AM	25	5	25	5	20	120



SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR
ADDITIONAL INFORMATION

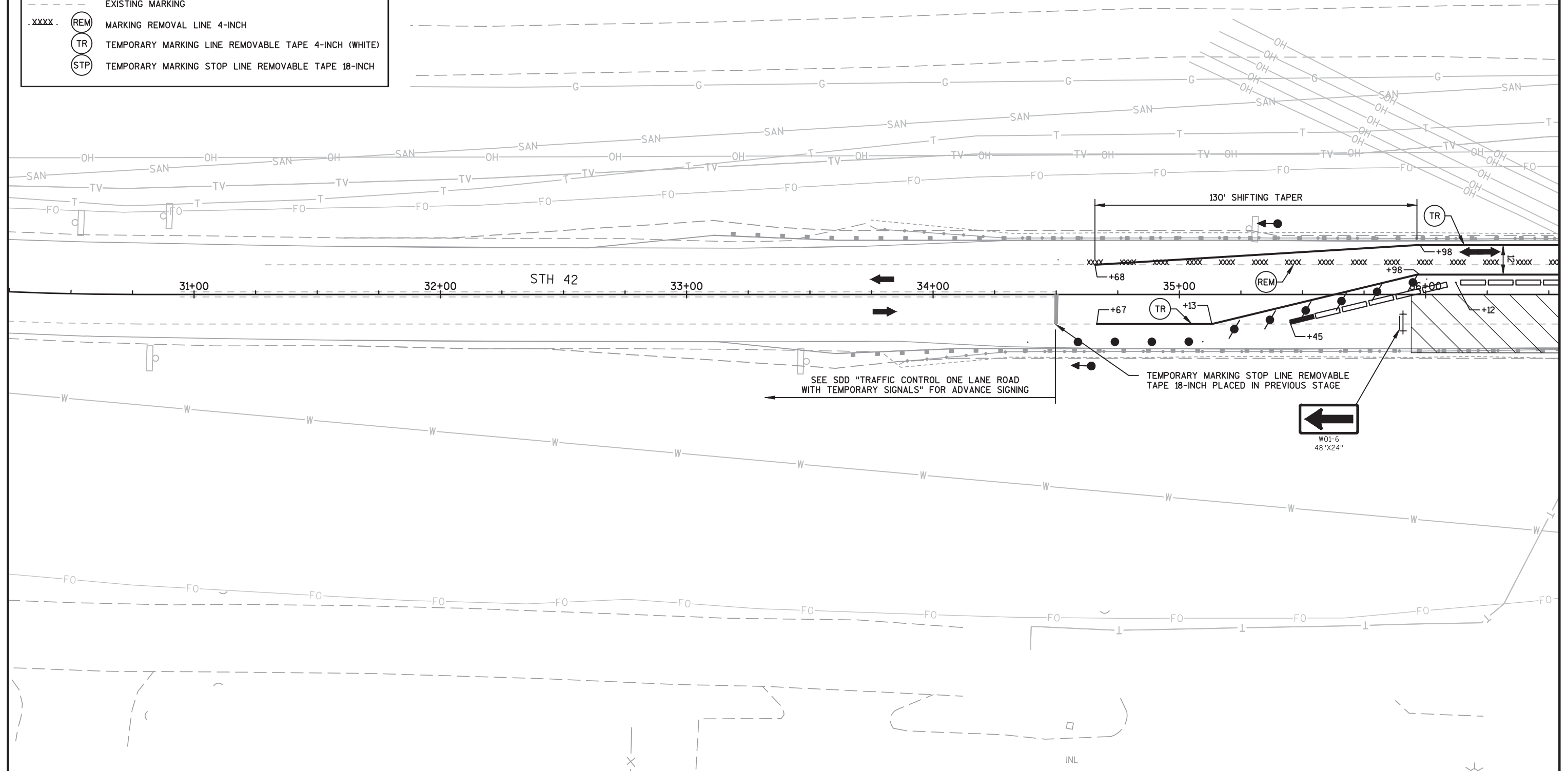


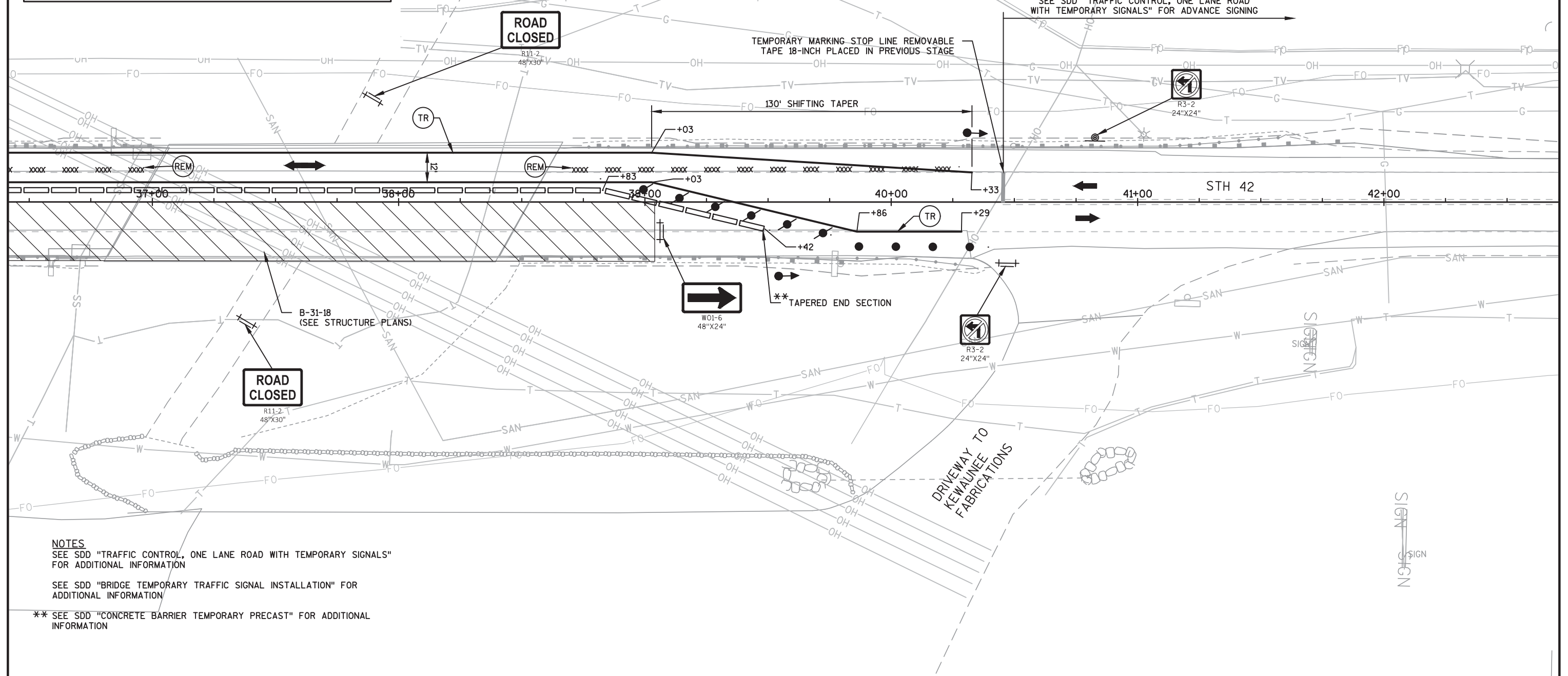
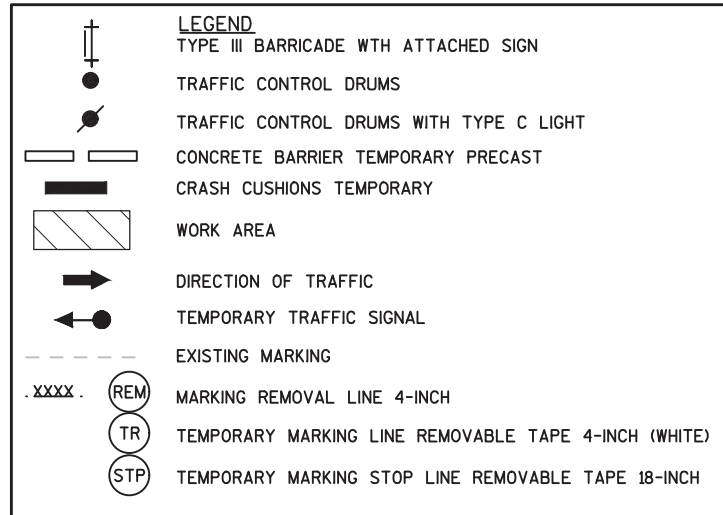


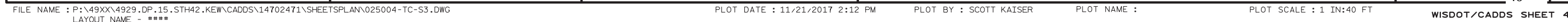
**NOTES**

SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL INFORMATION

SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION







LEGEND	
	TYPE II BARRICADE WITH ATTACHED SIGN
	TYPE III BARRICADE WITH ATTACHED SIGN
	TRAFFIC CONTROL DRUMS
	TRAFFIC CONTROL DRUMS WITH TYPE C LIGHT
	CONCRETE BARRIER TEMPORARY PRECAST
	CRASH CUSHIONS TEMPORARY
	WORK AREA
	DIRECTION OF TRAFFIC
	TEMPORARY TRAFFIC SIGNAL
	EXISTING MARKING
	MARKING REMOVAL LINE 4-INCH
	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH (WHITE)
	TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH

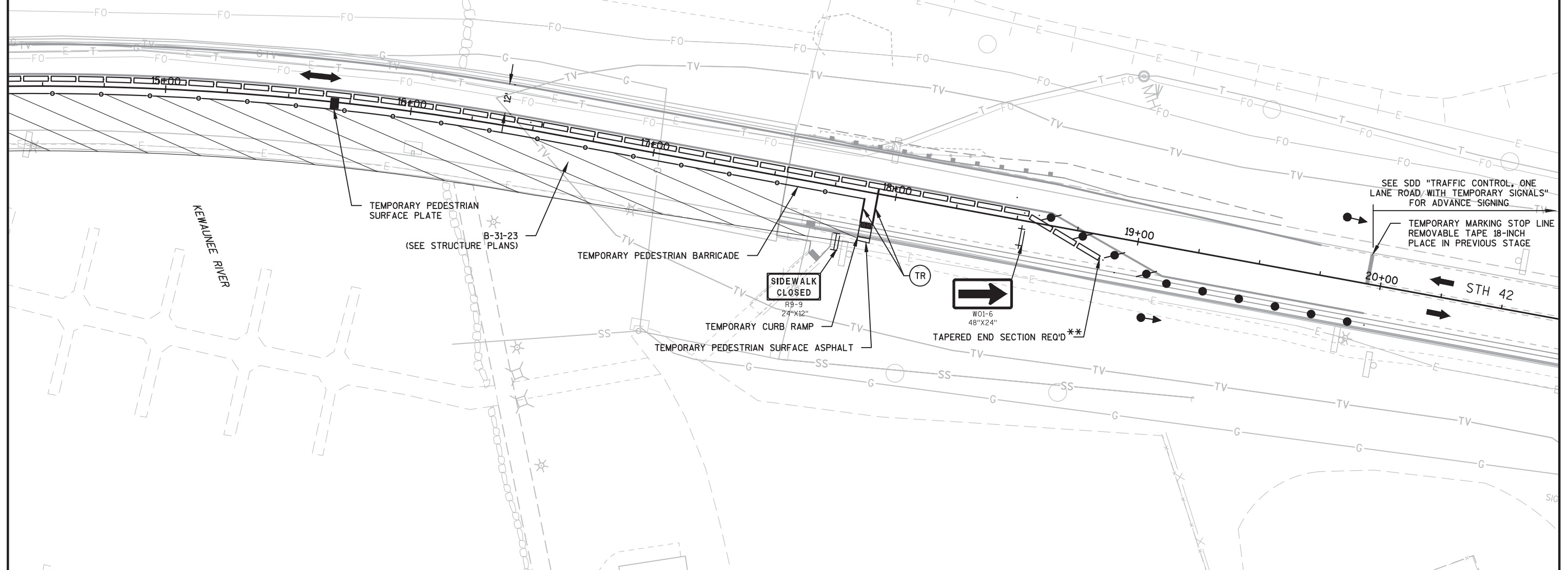
NOTES

SEE SDD "TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS" FOR ADDITIONAL INFORMATION

SEE SDD "BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION" FOR ADDITIONAL INFORMATION

SEE SDD "TRAFFIC CONTROL, PEDESTRIAN ACCOMODATION" FOR ADDITIONAL INFORMATION

** SEE SDD "CONCRETE BARRIER TEMPORARY PRECAST" FOR ADDITIONAL INFORMATION



Estimate Of Quantities

1470-24-71					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	6.000	6.000
0004	201.0120	Clearing	ID	44.000	44.000
0006	201.0205	Grubbing	STA	6.000	6.000
0008	201.0220	Grubbing	ID	44.000	44.000
0010	203.0225.S	Debris Containment (structure) 01. B-31-18	LS	1.000	1.000
0012	203.0225.S	Debris Containment (structure) 02. B-31-23	LS	1.000	1.000
0014	204.0100	Removing Pavement	SY	143.000	143.000
0016	204.0105	Removing Pavement Butt Joints	SY	10.000	10.000
0018	204.0109.S	Removing Concrete Surface Partial Depth	SF	2,950.000	2,950.000
0020	204.0110	Removing Asphaltic Surface	SY	970.000	970.000
0022	204.0115	Removing Asphaltic Surface Butt Joints	SY	94.000	94.000
0024	204.0120	Removing Asphaltic Surface Milling	SY	19,930.000	19,930.000
0026	204.0150	Removing Curb & Gutter	LF	710.000	710.000
0028	204.0155	Removing Concrete Sidewalk	SY	155.000	155.000
0030	204.0180	Removing Delineators and Markers	EACH	16.000	16.000
0032	204.0195	Removing Concrete Bases	EACH	6.000	6.000
0034	204.0220	Removing Inlets	EACH	2.000	2.000
0036	204.0245	Removing Storm Sewer (size) 01. 12-Inch	LF	10.000	10.000
0038	204.0280	Sealing Pipes	EACH	2.000	2.000
0040	204.9180.S	Removing (item description) 01. Asphaltic Curb	SY	250.000	250.000
0042	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 1470-24-71	LS	1.000	1.000
0044	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	65.000	65.000
0046	213.0100	Finishing Roadway (project) 01. 1470-24-71	EACH	1.000	1.000
0048	305.0110	Base Aggregate Dense 3/4-Inch	TON	310.000	310.000
0050	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,225.000	1,225.000
0052	305.0500	Shaping Shoulders	STA	70.000	70.000
0054	415.1080	Concrete Pavement HES 8-Inch	SY	25.000	25.000
0056	416.0160	Concrete Driveway 6-Inch	SY	105.000	105.000
0058	416.0260	Concrete Driveway HES 6-Inch	SY	70.000	70.000
0060	416.0280	Concrete Driveway HES 8-Inch	SY	40.000	40.000
0062	416.0610	Drilled Tie Bars	EACH	62.000	62.000
0064	416.1010	Concrete Surface Drains	CY	8.000	8.000
0066	440.4410	Incentive IRI Ride	DOL	3,852.000	3,852.000
0068	450.4000	HMA Cold Weather Paving	TON	1,200.000	1,200.000
0070	455.0605	Tack Coat	GAL	2,760.000	2,760.000
0072	460.2000	Incentive Density HMA Pavement	DOL	2,780.000	2,780.000
0074	460.5223	HMA Pavement 3 LT 58-28 S	TON	2,400.000	2,400.000
0076	460.5224	HMA Pavement 4 LT 58-28 S	TON	1,935.000	1,935.000
0078	465.0110	Asphaltic Surface Patching	TON	250.000	250.000

Estimate Of Quantities

1470-24-71

Line	Item	Item Description	Unit	Total	Qty
0080	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	175.000	175.000
0082	465.0315	Asphaltic Flumes	SY	12.000	12.000
0084	502.3100	Expansion Device (structure) 01. B-31-23	LS	1.000	1.000
0086	502.3200	Protective Surface Treatment	SY	3,315.000	3,315.000
0088	502.3210	Pigmented Surface Sealer	SY	403.000	403.000
0090	502.4205	Adhesive Anchors No. 5 Bar	EACH	94.000	94.000
0092	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	6,380.000	6,380.000
0094	509.0301	Preparation Decks Type 1	SY	306.000	306.000
0096	509.0302	Preparation Decks Type 2	SY	179.000	179.000
0098	509.0500	Cleaning Decks	SY	3,274.000	3,274.000
0100	509.1000	Joint Repair	SY	91.000	91.000
0102	509.1200	Curb Repair	LF	60.000	60.000
0104	509.1500	Concrete Surface Repair	SF	23.000	23.000
0106	509.2000	Full-Depth Deck Repair	SY	2.000	2.000
0108	509.2500	Concrete Masonry Overlay Decks	CY	238.000	238.000
0110	509.9010.S	Removing Asphaltic Concrete Deck Overlay (structure) 01. B-31-18	SY	778.000	778.000
0112	509.9050.S	Cleaning Parapets	LF	1,002.000	1,002.000
0114	520.8000	Concrete Collars for Pipe	EACH	1.000	1.000
0116	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	20.000	20.000
0118	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	1,100.000	1,100.000
0120	601.0452	Concrete Curb & Gutter Integral 30-Inch Type D	LF	50.000	50.000
0122	601.0600	Concrete Curb Pedestrian	LF	20.000	20.000
0124	602.0405	Concrete Sidewalk 4-Inch	SF	3,190.000	3,190.000
0126	602.0415	Concrete Sidewalk 6-Inch	SF	1,170.000	1,170.000
0128	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	68.000	68.000
0130	602.0605	Curb Ramp Detectable Warning Field Radial Yellow	SF	16.000	16.000
0132	603.8000	Concrete Barrier Temporary Precast Delivered	LF	1,215.000	1,215.000
0134	603.8125	Concrete Barrier Temporary Precast Installed	LF	2,430.000	2,430.000
0136	606.0200	Riprap Medium	CY	28.000	28.000
0138	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	12.000	12.000
0140	608.6006	Storm Sewer Pipe Composite 6-Inch	LF	173.000	173.000
0142	611.0430	Reconstructing Inlets	EACH	1.000	1.000
0144	611.0530	Manhole Covers Type J	EACH	2.000	2.000
0146	611.0639	Inlet Covers Type H-S	EACH	1.000	1.000
0148	611.2003	Manholes 3-FT Diameter	EACH	2.000	2.000
0150	611.3230	Inlets 2x3-FT	EACH	2.000	2.000
0152	611.8115	Adjusting Inlet Covers	EACH	2.000	2.000
0154	611.8120.S	Cover Plates Temporary	EACH	10.000	10.000

Estimate Of Quantities

1470-24-71

Line	Item	Item Description	Unit	Total	Qty
0156	614.0010	Barrier System Grading Shaping Finishing	EACH	6.000	6.000
0158	614.0905	Crash Cushions Temporary	EACH	4.000	4.000
0160	614.0920	Salvaged Rail	LF	990.000	990.000
0162	614.0925	Salvaged Guardrail End Treatments	EACH	6.000	6.000
0164	614.2300	MGS Guardrail 3	LF	562.500	562.500
0166	614.2330	MGS Guardrail 3 K	LF	262.500	262.500
0168	614.2500	MGS Thrie Beam Transition	LF	240.000	240.000
0170	614.2610	MGS Guardrail Terminal EAT	EACH	6.000	6.000
0172	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1470-24-71	EACH	1.000	1.000
0174	619.1000	Mobilization	EACH	1.000	1.000
0176	624.0100	Water	MGAL	12.000	12.000
0178	628.1504	Silt Fence	LF	3,200.000	3,200.000
0180	628.1520	Silt Fence Maintenance	LF	3,200.000	3,200.000
0182	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0184	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0186	628.2004	Erosion Mat Class I Type B	SY	7,250.000	7,250.000
0188	628.2008	Erosion Mat Urban Class I Type B	SY	2,400.000	2,400.000
0190	628.7005	Inlet Protection Type A	EACH	3.000	3.000
0192	628.7015	Inlet Protection Type C	EACH	14.000	14.000
0194	628.7020	Inlet Protection Type D	EACH	3.000	3.000
0196	628.7504	Temporary Ditch Checks	LF	100.000	100.000
0198	628.7555	Culvert Pipe Checks	EACH	20.000	20.000
0200	628.7570	Rock Bags	EACH	260.000	260.000
0202	631.0300	Sod Water	MGAL	19.000	19.000
0204	631.1000	Sod Lawn	SY	750.000	750.000
0206	633.0100	Delineator Posts Steel	EACH	11.000	11.000
0208	633.0500	Delineator Reflectors	EACH	11.000	11.000
0210	633.5200	Markers Culvert End	EACH	2.000	2.000
0212	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	19.000	19.000
0214	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	10.000	10.000
0216	637.2210	Signs Type II Reflective H	SF	155.680	155.680
0218	637.2230	Signs Type II Reflective F	SF	48.000	48.000
0220	638.2602	Removing Signs Type II	EACH	35.000	35.000
0222	638.3000	Removing Small Sign Supports	EACH	34.000	34.000
0224	642.5401	Field Office Type D	EACH	1.000	1.000
0226	643.0300	Traffic Control Drums	DAY	4,335.000	4,335.000
0228	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0230	643.0410	Traffic Control Barricades Type II	DAY	133.000	133.000
0232	643.0420	Traffic Control Barricades Type III	DAY	474.000	474.000

Estimate Of Quantities

1470-24-71					
Line	Item	Item Description	Unit	Total	Qty
0234	643.0705	Traffic Control Warning Lights Type A	DAY	196.000	196.000
0236	643.0715	Traffic Control Warning Lights Type C	DAY	777.000	777.000
0238	643.0900	Traffic Control Signs	DAY	3,935.000	3,935.000
0240	643.1050	Traffic Control Signs PCMS	DAY	20.000	20.000
0242	643.5000	Traffic Control	EACH	1.000	1.000
0244	644.1410.S	Temporary Pedestrian Surface Asphalt	SF	80.000	80.000
0246	644.1430.S	Temporary Pedestrian Surface Plate	SF	32.000	32.000
0248	644.1601.S	Temporary Curb Ramp	EACH	8.000	8.000
0250	644.1810.S	Temporary Pedestrian Barricade	LF	1,600.000	1,600.000
0252	645.0120	Geotextile Type HR	SY	100.000	100.000
0254	646.1020	Marking Line Epoxy 4-Inch	LF	8,310.000	8,310.000
0256	646.4520	Marking Line Same Day Epoxy 4-Inch	LF	10,000.000	10,000.000
0258	646.6120	Marking Stop Line Epoxy 18-Inch	LF	25.000	25.000
0260	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	195.000	195.000
0262	646.7520	Marking Crosswalk Epoxy Ladder Pattern 24-Inch	LF	60.000	60.000
0264	646.9000	Marking Removal Line 4-Inch	LF	5,000.000	5,000.000
0266	649.0105	Temporary Marking Line Paint 4-Inch	LF	30,000.000	30,000.000
0268	649.0150	Temporary Marking Line Removable Tape 4-Inch	LF	9,225.000	9,225.000
0270	649.0850	Temporary Marking Stop Line Removable Tape 18-Inch	LF	52.000	52.000
0272	650.4000	Construction Staking Storm Sewer	EACH	4.000	4.000
0274	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	1,230.000	1,230.000
0276	650.7000	Construction Staking Concrete Pavement	LF	75.000	75.000
0278	650.8000	Construction Staking Resurfacing Reference	LF	5,083.000	5,083.000
0280	650.8500	Construction Staking Electrical Installations (project) 01. 1470-24-71	LS	1.000	1.000
0282	650.9000	Construction Staking Curb Ramps	EACH	7.000	7.000
0284	650.9910	Construction Staking Supplemental Control (project) 01. 1470-24-71	LS	1.000	1.000
0286	652.0125	Conduit Rigid Metallic 2-Inch	LF	24.000	24.000
0288	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	570.000	570.000
0290	652.0605	Conduit Special 2-Inch	LF	60.000	60.000
0292	654.0105	Concrete Bases Type 5	EACH	5.000	5.000
0294	661.0100	Temporary Traffic Signals for Bridges (structure) 01. B-31-18	LS	1.000	1.000
0296	661.0100	Temporary Traffic Signals for Bridges (structure) 02. B-31-23	LS	1.000	1.000
0298	690.0150	Sawing Asphalt	LF	2,250.000	2,250.000
0300	690.0250	Sawing Concrete	LF	290.000	290.000
0302	715.0415	Incentive Strength Concrete Pavement	DOL	500.000	500.000
0304	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0306	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000

Estimate Of Quantities

1470-24-71					
Line	Item	Item Description	Unit	Total	Qty
0308	SPV.0060	Special 01. Adjusting Sanitary Manhole Covers	EACH	4.000	4.000
0310	SPV.0060	Special 02. Adjusting Water Manhole Covers	EACH	2.000	2.000
0312	SPV.0060	Special 03. Adjusting Water Valve Box	EACH	1.000	1.000
0314	SPV.0060	Special 04. Reconstructing Sanitary Manholes	EACH	1.000	1.000
0316	SPV.0060	Special 05. Inlet Covers Type H-D	EACH	1.000	1.000
0318	SPV.0060	Special 06. Aluminum Railing Tubular Anchorage	EACH	8.000	8.000
0320	SPV.0075	Special 01. Street Sweeping	HRS	10.000	10.000
0322	SPV.0090	Special 01. Concrete Curb & Gutter 30-Inch HES Type D	LF	100.000	100.000
0324	SPV.0120	Special 01. Water for Seeded Areas	MGAL	3.000	3.000

3

CLEARING AND GRUBBING ITEMS

CATEGORY	STATION	OFFSET	201.0105	201.0120	201.0205	201.0220
			CLEARING STA	CLEARING ID	GRUBBING STA	GRUBBING ID
0010						
	2+47	26' RT	--	7	--	7
	3+48	26' RT	--	13	--	13
	18+37	34' LT	--	12	--	12
	19+01	33' LT	--	12	--	12
	34+50 - 34+80	RT	1	--	1	--
	36+20 - 37+10	LT & RT	2	--	2	--
	38+90 - 41+60	LT	3	--	3	--
TOTALS			6	44	6	44

REMOVAL ITEMS

CATEGORY	STATION	TO	STATION	OFFSET	204.0100	204.0105	204.0109.S	204.0110	204.0115	204.0120	204.0150	204.0155	204.0180	204.0195	204.9180.S
					REMOVING PAVEMENT SY	REMOVING PAVEMENT BUTT JOINTS SY	REMOVING CONCRETE SURFACE PARTIAL DEPTH SF	REMOVING ASPHALTIC SURFACE SY	REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	REMOVING ASPHALTIC SURFACE MILLING SY	REMOVING CURB & GUTTER LF	REMOVING CONCRETE SIDEWALK SY	REMOVING DELINEATORS AND MARKERS EACH	REMOVING CONCRETE BASES EACH	REMOVING ASPHALTIC CURB SY
0010	2+80	-	3+57	RT	--	--	--	--	--	--	--	--	--	1	--
	3+42	-	3+79	LT	23	--	--	--	--	--	--	17	--	--	--
	3+57	-	4+40	LT&RT	--	10	2,950	--	--	--	--	--	--	2	--
	3+67	-	8+86	RT	80	--	--	690	--	--	520	62	--	2	--
	3+86	-	11+34	LT&RT	--	--	--	--	17	3,280	--	--	--	1	--
	4+15	-	5+36	LT	40	--	--	140	--	--	93	36	--	--	--
	7+70	-	8+80	LT	--	--	--	130	--	--	60	--	8	--	--
	10+97	-	11+34	RT	--	--	--	10	--	--	37	21	--	--	--
	17+56	-	36+95	LT&RT	--	--	--	--	47	8,630	--	--	8	--	--
	17+55	-	17+78	RT	--	--	--	--	--	--	--	17	--	--	--
	17+55	-	22+30	RT	--	--	--	--	--	--	--	--	--	--	250
	22+40	-	22+46	RT	--	--	--	--	--	--	--	2	--	--	--
	38+54	-	54+40	LT&RT	--	--	--	--	30	8,020	--	--	--	--	--
TOTALS					143	10	2,950	970	94	19,930	710	155	16	6	250

3

REMOVING DRAINAGE ITEMS

CATEGORY	STATION	OFFSET	204.0220	204.0245	204.0280
			REMOVING INLETS EACH	REMOVING STORM SEWER (12-INCH) LF	SEALING PIPES EACH
0010	7+32	RT	--	10	--
	36+70	RT	1	--	1
	36+95	LT	1	--	1
TOTALS			2	10	2

NOTE
STORM SEWER REMOVALS AT CTH E/MILLER STREET ARE BY OTHERS

PREPARE FOUNDATION ITEMS

					211.0100	211.0400
					PREPARE FOUNDATION FOR ASPHALTIC PAVING (1470-24-71)	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS
CATEGORY	STATION	TO	STATION	OFFSET	LS	STA
0010						
	22+29	-	36+77	RT	—	15
	22+29	-	37+03	LT	—	16
	38+45	-	54+40	RT	—	17
	38+71	-	54+40	LT	—	17
PROJECT				—	1	—
TOTALS					1	65

CONCRETE PAVEMENT HES 8-INCH

CATEGORY	STATION	TO	STATION	OFFSET	415.1080	
					SY	COMMENTS
0010	3+42	-	3+79	LT	25	CTH E/MILLER STREET
TOTAL					25	

3

BASE AGGREGATE ITEMS

						305.0110	305.0120	305.0500		
						BASE AGGREGATE DENSE 3/4-INCH	BASE AGGREGATE DENSE 1 1/4-INCH	SHAPING SHOULDERS		
CATEGORY	STATION	TO	STATION	OFFSET		TON	TON	STA	COMMENTS	
0010										
	3+42	-	4+44	LT & RT	--		292	--	STORM SEWER REPLACEMENT	
	4+40	-	7+78	RT	--		328	--	SIDEWALK AND DRIVEWAY REPLACEMENT	
	4+18	-	5+33	LT	15		49	--	SIDEWALK AND DRIVEWAY REPLACEMENT	
	7+26	-	8+87	LT & RT	--		244	--	STORM SEWER REPLACEMENT	
	7+70	-	8+25	LT	--		35	--	SIDEWALK AND DRIVEWAY REPLACEMENT	
	8+43	-	11+34	LT	25		--	3		
	10+96	-	11+34	RT	--		34	--	CURB & GUTTER REPLACEMENT	
	17+56	-	22+50	RT	--		210	--	CURB & GUTTER REPLACEMENT	
	17+56	-	36+95	LT & RT	120		--	35		
	36+57	-	37+07	LT & RT	--		33	--	CONCRETE SURFACE DRAIN REPLACEMENT	
	38+54	-	54+40	LT & RT	150		--	32		
TOTALS						310	1,225	70		

NOTE: THE DEPTH OF BASE AGGREGATE DENSE 3/4-INCH PLACED ON THE SHOULDERS IS ASSUMED TO BE APPROXIMATELY 2" AFTER SHAPING SHOULDERS HAS BEEN COMPLETED

DRILLED TIE BARS

						416.0610		
						DRILLED TIE BARS		
CATEGORY	STATION	TO	STATION	OFFSET		EACH	COMMENTS	
0010								
	3+42	-	3+74	LT	28		CTH E/MILLER STREET	
	4+21	-	4+41	RT	7		CURB & GUTTER	
	6+06	-	6+68	RT	27		GAS STATION PUMP ISLAND	
TOTAL						62		

CONCRETE SIDEWALK ITEMS

						416.0160	416.0260	416.0280	601.0600	602.0405	602.0415	602.0505	602.0605
						CONCRETE DRIVEWAY 6-INCH	CONCRETE DRIVEWAY HES 6-INCH	CONCRETE DRIVEWAY HES 8-INCH	CONCRETE CURB PEDESTRIAN	CONCRETE SIDEWALK 4-INCH	CONCRETE SIDEWALK 6-INCH	CURB RAMP DETECTABLE WARNING FIELD YELLOW	CURB RAMP DETECTABLE WARNING FIELD RADIAL YELLOW
CATEGORY	STATION	TO	STATION	OFFSET		SY	SY	SY	LF	SF	SF	SF	SF
0010													
	3+39	-	3+66	LT	--	--	--	--	--	140	--	10	--
	4+19	-	4+41	LT	--	--	--	--	--	125	--	20	--
	4+25	-	7+78	RT	70	25	--	--	20	--	--	10	--
	4+95	-	5+25	LT	35	--	--	--	--	--	--	--	--
	6+06	-	6+68	RT	--	--	40	--	--	--	--	--	--
	7+70	-	8+39	LT	--	45	--	--	--	100	--	10	--
	7+78	-	8+86	RT	--	--	--	--	--	700	--	10	--
	10+97	-	11+35	RT	--	--	--	--	--	193	--	--	--
	17+55	-	17+78	RT	--	--	--	--	--	160	--	8	--
	22+30	-	22+46	RT	--	--	--	--	--	112	--	--	16
SUBTOTALS						105	70	40	20	1,530	--	68	16
0020													
	2+40	-	4+25	RT	--	--	--	--	--	1,215	--	--	--
	4+25	-	7+78	RT	--	--	--	--	--	--	1,170	--	--
	4+41	-	5+36	LT	--	--	--	--	--	335	--	--	--
	7+70	-	8+39	LT	--	--	--	--	--	110	--	--	--
SUBTOTALS						0	0	0	0	1,660	1,170	0	0
TOTALS						105	70	40	20	3,190	1,170	68	16

ASPHALTIC ITEMS

					450.4000	455.0605	460.5223	460.5224	465.0110	465.0120	465.0315
					HMA COLD WEATHER PAVING	TACK COAT	HMA PAVEMENT 3 LT 58-28 S	HMA PAVEMENT 4 LT 58-28 S	ASPHALTIC SURFACE PATCHING	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	ASPHALTIC FLUMES
CATEGORY	STATION	TO	STATION	OFFSET	TON	GAL	TON	TON	TON	TON	SY
0010	3+57	-	4+40	LT&RT	--	45	--	65	--	--	--
	3+66	-	4+44	LT&RT	--	--	--	--	100	--	--
	4+18	-	5+29	LT	--	--	--	--	--	12	--
	4+40	-	7+26	RT	--	--	--	--	29	--	--
	4+40	-	11+34	LT&RT	--	415	370	280	--	--	--
	4+43	-	6+06	RT	--	--	--	--	--	40	--
	4+88	-	5+34	LT	--	--	--	--	4	--	--
	6+63	-	7+82	RT	--	--	--	--	--	32	--
	7+26	-	8+87	LT & RT	--	--	--	--	61	--	--
	7+70	-	8+25	LT	--	--	--	--	--	10	--
	10+96	-	11+34	RT	--	--	--	--	4	--	--
	17+56	-	36+95	LT&RT	--	1,200	1,060	830	--	--	--
	17+56	-	22+65	RT	--	--	--	--	52	--	12
	27+63	-	29+29	LT	--	--	--	--	--	25	--
	38+54	-	54+40	LT&RT	--	1,100	970	760	--	--	--
	40+32	-	41+62	RT	--	--	--	--	--	39	--
	49+13	-	49+70	LT	--	--	--	--	--	10	--
	51+82	-	52+32	LT	--	--	--	--	--	8	--
	PROJECT				--	1,200	--	--	--	--	--
	TOTALS					1,200	2,760	2,400	1,935	250	175

CONCRETE CURB & GUTTER AND CONCRETE SURFACE DRAIN ITEMS

					416.1010	601.0409	601.0411	601.0452	SPV.0090.01
					CONCRETE SURFACE DRAINS	CONCRETE CURB & GUTTER 30-INCH TYPE A	CONCRETE CURB & GUTTER 30-INCH TYPE D	CONCRETE CURB & GUTTER & GUTTER INTEGRAL 30-INCH TYPE D	CONCRETE CURB & GUTTER 30-INCH HES TYPE D
CATEGORY	STATION	TO	STATION	OFFSET	CY	LF	LF	LF	LF
0010	3+42	-	3+77	LT	--	--	--	50	--
	3+66	-	8+86	RT	--	20	460	--	40
	4+17	-	4+42	LT	--	--	45	--	--
	4+89	-	5+32	LT	--	--	45	--	--
	7+85	-	8+45	LT	--	--	--	--	60
	10+97	-	11+35	RT	--	--	40	--	--
	17+55	-	22+50	RT	--	--	510	--	--
	36+58	-	36+74	RT	4	--	--	--	--
	36+83	-	36+99	LT	4	--	--	--	--
	TOTALS				8	20	1,100	50	100

RIPRAP ITEMS

				606.0200	645.0120
				RIPRAP MEDIUM	GEOTEXTILE TYPE HR
CATEGORY	STATION	OFFSET		CY	SY
0010	36+60	RT		18	65
	36+85	LT		10	35
	TOTALS			28	100

TEMPORARY BARRIER ITEMS

						603.8000	603.8125	614.0905						
						CONCRETE BARRIER TEMPORARY PRECAST DELIVERED	CONCRETE BARRIER TEMPORARY PRECAST INSTALLED	CRASH CUSHIONS TEMPORARY	BACK WIDTH FT	OBJECT MARKING PATTERN	CRASH TEST LEVEL	TRAFFIC DIRECTION	TRAFFIC LOCATION	CRASH CUSHION SHIELDS
CATEGORY	STAGE	STATION	TO	STATION	LOCATION	LF	LF	EACH						
0010	1K	10+55	-	18+85	B-31-23	840	840	1	4	OM-3R (W05-58R)	TL-2	BIDIRECTIONAL	LT	TEMPORARY CONCRETE BARRIER
	1A	35+57	-	39+36	B-31-18	375	375	1	4	OM-3R (W05-58R)	TL-3	BIDIRECTIONAL	LT	TEMPORARY CONCRETE BARRIER
	2K	10+64	-	18+87	B-31-23	--	840	1	4	OM-3R (W05-58R)	TL-2	BIDIRECTIONAL	LT	TEMPORARY CONCRETE BARRIER
	2A	35+64	-	39+42	B-31-18	--	375	1	4	OM-3R (W05-58R)	TL-3	BIDIRECTIONAL	LT	TEMPORARY CONCRETE BARRIER
	TOTALS					1,215	2,430	4						

NOTE
AT B-31-23, ALL TRAFFIC CONTROL ITEMS REMAIN IN PLACE FOR STAGE 3

STORM SEWER ITEMS

		520.8000		608.0412		608.6006	
		CONCRETE COLLARS FOR PIPE		STORM SEWER PIPE REINFORCED CONCRETE CLASS IV 12-INCH		STORM SEWER PIPE COMPOSITE 6-INCH	
CATEGORY	LOCATION	FROM STRUCTURE	TO STRUCTURE	EACH	LF	LF	
0010							
	RT	1	3	--	--	47	
	LT&RT	2	3	--	--	35	
	RT	3	5	--	--	91	
	RT	4	5	1	4	--	
	RT	5	6	--	8	--	
TOTALS				1	12	173	

ADJUSTING INLET AND MANHOLE COVER ITEMS

		611.8115		611.8120.S*		SPV.0060.01		SPV.0060.02		SPV.0060.03		SPV.0060.04	
		ADJUSTING INLET COVERS		COVER PLATES TEMPORARY		ADJUSTING SANITARY MANHOLE COVERS		ADJUSTING WATER MANHOLE COVERS		ADJUSTING WATER VALVE BOX		RECONSTRUCTING SANITARY MANHOLES	
CATEGORY	STATION	OFFSET	EACH	EACH		EACH		EACH		EACH		EACH	
0010	11+23	16' RT	1	1		--		--		--		--	
	17+68	16' RT	1	1		--		--		--		--	
SUBTOTALS			2	2		--		--		--		--	
0050	3+64	15' RT	--	1		1		--		--		--	
	3+91	60' LT	--	1		1		--		--		--	
	7+64	8' RT	--	1		--		1		--		--	
	7+72	9' RT	--	1		--		1		--		--	
	7+76	12' LT	--	1		1		--		--		--	
	28+80	26' LT	--	1		1		--		--		--	
	28+88	11' LT	--	--		--		--		1		--	
	39+06	82' RT	--	--		--		--		--		1	
SUBTOTALS			--	6		4		2		1		1	
TOTALS			2	8		4		2		1		1	

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

STORM SEWER STRUCTURES

		611.0430		611.0530		611.0639		611.2003		611.3230		611.8120.S*		SPV.0060.05	
		RECONSTRUCTING INLETS		MANHOLE COVERS TYPE J		INLET COVERS TYPE H-S		MANHOLES 3-FT DIAMETER		INLETS 2X3-FT		COVER PLATES TEMPORARY		INLET COVERS TYPE H-D	
CATEGORY	STATION	OFFSET	STRUCTURE NUMBER	EACH	EACH	EACH		EACH		EACH		EACH		EACH	
0010	7+32	20.5' RT	6	1	--	--	--	--	--	--	--	--	--	--	--
	7+32	14.0' RT	5	--	1	--	1	--	--	1	--	1	--	--	--
	8+24	20.5' LT	2	--	--	--	--	1	--	--	--	--	--	1	--
	8+24	14.0' RT	3	--	1	--	1	--	--	1	--	1	--	--	--
	8+71	19.5' RT	1	--	--	1	--	--	1	--	--	--	--	--	--
TOTALS				1	2	1	2	2	2	2	2	1			

*ADDITIONAL QUANTITIES SHOWN ELSEWHERE

BARRIER SYSTEM GRADING SHAPING FINISHING												
				614.0010	**	**	**	**	**	**	**	**
				BARRIER SYSTEM GRADING SHAPING FINISHING	EXCAVATION COMMON	FILL	BORROW	TOPSOIL	FERTILIZER TYPE B	SEEDING MIXTURE NO. 20	SEEDING MIXTURE NO. 30	SEEDING MIXTURE NO. 40
CATEGORY	STATION TO	STATION	OFFSET	EACH	CY	CY	CY	SY	CWT	LB	LB	LB
0010	9+24	-	11+34	LT	1	-	-	240	0.2	-	--	5
	17+56	-	19+75	LT	1	-	100	580	0.4	-	--	10
	31+61	-	36+78	RT	1	175	1,150	2,740	1.8	55	14	-
	31+61	-	37+03	LT	1	-	550	1,620	1.0	22	15	-
	38+35	-	40+46	RT	1	-	635	1,080	0.7	-	--	20
	38+71	-	43+20	LT	1	-	460	1,440	0.9	23	11	-
UNDISTRIBUTED				--	-	-	-	1,950	1.0	25	10	10
TOTALS				6	175	2,895	2,720	9,650	6.0	125	50	45

**NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY. ITEMS INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING.

GUARDRAIL ITEMS										
				614.0920	614.0925	614.2300	614.2330	614.2500	614.2610	
				SALVAGED RAIL	SALVAGED GUARDRAIL END TREATMENTS	MGS GUARDRAIL 3	MGS GUARDRAIL 3 K	MGS THRIE BEAM TRANSITION	MGS GUARDRAIL TERMINAL EAT	
CATEGORY	STATION TO	STATION	OFFSET	LF	EACH	LF	LF	LF	EACH	
0010	10+26	-	11+29	LT	32	1	12.5	-	40	1
	17+61	-	18+66	LT	32	1	12.5	-	40	1
	33+11	-	37+03	LT	278	1	162.5	137.5	40	1
	33+60	-	36+78	RT	240	1	225.0	-	40	1
	38+45	-	40+35	RT	140	1	50.0	-	40	1
	38+71	-	41+88	LT	268	1	100.0	125.0	40	1
TOTALS				990	6	562.5	262.5	240	6	

WATER ITEMS			
		624.0100	SPV.0120.01
CATEGORY	LOCATION	WATER MGAL	WATER FOR SEEDED AREAS MGAL
0010			
	PROJECT - BASE COMPACTION	12	-
	PROJECT - SEEDED AREAS	-	3
TOTALS		12	3

EROSION CONTROL ITEMS

						628.1504	628.1520	628.2004	628.2008	628.7504	628.7555	628.7570
						SILT FENCE	SILT FENCE	EROSION MAT	EROSION MAT	TEMPORARY	CULVERT PIPE	ROCK BAGS
CATEGORY	STATION	TO	STATION	OFFSET		LF	MAINTENANCE LF	CLASS I TYPE B SY	URBAN CLASS I TYPE B SY	DITCH CHECKS LF	CHECKS EACH	EACH
0010	2+40	-	5+35	LT & RT		200	200	-	--	-	-	-
	7+70	-	8+87	LT & RT		180	180	-	--	-	-	30
	9+24	-	11+34	LT		260	260	-	240	-	-	20
	10+96	-	11+35	RT		-	-	-	--	-	-	-
	17+56	-	19+75	LT		220	220	-	580	15	8	-
	17+77	-	22+50	RT		-	-	-	--	15	-	-
	31+61	-	36+78	RT		350	350	2,740	--	50	-	-
	31+61	-	37+03	LT		620	620	1,620	--	-	-	80
	38+35	-	40+46	RT		270	270	-	1,080	-	-	20
	38+71	-	43+20	LT		530	530	1,440	--	-	8	60
UNDISTRIBUTED						570	570	1,450	500	20	4	50
TOTALS						3,200	3,200	7,250	2,400	100	20	260

EROSION CONTROL MOBILIZATION ITEMS

		628.1905	628.1910
		MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH
CATEGORY	LOCATION		
0010			
	PROJECT	6	4
TOTALS		6	4

INLET PROTECTION

				628.7005	628.7015	628.7020
				INLET PROTECTION TYPE A EACH	INLET PROTECTION TYPE C EACH	INLET PROTECTION TYPE D EACH
CATEGORY	STATION	OFFSET				
0010	1+71	20' RT		-	1	-
	2+02	20' LT		-	1	-
	3+45	21' LT		-	1	-
	3+75	48' LT		-	1	-
	4+14	20' RT		-	1	-
	4+15	45' LT		-	1	-
	7+32	20' RT		-	1	-
	7+32	20' LT		-	1	-
	8+24	20' LT		1	--	1
	8+71	19' RT		1	--	1
	11+23	16' RT		-	1	-
	17+68	15' RT		-	1	-
	21+75	19' RT		-	1	-
	UNDISTRIBUTED			1	3	1
	TOTALS			3	14	3

RESTORATION ITEMS

					631.0300	631.1000
					SOD WATER	SOD LAWN
CATEGORY	STATION	TO	STATION	OFFSET	MGAL	SY
0010						
	2+40	-	5+35	LT & RT	5	210
	7+70	-	8+87	LT & RT	2	80
	10+96	-	11+35	RT	1	20
	17+77	-	22+60	RT	7	290
					-	-
	UNDISTRIBUTED			-	4	150
TOTALS					19	750

ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II												
SIGN NO.	LOCATION	SIGN CODE	W X H			637.2210	637.2230	634.0614	634.0616	638.2602	638.3000	REMARKS
						SIGNS	SIGNS	POSTS	POSTS	REMOVING	REMOVING	
						TYPE II	TYPE II	WOOD	WOOD	SIGNS	SMALL	
						REFLECTIVE	REFLECTIVE	4x6x14	4x6x16	TYPE II	SIGN	
						TYPE H	TYPE F					SUPPORTS
						S.F.	S.F.	EACH	EACH	EACH	EACH	
1	STH 42, SOUTH OF CTH E	J13-1		--		--	--	--	--	1	1	
1A	"	J13-1	24"	X	45"	7.50	--	--	--	--	--	MOUNT TO LIGHT POLE, SEE PLAN SHEET, M1-97 PLATE
1B	"	R7-1D	18"	X	24"	3.00	--	1	--	1	1	
2A	"	J4-2	48"	X	36"	12.00	--	--	1	--	--	SEE PLAN SHEET
2	"	J13-1		--		--	--	--	--	1	1	
3	CTH E	J13-1	24"	X	45"	7.50	--	--	1	1	1	SEE PLAN SHEET
4	"	R1-1	36"	X	36"	7.46	--	--	1	1	1	
5	STH 42, NORTH OF CTH E	J4-1		--		--	--	--	--	1	--	
6	"	J4-2	48"	X	36"	12.00	--	--	--	--	--	MOUNT TO LIGHT POLE, SEE PLAN SHEET
7	"	J13-1	24"	X	45"	7.50	--	--	1	--	--	SEE PLAN SHEET
7A	"	R7-1D	18"	X	24"	3.00	--	1	--	1	1	
7B	"	R7-1D	18"	X	24"	3.00	--	1	--	1	1	
7C	"	R7-1D	18"	X	24"	3.00	--	1	--	1	1	
7D	"	W11-2	30"	X	30"	--	6.25	--	1	--	--	
7E	"	W16-7L	24"	X	12"	--	2.00	--	--	--	--	MOUNT BELOW SIGN 7D
7F	"	W11-2	30"	X	30"	--	6.25	--	1	--	--	
7G	"	W16-7L	24"	X	12"	--	2.00	--	--	--	--	MOUNT BELOW SIGN 7F
8	"	R2-1		--		--	--	--	--	1	1	
8A	"	R2-1	24"	X	30"	5.00	--	1	--	--	--	25 MPH
9	"	R2-1		--		--	--	--	--	1	1	
9A	"	R2-1	24"	X	30"	5.00	--	1	--	--	--	35 MPH
10	"	J1-1	24"	X	39"	6.50	--	--	1	1	1	SEE PLAN SHEET
11	"	W5-52L		--		--	--	--	--	1	1	
12	"	I3-1	36"	X	21"	5.25	--	--	--	1	--	MOUNT TO LIGHT POLE, SEE SIGN DETAILS
13	"	I3-1	36"	X	21"	5.25	--	--	--	--	--	MOUNT TO BACK OF SIGN 12
14	"	R2-1	24"	X	30"	5.00	--	1	--	1	1	35 MPH
15	"	W5-52R	12"	X	36"	--	3.00	1	--	1	1	
16	"	J4-1		--		--	--	--	--	1	1	
17	"	R2-1	24"	X	30"	5.00	--	1	--	1	1	35 MPH
18	PETERSON ST	R1-1	30"	X	30"	5.18	--	1	--	1	1	
19	MAIN ST	R1-1	30"	X	30"	5.18	--	1	--	1	1	
20	STH 42, NORTH OF PERTERSON ST	W1-6	48"	X	24"	--	8.00	1	--	1	2	
21	HATHAWAY DR	R1-1	30"	X	30"	5.18	--	1	--	1	1	
22	STH 42, NORTH OF HATHAWAY DR	R2-1	24"	X	30"	5.00	--	1	--	1	1	35 MPH
23	"	R2-1	24"	X	30"	5.00	--	1	--	1	1	45 MPH
24	"	W54-56	30"	X	30"	--	6.25	--	1	1	1	
25	"	W1-2R		--		--	--	--	--	1	1	
26	"	R2-1		--		--	--	--	--	1	1	
27	"	R2-1		--		--	--	--	--	1	1	
28	"	W54-56	30"	X	30"	--	6.25	--	1	--	--	
29	"	J4-2		--		--	--	--	--	1	1	
30	"	W54-56		--		--	--	--	--	1	1	
31	STH 42, ACROSS FROM DUVAL ST	W1-7	48"	X	24"	--	8.00	1	--	1	1	
32	DUVALL ST	R1-1	30"	X	30"	5.18	--	1	--	1	1	
33	STH 42, NORTH OF DUVAL ST	R2-1	24"	X	30"	5.00	--	1	--	1	1	45 MPH
34	"	R2-1	24"	X	30"	5.00	--	1	--	1	1	45 MPH
35	"	J4-2	48"	X	36"	12.00	--	--	1	1	1	SEE PLAN SHEET, M1-97 PLATE
TOTALS						155.68	48.00	19	10	35	34	

DELINEATOR REFLECTOR ITEMS

						633.0100	633.0500	633.5200	COMMENTS
						DELINEATOR POSTS STEEL EACH	DELINEATOR REFLECTORS (WHITE) EACH	MARKERS CULVERT END EACH	
CATEGORY	STATION TO	STATION	OFFSET						
0010	8+40	-	9+25	LT		7	7	--	15' SPACING
	19+35	-	21+00	LT		4	4	--	50' SPACING
	24+75	-	--	LT & RT		--	--	2	
	TOTALS					11	11	2	

TEMPORARY PORTABLE RUMBLE STRIPS

		643.0310.S
		TEMPORARY PORTABLE RUMBLE STRIPS
CATEGORY	LOCATION	LS
0010	PROJECT	1
TOTAL		1

TEMPORARY PEDESTRIAN BARRICADE

						644.1810.S
CATEGORY	STAGE	STATION TO	STATION	OFFSET		LF
0010	2	10+84	-	17+93	RT	760
	3	10+84	-	17+93	RT	700
	-	UNDISTRIBUTED			-	140
TOTAL						1,600

TRAFFIC CONTROL ITEMS

					643.0300		643.0410		643.0420		643.0705		643.0715		643.0900		643.1050		643.5000		644.1410.S		644.1430.S		644.1601.S		661.0100.01		661.0100.02			
					STAGE DURATION	TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE II		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL SIGNS PCMS		TRAFFIC CONTROL	TEMPORARY PEDESTRIAN SURFACE ASPHALT	TEMPORARY PEDESTRIAN SURFACE PLATE	TEMPORARY CURB RAMP	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (B-31-18)	TEMPORARY TRAFFIC SIGNALS FOR BRIDGES (B-31-23)							
CATEGORY	STAGE	STATION	TO	STATION	DAYS	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY	NO.	DAY	EACH	SF	SF	EACH	LS	LS	COMMENTS						
0010	1K	9+44	-	19+95	25	20	500	--	--	2	50	--	--	8	200	30	750	--	--	--	--	--	--	--	--	1	--	B-31-23				
	1A	34+50	-	40+45	15	20	300	--	--	7	105	--	--	8	120	18	270	--	--	--	--	--	--	--	1	--	B-31-18					
	2K	9+44	-	19+95	25	20	500	--	--	2	50	--	--	8	200	30	750	--	--	--	--	--	--	--	--	--	B-31-23					
	1A	34+50	-	40+45	15	20	300	--	--	7	105	--	--	8	120	18	270	--	--	--	--	--	--	--	--	--	B-31-18					
	3K	9+44	-	19+95	14	20	280	2	28	2	28	--	--	8	112	32	448	--	--	--	14	32	2	--	--	--	B-31-23					
	--	3+46	-	4+22	14	--	--	--	--	9	126	14	196	--	--	9	126	--	--	--	36	--	2	--	--	--	CTH E / MILLER ST STORM SEWER					
	--	5+04	-	11+95	5	32	160	--	--	2	10	--	--	5	25	4	20	--	--	--	--	--	--	--	--	--	STH 42 STORM SEWER					
	--	2+40	-	8+87	20	60	1,200	5	100	--	--	--	--	--	--	7	140	--	--	--	--	--	3	--	--	--	SIDEWALK REPLACEMENT					
	--	17+56	-	22+29	5	35	175	1	5	--	--	--	--	--	--	2	10	--	--	--	--	--	1	--	--	--	CURB & GUTTER REPLACEMENT					
	--	31+61	-	43+08	10	92	920	--	--	--	--	--	--	--	--	2	20	--	--	--	--	--	--	--	--	--	GUARDRAIL REPLACEMENT					
	--	PROJECT				87	--	--	--	--	--	--	--	--	--	13	1,131	2	20	1	--	--	--	--	--	--	ADVANCED WARNING					
TOTALS						4,335		133		474		196		777		3,935		20		1	80	32	8	1	1							

LONG LINE PAVEMENT MARKING ITEMS

					646.1020			646.4520		646.6120		646.7420		646.7520		
					MARKING LINE EPOXY 4-INCH			MARKING LINE SAME DAY EPOXY 4-INCH		MARKING STOP LINE EPOXY 18-INCH		MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH		MARKING CROSSWALK EPOXY LADDER PATTERN 24-INCH		
CATEGORY	STATION	TO	STATION	OFFSET	3' LINE 9' SKIP WHITE	12.5' LINE 37.5' SKIP WHITE	SOLID WHITE	DOUBLE YELLOW	WHITE	WHITE	WHITE	WHITE	COMMENTS			
					LF	LF	LF	LF	LF	LF	LF	LF				
0010																
	3+66	-	4+20	LT	--	--	--	--	25	105	--	--	CTH E/MILLER ST INTERSECTION			
	4+34	-	54+40	LT & RT	--	--	--	10,000	--	90	60	--				
	8+37	-	54+40	LT	--	--	4,430	--	--	--	--	--				
	10+75	-	54+40	RT	--	--	3,760	--	--	--	--	--				
	27+35	-	27+72	RT	10	--	--	--	--	--	--	--	HATHAWAY DR INTERSECTION			
	47+95	-	49+75	RT	45	--	--	--	--	--	--	--	DUVALL ST INTERSECTION			
	49+46	-	51+96	LT	--	65	--	--	--	--	--	--	--			
TOTALS					55	65	8,190	10,000	25	195	60					

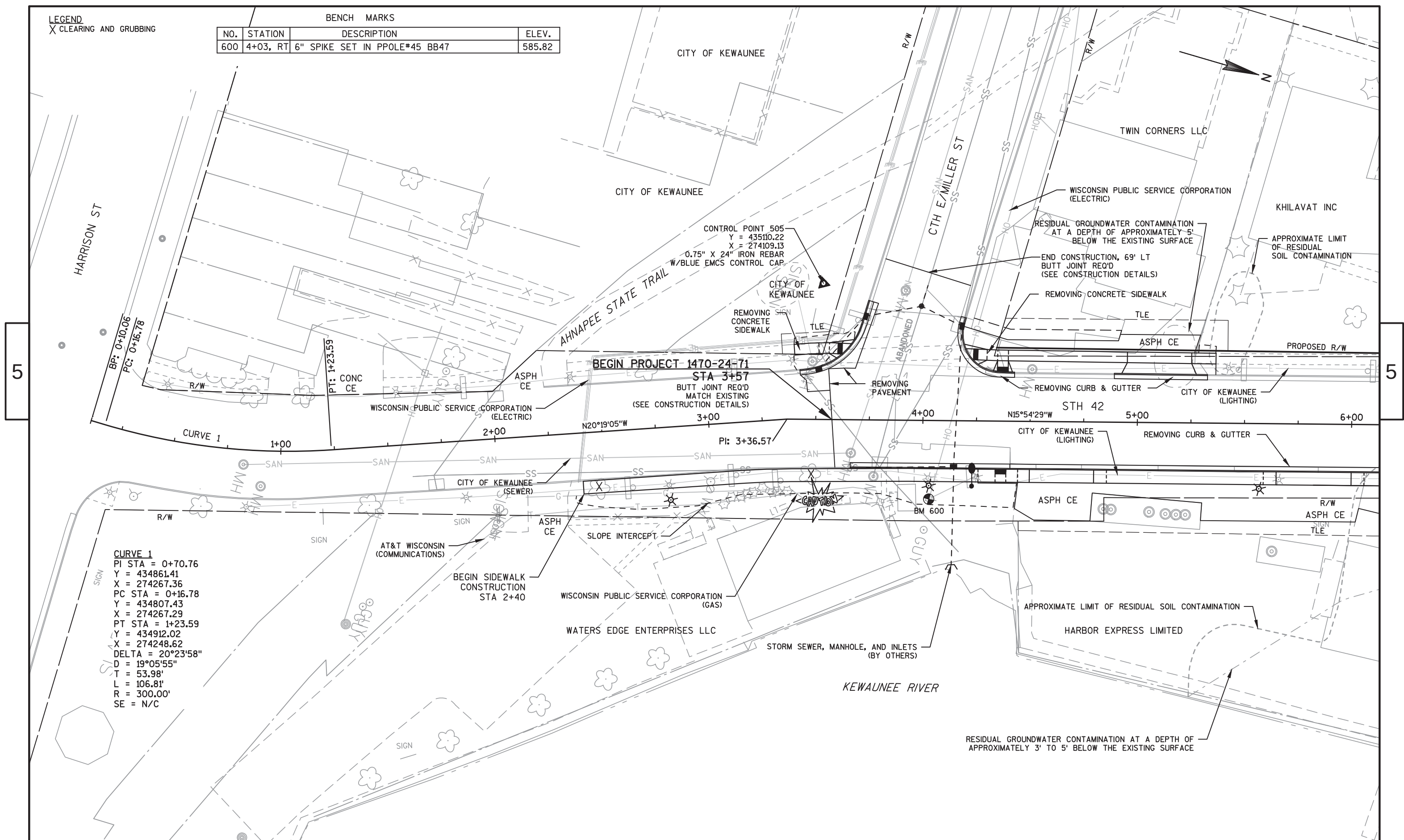
TEMPORARY PAVEMENT MARKING ITEMS

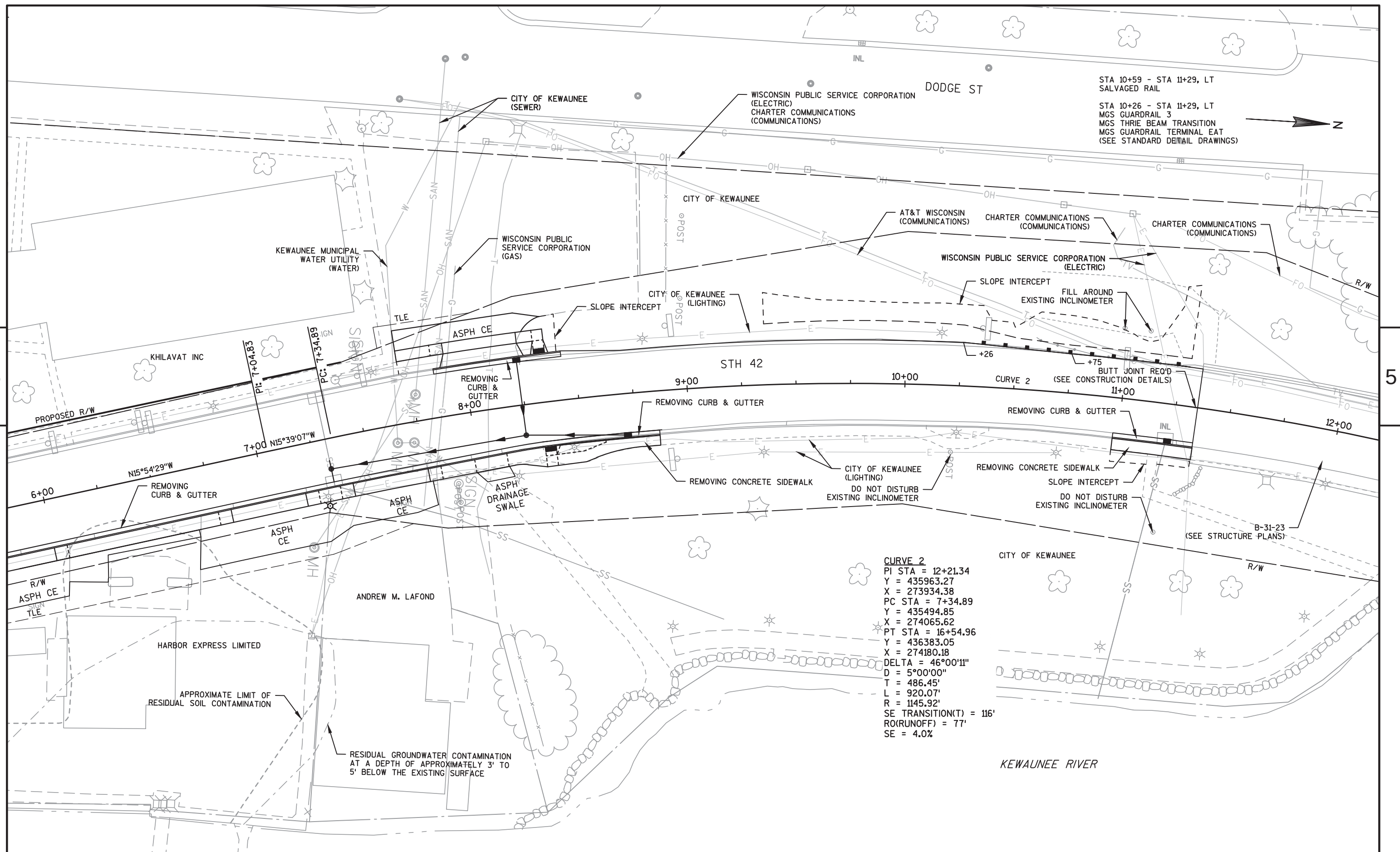
						646.9000	649.0105	649.0150		649.0850		
						MARKING REMOVAL LINE 4-INCH	TEMPORARY MARKING LINE PAINT 4-INCH	TEMPORARY MARKING LINE REMOVABLE TAPE 4-INCH		TEMPORARY MARKING STOP LINE REMOVABLE TAPE 18-INCH		COMMENTS
CATEGORY	STAGE	STATION	TO	STATION	OFFSET			LF	LF	YELLOW LF	WHITE LF	
0010												
	1K	9+44	-	19+95	LT & RT	1,365	--	--	1,895	28	B-31-23	
	1A	34+50	-	40+45	LT & RT	1,065	--	--	985	24	B-31-18	
	2K	9+44	-	19+95	LT & RT	420	--	--	2,385	--	B-31-23	
	2A	34+50	-	40+45	LT & RT	420	--	--	1,140	--	B-31-18	
	3K	9+44	-	19+95	RT	--	--	--	40	--	B-31-23	
	--	4+40	-	54+40	CL	--	30,000	--	--	--	ASPHALT PAVING	
	--	5+04	-	11+95	LT & RT	1,730	--	1,390	1,390	--	STORM SEWER	
TOTALS						5,000	30,000	1,390	7,835	52		
								9,225				

CONSTRUCTION STAKING ITEMS											
		650.4000		650.5500		650.7000		650.8000		650.9000	

LEGEND
X CLEARING AND GRUBBING

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
600	4+03, RT	6" SPIKE SET IN PPOLE#45 BB47	585.82

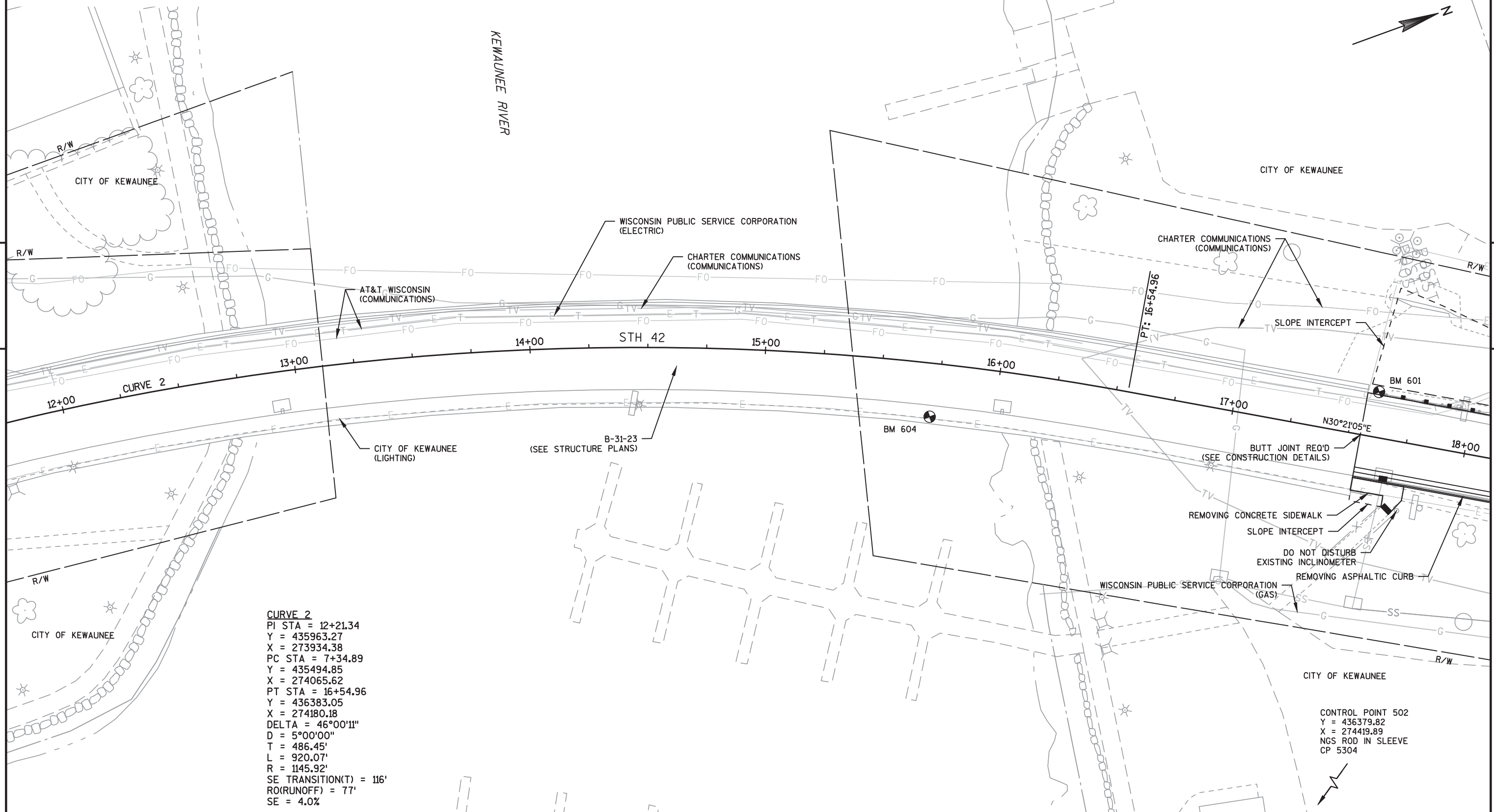




BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
604	15+72,RT	BRASS CAP IN SW OF STR B-31-23	597.42
601	17+60,LT	ALUMINUM CAP IN NW PARAPET STR B-31-23	594.79

STA 17+61 - STA 18+33, LT
SALVAGE RAIL

STA 17+61 - STA 18+66, LT
MGS GUARDRAIL 3
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT
(SEE STANDARD DETAIL DRAWINGS)



PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

PLAN

SHEET

66

E

LEGEND
X CLEARING AND GRUBBING

STA 17+61 - STA 18+33, LT
SALVAGED RAIL

STA 17+61 - STA 18+66, LT
MGS GUARDRAIL 3
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT
(SEE STANDARD DETAIL DRAWINGS)

CITY OF KEWAUNEE

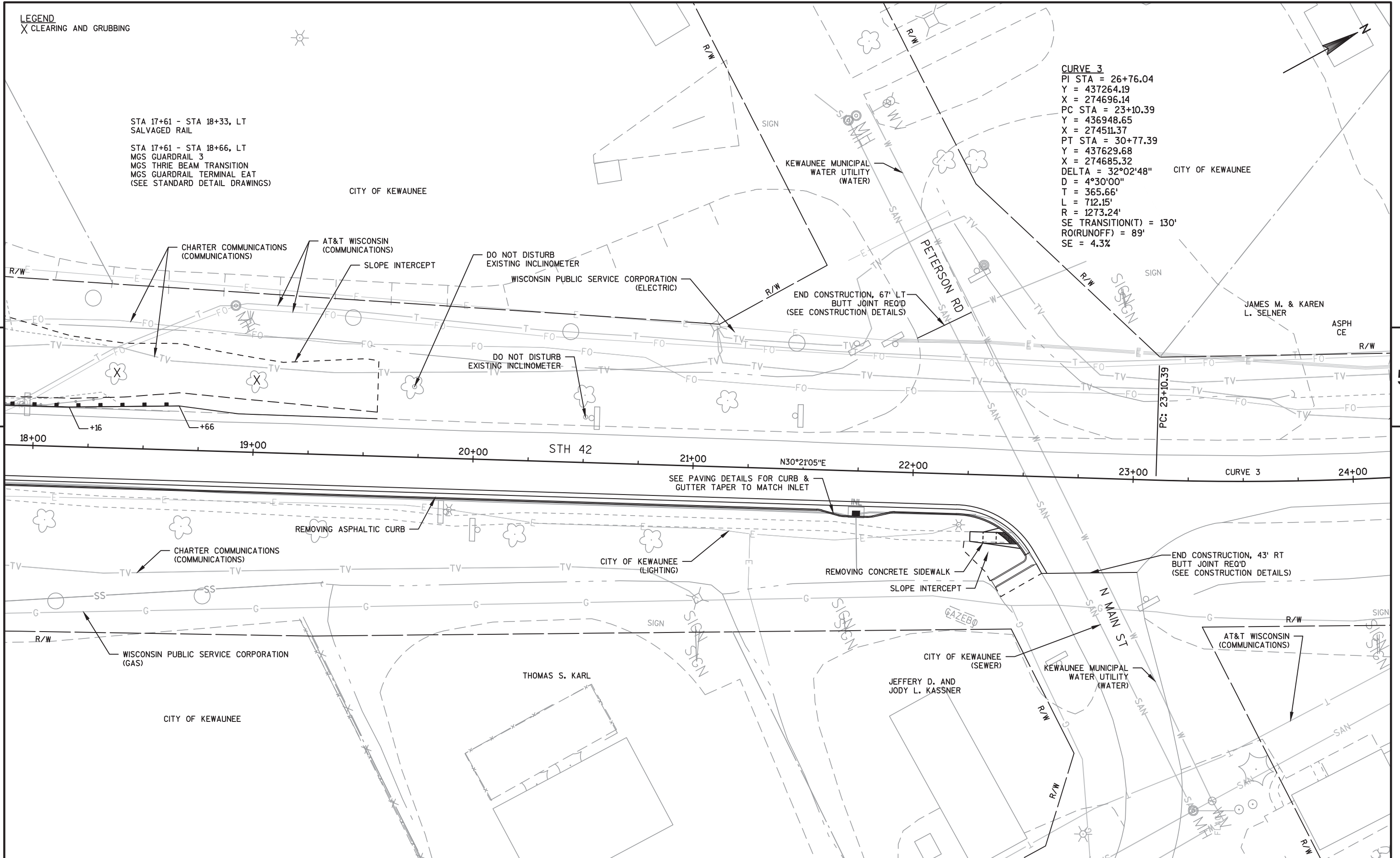
CURVE 3
PI STA = 26+76.04
Y = 437264.19
X = 274696.14
PC STA = 23+10.39
Y = 436948.65
X = 274511.37
PT STA = 30+77.39
Y = 437629.68
X = 274685.32
DELTA = 32°02'48"
D = 4°30'00"
T = 365.66'
L = 712.15'
R = 1273.24'
SE TRANSITION(T) = 130'
RO(RUNOFF) = 89'
SE = 4.3%

CITY OF KEWAUNEE

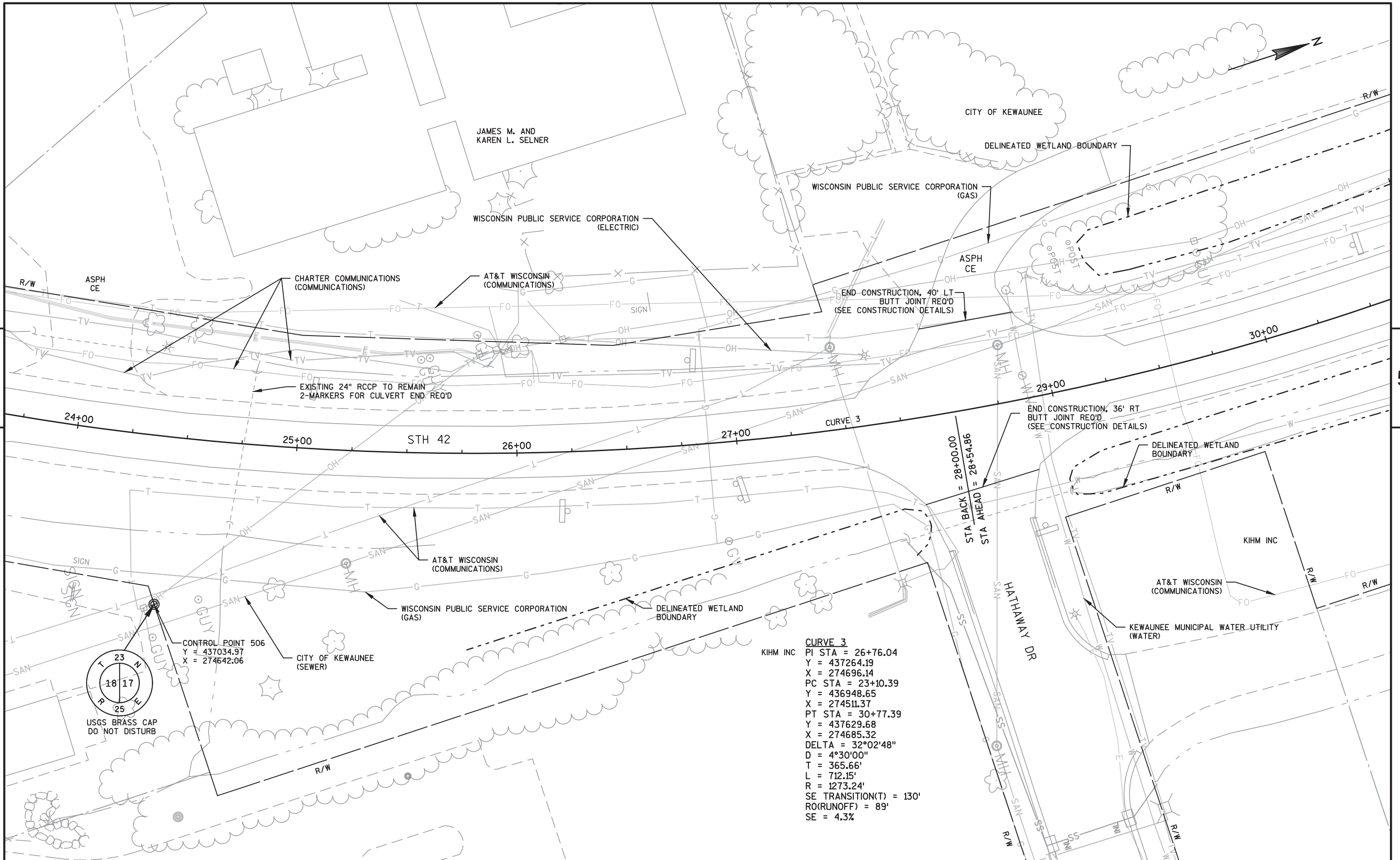
JAMES M. & KAREN
L. SELNER
ASPH
CE

5

5



PROJECT NO:1470-24-71	HWY:STH 42	COUNTY:KEWAUNEE	PLAN	SHEET 67	E
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LEGEND
X CLEARING AND GRUBBING
PERMITTED WETLAND IMPACTS

STA 33+74 - STA 37+03, LT
SALVAGED RAIL

STA 33+11 - STA 37+03, LT
MGS GUARDRAIL 3
MGS GUARDRAIL 3K
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT
(SEE STANDARD DETAIL DRAWINGS)

CITY OF KEWAUNEE

WISCONSIN PUBLIC SERVICE CORPORATION (GAS)
ATC MANAGEMENT, INC. (ELECTRIC)

DELINEATED WETLAND BOUNDARY

WISCONSIN PUBLIC SERVICE CORPORATION (ELECTRIC)

SLOPE INTERCEPT

AT&T WISCONSIN (COMMUNICATIONS)

CHARTER COMMUNICATIONS (COMMUNICATIONS)

PT: 30+77.39

31+00

32+00

STH 42

33+00

N01°41'43"W

34+00

35+00

36+00

DELINEATED WETLAND BOUNDARY

SLOPE INTERCEPT

KEWAUNEE MUNICIPAL WATER UTILITY (WATER)

KIHM INC.

STA 33+86 - STA 36+78, RT
SALVAGED RAIL

STA 33+60 - STA 36+78, RT
MGS GUARDRAIL 3
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT
(SEE STANDARD DETAIL DRAWINGS)

KEWAUNEE FABRICATIONS

AT&T WISCONSIN (COMMUNICATIONS)

INL

PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

PLAN

SHEET

69

E

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETSP\PLAN\050201-PN.DWG
LAYOUT NAME - *****

PLOT DATE : 1/23/2018 10:36 AM

PLOT BY : MICHAEL HIGGINS

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADD SHEET 44

LEGEND
X CLEARING AND GRUBBING

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
602	36+78,RT	ALUMINUM CAP IN SE PARAPET STR B-31-18	611.92

STA 38+70 - STA 41+60, LT
SALVAGED RAIL

STA 38+71 - STA 41+88, LT
MGS GUARDRAIL 3
MGS GUARDRAIL 3K
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT
(SEE STANDARD DETAIL DRAWINGS)

CITY OF KEWAUNEE

ANNAPEE STATE TRAIL

WISCONSIN DNR

SIGN

ACCURATE MARINE AND STORAGE LLC

R/W

WISCONSIN PUBLIC SERVICE CORPORATION
(GAS)

CHARTER COMMUNICATIONS
(COMMUNICATIONS)

WISCONSIN PUBLIC SERVICE CORPORATION
(ELECTRIC)

AT&T WISCONSIN
(COMMUNICATIONS)

SLOPE INTERCEPT

CONCRETE SURFACE DRAINS

B-31-18
(SEE STRUCTURE PLANS)

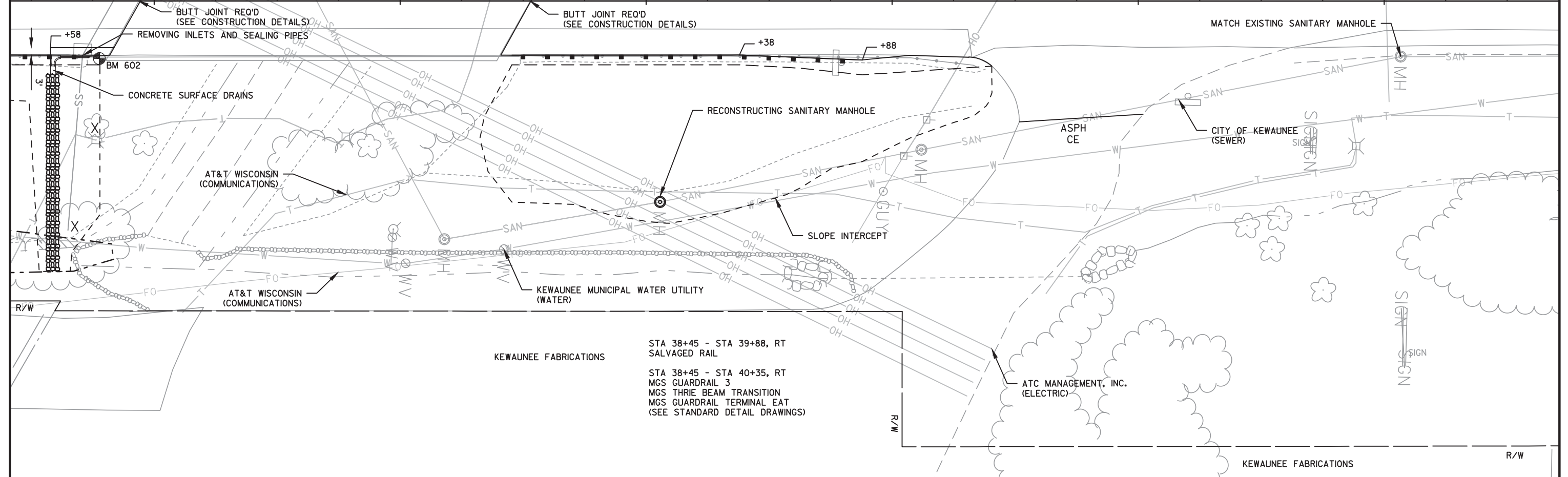
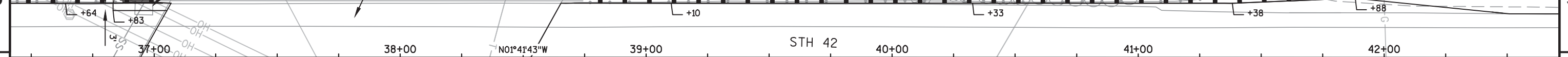
REMOVING INLETS AND SEALING PIPES

CHARTER COMMUNICATIONS
(COMMUNICATIONS)

CITY OF KEWAUNEE
(LIGHTING)

5

5



KEWAUNEE FABRICATIONS

STA 38+45 - STA 39+88, RT
SALVAGED RAIL

STA 38+45 - STA 40+35, RT
MGS GUARDRAIL 3
MGS THRIE BEAM TRANSITION
MGS GUARDRAIL TERMINAL EAT
(SEE STANDARD DETAIL DRAWINGS)

ATC MANAGEMENT, INC.
(ELECTRIC)

KEWAUNEE FABRICATIONS

R/W

PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

PLAN

SHEET

70

E

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\S\14702471\SHEETS\PLAN\050201-PN.DWG
LAYOUT NAME - *****

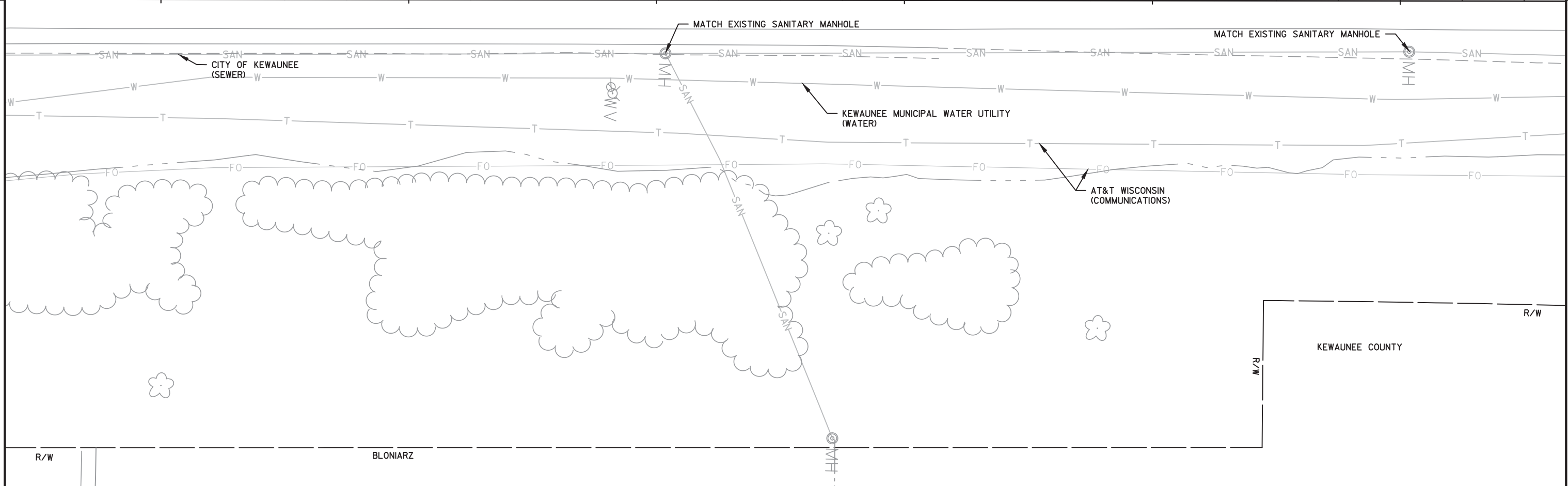
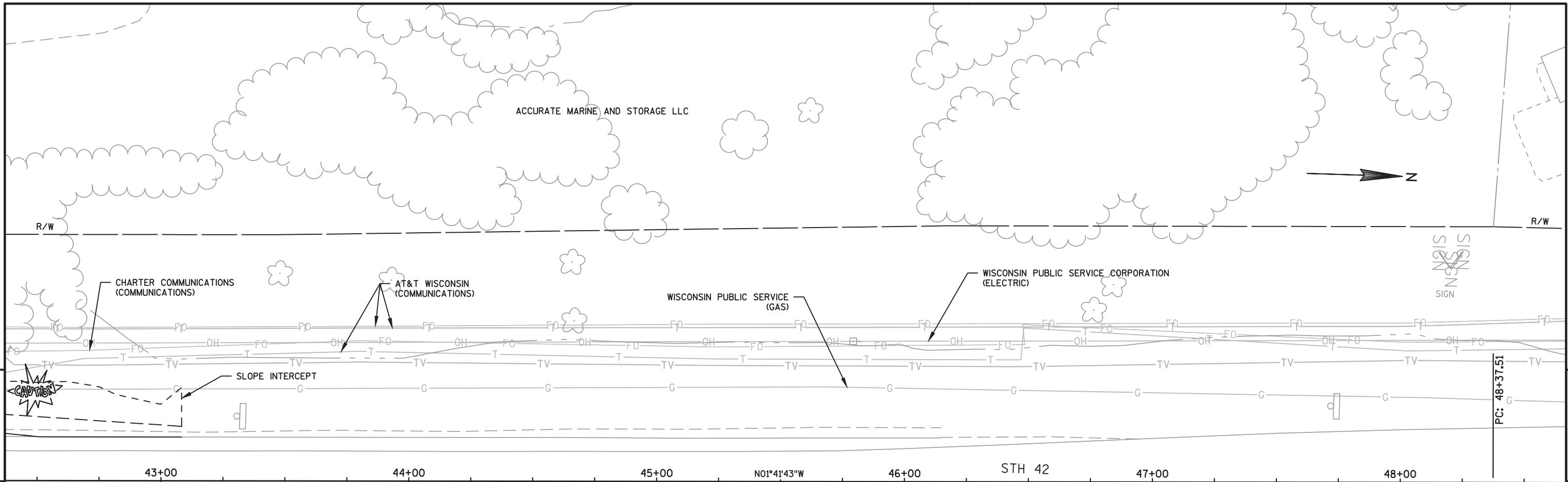
PLOT DATE : 1/23/2018 10:36 AM

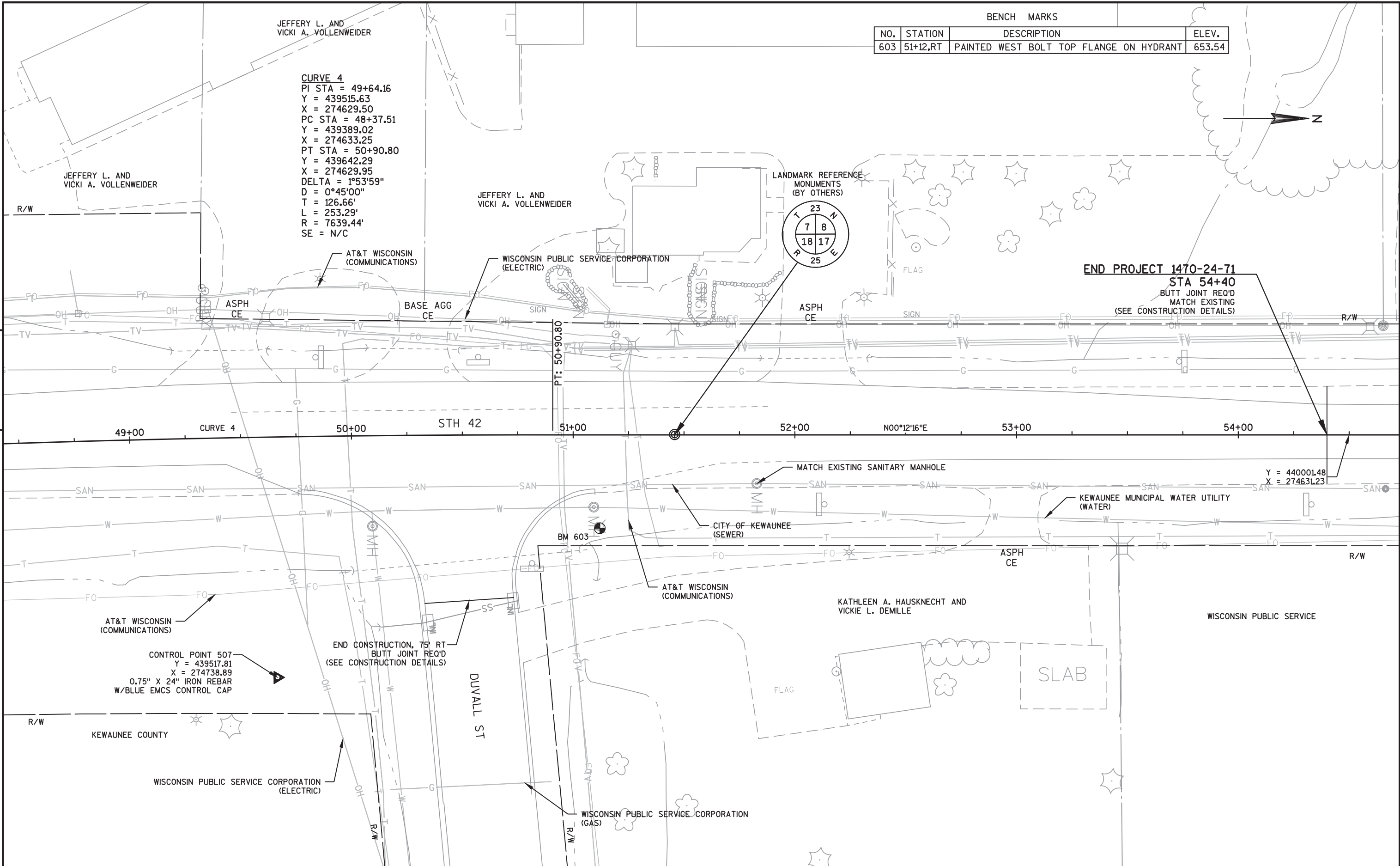
PLOT BY : MICHAEL HIGGINS

PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDs SHEET 44





BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
603	51+12,RT	PAINTED WEST BOLT TOP FLANGE ON HYDRANT	653.54

CURVE 4
PI STA = 49+64.16
Y = 439515.63
X = 274629.50
PC STA = 48+37.51
Y = 439389.02
X = 274633.25
PT STA = 50+90.80
Y = 439642.29
X = 274629.95
DELTA = 1°53'59"
D = 0°45'00"
T = 126.66'
L = 253.29'
R = 7639.44'
SE = N/C

END PROJECT 1470-24-71
STA 54+40
BUTT JOINT REQ'D
MATCH EXISTING
(SEE CONSTRUCTION DETAILS)

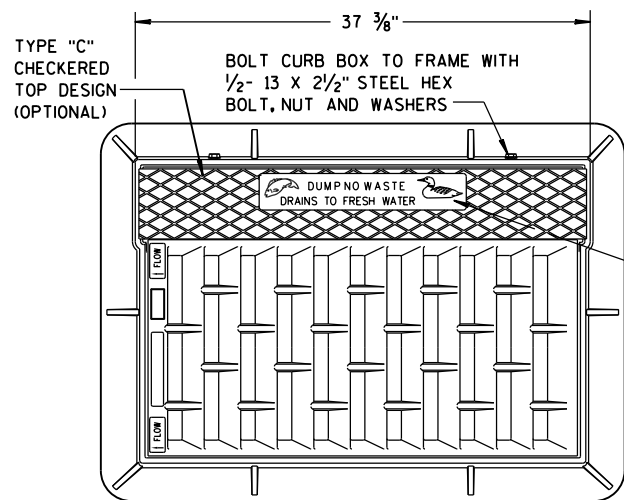
Y = 440001.48
X = 274631.23

Standard Detail Drawing List

08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-19D	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08B09-02	MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER
08C07-02	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT
08D01-20A	CONCRETE CURB & GUTTER
08D01-20B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-06	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D04-05	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08D05-19A	CURB RAMPS TYPES 1 AND 1-A
08D05-19B	CURB RAMPS TYPES 2 AND 3
08D05-19C	CURB RAMPS TYPES 4A AND 4A1
08D05-19D	CURB RAMPS TYPE 4B AND 4B1
08D05-19E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-19F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-19G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08D18-01	DRIVEWAY AND SIDEWALK RAMPS TYPES X & Y
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
09A01-13A	AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND D AND TEE INTERSECTION BYPASS LANE
09B02-10	CONDUIT
09C02-07	CONCRETE BASES, TYPES 1, 2, 5, & 6
09G02-04A	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-04B	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
09G02-04C	BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION
12A03-10	NAME PLATE (STRUCTURES)
13C01-18	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
14B07-15A	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15B	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15C	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15D	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15E	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15F	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15G	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15H	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B07-15I	CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"
14B08-02A	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02B	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02C	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02D	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B08-02E	CRASH CUSHION/SAND BARREL ARRAY AND OTHER TEMPORARY BARRIER LAYOUT DETAILS
14B42-05A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-05D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-03A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-03C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-04A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-04D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
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)
15A02-09	DELINEATOR POST, DELINEATOR REFLECTOR AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C03-04	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-04	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC

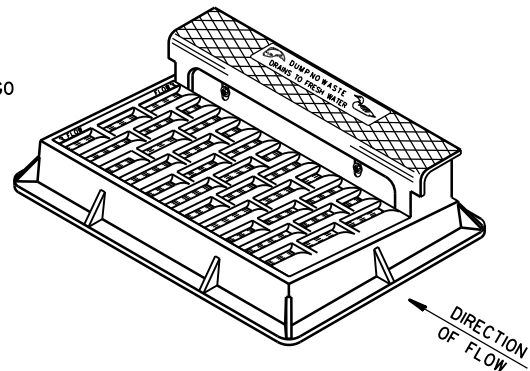
Standard Detail Drawing List

15C05-04	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS
15C06-09	SIGNING & MARKING FOR TWO LANE BRIDGES
15C08-18A	LONGITUDINAL MARKING (MAINLINE)
15C08-18B	PAVEMENT MARKING (TURN LANES)
15C11-07B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-06	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-05A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-05B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C19-05C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C33-03	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-02A	PAVEMENT MARKING (INTERSECTIONS)
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D30-03A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-03B	TRAFFIC CONTROL, TEMPORARY ADA COMPLIANT PEDESTRIAN ACCOMMODATION
15D30-03C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D33-04	TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS
15D38-02A	TEMPORARY TRAFFIC CONTROL SIGN MOUNTING
15D38-02B	ATTACHMENT OF SIGNS TO POSTS
15D39-01	TRAFFIC CONTROL, DROP-OFF SIGNING

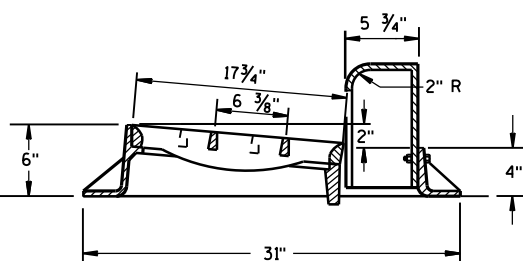
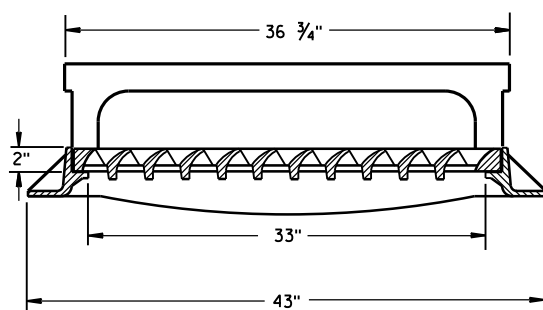
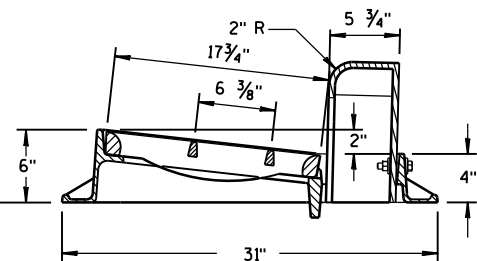
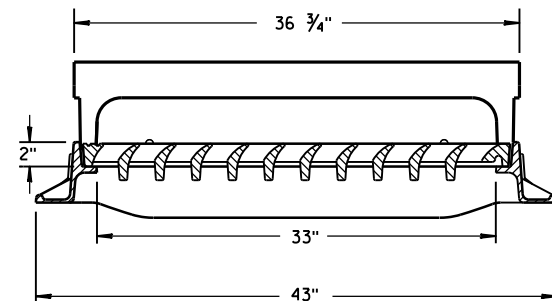
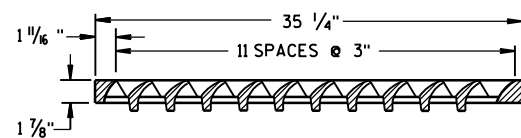


SEE LOGO
DETAIL

NOTE:
GRATE IS REVERSIBLE.

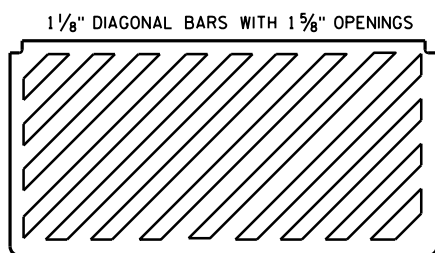


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"



TYPE "H"

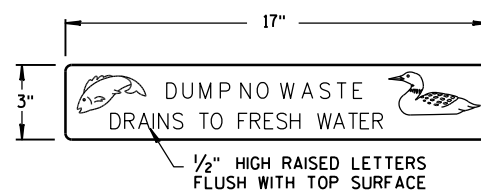
NOTE: EITHER CASTING IS ACCEPTABLE



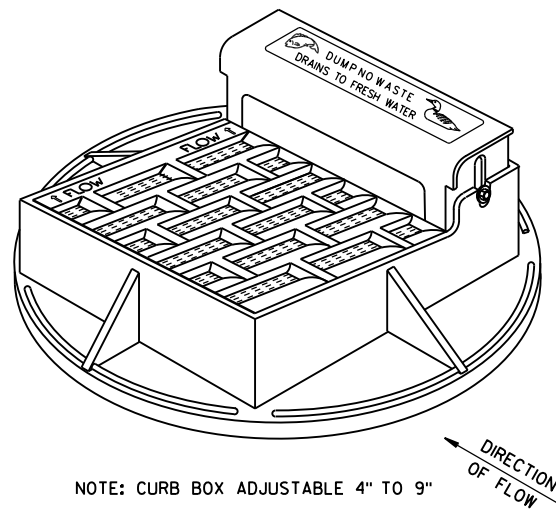
**SPECIAL GRATE FOR
TYPE "H" COVER**

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

(NOTED AS TYPE H-S ON DRAINAGE TABLE)

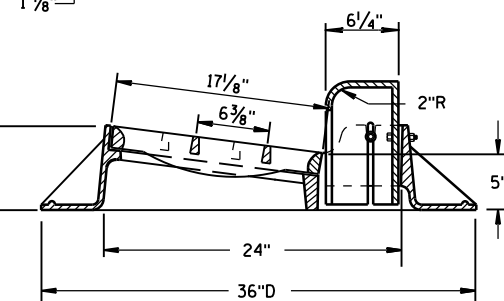
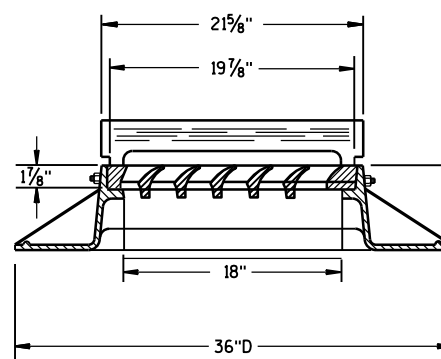
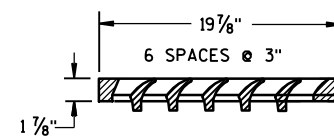
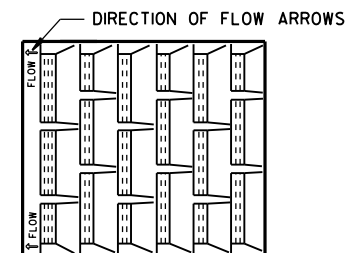


LOGO DETAIL

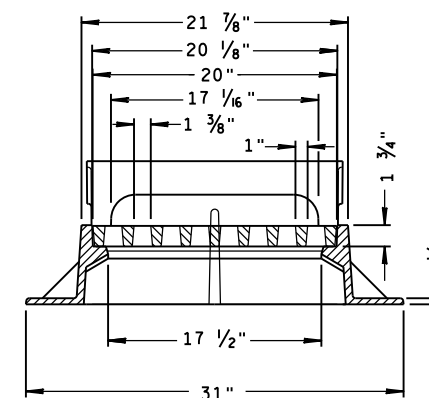
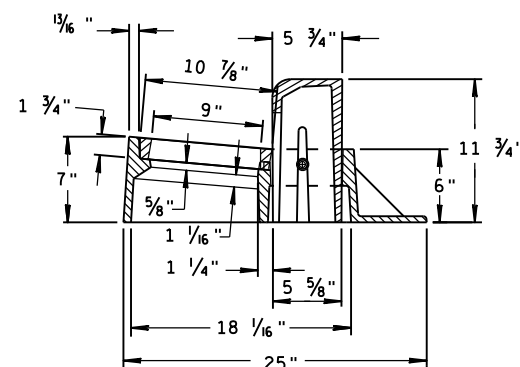


NOTE: CURB BOX ADJUSTABLE 4" TO 9"

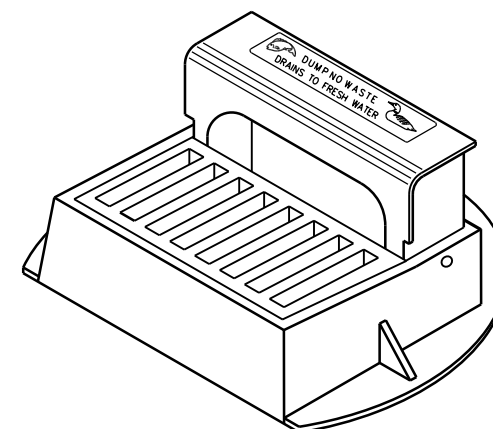
NOTE:
GRATE IS REVERSIBLE.



TYPE "A"



TYPE "Z"



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

**STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION**

APPROVED

11-27-13

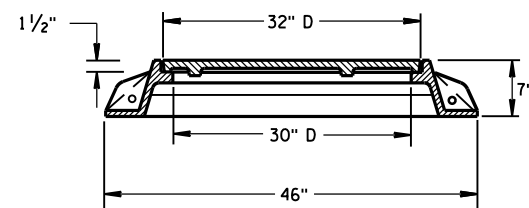
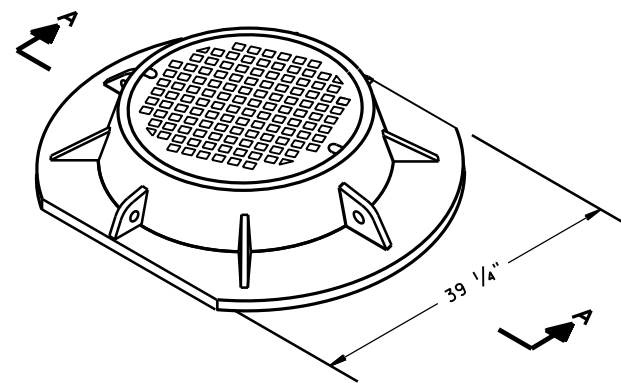
DATE

FHWA

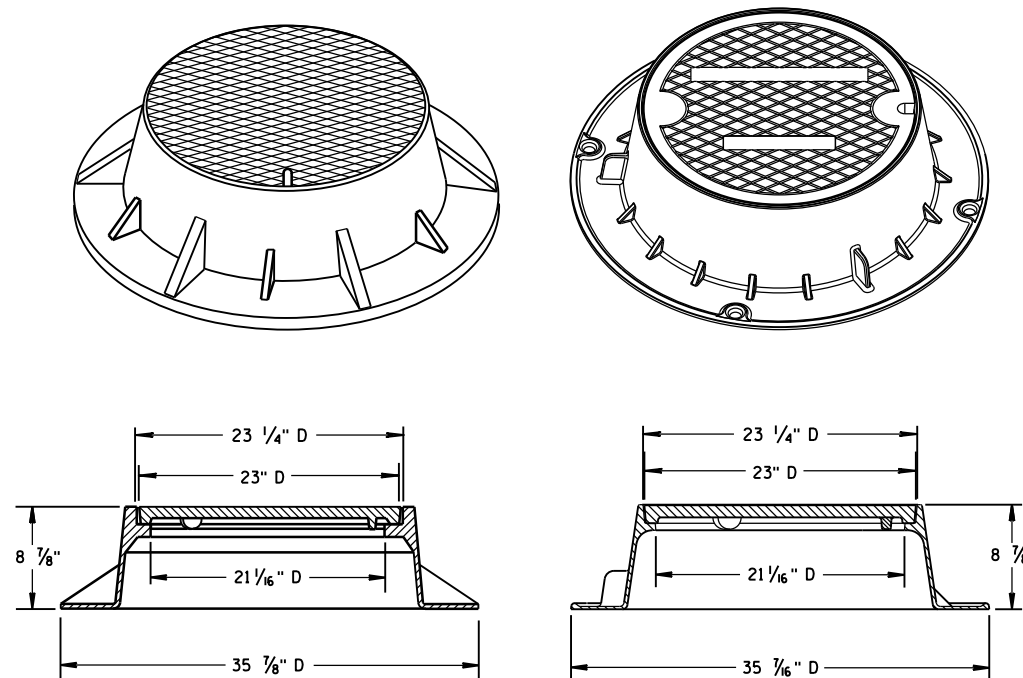
/S/ Jerry H. Zogg

ROADWAY STANDARDS ENGINEER

ENT

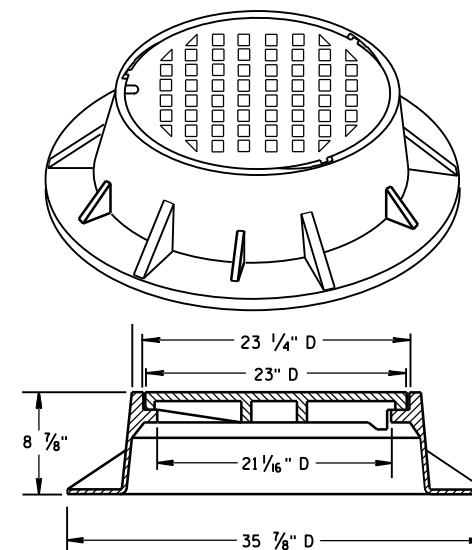
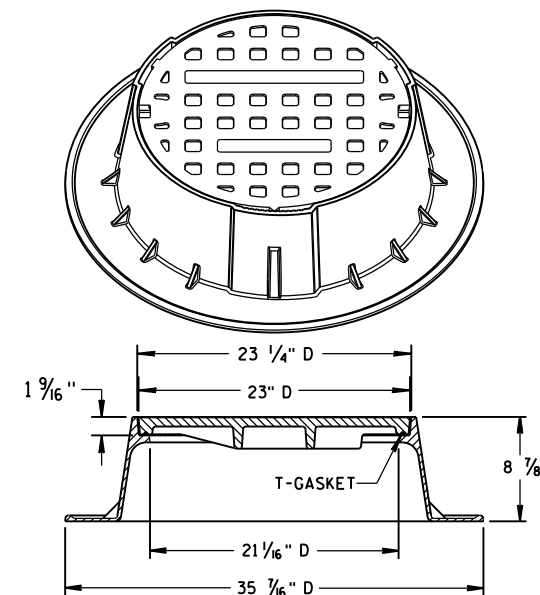


SECTION A-A
TYPE "K"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

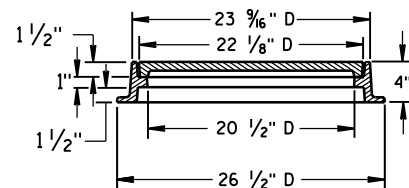
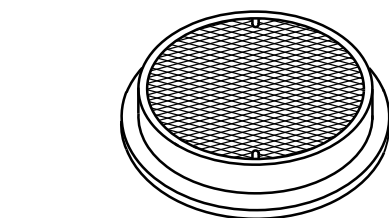


TYPE "J" SPECIAL

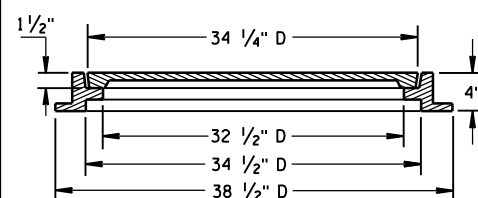
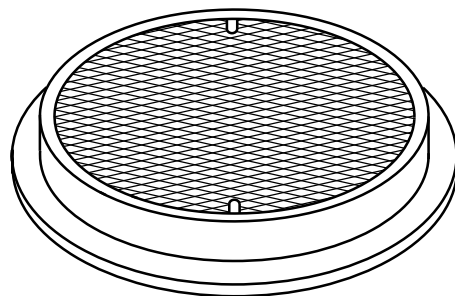
TYPE "B" NON-ROCKING SELF-SEAL LID

(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

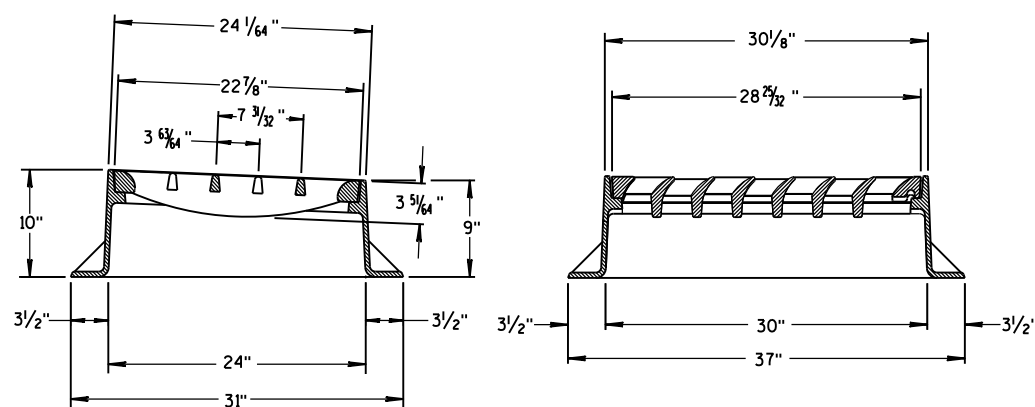
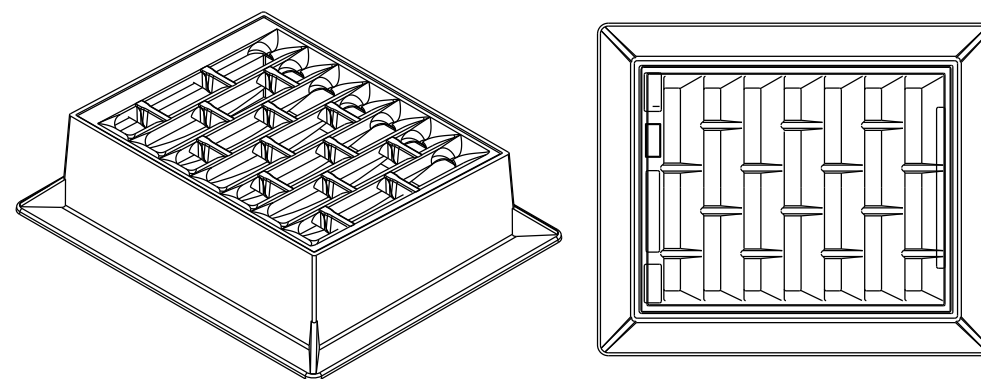
NOTE: EITHER CASTING IS ACCEPTABLE



TYPE "L"



TYPE "M"



INLET COVER TYPE "BW"

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 MANHOLE 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.

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K,
J, J-S, L & M

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/27/2013

DATE

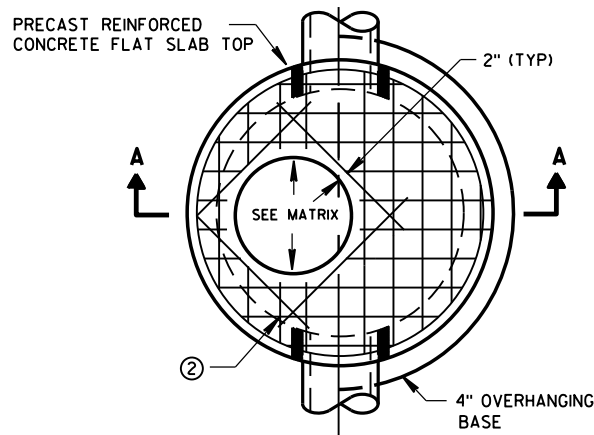
FHWA

/S/ Jerry H. Zogg

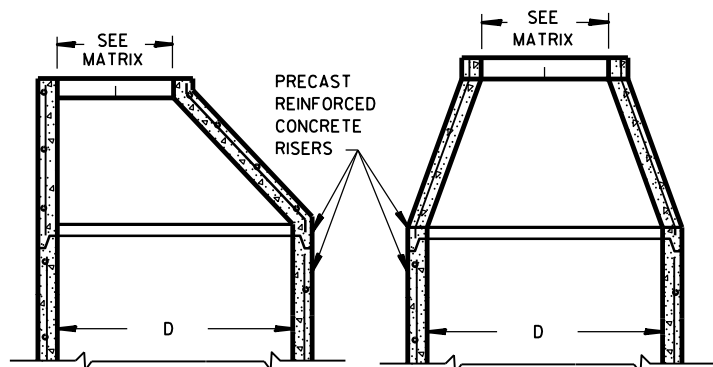
ROADWAY STANDARDS 76

ENGINEER

VT

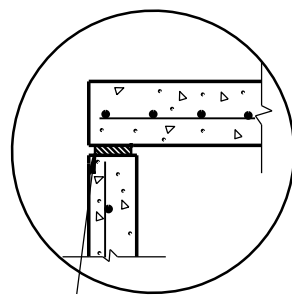


PLAN VIEW CIRCULAR OPENING

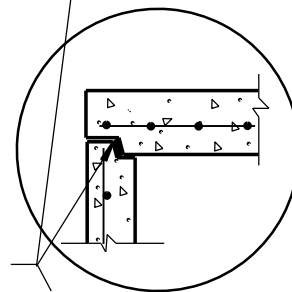


OPTIONAL PRECAST REINFORCED CONCRETE ECCENTRIC TOP

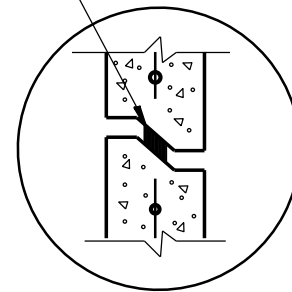
OPTIONAL PRECAST REINFORCED CONCRETE CONCENTRIC TOP



TOP WITH PLAIN END JOINT

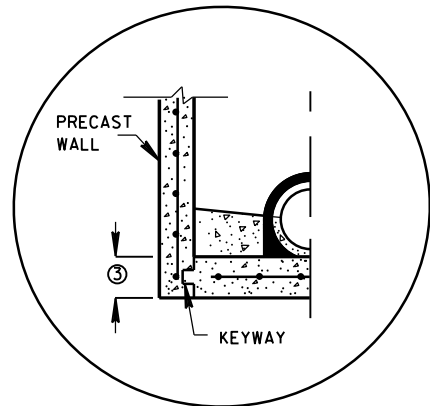


TOP WITH TONGUE AND GROOVE JOINT

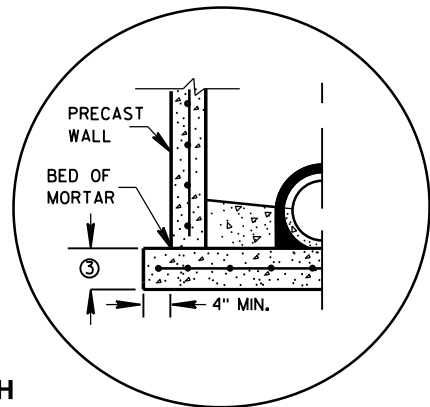


DETAIL "B"

JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C990 (TYP)

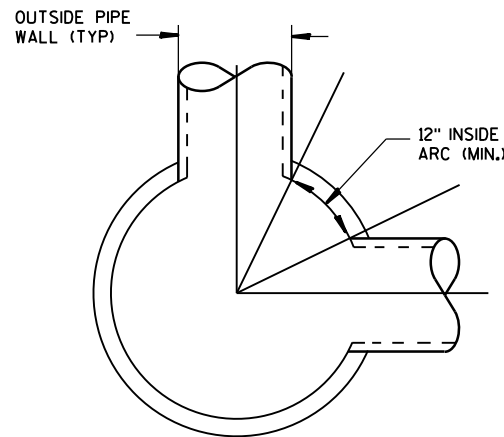


PRECAST REINFORCED CONCRETE WITH INTEGRAL BASE OPTION

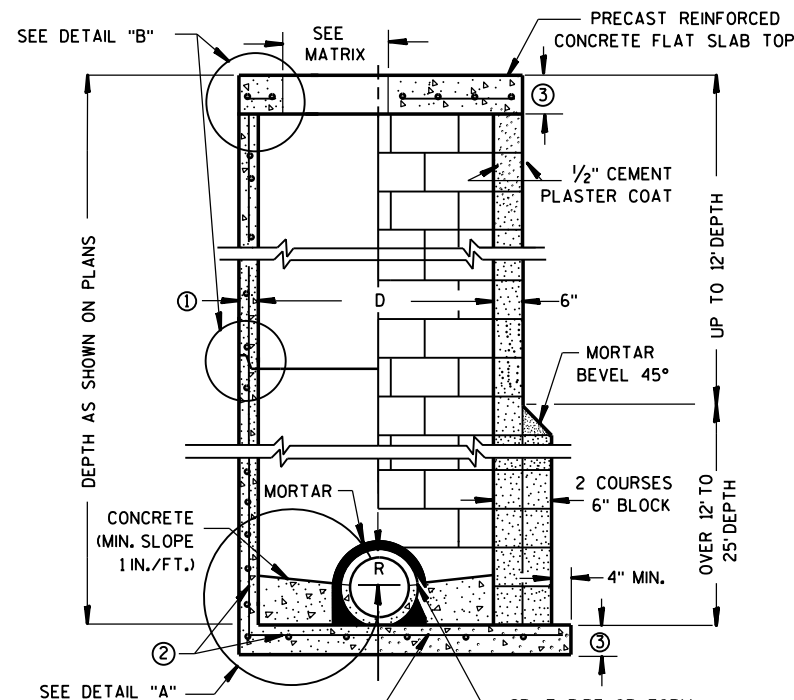


SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

DETAIL "A"



DETAIL "C"



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

PRECAST REINFORCED CONCRETE BLOCK WITH CONCRETE WITH MONOLITHIC BASE CAST-IN-PLACE OR PRECAST REINFORCED CONCRETE BASE ②

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS. UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE ENGINEER, THE CONTRACTOR SHALL NOT ORDER AND DELIVER PRECAST MANHOLE UNITS REQUIRED FOR THE PROJECT UNTIL A LIST OF SIZES IS FURNISHED BY THE ENGINEER.

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

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

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

PRECAST REINFORCED CONE TOPS (ECCENTRIC OR CONCENTRIC) OR PRECAST REINFORCED FLAT SLAB TOPS MAY BE USED ON CONCRETE BLOCK STRUCTURES.

ECCENTRIC CONE TOPS MAY BE USED ON ALL STRUCTURES, AND CONCENTRIC CONE TOPS SHALL BE USED ONLY ON STRUCTURES 5 FEET OR LESS IN DEPTH, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

STEPS MEETING AASHTO M199 AND THE FOLLOWING REQUIREMENTS SHALL BE INSTALLED IN ALL STRUCTURES OVER 5 FEET IN DEPTH: 16 INCH C-C MAXIMUM SPACING; PROJECT A MINIMUM CLEAR DISTANCE OF 4 INCHES FROM THE WALL AT THE POINT OF EMBEDMENT; MINIMUM LENGTH OF 10 INCHES; MINIMUM WALL EMBEDMENT OF 3 INCHES. FERROUS METAL STEPS NOT PAINTED OR TREATED TO RESIST CORROSION SHALL HAVE A MINIMUM CROSS SECTIONAL DIMENSION OF 1 INCH.

STEPS OF APPROVED POLYPROPYLENE PLASTIC COATED REINFORCEMENT BAR ARE ACCEPTABLE. REINFORCING BAR MUST BE A MINIMUM OF 1/2" AND MEET THE REQUIREMENTS OF ASTM A615.

CERTIFICATION SHALL BE PROVIDED THAT INSTALLED STEPS WHEN TESTED IN ACCORDANCE WITH SECTION 10 OF AASHTO T280 CAN WITHSTAND A VERTICAL LOAD OF 800 LBS. AND A HORIZONTAL LOAD OF 400 LBS.

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

CONCRETE BLOCK WILL NOT BE PERMITTED FOR STRUCTURES GREATER THAN 4 FEET IN DIAMETER.

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

ALL PRECAST MANHOLE UNITS SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF AASHTO DESIGNATION M 199.

4" OVERHANGING BASES ARE REQUIRED FOR ALL CONCRETE BLOCK INSTALLATIONS. 4" OVERHANG IS REQUIRED WHEN SEPARATE PRECAST BASE IS PROVIDED. OVERHANG IS NOT REQUIRED ON PRECAST STRUCTURES WITH AN INTEGRAL OR MONOLITHIC BASE.

FOR ADDITIONAL CONFIGURATIONS, MAINTAIN A MINIMUM OF 12 INCHES AS MEASURED FROM THE INSIDE OF THE STRUCTURE WALL BETWEEN THE OUTSIDE PIPE WALLS OF ADJACENT PIPES. SEE DETAIL "C".

- ① MINIMUM WALL THICKNESS SHALL BE 4 INCHES FOR 3-FT, 5 INCHES FOR 4-FT, 6 INCHES FOR 5-FT, 7 INCHES FOR 6-FT, 8 INCHES FOR 7-FT AND 9 INCHES FOR 8-FT DIAMETER PRECAST MANHOLES.
- ② FOR PRECAST MANHOLES PROVIDE REINFORCING STEEL IN ACCORDANCE TO AASHTO M199.
- ③ PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER OF 48" AND LESS SHALL HAVE A MINIMUM THICKNESS OF 6". PRECAST FLAT SLAB TOPS AND BASES WITH A DIAMETER LARGER THAN 48" SHALL HAVE A MINIMUM THICKNESS OF 8".

MANHOLE COVER OPENING MATRIX

MANHOLE COVER TYPE	C	ALL J'S	K	L	M
OPENING SIZE (FT)					
2 DIA.	X	X		X	
3 DIA.			X		X

PIPE MATRIX

MANHOLE SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	180° SEPARATION (IN)	90° SEPARATION (IN)
3-FT	15	12
4-FT	24	18
5-FT	36	24
6-FT	42	36
7-FT	48	36
8-FT	60	42

MANHOLES 3-FT, 4-FT, 5-FT, 6-FT, 7-FT AND 8-FT DIAMETER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept., 2016

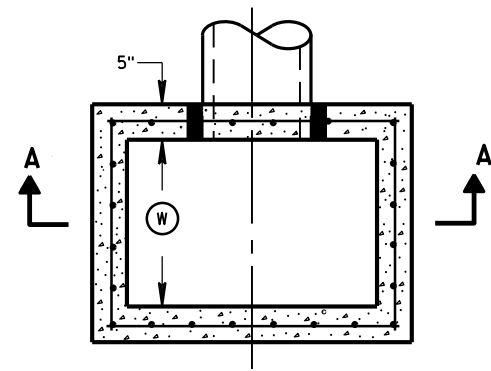
DATE

FHWA

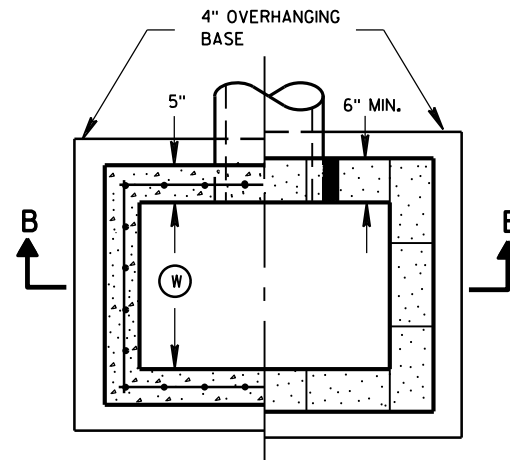
/S/ Rodney Taylor

ROADWAY STANDARDS DEVELOPMENT

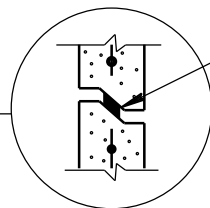
UNIT SUPERV 77



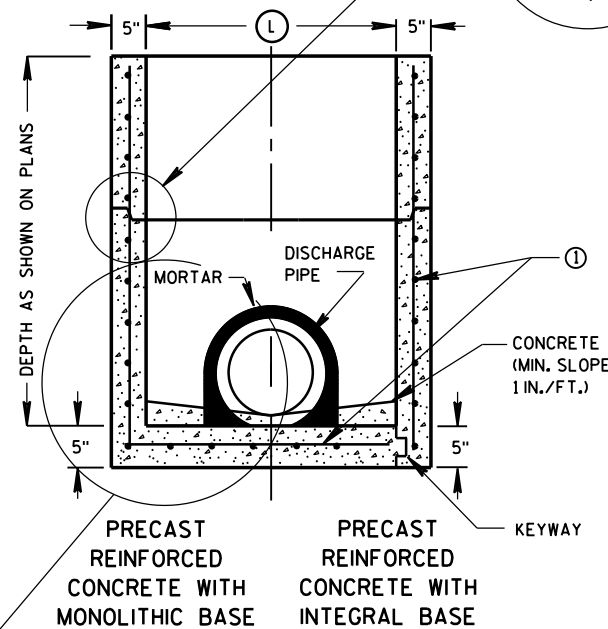
PLAN VIEW



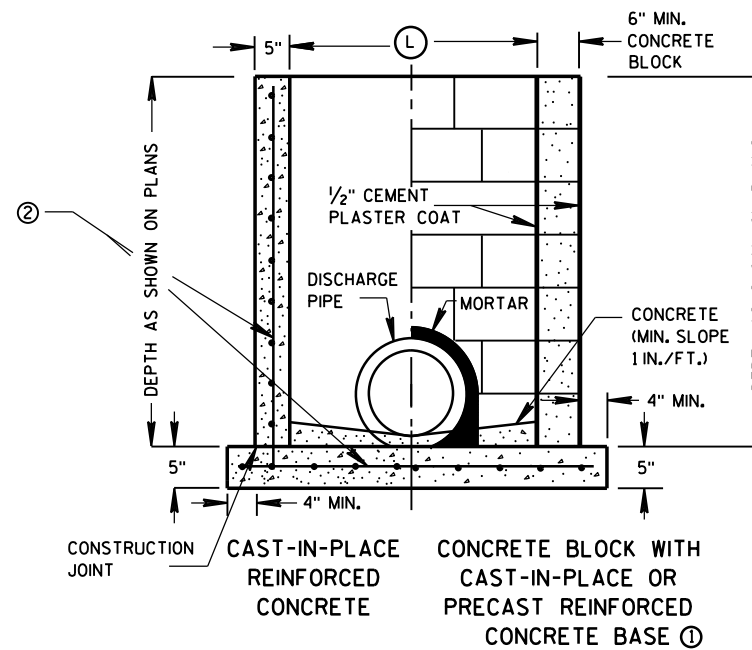
PLAN VIEW



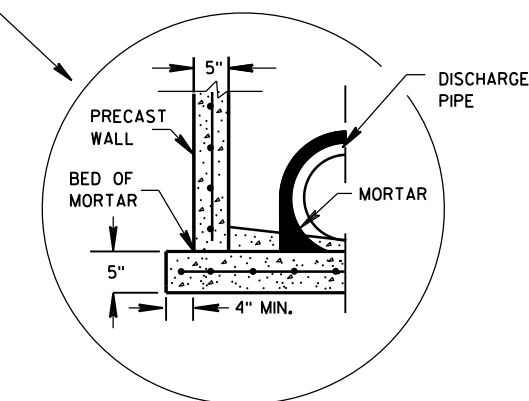
RISER JOINTS TO BE SEALED WITH A BUTYL RUBBER SEAL PER SEALANT MANUFACTURERS RECOMMENDATIONS CONFORMING TO ASTM C 990 (TYP)



SECTION A-A



SECTION B-B



SEPARATE PRECAST REINFORCED CONCRETE BASE OPTION

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

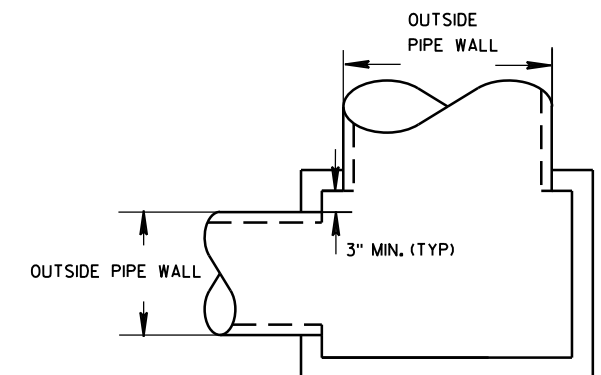
- FOR PRECAST INLETS PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913.
- CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

INLET COVER MATRIX

INLET SIZE	WIDTH ① (FT)	INLET COVER TYPE	ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM
		LENGTH ② (FT)									
2X2-FT	2	2	X	X				X		X	
2X2.5-FT	2	2.5			X			X	X	X	X
2X3-FT	2	3					X				
2.5X3-FT	2.5	3				X					

PIPE MATRIX

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

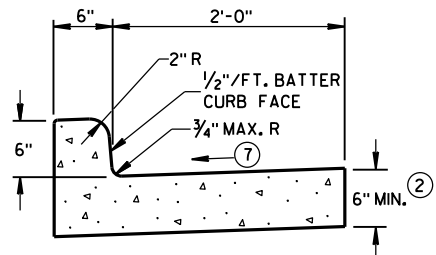


DETAIL "A"

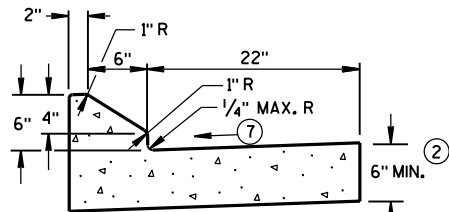
INLETS 2X2-FT, 2X2.5-FT, 2X3-FT AND 2.5X3-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

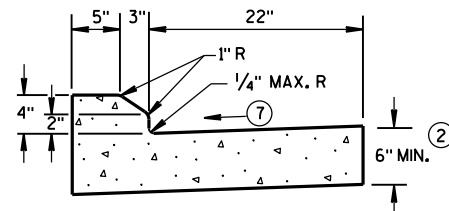
APPROVED
Sept., 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DIVISION IT
FHWA UNIT SUPERVISOR 78



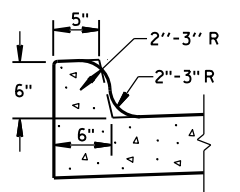
TYPES A^① & D



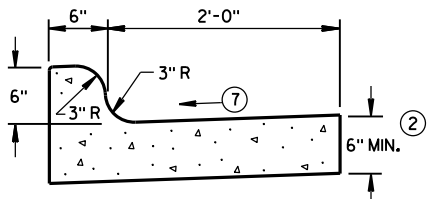
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

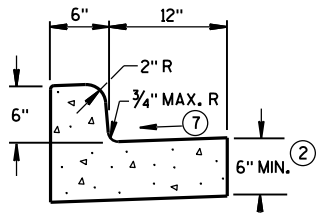


TYPES K^① & L
(OPTIONAL CURB SHAPE)



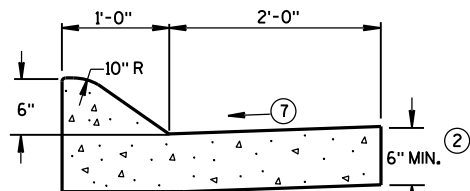
TYPES K^① & L

CONCRETE CURB & GUTTER 30"

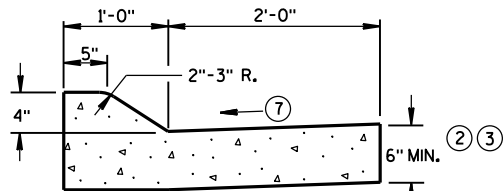


TYPES A^① & D

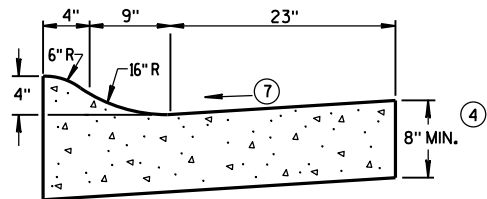
CONCRETE CURB & GUTTER 18"



6" SLOPED CURB TYPES A^① & D

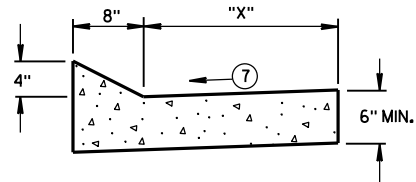


4" SLOPED CURB TYPES A^① & D



4" SLOPED CURB TYPES R^① & T^⑤

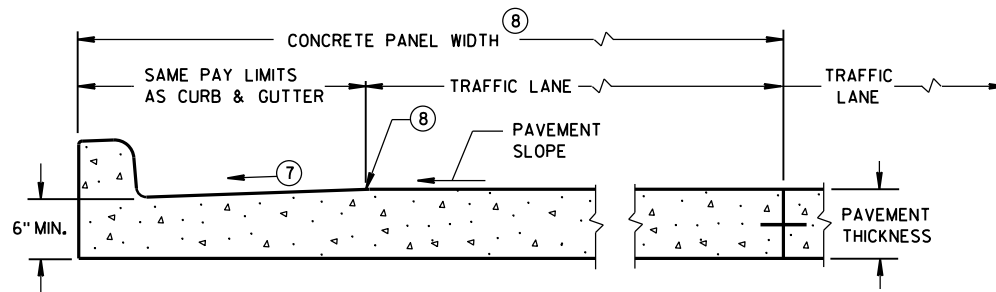
CONCRETE CURB & GUTTER 36"



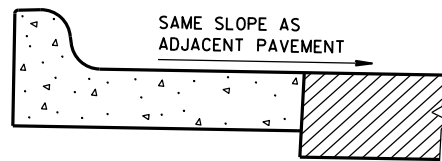
TYPES TBT & TBTT^①

CONCRETE CURB & GUTTER

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



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



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

GENERAL NOTES

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

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

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.

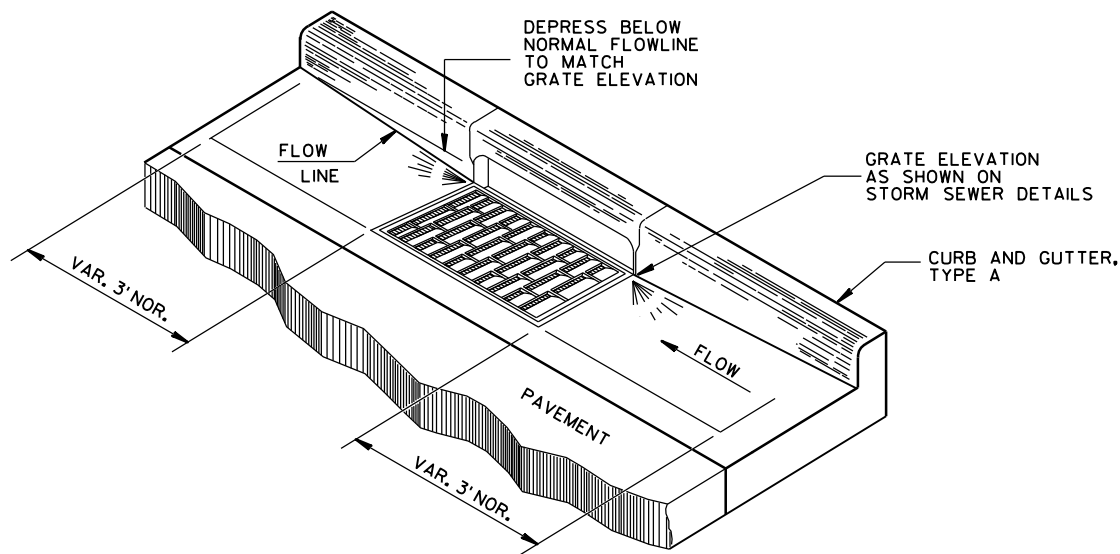
PAVEMENT THICKNESS AND MAXIMUM CONCRETE PANEL WIDTH TABLE

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

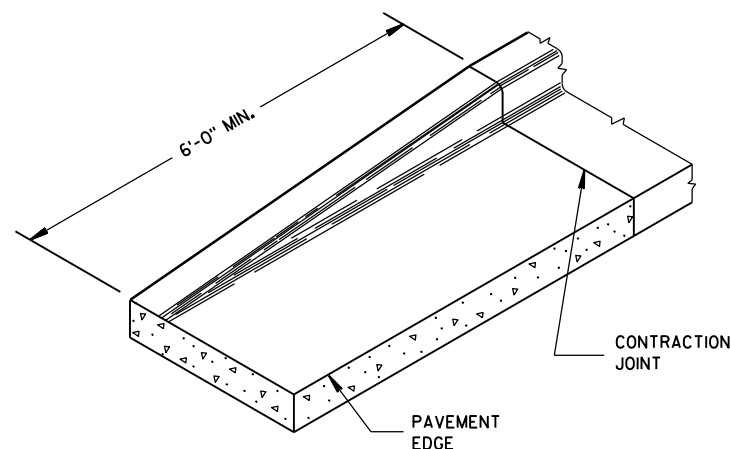
* BIKE LANE IS NOT SHOWN.

CONCRETE CURB & GUTTER

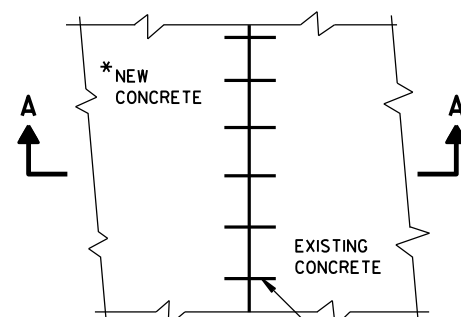
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



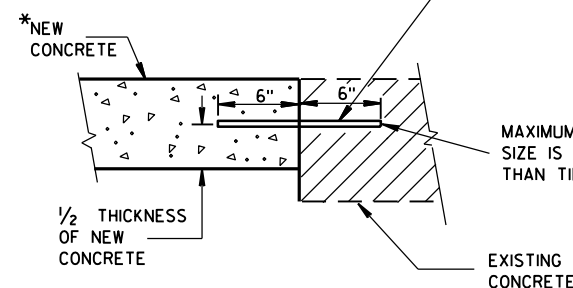
DETAIL OF CURB AND GUTTER AT INLETS
(TYPE H INLET COVER SHOWN)



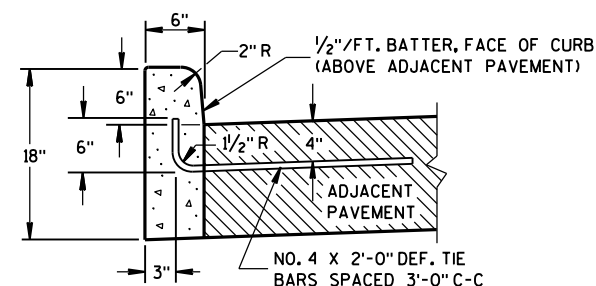
END SECTION CURB & GUTTER



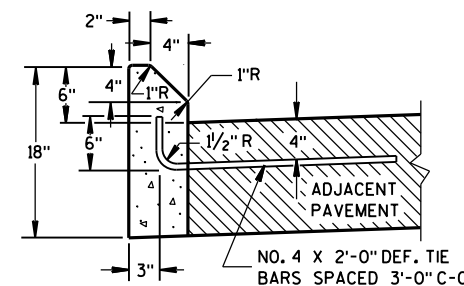
PLAN VIEW



SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT



TYPES A^① & D

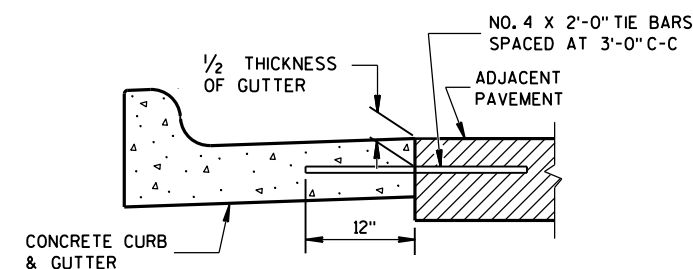


TYPES G^① & J

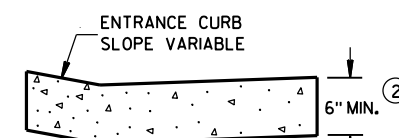
GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.
- UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBTT.
 - ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
 - ③ REFER TO SDD 8D18 AND SDD 8D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.

CONCRETE CURB

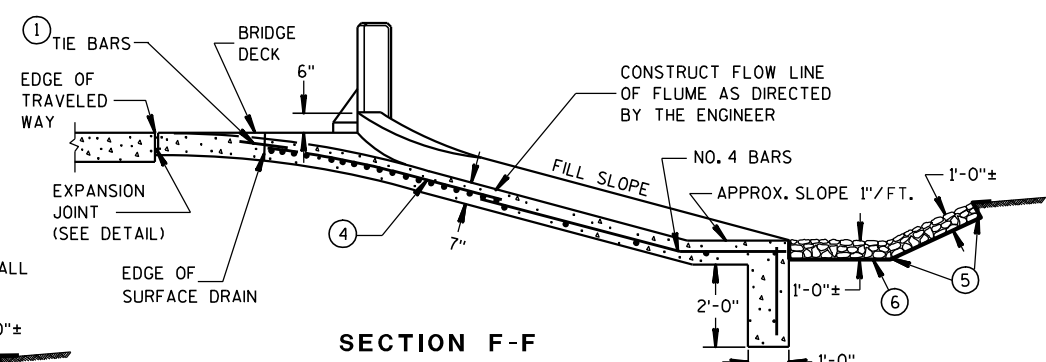


TYPICAL TIE BAR LOCATION^①

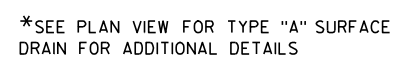


DRIVEWAY ENTRANCE CURB^⑨
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED June, 2017 DATE	/S/ Rodney Taylor ROADWAY STANDARDS 80 UNIT SUPERVISOR	ENT	
FHWA			



SECTION F-F



* PARTIAL PLAN VIEW
SURFACE DRAIN WITHOUT PIPE
TYPE "B"

GENERAL NOTES

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

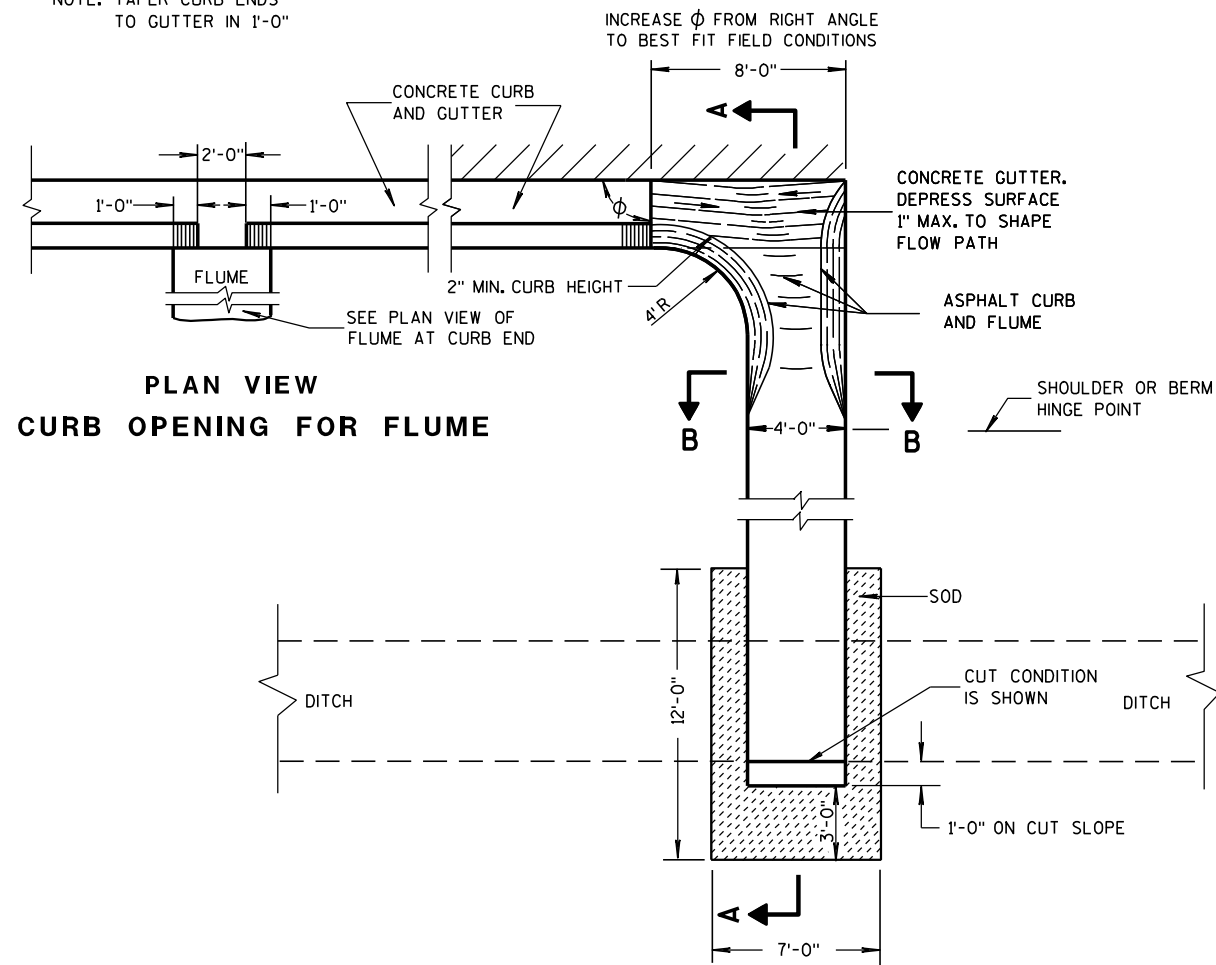
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR
UNLESS OTHERWISE SHOWN OR NOTED.

- ① NO. 4 X 2'-0" TIE BARS SPACED AT 3'-0" CENTERS TO BE USED ONLY WHEN ADJACENT TO P.C. CONCRETE.
- ② NO. 4 X 2'-0" TIE BARS SPACED AT 12" CENTERS TO BE PLACED BY BRIDGE CONTRACTOR, OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PIPE UNDERDRAIN MAY BE ANY OF THE MATERIALS LISTED IN SECTION 612.2 OF THE STANDARD SPECIFICATIONS EXCEPT DRAIN TILE.
- ④ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- ⑤ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑥ GEOTEXTILE FABRIC, TYPE "R"
- ⑦ HOT POURED SEALANT UNLESS OTHERWISE SPECIFIED.
- ⑧ THIS DIMENSION MAY VARY DEPENDING ON THE SPACING OF POSTS FOR THE STEEL PLATE BEAM GUARD. THE TYPICAL LOCATION FOR THE SURFACE DRAIN IS WHERE THE POST SPACING WIDENS TO 3'-1/2".

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
9/4/08	/S/	Jerry H. Zogg	
DATE	ROADWAY STANDARDS		81
	ENGINEER		MENT
FHWA			

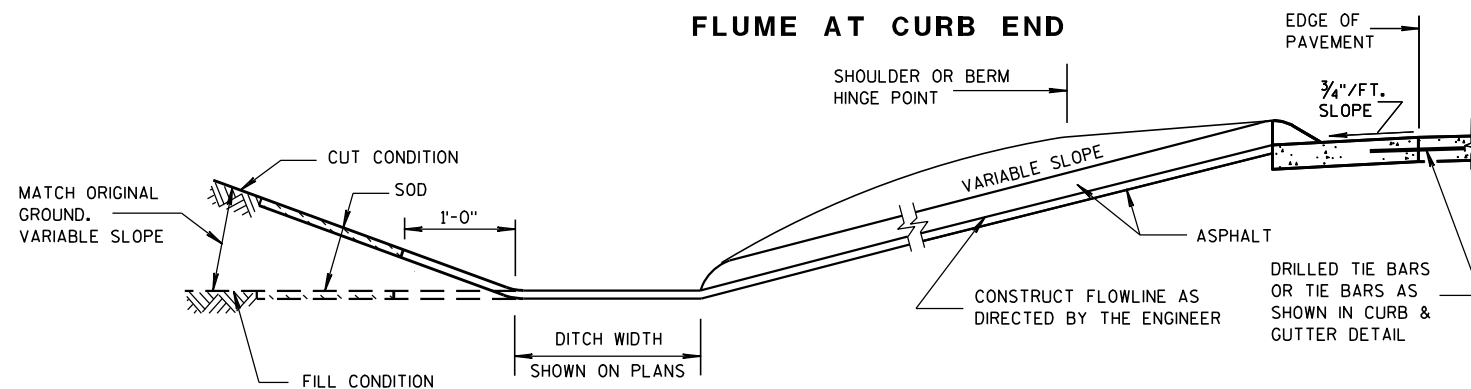
ASPHALTIC FLUME

NOTE: TAPER CURB ENDS
TO GUTTER IN 1'-0"

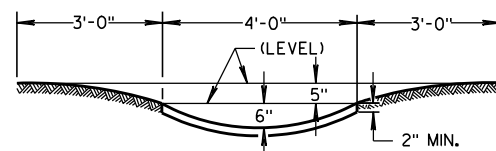


PLAN VIEW
CURB OPENING FOR FLUME

PLAN VIEW
FLUME AT CURB END



SECTION A-A



SECTION B-B

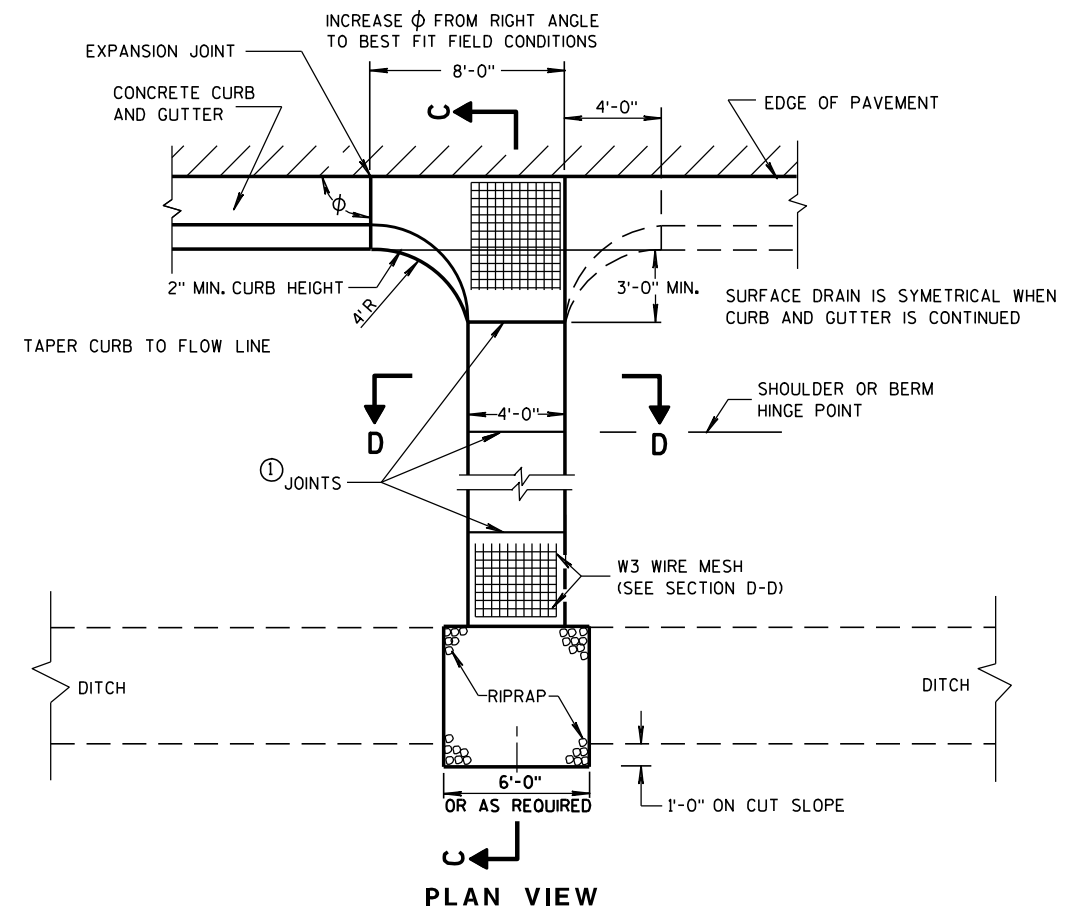
GENERAL NOTES

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

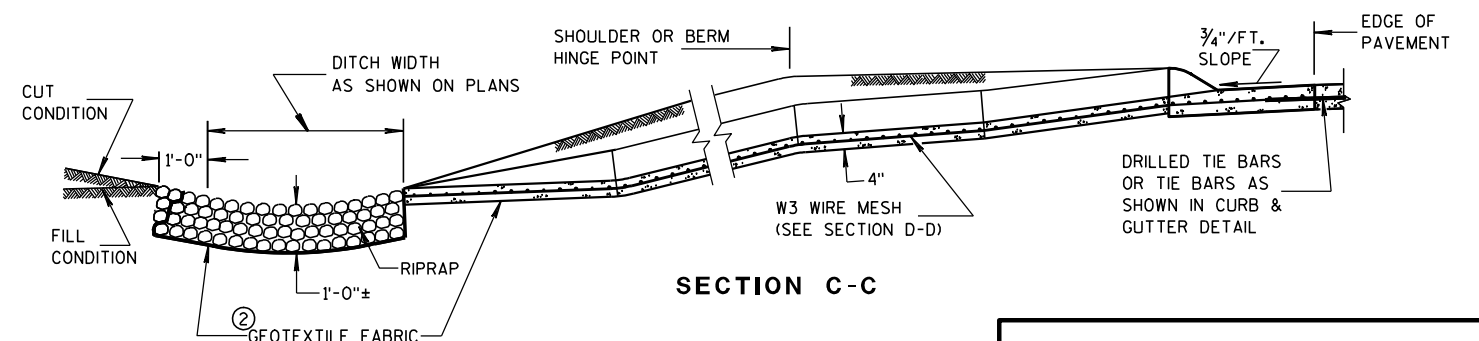
WELDED STEEL WIRE FABRIC SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

- ① JOINTS SHALL BE 1/8" TO 1/4" INCH WIDE BY 1 1/2" INCHES DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE FABRIC TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED

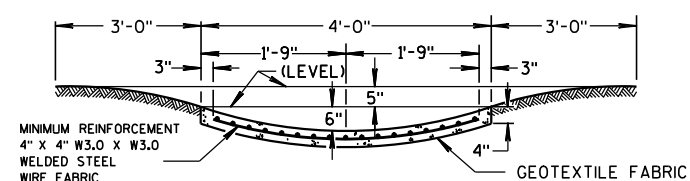
③ CONCRETE SURFACE DRAIN



PLAN VIEW



SECTION C-C



SECTION D-D

CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

9-4-08

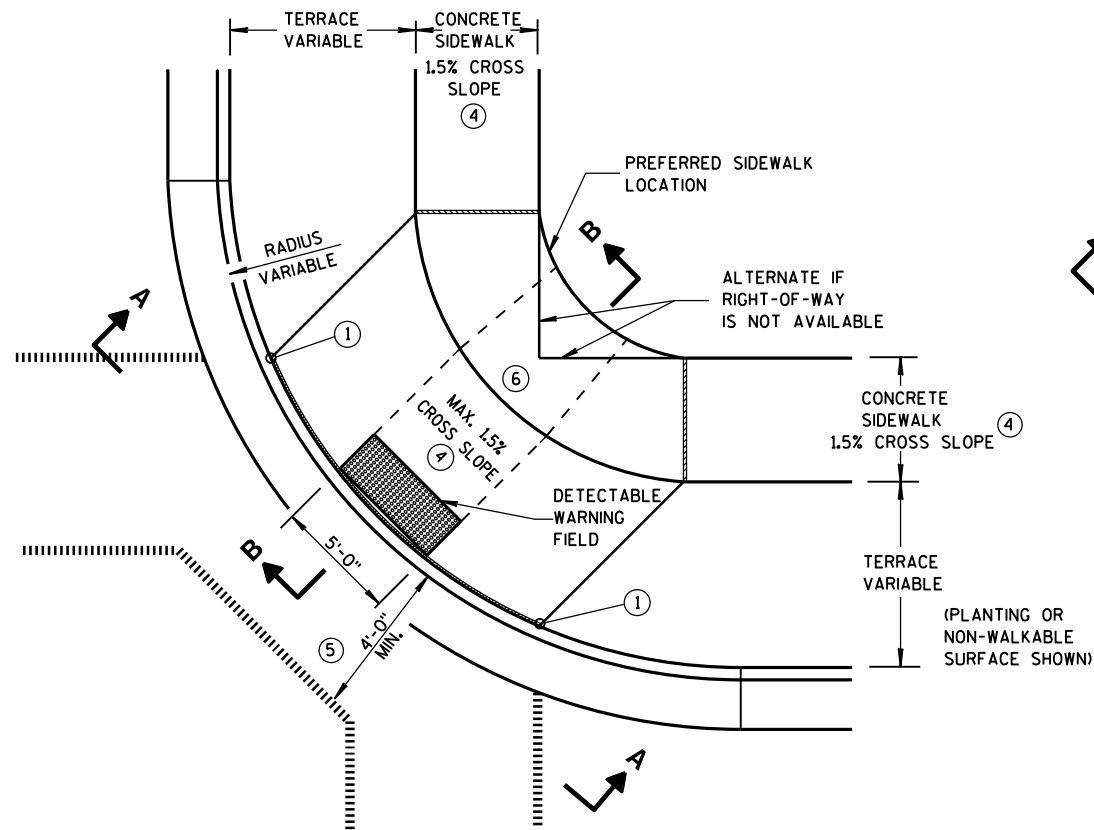
DATE

/S/ Jerry H. 7000

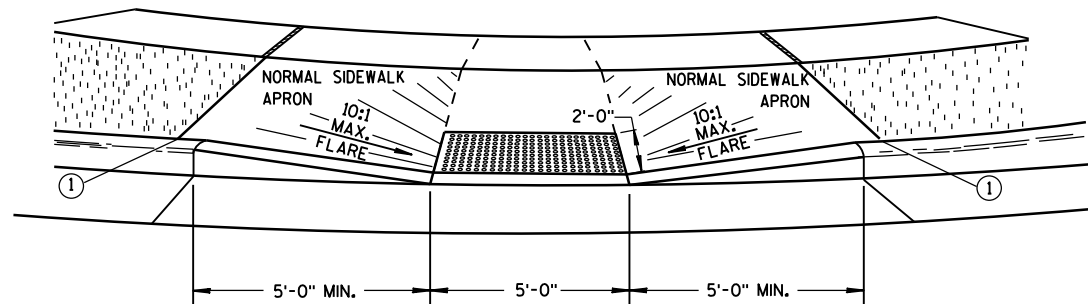
ROADWAY STANDARDS 82

ENGINEER

FHWA

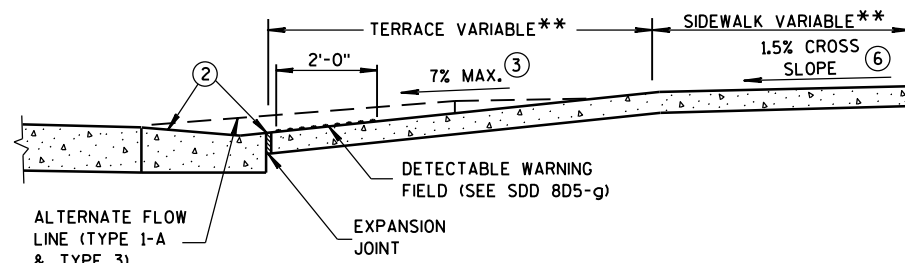


**PLAN VIEW
TYPE 1 RAMP**
(CENTER OF CORNER RADIUS)

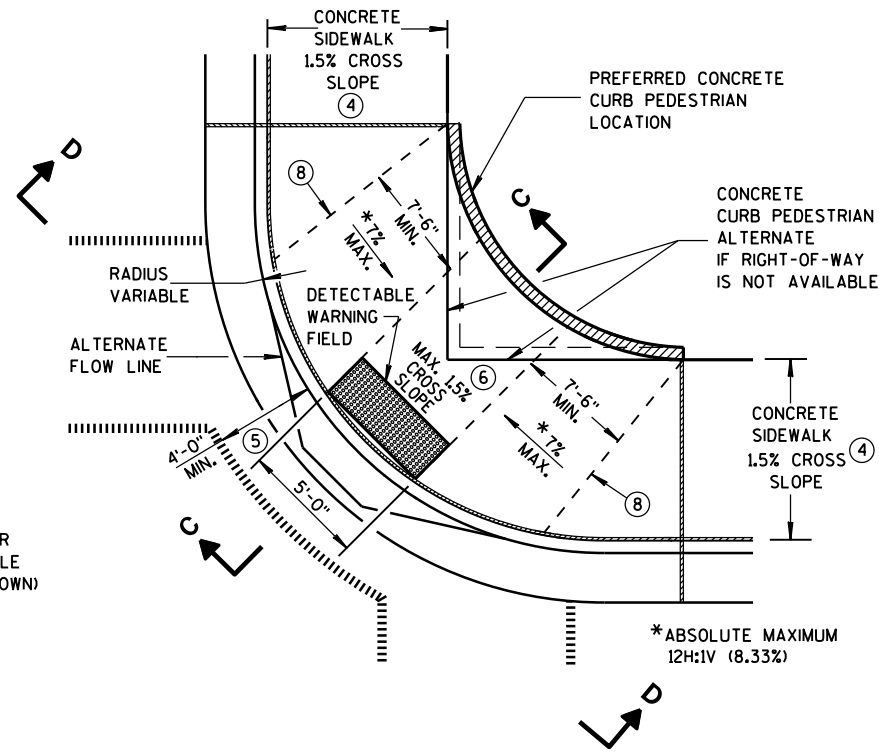


VIEW A-A

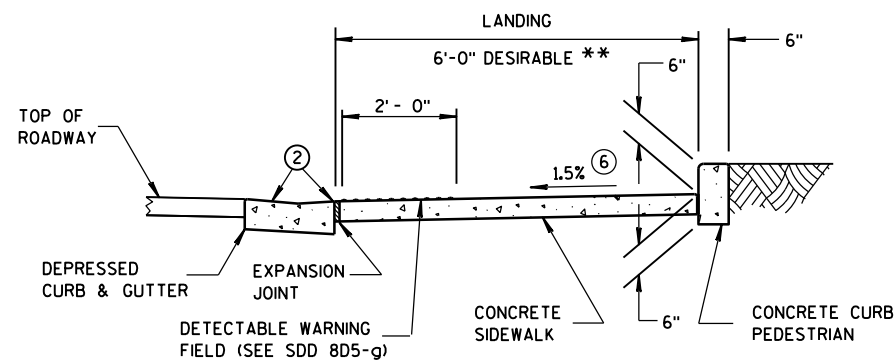
** WIDTH SHOWN ELSEWHERE
IN THE PLANS



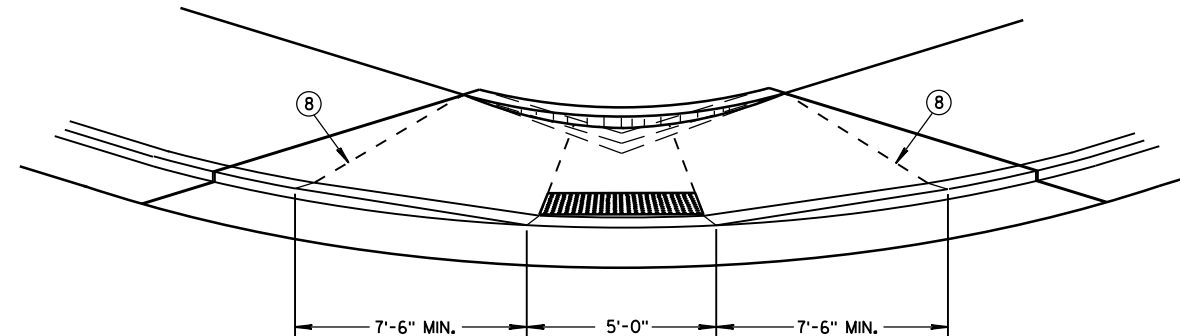
SECTION B-B



**PLAN VIEW
TYPE 1-A RAMP**
(NO TERRACE)



SECTION C-C



VIEW D-D

GENERAL NOTES

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

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.

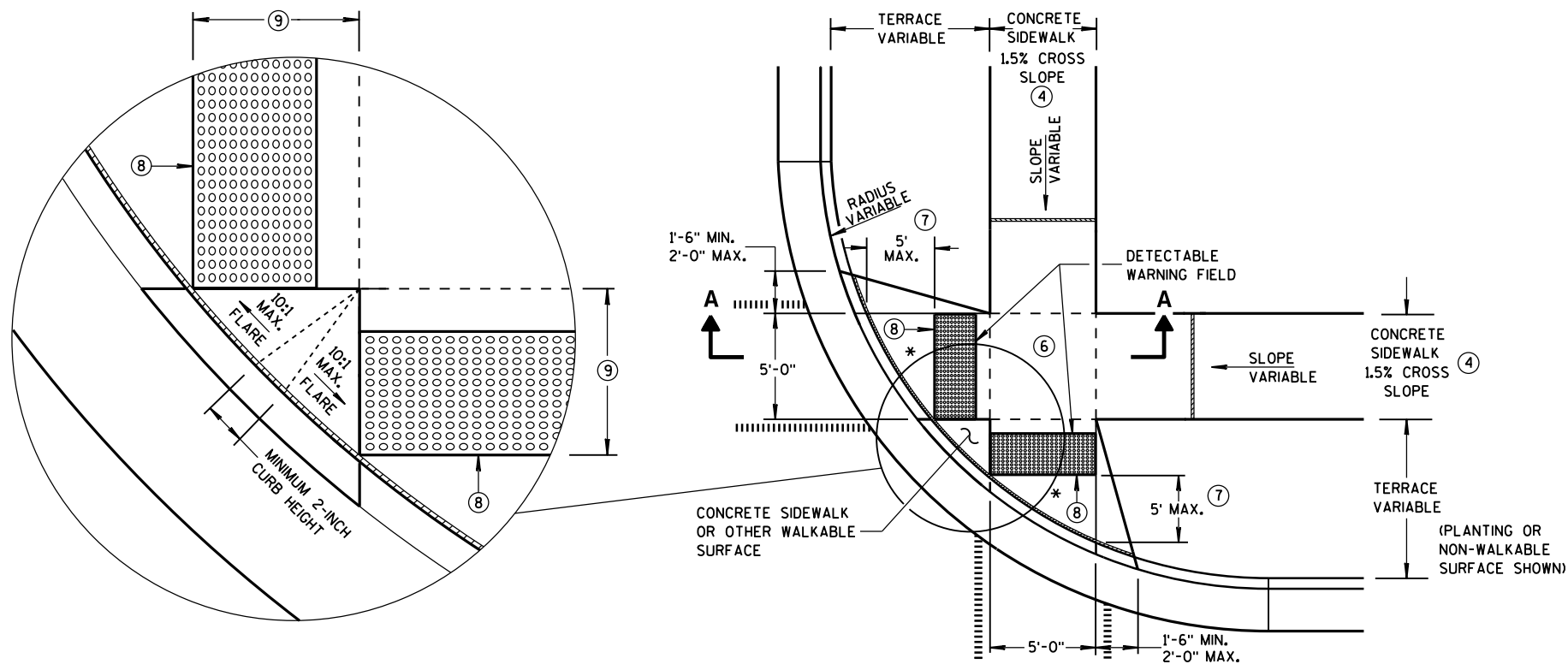
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. 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 MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 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.
- 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

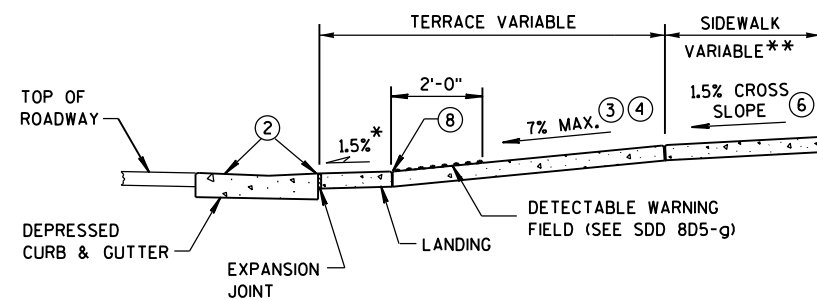
**CURB RAMPS
TYPES 1 AND 1-A**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



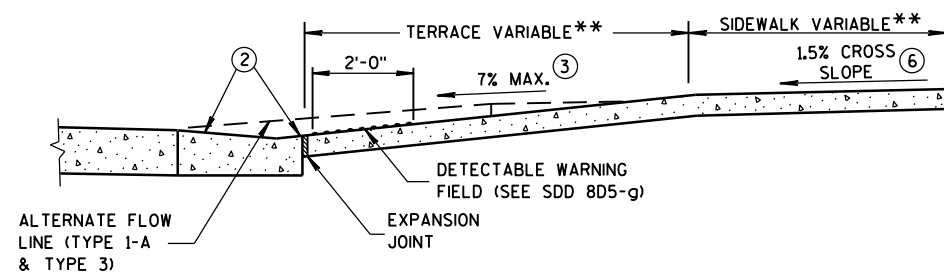
PLAN VIEW
TYPE 2 RAMP
(ON LINE WITH SIDEWALK)

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



SECTION A-A

** WIDTH SHOWN ELSEWHERE
IN THE PLANS

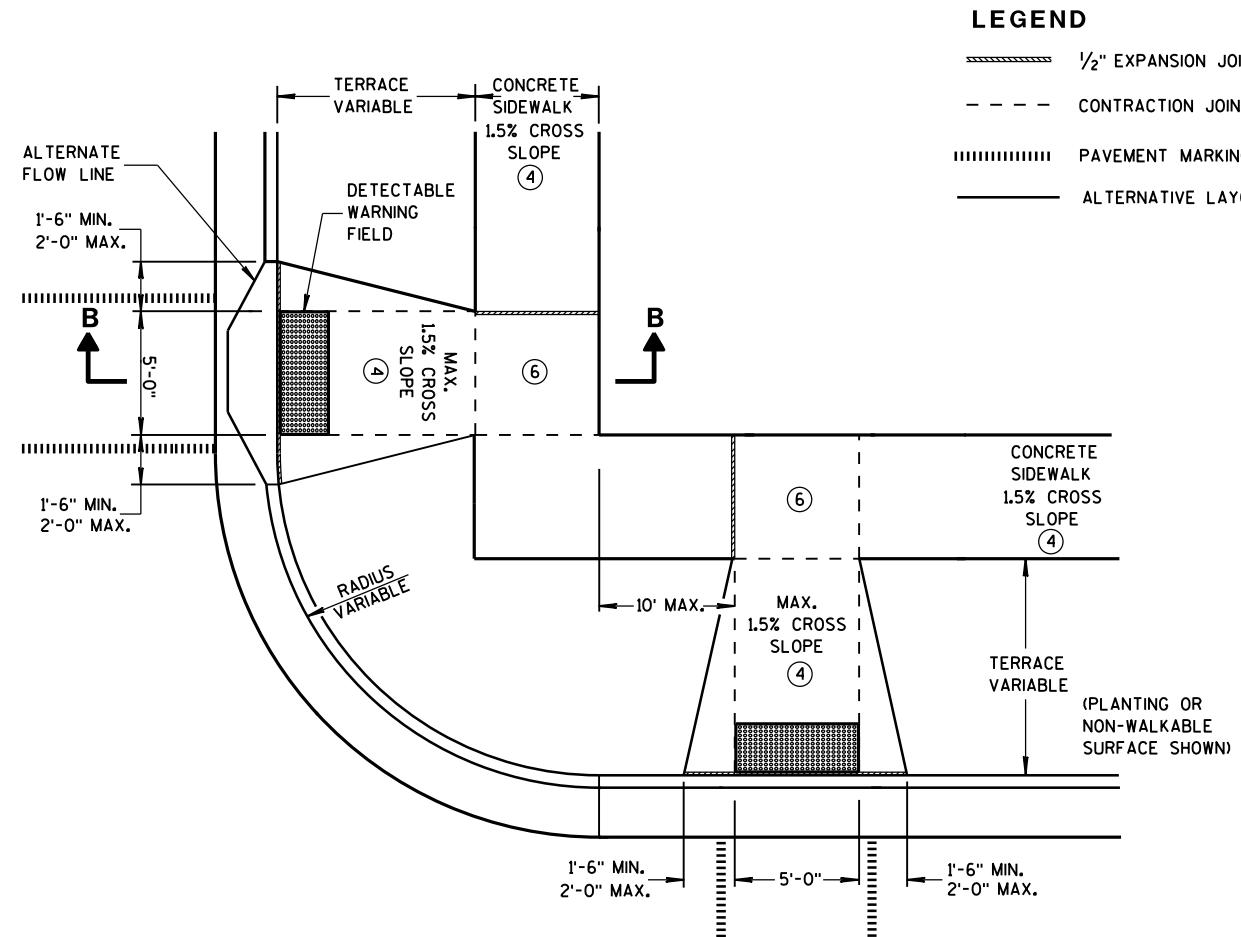


SECTION B-B

- ## GENERAL NOTES

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.



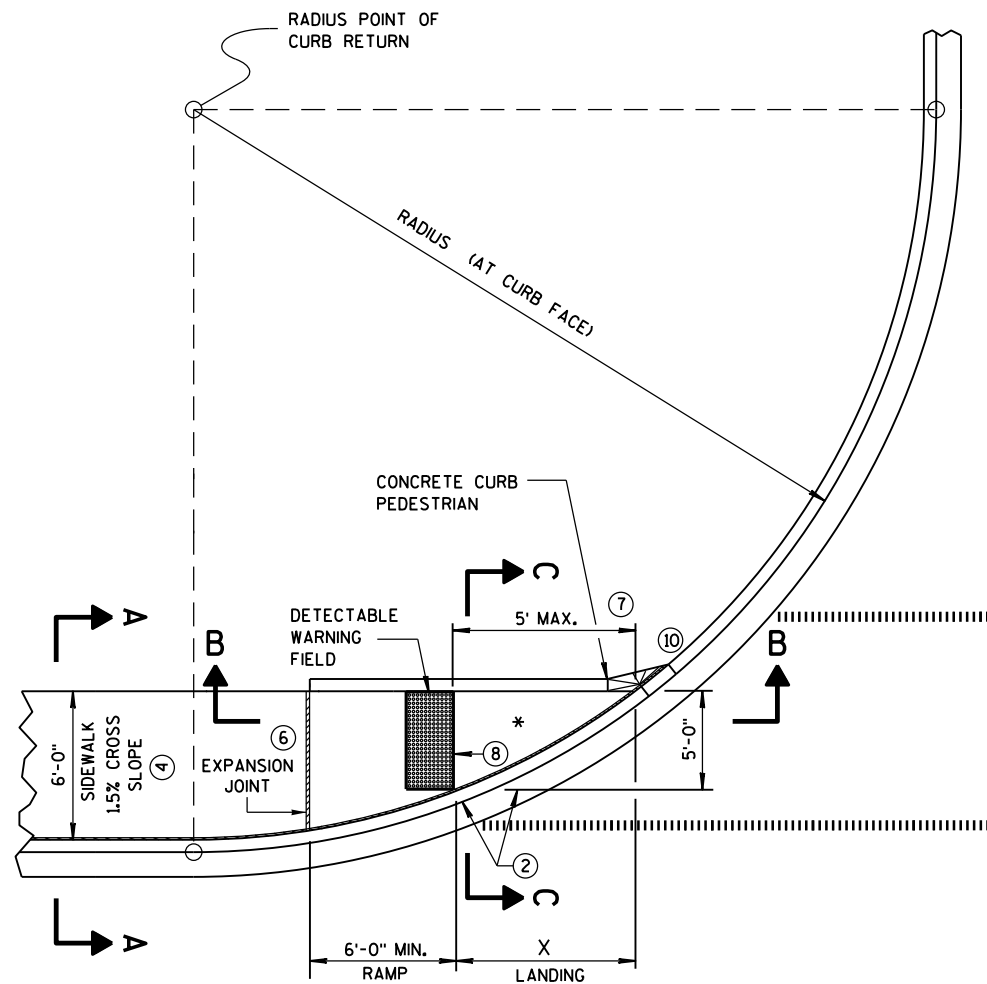
PLAN VIEW
TYPE 3 RAMP
(OUTSIDE OF CROSSWALK AREA)

- ## LEGEND

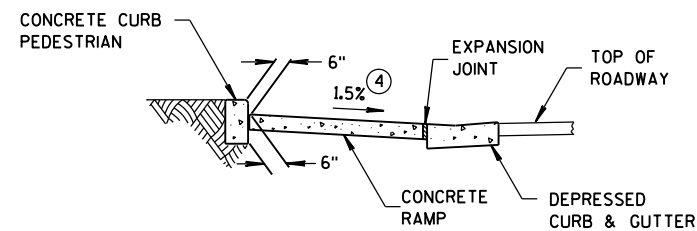
 1/2" EXPANSION JOINT-SIDEWALK
 - - - - CONTRACTION JOINT FIELD LOCATED
 ||||| PAVEMENT MARKING CROSSWALK (WHITE)
 _____ ALTERNATIVE LAYOUT

**CURB RAMPS
TYPES 2 AND 3**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION⁸⁴

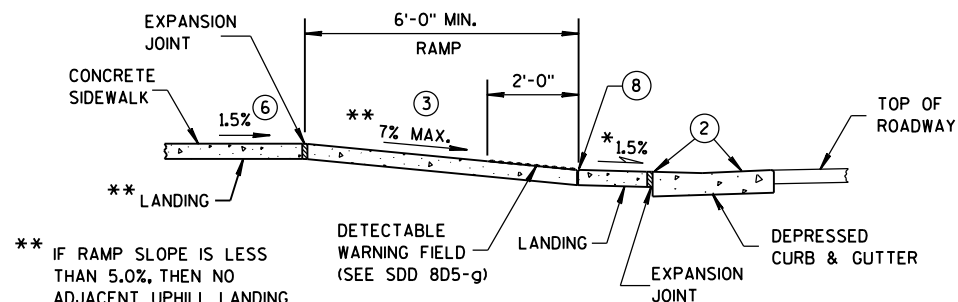


CURB RAMP TYPE 4A
PLAN VIEW



SECTION C-C FOR TYPE 4A

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

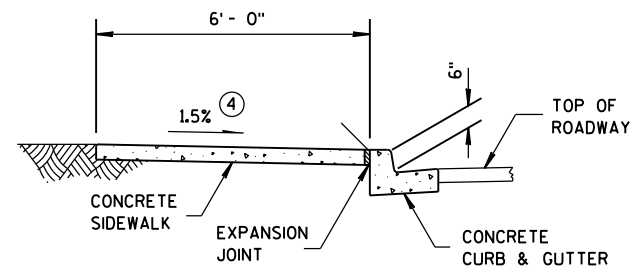


SECTION B-B FOR TYPE 4A

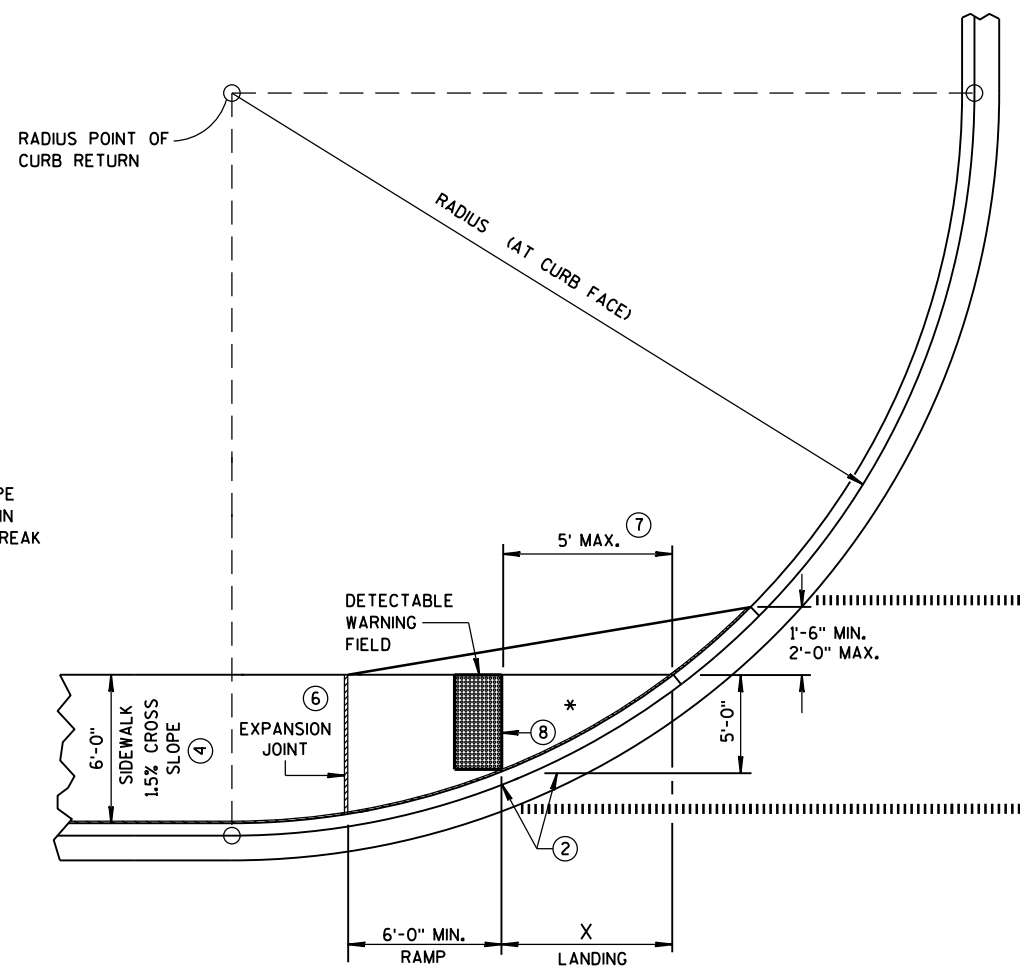
** IF RAMP SLOPE IS LESS
THAN 5.0%, THEN NO
ADJACENT UPHILL LANDING
IS REQUIRED

RADIUS (AT CURB FACE)	X
10 FEET	4'-7"
15 FEET	6'-5½"

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A-A FOR TYPE 4A



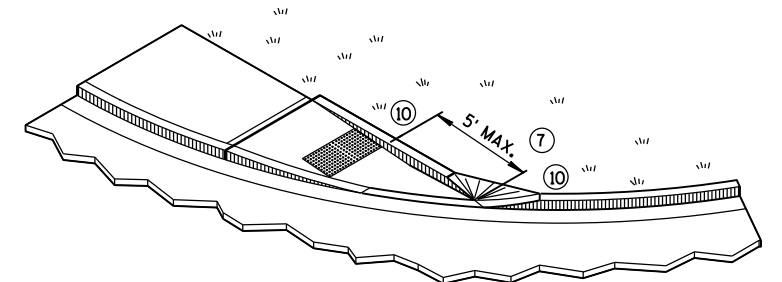
CURB RAMP TYPE 4A1
PLAN VIEW

GENERAL NOTES

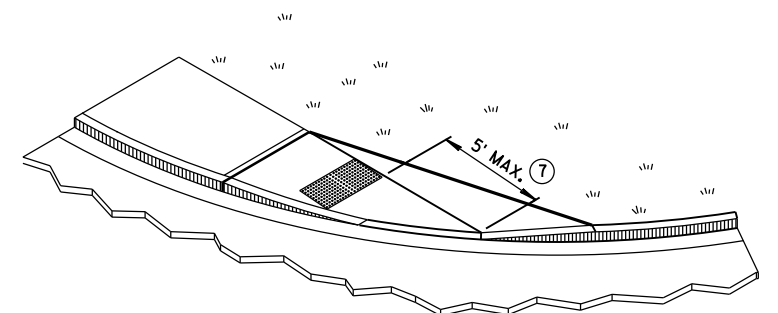
AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.

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 MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 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.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- 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



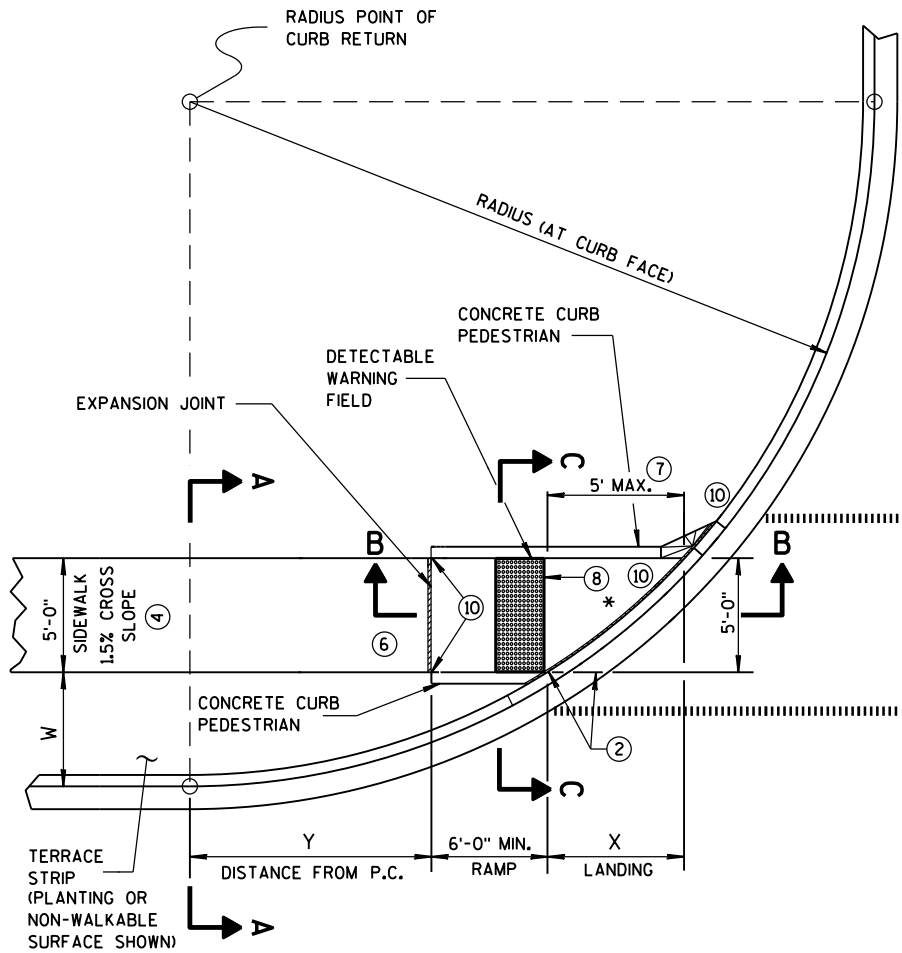
ISOMETRIC VIEW FOR TYPE 4A1

LEGEND

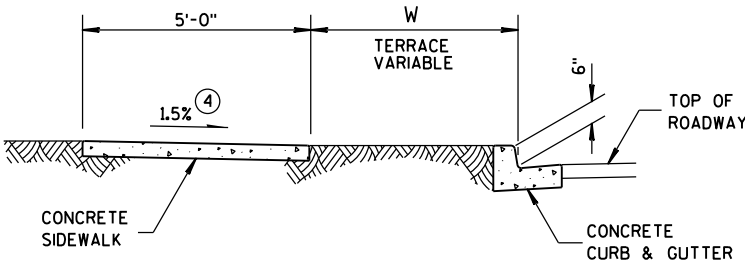
- ½" EXPANSION JOINT-SIDEWALK
- - - CONTRACTION JOINT FIELD LOCATED
- ||||| PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS
TYPES 4A AND 4A1

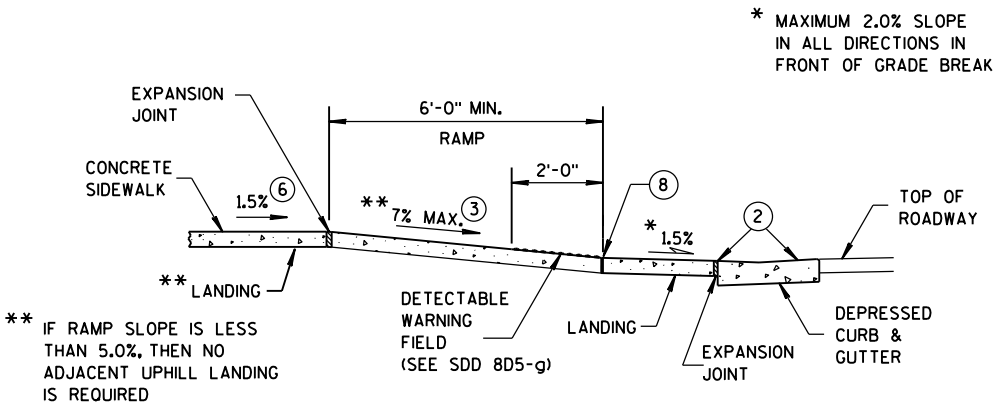
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 85



**CURB RAMP TYPE 4B
PLAN VIEW**



SECTION A-A FOR TYPE 4B



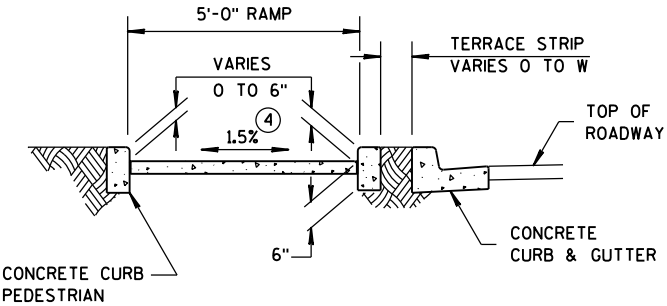
SECTION B-B FOR TYPE 4B

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2'-10 1/4"	0'-5"	2'-1"	1'-4 1/2"	1'-5"	2'-1"	0'-10"	2'-7 1/2"	0'-3 1/4"	3'-0 1/4"						
15 FEET	4'-6 3/4"	2'-1 3/4"	3'-9"	3'-5 1/4"	3'-1 1/4"	4'-6"	2'-6 3/4"	5'-4 1/2"	2'-1"	6'-1"	1'-8"	6'-8 1/2"	1'-3 1/4"	7'-2 1/2"	0'-10 3/4"	7'-7 1/4"
20 FEET	5'-9 3/4"	3'-6 1/2"	4'-11 1/2"	5'-1 3/4"	4'-3 1/4"	6'-5 1/2"	3'-8 3/4"	7'-7"	3'-3"	8'-6 1/2"	2'-10"	9'-4 1/2"	2'-5 1/2"	10'-1 1/4"	2'-1 1/4"	10'-9"
30 FEET			6'-9 1/4"	7'-11 1/4"	6'-0 1/4"	9'-8"	5'-5"	11'-1 3/4"	4'-10 3/4"	12'-5 3/4"	4'-5 1/2"	13'-7 3/4"	4'-0 3/4"	14'-8 1/2"	3'-8 1/2"	15'-8 1/4"
40 FEET									6'-1 3/4"	15'-8 1/2"	5'-8"	17'-2"	5'-3"	18'-5 3/4"	4'-10 3/4"	19'-8 1/4"
50 FEET															5'-10 1/4"	23'-2"

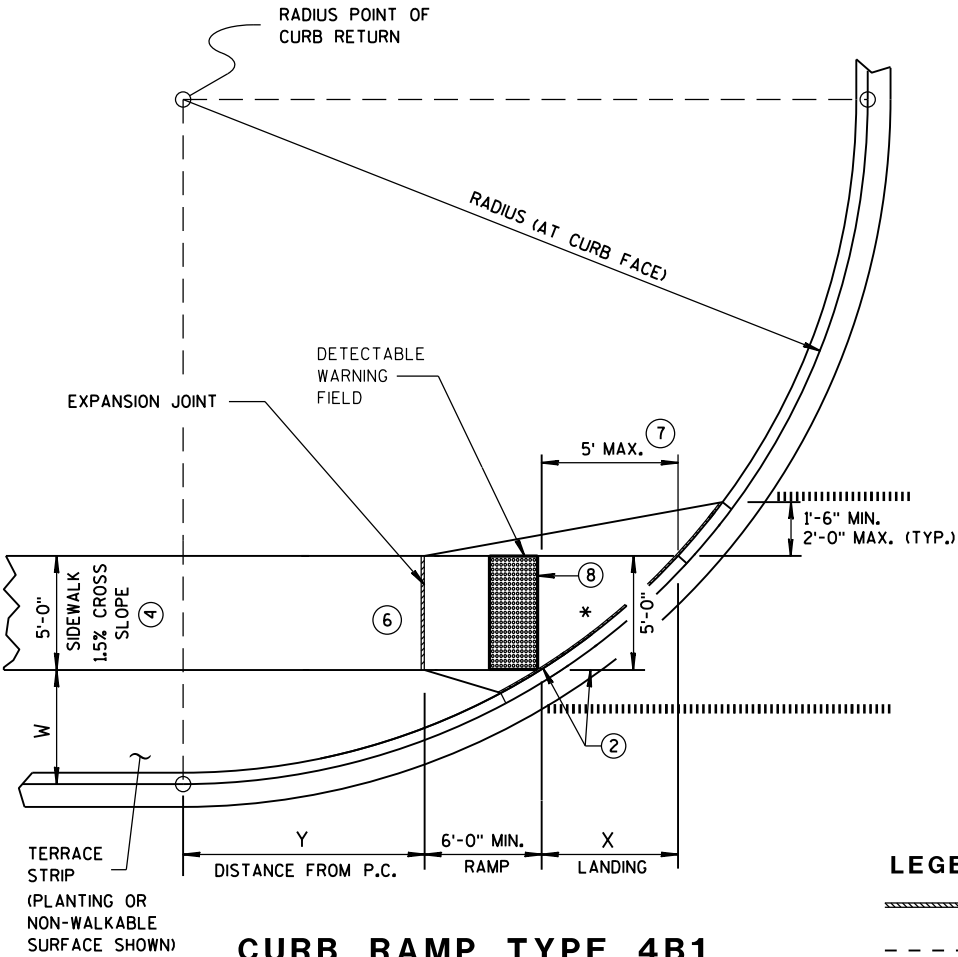
INTERMEDIATE RADII CAN BE INTERPOLATED
DIMENSION "Y" IS CALCULATED BASED ON 6'-0" RAMP LENGTH
DIMENSION "X" IS CALCULATED BASED ON 5'-0" SIDEWALK WIDTH

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.
- 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 MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE. (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



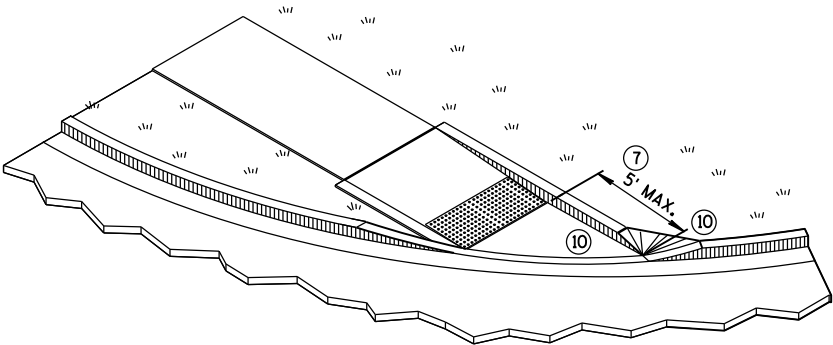
SECTION C-C FOR TYPE 4B



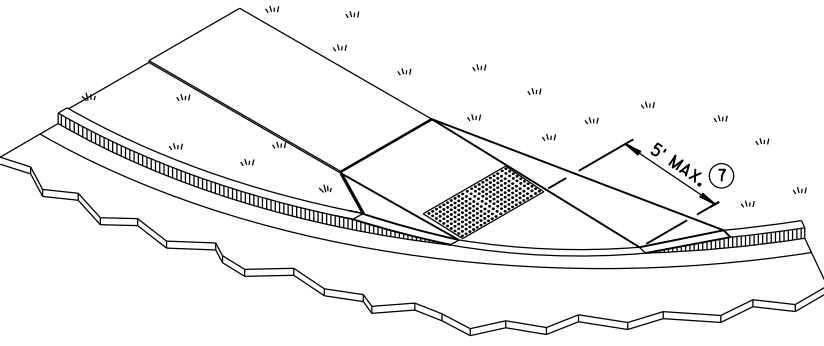
**CURB RAMP TYPE 4B1
PLAN VIEW**

LEGEND

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



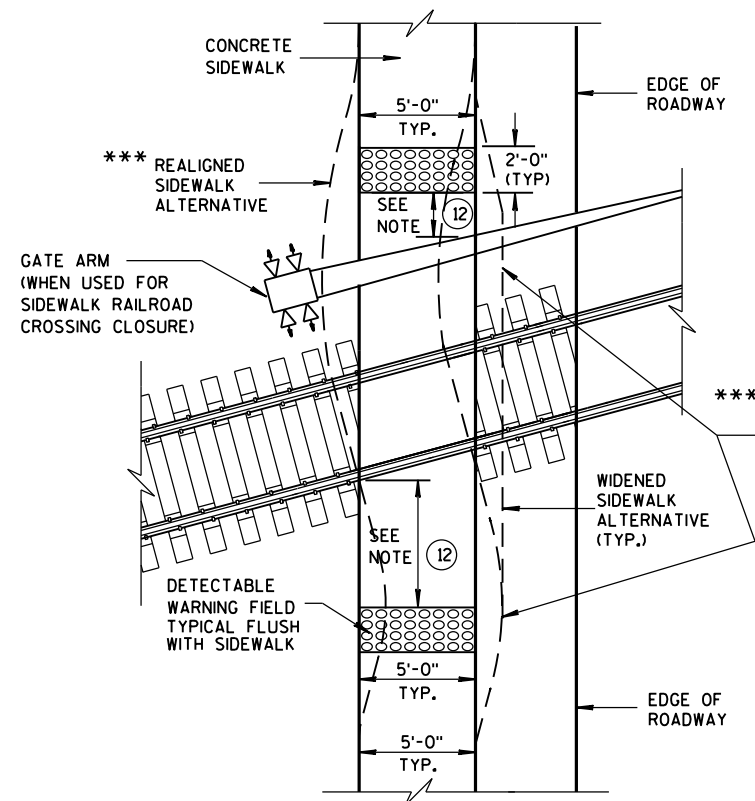
ISOMETRIC VIEW FOR TYPE 4B



ISOMETRIC VIEW FOR TYPE 4B1

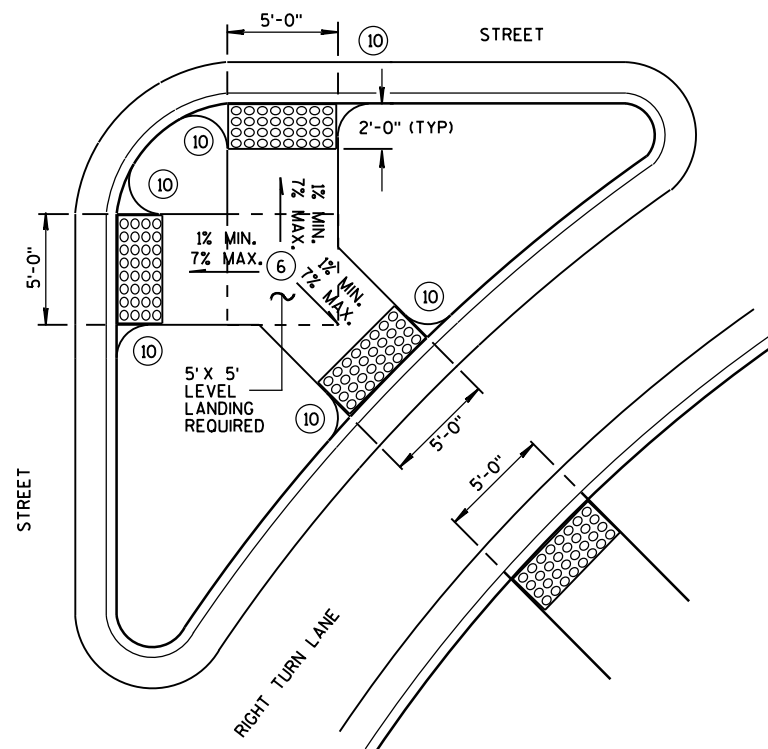
CURB RAMPS TYPE 4B AND 4B1

STATE OF WISCONSIN
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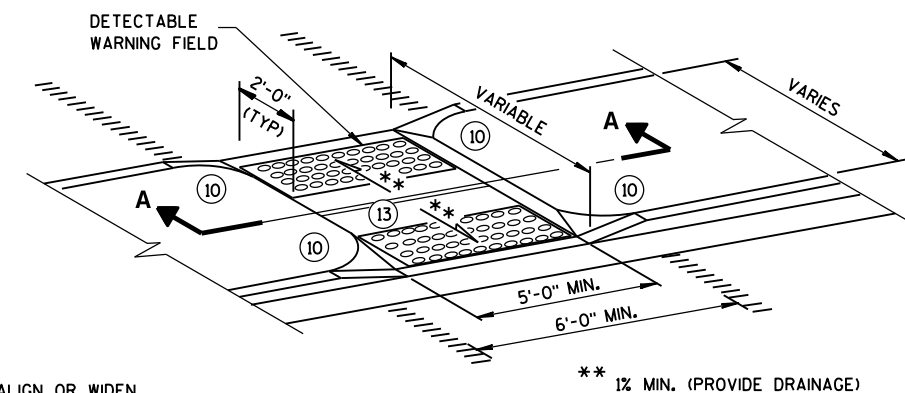


TYPE 8
DETECTABLE WARNINGS
AT RAILROAD CROSSING

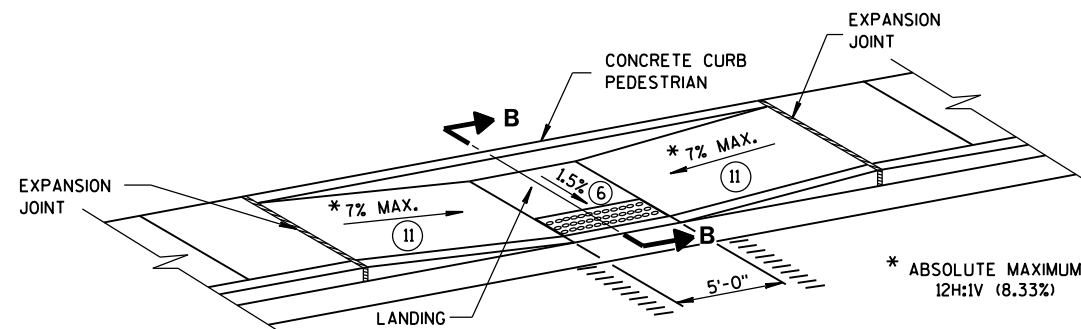
REFER TO GENERAL NOTES ② AND ③
FOR ALL ISLAND CURB RAMP



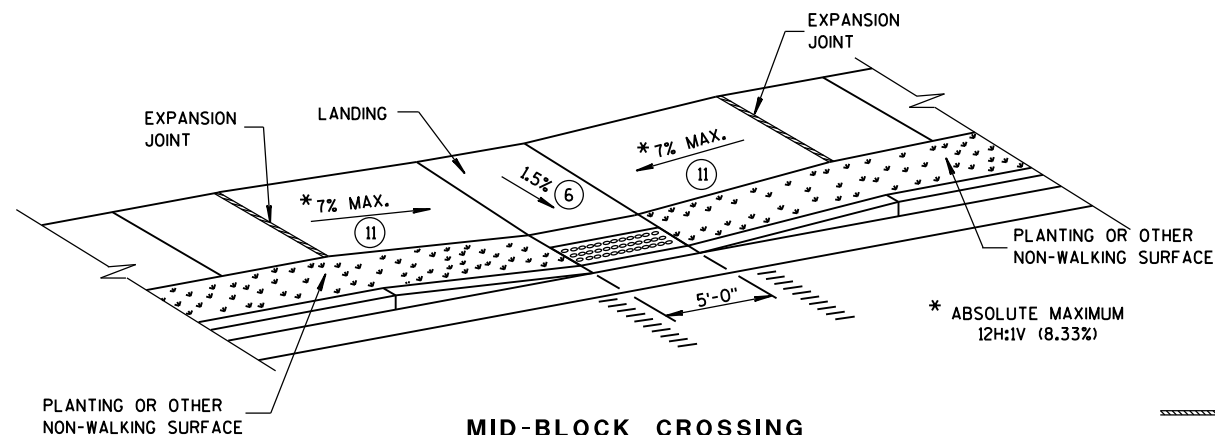
TYPE 6
DETECTABLE WARNING AT ISLANDS



MEDIAN ISLAND
NON-ELEVATED PEDESTRIAN CROSSING
TYPE 5



MID-BLOCK CROSSING
TYPE 7A

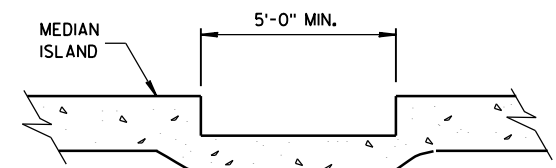


MID-BLOCK CROSSING
TYPE 7B

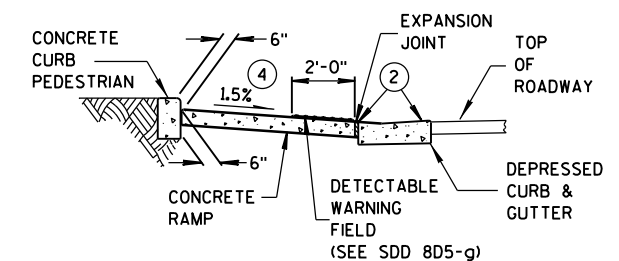
NOTE: THESE PARALLEL AND PARALLEL/PERPENDICULAR CURB RAMP
MAY BE USED AT INTERSECTIONS AND MID BLOCK LOCATIONS.

GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- 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 MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- 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.
- 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 15 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 AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2-FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.



SECTION A-A



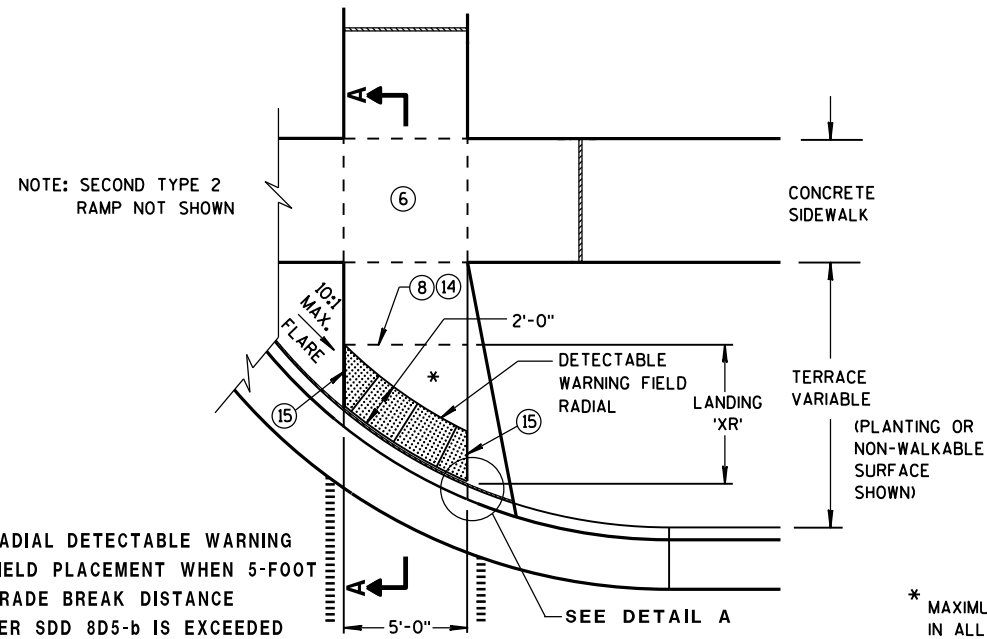
SECTION B-B

LEGEND

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

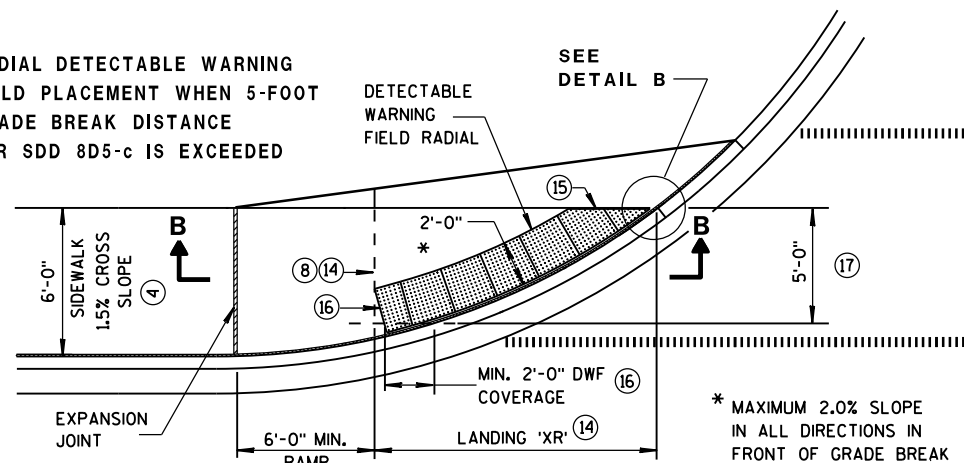


TYPE 2 RAMP PLAN VIEW

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)

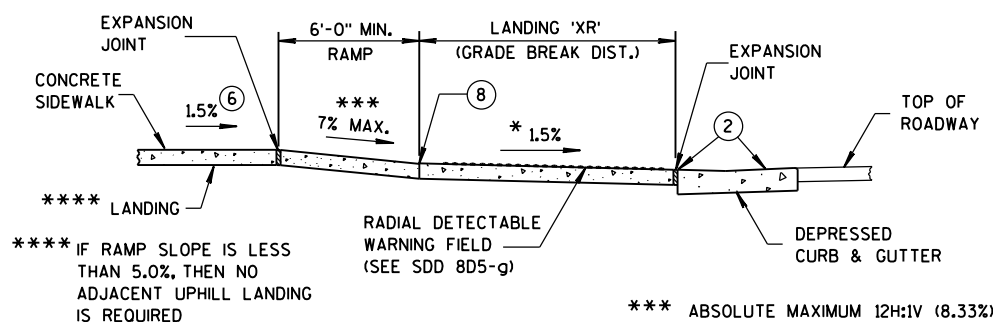
(ON LINE WITH SIDEWALK)

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5-FOOT GRADE BREAK DISTANCE PER SDD 8D5-c IS EXCEEDED

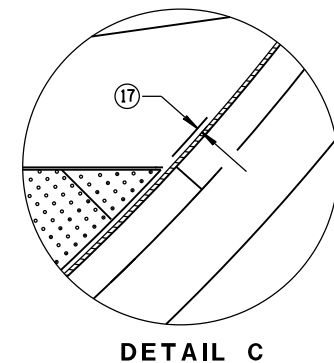
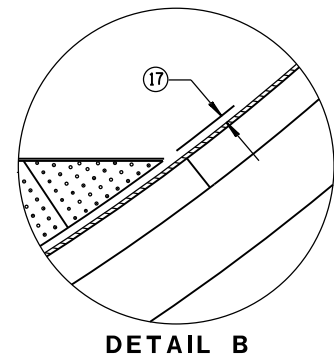
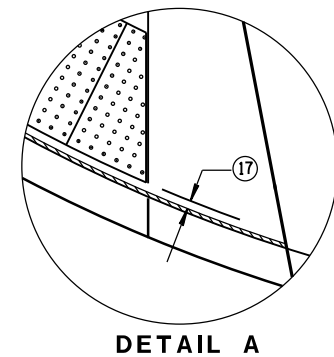
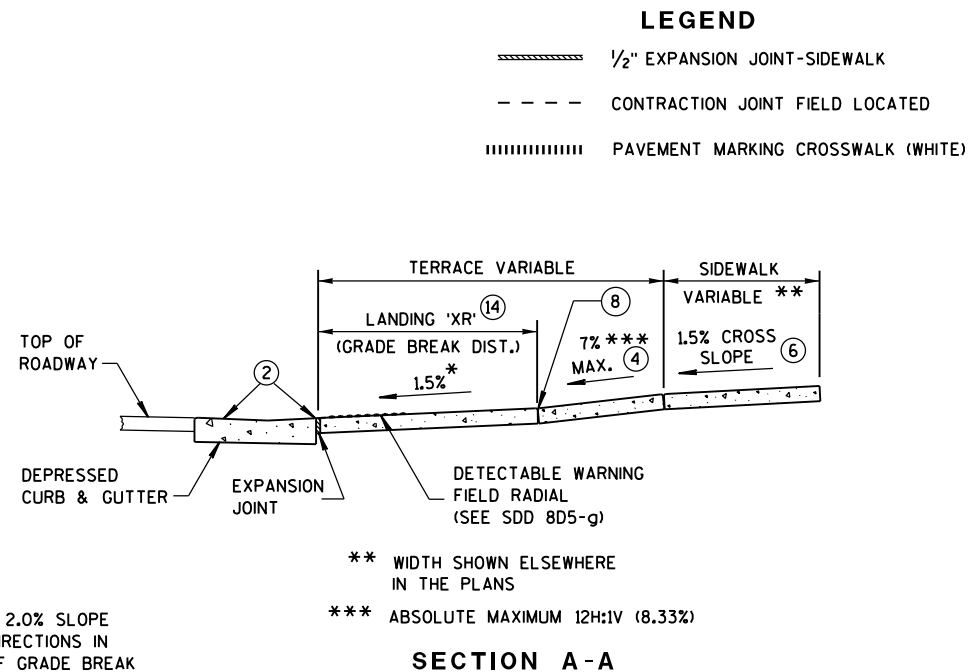


CURB RAMP TYPE 4A1 PLAN VIEW

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



SECTION B-B FOR TYPE 4A1



GENERAL NOTES

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

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

APPLY RADIAL DETECTABLE WARNING PLACEMENT SIMILARLY FOR TYPE 4A AND 4A1 CURB RAMPS AND SIMILARLY FOR TYPE 4B AND 4B1 CURB RAMPS. TYPE 4A AND 4B CURB RAMPS ARE NOT SHOWN.

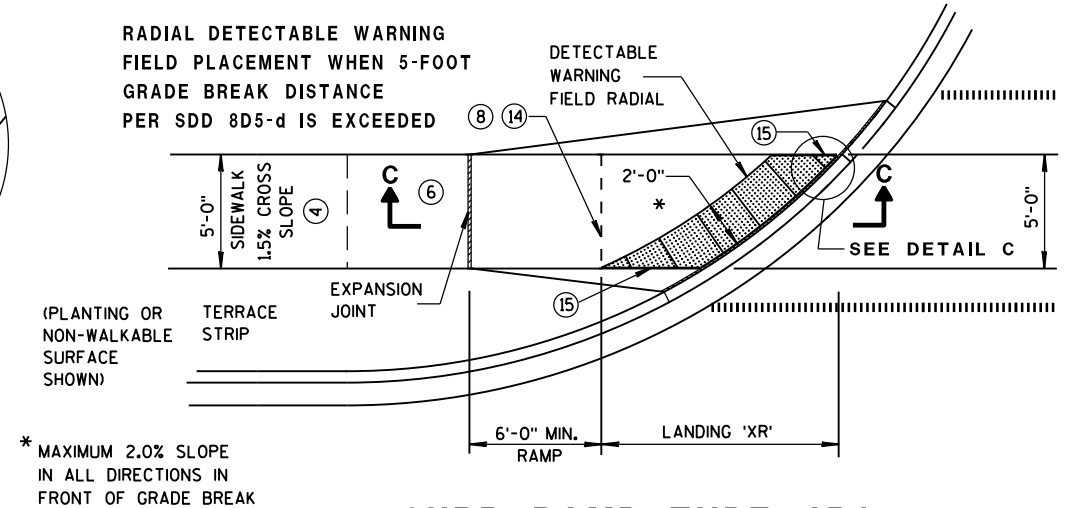
REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

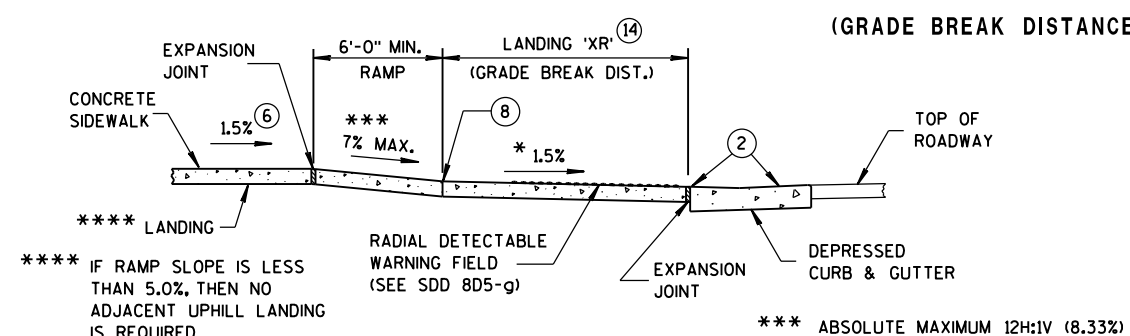
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4-INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ABSOLUTE MAXIMUM 12H:1V (8.33%) CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LANDING SIZE IS 5 FEET X 5 FEET.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- CONSULT ENGINEER IF GRADE BREAK LOCATION (END OF LANDING DIMENSION 'XR') REQUIRES FIELD ADJUSTMENT WHEN ESTABLISHING FINAL RADIAL DETECTABLE WARNING FIELD LOCATION.
- FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.
- USE 1'X 2' RECTANGULAR END PLATE AT END OF TYPE 4A1 RAMP AND PROVIDE MINIMUM 2'-0" DETECTABLE WARNING FIELD COVERAGE (IN DIRECTION OF PEDESTRIAN TRAVEL) ALONG THE ENTIRE CURB RAMP WIDTH.
- A MAXIMUM 3-INCH CONCRETE BORDER WIDTH IS ALLOWABLE IN FRONT OF RADIAL DETECTABLE WARNING FIELD FOR CONSTRUCTABILITY PURPOSES. CONCRETE BORDER WIDTH MAY VARY UP TO 1 INCH.

RADIAL DETECTABLE WARNING FIELD PLACEMENT WHEN 5-FOOT GRADE BREAK DISTANCE PER SDD 8D5-d IS EXCEEDED



CURB RAMP TYPE 4B1 PLAN VIEW

(GRADE BREAK DISTANCE GREATER THAN 5 FEET)



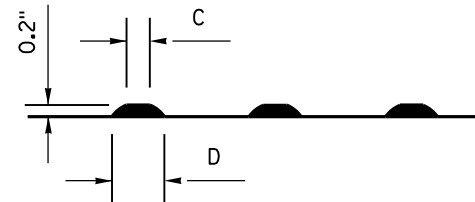
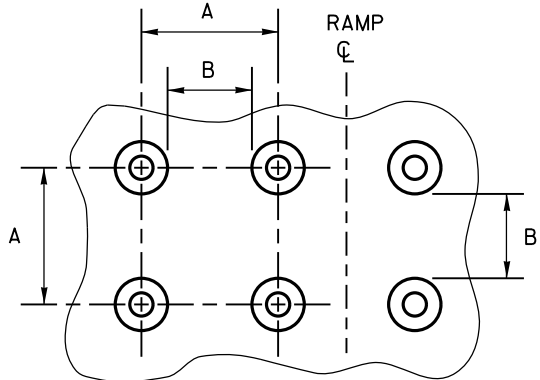
SECTION C-C FOR TYPE 4B1

**CURB RAMPS
RADIAL DETECTABLE WARNING
FIELD APPLICATIONS**

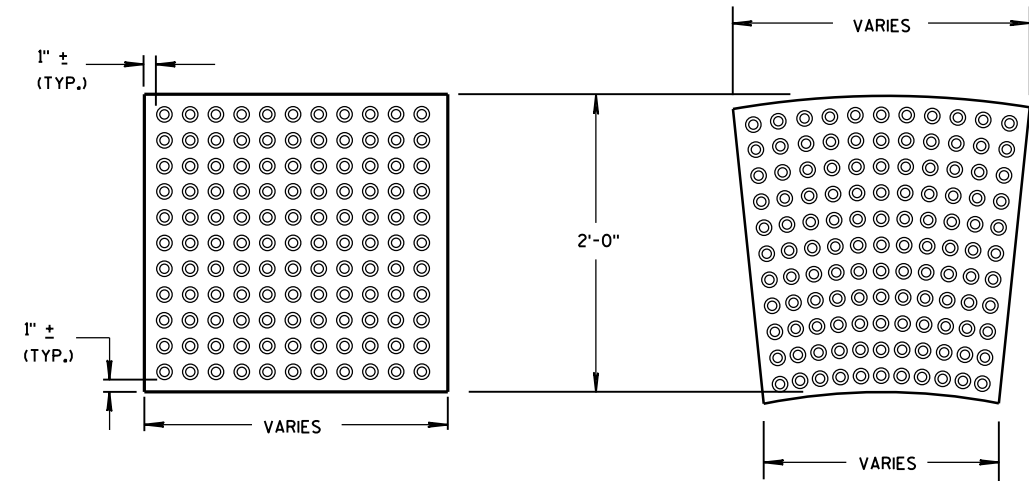
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	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

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



TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL



PLAN VIEW

GENERAL NOTES

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

PLACE ALL DETECTABLE WARNING FIELD SYSTEMS IN ACCORDANCE TO THE MANUFACTURER'S RECOMMENDATION.

FIELD CUTS AT INTERMEDIATE JOINTS WITHIN THE RADIAL DETECTABLE WARNING FIELD ARE PROHIBITED.

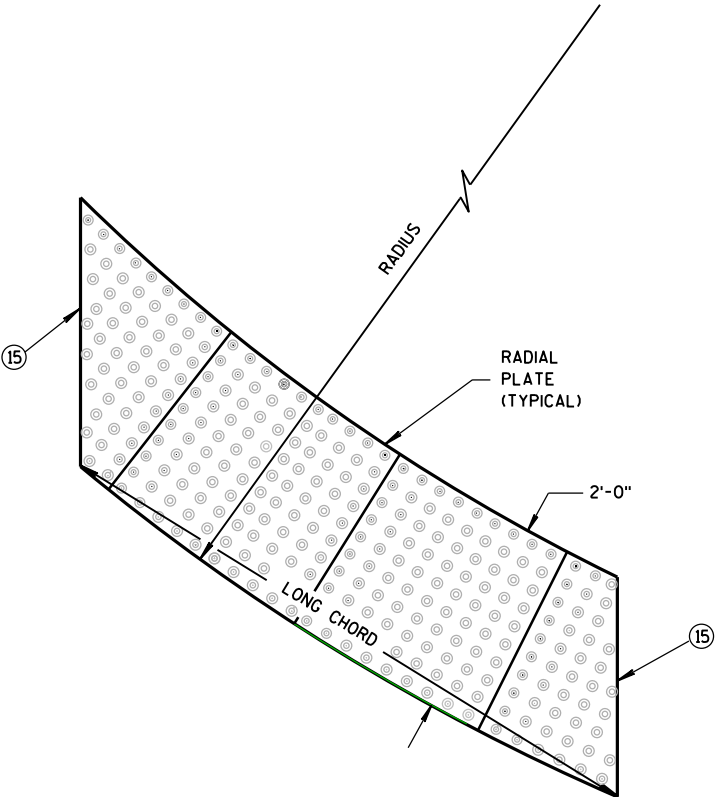
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

FOR RADIAL DETECTABLE WARNING FIELD APPLICATIONS WHERE STANDARD RADIAL PLATES ARE NOT AVAILABLE AT AN INTERSECTION CURB RADIUS, A COMBINATION OF SQUARE OR RECTANGULAR PLATES AND RADIAL PLATES MAY BE USED TO FORM RADIAL CONFIGURATION. RADIAL WEDGES IN COMBINATION WITH SQUARE PANELS ARE ALSO ACCEPTABLE. FOLLOW MANUFACTURER'S RECOMMENDATIONS.

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

DO NOT EMBED IN CONCRETE ANY FIELD-CUT PLATES WITH CUT EDGES SHORTER THAN 6 INCHES. CONSULT WITH MANUFACTURER FOR RE-DRILLING AND ANCHORING REQUIREMENTS OF FIELD-CUT PLATES.

15 FIELD SAW CUTS ALONG RADIAL DETECTABLE WARNING PLATES WILL BE NECESSARY TO MATCH EACH CURB RAMP EDGE. AVOID CUTTING THROUGH DOMES WHENEVER POSSIBLE. MAKE FIELD CUTS TRUE TO LINE AND WITHIN 1/8" DEVIATION. SMOOTH EDGES OF FIELD CUT PLATES.



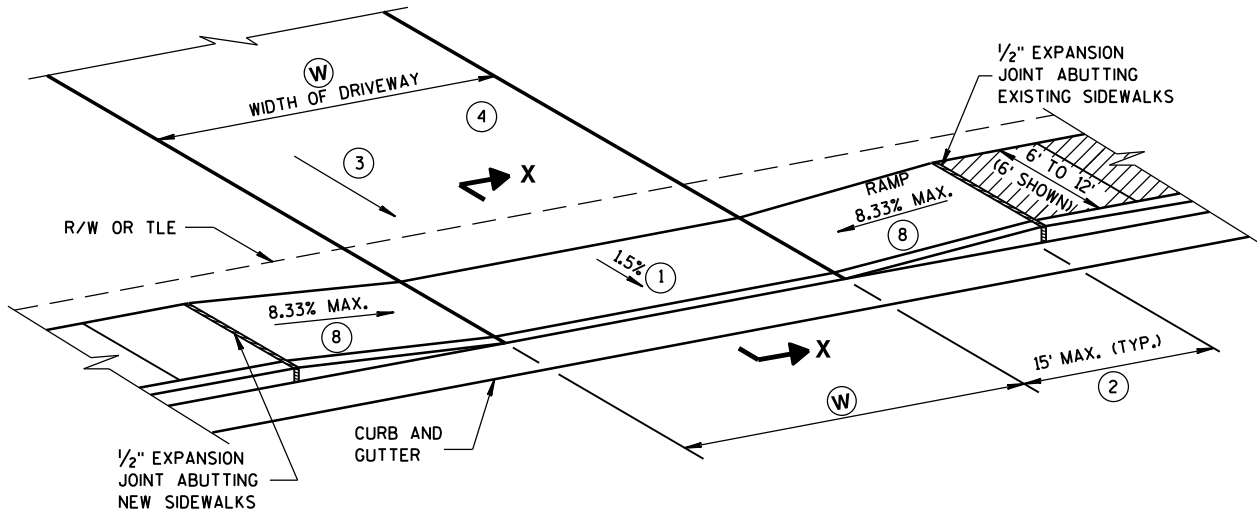
CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

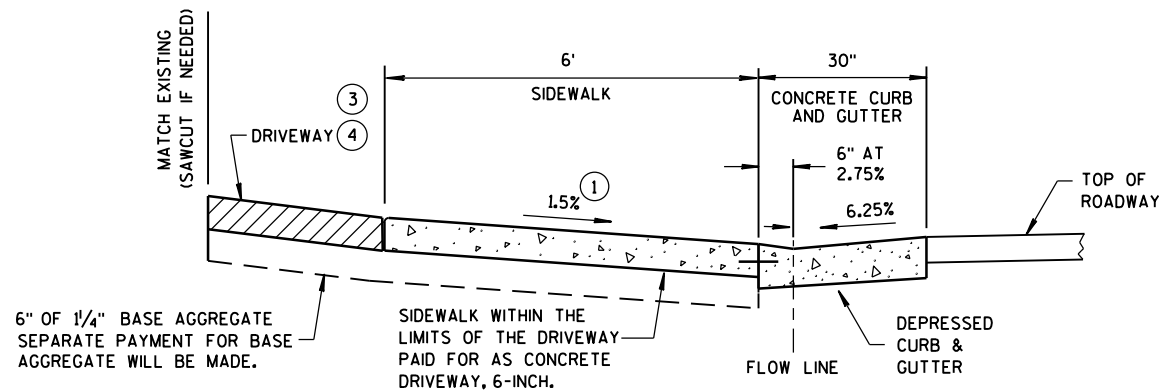
APPROVED
June, 2017 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERV 89 ENT
FHWA

GENERAL NOTES

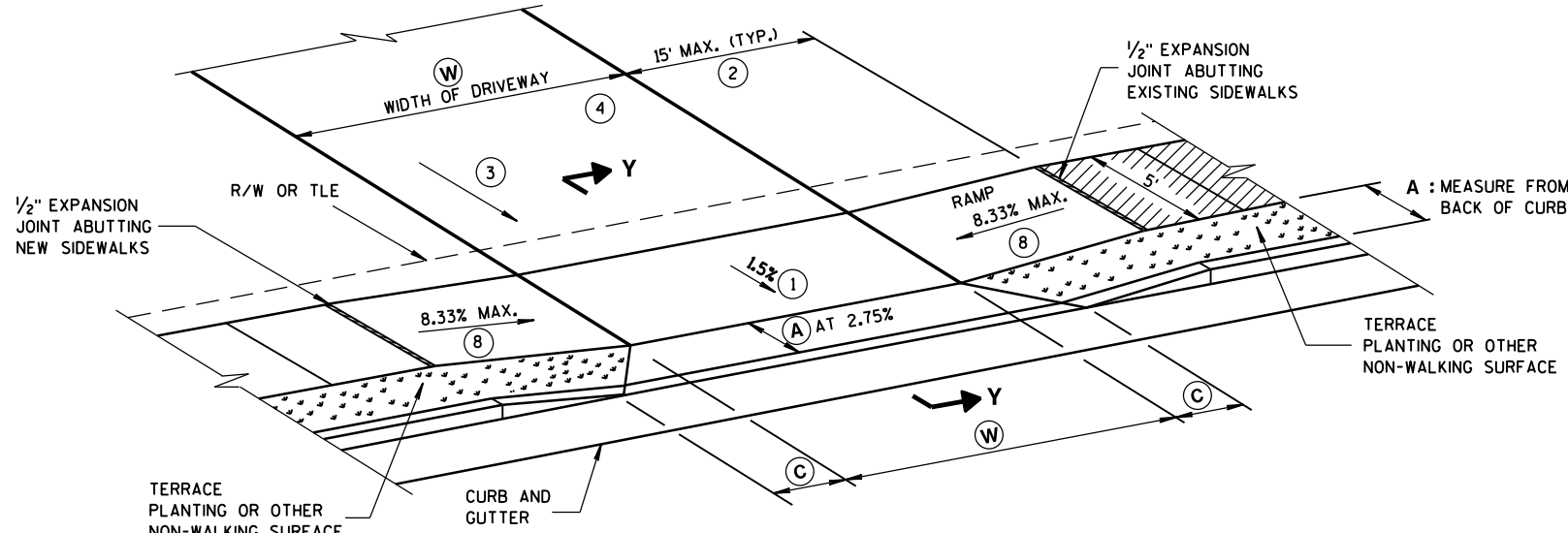
- 1 CONSTRUCTION TOLERANCE OF 0.5% ± FOR SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
- 2 THE SIDEWALK RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT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



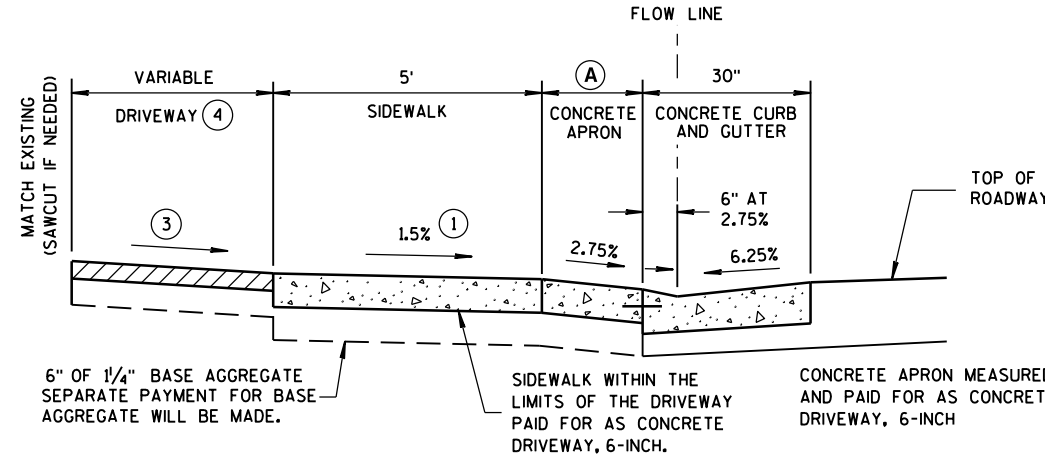
TYPE X
SIDEWALK ABUTS CURB & GUTTER
TERRACE VARIES 0 TO 3 FEET



SECTION X-X



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



NOTE: SIDEWALK MAY BE DEPRESSED IN DRIVEWAY AREAS

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

TABLE Y

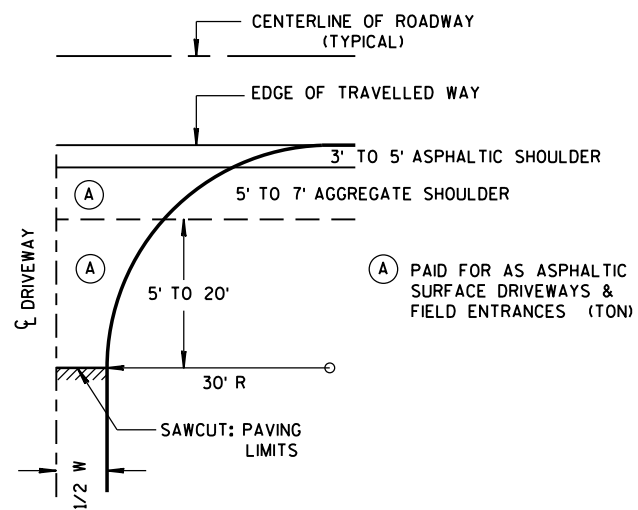
(A) FEET	(C) FEET
3.5'	2.0'
4.5'	3.0'
5.5'	3.5'

NOT TO SCALE

DRIVEWAY AND SIDEWALK
RAMPS
TYPES X & Y

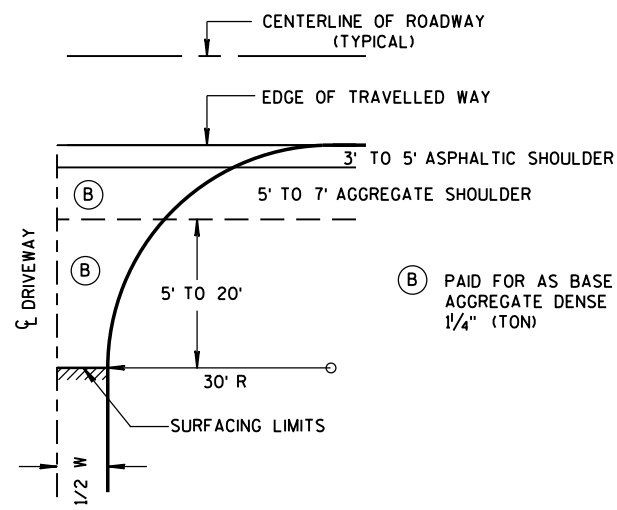
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERV 90 ENT
FHWA

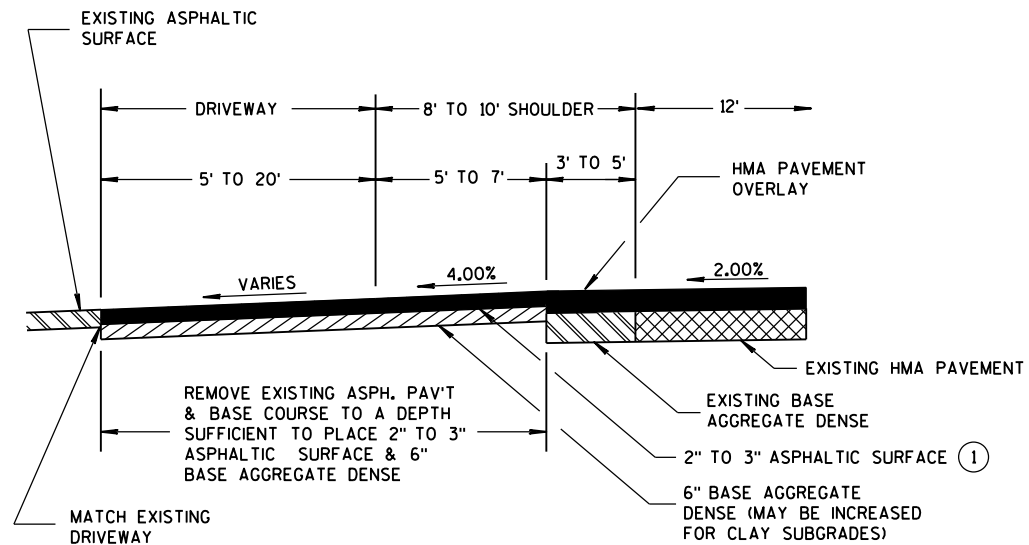


PLAN VIEW
HALF SECTION

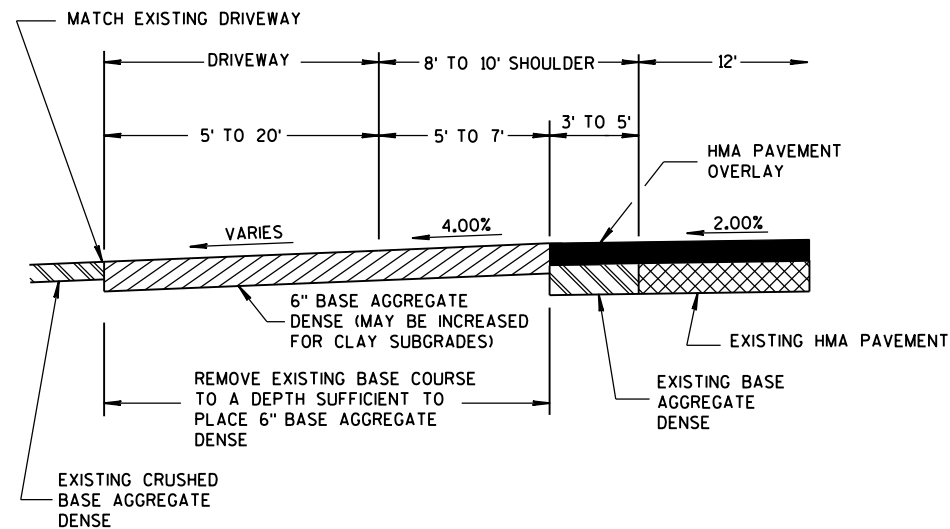
W MIN. = 16'
W MAX. = 24'



PLAN VIEW
HALF SECTION



PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS



PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

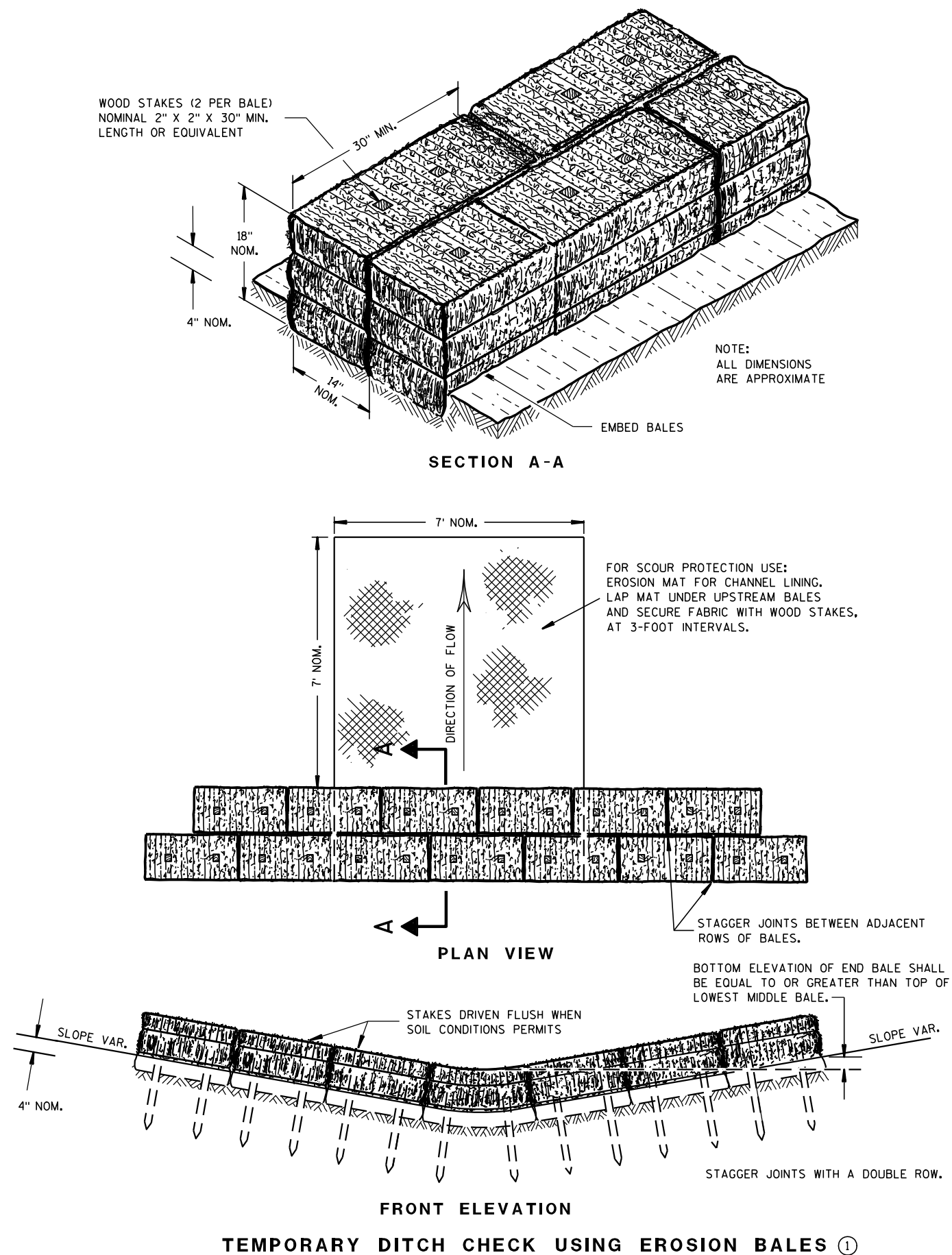
GENERAL NOTES

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

DRIVEWAYS WITHOUT
CURB & GUTTER
RESURFACING PROJECTS RURAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

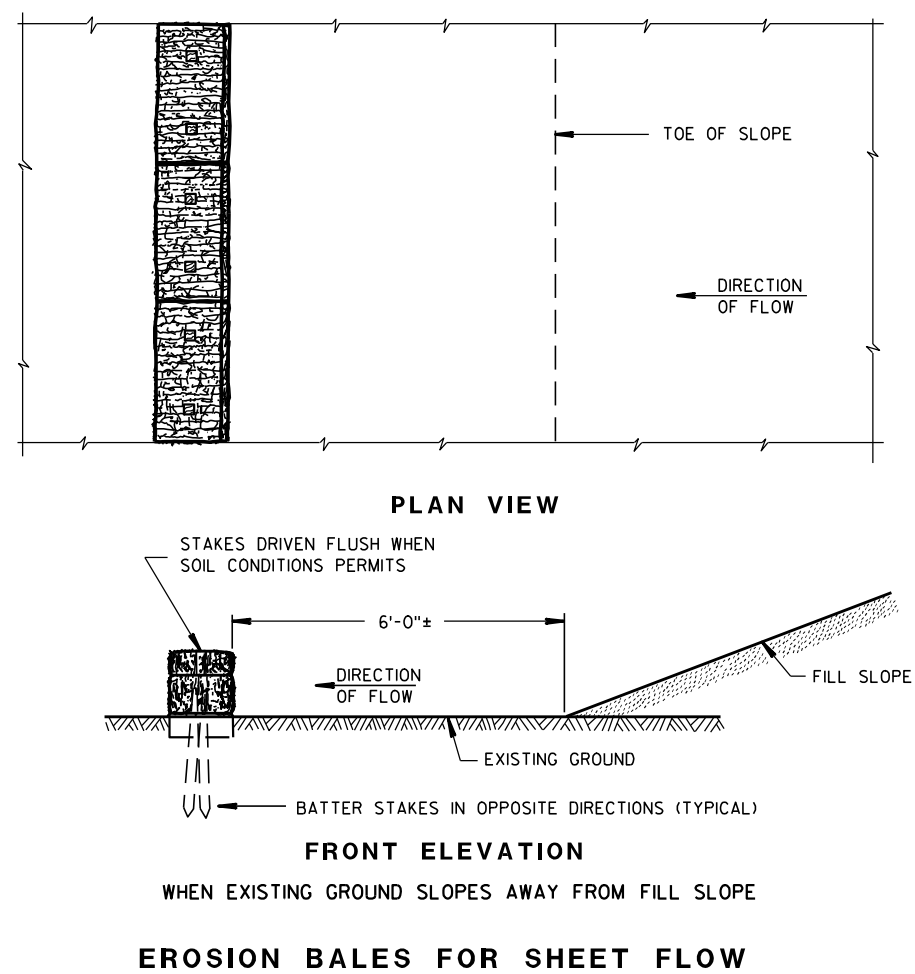
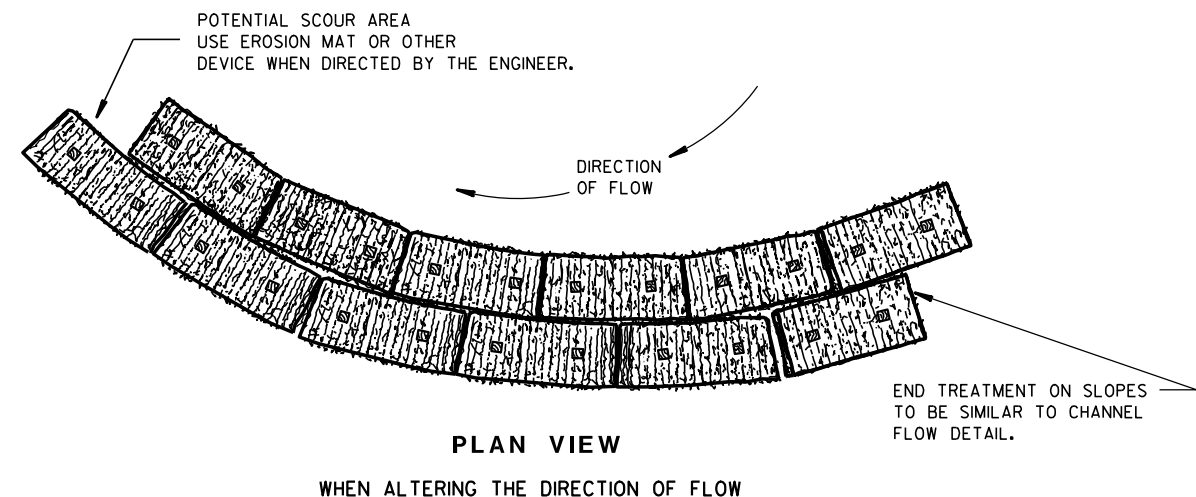
APPROVED
December, 2016 /S/ Rodney Taylor
DATE ROADWAY STANDARDS 91 ENT
FHWA UNIT SUPERV.



GENERAL NOTES

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

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

TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/04/02
DATE/S/ Beth Connors
CHIEF ROADWAY DEVELOPER

ENGINEER

FHWA



- 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 1 1/8" X 1 1/8" 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.



SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

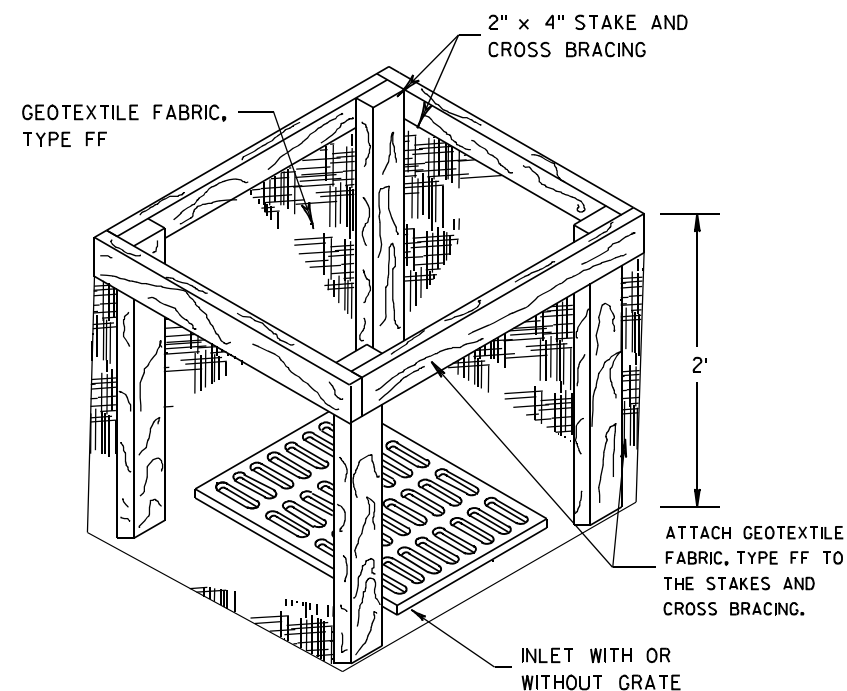
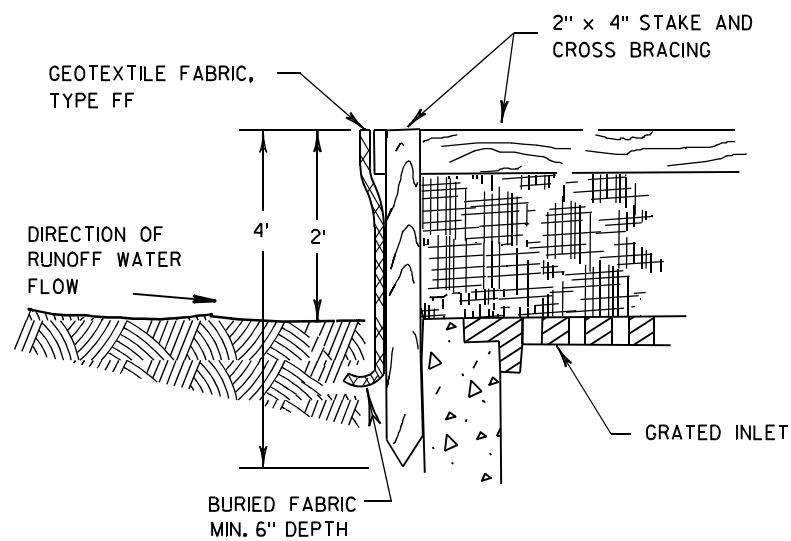
APPROVED
4-29-05
DATE

/S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT

93

ENGINEER

FHWA



INLET PROTECTION, TYPE A

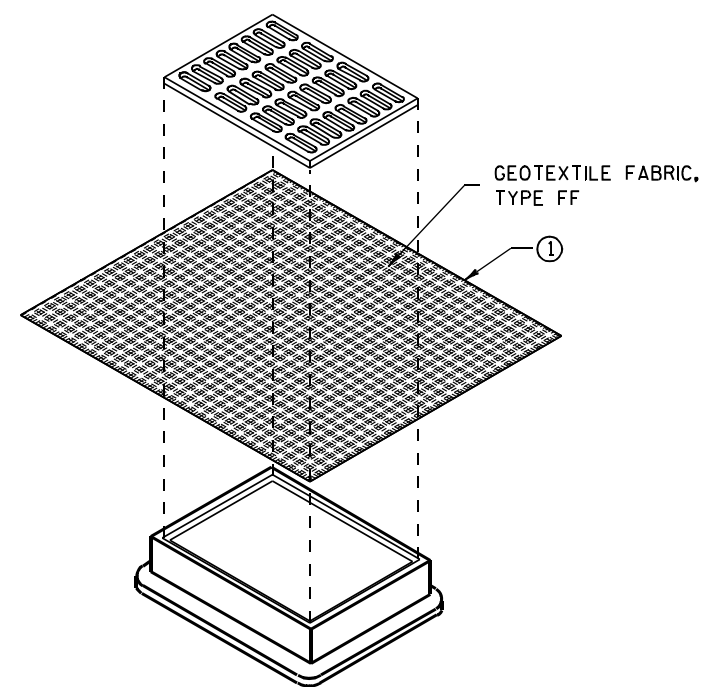
GENERAL NOTES

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.

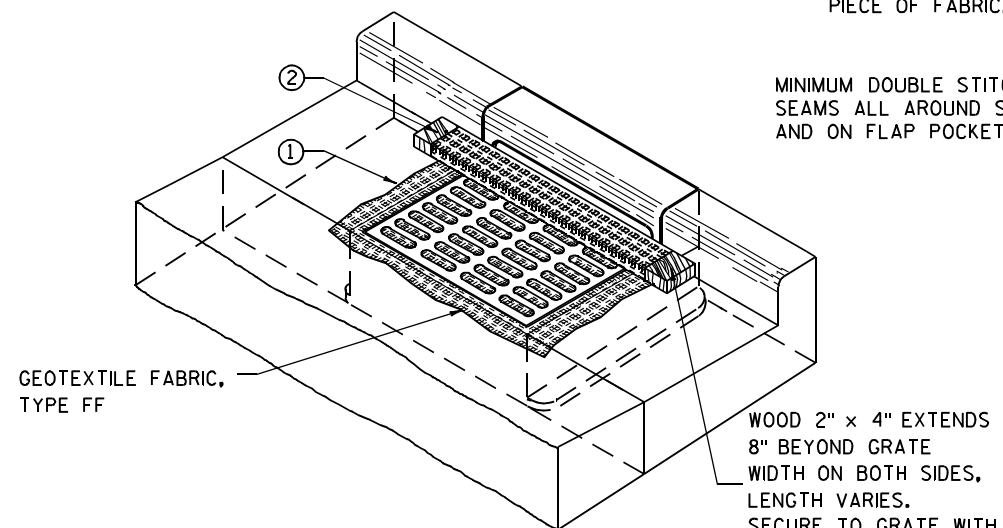
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.



**INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)**

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

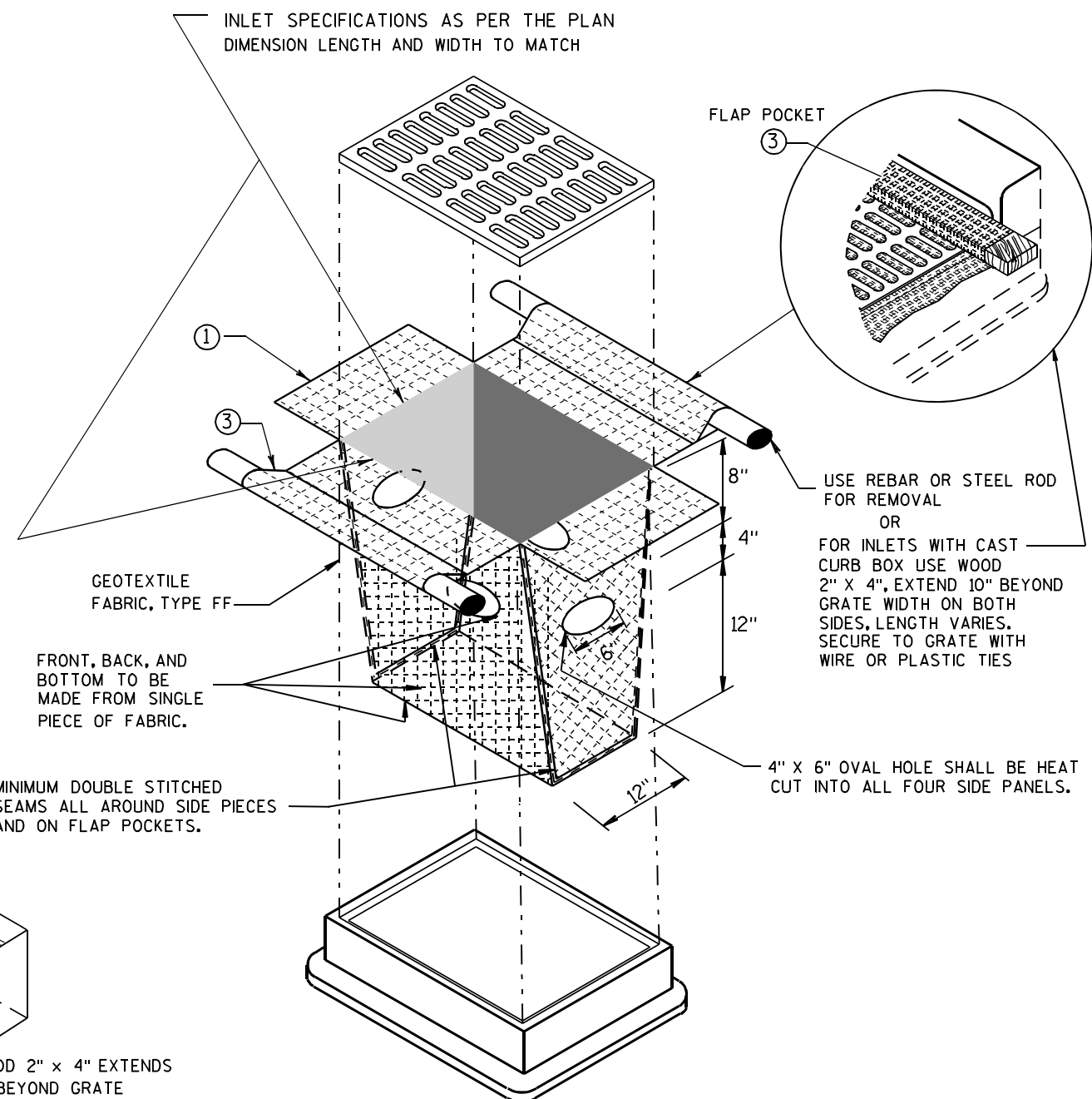
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.



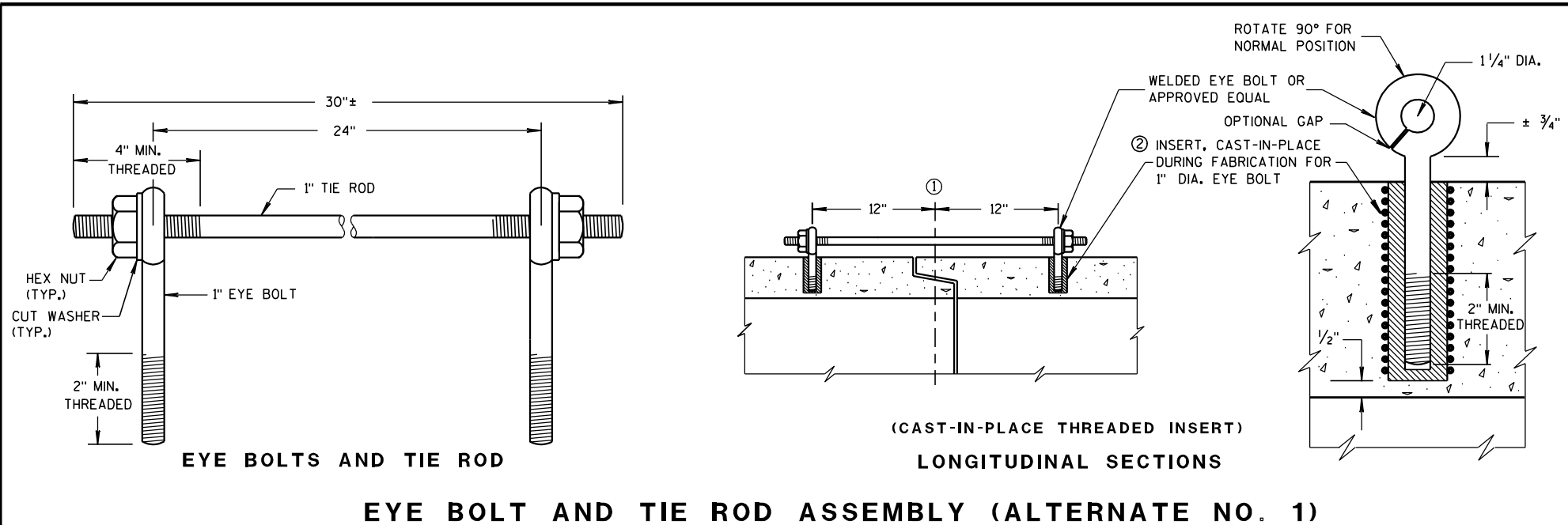
INLET PROTECTION, TYPE D

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

**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 94
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



GENERAL NOTES

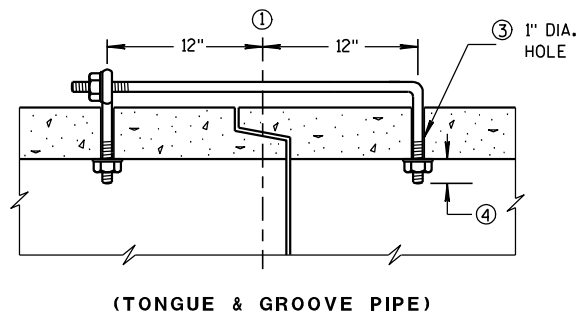
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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

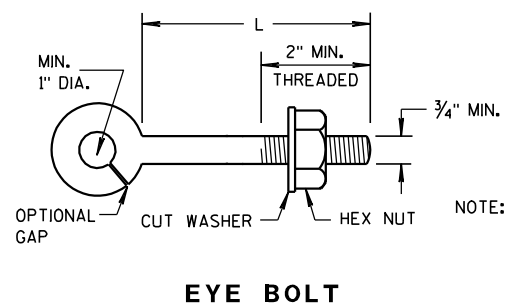
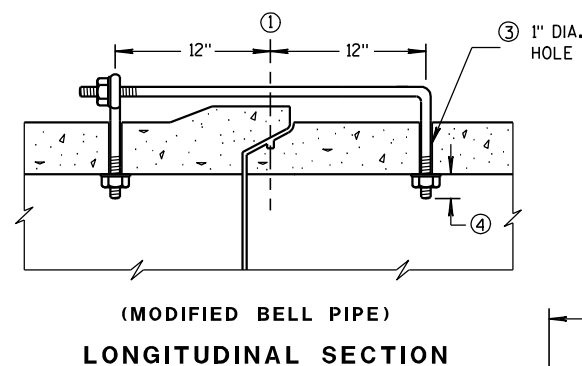
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- ① ϕ OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ② THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12 INCHES FROM ϕ OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- ⑤ OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- ⑥ LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.



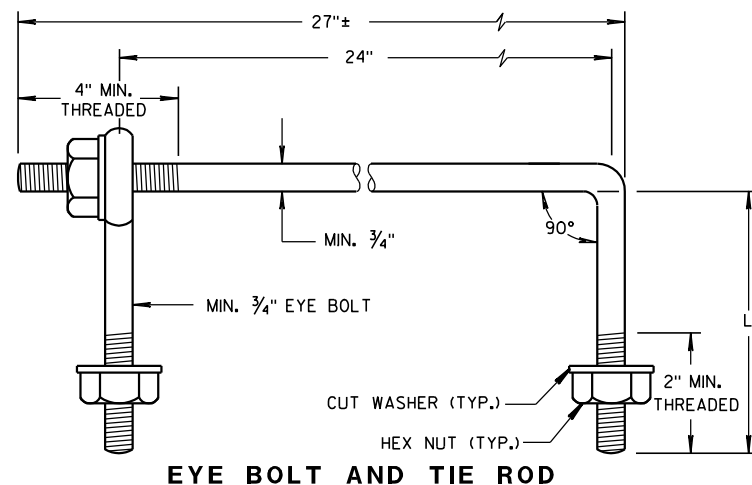
EYE BOLT DIMENSION TABLE

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



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

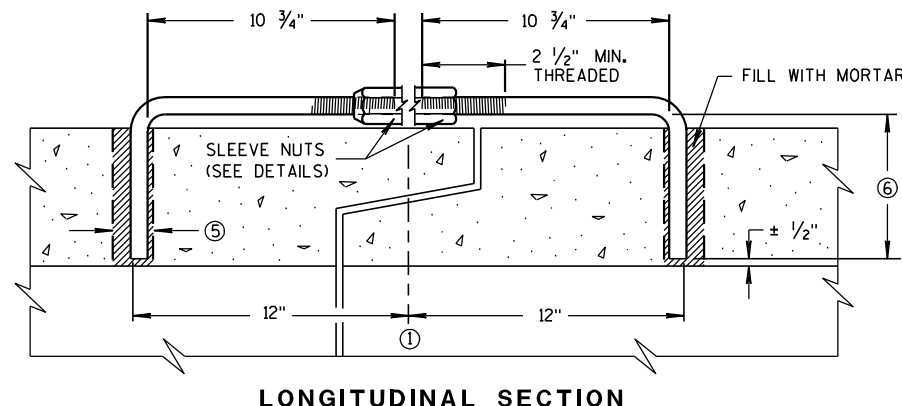
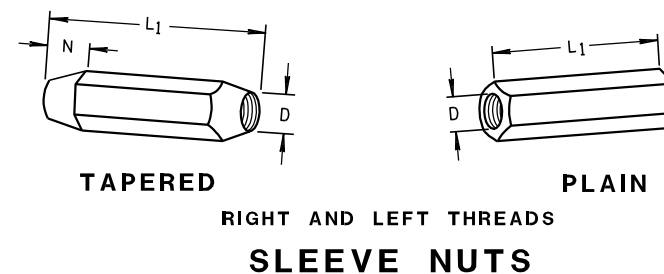
(JOINT TIES FOR 18" TO 66" DIA. CONCRETE PIPE)
EYE BOLT AND TIE ROD ASSEMBLY (ALTERNATE NO. 2)



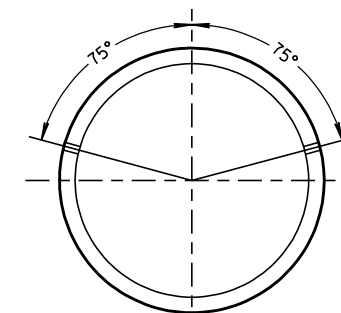
ADJUSTABLE TIE ROD TABLE

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

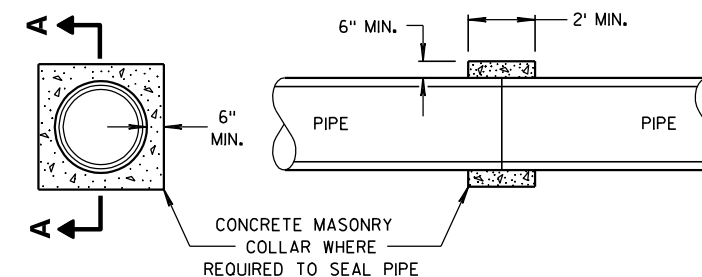
DIMENSIONS SHOWN ARE IN INCHES



(JOINT TIES FOR 12" TO 108" DIA. CONCRETE PIPE)
ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

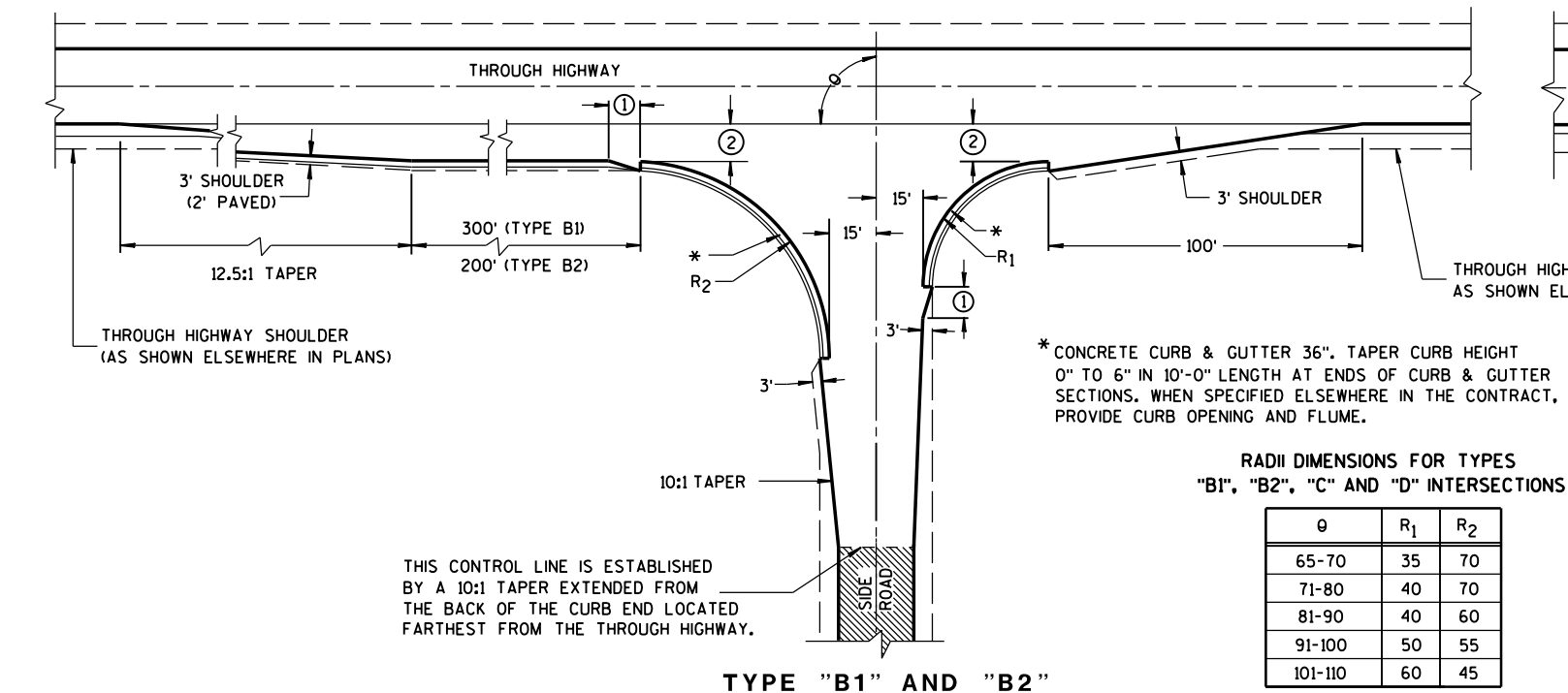


CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
6/5/2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 95 'MENT
FHWA ENGINEER



RADII DIMENSIONS FOR TYPES "B1", "B2", "C" AND "D" INTERSECTIONS

θ	R ₁	R ₂
65-70	35	70
71-80	40	70
81-90	40	60
91-100	50	55
101-110	60	45

GENERAL NOTES

DESIGNS MAY BE USED INTERCHANGEABLY IN COMBINATION OR SEPARATELY FOR ANY ONE COMPLETE INTERSECTION DEPENDING UPON INTERSECTION ANGLE AND SURFACING OF EACH APPROACH ROADWAY.

SIDE ROAD SURFACING NOTE

WHEN THE SIDE ROAD IS NOT PRESENTLY PAVED, PAVEMENT SHALL BE PLACED TO THE LIMITS SHOWN UNLESS OTHERWISE PROVIDED IN THE CONTRACT. WHERE THE CONSTRUCTION LIMITS ARE BEYOND THE PAVING LIMITS, CRUSHED AGGREGATE SURFACING SHALL BE PLACED BETWEEN THE PAVING LIMITS AND CONSTRUCTION LIMITS.

WHEN THE SIDE ROAD IS PRESENTLY PAVED, NEW PAVEMENT SHALL BE PLACED TO THE LIMITS OF DESIGN AS SHOWN AND BEYOND, IF NECESSARY, TO MEET EXISTING PAVEMENT.

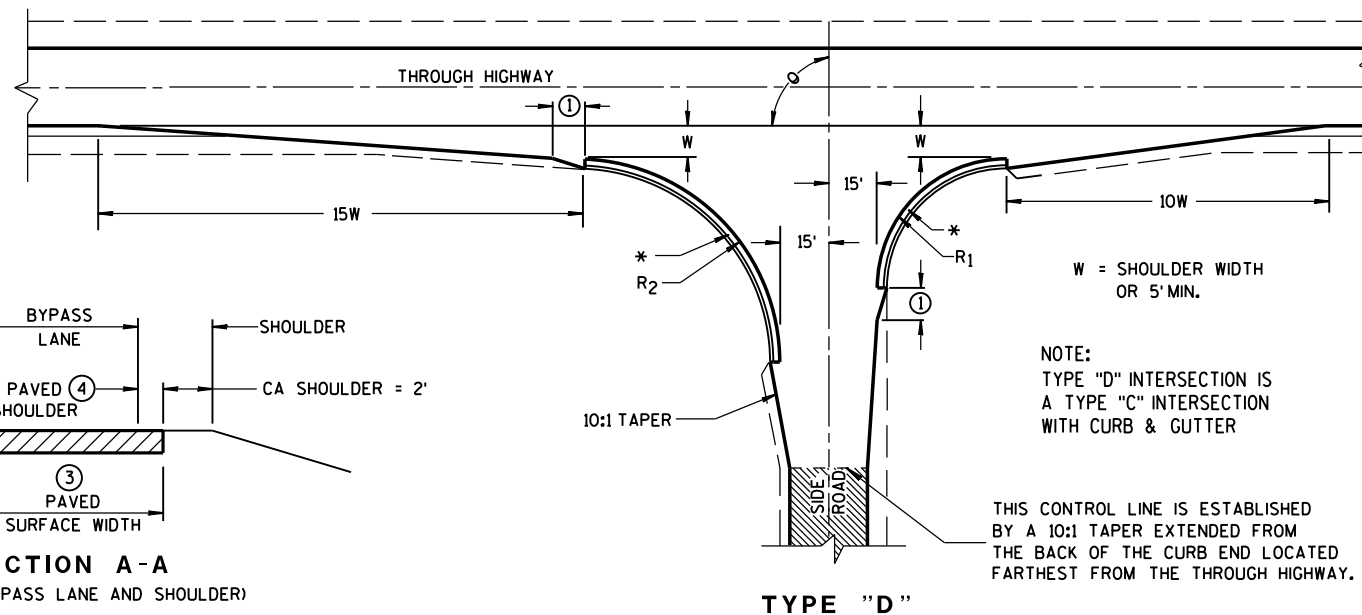
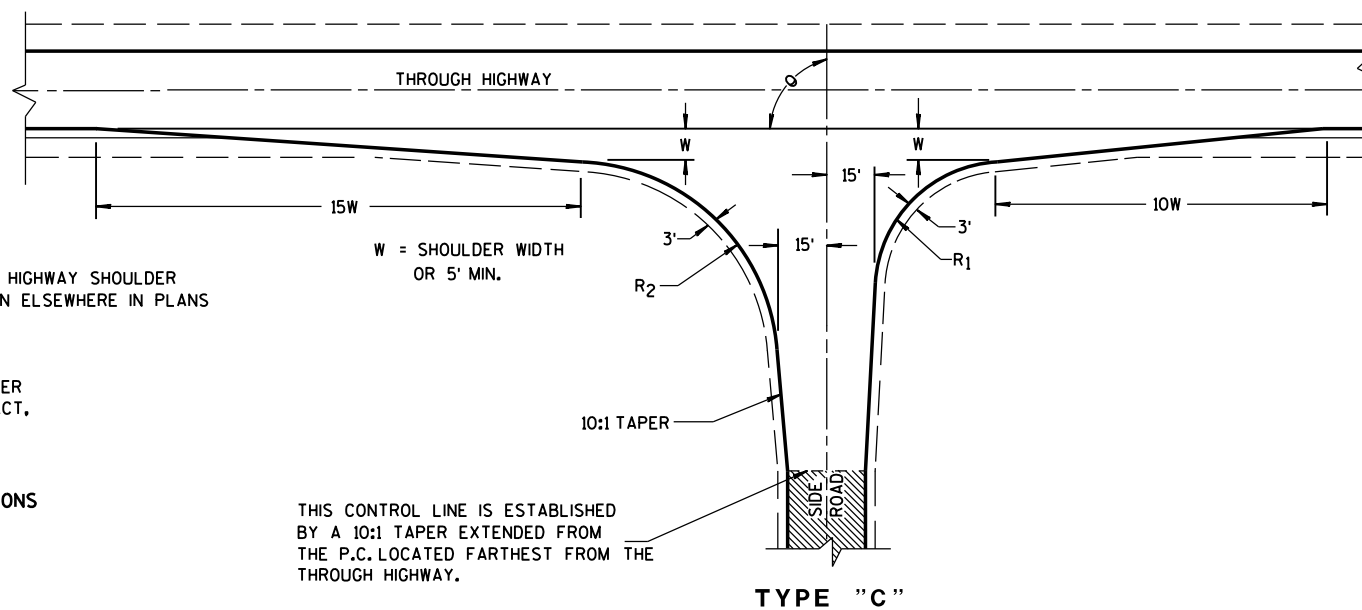
WHEN THE SIDE ROAD IS THE CONSTRUCTION PROJECT, THE INTERSECTION SURFACING SHALL BE THE SAME AS FOR THE PROJECT.

EXISTING PAVED SURFACE

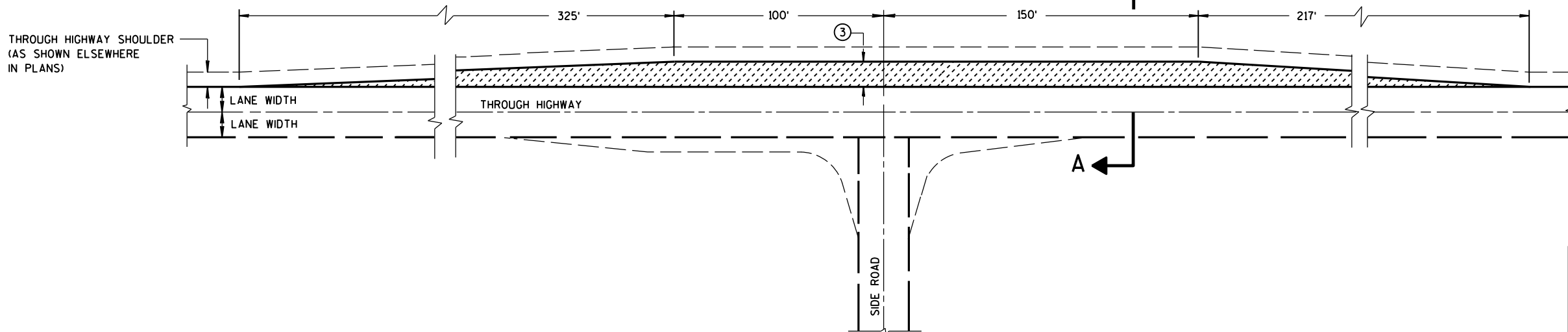
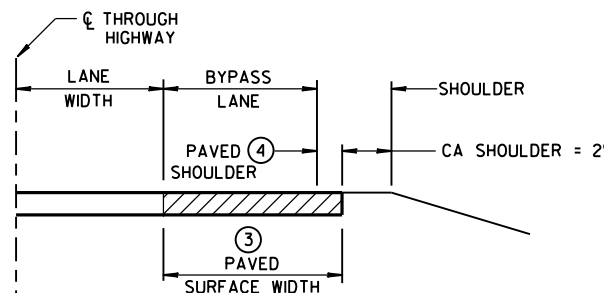
BYPASS LANE

- ① 10-FT TYPICAL.
- ② 12-FT** PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLAN.

**10-FT MAY BE USED ON TYPE B2 ON RESURFACING PROJECTS IF SPECIFIED IN THE CONTRACT.
- ③ BYPASS LANE PAVED SURFACE WIDTH OUTSIDE OF TRAVEL LANE
-ASPHALT = 12-FT PLUS PAVED SHOULDER WIDTH.
-PC CPNCRETE = 13-FT PLUS PAVED SHOULDER WIDTH.
- ④ BYPASS LANE PAVED SHOULDER WIDTH = THE GREATER OF 1-FT OR THE PAVED SHOULDER WIDTH OF THE THROUGH HIGHWAY.



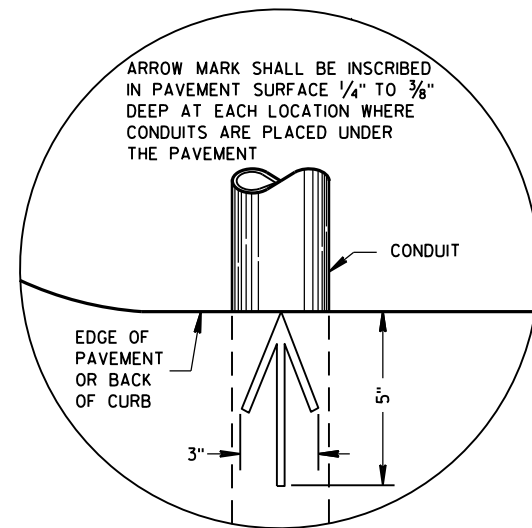
NOTE:
TYPE "D" INTERSECTION IS A TYPE "C" INTERSECTION WITH CURB & GUTTER



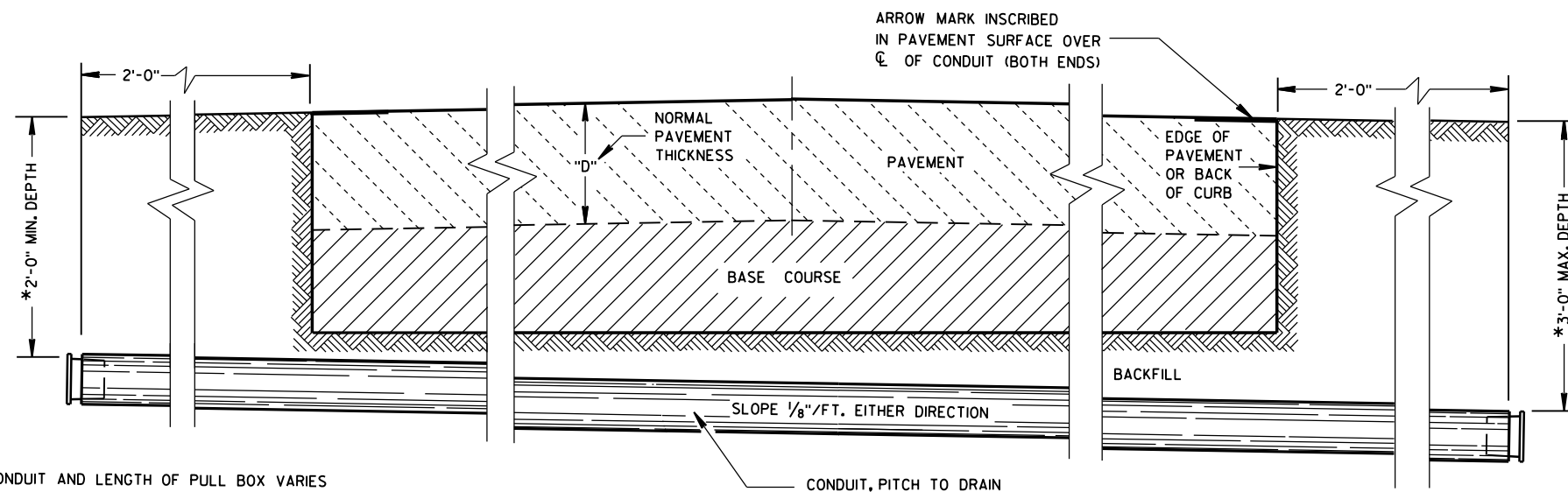
TEE INTERSECTION BYPASS LANE DETAIL

AT-GRADE SIDE ROAD INTERSECTION, TYPES "B1", "B2", "C" AND "D" AND TEE INTERSECTION BYPASS LANE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW
ARROW MARK



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

TRACER WIRE SHALL BE INSTALLED AS STATED IN THE STANDARD SPECIFICATION, ITEM 652.3.1.1.

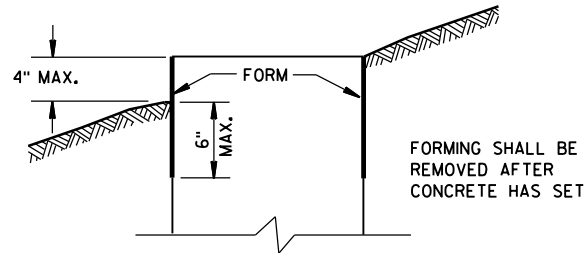
ALL CONDUIT RUNS SHALL BE STRAIGHT (WITHOUT BENDS) FROM PULL BOX TO PULL BOX, PULL BOX TO BASE AND BASE TO BASE AS SHOWN ON THE PLANS.

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March, 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 97
FHWA

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



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.

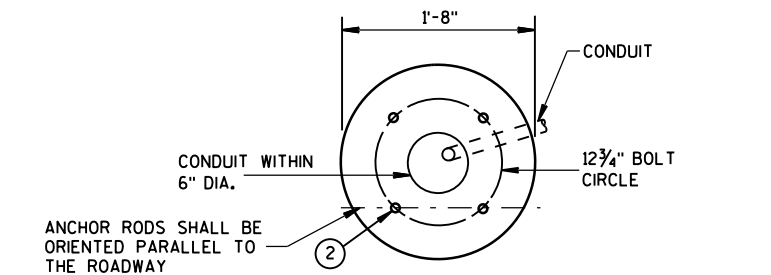
WHEN ANCHOR RODS USING THE ALTERNATE "L" BEND ARE FURNISHED, THE 4" "L" BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH. THE "L" BEND END SHALL NOT BE THREADED.

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.

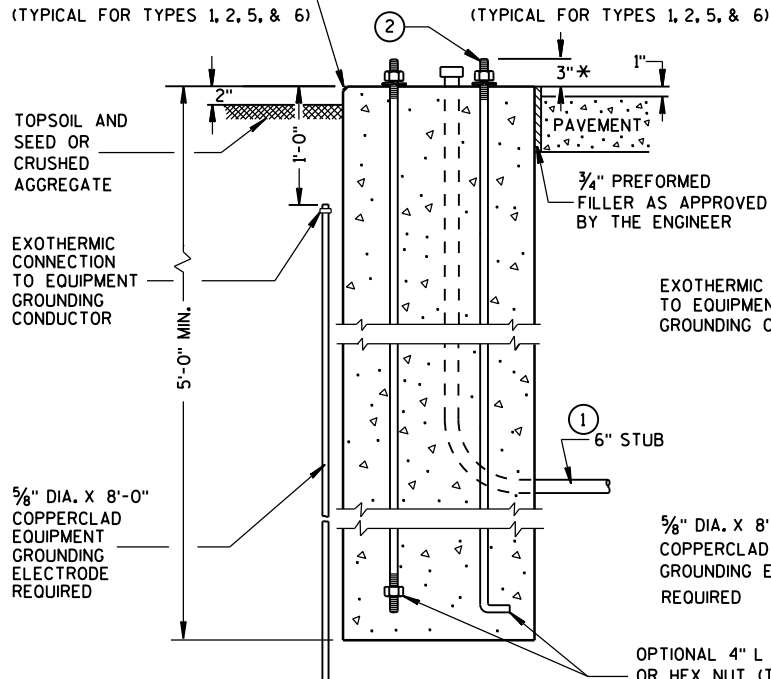
BAR STEEL REINFORCEMENT SHALL BE COATED WITH POWDERED EPOXY RESIN IN ACCORDANCE WITH SECTION 505 OF THE STANDARD SPECIFICATIONS (LATEST EDITION).

- 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.

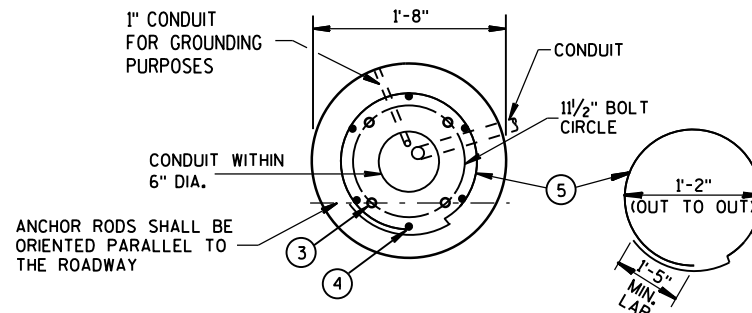


FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

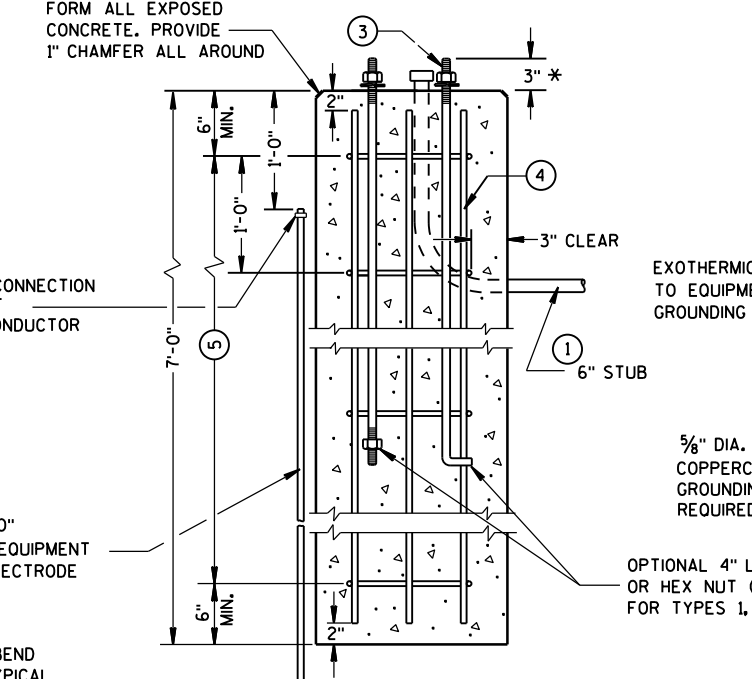
HALF SECTION IN UNPAVED AREA
(TYPICAL FOR TYPES 1, 2, 5, & 6)



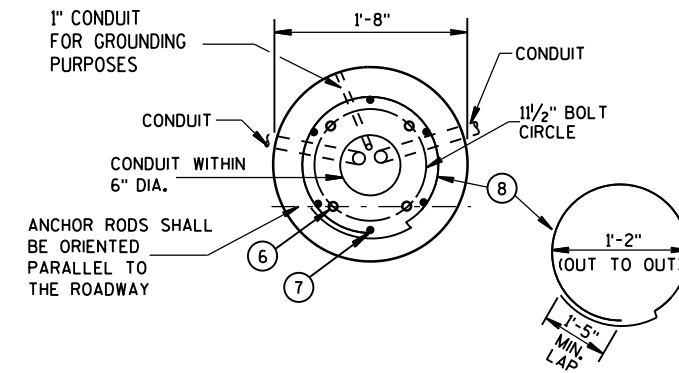
TYPE 1



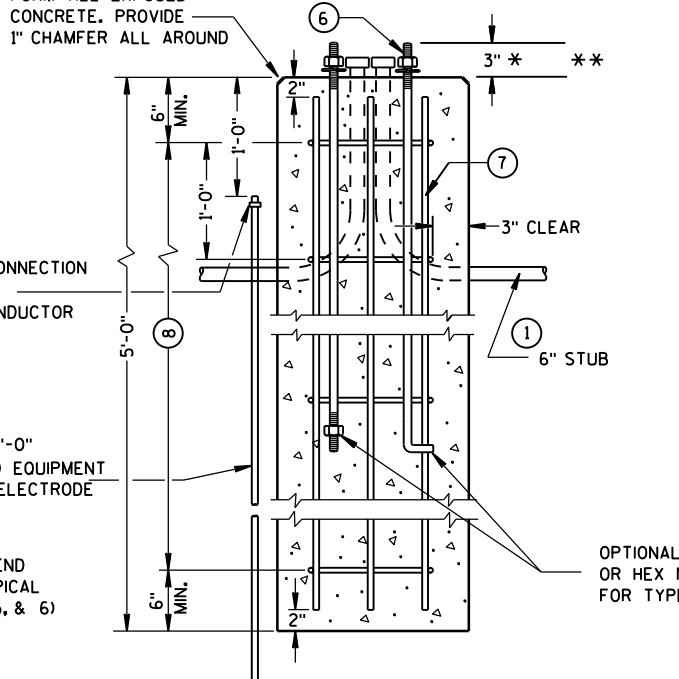
FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 2



FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 5 & 6

CONCRETE BASES

* ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/4" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTORS EXPENSE.

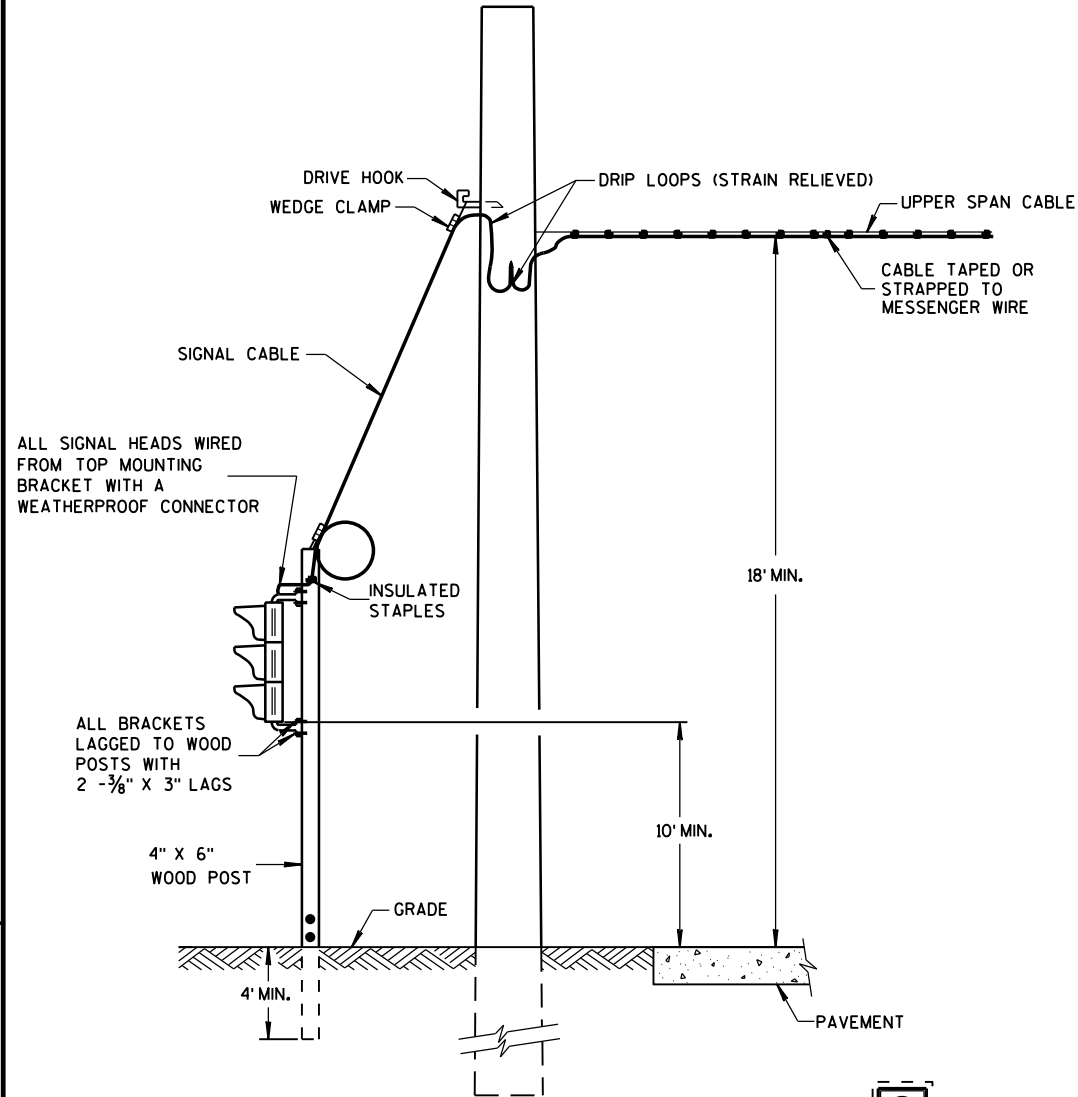
** FOR NONBREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

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

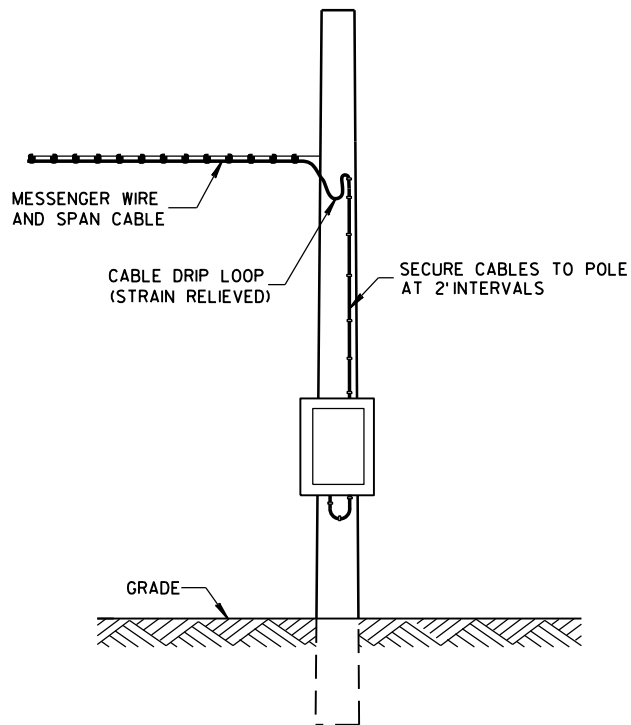
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2014 /S/ Ahmet Demirel
DATE STATE ELECTRICAL 98
FHWA

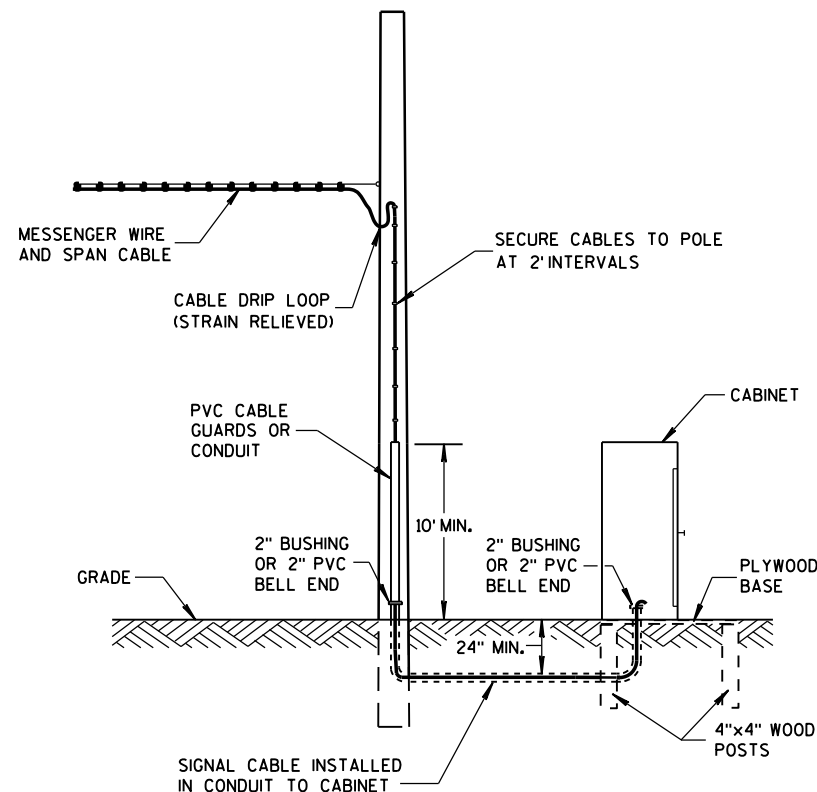
TYPICAL DROP TO TRAFFIC SIGNAL FACE



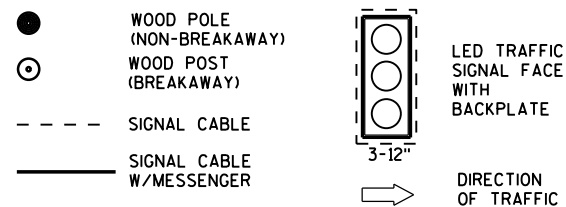
POLE MOUNT CABINET INSTALLATION



GROUND MOUNT CABINET INSTALLATION

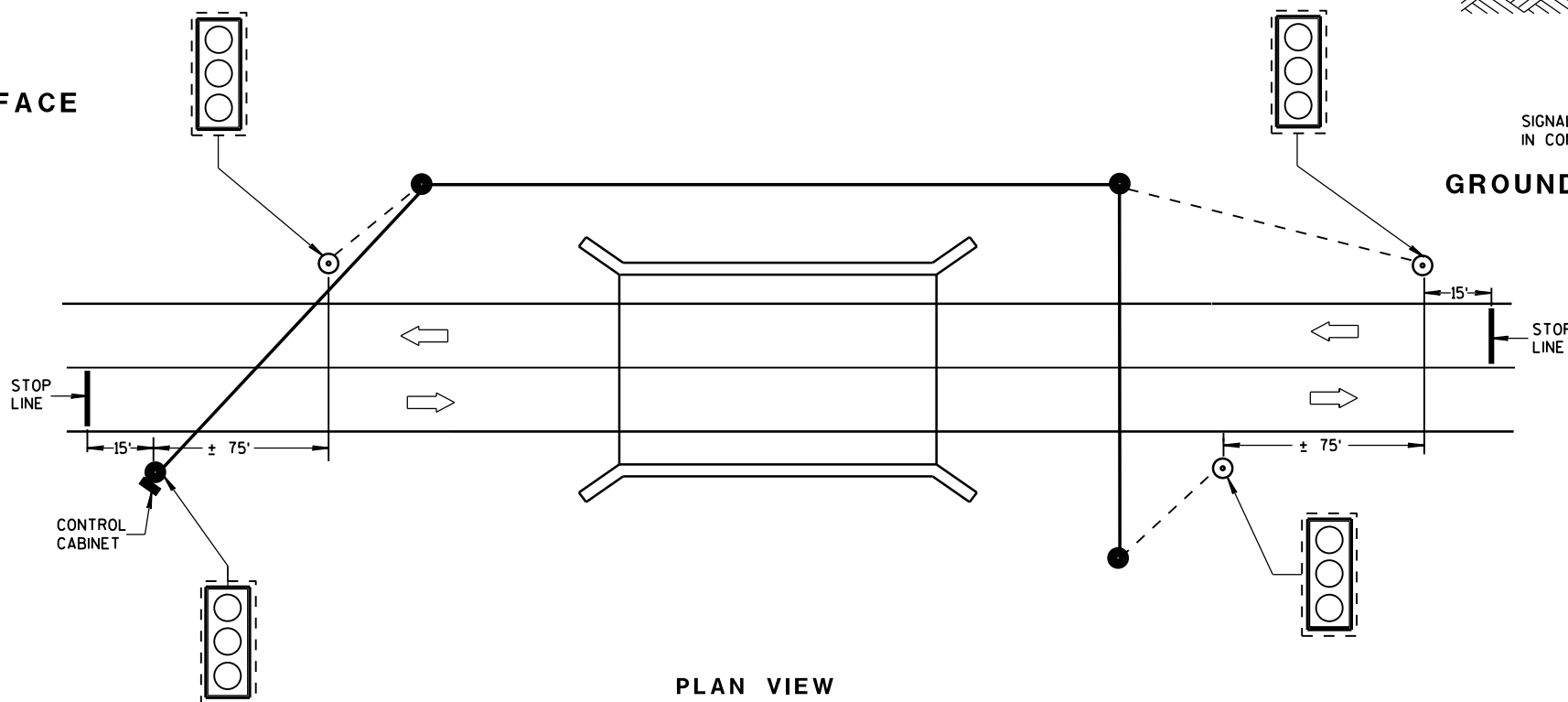


LEGEND



OFFSET DISTANCES FOR TEMPORARY NON-BREAKAWAY POLES	
SPEED LIMIT	OFFSET DISTANCE**
GREATER THAN 45 MPH	18 FT
45 MPH OR LESS	12 FT
45 MPH OR LESS W/ CURBS	2 FT
**NOTE: OFFSET MEASURED FROM OUTER EDGE OF OUTSIDE THRU LANE.	

MINIMUM POLE LENGTHS	CLASS	MINIMUM BURIAL DEPTHS
25 FEET	V	5 FEET
30 FEET	V	6 FEET
35 FEET	IV	7 FEET
40 FEET	IV	8 FEET
45 FEET	IV	9 FEET



**PLAN VIEW
TYPICAL BRIDGE TEMPORARY TRAFFIC SIGNAL LOCATION**

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE: Sept., 2016 /S/ Ahmet Demirbilek
STATE ELECTRICAL 99
FHWA

GENERAL NOTES

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

POLE MOUNTED TRAFFIC SIGNAL CONTROL CABINET MAYBE MOUNTED ON THE SERVICE POLE IF THE ELECTRICAL UTILITY ALLOWS THE INSTALLATION.

WHEN UTILITY POLES ARE USED TO SPAN THE TEMPORARY OVERHEAD CABLE, WRITTEN PERMISSION MUST BE OBTAINED FROM THE OWNER OF THE POLES AND GIVEN TO THE PROJECT MANAGER. ALL PERTINENT UTILITY AND CODE CLEARANCES SHALL BE MAINTAINED.

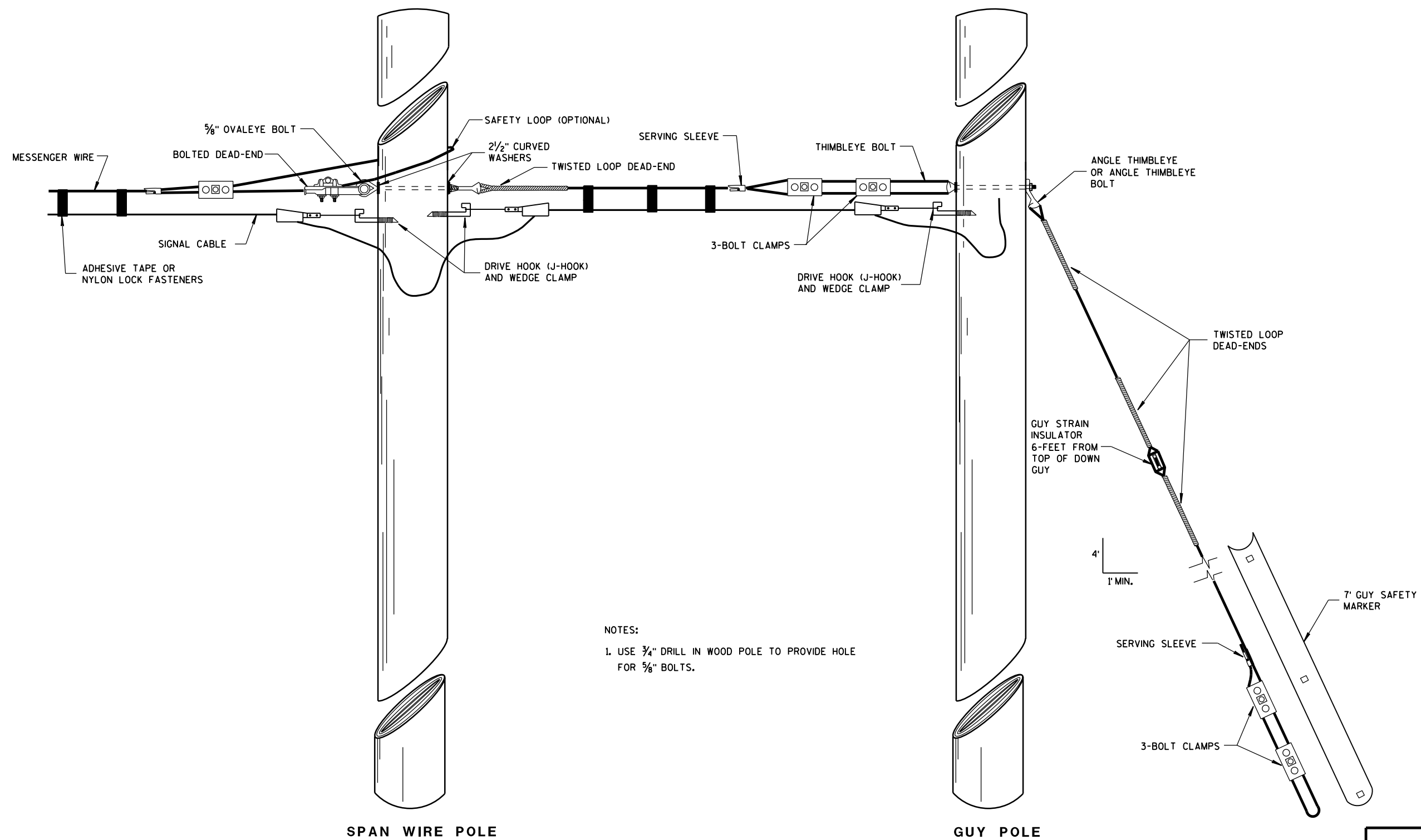
WOOD POLES (NONBREAKAWAY) SHALL BE NO CLOSER TO EDGE OF PAVEMENT THAN OFFSET DISTANCE CHART ALLOWS OR 4 FEET BEHIND PROTECTIVE BARRIER (BEAM GUARD, ETC.).

WOOD POSTS (BREAKAWAY) SHALL BE NO CLOSER THAN 2 FEET OUTSIDE OF SHOULDER.

VERTICAL CLEARANCE ETC. PER NEC.

TRAFFIC SIGNAL FACES SHALL BE TYPICALLY PLACED 12 FEET FROM EDGE OF PAVEMENT.

EACH TRAFFIC SIGNAL FACE SHALL HAVE A BACKPLATE.



NOTES:

1. USE 3/4" DRILL IN WOOD POLE TO PROVIDE HOLE FOR 5/8" BOLTS.

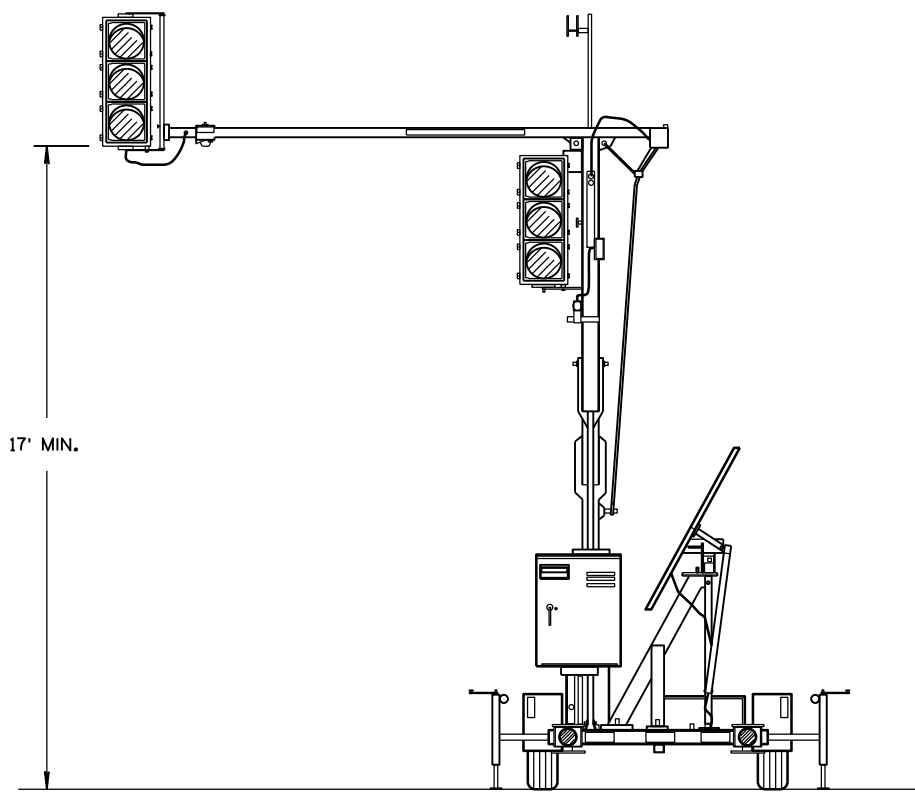
TYPICAL DEAD-ENDINGS OR GUYING

BRIDGE TEMPORARY
TRAFFIC SIGNAL INSTALLATIONSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept., 2016
DATE/S/ Ahmet Demirelek
STATE ELECTRICAL 100

FHWA

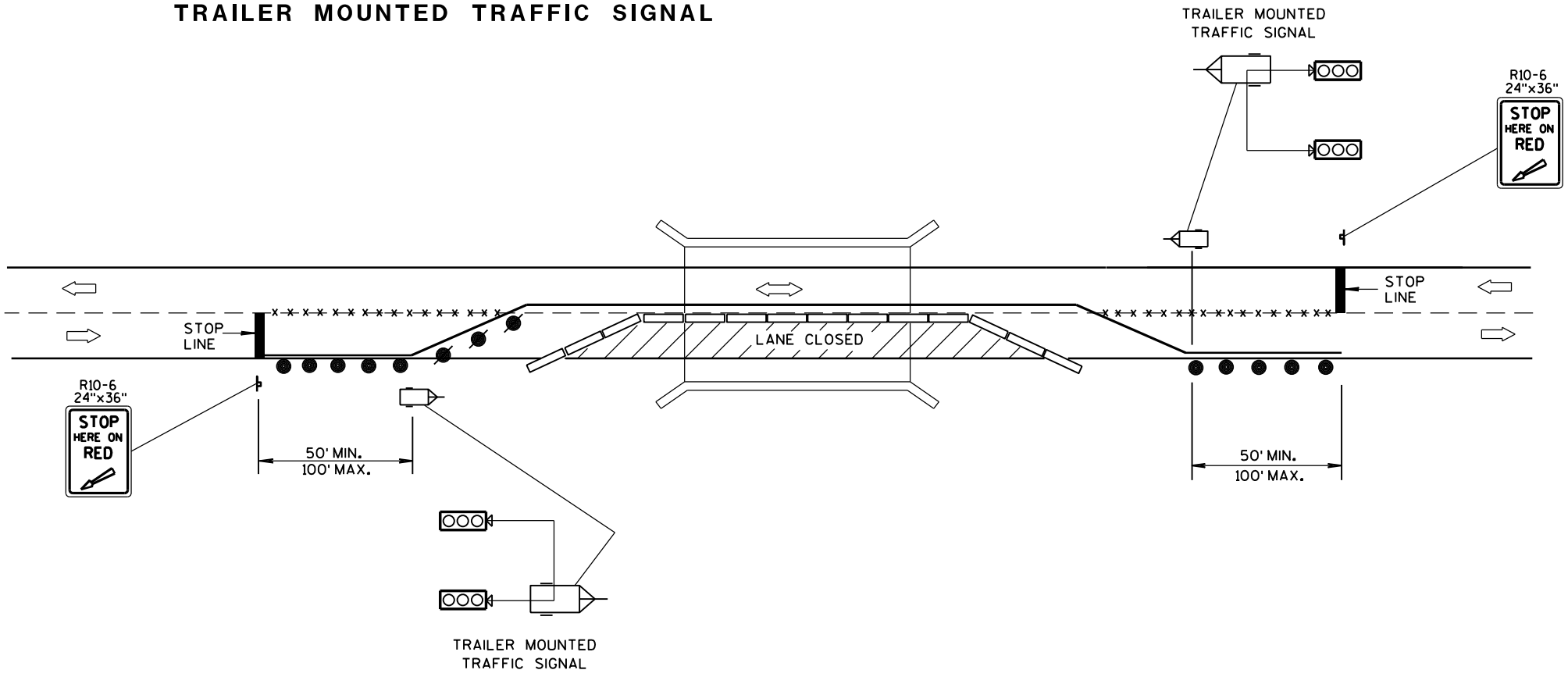


TRAILER MOUNTED TRAFFIC SIGNAL

GENERAL NOTES

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

SIGNING, PAVEMENT MARKING AND LANE CONTROL REQUIREMENTS SHALL CONFORM TO STANDARD DETAIL DRAWING 15 D 33.



TYPICAL TRAILER MOUNTED TRAFFIC SIGNAL LOCATION

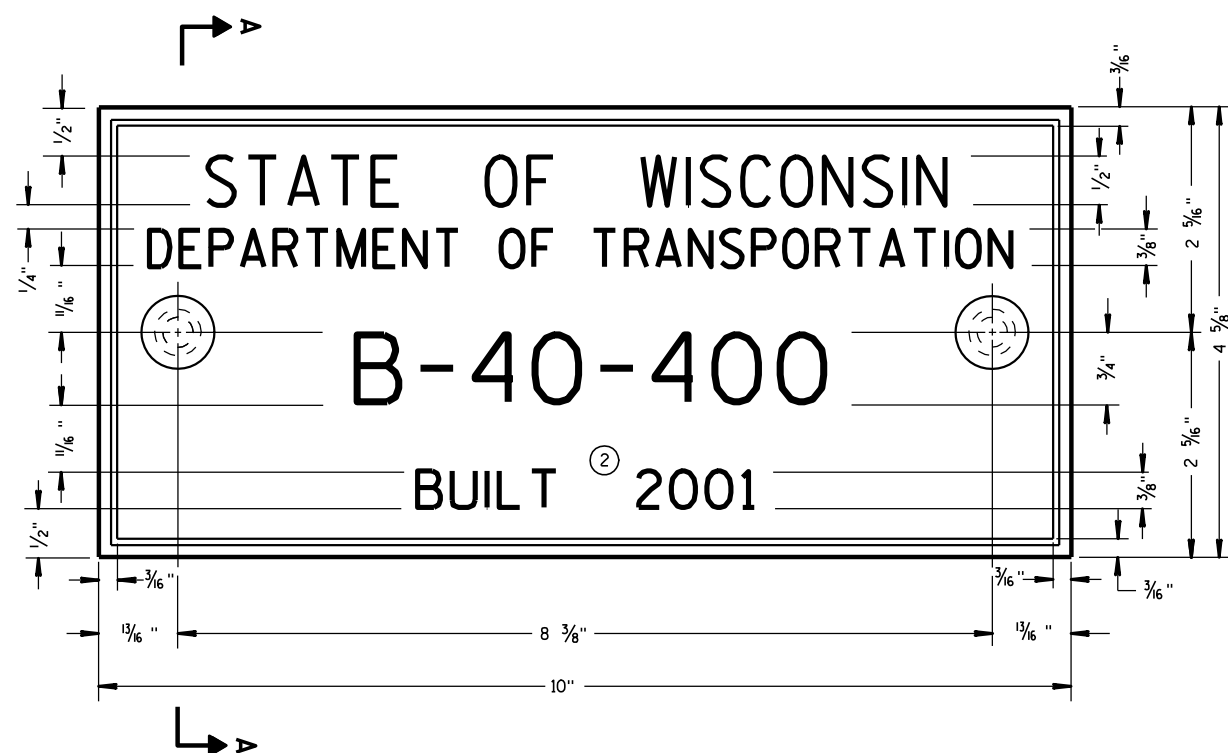
LEGEND

- POST MOUNTED SIGN
- REMOVING PAVEMENT MARKING
- DRUM WITH/WITHOUT WARNING LIGHT, TYPE C (STEADY-BURN)
- TEMPORARY PRECAST CONCRETE BARRIER
- TRAILER MOUNTED TRAFFIC SIGNAL
- DIRECTION OF TRAFFIC FLOW

BRIDGE TEMPORARY TRAFFIC SIGNAL INSTALLATION

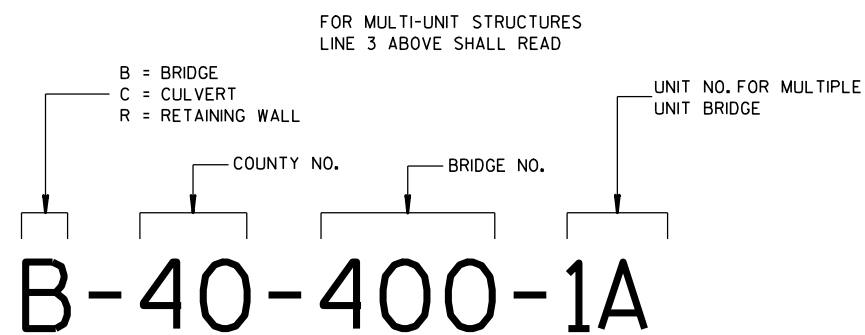
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE Sept., 2016 /S/ Ahmet Demirbilek
STATE ELECTRICAL 101
FHWA



TYPICAL NAME PLATE

(BRIDGES, CULVERTS, AND RETAINING WALLS)



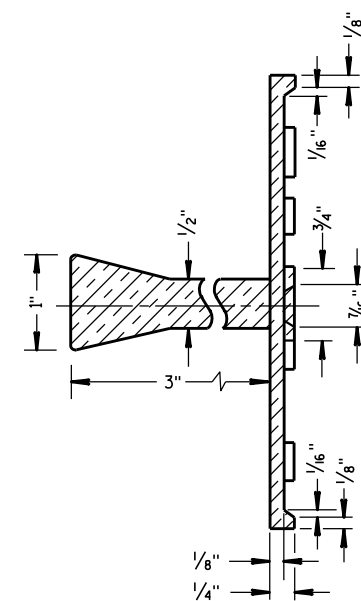
NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES

GENERAL NOTES

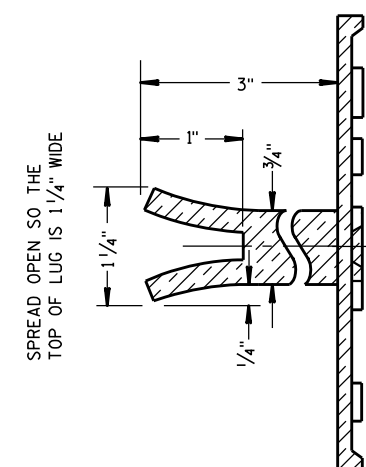
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

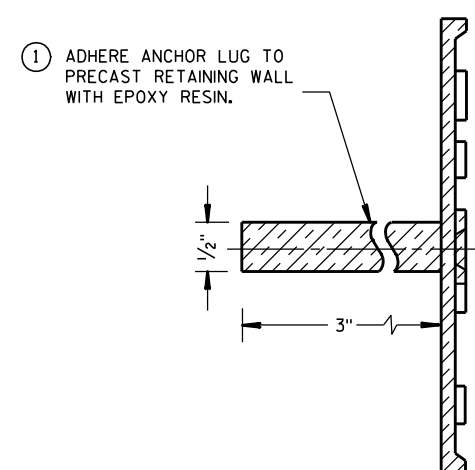
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A



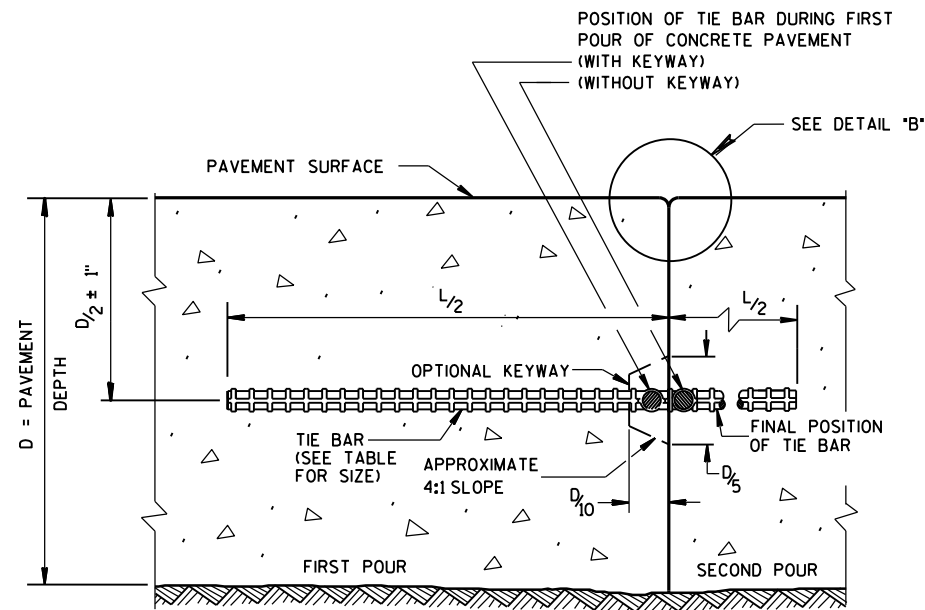
ALTERNATE LUG



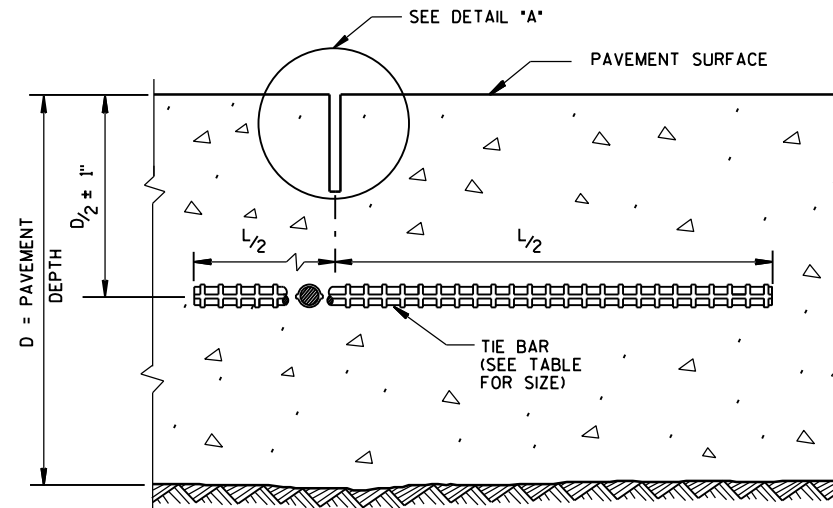
ALTERNATE LUG

(FOR ATTACHMENT TO PRECAST STRUCTURES)

NAME PLATE (STRUCTURES)	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED <u>3/26/10</u> DATE	<u>/S/ Scot Beck</u> CHIEF STRUCTURAL DEVELOPER 102



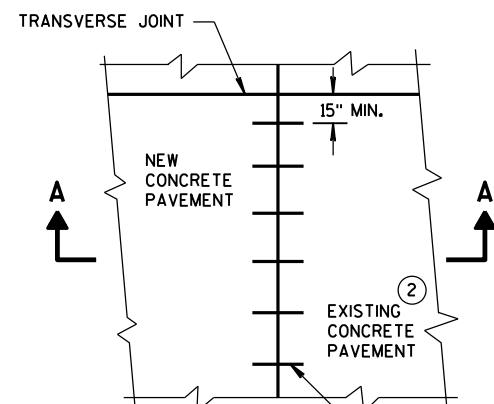
CONSTRUCTION JOINT



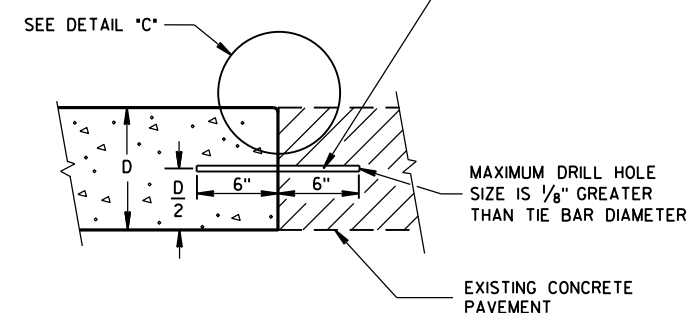
SAWED JOINT

GENERAL NOTES

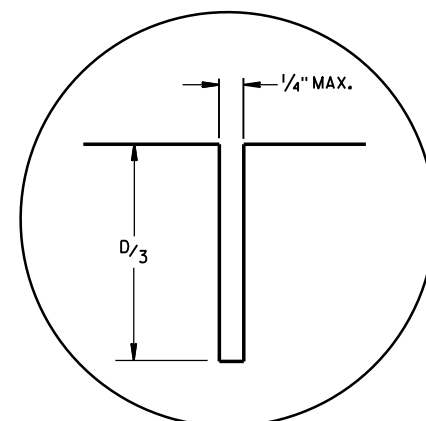
- DO NOT SEAL OR FILL LONGITUDINAL JOINTS.
- CREATE A LONGITUDINAL JOINT FOR PAVEMENT WIDTHS GREATER THAN 15 FEET.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.



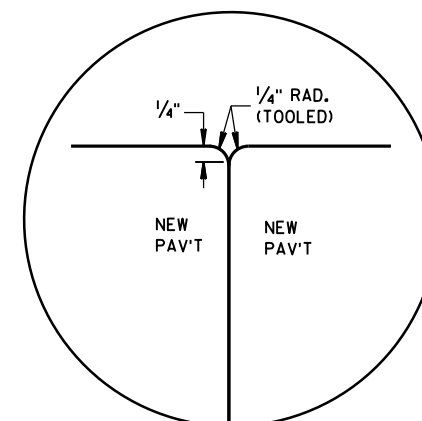
PLAN VIEW



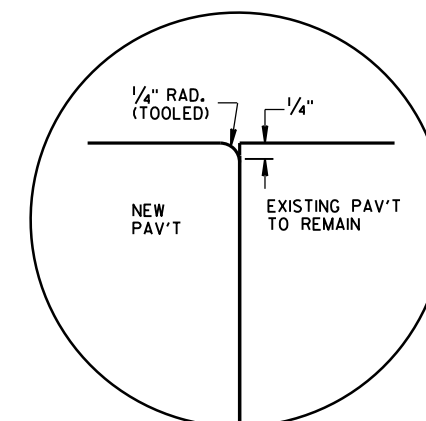
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"

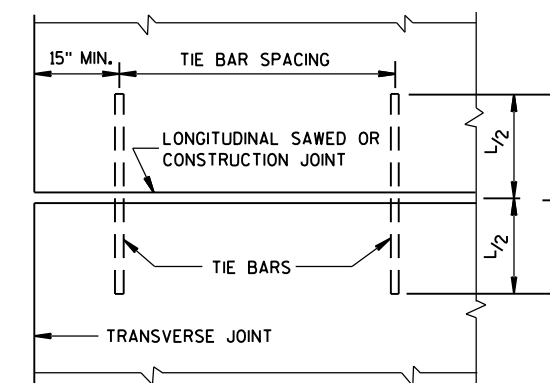


DETAIL "C"

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" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

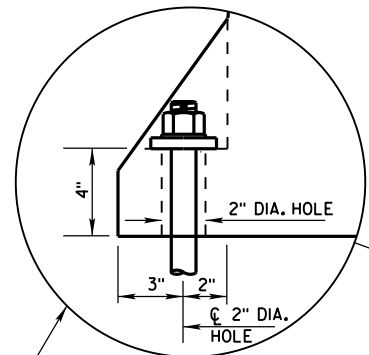


PLAN VIEW
SHOWING LOCATION OF TIE BARS

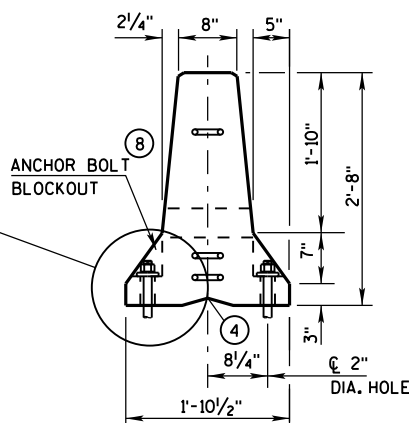
CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

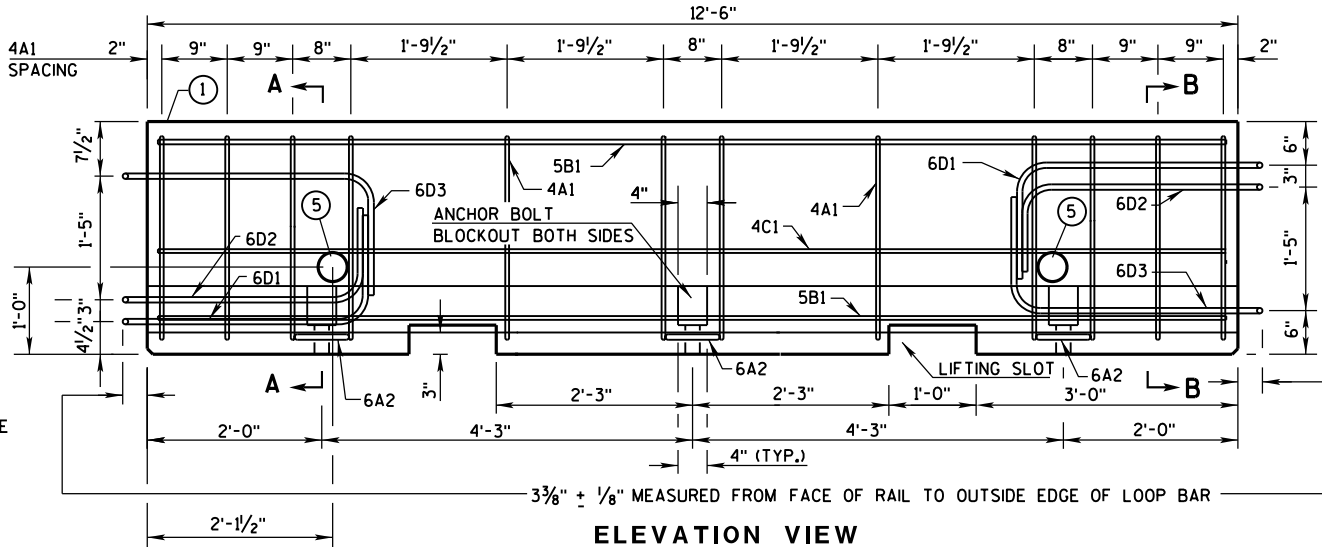
APPROVED
June, 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPER 103
FHWA



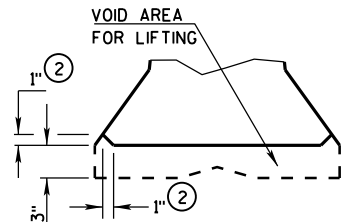
ANCHOR ON TRAFFIC SIDE
ONLY WHEN REQUIRED
(SEE SHEET D FOR ADDITIONAL
ANCHOR DETAIL)



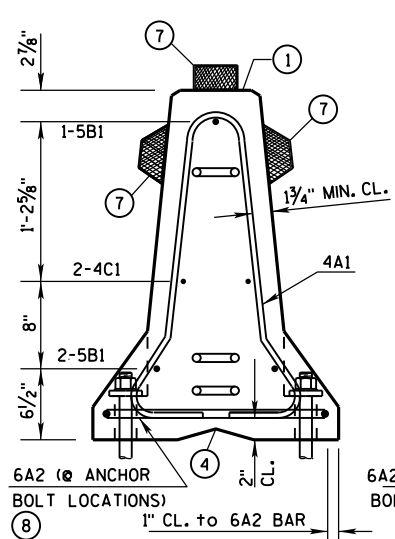
END VIEW



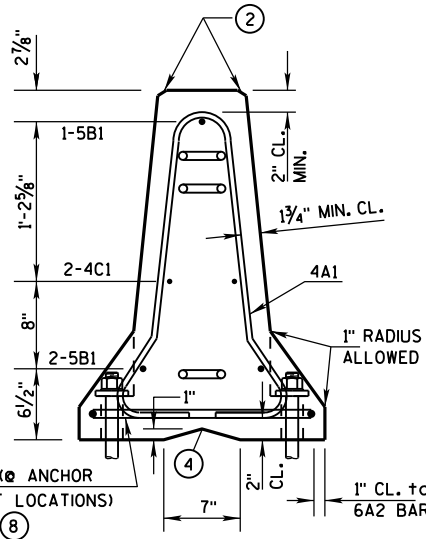
ELEVATION VIEW



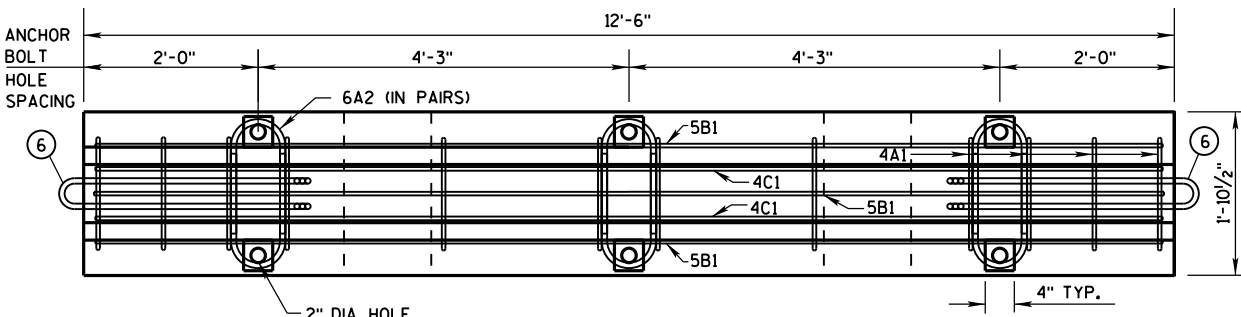
DETAIL "B"
LIFTING SLOT DETAIL



SECTION A-A
(STIRRUP PLACEMENT)

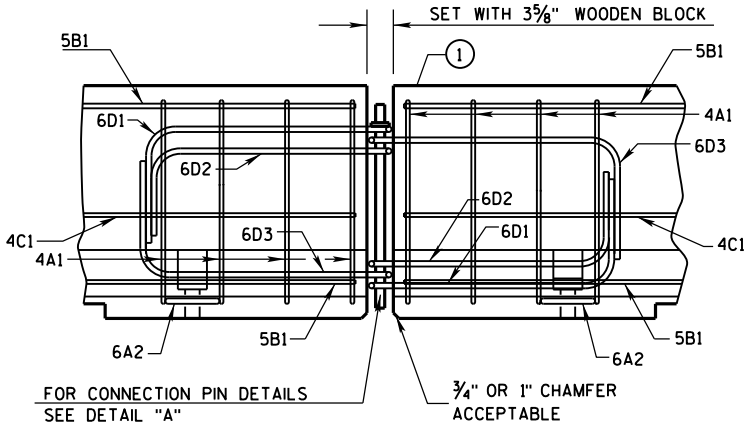


SECTION B-B
(STIRRUP PLACEMENT)

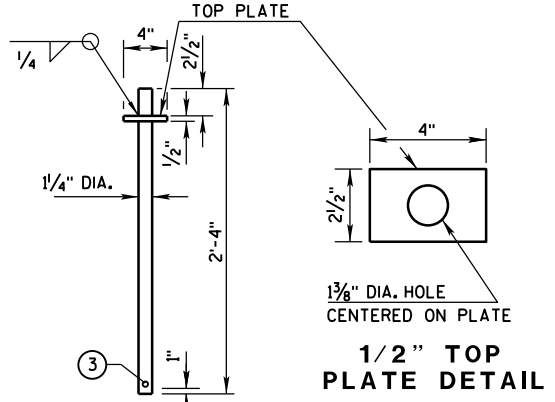


PLAN VIEW

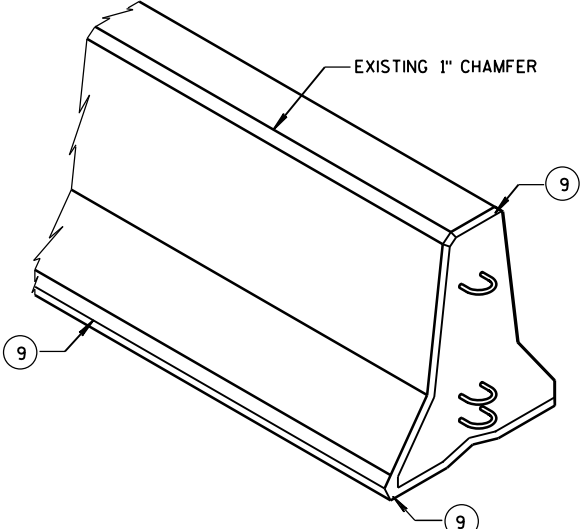
DETAILS OF BARRIER SECTION



DETAILS OF BARRIER CONNECTION



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



GENERAL NOTES

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

DO NOT INTERMIX CONCRETE BARRIER TEMPORARY PRECAST, 12'-6" (CBTP12.5) WITH OTHER TEMPORARY CONCRETE BARRIERS.

USE ASTM A-615, GRADE 60, DEFORMED STEEL BARS FOR BARS 4A1, 6A2, 5B1 AND 4C1 IN THE BARRIER SECTION AND FOR 4V1, 4V2, 4V3, 4V4, 4V5, 4V6, 4F1, 4F2 AND 5F3 IN THE BARRIER TAPER SECTION.

LOOP BARS 6D1, 6D2 AND 6D3 SHALL BE 3/4" SMOOTH STEEL BARS WITH A MINIMUM YIELD STRENGTH OF 60 KSI, A TENSILE STRENGTH OF NOT LESS THAN 1.25 TIMES THE YIELD STRENGTH BUT A MINIMUM OF 80 KSI, A MINIMUM 14% ELONGATION IN 8 INCHES AND PASSING A 180 DEGREE BEND TEST USING A 3-1/2" PIN BEND DIAMETER FOR BEND TESTS. THE LOOPS SHALL BE INSTALLED WITHIN 1/8" OF THE PLAN DIMENSION.

CONSTRUCT LIFTING SLOTS AS SPECIFIED ON THE PLANS TO FACILITATE THE DRAINAGE OF WATER AFTER INSTALLATION.

PLACE BARRIER ON A PAVED SURFACE. REMOVE ALL LOOSE DIRT AND SAND FROM THE ROADWAY SURFACE PRIOR TO PLACEMENT OF THE BARRIER.

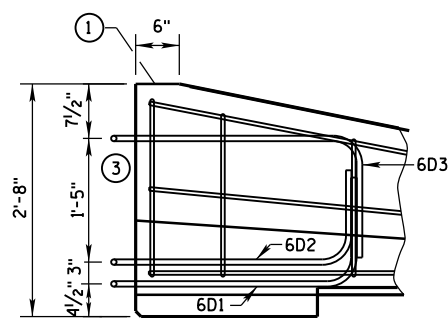
INSTALL MECHANICAL OR ADHESIVE ANCHORS PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE MANUFACTURER'S INFORMATION TO PROJECT ENGINEER.

- MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
a. TYPE: WICBTP
b. MANUFACTURER
c. DATE MANUFACTURED (MONTH AND YEAR)
- 1" CHAMFER TO PREVENT SPALLING.
- A 3/8" HOLE IN THE CONNECTION PIN, AT THE LOCATION SHOWN, IS ACCEPTABLE, BUT NOT REQUIRED..
- "V" NOTCH IS OPTIONAL.
- THE 4" DIAMETER, 11 GAUGE STEEL, ROUND MECHANICAL TUBING SLEEVE FOR LIFTING (OPTIONAL).
- NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.
- USE DELINEATORS CONFORMING TO SECTION 633 OF THE STANDARD SPECIFICATIONS. CONTRACTOR MAY USE ALTERNATE SHAPES AND HOUSING. INSTALL DELINEATORS ACCORDING TO MANUFACTURES INSTRUCTION. INSTALL YELLOW REFLECTORS WHEN BARRIER IS LOCATED TO THE LEFT OF TRAFFIC AND WHITE REFLECTORS WHEN BARRIER IS LOCATED TO THE RIGHT OF TRAFFIC. SPACE DELINEATORS A MAXIMUM OF 25 FEET APART. PROVIDE TOP MOUNTED DELINEATORS IN ADDITION TO THE SIDE MOUNTED DELINEATORS ON ALL BARRIER INSTALLATIONS LOCATED ON A CURVED ALIGNMENT LONGER THAN 200 FEET AND ON BARRIERS USED TO SEPARATE OPPOSING TRAFFIC.
- SEE SHEET D FOR HOW TO ANCHOR BARRIER. SEE SHEET E FOR WHEN TO ANCHOR BARRIER.
- 1" CHAMFER OPTIONAL.

f'c = 4,000 psi

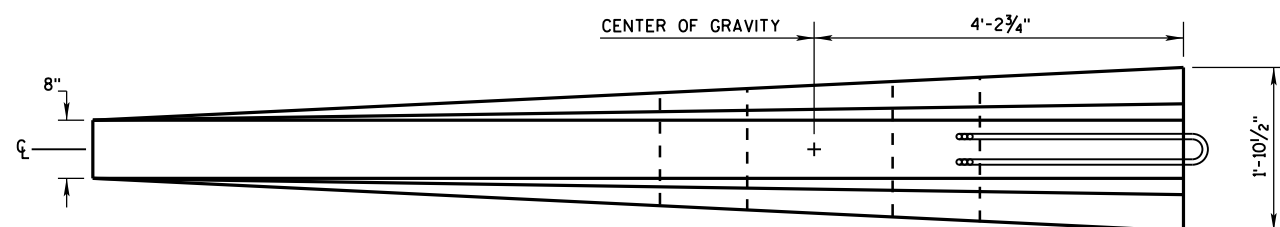
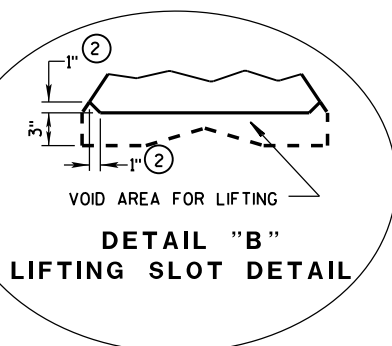
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

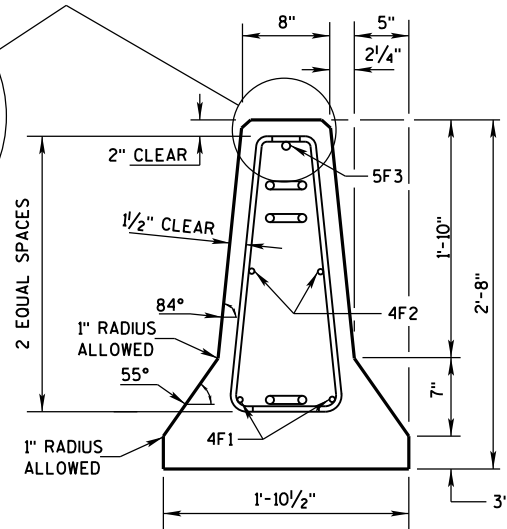


- ① MARK ONE END OF EACH BARRIER PERMANENTLY BY FORMING INTO THE BARRIER THE FOLLOWING INFORMATION:
 - a. TYPE WICBTP
 - b. MANUFACTURER
 - c. DATE MANUFACTURED (MONTH AND YEAR)
- ② 1" CHAMFER TO PREVENT SPALLING.
- ③ NEVER USE LOOP BARS (6D1, 6D2 OR 6D3) TO LIFT, MOVE OR REPOSITION THE BARRIER.

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



**CHAMFER
DETAIL**



The diagram illustrates two scenarios for barrier placement on a curve. The top scenario, labeled "BARRIER ON CURVE", shows a barrier segment following the curve of a road. Key dimensions include a "10'± OFFSET" from the road centerline, a "5°± MAX." angle between the barrier and the road edge, and two "12'-6"" segments along the road edge. The bottom scenario, labeled "FLARE AT BARRIER END", shows a barrier segment flaring out at the end of a road. It includes a "12'-6"" dimension for the flare length and an "END SECTION" label pointing to the barrier's termination point.

POSTED SPEED, (MPH)	FLARE RATE
40 OR LESS	6:1
45 OR GREATER	8:1

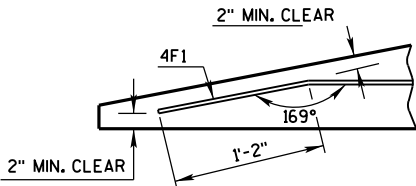
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 105

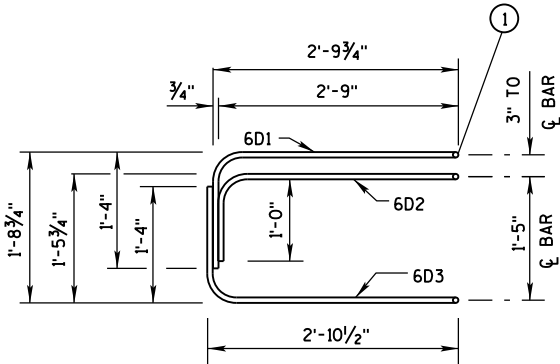
BARRIER TAPER SECTION
BILL OF MATERIALS

(PER 12'-6" BARRIER TAPER SECTION)

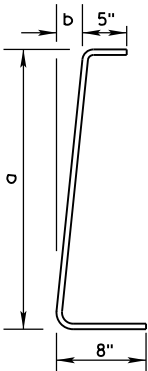
BAR	BAR SIZE	NO. OF BARS	LENGTH FT.
4V1	4	2	1'-11"
4V2	4	2	2'-2"
4V3	4	2	2'-6"
4V4	4	2	2'-9"
4V5	4	2	3'-2"
4V6	4	2	3'-4"
4F1	4	2	12'-0"
4F2	4	2	7'-6"
5F3	5	1	11'-9"
LOOP ASSEMBLY			
6D1	6	1	8'-5"
6D2	6	1	7'-7"
6D3	6	1	8'-6"



DETAIL "C"
BENT BAR DETAIL



ELEVATION
LOOP BAR ASSEMBLY



4V BARS
2 AT EACH SIZE REQUIRED
FOR STIRRUP ASSEMBLY

BAR	a	b
V1	10"	1"
V2	1'-1"	1 1/4"
V3	1'-5"	1 5/8"
V4	1'-8"	1 7/8"
V5	2'-0 1/2"	2 3/8"
V6	2'-3"	2 3/4"

TAPER BARRIER SECTION

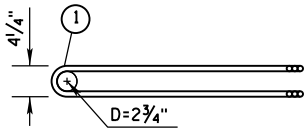
GENERAL NOTES

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

BARRIER SECTION
BILL OF MATERIALS

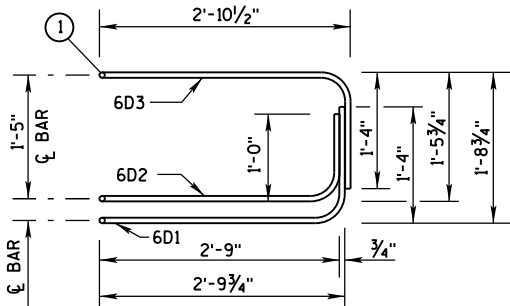
(PER 12'-6" BARRIER SECTION)

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

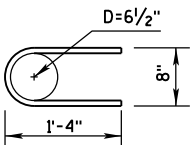


PLAN VIEW
LOOP BAR ASSEMBLY

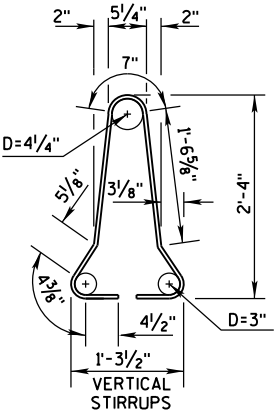
(MARKED END SHOWN, INVERT FOR OTHER END)



ELEVATION VIEW



6A2

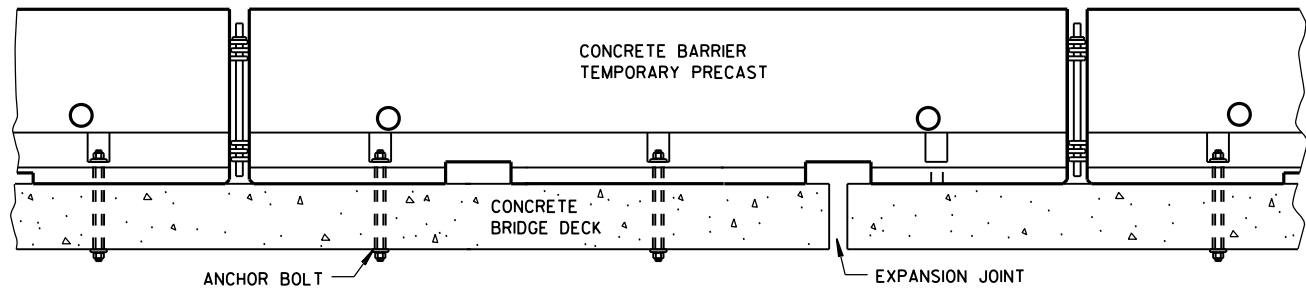
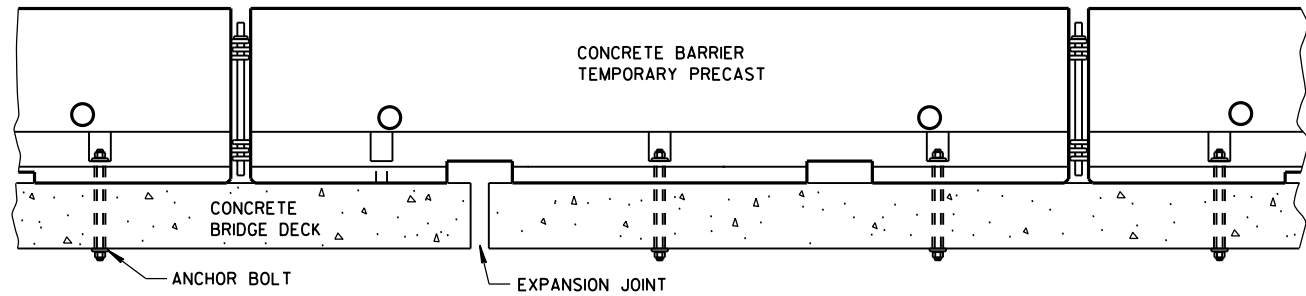


4A1

BARRIER SECTION

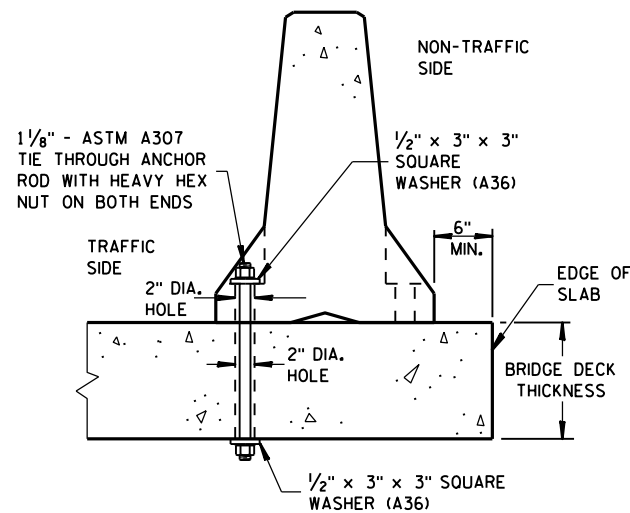
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 106



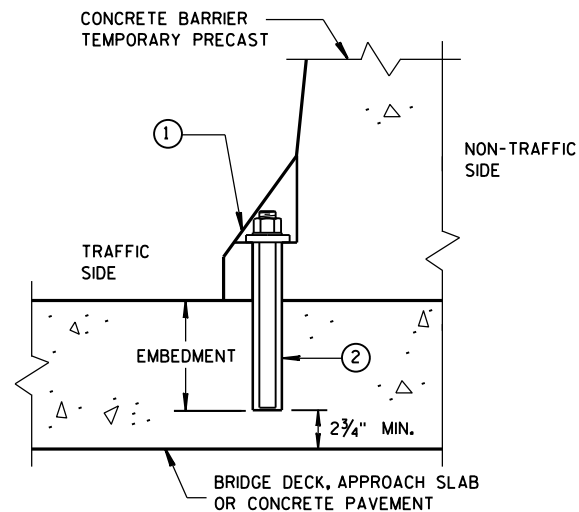
TREATMENT AT BRIDGE DECK EXPANSION JOINTS

(NO SINGLE CONCRETE BARRIER SECTION SHALL BE ANCHORED TO BOTH THE BRIDGE DECK AND THE APPROACH SLAB. ALL ANCHOR BOLT LOCATIONS SHALL BE ANCHORED TO THE DECK IN ACCORDANCE WITH THE DETAIL. NO MORE THAN ONE ANCHOR BOLT SHALL BE ELIMINATED FROM A BARRIER SECTION WHEN SPANNING AN EXPANSION JOINT.)



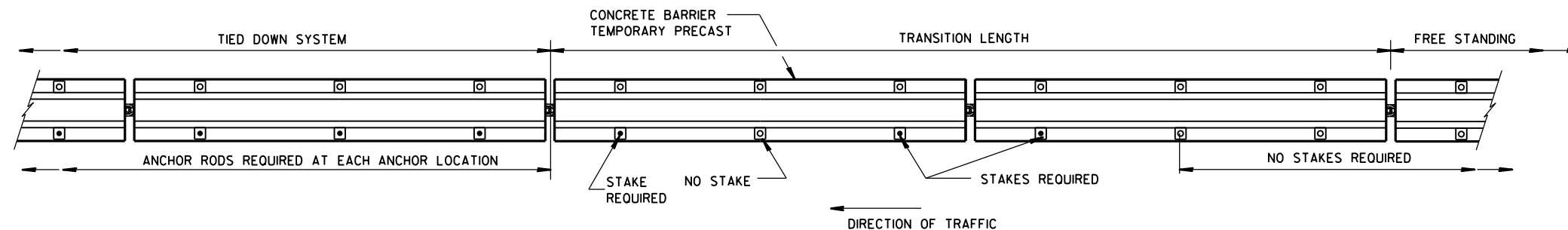
THROUGH BOLTED ANCHOR INSTALLATION ON BRIDGE DECK

(DO NOT USE ON CONCRETE BRIDGE DECK WITH ASPHALT OVERLAY)



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

(DO NOT USE ON CONCRETE WITH AN ASPHALTIC OVERLAY)



PLAN VIEW

FREE STANDING TRANSITION TO TIED-DOWN SYSTEM

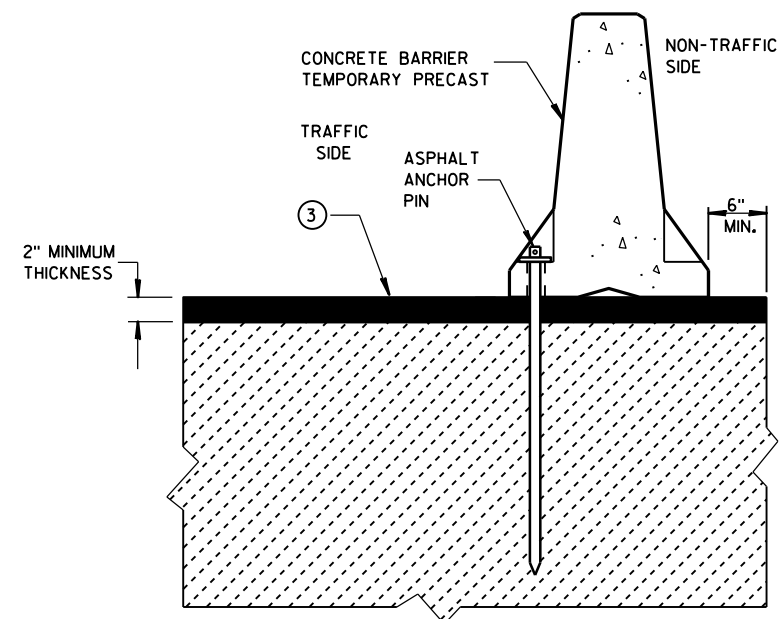
(PLACE TRANSITION IN A TANGENT SECTION OF BARRIER PARALLEL TO THE ROADWAY. IF TRANSITION OCCURS ON STRUCTURAL SLAB, ANCHOR AS SHOWN.)

GENERAL NOTES

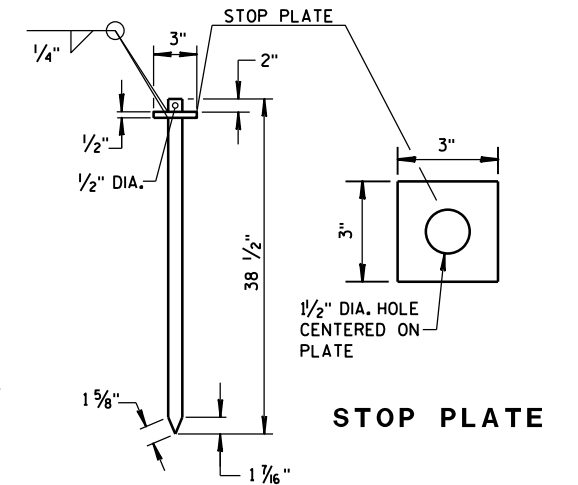
SEE SHEET E FOR WHEN TO ANCHOR. OTHER PARTS OF THE PLAN MAY SHOW ADDITIONAL LOCATIONS REQUIRING ANCHORING.

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

- ① 1/8" DIAMETER A307 THREADED ROD, 1/2" X 3" X 3" SQUARE PLATE WASHER WITH ASTM A36 STEEL, ASTM A563A HEAVY HEX NUT.
- ② ADHESIVE ANCHORS WITH A MINIMUM BOND STRENGTH OF 1,800 PSI AND 5/4" EMBEDMENT. SEE 603.2 AND 603.3.12 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR MORE INFORMATION ON ADHESIVE ANCHORS.
- ③ ASPHALT SURFACE SHOWN. CONTRACTOR MAY DRILL THROUGH CONCRETE PAVEMENT AND THEN DRIVE ASPHALT ANCHOR PIN.



STAKE DOWN INSTALLATION FOR ASPHALTIC SURFACE

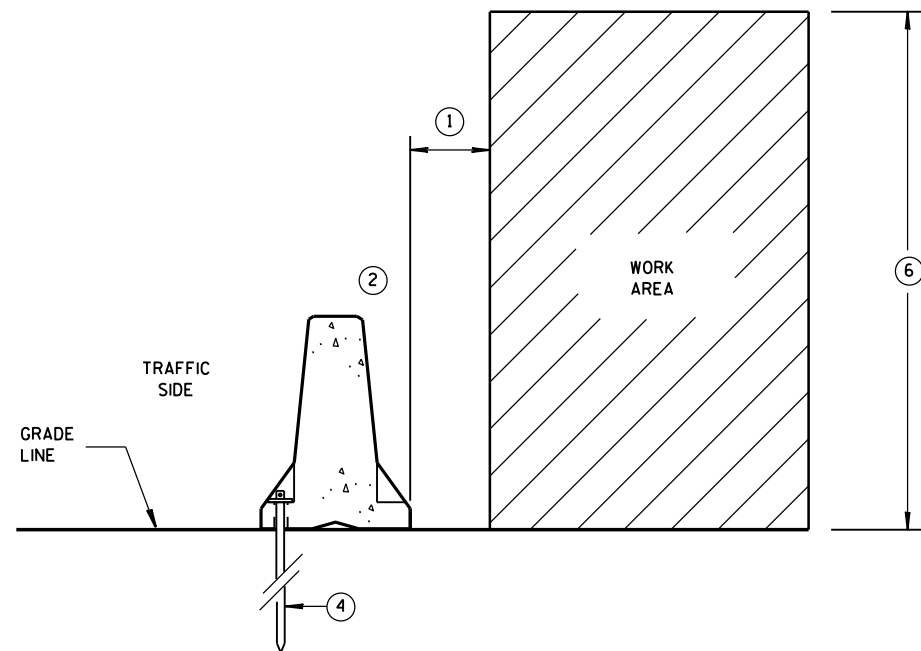


ASPHALT ANCHOR PIN

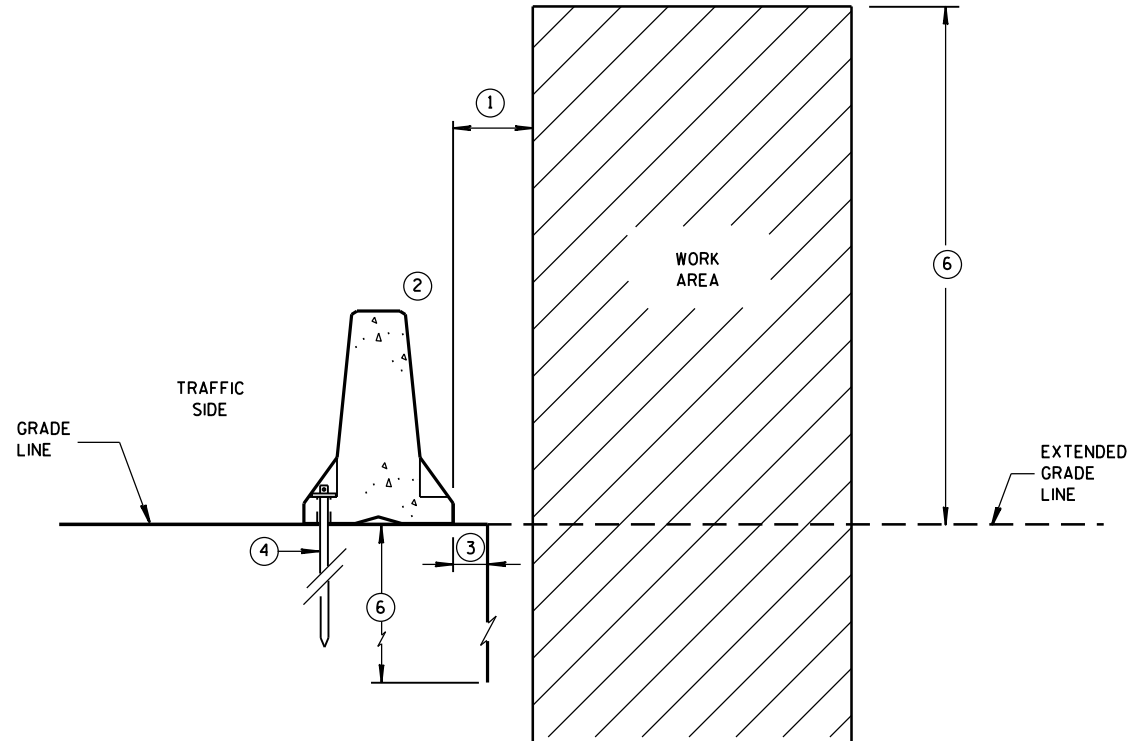
(ASTM A36 STEEL)

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 107



**ANCHORED BARRIER SPACE REQUIREMENTS
FOR HAZARDS EXTENDED
ABOVE THE GRADE LINE**

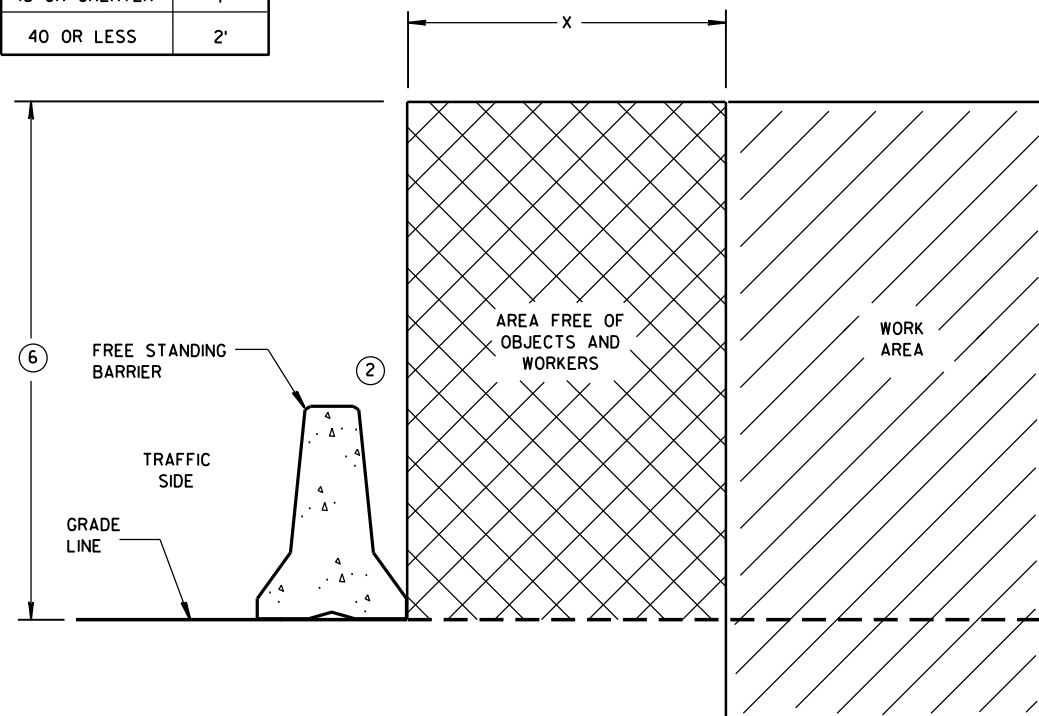


**ANCHORED BARRIER SPACE REQUIREMENTS
ON VERTICAL DROP OFFS**

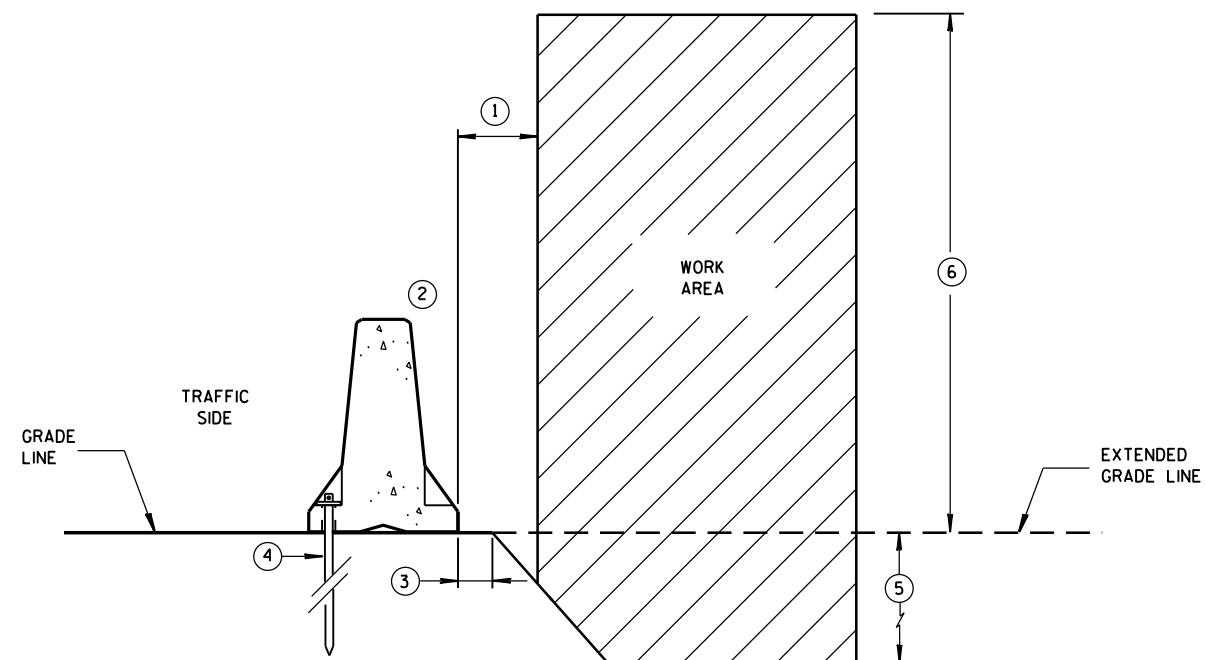
GENERAL NOTES

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

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



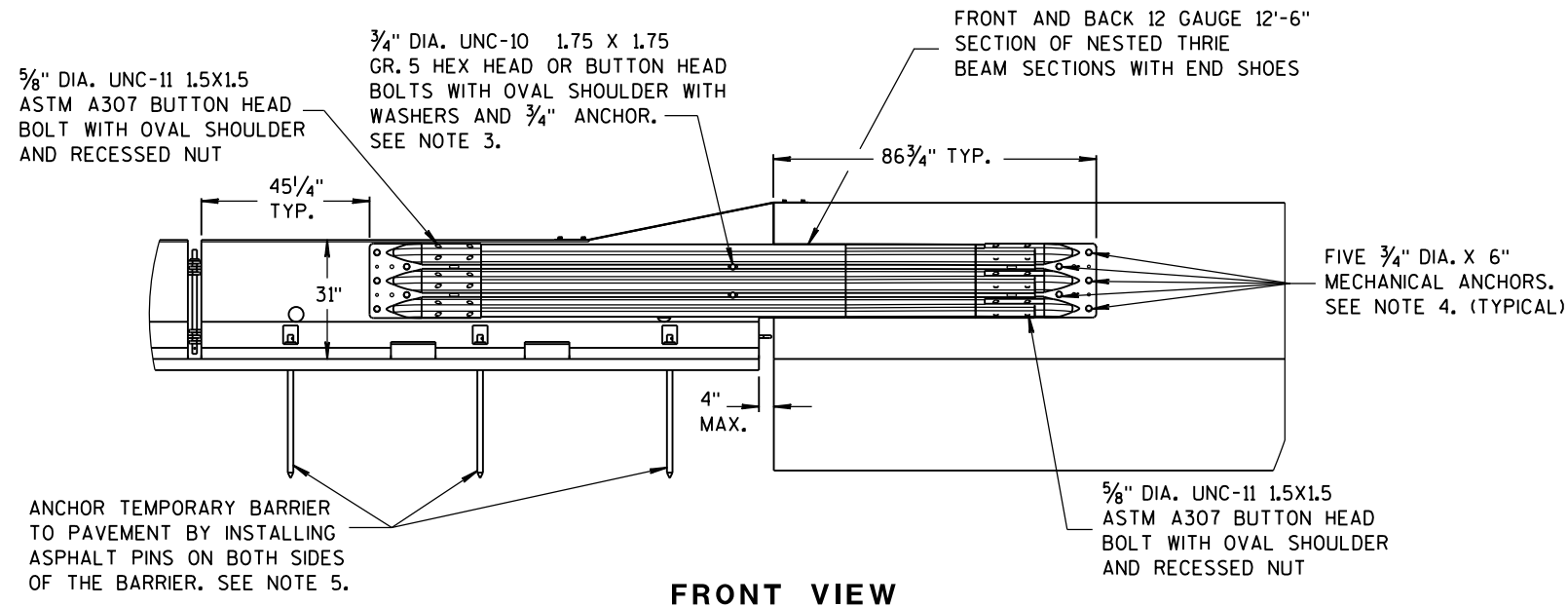
FREE STANDING BARRIER SPACE REQUIREMENTS



**ANCHORED BARRIER SPACE REQUIREMENTS
ON SLOPES**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 108



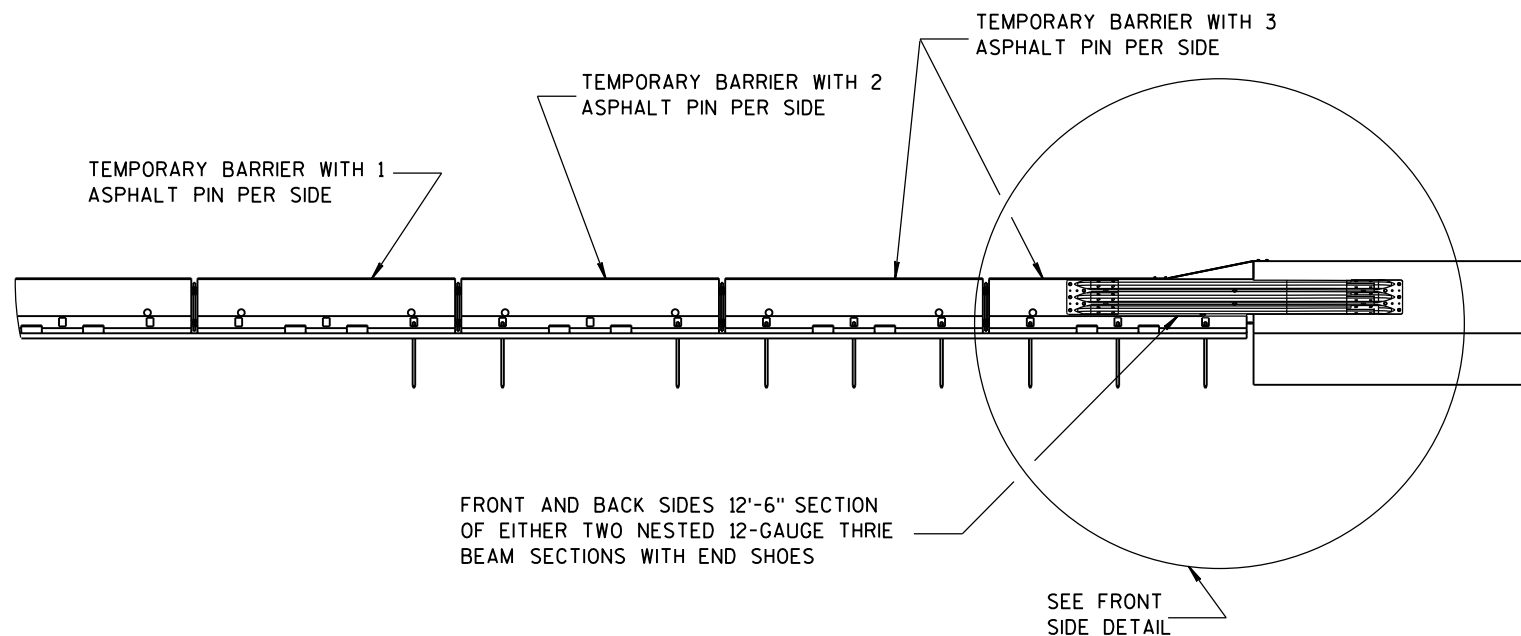
FRONT VIEW

NOTES

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

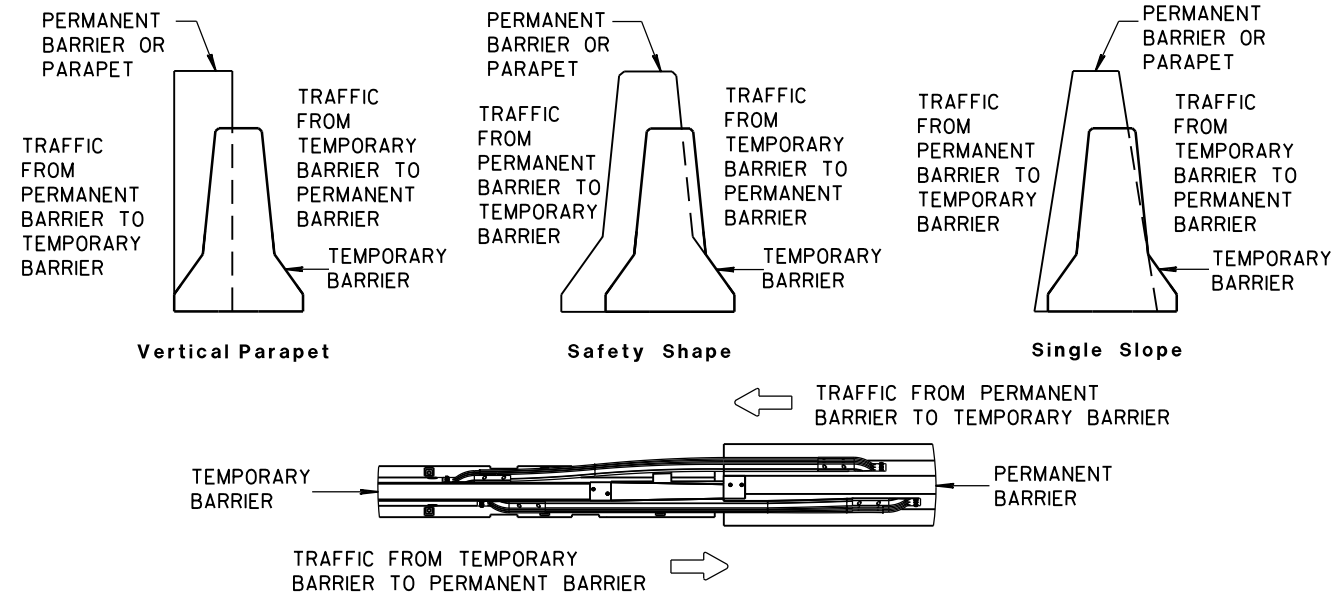
1. CAP END PLATE PLACED FLUSH WITH UPSTREAM END OF PERMANENT BARRIER OR PARAPET.
2. THRIE BEAM PIECES ARE OFFSET 15 1/4" TO PREVENT INTERFERENCE FROM THE ANCHORS ON OPPOSING SIDES.
3. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 9.48 KIPS AND ULTIMATE SHEAR LOAD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

4. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 17.9 KIPS AND ULTIMATE SHEAR LOAD 21.96 KIPS.
5. MAY BE USED ON CONCRETE OR ASPHALT PAVEMENTS. ASPHALT OPTION SHOWN. FOR CONCRETE OPTION SEE OTHER DETAILS.
6. MINIMUM MECHANICAL OR ADHESIVE ANCHOR STRENGTH REQUIREMENTS: ULTIMATE TENSILE LOAD 12.14 KIPS AND ULTIMATE SHEAR LOAD 17.5 KIPS.

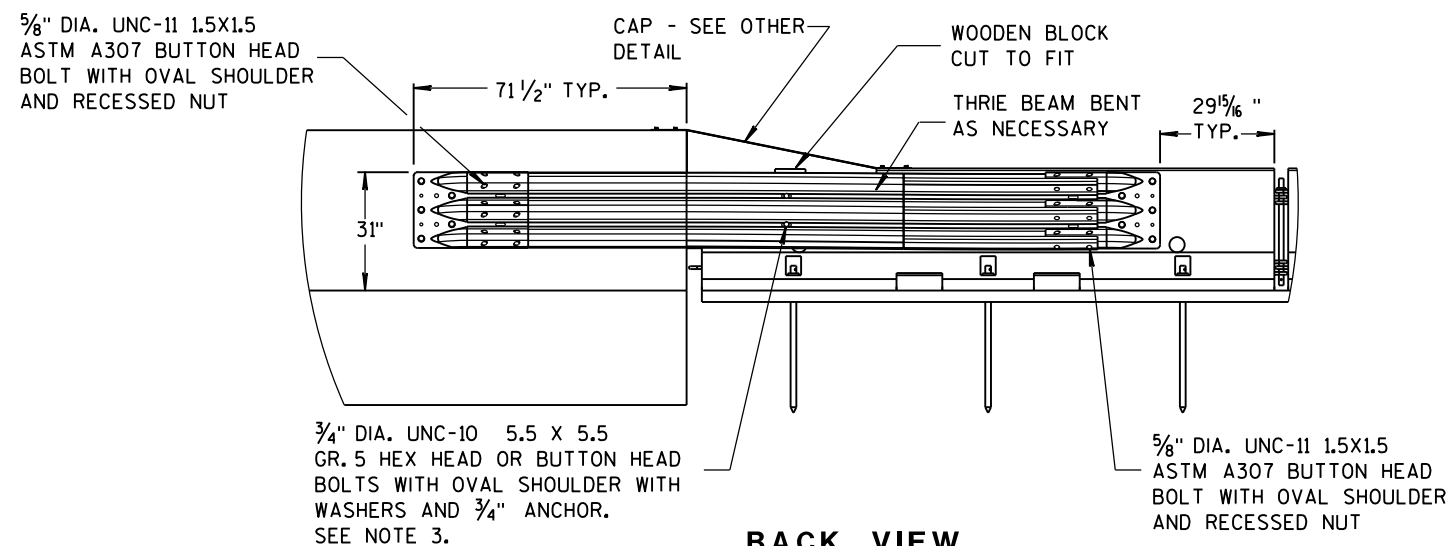


FRONT VIEW

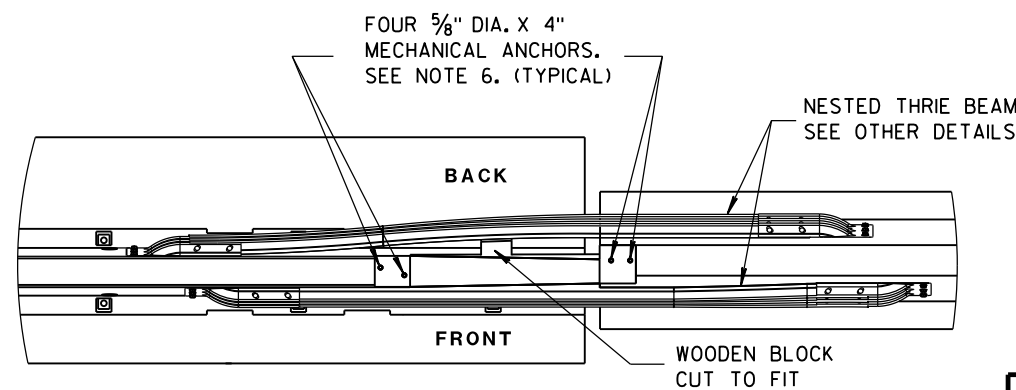
BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM



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



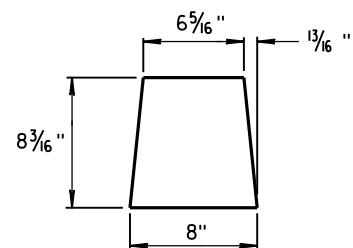
BACK VIEW



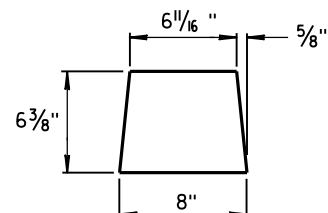
PLAN VIEW

CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

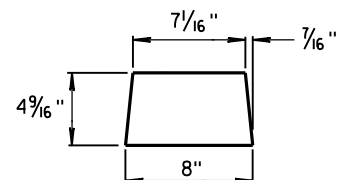
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 109



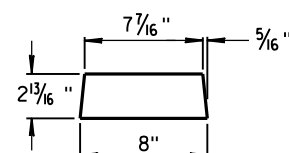
GUSSET 1



GUSSET 2

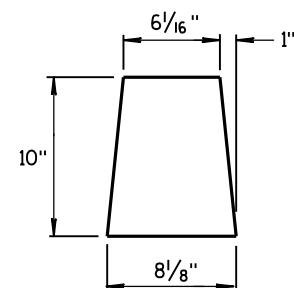


GUSSET 3

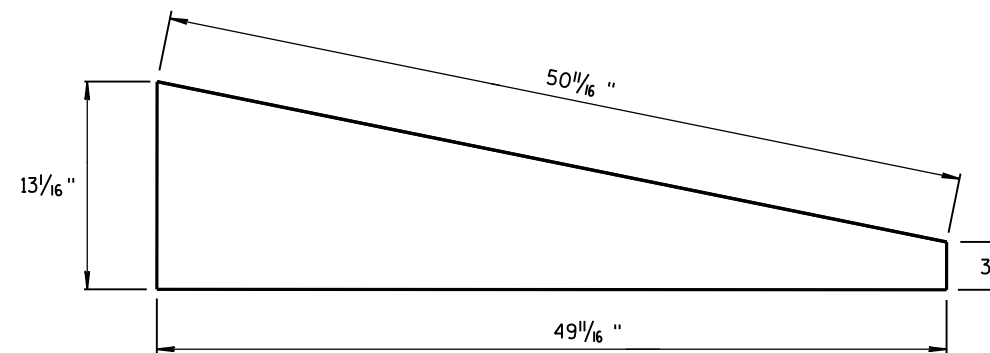


GUSSET 4

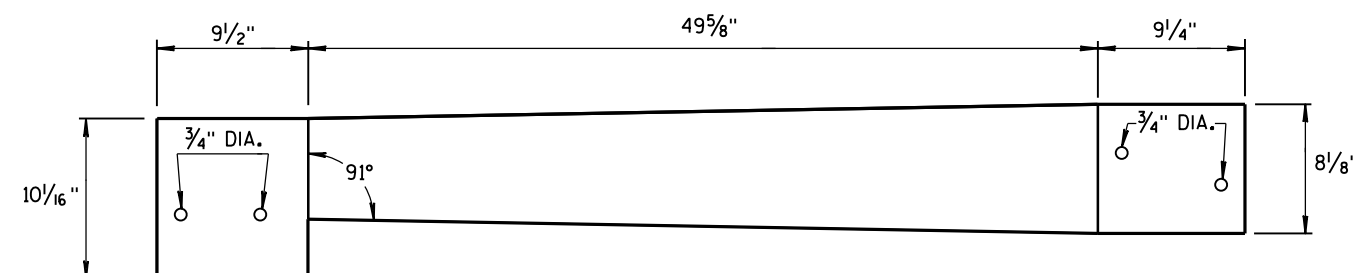
GUSSETS



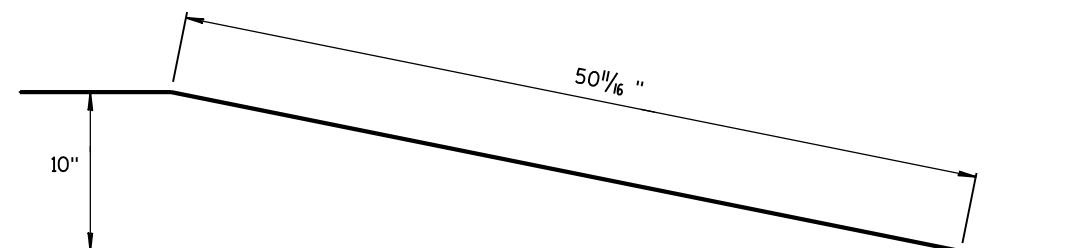
END PLATE



SIDE PLATE

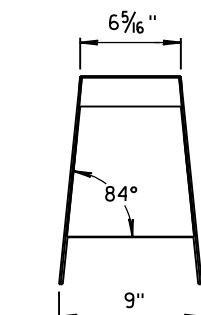
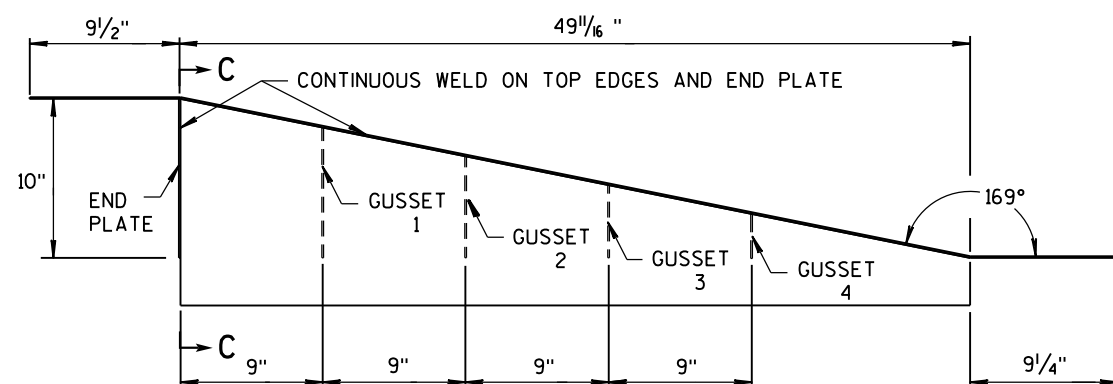
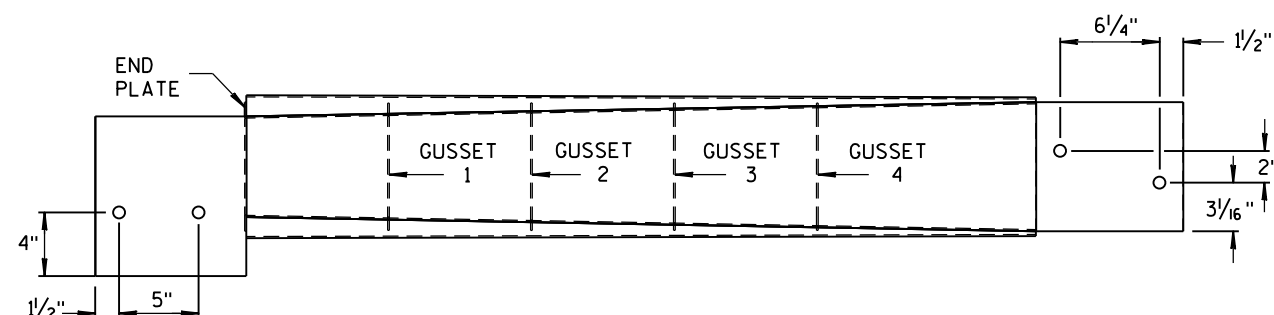


TOP PLATE



**SIDE, TOP AND END PLATES FOR CAP
FROM TEMPORARY CONCRETE BARRIER
TO 42" PERMANENT CONCRETE BARRIER**

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 GALVANIZED STEEL.



SECTION C-C

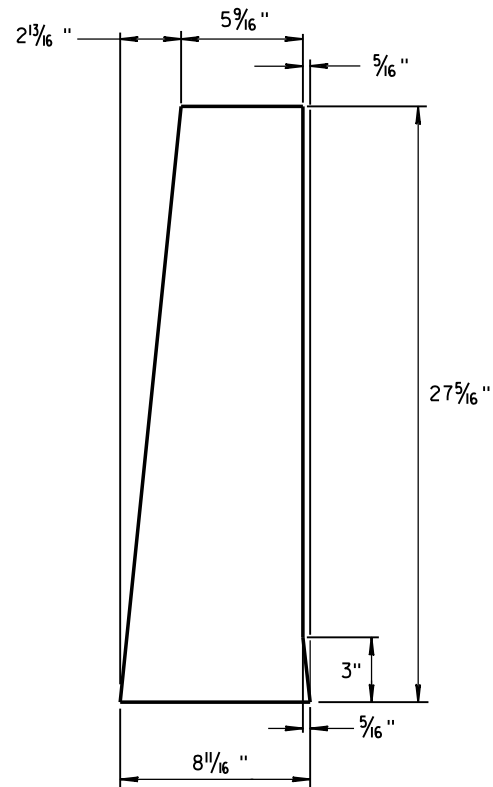
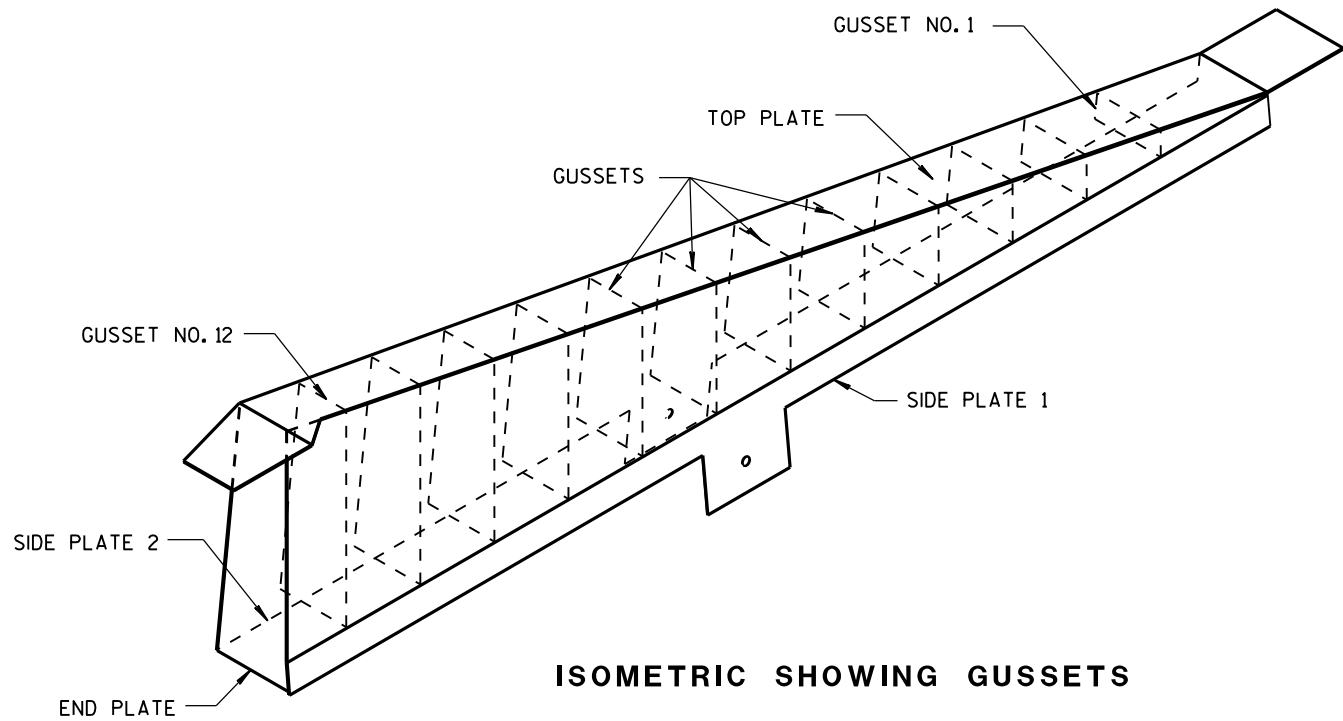
NOTES

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

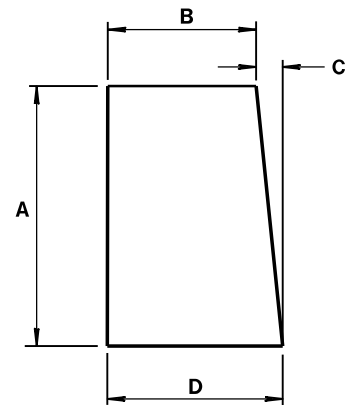
**CAP DETAILS FOR TEMPORARY CONCRETE
BARRIER TO 42" PERMANENT CONCRETE BARRIER**

**CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 110



END PLATE
1/8" STEEL PLATE

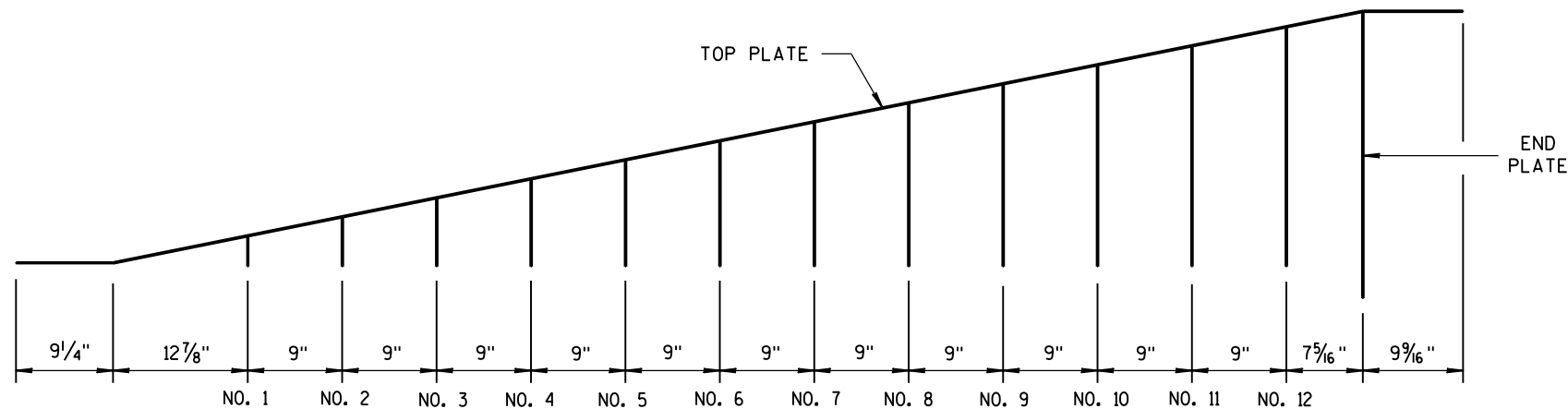


GUSSETS 1 - 12
ALL GUSSETS 1/8" STEEL PLATE

GUSSET DIMENSIONS				
GUSSET NO.	A	B	C	D
1	2 7/8"	7 3/4"	1/4"	8
2	4 1/16 "	7 9/16 "	1/2"	8
3	6 1/2"	7 3/8 "	1 1/16 "	8 1/16 "
4	8 5/16 "	7 3/16 "	7/8"	8 1/16 "
5	10 1/8 "	7"	1 1/16 "	8 1/16 "
6	11 5/16 "	6 13/16 "	1 1/4"	8 1/16 "
7	13 3/4"	6 5/8 "	1 7/16 "	8 1/16 "
8	15 9/16 "	6 7/16 "	1 9/16 "	8 1/16 "
9	17 3/8"	6 1/4"	1 13/16 "	8 1/16 "
10	19 3/16 "	6 1/16 "	1 15/16 "	8 1/16 "
11	21"	5 7/8 "	2 3/16 "	8 1/16 "
12	22 13/16 "	5 11/16 "	2 5/16 "	8 1/16 "

SIDE PLATES, TOP PLATE, END PLATE AND GUSSETS ARE 12 GAUGE ASTM A36 STEEL AND GALVANIZED.

GUSSETS AND END PLATE ARE STITCH WELDED ON 3 SIDES. TWO TRIANGULAR SIDE PLATES ARE STITCH WELDED TO TOP PLATE, END PLATE AND GUSSETS.

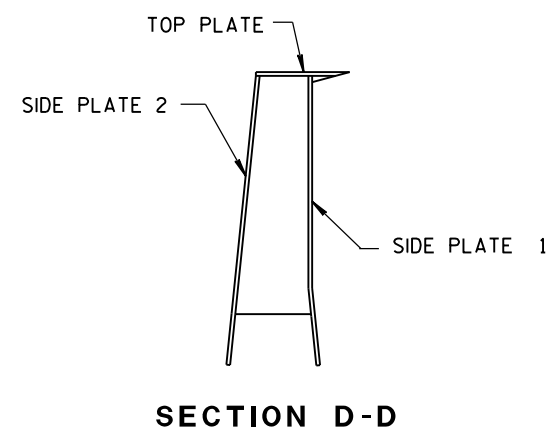
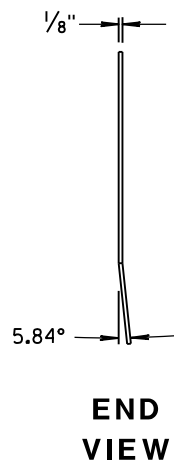
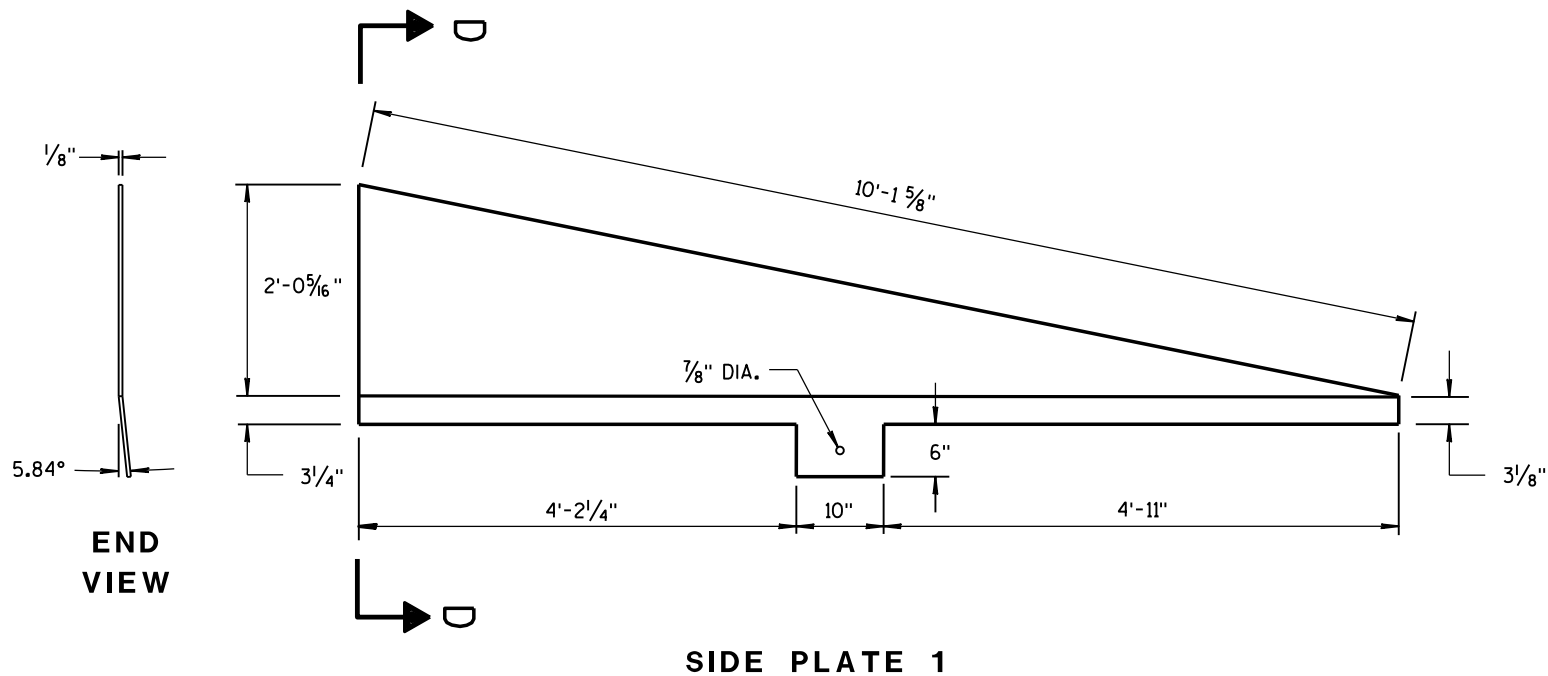
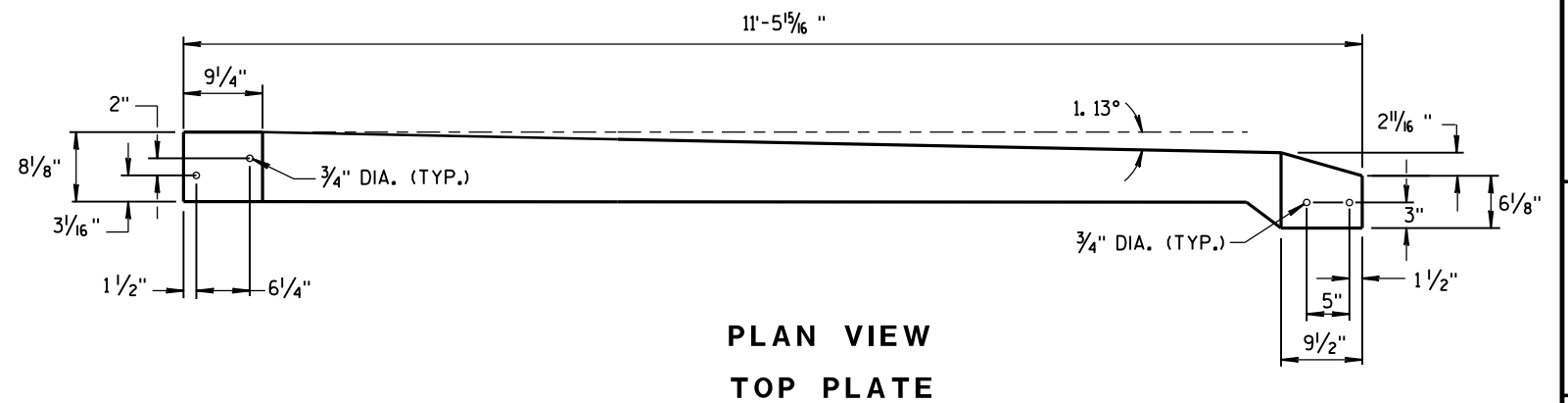
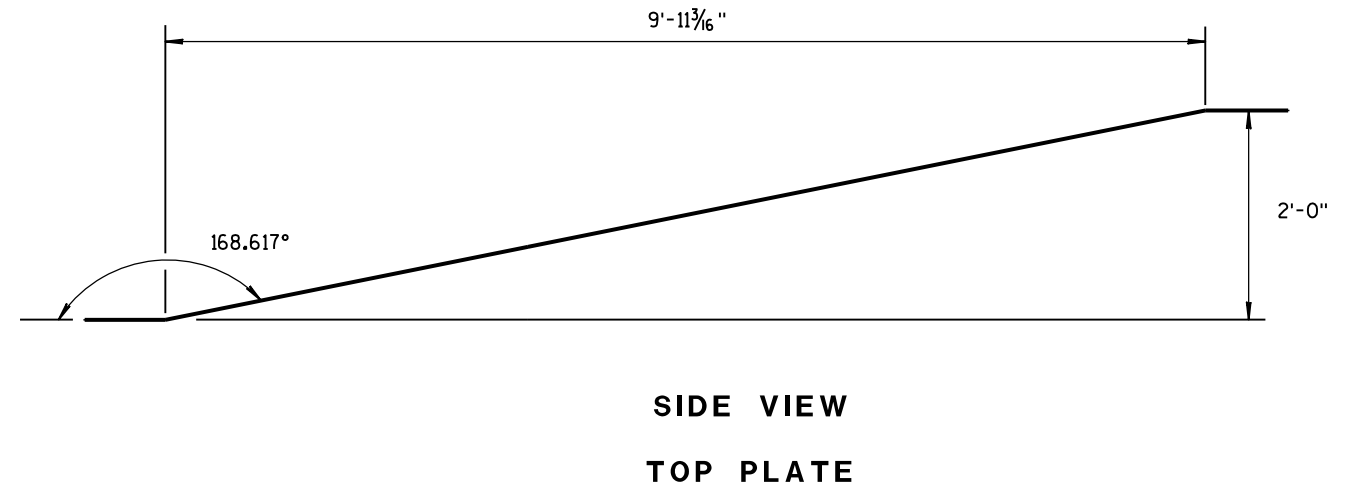
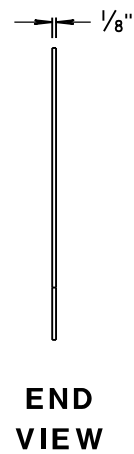
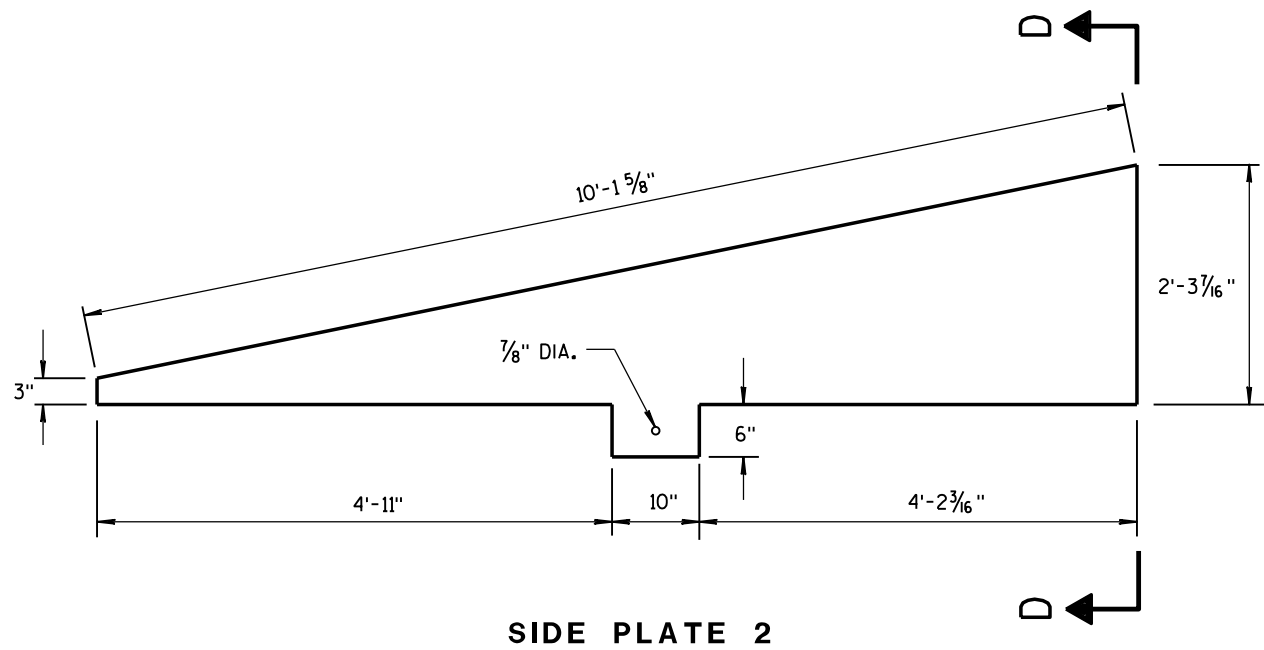


GUSSET LOCATION

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

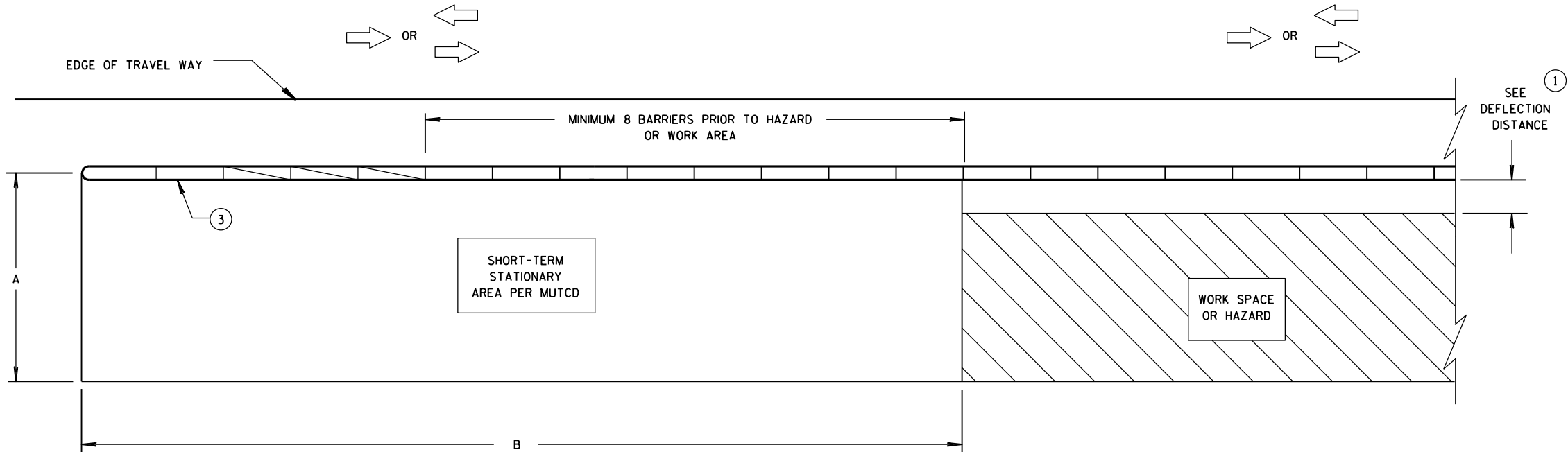
CONCRETE BARRIER
TEMPORARY PRECAST, 12'-6"

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 111



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

CONCRETE BARRIER TEMPORARY PRECAST, 12'-6"			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED June 2017	/S/ Rodney Taylor		
DATE	ROADWAY STANDARD	112	ENT
FHWA	UNIT SUPER		



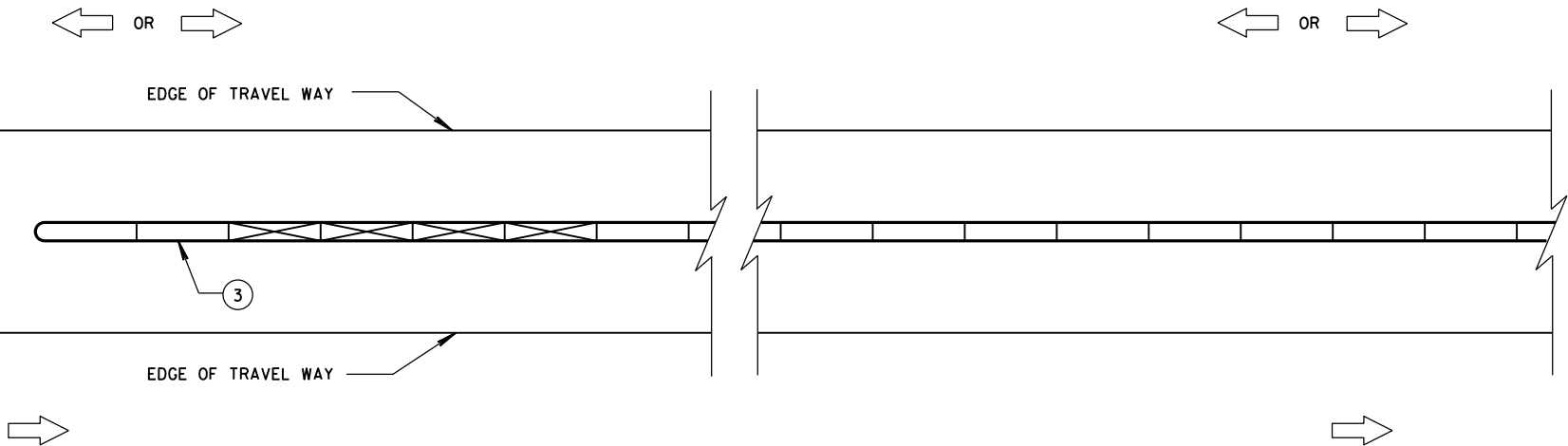
CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE OF BARRIER

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.

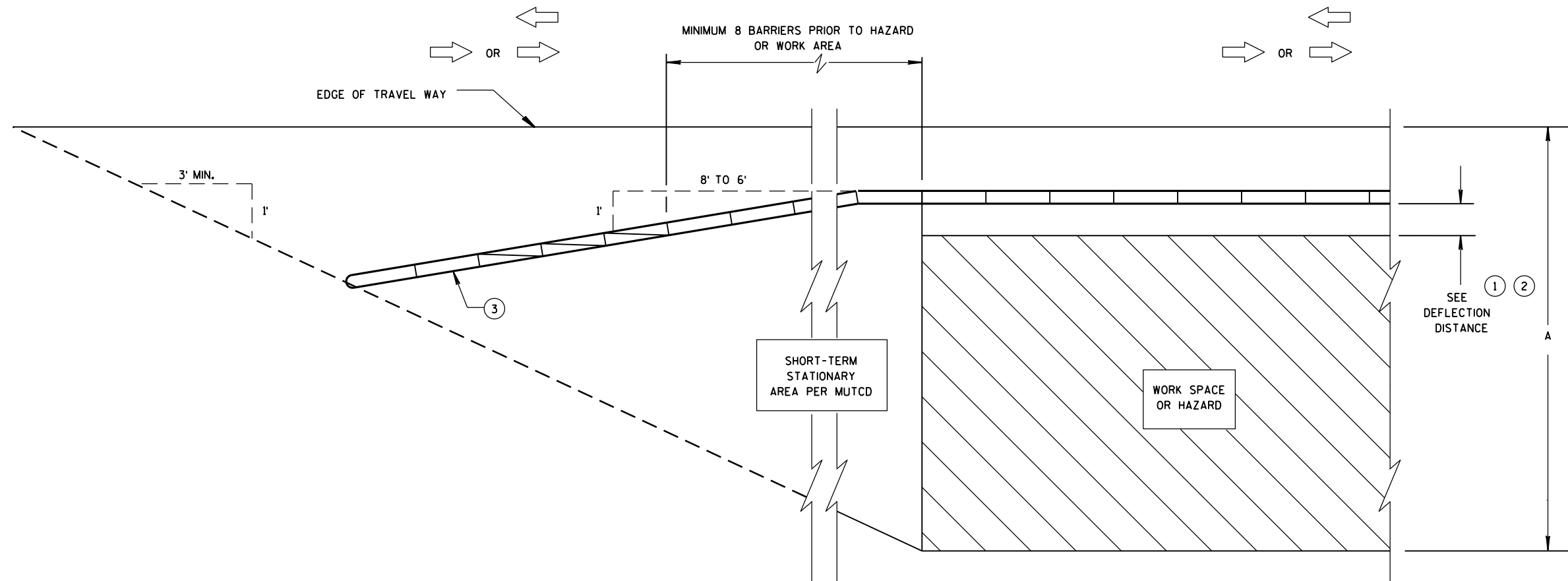
FOR DETAILS ON CRASH CUSHION OR SAND BARREL ARRAYS SEE OTHER SECTIONS OF THE PLAN AND MANUFACTURE'S DETAILS.

SLOPES LEADING TO TEMPORARY BARRIER, CRASH CUSHION OR SAND BARREL ARRAY ARE 10:1 OR LESS.

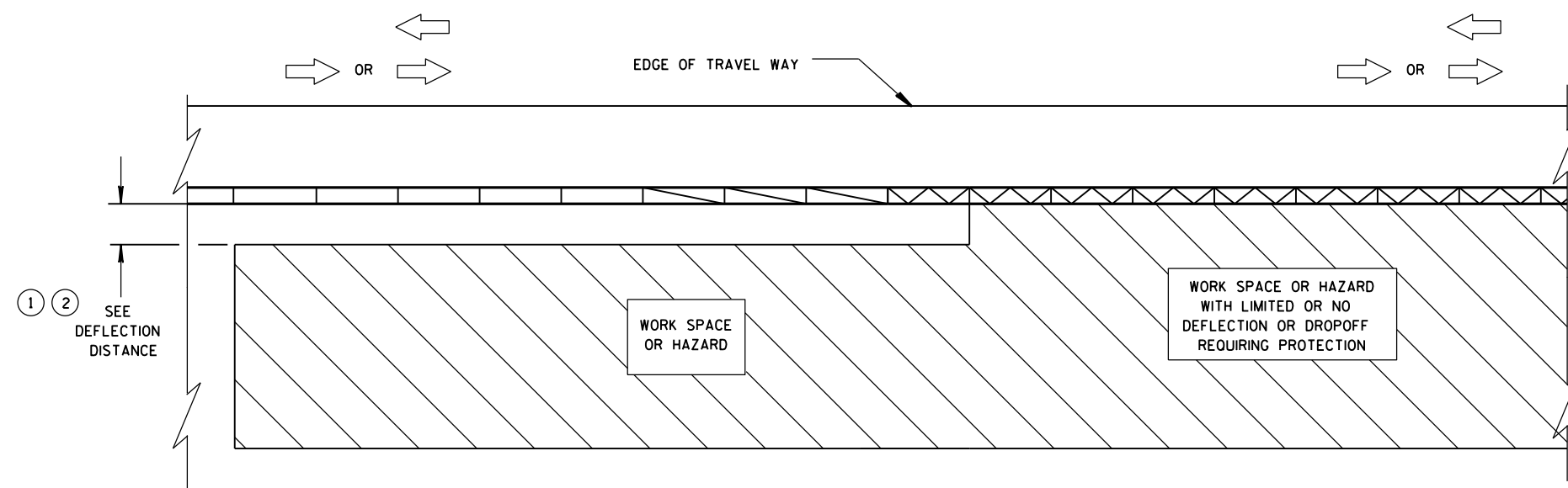
- ① FOR DEFLECTION INFORMATION SEE STANDARD DETAIL DRAWING 14B7.
- ② VALUES PROVIDED MAY NOT FIT ALL POSSIBLE SITUATIONS OR SITE CONDITIONS. SEE OTHER SECTIONS OF THE CONTRACT OR PROJECT ENGINEER FOR MORE DETAILS.
- ③ ANCHOR TEMPORARY BARRIER ACCORDING TO CRASH CUSHION OR SAND BARREL MANUFACTURER'S RECOMMENDATIONS. 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 TRANSPORTATION



**CRASH CUSHION/SAND BARREL ARRAY AND TEMPORARY BARRIER
INSTALLATION FOR TRAFFIC ON ONE SIDE - FLARED INSTALLATION**



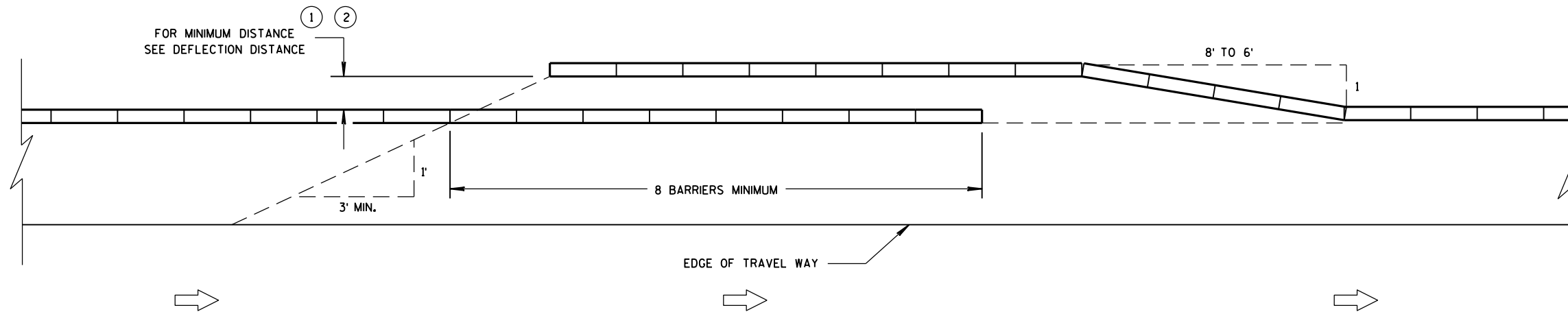
**TRANSITION FROM FREE STANDING TEMPORARY BARRIER
TO ANCHORED BARRIER**

LEGEND

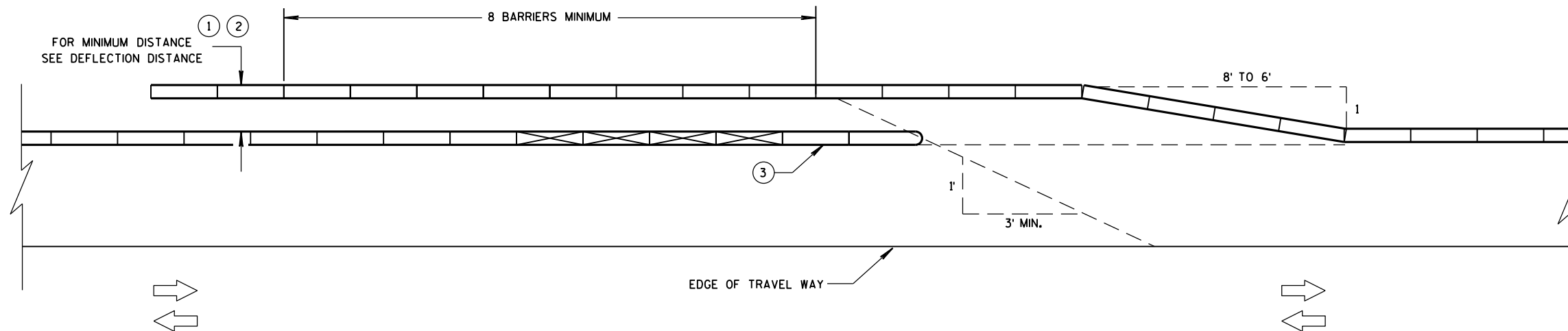
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

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

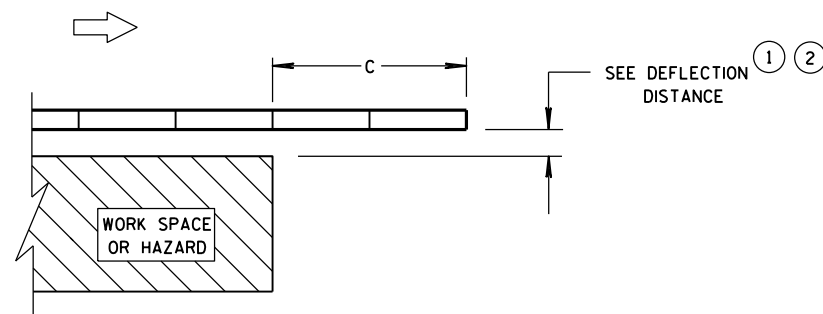
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 114



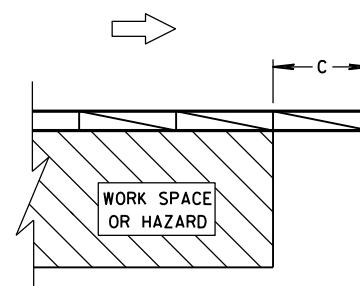
TEMPORARY BARRIER OVERLAP - ONE-WAY TRAFFIC



TEMPORARY BARRIER OVERLAP - TWO-WAY TRAFFIC



**ENDING TEMPORARY BARRIER
DOWNSTREAM - UNANCHORED**



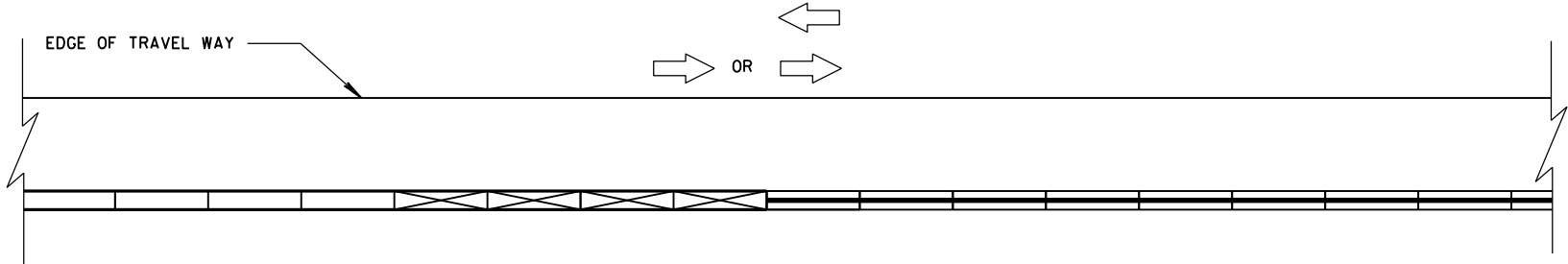
**ENDING TEMPORARY BARRIER
DOWNSTREAM - ANCHORED**

LEGEND

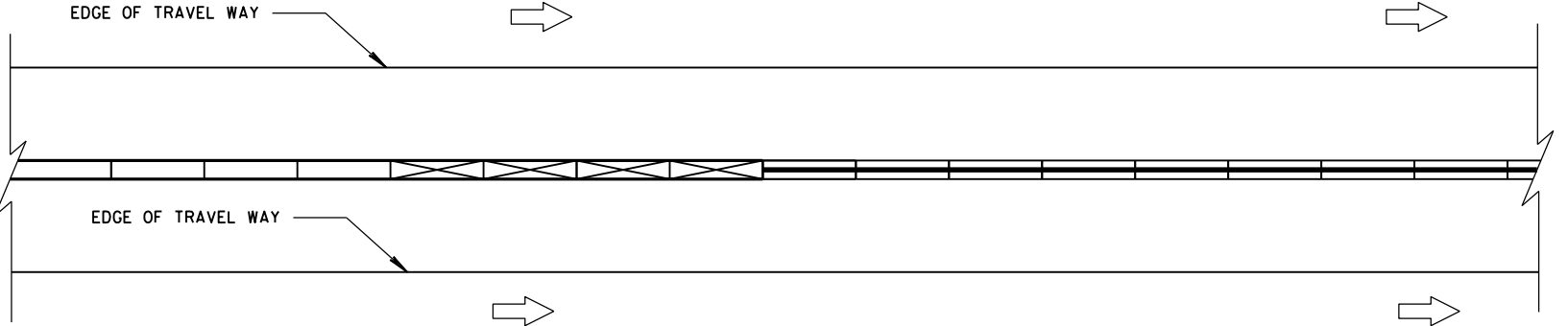
DIRECTION OF TRAVEL	
CRASH CUSHION OR SAND BARREL ARRAY	
SEE FREE STANDING TRANSITION TO TIED-DOWN SYSTEM DETAILS	
SEE BI-DIRECTIONAL TRANSITION TO TIED-DOWN SYSTEM DETAILS	
3 PINS PLACED ON TRAFFIC SIDE OF BARRIER	
PERMANENT CONCRETE BARRIER OR CONCRETE PARAPET	
FREE STANDING TEMPORARY BARRIER	

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

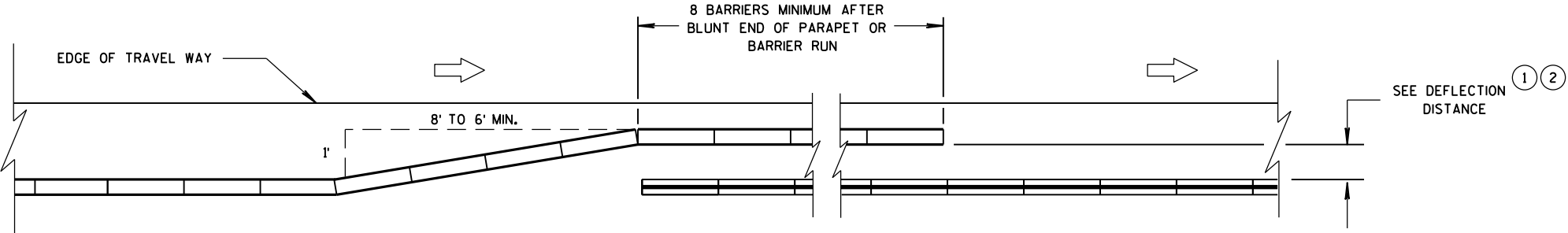


CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON ONE SIDE

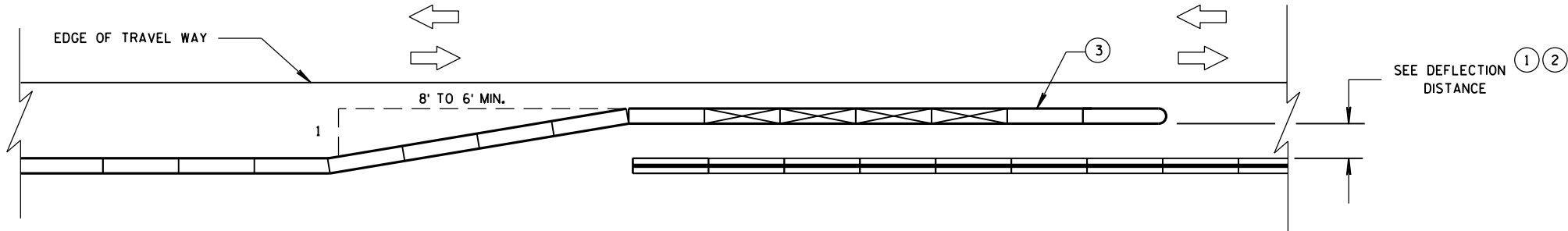


CONNECTING TEMPORARY BARRIER TO PERMANENT
CONCRETE BARRIER-TRAFFIC ON BOTH SIDES

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 TRANSPORTATION 116

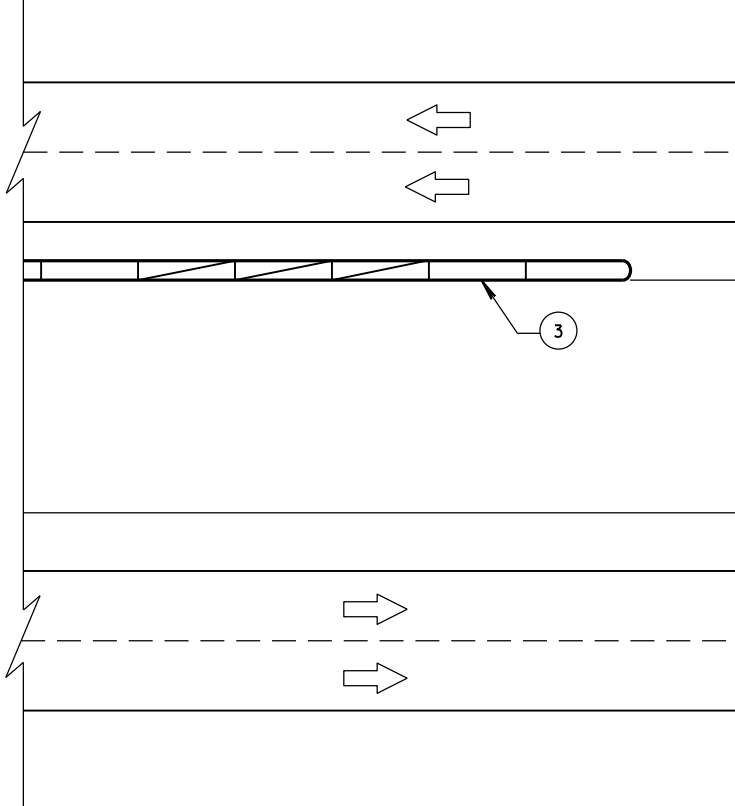
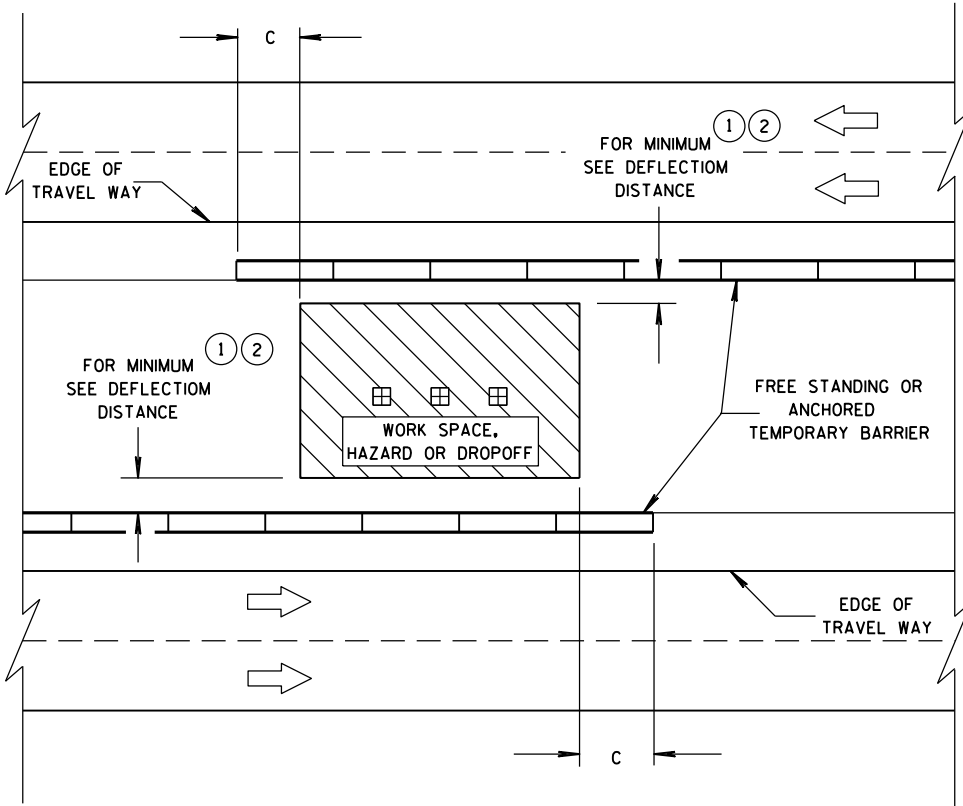
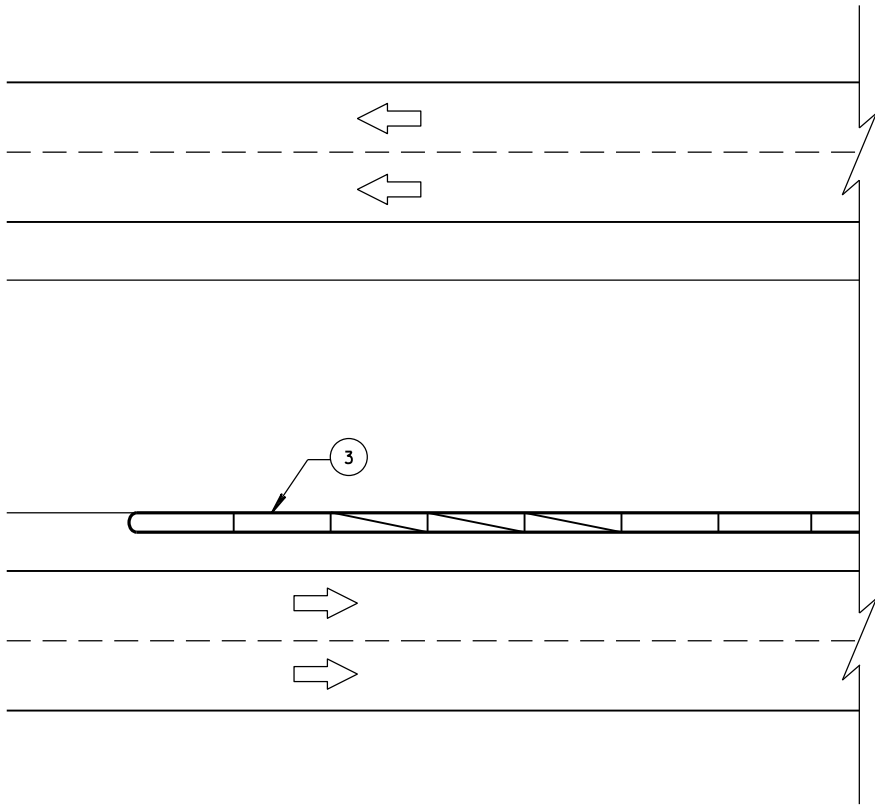
LEGEND

- 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

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

6



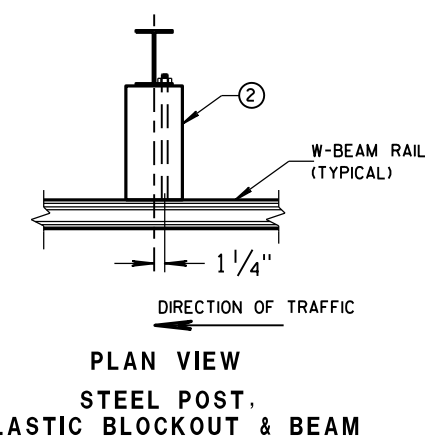
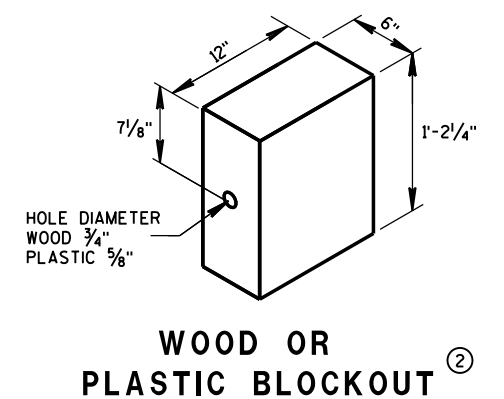
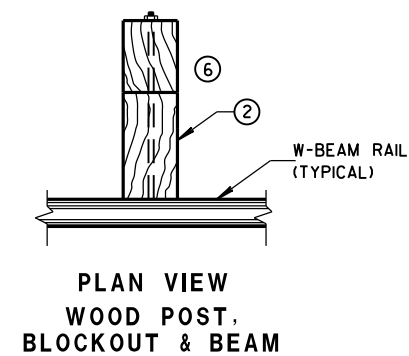
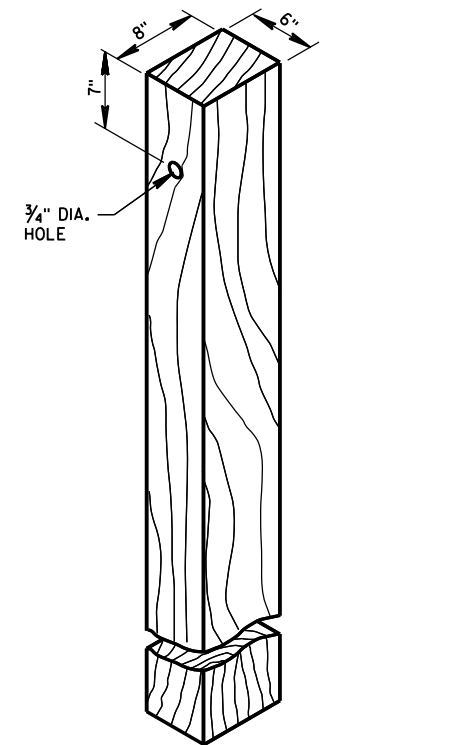
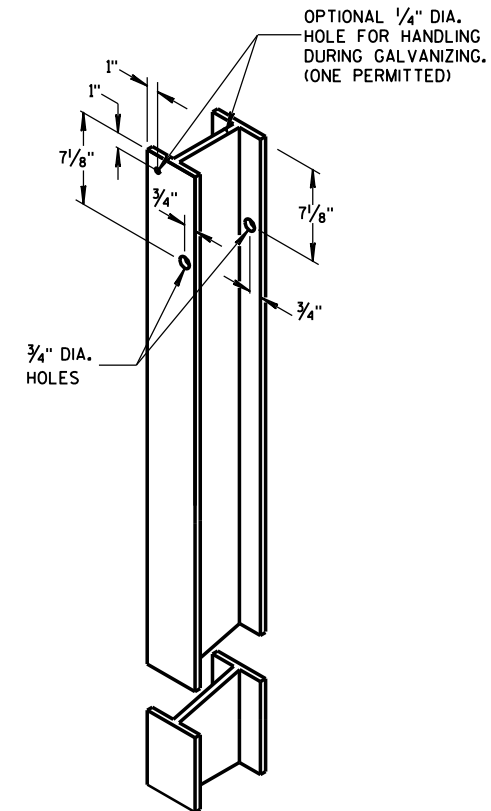
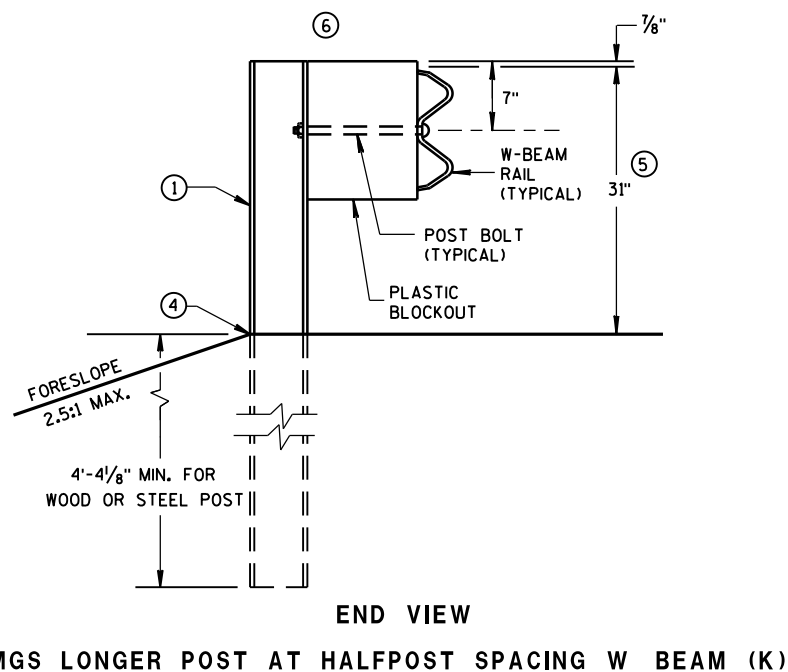
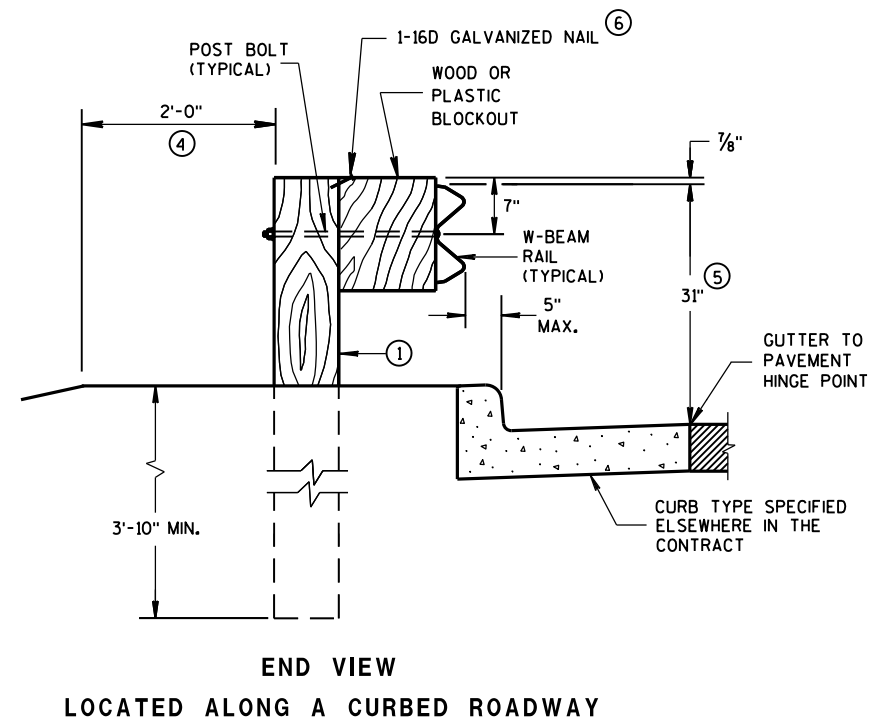
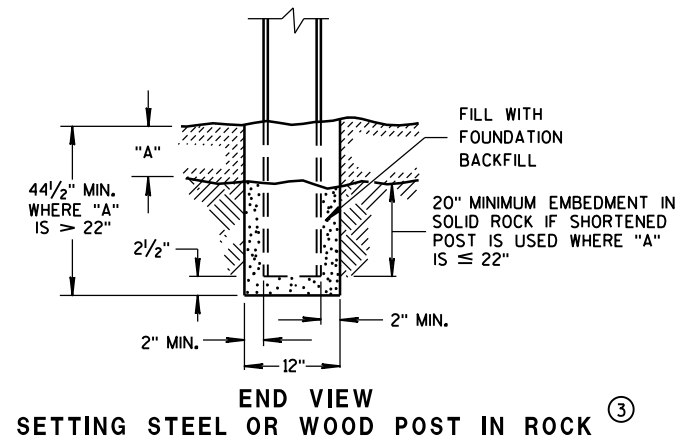
6

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

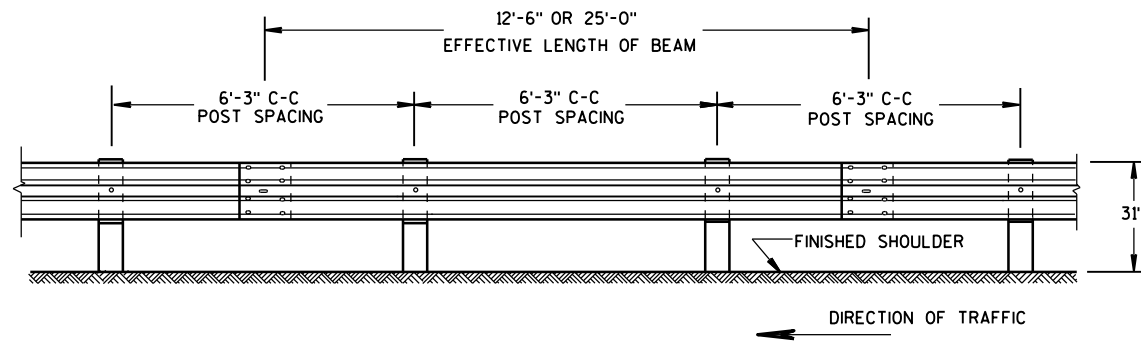
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 117 ENT
FHWA

- 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 $2\frac{1}{2}$ INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS TO LENGTH AND 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 $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN $27\frac{3}{4}"$ 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.



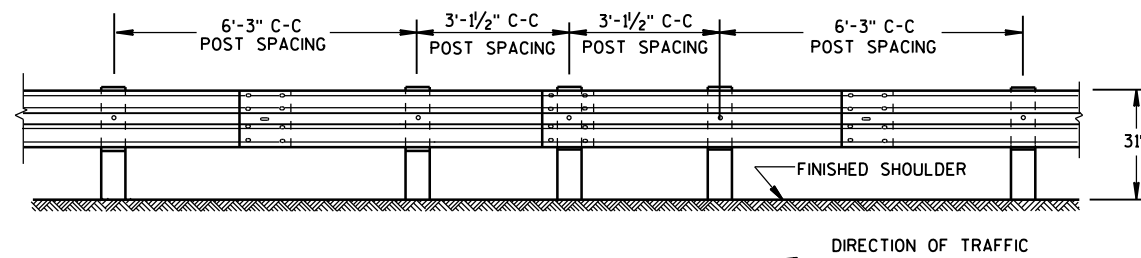
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 118



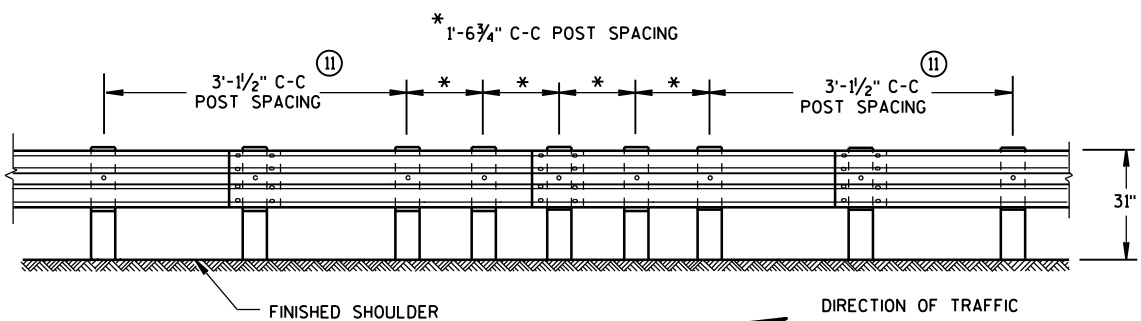
FRONT VIEW

POST SPACING STANDARD INSTALLATION



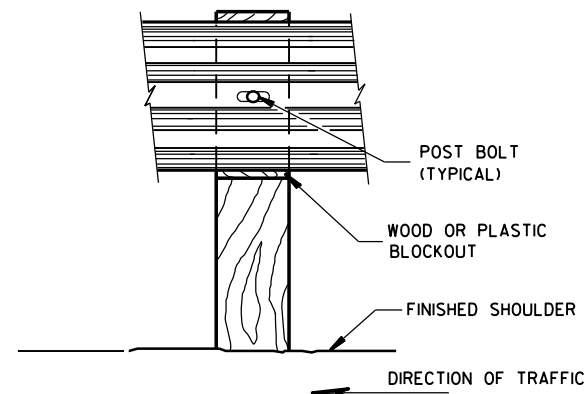
FRONT VIEW

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

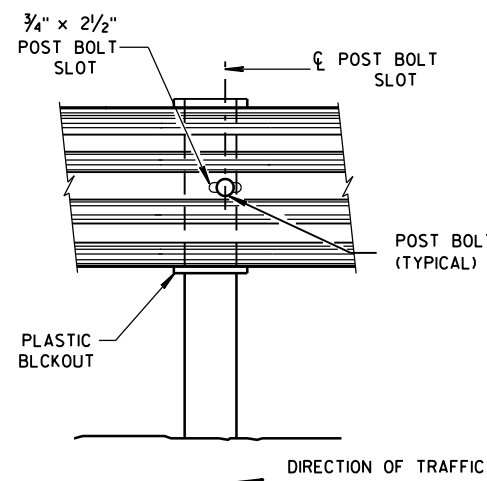


FRONT VIEW

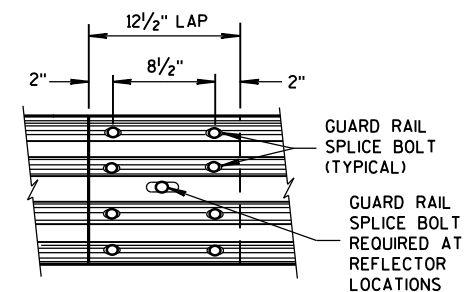
QUARTER POST SPACING (QS)



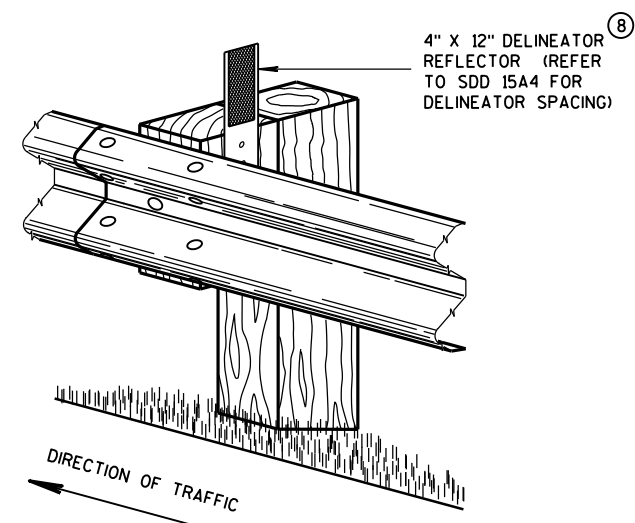
FRONT VIEW AT WOOD POST



FRONT VIEW AT STEEL POST



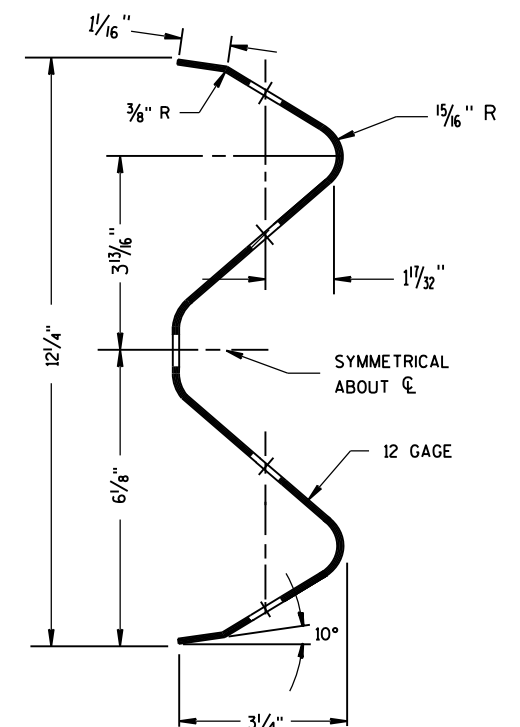
FRONT VIEW
MID-SPAN BEAM SPLICE



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

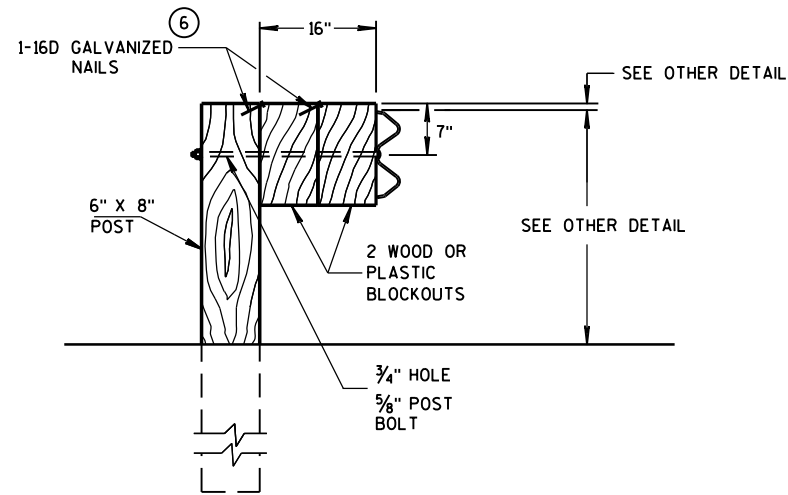
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
 - ⑪ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.
- POST BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 5/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.
- GUARD RAIL SPLICE BOLTS ARE A 5/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

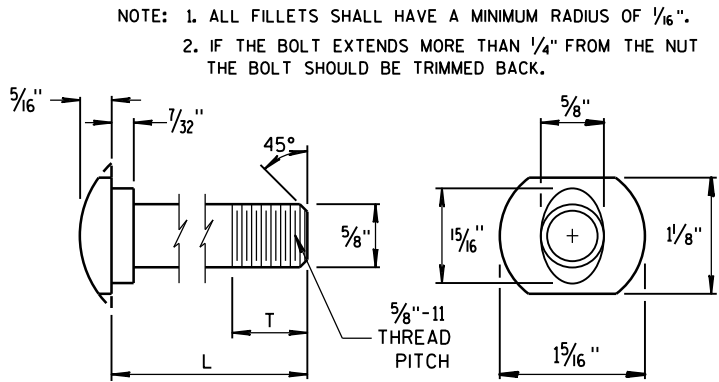
MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 119

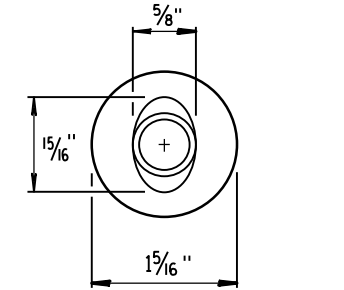


DETAIL FOR 16" BLOCKOUT DEPTH

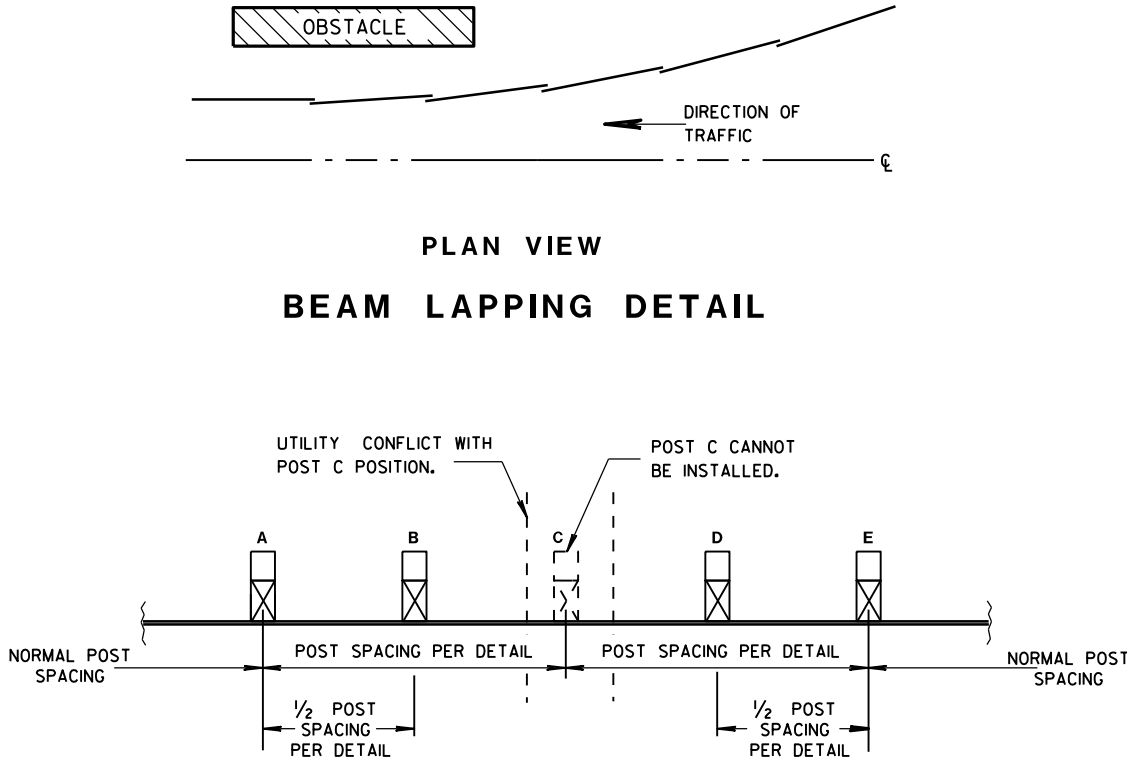
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



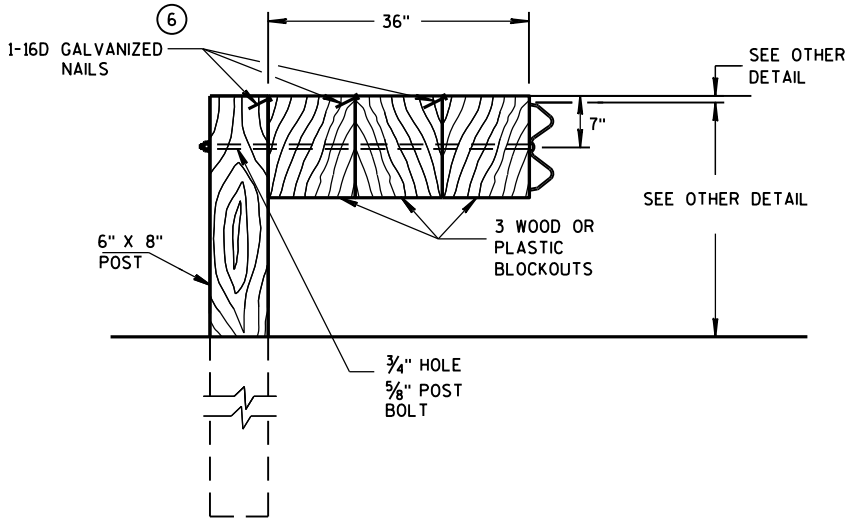
POST BOLT TABLE



ALTERNATE BOLT HEAD



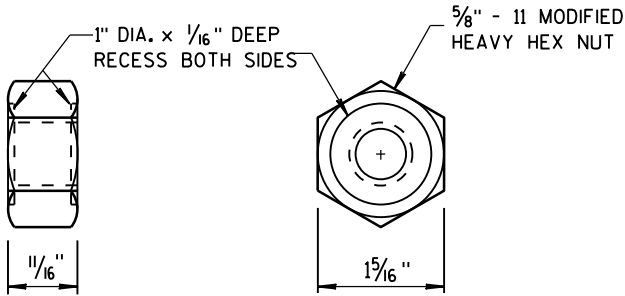
POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



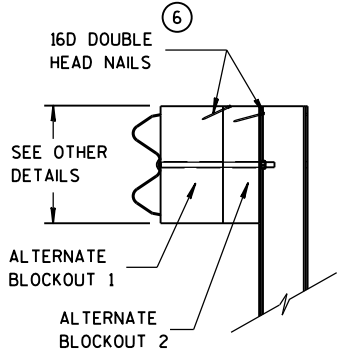
DETAIL FOR 36" BLOCKOUT DEPTH

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.

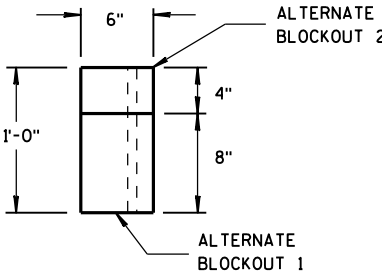
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.



POST BOLT, SPLICE BOLT AND RECESS NUT



SIDE VIEW

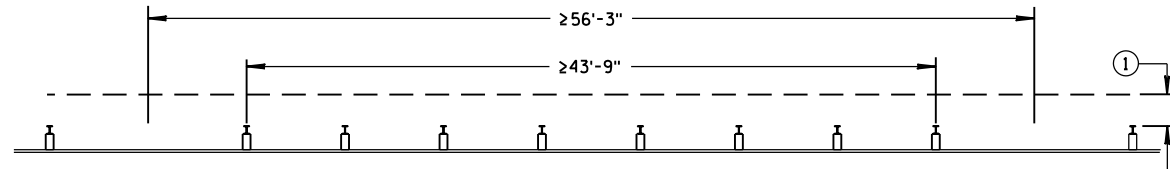


TOP VIEW

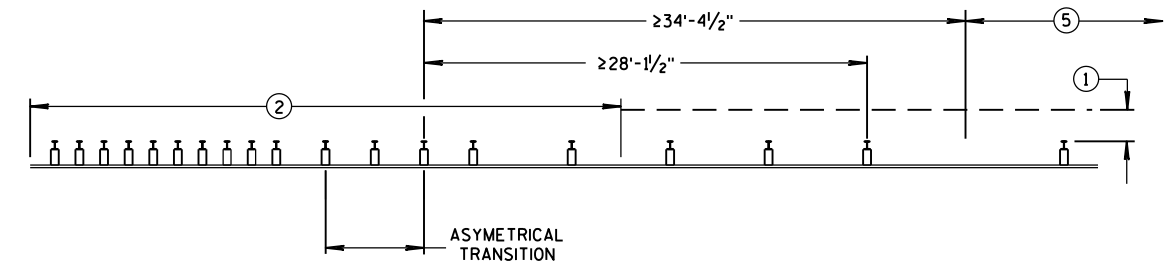
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

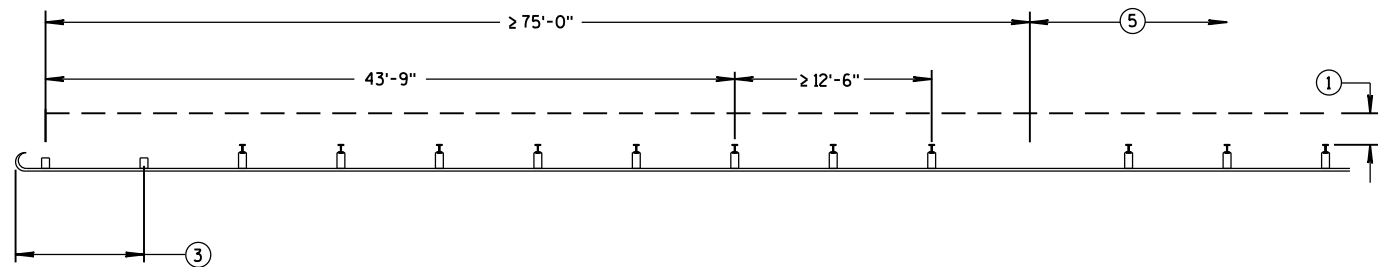
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MISSING POST IN NORMAL BEAM GUARD RUN

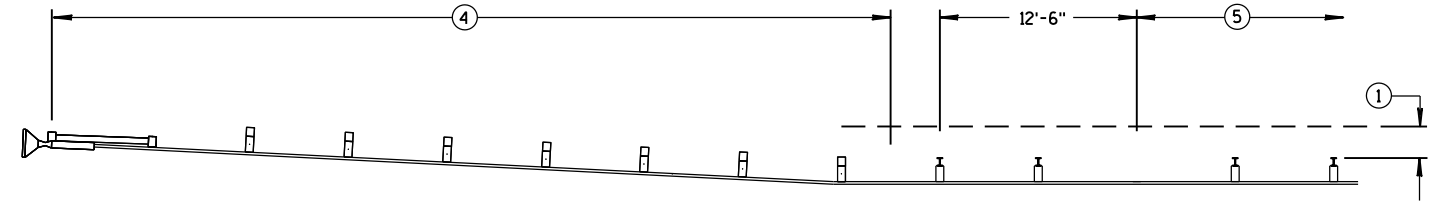


MISSING POST NEAR APPROACH THRIE BEAM TRANSITION

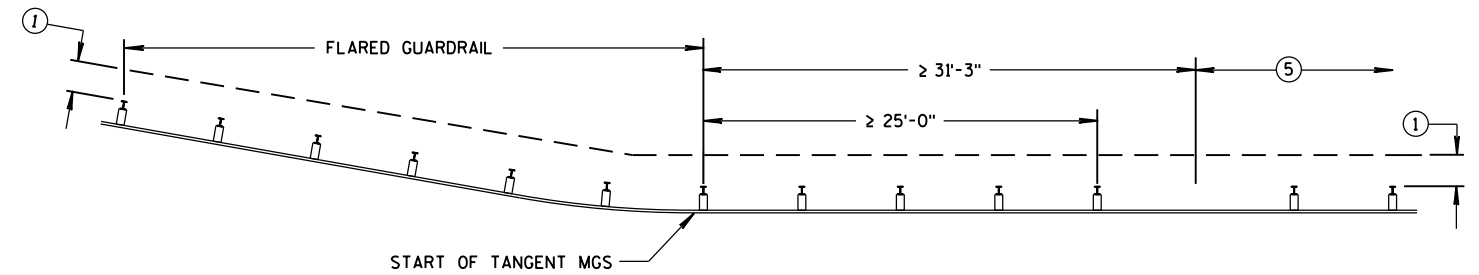


MISSING POST IN NORMAL BEAM GUARD RUN
NEAR TYPE 2 TERMINAL

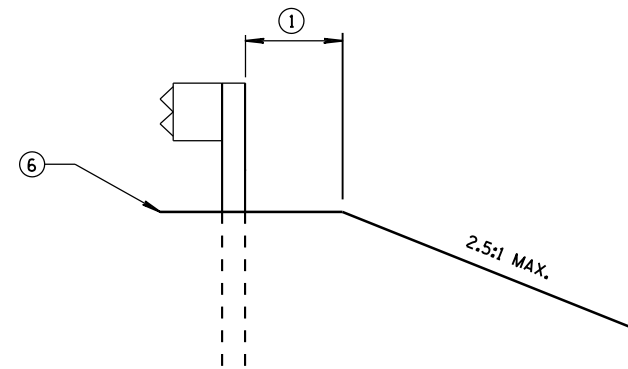
- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER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



MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



MISSING POST IN NORMAL BEAM GUARD RUN
NEAR FLARED BEAM GUARD



CROSS SECTION VIEW

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
June 2017	/S/ Rodney Taylor		
DATE	ROADWAY STANDARDS (121	ENT	
FHWA	UNIT SUPERVISOR		

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL), AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED.
- (C) DIFFERENT MANUFACTURES REQUIRE DIFFERENT PERFORATED W-BEAM RAIL END PANELS. SEE MANUFACTURES INFORMATION.
- (F) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF-TAPPING SCREWS. ONE SCREW PER CORNER.
- (H) HARDWARE VARIES BETWEEN DIFFERENT MANUFACTURES. SEE MANUFACTURE'S DRAWING FOR INFORMATION.

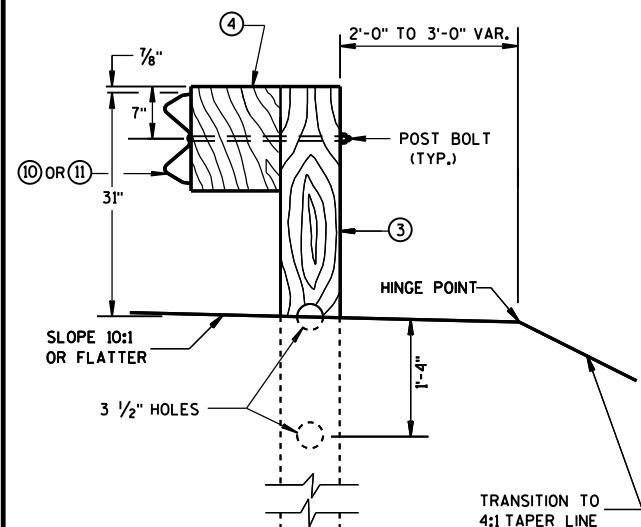
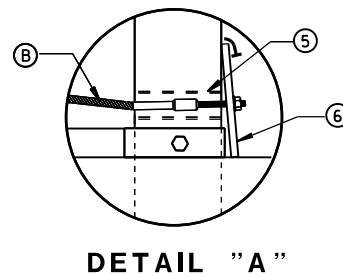
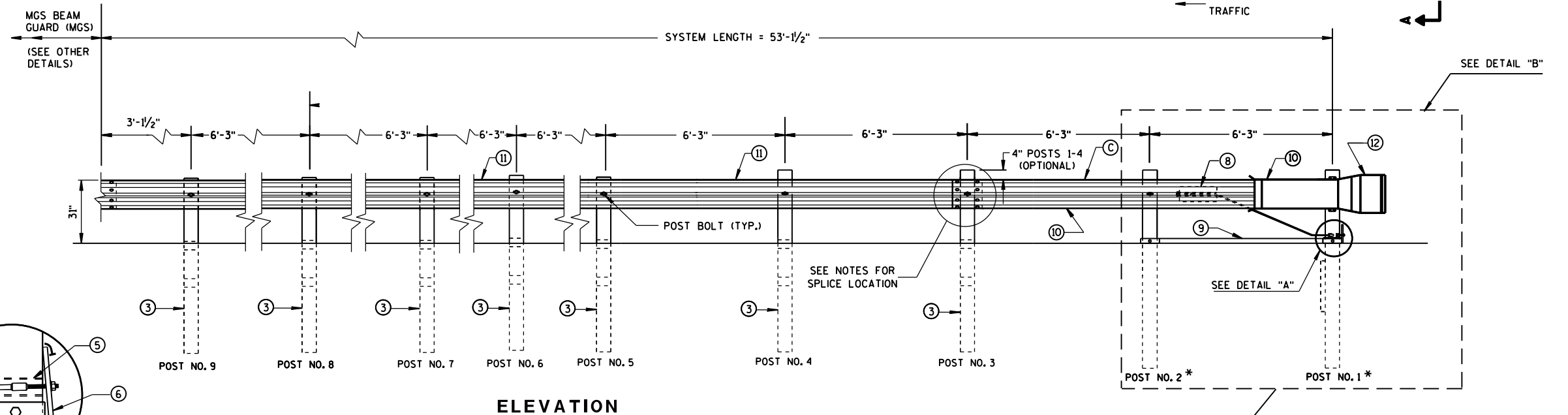
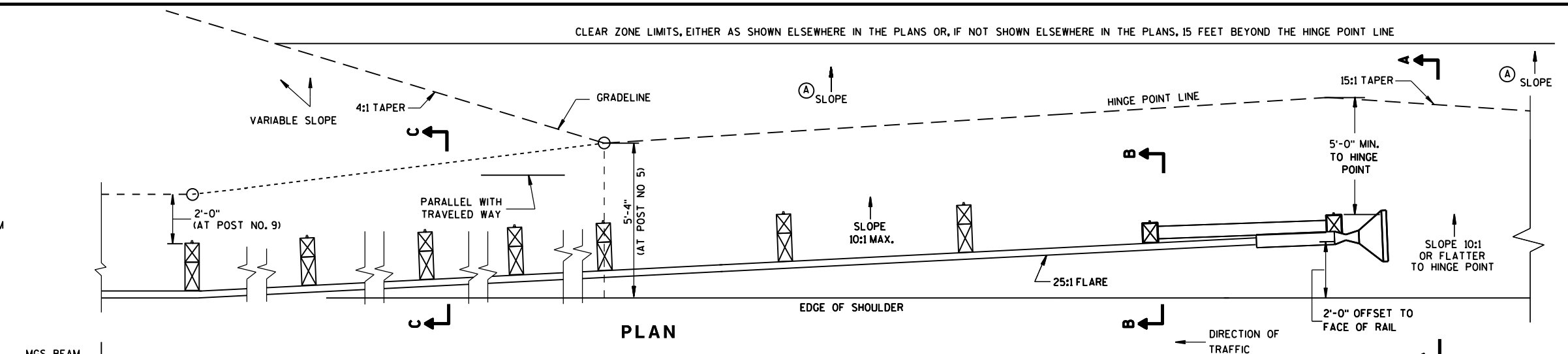
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

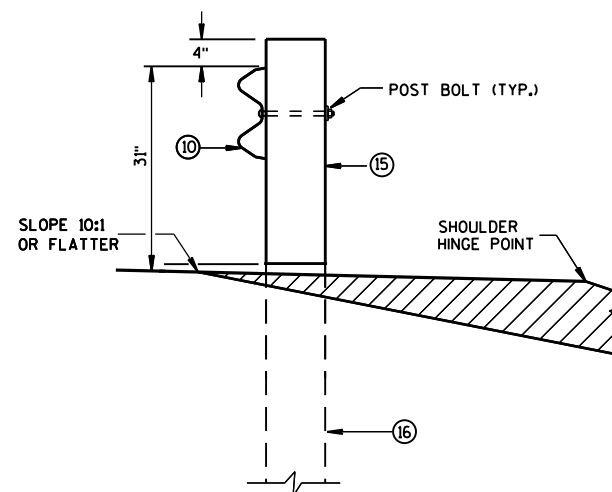
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

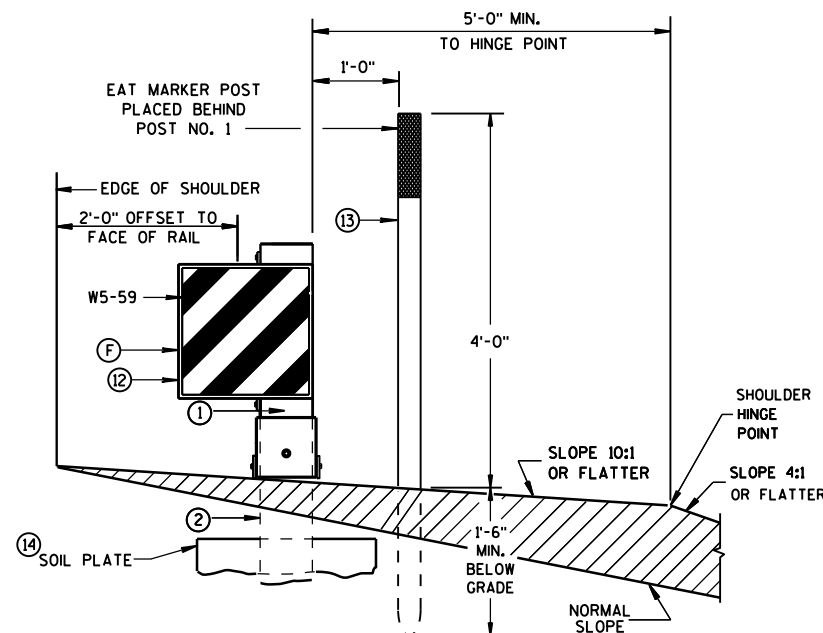
THE CENTER OF THE UPPER 3/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE.



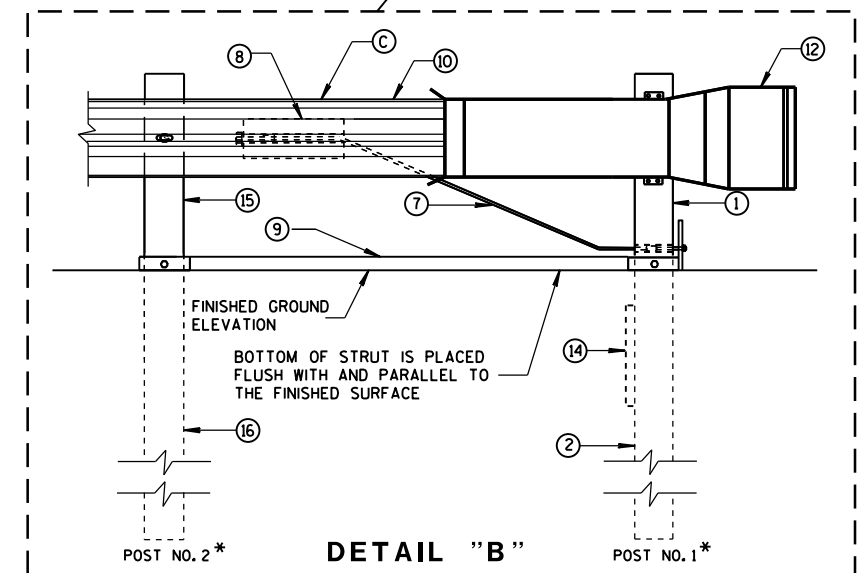
SECTION C-C
TYPICAL AT POST NOS. 3-9



SECTION B-B
TYPICAL AT POST NO. 2*

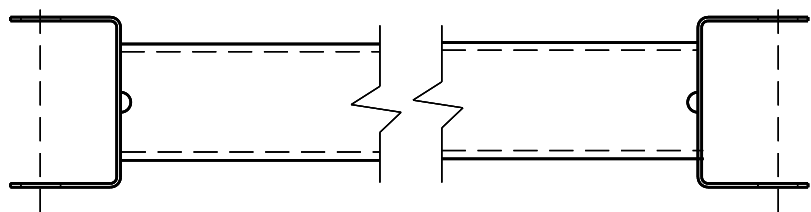


SECTION A-A
TYPICAL AT POST NO. 1*



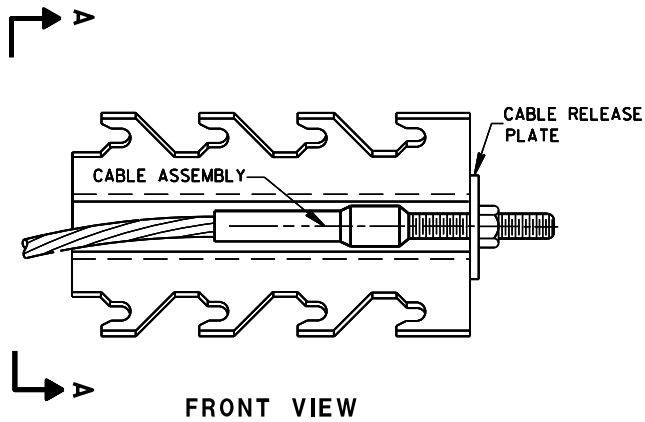
MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



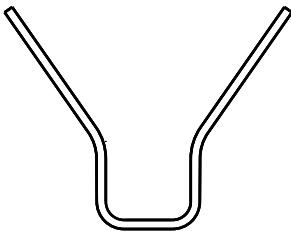
GENERIC GROUND STRUT

9 H

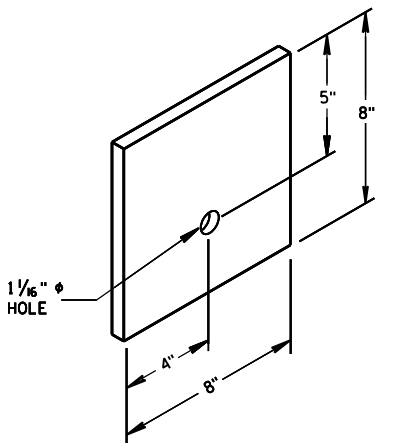


GENERIC ANCHOR CABLE BOX

8 H



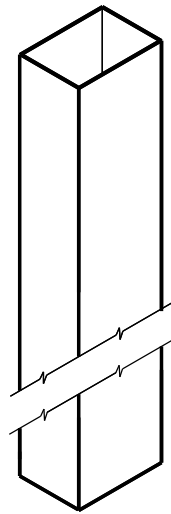
SECTION A-A



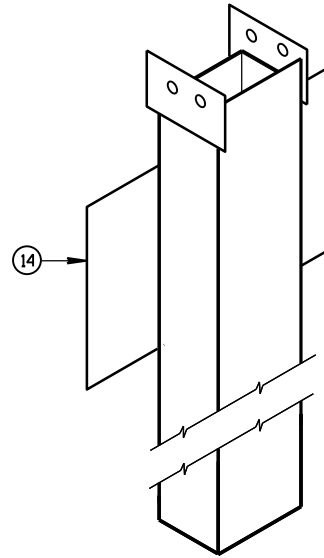
BEARING PLATE

6

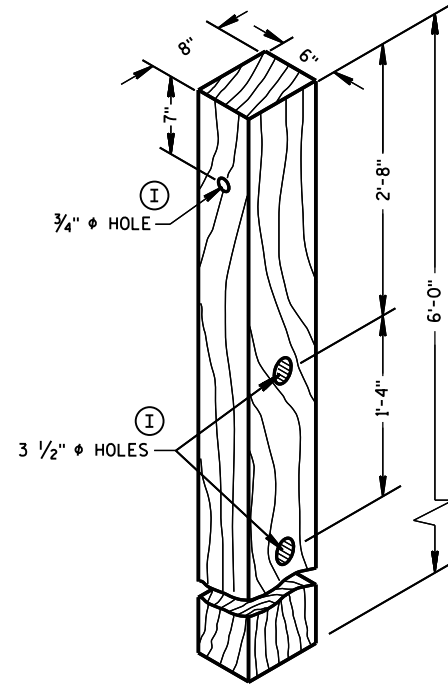
PART NO.	DESCRIPTION
	MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO.1 6" X 6" TUBE
②	LOWER POST NO.1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2



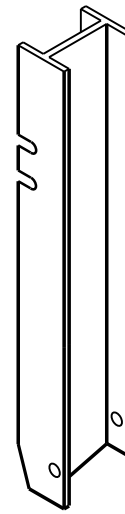
UPPER POST NO. 1^①



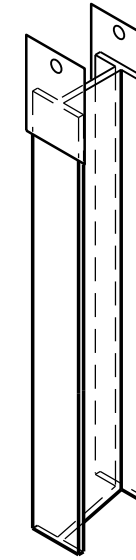
LOWER POST NO. 1^②



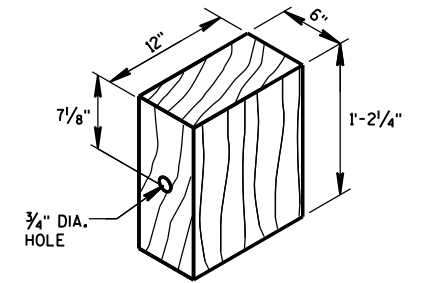
POSTS NUMBER 3-9
WOOD CRT POST^③



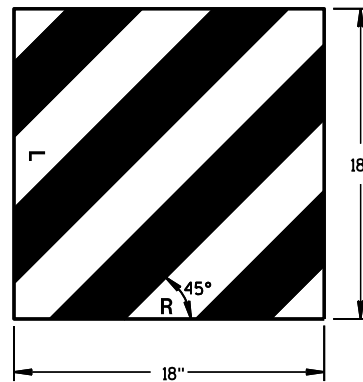
UPPER POST NO. 2^⑮



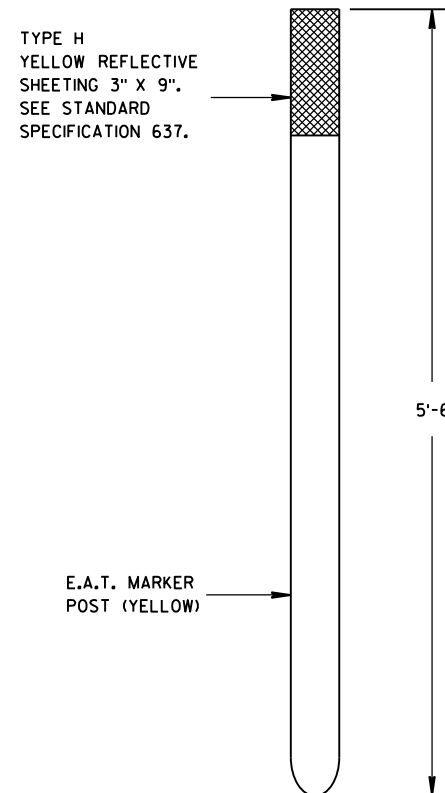
LOWER POST NO. 2^⑯



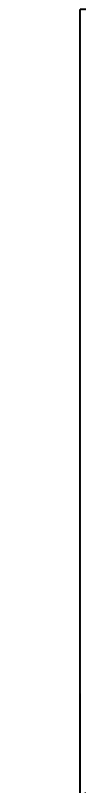
WOOD BLOCKOUT^④
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



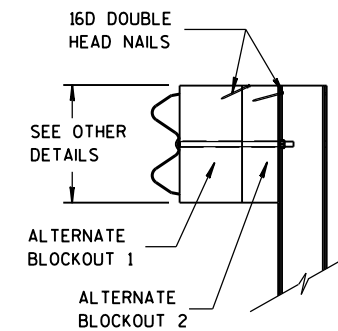
W5-59
REFLECTIVE SHEETING DETAIL^⑨



FRONT VIEW
E.A.T. MARKER POST^⑬

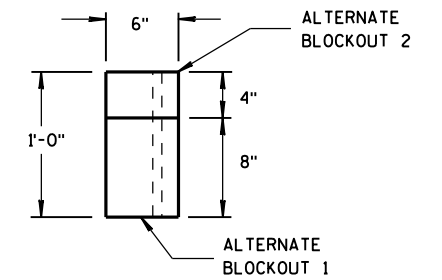


SIDE VIEW



SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

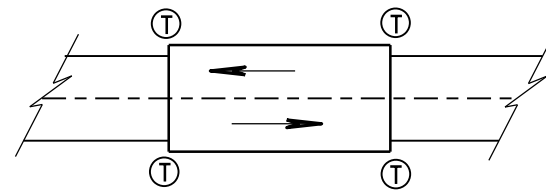


TOP VIEW

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

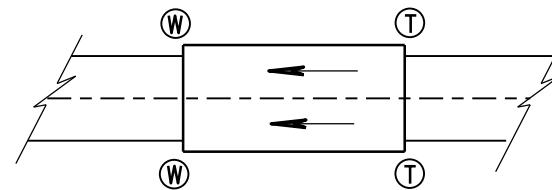
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2017 DATE /S/ Rodney Taylor
ROADWAY STANDARDS 124 UNIT SUPERVISOR
FHWA



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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.

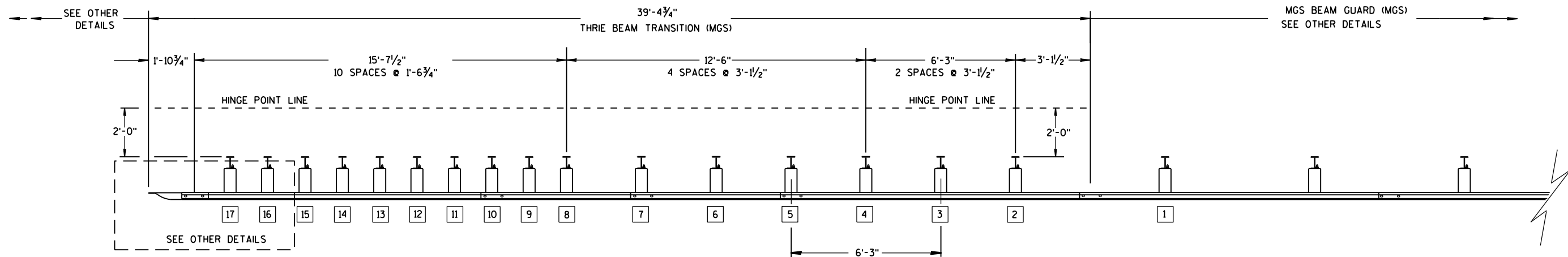
TRANSITION USES STEEL POSTS ONLY.

SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

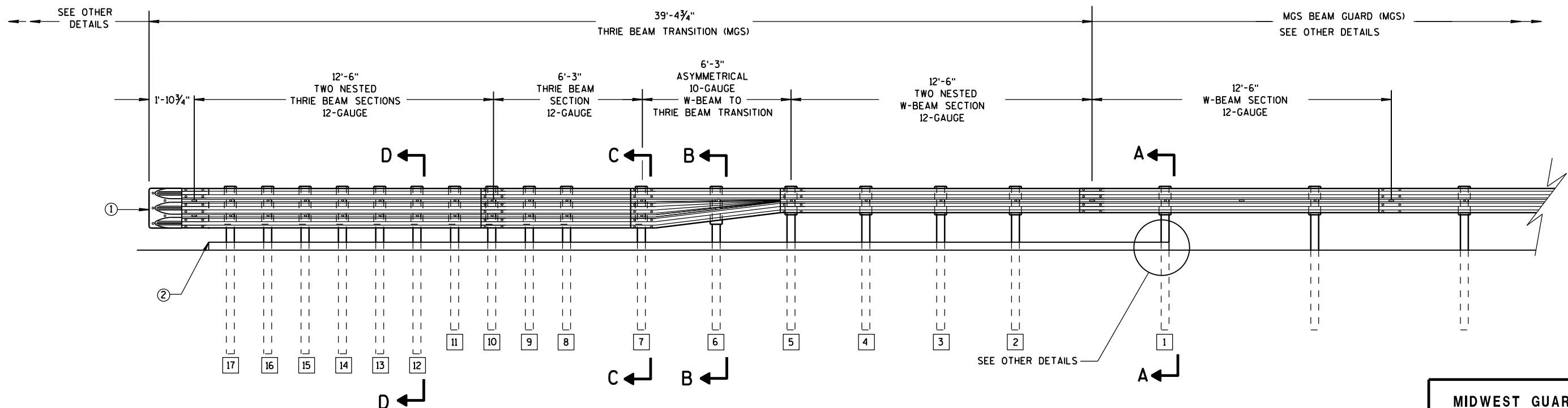
① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.

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

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



PLAN VIEW



ELEVATION VIEW

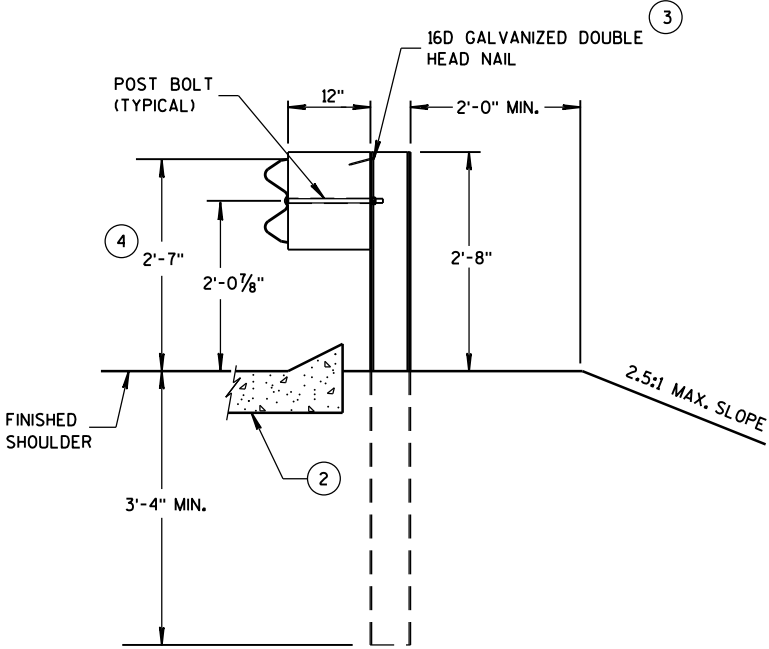
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

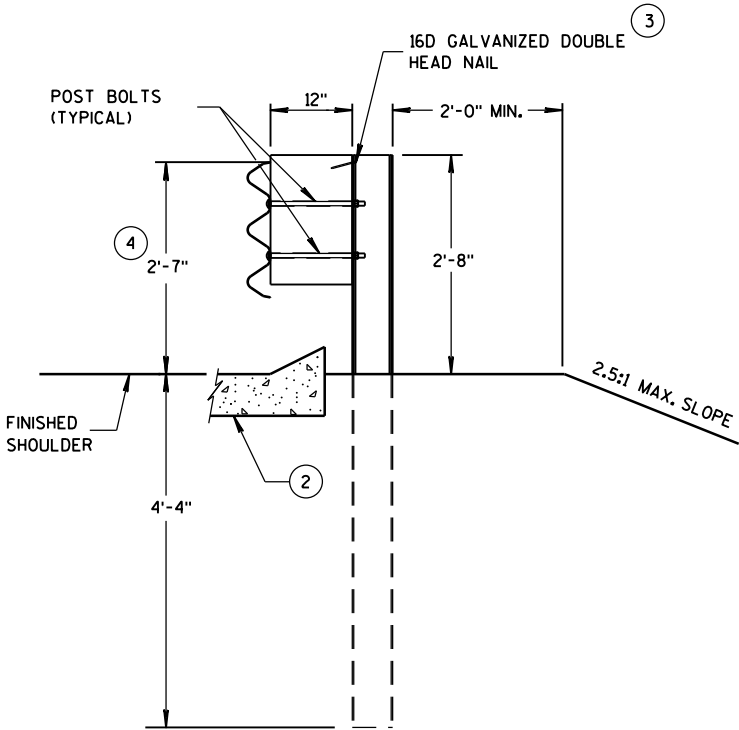
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 125

GENERAL NOTES

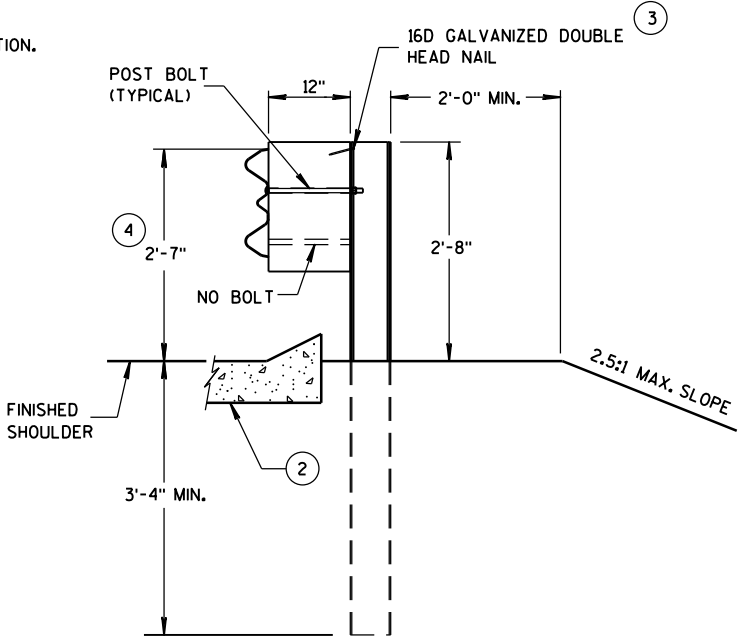
- 2 OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- 3 WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 10D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- 4 TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



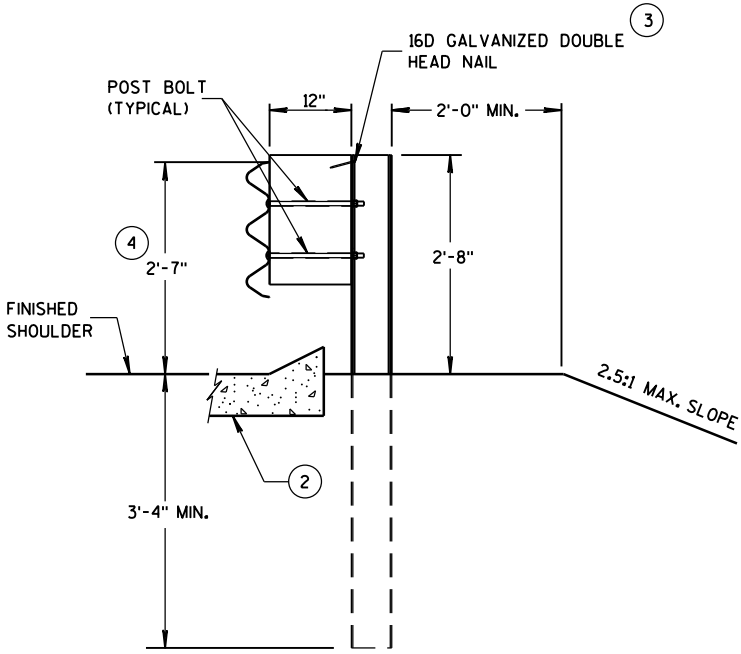
SECTION A-A
POSTS 1-5



SECTION D-D
POSTS 12-17



SECTION B-B
POST 6



SECTION C-C
POSTS 7-11

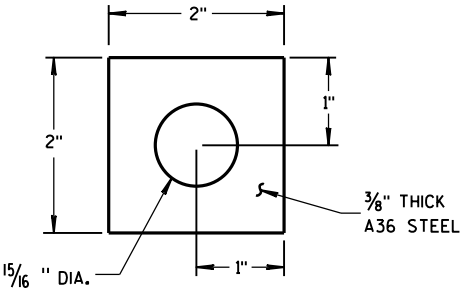
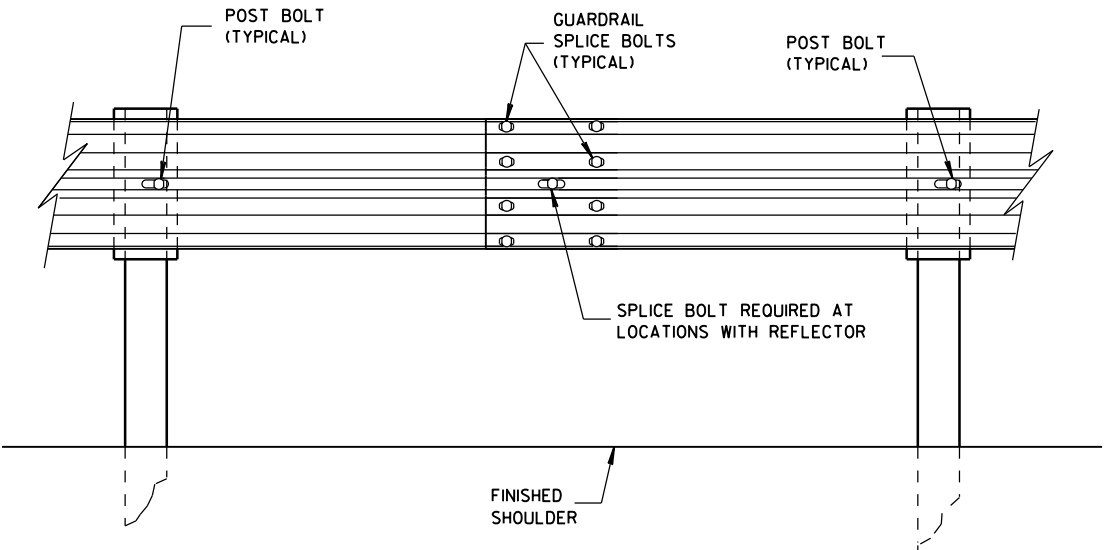
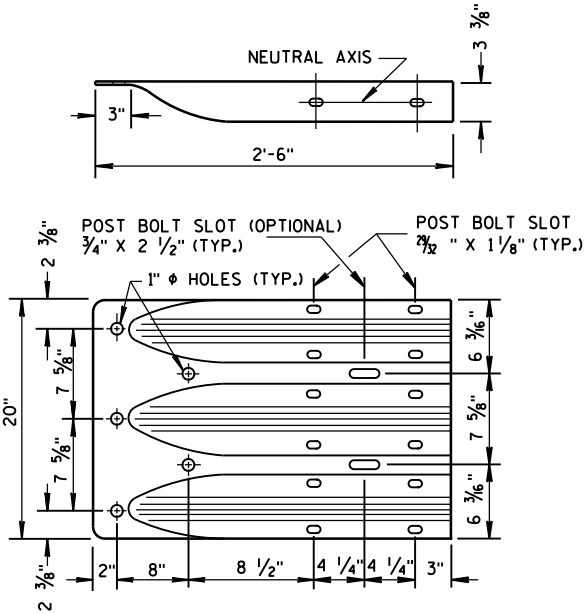


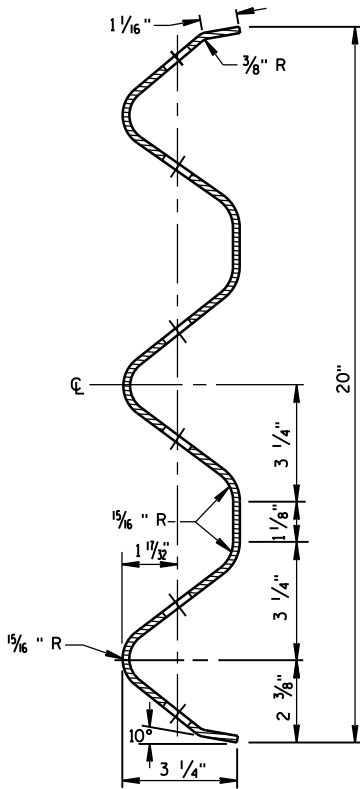
PLATE WASHER DETAIL



SPlice DETAIL



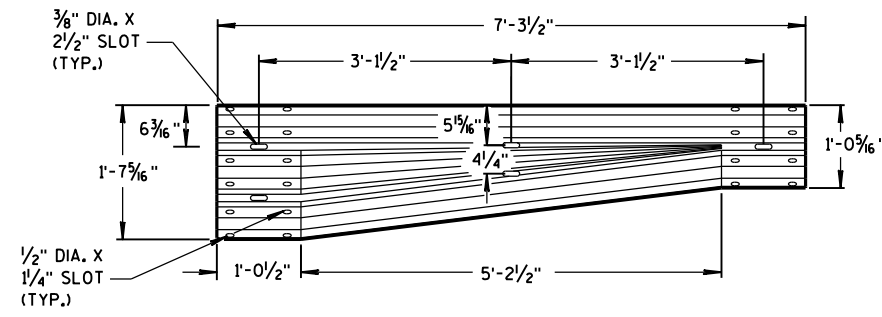
THRIE BEAM
TERMINAL CONNECTOR



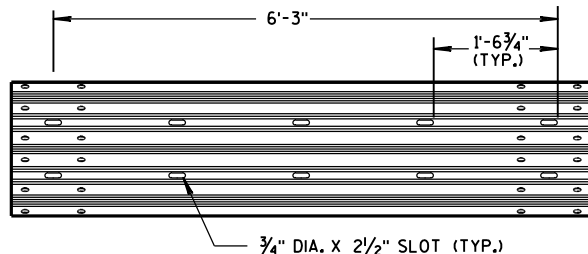
SECTION THRU THRIE
BEAM RAIL ELEMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

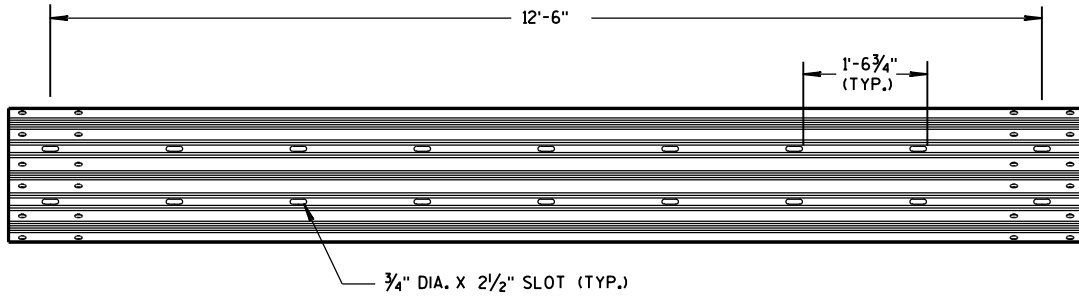
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 126



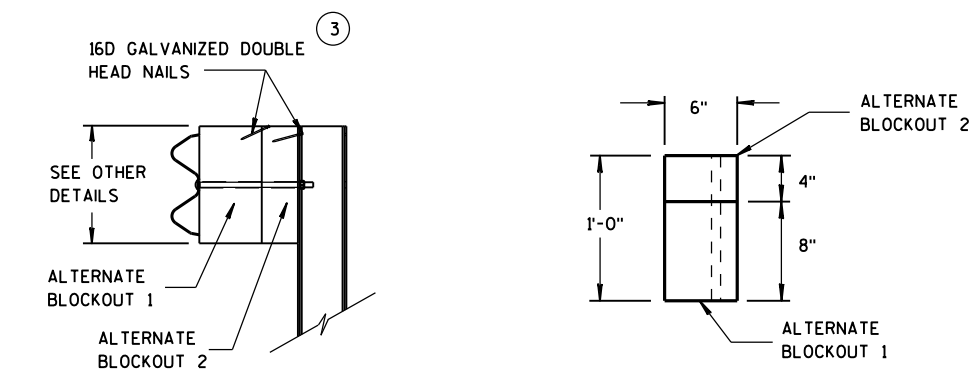
W-BEAM TO THRIE BEAM TRANSITION SECTION



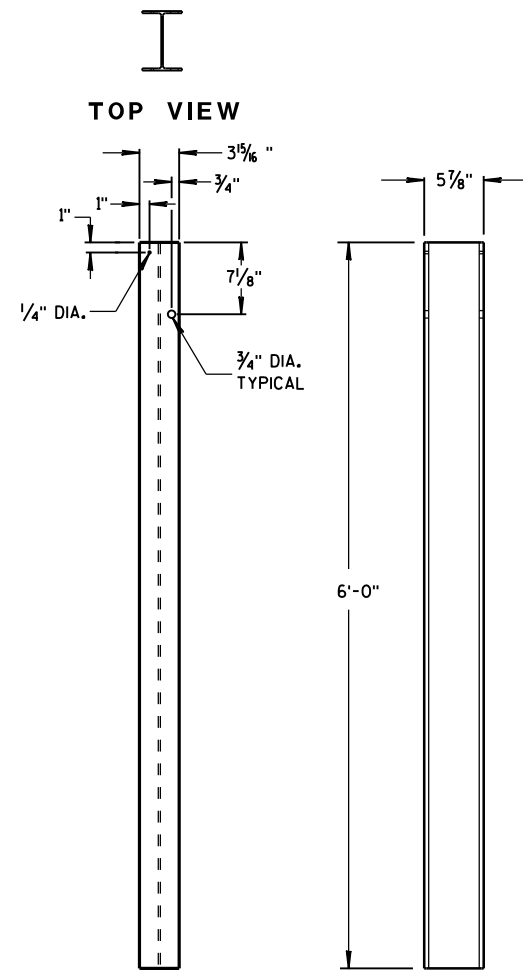
6'-3" THRIE BEAM SECTION



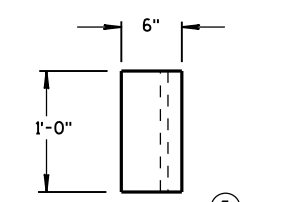
12'-6" THRIE BEAM SECTION



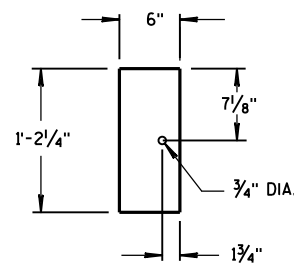
ALTERNATE WOOD BLOCKOUT DETAIL



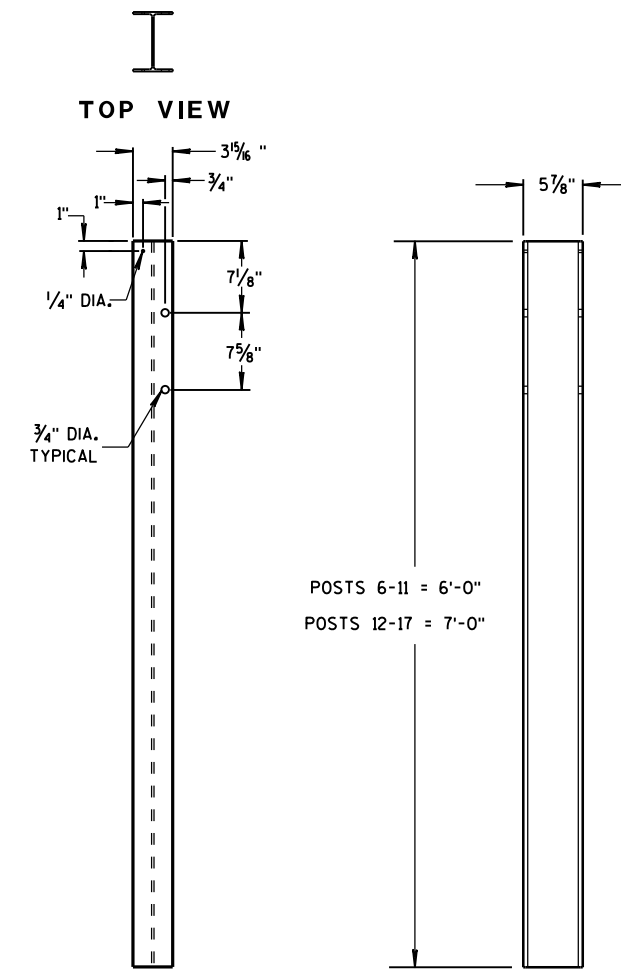
STEEL POSTS 1-5



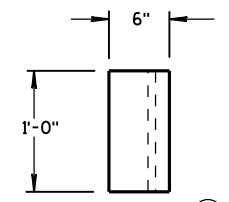
TOP VIEW



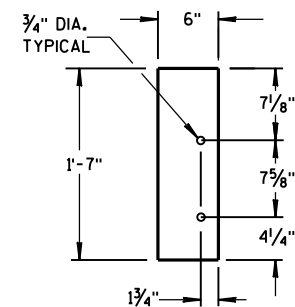
FRONT VIEW
BLOCKOUT
POSTS 1-5



STEEL POSTS 6-17



TOP VIEW



FRONT VIEW
BLOCKOUT
POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

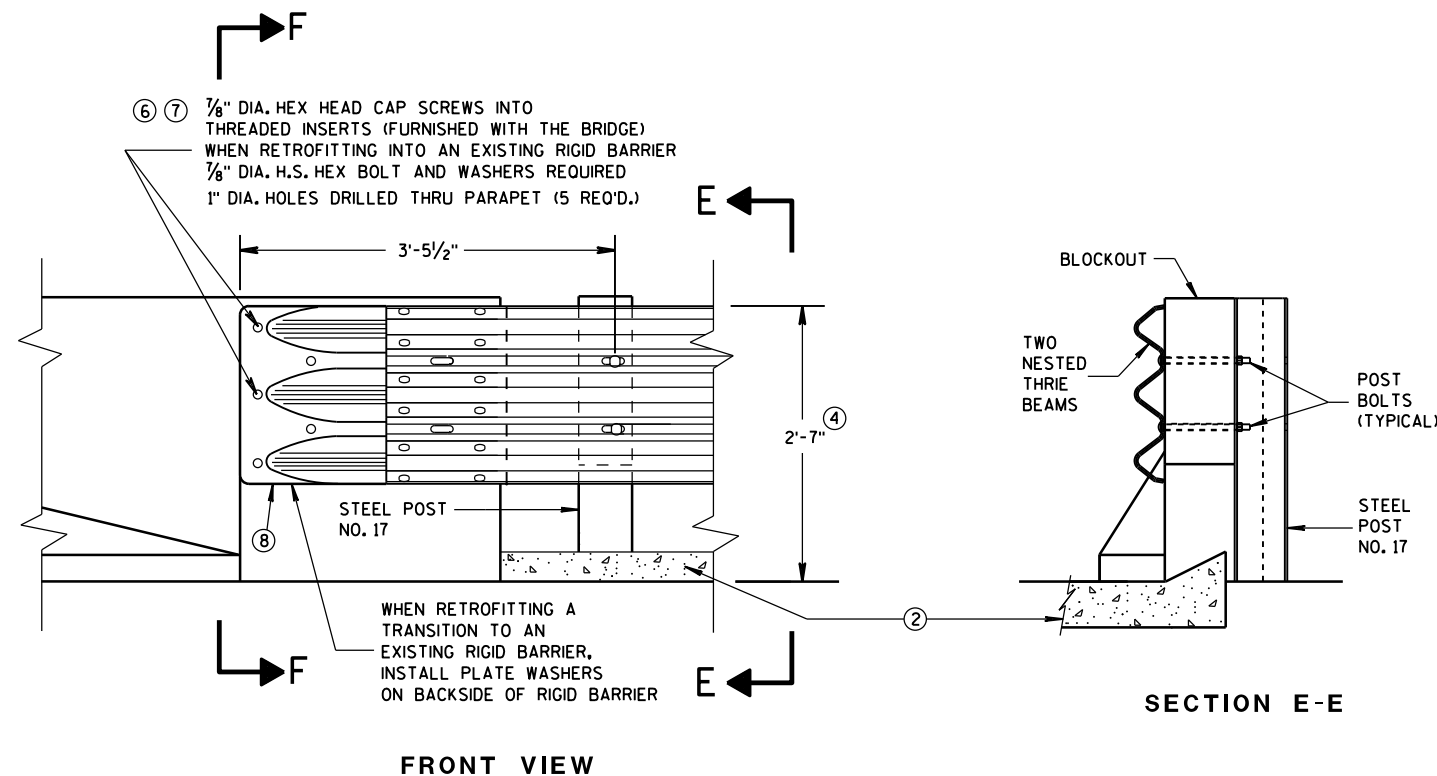
BOLT HOLES FOR POST ARE ON FRONT AND OF SIDE OF POST.

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 TRANSPORTATION

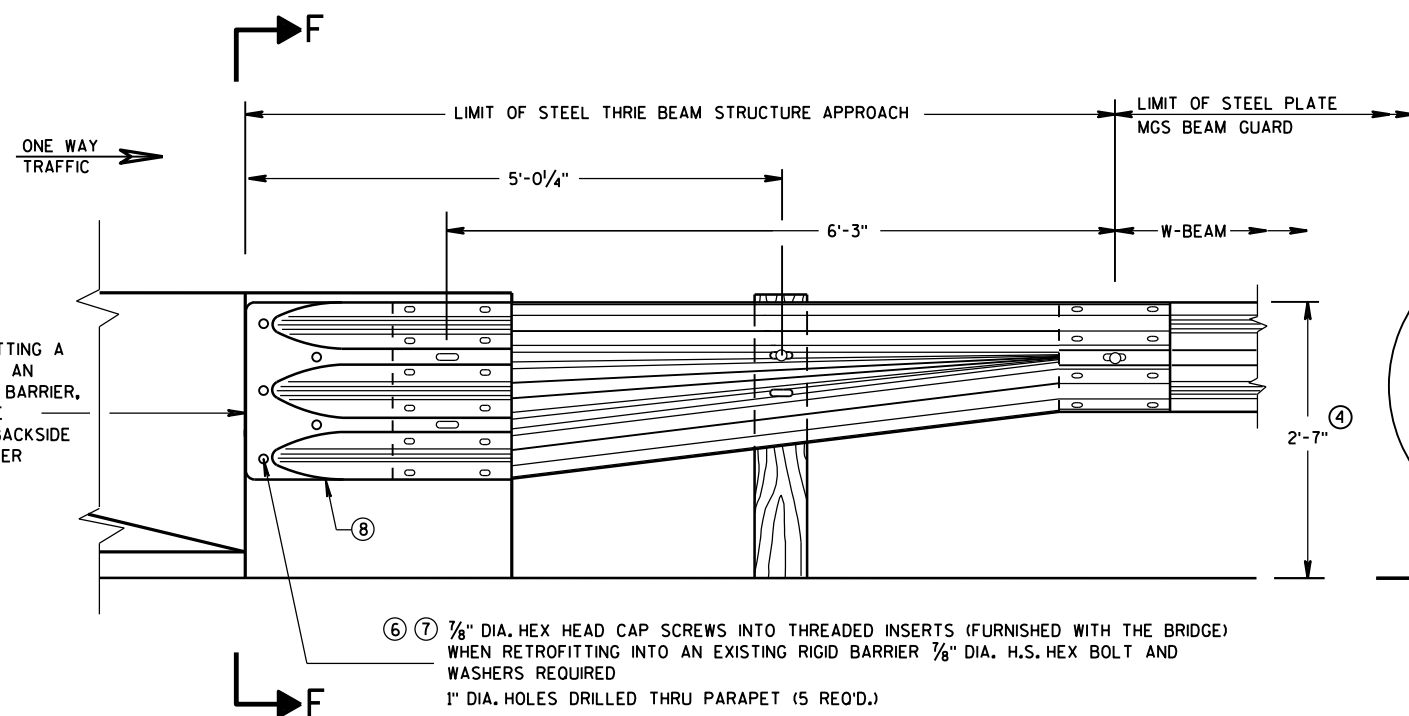
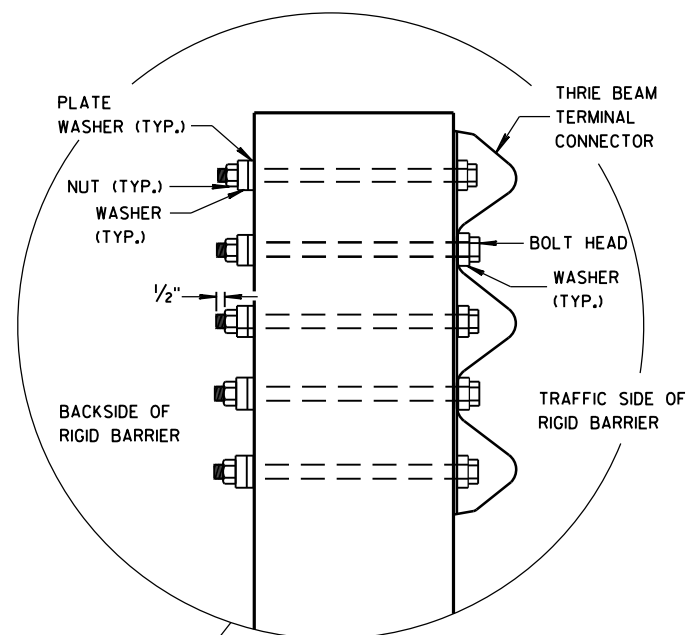


THRIE BEAM CONNECTION TO BRIDGE PARAPET WITH SQUARE ENDS

GENERAL NOTES

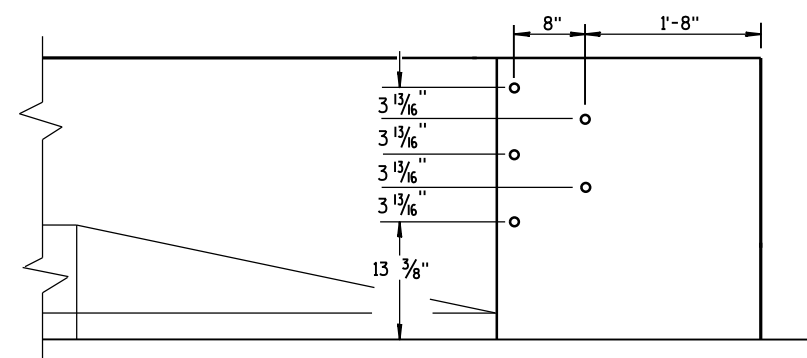
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSITION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- 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".



W BEAM TRANSITION AND CONNECTION TO BRIDGE PARAPETS WITH SQUARE ENDS (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

SECTION F-F



DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

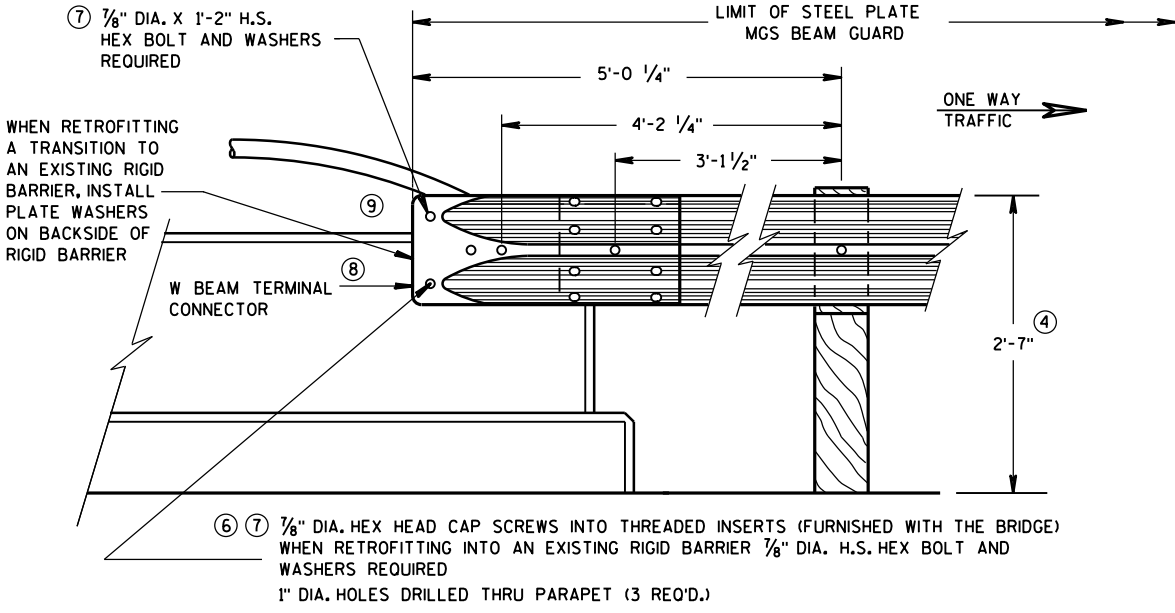
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 0128 NT
FHWA ENGINEER

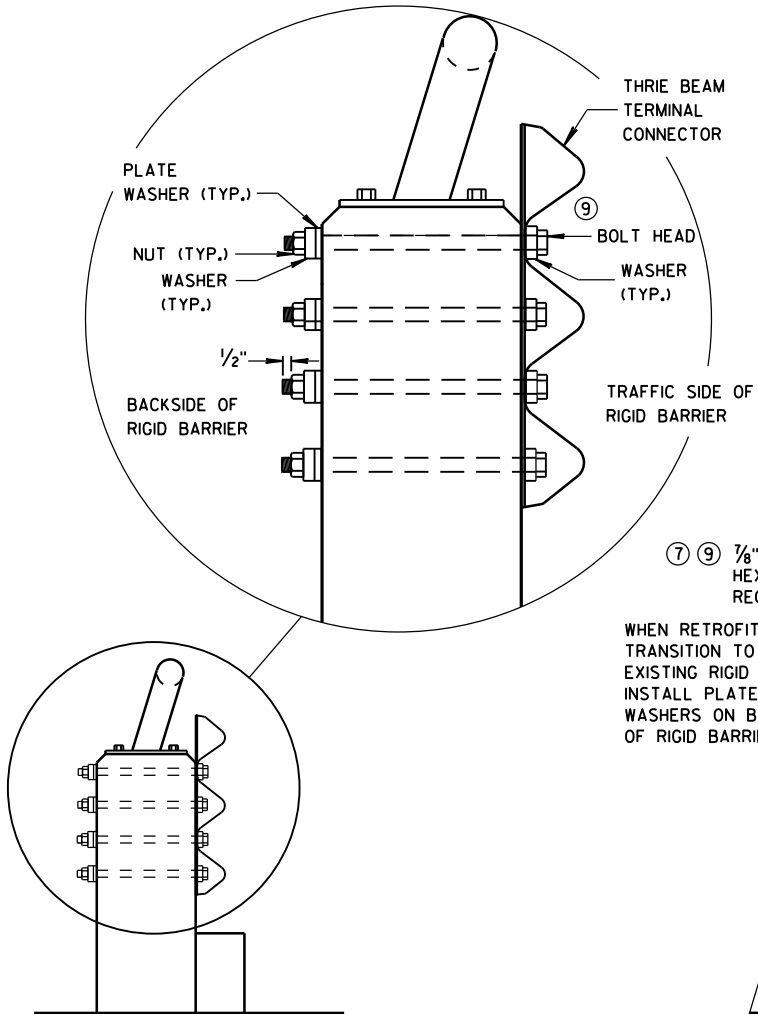
GENERAL NOTES

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

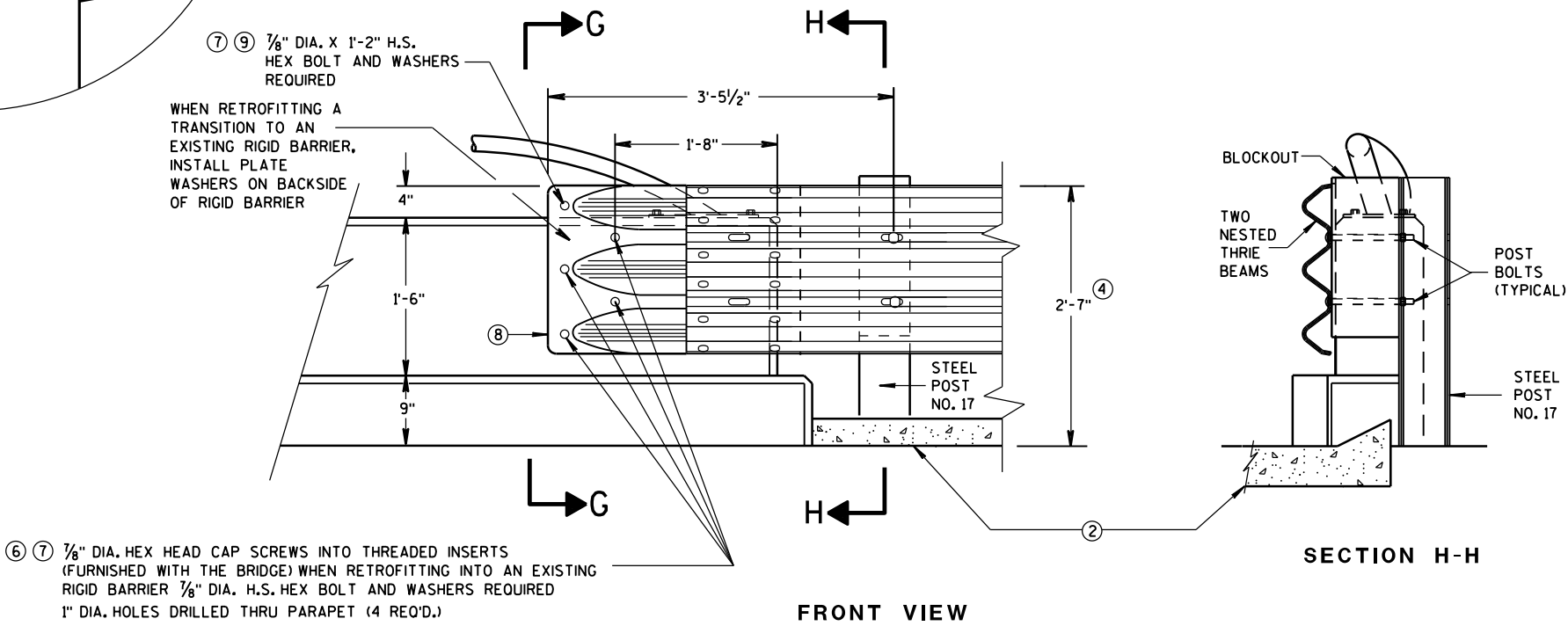
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH 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 $\frac{5}{8}"$ 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 $\frac{1}{2}"$.
- 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.



FRONT VIEW
W BEAM CONNECTION TO VERTICAL FACE PARAPET
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

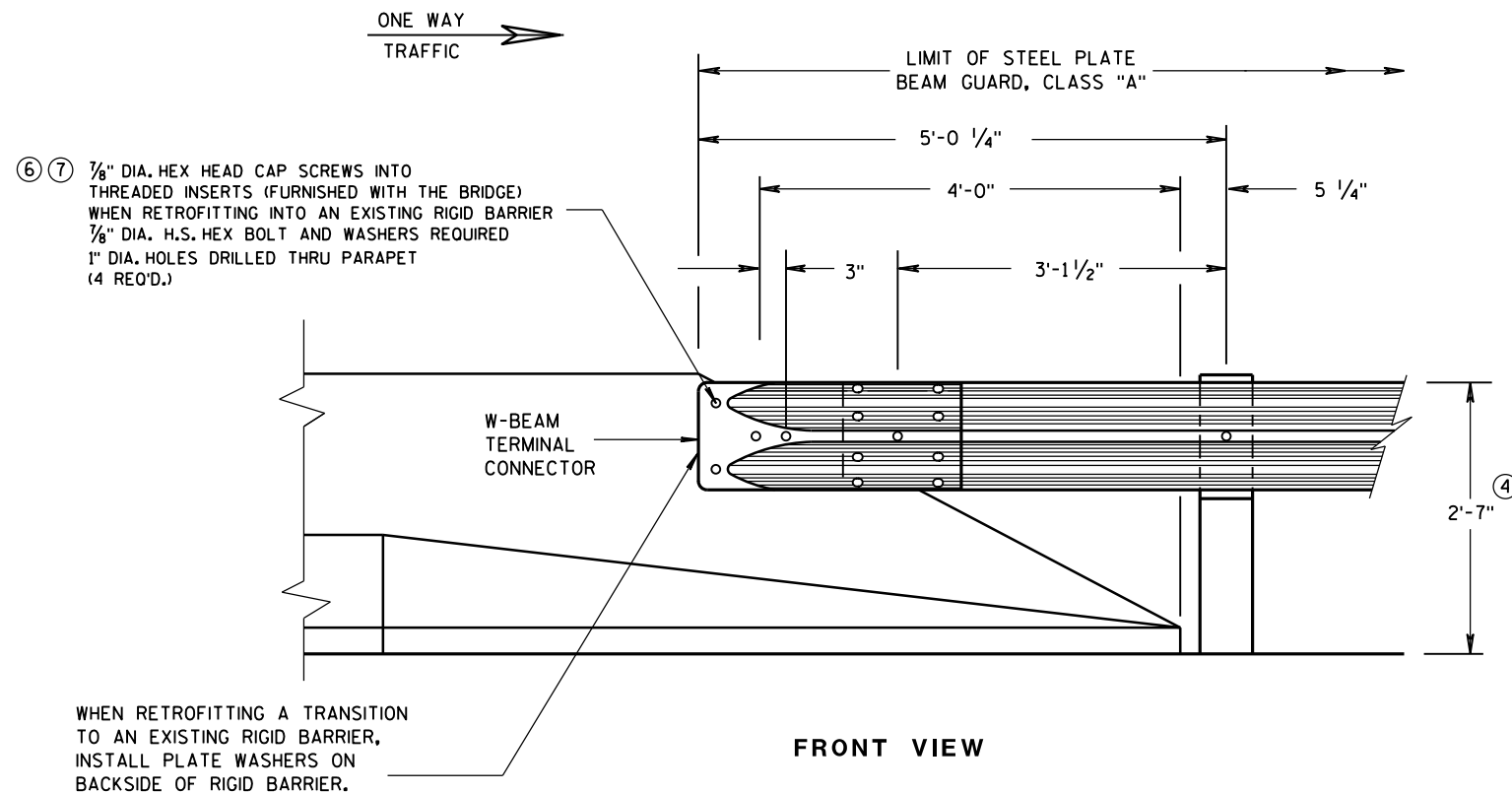


SECTION G-G



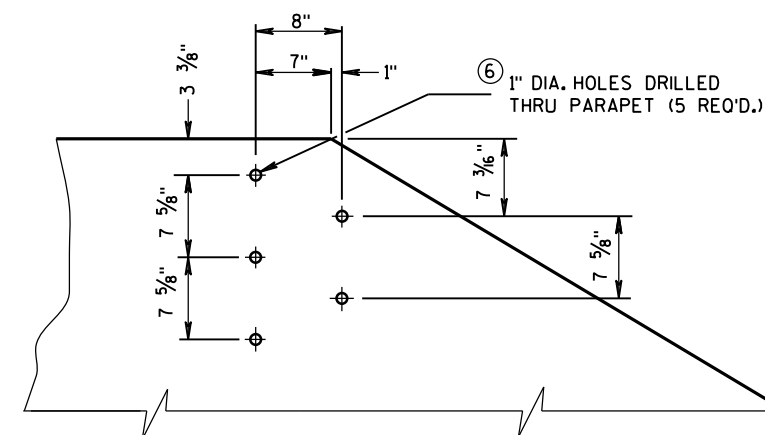
FRONT VIEW
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED June, 2015	/S/ Jerry H. Zogg		
DATE	ROADWAY STANDARDS	129	NT
FHWA	ENGINEER		

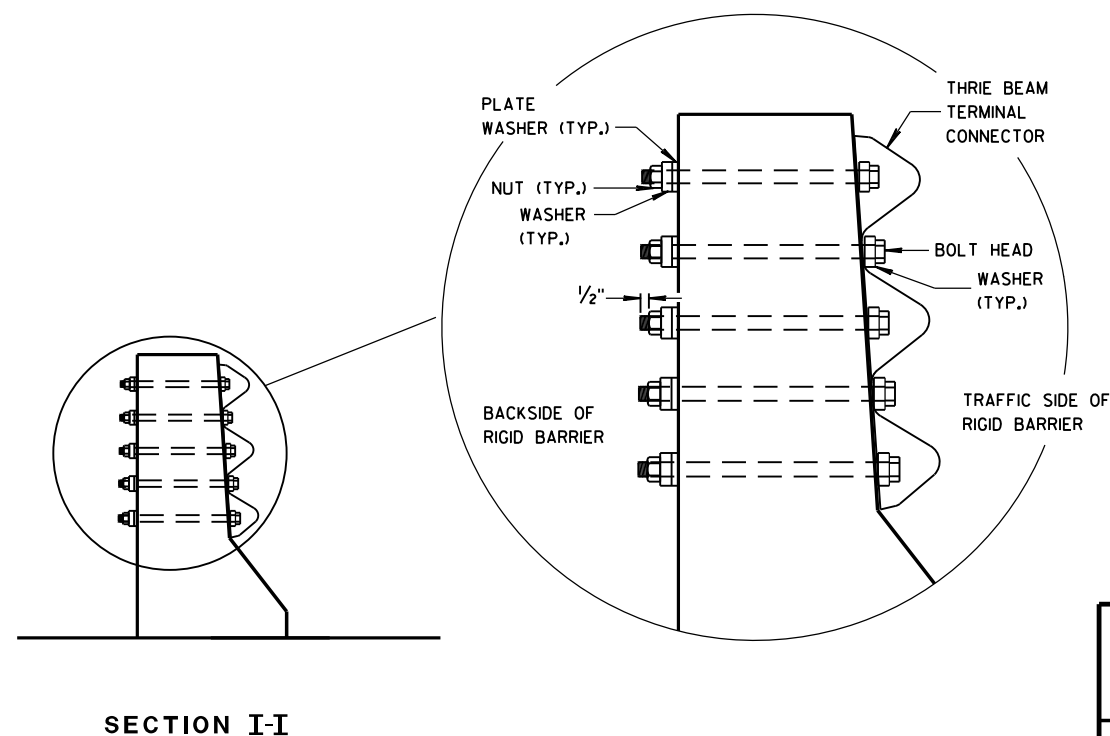
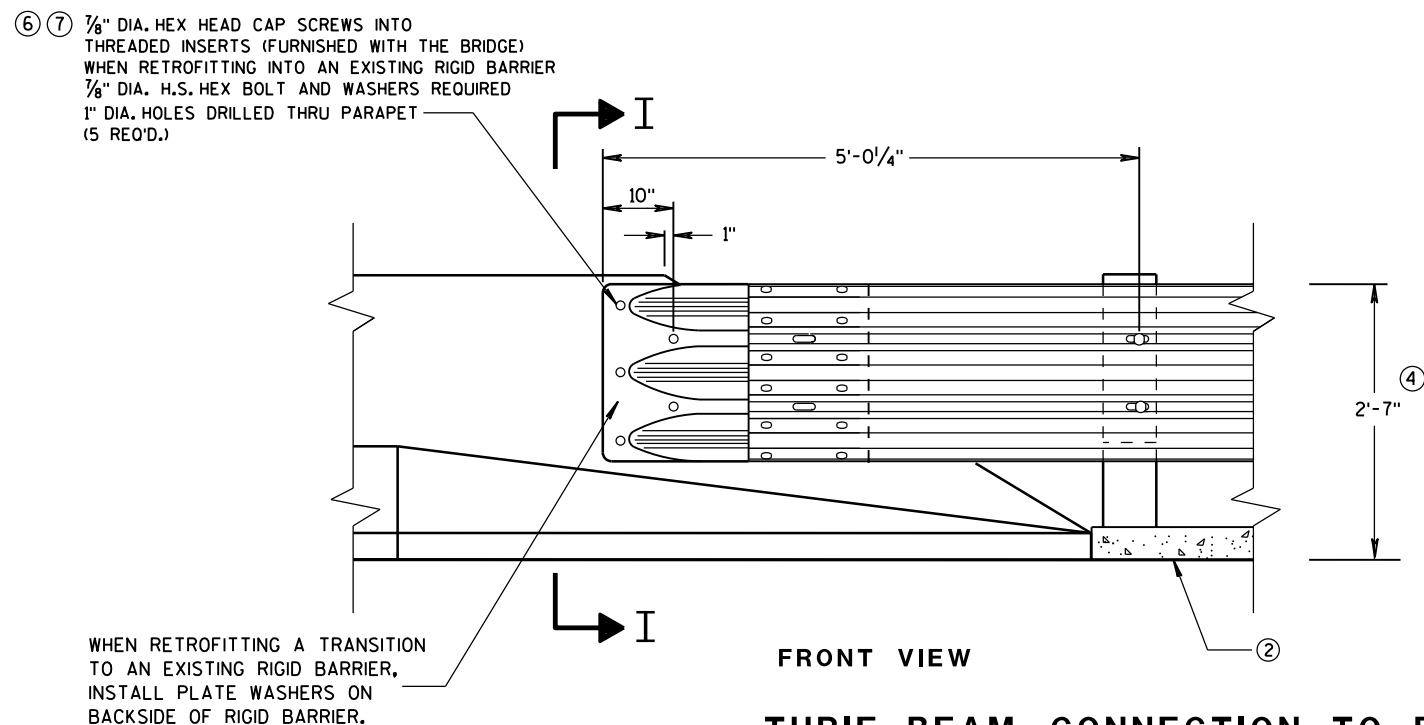


GENERAL NOTES

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- 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.



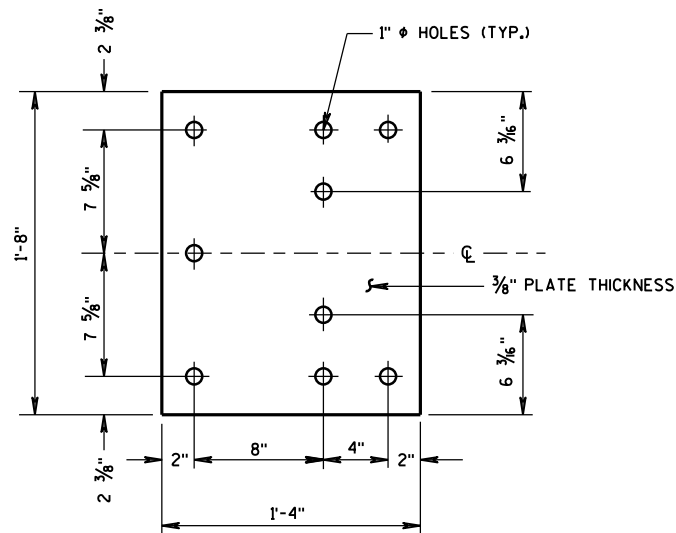
DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION



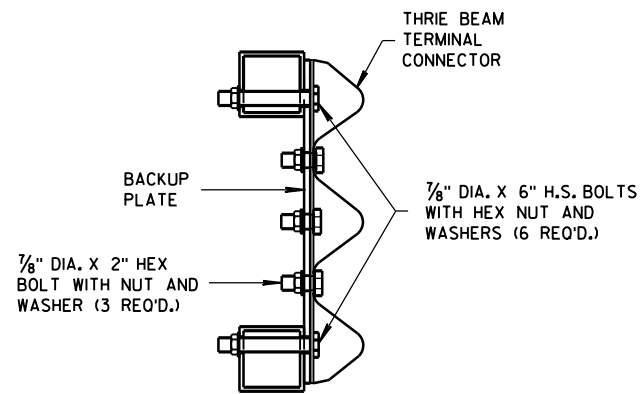
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

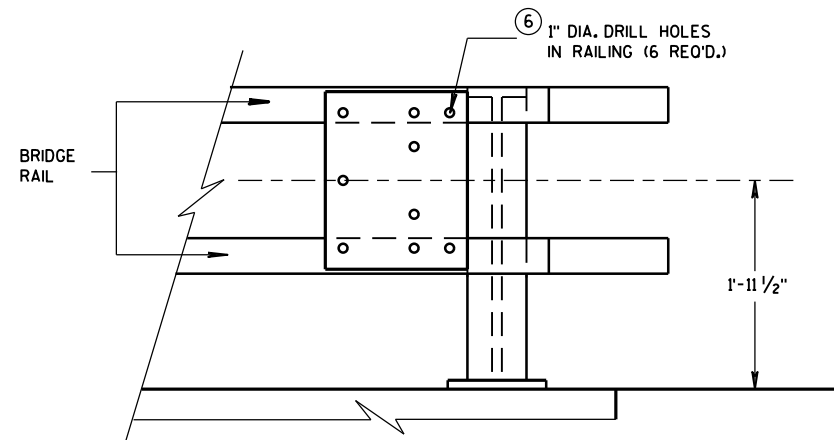
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS ENGINEER 130 INT
FHWA



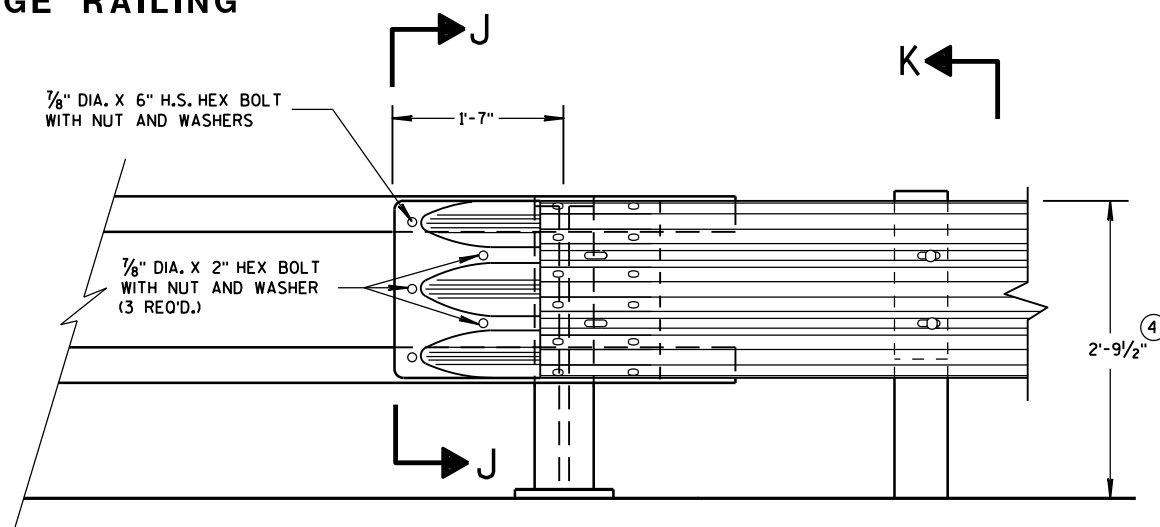
BACK-UP PLATE DETAIL



SECTION J-J

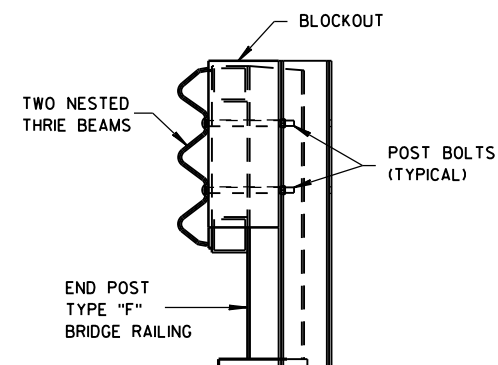


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

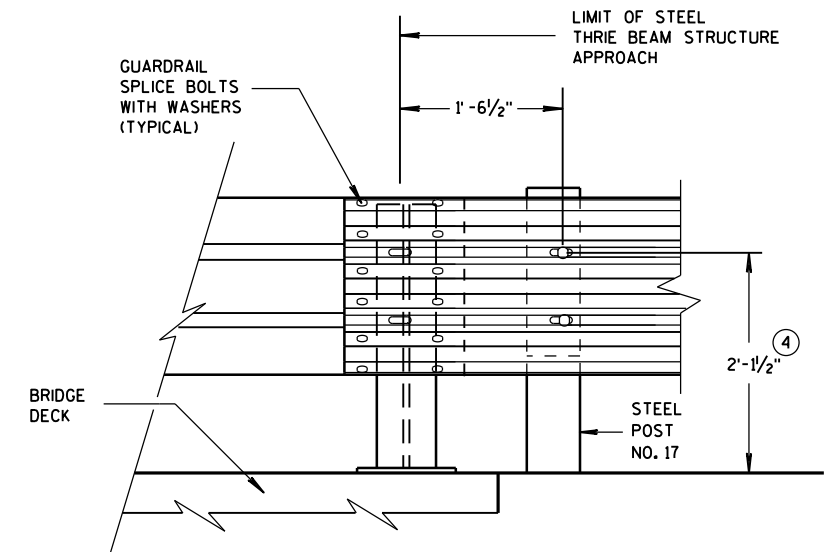
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

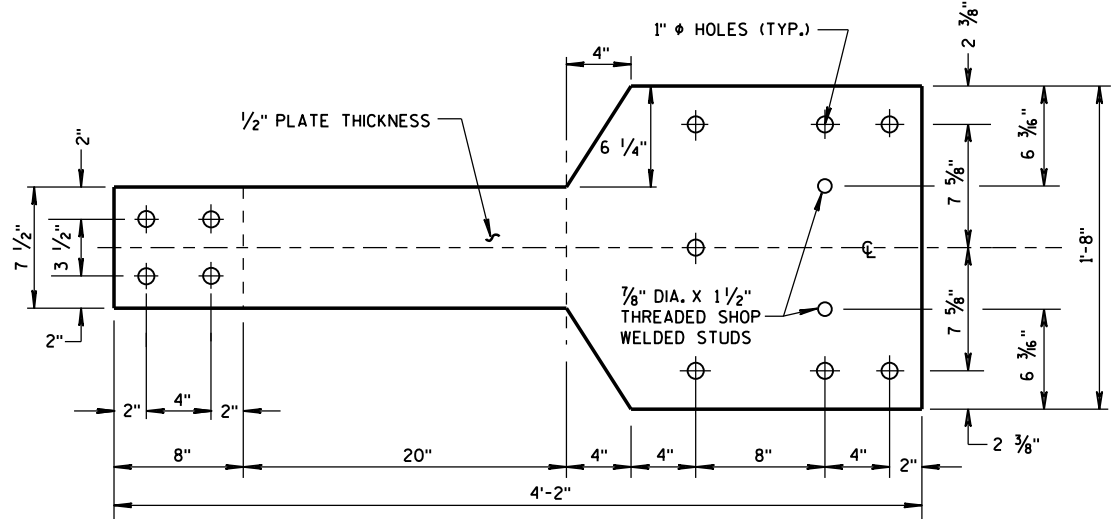
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

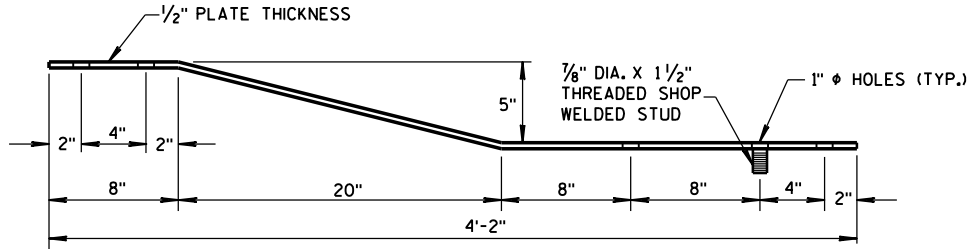
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GENERAL NOTES

④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.

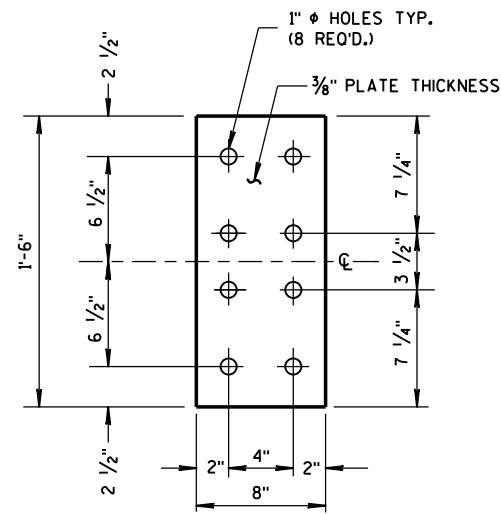


FRONT VIEW



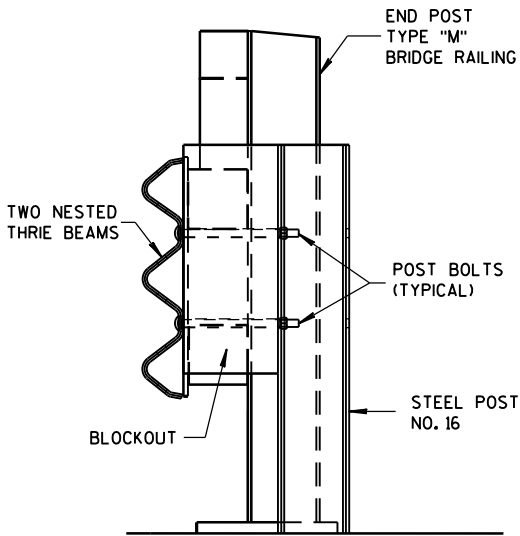
PLAN VIEW

BACK-UP PLATE DETAIL, TYPE "M"

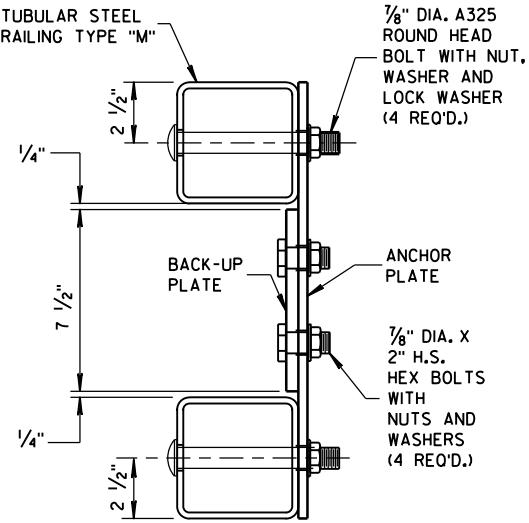


FRONT VIEW

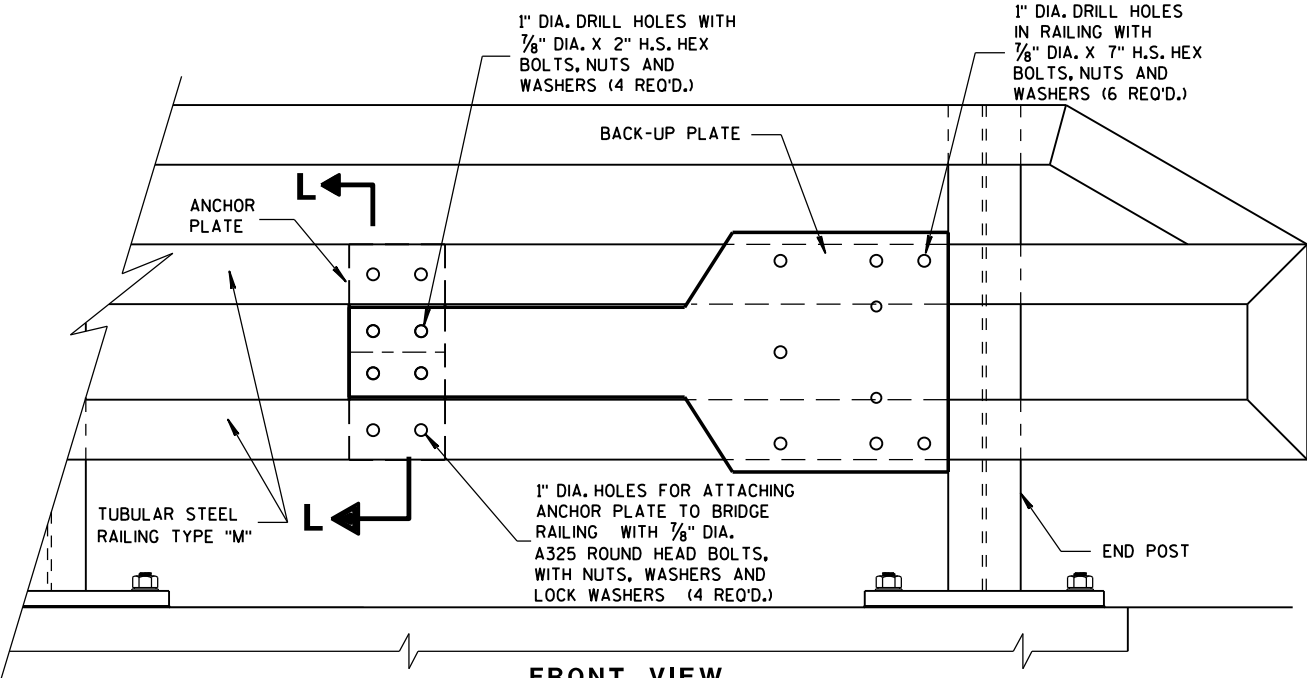
ANCHOR PLATE DETAIL, TYPE "M"



SECTION M-M

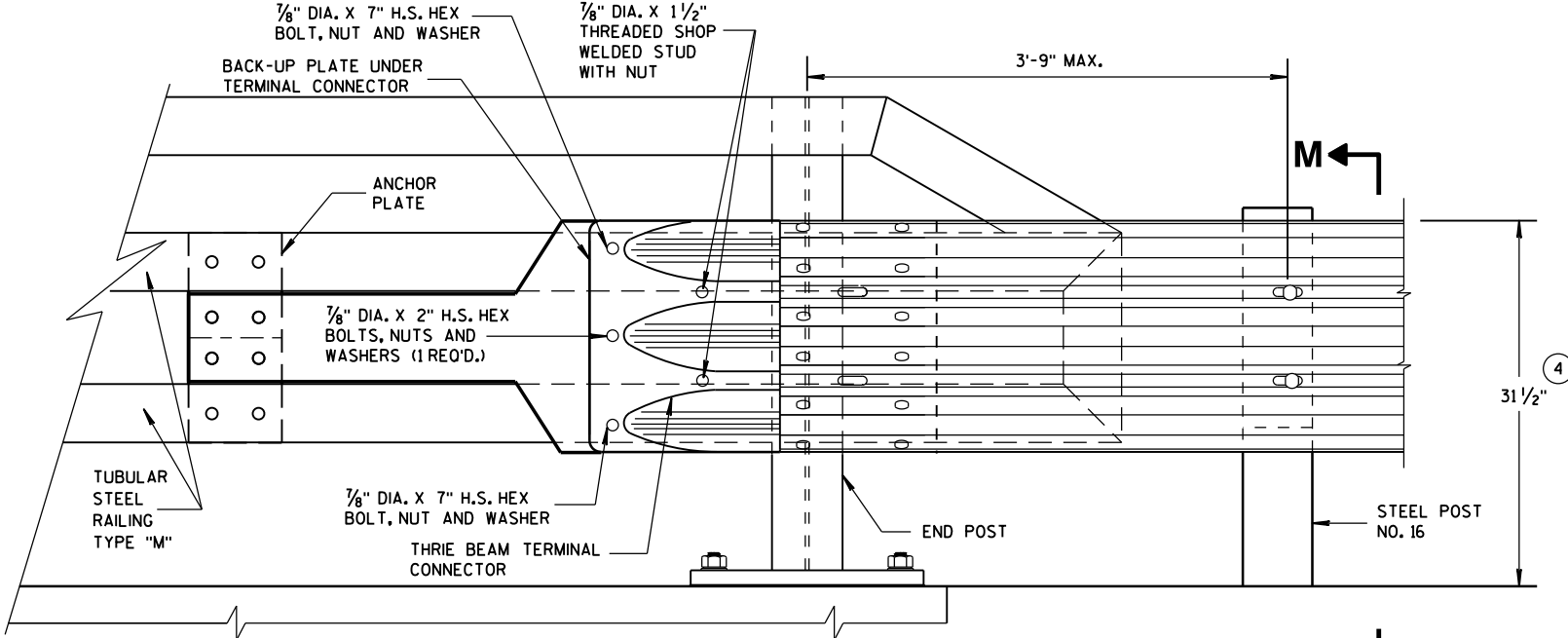


SECTION L-L

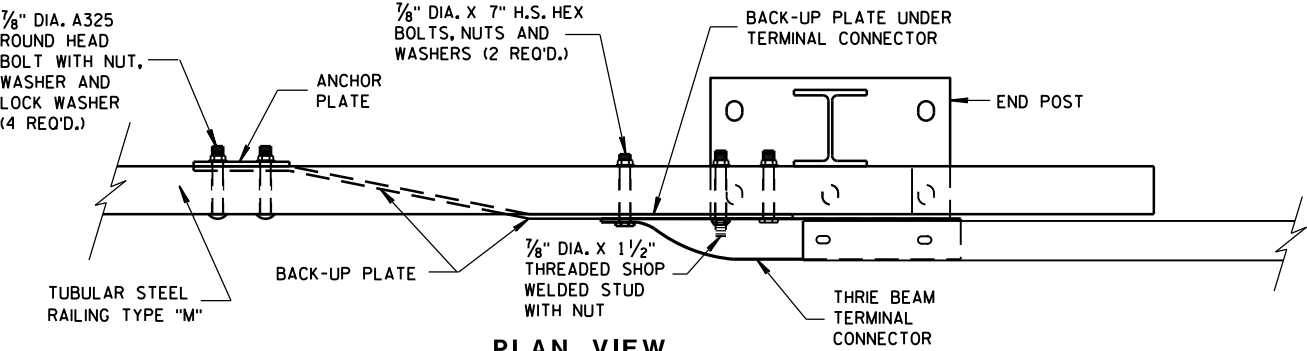


FRONT VIEW

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



FRONT VIEW



PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
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- 10 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND $\frac{3}{8}$ " 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:
 $\frac{3}{8}$ " 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 3/16"	3/16"
P3	1		39" x 3 5/8" x 20" x 19 5/16"	3/16"
S1	4		18 1/16" x 3 5/8" x 18 3/4"	1/4"
S2	1		10 1/4" x 2 1/16" x 10 3/8" x 1/2"	1/4"
S3	1		3" x 1/16" x 3/8" x 1/2"	1/4"
S4	1		6 1/8" x 2 1/16"	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 3/16" x 6" x 3 3/8" x 5 7/8"	1/4"
S8	1		1 5/32" x 7 1/2" x 2 1/2" x 7 3/8"	1/4"
S9	1		6 1/16" x 6 3/16" x 1 3/32"	1/4"
S10	1		1 7/8" x 9 7/8" x 3 5/8" x 9 1/16"	1/4"
S11	1		8 1/2" x 8 3/4" x 1 3/16"	1/4"

SINGLE SLOPE CONNECTION PLATE

MIDWEST GUARDRAIL SYSTEM
THREE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2015

DATE

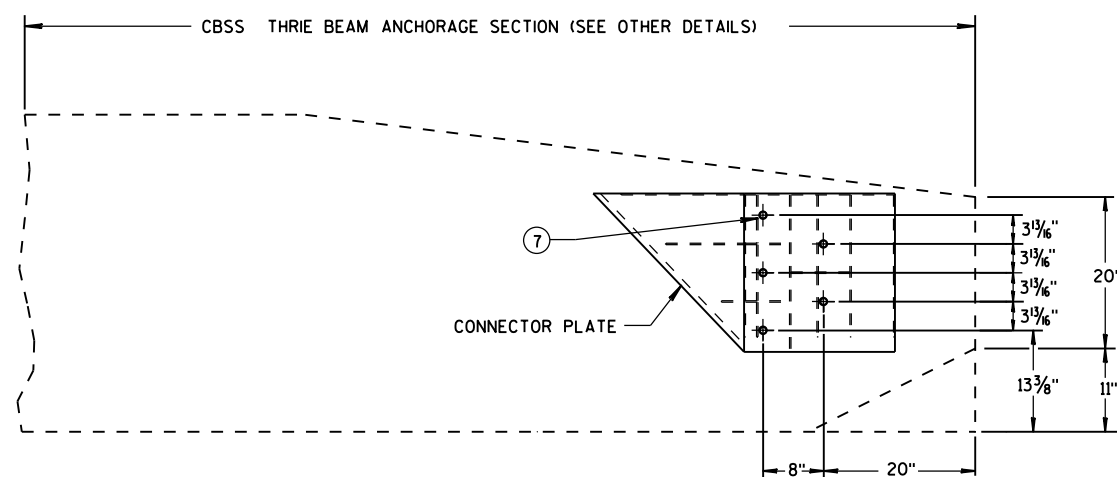
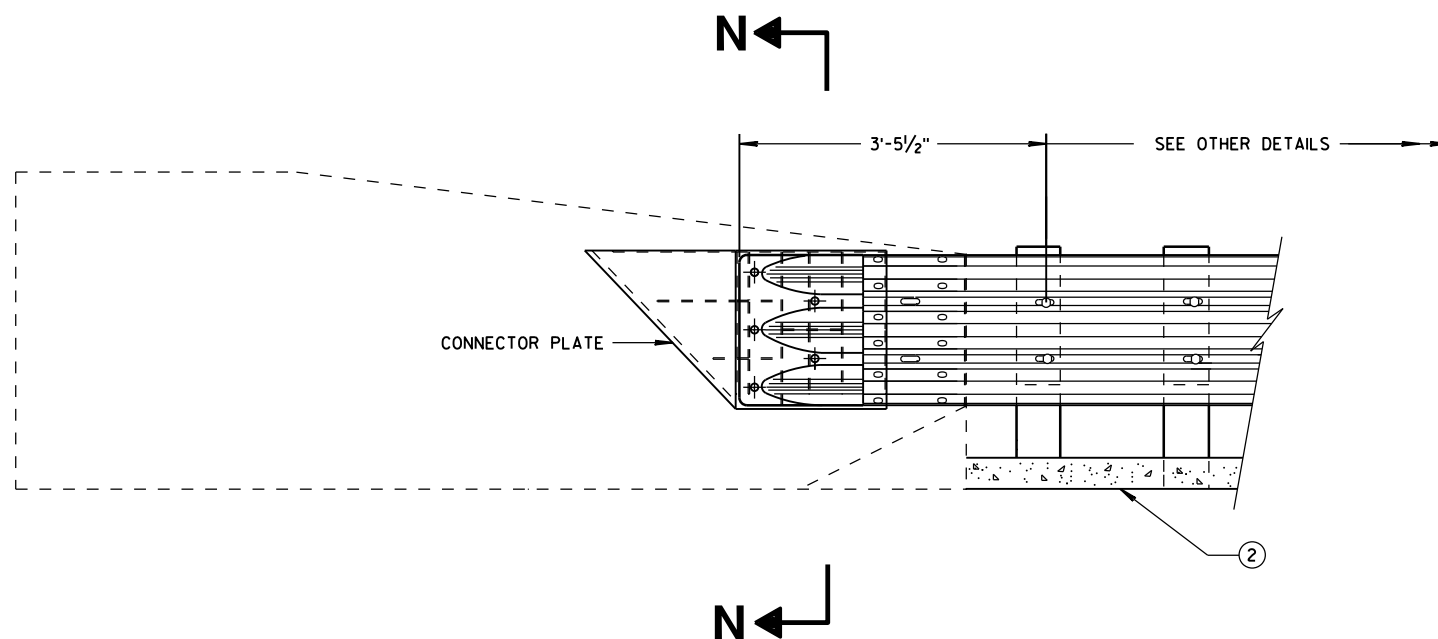
/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

133

INT

FHWA

THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



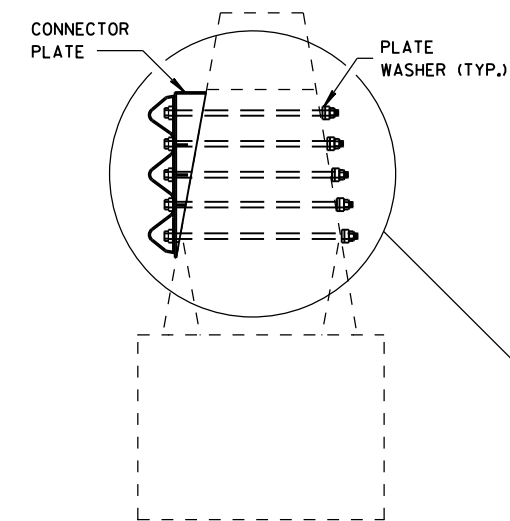
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

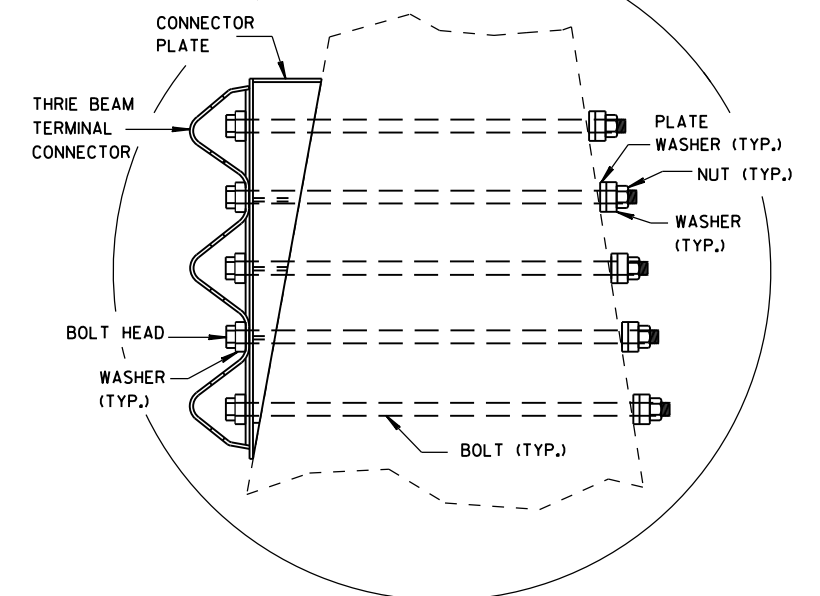
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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
DEPARTMENT OF TRANSPORTATION

APPROVED

June, 2015

DATE

FHWA

/s/ Jerry H. Zoog

ROADWAY STANDARDS 134

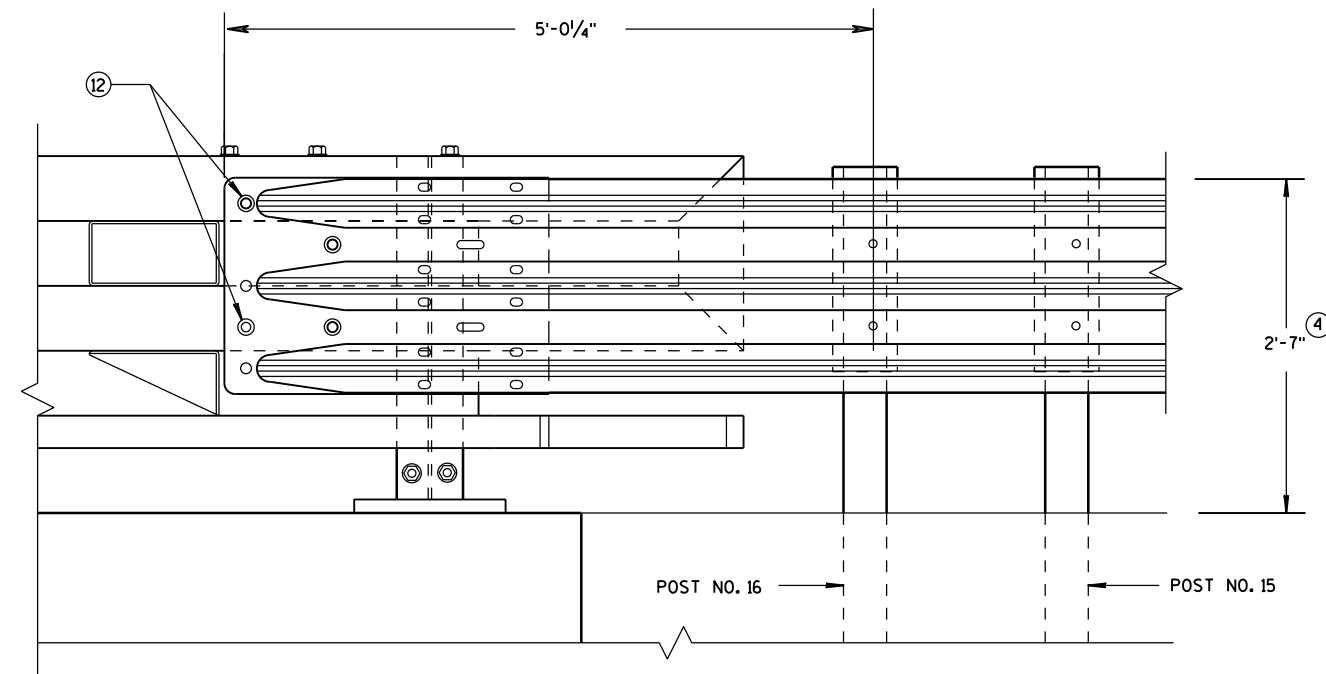
ENGINEER

NT

GENERAL NOTES

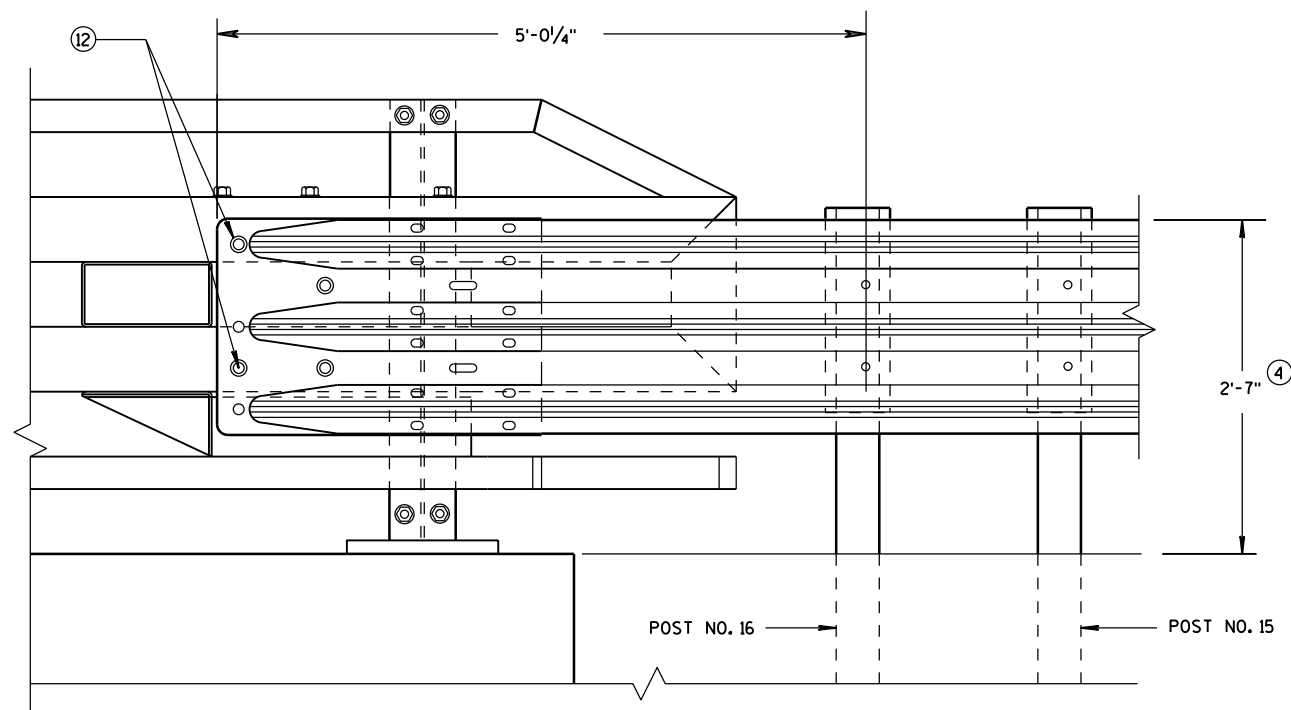
④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

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 $\frac{1}{2}$ -INCH BEYOND NUT.



ELEVATION OF DETAIL AT NY3 END POST

THRIE BEAM RAIL ATTACHMENT



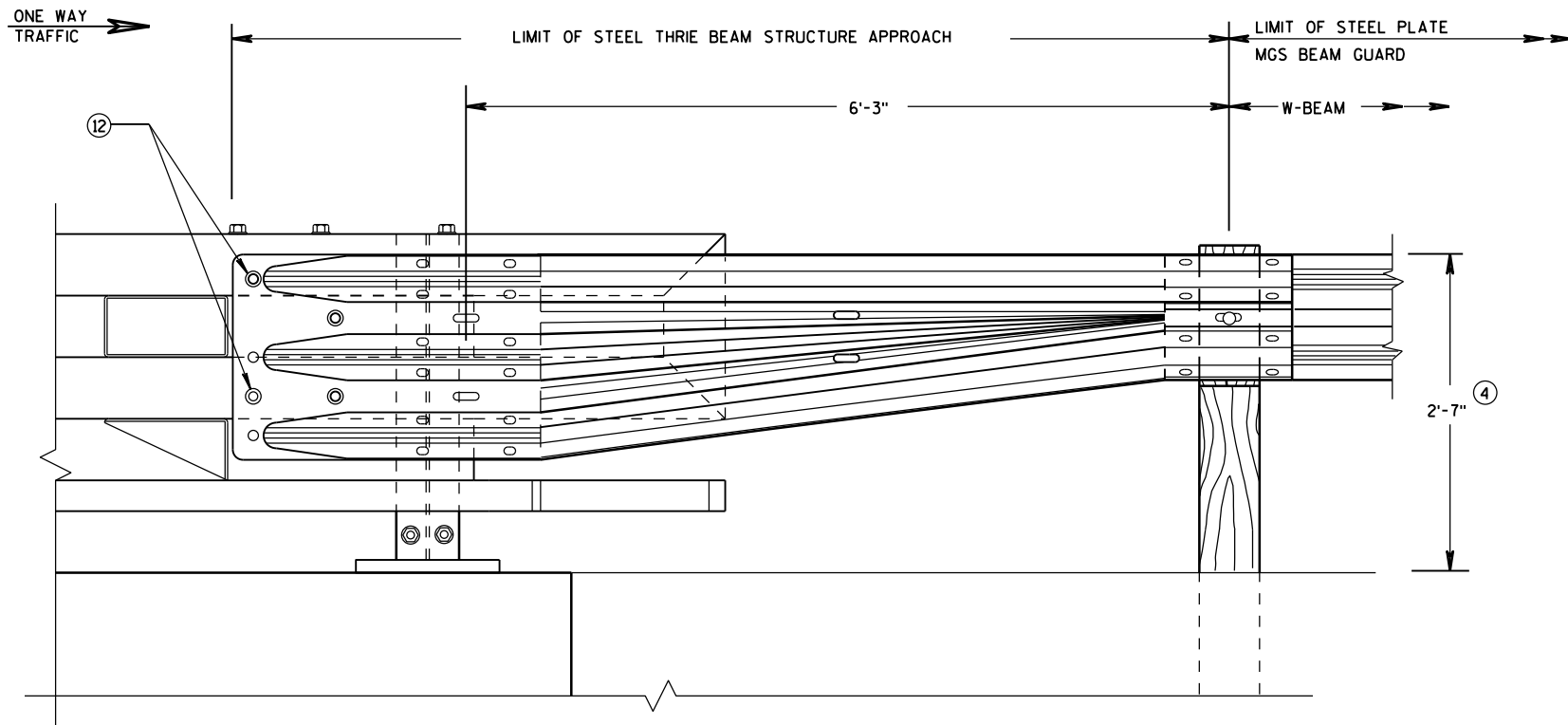
ELEVATION OF DETAIL AT NY4 END POST

THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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DATE ROADWAY STANDARDS D 135 NT
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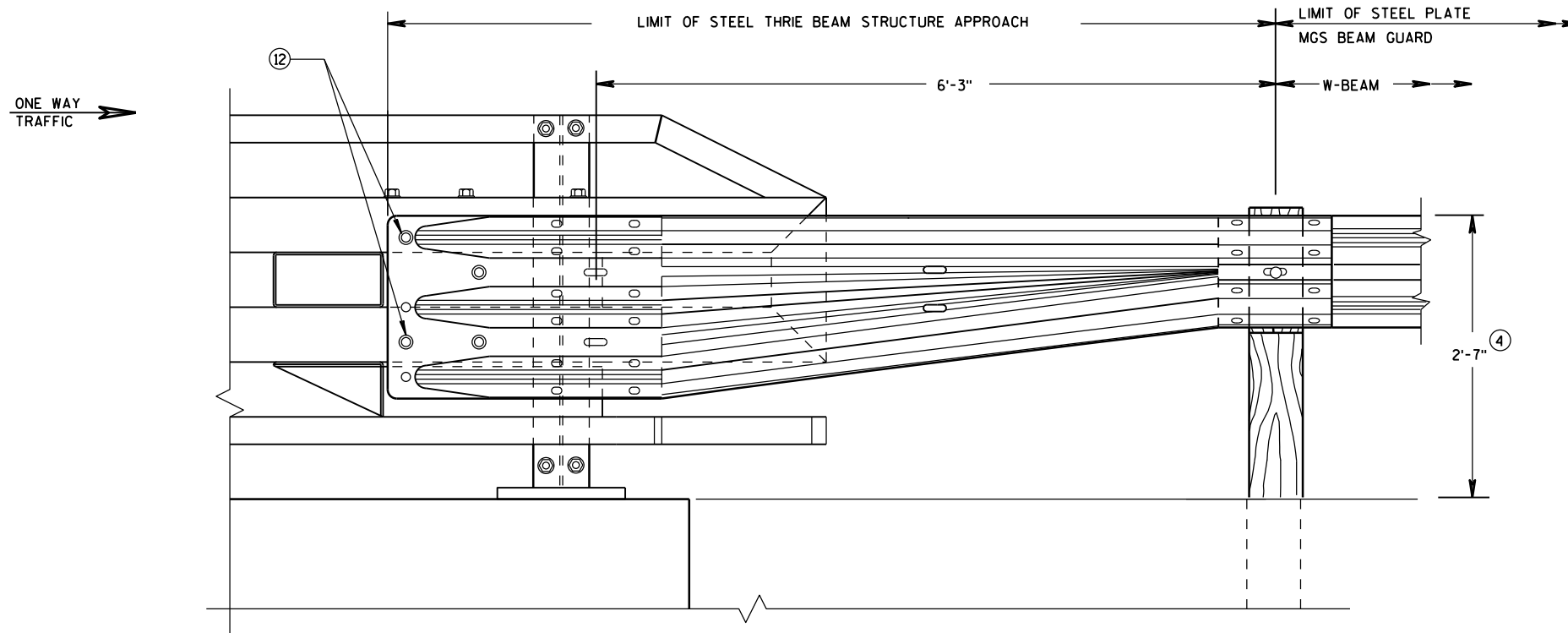


FRONT VIEW

**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 $\pm 1"$.
- 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 $\frac{1}{2}$ -INCH BEYOND NUT.



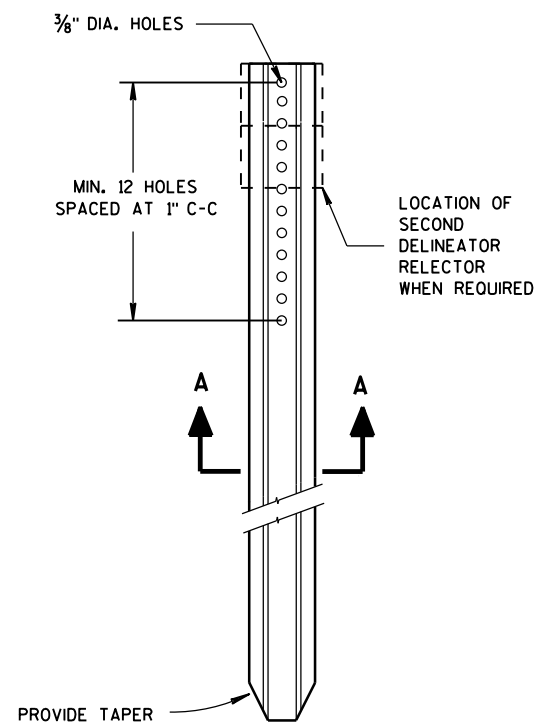
FRONT VIEW

**W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY4"**
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

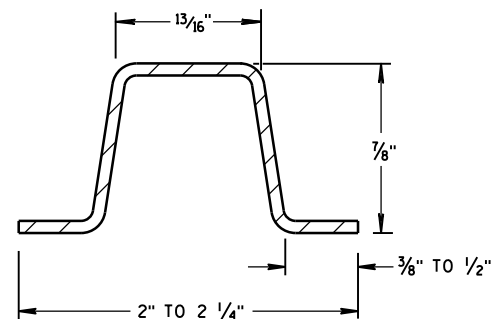
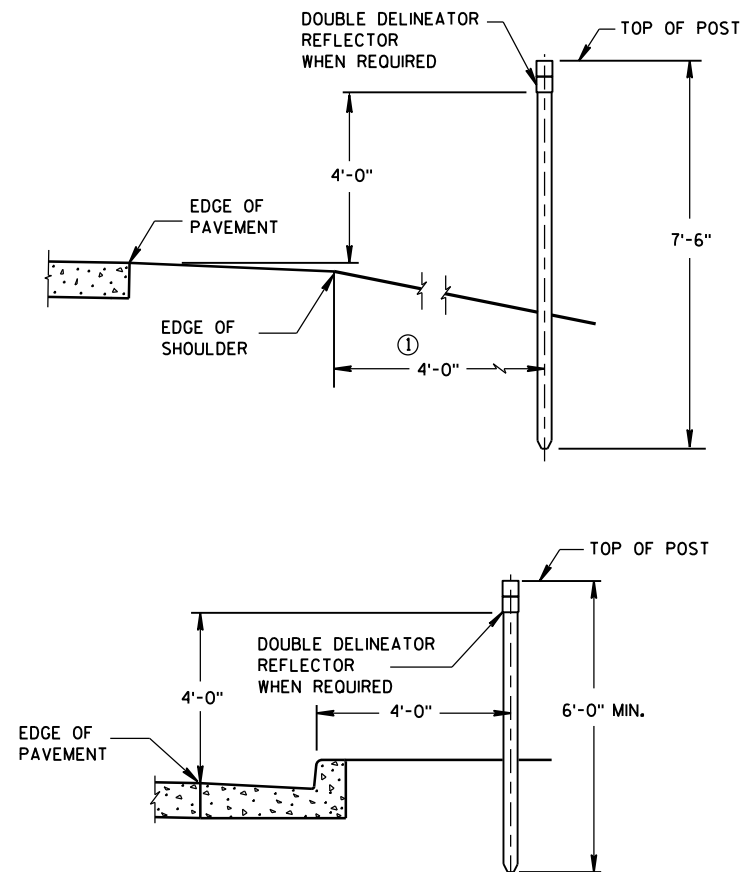
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

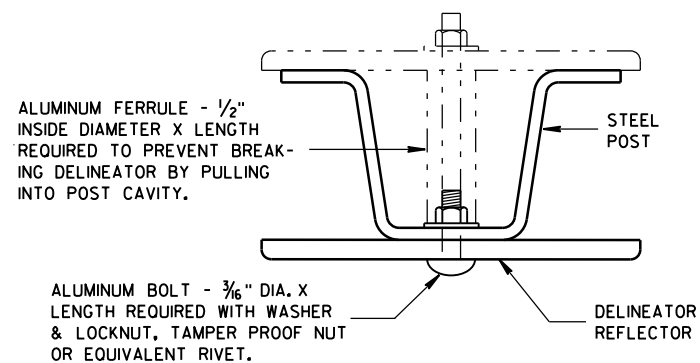
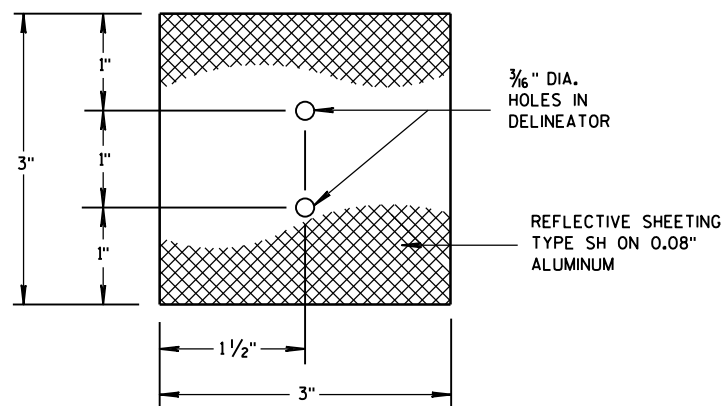
APPROVED
June, 2015 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS D 136 NT
FHWA ENGINEER



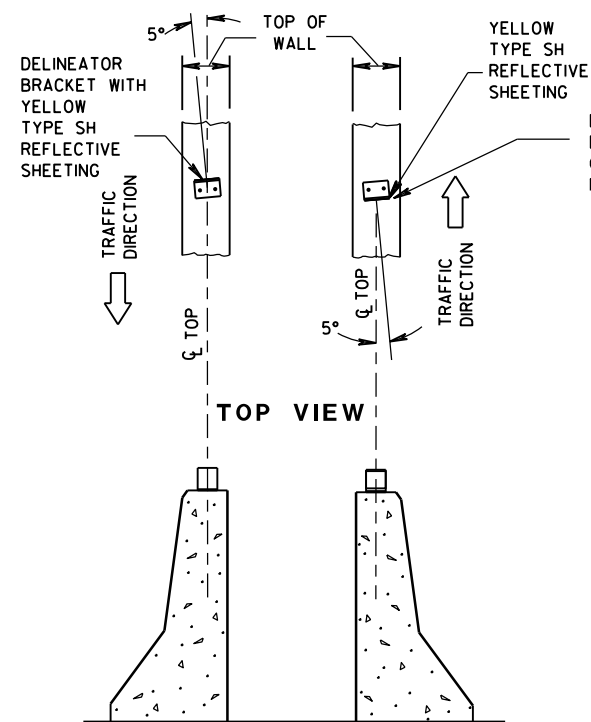
DELINEATOR POST

SECTION A-A
WEIGHT 1.12 LBS PER FT. ± 0.1 LB.

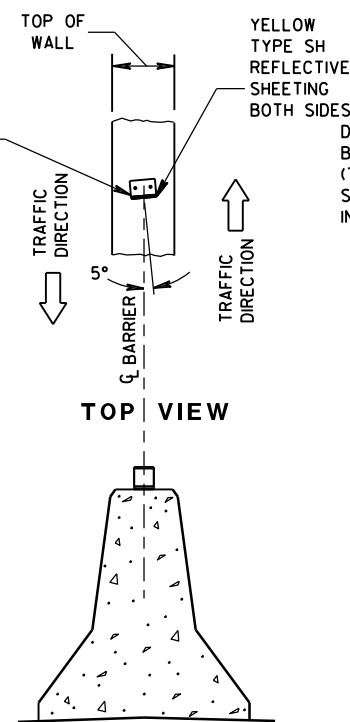
TYPICAL INSTALLATIONS OF DELINEATOR POSTS

MOUNTING DETAIL
FOR DELINEATOR REFLECTOR

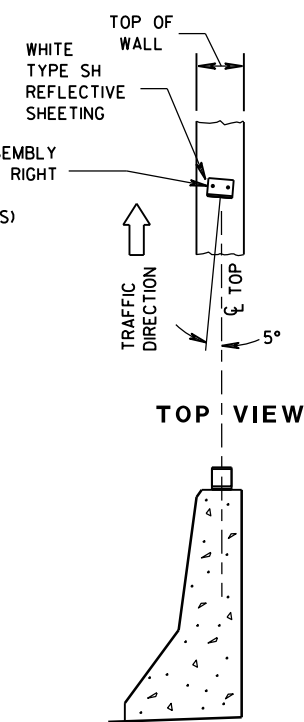
3" x 3" DELINEATOR REFLECTOR



DOUBLE BARRIERS IN MEDIAN



MEDIAN BARRIER

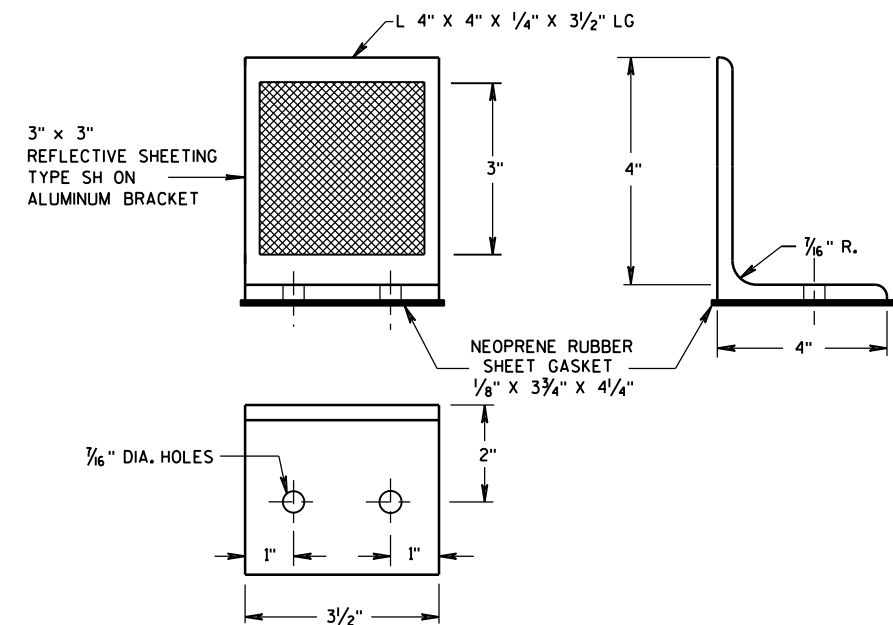
BARRIER LOCATED
TO RT. OF TRAFFIC FLOW

LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS

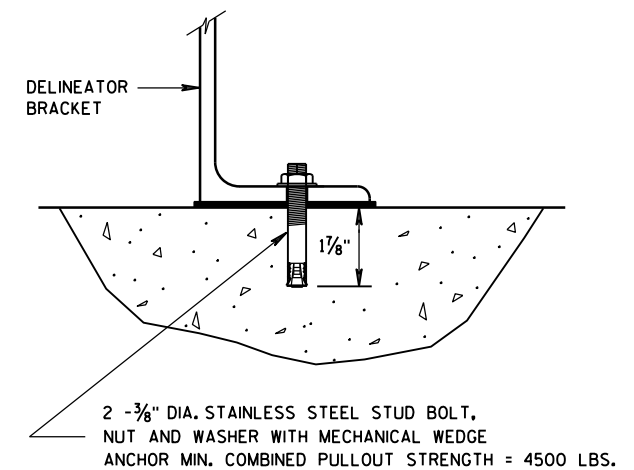
GENERAL NOTES

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

- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.



DELINEATOR BRACKET

DELINEATOR BRACKET
MOUNTING DETAIL

DELINEATOR POST,
DELINEATOR REFLECTOR AND
DELINEATOR BRACKET
WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

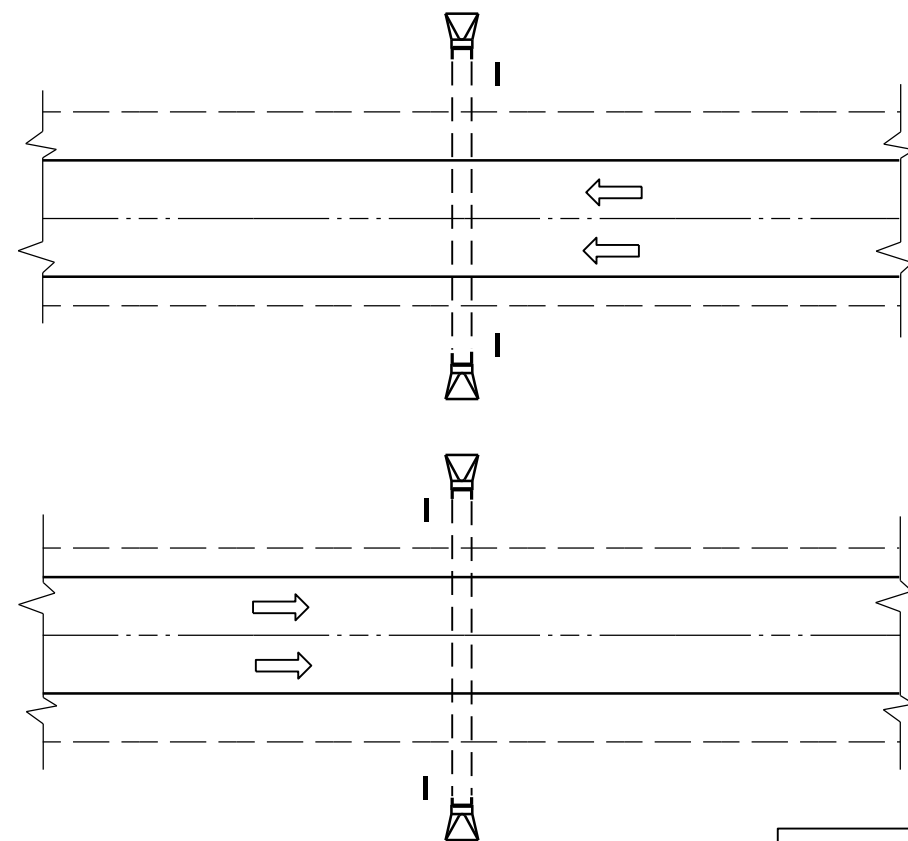
APPROVED

4-18-16

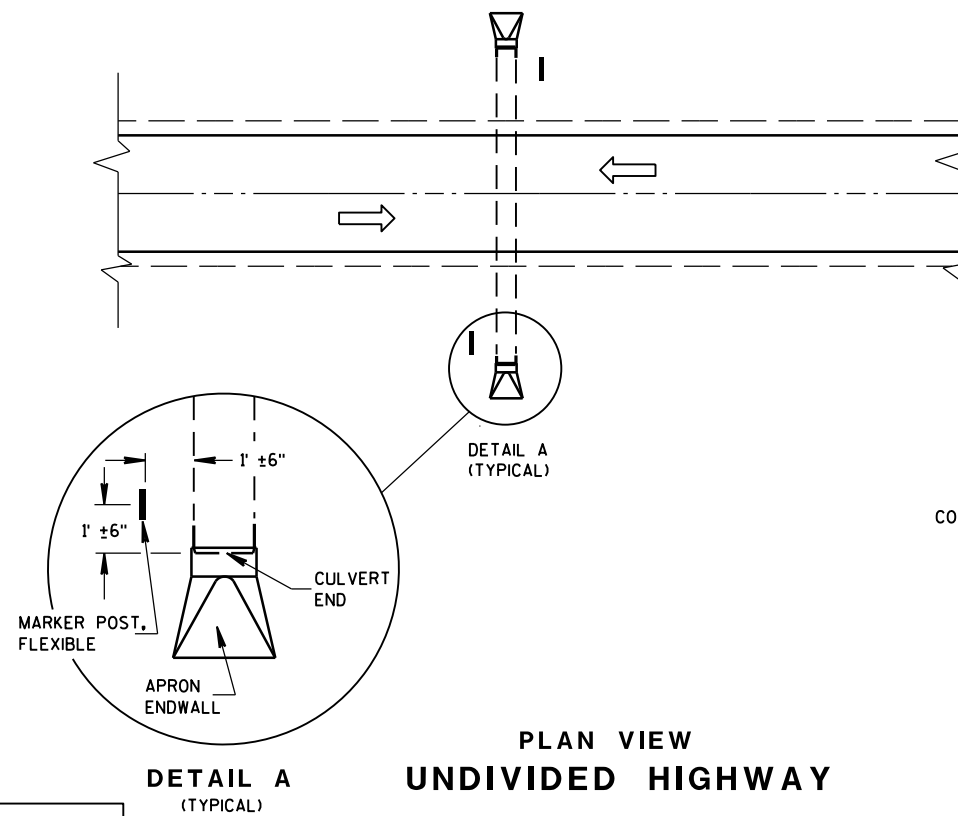
DATE

FHWA

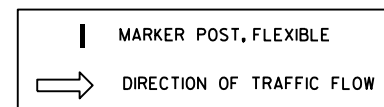
/S/ Matthew R. Rauch
STATE SIGNING AND MAINTENANCE ENGINEER



PLAN VIEW
DIVIDED HIGHWAY



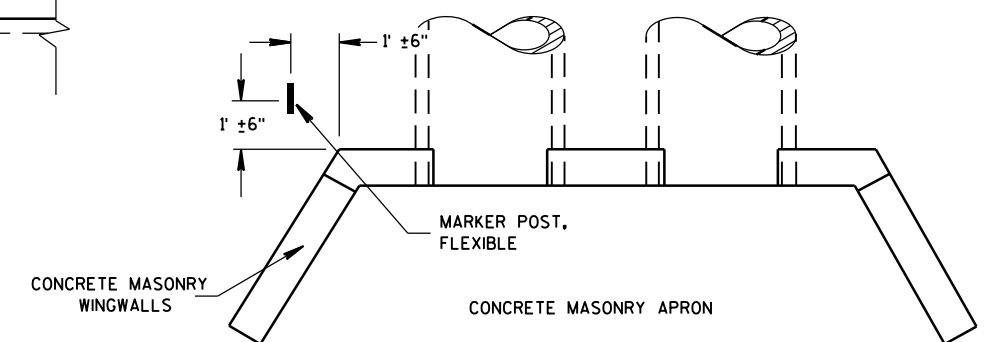
PLAN VIEW
UNDIVIDED HIGHWAY



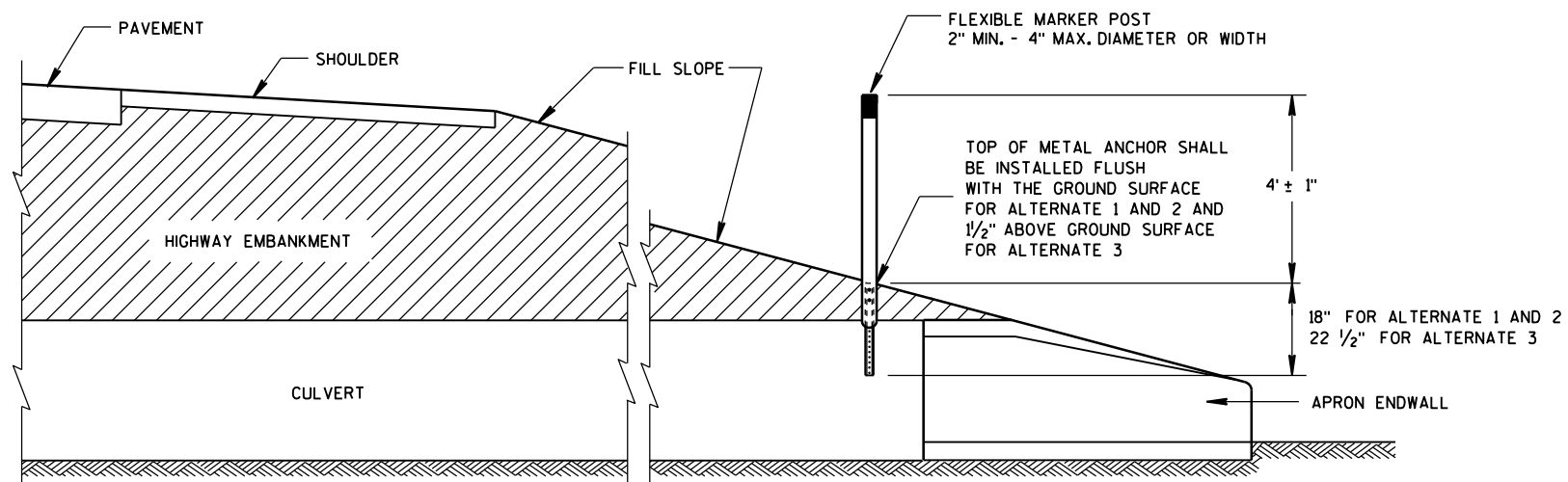
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



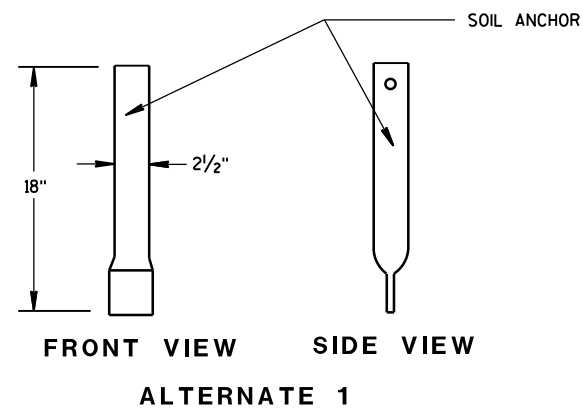
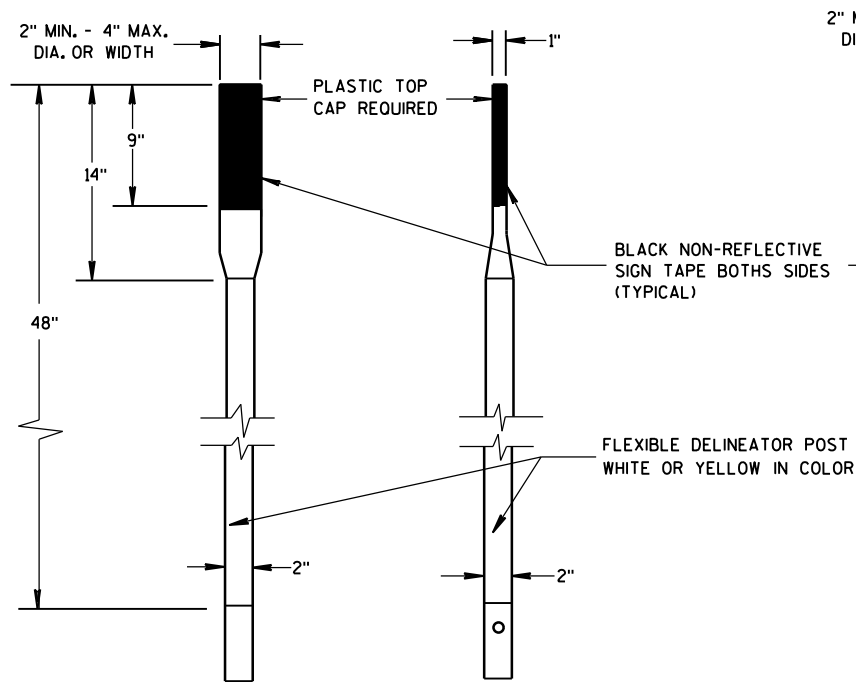
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



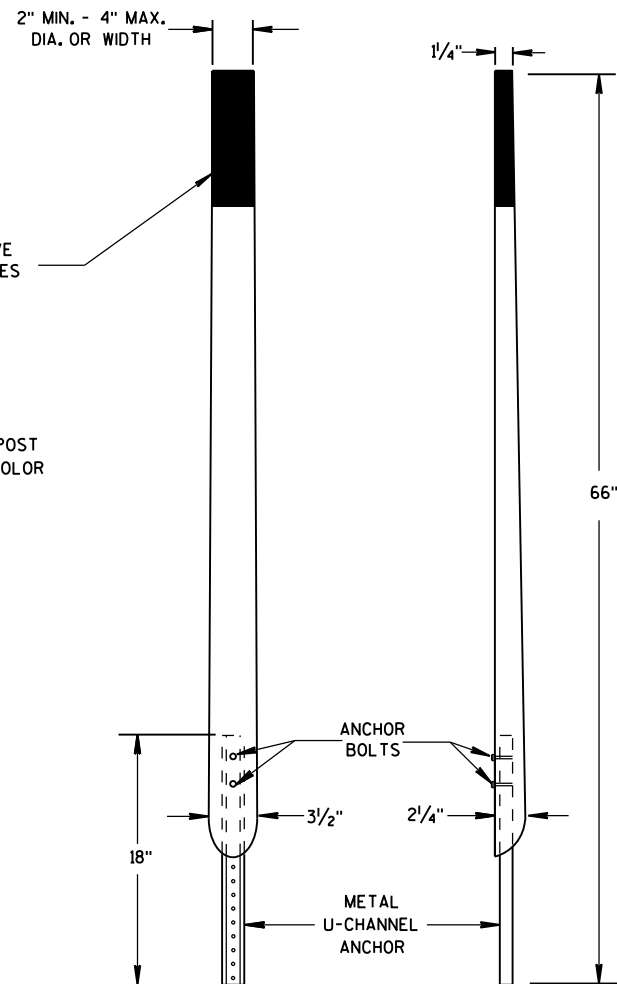
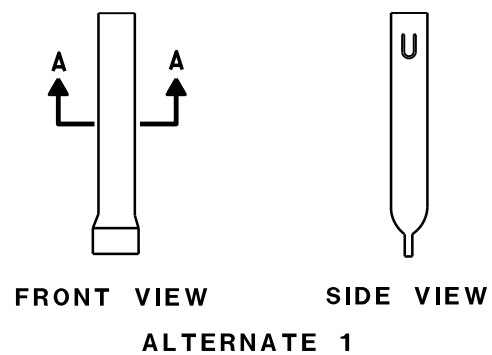
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 138

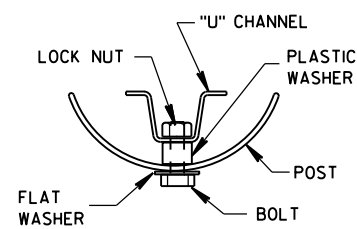


SECTION A-A

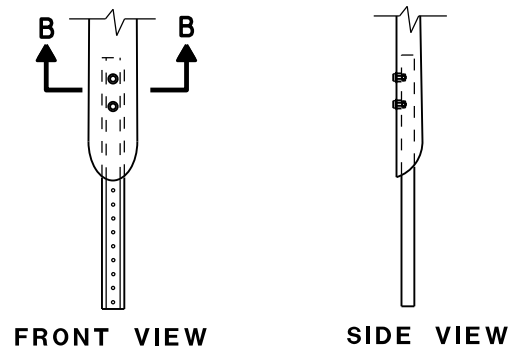


FRONT VIEW SIDE VIEW
ALTERNATE 2

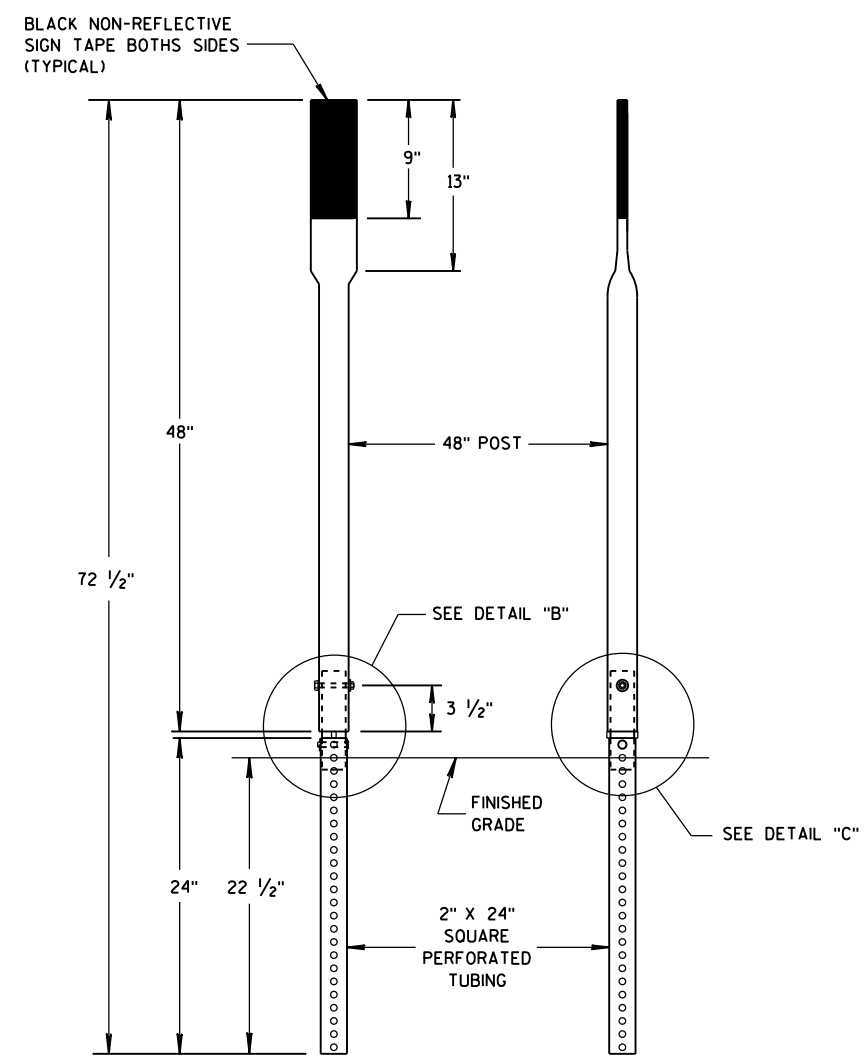
FLEXIBLE MARKER POSTS



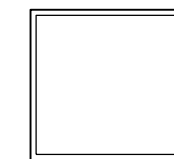
SECTION B-B



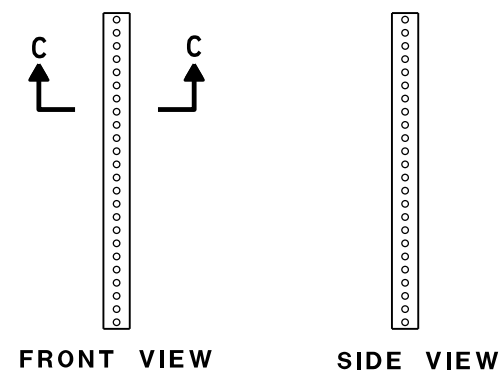
FRONT VIEW SIDE VIEW
ALTERNATE 2
FLEXIBLE MARKER POST ANCHORS



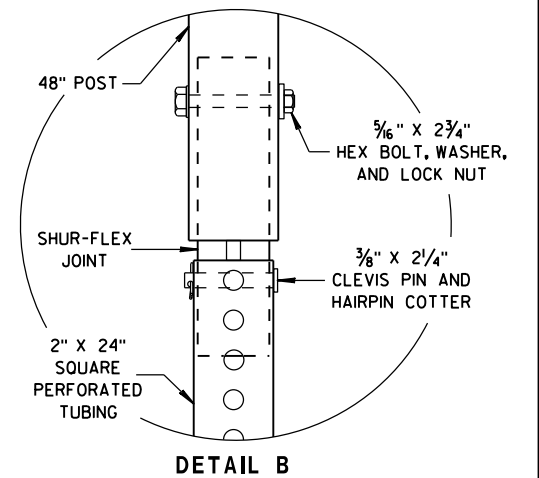
FRONT VIEW SIDE VIEW
ALTERNATE 3



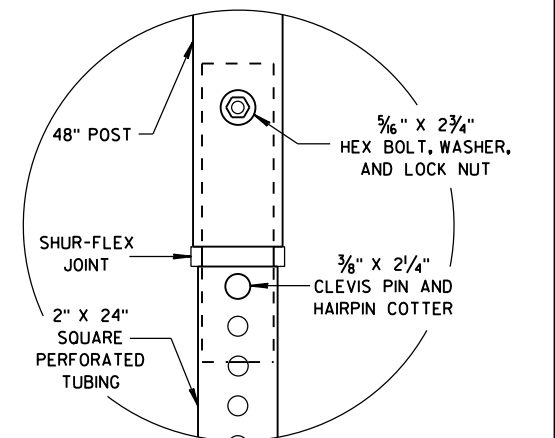
SECTION C-C



FRONT VIEW SIDE VIEW
ALTERNATE 3



DETAIL B



DETAIL C

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

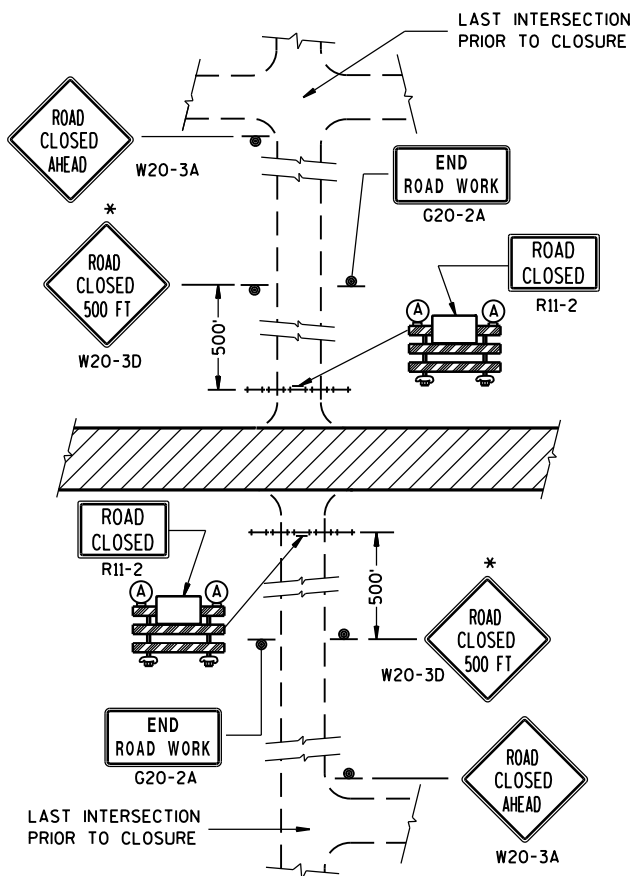
APPROVED

10/1/2012

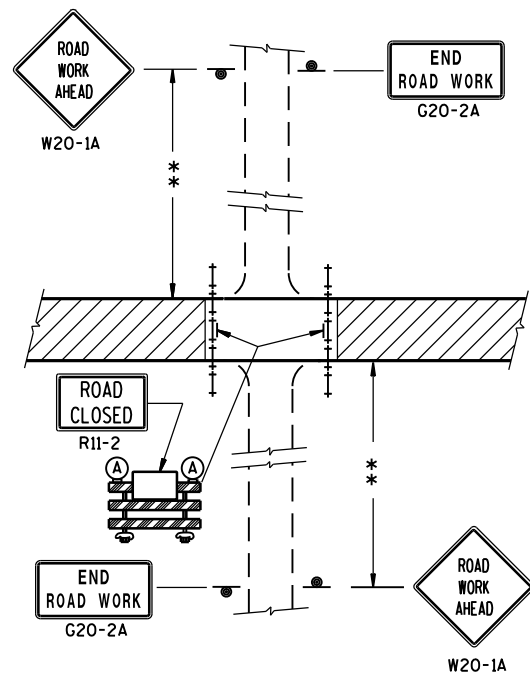
DATE

FHWA

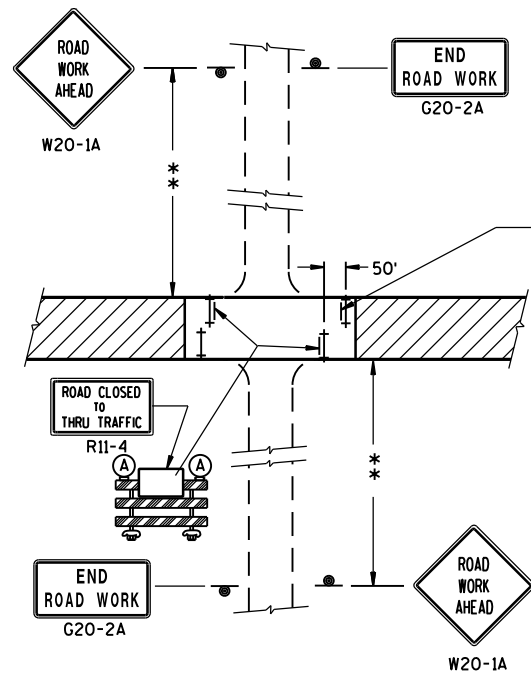
/S/ Travis Feltes
STATE TRAFFIC ENGINEER 139 IGN



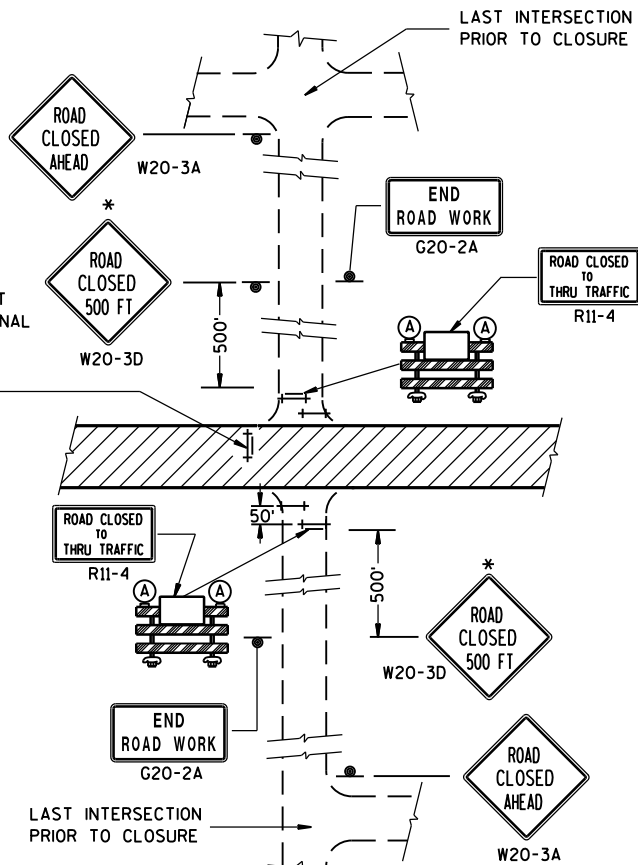
DETAIL 1
(NO ACCESS TO PROJECT)



DETAIL 2
(PUBLIC CROSS-TRAFFIC MAINTAINED.
NO ACCESS TO PROJECT).



DETAIL 3
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR,
LOCAL BUSINESS AND RESIDENT ACCESS).



DETAIL 4
(CONTRACTOR, LOCAL BUSINESS AND
RESIDENT ACCESS TO PROJECT)

GENERAL NOTES

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

ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

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

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

BARRICADES THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY RE-ESTABLISHED UPON COMPLETION OF THE OPERATION OR, FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.

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

ALL TYPE III BARRICADES SHALL HAVE RAILS REFLECTORIZED ON BOTH FACES. STRIPES SHALL BE PROPERLY SLOPED DOWN TOWARD THE TRAFFIC SIDE OR AS SHOWN IN THE ROAD CLOSURE BARRICADE DETAIL D FOR FULL ROAD CLOSURES.

TYPE "A" LOW-INTENSITY FLASHING WARNING LIGHTS SHALL BE VISIBLE ON BOTH SIDES OF THE BARRICADE.

THE R11-2, R11-3 AND R11-4 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

*OMIT THE "ROAD CLOSED 500 FT." SIGN IF
THE LAST INTERSECTION IS 500 FT. OR LESS
FROM THE WORK ZONE.

**500' MAX. OR AT LAST INTERSECTION
WHICHEVER IS CLOSER.

LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ⊢ TYPE III BARRICADE
- ⊢ TYPE III BARRICADE WITH ATTACHED SIGN
- Ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

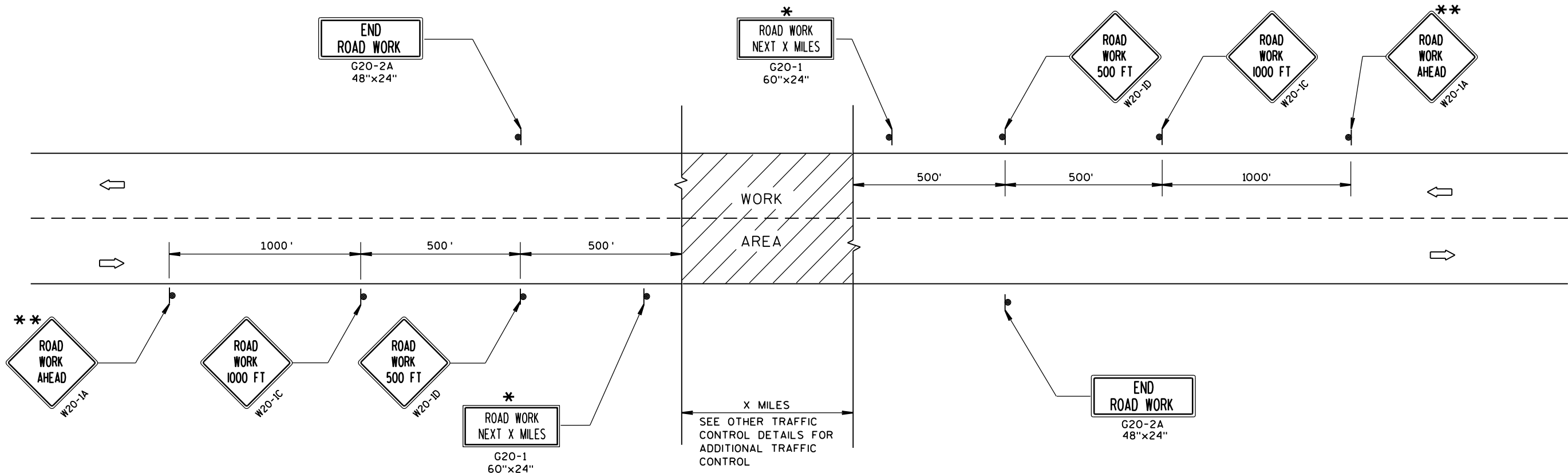
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENG 140

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.

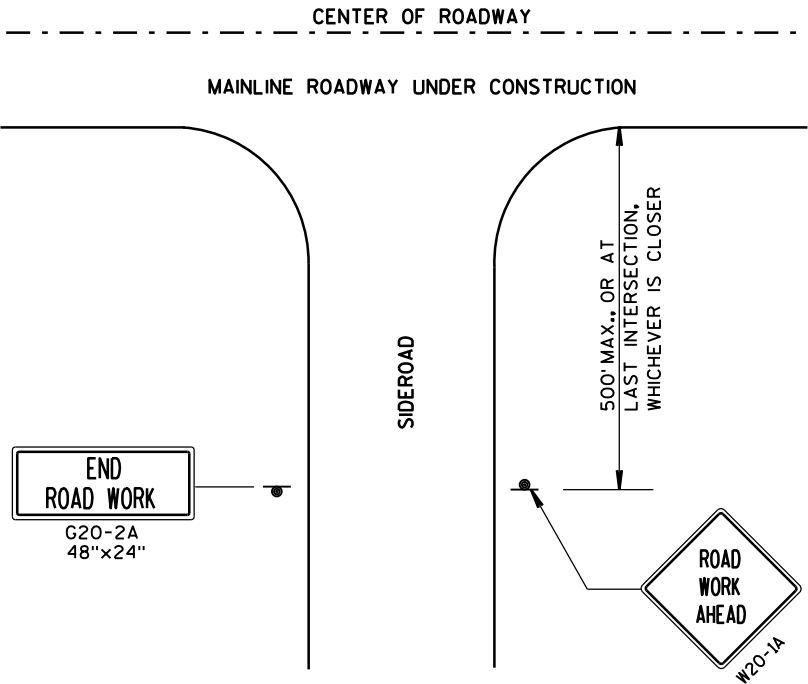
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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.



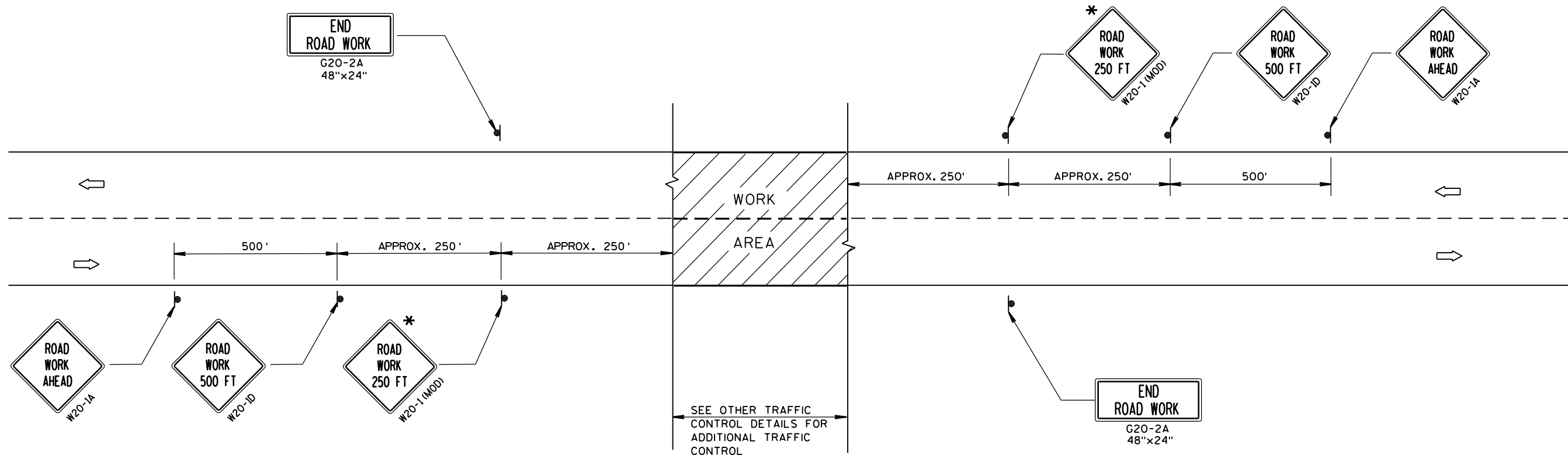
LEGEND

- 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. 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENG 141
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.

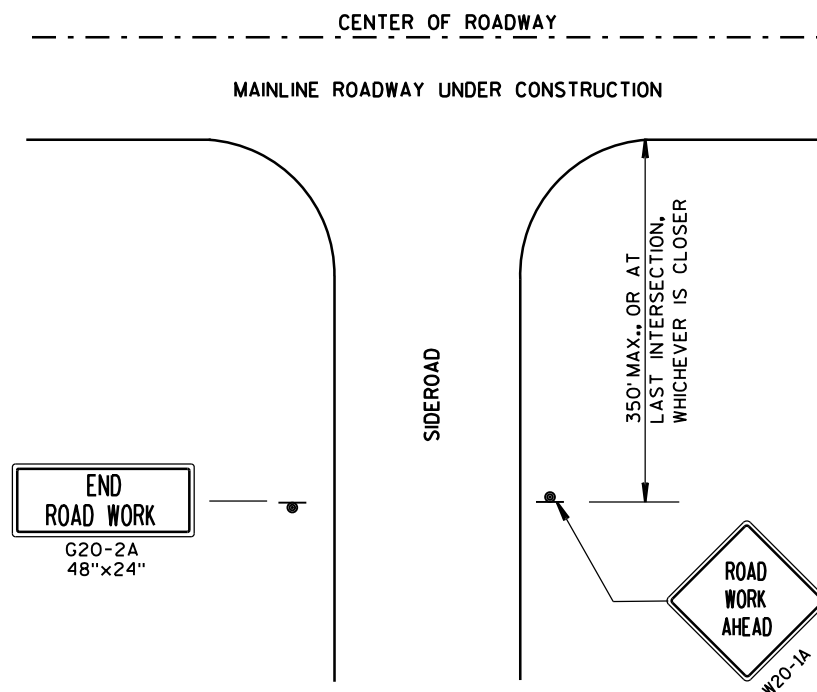
THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

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.



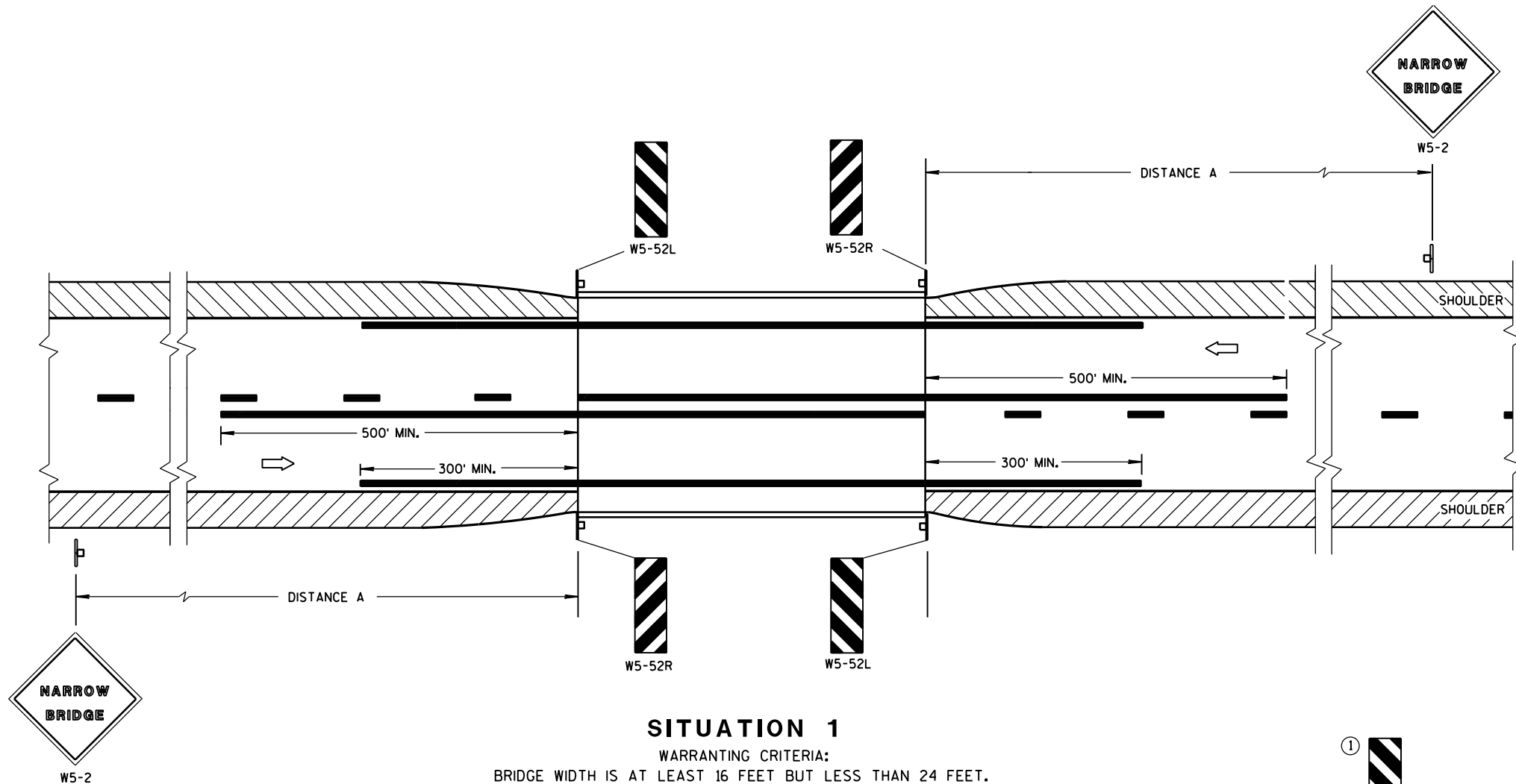
LEGEND

- 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. 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENG 142
FHWA



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'

GENERAL NOTES

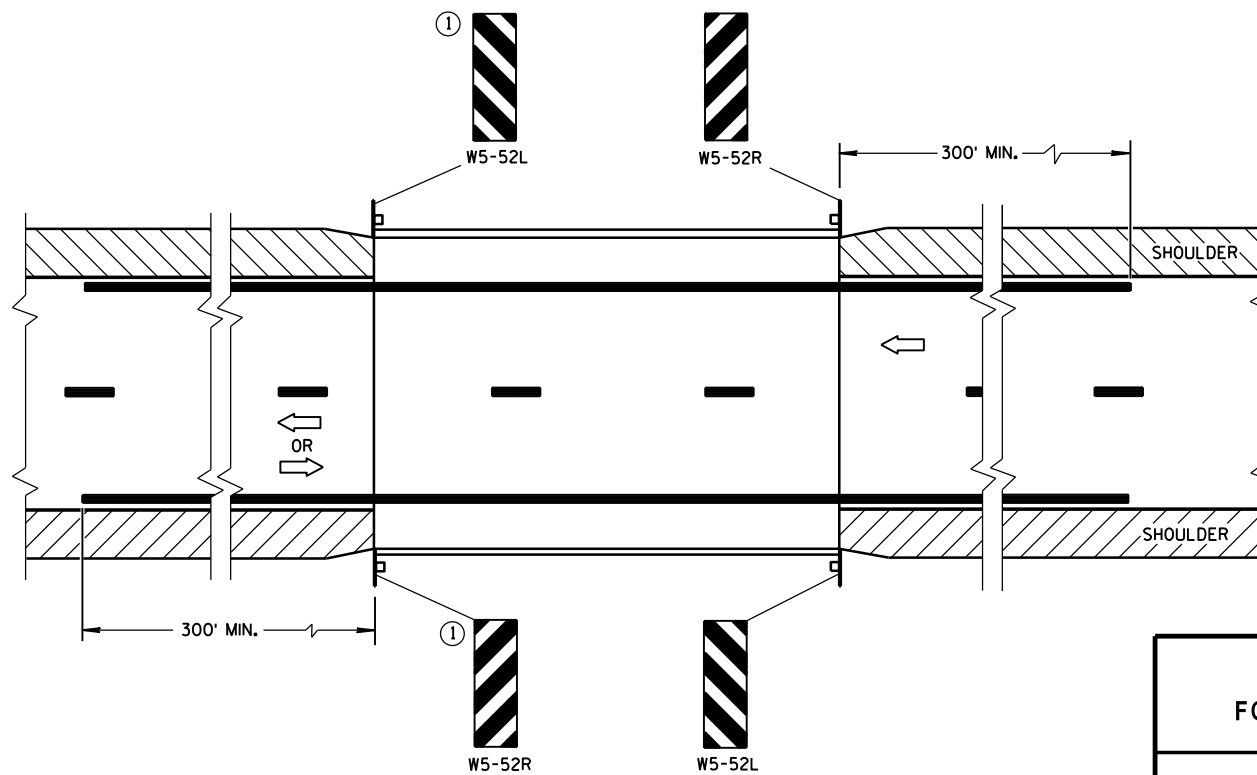
DETAILS OF TRAFFIC CONTROL DEVICES AND INSTALLATION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

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

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

① OMIT ON ONE-WAY TRAVELLED WAYS.

➡ DIRECTION OF TRAFFIC



SITUATION 2

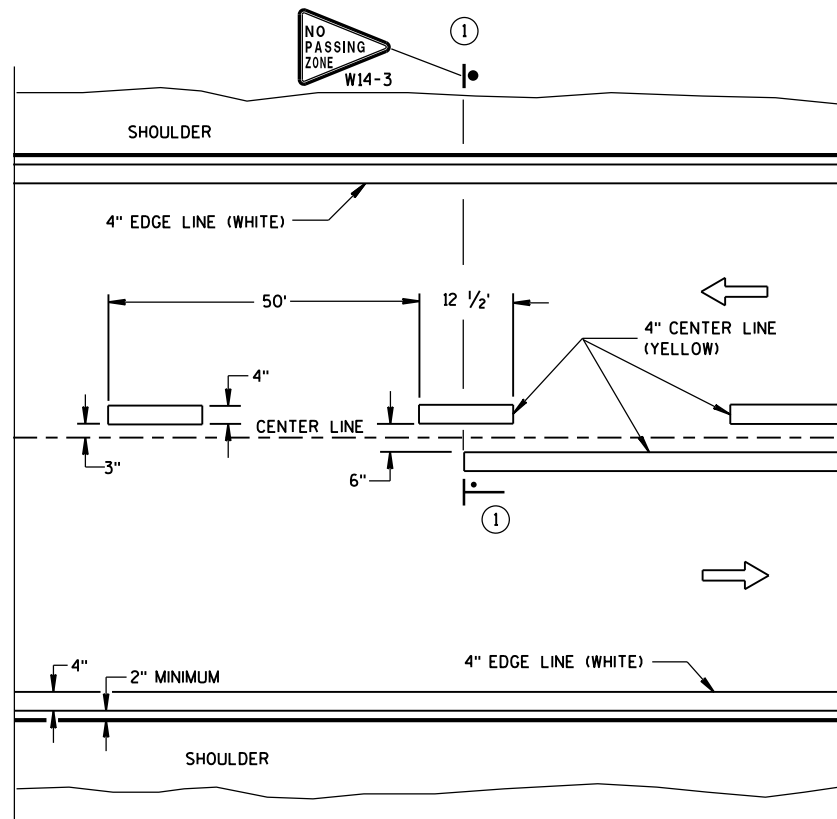
WARRANTING CRITERIA:
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET.

SIGNING & MARKING FOR TWO LANE BRIDGES

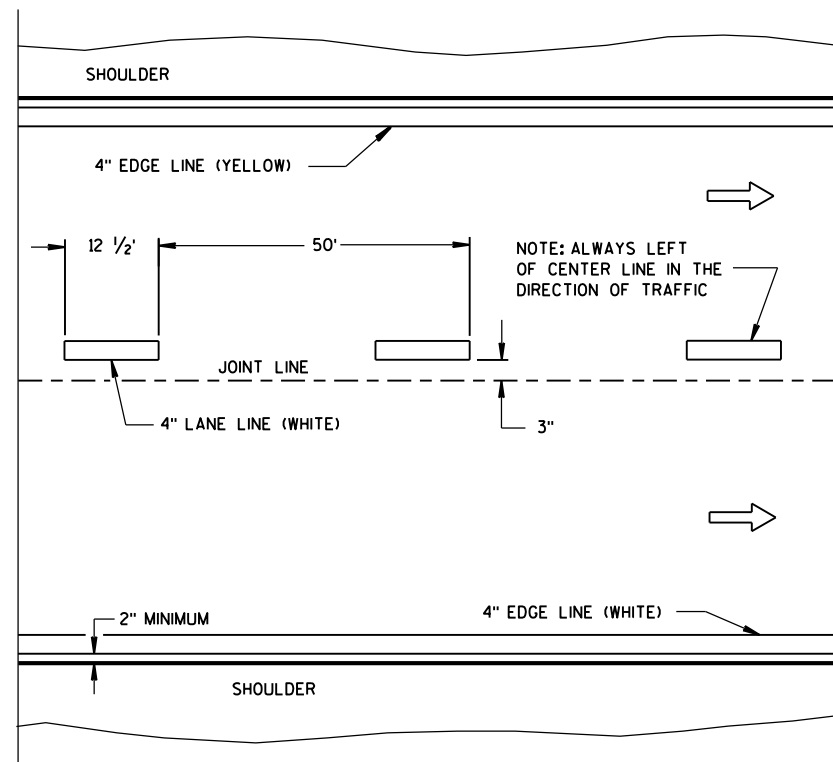
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MAR 143 JER
FHWA

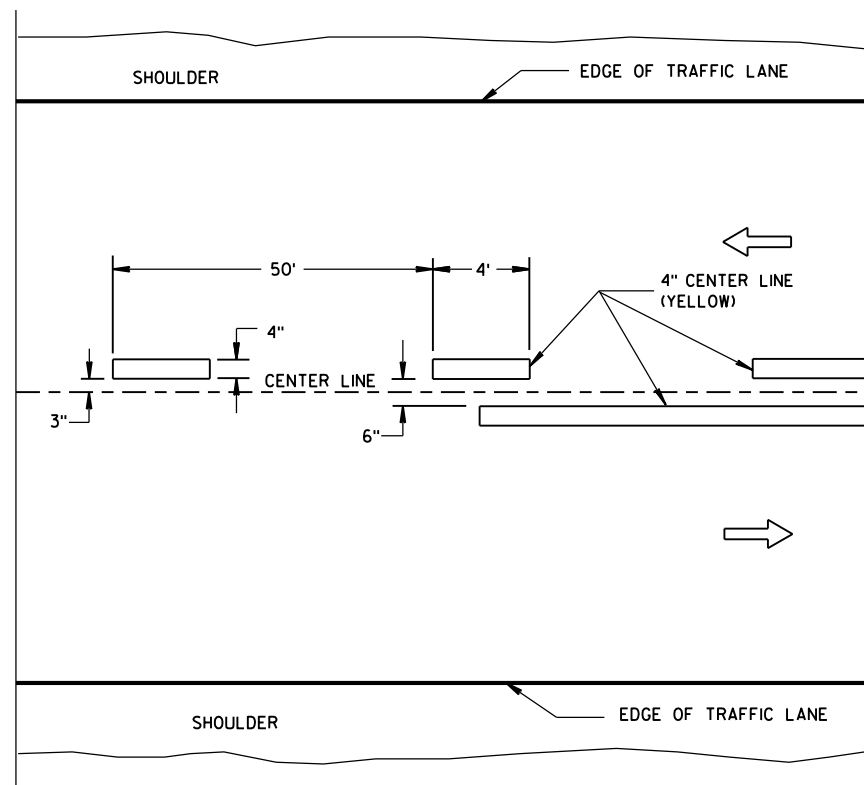


TWO WAY TRAFFIC

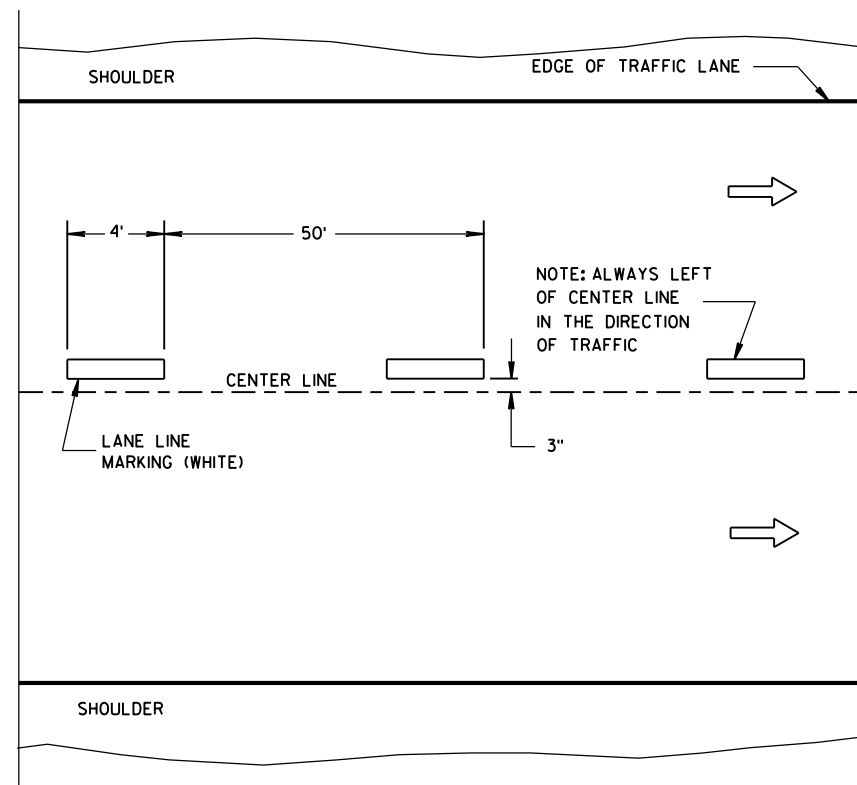


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY PAVEMENT MARKING

GENERAL NOTES

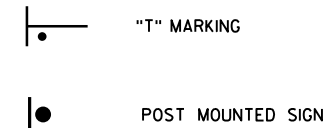
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

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

NOTE

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL

LEGEND

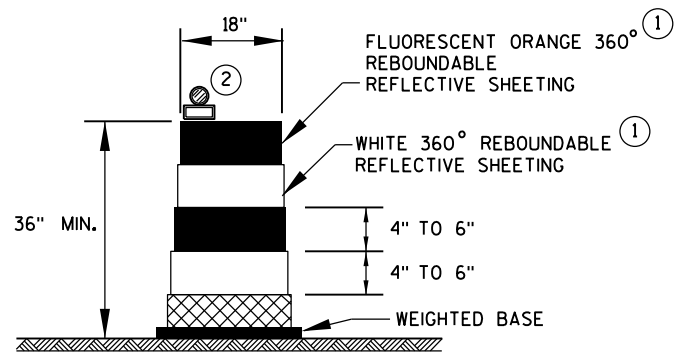


LONGITUDINAL MARKING (MAINLINE)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION
APPROVED <u>June 2017</u> <u>DATE</u> <u>/S/ Matthew R. Rauch</u> STATE SIGNING AND MAP 144 <u>ENGINEER</u>

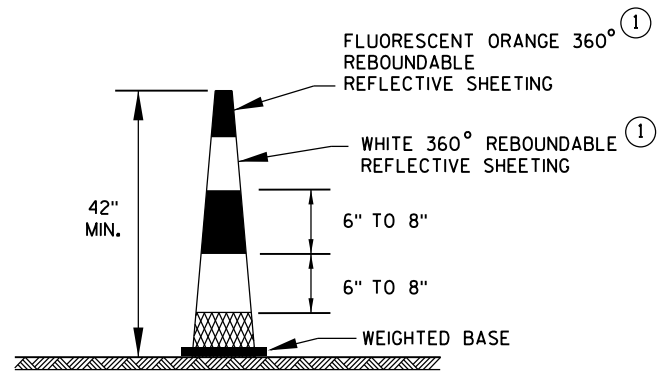


TWO WAY LEFT TURN LANE

- STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 145



DRUM

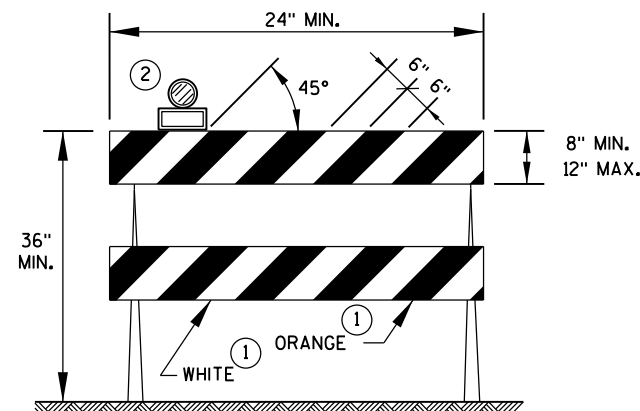


42" CONE

DO NOT USE IN TAPERS
1/2 SPACING OF DRUMS

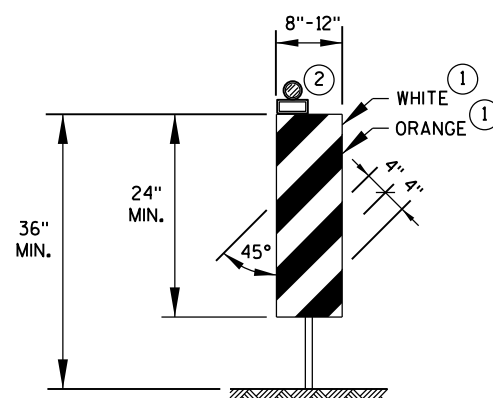
GENERAL NOTES

- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.



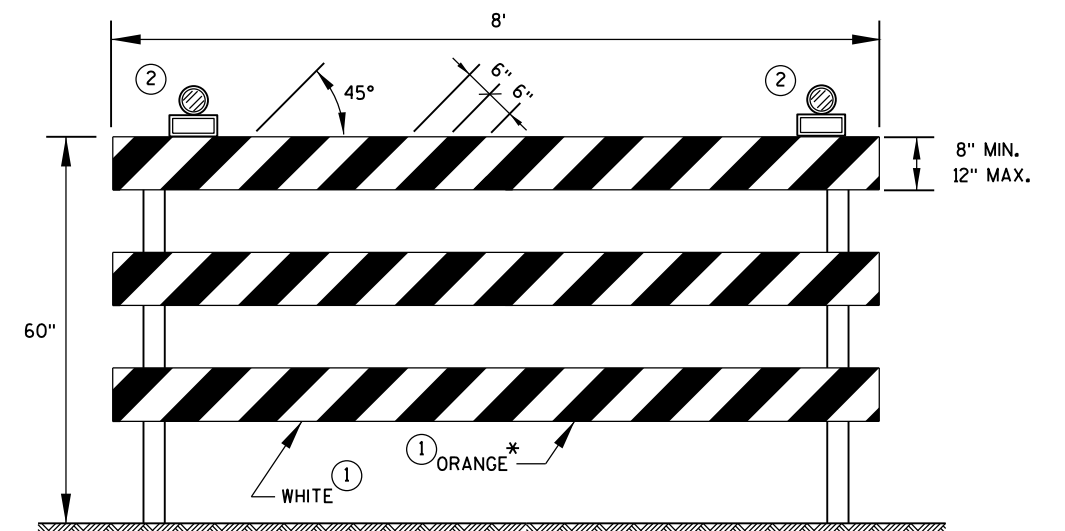
TYPE 2 BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.
ALL STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



VERTICAL PANEL

THE STRIPES SHALL SLOPE DOWNWARD TO THE TRAFFIC SIDE FOR CHANNELIZATION.



TYPE 3 BARRICADE

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

* IF USED FOR A PERMANENT APPLICATION, USE RED SHEETING.

CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

June 2017
DATE

/S/ Andrew Heidtke
WORK ZONE ENG 146

FHWA

LEGEND

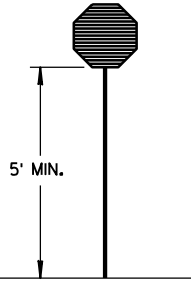
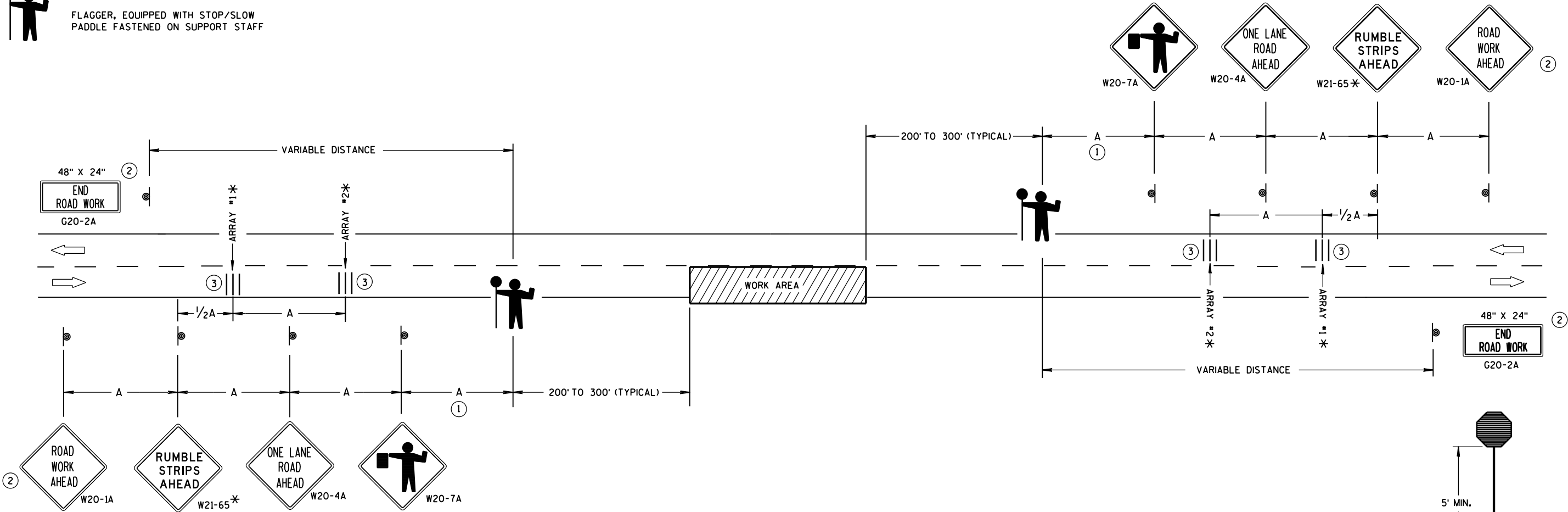
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING A
25-35 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF THE "BE PREPARED TO STOP" SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING A.



STOP/SLOW PADDLE ON SUPPORT STAFF

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

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.

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

THE FIRST ADVANCE WARNING SIGN SHOULD TYPICALLY BE LOCATED IN ADVANCE OF THE ANTICIPATED TRAFFIC BACKUP OR QUEUE.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, REMOVE TEMPORARY RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

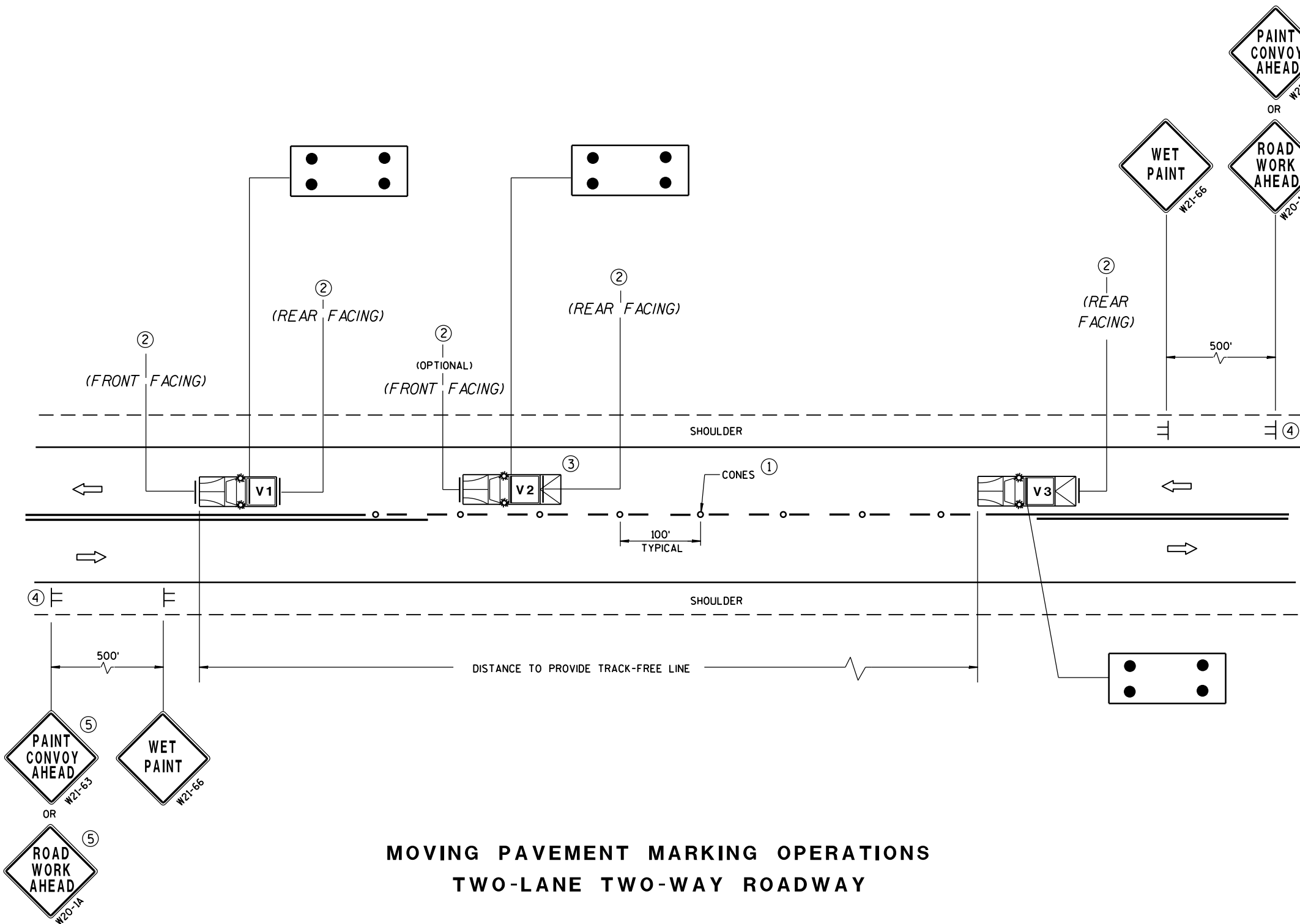
* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

- FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

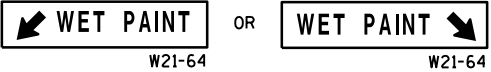
APPROVED
June 2017 /S/ Andrew Heldtke
DATE WORK ZONE ENG 147
FHWA



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY 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.
- VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL OPERATING IN CAUTION MODE. 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.
- THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.
- THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.
- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.
- 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.
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.



OR



LEGEND

- V1** LEAD VEHICLE
- V2** SHADOW VEHICLE
- V3** TRAIL VEHICLE WITH TMA
- TMA** TRUCK-MOUNTED ATTENUATOR

≡ SIGN ON TEMPORARY SUPPORT

➡ DIRECTION OF TRAFFIC

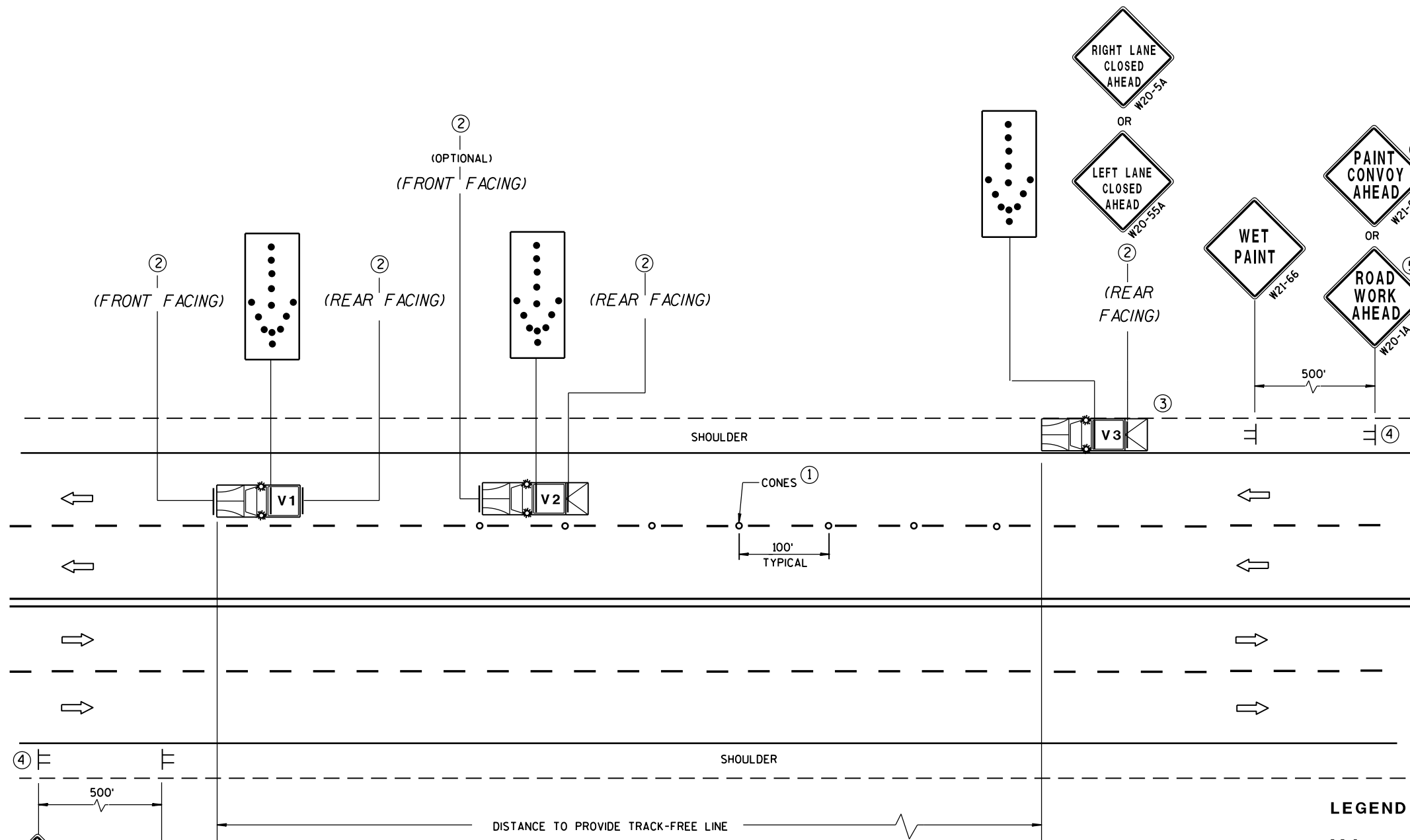
○ CONES

⬢ FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGR 148
FHWA



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE UNDIVIDED 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.

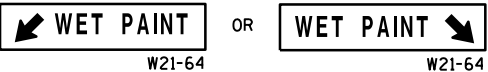
FOR EDGE LINE MARKING OR IF CONES ARE NOT USED, POSITION THE REARMOST SHADOW VEHICLE ON THE SHOULDER AS SHOWN IN THE MUTCD IF THE SHOULDER HAS ADEQUATE WIDTH.

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

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGE LINE OR LANELINE MARKING FOR MULTILANE UNDIVIDED 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.



③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.

④ SIGNS SHALL BE REPEATED APPROXIMATELY 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

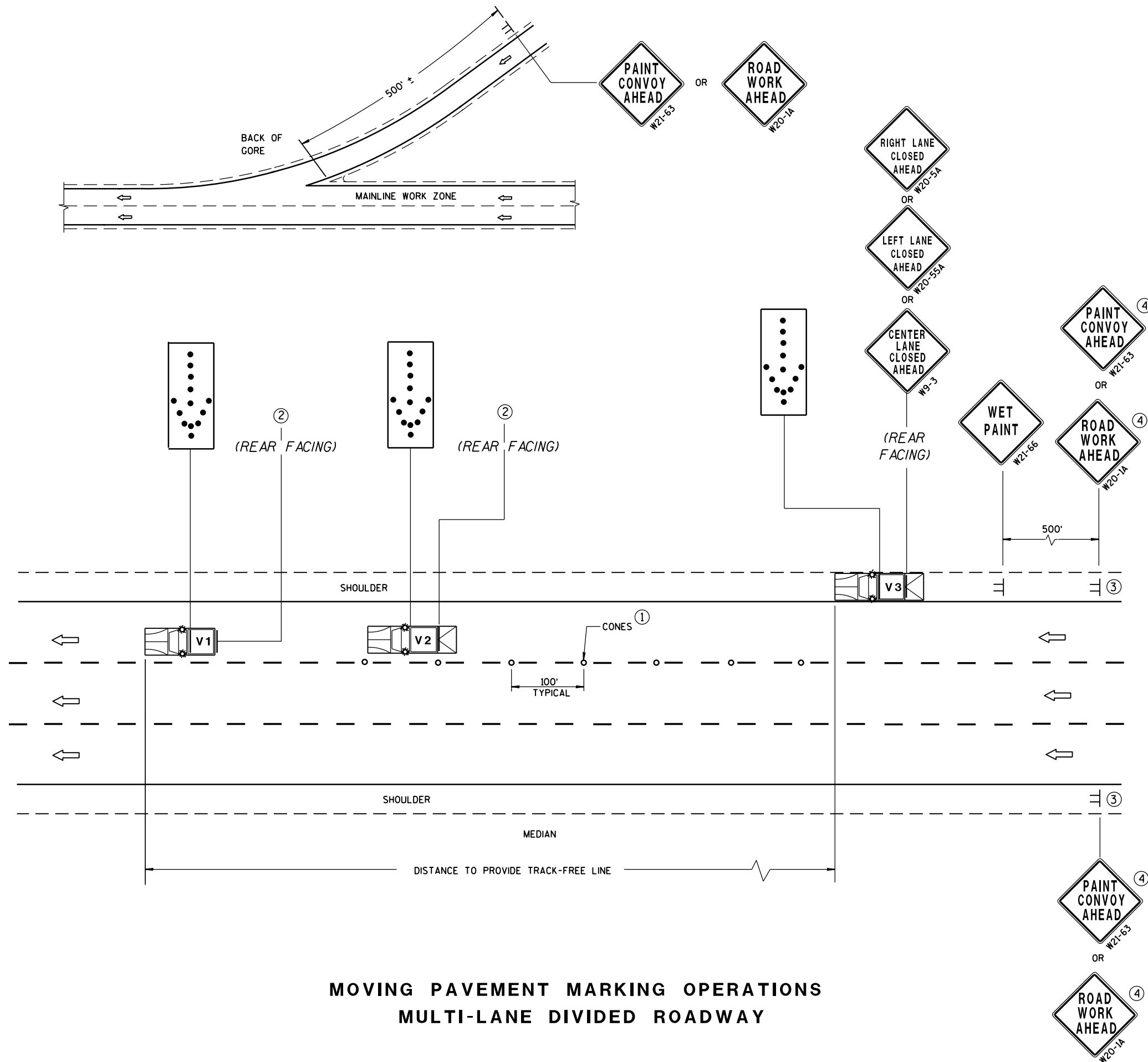
Cones

Flashing arrow panel (merge)

MOVING PAVEMENT MARKING
OPERATION
MULTI-LANE UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGIN 149
FHWA



S.D.D. 15 C 19-5c

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.

- ③ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.
- ④ 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

3 SIGN ON TEMPORARY SUPPORT

 DIRECTION OF TRAFFIC

○ CONES

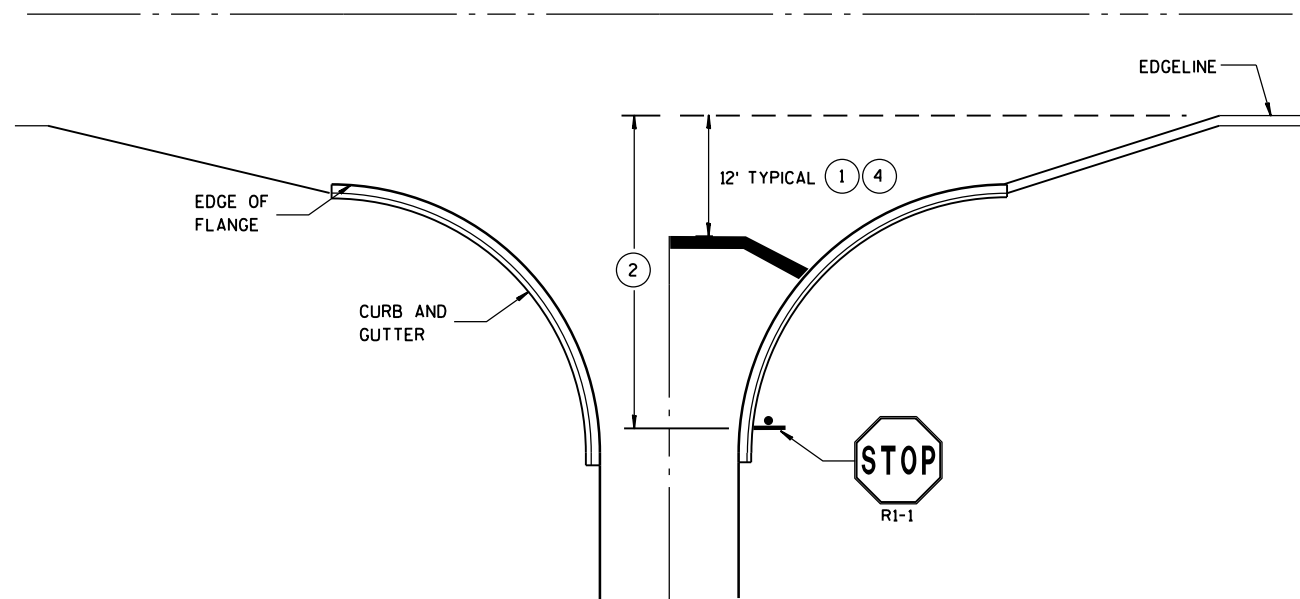
FLASHING
ARROW
PANEL (MERGE)

MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY

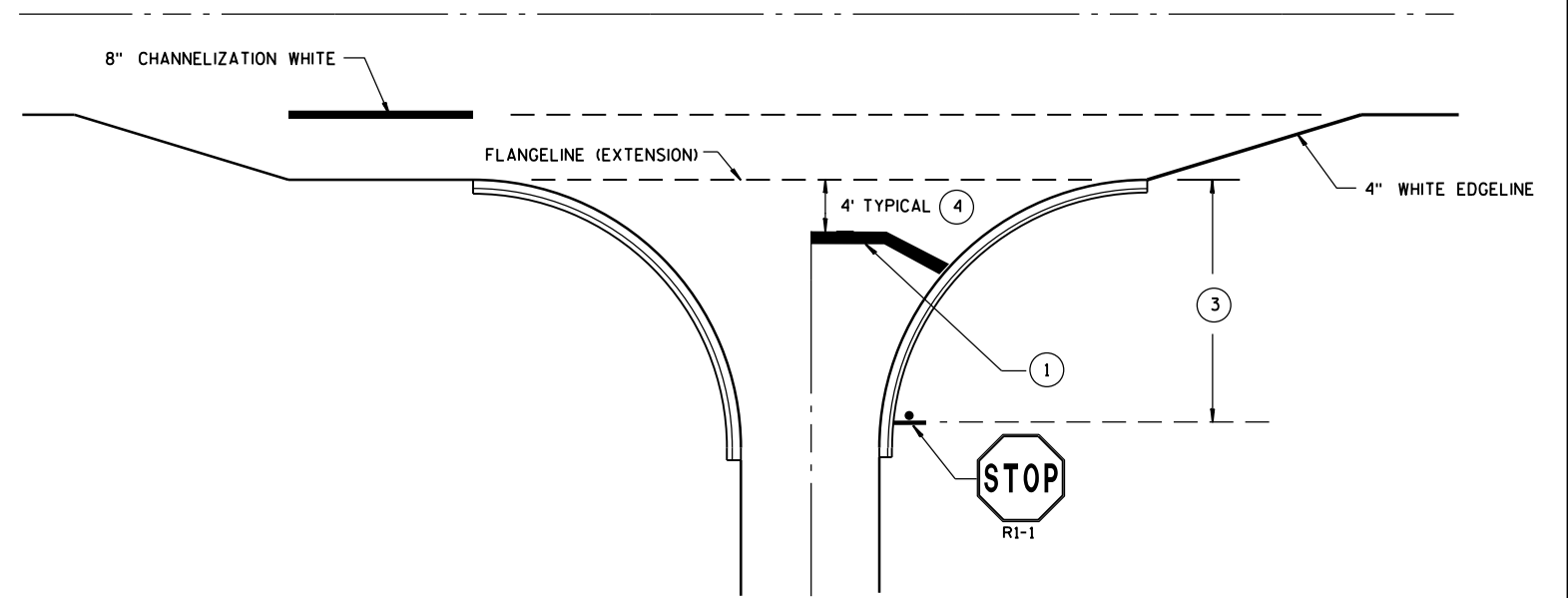
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept. 2017 /S/ Andrew Heidtke
DATE WORK ZONE ENGR 150
FHWA

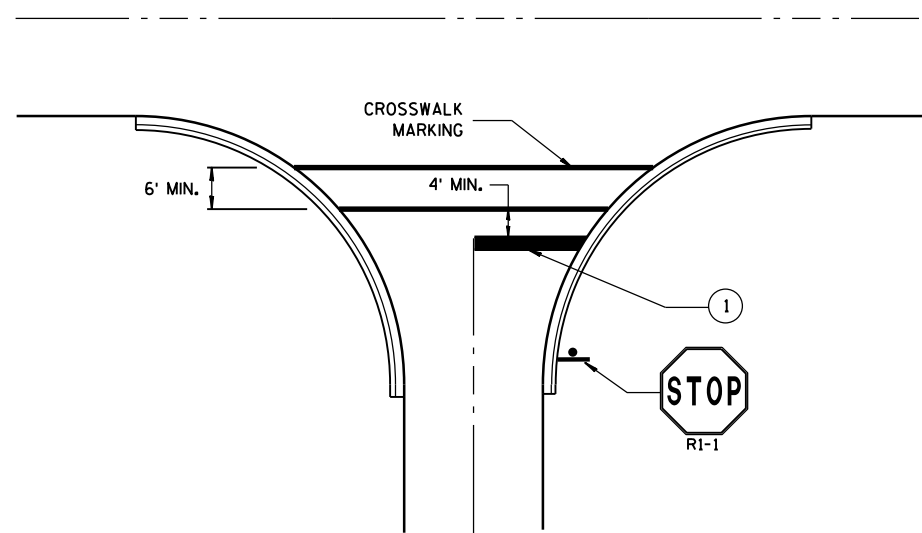
S.D.D. 15 C 19-5c



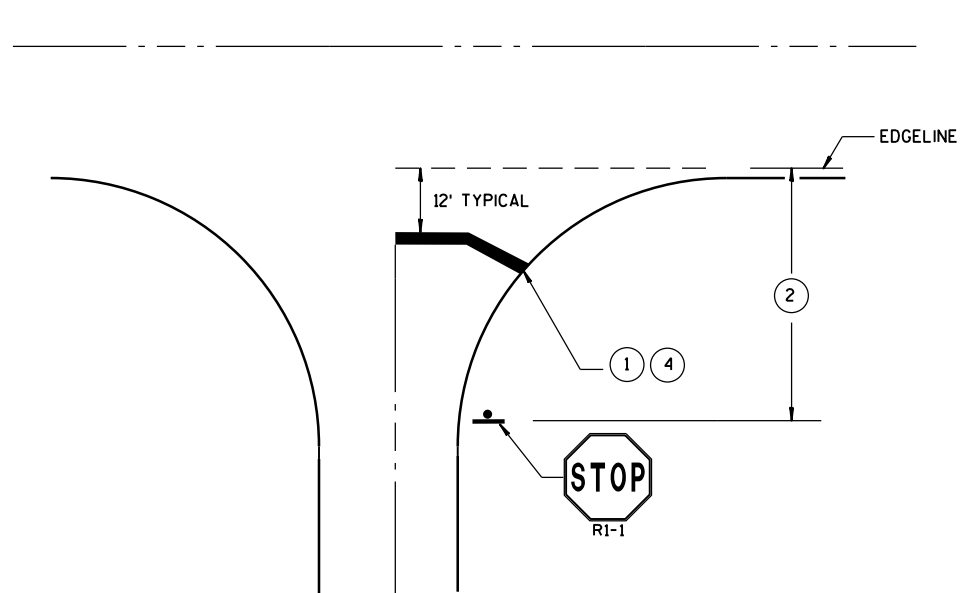
**TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER**



**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

STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

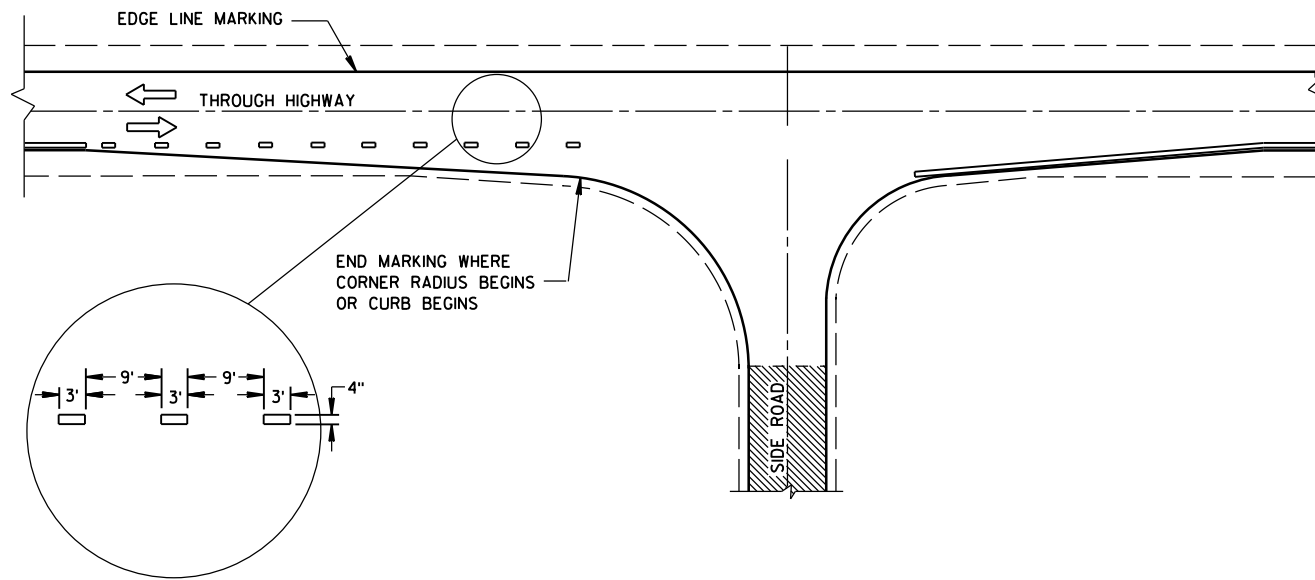
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE PROJECT ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE THAN NO STOP LINE IS REQUIRED.
- ③ IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION THAN NO STOP 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

DATE Sept., 2017 /S/ Matthew R. Rauch
STATE SIGNING AND MAR 151 JER
FHWA



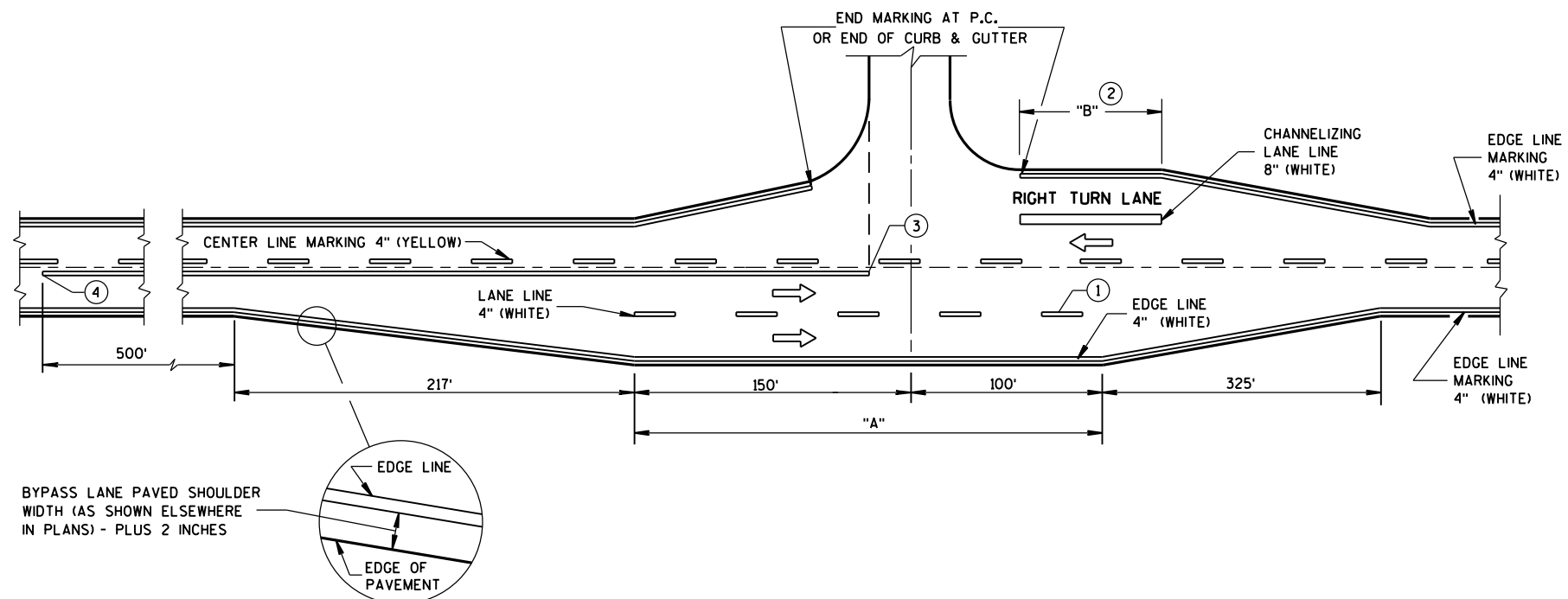
MINOR INTERSECTION

GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES 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 BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL



MAJOR INTERSECTIONS
(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 152

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.

ALL SIGNS ARE 48" X 48" 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 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.

W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

CHANNELIZING DEVICES PLACED ADJACENT TO THE WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

TABLE A

SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S	W	4	6	8	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

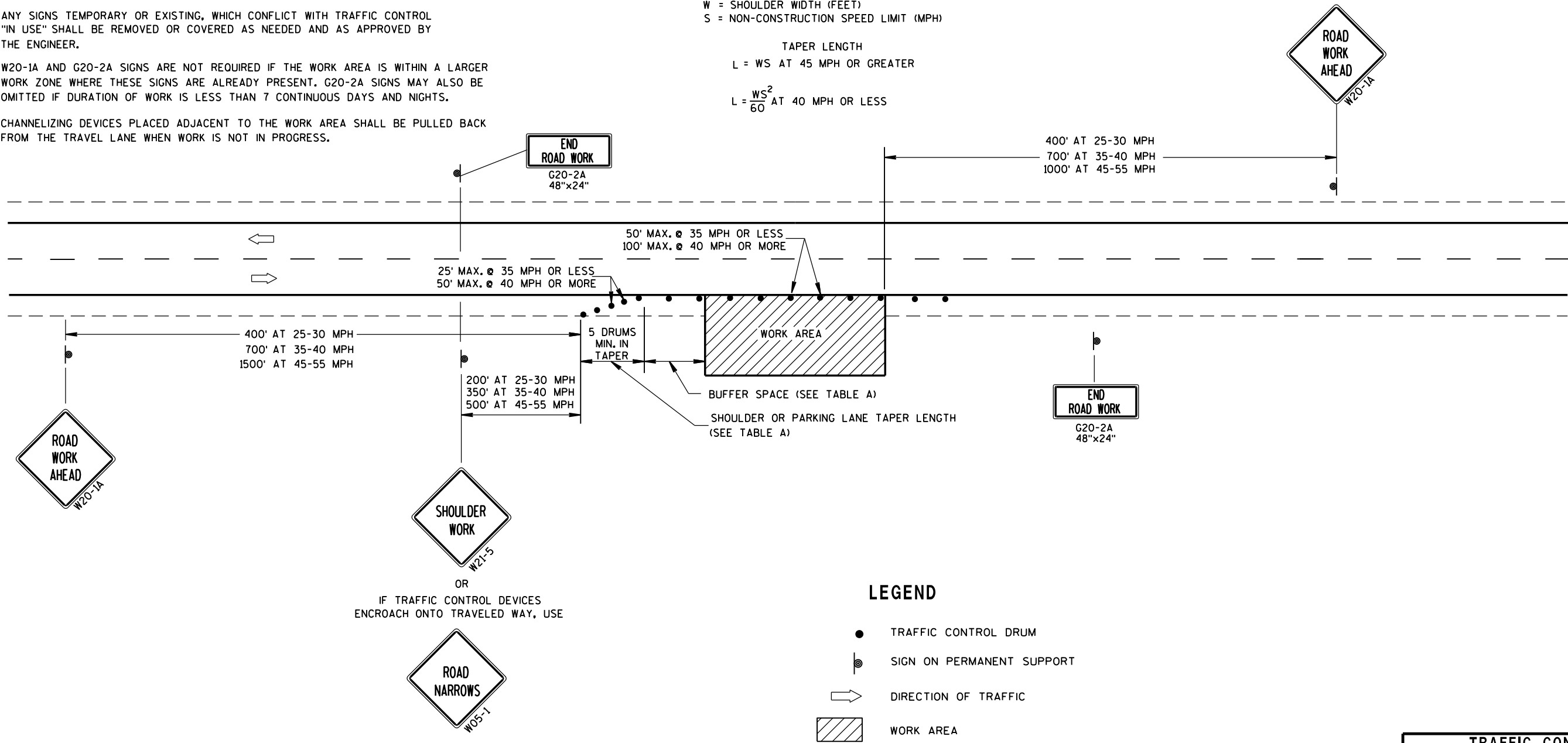
W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH

L = WS AT 45 MPH OR GREATER

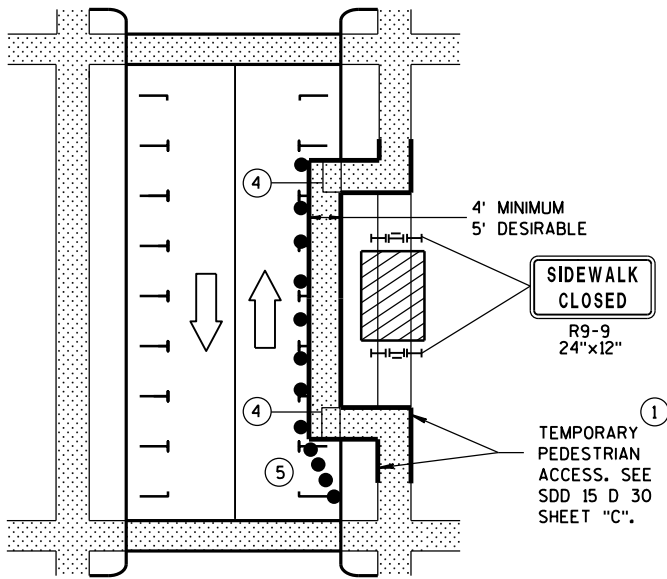
$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = $\frac{1}{3}L$

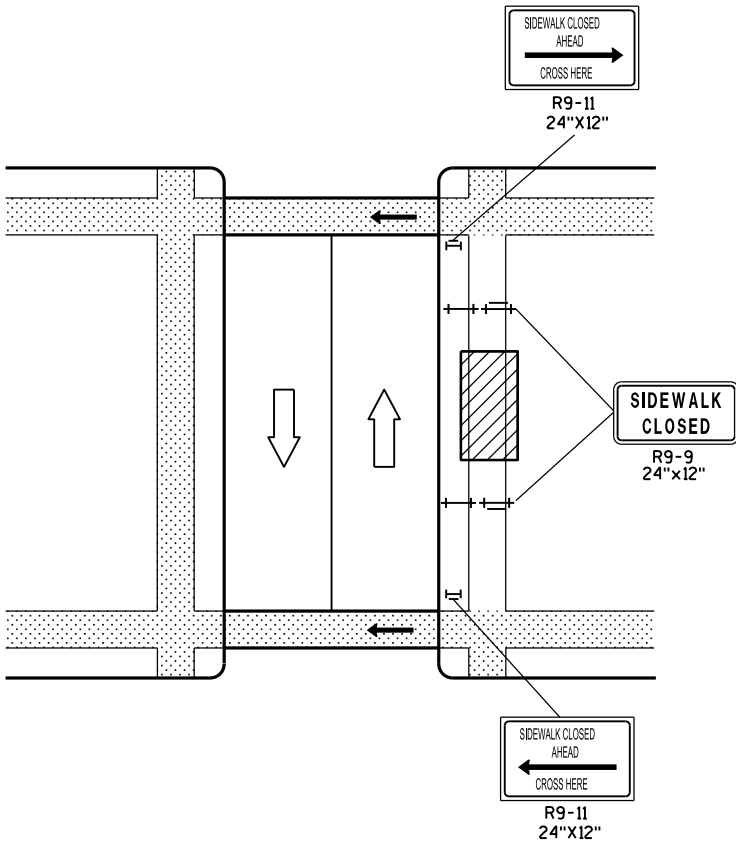


TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER 153 FIC
FHWA	

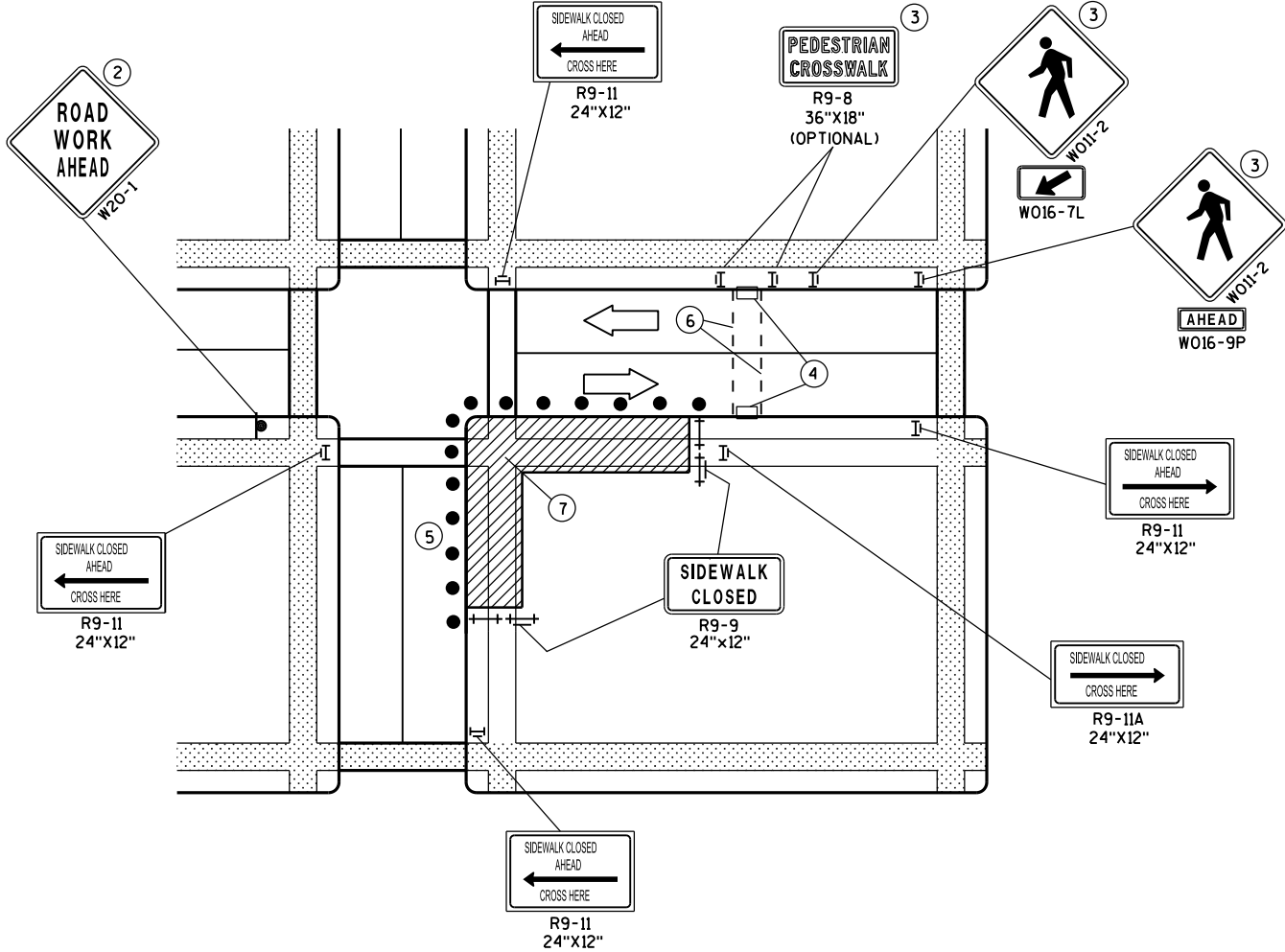
NOTE: MAY BE USED ON ROADWAY WITH POSTED SPEED OF LESS THAN 40 MPH.



MID-BLOCK SIDEWALK CLOSURE IN PARKING LANE

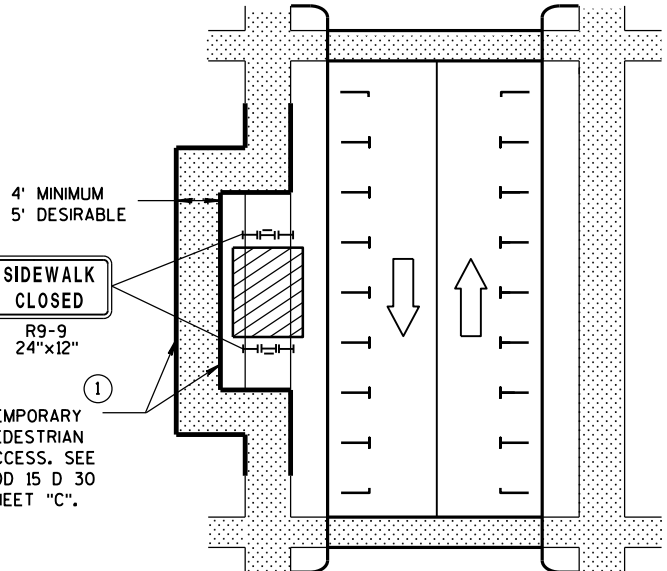


MID-BLOCK SIDEWALK CLOSURE



CORNER SIDEWALK CLOSURE WITH TEMPORARY CROSSWALK

NOTE: LAYOUT SAME AS ABOVE.



SIDEWALK DIVERSION

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.

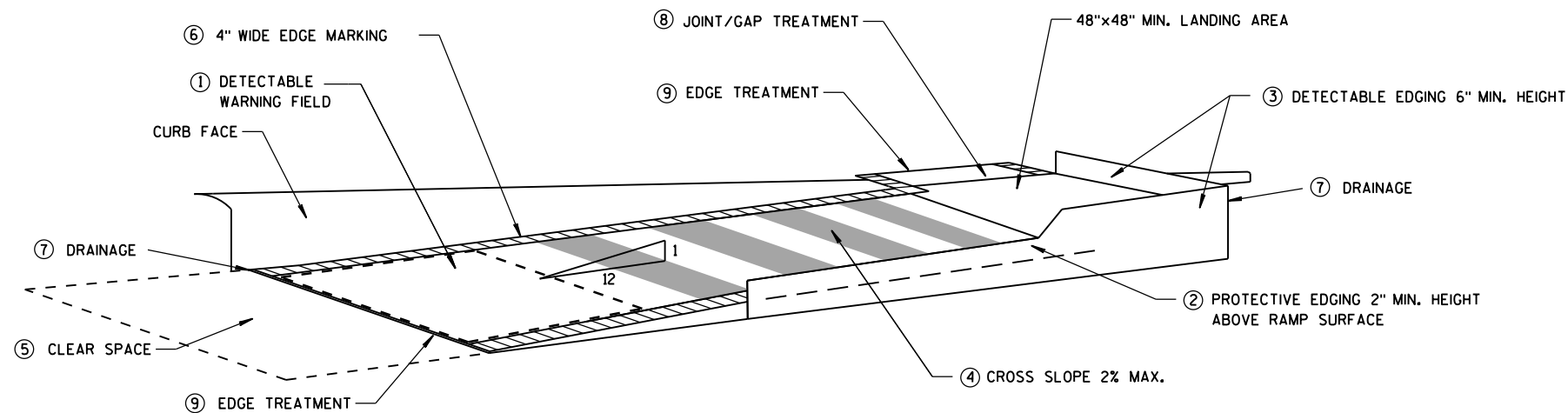
- ① IF SIDEWALK CLOSURE AFFECTS AN ACCESSIBLE AND DETECTABLE FACILITY, MAINTAIN ACCESSIBILITY AND DETECTABILITY ALONG THE ALTERNATE PEDESTRIAN ROUTE.
- ② "ROAD WORK AHEAD" SIGNS ARE NOT REQUIRED IF THE SIDEWALK CLOSURE OCCURS WITHIN A LARGER WORK ZONE WHERE ADVANCE WARNING SIGNS ARE ALREADY PRESENT, 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 CONTROL DRUM

TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION

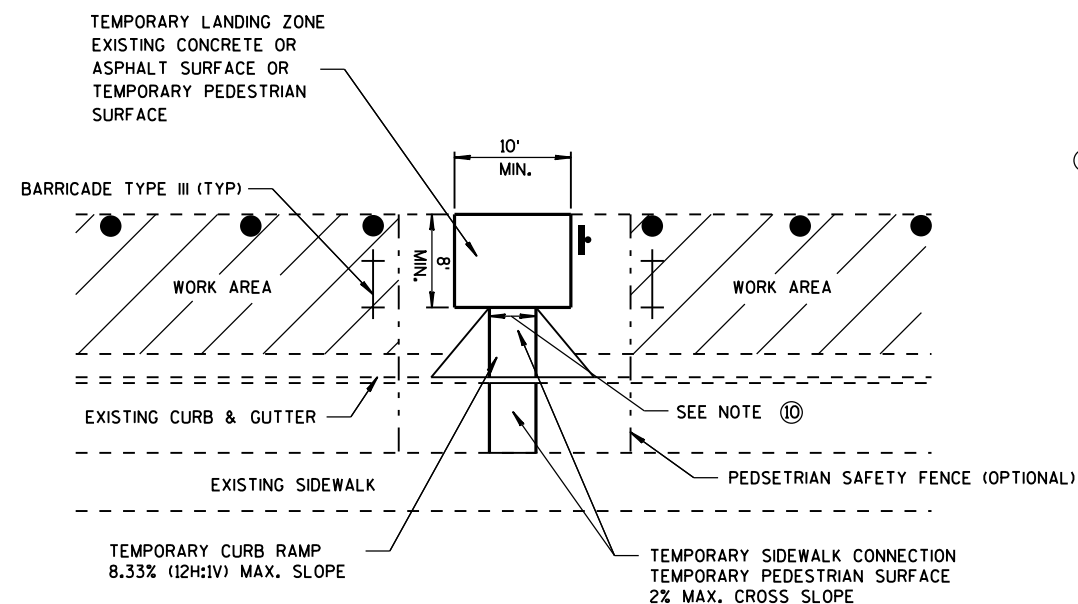
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 154



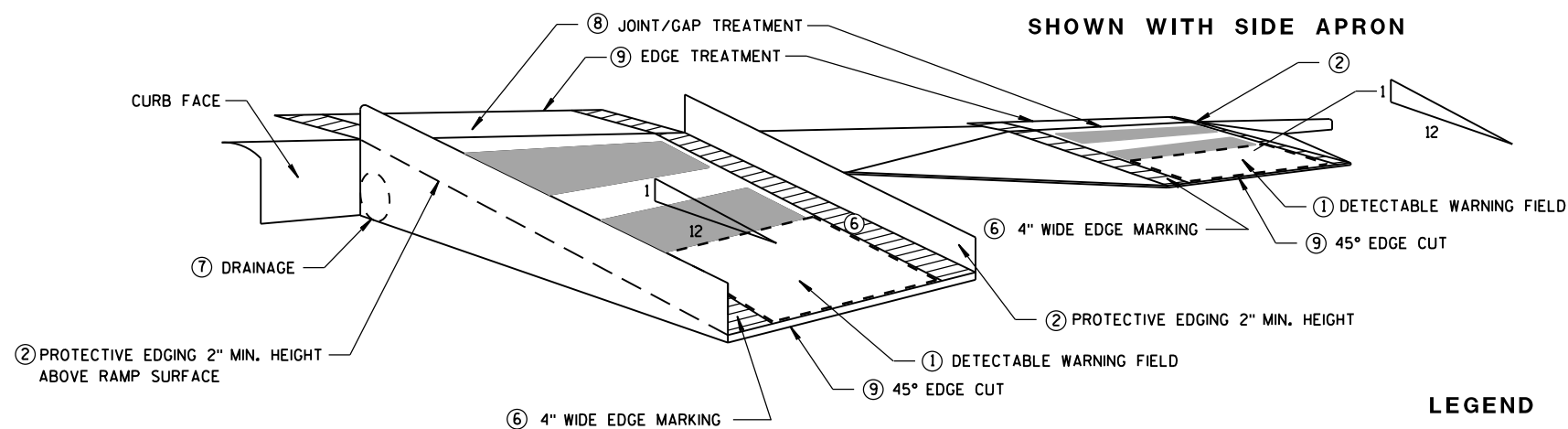
TEMPORARY CURB RAMP
PARALLEL TO CURB

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 PEDESTRIAN SAFETY FENCE, 10' WIDE MIN. WITHOUT PEDESTRIAN SAFETY FENCE.



TEMPORARY BUS STOP PAD



SHOWN WITH PROTECTIVE EDGE

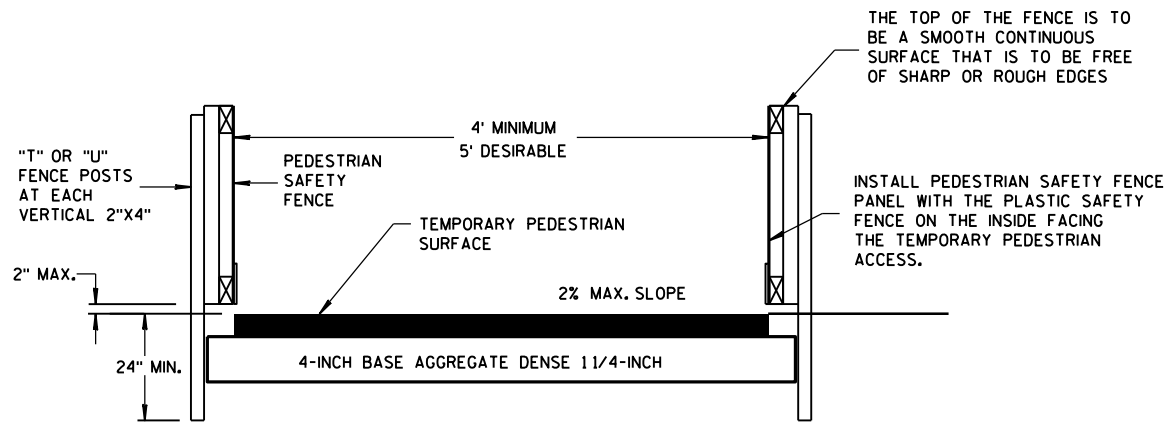
TEMPORARY CURB RAMP
PERPENDICULAR TO CURB

- LEGEND
- WORK AREA
 - TYPE III BARRICADE
 - TRAFFIC CONTROL DRUM

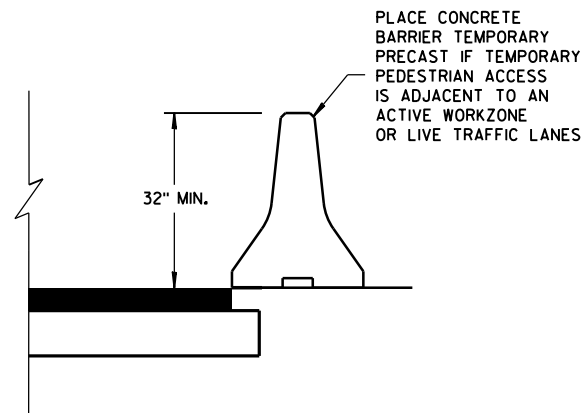
TRAFFIC CONTROL,
TEMPORARY ADA COMPLIANT
PEDESTRIAN ACCOMMODATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE SAFETY ENGINEER
FHWA

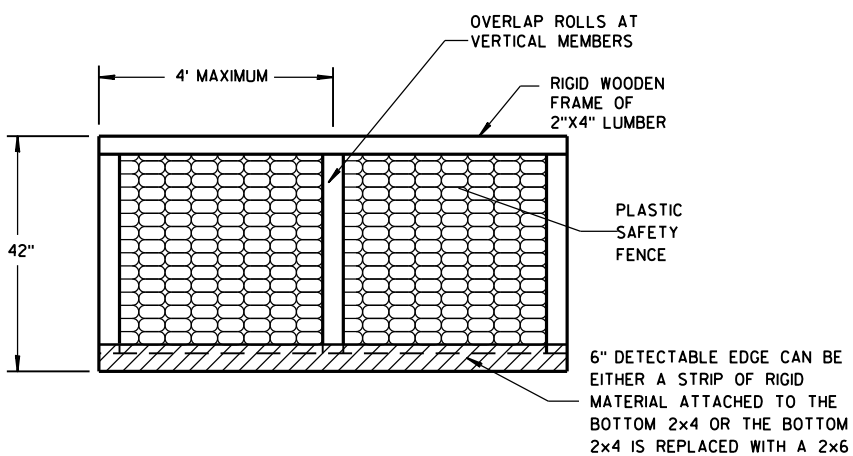
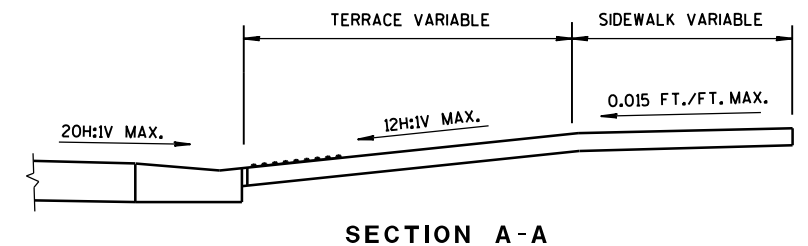


TEMPORARY PEDESTRIAN ACCESS

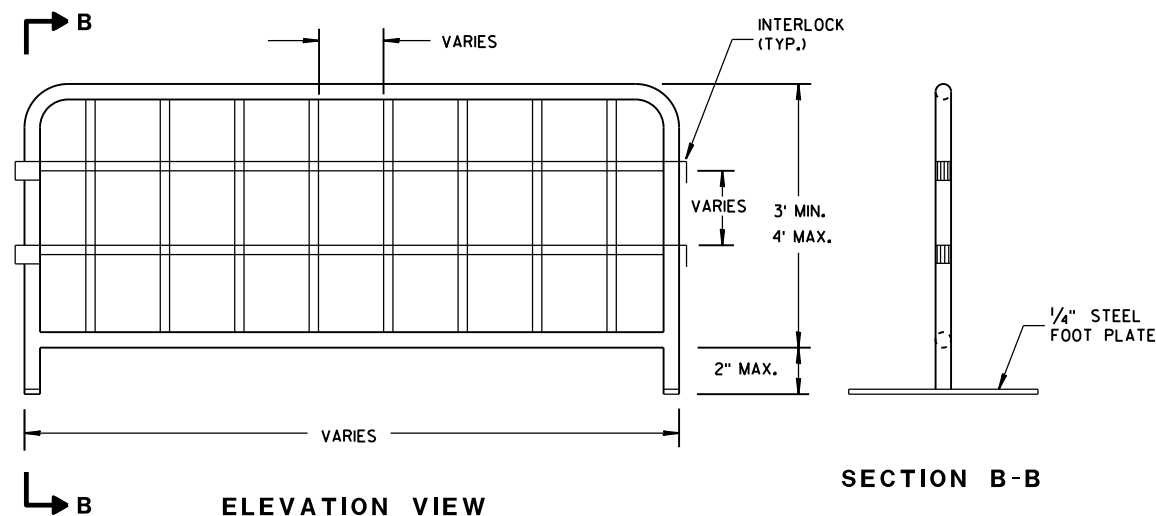


GENERAL NOTES

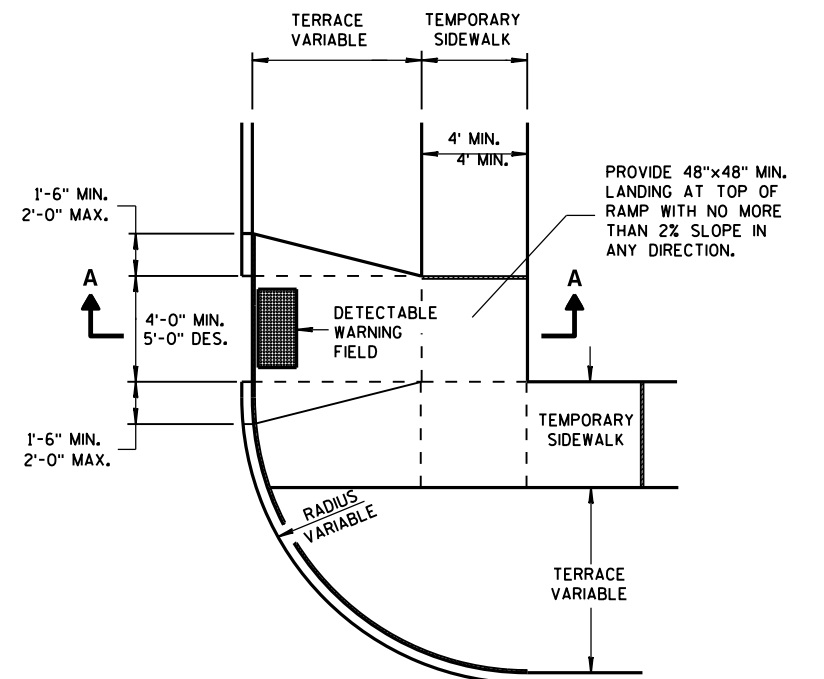
- INTERCHANGEABLE WITH THE PEDESTRIAN SAFETY FENCE.



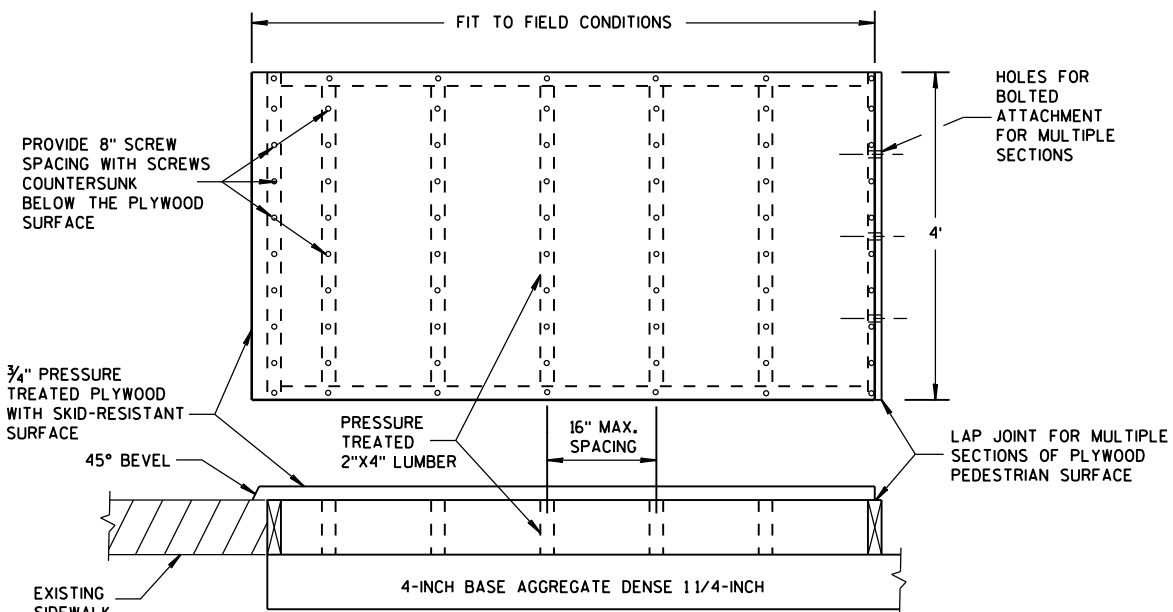
PEDESTRIAN SAFETY FENCE



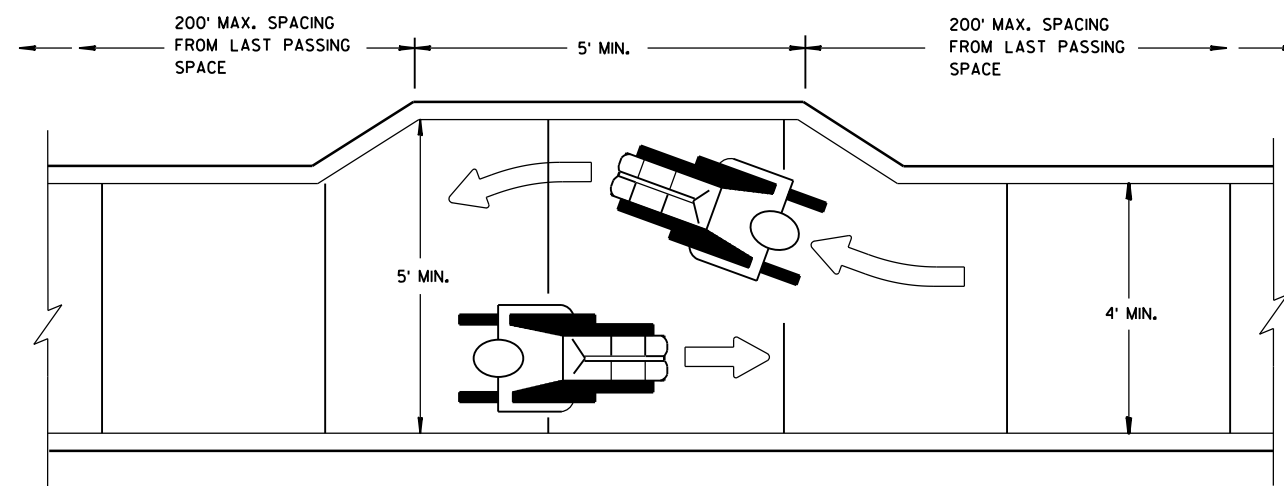
TEMPORARY PEDESTRIAN STEEL BARRICADE



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 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZON 156 IC
FHWA SAFETY ENGINEER

LEGEND

- SIGN ON PERMANENT SUPPORT
- REMOVING PAVEMENT MARKING
- TYPE III BARRICADE WITH ATTACHED SIGN
- CONCRETE BARRIER TEMPORARY PRECAST
- FLAGS, 16" x 16" MIN., (ORANGE)
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- ASPHALTIC PAVEMENT WIDENING
- DIRECTION OF TRAFFIC
- 4" X 6" WOOD POST
- TEMPORARY SIGNAL WITH BACKPLATE AND 12-INCH LENSES ON BREAKAWAY POLE

INSTALL ON EACH APPROACH AT THE CLOSEST INTERSECTION WITH A STATE OR COUNTY TRUNK HIGHWAY, OR AS DIRECTED BY THE ENGINEER. WIDTH ON SIGN TO BE APPROX. 1-FOOT LESS THAN AVAILABLE WIDTH. (OMIT IF AVAILABLE WIDTH IS MORE THAN 16 FEET.)

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.

"WO" IS THE SAME AS "W" 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.

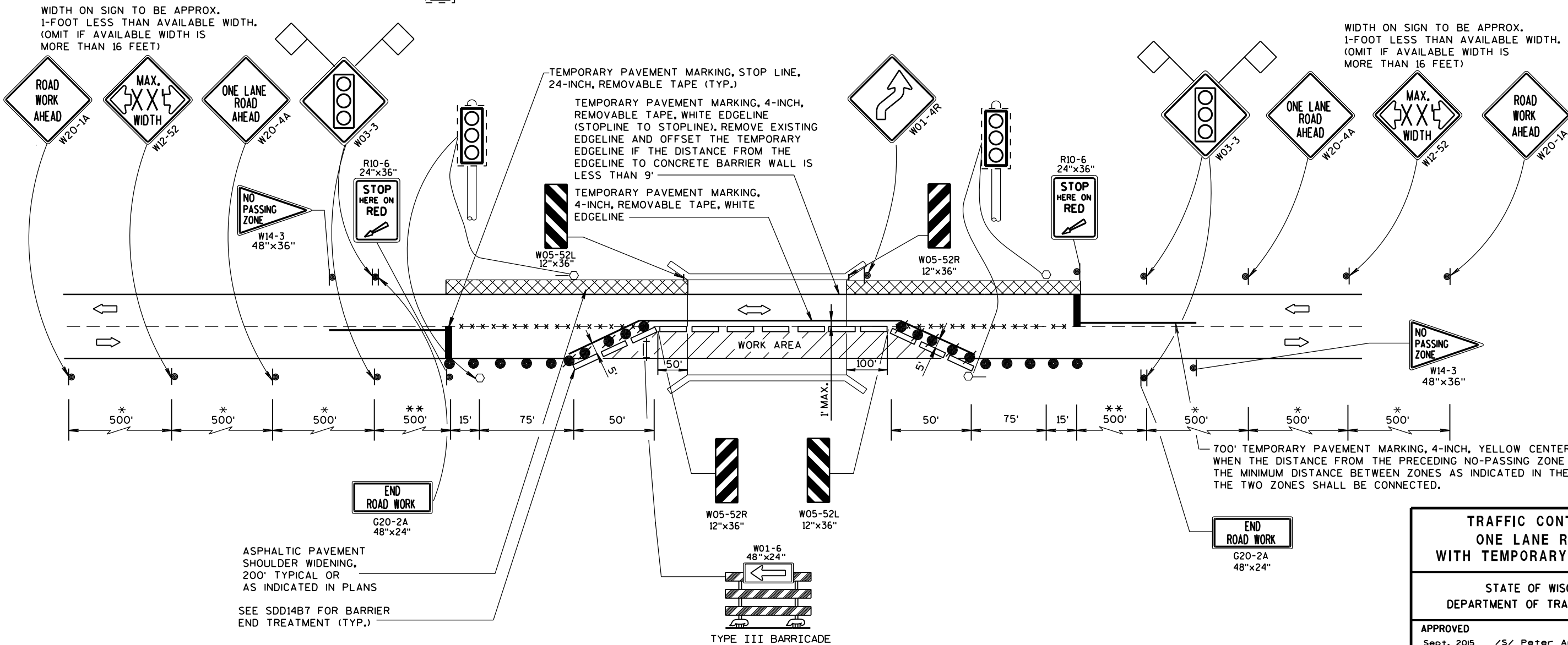
ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.

PLACE TEMPORARY PAVEMENT MARKING EDGELINE AND CENTERLINE, AND REMOVE EXISTING PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS OR AS NOTED ON DETAIL.

* 500-FOOT SPACING SHOWN IS FOR ROADWAYS WITH A PRE-CONSTRUCTION REGULATORY SPEED LIMIT OF 45 MPH OR MORE. FOR 35-40 MPH, USE 350-FOOT TYPICAL SPACING. FOR 25-30 MPH, USE 200-FOOT TYPICAL SPACING.

** USE 300' SPACING IF PRE-CONSTRUCTION REGULATORY SPEED LIMIT IS 35 MPH OR LESS.

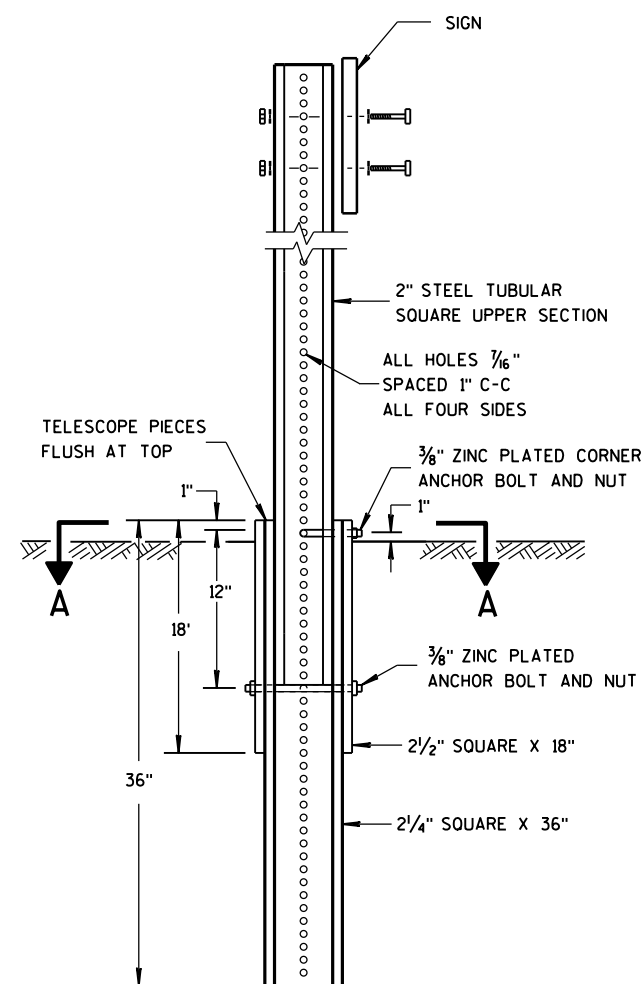
6



S.D.D. 15 D 33-4

TRAFFIC CONTROL, ONE LANE ROAD WITH TEMPORARY SIGNALS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED Sept. 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE SAFETY ENGINEER 157 C
FHWA	

S.D.D. 15 D 33-4



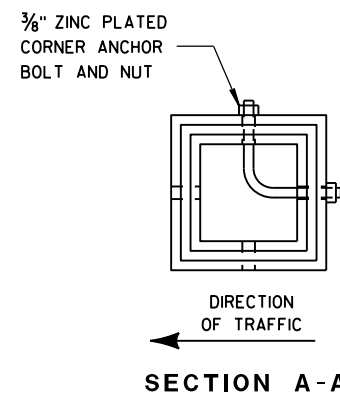
**DETAIL OF TUBULAR
STEEL SIGN POST**

TUBULAR STEEL POSTS

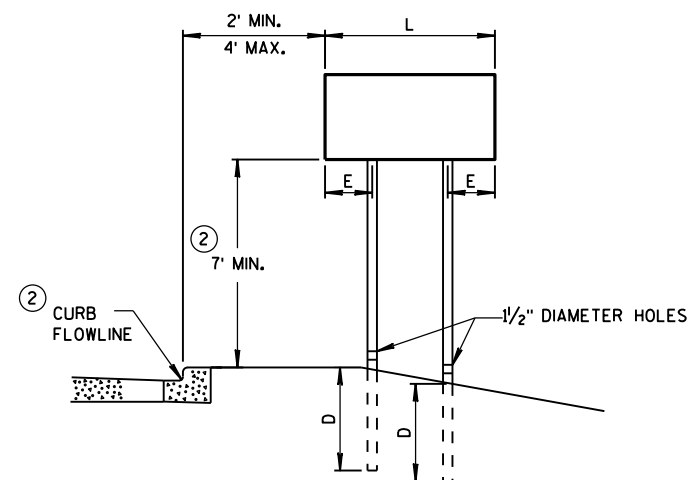
AREA OF SIGN INSTALLATION (SQ. FT.)	NUMBER OF REQUIRED TUBULAR STEEL POSTS
9 OR LESS	1
GREATER THAN 9 LESS THAN OR EQUAL TO 18	2
GREATER THAN 18 LESS THAN OR EQUAL TO 27	3

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

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



SECTION A-A

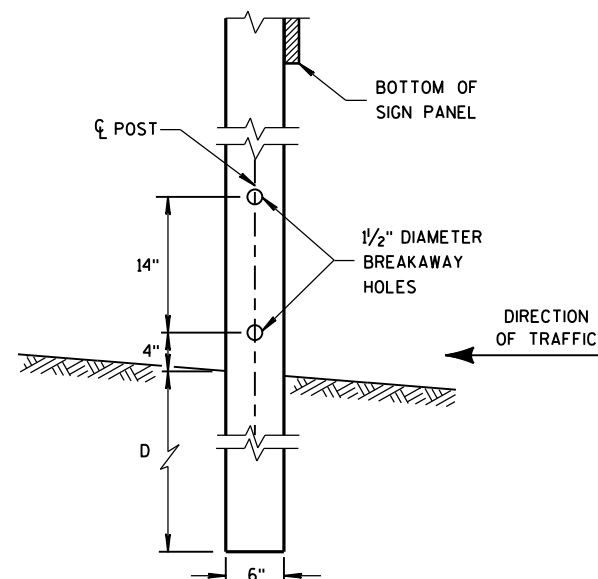


URBAN AREA

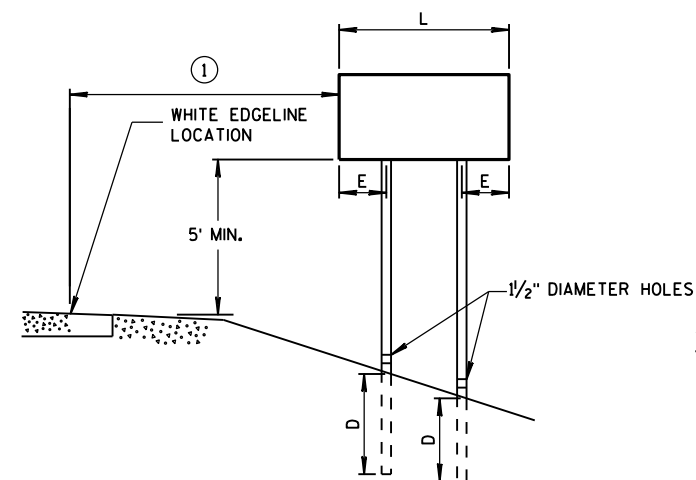
POST MOUNTING DETAIL FOR TEMPORARY TRAFFIC CONTROL FIXED MESSAGE SIGNS

**WOOD POST
EMBEDMENT DEPTH**

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



**4"x6" WOOD POST
MODIFICATION**



RURAL AREA

4" X 6" WOOD POST

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

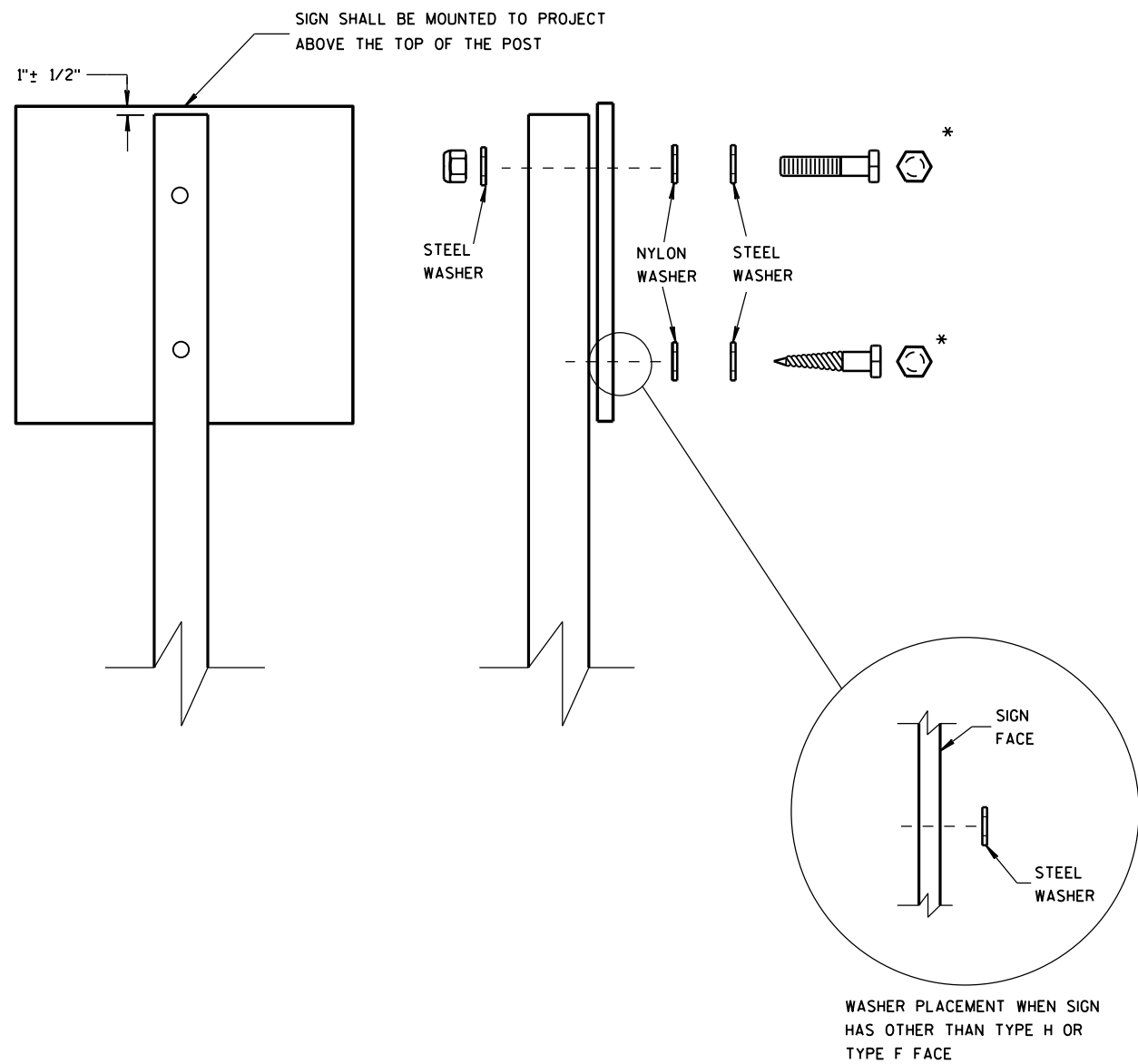
SEE NOTE ③

GENERAL NOTES

- ① 6 FEET FROM THE EDGE OF PAVEMENT (EDGE LINE LOCATION) UNLESS OTHERWISE DIRECTED BY THE PROJECT ENGINEER. LATERAL OFFSET SHOULD BE ADJUSTED TO AVOID THE DITCH FLOWLINE.
- ② THE EXISTENCE OF CURB AND GUTTER DOES NOT IN ITSELF MANDATE THE VERTICAL CLEARANCE ILLUSTRATED. THAT HEIGHT IS TYPICALLY MEASURED WHERE THERE IS SIDEWALK ADJACENT TO THE ROADWAY OR PARKING IS PERMITTED. IN THE ABSENCE OF SIDEWALK, VERTICAL CLEARANCE IS MEASURED FROM THE TOP OF THE CURB. IF NO SIDEWALK AND NO PARKING, VERTICAL CLEARANCE MAY BE REDUCED TO 5 FOOT MINIMUM. OFFSET OF SIGNS IS MEASURED FROM THE CURB FLOWLINE.
- ③ FOR SIGNS REQUIRING 4 POSTS, SPACE INTERMEDIATE POSTS EVENLY.

**TEMPORARY TRAFFIC CONTROL
SIGN MOUNTING**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 158



NUTS, BOLTS AND LAGS USED FOR MOUNTING SIGNS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- A. HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3
- B. ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC 3

THREADS ON BOLTS AND NUTS SHALL BE MANUFACTURED WITH SUFFICIENT ALLOWANCE FOR THE CADMIUM PLATE OR GALVANIZED COATING TO PERMIT THE NUTS TO RUN FREELY ON THE BOLTS.

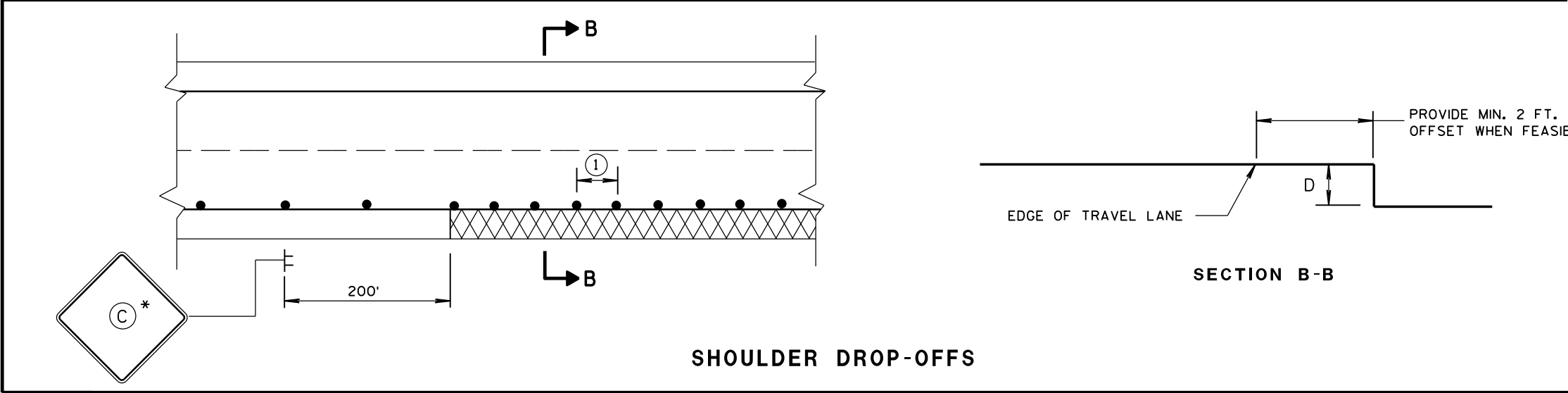
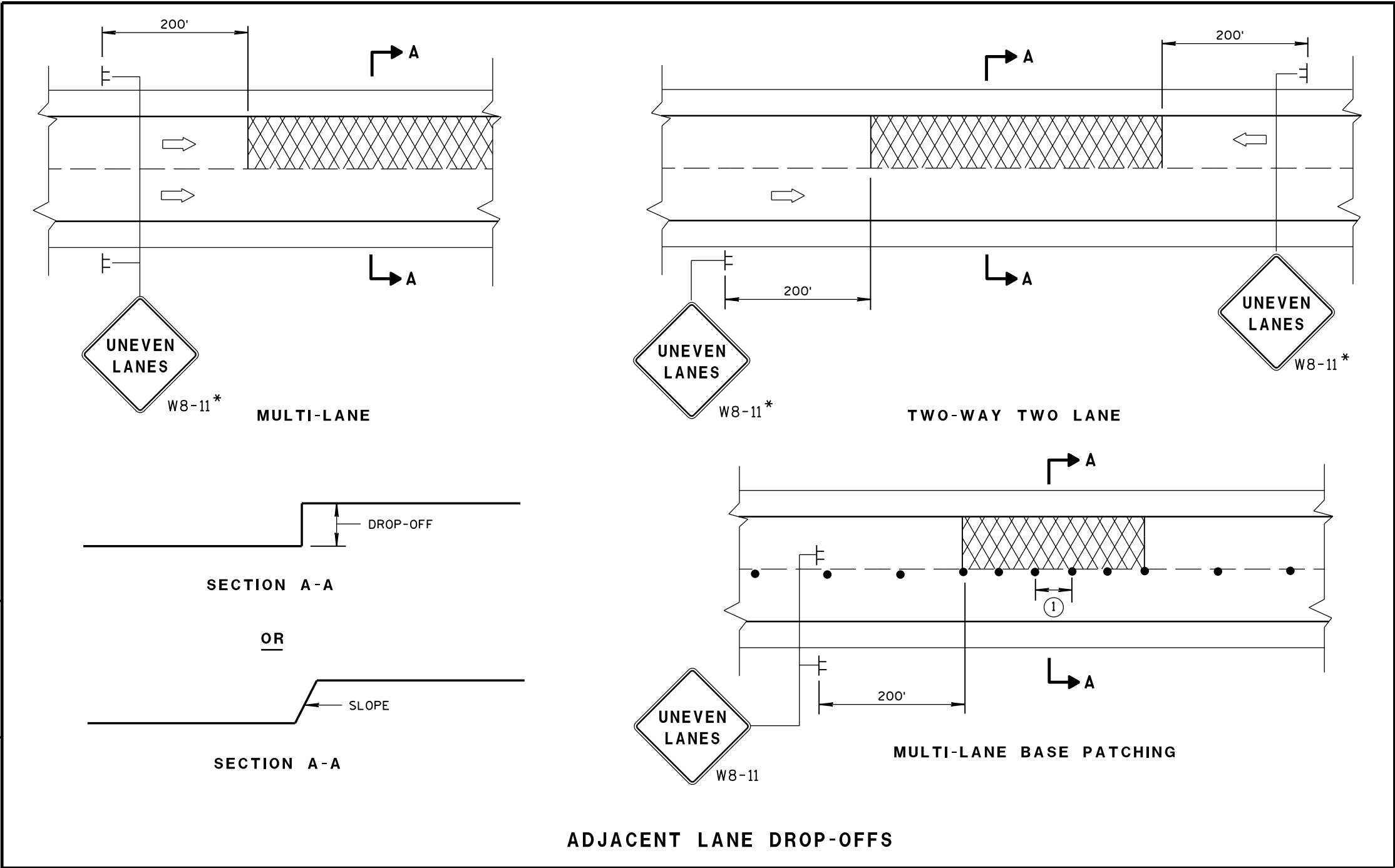
- WOOD POSTS (4" x 4" or 4" x 6")
- LAG SCREWS - 3/8" x 3"
 - MACHINE BOLTS - 5/16" x 6-1/2" OR 7" LENGTH W/ NUTS

- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - 3/8" x 3-1/4" LENGTH W/ NUTS
 - RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH

- WASHERS (ALL POSTS) -
- 1-1/4" O.D. x 3/8" I.D. x 1/16" STEEL
 - 1-1/4" O.D. x 3/8" I.D. x .080 NYLON FOR ALL TYPE H SIGNS

* TWO DIFFERENT FASTENING SYSTEMS ARE SHOWN FOR ILLUSTRATION PURPOSES. ON ANY INDIVIDUAL SIGN, EITHER ONE OR THE OTHER SYSTEM SHALL BE USED. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA. FOR A SINGLE POST INSTALLATION, ALL SIGNS GREATER THAN 9 SQ. FT. REQUIRE THE USE OF 3 FASTENERS.

ATTACHMENT OF SIGNS TO POSTS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017 DATE	/S/ Andrew Heidtke WORK ZONE EN 159
FHWA	



GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1/2 MILE.

① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

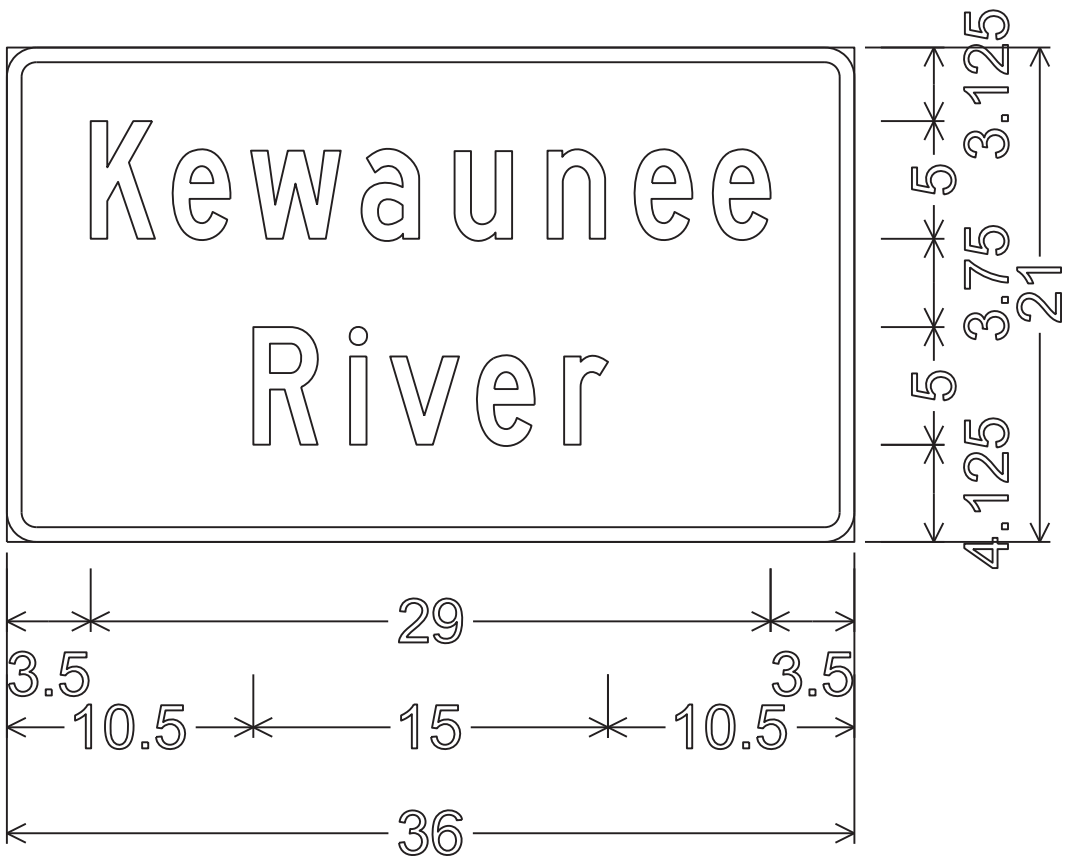
- ┌ SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA WITH DROP-OFF

D	SIGN (C)
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER W08-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP-OFF W8-9A PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT

TRAFFIC CONTROL, DROP-OFF SIGNING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March, 2017 DATE	/S/ Andrew Heldtke WORK ZONE ENGI 160
FHWA	

NOTES

- 1. Signs are Type II- Type H Reflective
- 2. Color:
 - Background - Green
 - Message - White
- 3. Message Series - C

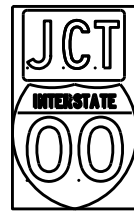


I3-1;
1.250" Radius, 0.625" Border

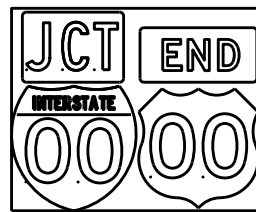
7

7

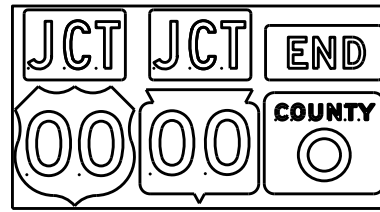
TYPICAL ASSEMBLIES



J1-1



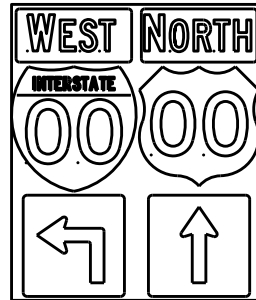
J1-2



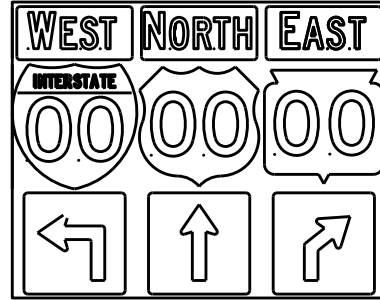
J1-3



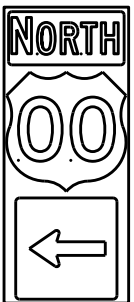
J2-1



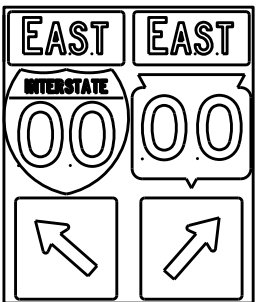
J2-2



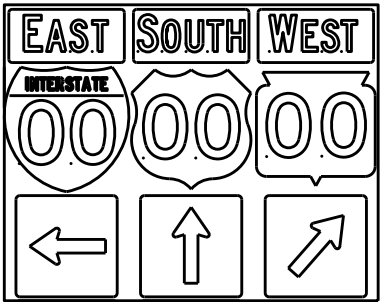
J2-3



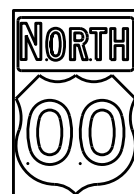
J3-1



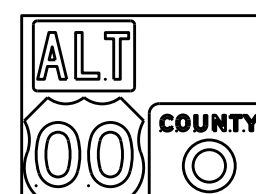
J3-2



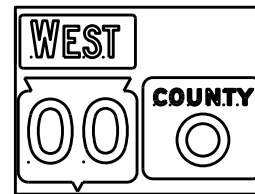
J3-3



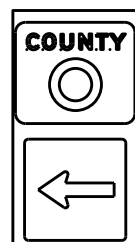
J4-1



J4-2



J4-2



J13-1



J12-1



J32-1



J33-1



J23-1

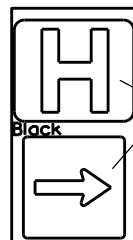


J22-1



JV

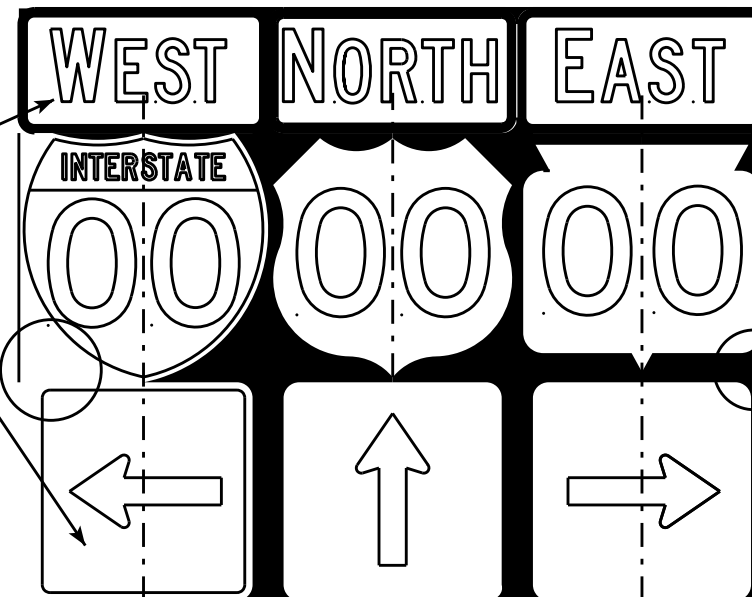
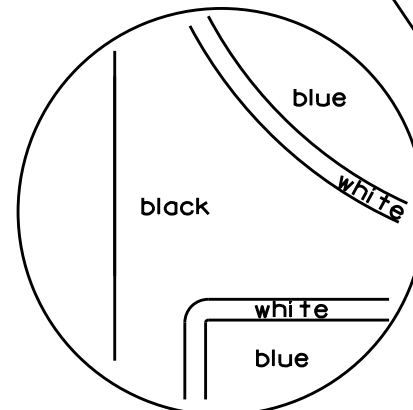
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

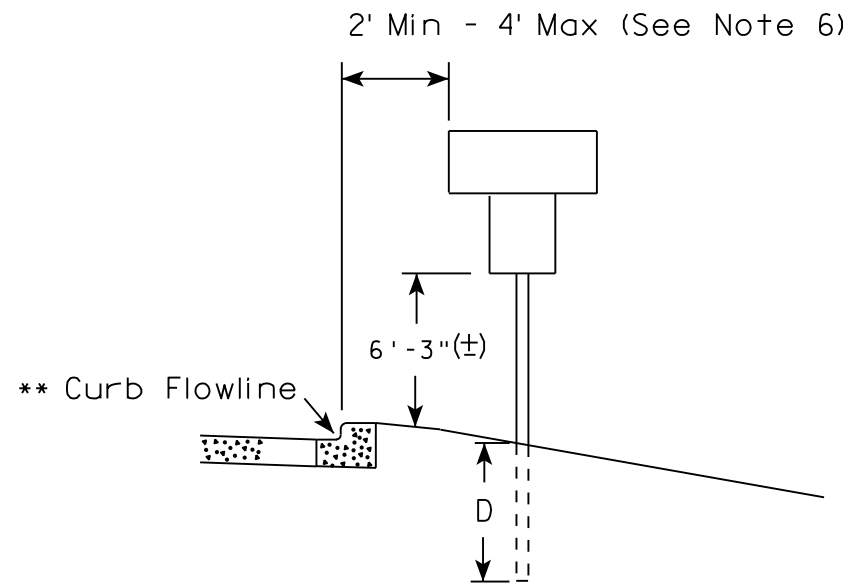
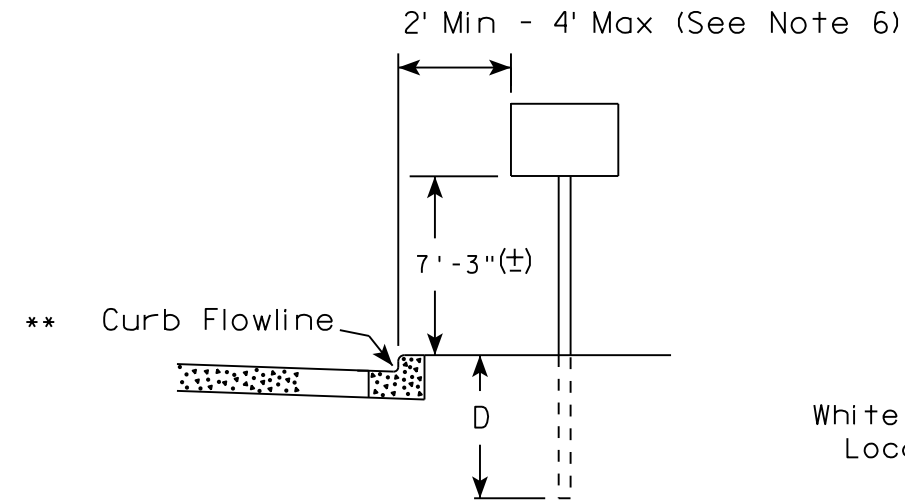
DATE 2/06/14 PL 162 A2-1S.8

SHEET NO: E

NOTES

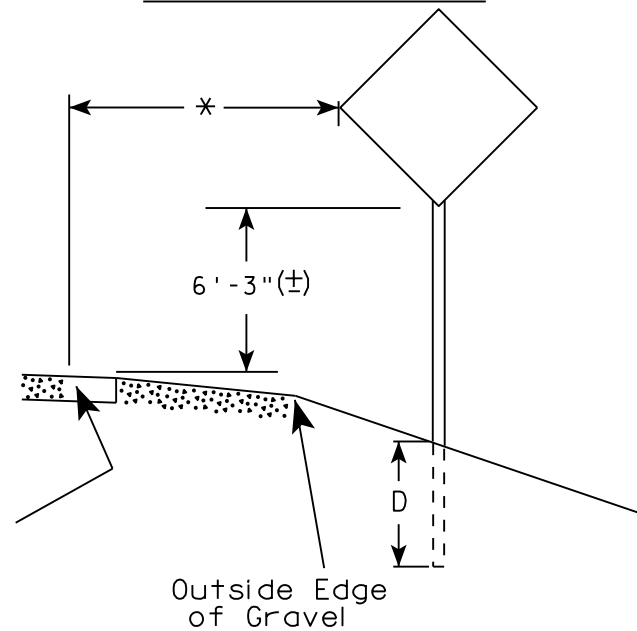
1. Signs are Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Black Non-reflective
Message - see Note 5
3. Message Series - See Note 5
4. Corners shall be square or rounded if base material is plywood. 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 inches (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.

URBAN AREA

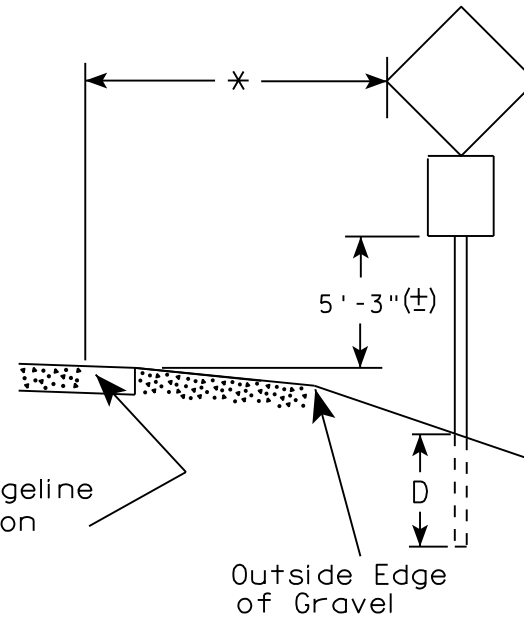


White Edgeline
Location

RURAL AREA (See Note 2)



White Edgeline
Location



Outside Edge
of Gravel

POST EMBEDMENT DEPTH

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

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. J-Assemblies are considered to be one sign for mounting height.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), 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" (±).

✱✱ 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.

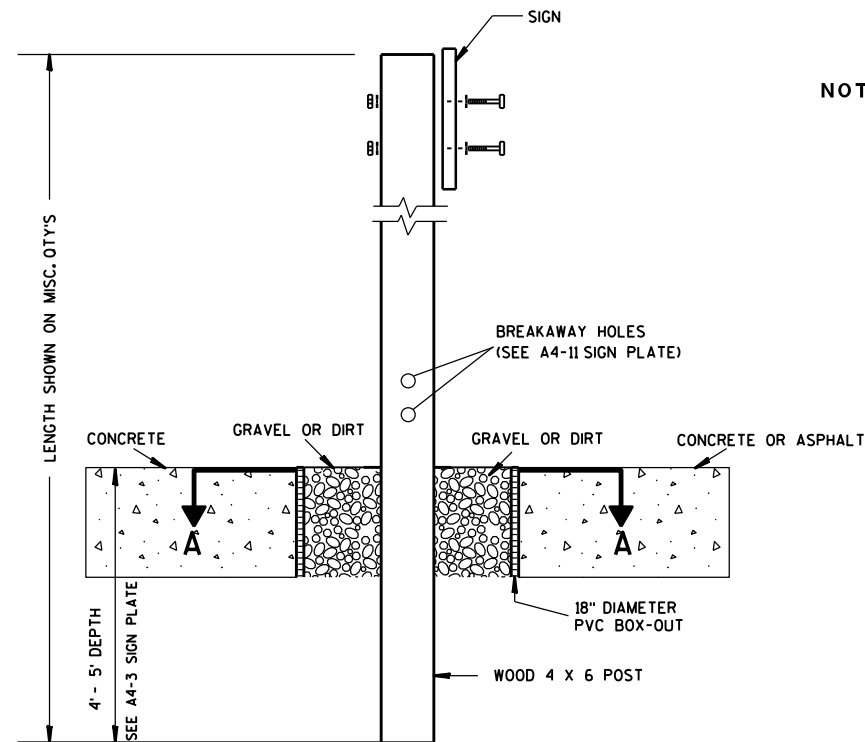
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

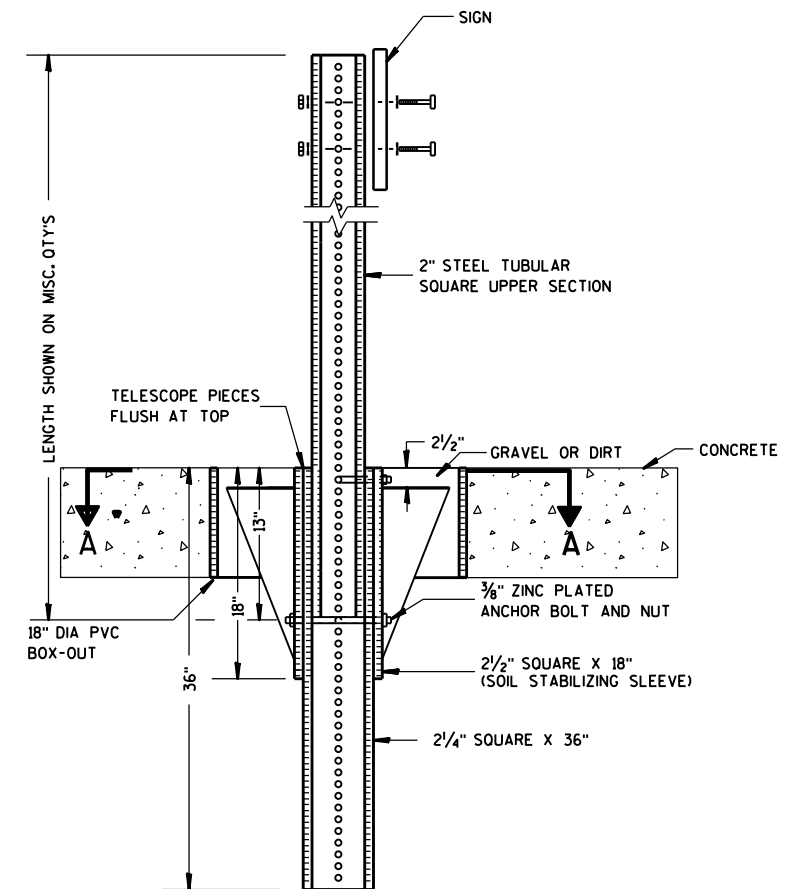
DATE 8/21/17 PLATE NO. A4-3.21



ELEVATION VIEW

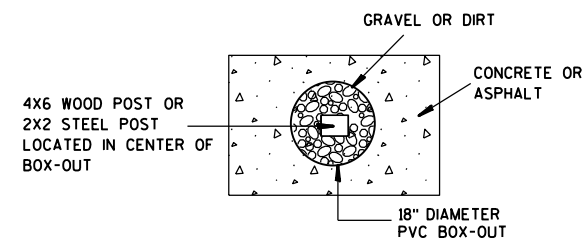
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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

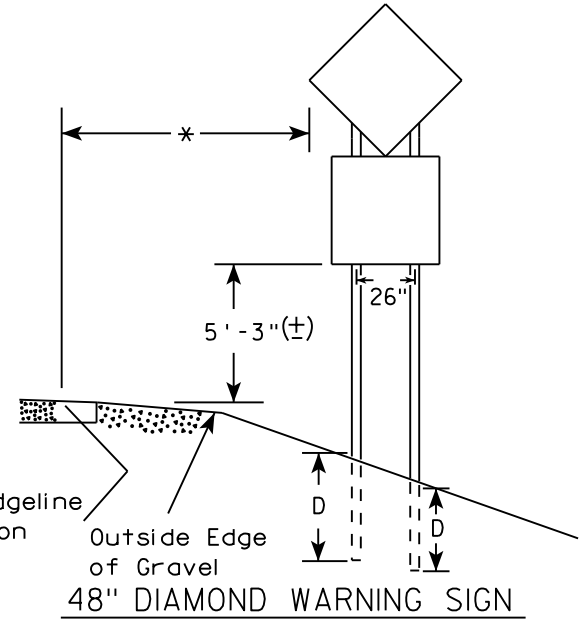
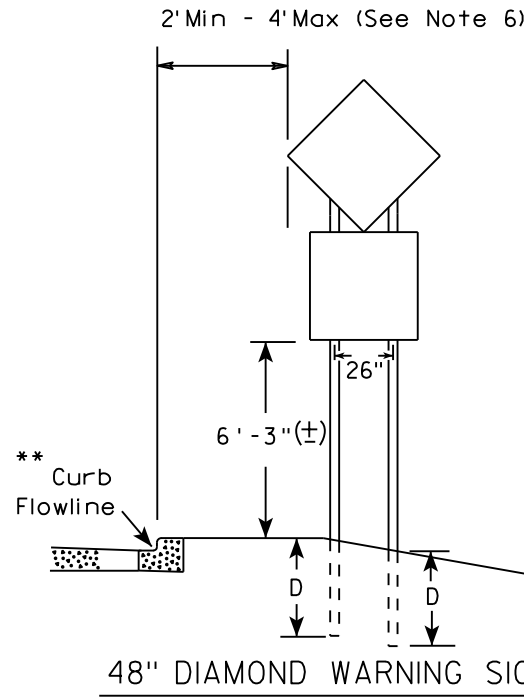
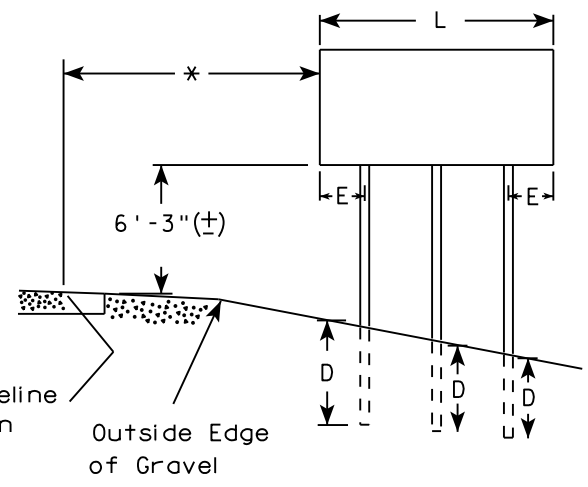
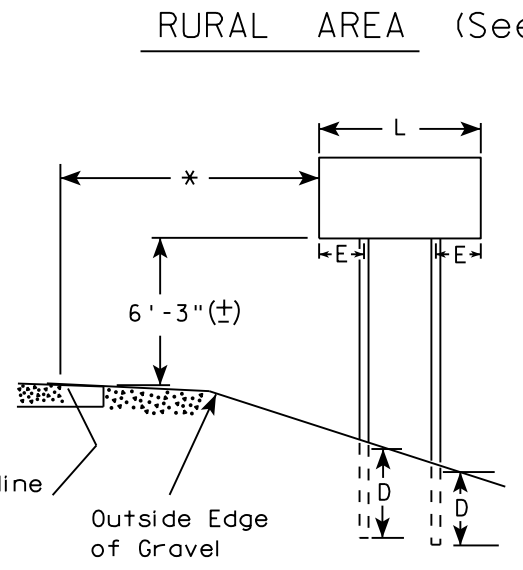
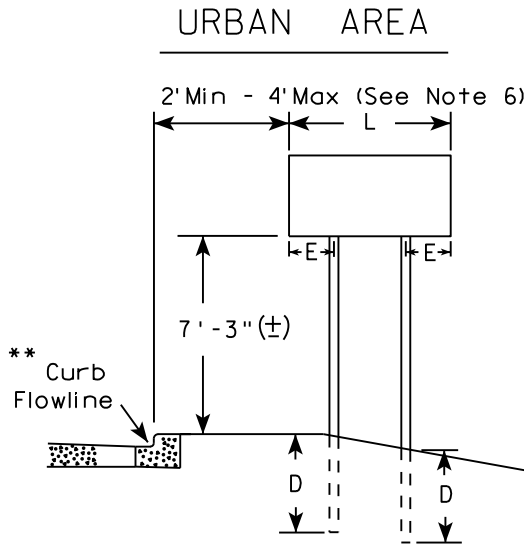
**SIGN POST
BOX-OUTS
A4-3B**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 164 A4-3B.1

PROJECT NO: HWY: COUNTY: SHEET NO: E



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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

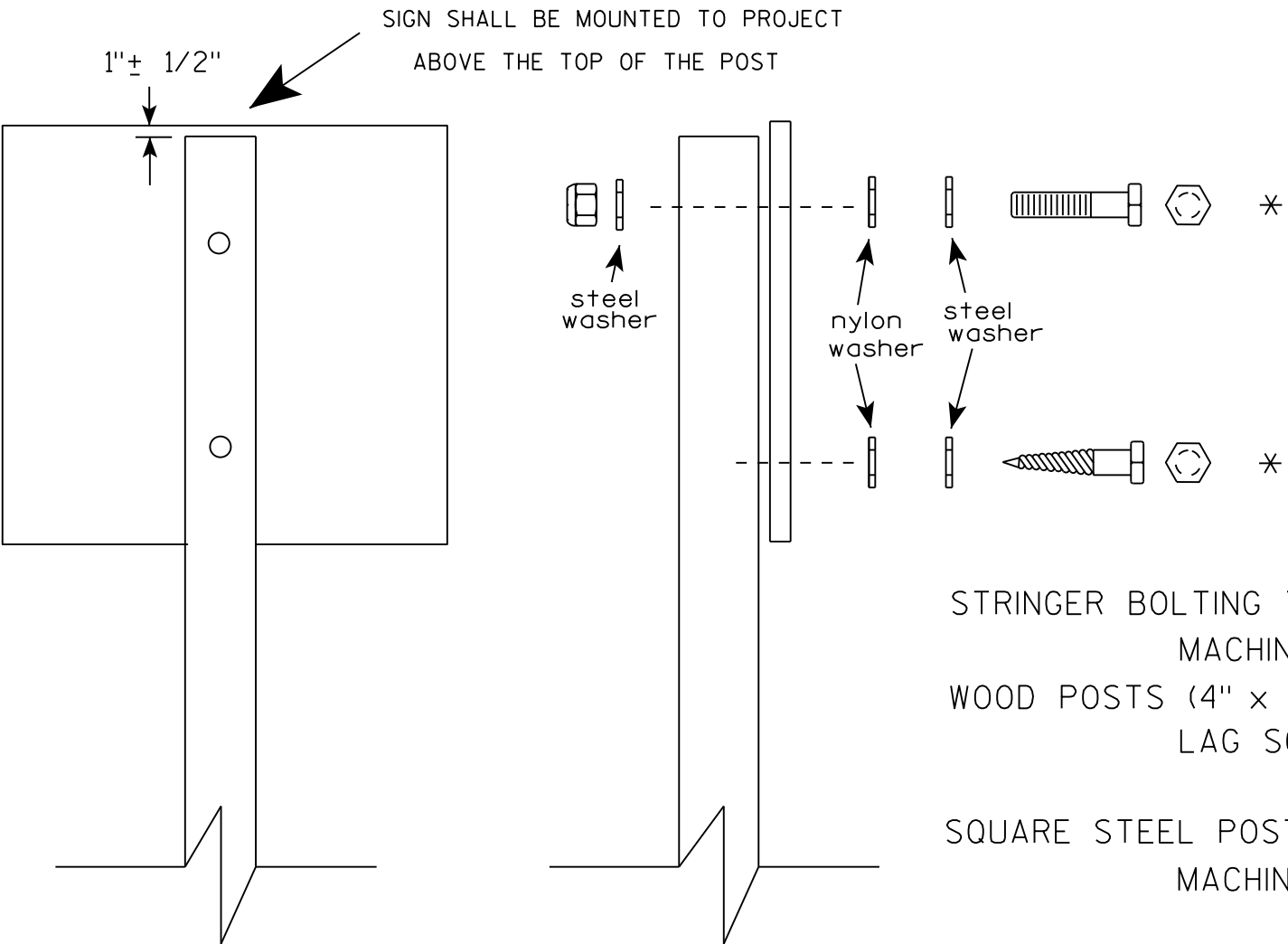
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

- GENERAL NOTES
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. J-Assemblies are considered to be one sign for mounting height.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding signs shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±).

- * 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.
- ** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.
- *** See A4-3 sign plate for signs 4' or less in width and less than 20 S.F. in area.



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
166

**2 1/4 " SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH**

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

2 1/2" TELES PAR TUBE

4"

2 1/2"

10"

1 1/2"

12 1/2"

4" x 10" x 10 GA. STEEL PLATE (CUT AS SHOWN) WELDED TO ALL FOUR CORNERS OF TELES PAR TUBE

[illegible]

TECHNICAL DRAWING OF A SIGNPOST ASSEMBLY:

- Dimensions:**
 - Overall height: LENGTH SHOWN ON MISC. QTY'S
 - Section 1: 36"
 - Section 2: 18"
 - Section 3: 12"
- Components and Labels:**
 - SIGN
 - SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL
 - 2" STEEL TUBULAR SQUARE UPPER SECTION
 - ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C
 - ALL FOUR SIDES
 - $\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT
 - 1"
 - $\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT
 - 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)
 - 2 1/4" SQUARE X 36"
 - TELESCOPE PIECES FLUSH AT TOP

3/8" ZINC PLATED CORNER
ANCHOR BOLT AND NUT

DIRECTION
OF TRAFFIC

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 PLATI 167 14-9.9

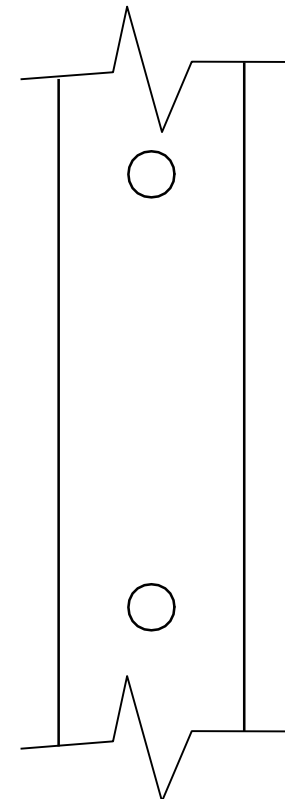
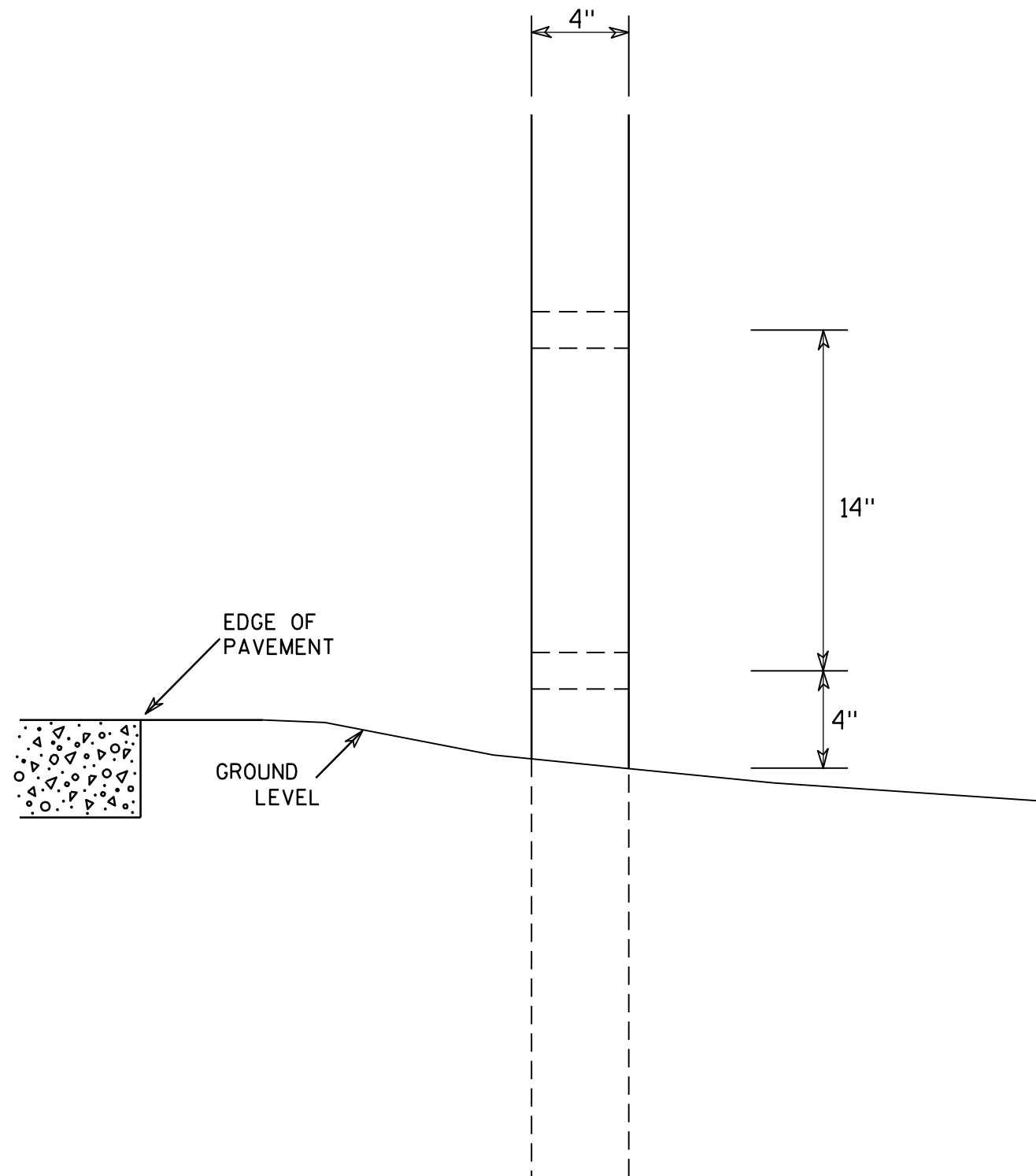
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

T



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:

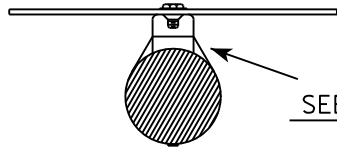
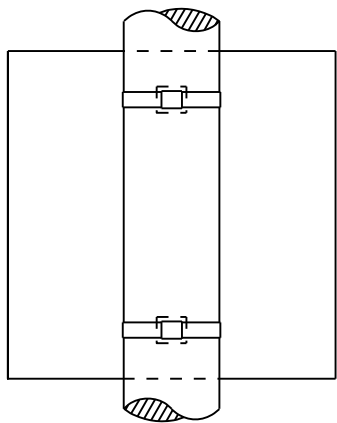
COUNTY:

SHEET NO: 168

E

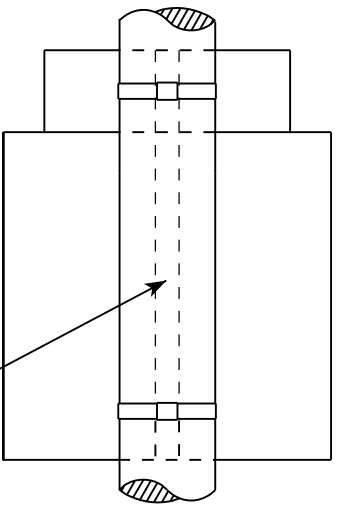
BANDING

SINGLE SIGN

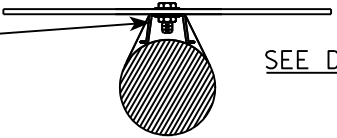


SEE DETAIL A

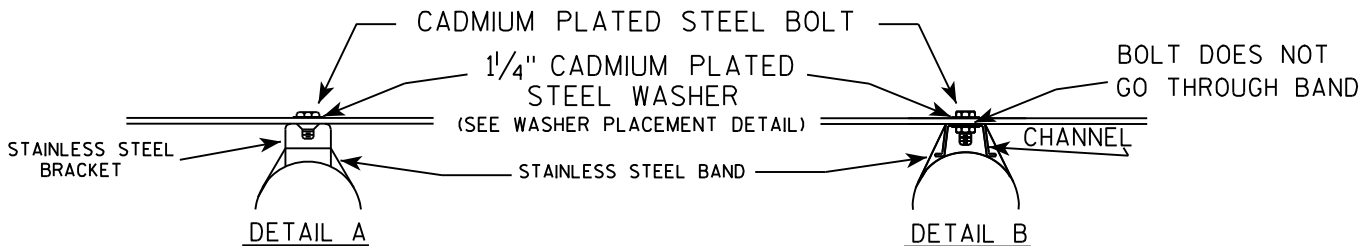
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



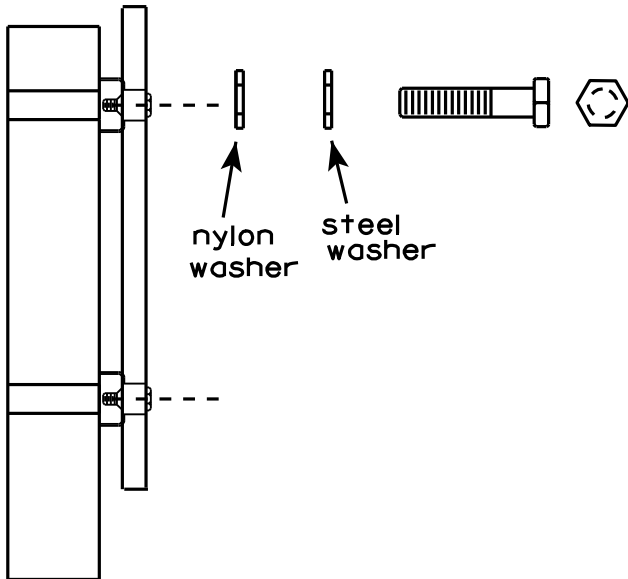
SEE DETAIL B



GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be $\frac{3}{4}$ " in width and 0.025" thickness.

WASHER PLACEMENT



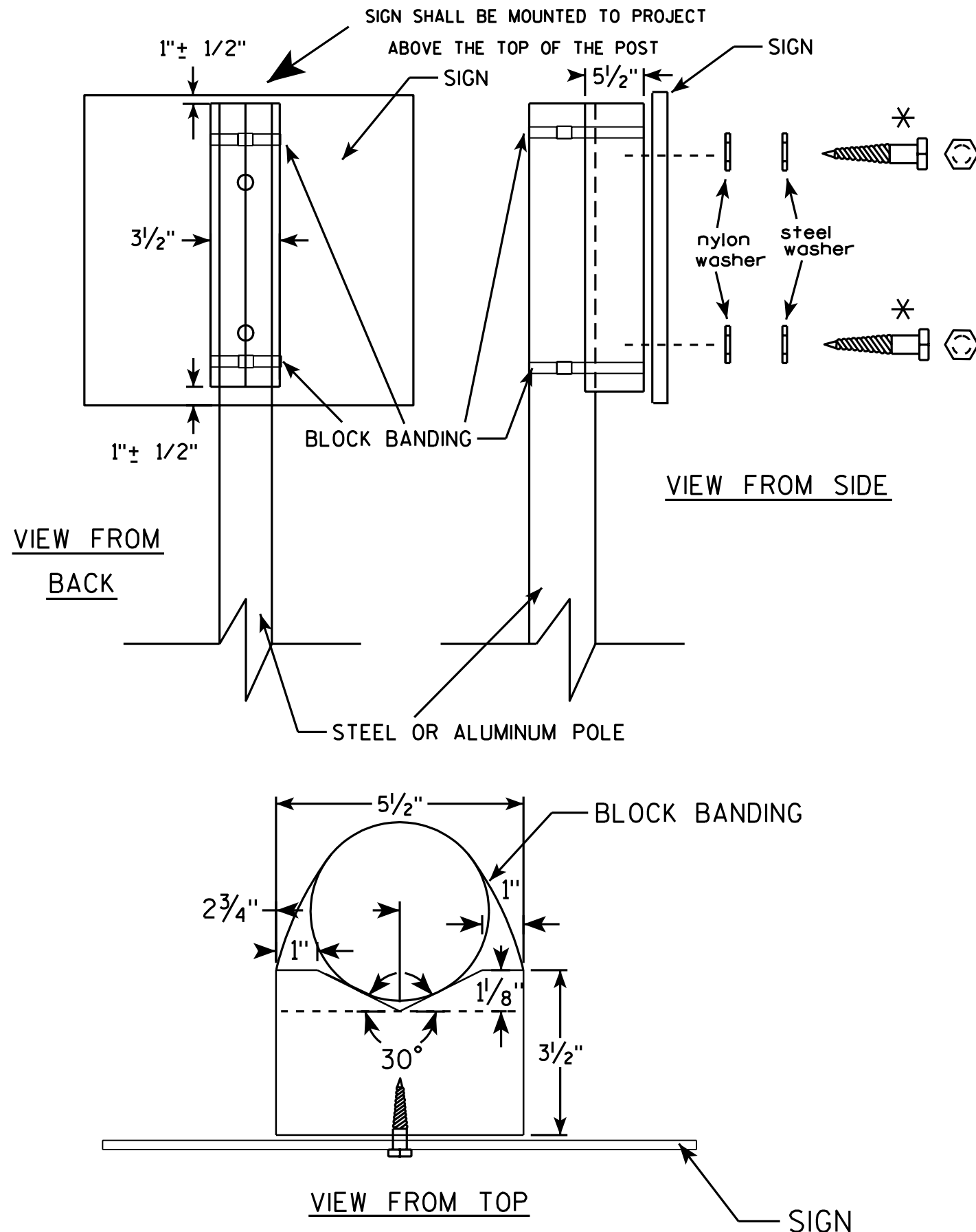
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



GENERAL NOTES

1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, 3/4" WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D, or
 - b. Cadmium plated in accordance with ASTM Designation : B 766 TYPE 3, Class 12, or
 - c. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X 1/16"
8. NYLON WASHERS SHALL BE 1 1/4" O.D. X 3/8" I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE 3/8" X 2 1/2"

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

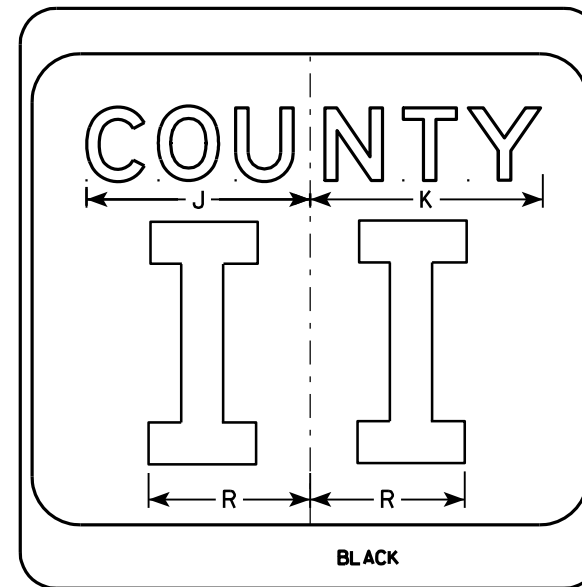
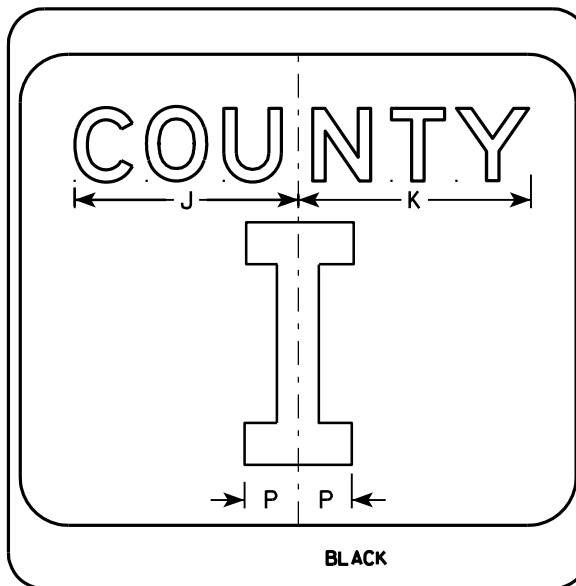
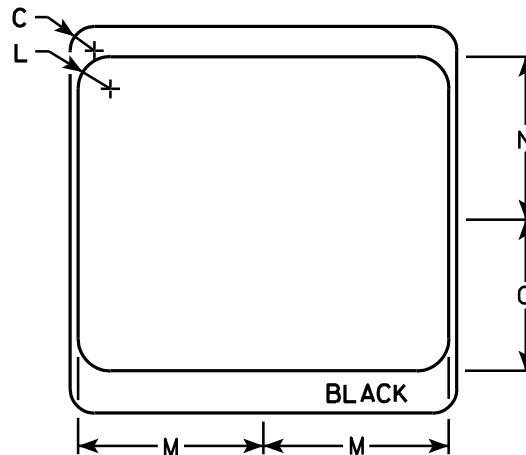
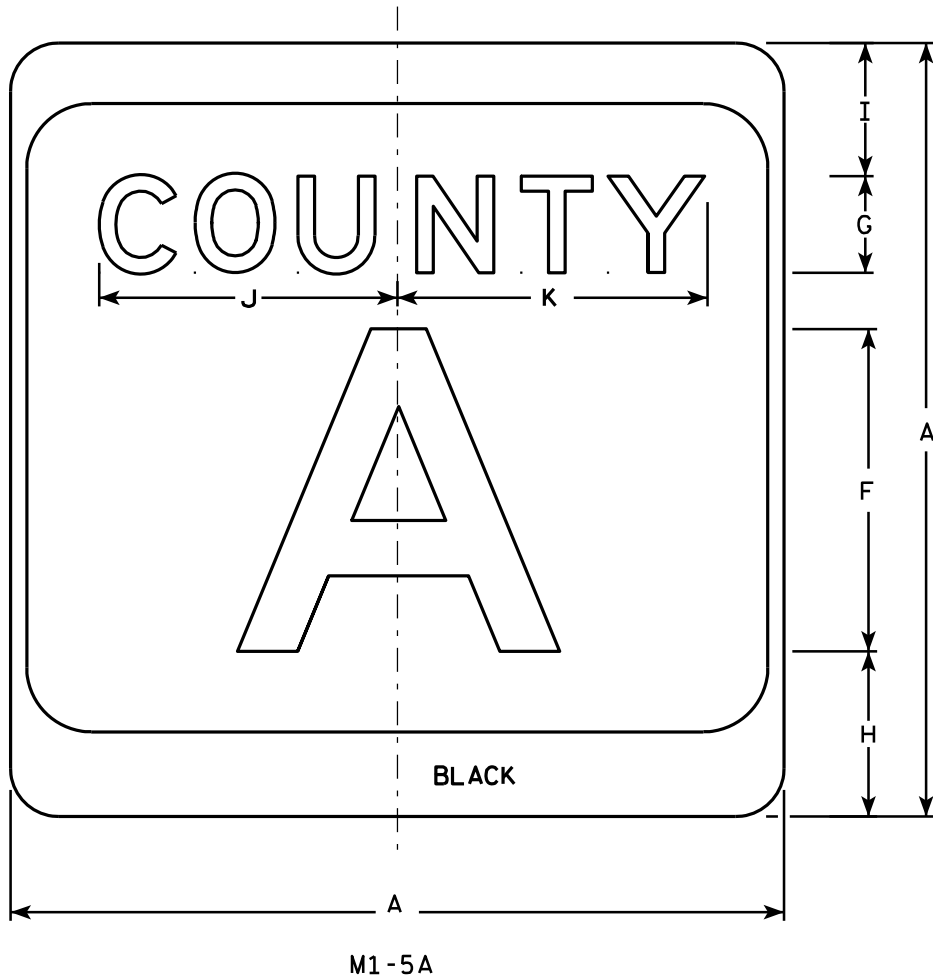
DATE 7/12/07 PLATE NO. A5-10.1

PROJECT NO:

SHEET NO: 170

E

7



NOTES

- Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White & Black - See Note 7
Message - Black
- Message Series - see Note 5
- 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.
- 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.
- Substitute appropriate letters & optically center to achieve proper balance.
- Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

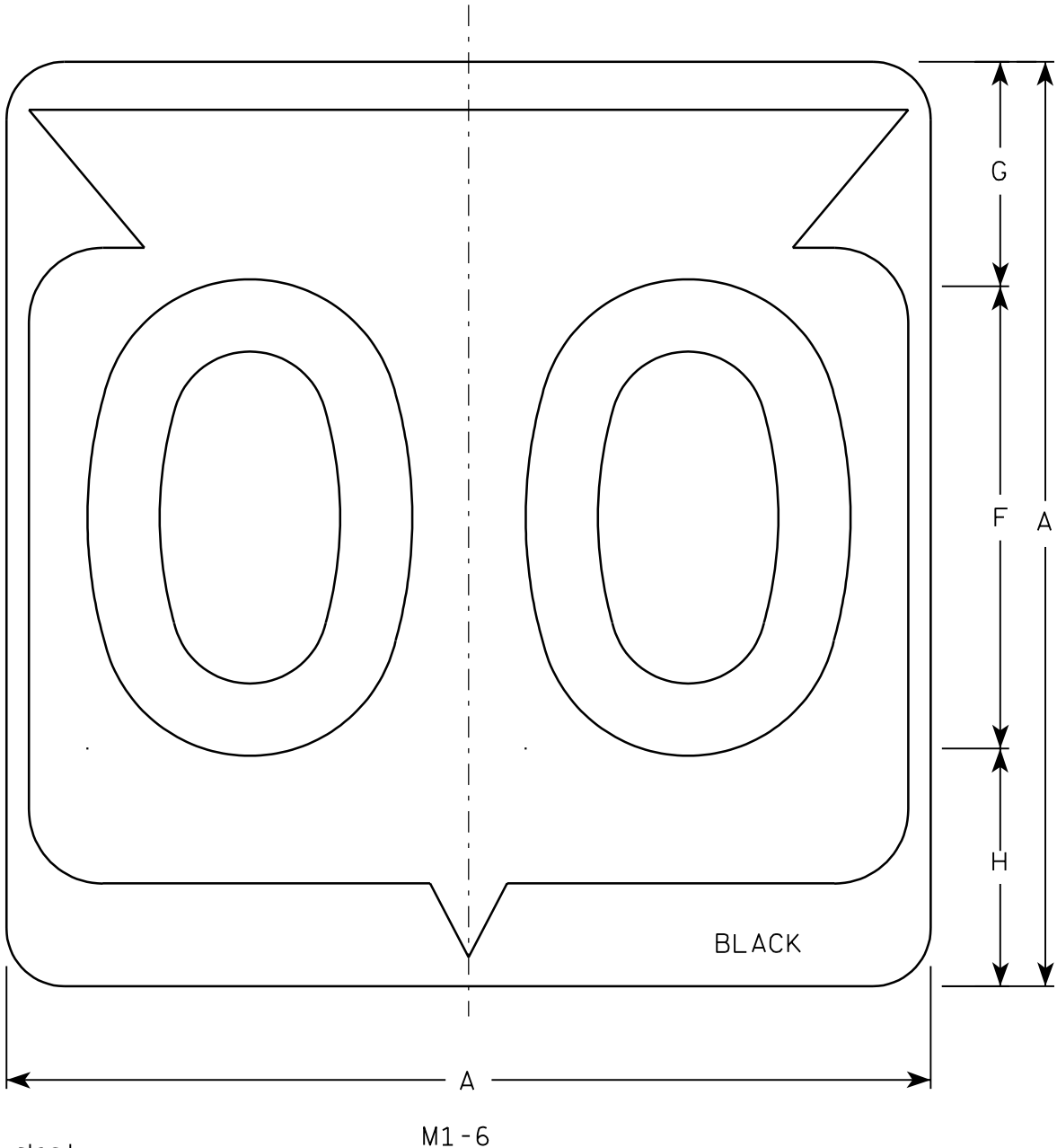
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 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	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/27/11	PLATE NO. M1-5A.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 171	E
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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 m ²
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

PROJECT NO:

HWY:

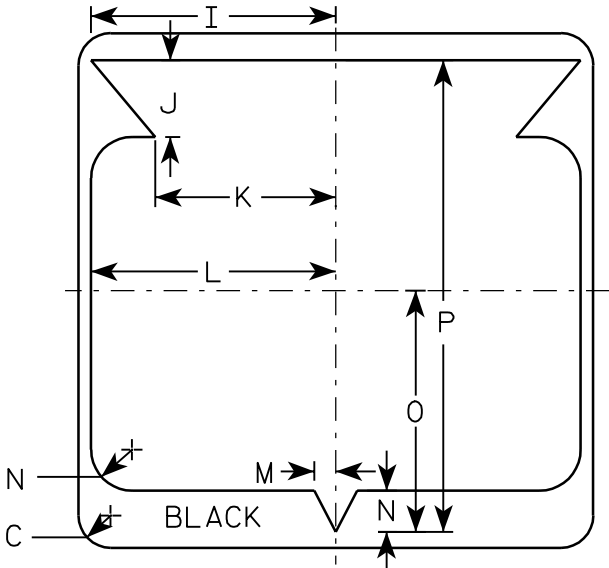
COUNTY:

SHEET NO: 172

E

NOTES

- Sign is Type II - See Note 6 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White & Black - See Note 6
Message - Black
- Message Series - See note 5
- 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.
- Substitute appropriate Series numerals and adjust spacing as per plate A10-1.
- Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective



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



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - Green
 - Message - White - Graphics - White
 - Circle Tour Message is Green
- 3. Message Series - Special
- 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.	Area m ²
1																												
2	24			1 1/8	1/2																						4.0	.36
3																												
4	36			1 5/8	3/4																						9.0	.81
5																												

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

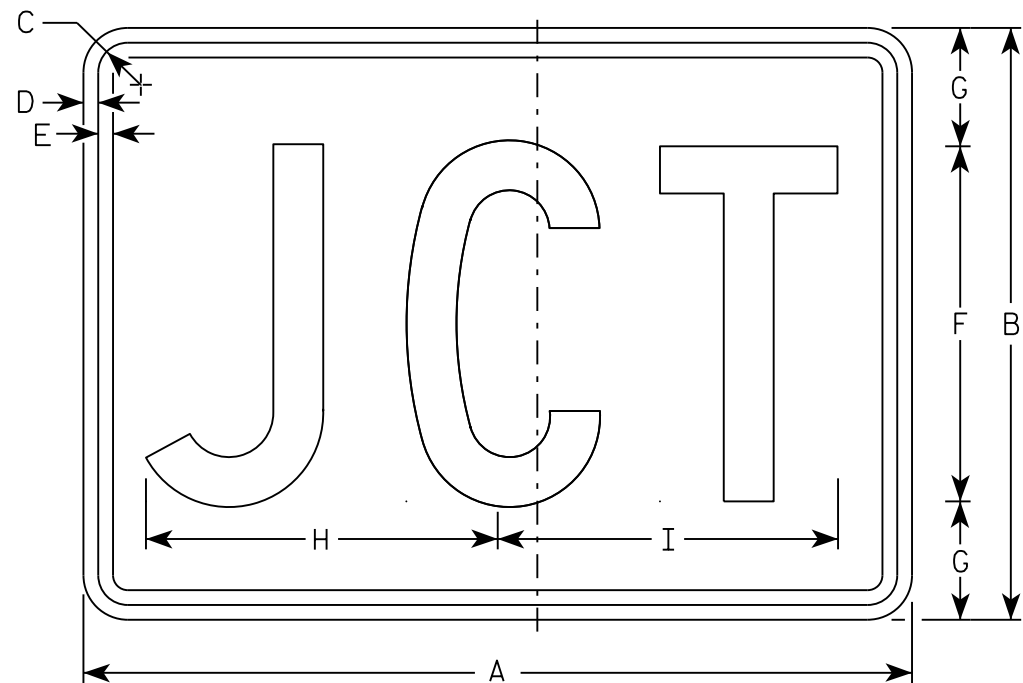
STANDARD SIGN

M1-93

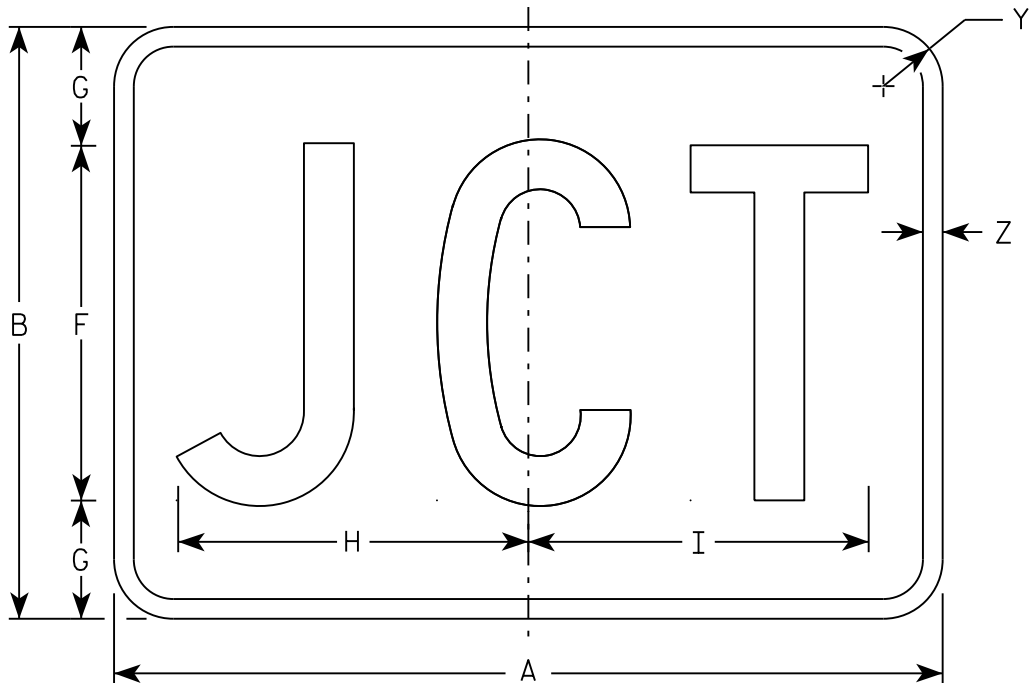
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
State Traffic Engineer

DATE 11/5/15 for PLATE NO. M1-93.2
173



M2-1
MM2-1
MP2-1



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

NOTES

- 1. Sign is Type II - Type H
- 2. Color:
 - Background - See note 5
 - Message - See note 5
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. M2-1 Background - White
 Message - Black
 MB2-1 Background - Blue
 Message - White
 MK2-1 Background - Green
 Message - White
 MM2-1 Background - White
 Message - Green
 MN2-1 Background - Brown
 Message - White
 MP2-1 Background - White
 Message - Blue
 MR2-1 Background - Brown
 Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20
3	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
4	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40
5	30	21	1 1/8	3/8	3/8	13	4	12 7/8	12 3/8																1 1/2	1/2	4.40

STANDARD SIGN

M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

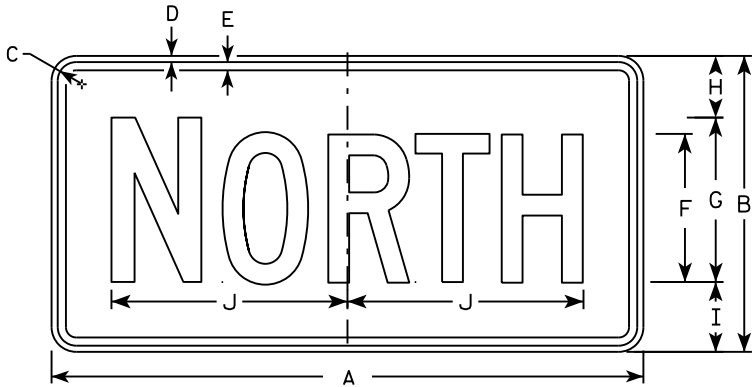
Matthew R. Rauch

For State Traffic Engineer

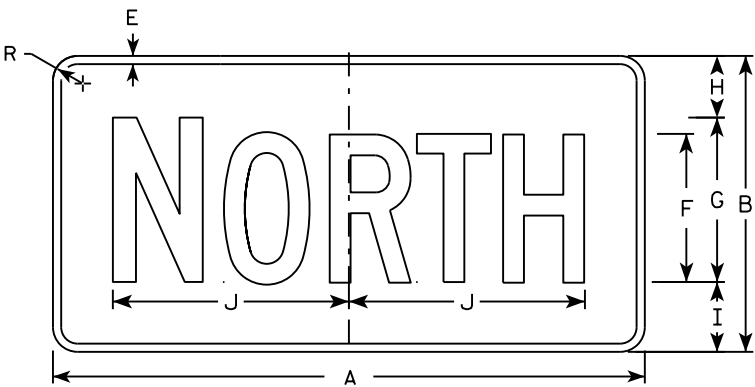
DATE 10/15/15

PLATE 174

''2-1.12



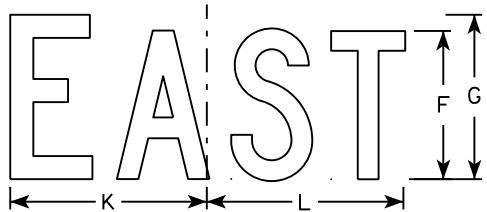
M3-1
MM3-1
MP3-1



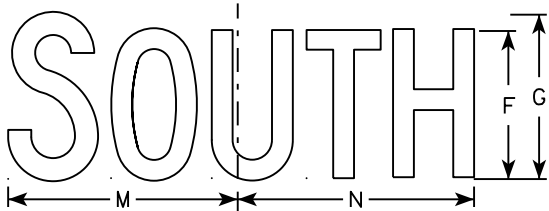
MB3-1
MK3-1
MN3-1



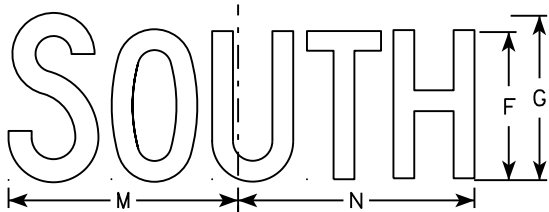
M3-2
MM3-2
MP3-2



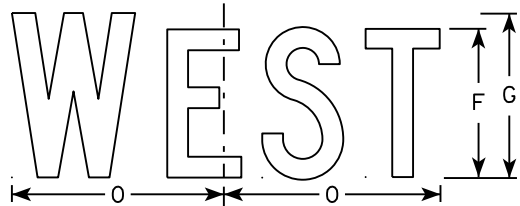
MB3-2
MK3-2
MN3-2



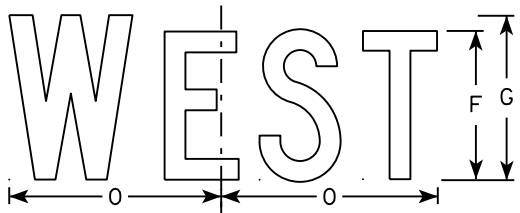
M3-3
MM3-3
MP3-3



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.

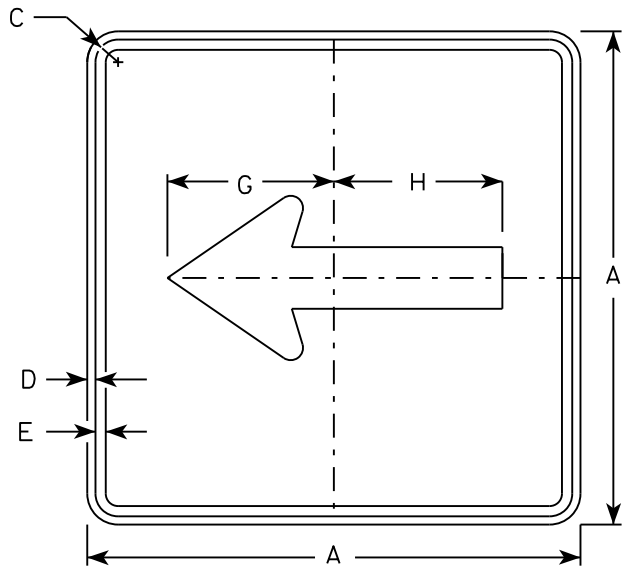
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4			1 1/2									2.00
3	36	18	1 1/8	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13			1 1/2									4.5
4	36	18	1 1/8	3/8	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 thru M3-4
SERIES

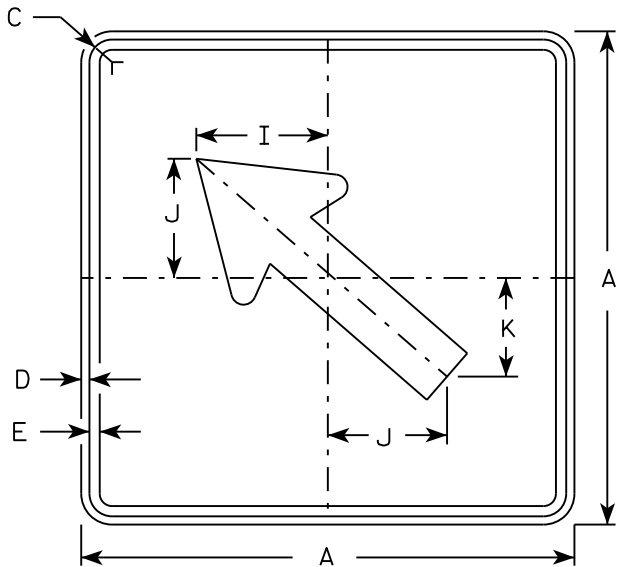
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

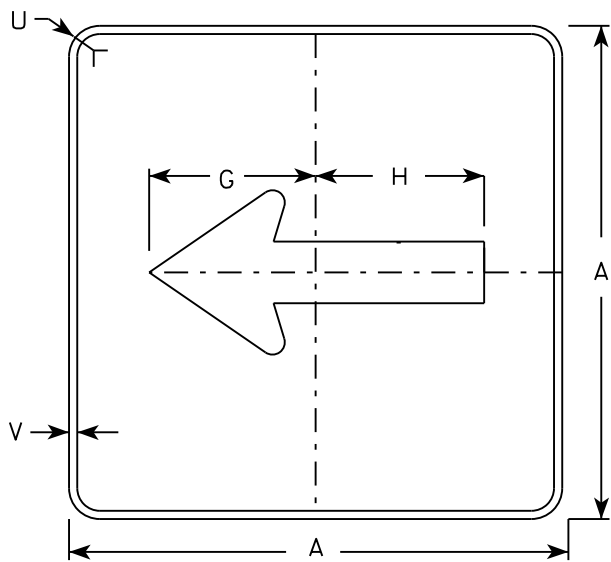
DATE 10/15/15 PLATE NO. 175 M3-1.14



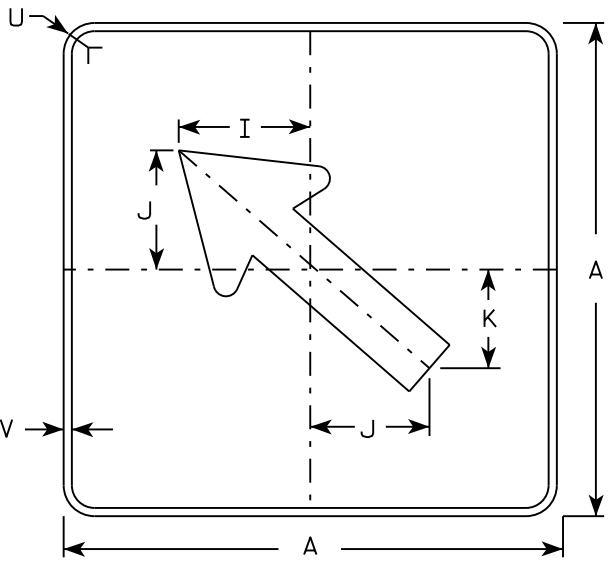
M6 - 1
MM6 - 1
M06 - 1
MP6 - 1



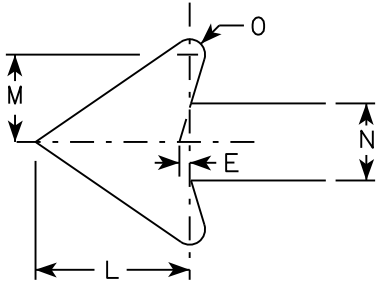
M6 - 2
MM6 - 2
M06 - 2
MP6 - 2



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



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



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See note 4
Message - See note 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.
- M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

PROJECT NO:

HWY:

COUNTY:

DATE 10/15/15

PLAT 176

SHEET NO:

E

STANDARD SIGN
M6 - 1 & M6 - 2
SERIES

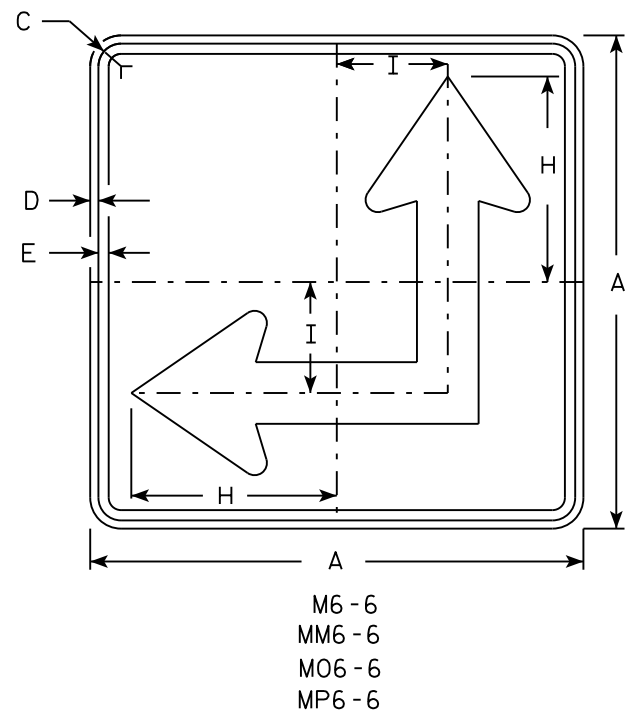
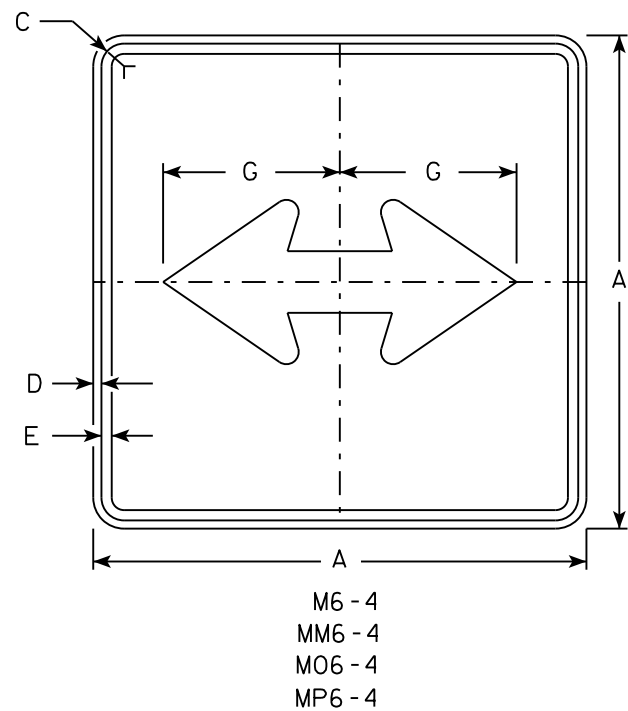
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 10/15/15

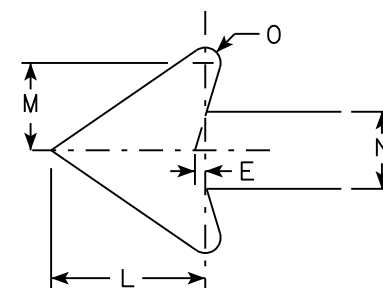
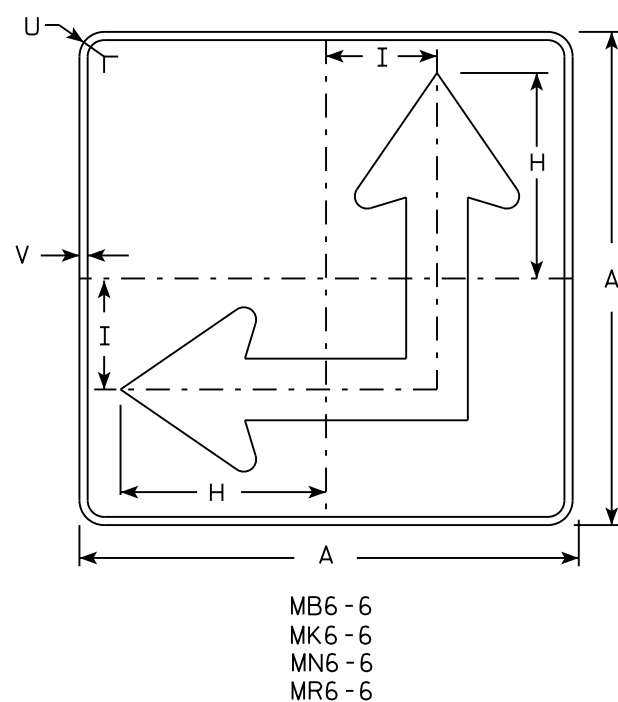
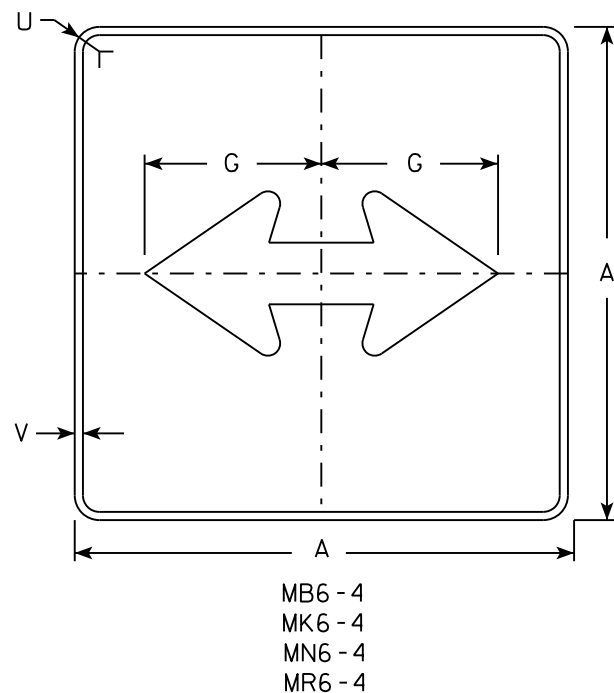
PLAT 176

M6-1.15



NOTES

- Signs are Type II - Type H except as Shown
- Color:
Background - See Note 4
Message - See Note 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.
- M6-4 and M6-6 Background - White
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White
MK6-4 and MK6-6 Background - Green
Message - White
MM6-4 and MM6-6 Background - White
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White
MO6-4 and MO6-6 Background - Orange - Type F Reflective
Message - Black
MP6-4 and MP6-6 Background - White
Message - Blue
MR6-4 and MR6-6 Background - Brown
Message - Yellow
- M6-6R same as M6-6L except arrow points ahead and 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 1/2	8 3/4	4 1/4			5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 3/4	12 1/2	6 3/4			7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25

PROJECT NO:	HWY:	COUNTY:	PLAT 177	SHEET NO:	E
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STANDARD SIGN
M6 - 4 & M6 - 6
SERIES

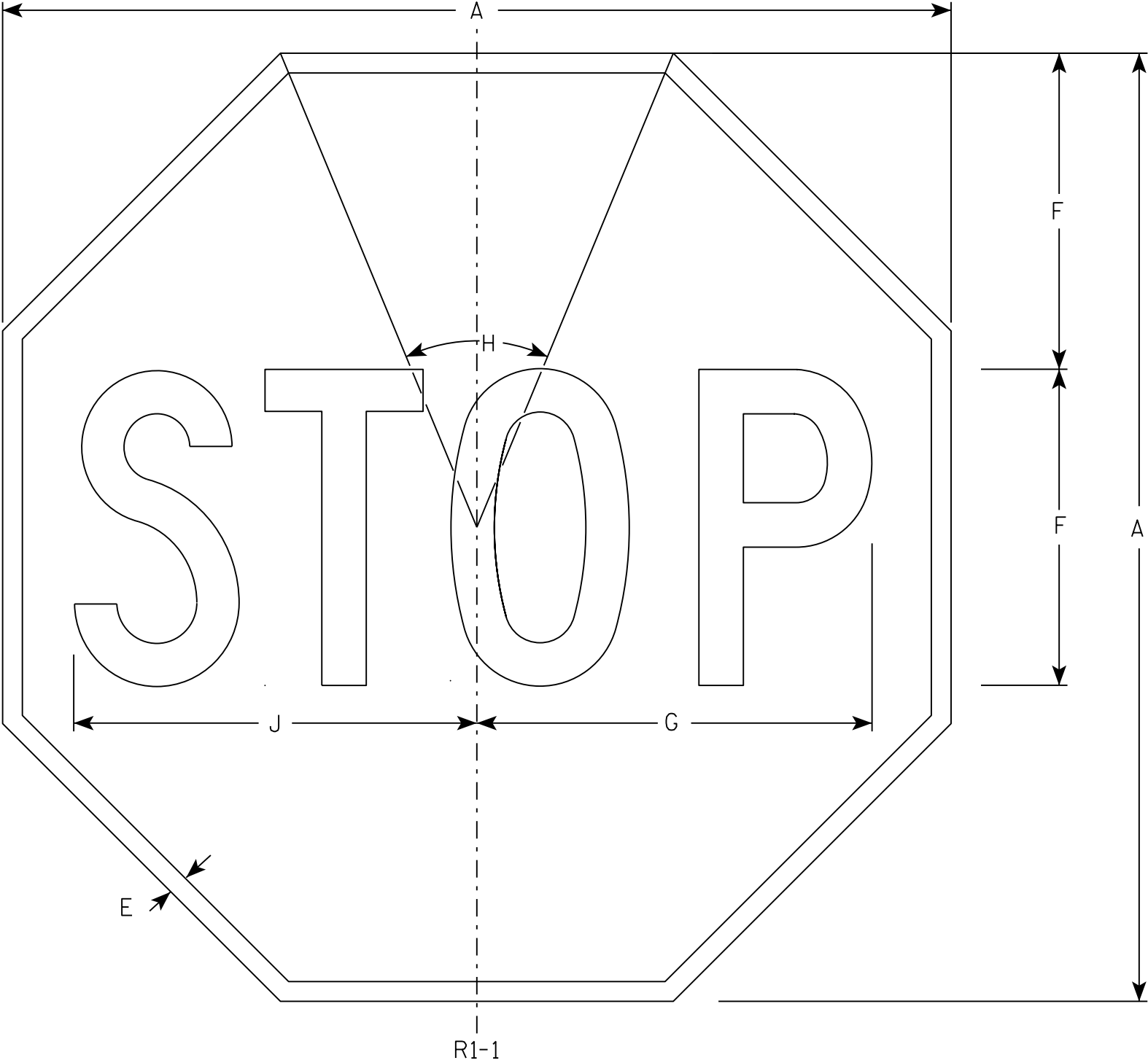
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 10/15/15 PLAT 177

M6-4.10

7



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

7

R1-1

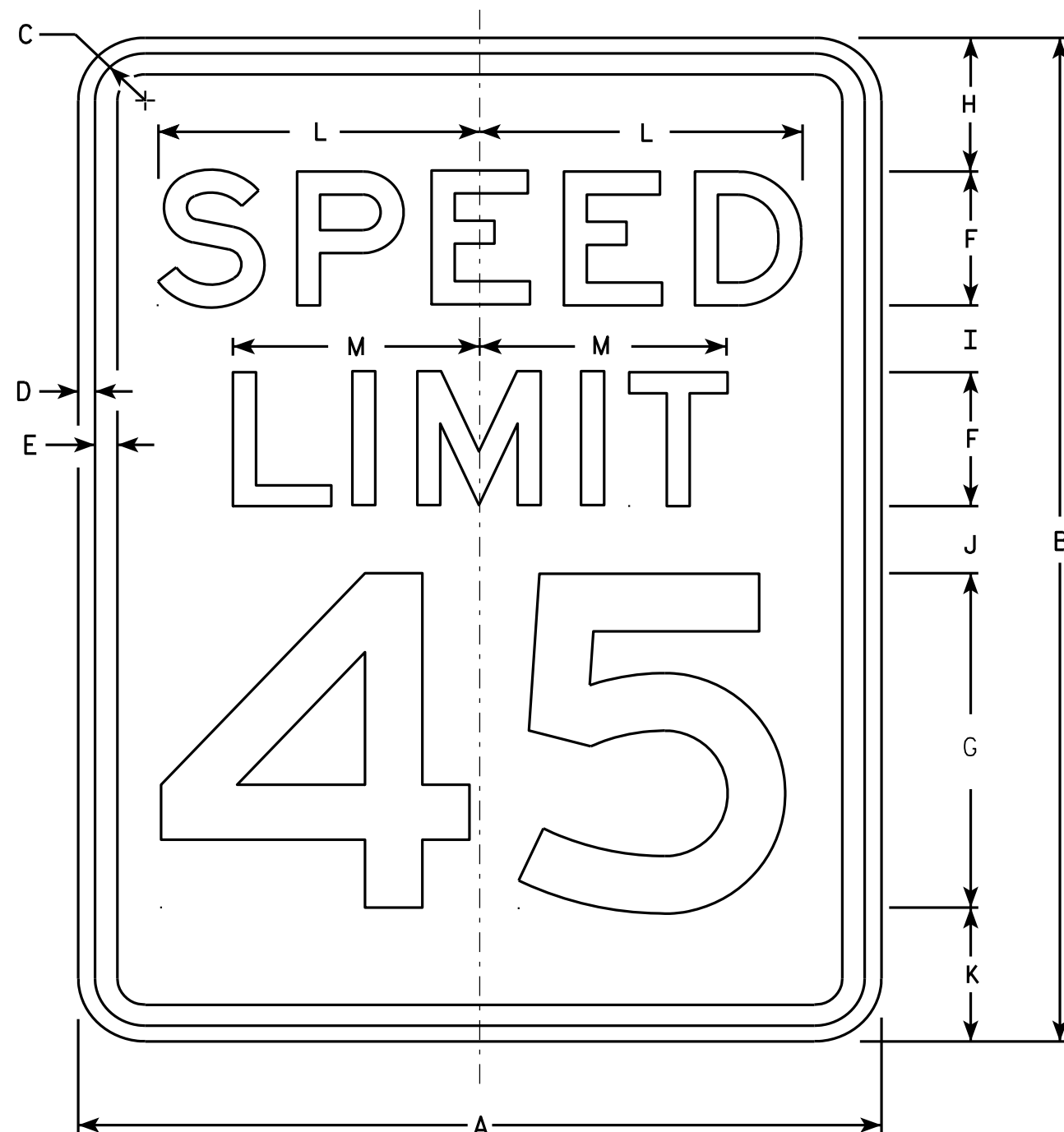
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



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

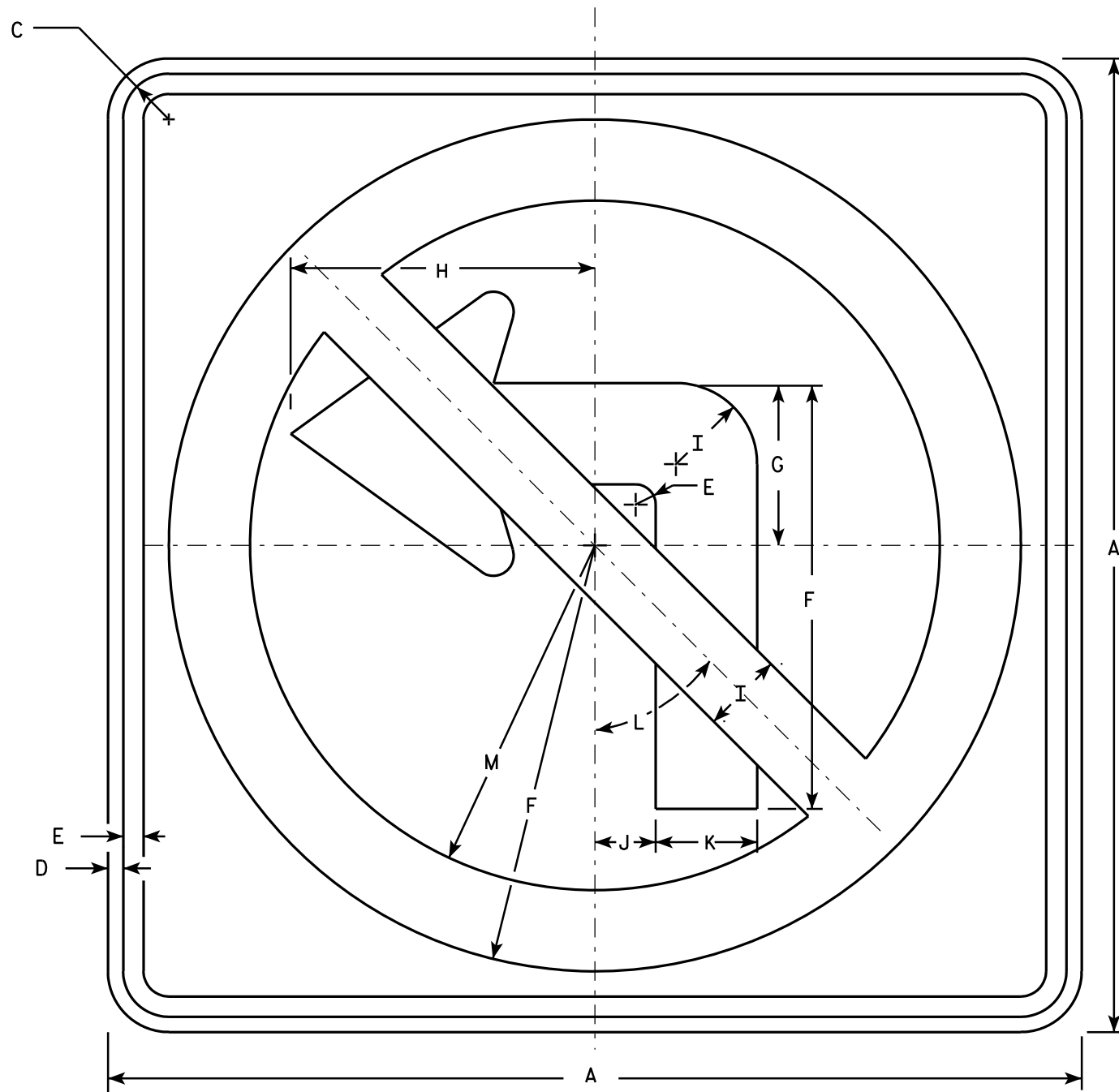
STANDARD SIGN R2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

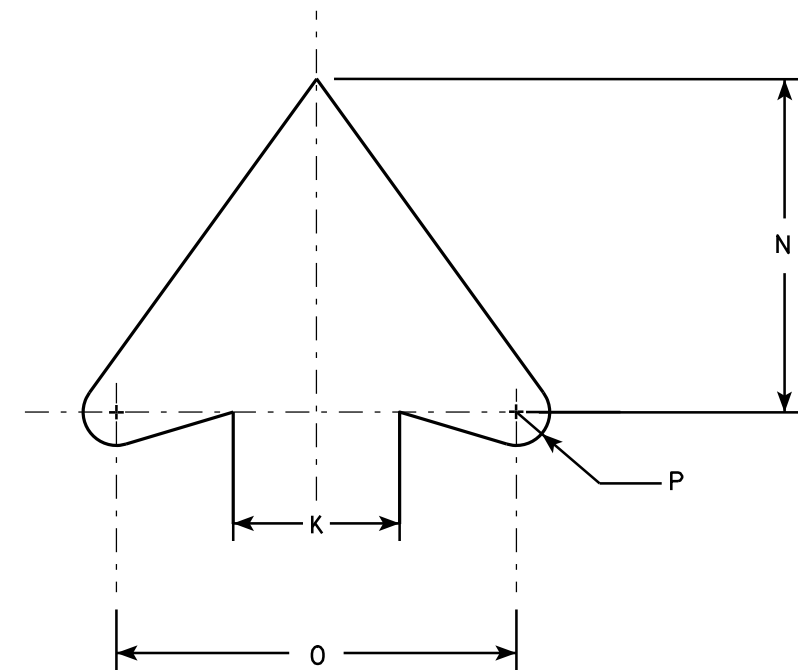
PROJECT NO: HWY: COUNTY: SHEET NO: 179 E



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: 180

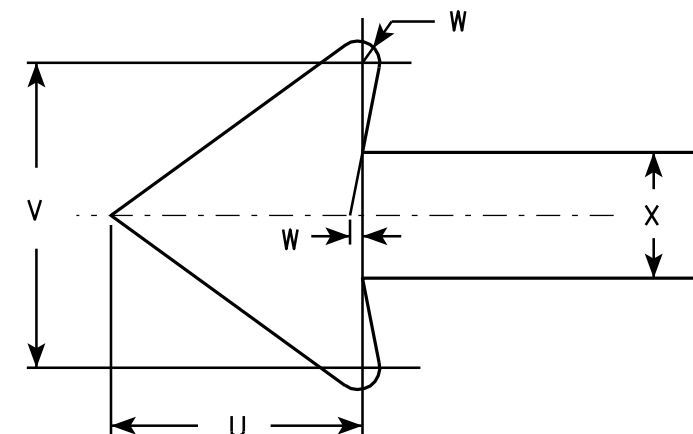
E



R7-1

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 - Red
3. Message Series - See Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1, 3 and 4 are series C, line 2 is series B.
6. R7-1D (double arrow)
R7-1L (left arrow)
R7-1R (right arrow)



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	12	18	1 1/8	3/8	3/8	3	1 7/8	2	7/8	5/8	1 1/2	2 1/2	2	2	4 7/8	4 7/8	2 1/4	2 1/8	2 1/2	3 7/8	1 1/2	1 3/4	1/8	3/4			1.5
2S	18	24	1 1/8	3/8	1/2	4	2 1/2	2 1/2	1 1/4	1	2	3 1/4	2 3/4	2 5/8	7 1/8	7	2 3/4	2 5/8	3 1/8	5 7/8	2 1/4	2 5/8	1/4	1 1/8			3.0
2M	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
3	24	30	1 1/8	3/8	1/2	5	3	3	2	1 1/4	2 1/2	4	3 1/4	3 3/8	9 1/4	9 1/4	3 1/4	3 1/4	3 3/4	7 3/4	3	3 1/2	1/4	1 1/2			5.0
4																											
5																											

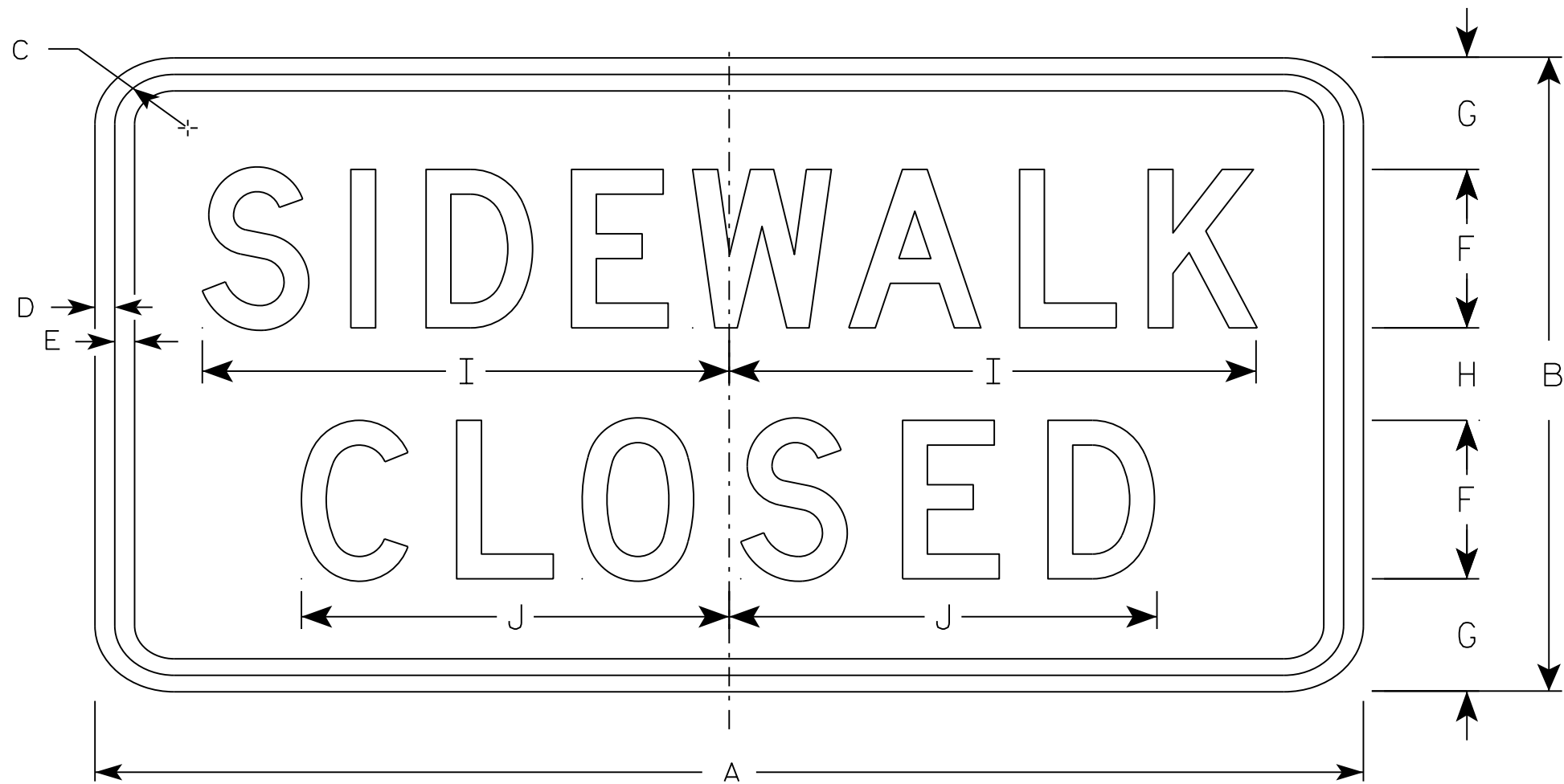
STANDARD SIGN R7-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R7-1.9

PROJECT NO: HWY: COUNTY: SHEET NO: 181 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.

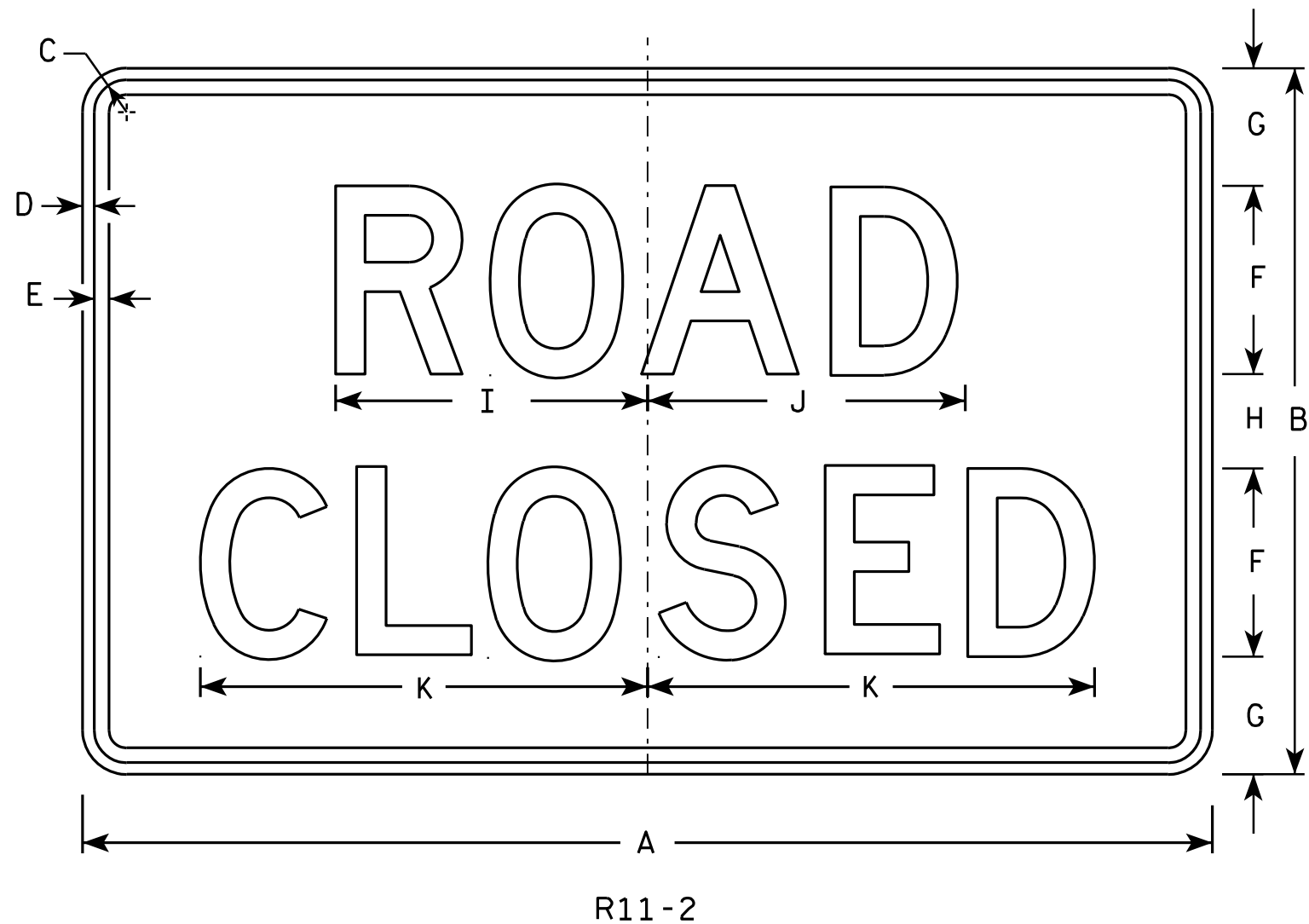
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 3/4	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 3/4	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

STANDARD SIGN
R9-9

WISCONSIN DEPT OF TRANSPORTATION

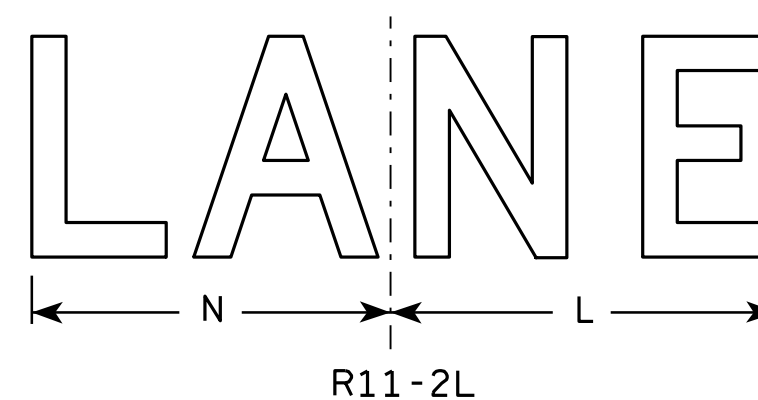
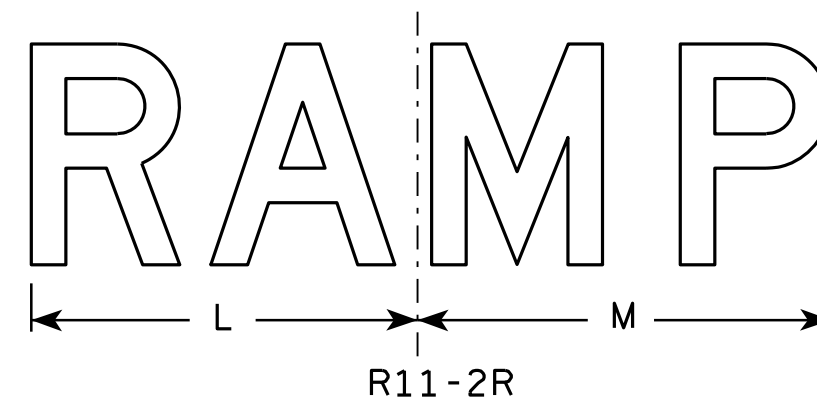
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/11/16 PLATE 182 R9-9.6



NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - White
Message - Black
- Message Series - D
- 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.
- Modify the message as required.



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

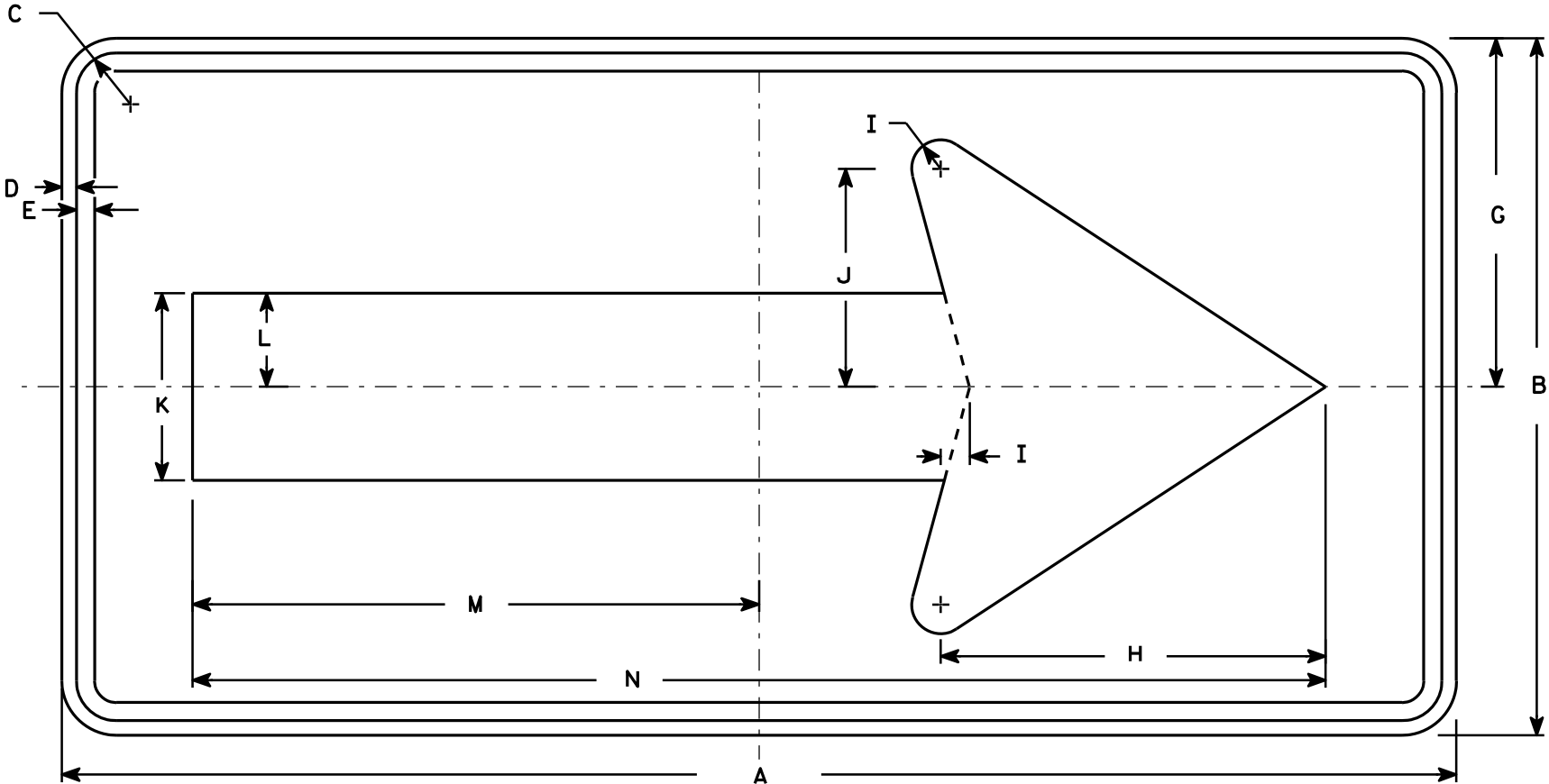
PROJECT NO: HWY: COUNTY: SHEET NO: 183 E

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:

Background - Yellow

Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



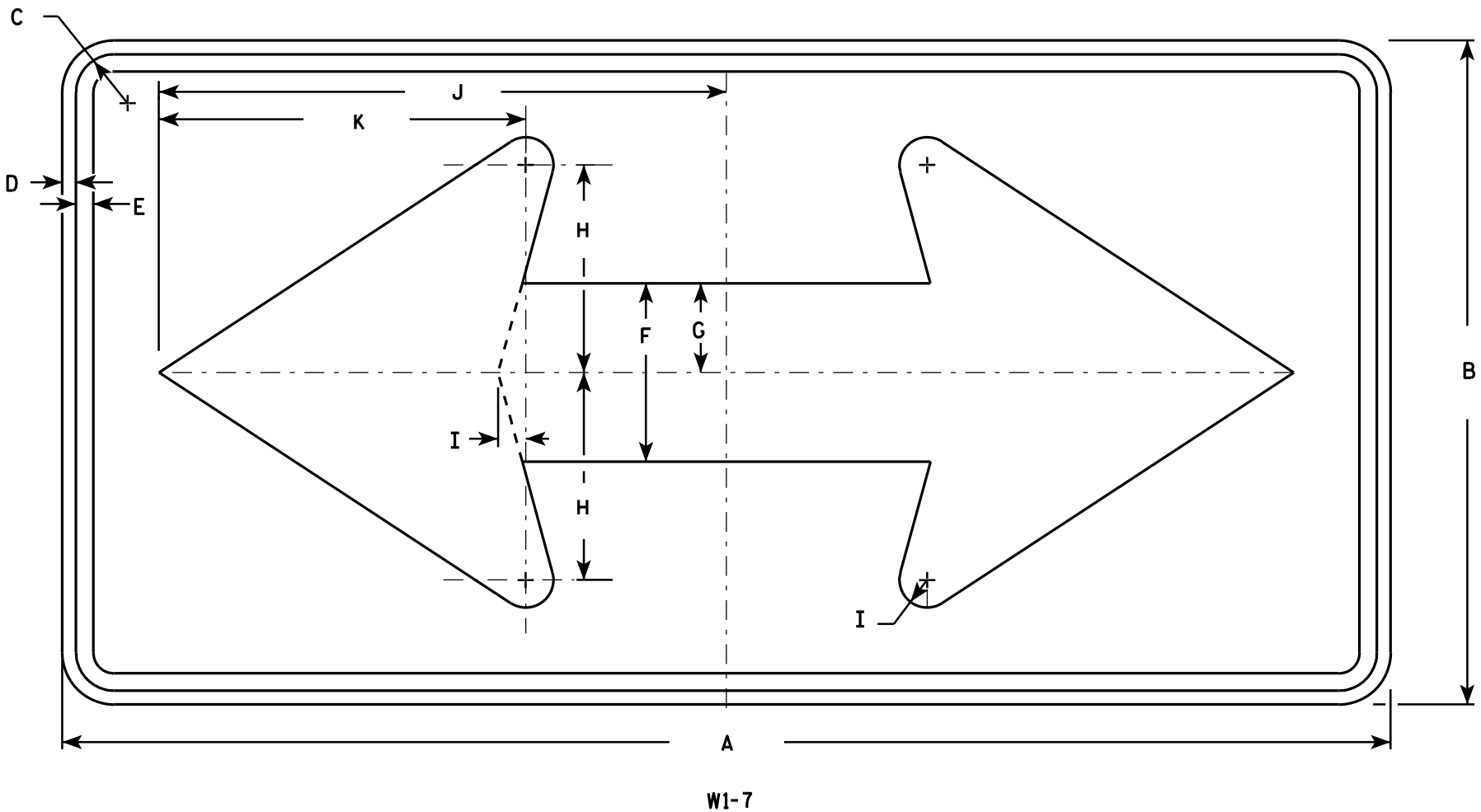
W1-6

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	3/8		9	10	3/4	5 5/8	4 3/4	2 3/8	14 5/8	29 1/4													4.5
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	96	48	2 1/4	3/4	1		24	26 1/2	2	15	13	6 1/2	39	78													32.0

STANDARD SIGN
W1-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W1-6.8



NOTES

- 1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
Background - Yellow
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/8	3/8	1/2	5	2 1/2	5 3/4	3/4	15 5/8	10 1/8																4.5
2S	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
2M	48	24	1 3/8	1/2	5/8	6 1/2	3 1/4	7 1/2	1	20 1/2	13 1/4																8.0
3	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
4	60	30	1 3/8	1/2	5/8	8	4	9 1/4	1 1/4	25 3/8	16 1/4																12.5
5	96	48	2 1/4	3/4	1	13	6 1/2	15	2	41	26 1/2																32.0

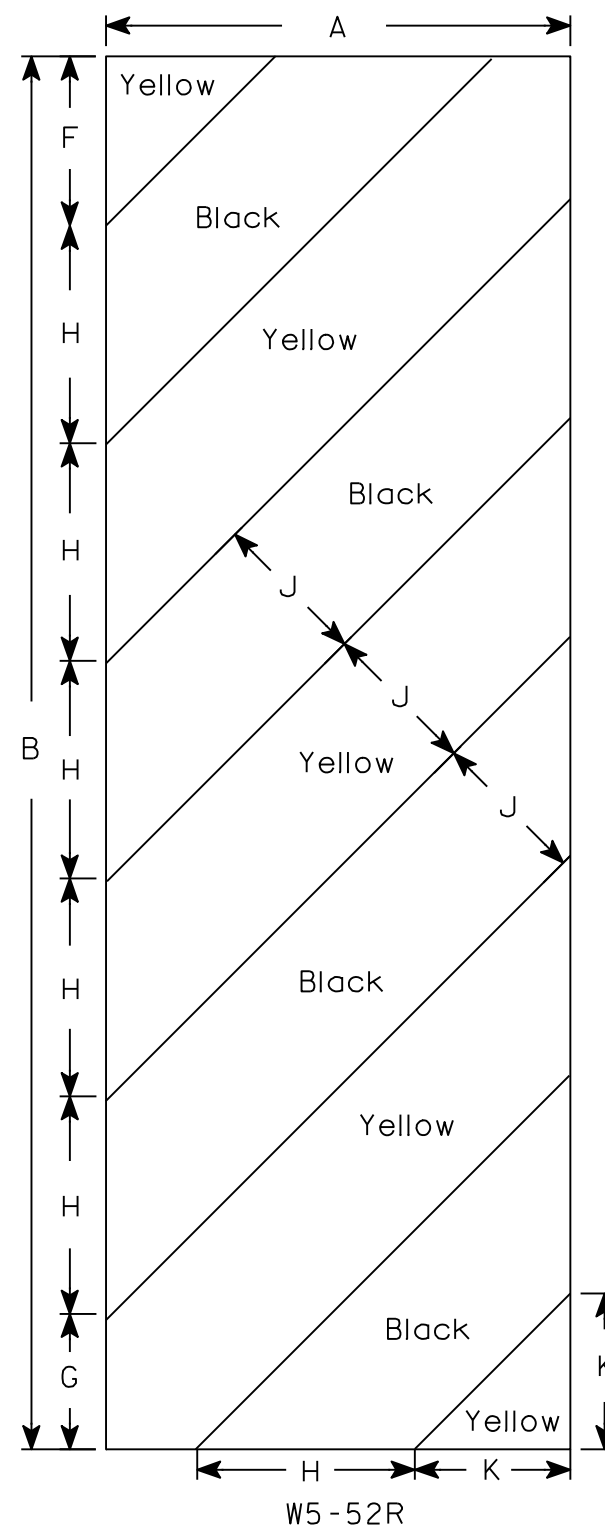
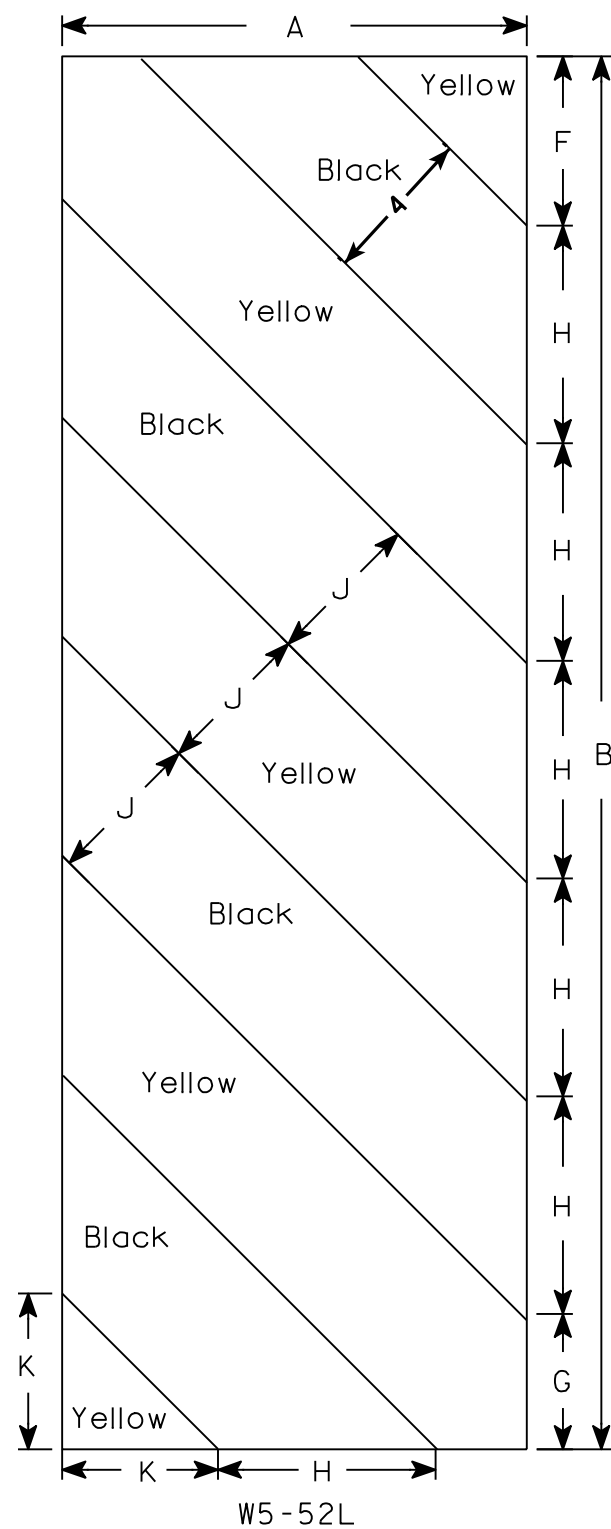
STANDARD SIGN

W1 - 7

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W1-7.7



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.

[illegible]

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

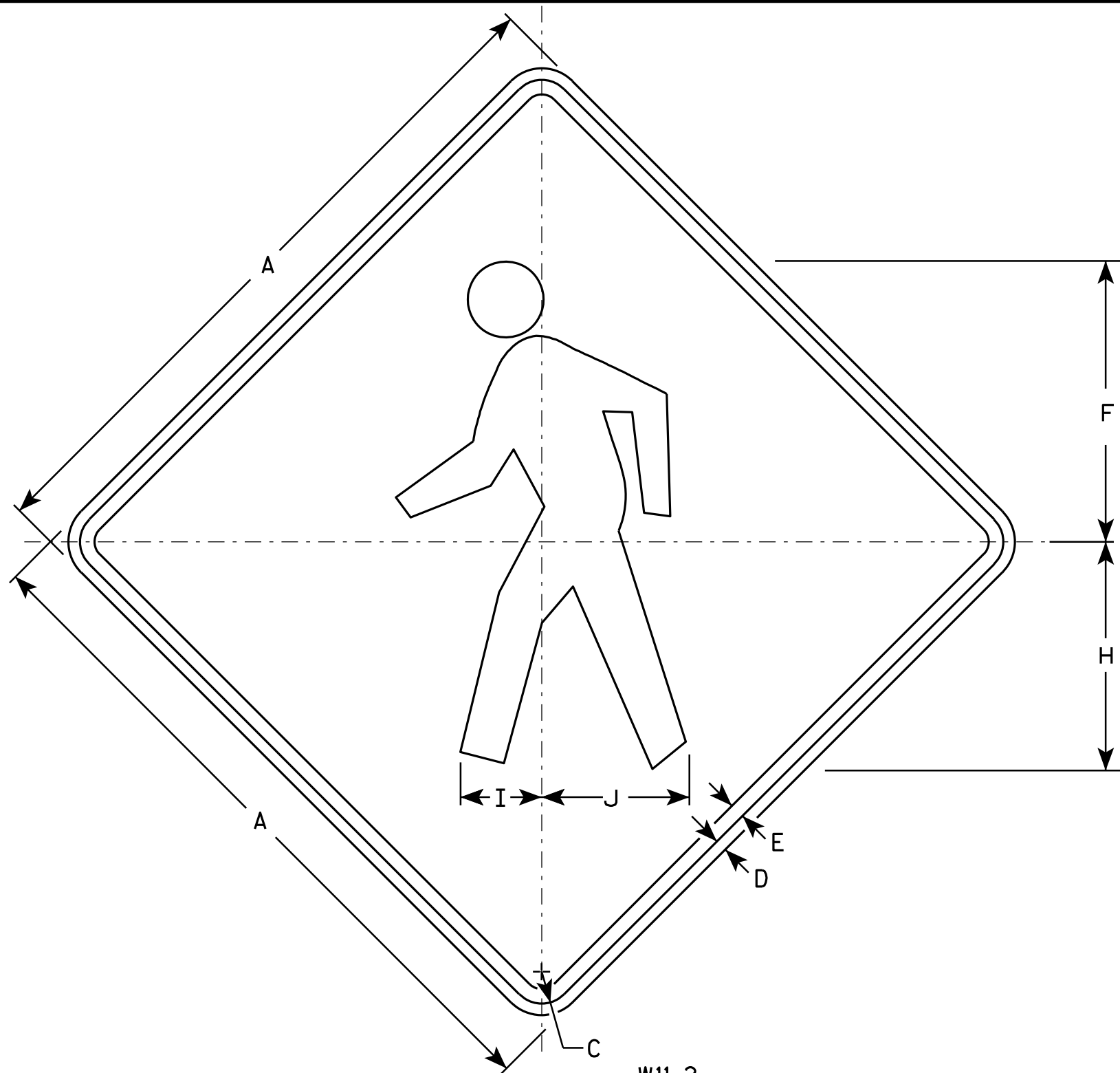
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 186

E



W11-2

NOTES

1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

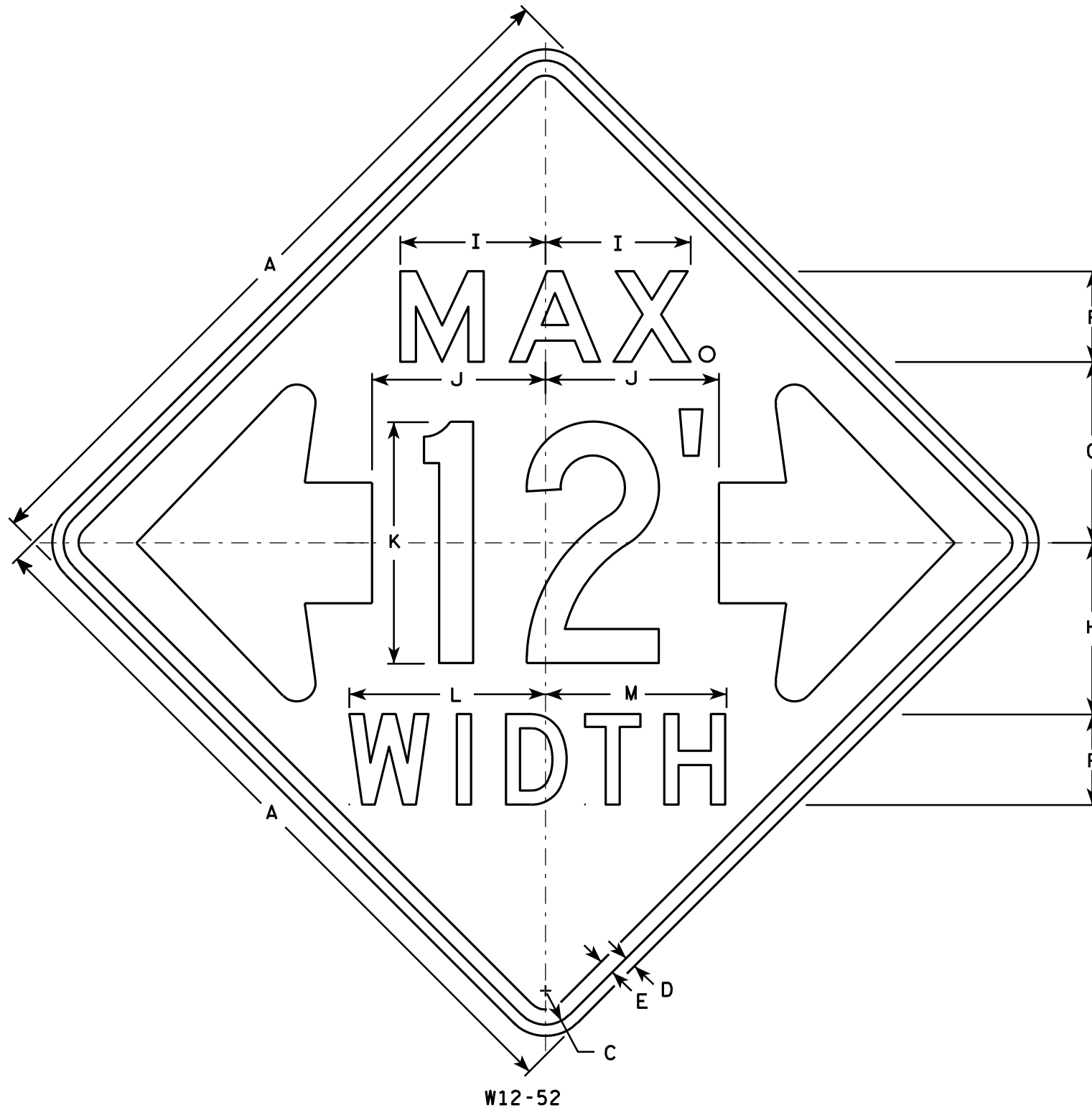
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	9 3/4		7 7/8	2 7/8	5 1/8																	4.0
2S	30		1 3/8	1/2	5/8	12 1/8		9 7/8	3 1/2	6 3/8																	6.25
2M	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
3	36		1 5/8	5/8	3/4	14 1/2		11 7/8	4 1/4	7 5/8																	9.0
4	48		2 1/4	3/4	1	19 3/8		15 3/4	5 5/8	10 1/4																	16.0
5																											

STANDARD SIGN W11-2

WISCONSIN DEPT OF TRANSPORTATION

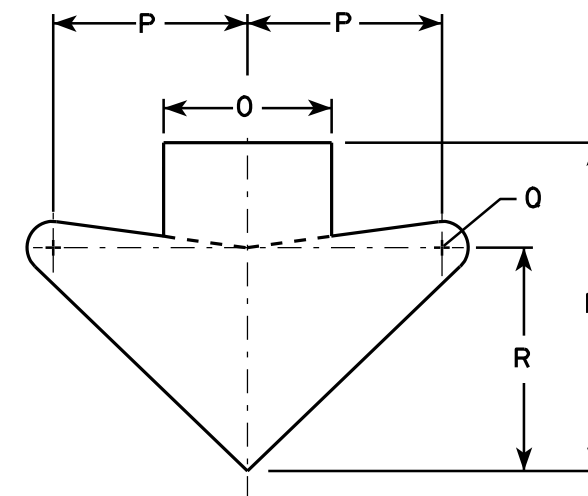
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 6/7/10 PLATE NO. W11-2.7



NOTES

1. Sign Is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - 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. The top line is series E, the numerals are series C, and the bottom line is series D.
6. Substitute appropriate numerals and adjust spacing as required.



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	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
2M	48		2 1/4	3/4	1	6	12	11 3/8	9 5/8	11 1/2	16	13	12	15 5/8	8	9 1/4	1 1/4	10 5/8									16.0
3																											
4																											
5																											

STANDARD SIGN W12-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
For State Traffic Engineer

DATE 3/16/11 PLATE NO. W12-52.7

PROJECT NO:

HWY:

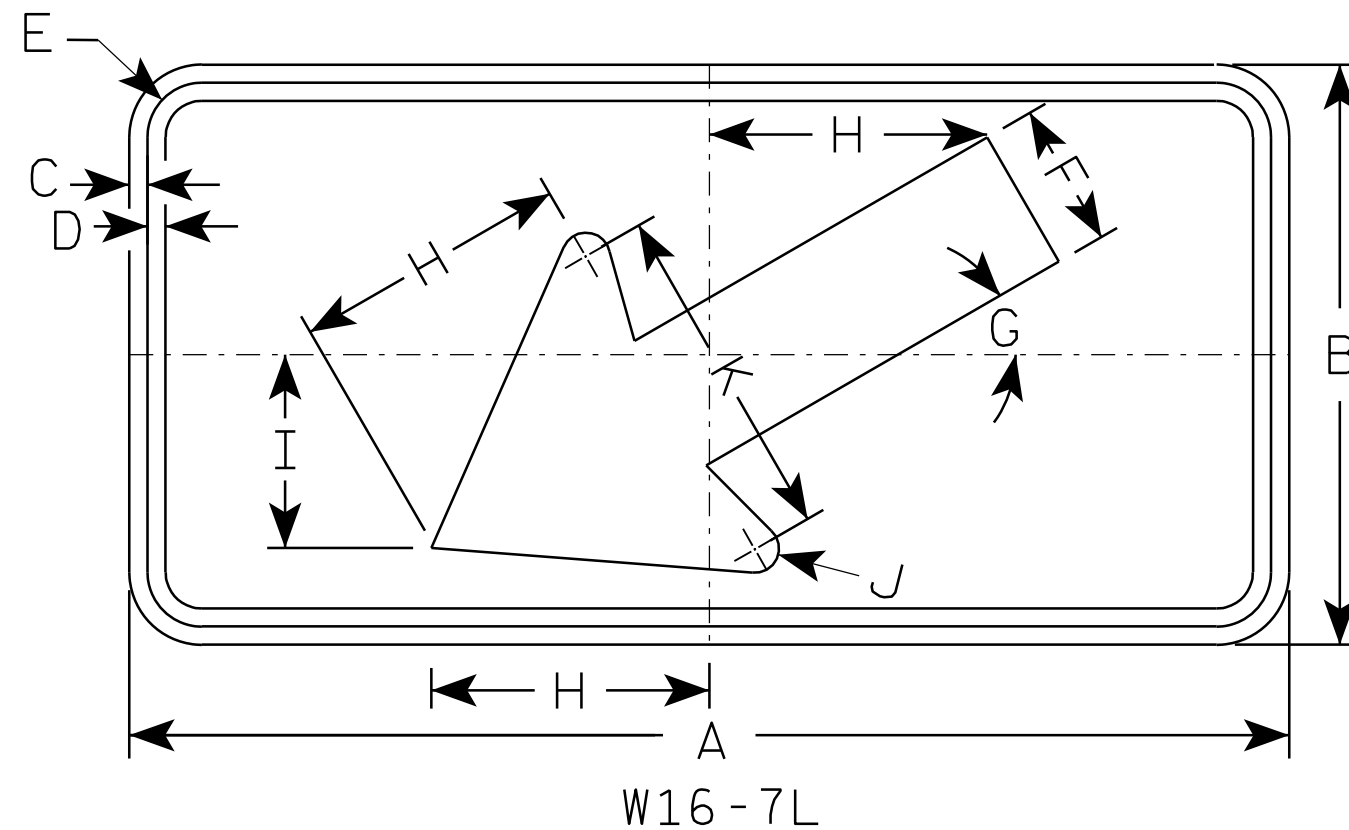
COUNTY:

SHEET NO: 188

E

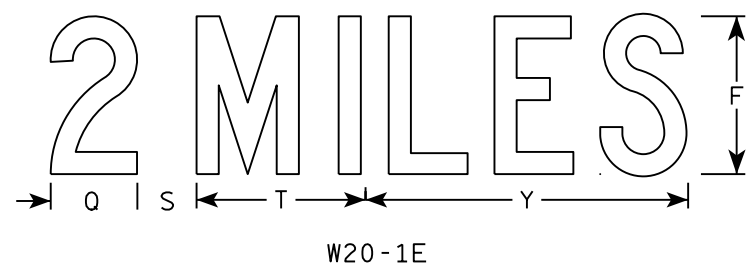
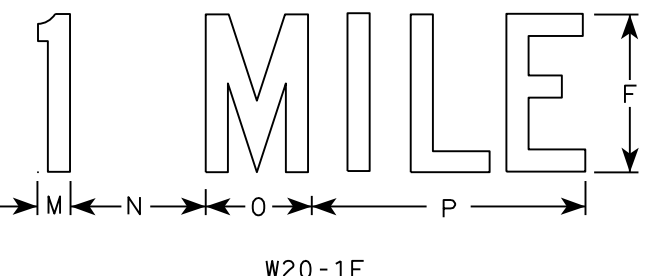
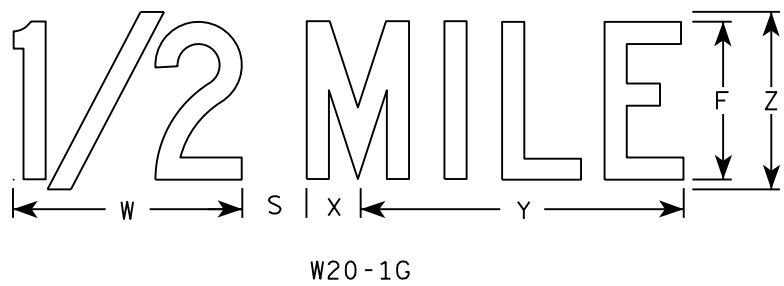
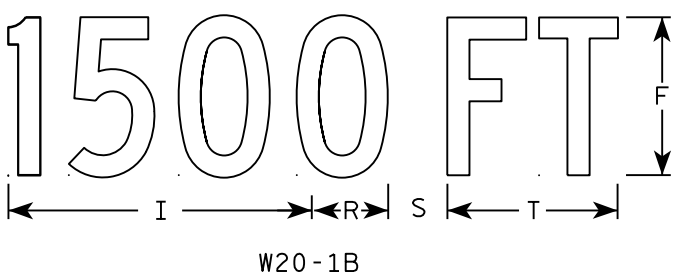
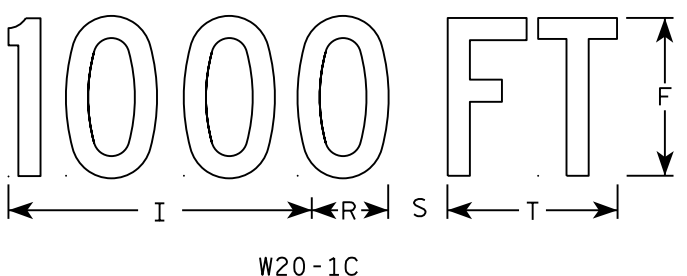
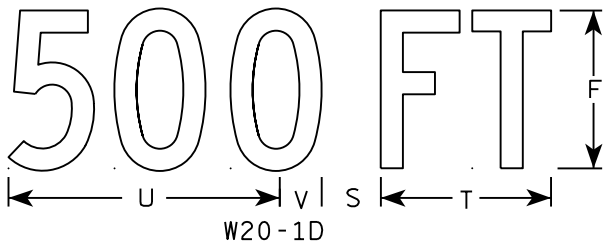
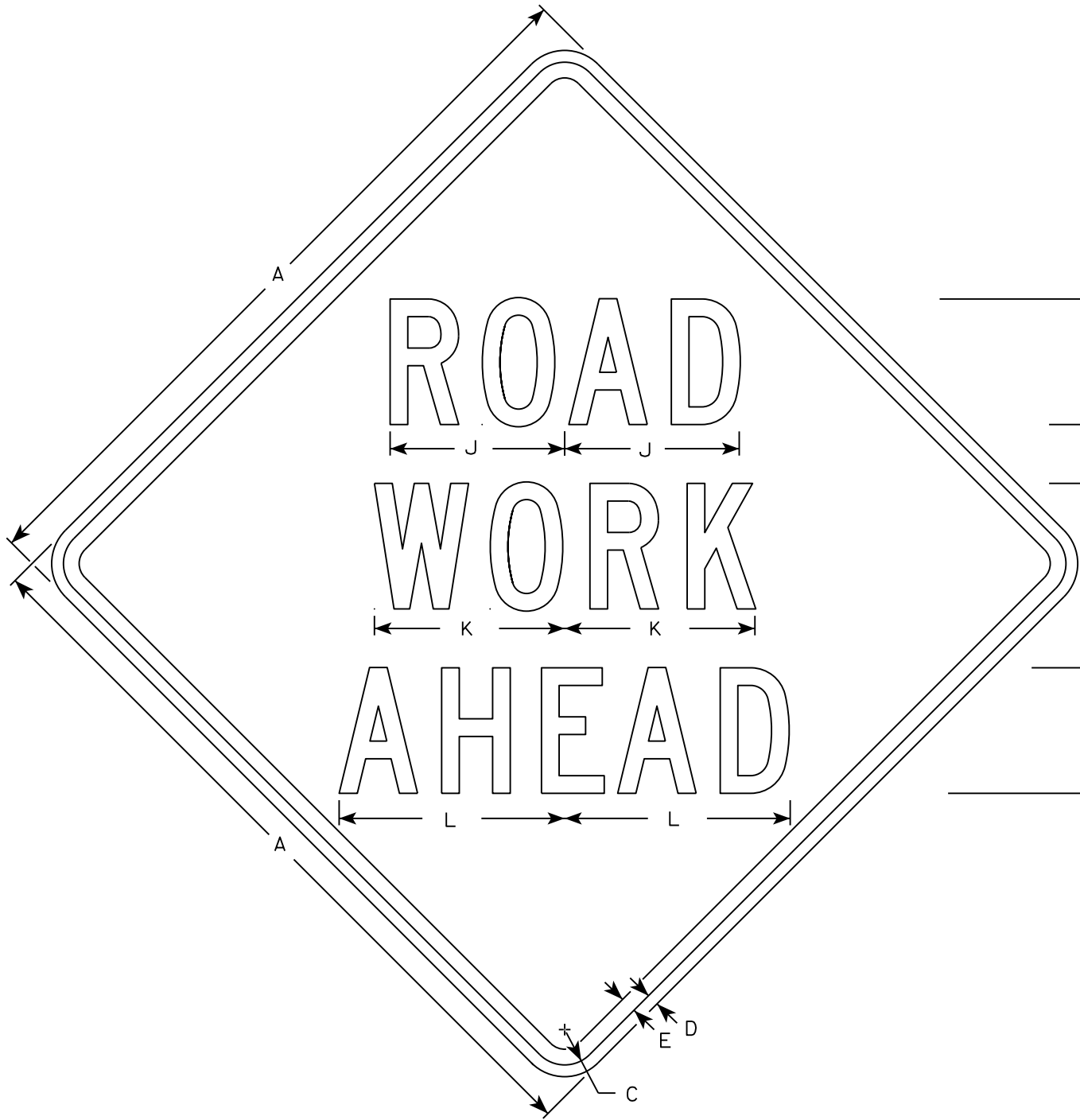
NOTES

1. Sign is Type II - Type F Reflective -
reference WIS DOT Standard Specification for
HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base
material is plywood but borders shall be rounded
as shown. When base material is metal, the
corners and borders shall be rounded.
4. W16-7R is the same as W16-L
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																											
2S	24	12	$\frac{3}{8}$	$\frac{3}{8}$	1 $\frac{1}{8}$	3	30°	5 $\frac{3}{4}$	4	$\frac{1}{2}$	7																2.0
2M	30	18	$\frac{3}{8}$	$\frac{1}{2}$	1 $\frac{1}{8}$	4 $\frac{1}{2}$	30°	8 $\frac{1}{2}$	6	$\frac{5}{8}$	10 $\frac{1}{4}$																3.75
3	30	18	$\frac{3}{8}$	$\frac{1}{2}$	1 $\frac{1}{8}$	4 $\frac{1}{2}$	30°	8 $\frac{1}{2}$	6	$\frac{5}{8}$	10 $\frac{1}{4}$																3.75
4																											8
5																											8

STANDARD SIGN	
W16-7	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 11/02/10	PLATE NO. W16-7.5



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

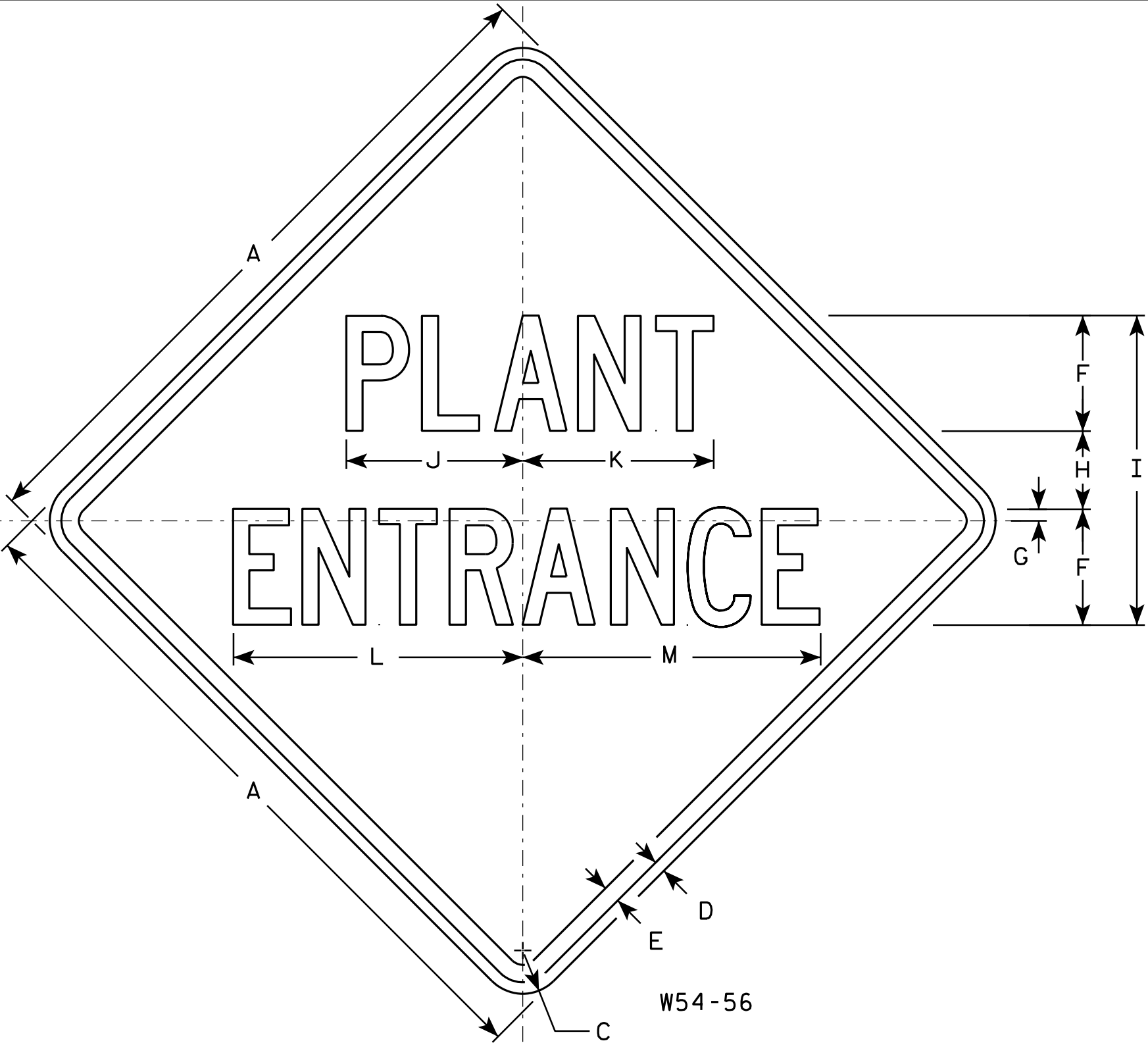
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/07/15 PLATE NO. W20-1.10

190

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	24		1 1/8	3/8	1/2	4	3/8	2 3/4	10 3/4	6 1/8	6 5/8	10	10 3/8														4.00
2S	30		1 3/8	1/2	5/8	5	1/2	3 3/8	13 3/8	7 5/8	8 1/4	12 1/2	12 7/8														6.25
2M	36		1 5/8	5/8	3/4	6	5/8	4 1/8	16 1/8	9 1/8	9 7/8	15	15 3/8														9.00
3	36		1 5/8	5/8	3/4	6	5/8	4 1/8	16 1/8	9 1/8	9 7/8	15	15 3/8														9.00
4																											
5																											

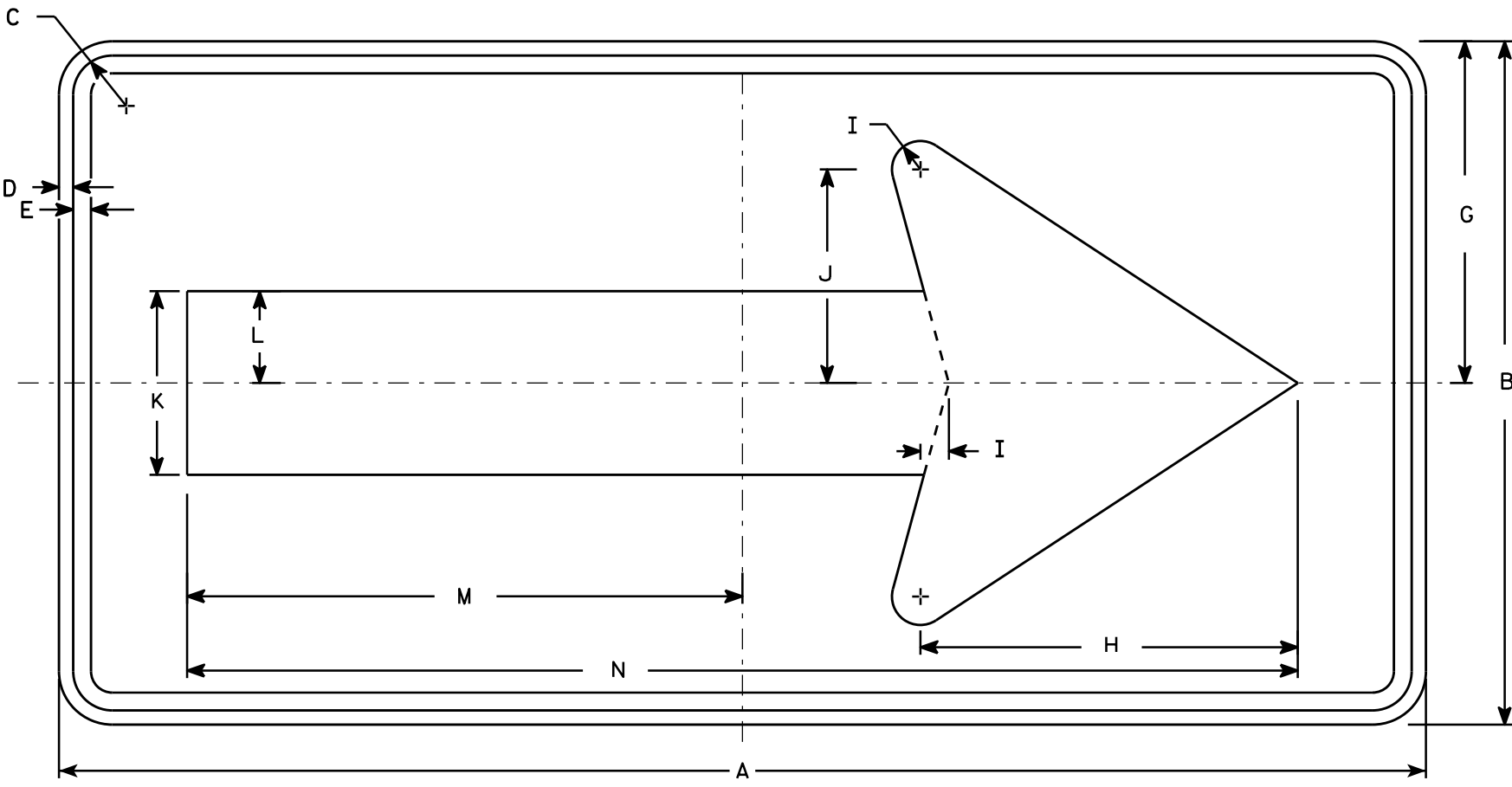
STANDARD SIGN

W54-56

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/13/13 PLATE NO. W54-56.8



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.

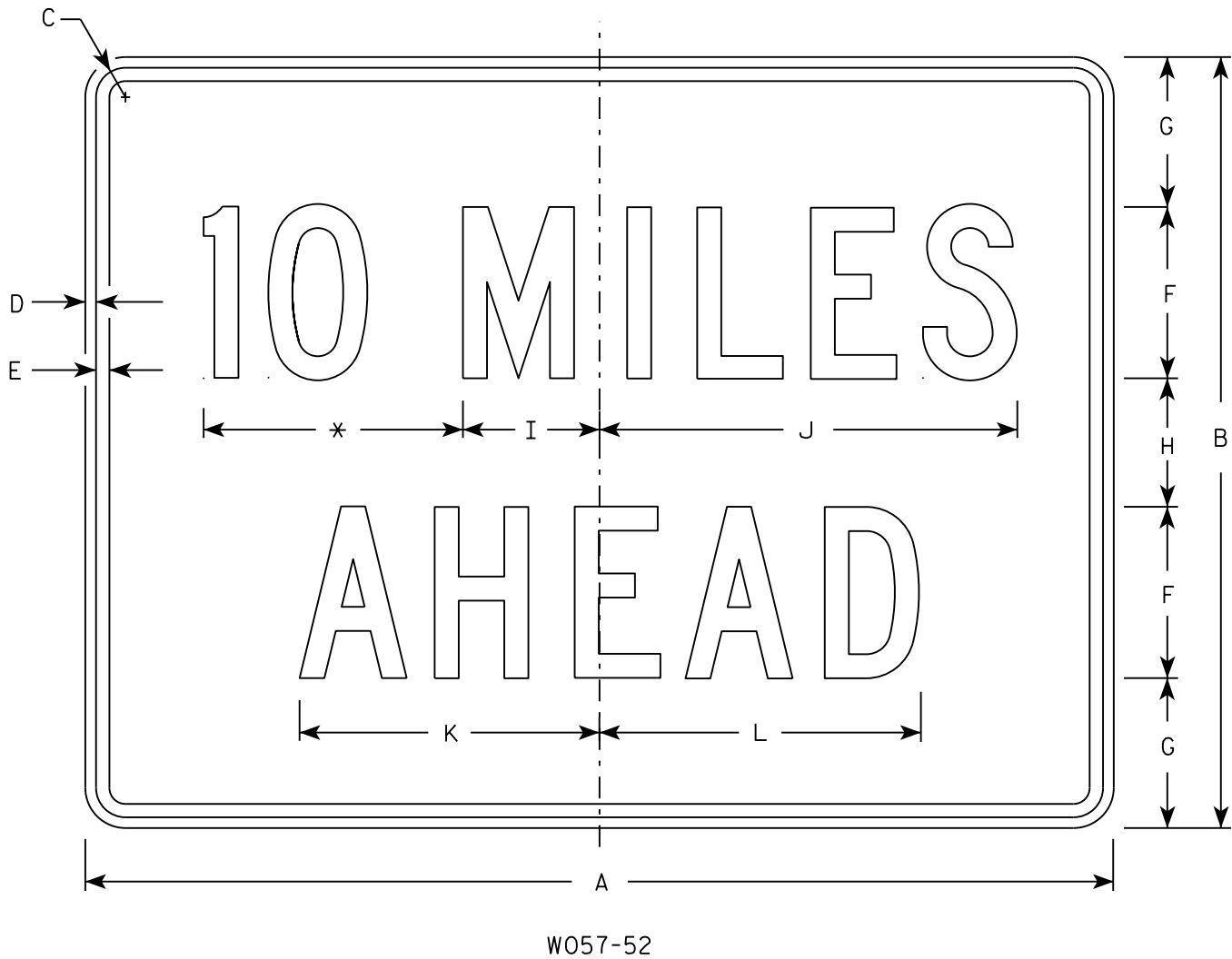
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 3/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 3/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	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

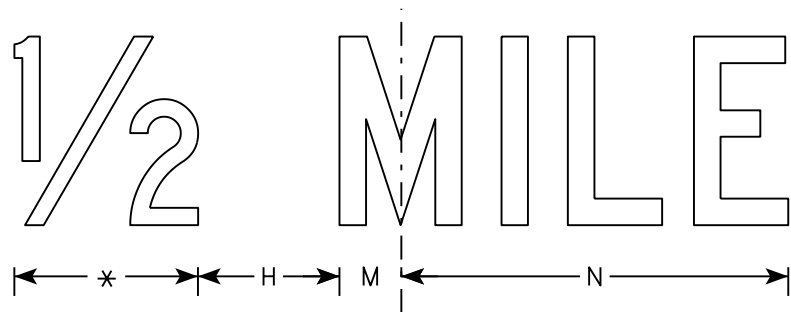
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 11/18/13 PLATE NO. 192 W01-6.1



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.
- 5. Substitute appropriate numerals to the nearest quarter mile 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	24	1 1/8	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	1 3/8	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

STANDARD SIGN
W057-52

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 3/21/17 PLATE NO. W057-52.2

NOTES

(A) EXISTING NAME PLATE LOCATION. IF NAME PLATE IS DAMAGED DURING PARAPET CLEANING CONTRACTOR MUST REPLACE AT NO EXPENSE TO THE OWNER. THE ORIGINAL CONSTRUCTION DATE IS 1977.

(X) DENOTES WINGWALL NUMBER.

* THREE BEAM RAIL CONNECTION (SEE ROADWAY PLANS FOR GUARDRAIL DETAILS).

■ DRAINAGE FLUMES AT CORNERS OF BRIDGE. SEE ROADWAY PLANS FOR DETAILS. WORK TO BE PAID FOR UNDER ROADWAY BID ITEMS.

DESIGN DATA

LIVE LOAD:

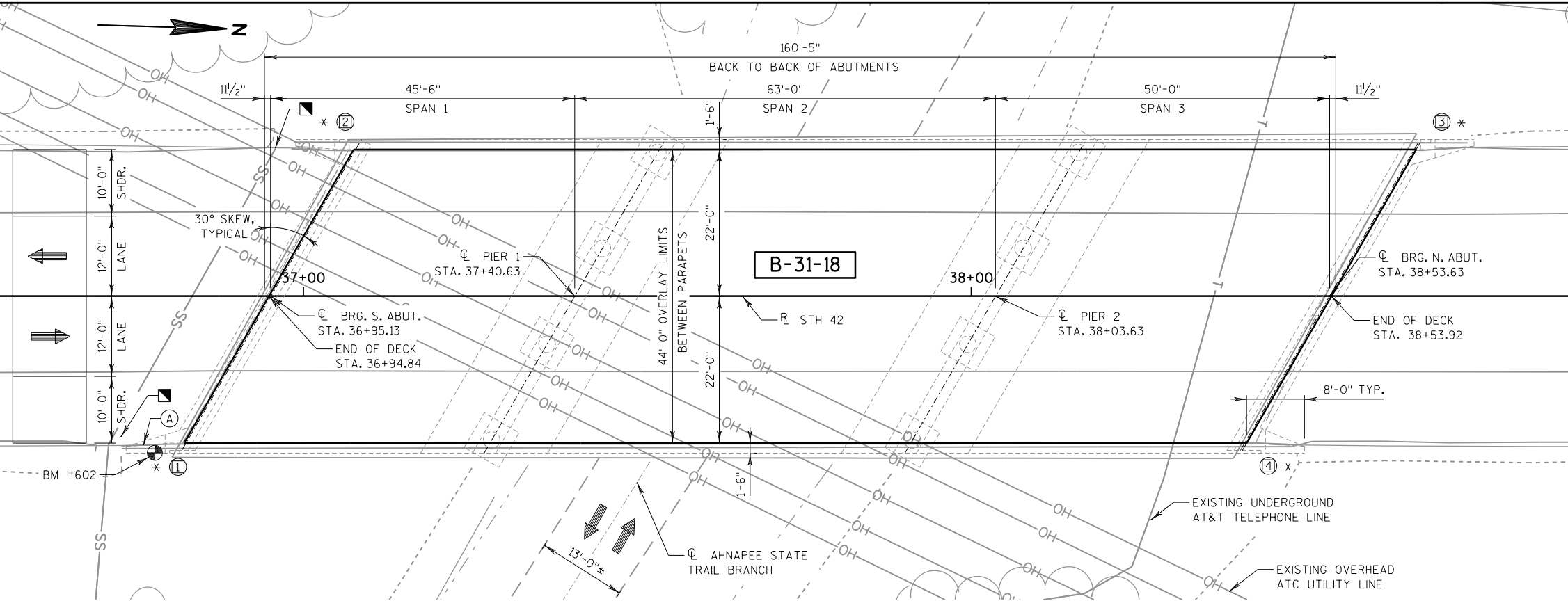
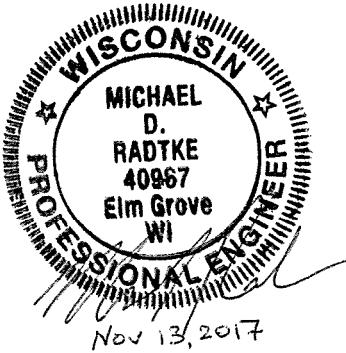
DESIGN LOADING: HS-20
INVENTORY RATING: HS-26
OPERATING RATING: HS-44
WISCONSIN STD. PERMIT VEHICLE (WIS-SPV) = 250 KIPS

MATERIAL PROPERTIES:

CONCRETE MASONRY OVERLAY DECKS _____ f'c = 4,000 psi

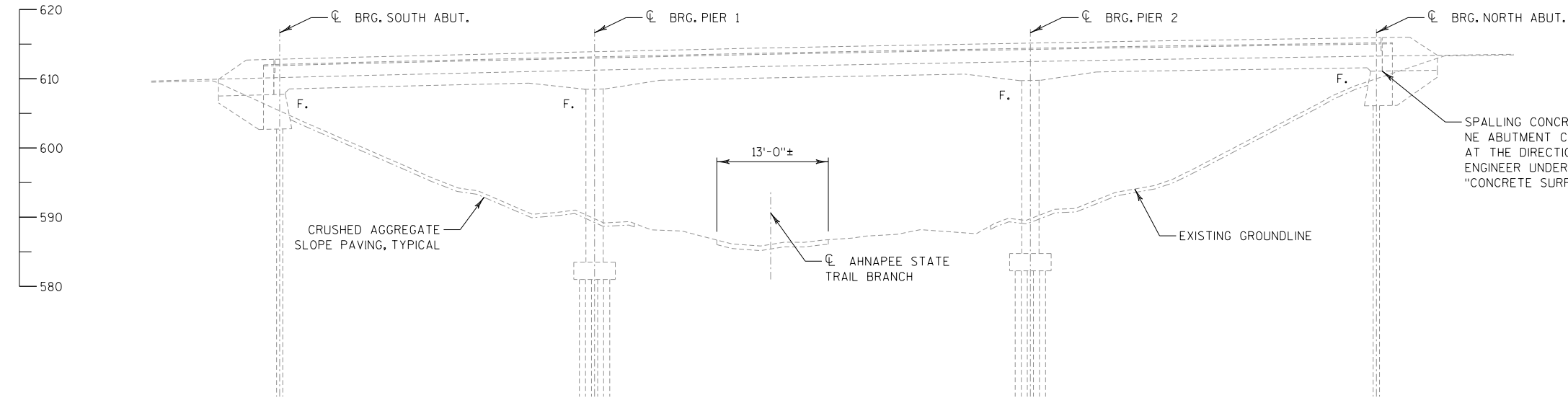
TRAFFIC DATA

ADT = 5,850 (2018)
ADT = 6,800 (2038)
RDS = 45 MPH



PLAN

3 SPAN HAUNCHED SLAB, CONCRETE OVERLAY



ELEVATION

(LOOKING WEST)

BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
602	36+78 (RT)	ALUMINIUM DISK IN CONCRETE PARAPET	611.92

LIST OF DRAWINGS

1. GENERAL PLAN & ELEVATION
2. CROSS SECTION AND QUANTITIES
3. DECK REPAIR DETAILS

STRUCTURE DESIGN CONTACTS

BRIDGE OFFICE: WILLIAM DREHER (608) 266-8489
CONSULTANT: MIKE RADTKE (414) 347-1607

NO.	DATE	REVISION	BY
emcs inc 1300 W. Canal Street, Suite 200 Milwaukee, WI 53233 414.347.1607 Fax 414.347.1347			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION ACCEPTED <i>William C. Dreher</i> ^{SOR} 02/08/18 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE B-31-18			
STH 42 OVER AHNAPEE STATE TRAIL BRANCH			
COUNTY	KEWAUNEE	CITY	KEWAUNEE
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	AJC	DESIGN CK'D.	MDR
DRAWN BY	AJC	PLANS CK'D.	MDR
GENERAL PLAN & ELEVATION			SHEET 1 OF 3 194

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET. ELEVATIONS REFERENCED TO NAVD 88, 2012 ADJUSTMENT.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

A MINIMUM OF 1½" OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK AND PAID UNDER BID ITEM "CLEANING DECKS". NOTIFY STRUCTURES SECTION IF MORE THAN 1½" CONCRETE REMOVAL IS ANTICIPATED. REMOVAL OF ASPHALT OVERLAY ON DECK SHALL BE PER BID ITEM "REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-31-18".

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1½" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION. EXPECTED AVERAGE OVERLAY THICKNESS IS 2¼". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN ½", CONTACT THE STRUCTURES DESIGN SECTION.

"PREPARATION DECKS TYPE 1, TYPE 2, AND FULL DEPTH DECK REPAIR" ARE BASED ON THE PLANS AND AS DETERMINED BY THE FIELD ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE ROADWAY TOP SURFACE OF THE NEW CONCRETE OVERLAY AND TO THE TOP OF THE ROADWAY APPROACH NOTCH AT THE END OF DECK.

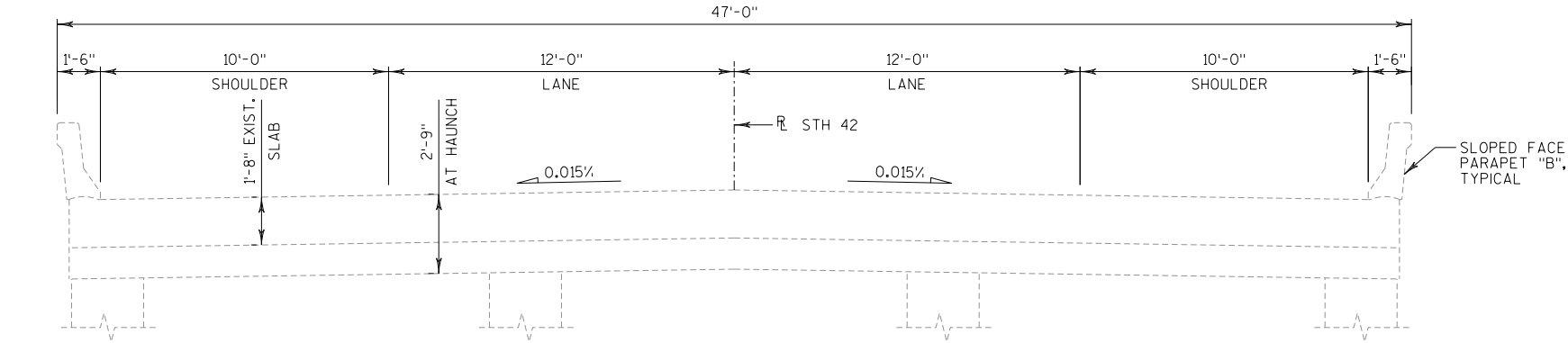
APPLY PIGMENTED SURFACE SEALER TO THE INSIDE FACE AND TOP OF PARAPETS. PERFORM APPLICATION OF SURFACE SEALER AFTER CLEANING PARAPETS.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY AT THE ABUTMENTS IS TO BE INCLUDED IN WORK FOR BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

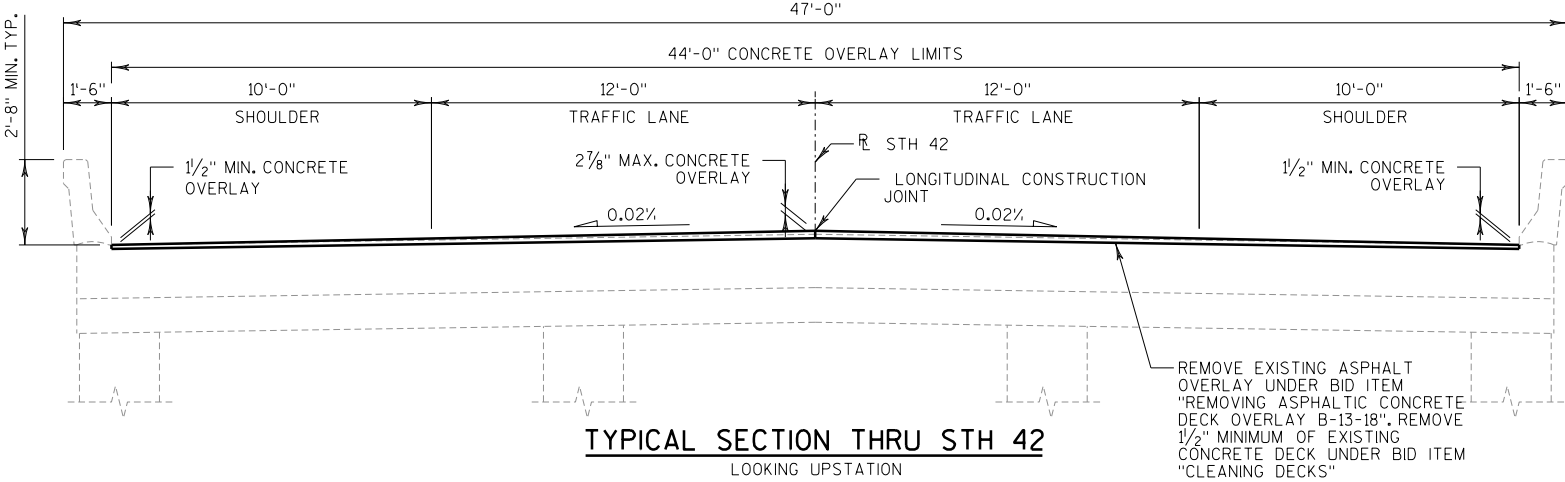
EXACT LOCATIONS AND LIMITS OF "CONCRETE SURFACE REPAIR" SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER. TOTAL LISTED IN THE QUANTITIES IS AN ESTIMATE.

TOTAL ESTIMATED QUANTITIES

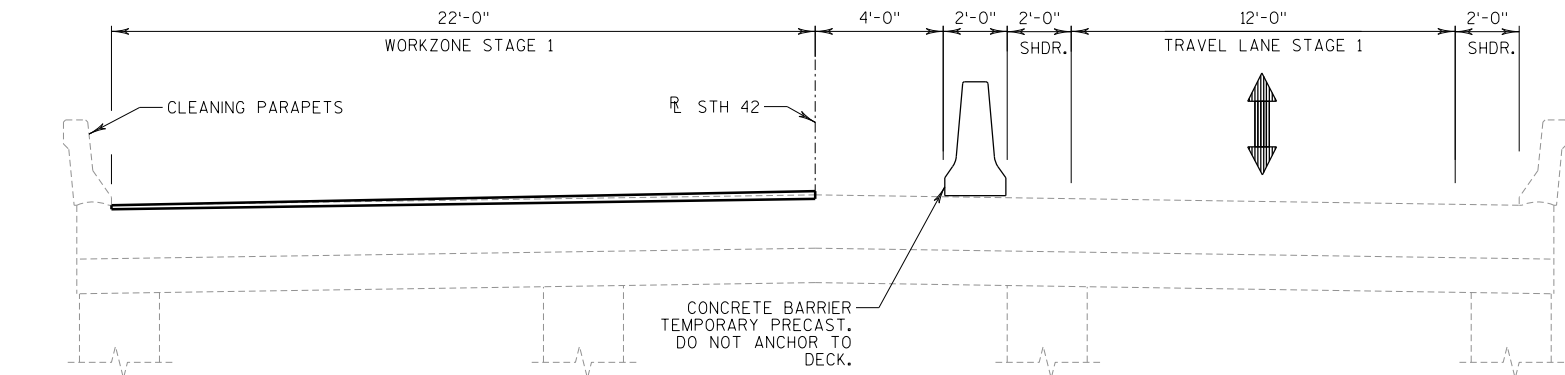
BID ITEM NO.	BID ITEMS	UNIT	TOTAL
203.0225.S	DEBRIS CONTAINMENT B-31-18	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	778
502.3210	PIGMENTED SURFACE SEALER	SY	142
509.0301	PREPARATION DECKS TYPE 1	SY	204
509.0302	PREPARATION DECKS TYPE 2	SY	153
509.0500	CLEANING DECKS	SY	778
509.1500	CONCRETE SURFACE REPAIR	SF	3
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	62
509.9010.S	REMOVING ASPHALTIC CONCRETE DECK OVERLAY B-31-18	SY	778
509.9050.S	CLEANING PARAPETS	LF	353



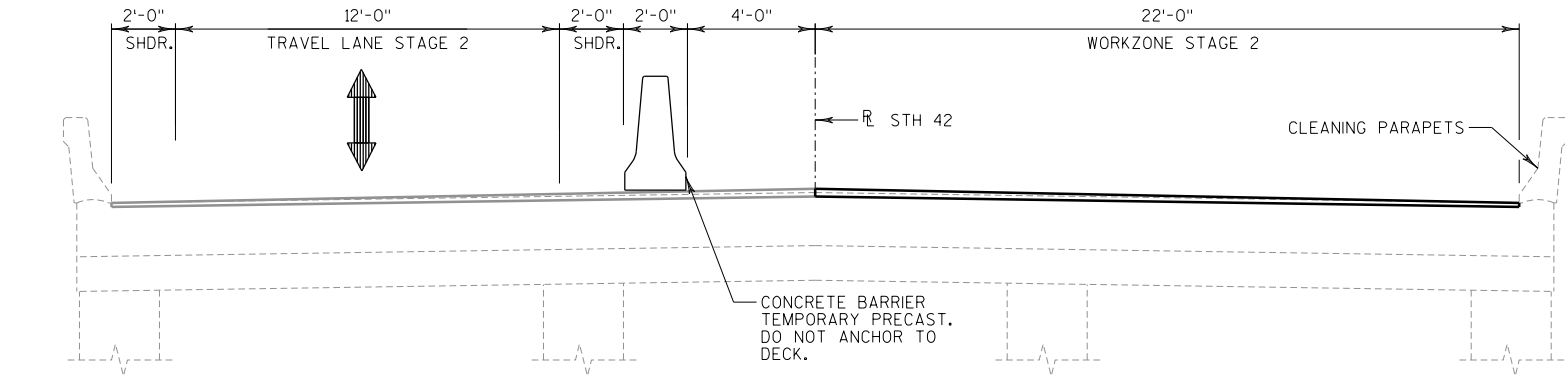
TYPICAL EXISTING SECTION THRU STH 42
LOOKING UPSTATION



TYPICAL SECTION THRU STH 42
LOOKING UPSTATION

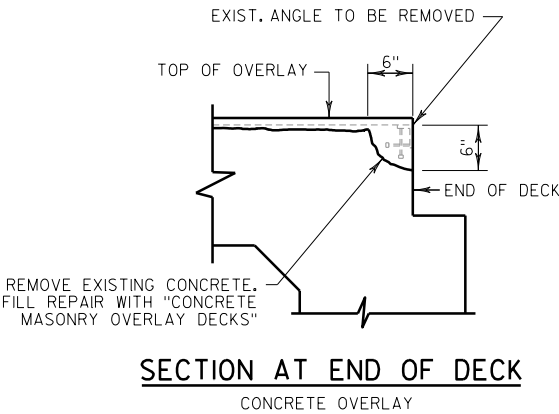


CONSTRUCTION STAGE 1
LOOKING UPSTATION



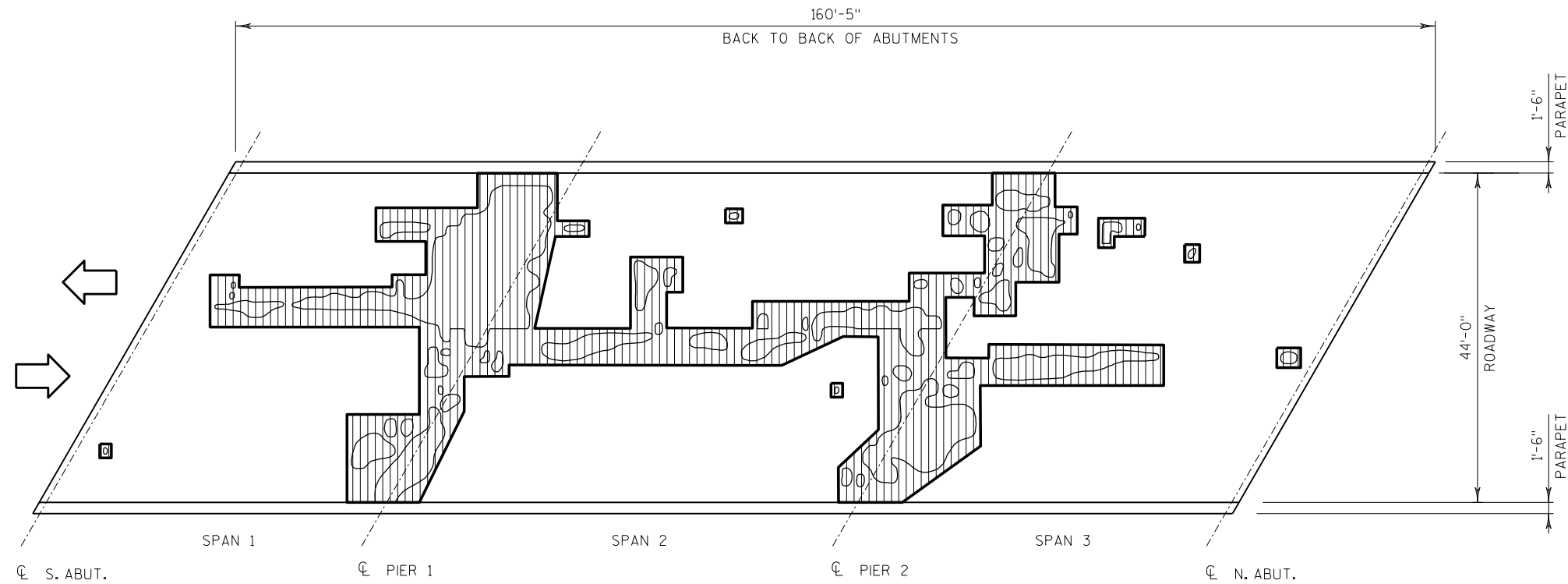
CONSTRUCTION STAGE 2
LOOKING UPSTATION

NOTE:
TRAFFIC WILL BE MAINTAINED WITH THE
USE OF TEMPORARY SIGNALS. SEE
ROADWAY PLANS FOR DETAILS



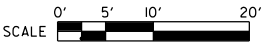
SECTION AT END OF DECK
CONCRETE OVERLAY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-18			
DRAWN BY MDR		PLANS CK'D. AJC	
CROSS SECTION AND QUANTITIES			SHEET 2 OF 3 195



PLAN
PROPOSED REHAB AREAS

REHAB AREA SUMMARY		S.N. B-31-18		LEGEND	
ITEM	UNIT	QUANT.	%	DECK PREPARATION AREA	DELAMINATION
TOTAL AREA	y ^d	777.8			
SHADE/DEBRIS	y ^d	0		SHADE/DEBRIS	SPALL
PREPARATION, DECKS, TYPE 1	y ^d	203.8	26.2		DEBOND
PREPARATION, DECKS, TYPE 2	y ^d	152.9	19.7		ASPHALT PATCH
FULL DEPTH DECK REPAIR	y ^d	1.0	0.1		CONCRETE PATCH

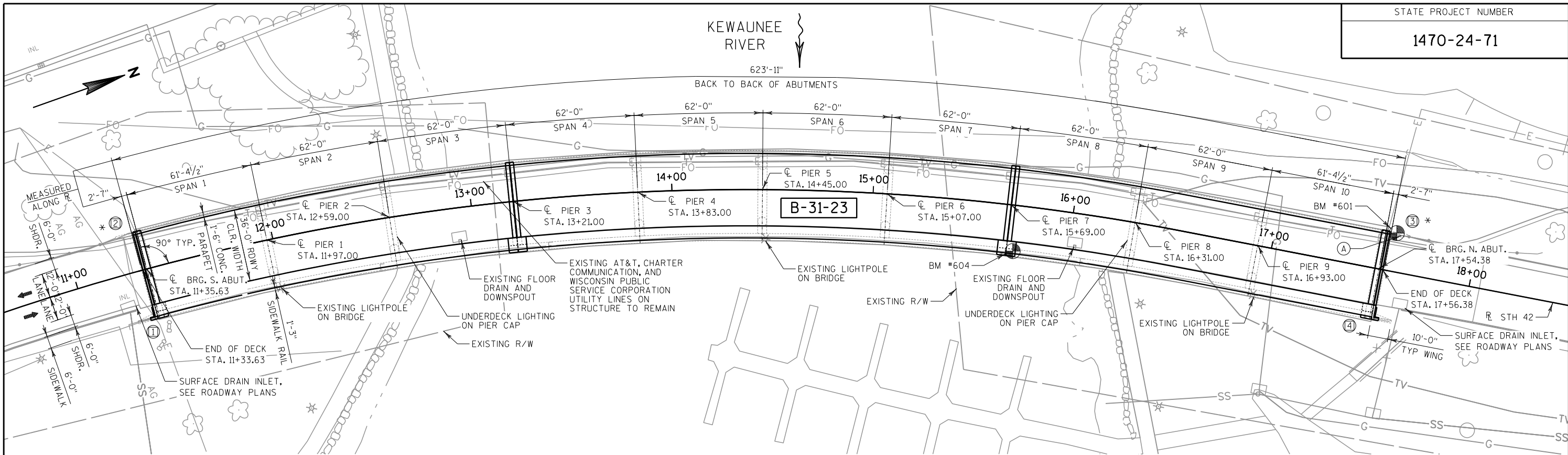


SURFACE TYPE: BITUMINOUS OVERLAY

DECK INFRARED THERMOGRAPHIC INVESTIGATION
PERFORMED BY OTHERS
INFRARED INSPECTION DATE: 7/27/17

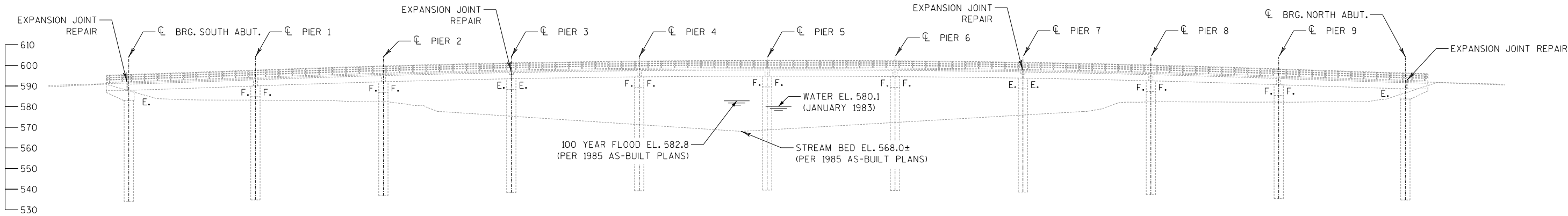
SHEET INCLUDED FOR INFORMATIONAL PURPOSES ONLY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-18			
DRAWN BY MDR		PLANS CK'D. AJC	
DECK REPAIR DETAILS		SHFFT 3 OF 3 196	



PLAN

10-SPAN 36" PRESTRESSED GIRDERS, CONCRETE OVERLAY, AND JOINT REPAIR



ELEVATION

(LOOKING UPSTREAM)



BENCH MARK

NO.	STATION	DESCRIPTION	ELEV.
601	17+59 (LT)	ALUMINIUM DISK IN CONCRETE WINGWALL	594.79
604	15+72 (RT)	BRASS DISK IN SIDEWALK	597.42

NOTES

- (A) EXISTING NAME PLATE LOCATION. IF NAME PLATE IS DAMAGED DURING PARAPET CLEANING CONTRACTOR WILL REPLACE AT NO EXPENSE TO THE OWNER. THE ORIGINAL CONSTRUCTION YEAR IS 1985.
- (X) DENOTES WINGWALL NUMBER.
- * THREE BEAM RAIL CONNECTION (SEE ROADWAY PLANS FOR GUARDRAIL DETAILS).

TRAFFIC DATA

ADT = 5,850 (2018)
ADT = 6,800 (2038)
RDS = 35 MPH

STRUCTURE DESIGN CONTACTS

BRIDGE OFFICE: WILLIAM DREHER (608) 266-8489
CONSULTANT: MIKE RADTKE (414) 347-1607

DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HS-20
INVENTORY RATING: HS-18
OPERATING RATING: HS-39
WISCONSIN STD. PERMIT VEHICLE (WIS-SPV) = 230 KIPS

MATERIAL PROPERTIES:
CONCRETE MASONRY OVERLAY DECKS _____ f'c = 4,000 psi

HYDRAULIC DATA

(FROM EXISTING PLANS DATED 1985)
Q₁₀₀ = 8,950 C.F.S.
HIGH WATER = EL. 582.8
DRAINAGE AREA = 137 SQ. MI.



LIST OF DRAWINGS

- GENERAL PLAN & ELEVATION
- CROSS SECTION AND QUANTITIES
- CONSTRUCTION STAGING
- SUPERSTRUCTURE DETAILS 1
- SUPERSTRUCTURE DETAILS 2
- EXPANSION JOINT DETAILS 1
- EXPANSION JOINT DETAILS 2
- COVER PLATE DETAILS
- DECK REPAIR DETAILS 1
- DECK REPAIR DETAILS 2

NO.	DATE	REVISION	BY
emcs			
1300 W. Canal Street, Suite 200 Milwaukee, WI 53233 414.347.1607 Fax 414.347.1347			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
ACCEPTED	William C. Dreher		02/06/18
CHIEF STRUCTURES DESIGN ENGINEER		DATE	
STRUCTURE B-31-23			
STH 42 OVER KEWAUNEE RIVER			
COUNTY	KEWAUNEE	CITY	KEWAUNEE
DESIGN SPEC.	REHABILITATION	N/A	
DESIGNED BY	AJC	DESIGN CK'D.	MDR
DRAWN BY	AJC	PLANS CK'D.	MDR
GENERAL PLAN & ELEVATION			SHEET 1 OF 10 197

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED.

ALL STATIONS AND ALL ELEVATIONS ARE IN FEET. ELEVATIONS REFERENCED TO NAVD 88, 2012 ADJUSTMENT.

A MINIMUM OF 1" OF CONCRETE SHALL BE REMOVED FROM THE ENTIRE BRIDGE DECK UNDER BID ITEM "CLEANING DECKS". NOTIFY STRUCTURES SECTION IF MORE THAN 1" CONCRETE REMOVAL IS ANTICIPATED.

ALL CONCRETE REMOVAL NOT COVERED WITH CONCRETE OVERLAY SHALL BE DEFINED BY A 1" DEEP SAW CUT.

PROFILE GRADE LINE SHALL BE DETERMINED IN THE FIELD BASED ON A MINIMUM OVERLAY THICKNESS OF 1/2" PLACED ABOVE THE DECK SURFACE AFTER SURFACE PREPARATION. EXPECTED AVERAGE OVERLAY THICKNESS IS 2". IF EXPECTED AVERAGE OVERLAY THICKNESS IS EXCEEDED BY MORE THAN 1/2", CONTACT THE STRUCTURES DESIGN SECTION.

DIMENSIONS SHOWN ARE BASED ON THE ORIGINAL STRUCTURE PLANS.

"PREPARATION DECKS TYPE 1, TYPE 2, AND FULL DEPTH DECK REPAIR" ARE BASED ON THE PLANS AND AS DETERMINED BY THE FIELD ENGINEER. DECK PREPARATION AND FULL-DEPTH DECK REPAIRS SHALL BE FILLED WITH "CONCRETE MASONRY OVERLAY DECKS".

PROTECTIVE SURFACE TREATMENT SHALL BE APPLIED TO THE ENTIRE ROADWAY AND VERTICAL FACE OF SIDEWALK CURB. APPLY PIGMENTED SURFACE SEALER TO THE TOP AND INSIDE FACES OF PARAPET. APPLY PIGMENTED SURFACE SEALER AFTER CLEANING PARAPETS.

ANY EXCAVATION REQUIRED TO COMPLETE THE OVERLAY AT THE ABUTMENTS IS TO BE INCLUDED IN WORK FOR BID ITEM "CONCRETE MASONRY OVERLAY DECKS".

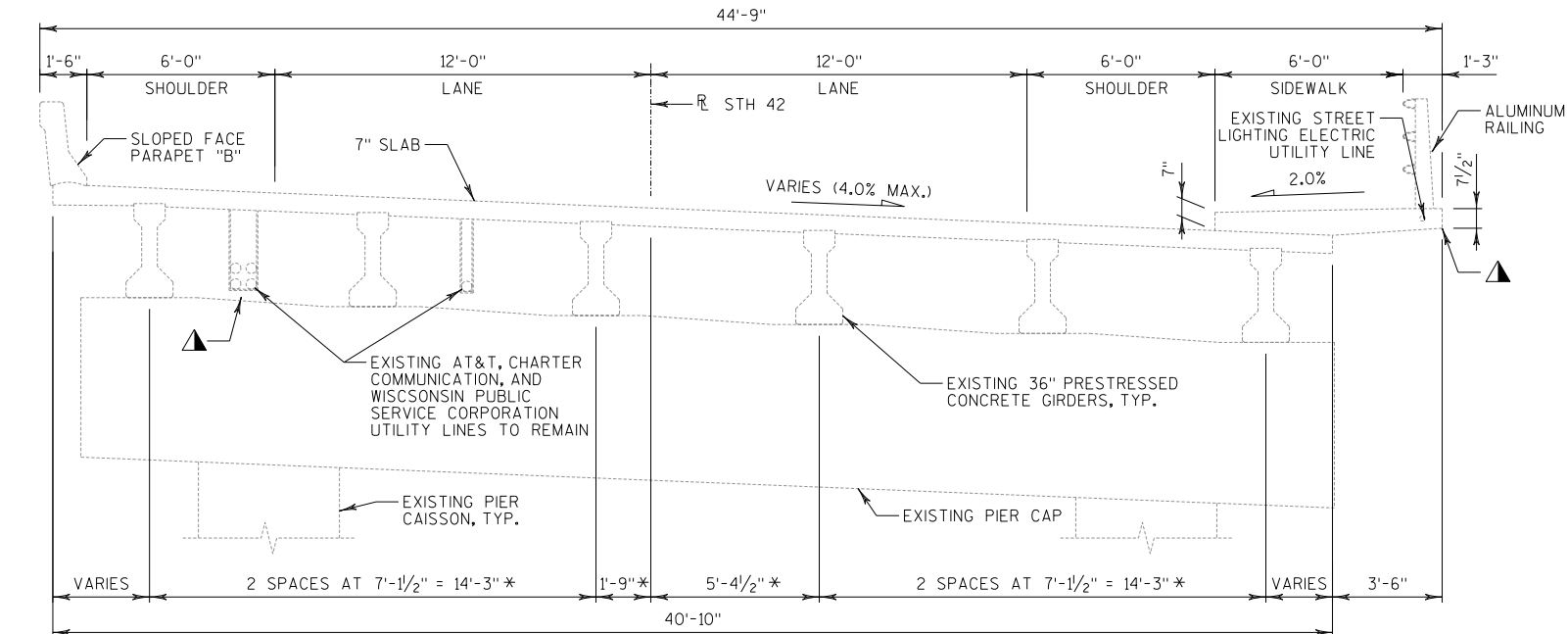
REPAIR DAMAGED CONCRETE CURB OF SIDEWALK AS DIRECTED BY FIELD ENGINEER. SEE CURB REPAIR DETAIL BELOW FOR MORE DETAILS.

EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS AND HARDWARE SHALL BE PAID FOR IN THE LUMP SUM PRICE BID AS "EXPANSION DEVICE B-31-0023".

AT "CURB REPAIR" EXPOSE EXISTING REINFORCEMENT A MINIMUM OF 1" CLEAR.

CONCRETE SURFACE REPAIRS AT SIDEWALK JUNCTION BOXES, UTILITY PENETRATIONS IN DIAPHRAGMS, PIERS COLUMNS, AND ABUTMENTS AS DIRECTED BY FIELD ENGINEER.

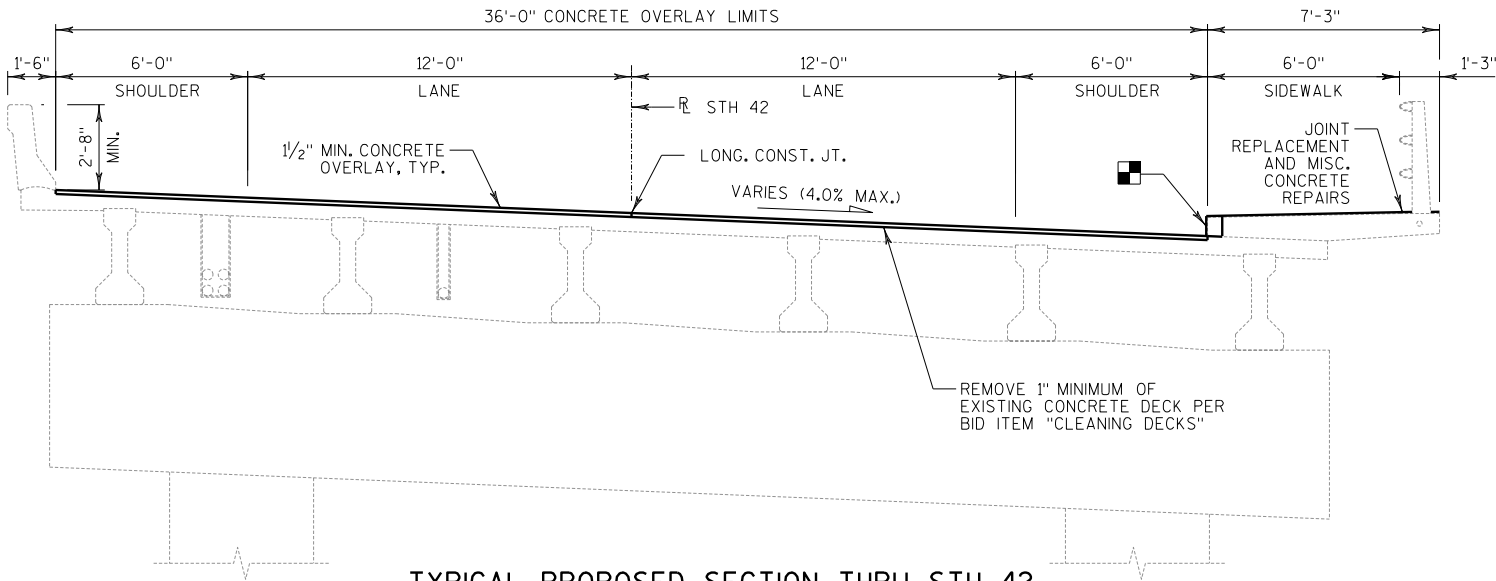
EXISTING FLOOR DRAINS TO REMAIN IN PLACE. REMOVE TOP OF DECK IN DRAIN AREA AS DIRECTED BY FIELD ENGINEER TO ALLOW PLACING THE FULL DEPTH 1/2" CONCRETE OVERLAY.



*MEASURED ALONG C SUBSTRUCTURE UNITS

TYPICAL EXISTING SECTION THRU STH 42

LOOKING UPSTATION

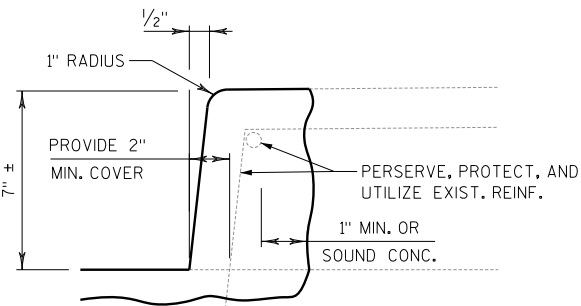


TYPICAL PROPOSED SECTION THRU STH 42

LOOKING UPSTATION

TOTAL ESTIMATED QUANTITIES

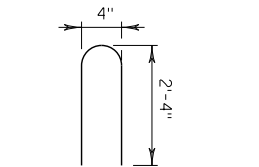
BID ITEM NO.	BID ITEMS	UNIT	TOTAL
203.0225.S	DEBRIS CONTAINMENT B-31-23	LS	1
502.3100	EXPANSION DEVICE B-31-23	LS	1
502.3200	PROTECTIVE SURFACE TREATMENT	SY	2537
502.3210	PIGMENTED SURFACE SEALER	SY	261
502.4205	ADHESIVE ANCHORS NO. 5 BAR	EA	94
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	6380
509.0301	PREPARATION DECKS TYPE 1	SY	102
509.0302	PREPARATION DECKS TYPE 2	SY	26
509.0500	CLEANING DECKS	SY	2496
509.1000	JOINT REPAIR	SY	91
509.1200	CURB REPAIR	LF	60
509.1500	CONCRETE SURFACE REPAIR	SF	20
509.2000	FULL-DEPTH DECK REPAIR	SY	1
509.2500	CONCRETE MASONRY OVERLAY DECKS	CY	176
509.9050.S	CLEANING PARAPETS	LF	649
652.0125	CONDUIT RIGID METALLIC 2-INCH	LF	24
SPV.0060.	ALUMINUM RAILING TUBULAR ANCHORAGE	EA	8



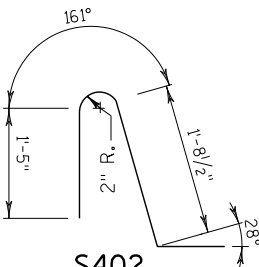
CURB REPAIR DETAIL

BILL OF BARS

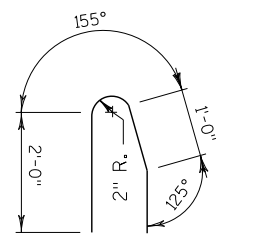
BAR MARK	COAT	NO.	LENGTH	BENT	LOCATION
S401	X	30	4'-10"	X	PARAPET VERT.
S402	X	26	4'-3"	X	PARAPET VERT.
S403	X	4	4'-7"	X	PARAPET VERT.
S404	X	80	3'-4"	X	PARAPET VERT. / PAVING BLOCK STIRRUP
S505	X	80	2'-11"	X	PARAPET & PAVING BLOCK VERT.
S507	X	36	7'-4"		PAVING BLOCK LONGITUDINAL
S408	X	48	5'-9"		DIAPHRAGM BLOCK HORIZ BETWEEN GIRDERS
S609	X	144	5'-9"		DIAPHRAGM BLOCK HORIZ BETWEEN GIRDERS
S510	X	54	18'-11"		DIAPHRAGM BLOCK HORIZ. STAGE 1
S511	X	54	21'-7"		DIAPHRAGM BLOCK HORIZ. STAGE 2
S412	X	90	4'-3"	X	ABUT. DIAPHRAGM BLOCK STIRRUPS B/ GIRDERS
S413	X	180	3'-5"	X	PIER DIAPHRAGM BLOCK STIRRUPS B/ GIRDERS
S415	X	14	2'-8"	X	SIDEWALK PAVING BLOCK STIRRUP
S516	X	14	2'-5"	X	SIDEWALK PAVING BLOCK VERT.
S517	X	4	5'-8"		PAVING BLOCK LONGITUDINAL
S418	X	14	4'-11"		SIDEWALK DECK LONGITUDINAL AT ABUT.
S419	X	26	4'-11"		SIDEWALK LONGITUDINAL AT ABUT.
S420	X	56	6'-2"	X	SIDEWALK DECK STIRRUP
S521	X	56	7'-4"	X	SIDEWALK TRANSVERSE
S522	X	54	3'-7"		SIDEWALK DECK TRANSVERSE
S423	X	28	4'-1"		SIDEWALK DECK LONGITUDINAL AT PIERS
S424	X	52	4'-1"		SIDEWALK LONGITUDINAL AT PIERS
S626	X	16	4'-0"		LONGITUDINAL AT RAILING POST
S627	X	6	9'-6"	X	STIRRUP AT RAILING POST
S428	X	12	2'-1"		DIAPHRAGM BLOCK HORIZ B/ GIRDERS STAGE 1
S429	X	12	4'-8"		DIAPHRAGM BLOCK HORIZ B/ GIRDERS STAGE 2
S630	X	36	2'-11"		DIAPHRAGM BLOCK HORIZ B/ GIRDERS STAGE 1
S631	X	36	4'-8"		DIAPHRAGM BLOCK HORIZ B/ GIRDERS STAGE 2



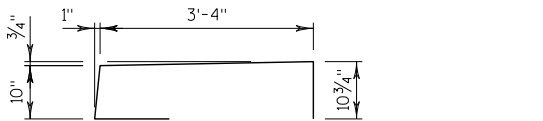
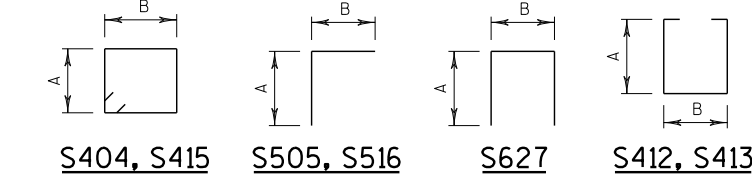
S401



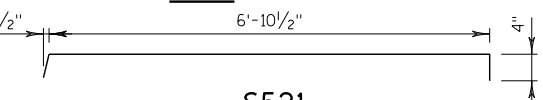
S402



S403



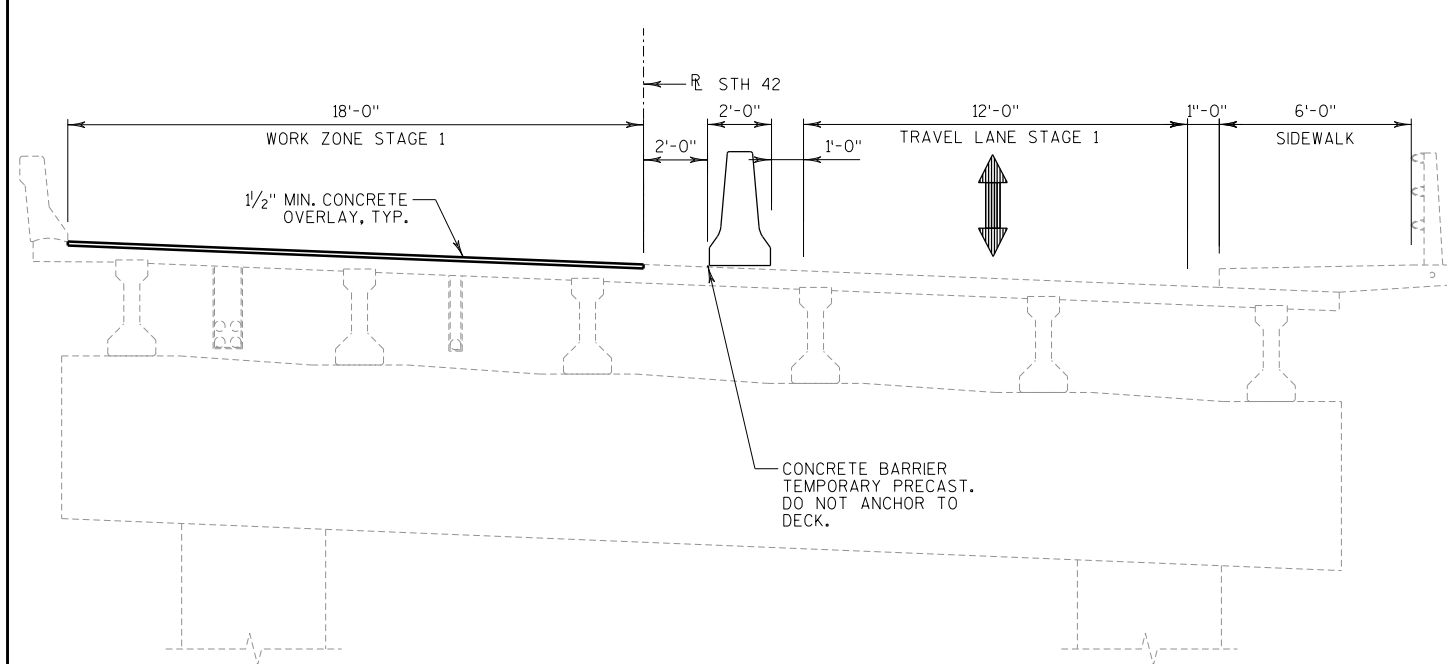
S420



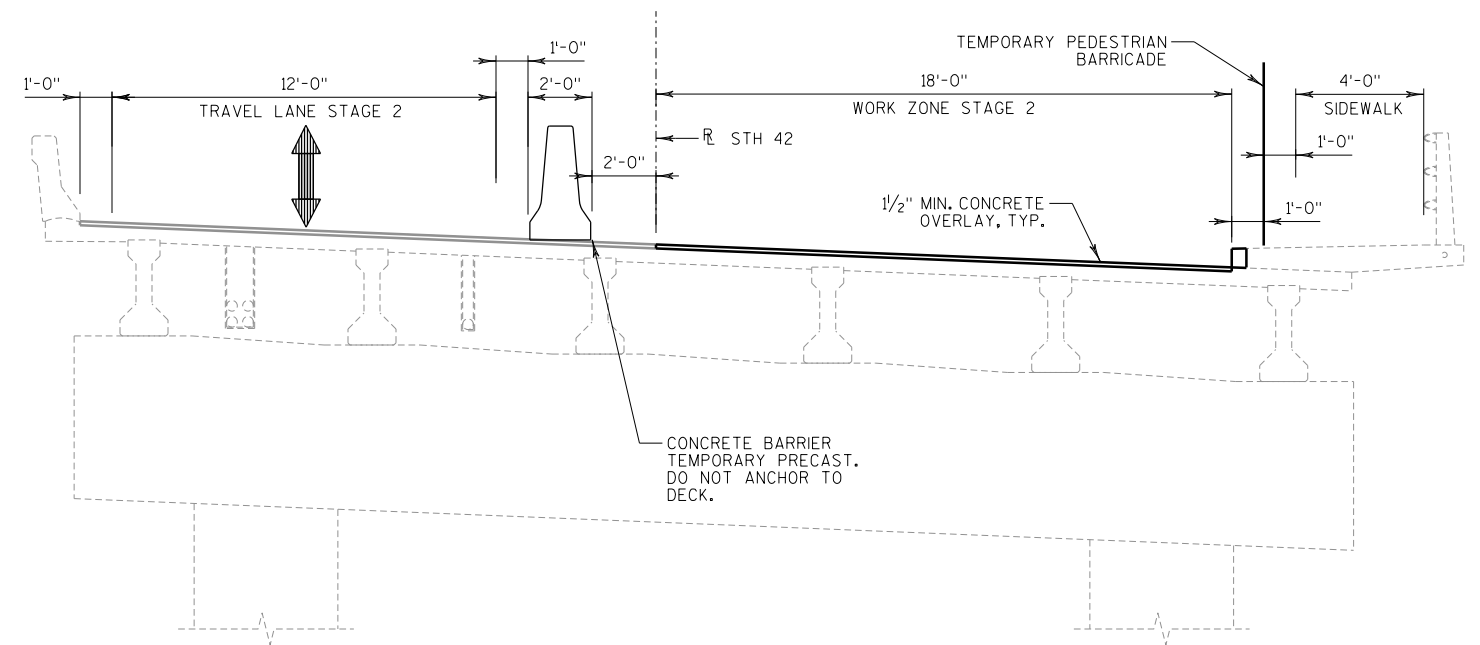
S521

BAR MARK	A	B
S404	8"	9"
S505	2'-4"	8"
S412	8"	2'-4"
S413	8"	1'-6"
S415	4"	9"
S516	1'-10"	8"
S627	4'-5"	1'-0"

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-23			
DRAWN BY AJC		PLANS CK'D. MDR	
CROSS SECTION AND QUANTITIES		SHFFT 2 OF 10 198	

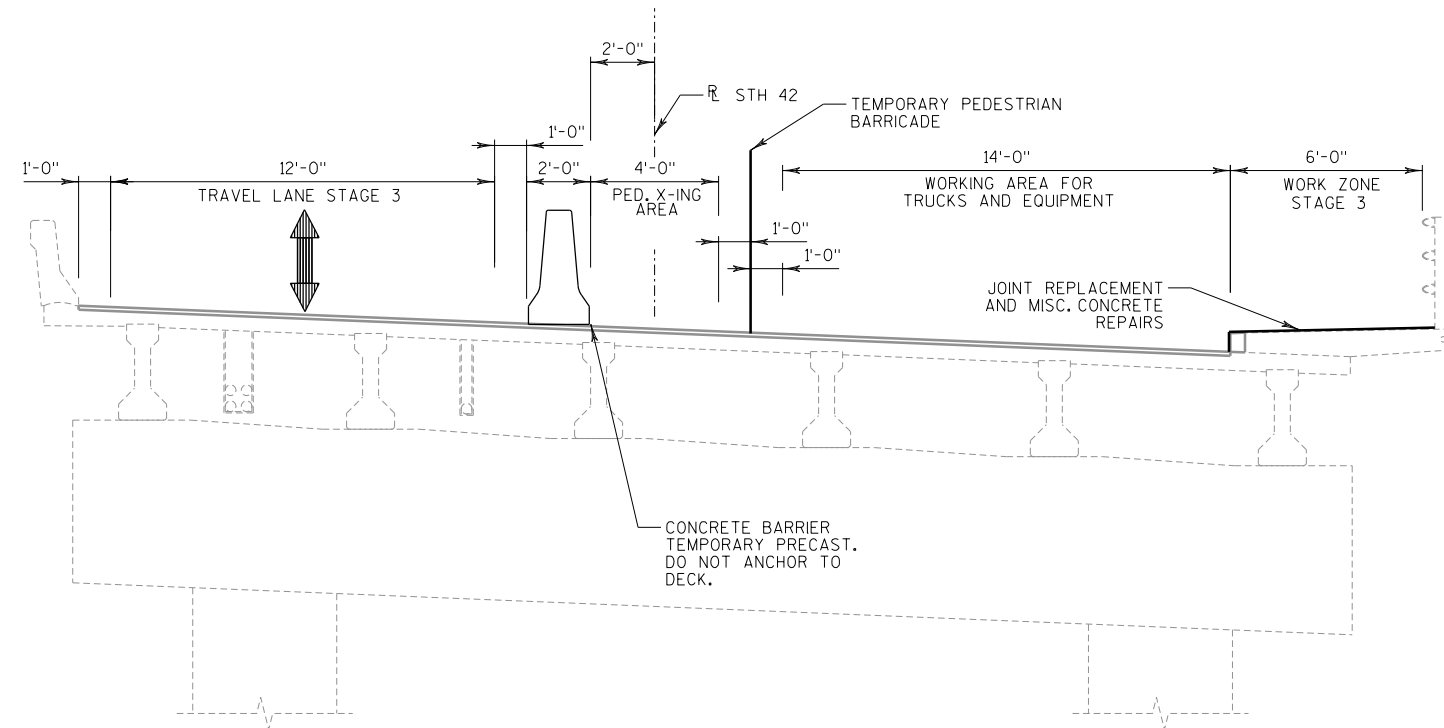


STAGE 1 TYPICAL SECTION THRU STH 42
LOOKING UPSTATION



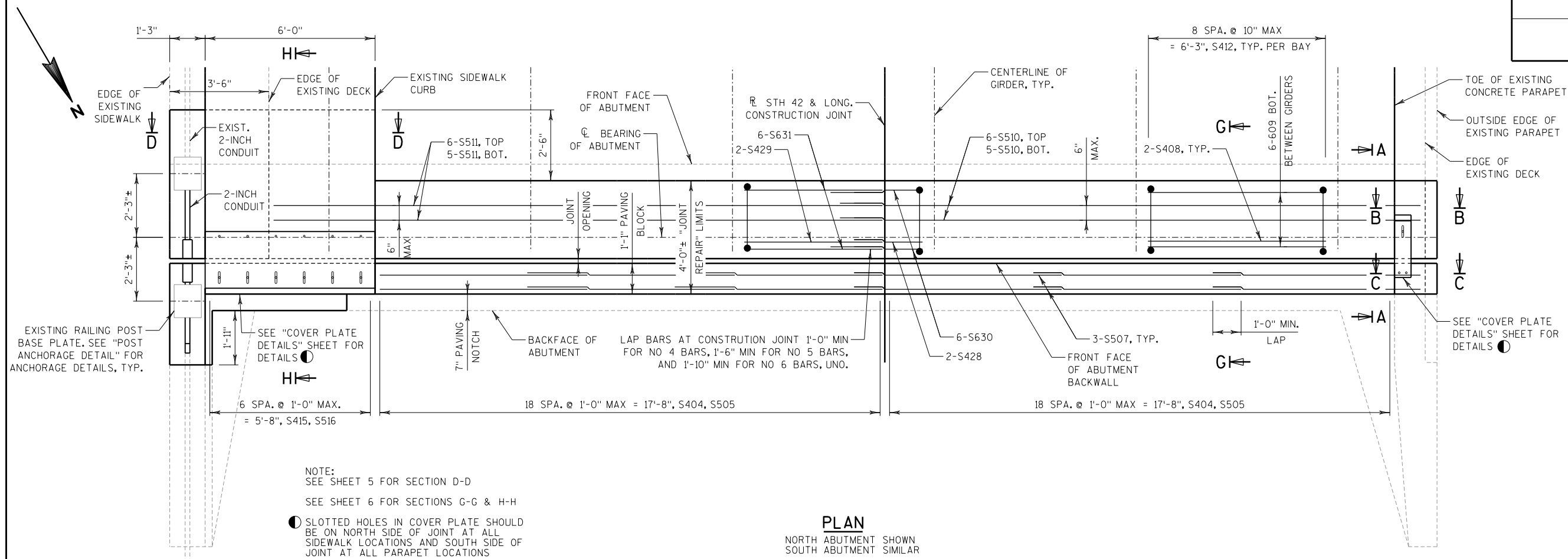
STAGE 2 TYPICAL SECTION THRU STH 42
LOOKING UPSTATION

NOTE:
TRAFFIC WILL BE MAINTAINED WITH THE
USE OF TEMPORARY SIGNALS. SEE
ROADWAY PLANS FOR DETAILS

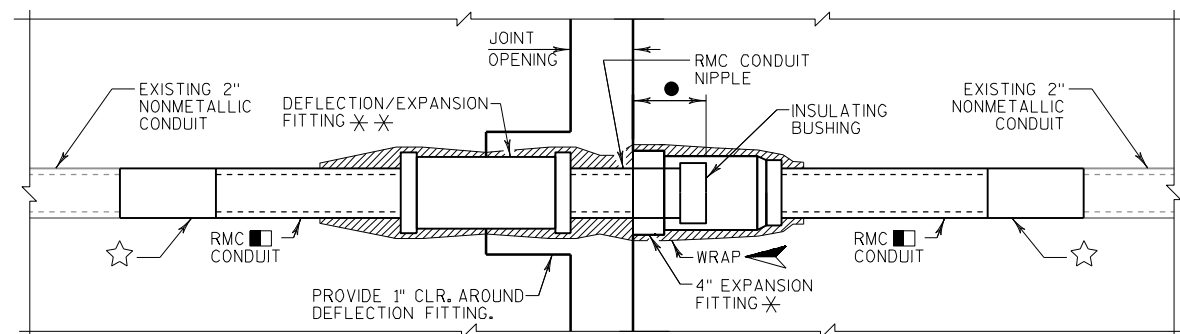


STAGE 3 TYPICAL SECTION THRU STH 42
LOOKING UPSTATION

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-23			
DRAWN BY AJC		PLANS CK'D. MDR	
CONSTRUCTION STAGING		SHFFT 3 OF 10 199	

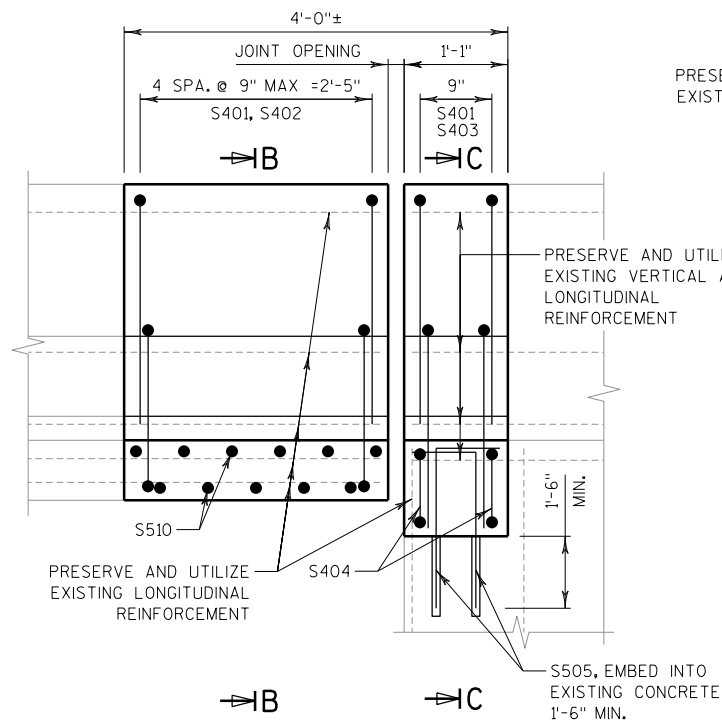


PLAN

NORTH ABUTMENT SHOWN
SOUTH ABUTMENT SIMILAR

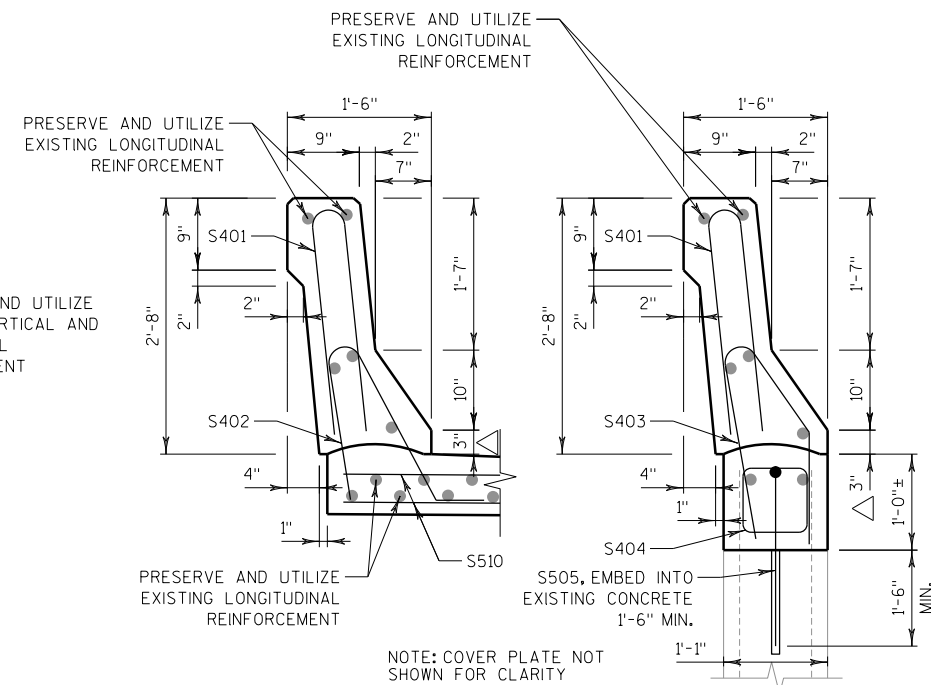
CONDUIT EXPANSION JOINT DETAIL

- CONDUIT SHALL BE EMBEDDED 2" CLEAR.
- PROVIDE CONDUIT EXPANSION JOINT DETAIL AT ALL JOINT REPAIR LOCATIONS.
- CONDUIT FITTINGS, CONDUIT BENDS, AND ADAPTER FITTINGS ARE INCLUDED IN BID ITEM "CONDUIT RIGID METALLIC 2-INCH". ANY CONDUIT BENDS SHALL CONFORM TO THE NATIONAL ELECTRIC CODE.
- USE 2" DIA. RIGID METALLIC (RMC) CONDUIT AT FITTINGS. PROVIDE RMC FOR 3'-0" MIN. ON EACH SIDE OF JOINT OPENINGS UNLESS NOTED OTHERWISE
- ☆ NONMETALLIC CONDUIT TO METALLIC CONDUIT ADAPTER FITTING (UL OR NRTL LISTED FOR ELECTRICAL USE SHALL BE USED).
- ▶ SPONGE RUBBER WRAP TO BE AASHTO M153, TYPE 1 OR EQUIVALENT - 1/4" MINIMUM THICKNESS. PROVIDE WRAP FOR THE ENTIRE LENGTH OF THE FITTING OR AS SHOWN. SPONGE RUBBER WRAP INCIDENTAL TO "CONDUIT RIGID METALLIC 2-INCH".
- POSITION MOVABLE END OF CONDUIT INSIDE EXPANSION FITTING, SUCH THAT IT WILL HAVE THE SAME ALLOWANCE FOR MOVEMENT (EXPANSION/CONTRACTION) AS THE EXPANSION DEVICE SET IN PLACE IN THE DECK BELOW IT. TAKE CARE TO INSTALL EXPANSION FITTING AND CONDUIT EXACTLY PARALLEL TO BRIDGE MOVEMENT.
- * EXPANSION FITTING REQUIREMENTS:
4" TOTAL CONDUIT MOVEMENT WITH BONDING JUMPER
- * * DEFLECTION/EXPANSION FITTING REQUIREMENTS:
UP TO 3/4" CONDUIT CONTRACTION OR EXPANSION AND UP TO 30 DEGREES OF ANGULAR MISALIGNMENT IN ANY DIRECTION WITH BONDING JUMPER
- △ DIMENSION ASSUMES 1 1/2" OVERLAY THICKNESS. ADJUST DIMENSION FOR ACTUAL OVERLAY THICKNESS AS NEEDED.



B

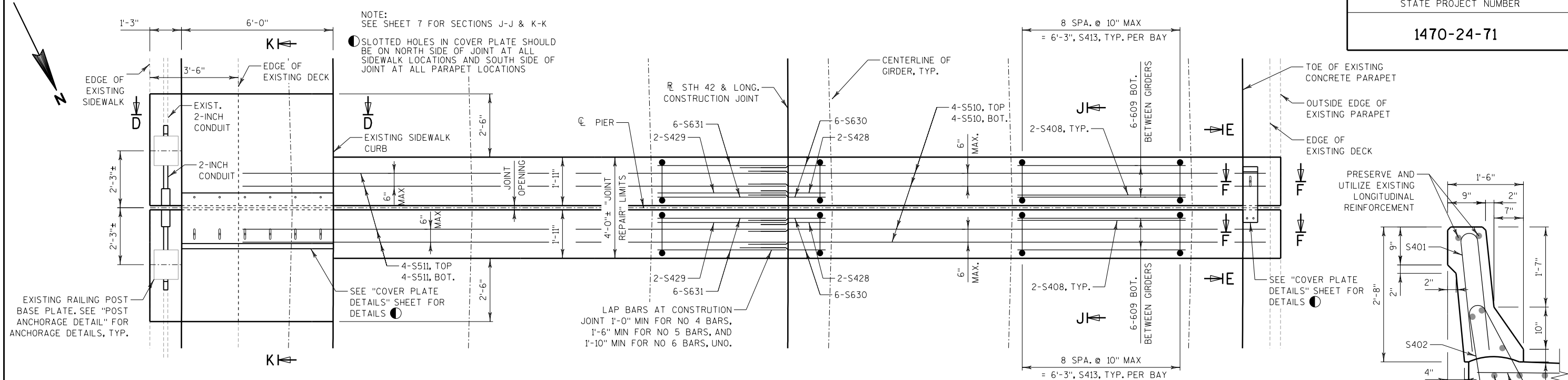
ELEVATION A-A



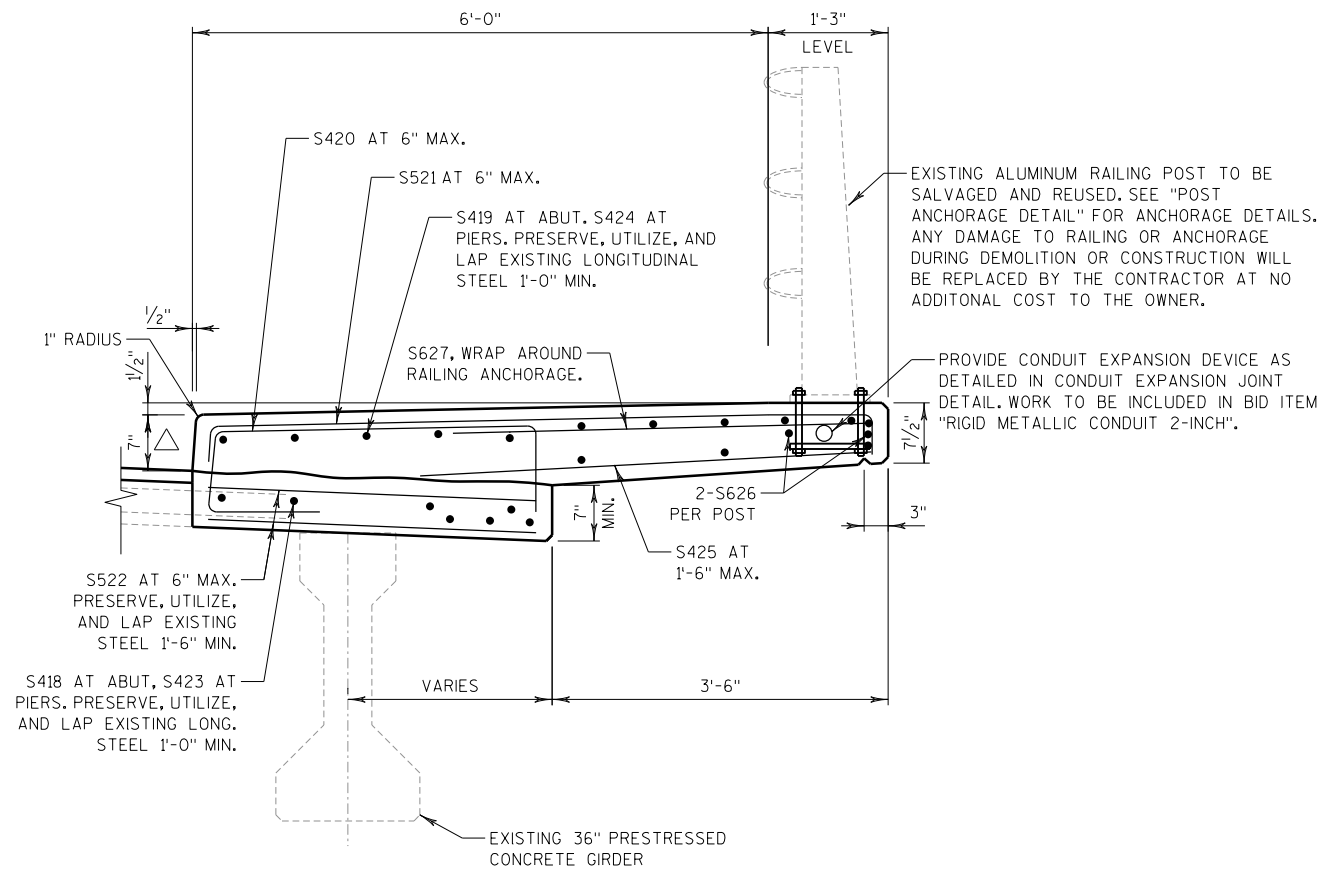
SECTION B-B

SECTION C-C

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-23			
DRAWN BY AJC		PLANS CK'D, MDR	
SUPERSTRUCTURE DETAILS 1		SHEET 4 OF 10 200	

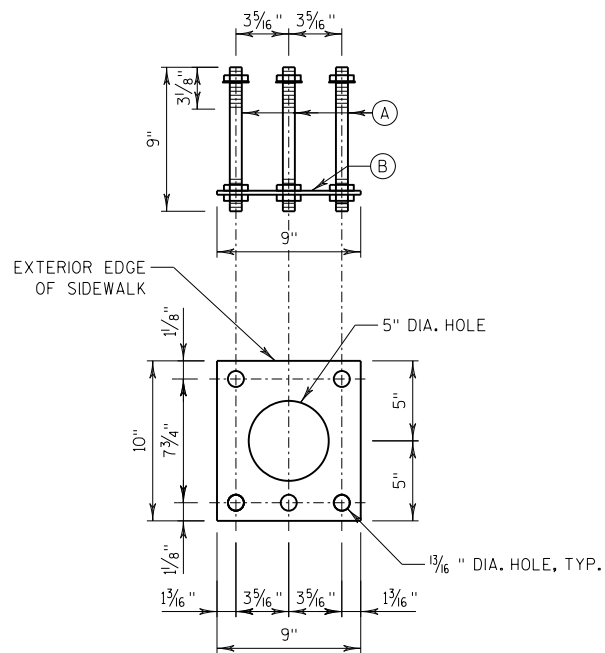


PLAN

PIER 7 SHOWN
PIER 3 SIMILAR

SECTION D-D

△ DIMENSION ASSUMES 1/2" OVERLAY THICKNESS. ADJUST DIMENSION FOR ACTUAL OVERLAY THICKNESS AS NEEDED.



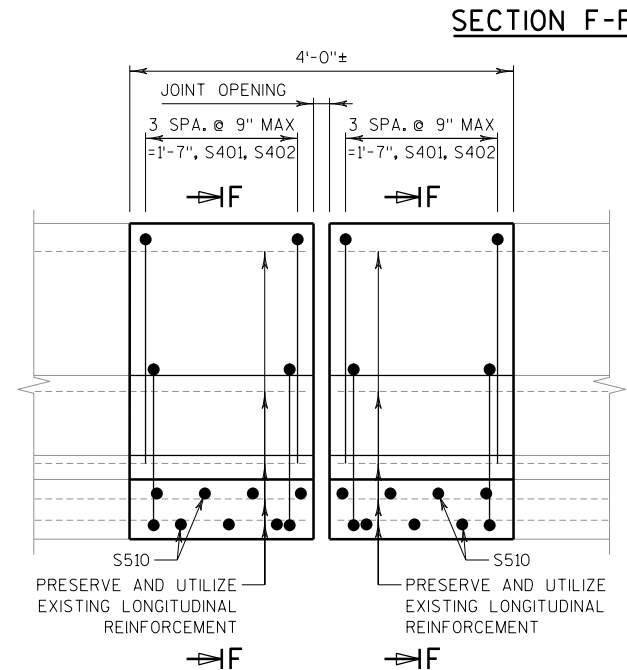
POST ANCHORAGE DETAIL

SALVAGE AND REUSE EXISTING RAILING POST AND BASE PLATE. PROVIDE 1/2" MINIMUM THICK LEVEL GROUT BED UNDER RAILING BASE PLATE WITH NON-SHRINK GROUT. WORK TO BE INCLUDED IN BID ITEM "ALUMINUM RAILING ANCHORAGE".

BID ITEM "ALUMINUM RAILING ANCHORAGE" INCLUDES ALL ITEMS SHOWN IN POST ANCHORAGE DETAIL.

- (A) (5) - 3/4" DIA. x 9" LONG ANCHOR BOLTS PER POST WITH 3/4" 10 THREADED HEX NUTS WITH 1 3/16" I.D. x 1 1/2" O.D. 1/8" THICK WASHERS. ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE STAINLESS STEEL (ASTM 276 TYPE 300 SERIES). ALL ANCHOR BOLTS TO BE SET TO A TEMPLATE. PROVIDE 3/8" PROJECTION, TYPICAL

- (B) 1/4"x9"x10" FLAT BAR WITH 1 3/16" DIA. HOLES FOR ANCHOR BOLTS (ASTM A36)



ELEVATION E-E

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-23			
DRAWN BY AJC		PLANS CK'D, MDR	
SUPERSTRUCTURE DETAILS 2			SHEET 5 OF 10 201

SHADED UNDERSIDE DECK TEMP. (°F)	JOINT OPENING (NORMAL TO JT.)
90°	1 ⁵ / ₈ "
80°	1 ⁵ / ₈ "
70°	1 ³ / ₄ "
60°	1 ³ / ₄ "
50°	1 ⁷ / ₈ "
40°	1 ⁷ / ₈ "
30°	2"

NOTES

*DIMENSIONS GIVEN ARE NORMAL TO $\mathbb{C}$ OF SUBSTRUCTURE UNIT.

NORMAL TO $\odot$ SUBSTRUCTURE
SEE SHEET 4 FOR LOCATION

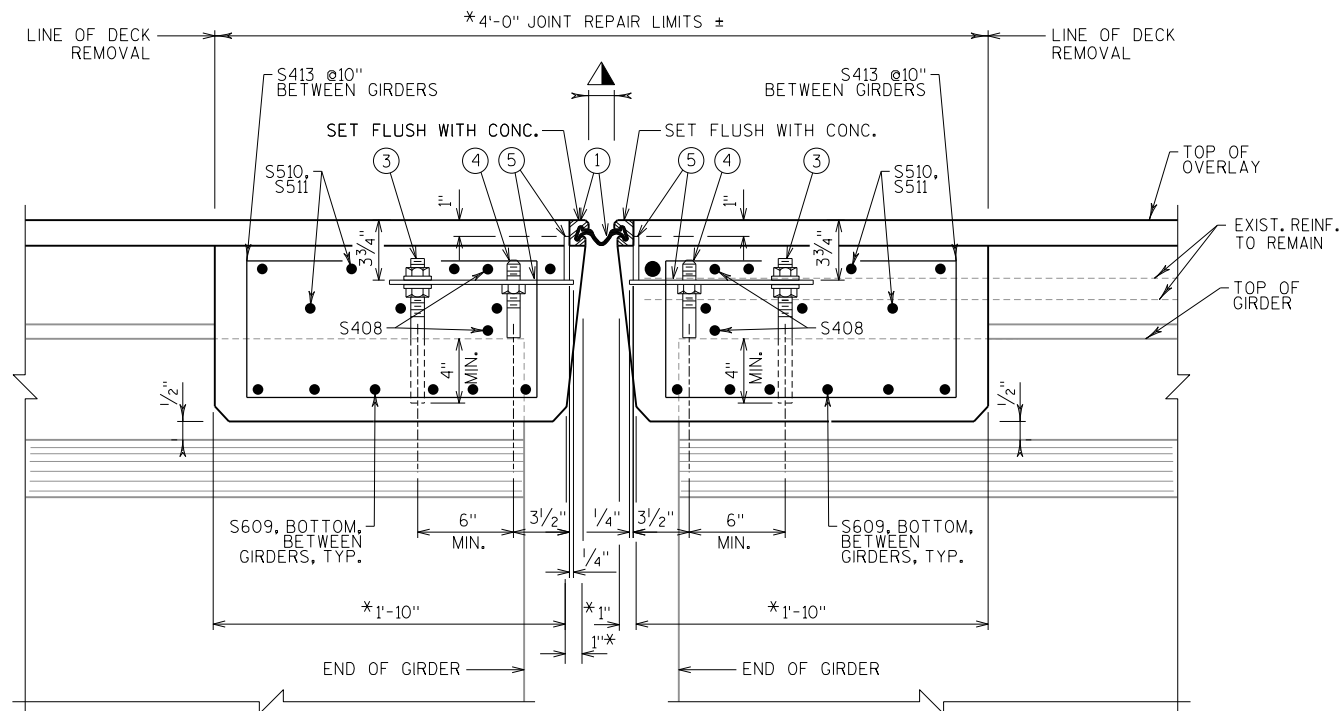
- (1) NEOPRENE STRIP SEAL (4 - INCH) AND STEEL EXTRUSIONS.
- (2) STUDS $\frac{5}{8}" \phi$ X $6\frac{3}{8}"$ LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS AND BEND AS SHOWN AFTER WELDING.
- (2A) $\frac{1}{2}"$ THICK ANCHOR PLATE WITH $\frac{5}{8}" \phi$ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE, WELD ANCHOR PLATE TO NO. 1 AT 1'-6" CENTERS BETWEEN GIRDERS.
- (3) $\frac{3}{4}" \phi$ THREADED ROD WITH 2 NUTS AND PLATE WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES ON $\frac{1}{4}"$ OF GIRDER. ON ABUTMENT SIDE GROUT THREADED ROD INTO FIELD DRILLED HOLES IN ABUTMENT BACKWALL AS SHOWN.
- (4) $\frac{3}{4}" \phi$ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
- (5) FABRICATE SUPPORT FROM 3" X $\frac{1}{2}"$ BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. SHOP OR FIELD WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE $\frac{1}{2}" \phi$ HOLE FOR NO. 3 & 1" ϕ HOLE FOR NO. 4.
- (6) GALVANIZED PLATE $\frac{3}{8}"$ X 1'-2" X 2'-0" LONG WITH HOLES FOR NO. 7. BEND AS SHOWN.
- (7) $\frac{3}{4}" \phi$ X $\frac{1}{2}"$ STAINLESS STEEL SOCKET FLAT HEAD SCREWS WITH ANTI-SEIZE LUBRICANT. PLACE IN COUNTERSUNK HOLE. RECESS $\frac{1}{16}"$ BELOW PLATE SURFACE.
- (8) $\frac{3}{4}" \phi$ X 4" GALVANIZED HEX HEAD BOLT. BEND 45°.
- (9) $\frac{3}{4}" \phi$ X 2 $\frac{1}{4}"$ GALVANIZED THREADED COUPLING.
- (10) 1" X 5" SLOTTED COUNTERSUNK HOLE FOR NO. 7. PLACE SLOT PARALLEL TO DIRECTION OF MOVEMENT.
- (11) SIDEWALK COVER PLATE $\frac{3}{8}"$ X 2'-0" X LIMITS SHOWN. BEND DOWN FACE OF SIDEWALK WITH HOLES FOR NO. 7. GALVANIZE PLATE AFTER SLIP-RESISTANT SURFACE IS APPLIED.

EXTERIOR GIRDER TO EDGE OF DECK AND AT
PARAPETS, MEDIANS AND SIDEWALKS

ALTERNATE STRIP SEAL ANCHOR

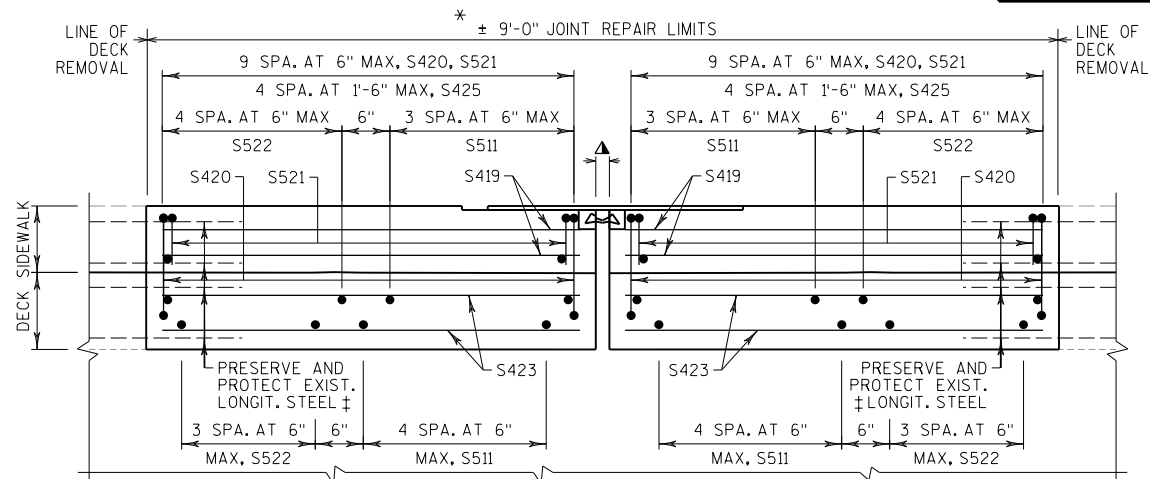
ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.

PART PLAN



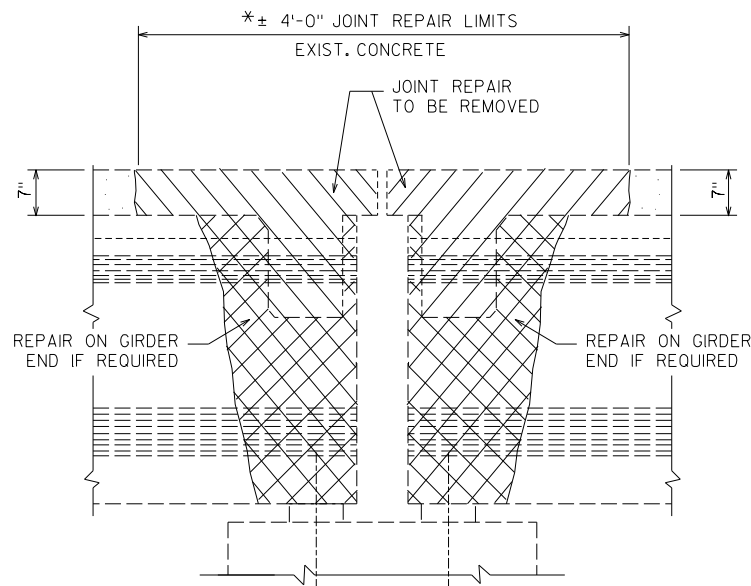
SECTION J-J

NORMAL TO ϕ SUBSTRUCTURE.
CONCRETE DIAPHRAGM TO EXTEND
BETWEEN INSIDE FACES OF EXTERIOR
GIRDER. SEE SHEET 5 FOR LOCATION.

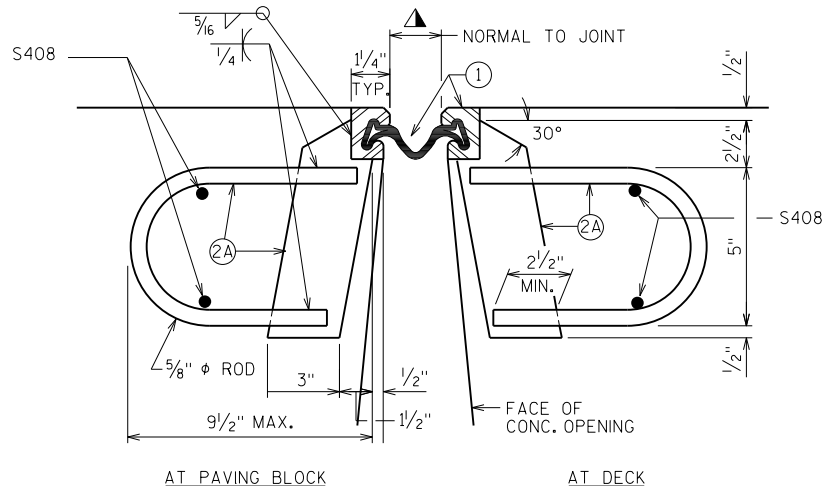


SECTION K-K

NORMAL TO ϕ SUBSTRUCTURE
SEE SHEET 5 FOR LOCATION



JOINT REPAIR-REMOVAL
SECTION THRU PIER JOINT



SECTION THRU JOINT AT PIERS 3 & 7
ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.

▲ TEMPERATURE TABLE

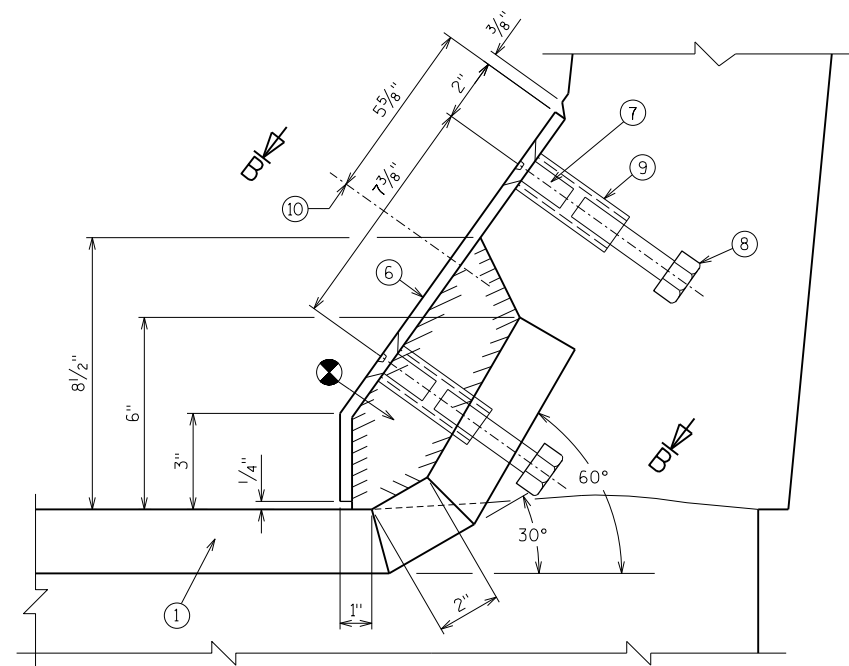
SHADED UNDERSIDE DECK TEMP. (°F)	JOINT OPENING (NORMAL TO JT.)
90°	1 1/2"
80°	1 3/4"
70°	1 5/8"
60°	2"
50°	2 1/8"
40°	2 3/8"
30°	2 1/2"

TEMPERATURE TABLE IS TAKEN FROM
EXISTING PLANS. A SMALL JOINT OPENING
DUE TO A HIGH TEMPERATURE AT TIME OF
CONSTRUCTION MAY REQUIRE NEOPRENE
STRIP SEAL INSTALLATION INTO STEEL
EXTRUSIONS PRIOR TO SETTING THE
EXPANSION JOINT.

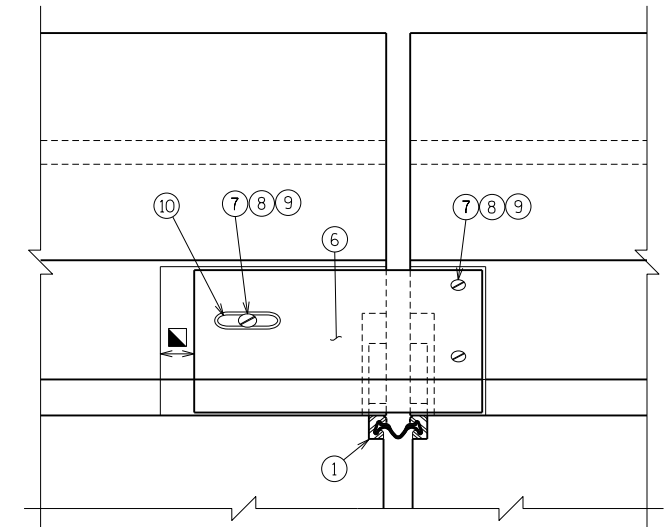
NOTES

SEE SHEET 6 FOR LEGEND AND NOTES

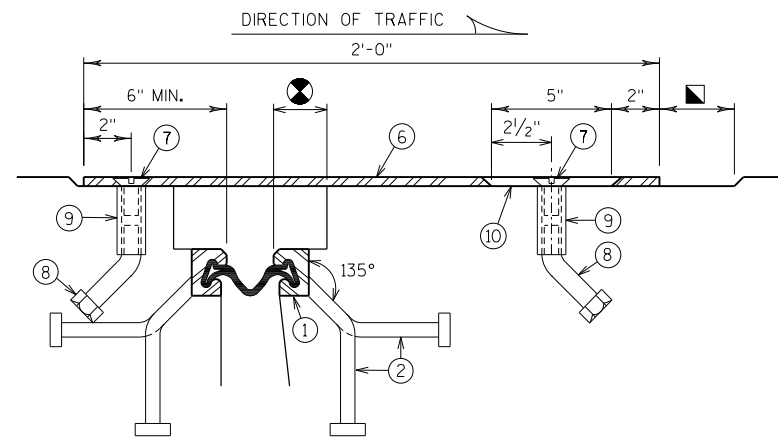
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-23			
DRAWN BY AJC		PLANS CK'D. MDR	
EXPANSION JOINT DETAILS 2		SHEET 7 OF 10 203	



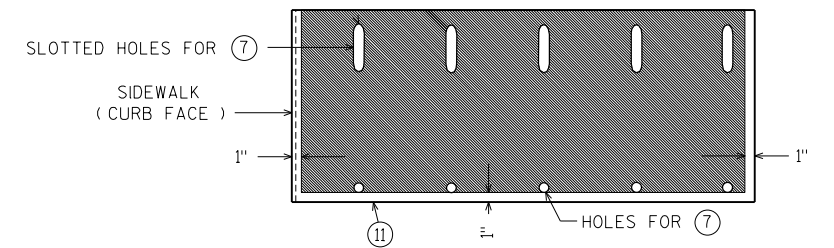
SECTION A-A



VIEW OF PARAPET PLATE
FROM ROADWAY



SECTION B-B

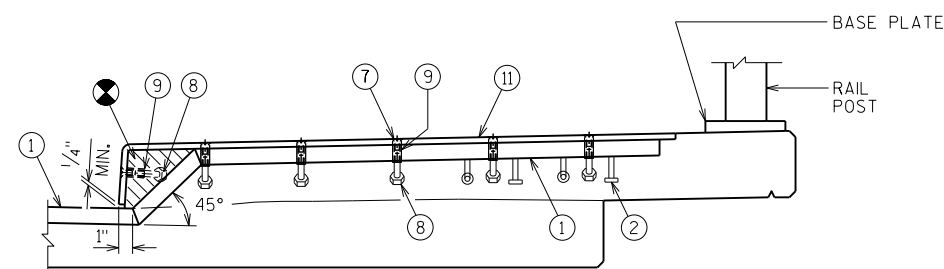


PLAN OF SIDEWALK COVER PLATE
WITH SLIP-RESISTANT SURFACE

Technical drawing of a cross-section of a traffic sign support structure. The drawing shows a concrete base with a sign on the left and a support structure on the right. The sign is 2'0" wide and 2'0" high. The support structure is 6" MIN. wide. The drawing includes dimensions and callouts for various components:

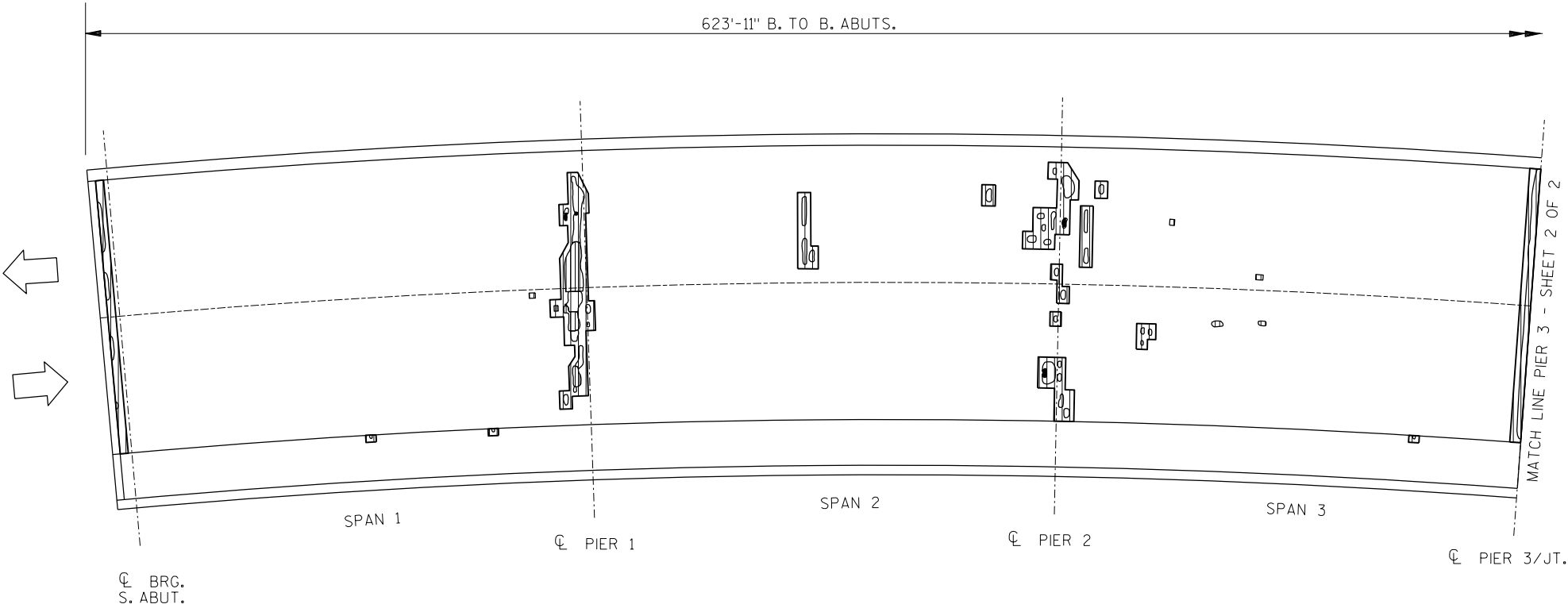
- Dimensions:**
 - Sign width: 2'0"
 - Sign height: 2'0"
 - Support structure width: 6" MIN.
 - Sign base offset: 2"
 - Sign base offset: 5"
 - Sign base offset: 2 1/2"
 - Support structure offset: 2"
- Callouts:**
 - 1: Support structure base
 - 2: Support structure base
 - 7: Sign base
 - 8: Sign base
 - 9: Sign base
 - 10: Sign base
 - 11: Sign base
- Other features:**
 - A 135° angle is indicated for the support structure base.
 - A "DIRECTION OF TRAFFIC" arrow points to the right.

SECTION C-C

SECTION AT SIDEWALK

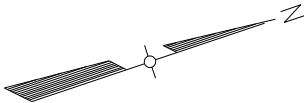
APPROVED SLIP-RESISTANT APPLIED SURFACES FOR STEEL PLATES		
PRODUCT	MANUFACTURER	CONTACT AT
SLIPNOT GRADE 2, STEEL	W. S. MOLNAR COMPANY	1-800-SLIPNOT
ALGRIP, STEEL	ROSS TECHNOLOGY CORP.	1-800-345-8170

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-23			
DRAWN BY		AJC	PLANS CK'D. MDR
COVER PLATE DETAILS		SHEET 8 OF 10 -204-	



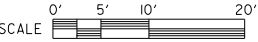
PLAN

PROPOSED REHAB AREAS



S.N. B-31-23

REHAB AREA SUMMARY		ROADWAY		SIDEWALK		LEGEND			
ITEM	UNIT	QUANT.	%	QUANT.	%	DECK PREPARATION AREA		DELAMINATION	
TOTAL AREA	yd²	2490.8		416.0				SPALL	
SHADE/DEBRIS	yd²	0		0				DEBOND	
PREPARATION, DECKS, TYPE 1	yd²	101.6	4.1	8.5	2.0			ASPHALT PATCH	
PREPARATION, DECKS, TYPE 2	yd²	25.4	1.0	2.1	0.5			CONCRETE PATCH	
FULL DEPTH DECK REPAIR	yd²	1.0	<0.1	1.0	0.2	SHADE/DEBRIS			

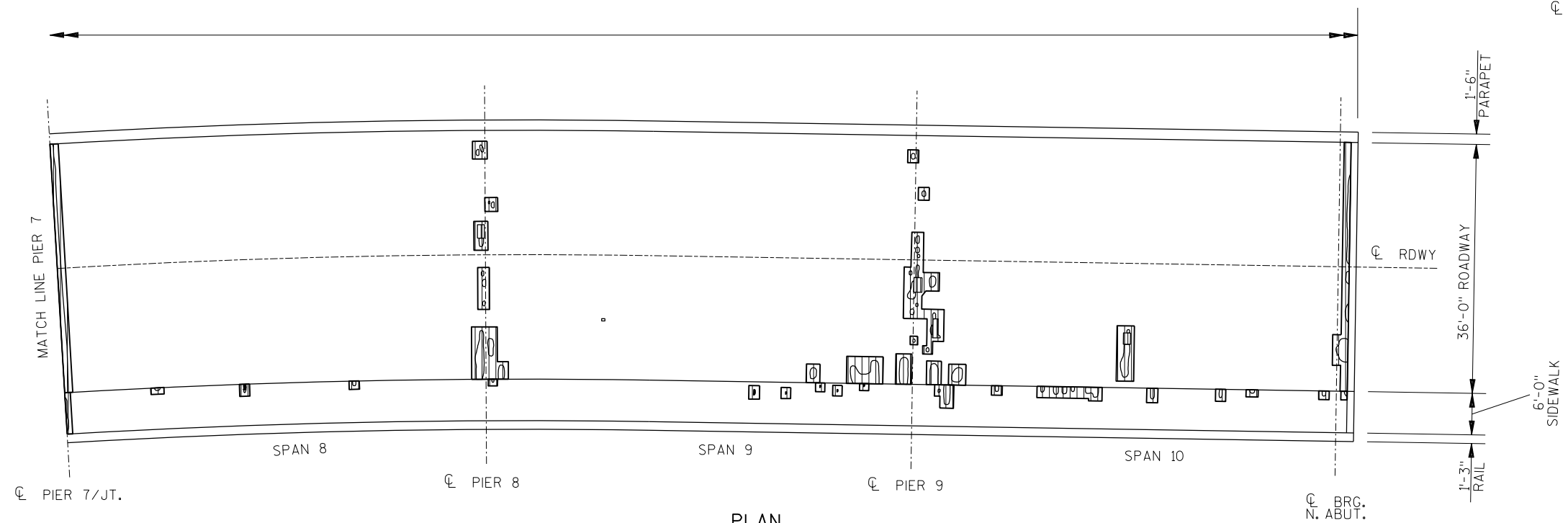
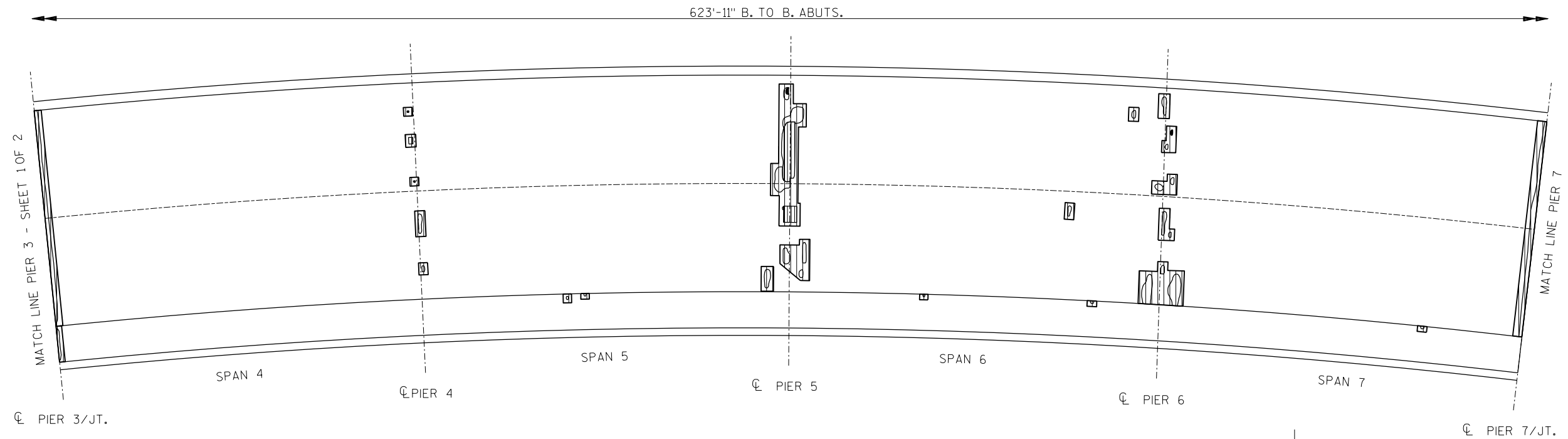


SURFACE TYPE: CONCRETE - NO OVERLAY

DECK INFRARED THERMOGRAPHIC INVESTIGATION
PERFORMED BY OTHERS
INFRARED INSPECTION DATE: 7/27/17

SHEET INCLUDED FOR INFORMATIONAL PURPOSES ONLY

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-23			
DRAWN BY AJC		PLANS CK'D. MDR	
DECK REPAIR DETAILS 1		SHEET 9 OF 10 205	



PLAN

PROPOSED REHAB AREAS

S.N. B-31-23

LEGEND

DECK PREPARATION
AREA

SHADE/DEBRIS



DELAMINATION



SPALL



DEBOND



ASPHALT PATCH



CONCRETE PATCH



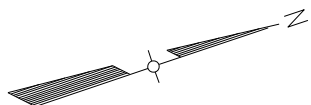
SCALE 0' 5' 10' 20'

SURFACE TYPE: CONCRETE - NO OVERLAY

DECK INFRARED THERMOGRAPHIC INVESTIGATION
PERFORMED BY OTHERS
INFRARED INSPECTION DATE: 7/27/17

SHEET INCLUDED FOR INFORMATIONAL PURPOSES ONLY

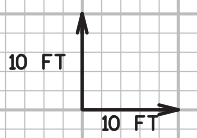
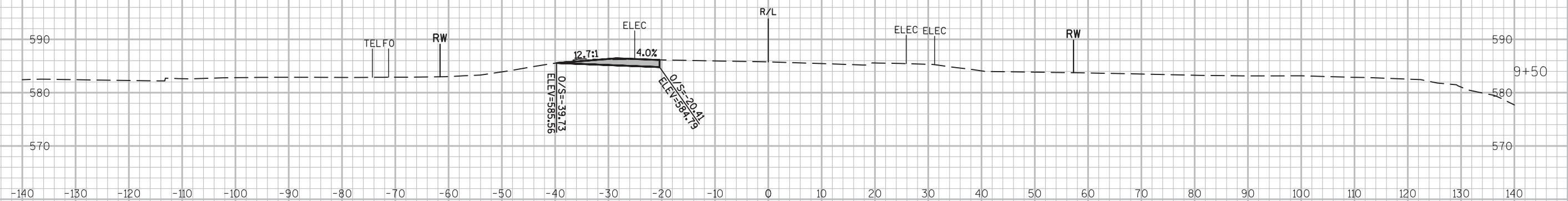
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
STRUCTURE B-31-23			
DRAWN BY: AJC		PLANS CK'D: MDR	
DECK REPAIR DETAILS 2			SHEET 10 OF 10 206



NOTE: SEE SHEET 1 OF 2
FOR REHAB QUANTITIES

GRADING LIMITS BEGIN AT THE EXISTING EDGE
OF PAVED SHOULDER AND IS NOT AN EVEN
OFFSET FROM THE REFERENCE LINE.

EXISTING BASE AGGREGATE COURSE IN GOOD
CONDITION TO REMAIN AS APPROVED BY THE
ENGINEER. SEE SHOULDER WIDENING EARTHWORK &
BASE AGGREGATE FOR GUARDRAIL DETAIL FOR
ADDITIONAL INFORMATION.

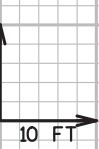
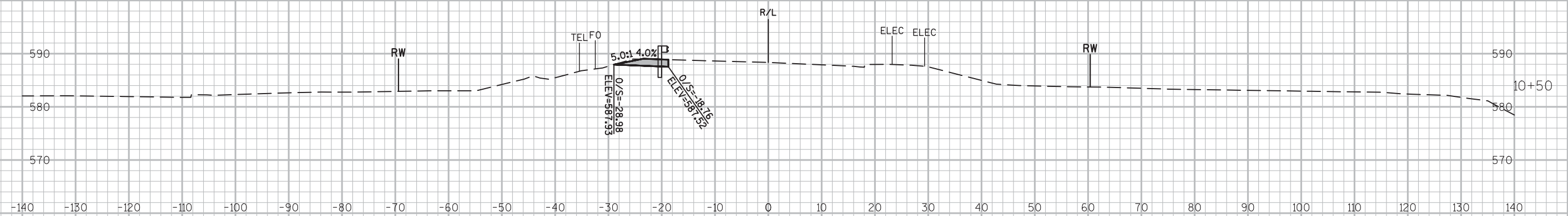


SHEET 207

WISDOT/CADDS SHEET 49

GRADING LIMITS BEGIN AT THE EXISTING EDGE
OF PAVED SHOULDER AND IS NOT AN EVEN
OFFSET FROM THE REFERENCE LINE.

EXISTING BASE AGGREGATE COURSE IN GOOD
CONDITION TO REMAIN AS APPROVED BY THE
ENGINEER. SEE SHOULDER WIDENING EARTHWORK &
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ADDITIONAL INFORMATION.

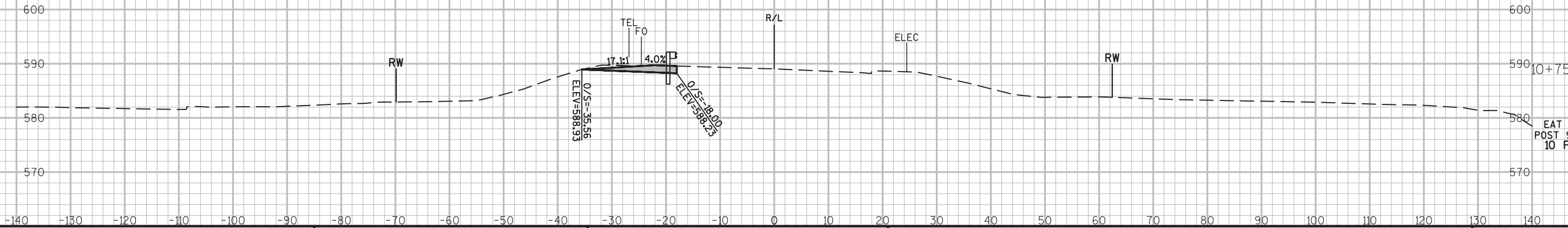
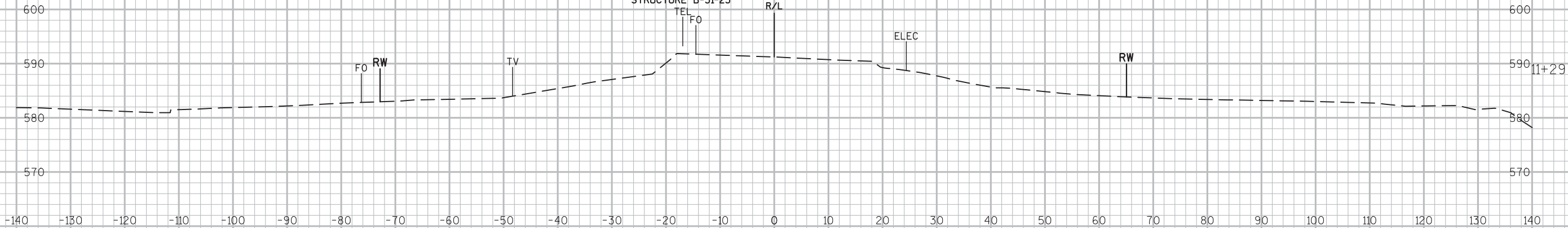


SHEET 208

NOTE
GRADING LIMITS BEGIN AT THE EXISTING EDGE
OF PAVED SHOULDER AND IS NOT AN EVEN
OFFSET FROM THE REFERENCE LINE.

LEGEND
EXISTING BASE AGGREGATE COURSE IN GOOD
CONDITION TO REMAIN AS APPROVED BY THE
ENGINEER. SEE SHOULDER WIDENING EARTHWORK &
BASE AGGREGATE FOR GUARDRAIL DETAIL FOR
ADDITIONAL INFORMATION.

END ABRUPT LT.
MATCH EXISTING
STRUCTURE B-31-23



PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

CROSS SECTIONS: B-31-23 GUARDRAIL

SHEET

209

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\1\SHEETS\PLAN\090201-XS.DWG
LAYOUT NAME - 090203-XS

PLOT DATE : 11/21/2017 2:45 PM

PLOT BY : SCOTT KAISER

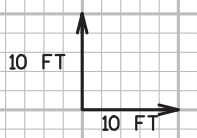
PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD\ SHEET 49

GRADING LIMITS BEGIN AT THE EXISTING EDGE
OF PAVED SHOULDER AND IS NOT AN EVEN
OFFSET FROM THE REFERENCE LINE.

EXISTING BASE AGGREGATE COURSE IN GOOD
CONDITION TO REMAIN AS APPROVED BY THE
ENGINEER. SEE SHOULDER WIDENING EARTHWORK &
BASE AGGREGATE FOR GUARDRAIL DETAIL FOR
ADDITIONAL INFORMATION.



SHEET 210

WISDOT/CADDS SHEET 49

NOTE
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LEGEND
EXISTING BASE AGGREGATE COURSE IN GOOD
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BASE AGGREGATE FOR GUARDRAIL DETAIL FOR
ADDITIONAL INFORMATION.



PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

CROSS SECTIONS: B-31-23 GUARDRAIL

SHEET

211

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETS\PLAN\090201-XS.DWG
LAYOUT NAME - 090205-XS

PLOT DATE : 11/21/2017 2:46 PM

PLOT BY : SCOTT KAISER

PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD SHEET 49

NOTE
GRADING LIMITS BEGIN AT THE EXISTING EDGE
OF PAVED SHOULDER AND IS NOT AN EVEN
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LEGEND
EXISTING BASE AGGREGATE COURSE IN GOOD
CONDITION TO REMAIN AS APPROVED BY THE
ENGINEER. SEE SHOULDER WIDENING EARTHWORK &
BASE AGGREGATE FOR GUARDRAIL DETAIL FOR
ADDITIONAL INFORMATION.



PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

CROSS SECTIONS: B-31-23 GUARDRAIL

SHEET

212

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETS\PLAN\090201-XS.DWG
LAYOUT NAME - 090206-XS

PLOT DATE : 11/21/2017 2:46 PM

PLOT BY : SCOTT KAISER

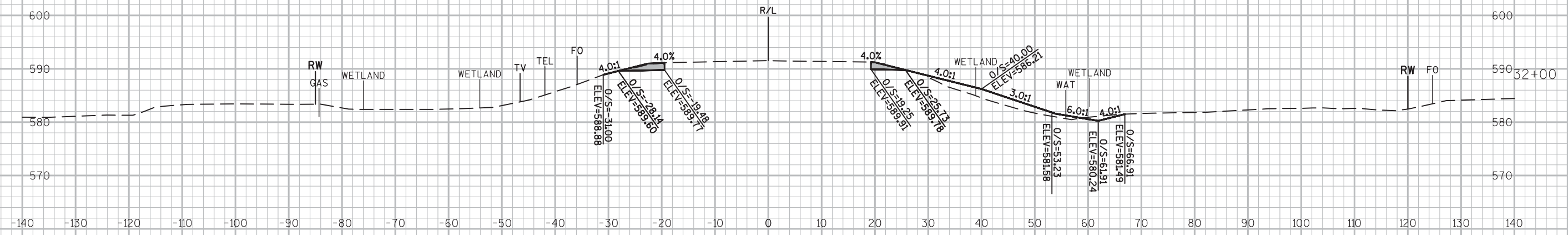
PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD\ SHEET 49

GRADING LIMITS BEGIN AT THE EXISTING EDGE
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EXISTING BASE AGGREGATE COURSE IN GOOD
CONDITION TO REMAIN AS APPROVED BY THE
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The profile view shows the proposed road alignment with a vertical curve. The horizontal axis represents stationing from -140 to 140, and the vertical axis represents elevation in feet from 580 to 600. The alignment is shown as a dashed line. Key features and labels include:

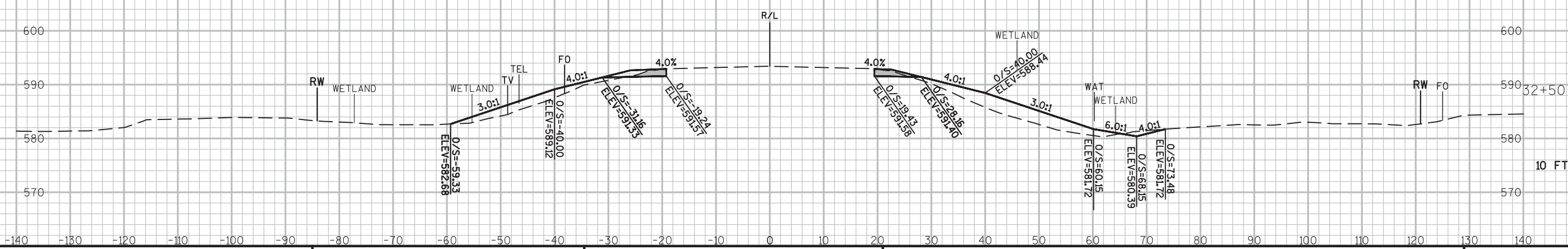
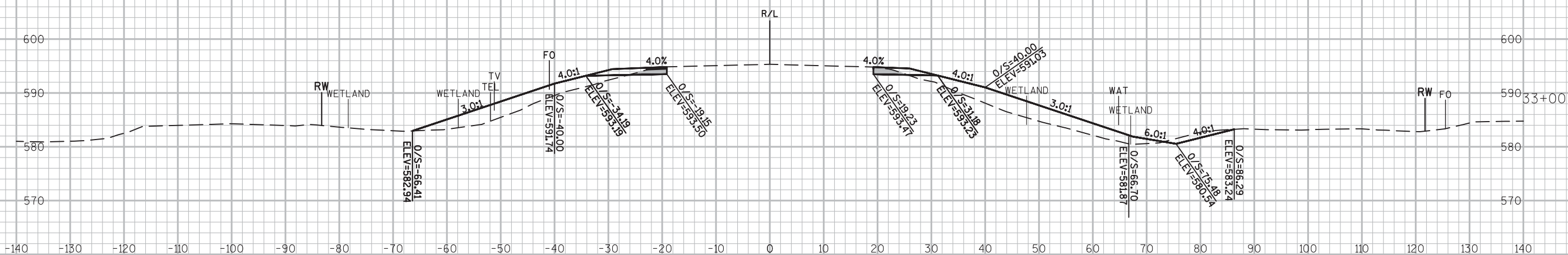
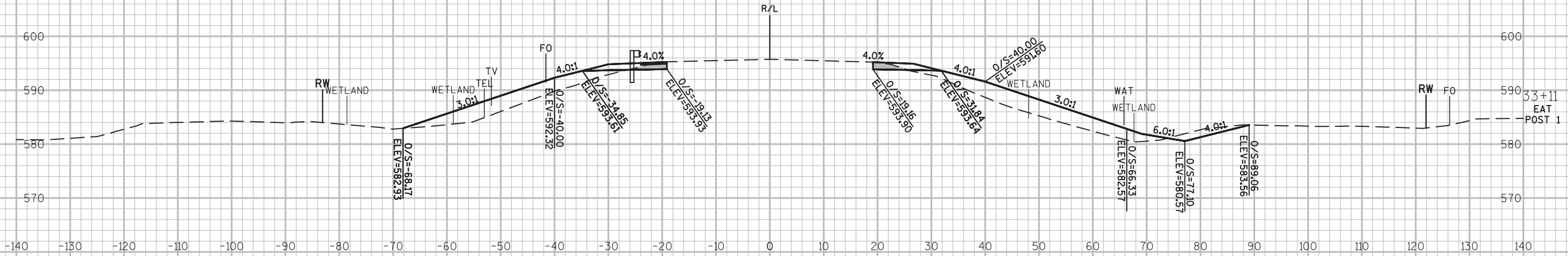
- WETLAND**: Multiple areas labeled as wetlands along the alignment.
- GAS**: A label indicating a gas feature near station -85.
- RW**: Right-of-way boundary near station -85.
- TV**: A label near station -45.
- TEL**: A label near station -40.
- FO**: A label near station -35.
- R/L**: A label near station 0.
- WAT WETLAND**: A label near station 55.
- RW**: Right-of-way boundary near station 120.
- FO**: A label near station 125.

The alignment starts at an elevation of approximately 580 feet at station -140, rises to a peak of about 590 feet at station 0, and then descends to a low point of about 580 feet at station 55, before rising again to about 585 feet at station 140. A 10-foot vertical curve is indicated near station 120.

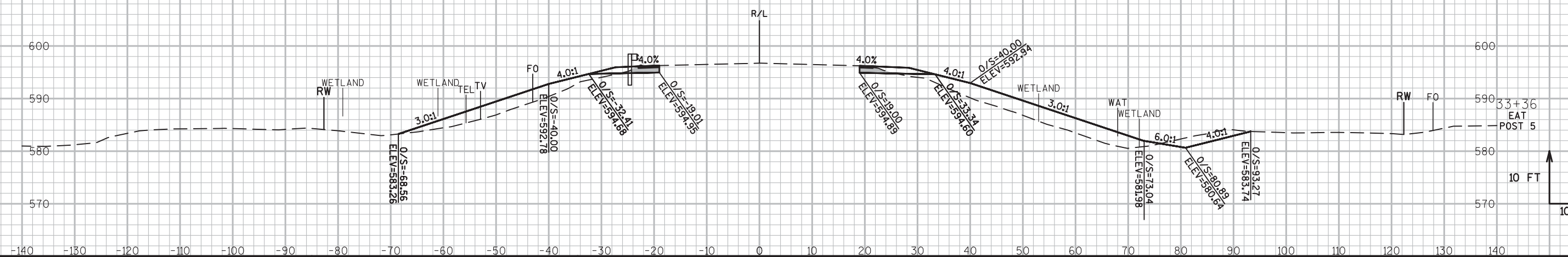
SHEET 213

NOTE
GRADING LIMITS BEGIN AT THE EXISTING EDGE
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LEGEND
EXISTING BASE AGGREGATE COURSE IN GOOD
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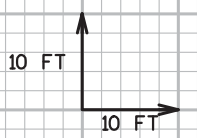
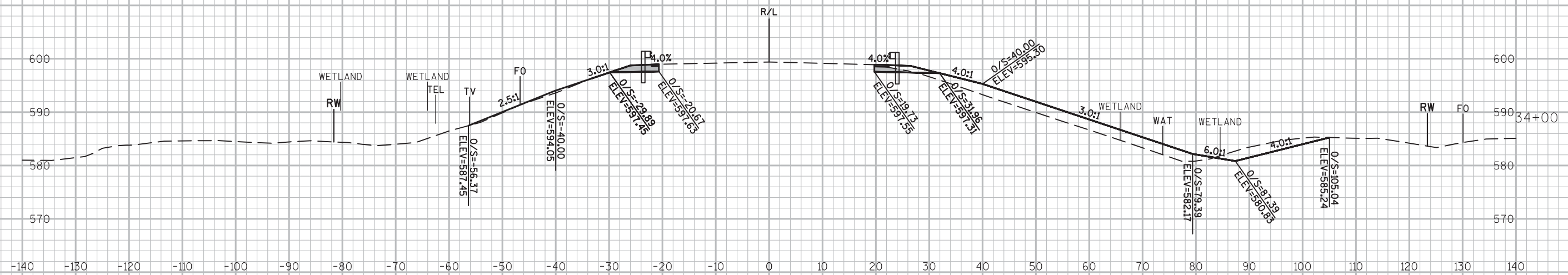
LEGEND
EXISTING BASE AGGREGATE COURSE IN GOOD
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SHEET 215

GRADING LIMITS BEGIN AT THE EXISTING EDGE
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CONDITION TO REMAIN AS APPROVED BY THE
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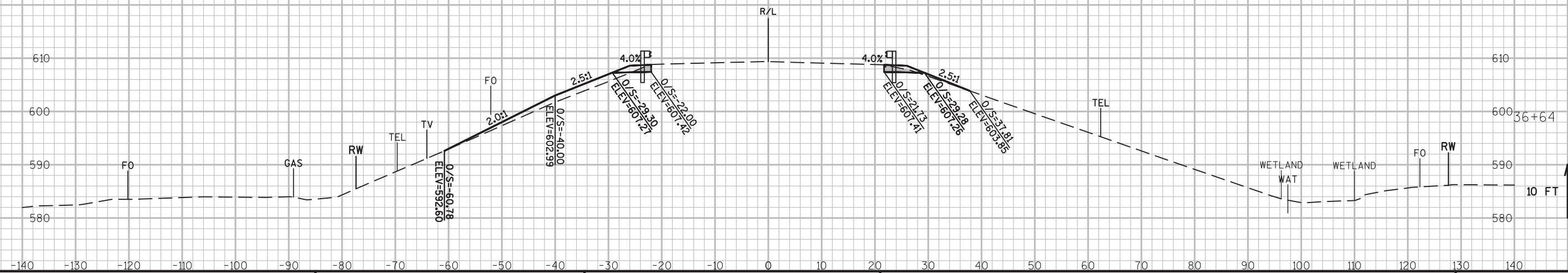


SHEET 216

WISDOT/CADDS SHEET 49

GRADING LIMITS BEGIN AT THE EXISTING EDGE
OF PAVED SHOULDER AND IS NOT AN EVEN
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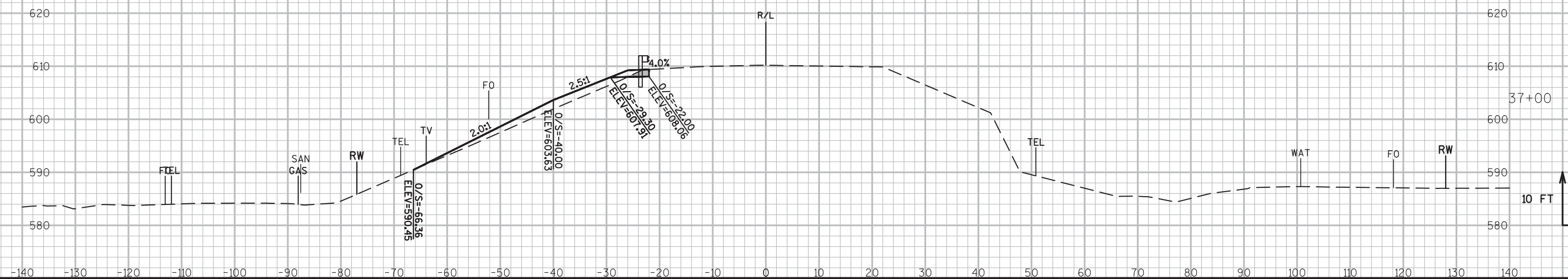
EXISTING BASE AGGREGATE COURSE IN GOOD
CONDITION TO REMAIN AS APPROVED BY THE
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SHEET 219

GRADING LIMITS BEGIN AT THE EXISTING EDGE
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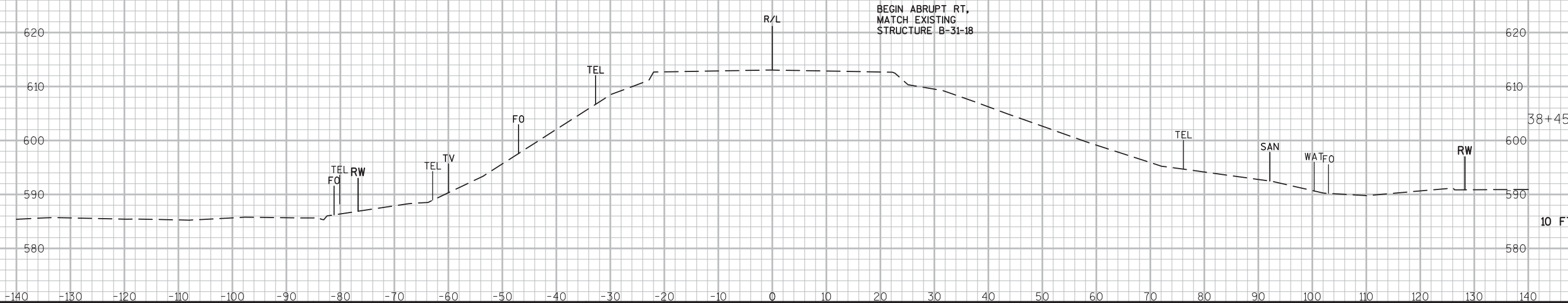
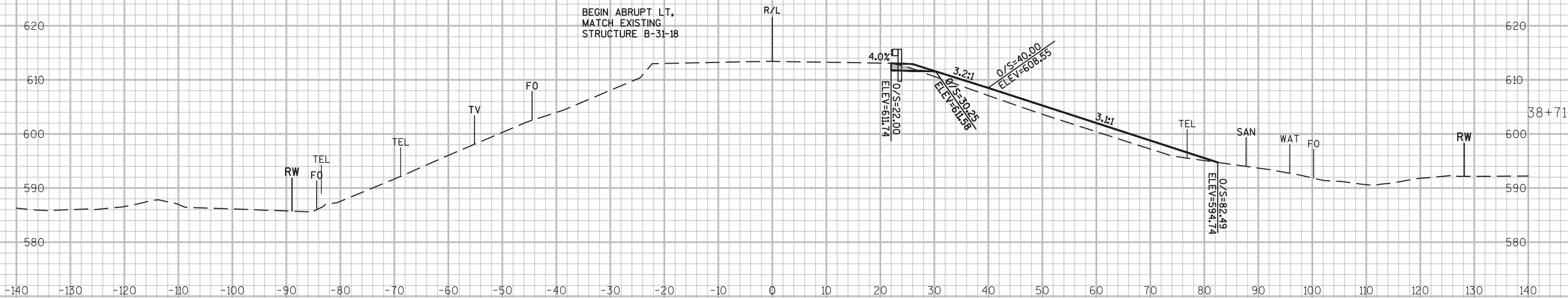
EXISTING BASE AGGREGATE COURSE IN GOOD
CONDITION TO REMAIN AS APPROVED BY THE
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SHEET 220

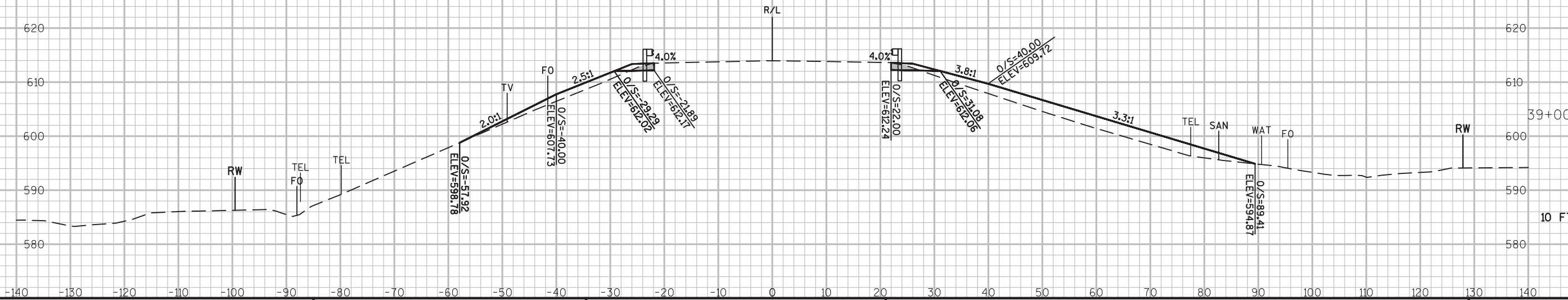
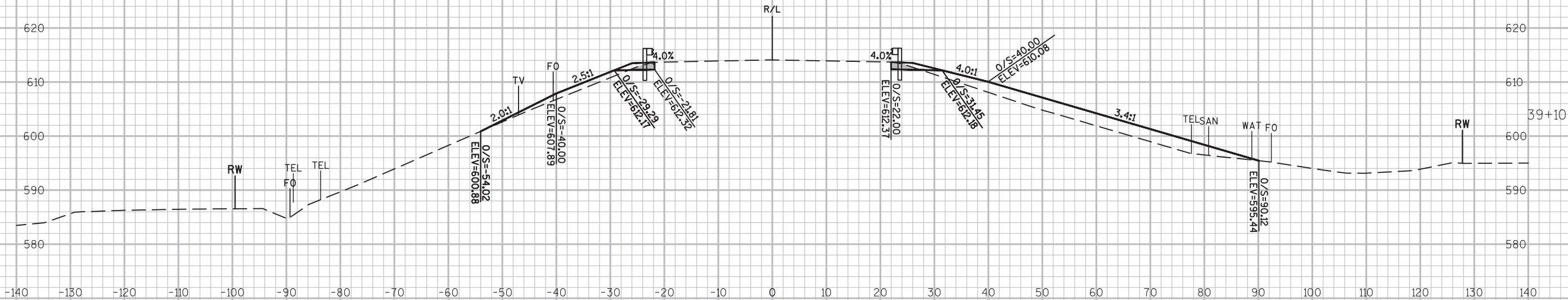
NOTE
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PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

CROSS SECTIONS: B-31-18 GUARDRAIL

SHEET

222

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090216-XS

PLOT DATE : 11/21/2017 2:50 PM

PLOT BY : SCOTT KAISER

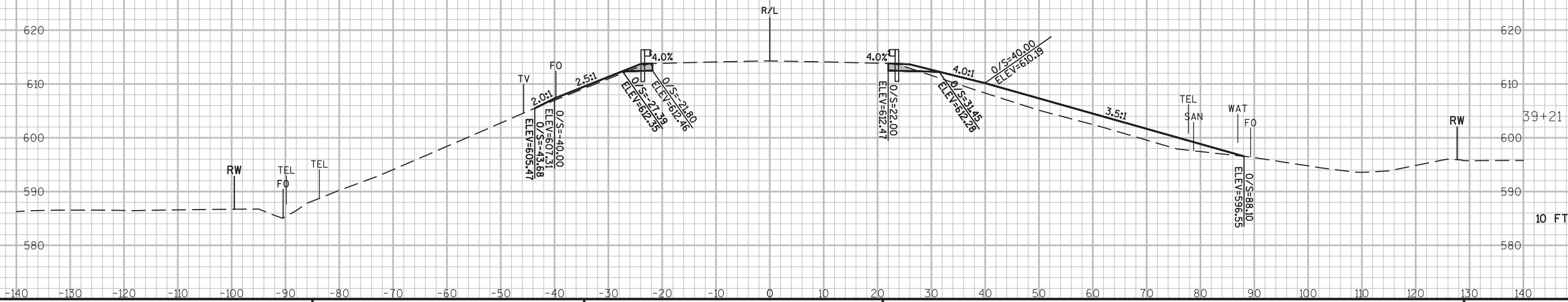
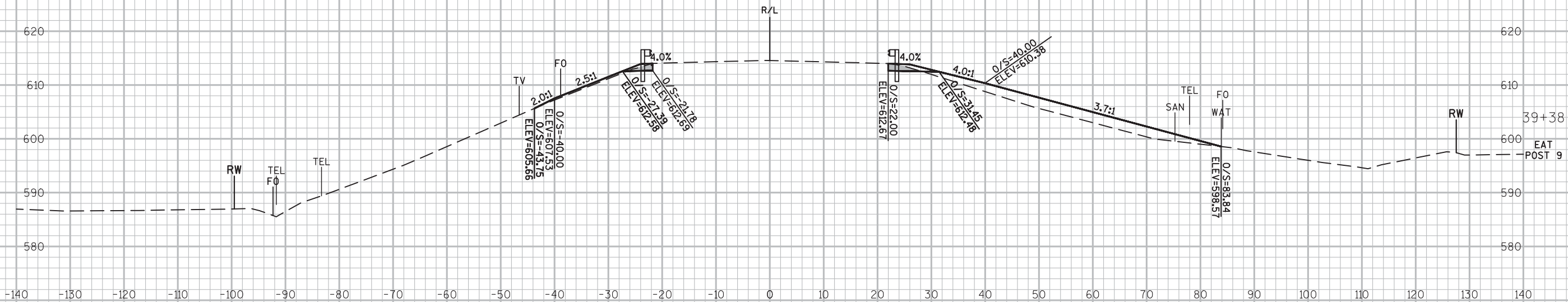
PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD SHEET 49

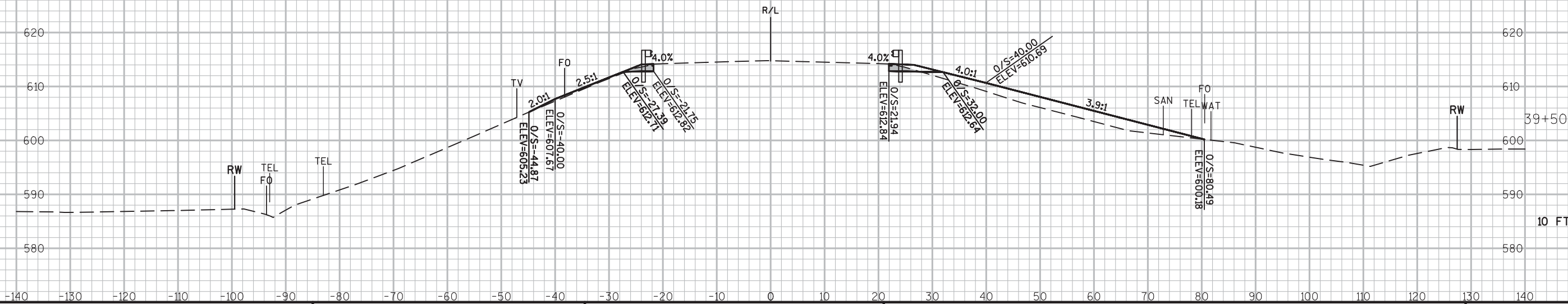
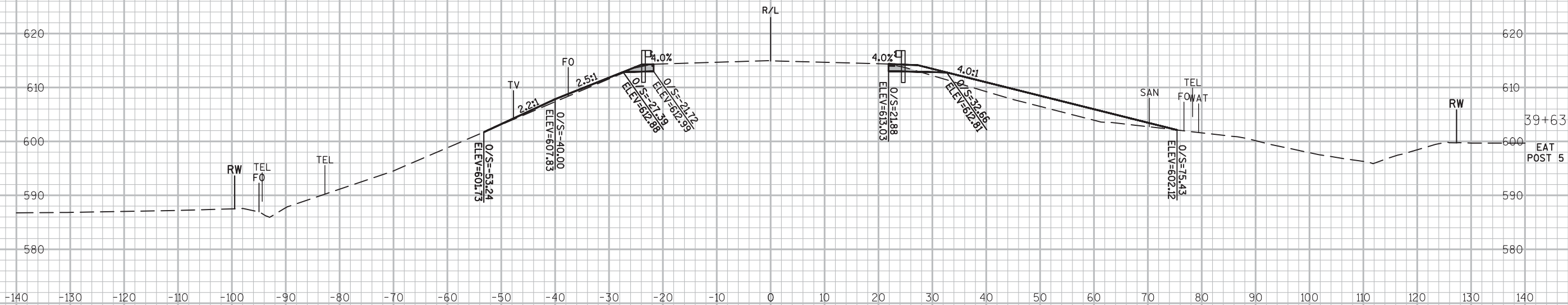
NOTE
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LEGEND
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PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

CROSS SECTIONS: B-31-18 GUARDRAIL

SHEET

224

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETSP\AN\090201-XS.DWG
LAYOUT NAME - 090218-XS

PLOT DATE : 11/21/2017 2:50 PM

PLOT BY : SCOTT KAISER

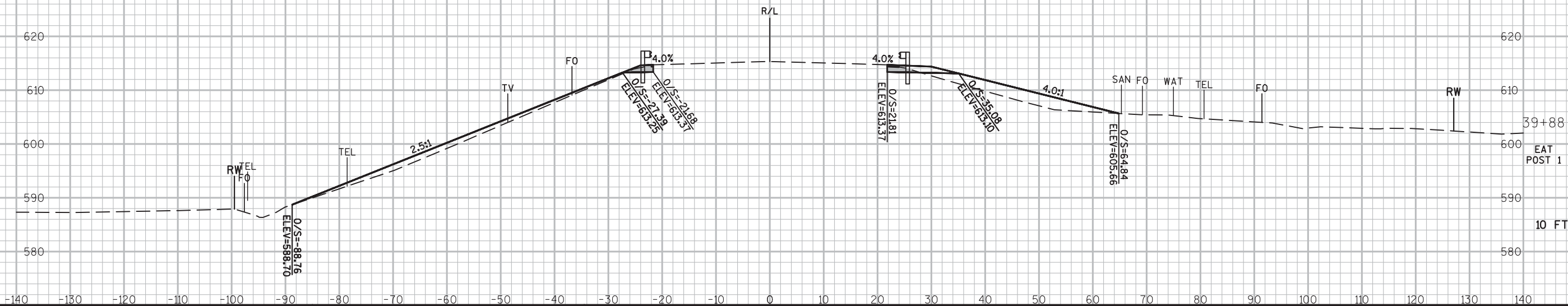
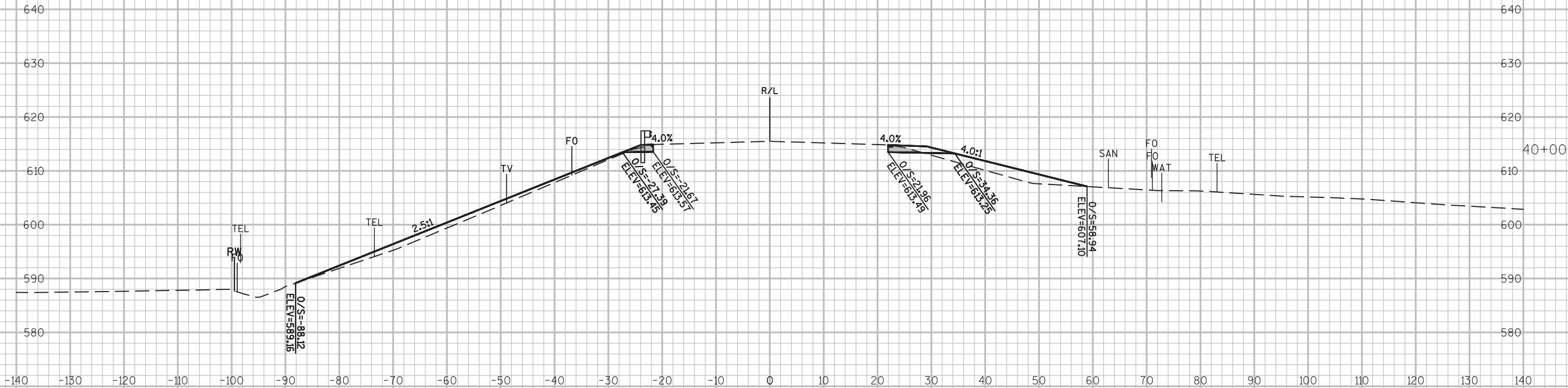
PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD SHEET 49

NOTE
GRADING LIMITS BEGIN AT THE EXISTING EDGE
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LEGEND
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PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

CROSS SECTIONS: B-31-18 GUARDRAIL

SHEET

225

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090219-XS

PLOT DATE : 11/21/2017 2:50 PM

PLOT BY : SCOTT KAISER

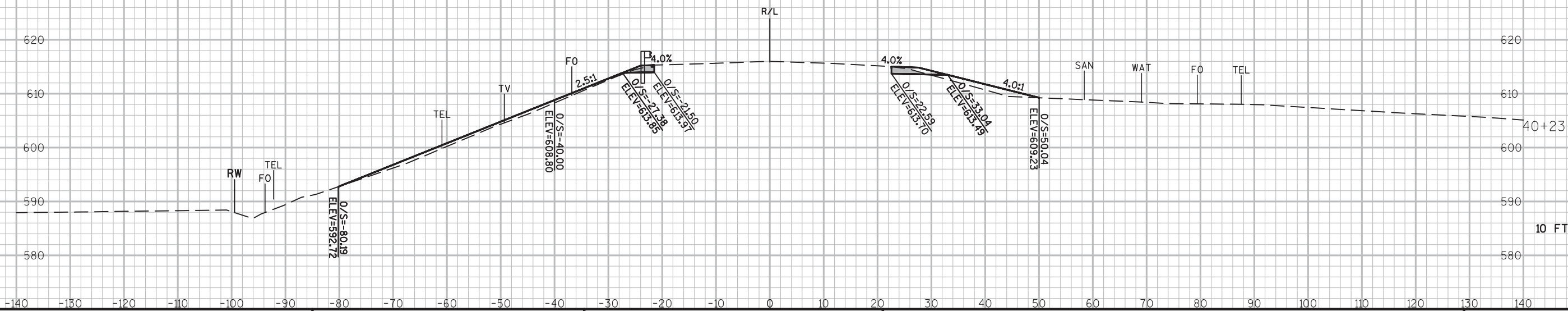
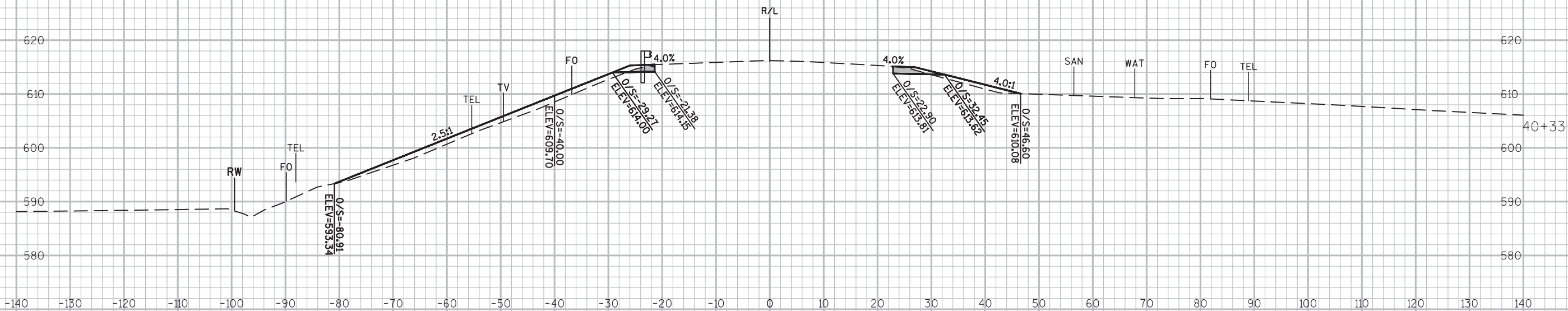
PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD SHEET 49

NOTE
GRADING LIMITS BEGIN AT THE EXISTING EDGE
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LEGEND
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PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

CROSS SECTIONS: B-31-18 GUARDRAIL

SHEET

226

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090220-XS

PLOT DATE : 11/21/2017 2:51 PM

PLOT BY : SCOTT KAISER

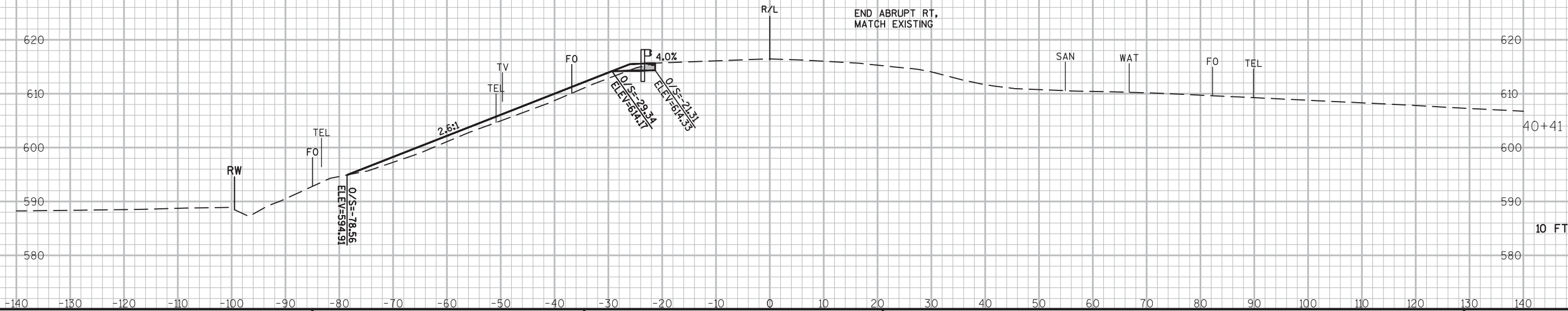
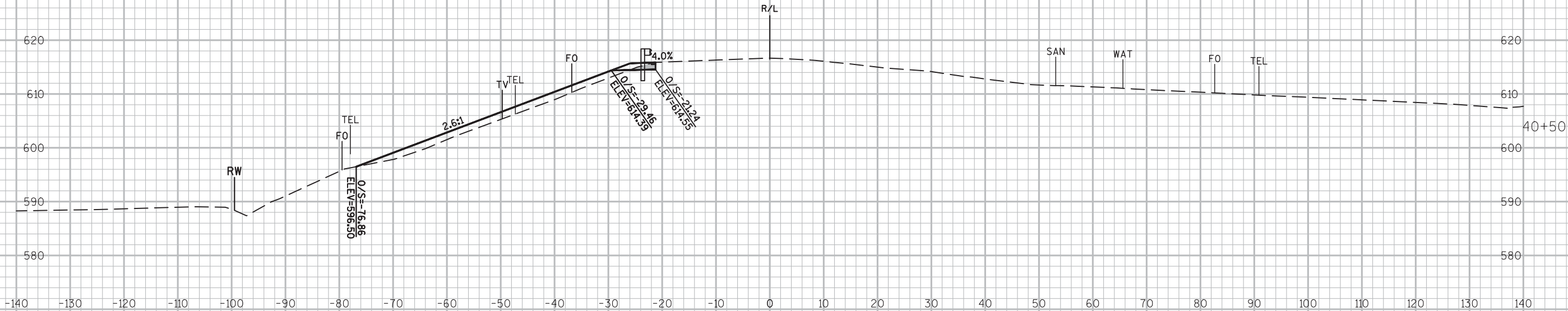
PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDs SHEET 49

NOTE
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LEGEND
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PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

CROSS SECTIONS: B-31-18 GUARDRAIL

SHEET

227

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADD\14702471\SHEETS\PLAN\090201-XS.DWG
LAYOUT NAME - 090221-XS

PLOT DATE : 11/21/2017 2:51 PM

PLOT BY : SCOTT KAISER

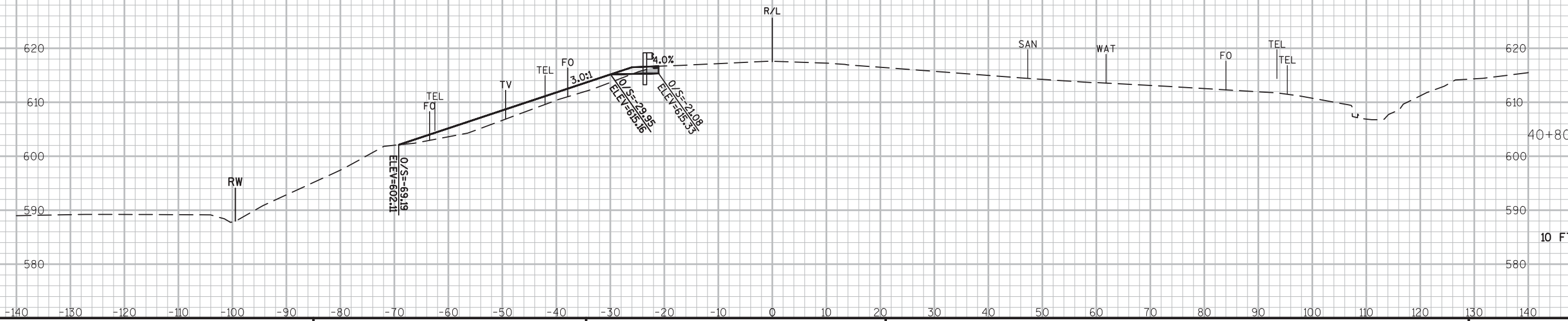
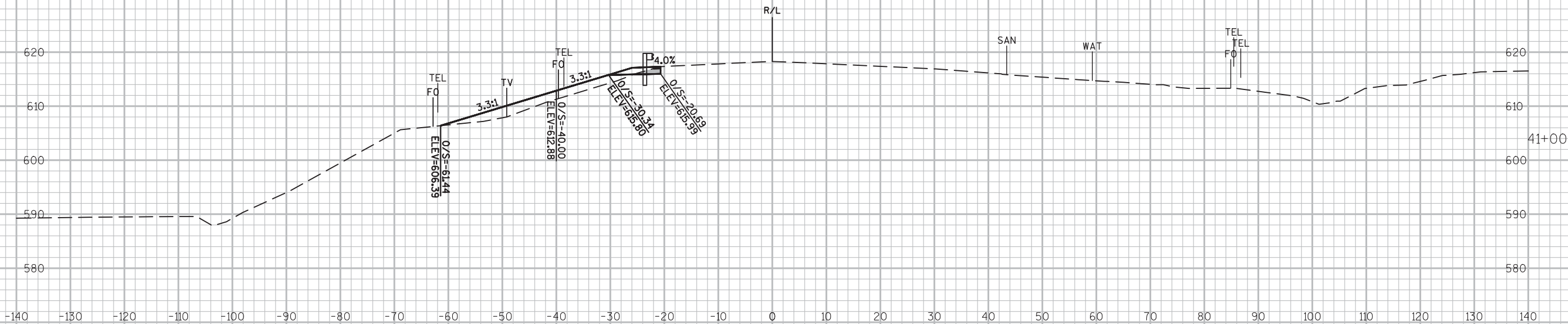
PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADD\ SHEET 49

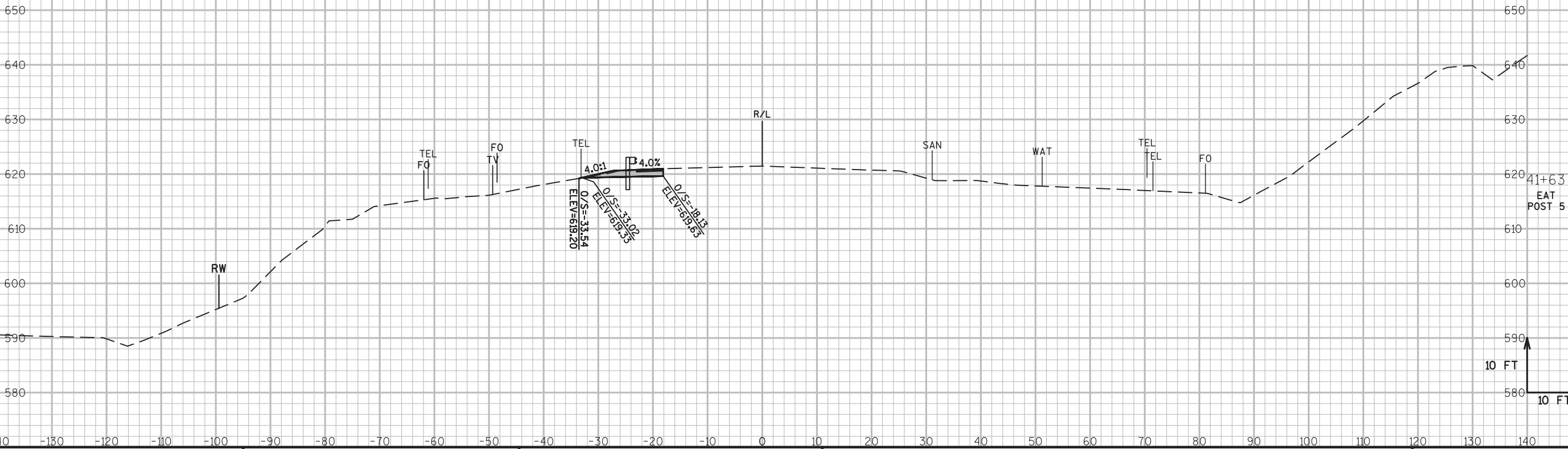
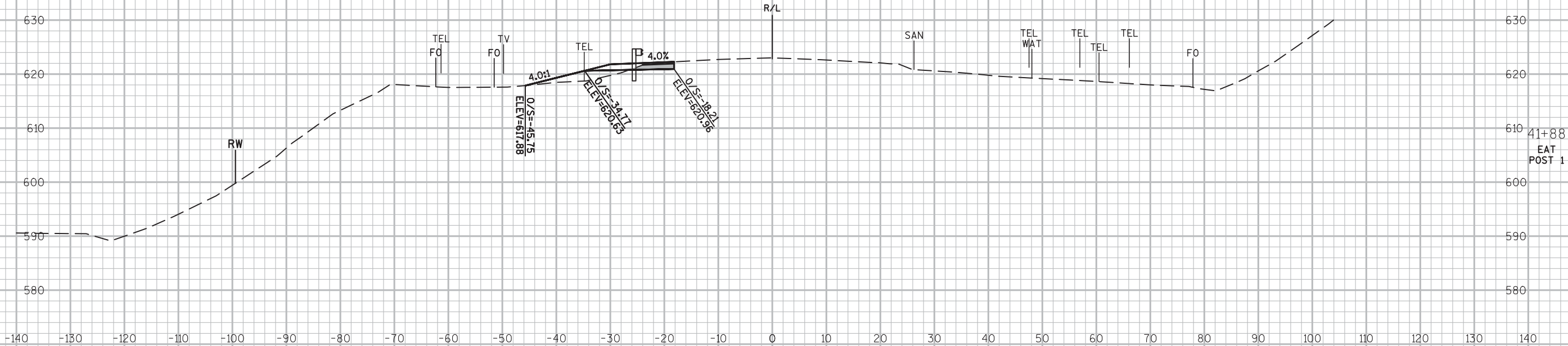
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LEGEND
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10 FT
10 FT

PROJECT NO:1470-24-71

HWY:STH 42

COUNTY:KEWAUNEE

CROSS SECTIONS: B-31-18 GUARDRAIL

SHEET

230

FILE NAME : P:\49XX\4929.DP.15.STH42.KEW\CADDS\14702471\SHEETSPLAN\090201-XS.DWG
LAYOUT NAME - 090224-XS

PLOT DATE : 11/21/2017 2:52 PM

PLOT BY : SCOTT KAISER

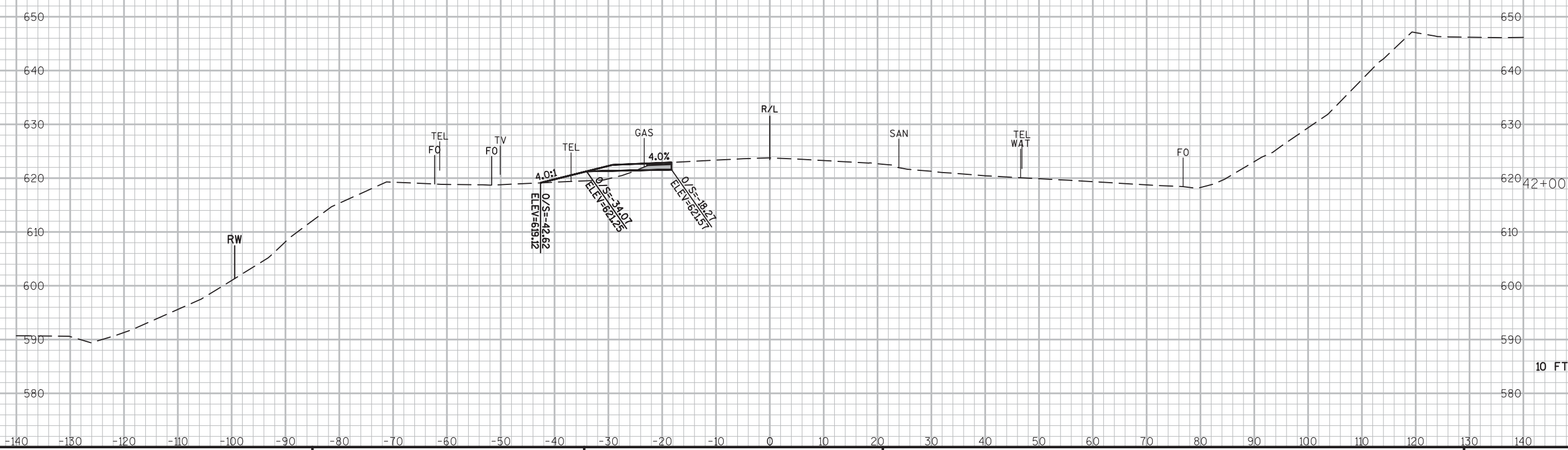
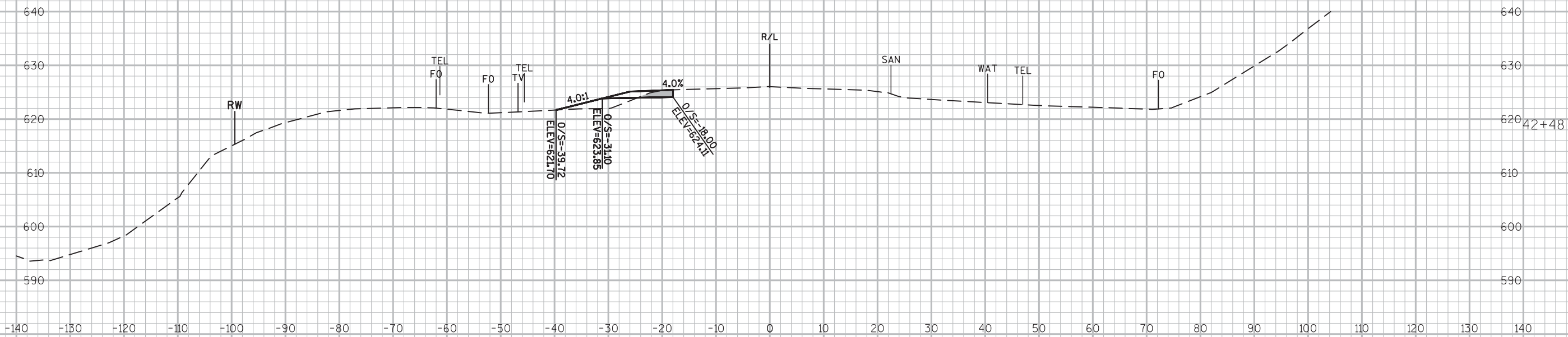
PLOT NAME :

PLOT SCALE : 1 IN:20 FT

WISDOT/CADDS SHEET 49

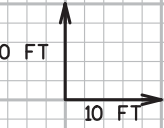
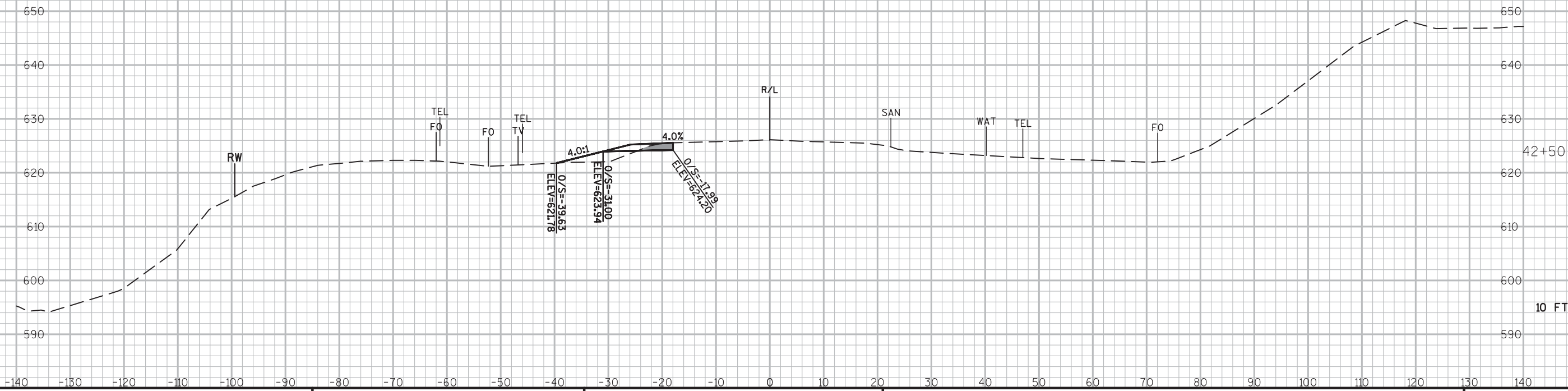
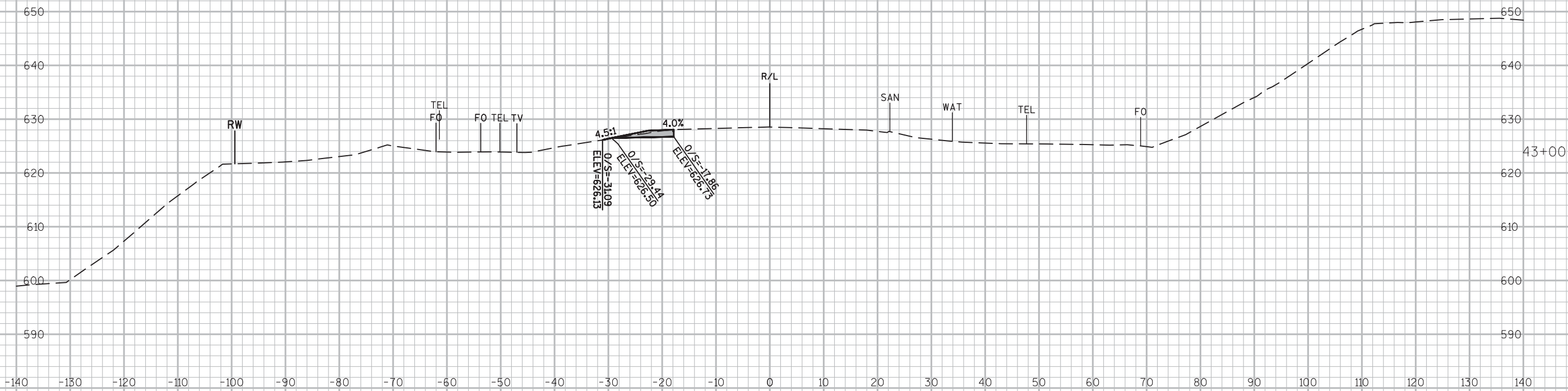
NOTE
GRADING LIMITS BEGIN AT THE EXISTING EDGE
OF PAVED SHOULDER AND IS NOT AN EVEN
OFFSET FROM THE REFERENCE LINE.

LEGEND
EXISTING BASE AGGREGATE COURSE IN GOOD
CONDITION TO REMAIN AS APPROVED BY THE
ENGINEER. SEE SHOULDER WIDENING EARTHWORK &
BASE AGGREGATE FOR GUARDRAIL DETAIL FOR
ADDITIONAL INFORMATION.



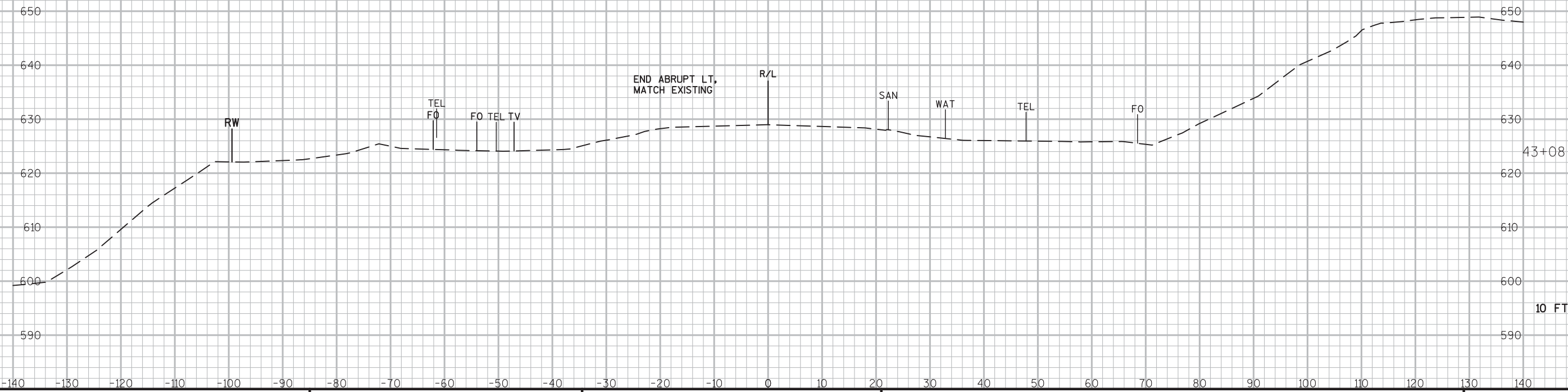
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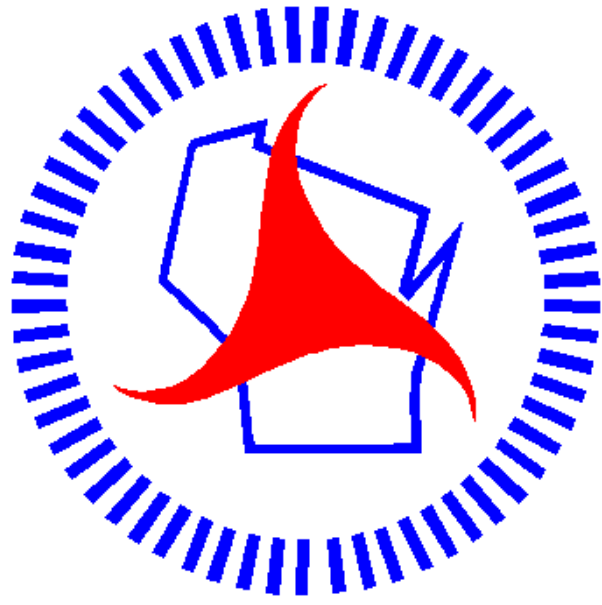
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