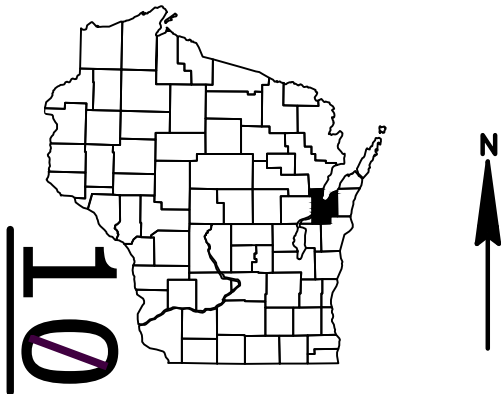


ORDER OF SHEETS	
Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure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

TOTAL SHEETS = 302



DESIGN DESIGNATION		
A.A.D.T.	2015	= 32,500
A.A.D.T.	2035	= 50,300
D.H.V.		= 5,080
D.D.		= 62/38
T.		= 5.3%
DESIGN SPEED		= 70 MPH
ESALS		= 4,569,800

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	

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

SHAWANO - GREEN BAY

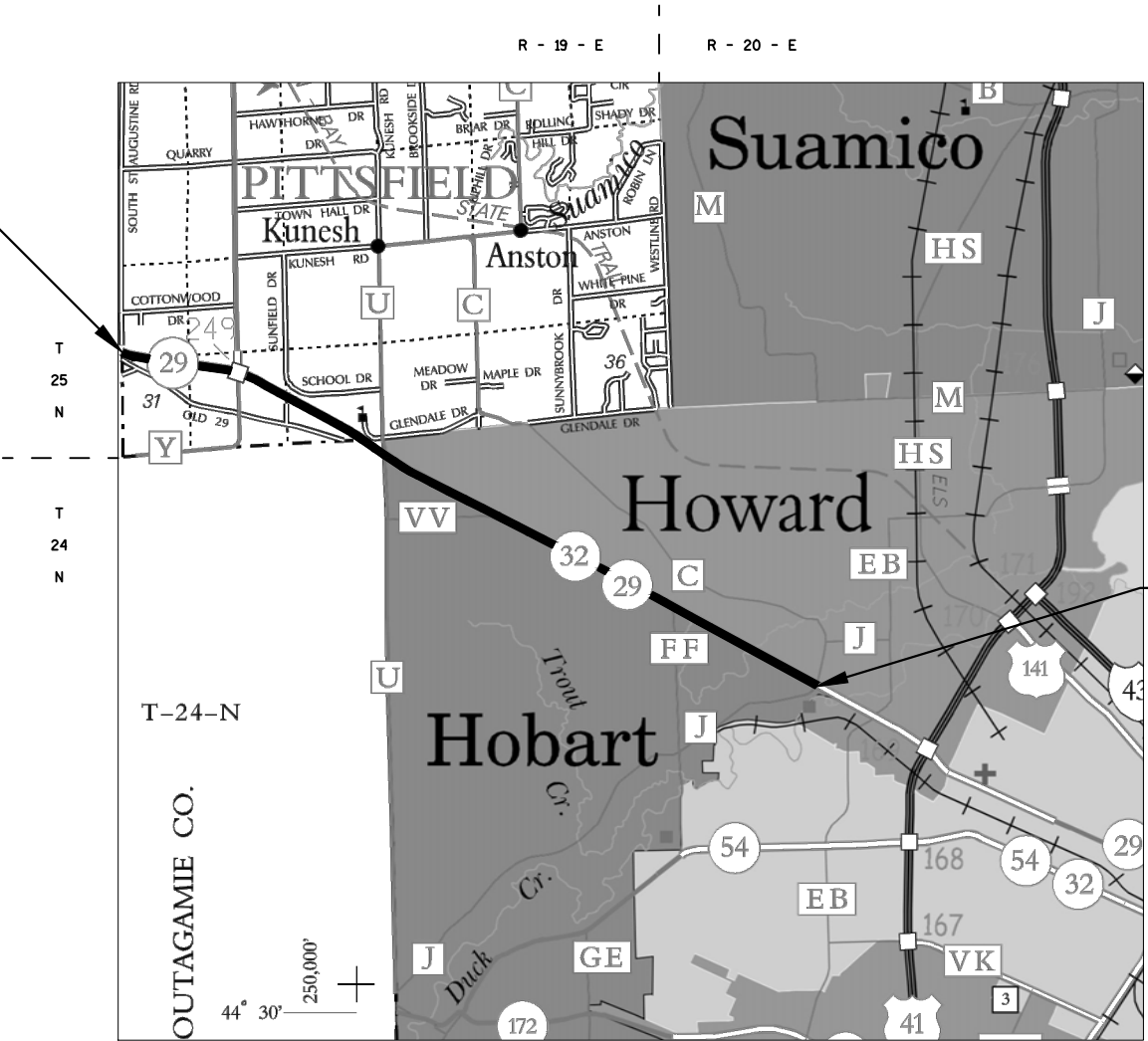
WCL - CTH J

STH 29

BROWN COUNTY

STATE PROJECT NUMBER
9202-10-71

BEGIN PROJECT 9202-10-71
STA 327+00
Y = 598,805.05
X = 39,628.98



END PROJECT 9202-10-71
STA 744+90.00

LAYOUT
SCALE 0 1 MI
TOTAL NET LENGTH OF CENTERLINE = 7.91 MI

HORIZONTAL POSITIONS SHOWN IN THIS PLAN ARE WISCONSIN COUNTY COORDINATES, BROWN COUNTY, NAD83 (1991), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES MAY BE USED AS GROUND DISTANCES

VERTICAL POSITIONS SHOWN IN THIS PLAN ARE WISCONSIN COUNTY COORDINATES, BROWN COUNTY, NAVD83 (1991)

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
9202-10-71	WISC 2014391	1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	
Surveyor	WisDOT NE REGION
Designer	A GRASSE
Project Manager	J ASHAUER
Regional Examiner	
Regional Supervisor	D SEGERSTROM
APPROVED FOR THE DEPARTMENT	
DATE: 5/28/14	(Signature)

UTILITIES

Mike Olsen
ATC Management, Inc. - Electricity
801 O'keefe Rd
P.O. Box 6113
De Pere, WI 54115-6113
(920) 338-6582
molsen@atcllc.com

Vince Albin
Time Warner Cable, a Delaware Limited Partnership - Communication Line
3520 Destination Dr
Appleton, WI 54915
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Robert Michaelson
Central Brown County Water Authority - Water
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P.O. Box 1090
Manitowoc, WI 54221-1090
(920) 686-4354

Nathan Qualls
Green Bay Metropolitan Sewerage District - Sewer
2231 N Quincy St
Green Bay, WI 54302-1248
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NQualls@newwater.us

Eric Adair
AT&T Wisconsin - Communication Line
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Green Bay, WI 54301
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az9216@att.com

Rick Vincent
Net Lec LLC - Communication Line
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P.O. Box 19079
Green Bay, WI 54307-9079
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rick.vincent@nsight.com

Dennis Baer
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122 S St Augustine St
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Lori Butry
Wisconsin Public Service Corporation - Gas/Petroleum
700 N Adams St
P.O. Box 19001
Green Bay, WI 54307-9001
(920) 433-1703
LAButry@integrysgroup.com

Kevin Huff
Qwest Communications - Communication Line
13057 S. Monitor Avenue
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(708) 837-7927
kevin.huff@centurylink.com

Jerry Lancelle
Village of Hobart - Water
2990 S Pinetree Rd
Hobart, WI 54155
(920) 869-3807
jerry@hobart-wi.org

Lori Butry
Wisconsin Public Service Corporation - Electricity
700 N Adams St
P.O. Box 19001
Green Bay, WI 54307-9001
(920) 433-1703
LAButry@integrysgroup.com



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

GENERAL NOTES

ELEVATIONS OF CULVERT PIPE REPLACEMENTS SHALL BE THE SAME AS EXISTING, UNLESS OTHERWISE DETERMINED BY THE ENGINEER IN THE FIELD.

EROSION CONTROL ITEMS SHOWN ARE SUGGESTED LOCATIONS, THE EXACT LOCATIONS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

TOPSOIL, FERTILIZER, SEED AND MULCH SHALL BE PLACED ON ALL EXPOSED DISTURBED AREAS.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLAN ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN. THE CONSTRUCTOR SHALL NOTIFY DIGGERS HOTLINE AND ALL UTILITIES IN THE VICINITY OF THE PROJECT TO LOCATE THEIR FACILITIES AT LEASET THREE WORKING DAYS PRIOP TO BEGINNING WORK.

THE EXACT LOCATION FOR BUTT JOINTS AND SAW CUTS TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

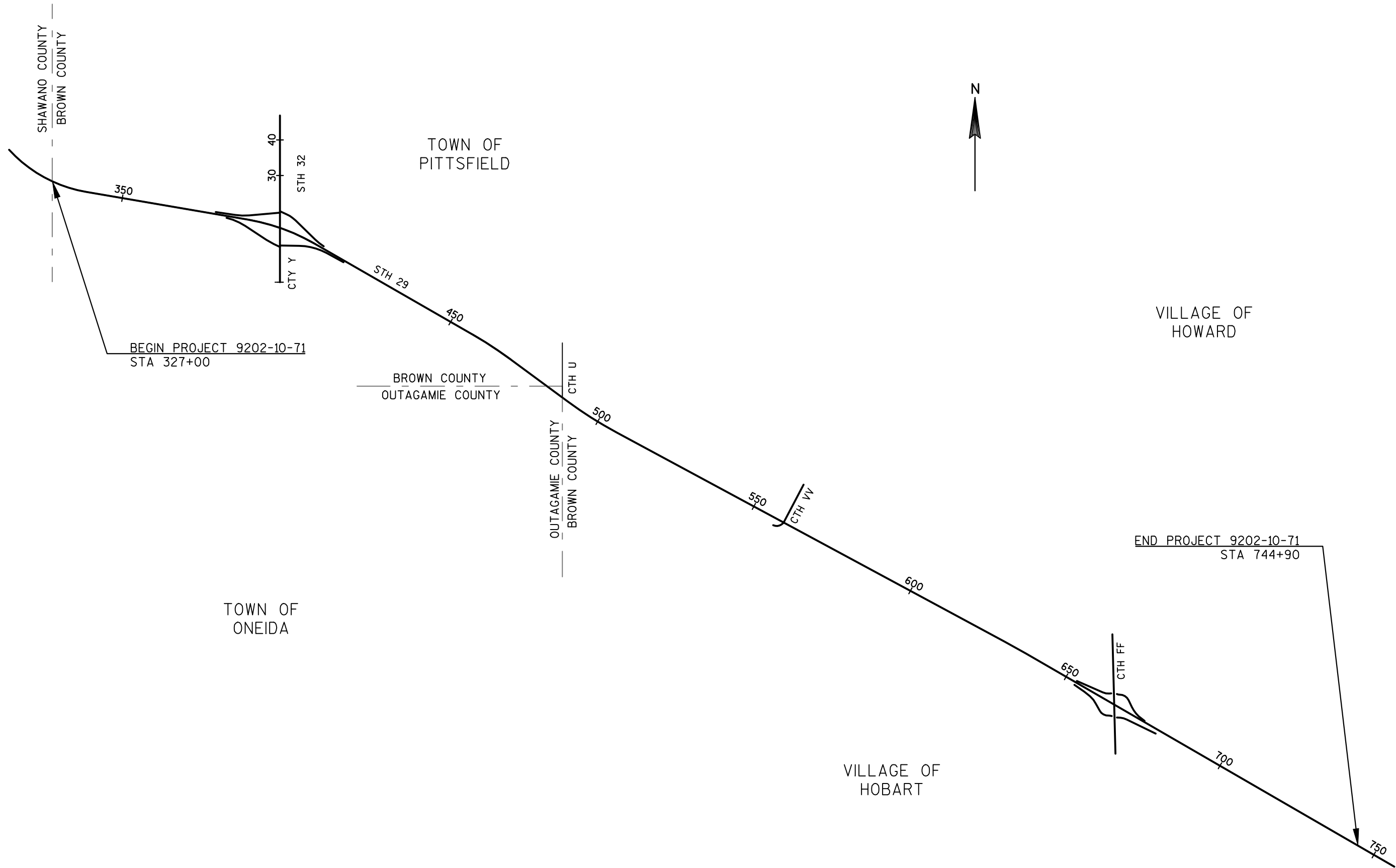
THE LOCATION OF THE CONCRETE JOINT REPAIRS ARE APPROXIMATE. THE EXACT LOCATIONS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

NE REGION SURVEY CONTACT PERSON

CORMAC MCINNIS
DEPARTMENT OF TRANSPORTATION
NORTHEAST REGION
944 VANDERPERREN WAY
GREEN BAY, WI 54304
920-492-5638
CORMAC.MCINNIS@DOT.WI.GOV

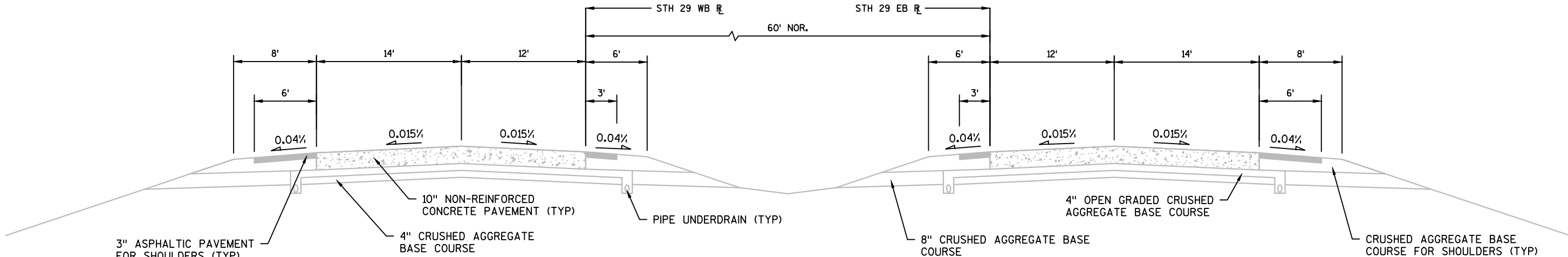
DNR AREA LIASON

JAMES DOPERALSKI JR
DEPARTMENT OF NATURAL RESOURCES
NORTHEAST REGION
2985 SHAWANO AVE
GREEN BAY, WI 54313
920-662-5119
JAMES.DOPERALSKI@WISCONSIN.GOV

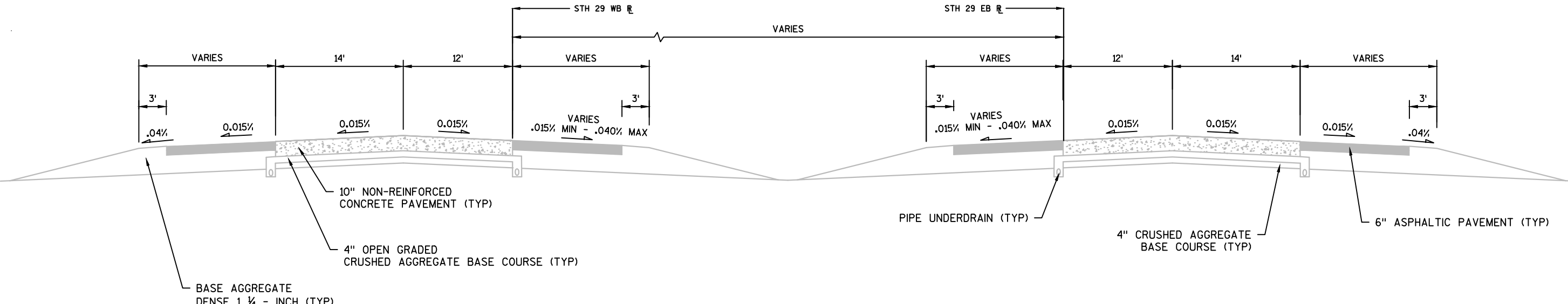


2

2

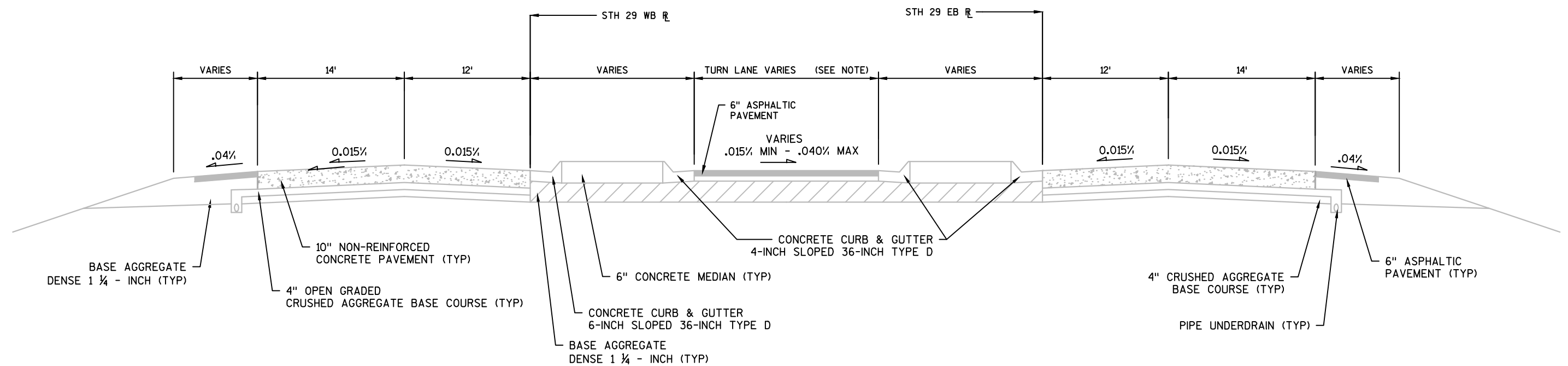


EXISTING TYPICAL SECTION STH 29
STA. 327+00 TO STA. 480+00
STA. 496+00 TO STA. 512+00



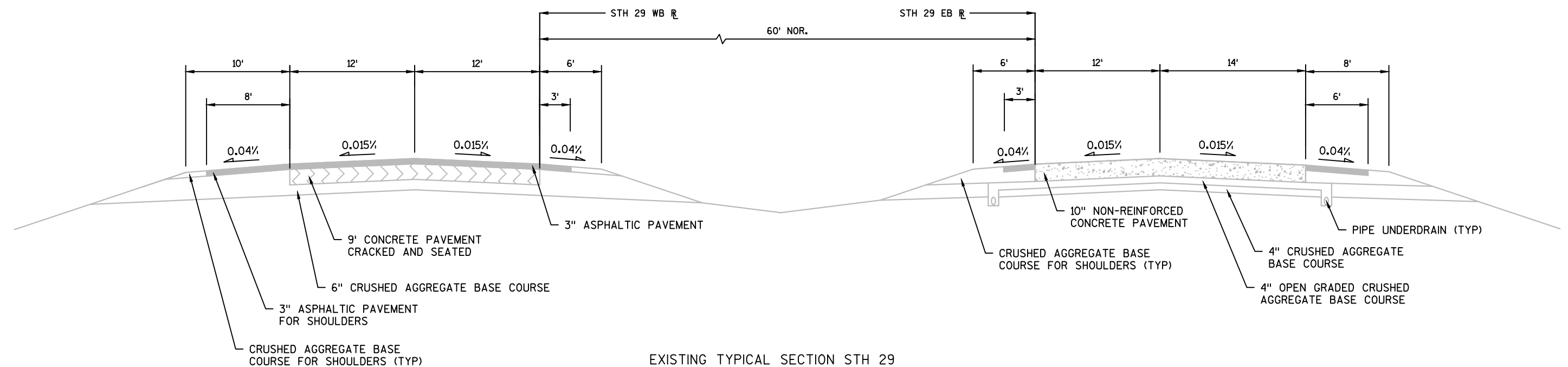
EXISTING TYPICAL SECTION STH 29
STA. 480+00 TO STA. 484+75
STA. 489+00 TO STA. 496+00

NOTE: OUTSIDE LANES VARY DUE TO
TURN LANES AT CTH U
INTERSECTION

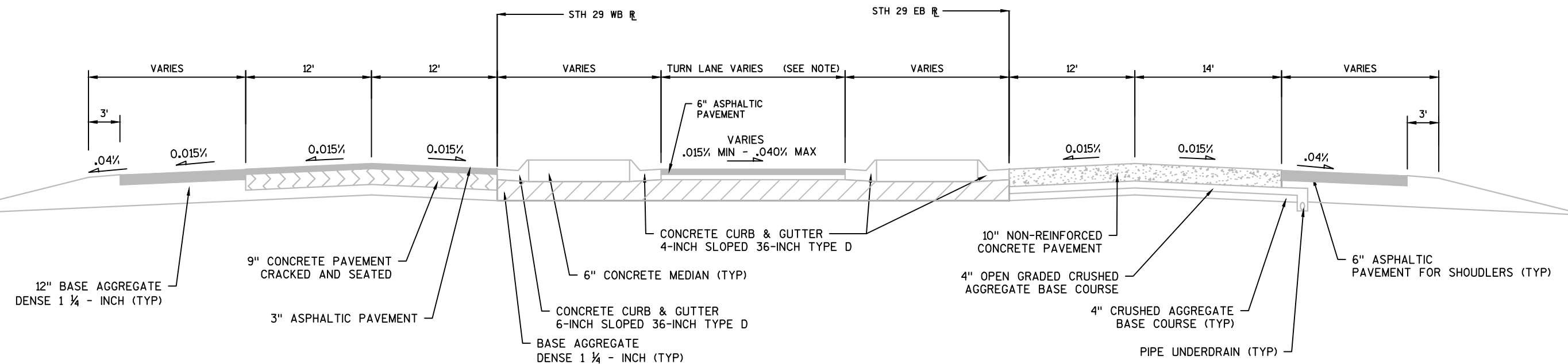
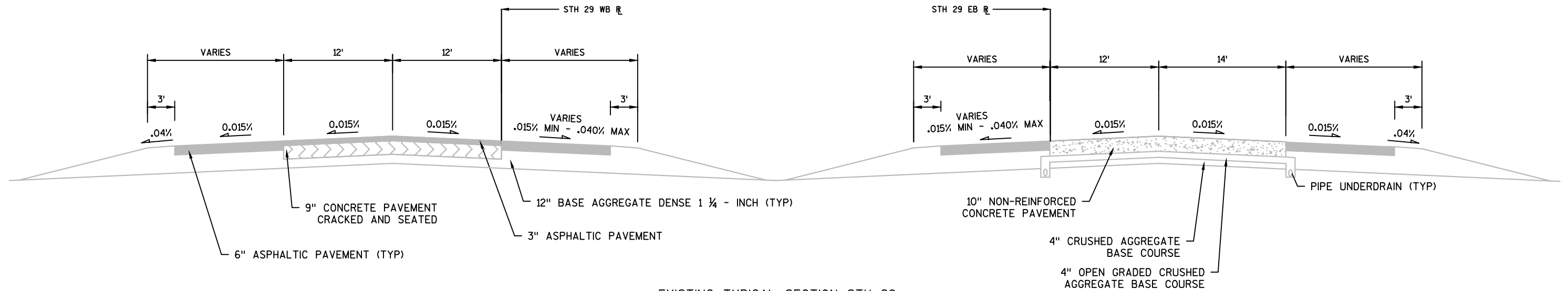


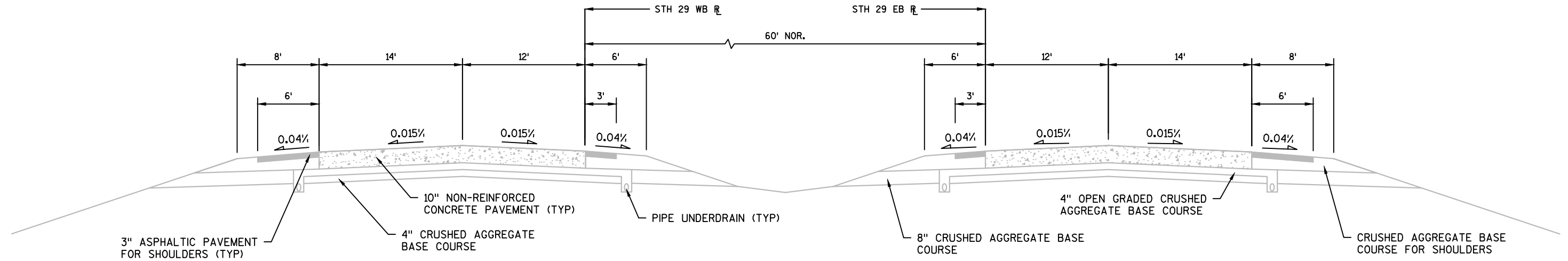
EXISTING TYPICAL SECTION STH 29
STA. 484+75 TO STA. 489+00

NOTE: SEE PLAN FOR TURN LANE
CONFIGURATION

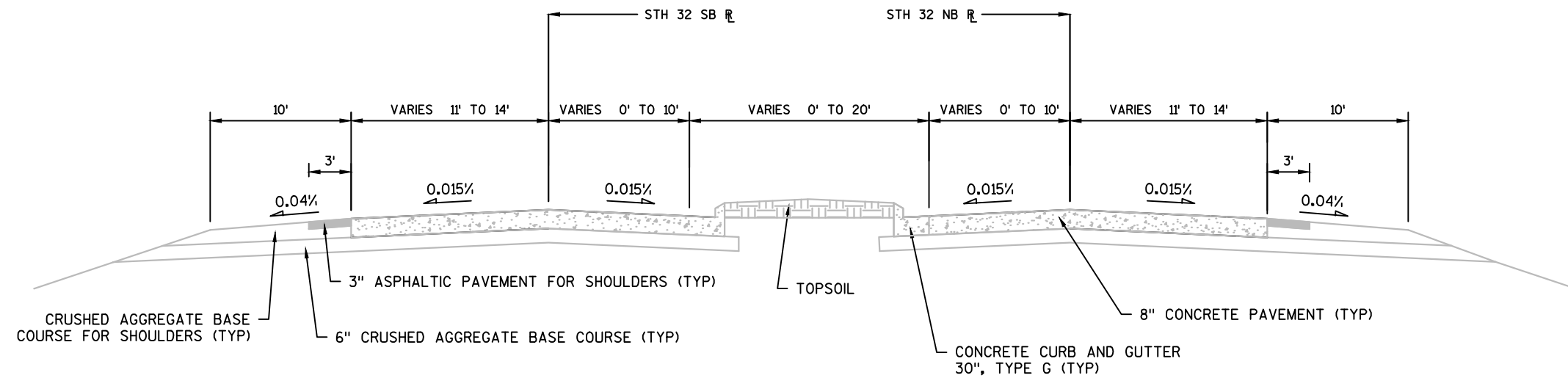


EXISTING TYPICAL SECTION STH 29
STA. 512+00 TO STA. 552+25
STA. 566+00 TO STA. 734+00

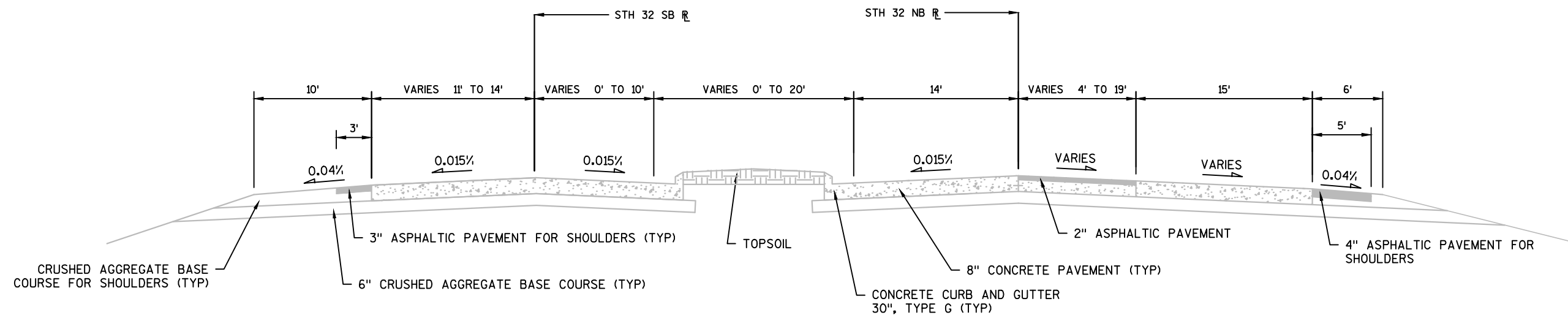




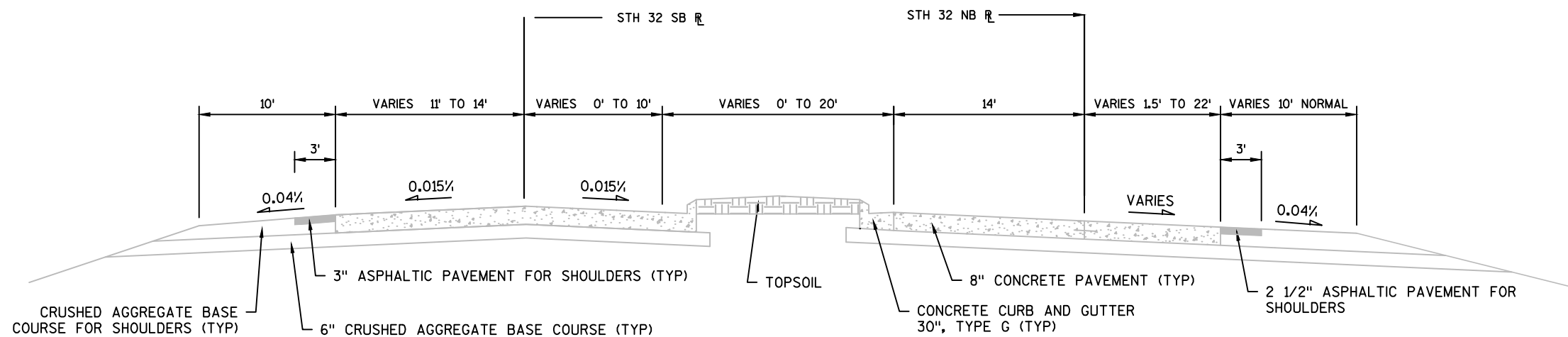
EXISTING TYPICAL SECTION STH 29
STA. 734+00 TO STA. 744+90



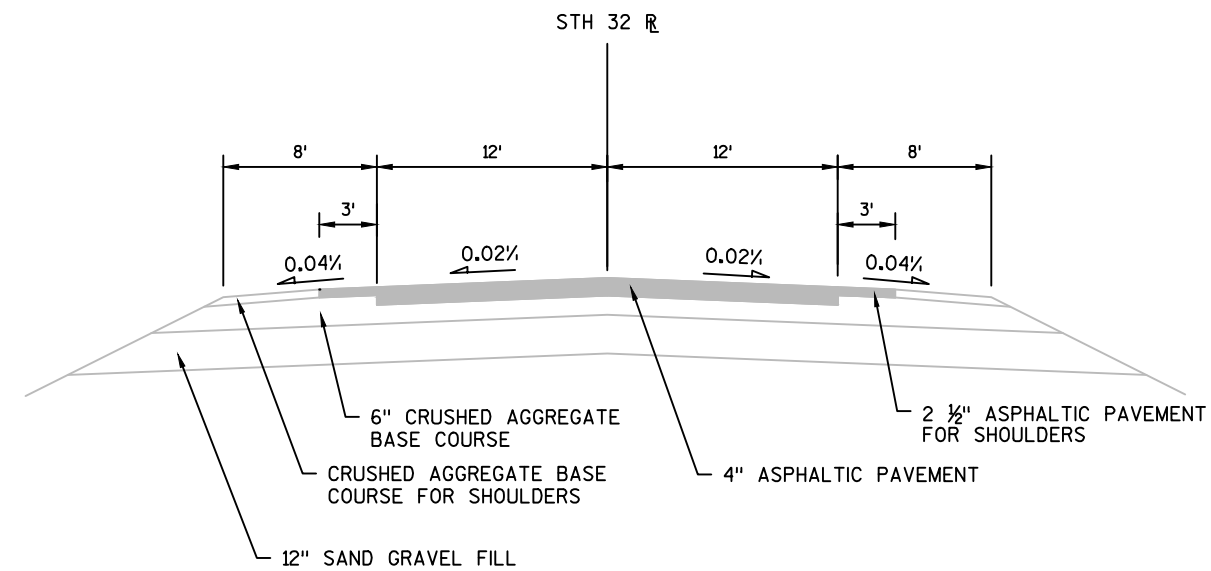
EXISTING TYPICAL SECTION STH 32
STA. 18+00 TO STA. 28+90
STA. 32+80 TO STA. 35+30



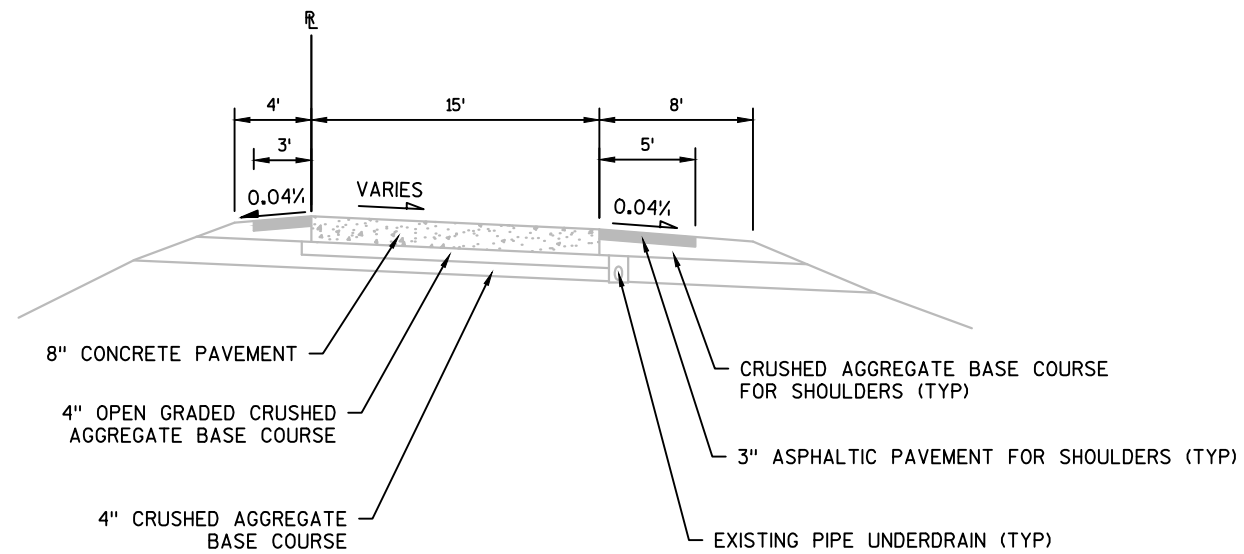
EXISTING TYPICAL SECTION STH 32
STA. 28+90 TO STA. 30+60



EXISTING TYPICAL SECTION STH 32
STA. 30+60 TO STA. 32+80
STA. 35+30 TO STA. 37+50



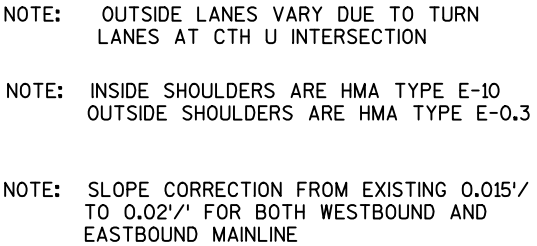
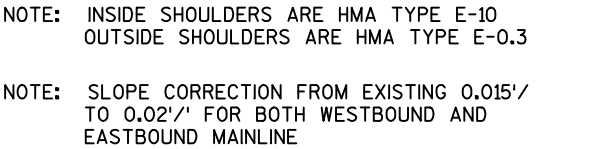
EXISTING TYPICAL SECTION STH 32
STA. 37+50 TO STA. 40+00

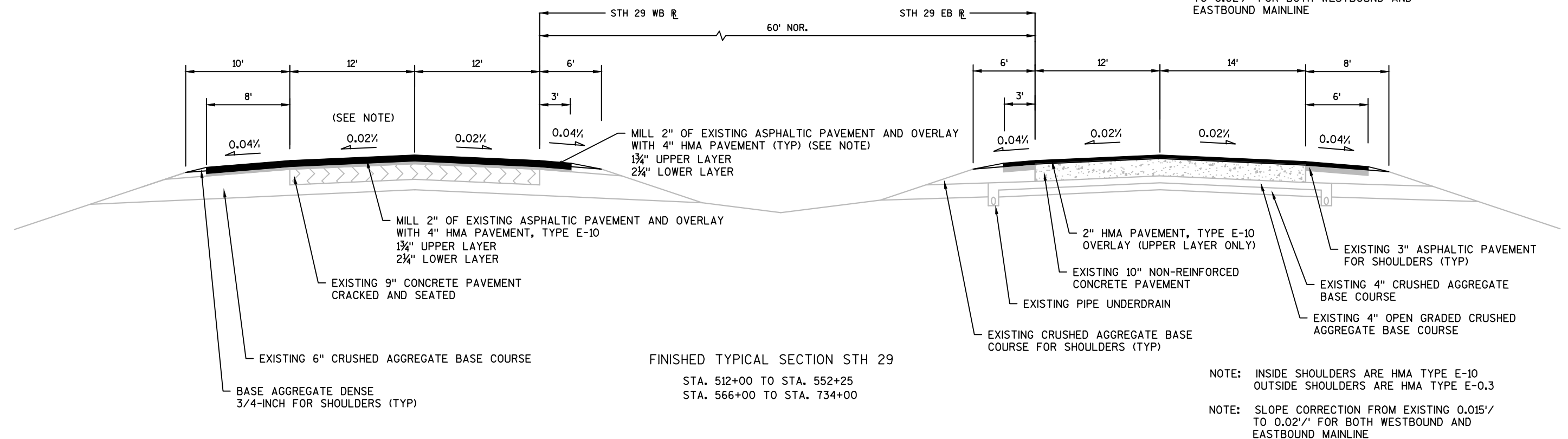
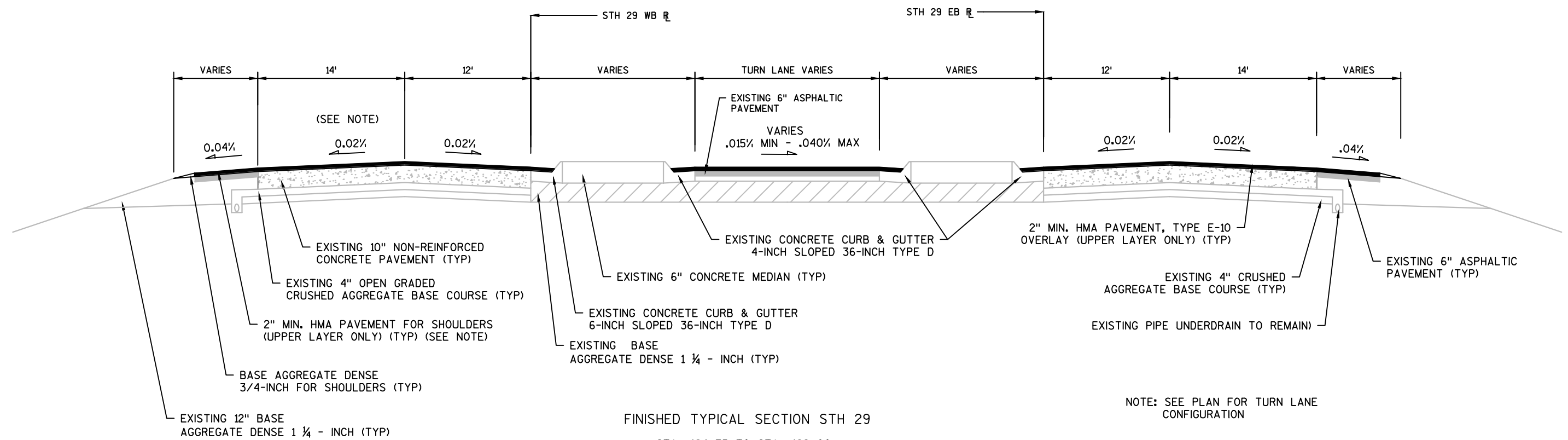


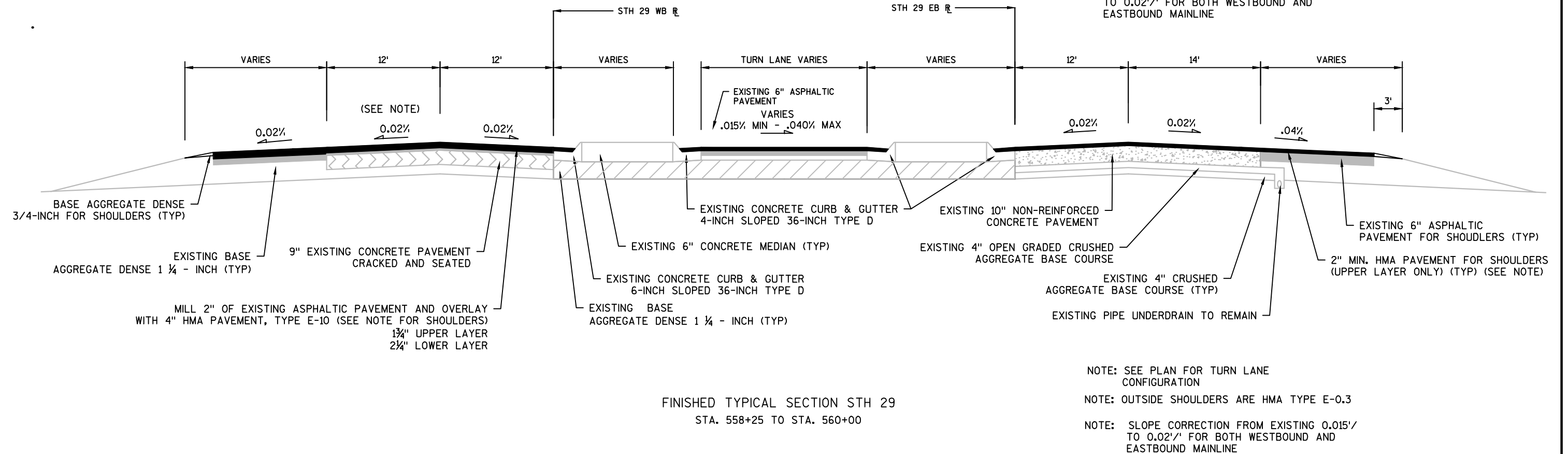
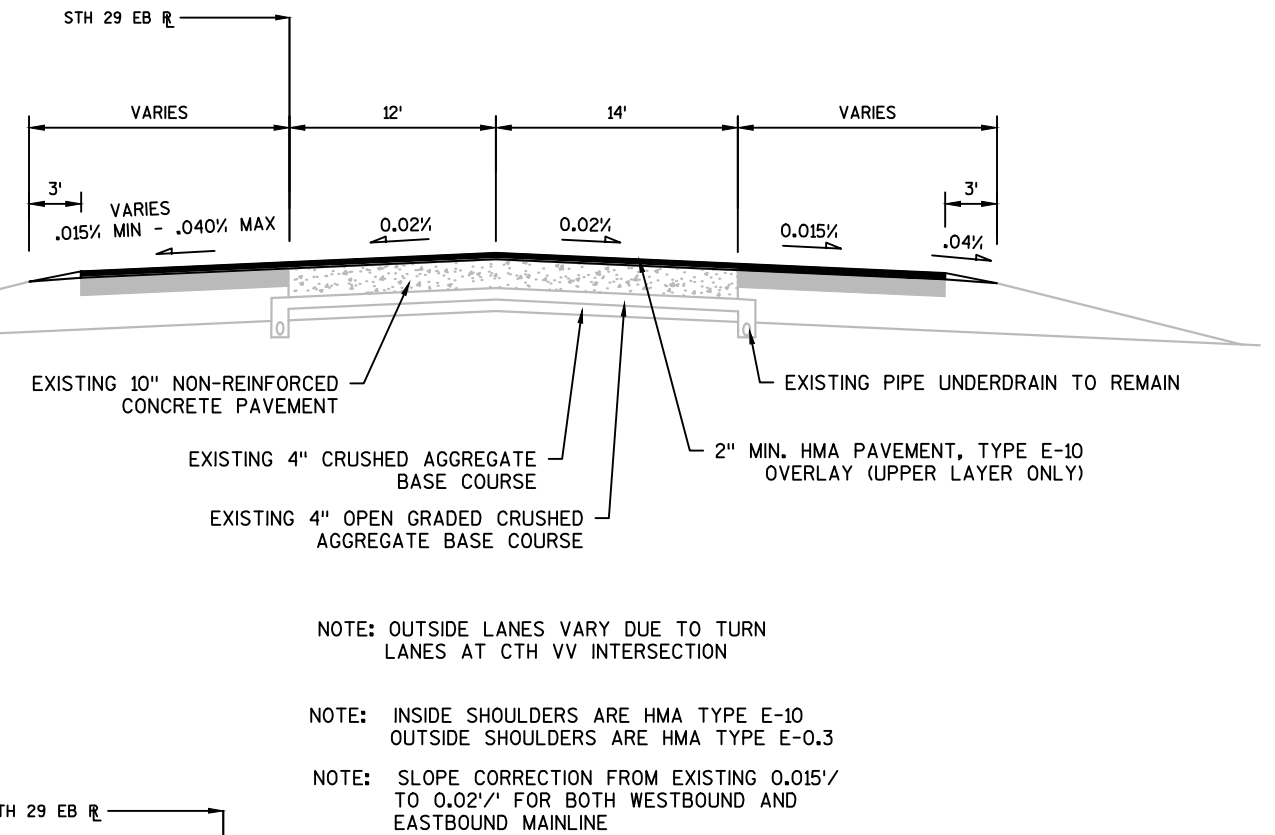
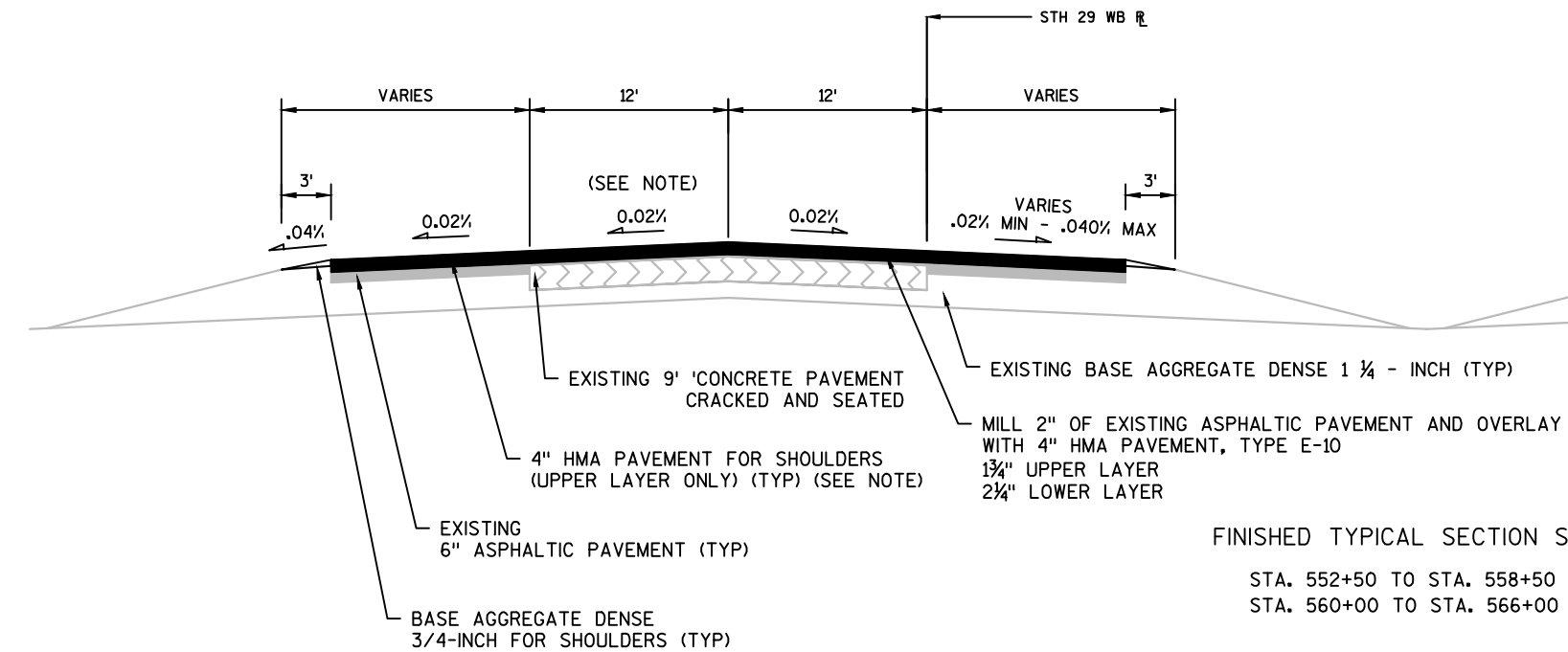
EXISTING TYPICAL SECTION STH 32 RAMP
ROTATE 180° ABOUT $\mathbb{R}$ FOR W.B. RAMPS

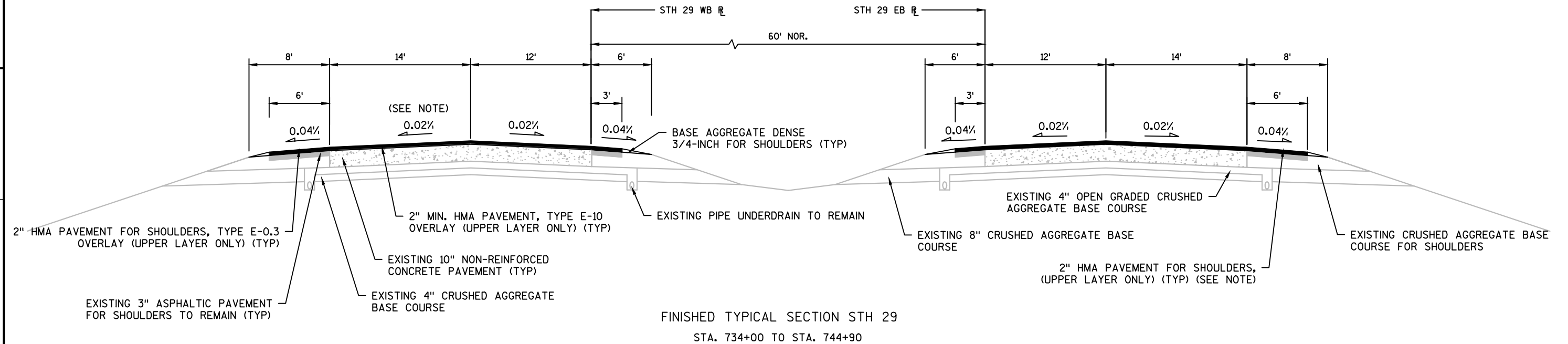
2

2



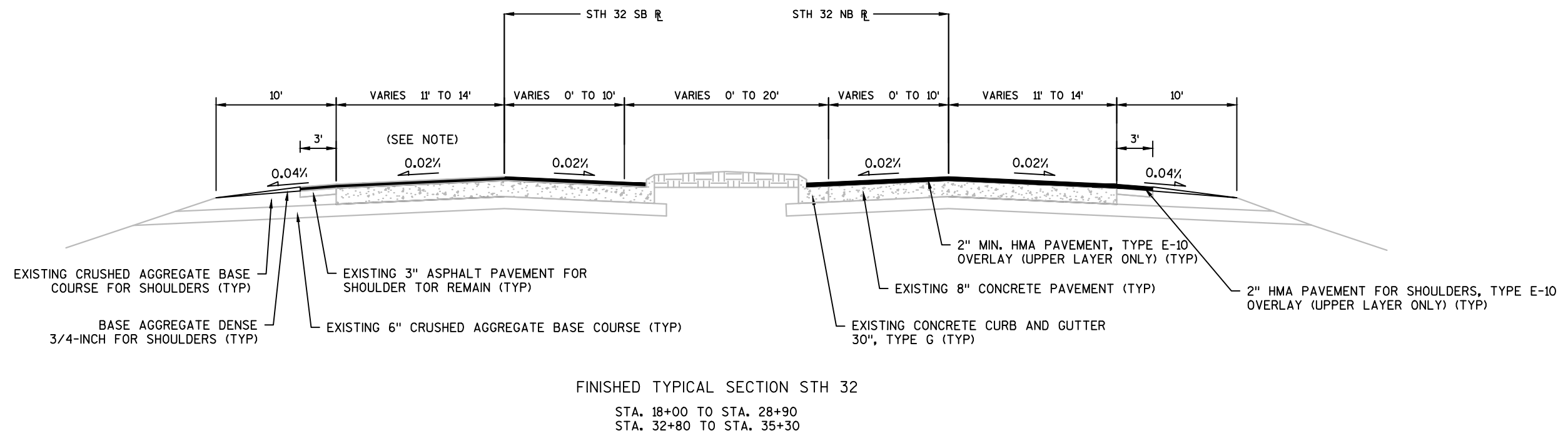




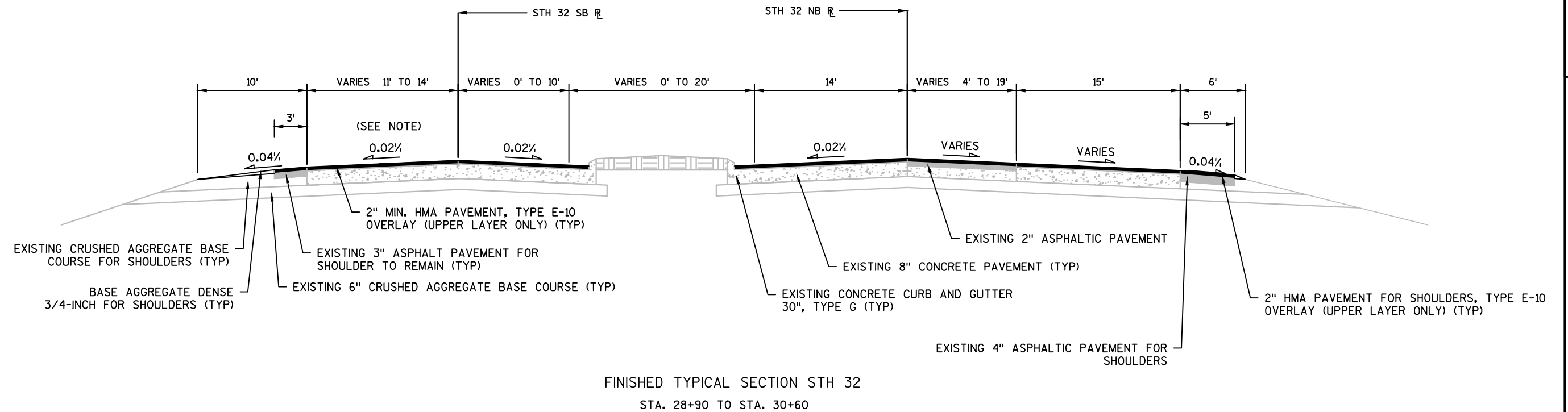


NOTE: INSIDE SHOULDERS ARE HMA TYPE E-10
OUTSIDE SHOULDERS ARE HMA TYPE E-0.3

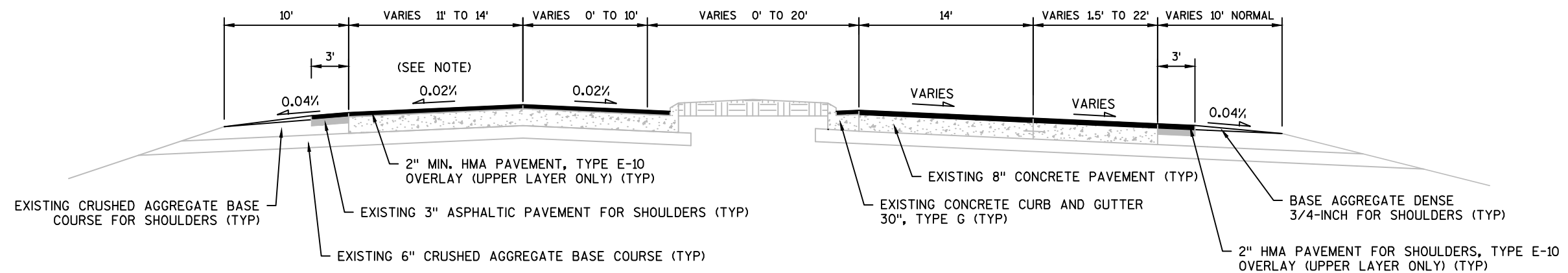
NOTE: SLOPE CORRECTION FROM EXISTING 0.015'/
TO 0.02'/' FOR BOTH WESTBOUND AND
EASTBOUND MAINLINE



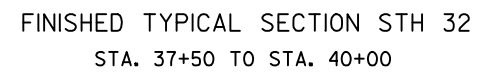
NOTE: SLOPE CORRECTION FROM EXISTING 0.015'/
TO 0.02'/' FOR BOTH WESTBOUND AND
EASTBOUND MAINLINE

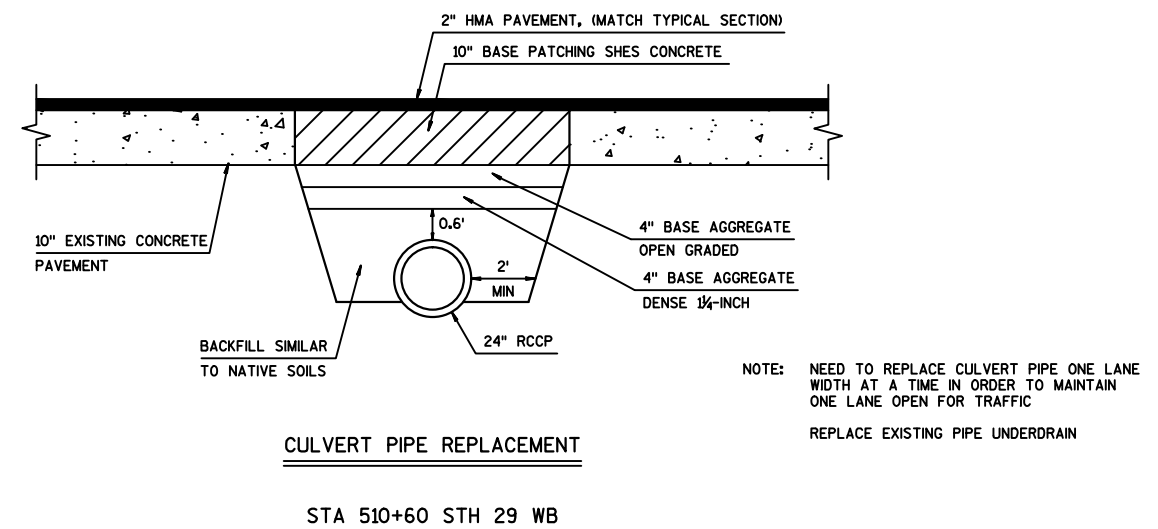
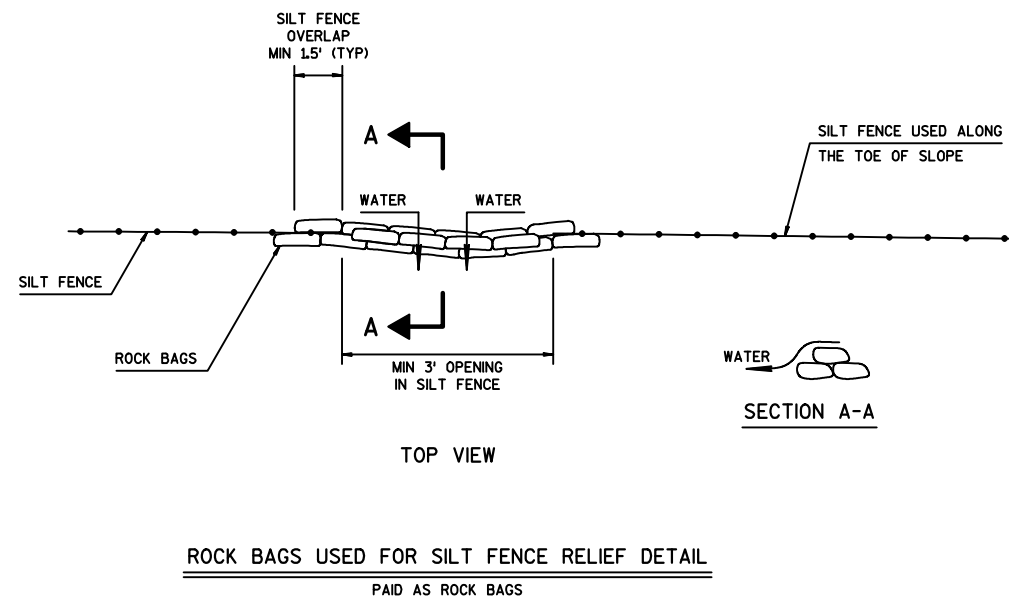
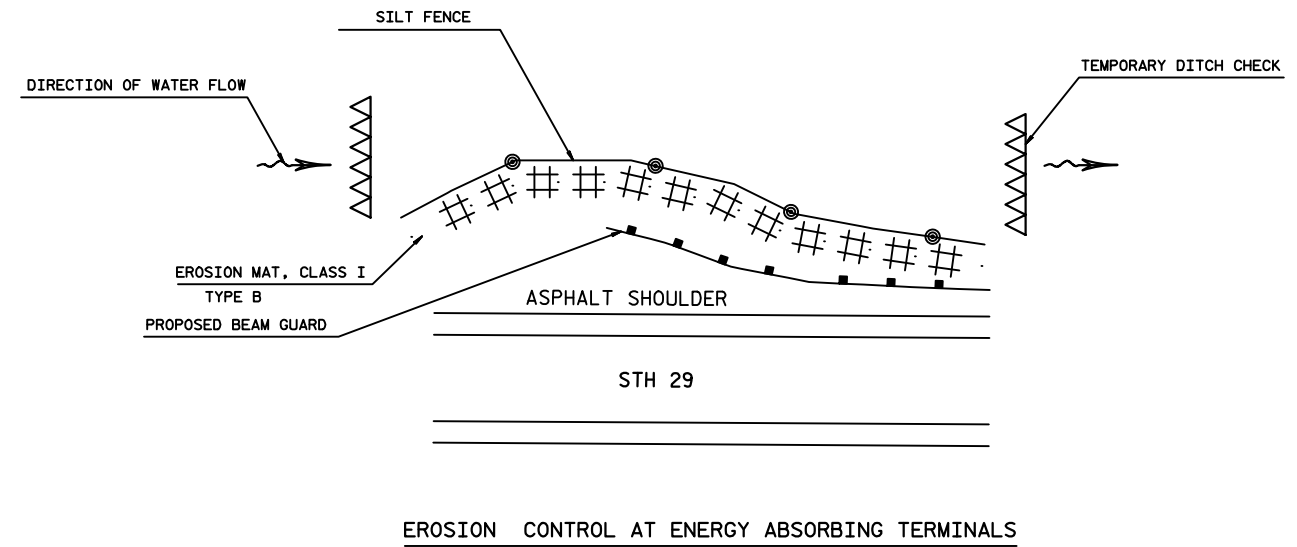
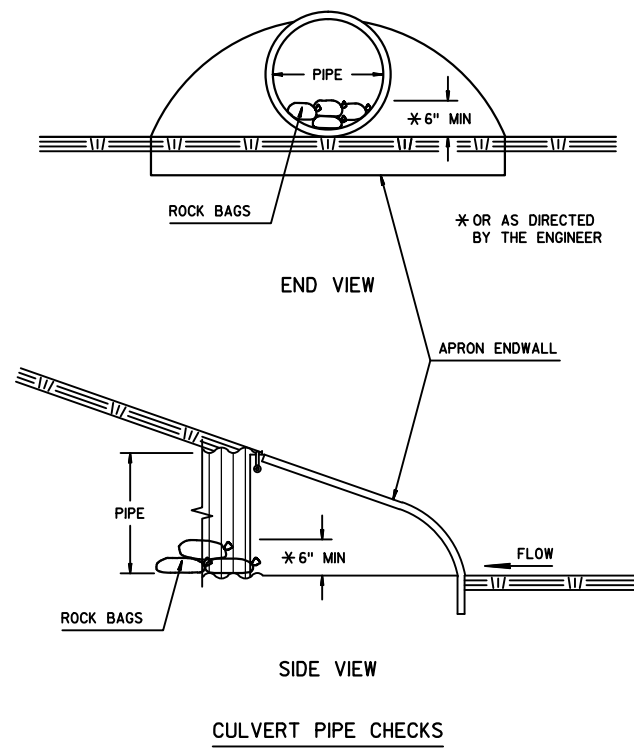


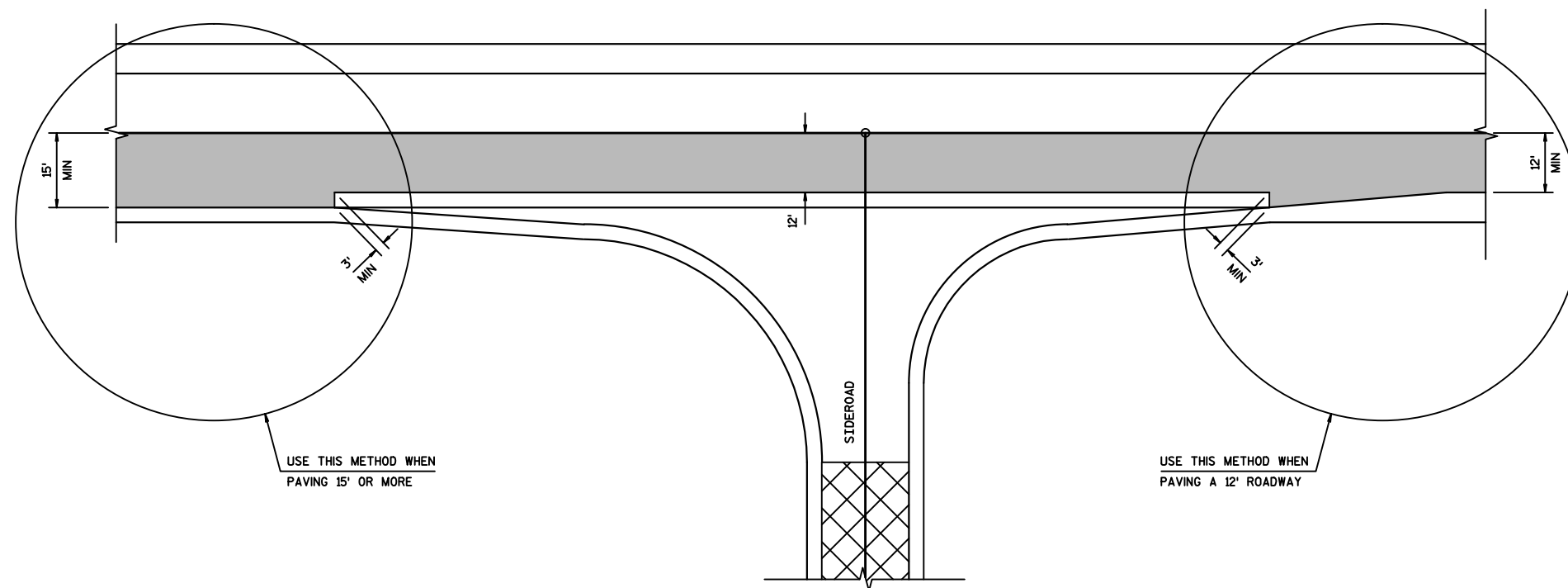
NOTE: SLOPE CORRECTION FROM EXISTING 0.015'/
TO 0.02'/ FOR BOTH WESTBOUND AND
EASTBOUND MAINLINE



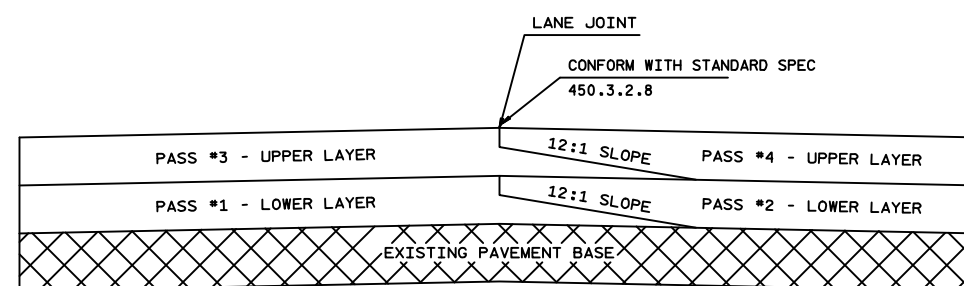
NOTE: SLOPE CORRECTION FROM EXISTING 0.015'/
TO 0.02'/ FOR BOTH WESTBOUND AND
EASTBOUND MAINLINE





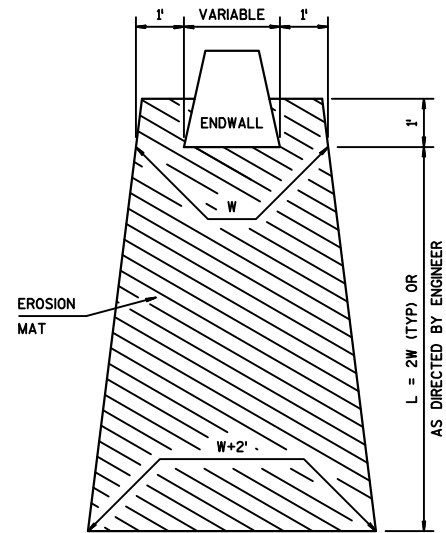


FINAL UPPER LAYER ASPHALTIC CONCRETE PAVING DETAIL AT INTERSECTIONS AND BYPASS LANES

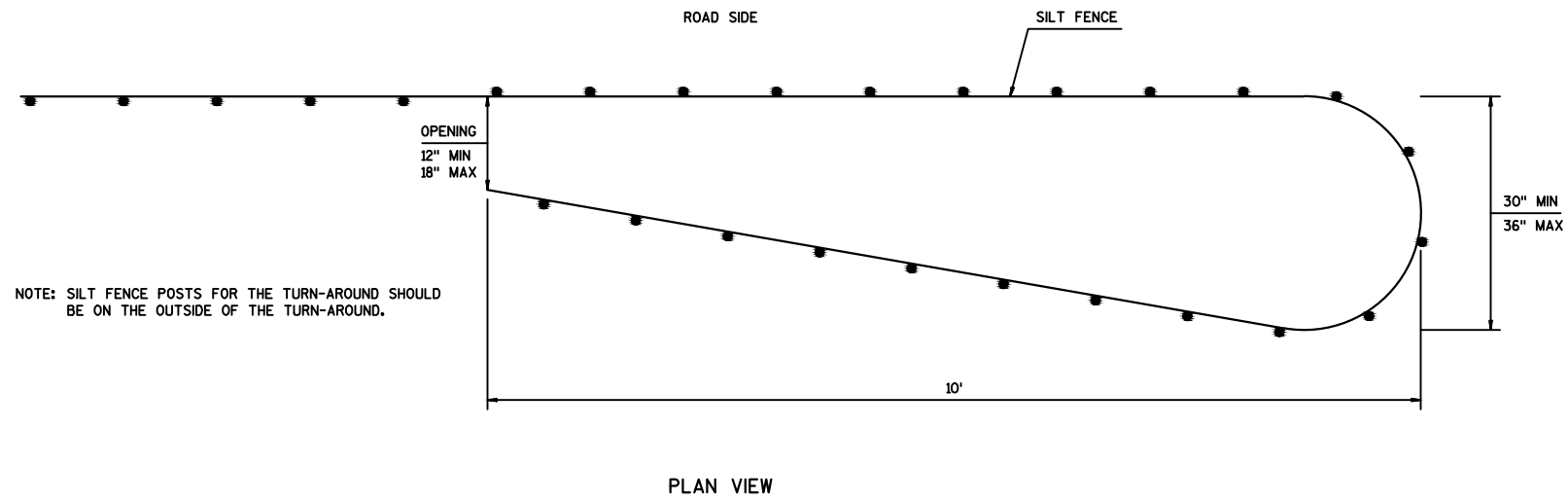


LOWER AND UPPER LAYERS

TYPICAL PAVEMENT CROSS SECTION OF NOTCHED WEDGE LONGITUDINAL JOINTS

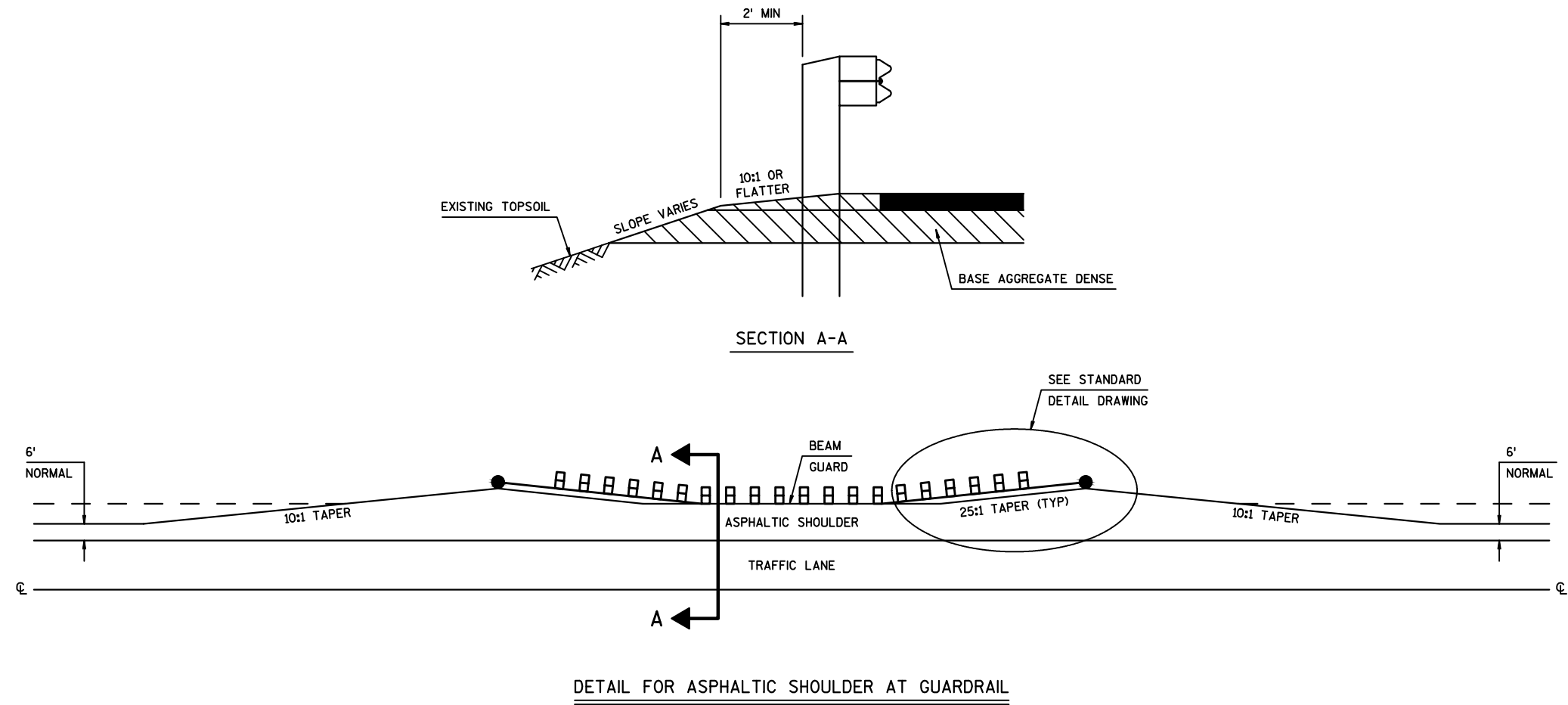


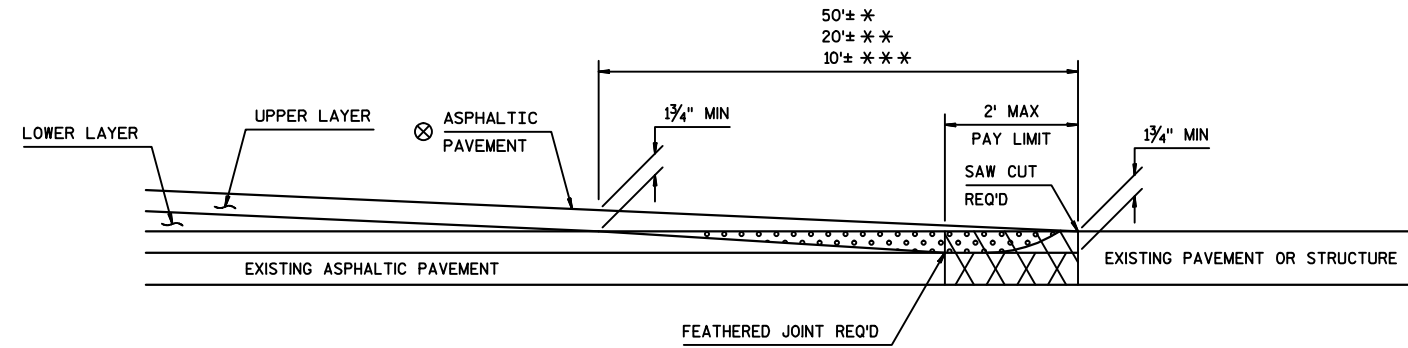
EROSION MAT TREATMENT AT CULVERTS



NOTE: SILT FENCE POSTS FOR THE TURN-AROUND SHOULD BE ON THE OUTSIDE OF THE TURN-AROUND.

SILT FENCE TURN-AROUND DETAIL



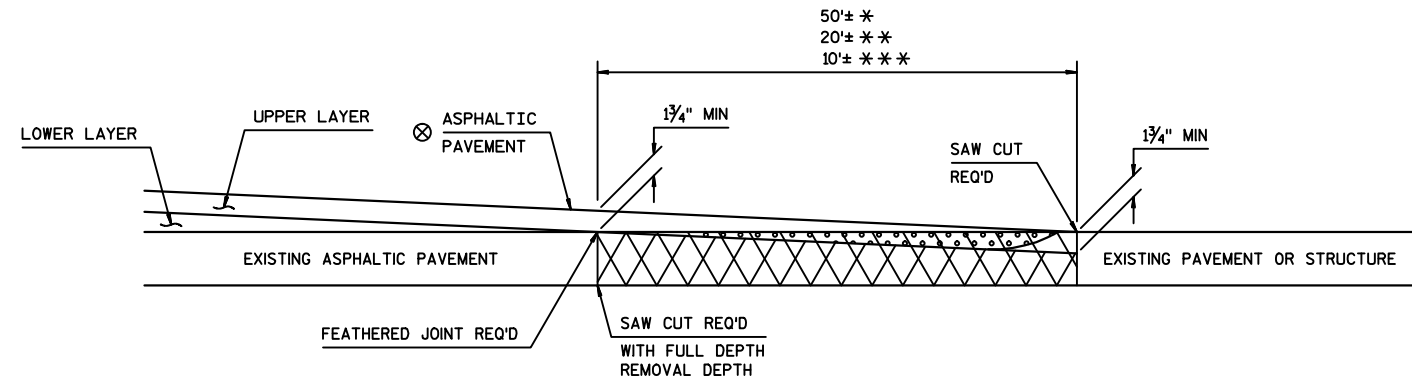


⊗ SEE TYPICAL CROSS SECTION FOR
PAVEMENT TYPE AND THICKNESS
OF INDIVIDUAL LAYERS

-  REMOVING ASPHALTIC SURFACE, MILLING
-  REMOVING ASPHALTIC SURFACE, BUTT JOINTS (FULL DEPTH REMOVAL OPTIONAL)
-  ASPHALTIC WEDGING (FULL DEPTH REMOVAL OPTION)

BUTT JOINT DETAIL FOR MILLED ASPHALTIC PAVEMENTS

* MAINLINE
** SIDEROADS
*** PRIVATE ENTRANCES

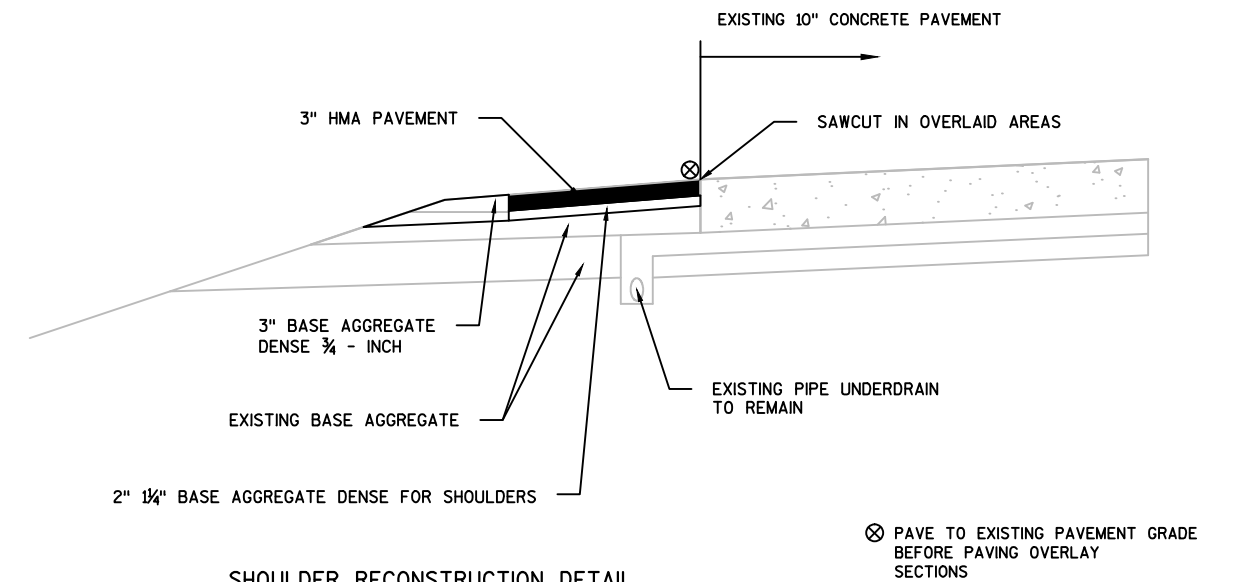


⊗ SEE TYPICAL CROSS SECTION FOR
PAVEMENT TYPE AND THICKNESS
OF INDIVIDUAL LAYERS

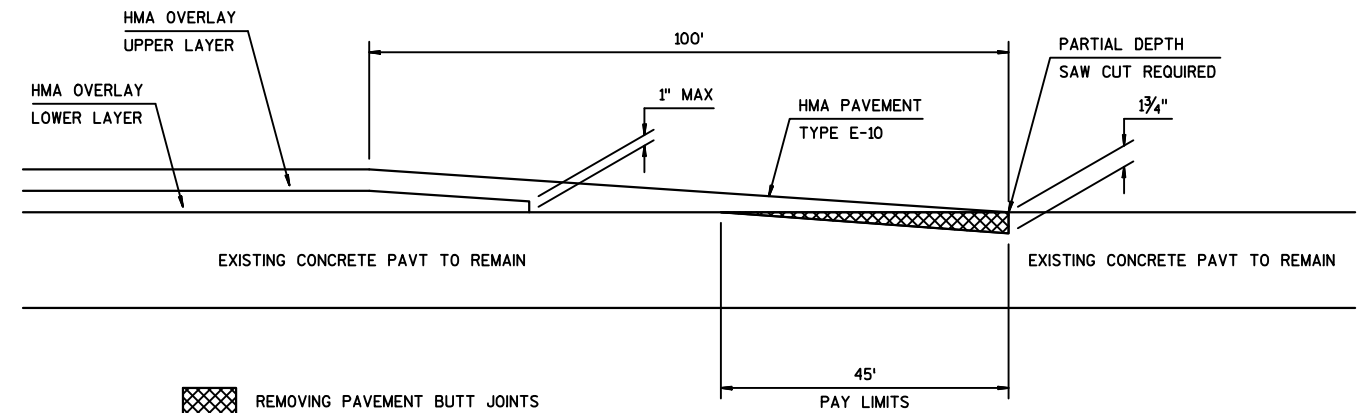
-  REMOVING ASPHALTIC SURFACE, BUTT JOINTS (FULL DEPTH REMOVAL OPTIONAL)
-  ASPHALTIC WEDGING (FULL DEPTH REMOVAL OPTION)
-  REMOVING ASPHALTIC SURFACE, BUTT JOINTS (MILLING OPTION)

BUTT JOINT DETAIL FOR NON-MILLED ASPHALTIC PAVEMENTS

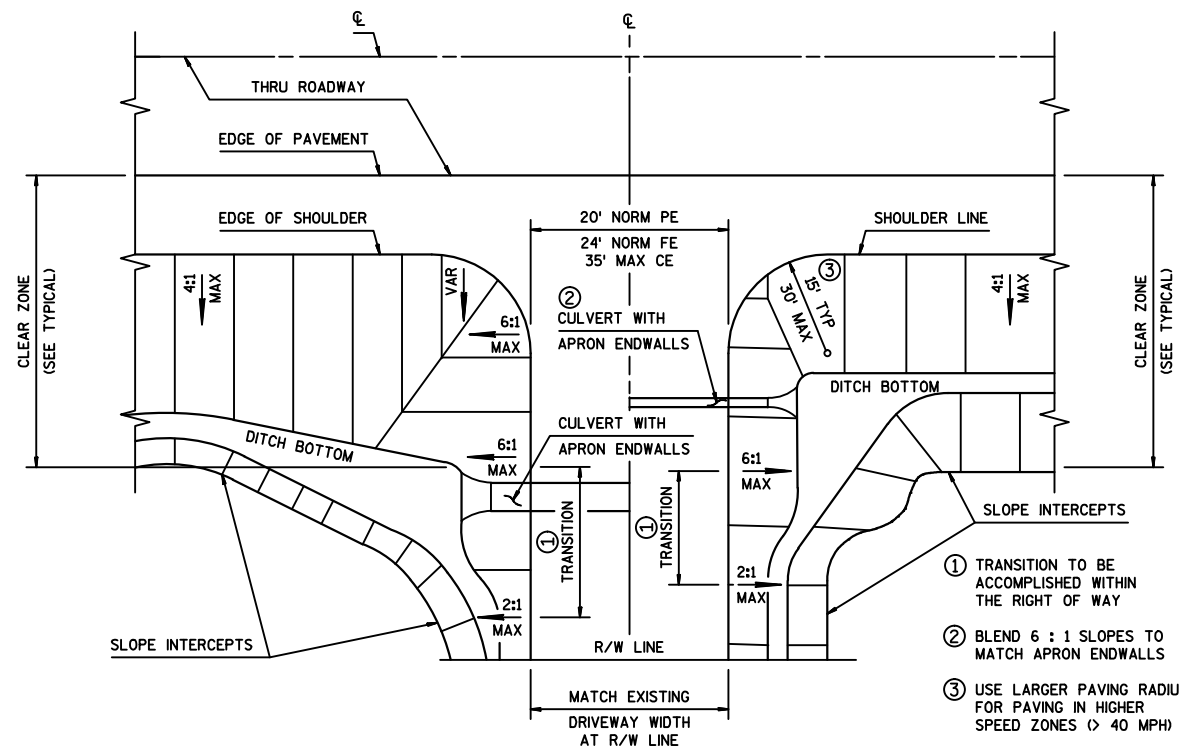
* MAINLINE
** SIDEROADS
*** PRIVATE ENTRANCES



⊗ PAVE TO EXISTING PAVEMENT GRADE
BEFORE PAVING OVERLAY
SECTIONS



REMOVING PAVEMENT BUTT JOINT DETAIL



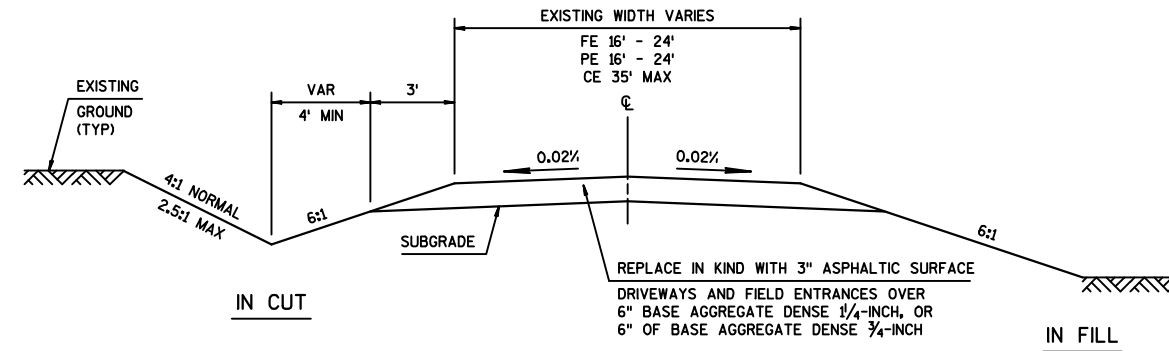
FOR CULVERTS OVER 24" DIAMETER

FOR CULVERTS 24" DIAMETER & LESS

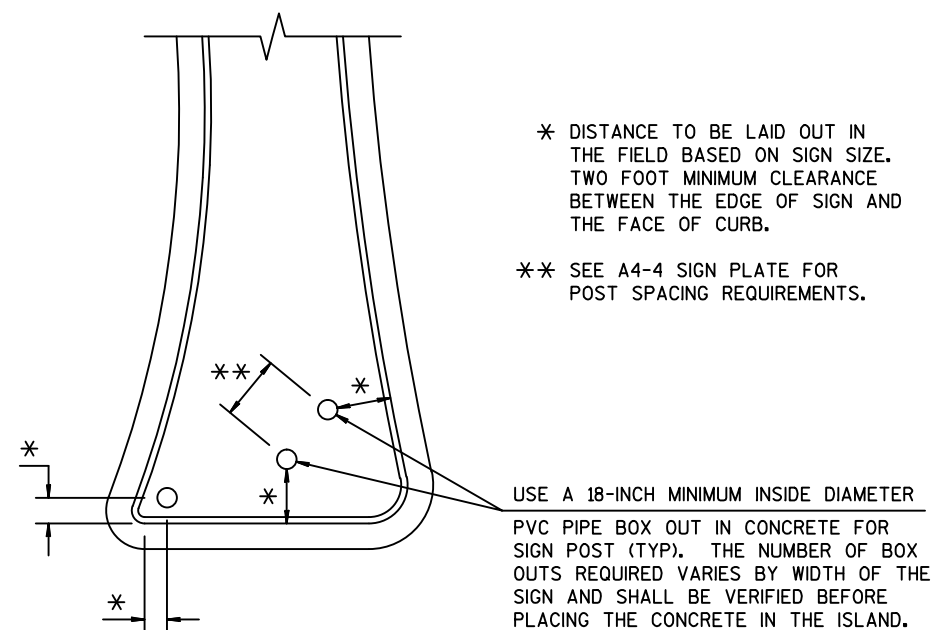
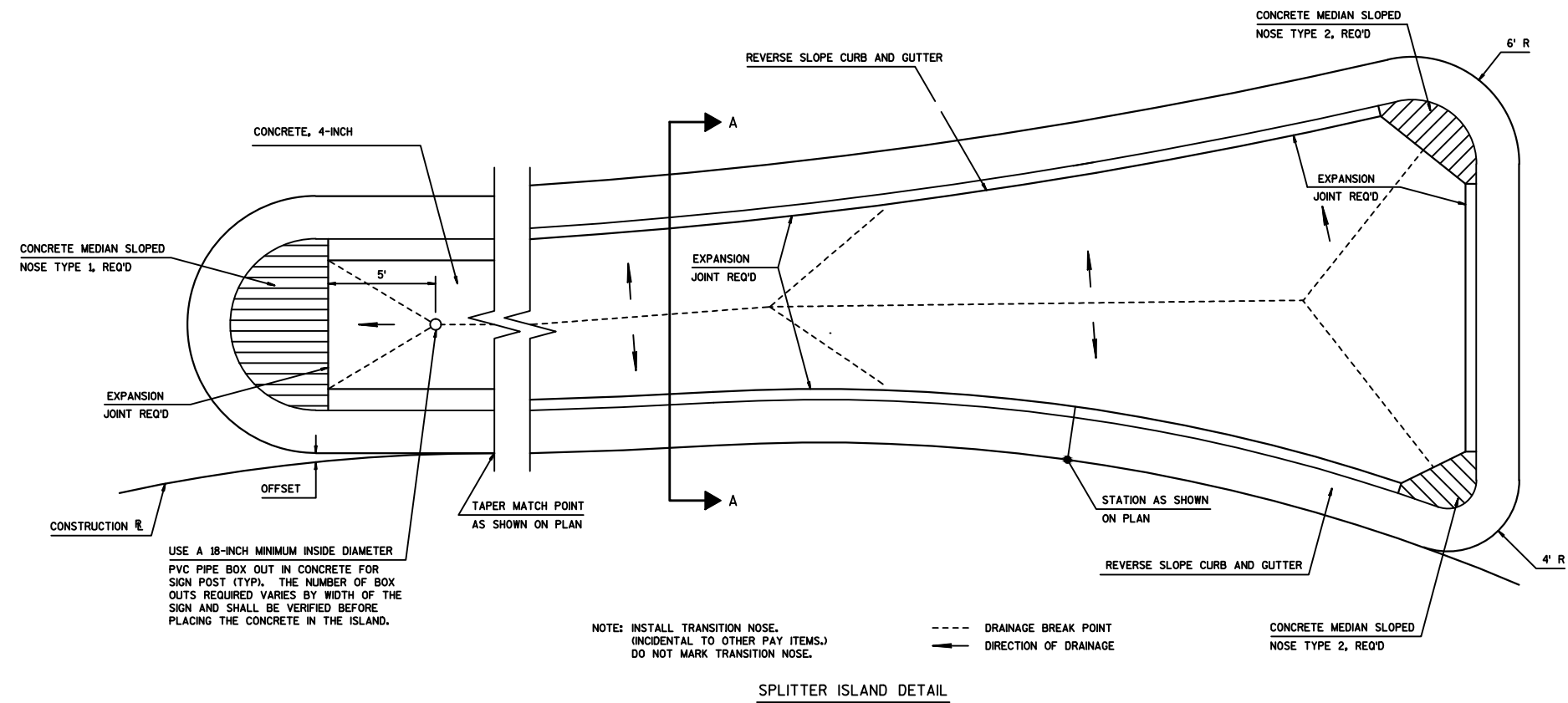
PLAN VIEW

RURAL DRIVEWAY GRADING AND/OR PAVING DETAIL

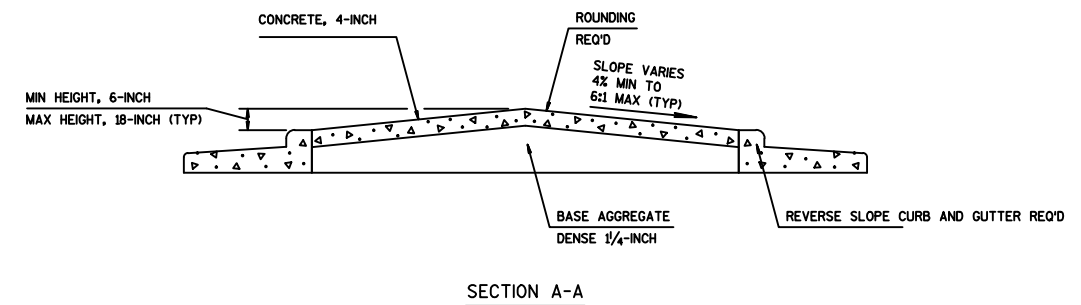
NOTE: COMMERCIAL ENTRANCE ASPHALTIC DRIVEWAYS SHALL CONSIST OF 12" BASE AGGREGATE DENSE AND 4" OF ASPHALTIC PAVEMENT

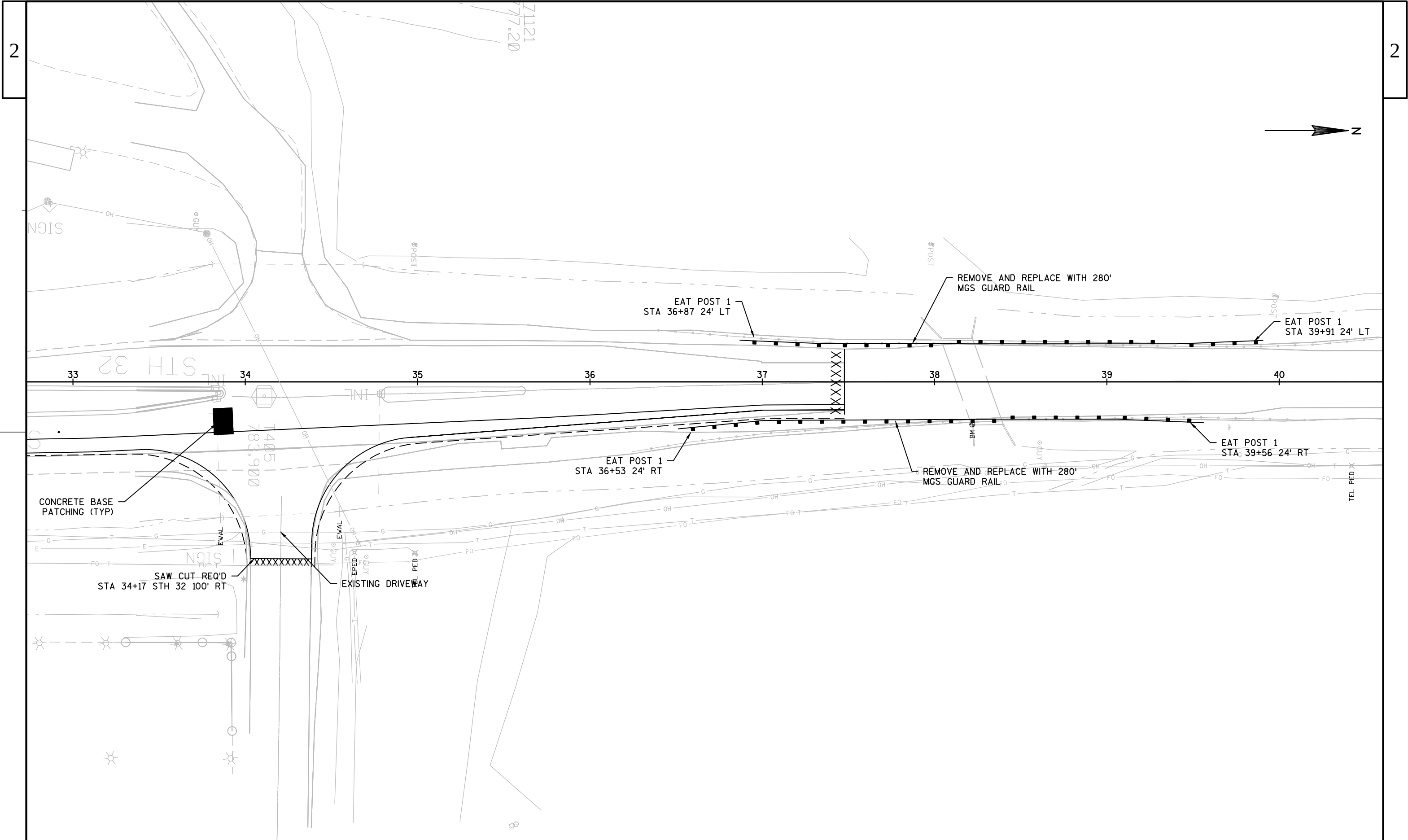


TYPICAL CROSS SECTION FOR PRIVATE DRIVE OR FIELD ENTRANCE



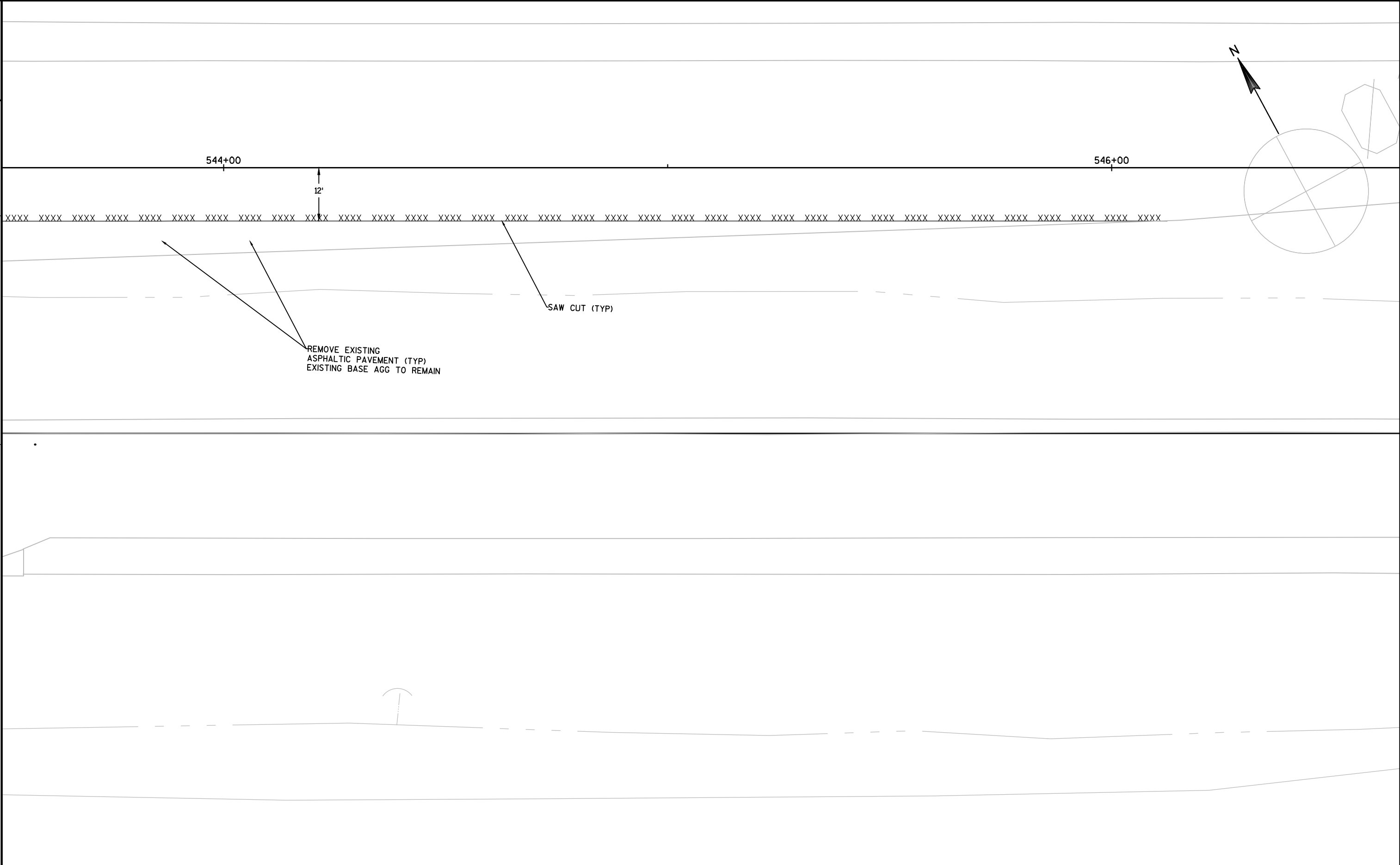
VERIFY BOX OUT LOCATIONS WITH PROJECT ENGINEER BEFORE PAVING

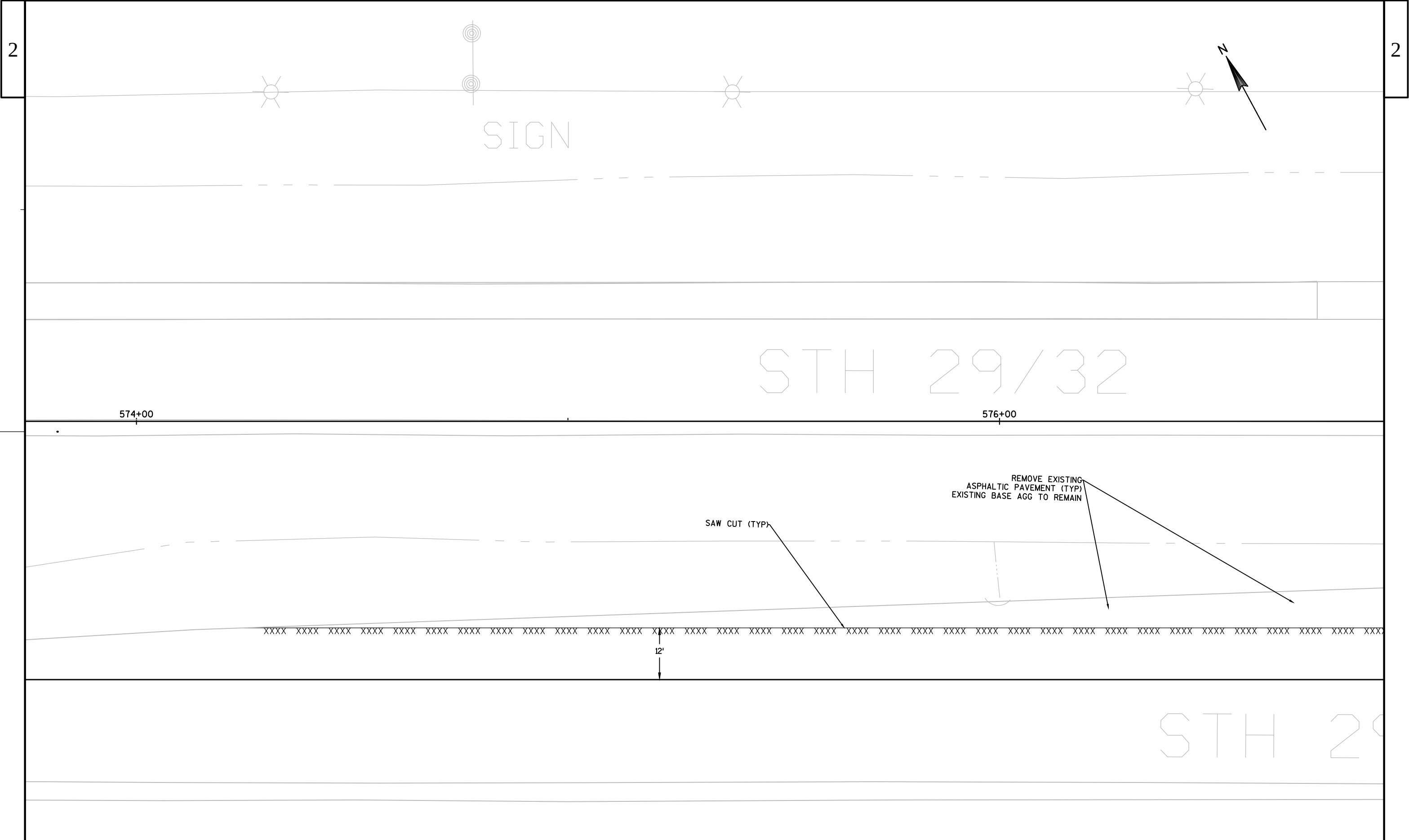






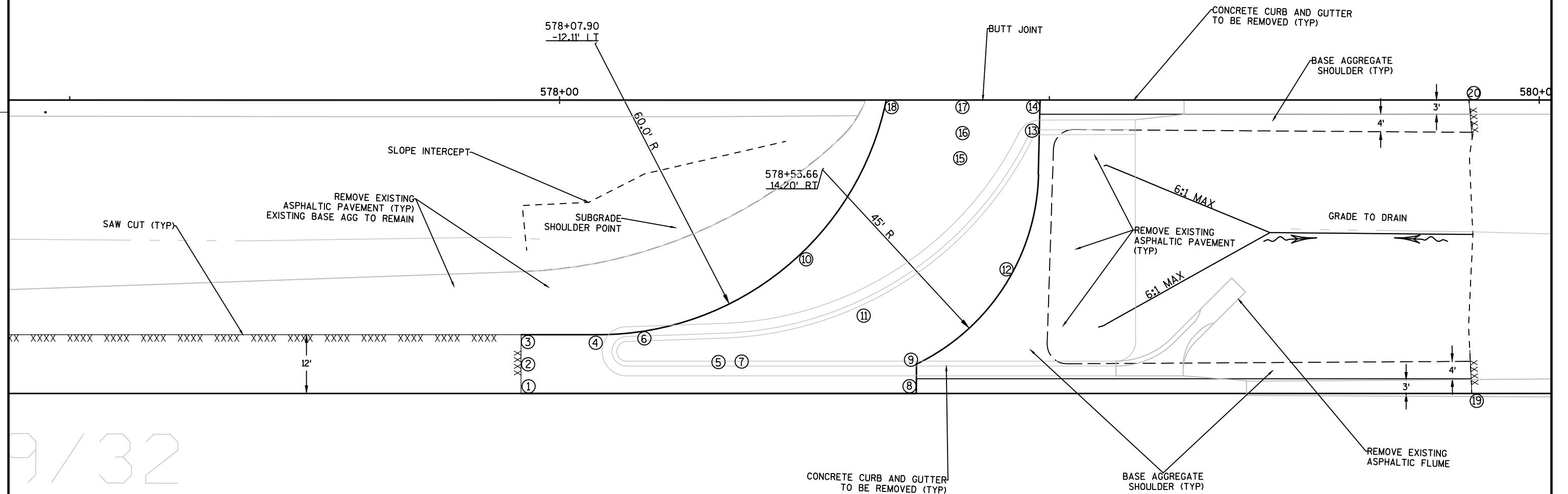
POINT	STATION	OFFSET	ELEVATION	
1	542+36.49	0.00' RT	MATCH	MAINLINE
2	542+36.49	6.00' RT	761.94	
3	542+36.49	12.00' RT	761.86	
4	542+20.73	12.00' RT	761.74	
5	541+96.27	6.00' RT	761.89	
6	542+01.80	15.03' RT	761.62	
7	541+91.49	6.18' RT	761.88	
8	541+55.75	0.00' RT	MATCH	MAINLINE
9	541+55.71	6.00' RT	761.89	
10	541+76.05	31.87' RT	761.09	
11	541+54.09	29.04' RT	761.66	
12	541+38.40	20.98' RT	762.35	
13	541+30.68	44.86' RT	761.88	
14	541+30.68	51.57' RT	761.70	
15	541+30.68	60.00' RT	MATCH	MAINLINE
16	541+46.22	55.87' RT	761.86	
17	541+46.22	60.00' RT	MATCH	MAINLINE
18	541+61.92	60.00' RT	MATCH	MAINLINE
19	540+47.84	0.00' RT	MATCH	MAINLINE
20	542+47.84	60.00' RT	MATCH	MAINLINE

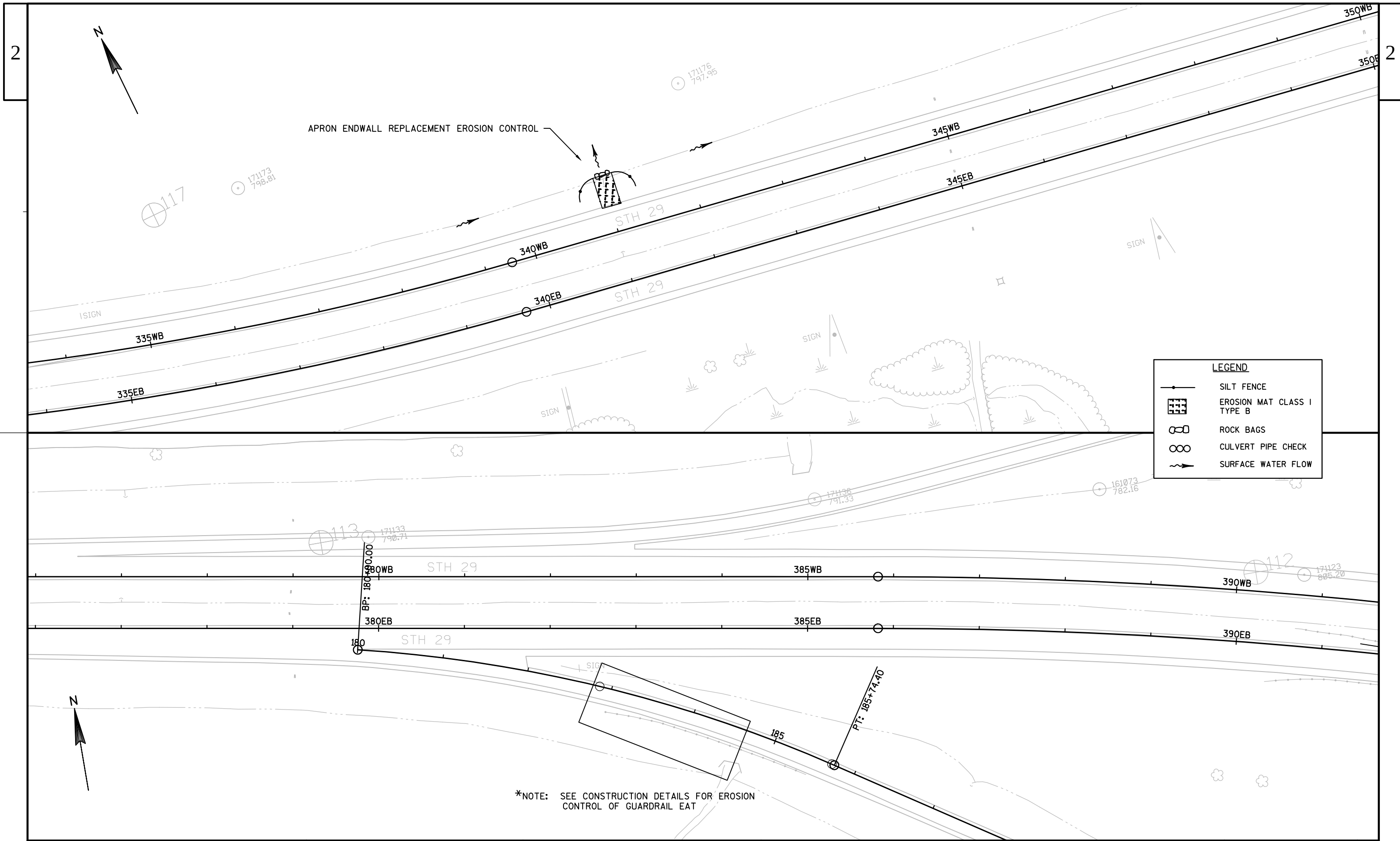


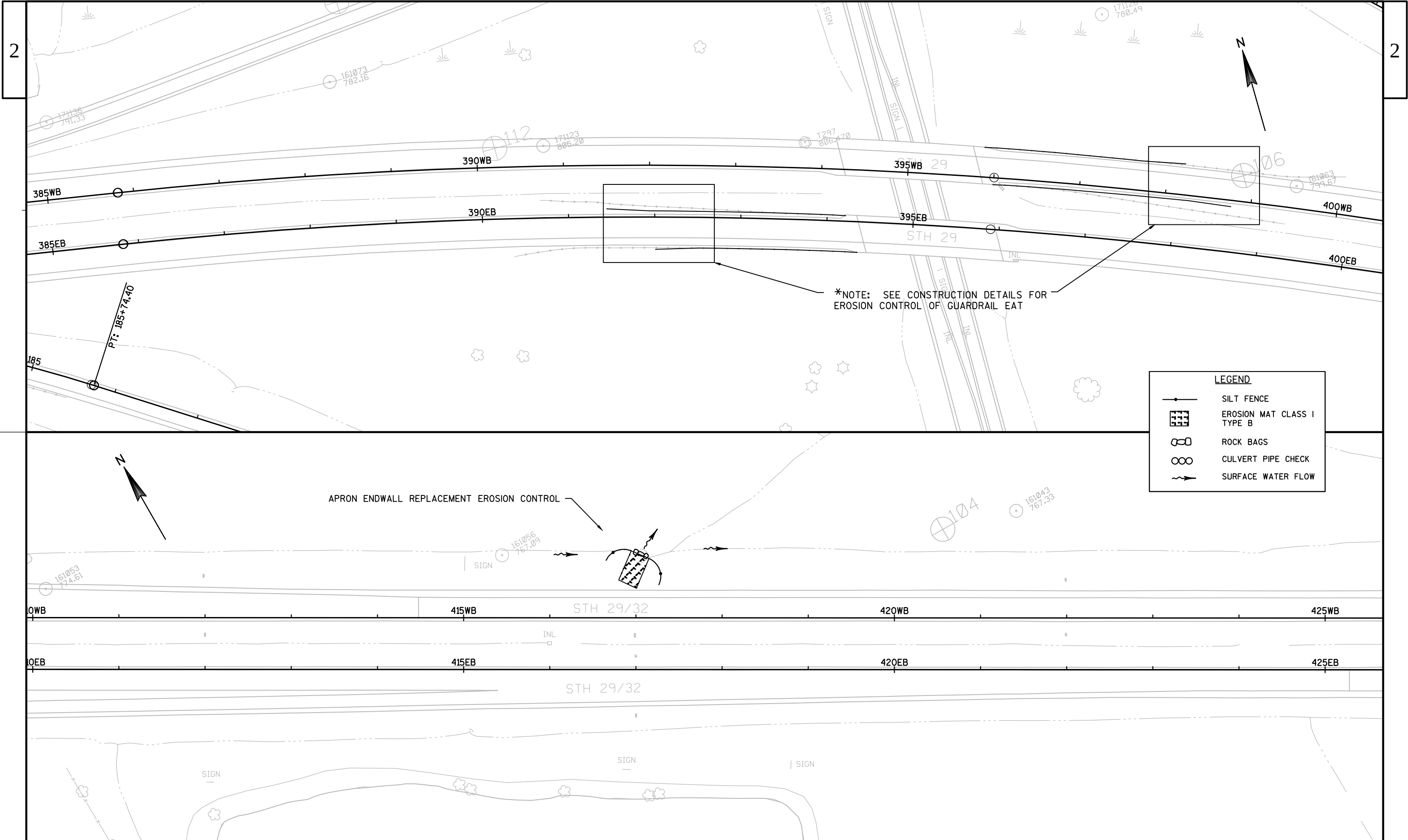


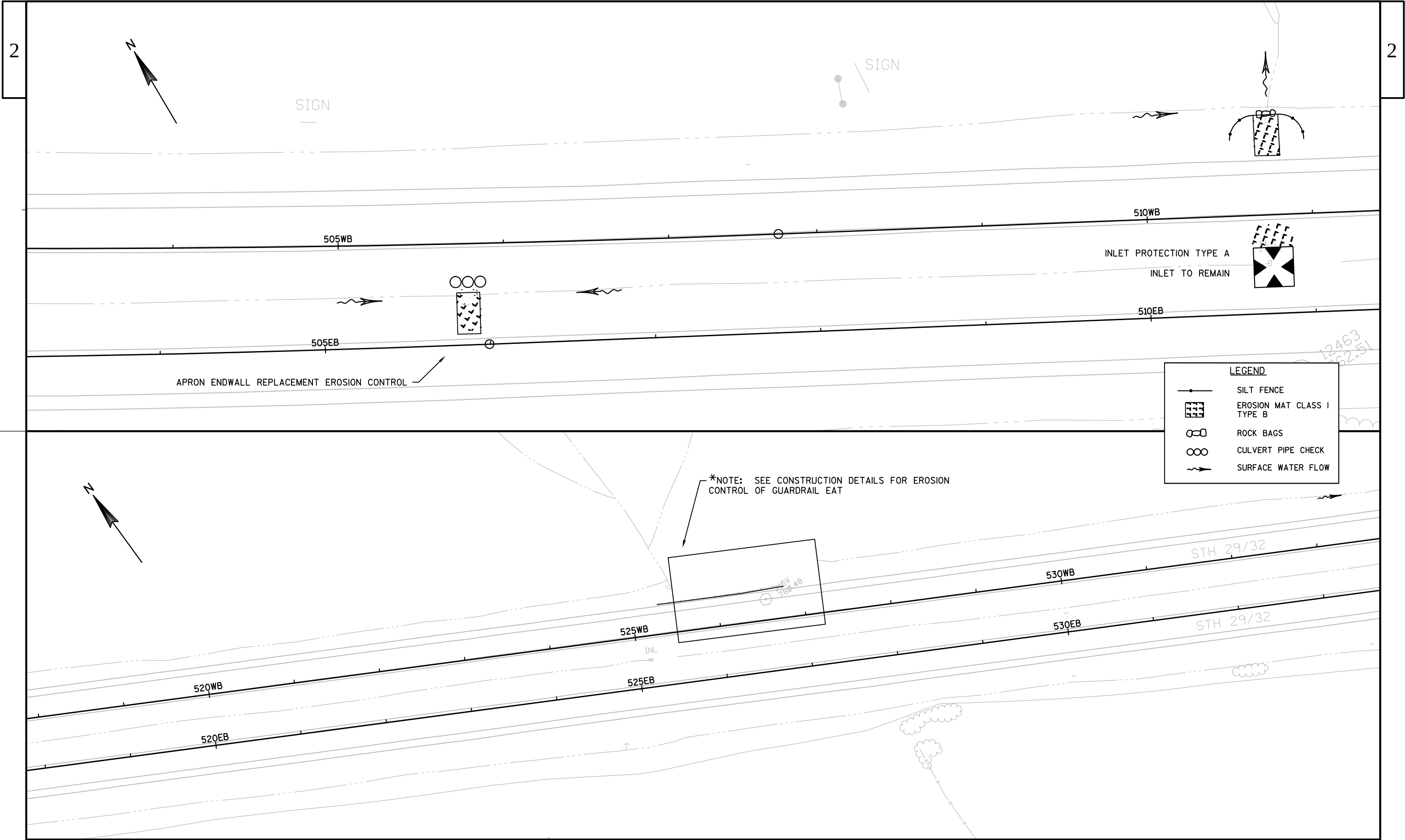
NOTE: ALL STATIONS AND OFFSETS ARE
BASED ON THE STH 29 WB REFERENCE LINE

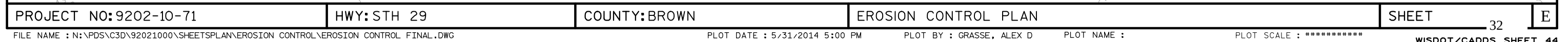
POINT	STATION	OFFSET	ELEVATION
1	577+92.16	60.00' RT	MATCH MAINLINE
2	577+92.16	54.00' RT	757.26
3	577+92.16	48.00' RT	757.17
4	578+07.90	48.00' RT	757.05
5	578+32.37	53.89' RT	757.21
6	578+17.12	47.18' RT	756.98
7	578+37.15	53.66' RT	757.20
8	578+72.83	60.00' RT	MATCH MAINLINE
9	578+72.83	54.00' RT	757.16
10	578+49.20	31.41' RT	756.40
11	578+62.06	44.12' RT	756.90
12	578+92.48	35.11' RT	757.59
13	578+98.00	6.26' RT	757.00
14	578+98.00	0.00' RT	MATCH MAINLINE
15	578+82.10	12.00' RT	757.09
16	578+82.10	6.67' RT	757.06
17	578+82.10	0.00' RT	MATCH MAINLINE
18	578+82.10	0.00' RT	MATCH MAINLINE
19	579+86.00	60.00' RT	MATCH MAINLINE
20	579+86.00	0.00' RT	MATCH MAINLINE

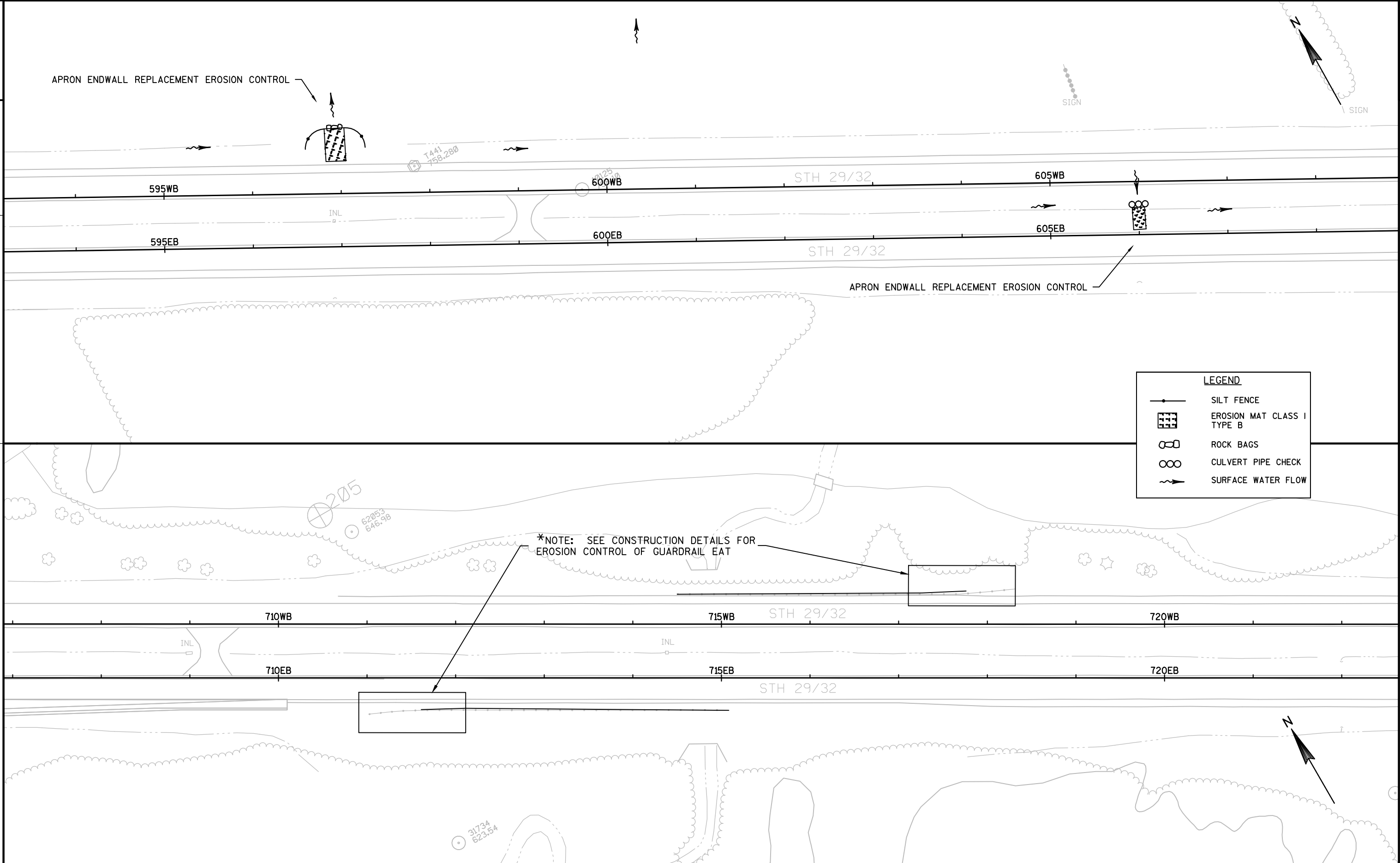






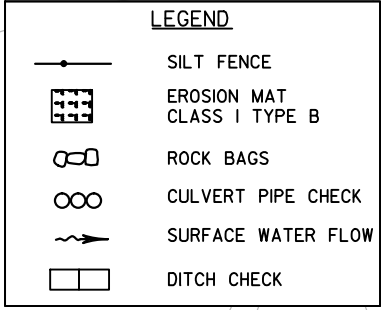






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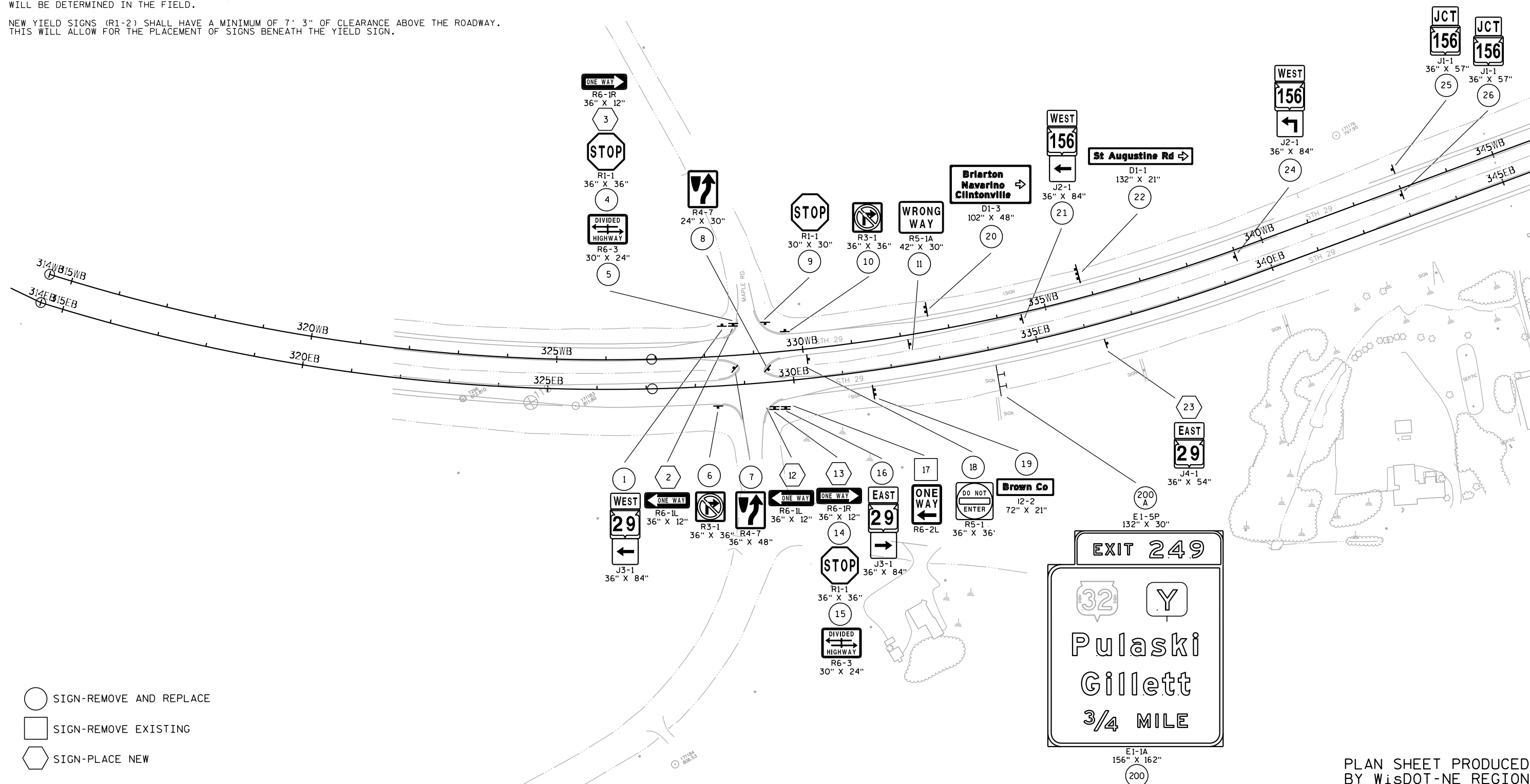


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WOOD POSTS SIZES, FOR TYPE II SIGNING, ARE ESTIMATED LENGTHS AND THE ACTUAL LENGTH WILL BE DETERMINED IN THE FIELD.

NEW YIELD SIGNS (R1-2) SHALL HAVE A MINIMUM OF 7' 3" OF CLEARANCE ABOVE THE ROADWAY.
THIS WILL ALLOW FOR THE PLACEMENT OF SIGNS BENEATH THE YIELD SIGN.



PLAN SHEET PRODUCED
BY WisDOT-NE REGION

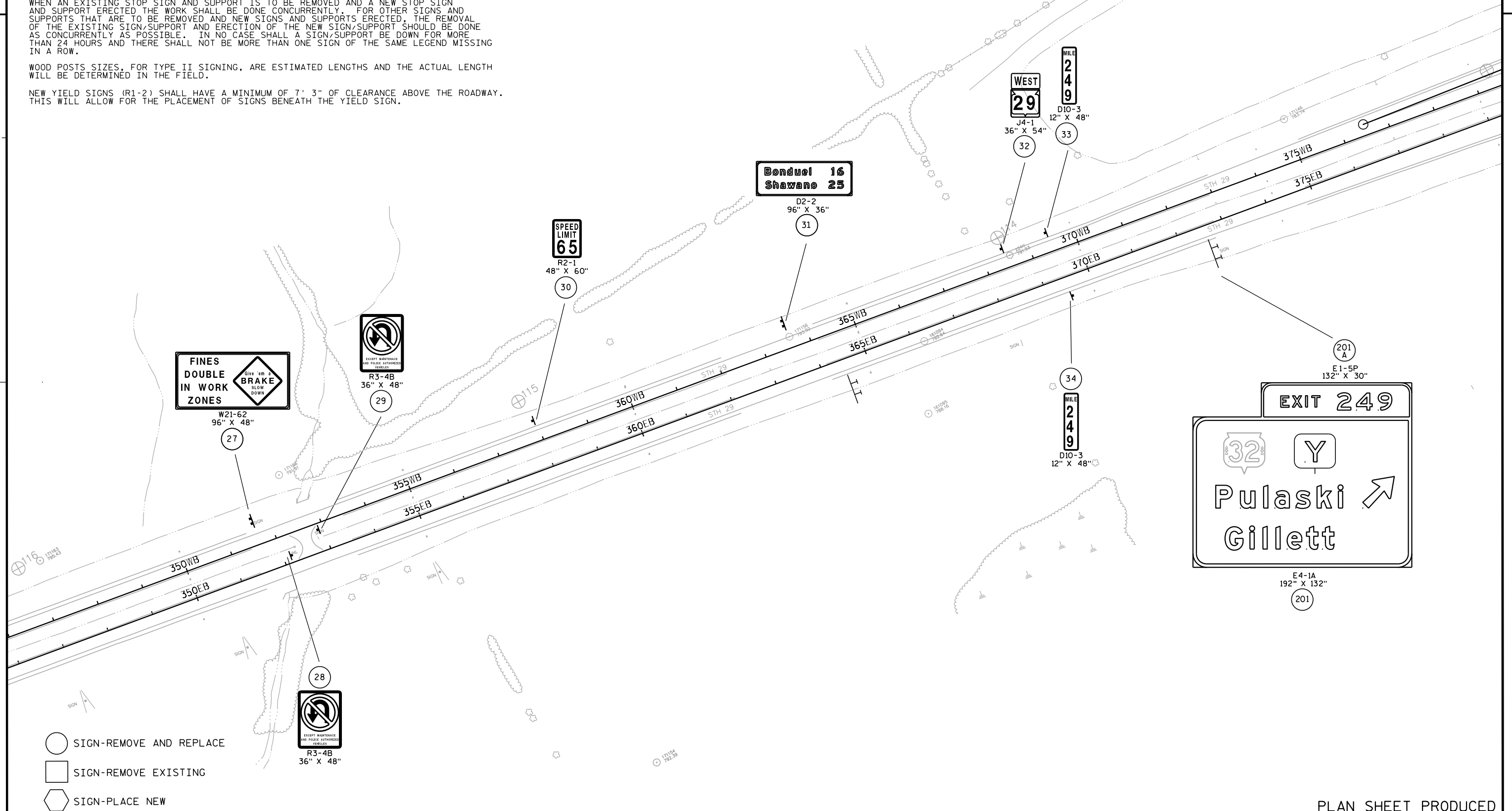
SIGNING NOTES

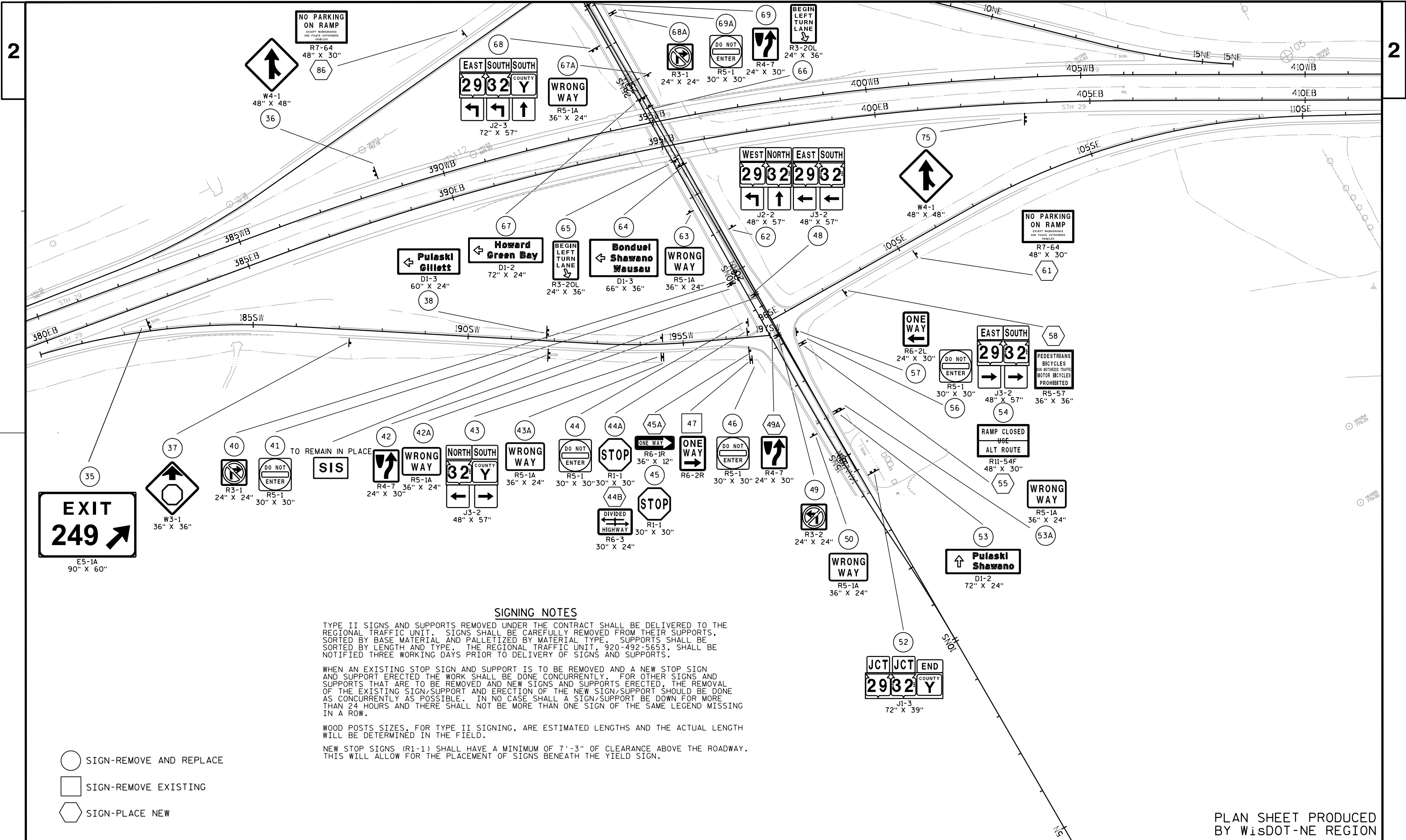
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NEW STOP SIGNS (R1-1) SHALL HAVE A MINIMUM OF 7'-3" OF CLEARANCE ABOVE THE ROADWAY. THIS WILL ALLOW FOR THE PLACEMENT OF SIGNS BENEATH THE YIELD SIGN.

- SIGN-REMOVE AND REPLACE
- SIGN-REMOVE EXISTING
- SIGN-PLACE NEW

PLAN SHEET PRODUCED
BY WISDOT-NE REGION

PROJECT NO: 9202-10-71

HWY: STH 29

COUNTY: BROWN

PERMANENT SIGNING

SHEET

37

E

SIGNING NOTES

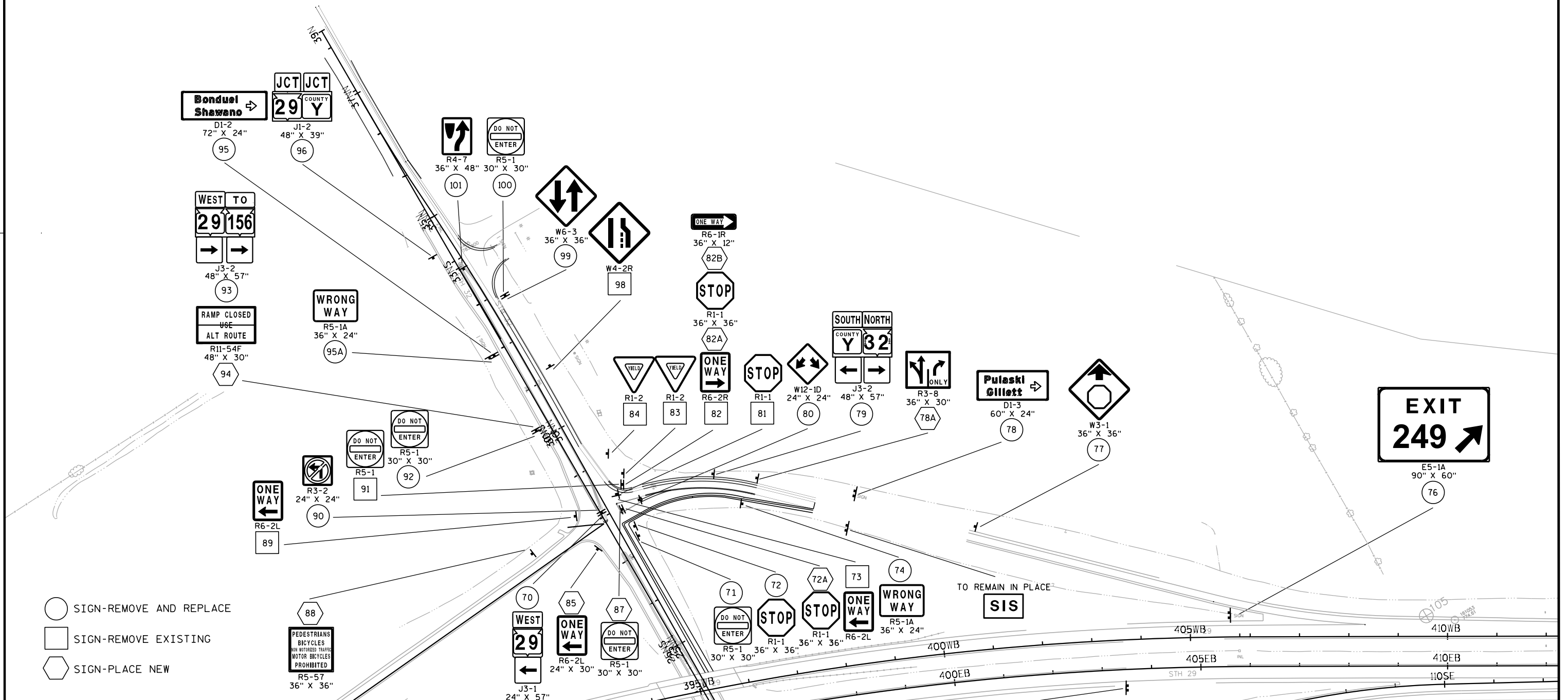
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PLAN SHEET PRODUCED
BY WisDOT-NE REGION



PROJECT NO: 9202-10-71

HWY: STH 29

COUNTY: BROWN

PERMANENT SIGNING

SHEET

38

E

FILE NAME : N:\spo\traffic\SIGNING\Projects\9202-10-71 STH 29 WCL-CTH J\023204_ps.dgn

PLOT DATE : 07-MAY-2014 12:40

PLOT BY : dotj1f

PLOT NAME :

PLOT SCALE : 200:1

WISDOT/CADDs SHEET 42

SIGNING NOTES

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TO REMAIN IN PLACE

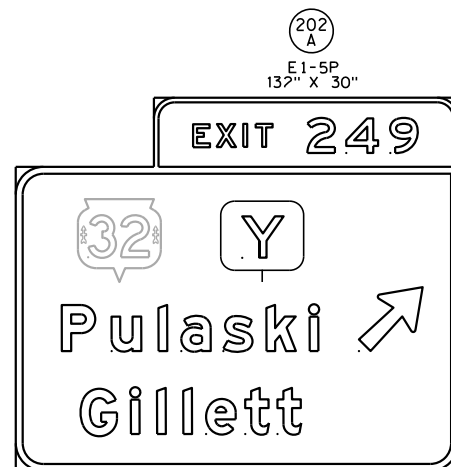
SIS

MILE
250D10-3
12" X 48"

105

R3-4B
36" X 48"

109

E4-1A
192" X 132"

202

415WB

STH 29/32

420WB

425WB

STH 29/32

430WB

435WB 29/32

440WB

415EB

STH 29/32

420EB

425EB

STH 29/32

430EB

435EB

440EB

Onelda Indian
ReservationI2-2R
78" X 24"EAST SOUTH
2932J4-2
72" X 54"MILE
250D10-3
12" X 48"

Green Bay S

D1-3
96" X 21"SPEED
LIMIT
65R2-1
48" X 60"R3-4B
36" X 48"

108

SIGN-REMOVE AND REPLACE

SIGN-REMOVE EXISTING

SIGN-PLACE NEW

PLAN SHEET PRODUCED
BY WISDOT-NE REGION

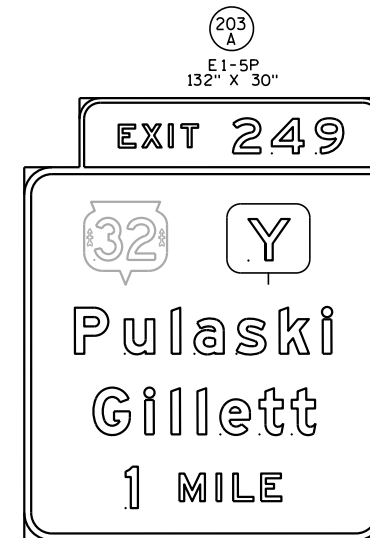
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PROJECT NO: 9202-10-71

HWY: STH 29

COUNTY: BROWN

PERMANENT SIGNING

SHEET

40

E

FILE NAME : N:\spo\traffic\SIGNING\Projects\9202-10-71 STH 29 WCL-CTH J\023206-ps.dgn

PLOT DATE : 06-MAR-2014 13:33

PLOT BY : dotj1f

PLOT NAME :

PLOT SCALE : 200:1

WISDOT/CADDs SHEET 42

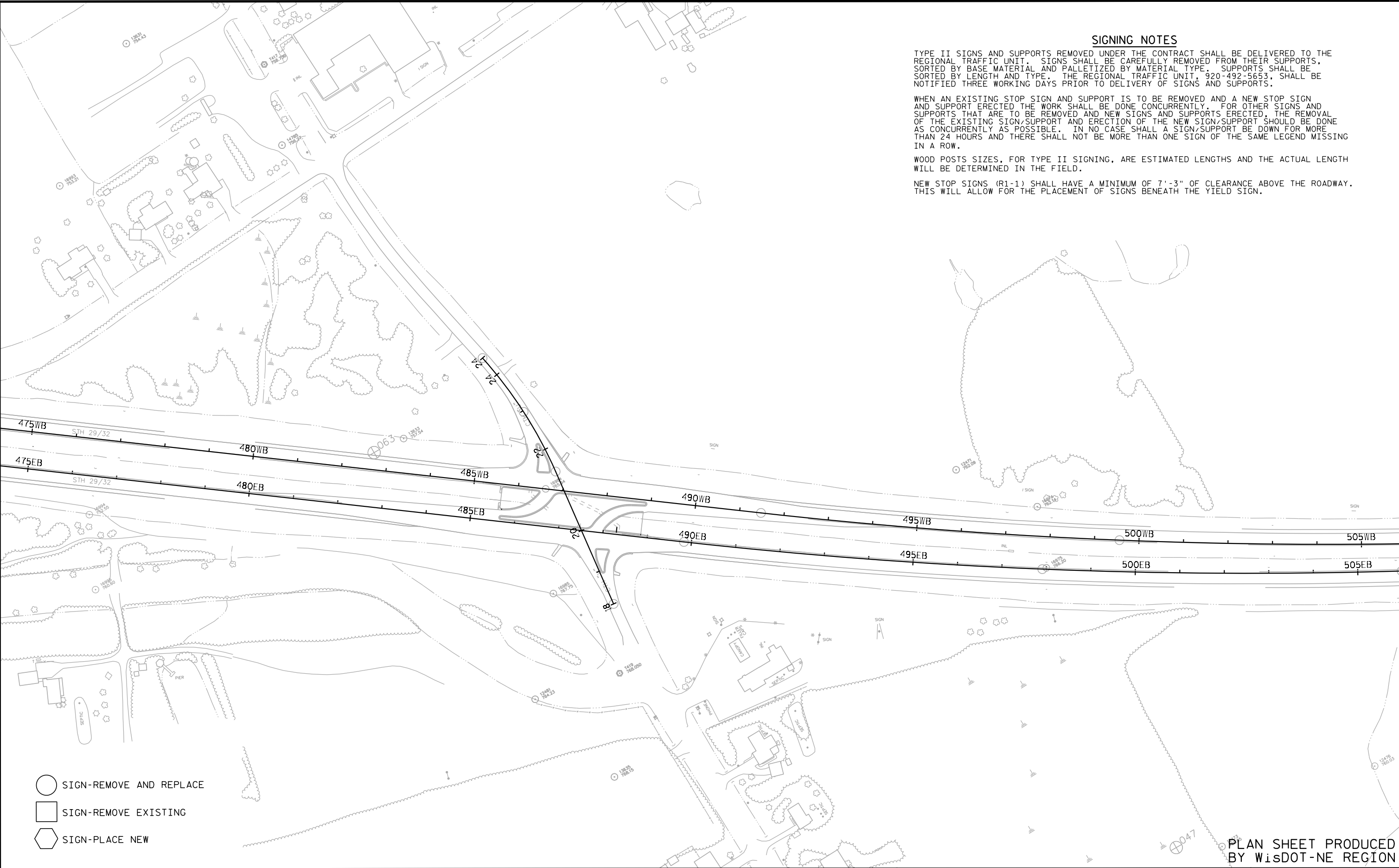
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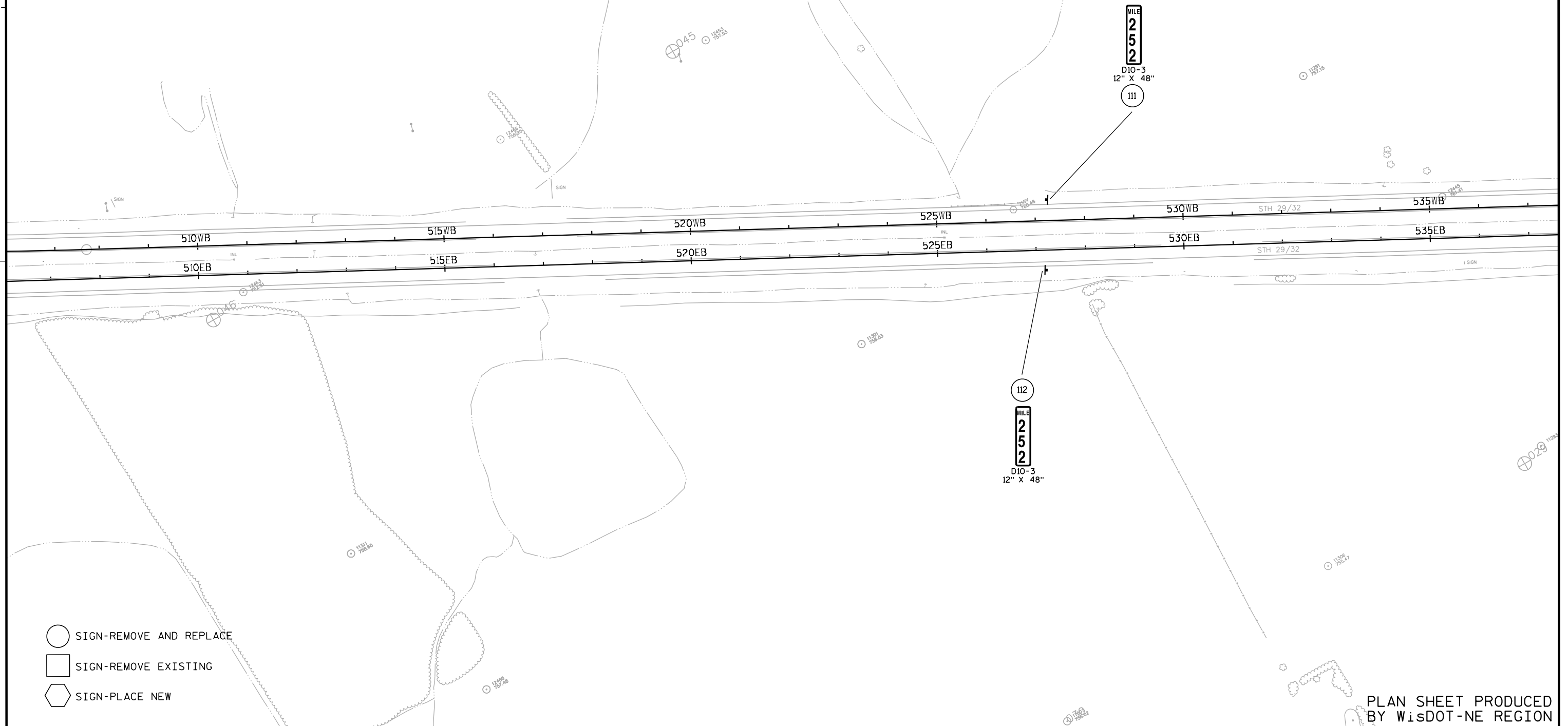
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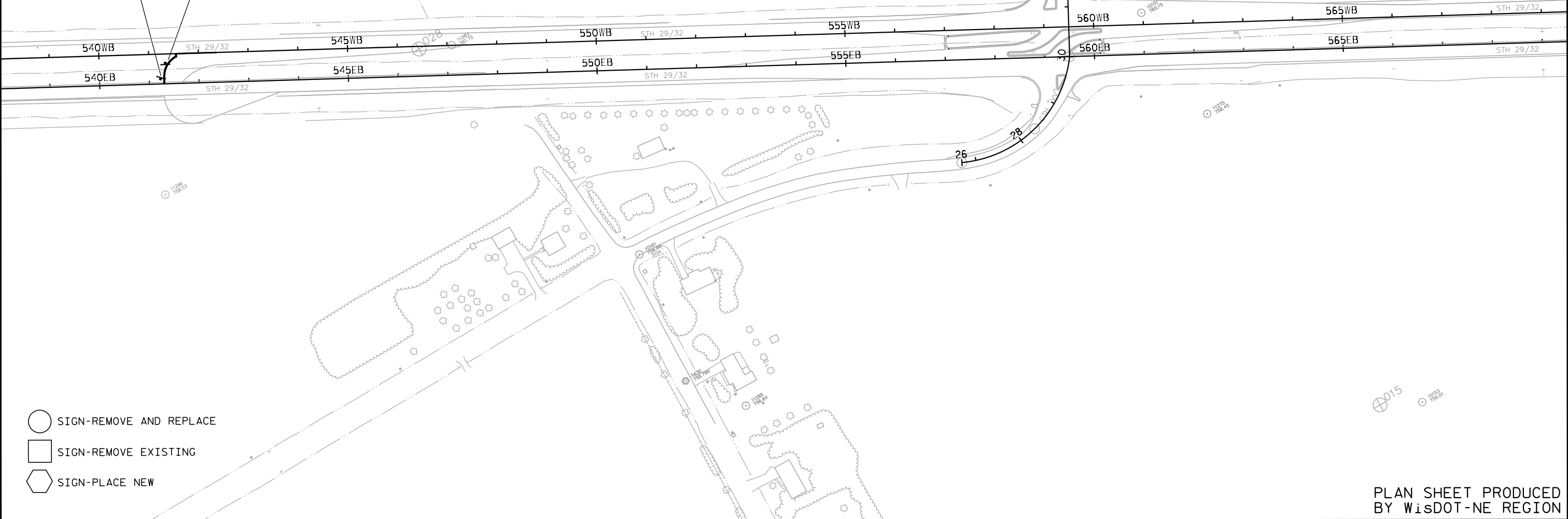
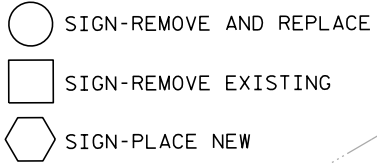
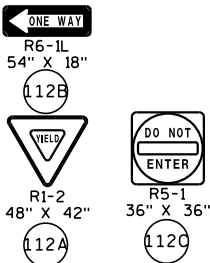
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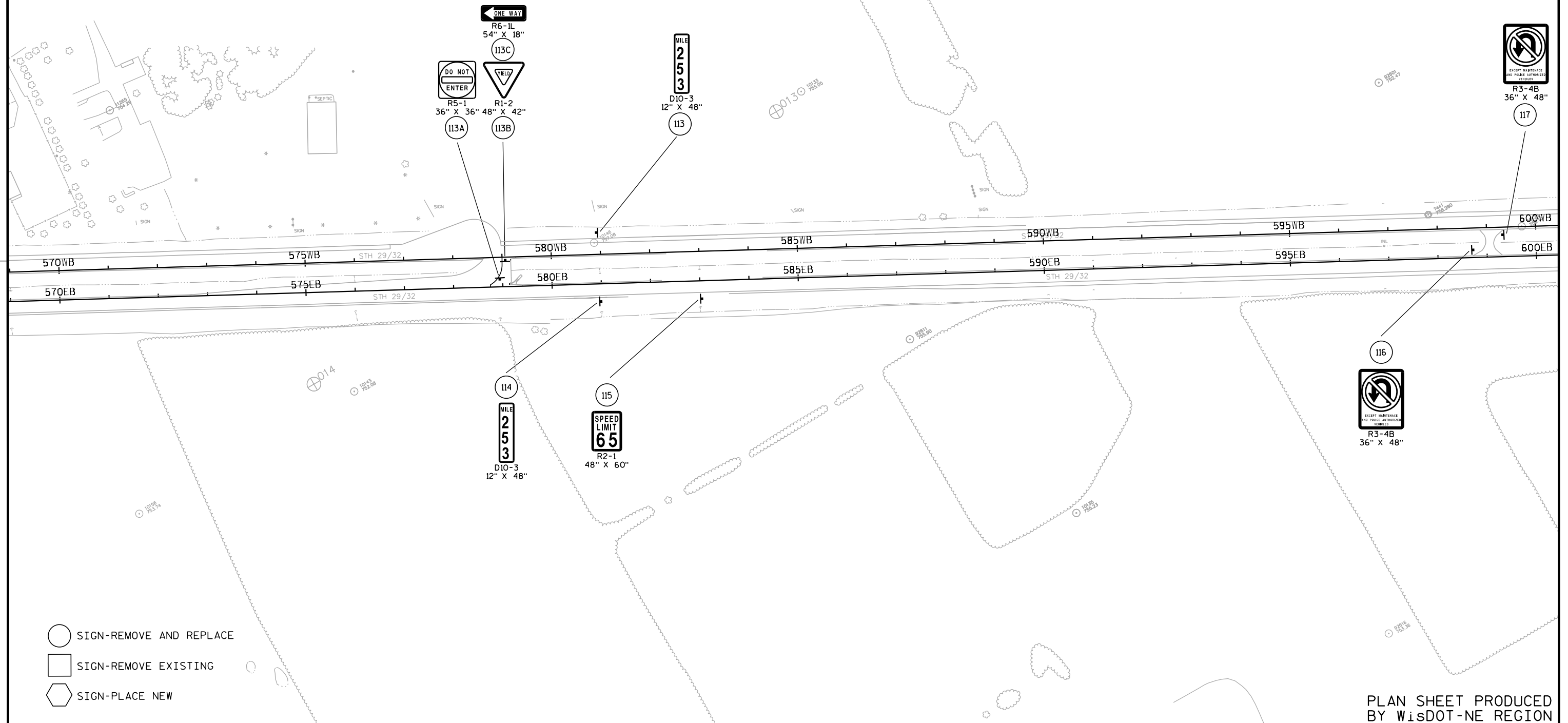
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PLAN SHEET PRODUCED
BY WISDOT-NE REGION

PROJECT NO: 9202-10-71

HWY: STH 29

COUNTY: BROWN

PERMANENT SIGNING

SHEET

44

E

FILE NAME : N:\spo\traffic\SIGNING\Projects\9202-10-71 STH 29 WCL-CTH J\023210-ps.dgn

PLOT DATE : 06-MAR-2014 13:42

PLOT BY : dotj1f

PLOT NAME :

PLOT SCALE : 200:1

WISDOT/CADDS SHEET 42

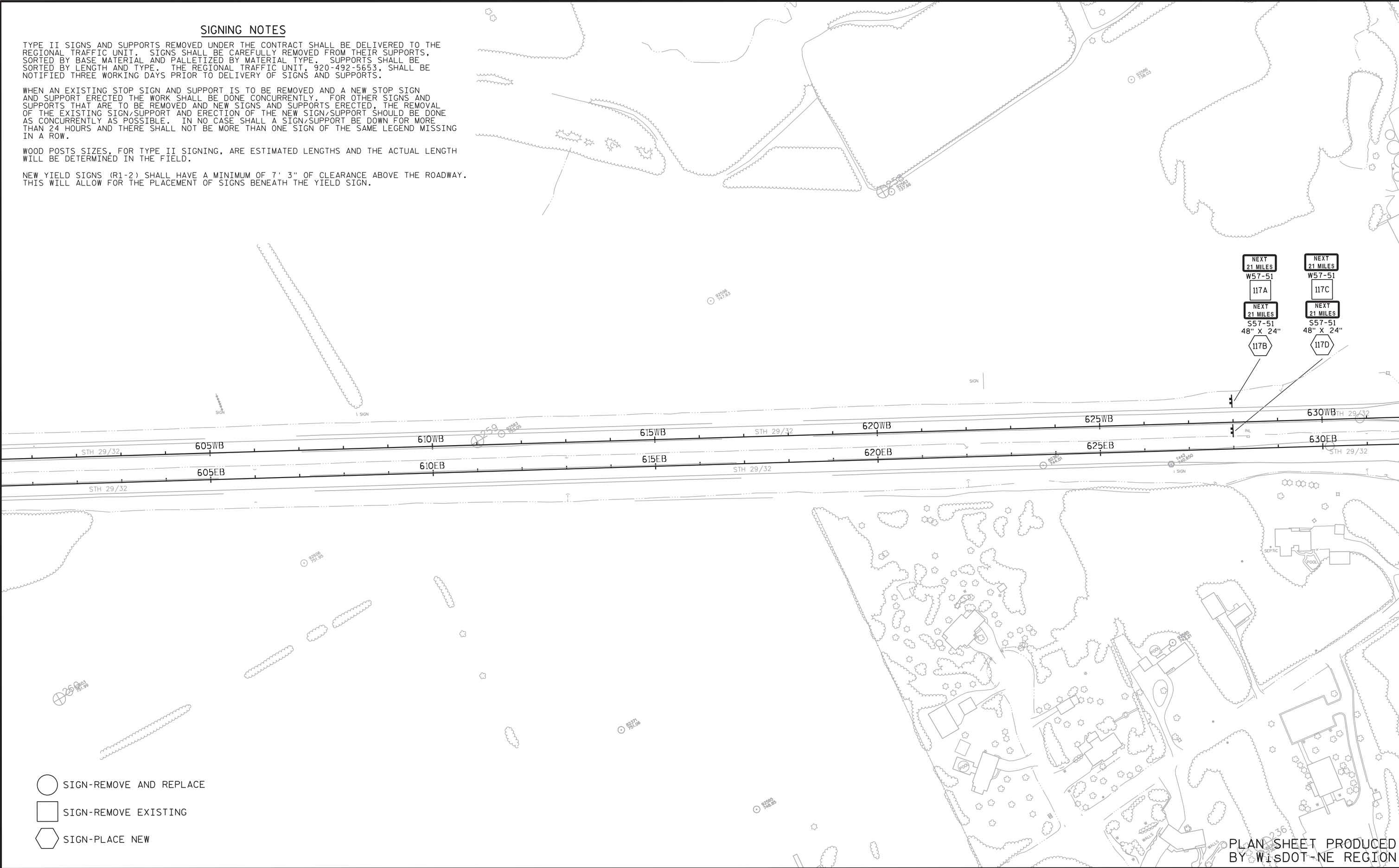
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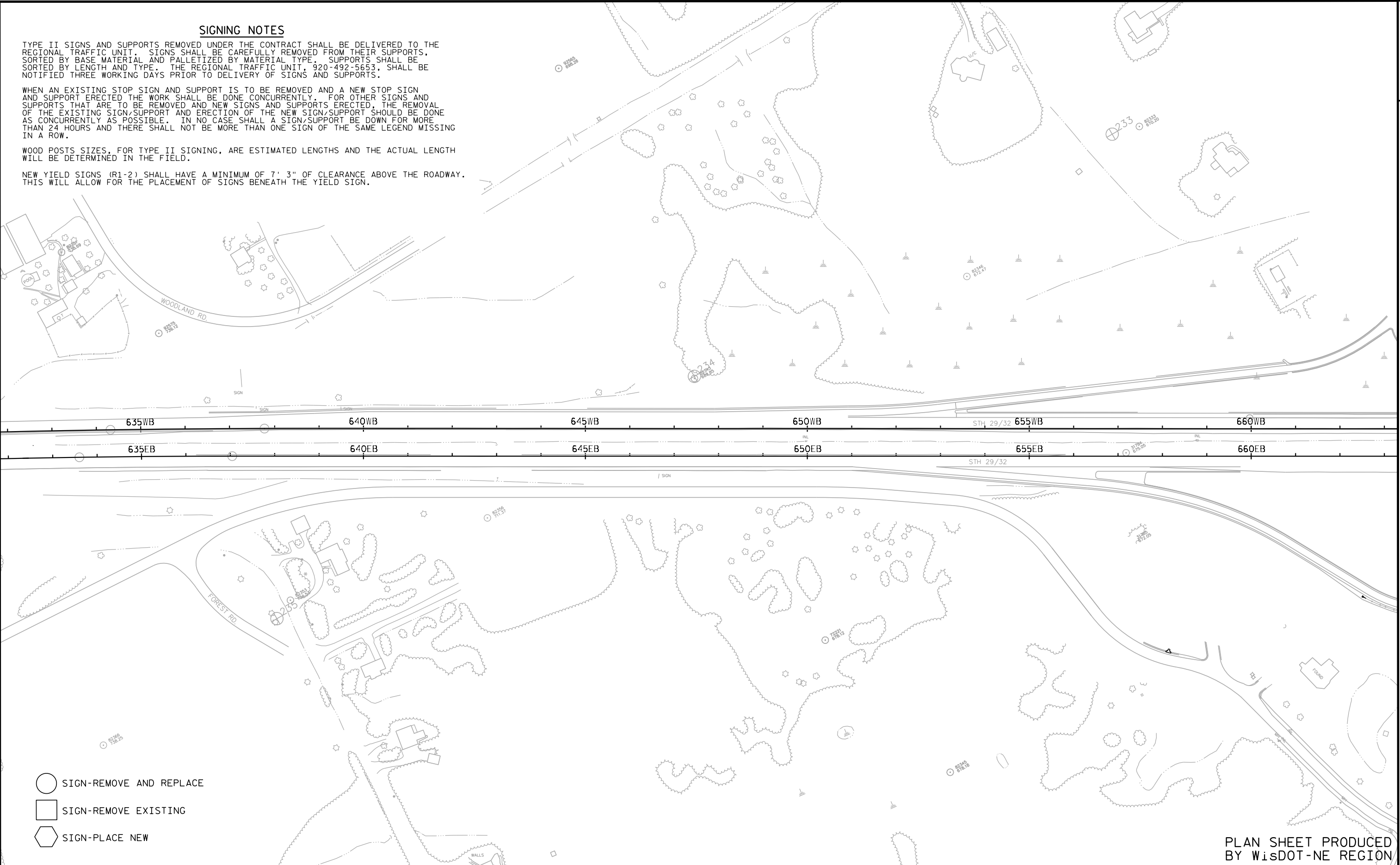
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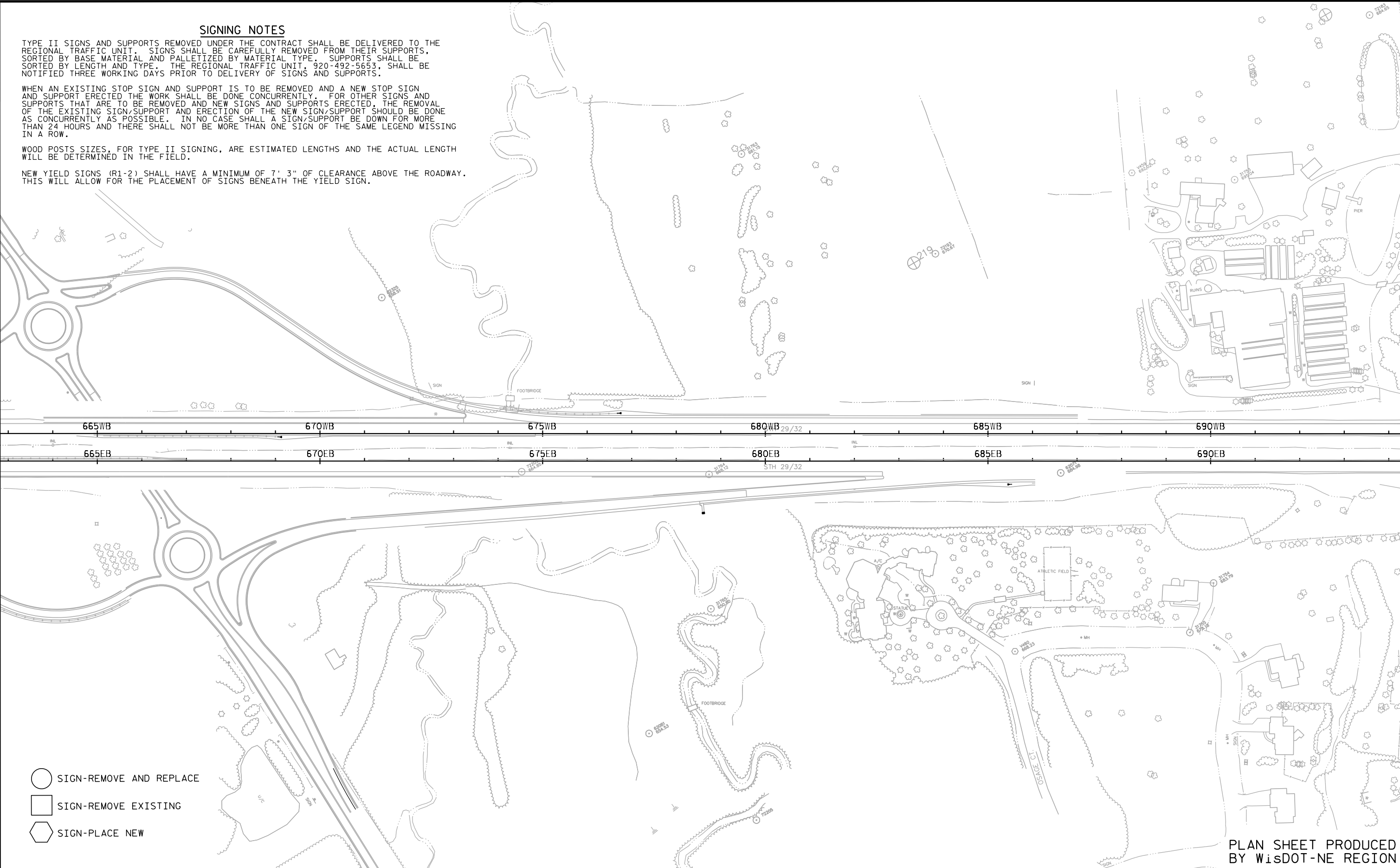
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PLAN SHEET PRODUCED BY WisDOT-NE REGION

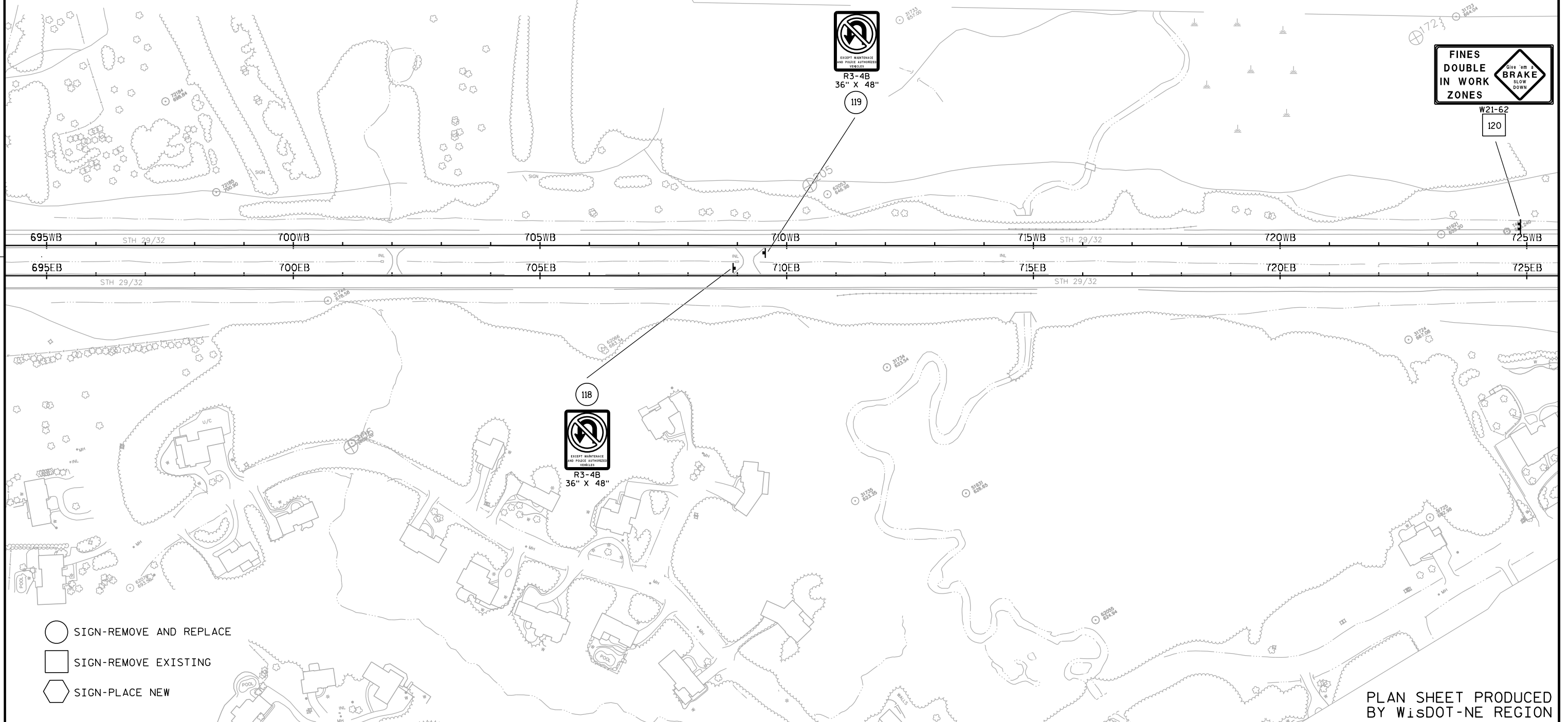
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NEW YIELD SIGNS (R1-2) SHALL HAVE A MINIMUM OF 7' 3" OF CLEARANCE ABOVE THE ROADWAY. THIS WILL ALLOW FOR THE PLACEMENT OF SIGNS BENEATH THE YIELD SIGN.



PLAN SHEET PRODUCED
BY WISDOT-NE REGION

PROJECT NO: 9202-10-71

HWY: STH 29

COUNTY: BROWN

PERMANENT SIGNING

SHEET

48

E

FILE NAME : N:\spo\traffic\SIGNING\Projects\9202-10-71 STH 29 WCL-CTH J\023214-ps.dgn

PLOT DATE : 06-MAR-2014 13:40

PLOT BY : dotj1f

PLOT NAME :

PLOT SCALE : 200:1

WISDOT/CADDS SHEET 42

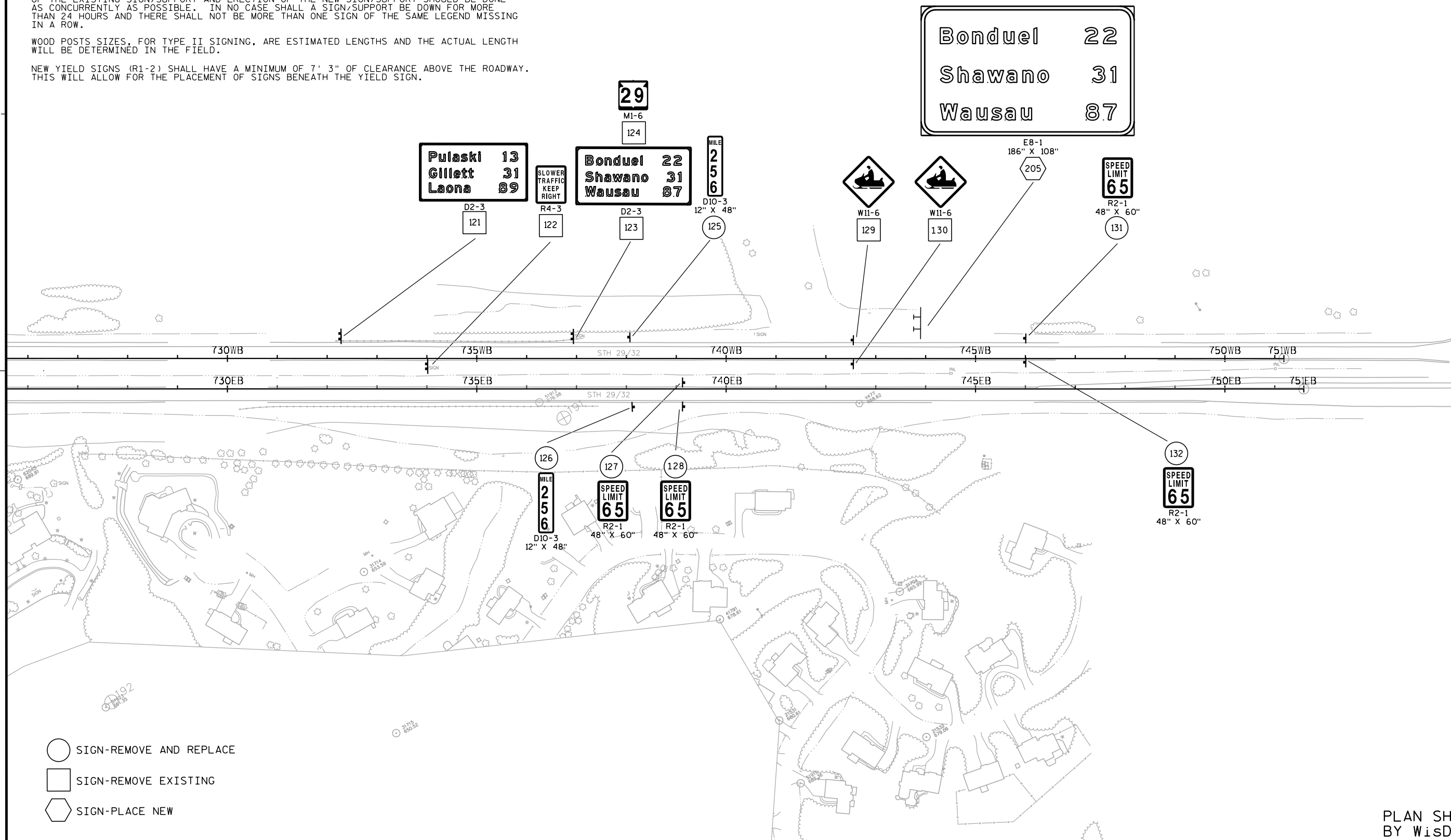
SIGNING NOTES

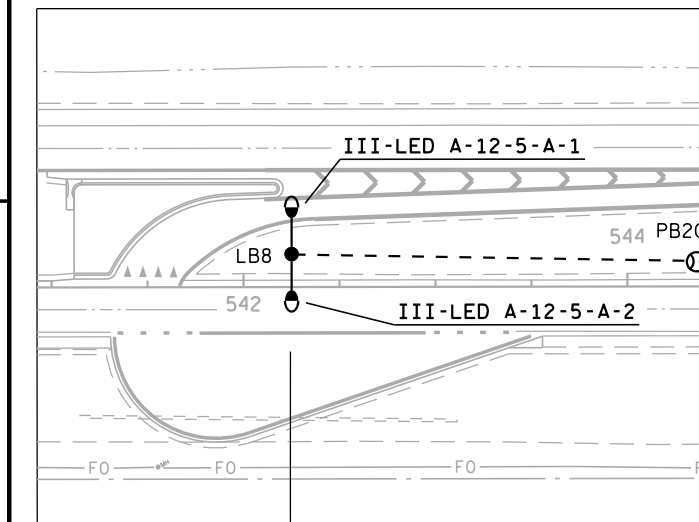
TYPE II SIGNS AND SUPPORTS REMOVED UNDER THE CONTRACT SHALL BE DELIVERED TO THE REGIONAL TRAFFIC UNIT. SIGNS SHALL BE CAREFULLY REMOVED FROM THEIR SUPPORTS, SORTED BY BASE MATERIAL AND PALLETIZED BY MATERIAL TYPE. SUPPORTS SHALL BE SORTED BY LENGTH AND TYPE. THE REGIONAL TRAFFIC UNIT, 920-492-5653, SHALL BE NOTIFIED THREE WORKING DAYS PRIOR TO DELIVERY OF SIGNS AND SUPPORTS.

WHEN AN EXISTING STOP SIGN AND SUPPORT IS TO BE REMOVED AND A NEW STOP SIGN AND SUPPORT ERECTED THE WORK SHALL BE DONE CONCURRENTLY. FOR OTHER SIGNS AND SUPPORTS THAT ARE TO BE REMOVED AND NEW SIGNS AND SUPPORTS ERECTED, THE REMOVAL OF THE EXISTING SIGN/SUPPORT AND ERECTION OF THE NEW SIGN/SUPPORT SHOULD BE DONE AS CONCURRENTLY AS POSSIBLE. IN NO CASE SHALL A 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.

NEW YIELD SIGNS (R1-2) SHALL HAVE A MINIMUM OF 7' 3" OF CLEARANCE ABOVE THE ROADWAY. THIS WILL ALLOW FOR THE PLACEMENT OF SIGNS BENEATH THE YIELD SIGN.



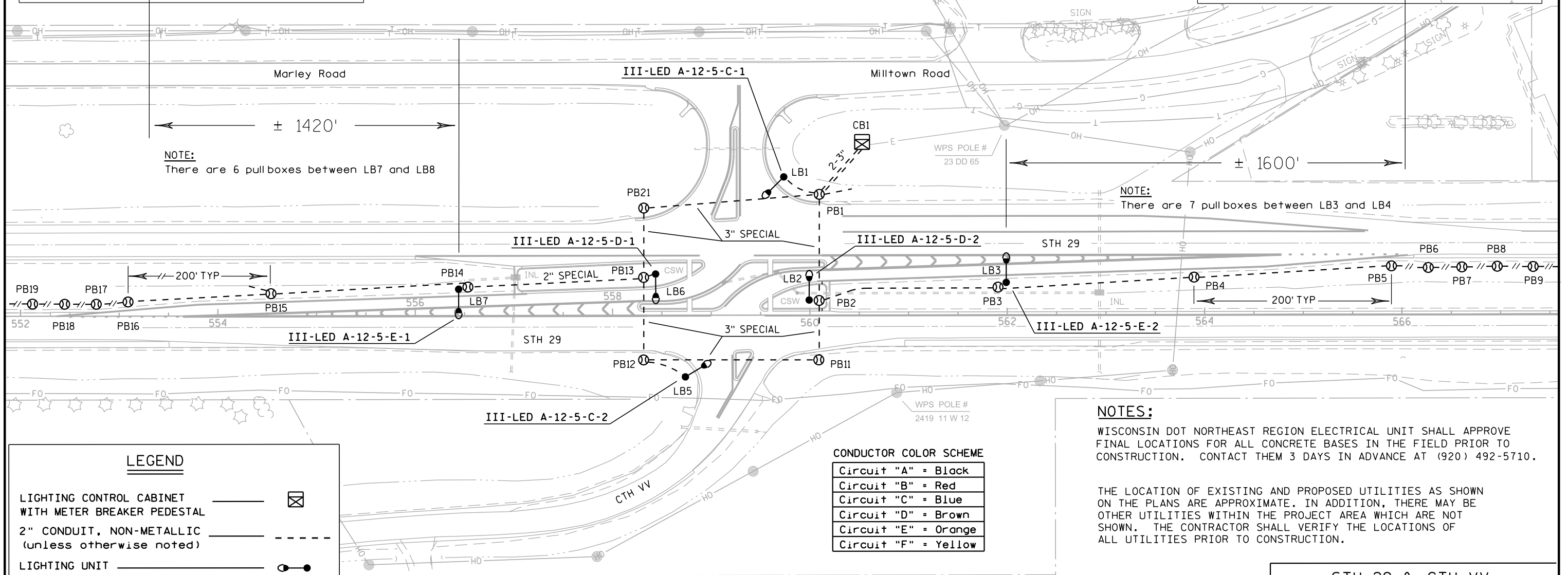
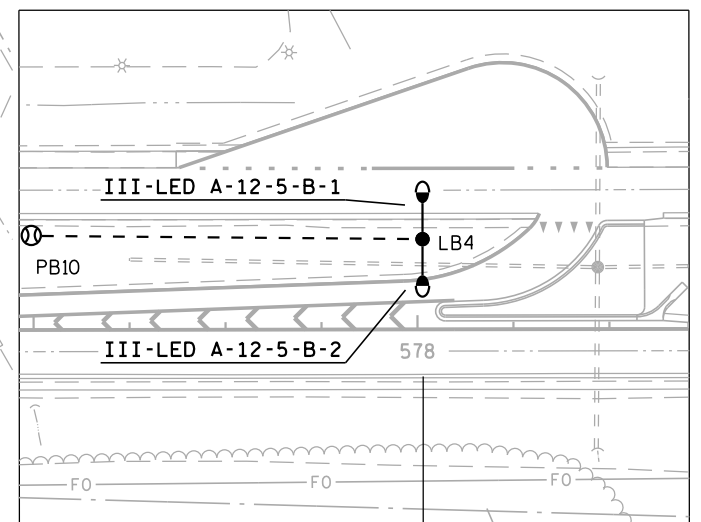


EXAMPLE (see individual label on each lighting unit)

III-LED A-12-5-A-4

LIGHT UNIT NUMBER IN CIRCUIT
CIRCUIT ID
BASE TYPE
MAST ARM LENGTH (in feet)
LAMP WATTAGE
DISTRIBUTION TYPE

240 VOLT SYSTEM
120/240 VOLT ELECTRIC SERVICE



LEGEND

LIGHTING CONTROL CABINET WITH METER BREAKER PEDESTAL

2\" CONDUIT, NON-METALLIC (unless otherwise noted)

LIGHTING UNIT

PULL BOX 24\" X 42\"

UTILITY POLE

ELECTRIC, UNDERGROUND

ELECTRIC, OVERHEAD

CONDUCTOR COLOR SCHEME

Circuit "A" = Black
Circuit "B" = Red
Circuit "C" = Blue
Circuit "D" = Brown
Circuit "E" = Orange
Circuit "F" = Yellow

NOTES:

WISCONSIN DOT NORTHEAST REGION ELECTRICAL UNIT SHALL APPROVE FINAL LOCATIONS FOR ALL CONCRETE BASES IN THE FIELD PRIOR TO CONSTRUCTION. CONTACT THEM 3 DAYS IN ADVANCE AT (920) 492-5710.

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

STH 29 & CTH VV
VILLAGE OF HOWARD
BROWN COUNTY

LIGHTING NO. 05-2011

DESIGNER: WISDOT NE REGION TRAFFIC UNIT

DATE: 4-21-2014

SHEET NO. 1 OF 1

PROJECT NO: 9202-10-71

HWY: STH 29

COUNTY: BROWN

CONSTRUCTION DETAIL - "J" TURN LIGHTING

SHEET

50

E

FILE NAME : F:\d3_traffic\NL05-2011.dgn

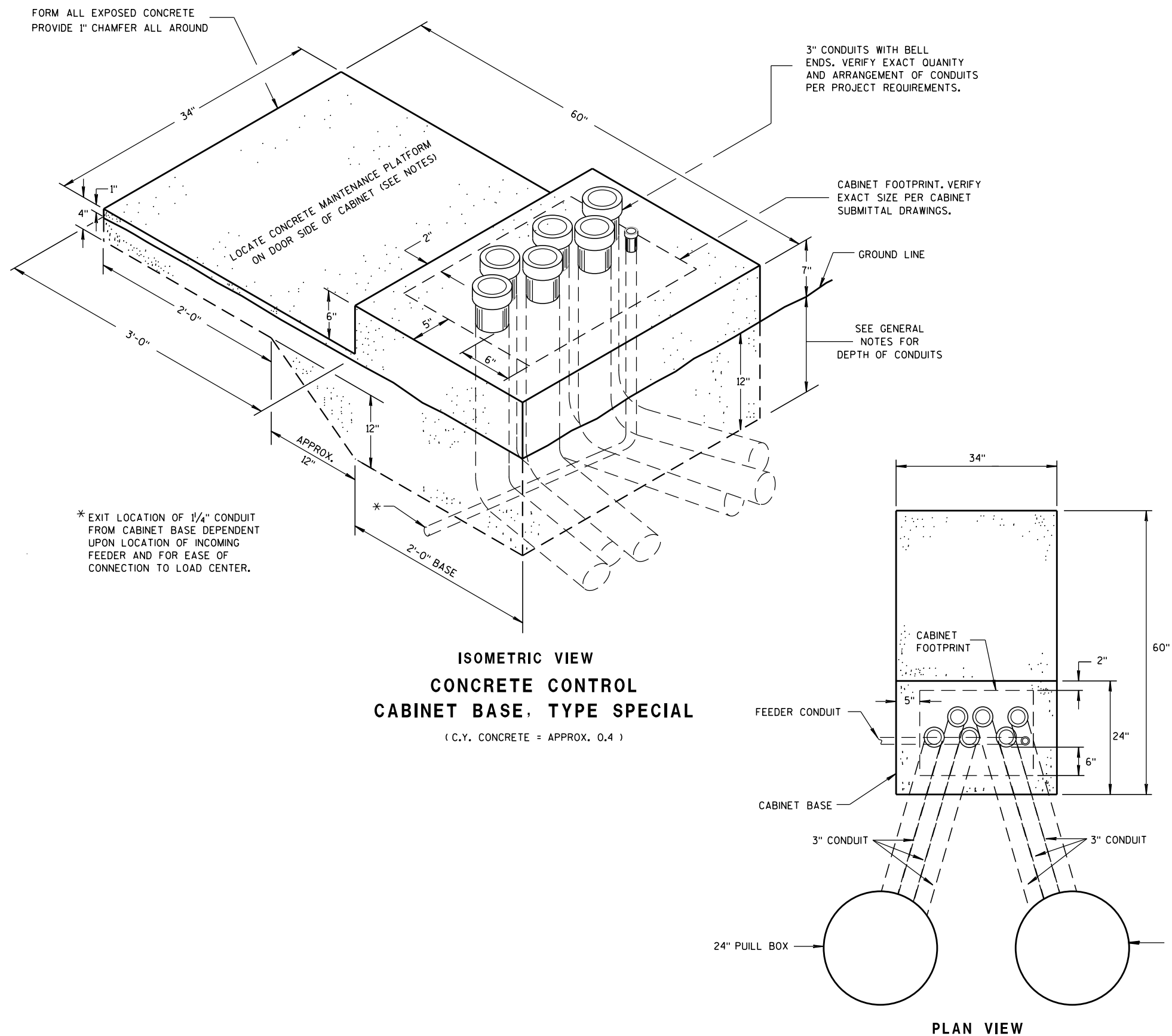
PLOT DATE : 21-APR-2014 14:07

PLOT BY : dotc5s

PLOT NAME : L05-2011.const

PLOT SCALE : 100:1

WISDOT/CADDS SHEET 42



GENERAL NOTES

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

INSTALL FOUR STAINLESS STEEL APPROVED CONCRETE MASONRY ANCHORS TO ANCHOR THE CABINET BASES. THE ANCHORS SHALL BE LOCATED AS DIRECTED BY THE ENGINEER TO PROPERLY ANCHOR THE CONTROL CABINET TO THE BASE.

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

CONDUIT HEIGHT ABOVE THE CONCRETE BASE SHALL BE 1 INCH.

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.

CONTROL CABINET BASE TOP SURFACE SHALL BE TROWEL FINISHED SMOOTH AND LEVEL.

MAINTENANCE PLATFORM SHALL BE FLOAT OR BROOM FINISHED AND BE LEVEL.

MAINTENANCE PLATFORMS ARE NOT REQUIRED WHEN THE SURROUNDING AREA IS PAVED.

MINIMUM BENDING RADIUS OF CONDUIT = 6 X THE DIAMETER.

ALL METALLIC CONDUIT ENDS SHALL BE REAMED AND THREADED.

CAP ALL BELOW GRADE METALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

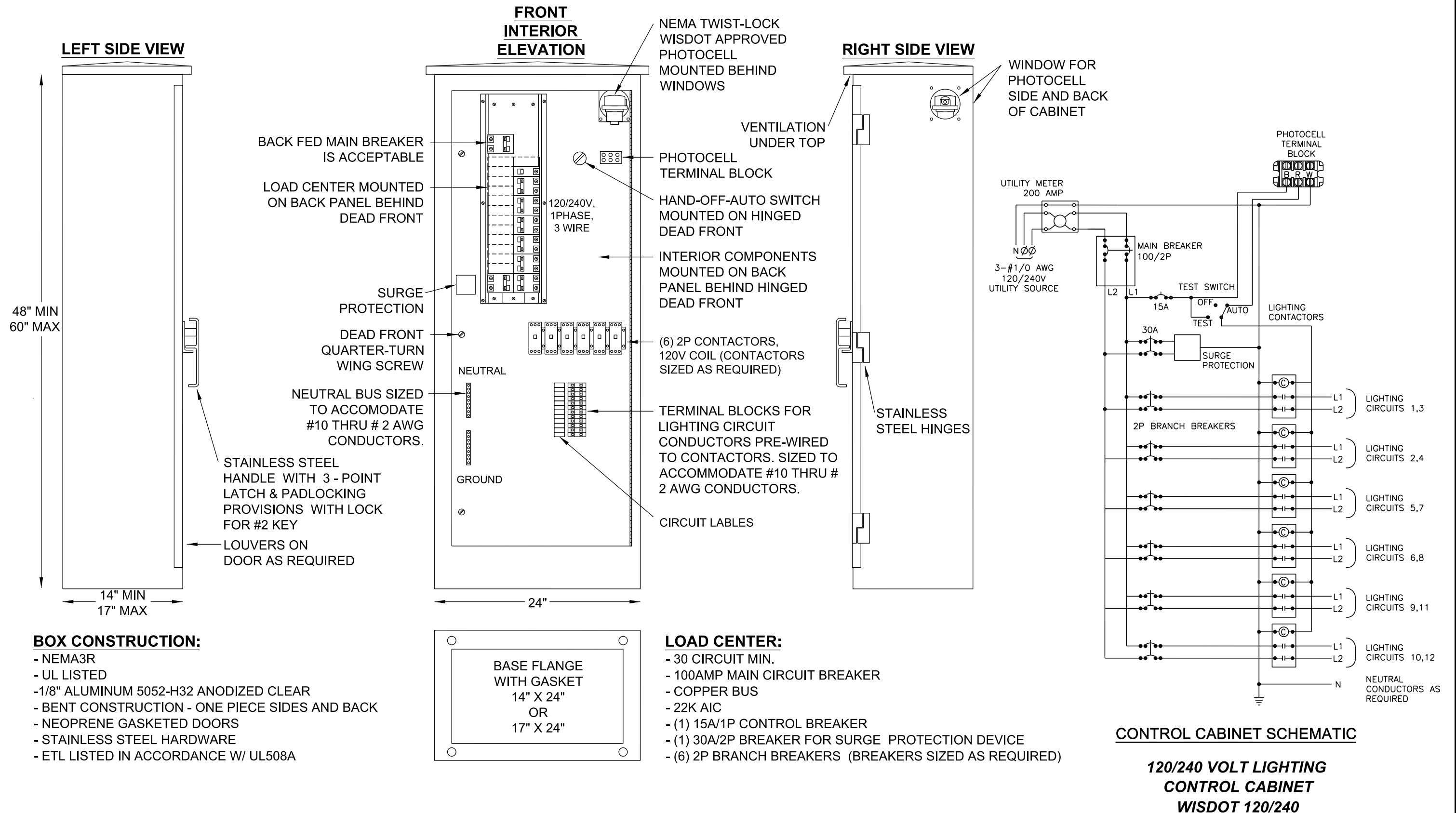
PLUG ALL BELOW GRADE NONMETALLIC CONDUIT ENDS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED.

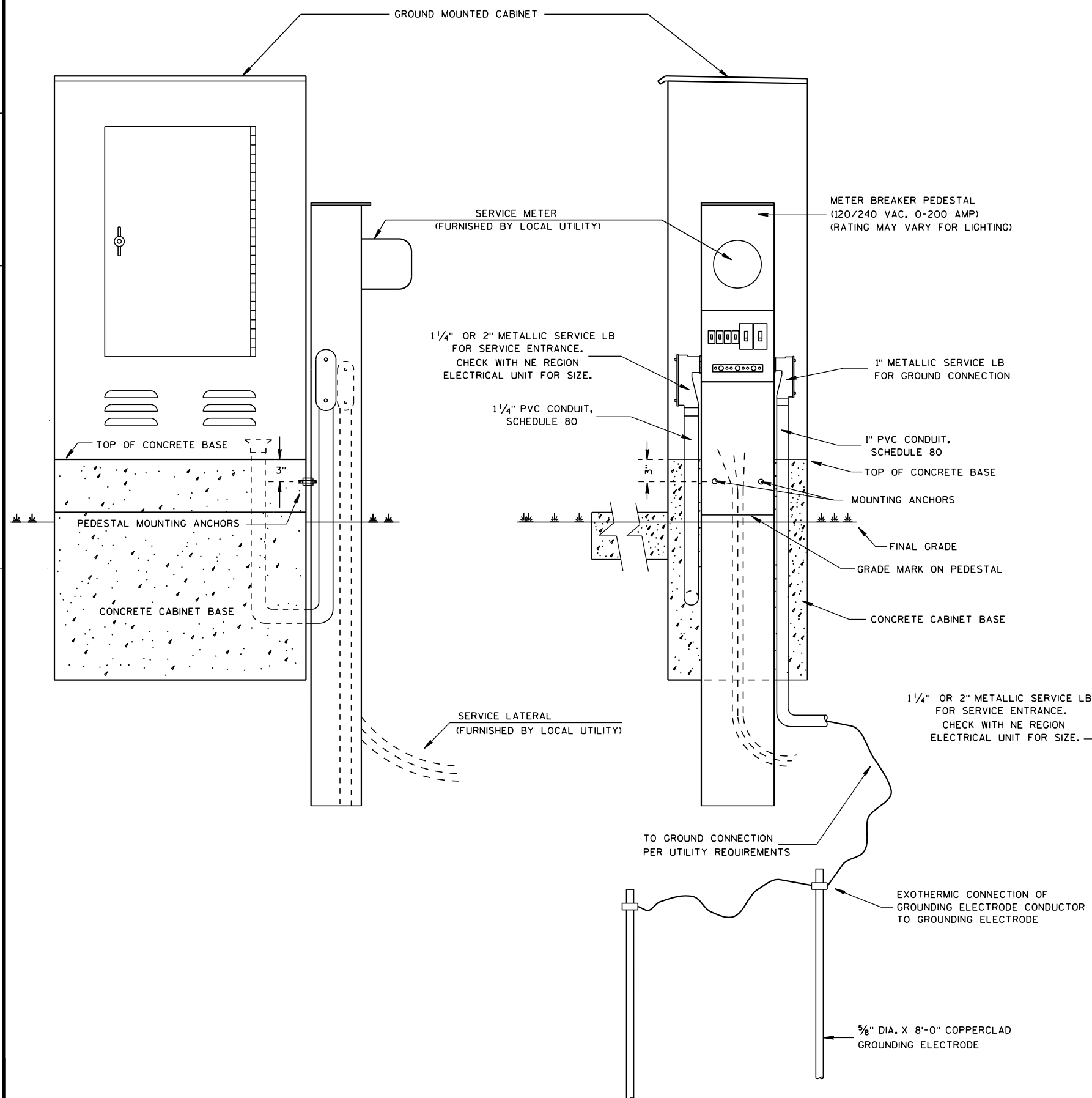
ALL CONDUIT ENDS AT THE TOP OF CONCRETE BASES SHALL BE CAPPED IF METALLIC OR PLUGGED IF NONMETALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT BEING INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

CONDUIT EXITING THE CONCRETE BASE (SIX THREE INCH) SHALL TERMINATE IN PULL BOXES AS SHOWN ON THE PLANS.

CONCRETE FORM DEPTH BELOW FINISHED GRADE SHALL BE 6" MAXIMUM. CONCRETE FORMS SHALL BE REMOVED AFTER CONCRETE HAS SET.

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





GENERAL NOTES

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

THE EXACT LOCATION OF THE METER BREAKER PEDESTAL SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE TYPE OF CONCRETE CABINET BASE TO BE INSTALLED SHALL BE AS CALLED FOR IN THE PLANS.

TO FACILITATE FLUSH MOUNTING OF THE METER BREAKER PEDESTAL AGAINST THE SIDE OF THE CABINET BASE (IF FLUSH MOUNTING POSSIBLE, CONFER WITH THE LOCAL UTILITY TO DETERMINE WHICH SIDE OF THE CONCRETE BASE THE ELECTRICAL SERVICE LATERAL WILL APPROACH, THEN FORM THAT INDICATED SIDE FOR FULL SIDE DEPTH.

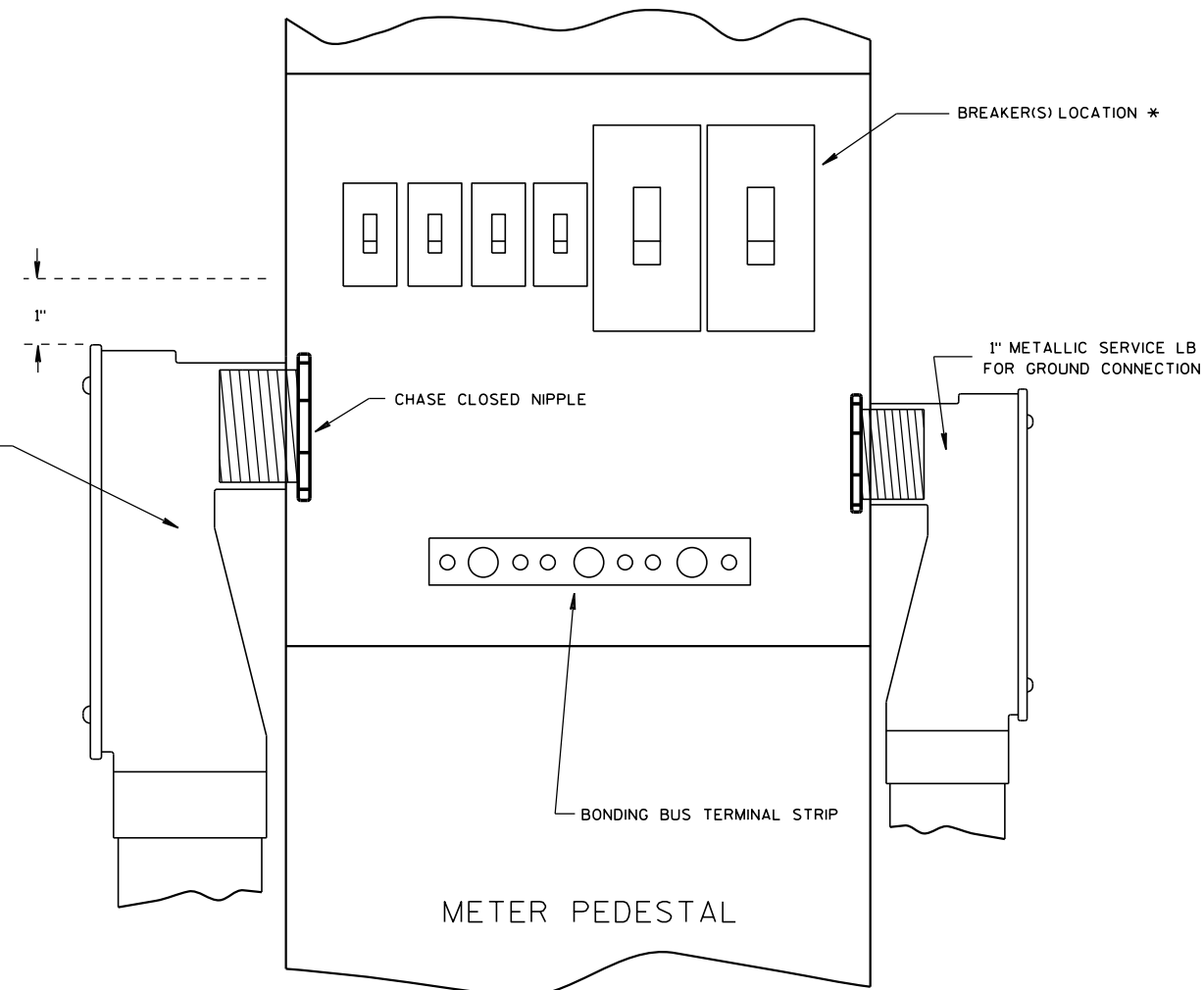
WHILE FLUSH MOUNTING IS THE MOST DESIRABLE MOUNTING CONFIGURATION UTILITY REQUIREMENTS MAY PRECLUDE THIS OPTION. CONTRACTOR MUST PROVIDE UTILITY APPROVED PEDESTAL AND INSTALL PER UTILITY AND MANUFACTURERS REQUIREMENTS.

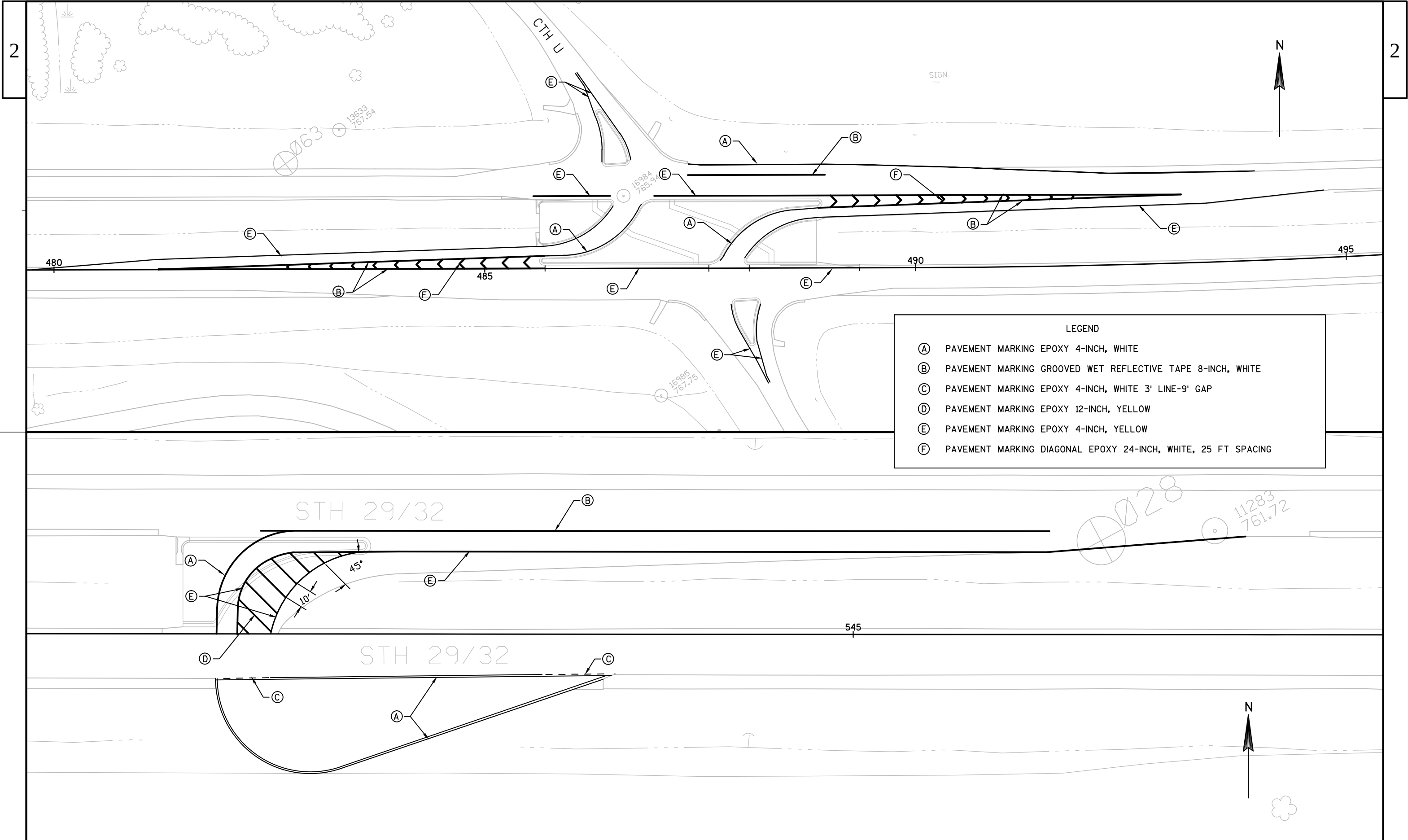
SERVICE CONDUCTOR ENTRANCES SHALL BE RIGID METALLIC CONDUIT OR SCHEDULE 80 PVC, NIPPLES AND/OR CONDULETS AS REQUIRED. CONDUIT LB SHALL BE OF METALLIC SERVICE ENTRANCE TYPE.

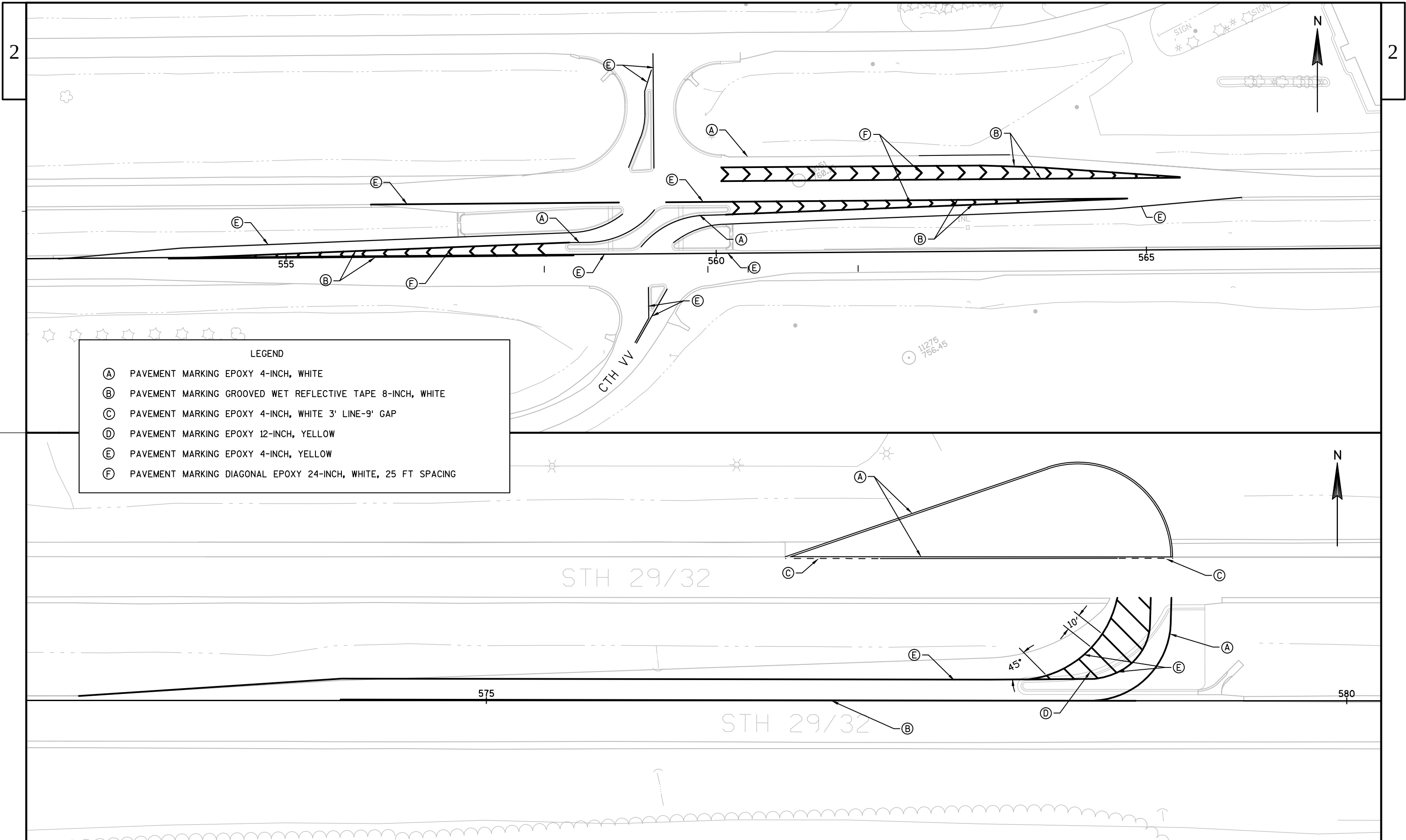
SERVICE CONDUCTOR ENTRANCES SHALL BE SIZED AND LOCATED AS REQUIRED BY THE LOCAL UTILITY AND IN ACCORDANCE WITH APPROPRIATE ARTICLES OF THE LATEST ACCEPTED NATIONAL ELECTRICAL CODE.

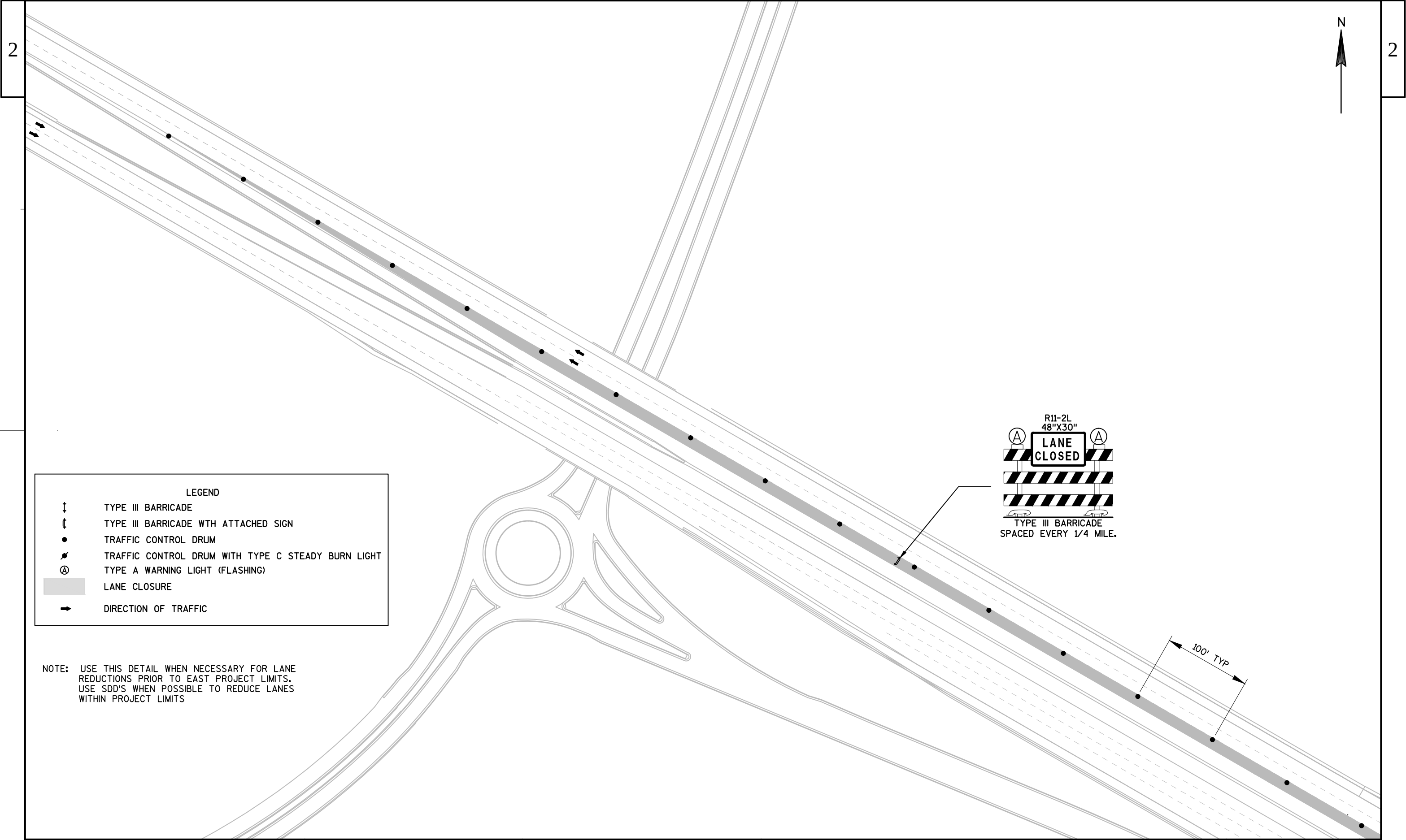
IF MORE THAN ONE GROUNDING ELECTRODE IS REQUIRED, THE DISTANCE APART SHALL BE 6 FEET OR PER NEC.

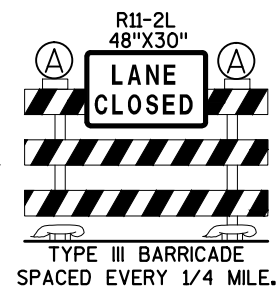
* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.







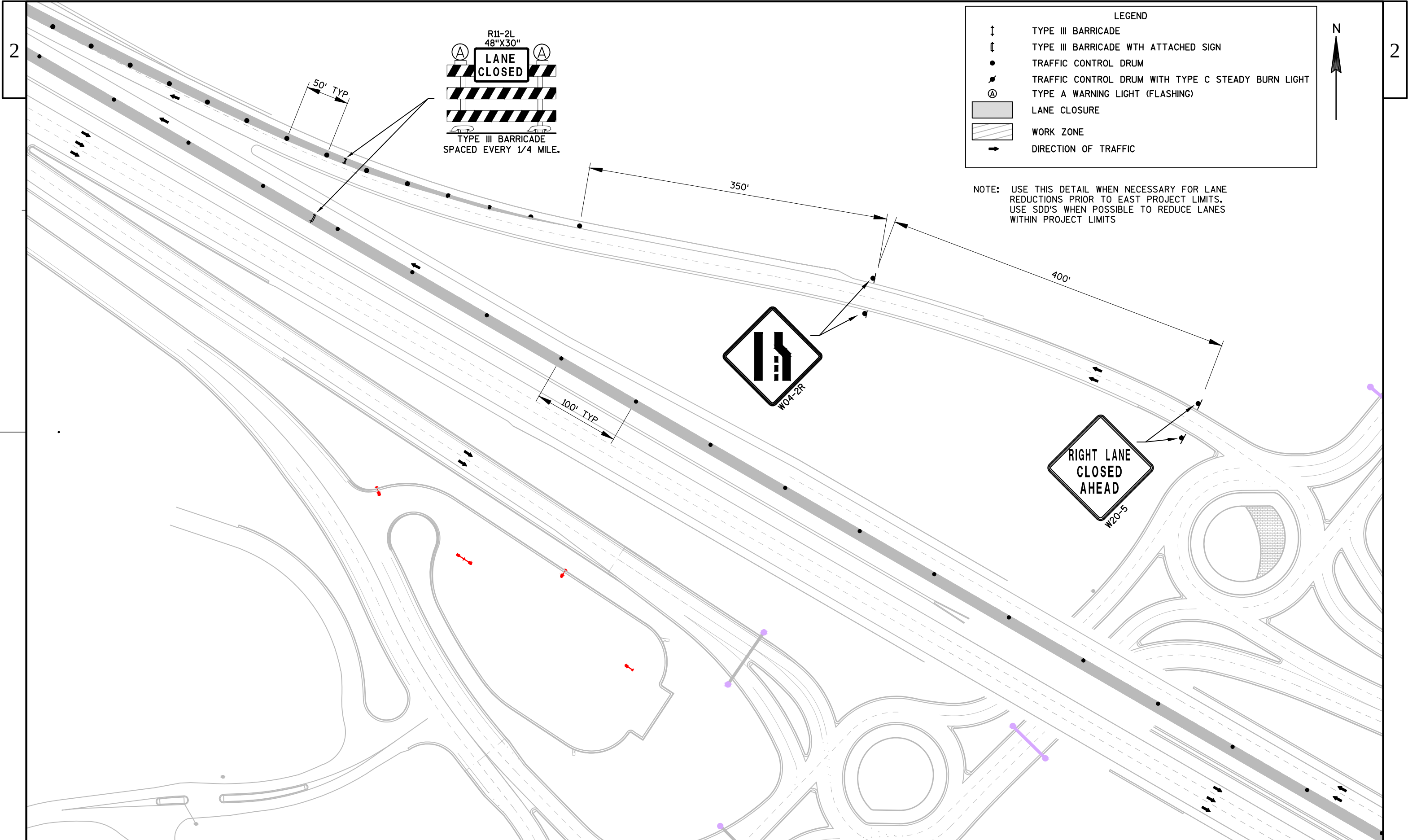


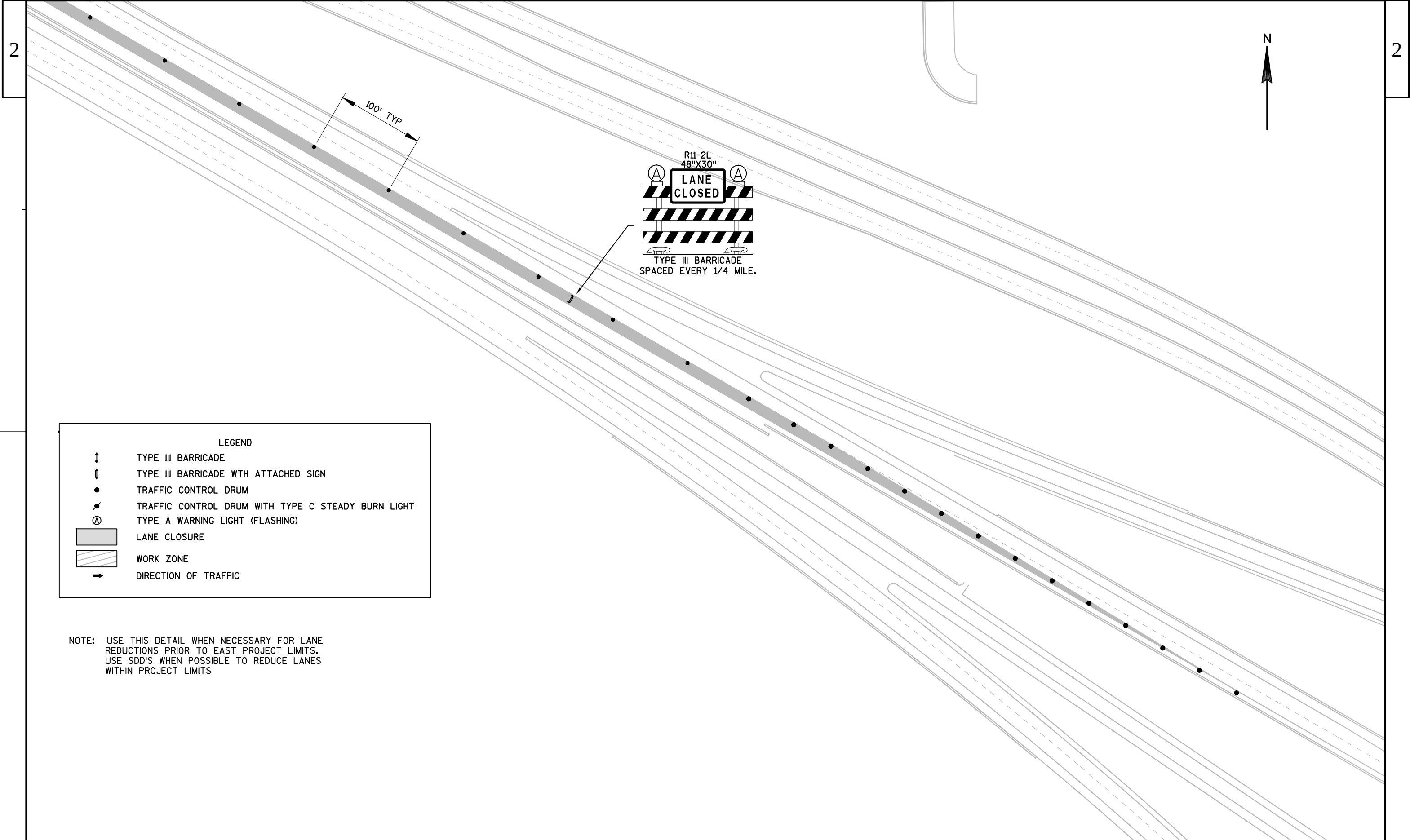


LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WTH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
-  TYPE A WARNING LIGHT (FLASHING)
-  LANE CLOSURE
-  DIRECTION OF TRAFFIC

NOTE: USE THIS DETAIL WHEN NECESSARY FOR LANE
REDUCTIONS PRIOR TO EAST PROJECT LIMITS.
USE SDD'S WHEN POSSIBLE TO REDUCE LANES
WITHIN PROJECT LIMITS

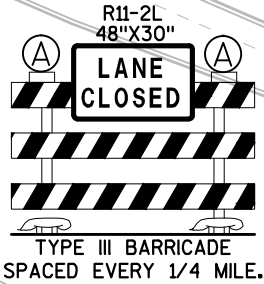


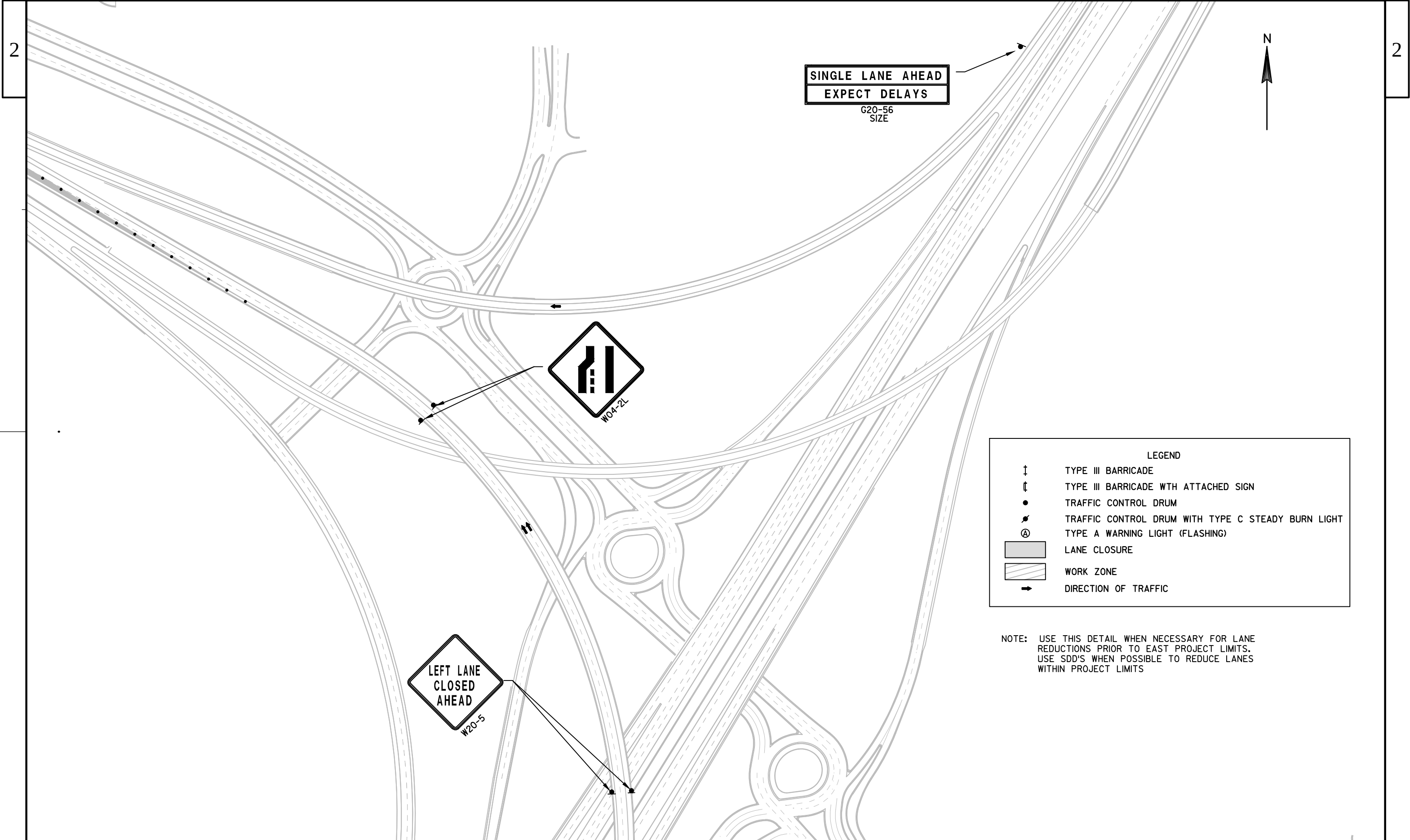


LEGEND

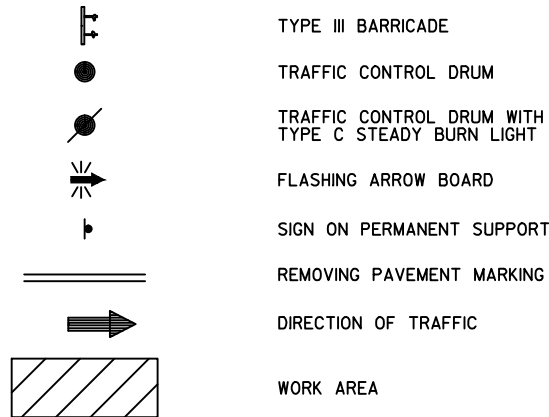
- ↑ TYPE III BARRICADE
- ↑ TYPE III BARRICADE WTH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- ⚡ TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- Ⓐ TYPE A WARNING LIGHT (FLASHING)
- LANE CLOSURE
- ▨ WORK ZONE
- ➡ DIRECTION OF TRAFFIC

NOTE: USE THIS DETAIL WHEN NECESSARY FOR LANE REDUCTIONS PRIOR TO EAST PROJECT LIMITS. USE SDD'S WHEN POSSIBLE TO REDUCE LANES WITHIN PROJECT LIMITS





LEGEND



TRAFFIC CONTROL NOTES

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

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

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

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

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

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

REDUCED SPEED AHEAD AND SPEED LIMIT 55 SIGNS MUST BE POST MOUNTED.

SPEED LIMIT SIGNS SHALL ALSO BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP AND AT 0.5 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.

THE LOCATION OF THE FIRST SIGN INDICATING THE 55 MPH REGULATORY SPEED LIMIT IS REFERENCED FROM BEGINNING OF LANE CLOSURE TAPER. THE 55 MPH REGULATORY SPEED LIMIT SIGN LOCATION MUST BE ADJUSTED WHEN CONSTRUCTION ACTIVITIES REQUIRE THE LANE CLOSURE START LOCATION TO CHANGE.

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

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 7 CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

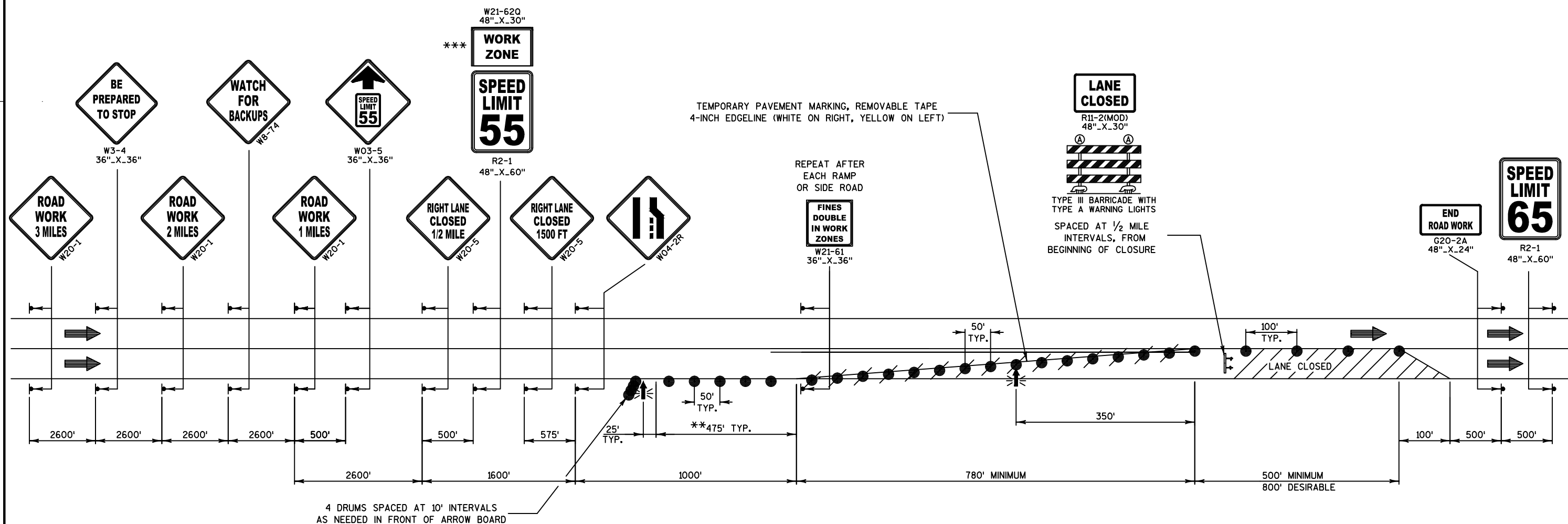
IF LANE CLOSURE IS MORE THAN 1 MILE, PLACE A TYPE III BARRICADE APPROXIMATELY EVERY 1/2 MILE ACROSS THE CLOSED LANE TO HELP ENFORCE THE DRUM LINE.

ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE 1/2 THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

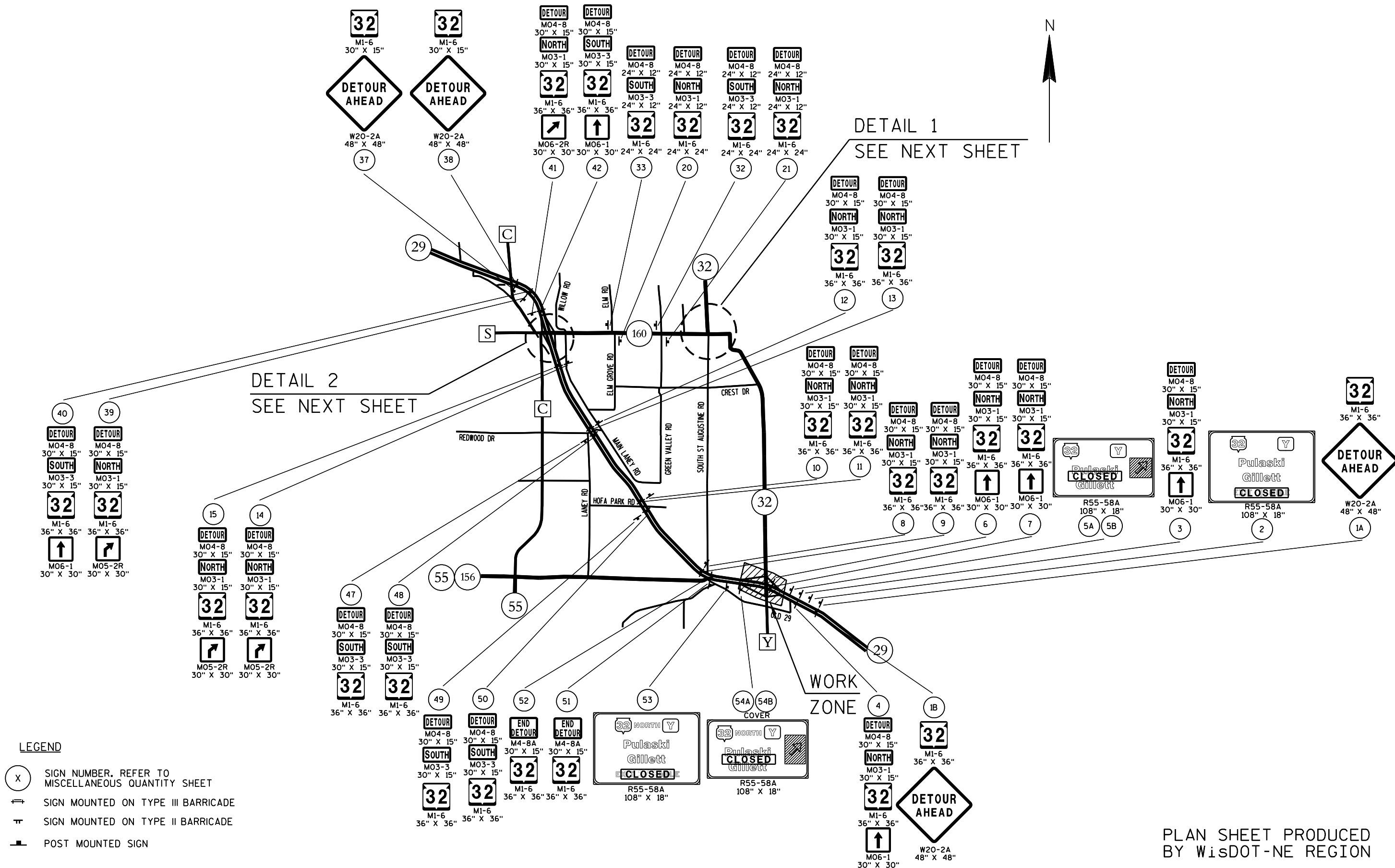
** CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARDS SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS FOR A MINIMUM OF 1500 FEET IN FRONT OF THE DRUMS.

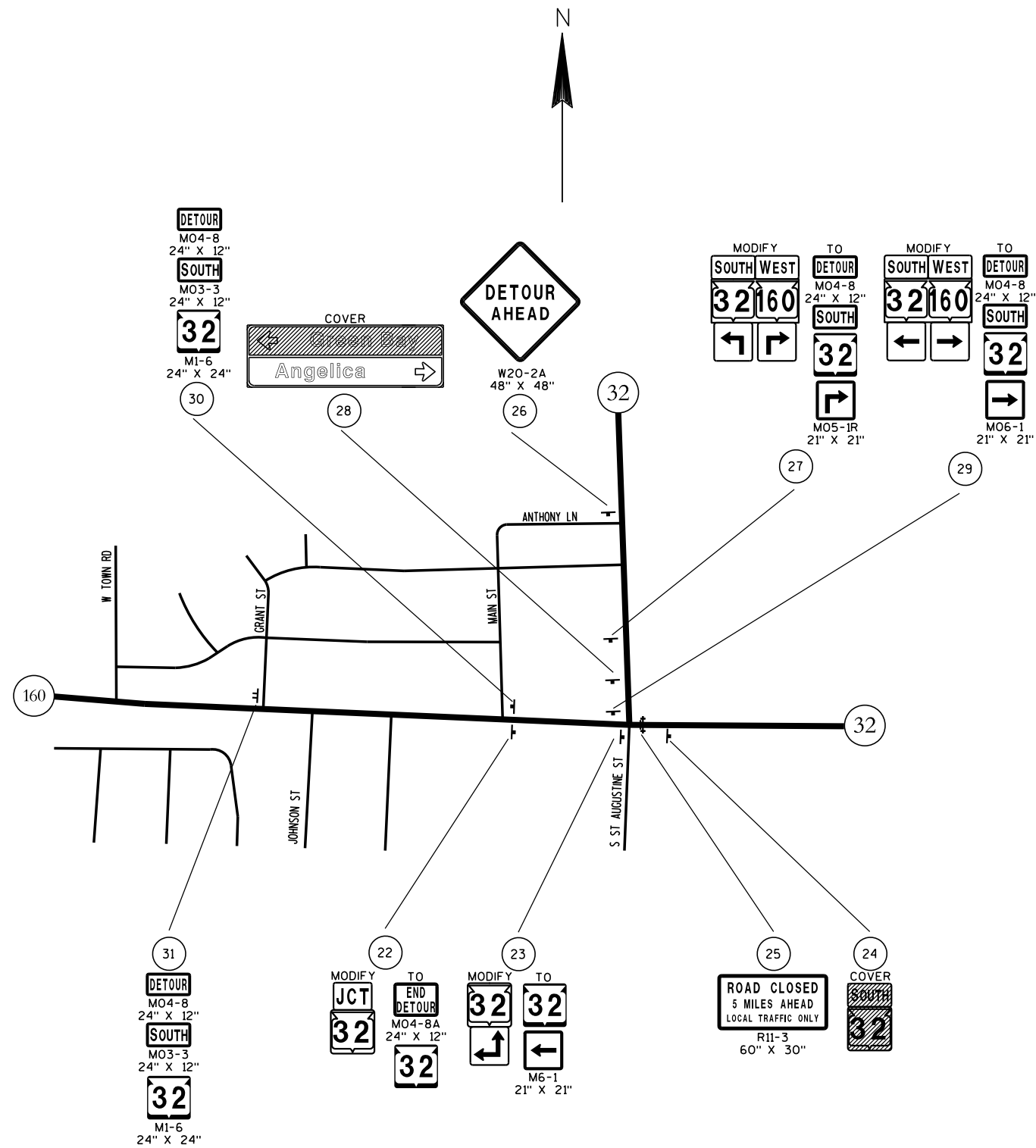
*** SEE REQUIREMENT FOR TEMPORARY REGULATORY SPEED REDUCTION IN THE SPECIAL PROVISIONS.

COVERING AND REMOVAL OF MATERIAL COVERING TEMPORARY REGULATORY SPEED LIMIT SIGNS AND EXISTING SPEED LIMIT SIGNS RELATED TO TEMPORARY AND/OR PERIODIC LANE CLOSURES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.



LANE CLOSURE - REGULATORY SPEED REDUCTION WITHOUT BARRIER

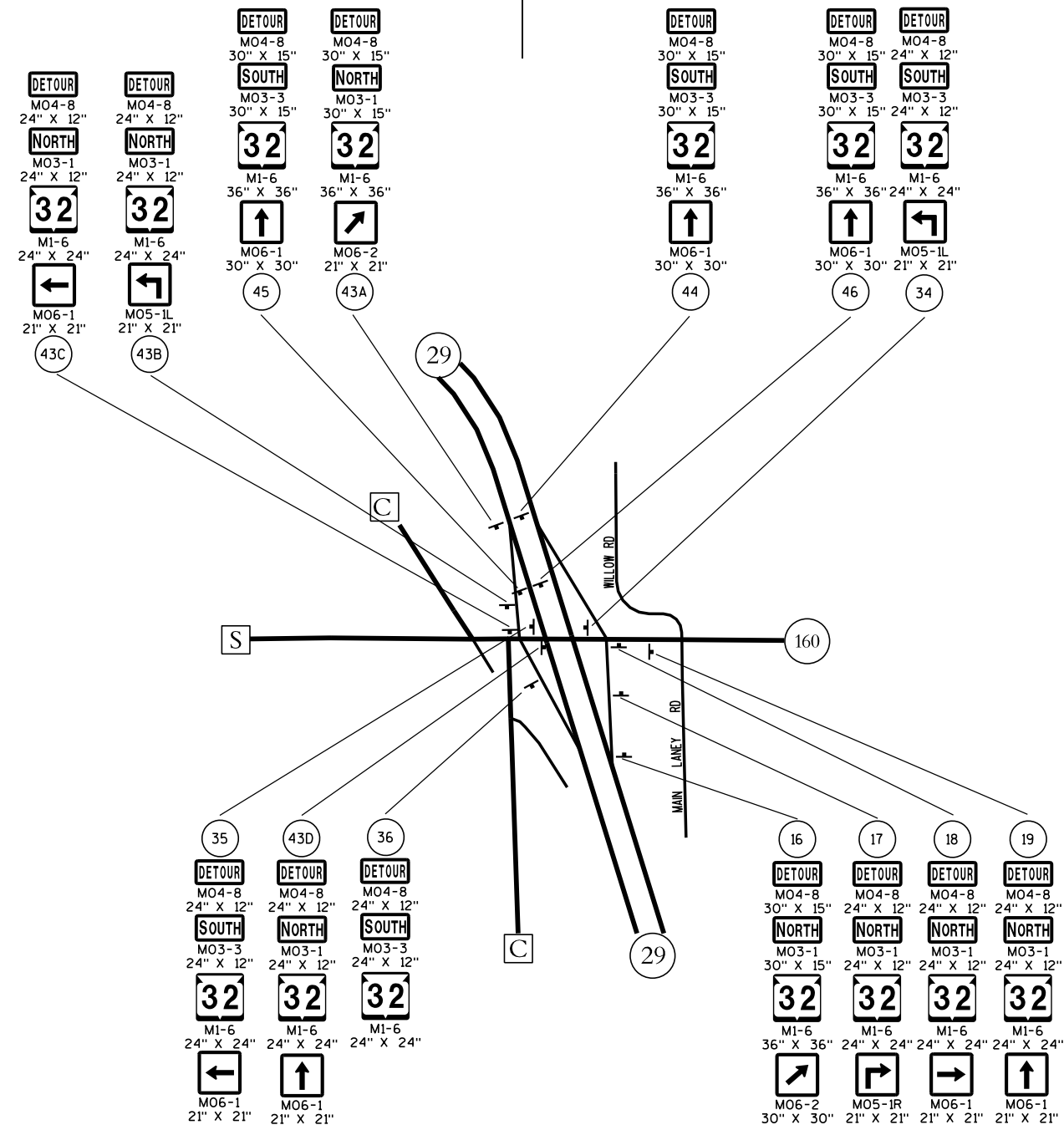




LEGEND

- (X) SIGN NUMBER, REFER TO MISCELLANEOUS QUANTITY SHEET
- ≡ SIGN MOUNTED ON TYPE III BARRICADE
- ≡ SIGN MOUNTED ON TYPE II BARRICADE
- POST MOUNTED SIGN

DETAIL 1



DETAIL 2

PLAN SHEET PRODUCED
BY WISDOT-NE REGION

3

DATE 20AUG14		E S T I M A T E O F Q U A N T I T I E S			
LINE				9202-10-71	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	204.0100	REMOVING PAVEMENT	SY	2,459.000	2,459.000
0020	204.0105	REMOVING PAVEMENT BUTT JOINTS	SY	869.000	869.000
0030	204.0110	REMOVING ASPHALTIC SURFACE	SY	4,330.000	4,330.000
0040	204.0115	REMOVING ASPHALTIC SURFACE BUTT JOINTS	SY	1,142.000	1,142.000
0050	204.0120	REMOVING ASPHALTIC SURFACE MILLING	SY	131,763.000	131,763.000
0060	204.0150	REMOVING CURB & GUTTER	LF	950.000	950.000
0070	204.0165	REMOVING GUARDRAIL	LF	3,280.000	3,280.000
0080	204.0180	REMOVING DELINEATORS AND MARKERS	EACH	100.000	100.000
0090	204.0220	REMOVING INLETS	EACH	1.000	1.000
0100	204.0245	REMOVING STORM SEWER (SIZE) 01. 12-INCH	LF	35.000	35.000
0110	204.0245	REMOVING STORM SEWER (SIZE) 02. 24-INCH	LF	85.000	85.000
0120	205.0100	EXCAVATION COMMON	CY	3,025.000	3,025.000
0130	208.0100	BORROW	CY	182.000	182.000
0140	209.0100	BACKFILL GRANULAR	CY	37.000	37.000
0150	211.0200	PREPARE FOUNDATION FOR CONCRETE PAVEMENT (PROJECT) 01. 9202-10-71	LS	1.000	1.000
0160	211.0400	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	STA	58.000	58.000
0170	213.0100	FINISHING ROADWAY (PROJECT) 01. 9202-10-71	EACH	1.000	1.000
0180	305.0110	BASE AGGREGATE DENSE 3/4-INCH	TON	3,457.000	3,457.000
0190	305.0120	BASE AGGREGATE DENSE 1 1/4-INCH	TON	2,437.000	2,437.000
0200	305.0500	SHAPING SHOULDERS	STA	925.000	925.000
0210	310.0115	BASE AGGREGATE OPEN GRADED	CY	22.000	22.000
0220	390.0403	BASE PATCHING CONCRETE SHES	SY	7,496.000	7,496.000
0230	415.0410	CONCRETE PAVEMENT APPROACH SLAB	SY	150.000	150.000
0240	416.0610	DRILLED TIE BARS	EACH	1,244.000	1,244.000
0250	416.0620	DRILLED DOWEL BARS	EACH	8,525.000	8,525.000
0260	440.4410.S	INCENTIVE IRI RIDE	DOL	63,280.000	63,280.000
0270	455.0105	ASPHALTIC MATERIAL PG58-28	TON	3,111.000	3,111.000
0280	455.0605	TACK COAT	GAL	11,651.000	11,651.000
0290	460.1100	HMA PAVEMENT TYPE E-0.3	TON	9,325.000	9,325.000
0300	460.1110	HMA PAVEMENT TYPE E-10	TON	47,224.000	47,224.000
0310	460.2000	INCENTIVE DENSITY HMA PAVEMENT	DOL	36,200.000	36,200.000
0320	460.4110.S	REHEATING HMA PAVEMENT LONGITUDINAL JOINTS	LF	90,380.000	90,380.000
0330	465.0120	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	TON	94.000	94.000
0340	465.0400	ASPHALTIC SHOULDER RUMBLE STRIPS	LF	158,480.000	158,480.000
0350	520.9700.S	CULVERT PIPE LINERS (SIZE) 01. 42-INCH	LF	220.000	220.000
0360	520.9750.S	CLEANING CULVERT PIPES FOR LINER VERIFICATION	EACH	1.000	1.000
0370	521.1024	APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH	EACH	1.000	1.000
0380	521.1030	APRON ENDWALLS FOR CULVERT PIPE STEEL 30-INCH	EACH	1.000	1.000
0390	522.1018	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH	EACH	4.000	4.000
0400	522.1024	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24-INCH	EACH	4.000	4.000
0410	522.1036	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH	EACH	1.000	1.000
0420	601.0409	CONCRETE CURB & GUTTER 30-INCH TYPE A	LF	200.000	200.000
0430	602.2400	CONCRETE SAFETY ISLANDS	SF	790.000	790.000
0440	608.0324	STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH	LF	86.000	86.000

3

3

DATE 20AUG14		E S T I M A T E O F Q U A N T I T I E S			
LINE				9202-10-71	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0450	611.8115	ADJUSTING INLET COVERS	EACH	14.000	14.000
0460	612.0106	PIPE UNDERDRAIN 6-INCH	LF	954.000	954.000
0470	612.0806	APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH	EACH	2.000	2.000
0480	614.0010	BARRIER SYSTEM GRADING SHAPING FINISHING	EACH	12.000	12.000
0490	614.2300	MGS GUARDRAIL 3	LF	2,845.000	2,845.000
0500	614.2340	MGS GUARDRAIL 3 L	LF	226.000	226.000
0510	614.2500	MGS THRIE BEAM TRANSITION	LF	160.000	160.000
0520	614.2610	MGS GUARDRAIL TERMINAL EAT	EACH	12.000	12.000
0530	614.2620	MGS GUARDRAIL TERMINAL TYPE 2	EACH	4.000	4.000
0540	618.0100	MAINTENANCE AND REPAIR OF HAUL ROADS (PROJECT) 01. 9202-10-71	EACH	1.000	1.000
0550	619.1000	MOBILIZATION	EACH	1.000	1.000
0560	620.0300	CONCRETE MEDIAN SLOPED NOSE	SF	46.000	46.000
0570	624.0100	WATER	MGAL	83.000	83.000
0580	625.0500	SALVAGED TOPSOIL	SY	31,303.000	31,303.000
0590	627.0200	MULCHING	SY	31,303.000	31,303.000
0600	628.1504	SILT FENCE	LF	2,820.000	2,820.000
0610	628.1520	SILT FENCE MAINTENANCE	LF	705.000	705.000
0620	628.1905	MOBILIZATIONS EROSION CONTROL	EACH	4.000	4.000
0630	628.1910	MOBILIZATIONS EMERGENCY EROSION CONTROL	EACH	4.000	4.000
0640	628.2008	EROSION MAT URBAN CLASS I TYPE B	SY	3,100.000	3,100.000
0650	628.7005	INLET PROTECTION TYPE A	EACH	1.000	1.000
0660	628.7010	INLET PROTECTION TYPE B	EACH	1.000	1.000
0670	628.7015	INLET PROTECTION TYPE C	EACH	13.000	13.000
0680	628.7504	TEMPORARY DITCH CHECKS	LF	200.000	200.000
0690	628.7555	CULVERT PIPE CHECKS	EACH	36.000	36.000
0700	628.7570	ROCK BAGS	EACH	72.000	72.000
0710	629.0210	FERTILIZER TYPE B	CWT	0.200	0.200
0720	630.0130	SEEDING MIXTURE NO. 30	LB	7.000	7.000
0730	630.0200	SEEDING TEMPORARY	LB	10.400	10.400
0740	633.0100	DELINEATOR POSTS STEEL	EACH	100.000	100.000
0750	633.0500	DELINEATOR REFLECTORS	EACH	100.000	100.000
0760	633.5200	MARKERS CULVERT END	EACH	26.000	26.000
0770	634.0614	POSTS WOOD 4X6-INCH X 14-FT	EACH	62.000	62.000
0780	634.0616	POSTS WOOD 4X6-INCH X 16-FT	EACH	58.000	58.000
0790	634.0618	POSTS WOOD 4X6-INCH X 18-FT	EACH	13.000	13.000
0800	635.0200	SIGN SUPPORTS STRUCTURAL STEEL HS	LB	5,520.000	5,520.000
0810	635.0300	SIGN SUPPORTS REPLACING BASE CONNECTION BOLTS	EACH	8.000	8.000
0820	636.0100	SIGN SUPPORTS CONCRETE MASONRY	CY	1.600	1.600
0830	636.0500	SIGN SUPPORTS STEEL REINFORCEMENT	LB	98.000	98.000
0840	637.1220	SIGNS TYPE I REFLECTIVE SH	SF	952.500	952.500
0850	637.2210	SIGNS TYPE II REFLECTIVE H	SF	1,444.590	1,444.590
0860	637.2215	SIGNS TYPE II REFLECTIVE H FOLDING	SF	20.000	20.000
0870	637.2230	SIGNS TYPE II REFLECTIVE F	SF	75.000	75.000
0880	638.2601	REMOVING SIGNS TYPE I	EACH	8.000	8.000
0890	638.2602	REMOVING SIGNS TYPE II	EACH	193.000	193.000
0900	638.3000	REMOVING SMALL SIGN SUPPORTS	EACH	136.000	136.000
0910	638.3100	REMOVING STRUCTURAL STEEL SIGN SUPPORTS	EACH	8.000	8.000
0920	642.5401	FIELD OFFICE TYPE D	EACH	1.000	1.000
0930	643.0100	TRAFFIC CONTROL (PROJECT) 01. 9202-10-71	EACH	1.000	1.000
0940	643.0300	TRAFFIC CONTROL DRUMS	DAY	19,650.000	19,650.000
0950	643.0420	TRAFFIC CONTROL BARRICADES TYPE III	DAY	1,552.000	1,552.000

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DATE 20AUG14		E S T I M A T E O F Q U A N T I T I E S				
LINE					9202-10-71	
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY	
0960	643.0705	TRAFFIC CONTROL WARNING LIGHTS TYPE A	DAY	3,104.000	3,104.000	
0970	643.0715	TRAFFIC CONTROL WARNING LIGHTS TYPE C	DAY	1,560.000	1,560.000	
0980	643.0800	TRAFFIC CONTROL ARROW BOARDS	DAY	72.000	72.000	
0990	643.0900	TRAFFIC CONTROL SIGNS	DAY	1,444.000	1,444.000	
1000	643.0910	TRAFFIC CONTROL COVERING SIGNS TYPE I	EACH	2.000	2.000	
1010	643.0920	TRAFFIC CONTROL COVERING SIGNS TYPE II	EACH	2.000	2.000	
1020	643.1000	TRAFFIC CONTROL SIGNS FIXED MESSAGE	SF	36.000	36.000	
1030	643.1050	TRAFFIC CONTROL SIGNS PCMS	DAY	7.000	7.000	
1040	643.2000	TRAFFIC CONTROL DETOUR (PROJECT) 01.	EACH	1.000	1.000	
		9202-10-71				
1050	643.3000	TRAFFIC CONTROL DETOUR SIGNS	DAY	1,670.000	1,670.000	
1060	646.0106	PAVEMENT MARKING EPOXY 4-INCH	LF	200,347.000	200,347.000	
1070	646.0126	PAVEMENT MARKING EPOXY 8-INCH	LF	1,500.000	1,500.000	
1080	646.0136	PAVEMENT MARKING EPOXY 12-INCH	LF	270.000	270.000	
1090	646.0600	REMOVING PAVEMENT MARKINGS	LF	5,300.000	5,300.000	
1100	646.0805.S	PAVEMENT MARKING OUTFALL	EACH	179.000	179.000	
1110	646.0881.S	PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 4-INCH	LF	21,015.000	21,015.000	
1120	646.0883.S	PAVEMENT MARKING GROOVED WET REFLECTIVE TAPE 8-INCH	LF	12,090.000	12,090.000	
1130	647.0166	PAVEMENT MARKING ARROWS EPOXY TYPE 2	EACH	4.000	4.000	
1140	647.0356	PAVEMENT MARKING WORDS EPOXY	EACH	2.000	2.000	
1150	647.0546	PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 36-INCH	EACH	42.000	42.000	
1160	647.0566	PAVEMENT MARKING STOP LINE EPOXY 18-INCH	LF	72.000	72.000	
1170	647.0606	PAVEMENT MARKING ISLAND NOSE EPOXY	EACH	4.000	4.000	
1180	647.0746	PAVEMENT MARKING DIAGONAL EPOXY 24-INCH	LF	3,308.000	3,308.000	
1190	649.0400	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH	LF	10,000.000	10,000.000	
1200	649.0801	TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH	LF	1,200.000	1,200.000	
1210	650.4000	CONSTRUCTION STAKING STORM SEWER	EACH	1.000	1.000	
1220	650.4500	CONSTRUCTION STAKING SUBGRADE	LF	450.000	450.000	
1230	650.5000	CONSTRUCTION STAKING BASE	LF	450.000	450.000	
1240	650.5500	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	LF	95.000	95.000	
1250	650.7000	CONSTRUCTION STAKING CONCRETE PAVEMENT	LF	450.000	450.000	
1260	650.8000	CONSTRUCTION STAKING RESURFACING REFERENCE	LF	92,929.000	92,929.000	
1270	650.9910	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) 01. 9202-10-71	LS	1.000	1.000	
1280	650.9920	CONSTRUCTION STAKING SLOPE STAKES	LF	1,715.000	1,715.000	
1290	652.0225	CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	LF	3,380.000	3,380.000	
1300	652.0235	CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	LF	140.000	140.000	
1310	652.0605	CONDUIT SPECIAL 2-INCH	LF	180.000	180.000	
1320	652.0615	CONDUIT SPECIAL 3-INCH	LF	690.000	690.000	
1330	653.0140	PULL BOXES STEEL 24X42-INCH	EACH	21.000	21.000	
1340	654.0105	CONCRETE BASES TYPE 5	EACH	8.000	8.000	
1350	655.0610	ELECTRICAL WIRE LIGHTING 12 AWG	LF	1,500.000	1,500.000	
1360	655.0615	ELECTRICAL WIRE LIGHTING 10 AWG	LF	23,750.000	23,750.000	
1370	656.0200	ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) 01. STH 29	LS	1.000	1.000	

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DATE 20AUG14		E S T I M A T E O F Q U A N T I T I E S			
LINE					9202-10-71
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
1380	657.0255	TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE	EACH	8.000	8.000
1390	657.0322	POLES TYPE 5-ALUMINUM	EACH	8.000	8.000
1400	657.0710	LUMINAIRE ARMS TRUSS TYPE 4 1/2-INCH CLAMP 12-FT	EACH	10.000	10.000
1410	659.1115	LUMINAIRES UTILITY LED A	EACH	10.000	10.000
1420	690.0150	SAWING ASPHALT	LF	801.000	801.000
1430	690.0250	SAWING CONCRETE	LF	22,773.000	22,773.000
1440	715.0415	INCENTIVE STRENGTH CONCRETE PAVEMENT	DOL	692.000	692.000
1450	ASP.1T0A	ON-THE-JOB TRAINING APPRENTICE AT \$5.00/HR	HRS	2,400.000	2,400.000
1460	ASP.1T0G	ON-THE-JOB TRAINING GRADUATE AT \$5.00/HR	HRS	3,040.000	3,040.000
1470	SPV.0060	SPECIAL 01. CONCRETE CONTROL CABINET BASE	EACH	1.000	1.000
1480	SPV.0060	SPECIAL 02. LIGHTING CONTROL CABINET	EACH	1.000	1.000
1490	SPV.0090	SPECIAL 01. CONCRETE JOINT AND CRACK CLEANING	LF	917.000	917.000
1500	SPV.0180	SPECIAL 01. CONCRETE PAVEMENT SHES 8-INCH	SY	1,696.000	1,696.000

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REMOVING PAVEMENT

STATION	TO	STATION	LOCATION	204.0100 SY
28+00	-	37+50	STH 32	1039
0+30	-	4+80	STH 32 NE RAMP	1420
TOTAL 0010				2459

REMOVING ASPHALTIC SURFACE

STATION	TO	STATION	LOCATION	204.0110 SY	REMARKS
28+00	-	37+50	STH 32	1039	
0+30	-	4+80	STH 32 NE RAMP	1420	
574+30	-	579+00	STH 29	502	J-TURN MEDIAN
541+40	-	546+10	STH 29	532	J-TURN MEDIAN
576+90	-	578+80	STH 29	388	J-TURN BULB
541+40	-	543+50	STH 29	449	J-TURN BULB
TOTAL 0010				4330	

REMOVING PAVEMENT BUTT JOINTS

STATION	LOCATION	204.0105 SY	REMARKS
327+00	STH 29 WB	130	BEGIN PROJECT
327+00	STH 29 EB	130	BEGIN PROJECT
653+97	STH 29 WB LT	75	CTH FF NW Ramp
656+80	STH 29 EB RT	75	CTH FF SW Ramp
672+92	STH 29 WB LT	75	CTH FF NE Ramp
682+08	STH 29 EB RT	75	CTH FF SE Ramp
744+90	STH 29 WB	130	END PROJECT
744+90	STH 29 EB	130	END PROJECT
17+50	STH 32	49	PROJECT LIMITS
TOTAL 0010		869	

REMOVING ASPHALTIC SURFACE BUTT JOINTS

STATION	LOCATION	204.0115 SY	REMARKS
327+00	STH 29 WB	45	BEGIN PROJECT; SHOULDERS
327+00	STH 29 EB	45	BEGIN PROJECT; SHOULDERS
329+00	STH 29 WB LT	78	ST. AUGUSTINE RD.
329+13	STH 29 EB RT	89	STH 156
485+98	STH 29 WB LT	78	CTH U NORTH
488+19	STH 29 EB RT	78	CTH U SOUTH
512+00	STH 29 WB	8	STH 29 TYPICAL SECTION CHANGE
512+00	STH 29 EB	8	STH 29 TYPICAL SECTION CHANGE
559+00	STH 29 EB RT	418	CTH VV SOUTH
559+27	STH 29 WB LT	89	CTH VV NORTH
734+00	STH 29 WB	8	STH 29 TYPICAL SECTION CHANGE
734+00	STH 29 EB	8	STH 29 TYPICAL SECTION CHANGE
744+90	STH 29 WB	45	END PROJECT; SHOULDERS
744+90	STH 29 EB	45	END PROJECT; SHOULDERS
34+25	STH 32 LT	29	DRIVEWAY
34+25	STH 32 RT	38	DRIVEWAY
37+50	STH 32	33	PROJECT LIMITS
TOTAL 0010		1142	

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REMOVING ASPHALTIC SURFACE MILLING

STATION	TO	STATION	LOCATION	204.0120 SY
327+00	-	744+90	STH 29 WB MAINLINE	120669
180+00	-	197+00	STH 32 SW RAMP	2833
0+00	-	18+00	STH 32 NW RAMP	3000
96+63	-	115+49	STH 32 SE RAMP	3413
4+80	-	15+89	STH 32 NE RAMP	1848
TOTAL 0010				131763

REMOVING GUARDRAIL

STATION	TO	STATION	LOCATION	204.0165 LF	REMARKS
391+45	-	394+15	STH 29 EB LT	280	MEDIAN
392+00	-	394+40	STH 29 EB RT	230	OUTSIDE
395+90	-	398+20	STH 29 WB RT	230	MEDIAN
396+00	-	398+75	STH 29 WB LT	280	OUTSIDE
525+30	-	526+75	STH 29 WB LT	150	OUTSIDE
711+60	-	715+10	STH 29 EB RT	350	OUTSIDE
714+50	-	717+10	STH 29 WB LT	325	OUTSIDE
731+00	-	737+45	STH 29 EB RT	645	OUTSIDE
182+90	-	184+80	STH 32 SW RAMP	190	
36+55	-	39+55	STH 32 RT	300	EAST SIDE
36+90	-	39+90	STH 32 LT	300	WEST SIDE
TOTAL 0010				3280	

REMOVING INLETS

STATION	LOCATION	204.0220 EACH	REMARKS
27+95	STH 32 RT	1	115' OFFSET
TOTAL 0010		1	

REMOVING CURB & GUTTER

STATION	TO	STATION	LOCATION	204.0150 LF
541+05	-	542+18	STH 29 J-TURN MEDIAN	245
578+08	-	579+30	STH 29 J-TURN MEDIAN	250
27+80	-	28+90	STH 32 NE RAMP ISLAND	310
28+10	-	28+80	STH 32 MEDIAN ISLAND	145
TOTAL 0010				950

REMOVING DELINEATORS AND MARKERS

LOCATION	204.0180 EACH
UNDISTRIBUTED	100
TOTAL 0010	100

REMOVING STORM SEWER (SIZE)

STATION	LOCATION	204.0245.01 12-INCH LF	204.0245.02 24-INCH LF	REMARKS
510+60	STH 29 WB	-	85	24" CSCP
1+25	NE RAMP	35	-	12" RCCP
TOTAL 0010		35	85	

Division	From / To Station	Location	Common Excavation (item # 205.0100)		Salvaged / Unusable Pavement Material (4)	Available Material (5)	Unexpanded Fill	Expanded Fill (13)	Mass Ordinate + / - (14)	Waste	Borrow	Comment:
			Cut (2)	EBS Excavation (3)				Factor 1.25				
Division 1										(item #208.0100)		
STH 32			2,404	0	819	1,585	114	143	1,442	1,442	0	
32/29 NE Ramp			621	0	0	621	191	239	382	382	0	
J-turns			2,081	0	0	2,081	4	5	2,076	2,076	0	
Division 1 Subtotal			5,106	0	819	4,287	309	387	3,900	3,900	0	
Grand Total			3,025.00	0.00	818.61	2,206.39	305.00	382.00	1,824.39	1,824.39	182.44	
Total Common Exc			3,025.00									

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unsuable Pavement Material is included in Cut.
- 4) Salvaged/Unusable Pavement Material
- 5) Available Material = Cut - Salvaged/Unusuable Pavement Material
- 13) Expanded Fill. Factor = 1.25
- Depending on selections:
- Or

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced EBS) * Fill Factor
- Or

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor - Reduced Marsh) * Fill Factor
- Or

Expanded Fill = (Unexpanded Fill - Rock* Rock Factor) * Fill Factor
- 14) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

BACKFILL GRANULAR

STATION	LOCATION	209.0100 CY
510+60	STH 29 WB LT	37
TOTAL 0010		37

PREPARE FOUNDATION FOR CONCRETE PAVEMENT (PROJECT) 01. 9202-10-71

LOCATION	211.0200 LS
STH 29/32 INTERCHANGE NE RAMP INTERSECTION	1
TOTAL 0010	1

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS

STATION	TO	STATION	LOCATION	211.0400 STA
447+00	-	477+00	STH 29 WB RT	30
677+00	-	678+00	STH 29 WB RT	1
703+00	-	713+00	STH 29 WB RT	10
544+00	-	556+00	STH 29 EB LT	12
563+00	-	568+00	STH 29 EB LT	5
TOTAL 0010				58

FINISHING ROADWAY (PROJECT) 01. 9202-10-71

LOCATION	213.0100 EACH
PROJECT	1
TOTAL 0010	1

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BASE AGGREGATE DENSE 1 1/4-INCH

STATION	TO	STATION	LOCATION	305.0120 TON	REMARKS
0+00	-	4+50	STH 32 NE RAMP	1420	
27+50	-	40+50	STH 32	550	
540+40	-	542+50	STH 29 J-TURN	220	
577+90	-	579+90	STH 29 J-TURN	220	
	510+60		STH 29 WB	27	CULVERT REPLACEMENT
TOTAL 0010				2437	

BASE AGGREGATE DENSE 3/4-INCH

STATION	TO	STATION	LOCATION	305.0110 TON	REMARKS
327+00	-	799+40	STH 29 EB LT & RT	1053	SHOULDER GRAVEL
544+00	-	556+00	STH 29 EB RT	30	SHOULDER GRAVEL
563+00	-	568+00	STH 29 EB RT	25	SHOULDER GRAVEL
327+00	-	376+50	STH 29 WB LT & RT	250	SHOULDER GRAVEL
383+00	-	408+50	STH 29 WB LT & RT	128	SHOULDER GRAVEL
408+50	-	485+00	STH 29 WB LT & RT	383	SHOULDER GRAVEL
491+50	-	495+00	STH 29 WB LT	9	SHOULDER GRAVEL
495+00	-	541+00	STH 29 WB LT & RT	230	SHOULDER GRAVEL
541+00	-	547+50	STH 29 WB LT	17	SHOULDER GRAVEL
547+00	-	555+50	STH 29 WB LT & RT	40	SHOULDER GRAVEL
565+00	-	576+50	STH 29 WB LT & RT	58	SHOULDER GRAVEL
579+00	-	630+00	STH 29 WB LT & RT	255	SHOULDER GRAVEL
630+00	-	654+50	STH 29 WB RT	62	SHOULDER GRAVEL
654+50	-	674+00	STH 29 WB LT & RT	98	SHOULDER GRAVEL
674+00	-	705+00	STH 29 WB RT	78	SHOULDER GRAVEL
705+00	-	744+90	STH 29 WB LT & RT	200	SHOULDER GRAVEL
17+19	-	18+10	STH 32 LT & RT	5	SHOULDER GRAVEL
18+57	-	27+75	STH 32 LT & RT	46	SHOULDER GRAVEL
28+50	-	33+75	STH 32 LT & RT	27	SHOULDER GRAVEL
35+00	-	37+50	STH 32 LT & RT	13	SHOULDER GRAVEL
180+00	-	197+22	STH 32 SW RAMP	86	SHOULDER GRAVEL
0+00	-	18+20	STH 32 NW RAMP	91	SHOULDER GRAVEL
96+63	-	115+50	STH 32 SE RAMP	94	SHOULDER GRAVEL
2+00	-	15+90	STH 32 NE RAMP	70	SHOULDER GRAVEL
	352+50		STH 29 MEDIAN CROSSOVER	16	
	440+50		STH 29 MEDIAN CROSSOVER	16	
	599+00		STH 29 MEDIAN CROSSOVER	16	
	702+00		STH 29 MEDIAN CROSSOVER	16	
	709+00		STH 29 MEDIAN CROSSOVER	16	
	510+60		STH 29 WB LT & RT	29	CULVERT REPLACEMENT
TOTAL 0010				3457	

SHAPING SHOULDERS

STATION	TO	STATION	LOCATION	305.0500 STA
327+00	-	744+90	STH 29 WB	418
327+00	-	744+90	STH 29 EB	418
180+00	-	197+22	STH 32 SW RAMP	17
96+63	-	115+49	STH 32 SE RAMP	19
0+00	-	18+20	STH 32 NW RAMP	18
0+00	-	15+89	STH 32 NE RAMP	16
18+00	-	37+50	STH 32	20
TOTAL 0010				925

BASE AGGREGATE OPEN GRADED

STATION	LOCATION	310.0115 CY	REMARKS
510+60	STH 29 WB	22	CULVERT REPLACEMENT
TOTAL 0010		22	

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CONCRETE REPAIR SUMMARY										
FIELD VERIFY LOCATIONS AND QUANTITIES										
		390.0403 BASE PATCHING CONCRETE SHES	416.0610 DRILLED TIE BARS	416.0620 DRILLED DOWEL BARS	455.0105 ASPHALTIC MATERIAL PG58-28	455.0605 TACK COAT	460.1110 HMA PAVEMENT TYPE E-10	690.0250 SAWING CONCRETE	SPV.0090.01 CONCRETE JOINT AND CRACK	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	REMARKS
323+45	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
325+40	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
326+00	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
331+00	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
331+70	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
340+50	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
344+40	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
346+90	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
351+40	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
355+80	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
366+05	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
368+10	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
374+20	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
377+50	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
387+75	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
410+10	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
413+35	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
420+45	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
421+70	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
423+40	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
425+40	STH 29 EB	13	-	16	-	-	-	34	-	LEFT LANE
425+40	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
430+75	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
431+55	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
437+60	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
438+35	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
443+50	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
445+65	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
450+85	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
452+85	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
456+15	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
459+85	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
464+85	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
465+55	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
471+00	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
472+10	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
473+65	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
478+75	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
480+55	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
481+05	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
SUBTOTALS		357	0	704	0 **	0 **	0 **	1324 **	0	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

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CONCRETE REPAIR SUMMARY CONTINUED

FIELD VERIFY LOCATIONS AND QUANTITIES

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	
		BASE PATCHING CONCRETE SHES	DRILLED TIE BARS	DRILLED DOWEL BARS	ASPHALTIC MATERIAL PG58-28	TACK COAT	HMA PAVEMENT TYPE E-10	SAWING CONCRETE	CONCRETE JOINT AND CRACK CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	REMARKS
483+90	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
489+05	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
489+85	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
490+60	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
492+45	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
493+30	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
495+35	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
503+85	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
510+70	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
528+80	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
553+15	STH 29 EB	16	-	16	-	-	-	36	-	RIGHT LANE
558+20	STH 29 EB	16	-	16	-	-	-	36	-	RIGHT LANE
596+60	STH 29 EB	27	14	16	-	-	-	56	-	RIGHT LANE
605+00	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
606+15	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
609+40	STH 29 EB	27	14	16	-	-	-	56	-	RIGHT LANE
610+40	STH 29 EB	27	14	16	-	-	-	56	-	RIGHT LANE
611+25	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
612+05	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
612+70	STH 29 EB	53	30	16	-	-	-	112	-	RIGHT LANE
617+65	STH 29 EB	13	-	16	-	-	-	34	-	RIGHT LANE
626+00	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
629+10	STH 29 EB	27	14	16	-	-	-	56	-	RIGHT LANE
634+05	STH 29 EB	49	28	16	-	-	-	109	-	RIGHT LANE
634+80	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
635+85	STH 29 EB	27	14	16	-	-	-	56	-	RIGHT LANE
636+40	STH 29 EB	27	14	16	-	-	-	56	-	RIGHT LANE
637+90	STH 29 EB	53	14	32	-	-	-	108	-	BOTH LANES
638+10	STH 29 EB	27	14	16	-	-	-	56	-	RIGHT LANE
639+75	STH 29 EB	53	30	16	-	-	-	112	-	RIGHT LANE
640+90	STH 29 EB	53	30	16	-	-	-	112	-	RIGHT LANE
640+95	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
641+65	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
642+55	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
642+65	STH 29 EB	27	14	16	-	-	-	56	-	RIGHT LANE
643+75	STH 29 EB	53	30	16	-	-	-	112	-	RIGHT LANE
644+65	STH 29 EB	53	30	16	-	-	-	112	-	RIGHT LANE
651+90	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
657+60	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
664+80	STH 29 EB	13	-	16	-	-	-	34	-	RIGHT LANE
SUBTOTALS		825	304	688	0 **	0 **	0 **	2055 **	0	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

CONCRETE REPAIR SUMMARY CONTINUED

FIELD VERIFY LOCATIONS AND QUANTITIES

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	
		BASE PATCHING CONCRETE SHES	DRILLED TIE BARS	DRILLED DOWEL BARS	ASPHALTIC MATERIAL PG58-28	TACK COAT	HMA PAVEMENT TYPE E-10	SAWING CONCRETE	CONCRETE JOINT AND CRACK CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	REMARKS
665+40	STH 29 EB	20	-	16	-	-	-	51	-	RIGHT LANE
665+60	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
666+20	STH 29 EB	27	14	16	-	-	-	56	-	RIGHT LANE
667+10	STH 29 EB	53	30	16	-	-	-	112	-	RIGHT LANE
667+10	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
668+15	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
668+70	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
670+20	STH 29 EB	53	30	16	-	-	-	112	-	RIGHT LANE
670+80	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
671+20	STH 29 EB	53	30	16	-	-	-	112	-	RIGHT LANE
682+00	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
683+55	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
684+65	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
685+70	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
689+85	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
693+95	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
694+45	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
695+00	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
696+15	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
697+85	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
699+35	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
701+90	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
703+55	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
703+85	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
704+60	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
704+90	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
705+35	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
705+70	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
706+00	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
706+20	STH 29 EB	16	-	16	-	-	-	36	-	RIGHT LANE
707+70	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
708+05	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
708+45	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
708+60	STH 29 EB	67	38	16	-	-	-	146	-	RIGHT LANE
709+95	STH 29 EB	20	-	16	-	-	-	51	-	LEFT LANE
710+00	STH 29 EB	80	46	16	-	-	-	168	-	RIGHT LANE
719+30	STH 29 EB	32	-	32	-	-	-	72	-	BOTH LANES
719+80	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
721+15	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
721+75	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
SUBTOTALS		701	188	736	0 **	0 **	0 **	1966 **	0	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

CONCRETE REPAIR SUMMARY CONTINUED

FIELD VERIFY LOCATIONS AND QUANTITIES

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	REMARKS
		BASE	DRILLED	DRILLED	ASPHALTIC	TACK COAT	HMA	SAWING	CONCRETE	
		PATCHING	TIE BARS	DOWEL	MATERIAL		PAVEMENT	CONCRETE	JOINT	
		CONCRETE		BARS	PG58-28		TYPE E-10		AND	
		SHES							CRACK	
									CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	
722+85	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
724+70	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
727+45	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
728+10	STH 29 EB	16	-	32	-	-	-	60	-	BOTH LANES
728+55	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
729+45	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
729+90	STH 29 EB	8	-	16	-	-	-	30	-	LEFT LANE
730+15	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
743+60	STH 29 EB	8	-	16	-	-	-	30	-	RIGHT LANE
743+60	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
743+00	STH 29 WB	8	-	16	-	-	-	30	-	LEFT LANE
742+90	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
742+65	STH 29 WB	-	-		-	-	-	-	24	BOTH LANES
736+80	STH 29 WB	80	23	16	-	-	-	168	-	RIGHT LANE
736+40	STH 29 WB	27	7	16	-	-	-	56	-	LEFT LANE
734+70	STH 29 WB	27	7	16	-	-	-	56	-	RIGHT LANE
733+75	STH 29 WB	27	7	16	0.3	0.7	5	56	-	LEFT LANE
733+95	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
733+50	STH 29 WB	11	-	16	0.1	0.3	2	32	-	RIGHT LANE
732+45	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
731+75	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
729+85	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
729+40	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
726+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
726+25	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
725+55	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
725+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
723+55	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
723+15	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
722+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
721+20	STH 29 WB	11	-	16	0.1	0.3	2	32	-	LEFT LANE
720+70	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
719+95	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
719+55.00	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
719+10	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
718+65	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
718+45	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
716+40	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
714+00	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
713+55	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
SUBTOTALS		469	44	672	2 **	6 **	41 **	1480 **	24	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

CONCRETE REPAIR SUMMARY CONTINUED

FIELD VERIFY LOCATIONS AND QUANTITIES

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	REMARKS
		BASE PATCHING CONCRETE SHES	DRILLED TIE BARS	DRILLED DOWEL BARS	ASPHALTIC MATERIAL PG58-28	TACK COAT	HMA PAVEMENT TYPE E-10	SAWING CONCRETE	CONCRETE JOINT AND CRACK CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	
712+40	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
711+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
710+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
710+20	STH 29 WB	16	-	16	0.2	0.4	3	36	-	RIGHT LANE
709+65	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
708+70	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
707+80	STH 29 WB	32	-	32	0.3	0.8	6	72	-	BOTH LANES
706+40	STH 29 WB	33	9	16	0.3	0.8	6	73	-	RIGHT LANE
706+20	STH 29 WB	13	-	16	0.1	0.3	2	34	-	LEFT LANE
704+85	STH 29 WB	67	19	16	0.6	1.7	12	146	-	RIGHT LANE
703+60	STH 29 WB	100	29	16	1.0	2.5	18	207	-	RIGHT LANE
703+40	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
703+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
702+20	STH 29 WB	21	-	32	0.2	0.5	4	64	-	BOTH LANES
702+00	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
700+60	STH 29 WB	27	7	16	0.3	0.7	5	56	-	RIGHT LANE
700+65	STH 29 WB	20	-	16	0.2	0.5	4	51	-	LEFT LANE
699+75	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
698+80	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
698+15	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
697+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
697+20	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
696+10	STH 29 WB	16	-	16	0.2	0.4	3	36	-	RIGHT LANE
695+15	STH 29 WB	53	14	32	0.5	1.3	9	112	-	BOTH LANES
694+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
694+30	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
692+80	STH 29 WB	133	38	32	1.3	3.3	23	292	-	BOTH LANES
691+70	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
691+05	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
690+05	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
689+70	STH 29 WB	13	-	16	0.1	0.3	2	34	-	LEFT LANE
689+30	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
688+90	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
688+30	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
687+70	STH 29 WB	27	7	16	0.3	0.7	5	56	-	LEFT LANE
687+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
686+40	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
685+95	STH 29 WB	11	-	16	0.1	0.3	2	32	-	LEFT LANE
685+95	STH 29 WB	27	7	16	0.3	0.7	5	56	-	RIGHT LANE
685+75	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
SUBTOTALS		865	130	832	8 **	22 **	151 **	2317 **	0	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

CONCRETE REPAIR SUMMARY CONTINUED

FIELD VERIFY LOCATIONS AND QUANTITIES

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	REMARKS
		BASE	DRILLED	DRILLED	ASPHALTIC	TACK COAT	HMA	SAWING	CONCRETE	
		PATCHING	TIE BARS	DOWEL	MATERIAL		PAVEMENT	CONCRETE	JOINT	
		CONCRETE		BARS	PG58-28		TYPE E-10		AND	
		SHES							CRACK	
									CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	
685+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
684+75	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
683+75	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
683+30	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
683+10	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
682+70	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
682+50	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
681+95	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
681+75	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
681+25	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
681+15	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
680+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
680+30	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
679+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
679+20	STH 29 WB	13	-	16	0.1	0.3	2	34	-	RIGHT LANE
678+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
678+30	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
677+90	STH 29 WB	20	-	16	0.2	0.5	4	51	-	RIGHT LANE
677+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
677+30	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
677+10	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
676+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
674+10	STH 29 WB	40	-	32	0.4	1.0	7	102	-	BOTH LANES
673+85	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
672+85	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
670+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
669+60	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
668+50	STH 29 WB	20	-	16	0.2	0.5	4	51	-	LEFT LANE
668+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
667+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
667+30	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
666+90	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
666+40	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
665+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
665+10	STH 29 WB	27	7	16	0.3	0.7	5	56	-	LEFT LANE
663+70	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
662+50	STH 29 WB	13	-	16	0.1	0.3	2	34	-	LEFT LANE
661+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
661+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
660+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
SUBTOTALS		437	7	720	4 **	11 **	77 **	1468 **	0	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

CONCRETE REPAIR SUMMARY CONTINUED

FIELD VERIFY LOCATIONS AND QUANTITIES

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	REMARKS
		BASE PATCHING CONCRETE SHES	DRILLED TIE BARS	DRILLED DOWEL BARS	ASPHALTIC MATERIAL PG58-28	TACK COAT	HMA PAVEMENT TYPE E-10	SAWING CONCRETE	CONCRETE JOINT AND CRACK CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	
659+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
659+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
657+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
655+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
654+60	STH 29 WB	53	14	32	0.5	1.3	9	112	-	BOTH LANES
653+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
651+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
650+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
649+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
649+40	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
648+60	STH 29 WB	27	-	32	0.3	0.7	5	68	-	BOTH LANES
647+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
647+55	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
644+80	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
642+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
641+70	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
641+20	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
640+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
639+90	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
633+70	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
631+30	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
630+50	STH 29 WB	53	14	32	0.5	1.3	9	112	-	BOTH LANES
629+50	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
628+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
627+10	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
625+30	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
625+10	STH 29 WB	27	14	16	0.3	0.7	5	56	-	RIGHT LANE
624+50	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
623+10	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
622+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
621+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
614+70	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
614+15	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
612+90	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
610+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
610+40	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
610+10	STH 29 WB	27	7	16	0.3	0.7	5	56	-	LEFT LANE
609+70	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
609+50	STH 29 WB	27	7	16	0.3	0.7	5	56	-	RIGHT LANE
605+10	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
SUBTOTALS		557	56	832	5 **	14 **	98 **	1750 **	0	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

CONCRETE REPAIR SUMMARY CONTINUED

FIELD VERIFY LOCATIONS AND QUANTITIES

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	REMARKS
		BASE PATCHING CONCRETE SHES	DRILLED TIE BARS	DRILLED DOWEL BARS	ASPHALTIC MATERIAL PG58-28	TACK COAT	HMA PAVEMENT TYPE E-10	SAWING CONCRETE	CONCRETE JOINT AND CRACK CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	
602+80	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
600+30	STH 29 WB	13	-	16	0.1	0.3	2	34	-	LEFT LANE
599+70	STH 29 WB	27	-	32	0.3	0.7	5	68	-	BOTH LANES
595+50	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
594+50	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
593+00	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
593+00	STH 29 WB	27	7	16	0.3	0.7	5	56	-	RIGHT LANE
592+00	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
589+50	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
588+00	STH 29 WB	107	31	16	1.0	2.7	19	224	-	RIGHT LANE
586+90	STH 29 WB	80	23	16	0.8	2.0	14	168	-	RIGHT LANE
585+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
584+30	STH 29 WB	40	11	16	0.4	1.0	7	90	-	RIGHT LANE
576+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
572+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
563+20	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
556+90	STH 29 WB	67	19	16	0.6	1.7	12	146	-	RIGHT LANE
555+90	STH 29 WB	27	7	16	0.3	0.7	5	56	-	LEFT LANE
555+60	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
555+10	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
553+90	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
553+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
552+60	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
548+90	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
548+10	STH 29 WB	27	7	16	0.3	0.7	5	56	-	LEFT LANE
543+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
542+90	STH 29 WB	20	-	16	0.2	0.5	4	51	-	RIGHT LANE
542+90	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
541+40	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
540+40	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
539+85	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
538+00	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
536+85	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
535+20	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
533+10	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
531+90	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
530+50	STH 29 WB	16	-	32	0.2	0.4	3	60	-	BOTH LANES
529+90	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
528+70	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
525+30	STH 29 WB	40	11	16	0.4	1.0	7	90	-	RIGHT LANE
SUBTOTALS		785	116	816	8 **	20 **	137 **	2209 **	0	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

CONCRETE REPAIR SUMMARY CONTINUED

FIELD VERIFY LOCATIONS AND QUANTITIES

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	
		BASE PATCHING CONCRETE SHES	DRILLED TIE BARS	DRILLED DOWEL BARS	ASPHALTIC MATERIAL PG58-28	TACK COAT	HMA PAVEMENT TYPE E-10	SAWING CONCRETE	CONCRETE JOINT AND CRACK CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	REMARKS
523+90	STH 29 WB	53	15	16	0.5	1.3	9	112	-	RIGHT LANE
522+50	STH 29 WB	16	-	16	0.2	0.4	3	36	-	RIGHT LANE
520+80	STH 29 WB	20	-	16	0.2	0.5	4	51	-	RIGHT LANE
520+80	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
518+30	STH 29 WB	21	-	32	0.2	0.5	4	64	-	BOTH LANES
516+15	STH 29 WB	8	-	16	0.1	0.2	1	30	-	RIGHT LANE
515+70	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
514+15	STH 29 WB	8	-	16	0.1	0.2	1	30	-	LEFT LANE
511+38	STH 29 WB	47	13	16	-	-	-	107	-	LEFT LANE
510+60	STH 29 WB	78	-	32	-	-	-	52	-	CULVERT REPLACEMENT
504+90	STH 29 WB	8	-	16	-	-	-	30	-	LEFT LANE
501+25	STH 29 WB	27	7	16	-	-	-	56	-	RIGHT LANE
501+18	STH 29 WB	8	-	16	-	-	-	30	-	LEFT LANE
499+40	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
494+35	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
493+80	STH 29 WB	8	-	16	-	-	-	30	-	LEFT LANE
492+60	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
490+65	STH 29 WB	11	-	16	-	-	-	32	-	RIGHT LANE
490+15	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
489+05	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
486+95	STH 29 WB	16	-	32	-	-	-	60	-	BOTH LANES
486+75	STH 29 WB	8	-	16	-	-	-	30	-	LEFT LANE
486+55	STH 29 WB	8	-	16	-	-	-	30	-	LEFT LANE
484+80	STH 29 WB	-	-	-	-	-	-	-	12	RIGHT LANE
484+00	STH 29 WB	-	-	-	-	-	-	-	12	RIGHT LANE
480+60	STH 29 WB	-	-	-	-	-	-	-	12	LEFT LANE
476+00	STH 29 WB	-	-	-	-	-	-	-	12	RIGHT LANE
472+80	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
467+80	STH 29 WB	-	-	-	-	-	-	-	12	RIGHT LANE
464+75	STH 29 WB	-	-	-	-	-	-	-	4	LANE JOINT
463+20	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
460+70	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
457+00	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
456+80	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
455+45	STH 29 WB	-	-	-	-	-	-	-	12	RIGHT LANE
454+45	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
453+95	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
452+80	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
447+00	STH 29 WB	8	-	16	-	-	-	30	-	LEFT LANE
446+05	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
SUBTOTALS		425	35	464	1 **	4 **	25 **	1080 **	90	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

CONCRETE REPAIR SUMMARY CONTINUED

FIELD VERIFY LOCATIONS AND QUANTITIES

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	
		BASE PATCHING CONCRETE SHES	DRILLED TIE BARS	DRILLED DOWEL BARS	ASPHALTIC MATERIAL PG58-28	TACK COAT	HMA PAVEMENT TYPE E-10	SAWING CONCRETE	CONCRETE JOINT AND CRACK CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	REMARKS
443+00	STH 29 WB	-	-	-	-	-	-	-	3	LANE JOINT
441+00	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
436+70	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
430+05	STH 29 WB	-	-	-	-	-	-	-	12	RIGHT LANE
429+00	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
424+30	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
423+85	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
415+75	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
414+80	STH 29 WB	53	15	16	-	-	-	112	-	RIGHT LANE
410+95	STH 29 WB	16	-	32	-	-	-	60	-	BOTH LANES
409+15	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
393+60	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
383+50	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
375+60	STH 29 WB	27	7	16	-	-	-	56	-	RIGHT LANE
375+00	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
373+85	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
370+95	STH 29 WB	16	-	32	-	-	-	60	-	BOTH LANES
367+55	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
366+65	STH 29 WB	16	-	32	-	-	-	60	-	BOTH LANES
355+55	STH 29 WB	16	-	32	-	-	-	60	-	BOTH LANES
353+40	STH 29 WB	8	-	16	-	-	-	30	-	LEFT LANE
349+80	STH 29 WB	16	-	32	-	-	-	60	-	BOTH LANES
349+00	STH 29 WB	-	-	-	-	-	-	-	3	LANE JOINT
342+05	STH 29 WB	-	-	-	-	-	-	-	2	LANE JOINT
338+05	STH 29 WB	8	-	16	-	-	-	30	-	LEFT LANE
337+05	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
333+75	STH 29 WB	-	-	-	-	-	-	-	12	LEFT LANE
333+55	STH 29 WB	8	-	16	-	-	-	30	-	LEFT LANE
331+65	STH 29 WB	8	-	16	-	-	-	30	-	RIGHT LANE
326+85	STH 29 WB	-	-	-	-	-	-	-	12	RIGHT LANE
2+41 - 3+21	STH 32 NB	124	31	16	-	-	-	304	-	
3+33 - 3+64	STH 32 NB	48	11	16	-	-	-	101	-	
11+76	STH 32 NB	2	-	16	-	-	-	18	-	
14+18	STH 32 NB	9	-	16	-	-	-	40	-	
16+92 - 17+03	STH 32 NB	17	-	16	-	-	-	50	-	
9+44 - 9+64	STH 32 SB	31	7	16	-	-	-	62	-	
12+52 - 12+89	STH 32 SB	58	28	16	-	-	-	158	-	
13+32 - 13+64	STH 32 SB	50	24	16	-	-	-	134	-	
15+99 - 16+23	STH 32 SB	37	9	16	-	-	-	80	-	
16+85 - 17+21	STH 32 SB	56	13	16	-	-	-	120	-	
SUBTOTALS		673	145	512	0 **	0 **	0 **	1835 **	55	

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CONCRETE REPAIR SUMMARY CONTINUED

FIELD VERIFY LOCATIONS AND QUANTITIES

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	REMARKS
		BASE PATCHING CONCRETE SHES	DRILLED TIE BARS	DRILLED DOWEL BARS	ASPHALTIC MATERIAL PG58-28	TACK COAT	HMA PAVEMENT TYPE E-10	SAWING CONCRETE	CONCRETE JOINT AND CRACK CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	
18+25 - 18+56	STH 32 SB	48	11	16	-	-	-	101	-	
19+52 - 19+60	STH 32 SB	12	-	16	-	-	-	36	-	
0+53	NW RAMP	9	-	16	-	-	-	40	10	BOTH LANES
0+62 - 0+67	NW RAMP	-	-	-	-	-	-	-	5	LANE JOINT
0+65	NW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
0+77 - 0+88	NW RAMP	-	-	-	-	-	-	-	11	LANE JOINT
0+86	NW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
1+05	NW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
1+45	NW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
7+89	NW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
8+51	NW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
9+72	NW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
9+92	NW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
11+28	NW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
1+35	NE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
1+55	NE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
8+71	NE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
9+68	NE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
12+08	NE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
12+18	NE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
12+60	NE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
13+60	NE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
14+08 - 14+22	NE RAMP	22	-	-	-	-	-	42	-	LEFT LANE
14+55	NE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
0+18 - 0+33	SW RAMP	23	-	16	-	-	-	44	-	RIGHT LANE
0+46	SW RAMP	15	-	32	-	-	-	46	-	BOTH LANES
0+65	SW RAMP	-	-	-	-	-	-	-	19	BOTH LANES
0+75	SW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
1+36	SW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
7+40	SW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
11+80	SW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
12+00	SW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
12+19	SW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
12+32	SW RAMP	9	-	16	-	-	-	28	-	LEFT LANE
12+39	SW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
12+50	SW RAMP	9	-	16	-	-	-	28	-	LEFT LANE
13+97	SW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
14+37	SW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
16+37	SW RAMP	-	-	-	-	-	-	-	14	LEFT LANE
0+00 - 0+32	SE RAMP	50	12	16	-	-	-	134	-	LEFT LANE
SUBTOTALS		151	12	128	0 **	0 **	0 **	398 **	437	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

FIELD VERIFY LOCATIONS AND QUANTITIES

CONCRETE REPAIR SUMMARY CONTINUED

		390.0403	416.0610	416.0620	455.0105	455.0605	460.1110	690.0250	SPV.0090.01	
		BASE	DRILLED	DRILLED	ASPHALTIC	TACK COAT	HMA	SAWING	CONCRETE	
		PATCHING	TIE BARS	DOWEL	MATERIAL		PAVEMENT	CONCRETE	JOINT	
		CONCRETE		BARS	PG58-28		TYPE E-10		AND	
		SHES							CRACK	
									CLEANING	
STATION	LOCATION	SY	EACH	EACH	TON	GAL	TON	LF	LF	REMARKS
0+06 - 0+22	SE RAMP	36	4	16	-	-	-	44	-	RIGHT LANE
0+32	SE RAMP	-	-	-	-	-	-	-	18	RIGHT LANE
0+54 - 0+64	SE RAMP	-	-	-	-	-	-	-	9	LANE JOINT
0+73	SE RAMP	-	-	-	-	-	-	-	7	RIGHT LANE
0+94	SE RAMP	-	-	-	-	-	-	-	19	BOTH LANES
1+10	SE RAMP	-	-	-	-	-	-	-	4	RIGHT LANE
1+22	SE RAMP	-	-	-	-	-	-	-	3	RIGHT LANE
1+33	SE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
1+73	SE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
5+54	SE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
5+94	SE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
6+55	SE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
6+74	SE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
9+34	SE RAMP	-	-	-	-	-	-	-	14	LEFT LANE
SUBTOTALS		0	0	0	0	0	0	0	158	
UNDISTRIBUTED		1249	207	1421	6	15	106	3576	153	
PROJECT TOTALS 0010		7496	1244	8525	35 **	91 **	634 **	21458 **	917	

**FOR INFORMATIONAL PURPOSES ONLY, ADDITIONAL QUANITITES SHOWN ELSEWHERE

HMA SUMMARY

				455.0105 ASPHALTIC MATERIAL PG58-28	455.0605 TACK COAT GAL	460.1100 HMA PAVEMENT TYPE E-0.3	460.1110 HMA PAVEMENT TYPE E-10	REMARKS
STATION	TO	STATION	LOCATION	TON		TON	TON	
327+00	-	512+00	STH 29 WB MAINLINE	399	1490	-	7260	
512+00	-	734+00	STH 29 WB MAINLINE	912	3577	-	16581	
734+00	-	744+90	STH 29 WB MAINLINE	24	88	-	428	
327+00	-	512+00	STH 29 WB SHOULDER LT	81	308	1480	-	6' OF OUTSIDE PAVED SHOULDER
512+00	-	734+00	STH 29 WB SHOULDER LT	187	370	3404	-	6' OF OUTSIDE PAVED SHOULDER
734+00	-	744+90	STH 29 WB SHOULDER LT	5	18	87	-	6' OF OUTSIDE PAVED SHOULDER
327+00	-	744+90	STH 29 EB MAINLINE	902	3366	-	16399	
327+00	-	744+90	STH 29 EB SHOULDER RT	184	697	3343	-	6' OF OUTSIDE PAVED SHOULDER
180+00	-	197+22	STH 32 SW RAMP MAINLINE	19	71	-	344	
96+63	-	115+49	STH 32 SE RAMP MAINLINE	21	79	-	377	
0+00	-	18+20	STH 32 NW RAMP MAINLINE	20	76	-	364	
0+00	-	15+89	STH 32 NE RAMP MAINLINE	17	66	-	318	
0+00	-	4+50	STH 32 NE RAMP MAINLINE	1	43	-	16	RAMP RECONSTRUCTION
0+00	-	4+50	STH 32 NE RAMP RT SHOULDER	4	7	66	-	RAMP RECONSTRUCTION
0+00	-	4+50	STH 32 NE RAMP LT SHOULDER	2	5	40	-	RAMP RECONSTRUCTION
29+50	-	37+50	STH 32 RT SHOULDER	13	28	242	-	
18+00	-	37+50	STH 32 MAINLINE	39	163	-	718	
4+00	-	4+50	STH 29 CENTER ISLAND	-	2	-	-	
391+45	-	394+15	STH 29 EB SHOULDER LT	3	5	46	-	SHOULDER RECONSTRUCTION
392+00	-	394+40	STH 29 EB SHOULDER RT	3	7	61	-	SHOULDER RECONSTRUCTION
395+90	-	398+20	STH 29 WB SHOULDER RT	3	6	51	-	SHOULDER RECONSTRUCTION
396+00	-	398+75	STH 29 WB SHOULDER LT	4	7	64	-	SHOULDER RECONSTRUCTION
510+60			STH 29 WB SHOULDER LT & RT	1	1	5	-	CULVERT REPLACEMENT
525+30	-	526+75	STH 29 WB SHOULDER LT	3	6	51	-	SHOULDER RECONSTRUCTION
711+60	-	715+10	STH 29 EB SHOULDER RT	4	9	80	-	SHOULDER RECONSTRUCTION
714+50	-	717+75	STH 29 EB SHOULDER RT	5	11	95	-	SHOULDER RECONSTRUCTION
182+90	-	184+80	STH 32 SW RAMP SHOULDER	3	5	48	-	SHOULDER RECONSTRUCTION
36+55	-	39+55	STH 32 SHOULDER RT	4	9	77	-	SHOULDER RECONSTRUCTION; EAST SIDE
36+90	-	39+90	STH 32 SHOULDER LT	5	10	85	-	SHOULDER RECONSTRUCTION; WEST SIDE
28+00			STH 32 NE RAMP SE QUADRANT	-	1	-	-	
28+25	-	28+75	STH 32 MEDIAN	-	3	-	-	
540+40	-	542+50	STH 29 J-TURN MEDIAN CTH U	7	11	-	120	J-TURN RECONSTRUCTION
577+90	-	579+90	STH 29 J-TURN MEDIAN CTH VV	7	11	-	122	J-TURN RECONSTRUCTION
576+50	-	579+00	STH 29 J-TURN EAST BULB	5	21	-	90	J-TURN RECONSTRUCTION
572+50	-	579+00	STH 29 J-TURN LEFT TURN LANE	5	21	-	93	J-TURN RECONSTRUCTION
552+00	-	567+00	STH 29 CTH VV INTERSECTION	27	111	-	486	J-TURN RECONSTRUCTION
541+00	-	547+50	STH 29 J-TURN WEST LEFT TURN	5	22	-	93	J-TURN RECONSTRUCTION
541+00	-	544+00	STH 29 J-TURN WEST BULB	5	21	-	90	J-TURN RECONSTRUCTION
480+00	-	495+00	STH 29 CTH U INTERSECTION	18	74	-	327	J-TURN RECONSTRUCTION
636+50	-	654+00	STH 29 WB LT	23	96	-	422	CTH FF NW RAMP
673+00	-	705+25	STH 29 WB LT	36	150	-	659	CTH FF NE RAMP
651+00	-	656+50	STH 29 EB RT	15	61	-	271	CTH FF SW RAMP
682+00	-	710+00	STH 29 EB RT	36	149	-	655	CTH FF SE RAMP
328+00	-	330+00	STH 29/STH 156 INTERSECTION	6	23	-	100	STH 156
328+00	-	330+00	STH 29/STH 156 INTERSECTION	11	191	-	191	MEDIAN
328+00	-	330+00	STH 29/STH 156 INTERSECTION	4	66	-	66	ST. AUGUSTINE RD.
CONCRETE REPAIRS				35	91	-	634	SEE CONCRETE REPAIR SUMMARY FOR DETAILS
TOTAL 0010				3111	11651	9325	47224	

REHEATING HMA LONGITUDINAL JOINTS

				460.4110.S		
STATION	TO	STATION	LOCATION	LF	REMARKS	
327+00	-	370+00	STH 29 WB	4300		
370+00	-	376+50	STH 29 WB	1300	2 JOINTS	
376+50	-	408+50	STH 29 WB	3200		
408+50	-	415+00	STH 29 WB	1300	2 JOINTS	
415+00	-	484+00	STH 29 WB	6900		
484+00	-	495+00	STH 29 WB	2200	2 JOINTS	
495+00	-	556+00	STH 29 WB	6100		
556+00	-	566+00	STH 29 WB	2000	2 JOINTS	
566+00	-	744+90	STH 29 WB	17890		
327+00	-	370+00	STH 29 EB	4300		
370+00	-	376+50	STH 29 EB	1300	2 JOINTS	
376+50	-	408+50	STH 29 EB	3200		
408+50	-	415+00	STH 29 EB	1300	2 JOINTS	
415+00	-	484+00	STH 29 EB	6900		
484+00	-	495+00	STH 29 EB	2200	2 JOINTS	
495+00	-	556+00	STH 29 EB	6100		
556+00	-	566+00	STH 29 EB	2000	2 JOINTS	
566+00	-	744+90	STH 29 EB	17890		
TOTAL 0010				90380		

ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES

				465.0120		
CATEGORY	STATION	LOCATION	TON	REMARKS		
0010	34+25	STH 32 LT	41	DRIVEWAY		
0010	34+25	STH 32 RT	53	DRIVEWAY		
TOTAL 0010			94			

CONCRETE PAVEMENT APPROACH SLAB HES

				415.1410		
CATEGORY	STATIONS	LOCATION	SY	REMARKS		
0010	STA 394+00	EB LANE	75	APPROACH SLABS AT STH 29/32 BRIDGE		
0010	STA 396+00	WB LANE	75			
TOTAL 0010			150			

ASPHALTIC SHOULDER RUMBLE STRIP

				465.0400
STATION	TO	STATION	LOCATION	LF
327+00	-	394+50	STH 29 WB LT & RT	13500
396+00	-	485+00	STH 29 WB LT & RT	17800
493+00	-	541+00	STH 29 WB LT & RT	9600
541+00	-	548+00	STH 29 WB LT	700
548+00	-	555+00	STH 29 WB LT & RT	1400
566+00	-	576+50	STH 29 WB LT & RT	2100
580+00	-	635+00	STH 29 WB LT & RT	11000
635+00	-	655+00	STH 29 WB RT	2000
655+00	-	674+00	STH 29 WB LT & RT	3800
674+00	-	701+00	STH 29 WB RT	2700
701+00	-	744+00	STH 29 WB LT & RT	8600
327+00	-	744+90	STH 29 EB LT & RT	83580
544+00	-	556+00	STH 29 EB LT	1200
563+00	-	568+00	STH 29 EB LT	500
TOTAL 0010				158480

CULVERT PIPE LINERS (SIZE) 01. 42-INCH

				520.9700.S	
CATEGORY	STATION	LOCATION	LF	42-INCH	
0010	693+78	STH 29 WB LT	220	42-INCH, CSCP, 1.10% SLOPE	
				*VERIFY IN FIELD	
		TOTAL 0010	220		

CLEANING CULVERT PIPES FOR LINER VERIFICATION

		520.9750.S
STATION	LOCATION	EACH
693+78	STH 29 WB LT	1
TOTAL 0010		1

ENDWALL SUMMARY

STATION	LOCATION	521.1024	521.1030	522.1018	522.1024	522.1036	633.5200
		APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE STEEL 30-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 18-INCH EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED EACH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 36-INCH EACH	MARKERS CULVERT END EACH
341+00	STH 29 WB LT	-	-	1	-	-	1
363+00	STH 29	-	-	-	-	-	1
384+50	STH 29	-	-	-	-	-	1
415+75	STH 29 WB LT	-	-	-	-	1	1
424+00	STH 29	-	-	-	-	-	1
506+00	STH 29 WB RT	-	-	1	-	-	1
510+60	STH 29 WB LT	-	-	-	1	-	1
517+00	STH 29	-	-	-	-	-	1
525+05	STH 29	-	-	-	-	-	1
533+75	STH 29 WB LT	-	1	-	-	-	1
544+50	STH 29 WB LT	1	-	-	-	-	1
583+00	STH 29 WB RT	-	-	1	-	-	1
590+00	STH 29 WB RT	-	-	1	-	-	1
596+85	STH 29 WB LT	-	-	-	1	-	1
606+00	STH 29 WB RT	-	-	-	1	-	1
643+30	STH 29	-	-	-	1	-	1
	UNDISTRIBUTED	-	-	-	-	-	10
	TOTAL 0010	1	1	4	4	1	26

3

CONCRETE CURB & GUTTER 30-INCH TYPE A

STATION	TO	STATION	LOCATION	601.0409 LF	REMARKS
27+80	-	28+75	STH 32	200	MEDIAN
TOTAL 0010				200	

STORM SEWER PIPE REINFORCED CONCRETE CLASS III 24-INCH

STATION	TO	STATION	LOCATION	608.0324 LF
		510+60	STH 29 WB	86
TOTAL 0010				86

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CONCRETE SAFETY ISLANDS

LOCATION	602.2400 SF
STH 29 CENTER ISLAND	790
TOTAL 0010	790

ADJUSTING INLET COVERS

LOCATION	611.8115 EACH
STH 29 & CTH U INTERSECTION MEDIAN	4
STH 29 & CTH VV INTERSECTION MEDIAN	2
STH 32	8
TOTAL 0010	14

PIPE UNDERDRAIN SUMMARY

STATION	TO	STATION	LOCATION	612.0106 PIPE UNDERDRAIN 6-INCH LF	612.0806 APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 6-INCH EACH	REMARKS
0+00	-	4+50	STH 32 NE RAMP LT	450	1	
0+00	-	4+50	STH 32 NE RAMP RT	450	1	
	510+60		STH 29 WB	54	-	CULVERT REPLACEMENT
TOTAL 0010				954	2	

GUARDRAIL SUMMARY

						614.0010	614.2300	614.2340	614.2500	614.2610	614.2620		
						BARRIER SYSTEM	MGS	MGS	MGS THRIE	MGS	MGS		
						GRADING	GUARDRAIL	GUARDRAIL	BEAM	GUARDRAIL	GUARDRAIL		
						SHAPING	3	3 L	TRANSITION	TERMINAL	TERMINAL		
						FINISHING	LF	LF	LF	EAT	TYPE 2		
CATEGORY	STATION	TO	STATION	LOCATION		EACH				EACH	EACH	REMARKS	
0010	391+45	-	394+15	STH 29 EB LT		1	243		40	1	-		
0010	392+00	-	394+40	STH 29 EB RT		1	203		40	1	-		
0010	395+90	-	398+20	STH 29 WB RT		1	243		40	1	-		
0010	396+00	-	398+75	STH 29 WB LT		1	203		40	1	-		
0010	525+30	-	526+75	STH 29 WB LT		1	138		-	1	1		
0010	711+60	-	715+10	STH 29 EB RT		1	338		-	1	1		
0010	714+50	-	717+75	STH 29 WB LT		1	313		-	1	1		
0010	182+90	-	184+80	STH 32 SW RAMP		1	183		-	1	1		
0010	36+55	-	39+55	STH 32 RT		2	168	113	-	2	-		
0010	36+90	-	39+90	STH 32 LT		2	168	113	-	2	-		
0010	731+00	-	737+45	STH 29 EB RT		-	645		-	-	-		
TOTAL 0010						12	2845	226	160	12	4		

LANDSCAPING FOR BARRIER SYSTEM GRADING SHAPING FINISHING

				****	****	****	****	****
				SALVAGED TOPSOIL	MULCHING	FERTILIZER TYPE B	SEEDING MIXTURE NO. 30	SEEDING TEMPORARY
STATION	TO	STATION	LOCATION	SY	SY	CWT	LB	LB
391+05	-	394+22	STH 29 EB LT	89	89	0.1	2	2
391+58	-	394+38	STH 29 EB RT	57	57	0.0	2	1
711+21	-	715+48	STH 29 EB RT	223	223	0.1	6	4
395+97	-	399+21	STH 29 WB RT	46	46	0.0	1	1
395+84	-	398+56	STH 29 WB LT	39	39	0.0	1	1
524+88	-	527+16	STH 29 WB LT	145	145	0.1	4	3
714+11	-	718+15	STH 29 WB LT	270	270	0.2	7	5
182+41	-	185+18	STH 32 SW RAMP	337	337	0.2	9	6
35+00	-	39+95	STH 32 RT	960	960	0.6	26	17
36+00	-	40+35	STH 32 LT	251	251	0.2	7	5
TOTAL 0010				2417	2417	2	65	45
**** FOR INFORMATIONAL PURPOSES ONLY								

EARTHWORK FOR BARRIER SYSTEM GRADING SHAPING FINISHING
FOR INFORMATIONAL PURPOSES ONLY

Division	From / To Station	Common Excavation (1)	Unexpanded Fill	Expanded Fill (3)	Mass Ordinate + / - (4)	Waste	Borrow
Division 1		Cut (2)		Factor 1.25			(item #208.0100)
STH 29 EB INSIDE	391+05-394+22	123	8	10	112	112	-
STH 29 EB OUTSIDE	391+58-394+38	84	15	19	65	65	-
STH 29 EB OUTSIDE	711+21-715+48	177	1	1	176	176	-
STH 29 WB INSIDE	395+97-399+21	51	8	10	41	41	-
STH 29 WB OUTSIDE	395+84-398+56	129	5	7	123	123	-
STH 29 WB OUTSIDE	524+88-527+16	77	38	48	30	30	-
STH 29 WB OUTSIDE	714+11-718+15	149	41	51	98	98	-
STH32/STH29 SW RAMP	182+41-185+18	44	93	116	- 72	-	72
STH 32 EAST	35+00-39+95	406	48	60	346	346	-
STH 32 WEST	36+00-40+35	149	101	126	23	23	-
Division 1 Subtotal		1,389	358	448	941	1,013	72
Grand Total		1,389	358	448	941	1,013	72

- 1) Common Excavation is the sum of the Cut and EBS Excavation columns. Item number 205.0100
- 2) Salvaged/Unsuable Pavement Material is included in Cut.
- 3) Expanded Fill. Factor = 1.25
- Depending on selections:
- Expanded Fill = (Unexpanded Fill - Rock * Rock Factor - Reduced EBS) * Fill Factor

Expanded Fill = (Unexpanded Fill - Rock * Rock Factor - Reduced Marsh) * Fill Factor

Expanded Fill = (Unexpanded Fill - Rock * Rock Factor) * Fill Factor
- 4) The Mass Ordinate + or - Qty calculated for the Division. Plus quantity indicates an excess of material within the Division. Minus indicates a shortage of material within the Division.

CONCRETE MEDIAN SLOPED NOSE

STATION	LOCATION	620.0300 SF	REMARKS
4+00	STH 32 NE RAMP		TYPE I; 0' OFFSET
27+90	STH 32		TYPE I; 0' OFFSET
4+45	STH 32 RAMP	40	TYPE II; 0' OFFSET
4+45	STH 32 RAMP	6	TYPE II; 20' OFFSET
TOTAL 0010		46	

WATER

LOCATION	624.0100 MGAL	REMARKS
UNDISTRIBUTED	34	WATER FOR 1 1/4" BAD
UNDISTRIBUTED	48	WATER FOR 3/4" BAD
TOTAL 0010	83	

MOBILIZATIONS EROSION CONTROL

LOCATION	628.1905 EACH
PROJECT	4
TOTAL 0010	4

LANDSCAPING

STATION	TO	STATION	LOCATION	625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0130 SEEDING MIXTURE NO. 30 LB	630.0200 SEEDING TEMPORARY LB
0+00	-	4+50	STH 32 NE RAMP RT	4271	4271	0.033	0.9	1.4
0+00	-	4+50	STH 32 NE RAMP LT	4492	4492	0.033	1.0	1.5
28+50	-	34+00	STH 32 RT DITCH	22540	22540	0.175	5.0	7.5
TOTAL 0010				31303	31303	0.2	7	10

MOBILIZATIONS EMERGENCY EROSION CONTROL

LOCATION	628.1910 EACH
PROJECT	4
TOTAL 0010	4

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EROSION MAT CLASS I TYPE B

SILT FENCE SUMMARY

		628.1504	628.1520	REMARKS
		SILT FENCE	SILT FENCE	
STATION	LOCATION	LF	LF	
341+00	STH 29 WB LT	50	13	
415+75	STH 29 WB LT	50	13	
510+60	STH 29 WB LT	50	13	
596+85	STH 29 WB LT	50	13	
182+86	STH 32 SW RAMP RT	135	34	BEAMGAURD EAT
391+44	STH 29 EB LT	135	34	BEAMGAURD EAT
392+00	STH 29 EB RT	135	34	BEAMGAURD EAT
398+20	STH 29 WB LT	135	34	BEAMGAURD EAT
398+77	STH 29 WB RT	135	34	BEAMGAURD EAT
526+78	STH 29 WB LT	135	34	BEAMGAURD EAT
711+61	STH 29 EB RT	135	34	BEAMGAURD EAT
717+76	STH 29 WB LT	135	34	BEAMGAURD EAT
36+50	STH 32 RT	135	34	BEAMGAURD EAT
37+00	STH 32 LT	135	34	BEAMGAURD EAT
39+50	STH 32 RT	135	34	BEAMGAURD EAT
39+90	STH 32 LT	135	34	BEAMGAURD EAT
0+00 - 4+50	STH 32 NE RAMP	1000	250	RAMP RECONSTRUCTION
TOTAL 0010		2820	705	

		628.2004	REMARKS
		SY	
STATION	LOCATION		
341+00	STH 29 WB LT	190	
415+75	STH 29 WB LT	190	
506+00	STH 29 WB RT	190	
510+60	STH 29 WB LT	190	
533+75	STH 29 WB LT	190	
544+50	STH 29 WB LT	190	
583+00	STH 29 MEDIAN	190	
590+00	STH 29 EB LT	190	
596+85	STH 29 WB LT	190	
606+00	STH 29 EB LT	190	
182+86	SW RAMP RT	100	BEAMGAURD EAT
391+44	STH 29 EB LT	100	BEAMGAURD EAT
392+00	STH 29 EB RT	100	BEAMGAURD EAT
398+20	STH 29 WB LT	100	BEAMGAURD EAT
398+77	STH 29 WB RT	100	BEAMGAURD EAT
526+78	STH 29 WB LT	100	BEAMGAURD EAT
711+61	STH 29 EB RT	100	BEAMGAURD EAT
717+76	STH 29 WB LT	100	BEAMGAURD EAT
36+50	STH 32 RT	100	BEAMGAURD EAT
37+00	STH 32 LT	100	BEAMGAURD EAT
39+50	STH 32 RT	100	BEAMGAURD EAT
39+90	STH 32 LT	100	BEAMGAURD EAT
TOTAL 0010		3100	

INLET PROTECTION SUMMARY

		628.7005	628.7010	628.7015	REMARKS
		TYPE A	TYPE B	TYPE C	
STATION	LOCATION	EACH	EACH	EACH	
510+60	STH 29 WB LT	1	-	-	MEDIAN INLET
	STH 29 & CTH U INTERSECTION MEDIAN	-	-	4	
	STH 29 & CTH VV INTERSECTION MEDIAN	-	-	2	
	STH 32	-	1	7	
TOTAL 0010		1	1	13	

TEMPORARY DITCH CHECKS

STATION	LOCATION	628.7504 LF
540+50	STH 29 MEDIAN	30
545+50	STH 29 MEDIAN	30
577+00	STH 29 MEDIAN	30
580+00	STH 29 MEDIAN	30
27+35	STH 32 RT	20
30+00	STH 32 RT	20
33+80	STH 32 RT	20
2+76	STH 32 NE RAMP LT	20
TOTAL 0010		200

CULVERT PIPE CHECKS

STATION	LOCATION	628.7555 EACH
506+00	STH 29 WB RT	6
533+75	STH 29 WB LT	6
544+50	STH 29 WB LT	6
583+00	STH 29 MEDIAN	6
590+00	STH 29 EB LT	6
606+00	STH 29 EB LT	6
TOTAL 0010		36

ROCK BAGS

STATION	LOCATION	628.7570 EACH
341+00	STH 29 WB LT	18
415+75	STH 29 WB LT	18
510+60	STH 29 WB LT	18
596+85	STH 29 WB LT	18
TOTAL 0010		72

DELINEATORS

LOCATION	633.0100 DELINEATOR POSTS STEEL EACH	633.0500 DELINEATOR REFLECTORS EACH	REMARKS
UNDISTRIBUTED	100	100	SEE S.D.D. 15A6 FOR PLACEMENT DETAILS
TOTAL 0010	100	100	

ERECTION & REMOVAL OF TYPE II SIGNS AND SUPPORTS

SIGN NO.	LOCATION	SIGN CODE	W X H	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2215 SIGNS FOLDING TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0614 POSTS WOOD 4x6x14 EACH	634.0616 POSTS WOOD 4x6x16 EACH	634.0618 POSTS WOOD 4x6x18 EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
1	ST. AUGUSTINE RD	J3-1	36" X 84"	21.00					1	3	1	WEST STH 29, SEE PLAN SHEET
2	"	R6-1L	36" X 12"	3.00								MOUNT ON BACKSIDE OF SIGN #3
3	"	R6-1R	36" X 12"	3.00								MOUNT ABOVE SIGN #4
4	"	R1-1	36" X 36"	7.46					1	1	1	
5	"	R6-3	30" X 24"	5.00						1		MOUNT BELOW SIGN #4
6	STH 29, W. OF STH 156	R3-1	36" X 36"	9.00			1			1	1	
7	STH 29 / STH 156 INTERSECTION	R4-7	36" X 48"	12.00			1			1	1	
8	"	R4-7	36" X 48"	12.00			1			1	1	
9	ST. AUGUSTINE RD	R1-1	30" X 30"	5.18			1			1	1	
10	STH 29, E. OF ST. AUGUSTINE RD	R3-1	36" X 36"	9.00			1			1	1	
11	"	R5-1A	42" X 30"	8.75			1			1	1	
12	STH 156	R6-1L	36" X 12"	3.00								MOUNT ON BACKSIDE OF SIGN #13
13	"	R6-1R	36" X 12"	3.00								MOUNT ABOVE SIGN #14
14	"	R1-1	36" X 36"	7.46					1	1	1	
15	"	R6-3	30" X 24"	5.00								MOUNT BELOW SIGN #14
16	"	J3-1	36" X 84"	21.00					1	3	1	EAST STH 29, SEE PLAN SHEET
17	"	R6-2L								1		
18	STH 29, E. OF ST. AUGUSTINE RD	R5-1	36" X 36"	9.00			1			1	1	
19	"	I2-2	72" X 21"	10.50			1	1		1	2	BROWN CO
20	"	D1-3	102" X 48"	34.00				1	1	1	2	BRIARTON, NAVARINO, CLINTONVILLE, SEE SIGN DETAIL SHEET
21	"	J2-1	36" X 84"	21.00					1	3	1	WEST STH 156, SEE PLAN SHEET
22	"	D1-1	132" X 21"	19.25			1	2		1	2	ST AUGUSTINE RD
23	"	J4-2	72" X 54"	27.00				1		2	1	EAST STH 29, SEE PLAN SHEET
24	"	J2-1	36" X 84"	21.00					1	3	1	WEST STH 156, SEE PLAN SHEET
25	"	J1-1	36" X 57"	14.25				1		2	1	JCT STH 156
26	"	J1-1	36" X 57"	14.25				1		2	1	JCT STH 156
27	"	W21-62								1	2	
28	"	R3-4B	36" X 48"	12.00				1		1	1	
29	"	R3-4B	36" X 48"	12.00				1		1	1	
30	"	R2-1	48" X 60"	20.00				2		1	1	65 MPH
31	"	D2-2	96" X 36"	24.00				2		1	2	BONDUEL 16, SHAWANO 25, SEE SIGN DETAIL SHEET
32	"	J4-1	36" X 54"	13.50				1		2	1	WEST STH 29, SEE PLAN SHEET
33	"	D10-3	12" X 48"	4.00			1			1	1	MILE 249
34	"	D10-3	12" X 48"	4.00			1			1	1	MILE 249
35	STH 29, OFF-RAMP TO STH 32	E5-1A	90" X 60"	37.50				2		1	2	EXIT 249
36	STH 29, W. OF STH 32	W4-1	48" X 48"			16.00		2		1	2	
37	OFF-RAMP TO STH 32	W3-1	36" X 36"			9.00	1			1	1	
38	"	D1-3	60" X 24"	10.00			2			1	2	PULASKI, GILLETT, SEE SIGN DETAIL SHEET
39	VACANT											
40	STH 32, S. OF STH 29	R3-1	24" X 24"	4.00			1			1	1	
41	"	R5-1	30" X 30"	6.25						1		MOUNT ON BACKSIDE OF SIGN #40
42	OFF-RAMP TO STH 32	R4-7	24" X 30"	5.00			1			1	1	

PAGE SUBTOTALS

457.35

0.00

25.00

16

18

7

48

41

PLAN SHEET PRODUCED
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ERECTION & REMOVAL OF TYPE II SIGNS AND SUPPORTS

SIGN NO.	LOCATION	SIGN CODE	W X H	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2215 SIGNS FOLDING TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0614 POSTS WOOD 4x6x14 EACH	634.0616 POSTS WOOD 4x6x16 EACH	634.0618 POSTS WOOD 4x6x18 EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
42A	OFF-RAMP TO STH 32	R5-1A	36" X 24"	6.00			1			1	1	
43	"	J3-2	48" X 57"	19.00				2		6	2	NORTH STH 32, SOUTH CTH Y, SEE PLAN SHEET
43A	"	R5-1A	36" X 24"	6.00						1		MOUNT ON BACKSIDE OF SIGN #43
44	"	R5-1	30" X 30"	6.25			1			1	1	
44A	"	R1-1	30" X 30"	5.18			1			1	1	
44B	"	R6-3	30" X 24"	5.00								MOUNT BELOW SIGN #44A
45	"	R1-1	30" X 30"	5.18			1			1	1	
46	"	R5-1	30" X 30"	6.25			1			1	1	
47	"	R6-2R								1		
48	INTERSECTION OF STH 29 RAMP & STH 32	J3-2	48" X 57"	19.00				1		6	1	EAST STH 29, SOUTH STH 32, SEE PLAN SHEET
49	"	R3-2	24" X 24"	4.00						1		MOUNT ON BACKSIDE OF SIGN #48
49A	"	R4-7	24" X 30"	5.00			1					
50	CTH Y, S. OF STH 29/32 ON/OFF RAMPS	R5-1A	36" X 24"	6.00			1			1	1	
51	VACANT											
52	CTH Y, S. OF STH 29/32 ON/OFF RAMPS	J1-3	72" X 39"	19.50			2			6	2	JCT STH 29, JCT STH 32, END CTH Y
53	"	D1-2	72" X 24"	12.00				2		1	2	PULASKI, SHAWANO, SEE SIGN DETAIL SHEET
53A	"	R5-1A	36" X 24"	6.00						1		MOUNT ON BACKSIDE OF SIGN #53
54	"	J3-2	48" X 57"	19.00					1	6	1	EAST STH 29, SOUTH STH 32, SEE PLAN SHEET
55	"	R11-54F	48" X 30"		10.00							MOUNT BELOW SIGN #54
56	"	R5-1	30" X 30"	6.25						1		MOUNT ON BACKSIDE OF SIGN #55
57	S. INTERSECTION OF STH 29 RAMP & STH 32	R6-2L	24" X 30"	5.00			1			1	1	
58	ON-RAMP TO STH 29/32	R5-57	36" X 36"	9.00			1					
59	VACANT											
60	VACANT											
61	ON-RAMP TO STH 29/32	R7-64	48" X 30"	10.00			1					
62	STH 32, S. OF STH 29	J2-2	48" X 57"	19.00				1		6	1	WEST STH 29, NORTH STH 32, SEE PLAN SHEET
63	"	R5-1A	36" X 24"	6.00			1			1	1	
64	"	D1-3	66" X 36"	16.50			2			1	2	BONDUEL, SHAWANO, WAUSAU, SEE SIGN DETAIL SHEET
65	"	R3-20L	24" X 36"	6.00			1			1	1	
66	STH 32, N. OF STH 29	R3-20L	24" X 36"	6.00			1			1	1	
67	"	D1-2	72" X 24"	12.00			2			1	2	HOWARD, GREEN BAY, SEE SIGN DETAIL SHEET
67A	"	R5-1A	36" X 24"	6.00			1			1	1	
68	"	J2-3	72" X 57"	28.50				2		9	2	EAST STH 29, SOUTH STH 32, SOUTH CTH Y, SEE PLAN SHEET
68A	"	R3-1	24" X 24"	4.00			1			1	1	
69	"	R4-7	24" X 30"	5.00			1			1	1	
69A	"	R5-1	30" X 30"	6.25						1		MOUNT ON BACK OF SIGN #68A
70	N. INTERSECTION OF STH 29 RAMP & STH 32	J3-1	24" X 57"	9.50				1		3	1	WEST STH 29, SEE PLAN SHEET
71	STH 29/32 OFF-RAMP	R5-1	30" X 30"	6.25			1			1	1	
72	"	R1-1	36" X 36"	7.46			1			1	1	
72A	"	R1-1	36" X 36"	7.46								MOUNT ON BACK OF SIGN #87
73	"	R6-2L	24" X 30"	5.00						1		MOUNT ON SIDE OF SIGN #81, FACING SOUTH
74	"	R5-1A	36" X 24"	6.00			1			1	1	
75	STH 29, W. OF STH 32 ON-RAMP	W4-1	48" X 48"			16.00		2		1	2	
PAGE SUBTOTALS				336.53	10.00	16.00	25	11	1	69	34	

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ERECTION & REMOVAL OF TYPE II SIGNS AND SUPPORTS

SIGN NO.	LOCATION	SIGN CODE	W X H	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2215 SIGNS FOLDING TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0614 POSTS WOOD 4x6x14 EACH	634.0616 POSTS WOOD 4x6x16 EACH	634.0618 POSTS WOOD 4x6x18 EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
76	STH 29 & STH 32 SPLIT	E5-1A	90" X 60"	37.50				2		1	2	EXIT 249
77	STH 32 OFF-RAMP FROM STH 29	W3-1	36" X 36"			9.00		1		1	1	
78	"	D1-3	60" X 24"	10.00			1	1		1	2	PULASKI, GILLETT, SEE SIGN DETAIL SHEET
78A	"	R3-8	36" X 30"	7.50			1					
79	"	J3-2	48" X 57"	19.00				1		6	1	SOUTH CTH Y, NORTH STH 32, SEE PLAN SHEET
80	"	W12-1D								1	1	
81	"	R1-1								1	1	
82	"	R6-2R								1	1	
82A	"	R1-1	36" X 36"	7.46					1			
82B	"	R6-1R	36" X 12"	3.00								MOUNT ABOVE SIGN #82A
83	"	R1-2								1	1	
84	"	R1-2								1	1	
85	ON-RAMP TO STH 29 WEST	D1-70	78" X 42"	22.75				1				SEE SIGN DETAIL, TO BE BANDED TO STEEL I-BEAMS USING WOOD POSTS
86	"	R7-64	48" X 30"	10.00				1				
87	"	D1-71	90" X 90"	56.25								MOUNT ON BACKSIDE OF SIGN #85, SEE SIGN DETAIL, TO BE BANDED TO STEEL I-BEAMS
88	"	R5-57	36" X 36"	9.00				1				
89	N. INTERSECTION OF STH 29 RAMP & STH 32	R6-2L								1	1	
90	"	R3-2								1		
91	STH 32 OFF-RAMP FROM STH 29	R5-1	30" X 30"	6.25						1		MOUNT ON BACKSIDE OF SIGN #82
92	STH 32, N. OF STH 29	R5-1	30" X 30"	6.25			1			1	1	
93	"	J3-2	48" X 57"	19.00					1	6	1	WEST STH 29, TO STH 156, SEE PLAN SHEET
94	"	R11-54F	48" X 30"		10.00							MOUNT BELOW SIGN #93
95	"	D1-2	72" X 24"	12.00				2		1	2	BONDUEL, SHAWANO, SEE SIGN DETAIL SHEET
95A	"	R5-1A	36" X 24"	6.00						1		MOUNT ON BACKSIDE OF SIGN #95
96	"	J1-2								4	1	JCT STH 29, JCT CTH Y
97	"	D1-72	120" X 60"	50.00				2	1			EAST STH 29, WEST STH 29,SEE SIGN DETAIL SHEET
98	"	W4-2R								1	1	
99	"	W6-3	36" X 36"			9.00		1		1	1	
100	"	R5-1	30" X 30"	6.25						1		MOUNT ON BACKSIDE OF SIGN #99
101	"	R4-7	36" X 48"	12.00			1			1	1	
102	STH 29 / STH 32, E. OF STH 32 INTERCHANGE	I2-2R	78" X 24"	13.00				2		1	2	ONEIDA INDIAN RESERVATION
103	"	J4-2	72" X 54"	27.00				2		4	2	EAST STH 29, SOUTH STH 32, SEE PLAN SHEET
104	STH 29 / STH 32, E. OF STH 32 INTERCHANGE	D10-3	12" X 48"	4.00			1			1	1	MILE 250
105	"	D10-3	12" X 48"	4.00			1			1	1	MILE 250
106	"	D1-3	96" X 21"	14.00			1	1		1	2	GREEN BAY 8, SEE SIGN DETAIL SHEET
107	"	R2-1	48" X 60"	20.00				1		1	1	65 MPH
108	"	R3-4B	36" X 48"	12.00			1			1	1	
109	"	R3-4B	36" X 48"	12.00			1			1	1	
110	"	R4-3	48" X 60"	20.00				2		1	2	
111	STH 29 / STH 32, E. OF CTH U	D10-3	12" X 48"	4.00			1			1	1	MILE 252
112	"	D10-3	12" X 48"	4.00			1			1	1	MILE 252
112A	STH 29 / STH 32, J-TURN TURNAROUND FOR CTH VV	R1-2	48" X 42"	7.00					1	1	1	
112B	"	R6-1L	54" X 18"	6.75						1		MOUNT ABOVE SIGN #112B
112C	"	R5-1	36" X 36"	9.00			1			1	1	
113	STH 29 / STH 32, E. OF CTH VV	D10-3	12" X 48"	4.00			1			1	1	MILE 253
113A	STH 29 / STH 32, J-TURN TURNAROUND FOR CTH VV	R5-1	36" X 36"	9.00			1			1	1	
113B	"	R1-2	48" X 42"	14.00					1	1	1	
113C	"	R6-1L	54" X 18"	6.75						1		MOUNT ABOVE SIGN #113B
114	STH 29 / STH 32, E. OF CTH VV	D10-3	12" X 48"	4.00			1			1	1	MILE 253

PAGE SUBTOTALS

494.71

10.00

18.00

15

21

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56

41

PLAN SHEET PRODUCED
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3

ERECTION & REMOVAL OF TYPE II SIGNS AND SUPPORTS

SIGN NO.	LOCATION	SIGN CODE	W X H	637.2210 SIGNS TYPE II REFLECTIVE H S.F.	637.2215 SIGNS FOLDING TYPE II REFLECTIVE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE F S.F.	634.0614 POSTS WOOD 4x6x14 EACH	634.0616 POSTS WOOD 4x6x16 EACH	634.0618 POSTS WOOD 4x6x18 EACH	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
115	STH 29 / STH 32, E. OF CTH VV	R2-1	48" X 60"	20.00				2		1	1	65 MPH
116	"	R3-4B	36" X 48"	12.00			1			1	1	
117	"	R3-4B	36" X 48"	12.00			1			1	1	
117A	STH 29 / STH 32, W. OF CTH FF INTERCHANGE	W57-51								1		
117B	"	S57-51	48" X 24"			8.00						MOUNT BELOW EXISTING S3-51 "SCHOOL BUS TRAFFIC"
117C	"	W57-51								1		
117D	"	S57-51	48" X 24"			8.00						MOUNT BELOW EXISTING S3-51 "SCHOOL BUS TRAFFIC"
118	STH 29 / STH 32, E. OF CTH FF INTERCHANGE	R3-4B	36" X 48"	12.00			1			1	1	
119	"	R3-4B	36" X 48"	12.00			1			1	1	
120	"	W21-62								1	2	
121	STH 29 / STH 32, W. OF CTH J	D2-3								1	2	
122	"	R4-3								1	1	
123	"	D2-3								1	2	
124	"	M1-6								1		
125	STH 29 / STH 32, W. OF CTH J	D10-3	12" X 48"	4.00			1			1	1	MILE 256
126	"	D10-3	12" X 48"	4.00			1			1	1	MILE 256
127	"	R2-1	48" X 60"	20.00				1		1	1	65 MPH
128	"	R2-1	48" X 60"	20.00				1		1	1	65 MPH
129	"	W11-6								1	1	
130	"	W11-6								1	1	
131	"	R2-1	48" X 60"	20.00				2		1	1	65 MPH
132	"	R2-1	48" X 60"	20.00				2		1	1	65 MPH
PAGE SUBTOTALS				156.00	0.00	16.00	6	8	0	20	20	
PROJECT TOTALS				1444.59	20.00	75.00	62	58	13	193	136	

ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE I AND SIGN SUPPORTS

SIGN NO.	LOCATION	SIGN CODE	637.1220 SIGNS TYPE I REFLECTIVE SH				635.0200 SIGN SUPPORTS STRUCT. STEEL HIGH-STRENGTH	635.0300 SIGN SUPPORTS REPLACING BASE CONNECTION BOLTS	636.0100 SIGN SUPPORTS CONCRETE MASONRY	636.0500 SIGN SUPPORTS STEEL REINFORCEMENT	638.2601 REMOVING SIGNS TYPE I	638.3100 REMOVING STRUCT. STEEL SIGN SUPPORTS	TYPE/SIZE OF STEEL	INFO ONLY - POST LENGTH TO BE VERIFIED BY CONTRACTOR				REMARKS	
			W	X	H	S.F.	LB	EACH	CY	LB	EACH	EACH		EACH	POST NO. 1	POST NO. 2	OFFSET		DISTANCE
															LENGTH	LENGTH	DISTANCE		BETWEEN POSTS (S)
														FT	FT	FT	FT		
200	STH 29 EB	E1-1A	156"	X	162"	175.50	1160	2			1	2	2-TYPE B	25.7	28.5	30	7.8	STH 32, CTH Y, PULASKI, GILLET, 3/4 MILE, SEE SIGN DETAIL SHEET	
200A	"	E1-5P	132"	X	30"	27.50					1							EXIT 249, MOUNT ABOVE SIGN #200	
201	STH 29 EB	E4-1A	192"	X	132"	176.00	1072	2			1	2	2-TYPE B	23.5	25.2	30	9.6	STH 32, CTH Y, PULASKI, GILLET, SEE SIGN DETAIL SHEET	
201A	"	E1-5P	132"	X	30"	27.50					1							EXIT 249, MOUNT ABOVE SIGN #201	
202	STH 29 WB / STH 32 NB	E4-1A	192"	X	132"	176.00	1072	2			1	2	2-TYPE B	23.5	25.2	30	9.6	STH 32, CTH Y, PULASKI, GILLET, SEE SIGN DETAIL SHEET	
202A	"	E1-5P	132"	X	30"	27.50					1							EXIT 249, MOUNT ABOVE SIGN #202	
203	STH 29 WB / STH 32 NB	E1-1A	156"	X	162"	175.50	1160	2			1	2	2-TYPE B	25.7	28.5	30	7.8	STH 32, CTH Y, PULASKI, GILLET, 1 MILE, SEE SIGN DETAIL SHEET	
203A	"	E1-5P	132"	X	30"	27.50					1							EXIT 249, MOUNT ABOVE SIGN #203	
204	VACANT																		
205	STH 29 WB / STH 32 NB	E8-1	186"	X	108"	139.50	1056		1.6	98			2-TYPE B	22.5	25.2	30	10.8	BONDUEL 22, SHAWANO 31, WAUSAU 87, SEE SIGN DETAIL SHEET	
PROJECT TOTALS			952.50				5520	8	1.6	98	8	8							

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

FIELD OFFICE TYPE D

LOCATION	642.5401 EACH
PROJECT	1
TOTAL 0010	1

TRAFFIC CONTROL SUMMARY

		643.0100	643.0300	643.0420*	643.0705	643.0715	643.0800	643.0900	643.0910*	643.0920*	643.1000	643.1050	643.2000	643.3000
		TRAFFIC CONTROL (PROJECT) 01. 9202-10-71	TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL BARRICADES TYPE III	TRAFFIC CONTROL WARNING LIGHTS TYPE A	TRAFFIC CONTROL WARNING LIGHTS TYPE C	TRAFFIC CONTROL ARROW BOARDS	TRAFFIC CONTROL SIGNS	TRAFFIC CONTROL COVERING SIGNS TYPE I	TRAFFIC CONTROL COVERING SIGNS TYPE II	TRAFFIC CONTROL SIGNS FIXED MESSAGE	TRAFFIC CONTROL SIGNS PCMS	TRAFFIC CONTROL DETOUR (PROJECT) 01. 9202-10-71	TRAFFIC CONTROL DETOUR SIGNS
LOCATION	NUMBER OF DAYS	EACH	DAY	DAY	DAY	DAY	DAY	DAY	EACH	EACH	SF	DAY	EACH	DAY
PROJECT	-	1	-	-	-	-	-	-	-	-	-	-	-	-
STAGE 1	6	-	6250	440	880	220	24	276	-	-	-	-	-	-
STAGE 2	6	-	3708	252	504	360	12	234	-	-	-	-	-	-
STAGE 3	6	-	3408	228	456	60	12	162	-	-	-	-	-	-
STAGE 4	6	-	3042	228	456	360	12	162	-	-	-	-	-	-
STAGE 5	6	-	2742	204	408	60	12	90	-	-	-	-	-	-
STAGE 6	10	-	500	200	400	500	-	520	2	2	36	7	1	1670
TOTAL 0010		1	19650	1552	3104	1560	72	1444	2	2	36	7	1	1670

NOTE: STAGE 1 CONSISTS PERFORMING CONCRETE REPAIRS FOR WB AND EB INSIDE LANES AND J-TURN CONSTRUCTION
STAGE 2 CONSISTS OF MILLING AND OVERLAYING WB OUTSIDE LANES
STAGE 3 CONSISTS OF MILLING OVERLAYING WB INSIDE LANES
STAGE 4 CONSISTS OF CONCRETE REPAIRS AND OVERLAYING EB INSIDE LANES
STAGE 5 CONSISTS OF OVERLAYING EB OUTSIDE LANES
STAGE 6 CONSISTS OF STH 29/32 INTERCHANGE AND STH 32 WORK WITH DETOUR

*TABLE INCLUDES TYPE III BARRICADES AND BOTH COVERING SIGN ITEMS FROM TRAFFIC CONTROL DETOUR SIGNS AND COVERING SIGNS TABLE

TRAFFIC CONTROL DETOUR SIGNS AND COVERING SIGNS

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 10 DAYS	643.1000 SIGNS FIXED MESSAGE S.F.	643.3000 DETOUR SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
1A	500' E OF SIGN # 2	M1-6	36"x36"	1	10		10				32
	"	W0 20-2-A	48"x48"	1	10		10				
1B	ACROSS FROM SIGN # 1 (MEDIAN SIDE)	M1-6	36"x36"	1	10		10				32
	"	W0 20-2-A	48"x48"	1	10		10				
2	TYPE 1 (32-Y, PULASKI - GILLETT, 1 MILE)	R-55-58-A	108"x18"	1	10		10				PLACED OVER "EXIT 1 MILE"
3	1000' E OF SIGN # 5	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 6-1	30"x30"	1	10		10				AHEAD
4	ACROSS FROM SIGN # 3 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 6-1	30"x30"	1	10		10				AHEAD
5A	TYPE 1 (32-Y, PULASKI - GILLETT, TILT RT)								1		TILT RIGHT ARROW
5B	TYPE 1 (32-Y, PULASKI - GILLETT, TILT RT)	R-55-58-A	108"x18"	1	10		10				BETWEEN PULASKI & GILLET
6	250' W OF EXIT 249 SIGN	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 6-1	30"x30"	1	10		10				AHEAD
7	ACROSS FROM SIGN # 6 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 6-1	30"x30"	1	10		10				AHEAD
8	LT OF SHAWANO COUNTY SIGN	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
9	ACROSS FROM SIGN # 8 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
10	200' W OF HOFA PARK RD INTERSECTION	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
PAGE SUBTOTALS				31			310	0	1	0	

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

TRAFFIC CONTROL DETOUR SIGNS AND COVERING SIGNS

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 10 DAYS	643.1000 SIGNS FIXED MESSAGE S.F.	643.3000 DETOUR SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
11	ACROSS FROM SIGN # 10 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
12	250' W OF REDWOOD DR. INTERSECTION	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
13	ACROSS FROM SIGN # 12 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
14	LT OF TYPE 1 (NORTH-55-AHEAD)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 5-2-R	30"x30"	1	10		10				
15	ACROSS FROM SIGN # 14 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 5-2-R	30"x30"	1	10		10				
16	LT OF TYPE 1 (S 55-160, PULASKI-SEYMOUR, TILT RT)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	M6-2	30"x30"	1	10		10				RIGHT
17	LT OF STOP AHEAD SIGN	MO 4-8	24"x12"	1	10		10				
	"	MO 3-1	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
	"	MO 5-1-R	21"x21"	1	10		10				
18	RT OF STOP SIGN	MO 4-8	24"x12"	1	10		10				
	"	MO 3-1	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
	"	MO 6-1	21"x21"	1	10		10				RIGHT
19	300' E OF NE RAMP & STH 160 INTERSECTION	MO 4-8	24"x12"	1	10		10				
	"	MO 3-1	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
	"	MO 6-1	21"x21"	1	10		10				AHEAD
PAGE SUBTOTALS				33			330	0	0	0	

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

TRAFFIC CONTROL DETOUR SIGNS AND COVERING SIGNS

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD DAYS	643.1000 SIGNS FIXED MESSAGE S.F.	643.3000 DETOUR SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
20	200' E OF ELM GROVE RD & STH 160 INTERSECTION	MO 4-8	24"x12"	1	10		10				
	"	MO 3-1	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
21	200' E OF GREEN VALLEY (SOUTH LEG) & STH 160 INTERSECTION	MO 4-8	24"x12"	1	10		10				
	"	MO 3-1	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
22	MODIFY J1-1 (JCT 32)	MO 4-8-A	24"x12"	1	10		10				
	"	M1-6	EXISTING								
23	MODIFY J13-1 (32 - AH & LT)	M1-6	EXISTING								
	"	MO 6-1	24"x12"	1	10		10				LEFT
24	J4-1 (SOUTH 32)									1	
25	SE QUAD OF STH 32 & STH 160 INTERSECTION	R11-3	60"x30"	1	10		10				2 MILES
26	50' N OF ANTHONY LANE	WO 20-2-A	48"x48"	1	10		10				
27	MODIFY J2-2 (S-32-AH LT; W-160-AH RT)	MO 4-8	24"x12"	1	10		10				
	"	MO 3-3	EXISTING								
	"	M1-6	EXISTING								
	"	MO 5-1-R	21"x21"	1	10		10				
28	D1-2 (LT-GREEN BAY; ANGELICA-RT)									1	LT- GREEN BAY
29	MODIFY J3-2 (S-32-LT; W-160-RT)	MO 4-8	24"x12"	1	10		10				
	"	MO 3-3	EXISTING								
	"	M1-6	EXISTING								
	"	MO 6-1	21"x21"	1	10		10				RIGHT
30	IN FRONT OF TREE (ON TYPE II BARICADE)	MO 4-8	24"x12"	1	10		10				
	"	MO 3-3	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10	10			32
31	50' E OF J4-1 (WEST-160)	MO 4-8	24"x12"	1	10		10				
	"	MO 3-3	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
32	200' W OF GREEN VALLEY RD & STH 160 INTERSECTION	MO 4-8	24"x12"	1	10		10				
	"	MO 3-3	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
PAGE SUBTOTALS				23			230	10	0	2	

PLAN SHEET PRODUCED
BY WisDOT - NE REGION

TRAFFIC CONTROL DETOUR SIGNS AND COVERING SIGNS

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 10 DAYS	643.1000 SIGNS FIXED MESSAGE S.F.	643.3000 DETOUR SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
33	200' W OF ELM RD & STH 160 INTERSECTION	MO 4-8	24"x12"	1	10		10				
	"	MO 3-3	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
34	LT OF J2-2 (E-29-AH LT; S-55-AH)	MO 4-8	24"x12"	1	10		10				
	"	MO 3-3	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
	"	MO 5-1-L	21"x21"	1	10		10				
35	LT OF J3-2 (E-29-LT; S-55-AH)	MO 4-8	24"x12"	1	10		10				
	"	MO 3-3	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10	10			32
	"	MO 6-1	21"x21"	1	10		10				LEFT
36	250' S OF STH 160 & SE RAMP INTERSECTION	MO 4-8	24"x12"	1	10		10				
	"	MO 3-3	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
37	1000' W OF D2-1 (ANGELICA -EXIT 242)	M1-6	30"x15"	1	10		10				32
	"	WO 20-2-A	48"x48"	1	10		10				
38	ACROSS FROM SIGN # 37 (MEDIAN SIDE)	M1-6	30"x15"	1	10		10				32
	"	W20-2-A	48"x48"	1	10		10				
39	LT OF D2-1 (ANGELICA- EXIT 242)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 5-2-R	30"x30"	1	10		10				
40	ACROSS FROM SIGN # 39 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-3	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 6-1	30"x30"	1	10		10				AHEAD
41	1000 ' E OF SIGN # 39 -(D2-1 - ANGELICA- EXIT 242)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-3	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 5-2-R	30"x30"	1	10		10				
PAGE SUBTOTALS				30			300	10	0	0	

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TRAFFIC CONTROL DETOUR SIGNS AND COVERING SIGNS

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 10 DAYS	643.1000 SIGNS FIXED MESSAGE S.F.	643.3000 DETOUR SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0910 COVERING SIGNS TYPE I EACH	643.0920 COVERING SIGNS TYPE II EACH	REMARKS
42	ACROSS FROM SIGN # 41 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-3	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 6-1	30"x30"	1	10		10				AHEAD
43A	LT OF TYPE 1 (55 - 160, PULASKI-SEYMOUR, TILT RT)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-1	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 6-2	30"x30"	1	10		10				RIGHT
43B	ACROSS FROM STOP AHEAD SIGN ON EB OFF-RAMP TO HWY 160	MO 4-8	24"x12"	1	10		10				
	"	MO 3-1	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
	"	MO 5-1-L	21"x21"	1	10		10				
43C	LT OF LEFT STOP SIGN @ EB OFF-RAMP & STH 160 INTWRSECTION	MO 4-8	24"x12"	1	10		10				
	"	MO 3-1	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
	"	MO 6-1	21"x21"	1	10		10				RIGHT
43D	RT OF J2-2 (E-29-AH LT; N-55-AH) ON STH 55 (NB)	MO 4-8	24"x12"	1	10		10				
	"	MO 3-1	24"x12"	1	10		10				
	"	M1-6	24"x24"	1	10		10				32
	"	MO 6-1	21"x21"	1	10		10				AHEAD
44	ACROSS FROM SIGN # 43 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-3	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 6-1	30"x30"	1	10		10				AHEAD
45	200' S OF EXIT - 242 - TILT RT SIGN	MO 4-8	30"x15"	1	10		10				
	"	MO 3-3	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 6-1	30"x30"	1	10		10				AHEAD
46	ACROSS FROM SIGN # 45 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-3	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
	"	MO 6-1	30"x30"	1	10		10				AHEAD
PAGE SUBTOTALS				32			320	0	0	0	

PLAN SHEET PRODUCED
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TRAFFIC CONTROL DETOUR SIGNS AND COVERING SIGNS

SIGN NO.	LOCATION	SIGN CODE	SIZE W X H	NUMBER IN SERVICE	APPROX. SERVICE PERIOD 10 DAYS	643.1000 SIGNS FIXED MESSAGE S.F.	643.3000 DETOUR SIGNS DAYS	643.0420 BARRICADES TYPE III DAYS	643.0910* COVERING SIGNS TYPE I EACH	643.0920* COVERING SIGNS TYPE II EACH	REMARKS
47	250' E OF REDWOOD RD & STH 29 INTERSECTION	MO 4-8	30"x15"	1	10		10				
	"	MO 3-3	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
48	ACROSS FROM SIGN # 47 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-3	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
49	250' E OF HOFA PARK RD & STH 29 INTERSECTION	MO 4-8	30"x15"	1	10		10				
	"	MO 3-3	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
50	ACROSS FROM SIGN # 49 (MEDIAN SIDE)	MO 4-8	30"x15"	1	10		10				
	"	MO 3-3	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
51	250' E OF STH 156/ ST. AUGISTINE RD. & STH 29 INTERSECTION	MO 4-8-A	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
52	ACROSS FROM SIGN # 51 (MEDIAN SIDE)	MO 4-8-A	30"x15"	1	10		10				
	"	M1-6	36"x36"	1	10		10				32
53	TYPE I (32-NORTH-Y, PULASKI-GILLETT, 3/4 MILE)	R-55-58-A	108"x18"	1	10		10				PLACED OVER "EXIT 3/4 MILE"
54A	TYPE I (32-NORTH-Y, PULASKI-GILLETT, TILT RT)								1		TILT RIGHT ARROW
54B	TYPE I (32-NORTH-Y, PULASKI-GILLETT, TILT RT	R-55-58-A	108"x18"	1	10		10				BETWEEN "PULASKI- GILLETT"
PAGE SUBTOTALS				18			180	0	1	0	
PROJECT TOTALS				167			1,670	20	2	2	

*ALL COVERING SIGN ITEMS ARE FOR STAGE 6 WITH ONE CYCLE

TYPE III BARRICADES AND BOTH COVERING SIGN ITEMS ARE INCLUDED IN TRAFFIC CONTROL SUMMARY TABLE

PLAN SHEET PRODUCED
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PAVEMENT MARKING SUMMARY

		646.0106		646.0881.S		646.0883.S		647.0566	647.0746	REMARKS
		PAVEMENT MARKING		PAVEMENT MARKING		PAVEMENT MARKING		PAVEMENT	PAVEMENT	
		EPOXY 4-INCH		GROOVED WET REFLECTIVE TAPE 4 INCH		GROOVED WET REFLECTIVE TAPE 8-INCH		MARKING STOP LINE EPOXY 18 INCH	MARKING DIAGONAL EPOXY 24-INCH	
STATION	TO	STATION	LOCATION	WHITE LF	YELLOW LF	LF	LF	LF	LF	
327+00	-	744+90	STH 29 WB LANES	41790	-	-	-	-	-	EDGE LINE
327+00	-	744+90	STH 29 WB LANES	-	-	10448	-	-	-	LANE LINE
327+00	-	744+90	STH 29 WB LANES	-	41790	-	-	-	-	CENTER LINE
327+00	-	744+90	STH 29 EB LANES	41790	-	-	-	-	-	EDGE LINE
327+00	-	744+90	STH 29 EB LANES	-	-	10448	-	-	-	LANE LINE
327+00	-	744+90	STH 29 EB LANES	-	41790	-	-	-	-	CENTER LINE
0+00	-	18+20	STH 32 NW RAMP	1820	-	-	-	-	-	EDGE LINE
0+00	-	18+20	STH 32 NW RAMP	-	1820	-	-	-	-	CENTER LINE
0+00	-	18+20	STH 32 NW RAMP	-	-	-	400	-	-	GORE AREA
0+00	-	15+89	STH 32 NE RAMP	1589	-	-	-	-	-	EDGE LINE
0+00	-	15+89	STH 32 NE RAMP	-	1589	-	-	-	-	CENTER LINE
0+00	-	15+89	STH 32 NE RAMP	-	33	-	250	24	150	GORE AREA
180+00	-	197+22	STH 32 SW RAMP	1722	-	-	-	-	-	EDGE LINE
180+00	-	197+22	STH 32 SW RAMP	-	1722	-	-	-	-	CENTER LINE
180+00	-	197+22	STH 32 SW RAMP	-	33	-	250	12	150	GORE AREA
96+63	-	115+49	STH 32 SE RAMP	1886	-	-	-	-	-	EDGE LINE
96+63	-	115+49	STH 32 SE RAMP	-	1886	-	-	-	-	CENTER LINE
96+63	-	115+49	STH 32 SE RAMP	-	-	-	400	-	-	GORE AREA
18+00	-	37+50	STH 32 NB	-	1950	-	-	-	-	CENTER LINE
18+00	-	40+00	STH 32 NB	2200	-	-	-	-	-	EDGE LINE
18+00	-	37+50	STH 32 SB	-	1950	-	-	-	-	CENTER LINE
18+00	-	40+00	STH 32 SB	2200	-	-	-	-	-	EDGE LINE
37+50	-	40+00	STH 32	-	500	-	-	-	-	CENTER LINE
636+50	-	654+00	STH 29 WB LT	350	125	-	1200	-	-	CTH FF NW RAMP
673+00	-	705+25	STH 29 WB LT	100	100	-	2700	-	150	CTH FF NE RAMP
651+00	-	656+50	STH 29 EB RT	100	100	-	600	-	150	CTH FF SW RAMP
682+00	-	710+00	STH 29 EB RT	500	125	-	500	-	-	CTH FF SE RAMP
479+75	-	486+51	STH 29	270	780	-	-	-	162	CTH U TURN LANE
481+20	-	485+70	STH 29	-	-	-	900	-	-	MAINLINE NEAR CTH U
	486+53		STH 29	-	230	-	-	-	-	CTH U NORTHBOUND ISLAND
486+96	-	488+86	STH 29	-	190	-	-	-	-	STH 29 WB MAILINE
485+70	-	487+70	STH 29	190	-	-	-	-	-	MAINLINE NEAR CTH U
	487+98		STH 29	-	194	-	-	-	-	CTH U SOUTHBOUND ISLAND
488+07	-	489+37	STH 29	-	130	-	-	-	-	MAINLINE NEAR CTH U
488+02	-	493+93	STH 29	658	690	-	1060	-	162	CTH U TURN LANE
541+30	-	541+65	STH 29	520	695	60	450	-	-	WEST CTH VV BULB
552+35	-	558+90	STH 29	110	950	-	930	-	165	CTH VV TURN LANE
558+28	-	560+32	STH 29	-	150	-	-	-	-	MAINLINE NEAR CTH VV
	559+30		STH 29	-	140	-	-	-	-	CTH VV SOUTHBOUND ISLAND
559+10	-	560+10	STH 29	110	-	-	-	-	-	CTH VV TURN LANE
559+42	-	560+12	STH 29	-	70	-	-	-	-	MAINLINE NEAR CTH VV
	559+30		STH 29	-	250	-	-	-	-	CTH VV NORTHBOUND ISLAND
560+10	-	564+79	STH 29	-	665	-	930	-	165	CTH VV TURN LANE
560+10	-	565+40	STH 29	580	-	-	1070	-	400	CTH VV RIGHT TURN LANE
576+75	-	578+90	STH 29	520	695	60	450	-	-	EAST CTH VV BULB
SUBTOTALS				99005	101342	21015	12090	36	1654	
TOTAL 0010				200347		21015	12090	72	3308	

PAVEMENT MARKING EPOXY 8-INCH

LOCATION	646.0126 LF	REMARKS
MAPLE RD.	600	TURN LANES
STH 156/ST. AUGUSTINE ST.	600	TURN LANES
STH 32	300	LEFT TURN LANE
TOTAL 0010	1500	

PAVEMENT MARKING WORDS EPOXY

LOCATION	647.0356 EACH	REMARKS
STH 32	2	LEFT TURN LANE
TOTAL 0010	2	

PAVEMENT MARKING ARROWS EPOXY TYPE 2

LOCATION	647.0166 EACH	REMARKS
STH 32	4	LEFT TURN LANES
TOTAL 0010	4	

PAVEMENT MARKING ISLAND NOSE EPOXY

LOCATION	647.0606 EACH
STH 32	4
TOTAL 0010	4

TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 4-INCH

LOCATION	649.0400 LF
PROJECT	10000
TOTAL 0010	10000

PAVEMENT MARKING EPOXY 12-INCH

STATION	LOCATION	646.0136 LF	REMARKS
541+65	STH 29 EB RT	135	WEST CTH VV BULB
578+75	STH 29 WB LT	135	EAST CTH VV BULB
	TOTAL 0010	270	

REMOVING PAVEMENT MARKINGS

LOCATION	646.0600 LF
PROJECT	5300
TOTAL 0010	5300

PAVEMENT MARKING YIELD LINE SYMBOLS EPOXY 36-INCH

STATION	LOCATION	647.0546 EACH	REMARKS
487+00	STH 29 WB RT	7	CTH U INTERSECTION
488+00	STH 29 EB LT	7	CTH U INTERSECTION
541+00	STH 29 EB RT	7	CTH VV WEST BULB
559+00	STH 29 WB RT	7	CTH VV INTERSECTION
559+00	STH 29 EB LT	7	CTH VV INTERSECTION
579+00	STH 29 WB RT	7	CTH VV EAST BULB
	TOTAL 0010	42	

TEMPORARY PAVEMENT MARKING REMOVABLE TAPE 8-INCH

LOCATION	649.0801 LF
PROJECT	1200
TOTAL 0010	1200

3

PAVEMENT MARKING OUTFALL

STATION	LOCATION	646.0805.S EACH
328+00	STH 29 WB LT	1
333+00	STH 29 WB LT	1
337+00	STH 29 WB LT	1
340+97	STH 29 WB RT	1
341+00	STH 29 WB LT	1
345+00	STH 29 WB LT & RT	2
350+00	STH 29 WB LT & RT	2
355+00	STH 29 WB LT & RT	2
360+00	STH 29 WB LT & RT	2
365+00	STH 29 WB LT & RT	2
370+00	STH 29 WB LT & RT	2
374+22	STH 29 WB LT & RT	2
379+00	STH 29 WB LT & RT	2
384+00	STH 29 WB RT	1
387+50	STH 29 WB RT	1
391+00	STH 29 WB RT	1
394+27	STH 29 WB RT	1
395+87	STH 29 WB RT	1
401+00	STH 29 WB RT	1
406+00	STH 29 WB RT	1
412+00	STH 29 WB LT & RT	2
417+00	STH 29 WB LT & RT	2
422+00	STH 29 WB LT & RT	2
427+00	STH 29 WB LT & RT	2
432+00	STH 29 WB LT & RT	2
437+00	STH 29 WB LT & RT	2
442+00	STH 29 WB LT & RT	2
447+00	STH 29 WB LT & RT	2
452+00	STH 29 WB LT & RT	2
457+00	STH 29 WB RT	1
457+86	STH 29 WB LT	1
460+50	STH 29 WB RT	1
464+50	STH 29 WB RT	1
469+00	STH 29 WB RT	1
473+44	STH 29 WB LT	1
473+50	STH 29 WB RT	1
478+50	STH 29 WB LT & RT	2
483+50	STH 29 WB LT & RT	2
488+50	STH 29 WB LT	1
490+16	STH 29 WB RT	1
SUBTOTAL		59

PAVEMENT MARKING OUTFALL CONTINUED

STATION	LOCATION	646.0805.S EACH
498+00	STH 29 WB LT	1
503+00	STH 29 WB LT	1
507+50	STH 29 WB LT	1
509+08	STH 29 WB RT	1
512+34	STH 29 WB LT & RT	2
327+00	STH 29 EB LT	1
332+00	STH 29 EB LT	1
336+00	STH 29 EB LT	1
340+00	STH 29 EB LT	1
341+04	STH 29 EB RT	1
345+00	STH 29 LT & RT	2
350+00	STH 29 LT & RT	2
355+00	STH 29 LT & RT	2
360+00	STH 29 LT & RT	2
365+00	STH 29 LT & RT	2
370+00	STH 29 LT & RT	2
374+22	STH 29 LT & RT	2
379+00	STH 29 LT & RT	2
383+00	STH 29 EB RT	1
384+00	STH 29 EB LT	1
388+00	STH 29 EB RT	1
396+04	STH 29 EB RT	1
401+05	STH 29 EB RT	1
407+31	STH 29 EB LT & RT	2
412+00	STH 29 EB LT	1
413+50	STH 29 EB RT	1
417+00	STH 29 LT & RT	2
422+00	STH 29 LT & RT	2
427+00	STH 29 LT & RT	2
432+00	STH 29 LT & RT	2
437+00	STH 29 LT & RT	2
442+00	STH 29 LT & RT	2
447+00	STH 29 LT & RT	2
452+00	STH 29 LT & RT	2
455+70	STH 29 EB LT	1
457+00	STH 29 EB RT	1
460+50	STH 29 EB RT	1
464+00	STH 29 EB RT	1
468+35	STH 29 EB RT	1
471+37	STH 29 EB LT	1
SUBTOTAL		58

PAVEMENT MARKING OUTFALL CONTINUED

STATION	LOCATION	646.0805.S EACH
471+50	STH 29 EB RT	1
476+50	STH 29 LT & RT	2
481+50	STH 29 LT & RT	2
486+50	STH 29 LT & RT	2
488+50	STH 29 EB RT	1
488+50	STH 29 EB LT	1
489+50	STH 29 EB LT	1
498+00	STH 29 EB LT	1
503+00	STH 29 EB LT	1
507+33	STH 29 EB RT	1
508+00	STH 29 EB LT	1
513+00	STH 29 LT & RT	2
518+00	STH 29 LT & RT	2
520+00	STH 29 LT & RT	2
379+00	STH 32 NW RAMP LT	1
182+00	STH 32 NW RAMP LT	1
192+00	STH 32 NW RAMP LT	1
179+00	STH 32 SW RAMP RT	1
184+00	STH 32 SW RAMP RT	1
188+00	STH 32 SW RAMP RT	1
192+00	STH 32 SW RAMP RT	1
192+00	STH 32 SW RAMP LT	1
195+14	STH 32 SW RAMP LT & RT	2
196+00	STH 32 SW RAMP LT & RT	2
97+40	STH 32 SE RAMP RT	1
103+45	STH 32 SE RAMP RT	1
109+50	STH 32 SE RAMP RT	1
93+00	STH 32 NE RAMP LT	1
94+00	STH 32 NE RAMP LT	1
94+00	STH 32 NE RAMP RT	1
96+32	STH 32 NE RAMP RT	1
97+89	STH 32 NE RAMP RT	1
97+89	STH 32 NE RAMP LT	1
106+81	STH 32 NE RAMP LT	1
SUBTOTAL		42
UNDISTRIBUTED		20
TOTAL 0010		179

3

STAKING SUMMARY

				650.4000	650.4500	650.5000	650.5500	650.7000	650.8000	650.9910	650.9920
				CONSTRUCTION STAKING STORM SEWER	CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	CONSTRUCTION STAKING CONCRETE PAVEMENT	CONSTRUCTION STAKING RESURFACING REFERENCE	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL	CONSTRUCTION STAKING SLOPE STAKES
STATION	TO	STATION	LOCATION	EACH	LF	LF	LF	LF	LF	LS	LF
327+00	-	744+90	STH 29 WB & EB	-	-	-	-	-	83580	-	-
180+00	-	197+22	STH 32 SW RAMP	-	-	-	-	-	1722	-	-
96+63	-	115+49	STH 32 SE RAMP	-	-	-	-	-	1886	-	-
0+00	-	18+20	STH 32 NW RAMP	-	-	-	-	-	1820	-	-
0+00	-	15+89	STH 32 NE RAMP	-	-	-	-	-	1589	-	-
18+00	-	37+50	STH 32	-	-	-	-	-	1950	-	-
0+00	-	4+50	STH 32 NE RAMP	-	450	450	-	450	-	-	450
27+80	-	28+75	STH 32	-	-	-	95	-	-	-	-
2+92	-	11+75	STH 32	-	-	-	-	-	-	-	883
540+47	-	542+36	STH 29 J-TURNS	-	-	-	-	-	189	-	189
577+92	-	579+85	STH 29 J-TURNS	-	-	-	-	-	193	-	193
	510+60		STH 29 WB	1	-	-	-	-	-	-	-
			PROJECT	-	-	-	-	-	-	1	-
TOTAL 0010				1	450	450	95	450	92929	1	1715

CONDUIT RIGID NONMETALLIC								
				652.0225 CONDUIT RIGID NONMETALLIC SCHEDULE 40 2-INCH	652.0235 CONDUIT RIGID NONMETALLIC SCHEDULE 40 3-INCH	652.0605 CONDUIT SPECIAL 2-INCH	652.0615 CONDUIT SPECIAL 3-INCH	
FROM	TO	LOCATION	LF	LF	LF	LF	LF	
CB1	- PB1	STH 29 & CTH VV	-	70	-	-		
CB1	- PB1	STH 29 & CTH VV	-	70	-	-		
PB1	- Drain	STH 29 & CTH VV	30	-	-	-		
PB1	- LB1	STH 29 & CTH VV	40	-	-	-		
PB1	- PB2	STH 29 & CTH VV	-	-	-	110		
PB2	- LB2	STH 29 & CTH VV	10	-	-	-		
PB2	- PB3	STH 29 & CTH VV	180	-	-	-		
PB3	- LB3	STH 29 & CTH VV	10	-	-	-		
PB3	- PB4	STH 29 & CTH VV	200	-	-	-		
PB4	- PB5	STH 29 & CTH VV	200	-	-	-		
PB5	- PB6	STH 29 & CTH VV	200	-	-	-		
PB6	- PB7	STH 29 & CTH VV	200	-	-	-		
PB7	- PB8	STH 29 & CTH VV	200	-	-	-		
PB8	- PB9	STH 29 & CTH VV	200	-	-	-		
PB9	- PB10	STH 29 & CTH VV	200	-	-	-		
PB10	- LB4	STH 29 & CTH VV	200	-	-	-		
PB2	- PB11	STH 29 & CTH VV	-	-	-	60		
PB11	- PB12	STH 29 & CTH VV	-	-	-	180		
PB12	- LB5	STH 29 & CTH VV	40	-	-	-		
PB12	- PB13	STH 29 & CTH VV	-	-	-	90		
PB13	- LB6	STH 29 & CTH VV	10	-	-	-		
PB13	- PB14	STH 29 & CTH VV	-	-	180	-		
PB14	- LB7	STH 29 & CTH VV	10	-	-	-		
PB14	- PB15	STH 29 & CTH VV	200	-	-	-		
PB15	- Drain	STH 29 & CTH VV	30	-	-	-		
PB15	- PB16	STH 29 & CTH VV	200	-	-	-		
PB16	- PB17	STH 29 & CTH VV	200	-	-	-		
PB17	- PB18	STH 29 & CTH VV	205	-	-	-		
PB18	- PB19	STH 29 & CTH VV	205	-	-	-		
PB19	- PB20	STH 29 & CTH VV	205	-	-	-		
PB20	- LB8	STH 29 & CTH VV	205	-	-	-		
PB13	- PB21	STH 29 & CTH VV	-	-	-	70		
PB21	- PB1	STH 29 & CTH VV	-	-	-	180		
TOTAL 0010			3380	140	180	690		

PULL BOXES STEEL 24X42-INCH		
LOCATION	653.0140 EACH	
STH 29 & CTH VV	21	
TOTAL 0010	21	
CONCRETE BASES		
LOCATION	654.0105 CONCRETE BASES TYPE 5 EACH	SPV.0060.01 CONCRETE CONTROL CABINET BASE EACH
STH 29 & CTH VV	8	1
TOTAL 0010	8	1
ELECTRIC SERVICE		
LOCATION	656.0200 ELECTRICAL SERVICE METER BREAKER PEDESTAL (LOCATION) LS	SPV.0060.02 LIGHTING CONTROL CABINET EACH
STH 29 & CTH VV	1	1
TOTAL 0010	1	1

Electrical Wire Lighting 10AWG

LOCATION		655.0615
STH 29 & CTH V V		Equipment
(240 VOLT SYSTEM)		Grounding
		Conductor
		(Green)
FROM	TO	LF
CB1	LB1	140
LB1	PB1	60
LB1	LB2	200
LB2	PB2	30
LB2	LB3	240
LB3	PB3	30
LB3	PB4	240
LB3	PB5	450
LB3	PB6	660
LB3	LB4	1710
LB4	PB7	850
LB4	PB8	640
LB4	PB9	430
LB4	PB10	220
LB2	LB5	340
LB2	PB11	100
LB5	PB12	60
LB5	LB6	180
LB6	PB13	30
LB6	LB7	240
LB7	PB14	30
LB7	PB15	240
LB7	PB16	450
LB7	PB17	650
LB7	LB8	1520
LB8	PB18	655
LB8	PB19	440
LB8	PB20	225
LB6	CB1	380
LB6	PB21	110
TOTAL		11550 **

** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

Electrical Wire Lighting Summary

	655.0610	655.0615
	ELECTRICAL	ELECTRICAL
	WIRE	WIRE
	LIGHTING	LIGHTING
	12 AWG	10 AWG
	LF	LF
PROJECT TOTALS 0010	1500	23750

Electrical Wire Lighting

LOCATION		10AWG	12AWG	655.0610
STH 29 & CTH V V		655.0615	655.0610	Equipment
(240 VOLT SYSTEM)		Ungrounded	Ungrounded	Grounding
		Conductor	Conductor	Conductor
		(see Circuit Color)	(Black)/(Red)	(Green)
Circuit	FROM	TO	LF	LF
A (Black)	CB1	LB8	4080	-
	LB8	Luminaires	-	200
B (Red)	CB1	LB4	4160	-
	LB4	Luminaires	-	200
C (Blue)	CB1	LB1	280	-
	LB1	Luminaire	-	100
	LB1	LB5	480	-
	LB5	Luminaire	-	100
D (Brown)	CB1	LB2	460	-
	LB2	Luminaire	-	100
	CB1	LB6	760	-
	LB6	Luminaire	-	100
E (Orange)	CB1	LB3	840	-
	LB3	Luminaire	-	100
	CB1	LB7	1140	-
	LB7	Luminaire	-	100
SUB-TOTALS			12,200	1,000
TOTAL			12200 **	1500 **

** ADDITIONAL QUANTITIES SHOWN ELSEWHERE

LIGHTING SUMMARY

LOCATION	657.0255 TRANSFORMER BASES BREAKAWAY 11 1/2-INCH BOLT CIRCLE EACH	657.0322 POLES TYPE 5-ALUMINUM EACH	657.0710 LUMINAIRE ARMS TRUSS TYPE 4 1/2-INCH CLAMP 12-FT EACH	659.1115 LUMINAIRES UTILITY LED A EACH
STH 29 & CTH VV	8	8	10	10
TOTAL 0010	8	8	10	10

SAWING ASPHALT

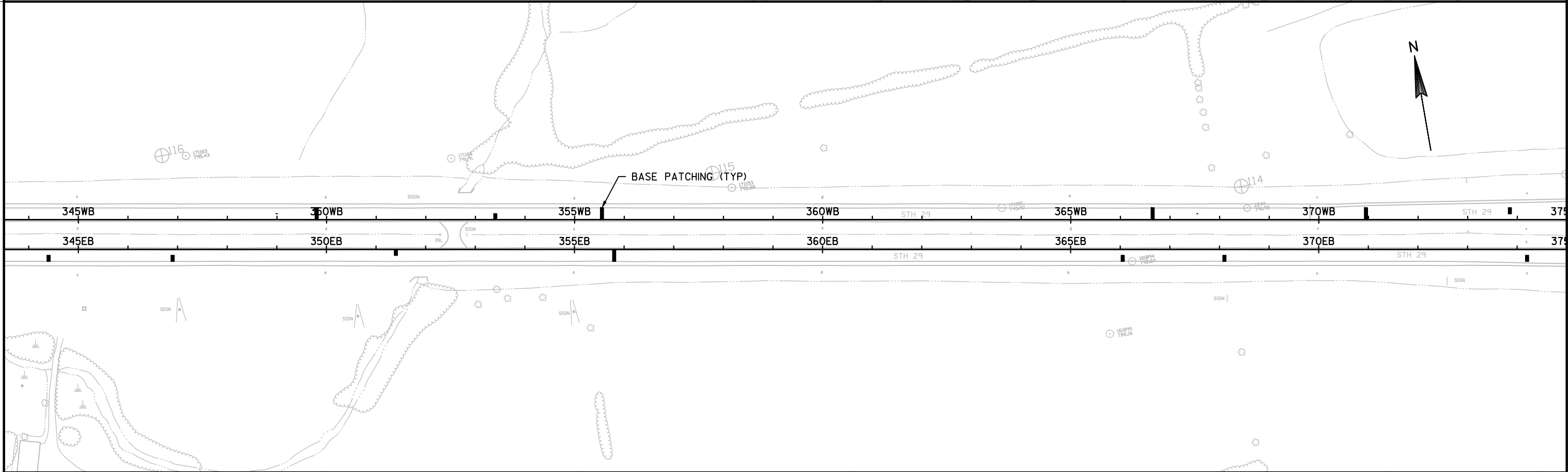
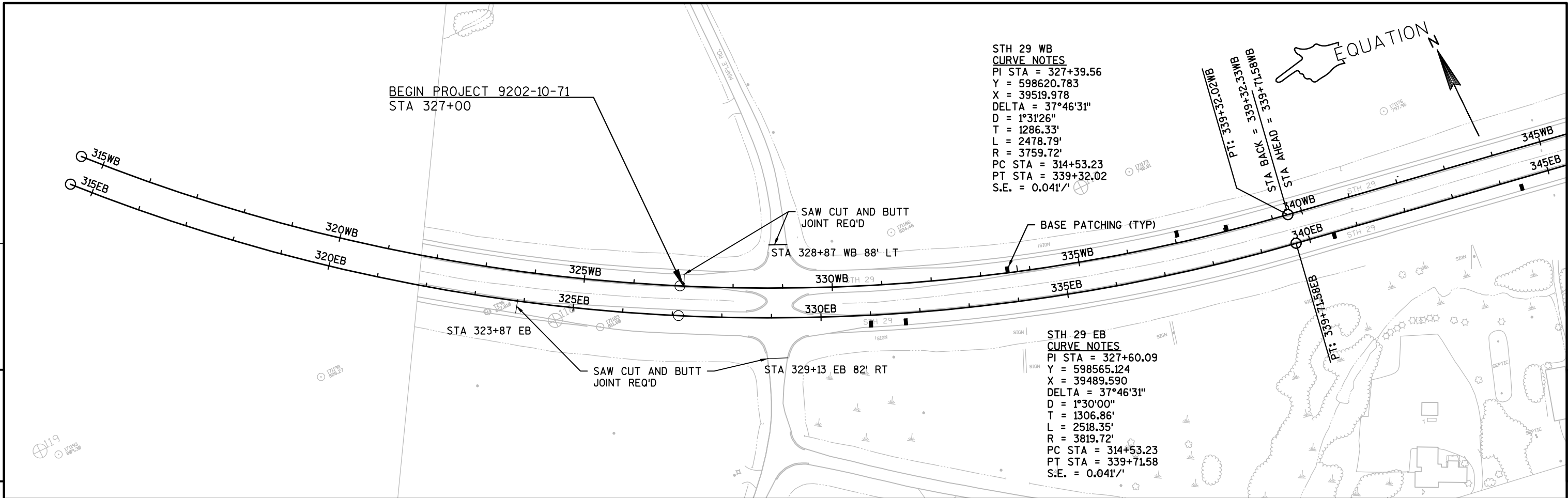
				690.0150	
STATION	TO	STATION	LOCATION	LF	REMARKS
	0+00		STH 32 SE RAMP	15	RAMP RECONSTRUCTION
34+00	-	34+35	STH 32	35	RAMP RECONSTRUCTION
391+45	-	394+15	STH 29 EB RT	6	RAMP RECONSTRUCTION
392+00	-	394+40	STH 29 EB LT	12	RAMP RECONSTRUCTION
395+90	-	398+20	STH 29 WB RT	6	RAMP RECONSTRUCTION
396+00	-	398+75	STH 29 WB LT	12	RAMP RECONSTRUCTION
525+30	-	526+75	STH 29 WB LT	12	RAMP RECONSTRUCTION
711+60	-	715+10	STH 29 EB RT	12	RAMP RECONSTRUCTION
714+50	-	717+75	STH 29 WB LT	12	RAMP RECONSTRUCTION
182+90	-	184+80	STH 32 SW RAMP	6	RAMP RECONSTRUCTION
36+55	-	39+55	STH 32 RT	10	RAMP RECONSTRUCTION
36+90	-	39+90	STH 32 LT	10	RAMP RECONSTRUCTION
	327+00		STH 29 WB	9	BEGIN PROJECT; SHOULDERS
	327+00		STH 29 EB	9	BEGIN PROJECT; SHOULDERS
	329+00		STH 29 WB LT	35	ST. AUGUSTINE RD.
	329+13		STH 29 EB RT	40	STH 156
	485+98		STH 29 WB LT	35	CTH U NORTH
	488+19		STH 29 EB RT	35	CTH U SOUTH
	512+00		STH 29 WB	34	STH 29 TYPICAL SECTION CHANGE
	512+00		STH 29 EB	34	STH 29 TYPICAL SECTION CHANGE
	559+00		STH 29 EB RT	40	CTH VV SOUTH
	559+27		STH 29 WB LT	188	CTH VV NORTH
	734+00		STH 29 WB	34	STH 29 TYPICAL SECTION CHANGE
	734+00		STH 29 EB	34	STH 29 TYPICAL SECTION CHANGE
	744+90		STH 29 WB	9	END PROJECT; SHOULDERS
	744+90		STH 29 EB	9	END PROJECT; SHOULDERS
	34+25		STH 32 LT	26	DRIVEWAY
	34+25		STH 32 RT	34	DRIVEWAY
	37+50		STH 32	30	PROJECT LIMITS
	510+60		STH 29 WB	18	CULVERT REPLACEMENT
TOTAL 0010				801	

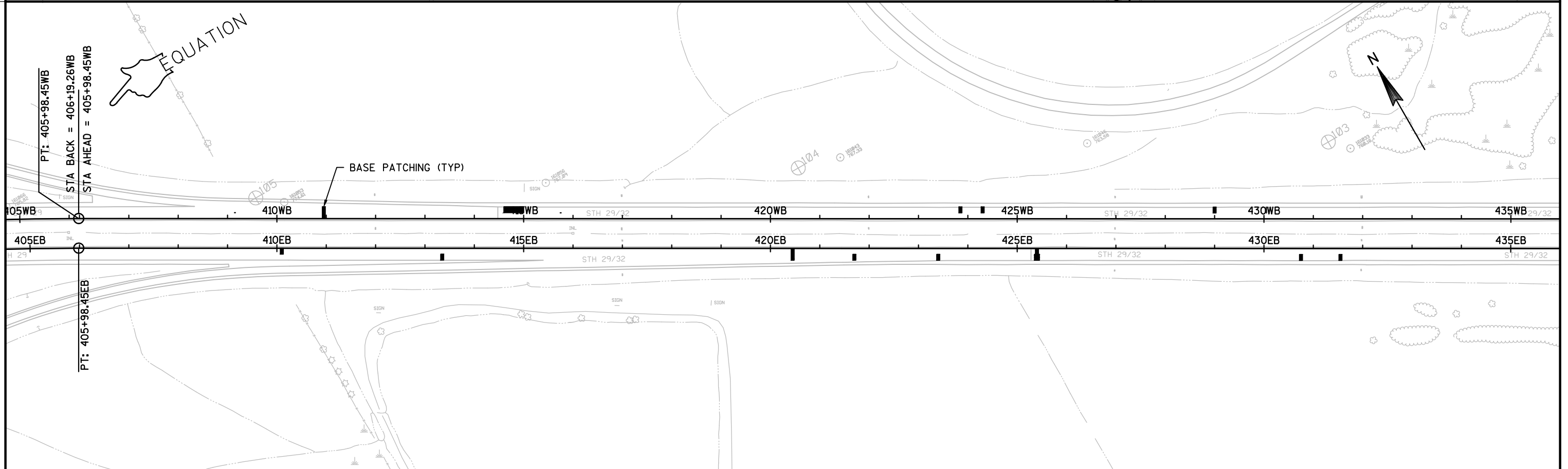
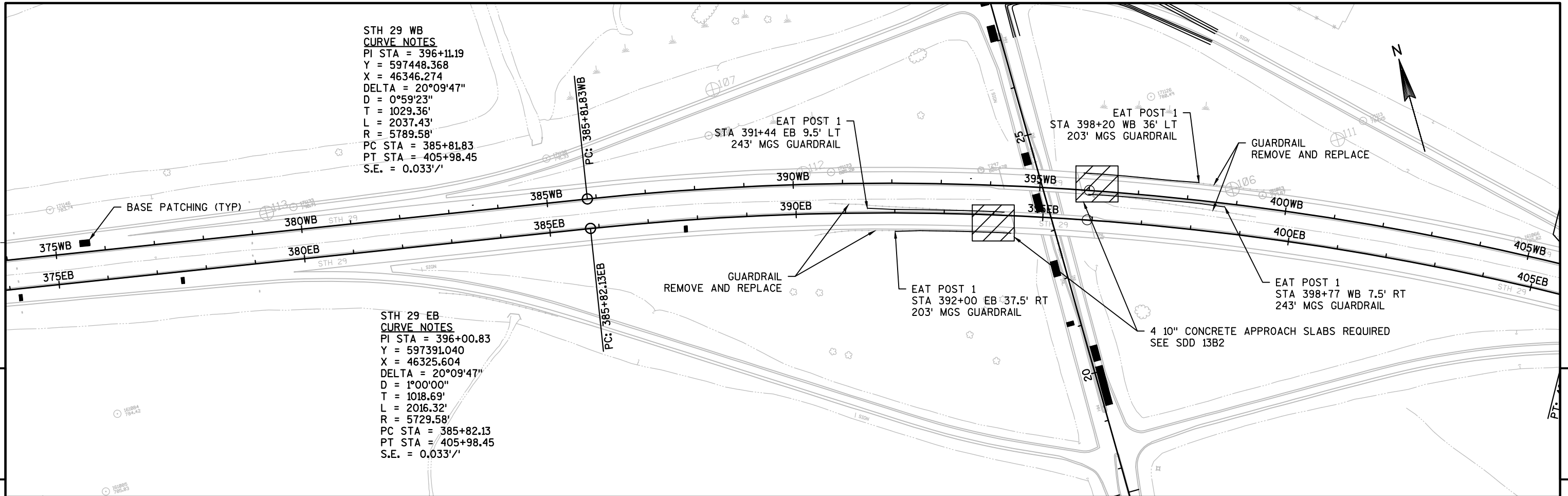
SAWING CONCRETE

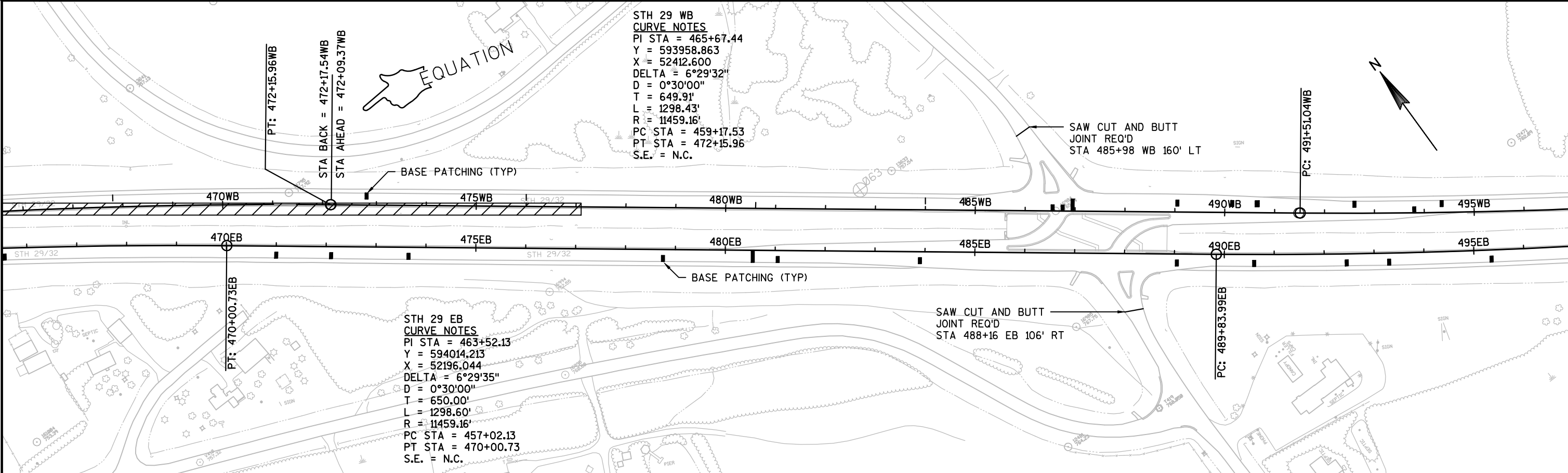
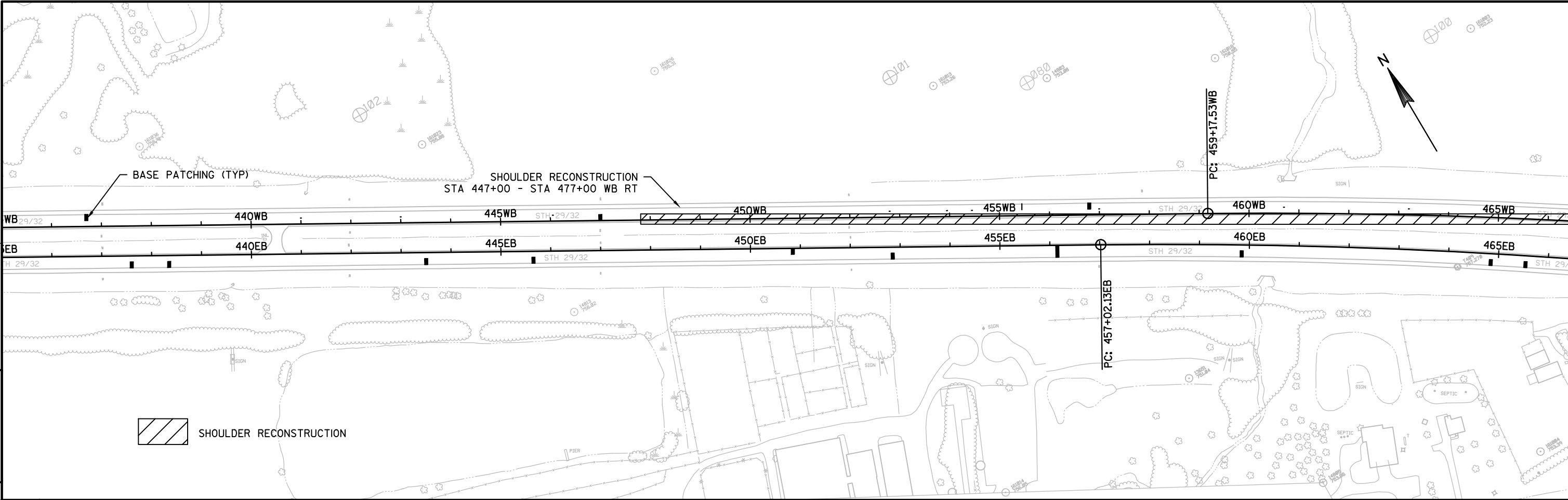
		690.0250			
STATION	TO	STATION	LOCATION	LF	REMARKS
	327+00		STH 29 WB	26	Begin Project
	327+00		STH 29 EB	26	Begin Project
	653+97		CTH FF NW Ramp	15	
	656+80		CTH FF SW Ramp	15	
	672+92		CTH FF NE Ramp	15	
	682+08		CTH FF SE Ramp	15	
	744+90		STH 29 WB	26	End Project
	744+90		STH 29 EB	26	End Project
	17+50		STH 32 SOUTH	44	PROJECT LIMITS
28+25	-	37+00	STH 32	960	RAMP RECONSTRUCTION
	0+00		STH 32 SE RAMP	15	RAMP RECONSTRUCTION
0+00	-	1+60	STH 32 SE RAMP	160	
2+75	-	4+50	STH 32 SE RAMP	180	
			CONCRETE REPAIRS	21458	SEE CONCRETE REPAIR SUMMARY FOR DETAILS; PARTIAL DEPTH
			TOTAL 0010	22773	

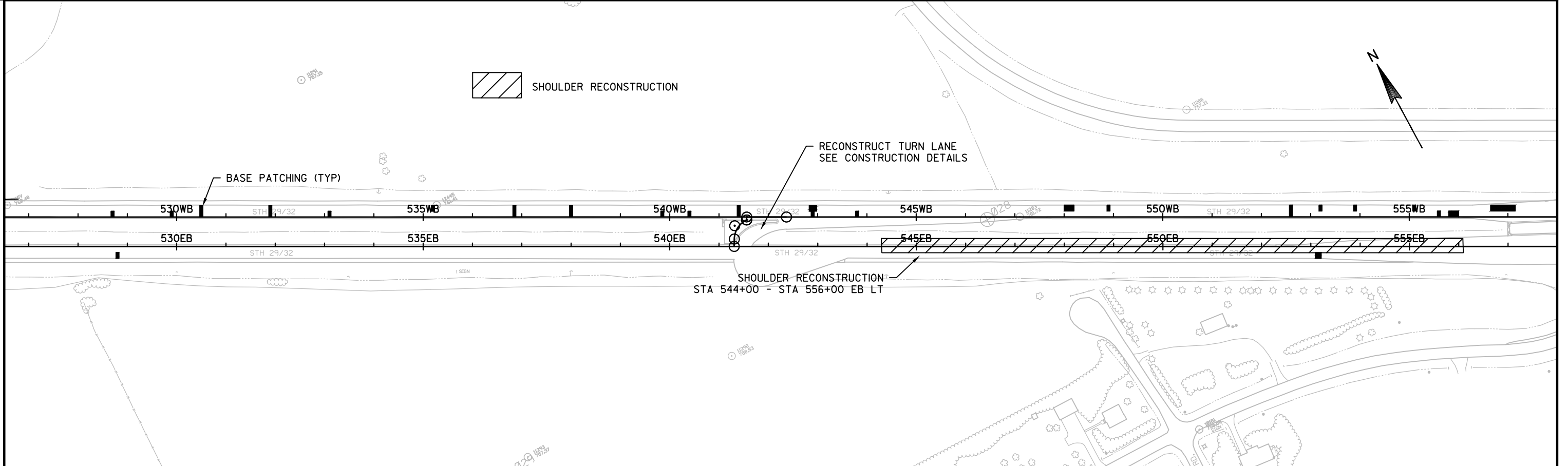
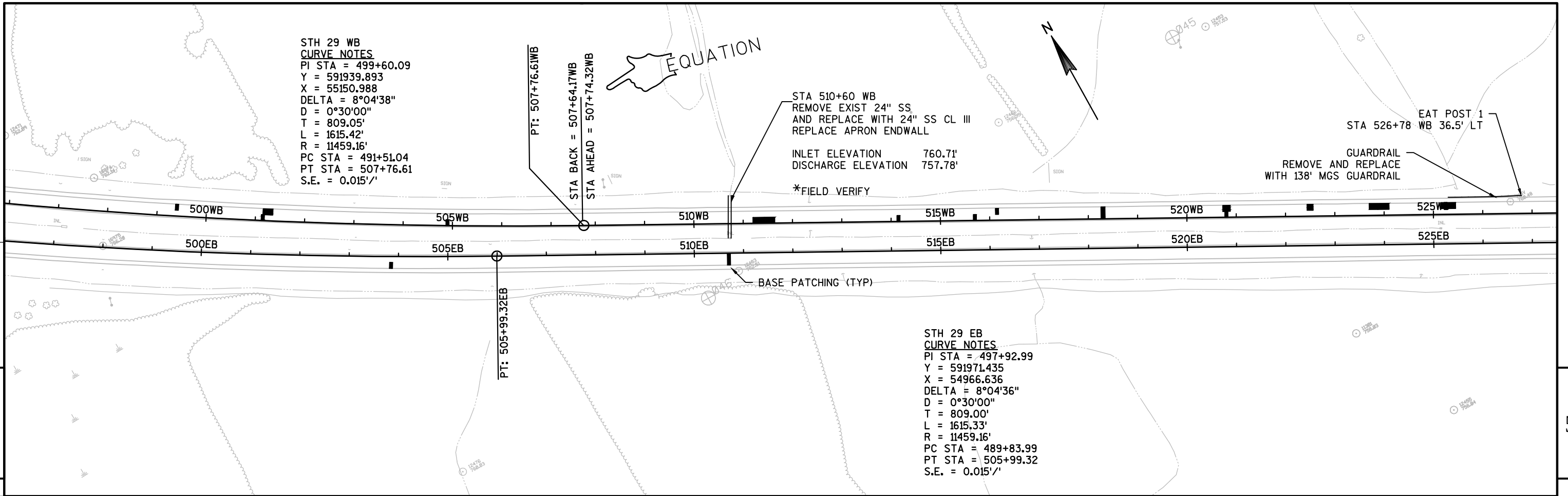
CONCRETE PAVEMENT SHES 8-INCH

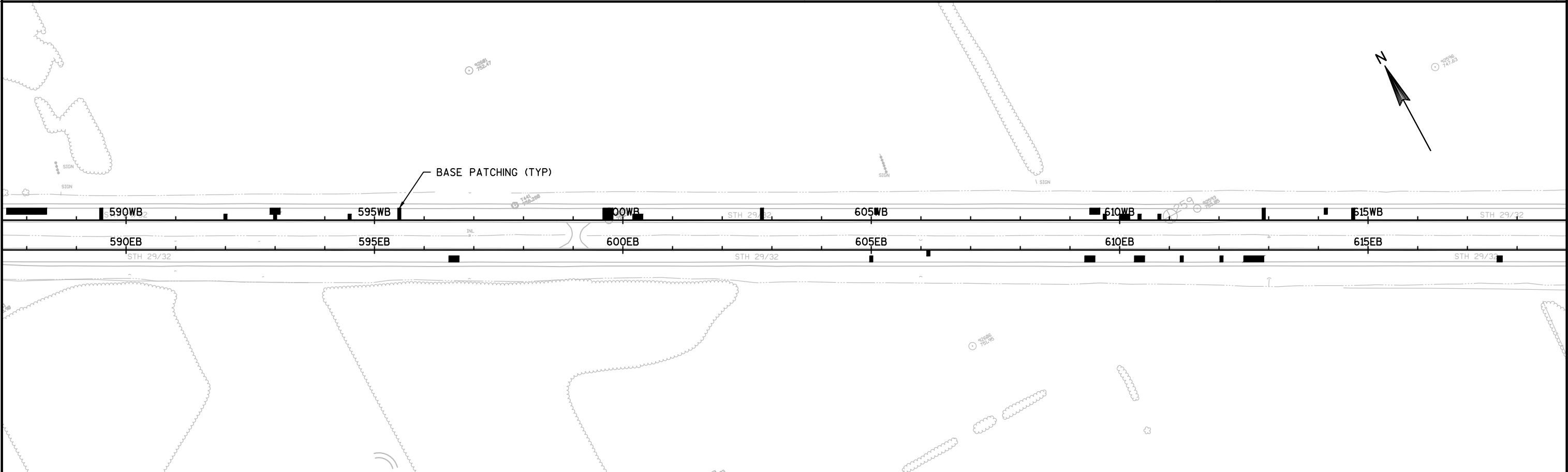
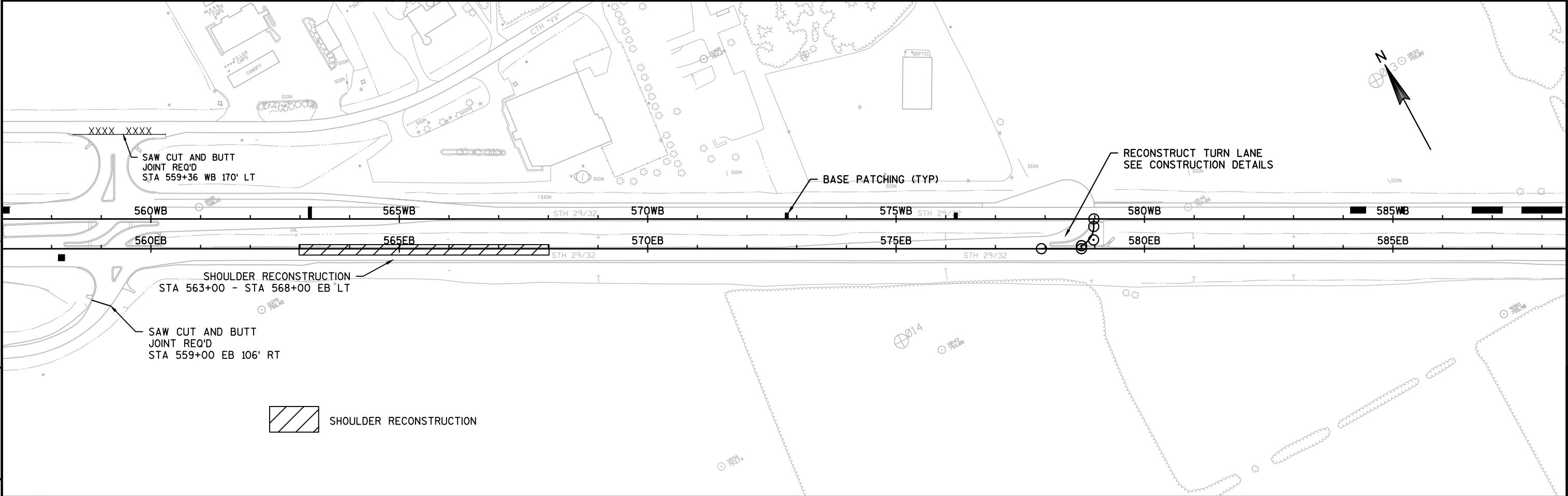
		SPV.0180.01			
STATION	TO	STATION	LOCATION	SY	REMARKS
	0+00	-	4+50	1696	RAMP RECONSTRUCTION
			TOTAL 0010	1696	











STH 29 WB
CURVE NOTES
PI STA = 634+31.56
Y = 585551.877
X = 67003.102
DELTA = 1°44'06"
D = 0°14'02"
T = 370.82'
L = 741.58'
R = 24490.07'
PC STA = 630+60.74
PT STA = 638+00.49
S.E. = N.C.

EQUATION

BASE PATCHING (TYP)

STA BACK = 637+78.75WB
STA AHEAD = 637+76.92WB

PT: 638+00.49WB

STH 29 EB
CURVE NOTES
PI STA = 633+60.22
Y = 585532.891
X = 66911.824
DELTA = 1°43'25"
D = 0°15'00"
T = 344.77'
L = 689.49'
R = 22918.31'
PC STA = 630+15.45
PT STA = 637+04.94
S.E. = N.C.

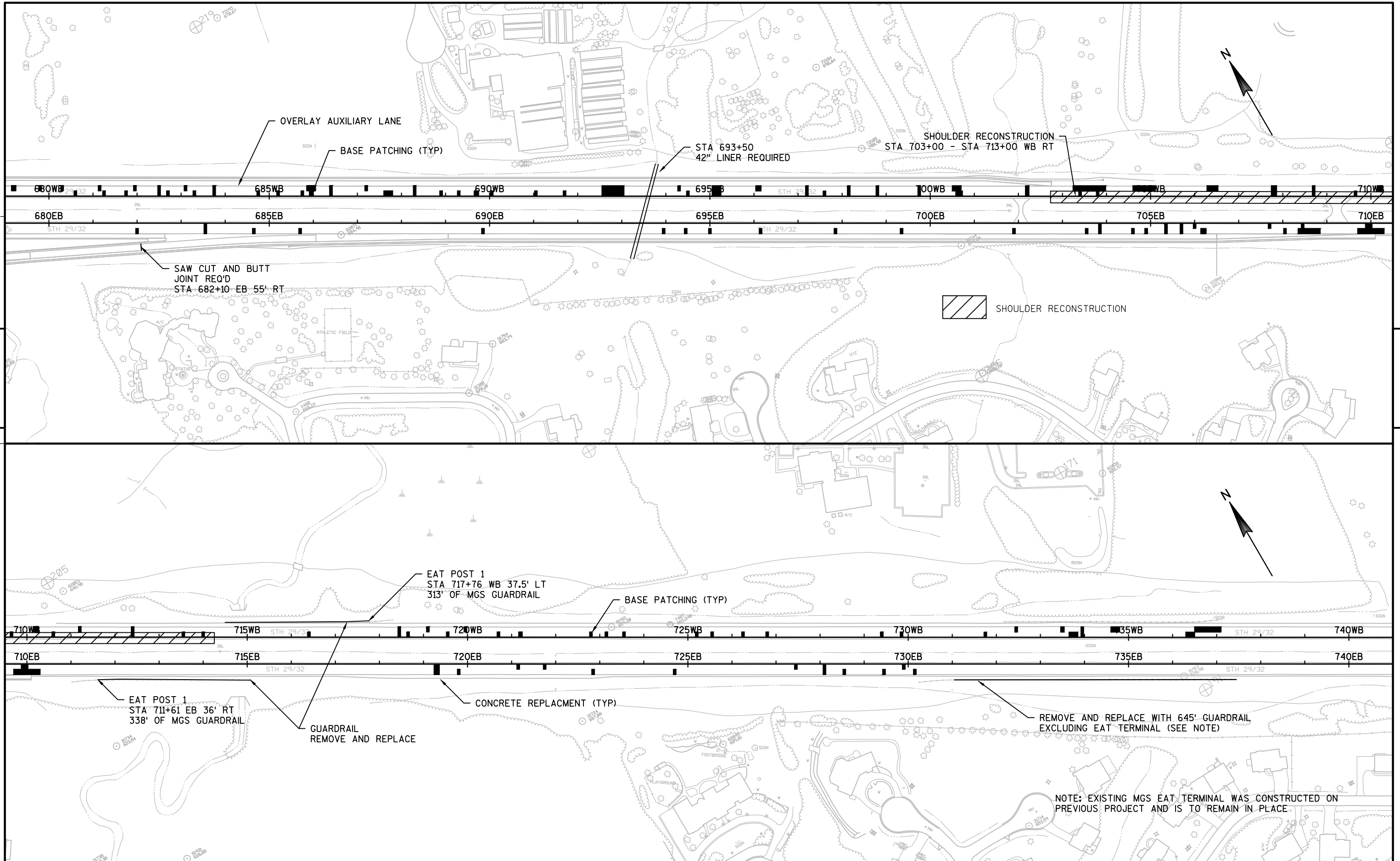
SAW CUT AND BUTT
JOINT REQ'D
STA 672+95 WB 57' LT

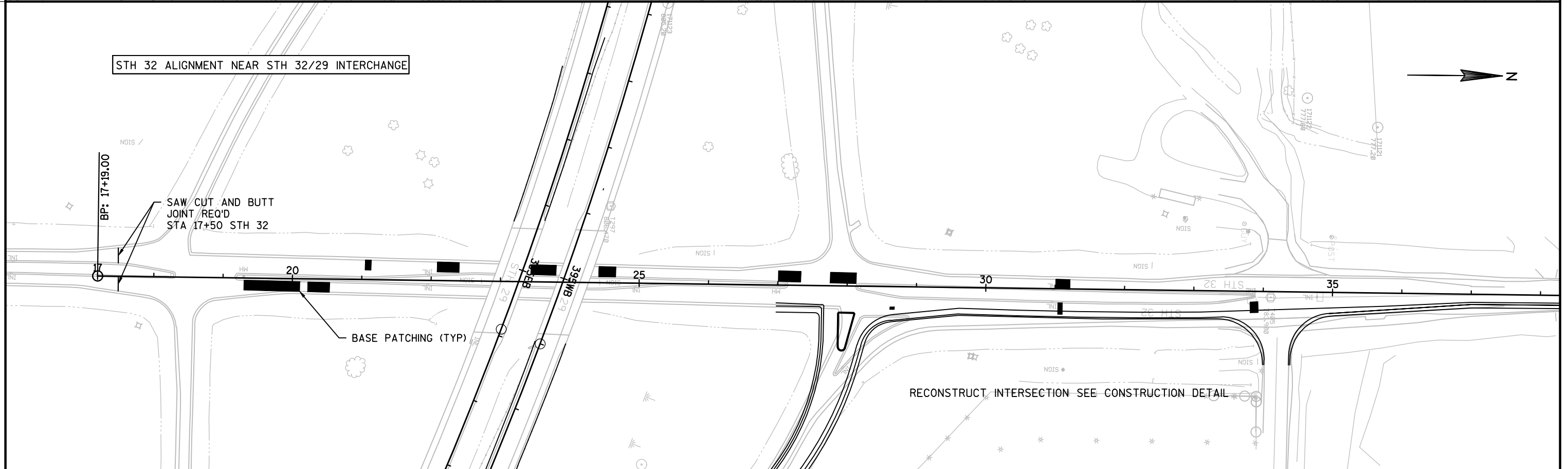
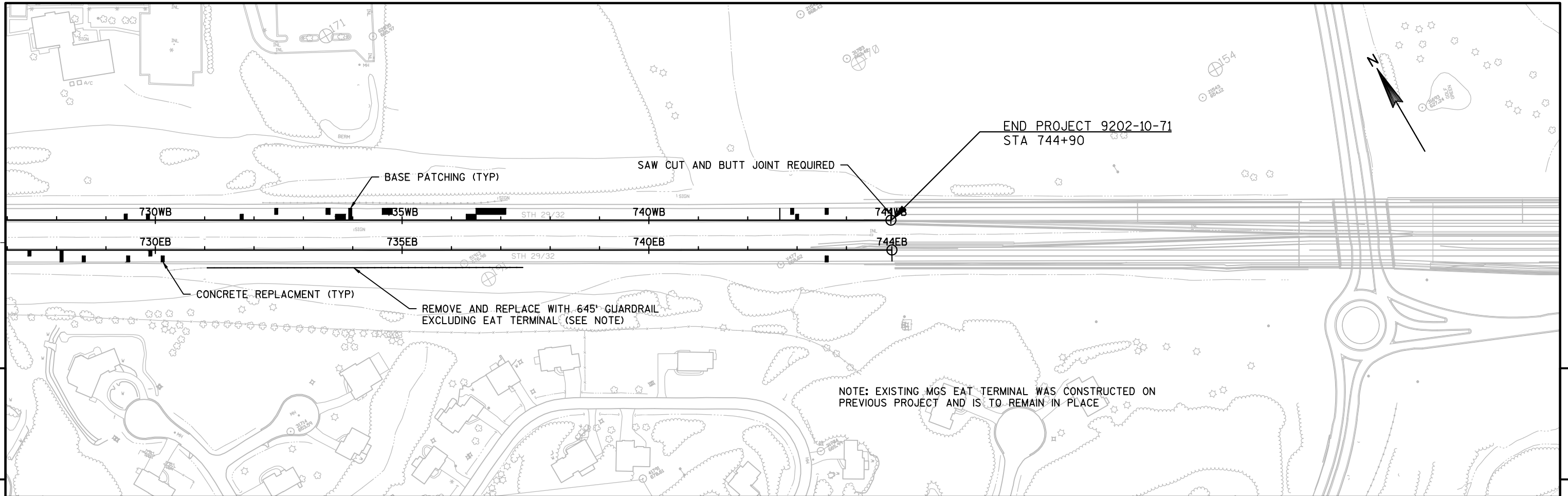
SHOULDER RECONSTRUCTION
STA 677+00 - STA 680+00 WB-RT

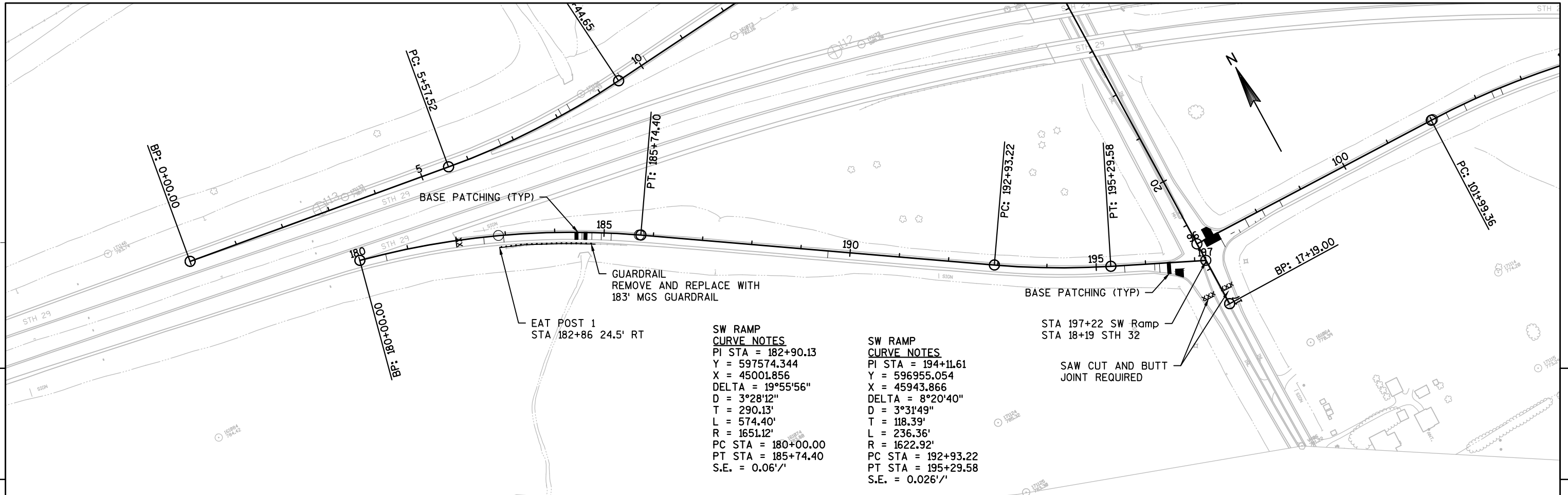
SAW CUT AND BUTT
JOINT REQ'D
STA 656+80 EB 50' RT

BASE PATCHING (TYP)

SHOULDER RECONSTRUCTION

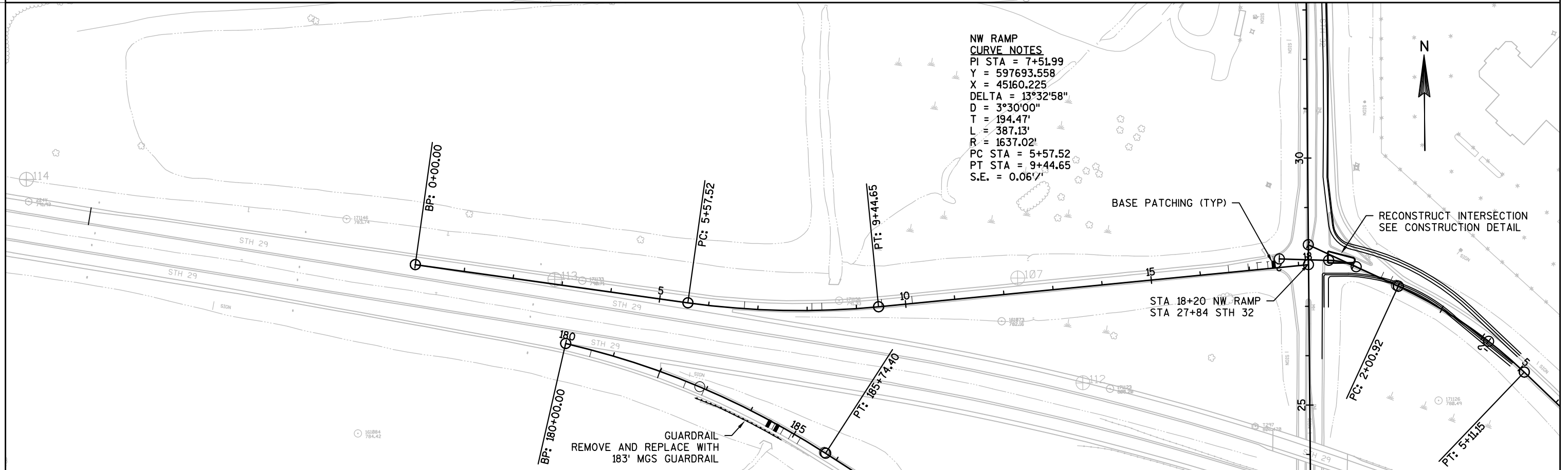






SW RAMP
CURVE NOTES
PI STA = 182+90.13
Y = 597574.344
X = 45001.856
DELTA = 19°55'56"
D = 3°28'12"
T = 290.13'
L = 574.40'
R = 1651.12'
PC STA = 180+00.00
PT STA = 185+74.40
S.E. = 0.06'/'

SW RAMP
CURVE NOTES
PI STA = 194+11.61
Y = 596955.054
X = 45943.866
DELTA = 8°20'40"
D = 3°31'49"
T = 118.39'
L = 236.36'
R = 1622.92'
PC STA = 192+93.22
PT STA = 195+29.58
S.E. = 0.026'/'



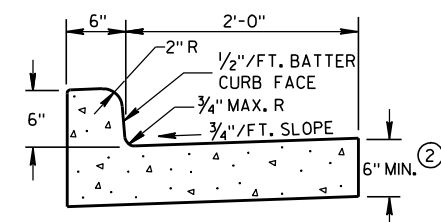
NW RAMP
CURVE NOTES
PI STA = 7+51.99
Y = 597693.558
X = 45160.225
DELTA = 13°32'58"
D = 3°30'00"
T = 194.47'
L = 387.13'
R = 1637.02'
PC STA = 5+57.52
PT STA = 9+44.65
S.E. = 0.06'/'

Standard Detail Drawing List

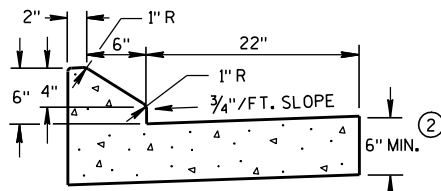
08D01-17	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
08D15-04A	EDGEDRAIN OUTLET AND OUTFALL MARKERS
08D15-04B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D15-04C	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-07	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
09A01-13B	AT-GRADE SIDE ROAD INTERSECTION, TYPE "A1" & "A2"
09B02-07	CONDUIT
09B04-10	PULL BOX
09C02-06	CONCRETE BASES, TYPES 1, 2 & 5
09C03-03	TRANSFORMER/PEDESTAL BASES
09E01-12D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E01-12G	HARDWARE DETAILS FOR POLE MOUNTINGS
09E03-04	NON-FREEWAY LIGHTING UNIT POLE WIRING
11A01-05	MAINTENANCE CROSSOVER FOR FREEWAYS
11B02-02	CONCRETE MEDIAN NOSE
13A05-05A	SHOULDER RUMBLE STRIP, MILLING
13A05-05B	SHOULDER RUMBLE STRIP, MILLING
13B02-06	CONCRETE PAVEMENT APPROACH SLAB
13C01-16	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C09-11A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-11B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-11C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C11-11A	RURAL DOWELED CONCRETE PAVEMENT
13C11-11B	RURAL DOWELED CONCRETE PAVEMENT
13C14-04A	BASE PATCHING CONCRETE
13C14-04B	BASE PATCHING CONCRETE
13C14-04C	BASE PATCHING CONCRETE
13C17-01A	CONCRETE JOINT DETAIL FOR EXIT RAMP TERMINI
13C17-01B	CONCRETE JOINT DETAIL FOR ENTRANCE RAMP TERMINI
13C18-02A	CONCRETE PAVEMENT JOINTING
13C18-02B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-02C	CONCRETE PAVEMENT JOINT TIES
13C18-02D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
14B29-01	SAFETY EDGE
14B42-02A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-02C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B43-03A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-03B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-03C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B44-01A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-01C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-03A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-03J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B47-01A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-01B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-01C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
15A02-08	DELINEATOR POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15A06-02	DELINEATOR LAYOUT
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05C	DETOUR SIGNING FOR MAINLINE CLOSURES

Standard Detail Drawing List

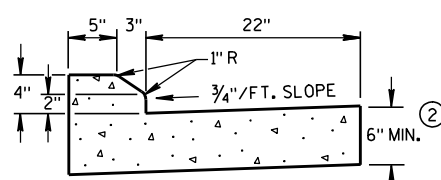
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C06-07	SIGNING & MARKING FOR TWO LANE BRIDGES
15C07-12B	PAVEMENT MARKING WORDS
15C07-12C	PAVEMENT MARKING ARROWS
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C08-16E	PAVEMENT MARKING (LEFT TURN LANE)
15C08-16F	PAVEMENT MARKING (ISLANDS)
15C10-10	PAVEMENT MARKINGS FOR DROP LANES FREEWAY/EXPRESSWAY
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C18-03	MEDIAN ISLAND MARKING
15C19-02C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C20-01	YIELD MARKING
15C28-02	SIGNING AND MARKING FOR COMBINATION RIGHT TURN AND BYPASS LANE
15C31-01A	PAVEMENT MARKING (RAMPS AND GORES)
15C31-01B	LANE DROP PAVEMENT MARKING
15C31-01C	PAVEMENT MARKING MAJOR SPLIT FREEWAY TO FREEWAY
15C31-01D	PAVEMENT MARKING FOR PARALLEL ON-RAMP AND PARALLEL OFF-RAMP
15D12-04	TRAFFIC CONTROL, LANE CLOSURE, SPEED REDUCTION
15D15-01	TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE
15D16-02	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D20-02	TRAFFIC CONTROL, SINGLE LANE CLOSURE, NON-FREEWAY/EXPRESSWAY
15D27-02	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH



TYPES A & D ①



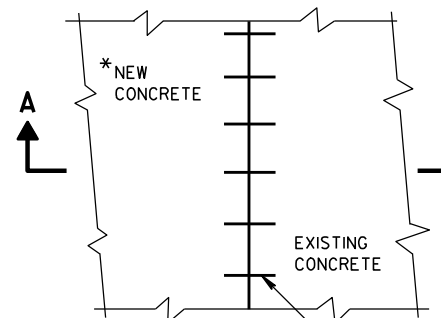
6" SLOPED CURB TYPES G & J ①



4" SLOPED CURB TYPES G & J ①

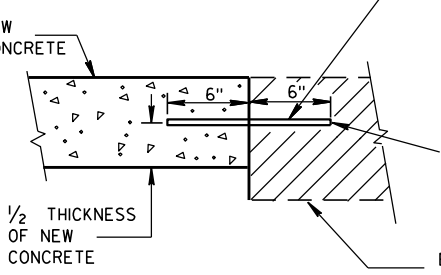
CONCRETE CURB & GUTTER 30"

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

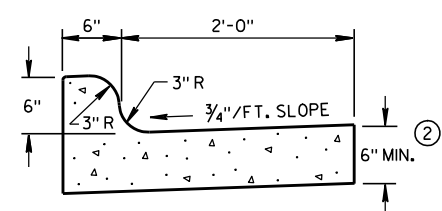


PLAN VIEW

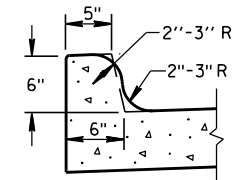
NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT.



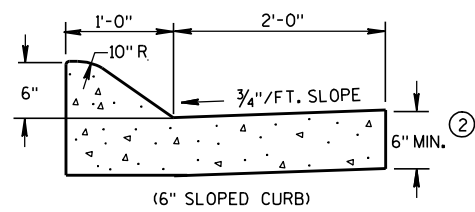
SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT



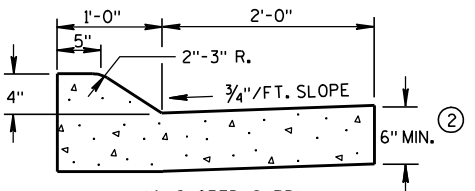
TYPES K & L ①



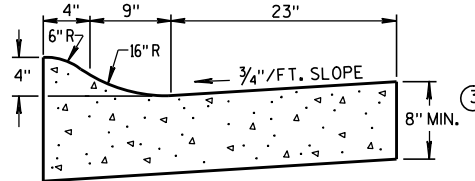
OPTIONAL CURB SHAPE
FOR TYPES K & L ①



(6" SLOPED CURB)

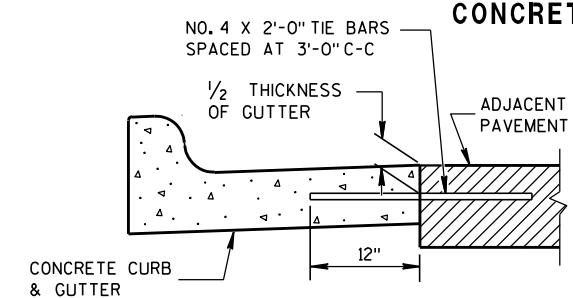


(4" SLOPED CURB)

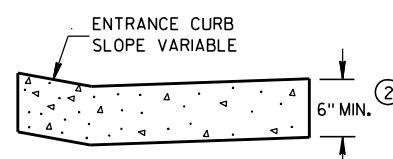


4" SLOPED CURB TYPES R & T ① ④

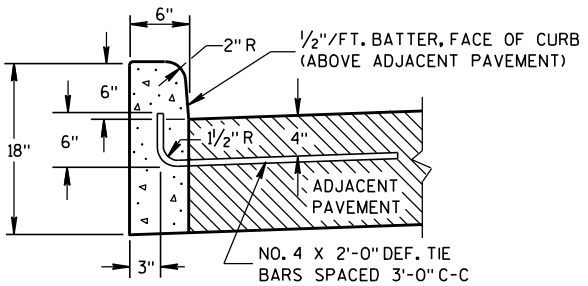
CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION ①

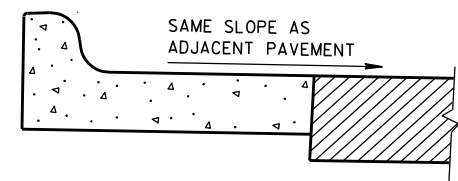


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

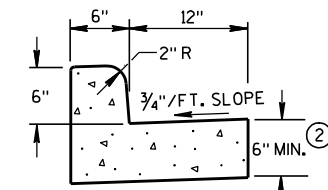


TYPES A & D ①

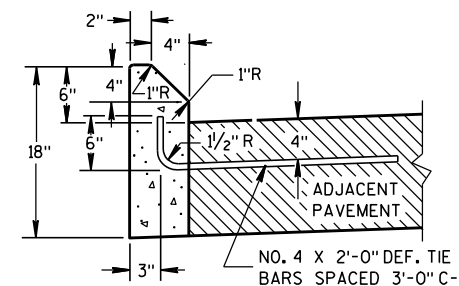
CONCRETE CURB



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



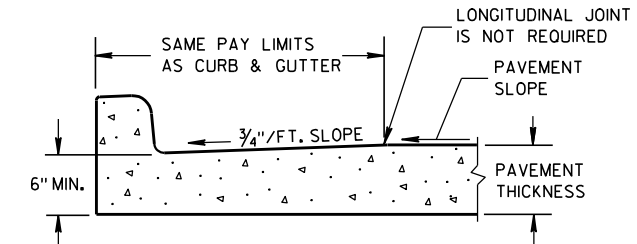
TYPES A & D
CONCRETE CURB & GUTTER 18"



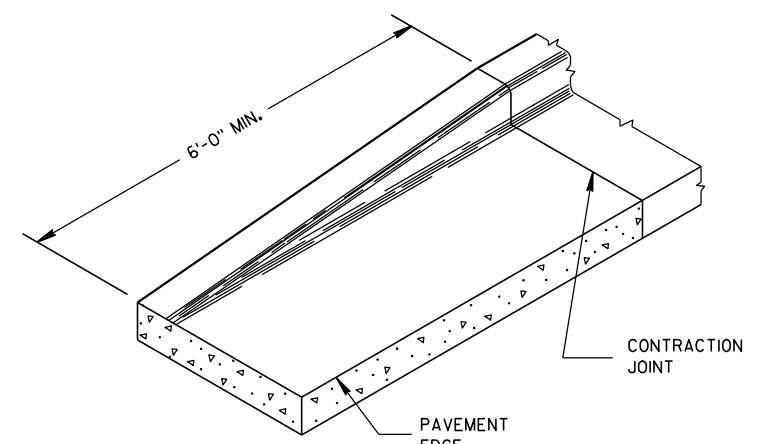
TYPES G & J ①

GENERAL NOTES

- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
- PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.
- INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.
- WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.
- UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.
 - ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
 - ③ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
 - ④ THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
 - ⑤ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

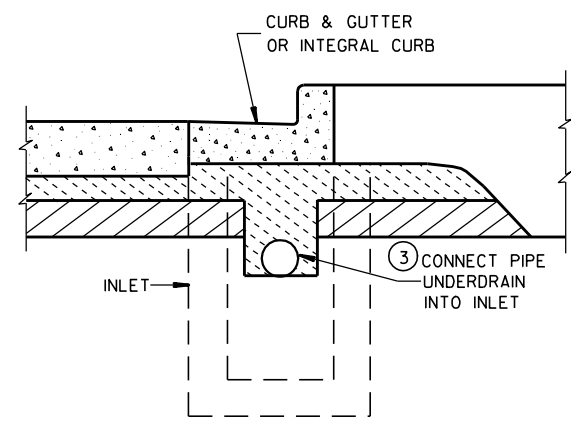
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 /S/ Jerry H. 7-
DATE ROADWAY STANDARDS 127 ENT
FHWA ENGINEER

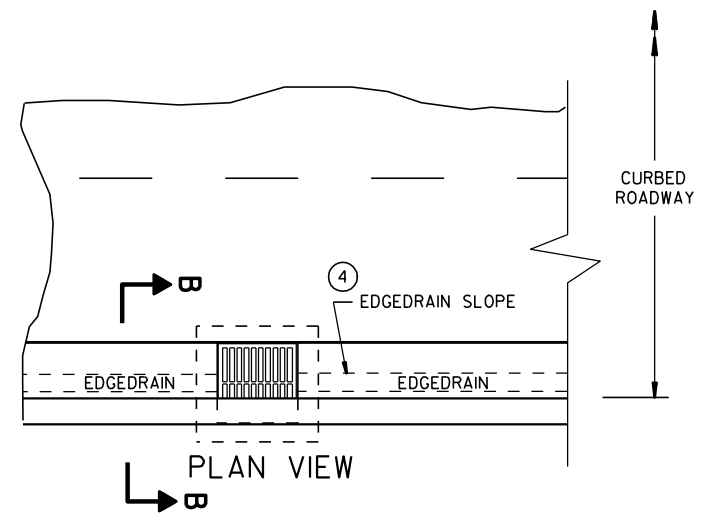
GENERAL NOTES

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

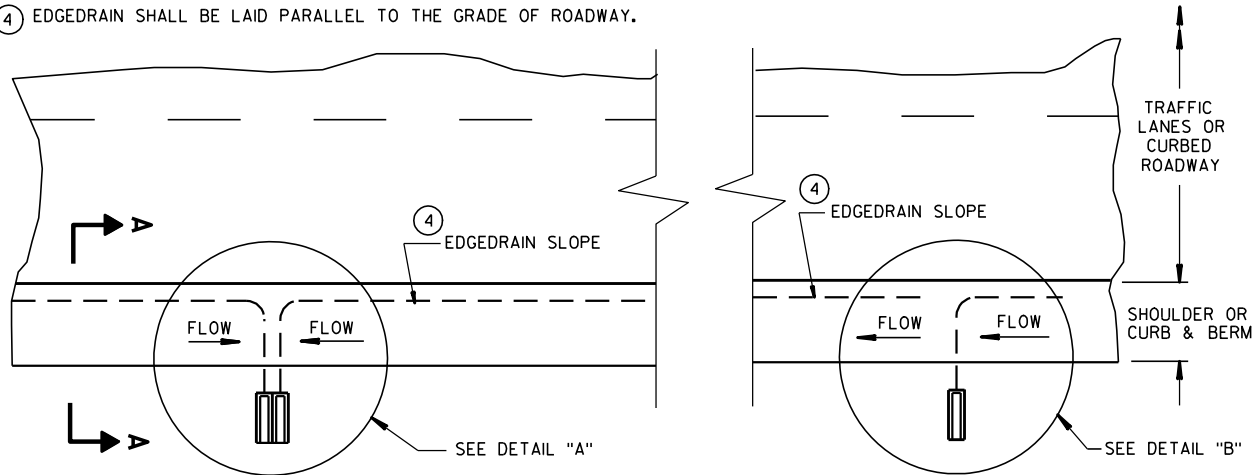
- 1 UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:
POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.
TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.
- 2 MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.
- 3 EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.
- 4 EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



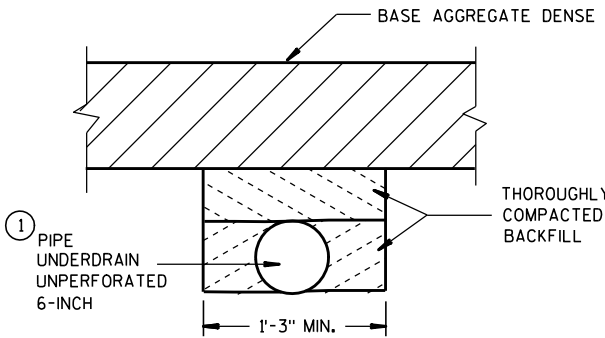
SECTION B-B
URBAN CROSS SECTION



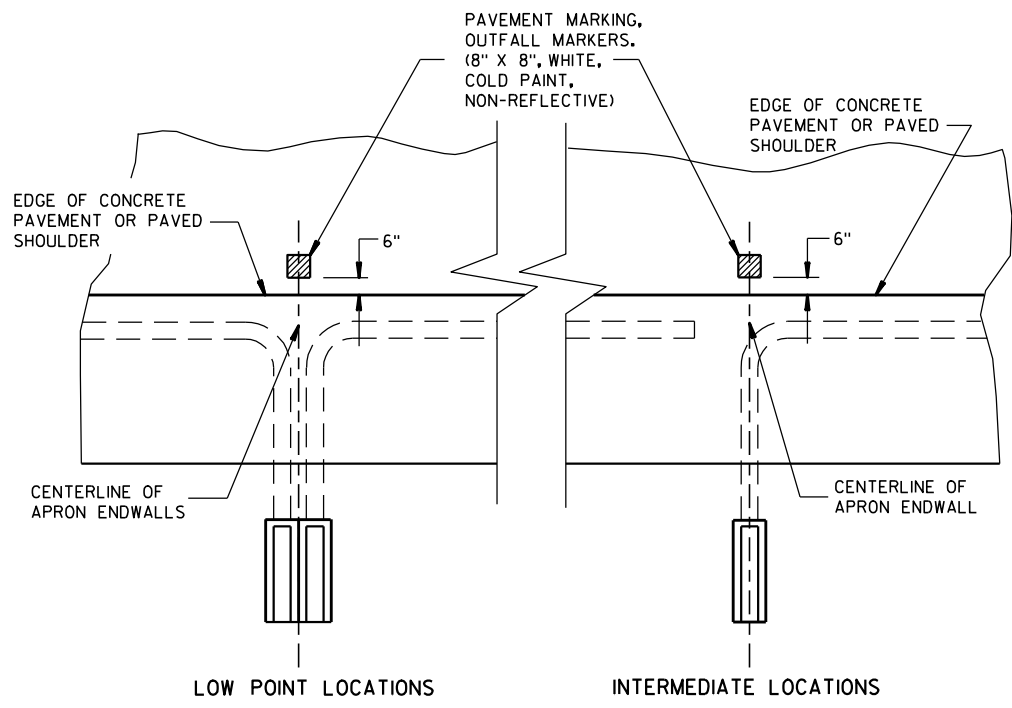
ROADWAY WITH CURBS
(EDGEDRAIN CONNECTS INTO INLET STRUCTURE)



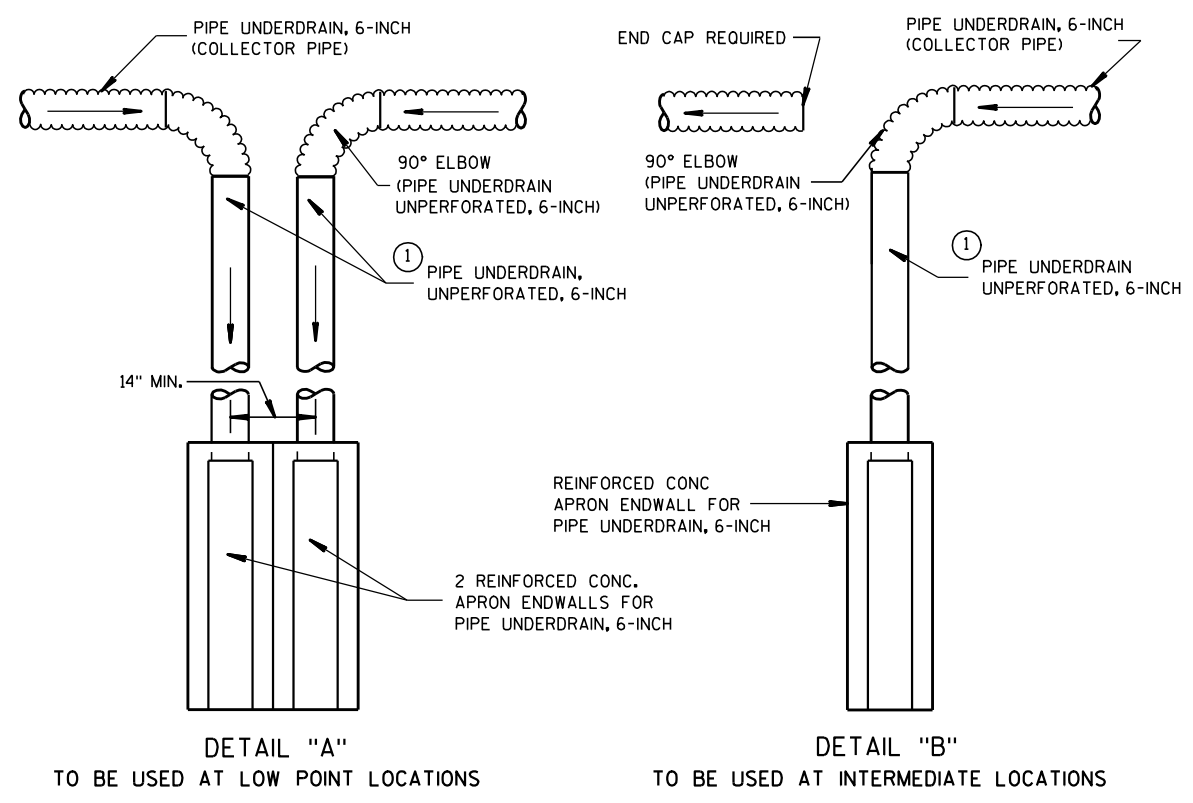
PLAN VIEW
ROADWAY WITH SHOULDERS OR CURBS
(EDGEDRAIN OUTLETS TO ROADSIDE)



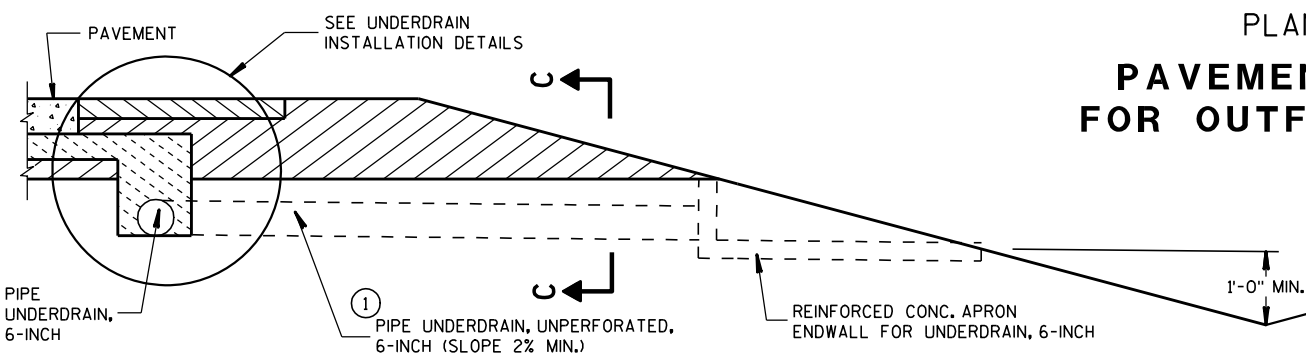
SECTION C-C
(TRENCH FOR OUTFALL PIPE)



PAVEMENT MARKING
FOR OUTFALL MARKERS



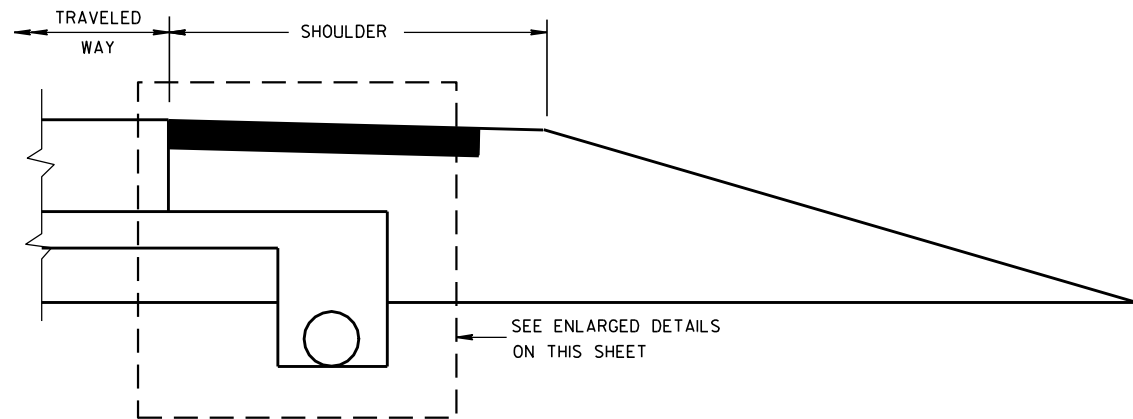
TYPICAL DRAIN OUT DETAILS



SECTION A-A
RURAL CROSS SECTION

EDGEDRAIN OUTLET
AND OUTFALL MARKERS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



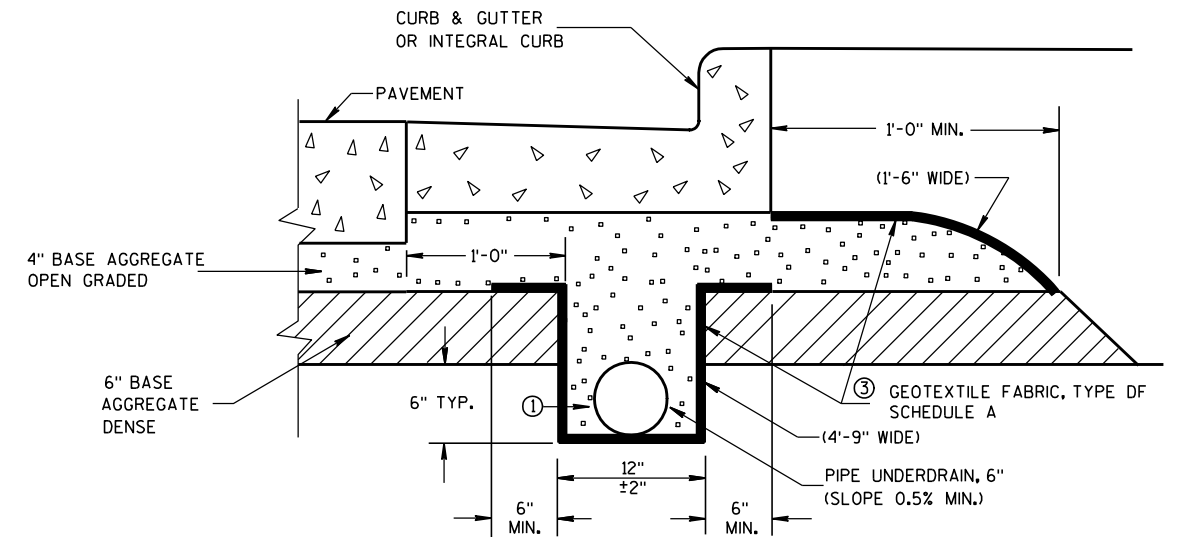
RURAL CROSS SECTION

GENERAL NOTES

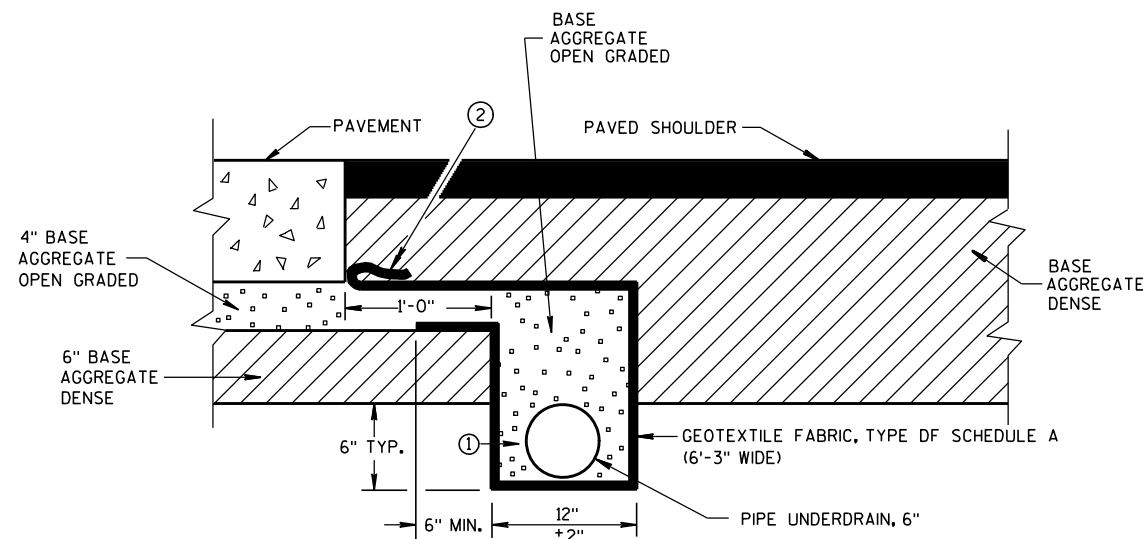
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

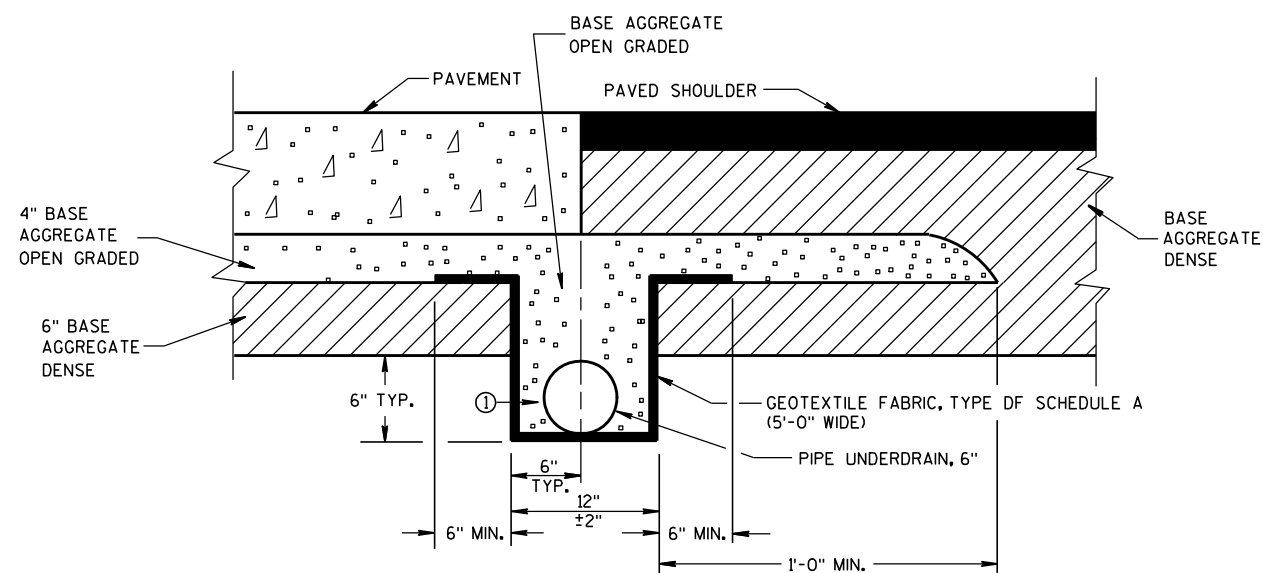
- ① TRENCH BACKFILL WILL BE PAID FOR AS BASE AGGREGATE OPEN GRADED.
- ② FOLD OVER EXCESS GEOTEXTILE FABRIC AT THIS LOCATION.
- ③ TOTAL FABRIC WIDTH IS 6'-3" FOR PAYMENT.



EDGEDRAIN IN URBAN ROADWAY



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATE

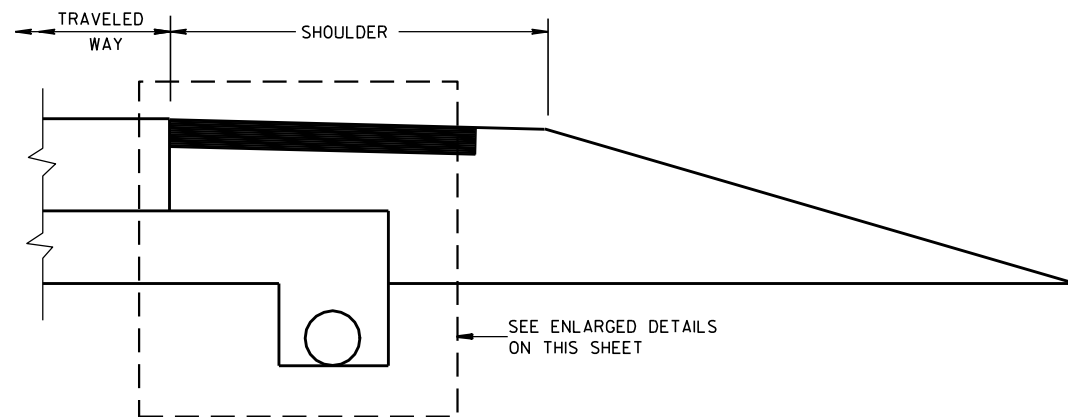
EDGEDRAIN IN RURAL ROADWAY

**EDGEDRAIN AND BASE
AGGREGATE OPEN GRADED**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

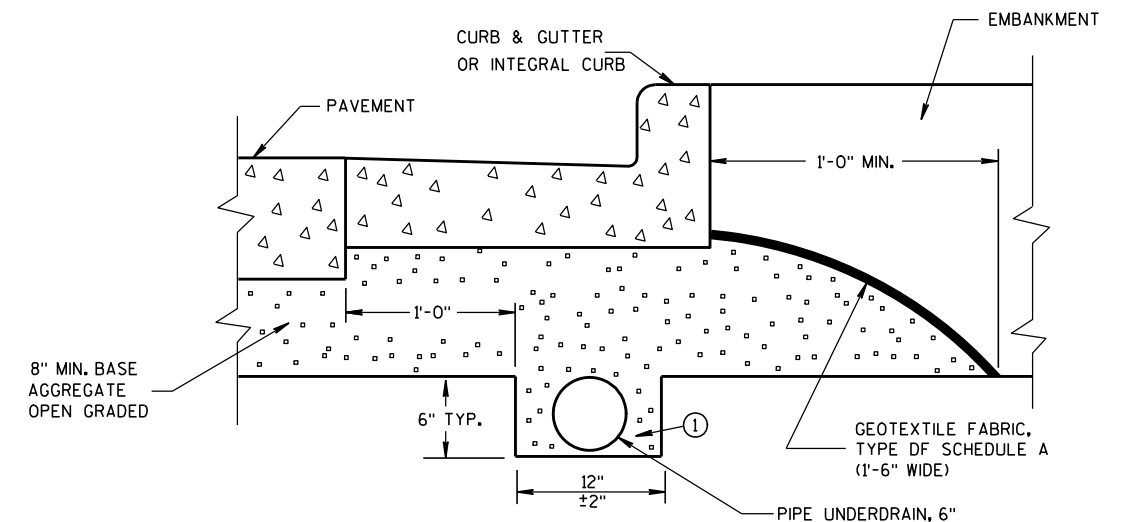
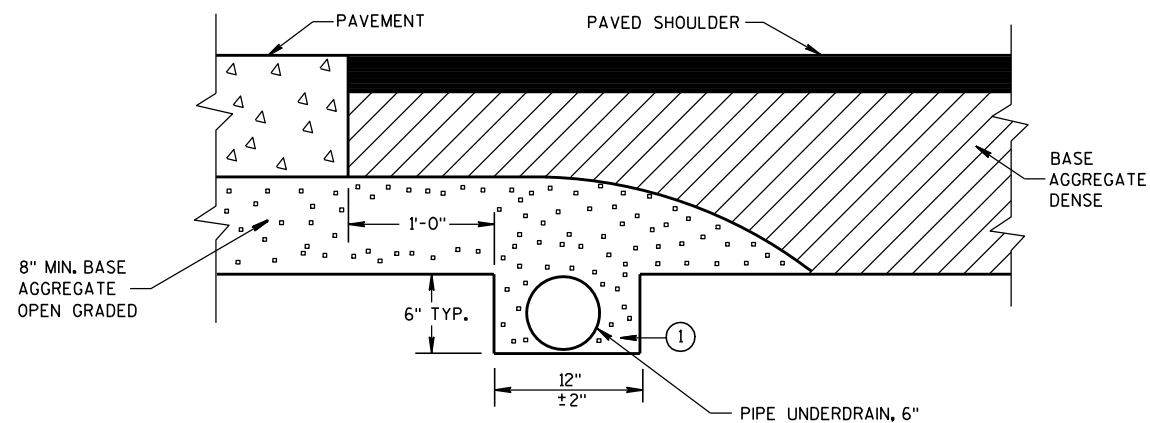
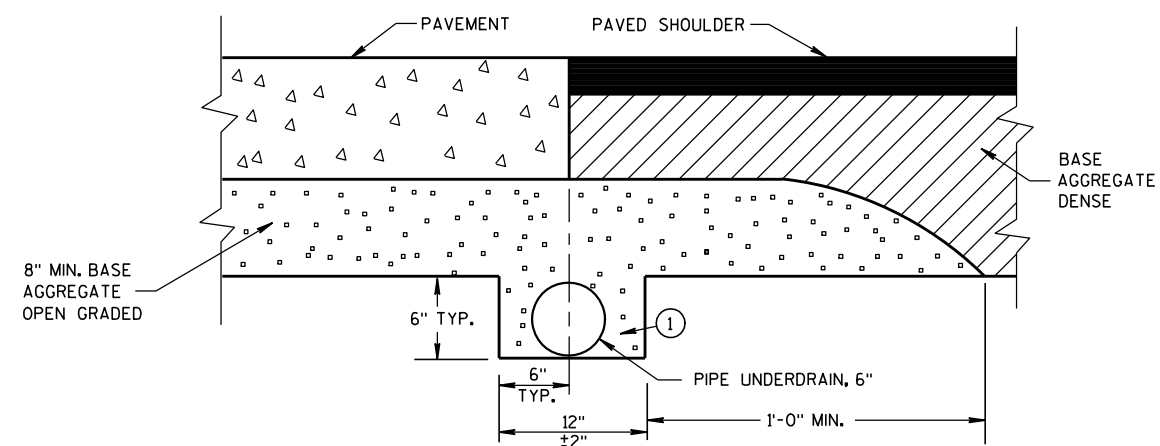
3/21/07 /S/ Steven W. [Signature]
DATE CHIEF MATERIALS MANAGER 129 ENGINEER
FHWA

**RURAL CROSS SECTION****GENERAL NOTES**

THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

PIPE UNDERDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF THE ROADWAY.

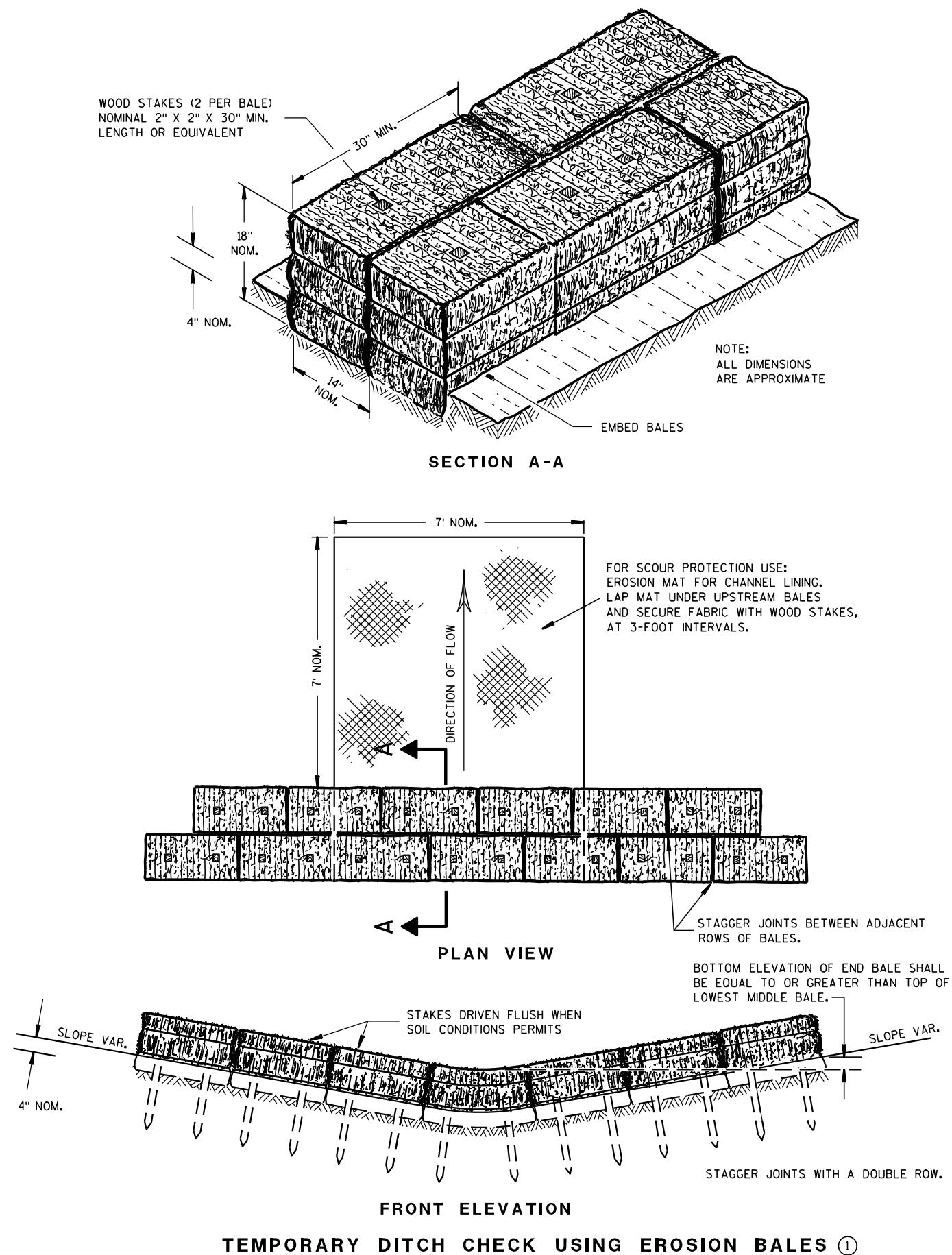
① TRENCH BACKFILL WILL BE PAID FOR AS BASE AGGREGATE OPEN GRADED.

**EDGEDRAIN IN URBAN ROADWAY****POST PAVING INSTALLATION**
(QUANTITIES ARE BASED ON THIS DETAIL)**PRE-PAVING INSTALLATION ALTERNATIVE****EDGEDRAIN IN RURAL ROADWAY****EDGEDRAIN AND BASE AGGREGATE OPEN GRADED**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

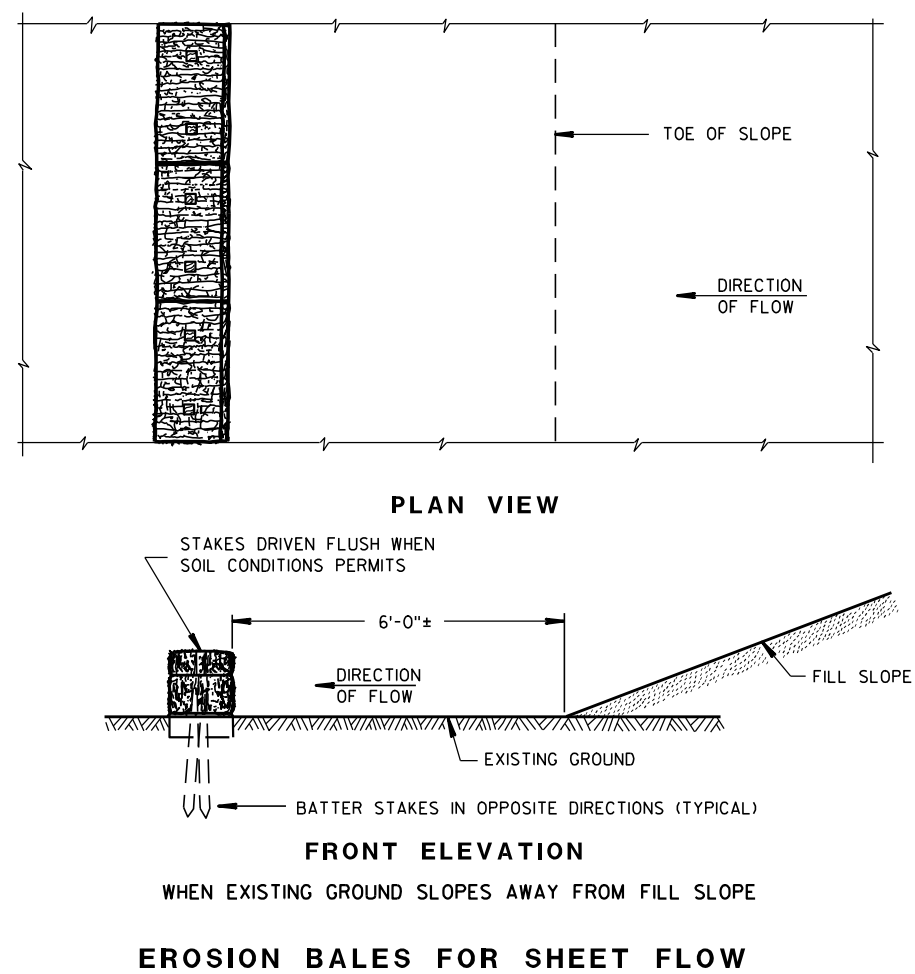
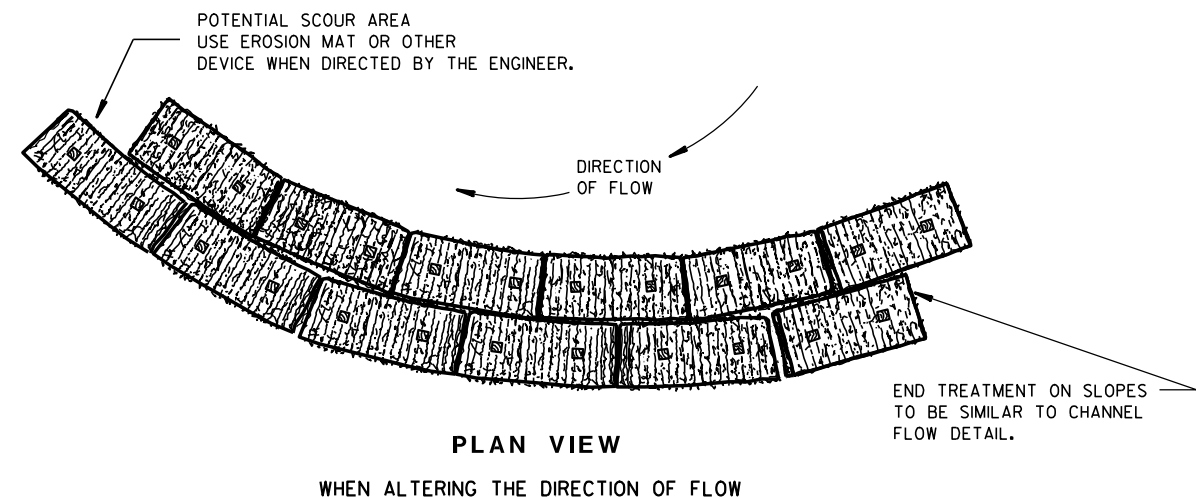
3/21/07 /S/ Steven W. Koch
DATE CHIEF MATERIALS MANAGER 130 ENGINEER
FHWA



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.

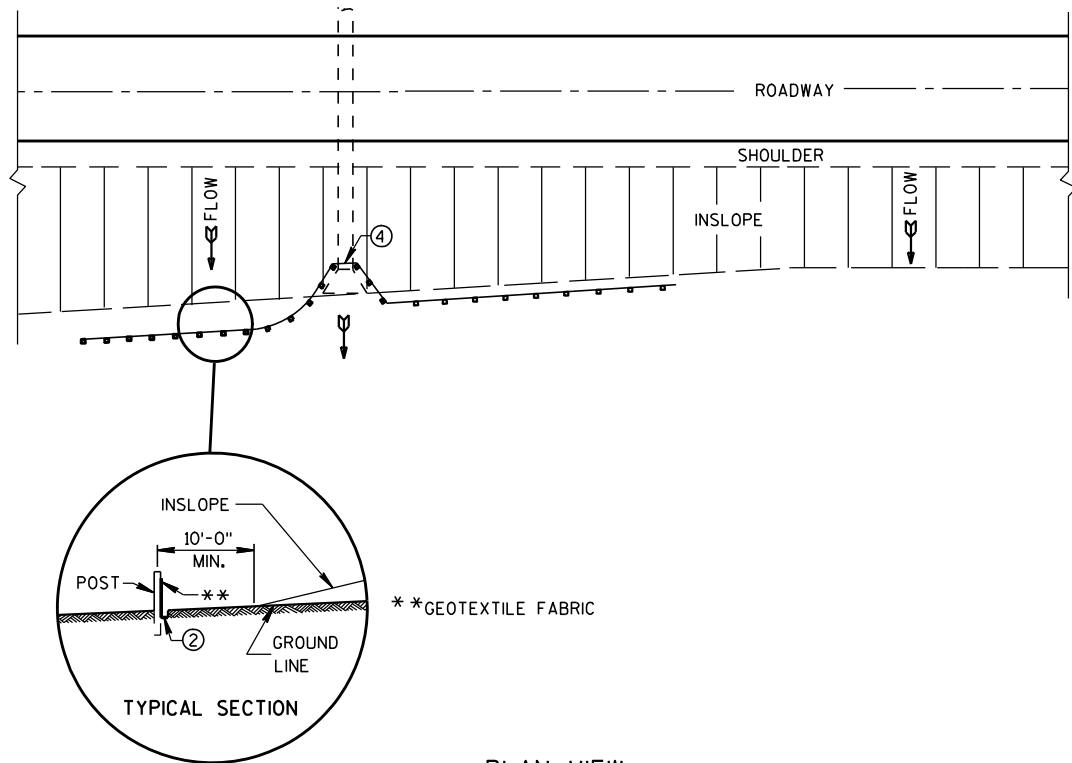
TYPICAL INSTALLATIONS OF
EROSION BALES / TEMPORARY
DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

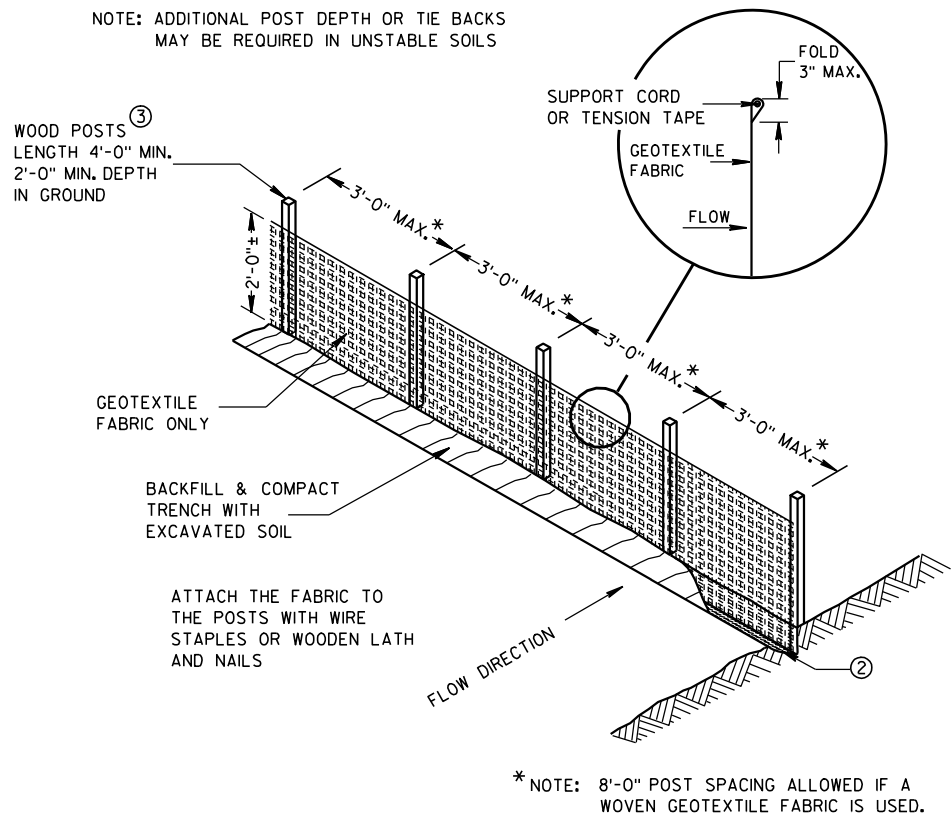
APPROVED

6/04/02
DATE/S/ Beth Conn
CHIEF ROADWAY DEVELOPER 131 ENGINEER

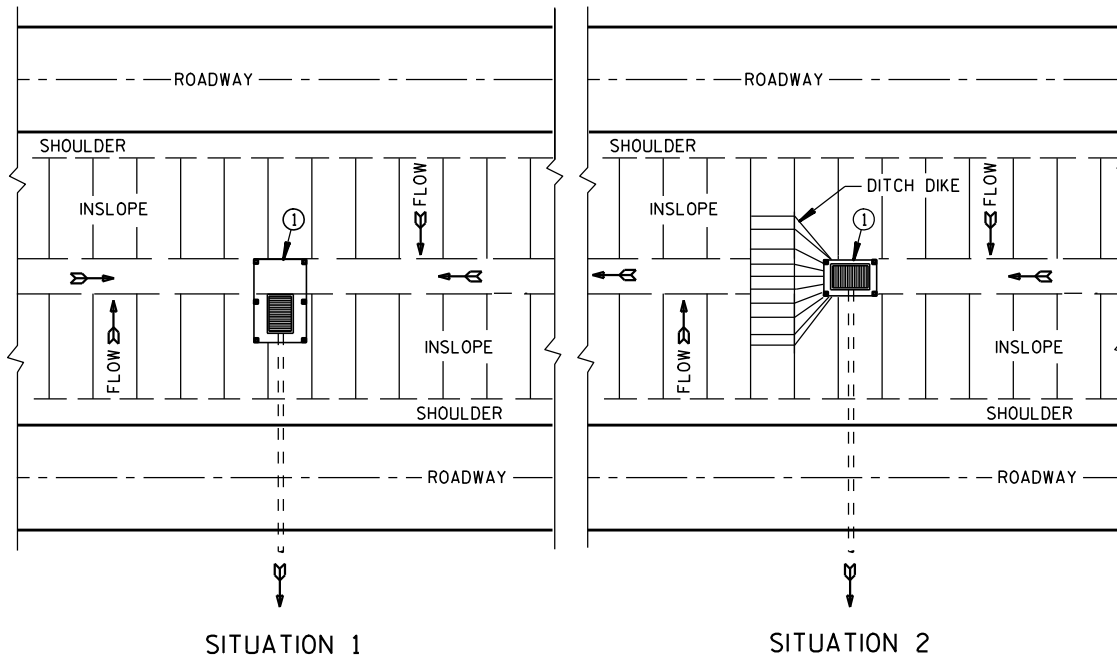
FHWA



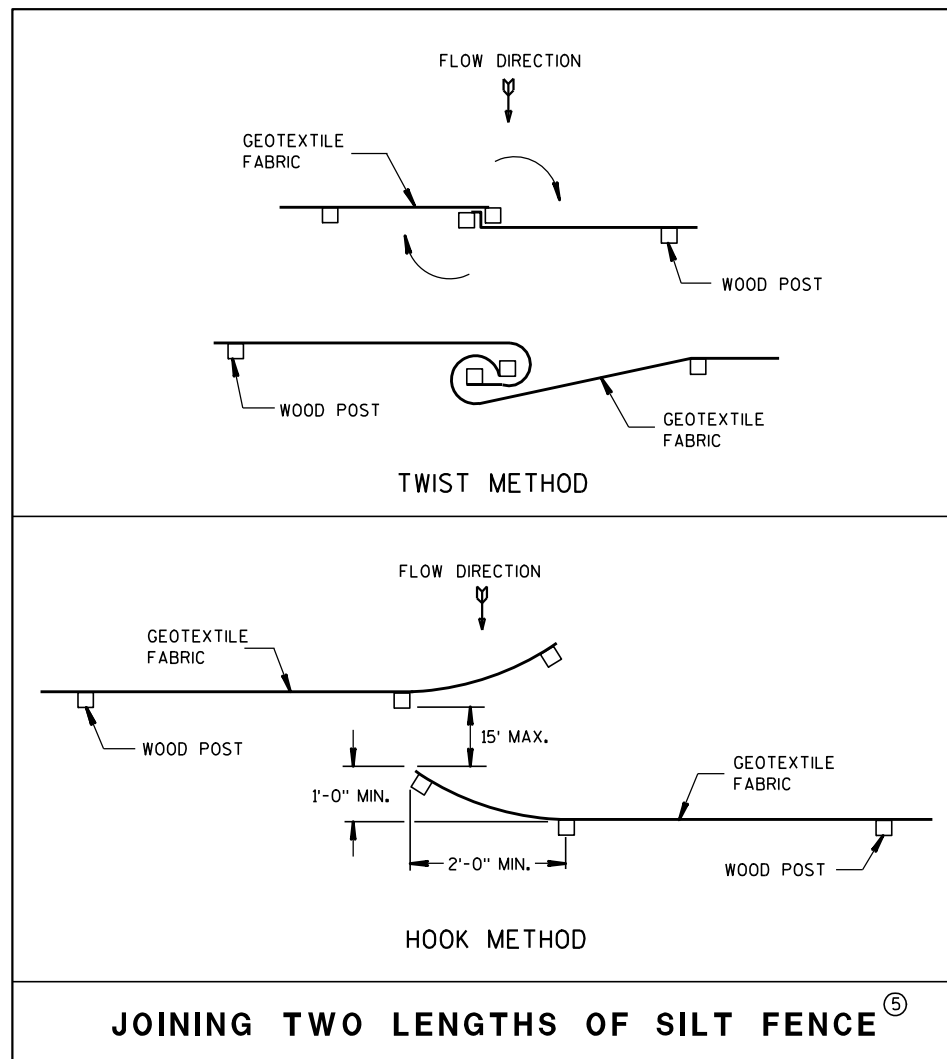
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



SITUATION 1
SITUATION 2
PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

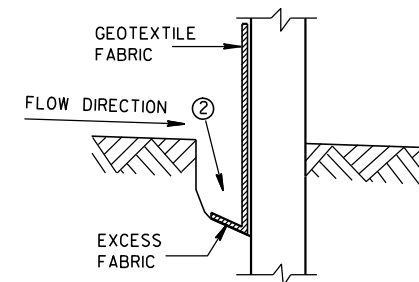


JOINING TWO LENGTHS OF SILT FENCE ⑤

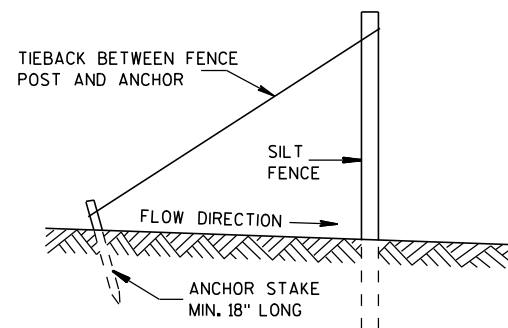
GENERAL NOTES

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

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

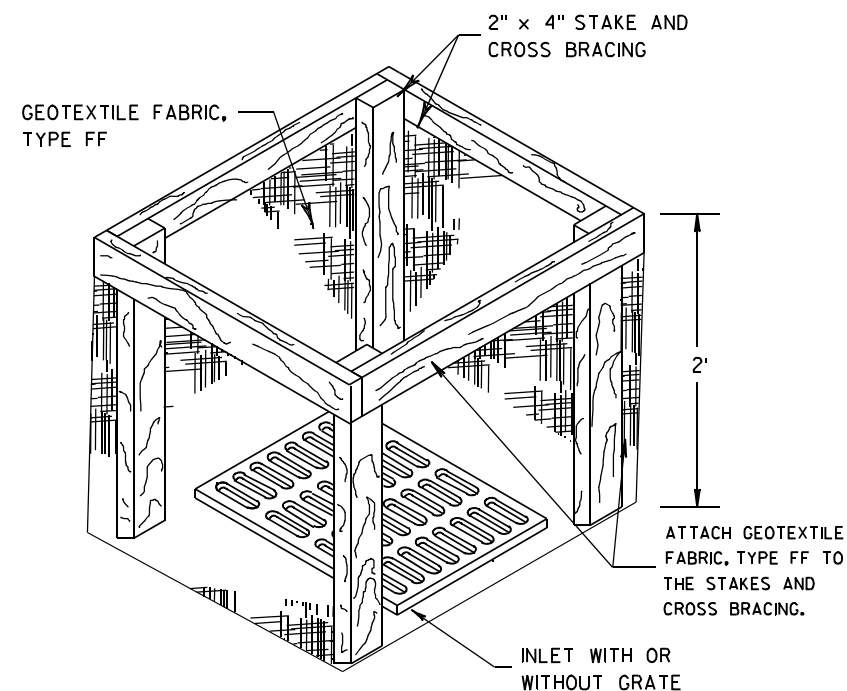
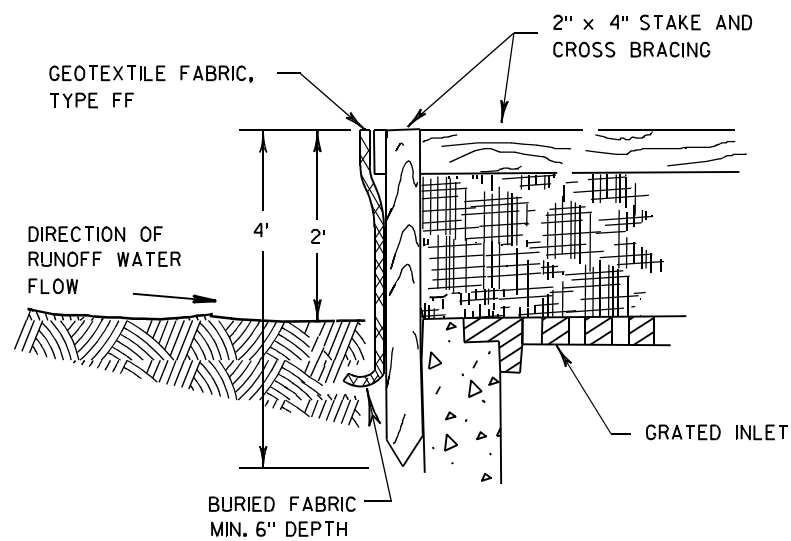


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Conn CHIEF ROADWAY DEVELOPER 132 ENGINEER
FHWA	



INLET PROTECTION, TYPE A

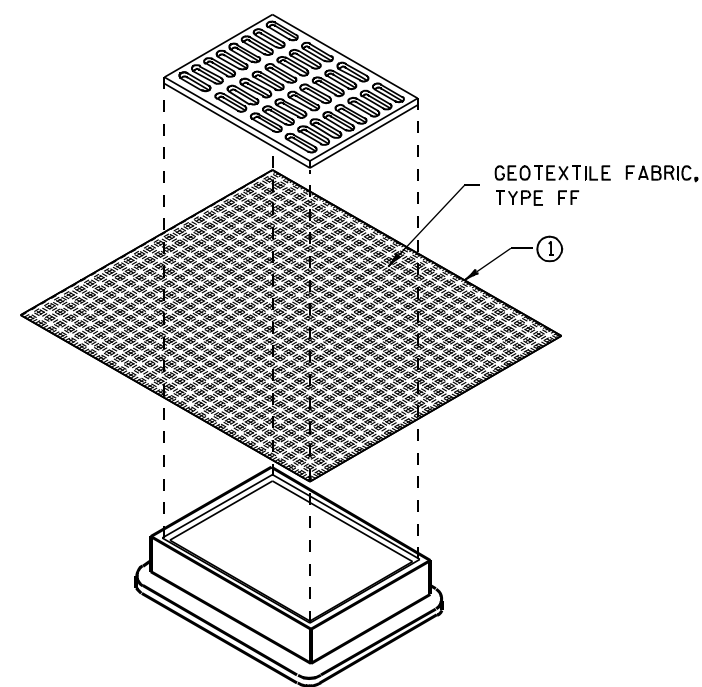
GENERAL NOTES

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.

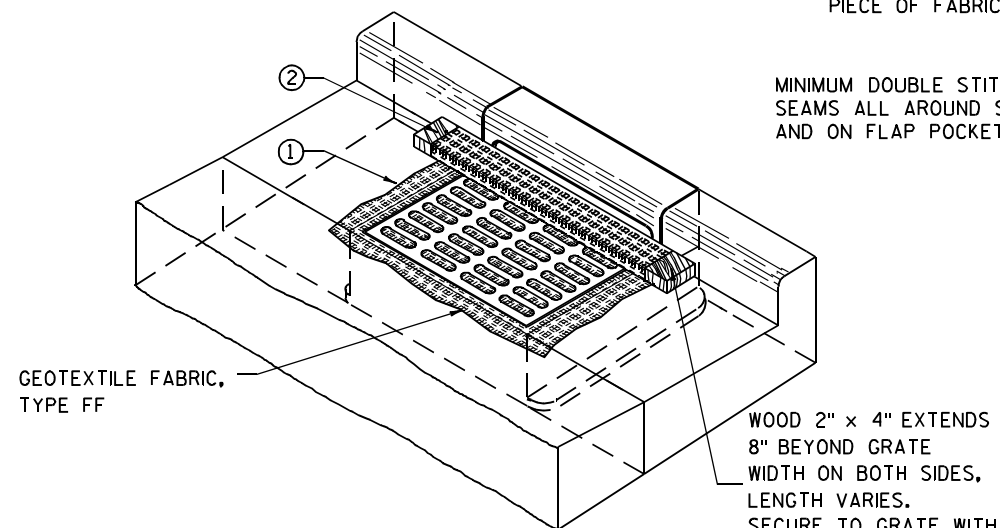
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

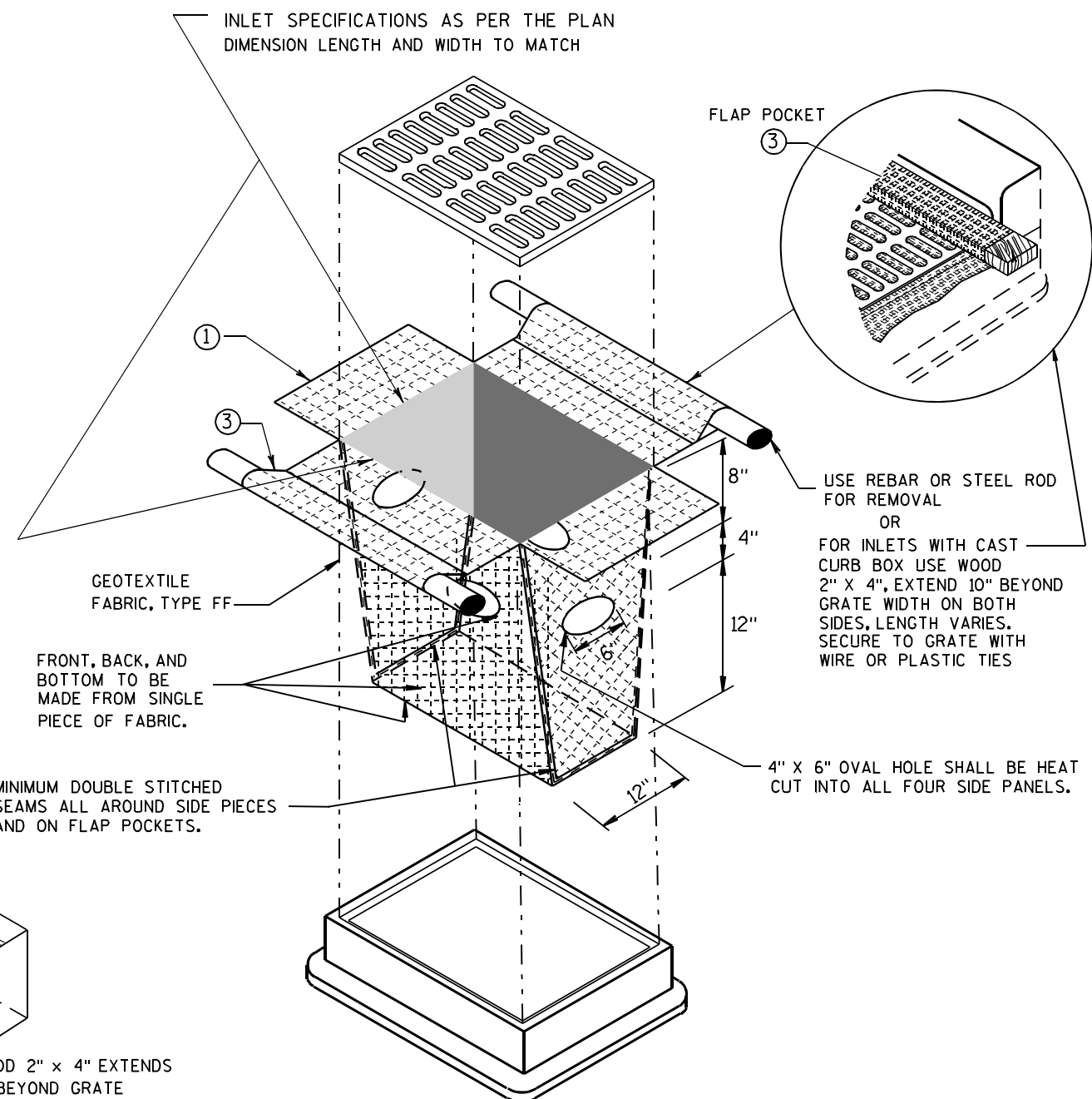
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.



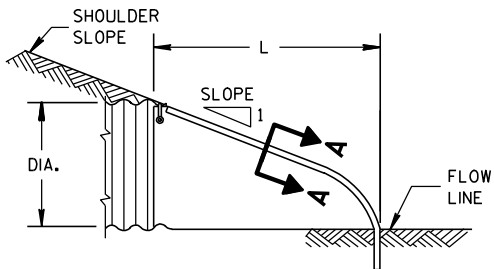
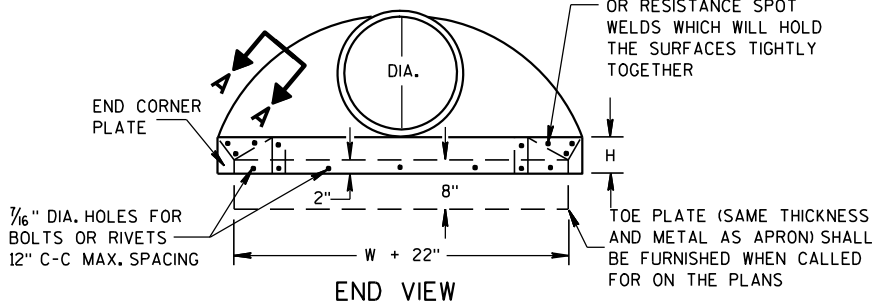
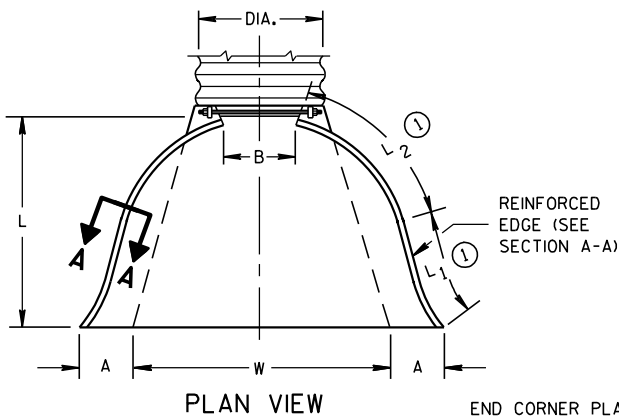
INLET PROTECTION, TYPE D

(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 DATE	/S/ Beth Connolly 133 CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

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

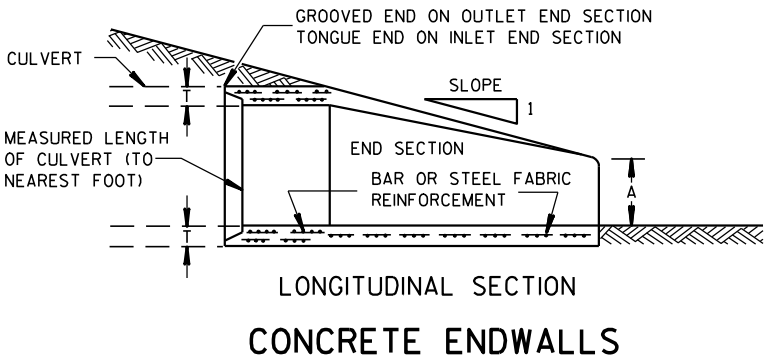
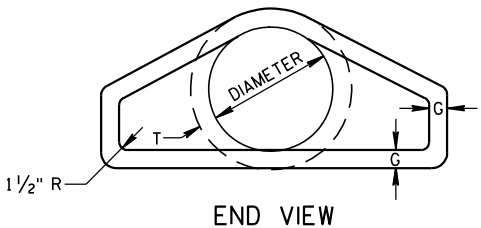
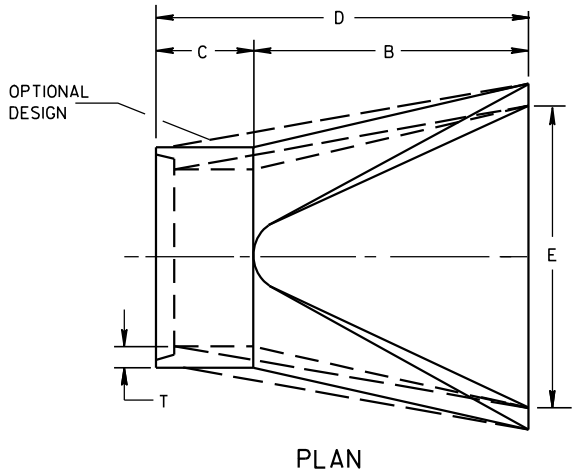
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

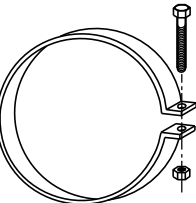
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9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

* MINIMUM
** MAXIMUM

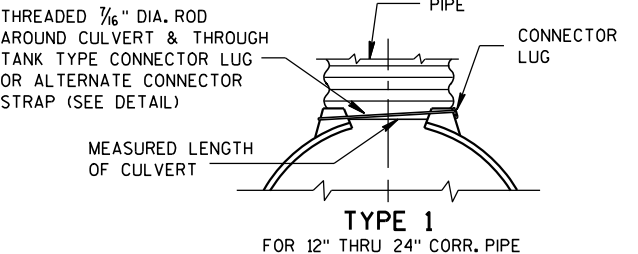


LONGITUDINAL SECTION
CONCRETE ENDWALLS

1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT

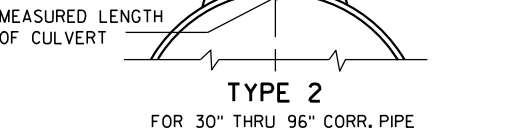


ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP

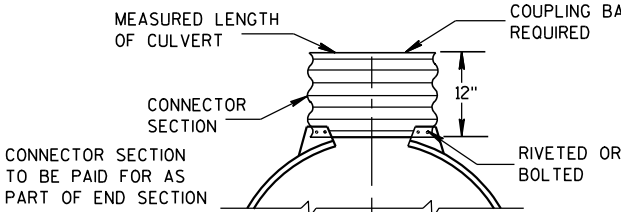


TYPE 1
FOR 12" THRU 24" CORR. PIPE

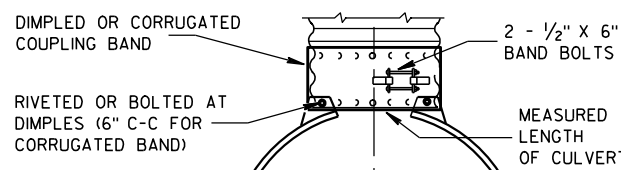
THREADED 1/16" DIA. ROD OVER TOP OF APRON, SIDE LUGS TO BE RIVETED TO APRON



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



TYPE 5
ALTERNATE FOR:
ALL SIZES CORRUGATED CIRCULAR PIPE

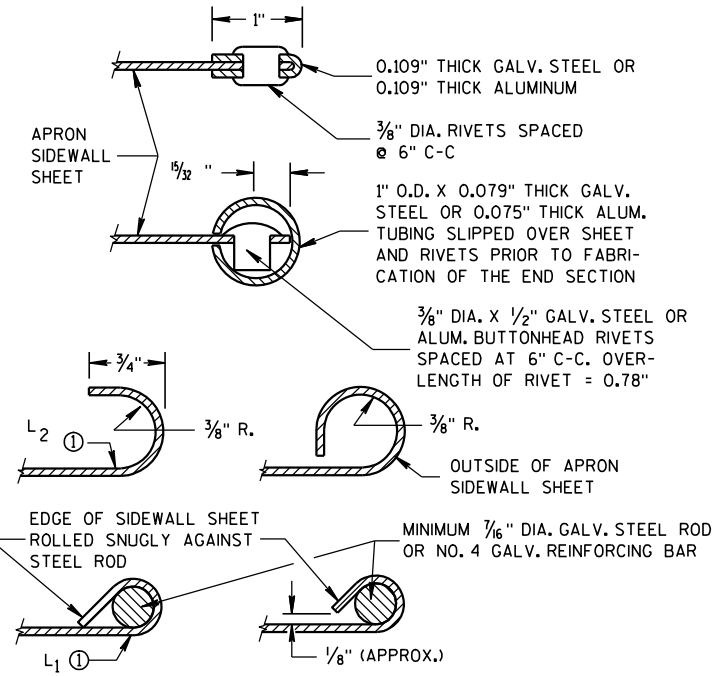
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

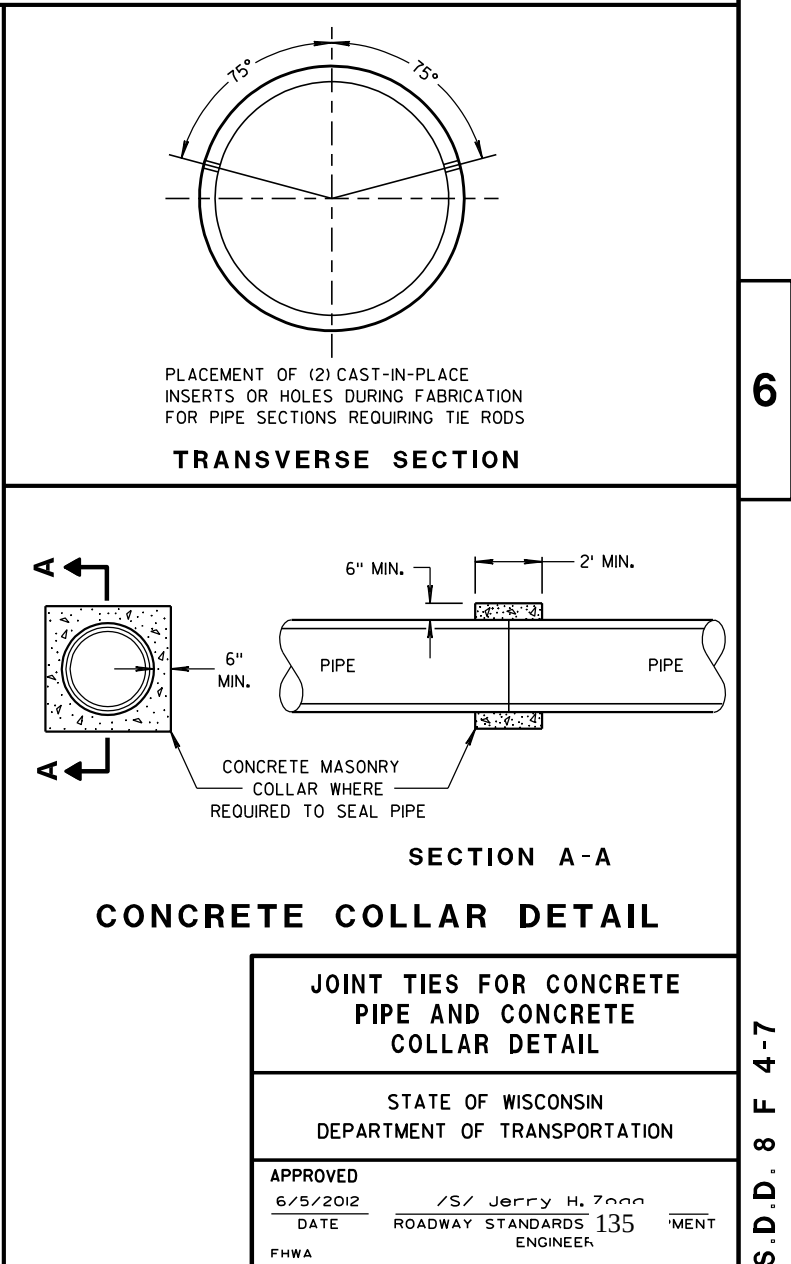
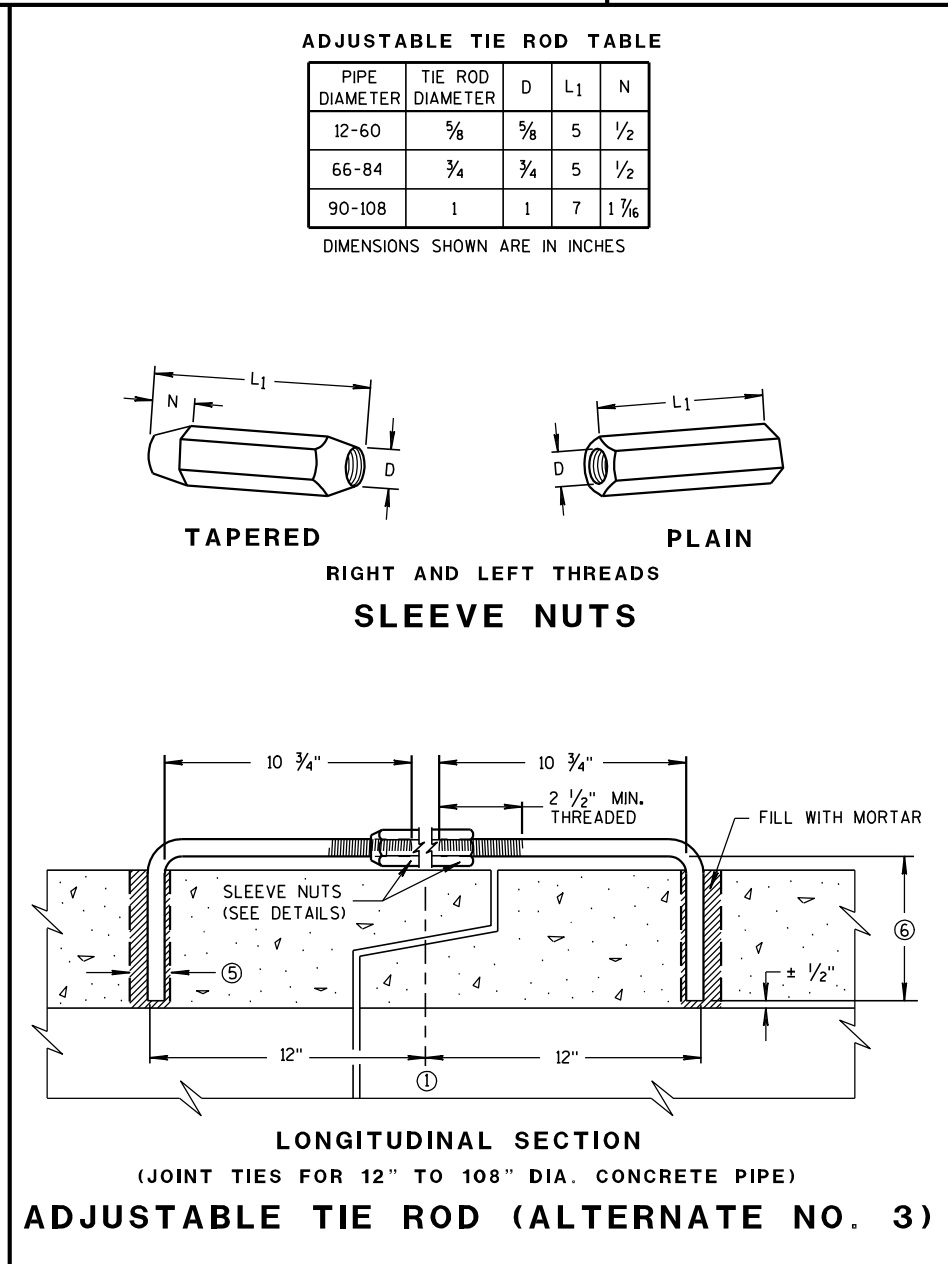
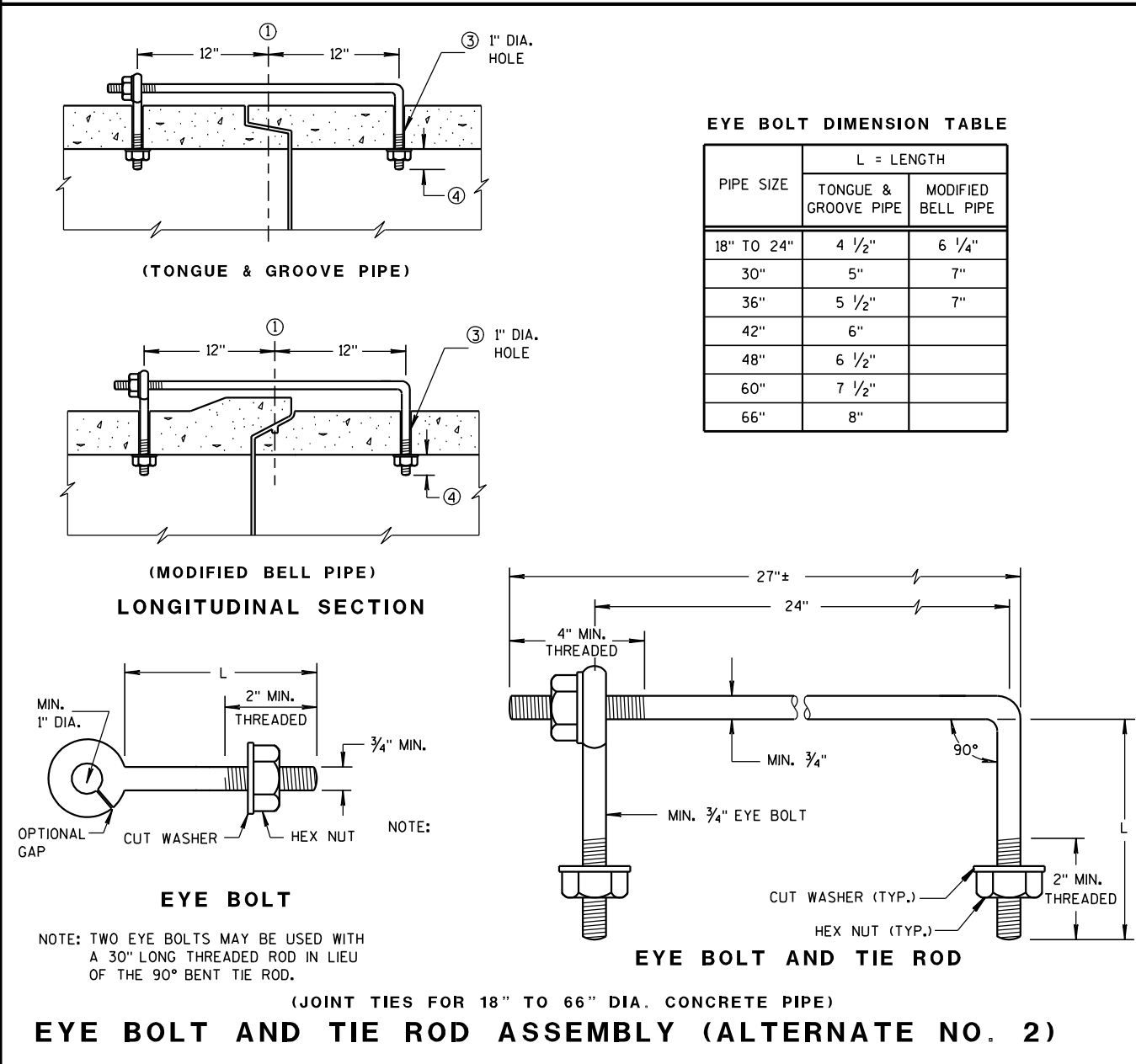
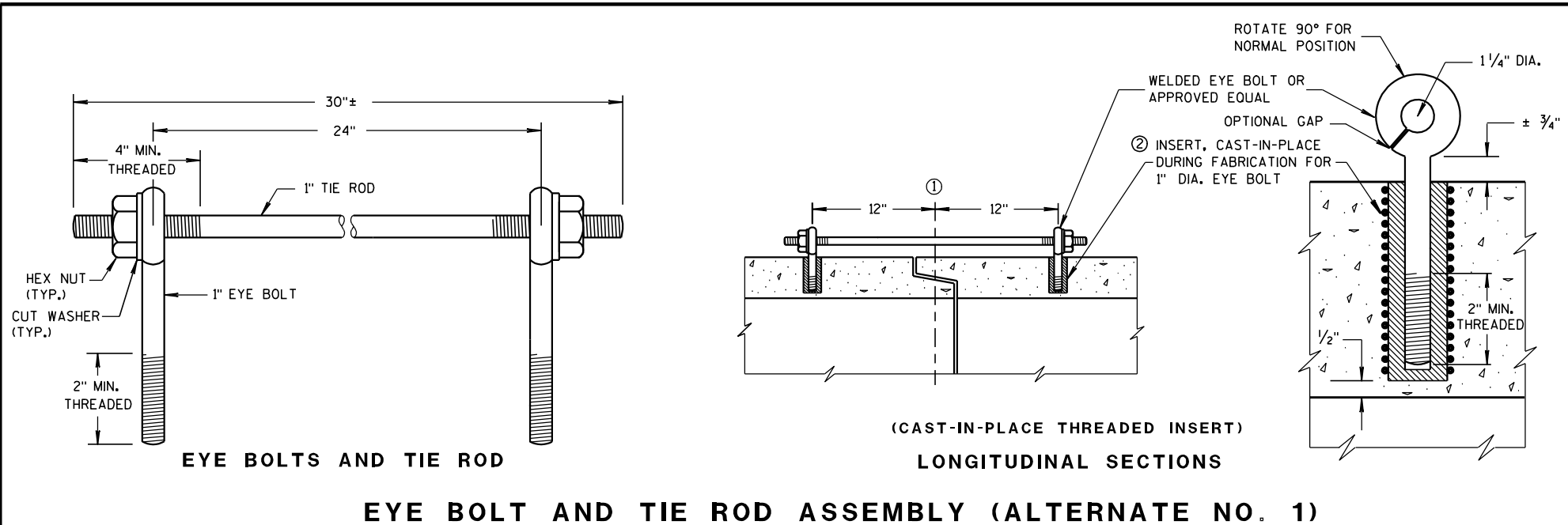
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

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

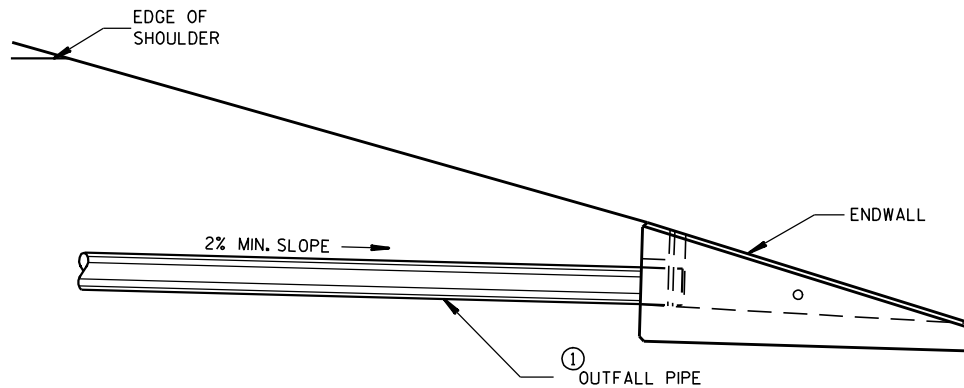
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhin... CHIEF ROADWAY DEVELOP	134	NEER
FHWA			

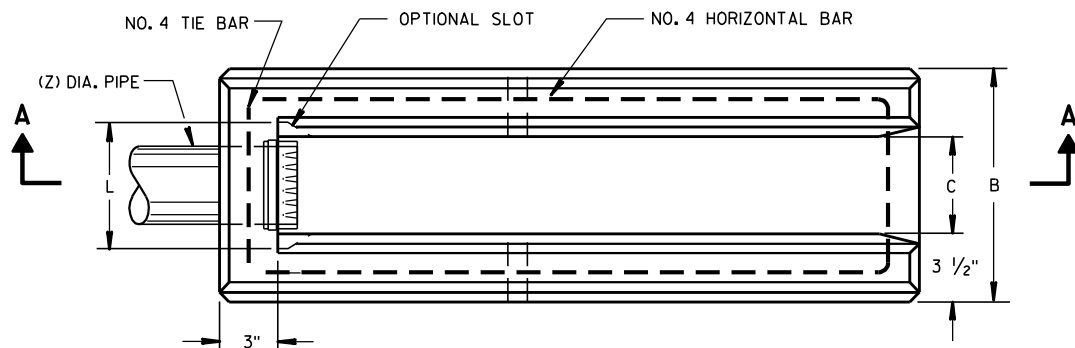


DIMENSIONS IN INCHES											
PIPE DIA.	A	B	C	D	E	F	G	H	J	L	Z
**4	6	12	5 1/4	9	8	32	36	11	2 3/8	6 1/2	4
6	8	14	7 1/4	11	10	42	44	13	3 5/8	8 1/2	6

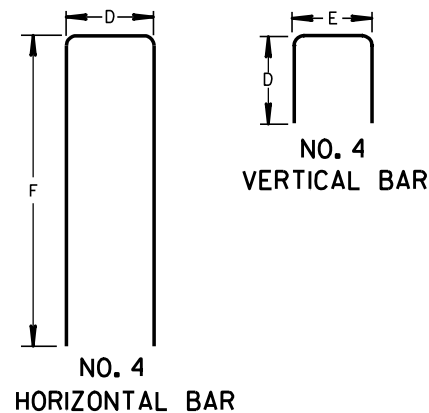
** APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



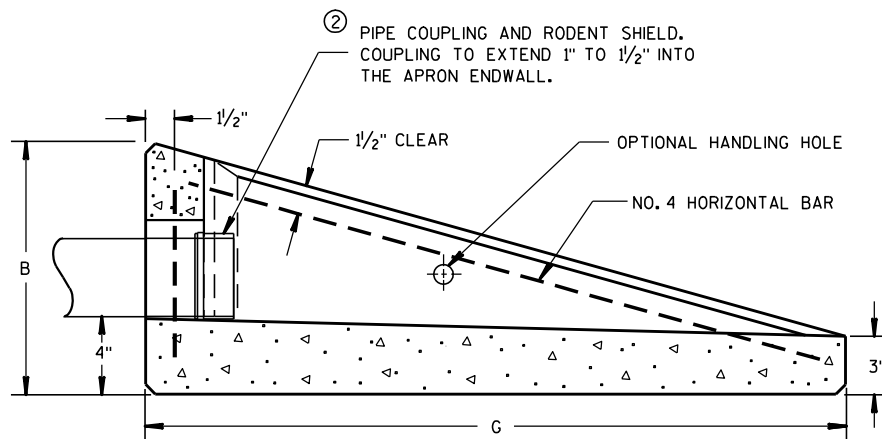
INSTALLATION DETAIL



PLAN VIEW

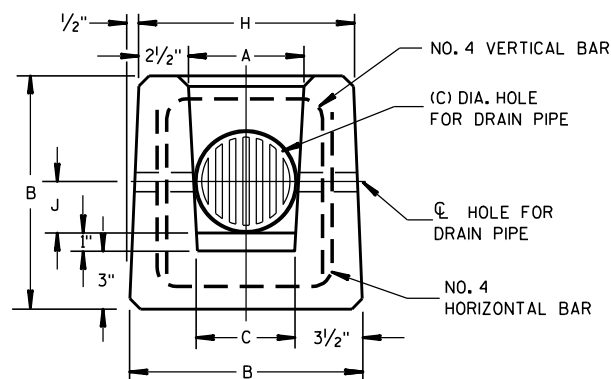


BAR STEEL REINFORCEMENT DETAILS



SECTION A-A

CONCRETE APRON ENDWALL FOR UNDERDRAIN



END VIEW

GENERAL NOTES

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

ALTERNATIVE DESIGNS WHICH PROVIDE EQUIVALENT CAPACITY AND STRENGTH MAY BE USED WHEN APPROVED BY THE ENGINEER. ENDWALL MAY BE EITHER PRECAST OR CAST-IN-PLACE CONCRETE.

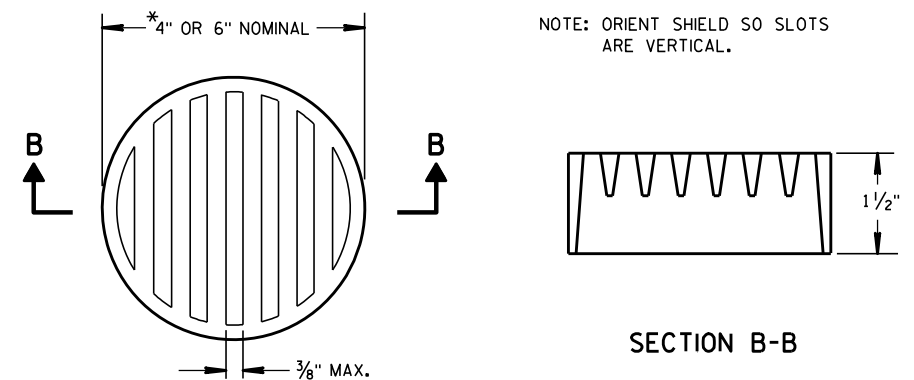
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

THE UPPERMOST POINT OF THE ENDWALL SHALL BE PLACED FLUSH WITH THE ROADWAY SLOPE. ADJACENT EMBANKMENT SLOPES SHALL BE SHAPED TO FIT THE SIDES AND TOE OF THE ENDWALL. EXACT PLACEMENT OF THE OUTFALL PIPE AND ENDWALL SHALL BE DETERMINED BY THE ENGINEER TO MATCH THE ELEVATIONS AND FLOW DIRECTION OF THE ROADSIDE DITCH.

- ① THE OUTFALL PIPE UNDERDRAIN AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATION FOR POLY (VINYL CHORIDE) (PVC) PLASTIC DRAIN, WASTE AND VENT PIPE AND FITTINGS, ASTM DESIGNATION: D 2665, SCHEDULE 40 PVC OR THE STANDARD SPECIFICATION FOR TYPE PSM POLY (VINYL CHORIDE) (PVC) SEWER PIPE AND FITTINGS, ASTM DESIGNATION: D 3034, TYPE PSM SDR 23.5 PVC SEWER PIPE, ALL JOINTS SHALL BE SOLVENT WELDED.

THE OUTFALL PIPE INCLUDING ALL FITTINGS AND THE RODENT SHIELD SHALL BE MEASURED AND PAID FOR AS PIPE UNDERDRAIN UNPERFORATED.

- ② THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE OUTFALL PIPE. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



② RODENT SHIELD

*NOTE: DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING.

REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

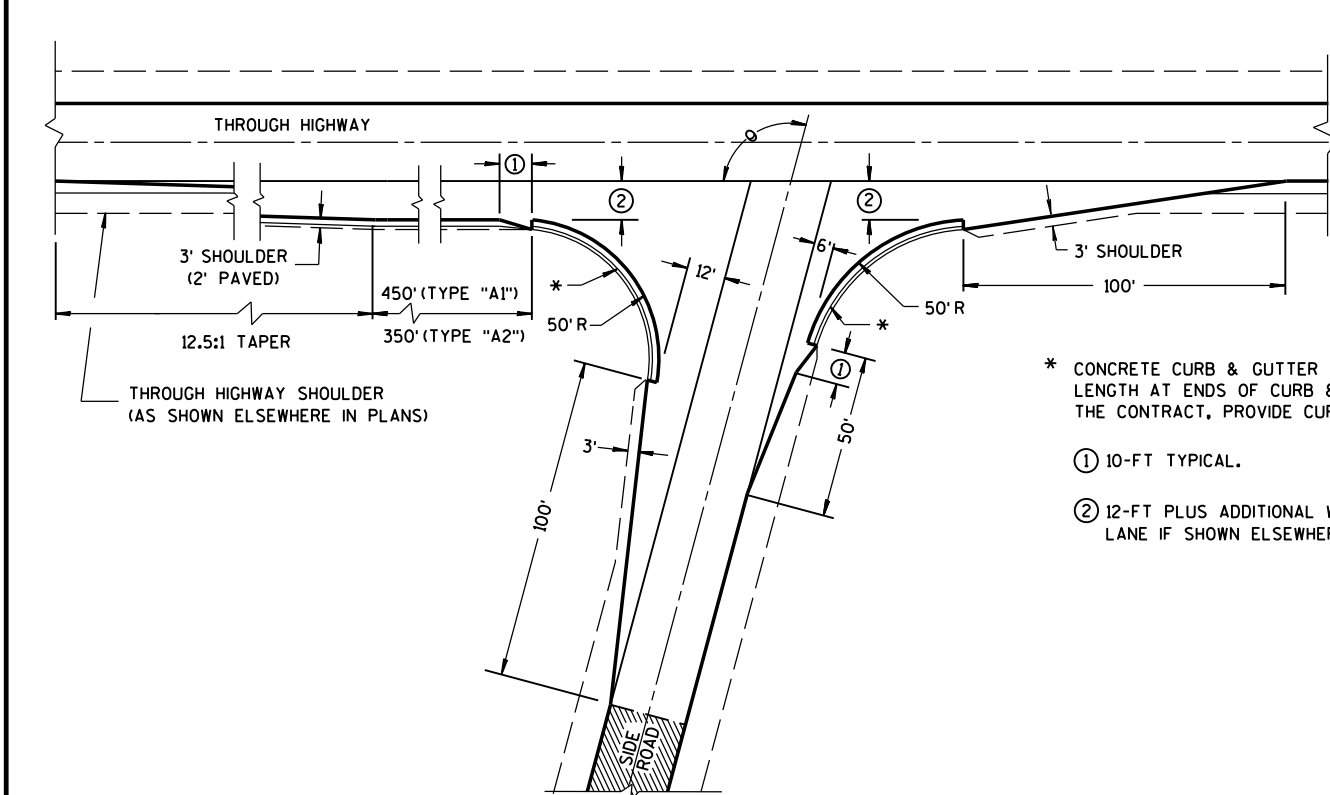
3/10/98

DATE

FHWA

/S/ Rory L. Rhin...
CHIEF ROADWAY DEVELOPER

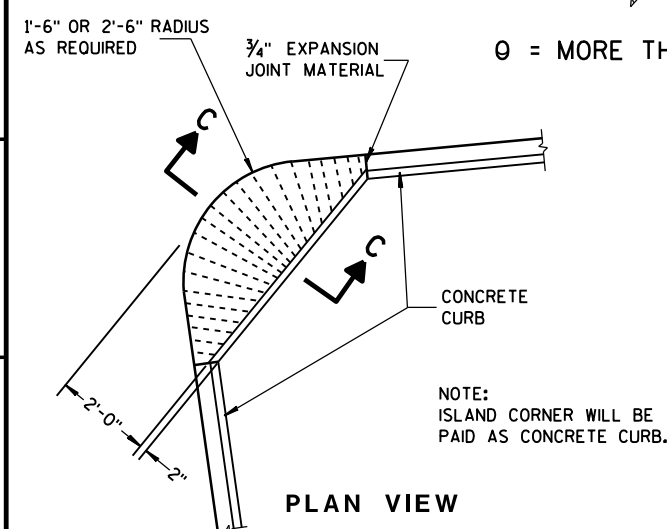
136 INEER



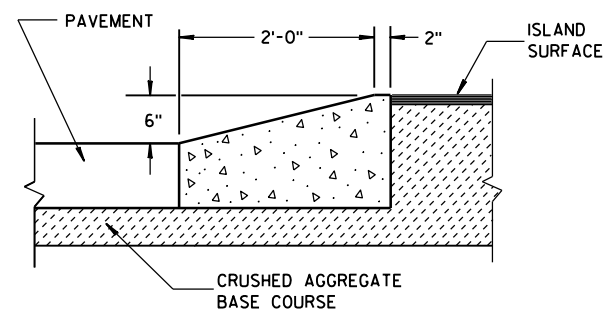
* CONCRETE CURB & GUTTER 36". TAPER CURB HEIGHT 0" TO 6" IN 10'-0" LENGTH AT ENDS OF CURB & GUTTER SECTIONS. WHEN SPECIFIED ELSEWHERE IN THE CONTRACT, PROVIDE CURB OPENING AND FLUME.

① 10-FT TYPICAL.

② 12-FT PLUS ADDITIONAL WIDTH FOR BIKE LANE IF SHOWN ELSEWHERE IN THE PLANS.



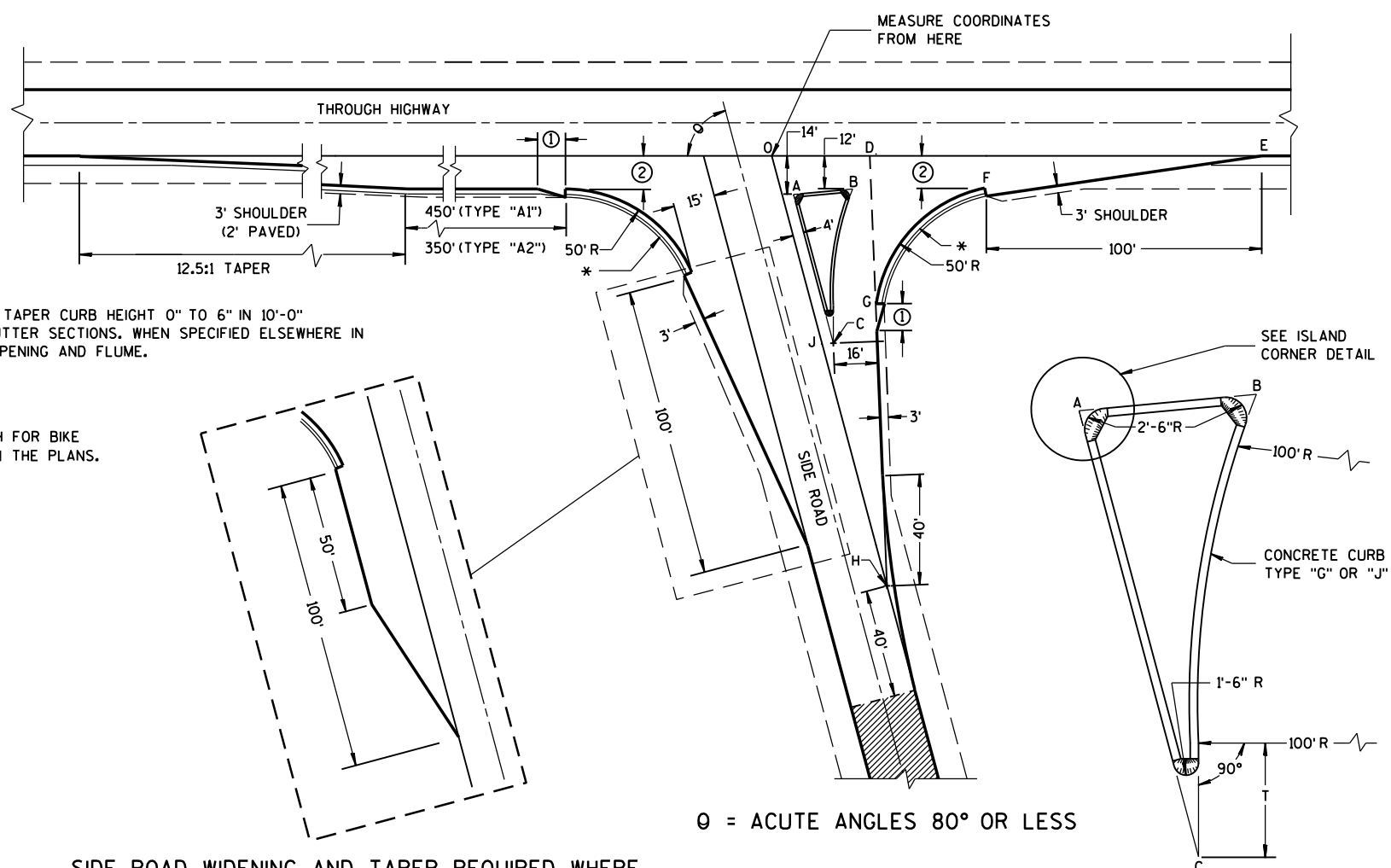
PLAN VIEW



SECTION C-C

ISLAND CORNER DETAIL

(TO BE CONSTRUCTED AT ALL ISLAND CORNERS)



SIDE ROAD WIDENING AND TAPER REQUIRED WHERE THE THROUGH HIGHWAY CARRIES TWO-WAY TRAFFIC
 θ = ACUTE ANGLES 70° OR LESS

TABLE OF DIMENSIONS FOR
 VARIABLE SIDE ROAD INTERSECTION ANGLES

(INTERPOLATE VALUES FOR ANGLES NOT SHOWN)

ANGLE θ DEGREES	COORDINATES IN FEET (MEASURED FROM POINT "O")								LENGTH IN FEET				
	A	B	C	D	E	F	G	H	AB	AC	T	OJ	OH
60	12.7	44.9	46.4	41.9	205.0	104.6	64.0	85.0	32.3	67.4	4.9	85.9	169.9
	-14.0	-12.0	-72.4	0.0	0.0	-12.0	-75.5	-147.1					
65	10.9	39.0	37.8	39.4	196.1	95.7	54.1	70.5	28.2	63.6	8.5	80.9	166.9
	-14.0	-12.0	-71.6	0.0	0.0	-12.0	-71.5	-151.3					
70	9.4	33.9	29.8	37.4	188.3	87.8	45.6	56.1	24.6	59.7	11.5	76.1	164.1
	-14.0	-12.0	-70.1	0.0	0.0	-12.0	-67.5	-154.2					
75	7.9	29.3	22.3	35.7	181.2	80.7	38.2	41.8	21.5	55.8	13.8	71.4	161.4
	-14.0	-12.0	-67.9	0.0	0.0	-12.0	-63.4	-155.9					
80	6.5	25.4	15.6	34.4	174.8	74.4	31.8	27.6	18.9	52.0	15.6	66.9	158.9
	-14.0	-12.0	-65.2	0.0	0.0	-12.0	-59.3	-156.5					

TYPE "A1" & "A2" SIDE ROAD INTERSECTION DETAILS

AT-GRADE SIDE ROAD
 INTERSECTION, TYPE "A1" & "A2"

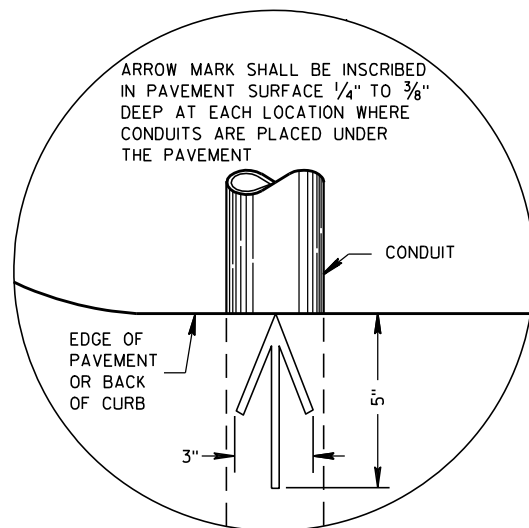
STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION

APPROVED

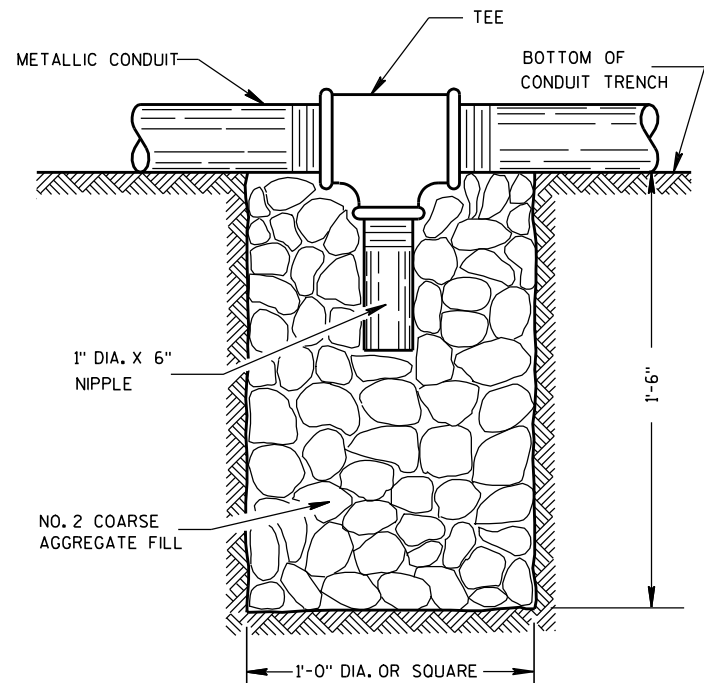
12/18/12
 DATE

FHWA

/S/ Jerry H. Zogg
 ROADWAY STANDARDS D 137
 ENGINEER

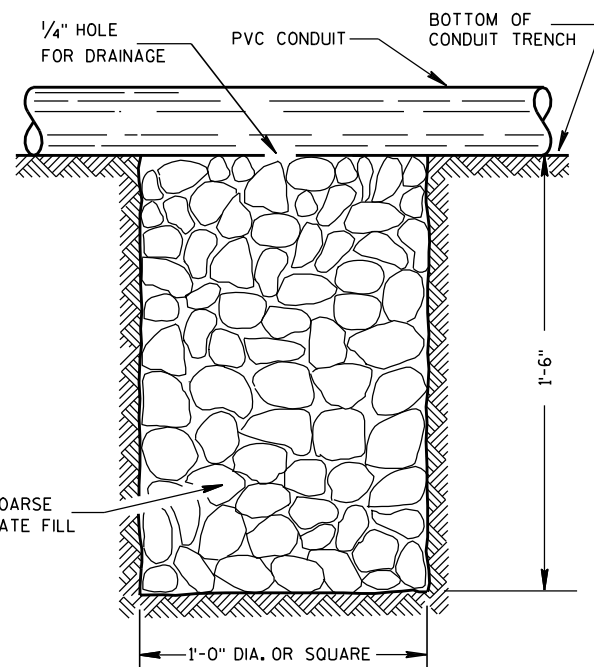


PLAN VIEW
ARROW MARK



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

DRAIN SUMP FOR METALLIC CONDUIT



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

DRAIN SUMP FOR PVC CONDUIT

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

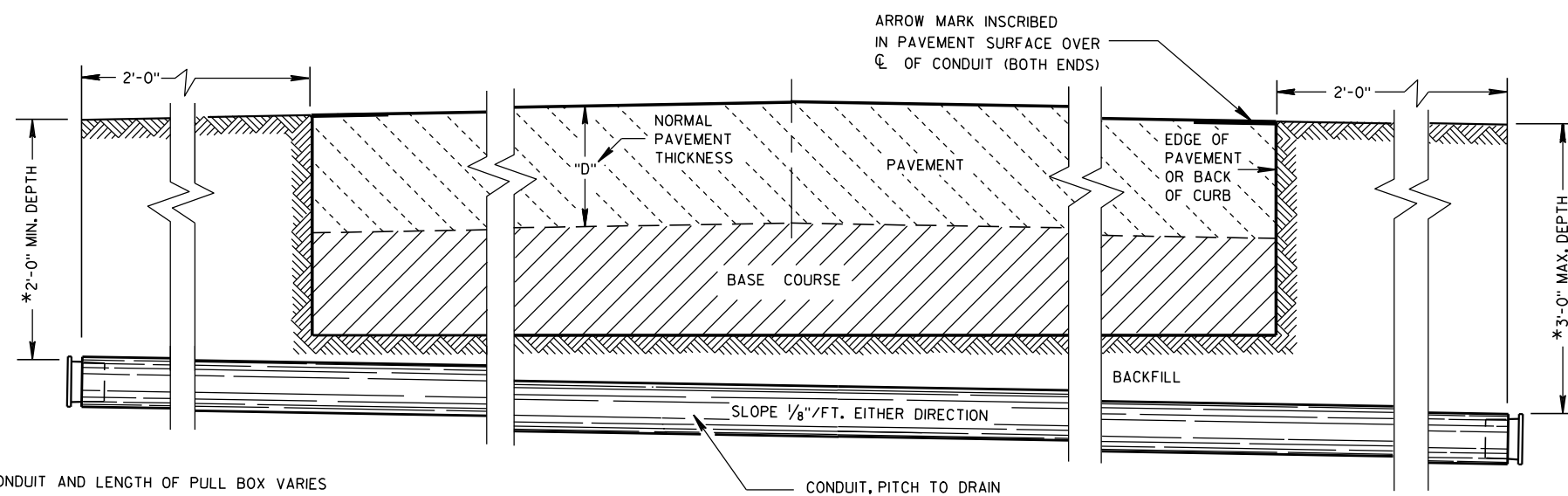
PRIOR TO CONDUIT ACCEPTANCE, CONDUIT CAPS OR PLUGS SHALL BE REMOVED, AND THE CAPS, PLUGS AND CONDUIT ENDS SHALL BE THOROUGHLY CLEANED AND THEN THE CAPS OR PLUGS REINSTALLED TO ENSURE THAT THE CAPS OR PLUGS CAN BE EASILY REMOVED IN THE FUTURE.

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

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

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

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



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

SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

10/23/03

DATE

FHWA

/S/ Balu Ananthanarayanan
STATE ELECTRICAL ENGR 138 HWYS

TABLE OF NOMINAL DIMENSIONS AND WEIGHTS

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

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

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

GENERAL NOTES

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

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

PULL BOXES LOCATED IN THE ROADWAYS SHALL HAVE LOCKING COVERS.

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

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

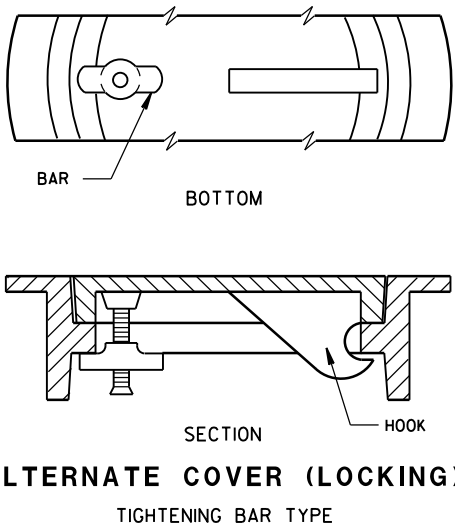
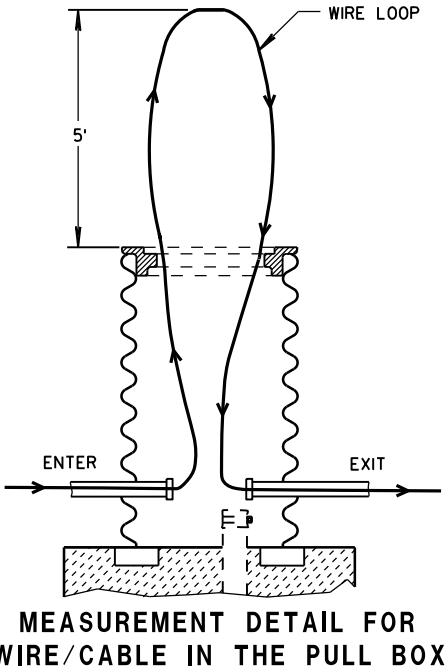
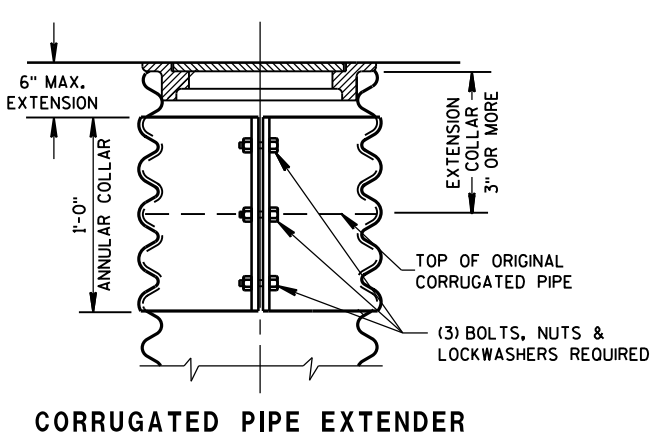
GROUNDING LUGS (MECHANICAL CONNECTORS) SHALL BE U.L. LISTED AND APPROVED FOR USE WITH COPPER WIRE.

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

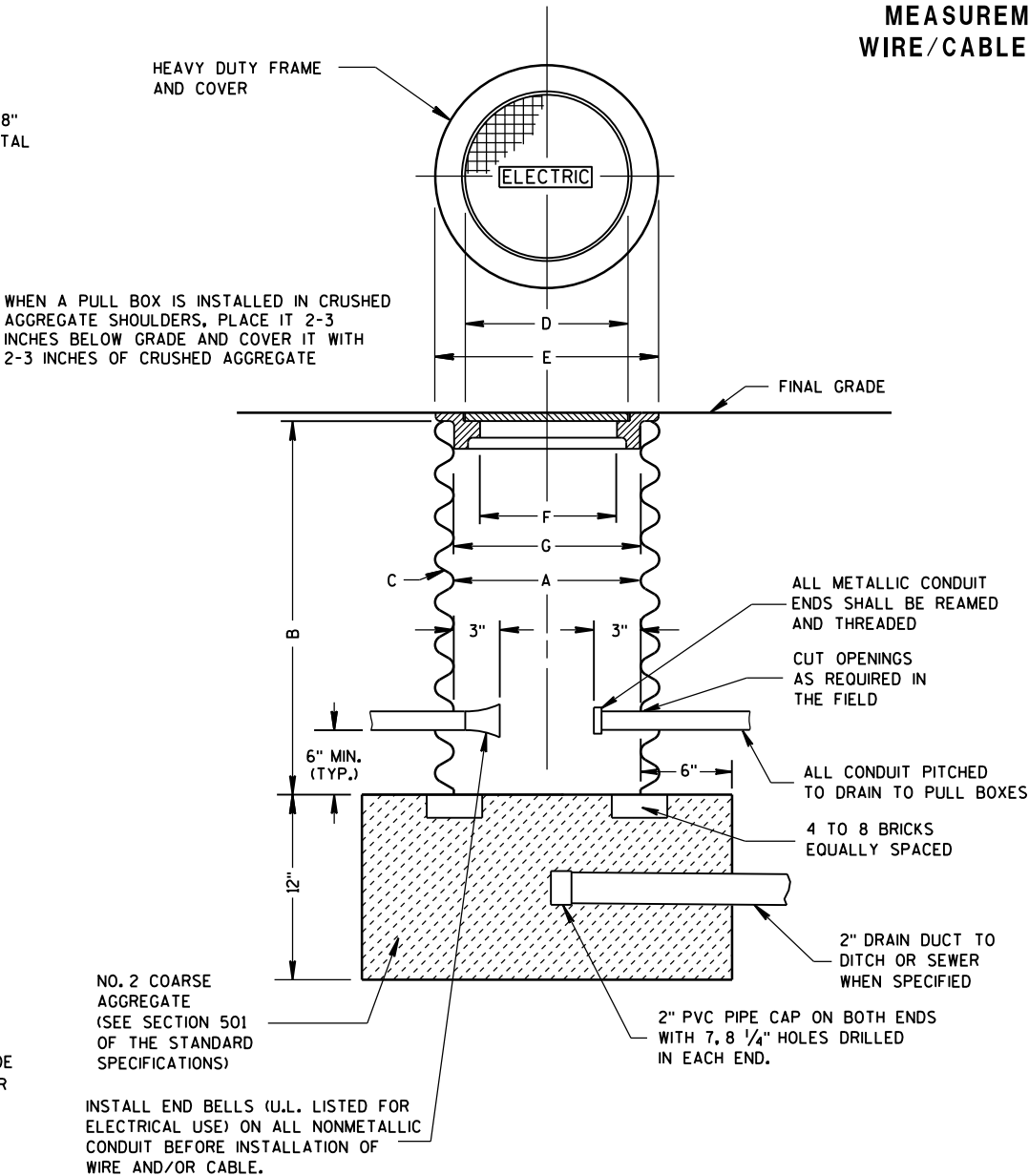
ALL METALLIC CONDUIT IN WHICH WIRE AND/OR CABLE IS TO BE INSTALLED, SHALL BE BUSHED BEFORE INSTALLATION OF THE WIRE AND/OR CABLE.

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

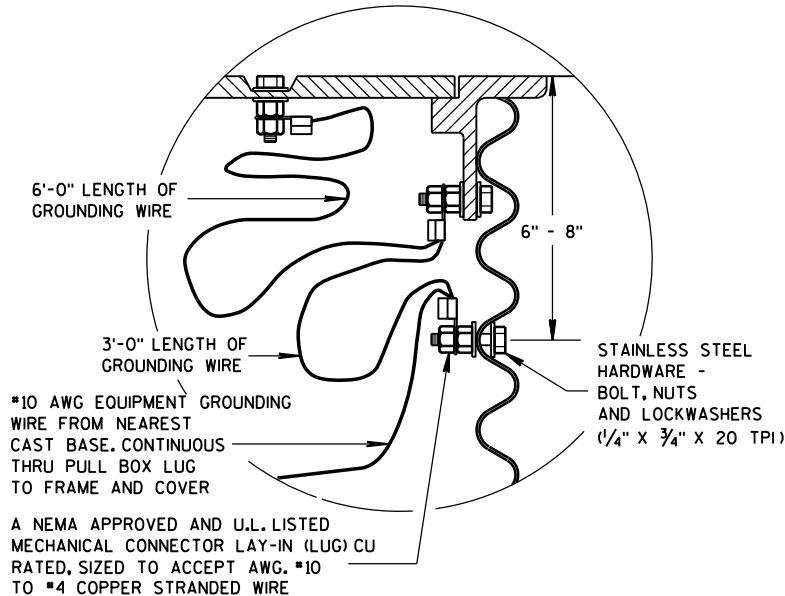
WHEN PULL BOXES ARE INSTALLED FOR FUTURE USE, DO NOT INSTALL THE EQUIPMENT GROUNDING LUG. THE EQUIPMENT GROUNDING LUG, THE EQUIPMENT GROUNDING ELECTRODE AND THE EQUIPMENT GROUNDING CONDUCTOR SHALL BE REQUIRED AND INSTALLED UNDER A FUTURE WIRING CONTRACT.



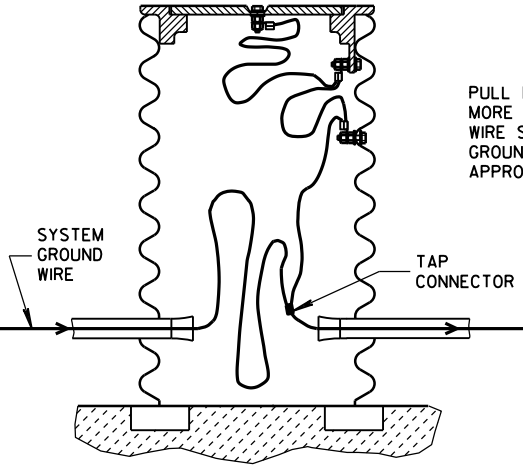
ALTERNATE COVER (LOCKING)
TIGHTENING BAR TYPE



PULL BOX



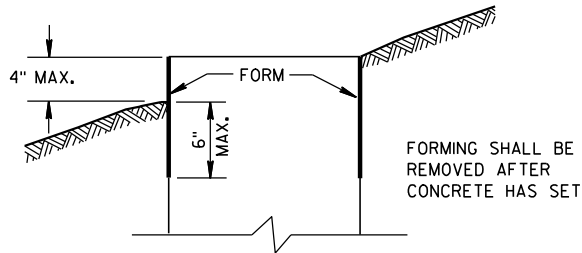
EQUIPMENT GROUNDING LUG AND
LOCATION IN STEEL PULL BOXES



EQUIPMENT GROUNDING LUG AND
LOCATION IN STEEL PULL BOXES

PULL BOX	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 2-7-2013 DATE	/S/ Ahmet Demirbilek STATE ELECTRICAL 139
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
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 2 AND TYPE 5 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 AND 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-449, OR ASTM A-687 (GRADE 105).

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.

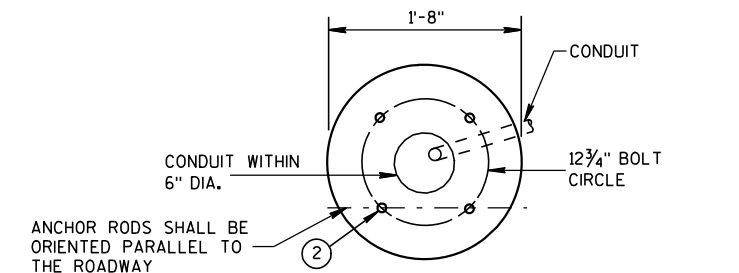
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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).

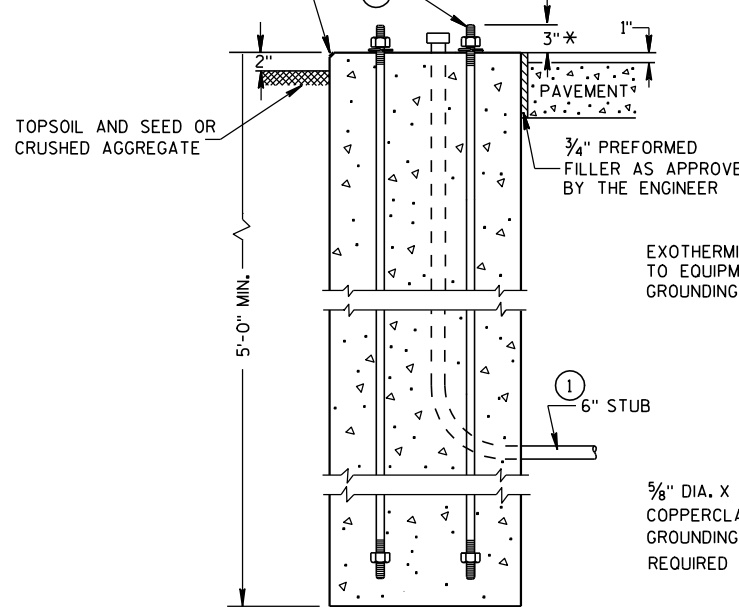
1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN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

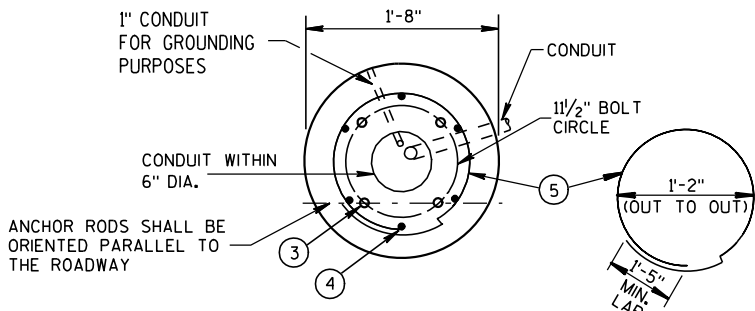


FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND

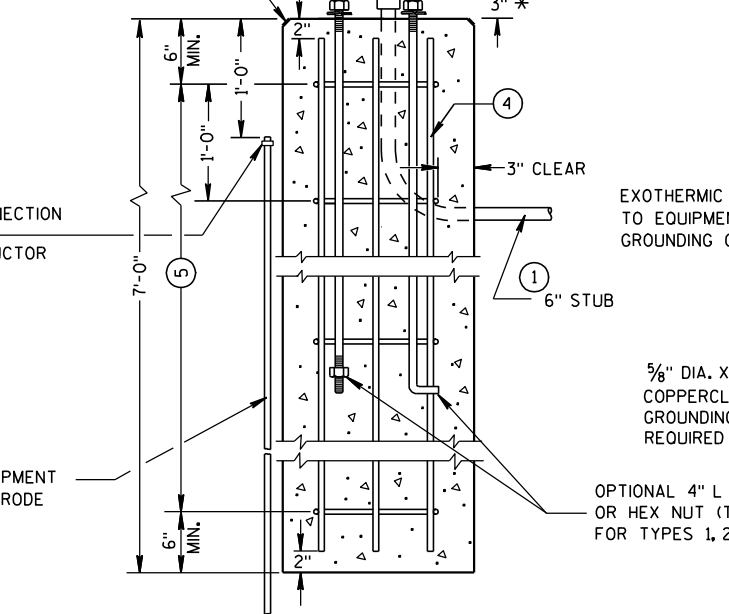
HALF SECTION IN UNPAVED AREA (TYPICAL FOR TYPES 1, 2 & 5)



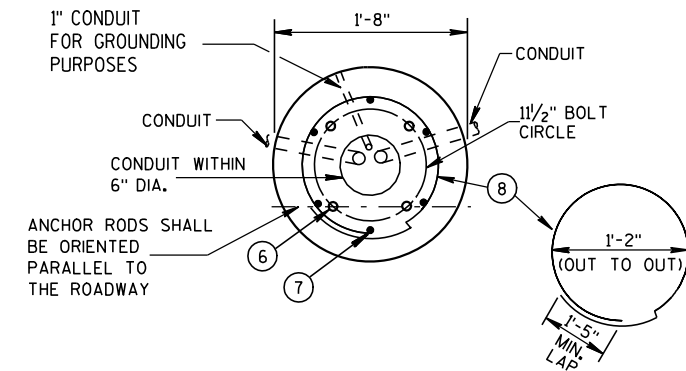
TYPE 1



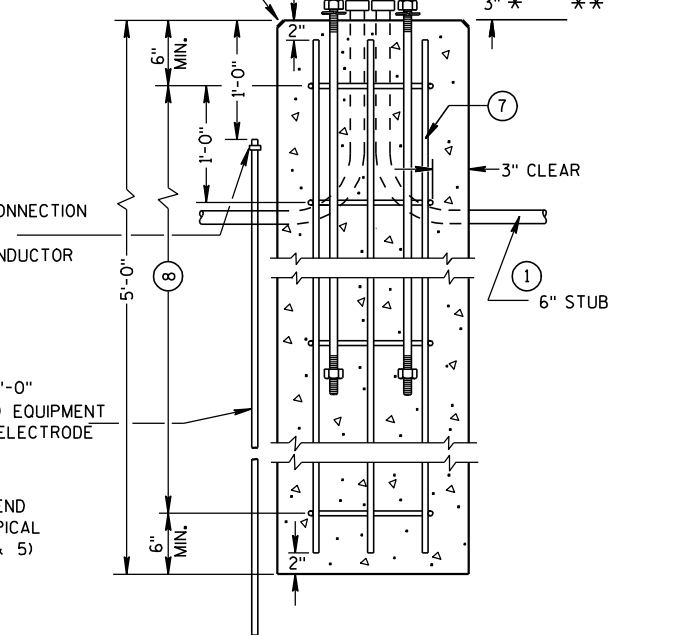
FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 2



FORM ALL EXPOSED CONCRETE. PROVIDE 1" CHAMFER ALL AROUND



TYPE 5

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3/3/10

DATE

FHWA

/S/ Joanna L. Bush

STATE ELECTRICAL ENGI 140

HWYS

GENERAL NOTES

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

FOUR (4) BOLTS SHALL BE FURNISHED WITH EACH TRANSFORMER BASE. BOLTS SHALL BE 1" DIAMETER, 4" IN LENGTH, WITH WASHERS, LOCK WASHERS AND NUTS. BOLTS, NUTS AND WASHERS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 641.2.2 OF THE STANDARD SPECIFICATIONS, ASTM A-325, (92,000 YIELD) HEAVY HEX NUT AND BE GALVANIZED IN ACCORDANCE WITH ASTM A-153, CLASS C.

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

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

DOUBLE NUTTING IS NOT ACCEPTABLE FOR LEVELING OR MOUNTING PURPOSES.

A NEMA APPROVED AND U.L. LISTED MECHANICAL CONNECTOR (LUG) AL/CU RATED AND SIZED TO ACCEPT #10 AWG STRANDED WIRE, SHALL BE FURNISHED AND INSTALLED IN THE PEDESTAL AND TRANSFORMER BASES.

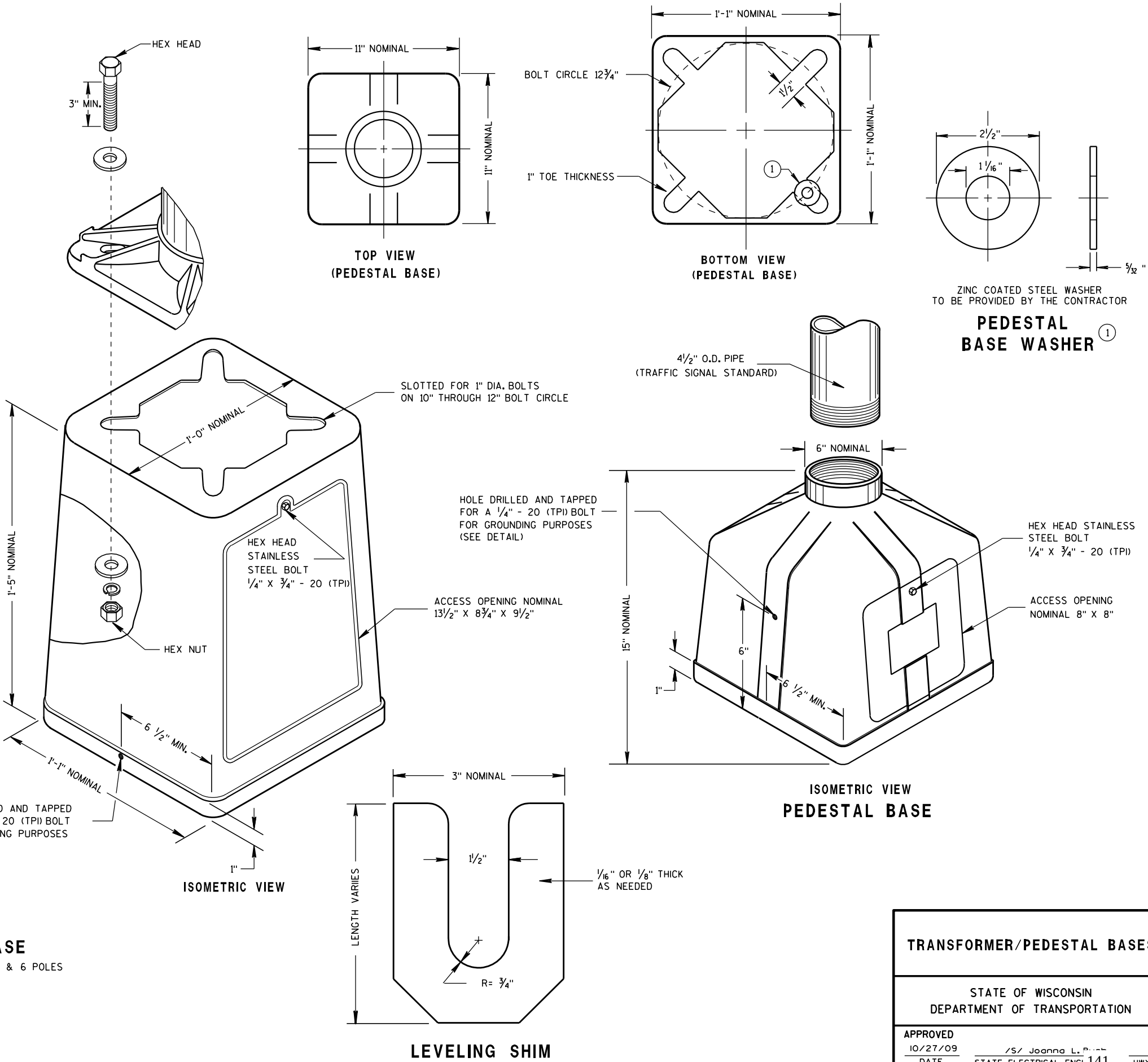
THE MECHANICAL CONNECTOR SHALL BE INSTALLED USING A 1/4" - 20 (TPI) STAINLESS STEEL HEX HEAD BOLT OF SUFFICIENT LENGTH TO FIRMLY ATTACH THE LUG TO THE BASE.

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

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

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

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

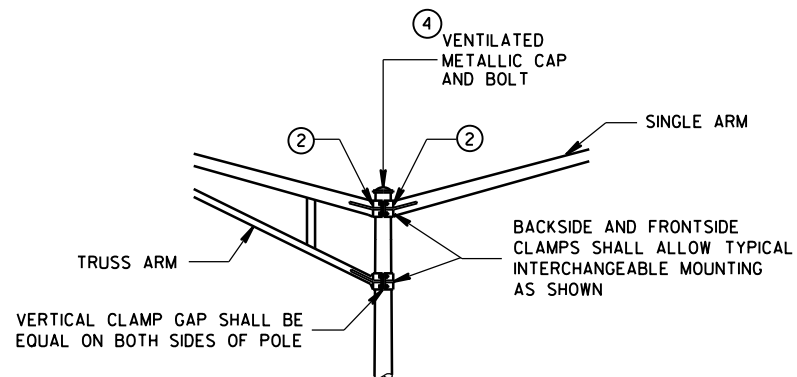
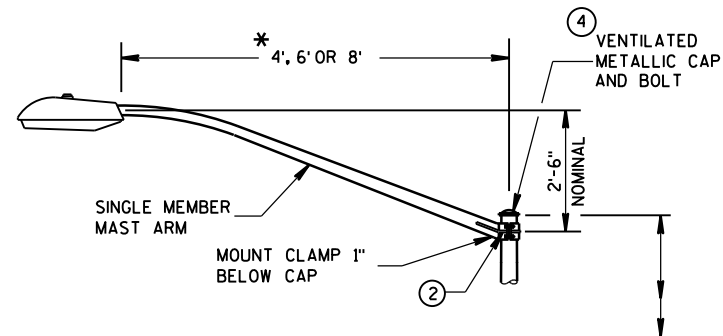


TRANSFORMER/PEDESTAL BASES

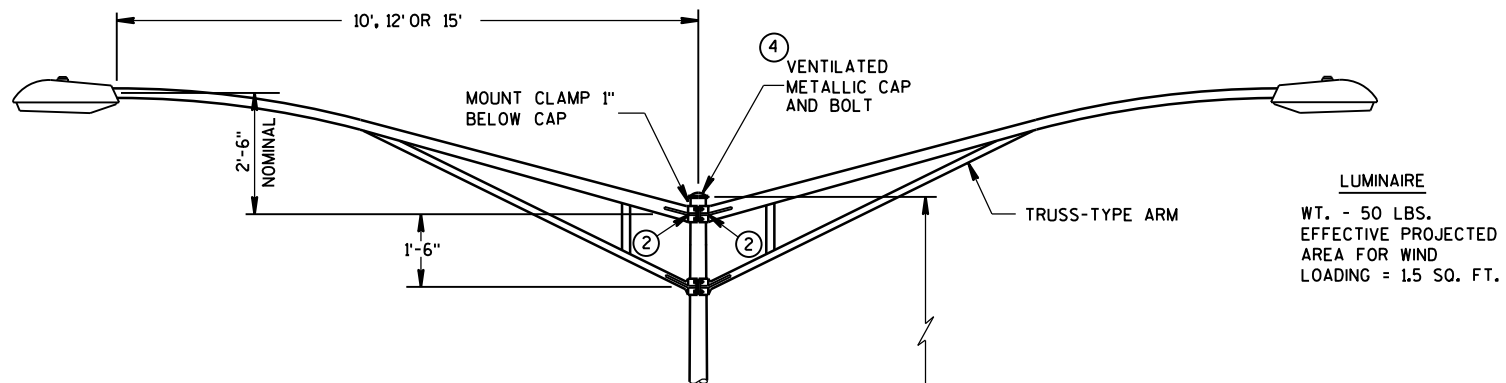
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/27/09
DATE
/S/ Joanna L. P...
STATE ELECTRICAL ENGI 141
HWYS
FHWA

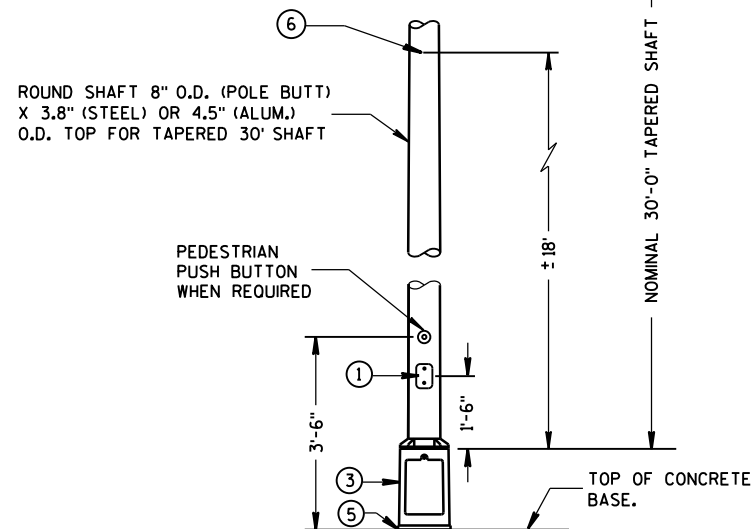
* RISE FOR 4' ARM SHALL BE 2'-0".



INTERCHANGEABLE MOUNTING DETAIL



LUMINAIRE
WT. - 50 LBS.
EFFECTIVE PROJECTED
AREA FOR WIND
LOADING = 1.5 SQ. FT.



TYPE 5 POLE MOUNTING CONFIGURATION
(MAXIMUM LOAD)
LIGHTING ONLY

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
ALL TYPE 5 POLE MOUNTINGS SHALL BE DESIGNED TO INCLUDE TWIN 15' ARMS WITH LUMINAIRES.

POLES SHALL BE GALVANIZED STEEL OR ALUMINUM, AS CALLED FOR IN THE CONTRACT.

TYPE 5 ALUMINUM POLES SHALL BE CONSTRUCTED OF 6063-T6 ALUMINUM ALLOY. SLEEVING INSIDE THE POLE IS NOT ACCEPTABLE.

THE TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.188".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (.1196").

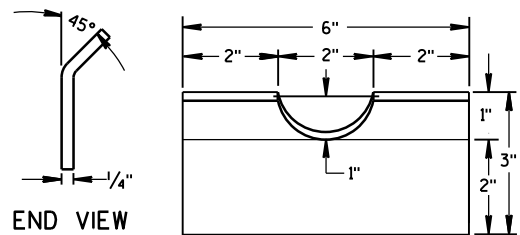
THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL $2\frac{3}{8}$ INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

WHEN TRANSFORMER BASES ARE USED, WIRE CONECTIONS SHALL BE MADE IN THE TRANSFORMER BASE.

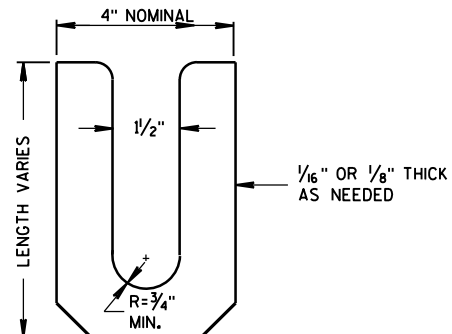
- ① 4" x 6" REINFORCED HANDHOLE & COVER ASSEMBLY WITH 2 (TWO) $\frac{1}{4}$ " x $\frac{3}{4}$ " - 20 TPI HEX HEAD STAINLESS STEEL BOLTS.
- ② GROMMETS, 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR $1\frac{1}{8}$ " HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE, WHEN REQUIRED.
- ④ FURNISH AND INSTALL VENTILATED, CAST, METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH ONE (1) $\frac{1}{4}$ " x $\frac{3}{4}$ " - 20 TPI STAINLESS STEEL, HEX HEAD BOLT.
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND THE TRANSFORMER BASE.
- ⑥ INTERNAL DUMBBELL-TYPE VIBRATION DAMPER.

POLE MONTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)

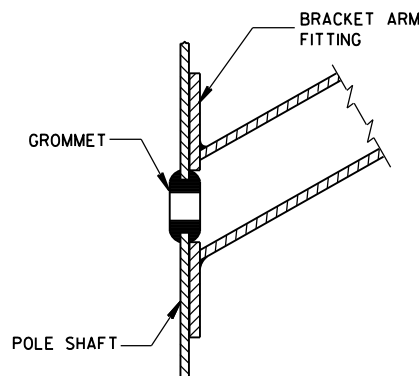
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 142



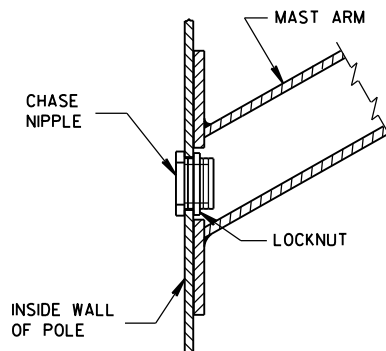
**FRONT VIEW
RECTANGULAR CLAMP SHIM**
(4 TO A SET)



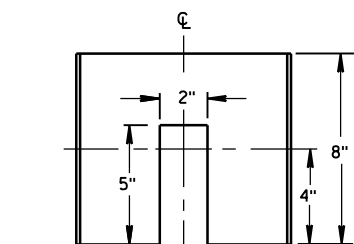
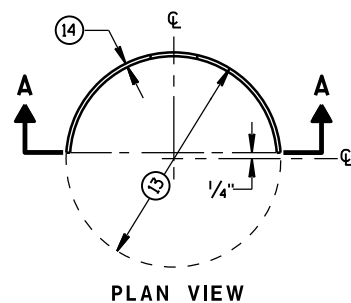
LEVELING SHIM
SHALL BE ALUMINUM



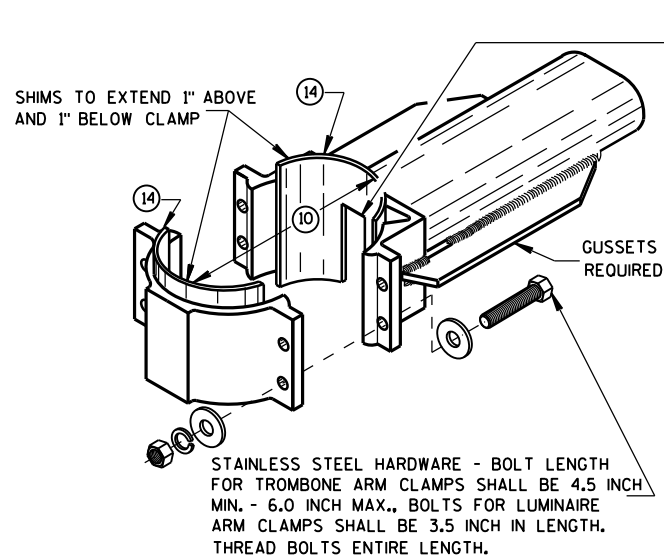
**TYPICAL APPLICATION OF
GROMMET IN POLE SHAFT**



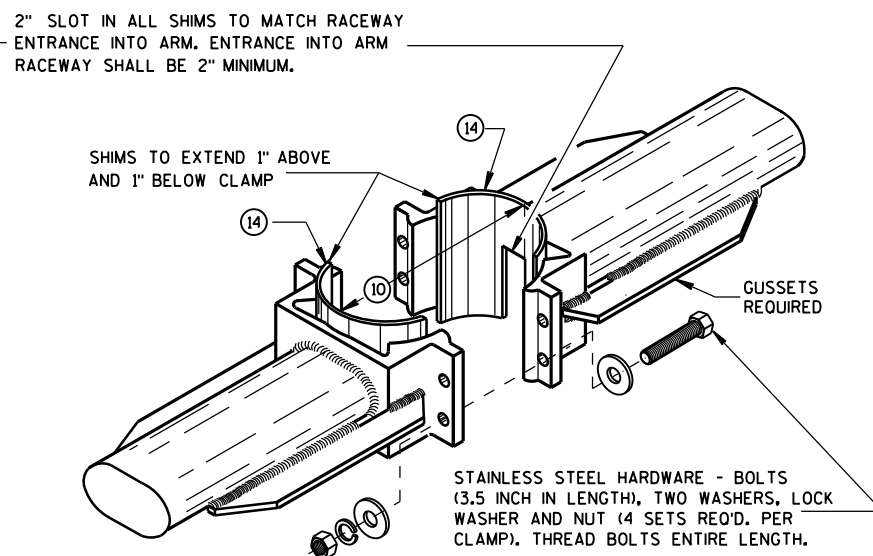
**TYPICAL APPLICATION OF
CHASE NIPPLE IN POLE SHAFT**



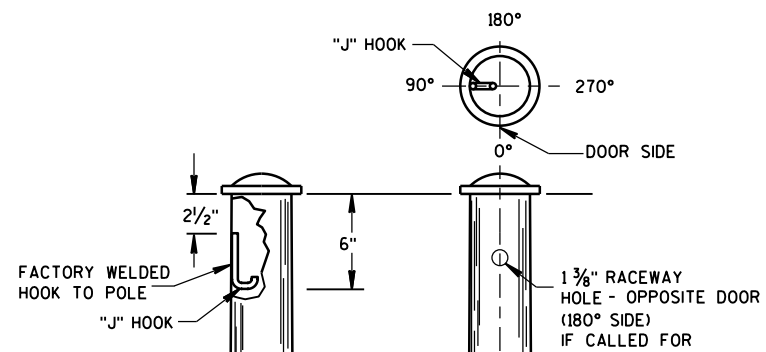
**SECTION A-A
CIRCULAR CLAMP SHIM**
(2 TO A SET)



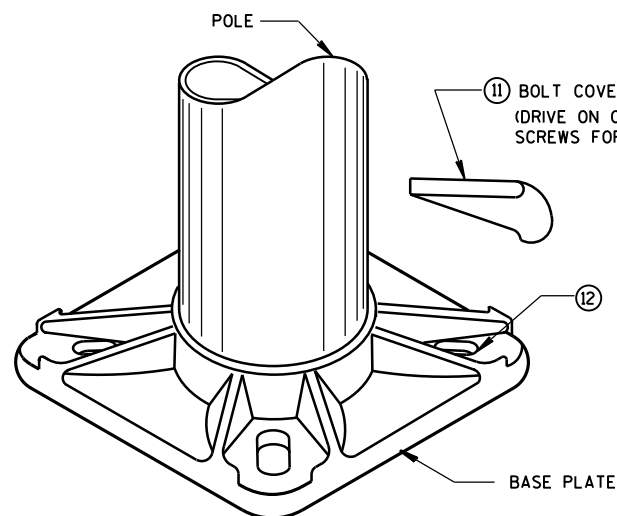
**TYPICAL TROMBONE MAST ARM AND SINGLE
LUMINAIRE MAST ARM MOUNTING CLAMP**



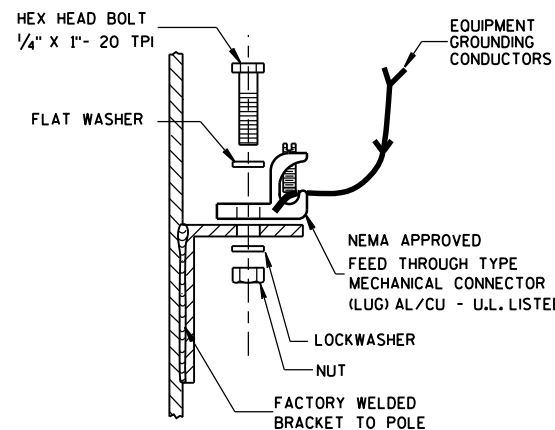
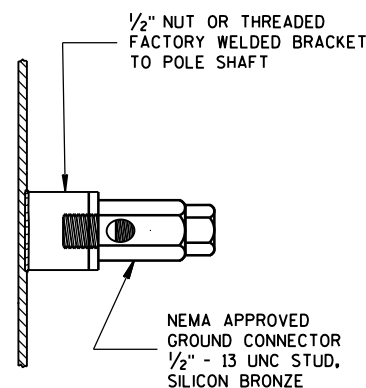
**TYPICAL LUMINAIRE MAST ARM
(DOUBLE) MOUNTING BRACKETS**



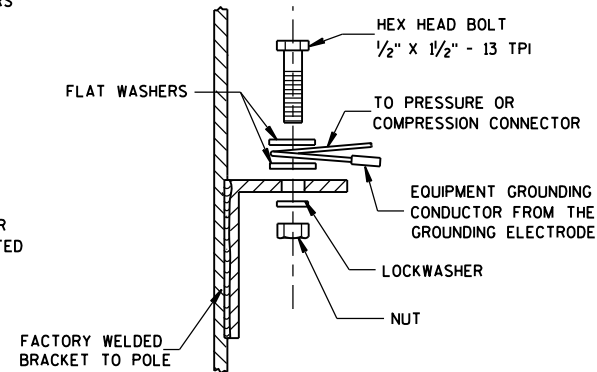
TYPICAL "J" HOOK LOCATION



BASE PLATE



TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL
BE STAINLESS STEEL



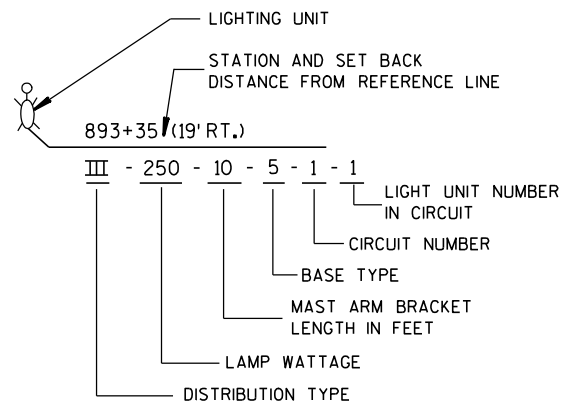
GENERAL NOTES

- CLAMP BOLT-NUT TIGHTENING TORQUE SHALL BE INDICATED BY INDENT STAMPING (1/2 INCH NUMERALS AND LETTERS) OR WEATHERPROOF PRINTING ON THE INSIDE OF THE CLAMP THAT IS WELDED TO THE ARM MEMBER.
- ⑩ 4.5" I.D. FOR LUMINAIRE MAST ARM CLAMP.
6.625" I.D. FOR TROMBONE MAST ARM CLAMP.
- ⑪ INDIVIDUAL BASE PLATE ANCHOR ROD COVERS. (4 REQUIRED)
- ⑫ BASE PLATE SLOTTED TO ACCEPT 11" THROUGH 12" BOLT CIRCLE USING 1" DIAMETER ANCHOR RODS.
- ⑬ OUTSIDE SHIM DIAMETER - (4.5" O.D. FOR LUMINAIRE MAST ARM)
(6.625" O.D. FOR TROMBONE MAST ARM)
- ⑭ VARIABLE SHIM THICKNESS - (0.10", 0.25", 0.35", 0.53" OR 0.70")
SHIM THICKNESS FOR TROMBONE MAST ARMS MAY BE TYPICALLY 0.25", 0.35", 0.53" OR 0.70".
SHIM THICKNESS FOR LUMINAIRE MAST ARMS MAY BE TYPICALLY 0.10", 0.25" OR 0.35".
SHIM MATERIAL SHALL BE ALUMINUM ALLOY.
SHIM THICKNESS SHALL BE IMPRESSED INTO EACH SHIM. NUMERALS SHALL BE 1/4" HIGH AND LEGIBLE.
THE CONTRACTOR SHALL SUBMIT TWO COPIES OF ALL SHIM SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL.
- ⑮ LEVELING SHIMS, DESIGNED FOR THE PURPOSE, SHALL BE USED WHEN PLUMBING POLES. THE USE OF WASHERS IN LIEU OF PROPER LEVELING SHIMS IS NOT ACCEPTABLE. LEVELING SHIMS SHALL BE USED ONLY BETWEEN THE TOP OF THE CONCRETE BASE AND A METALLIC BASE PLATE.
SHIMS SHALL BE LONG ENOUGH AND WIDE ENOUGH TO COMPLETELY COVER THE AREA UNDER THE LENGTH AND WIDTH OF THE BASE MOUNTING FLANGE.

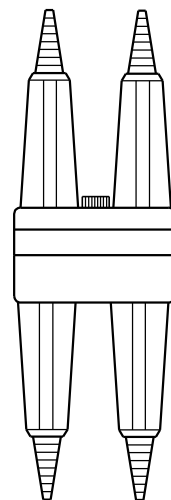
HARDWARE DETAILS FOR POLE MOUNTINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

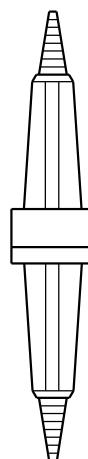
APPROVED
2/7/2013
DATE
/S/ Ahmet Demirbilek
STATE ELECTRICAL 143
FWHA



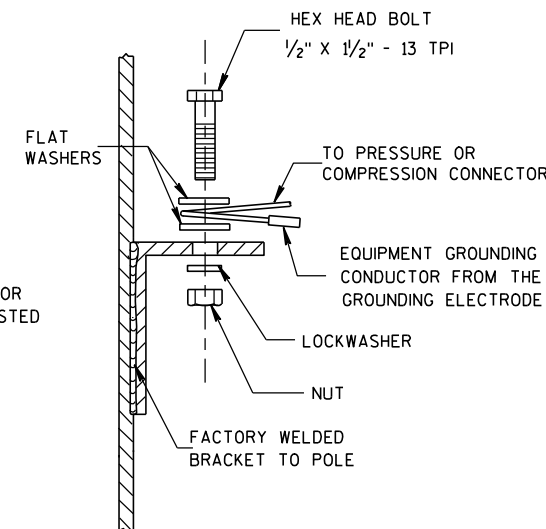
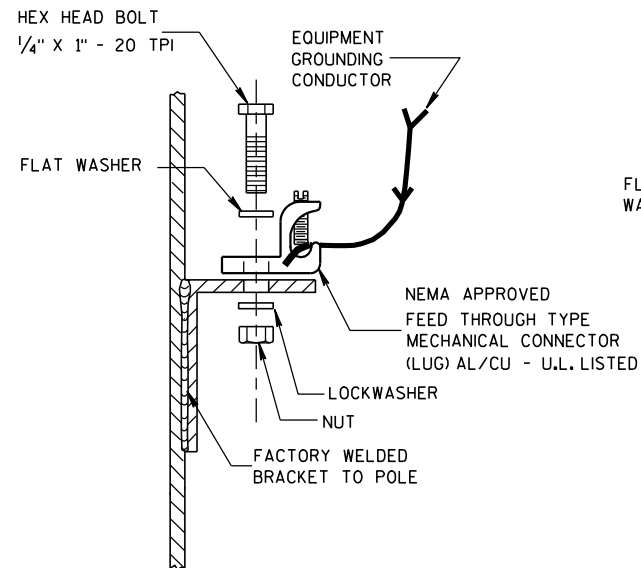
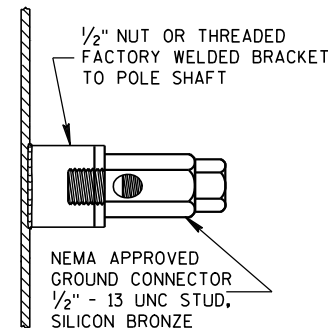
LIGHTING UNIT CODE
(TYPICAL)



DETAIL "A"
BREAKAWY
DOUBLE POLE WITH
WATERPROOF
INSULATING BOOT



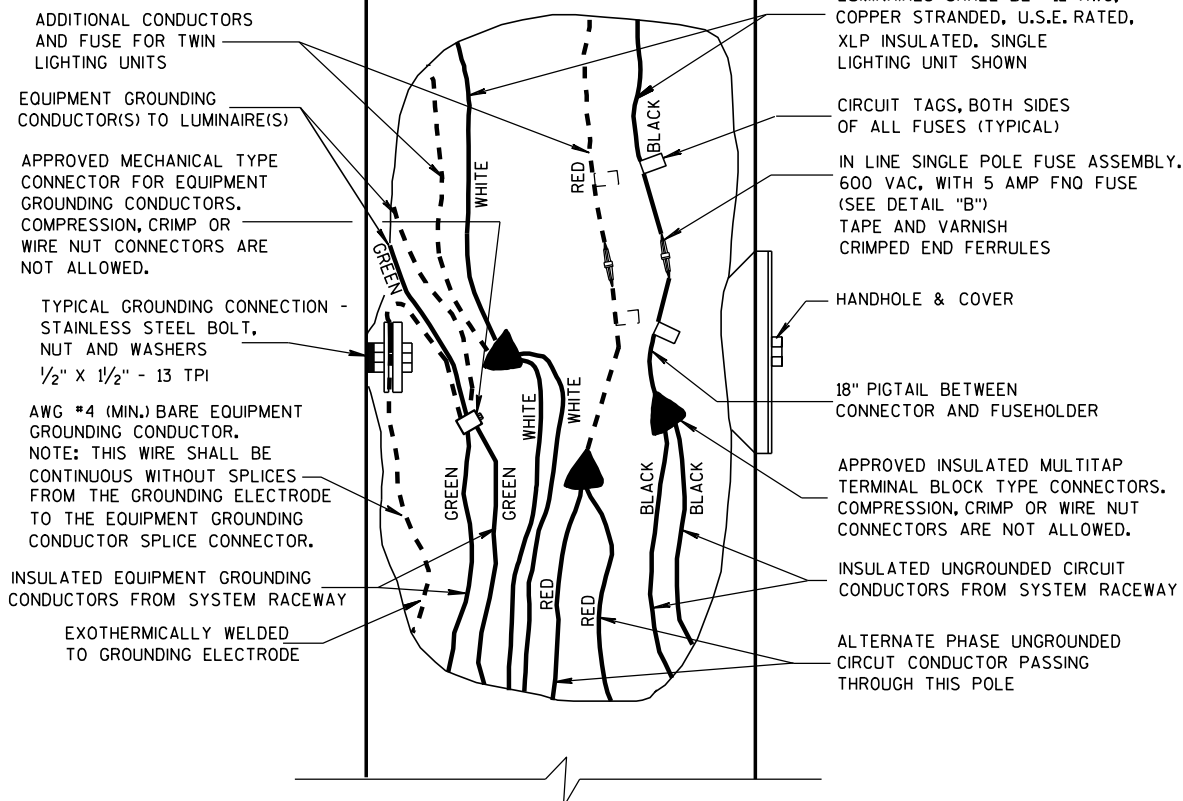
DETAIL "B"
BREAKAWY
SINGLE POLE WITH
WATERPROOF
INSULATING BOOT



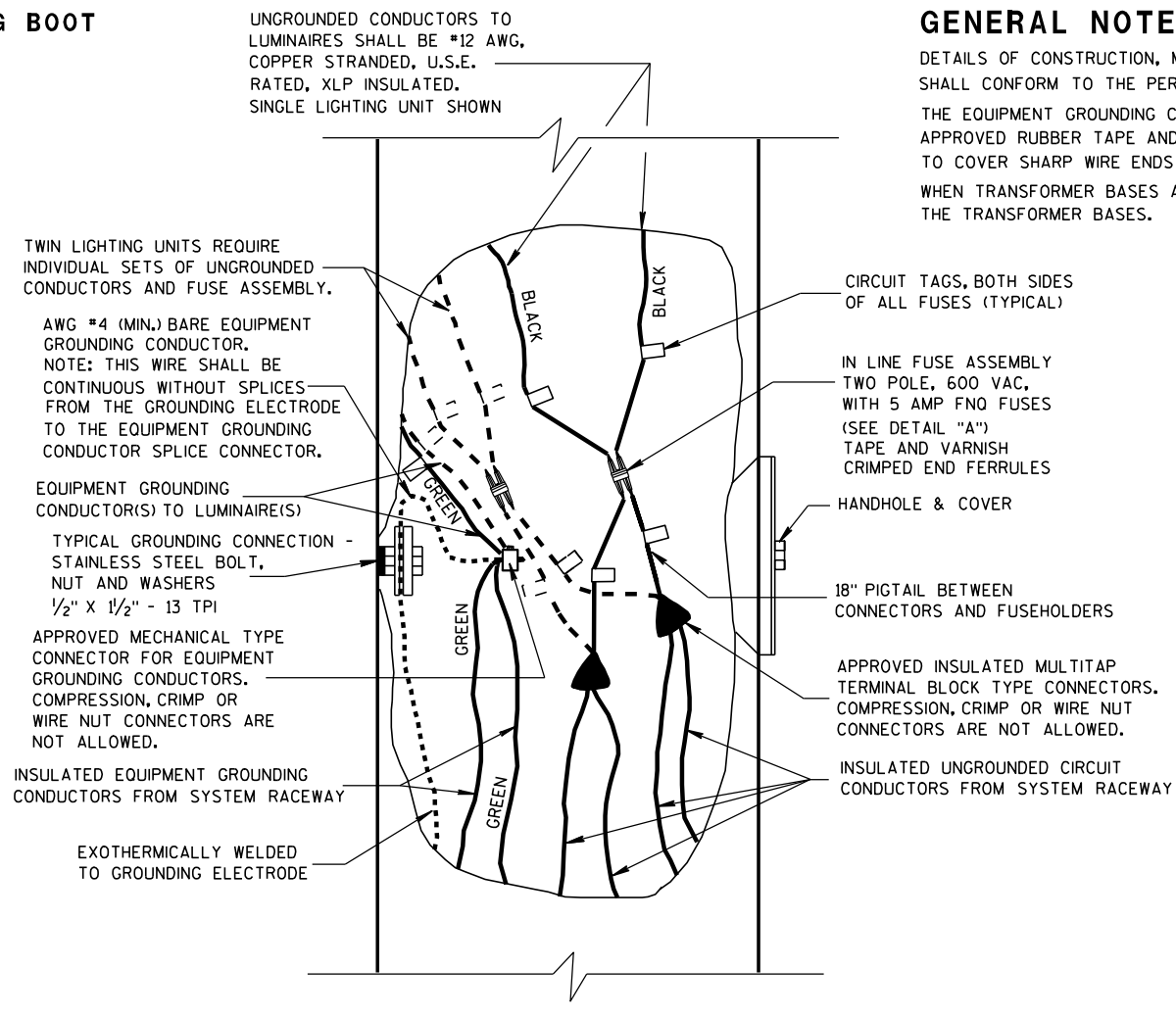
TYPICAL GROUNDING CONNECTIONS
NUT, BOLT, WASHERS AND LOCKWASHERS SHALL BE STAINLESS STEEL

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
THE EQUIPMENT GROUNDING CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND THEN 3 WRAPS (MINIMUM) OF APPROVED VINYL TAPE TO COVER SHARP WIRE ENDS AFTER THE CONNECTION IS COMPLETED.
WHEN TRANSFORMER BASES ARE USED, ALL WIRING CONNECTIONS SHALL OCCUR WITHIN THE TRANSFORMER BASES.



3 WIRE - 120, 240 OR 480 VAC (UNGROUNDING CONDUCTOR)
WITH GROUNDED CONDUCTOR AND
WITH EQUIPMENT GROUNDING CONDUCTOR

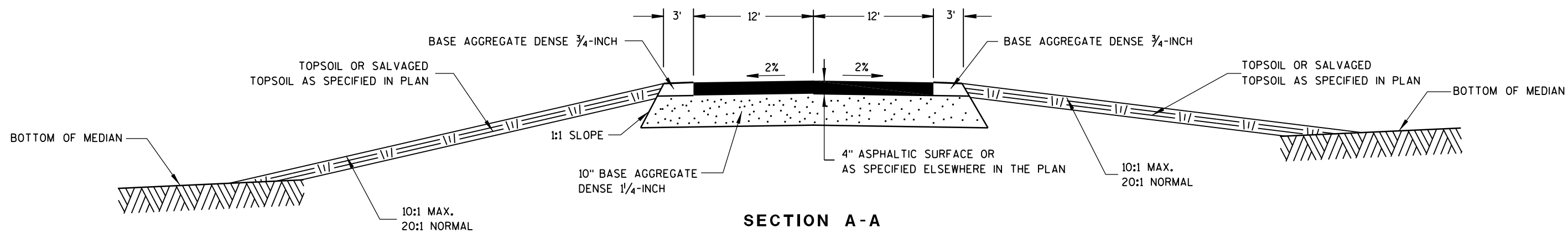


2 WIRE - 240 OR 480 VAC (UNGROUNDING CONDUCTORS)
WITH EQUIPMENT GROUNDING CONDUCTOR

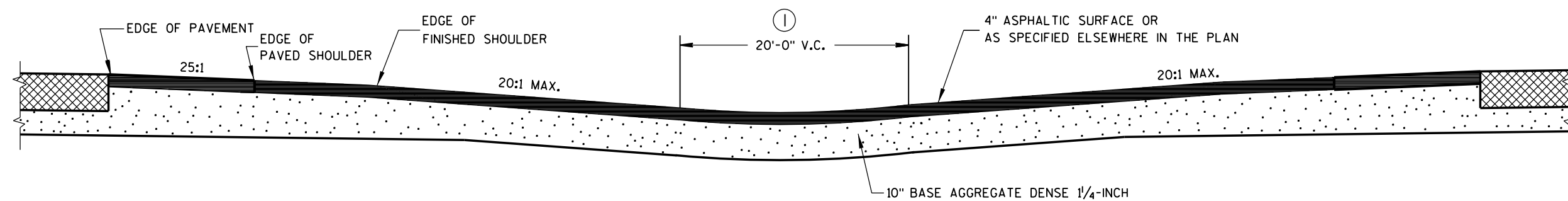
NON-FREWAY LIGHTING UNIT
POLE WIRING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

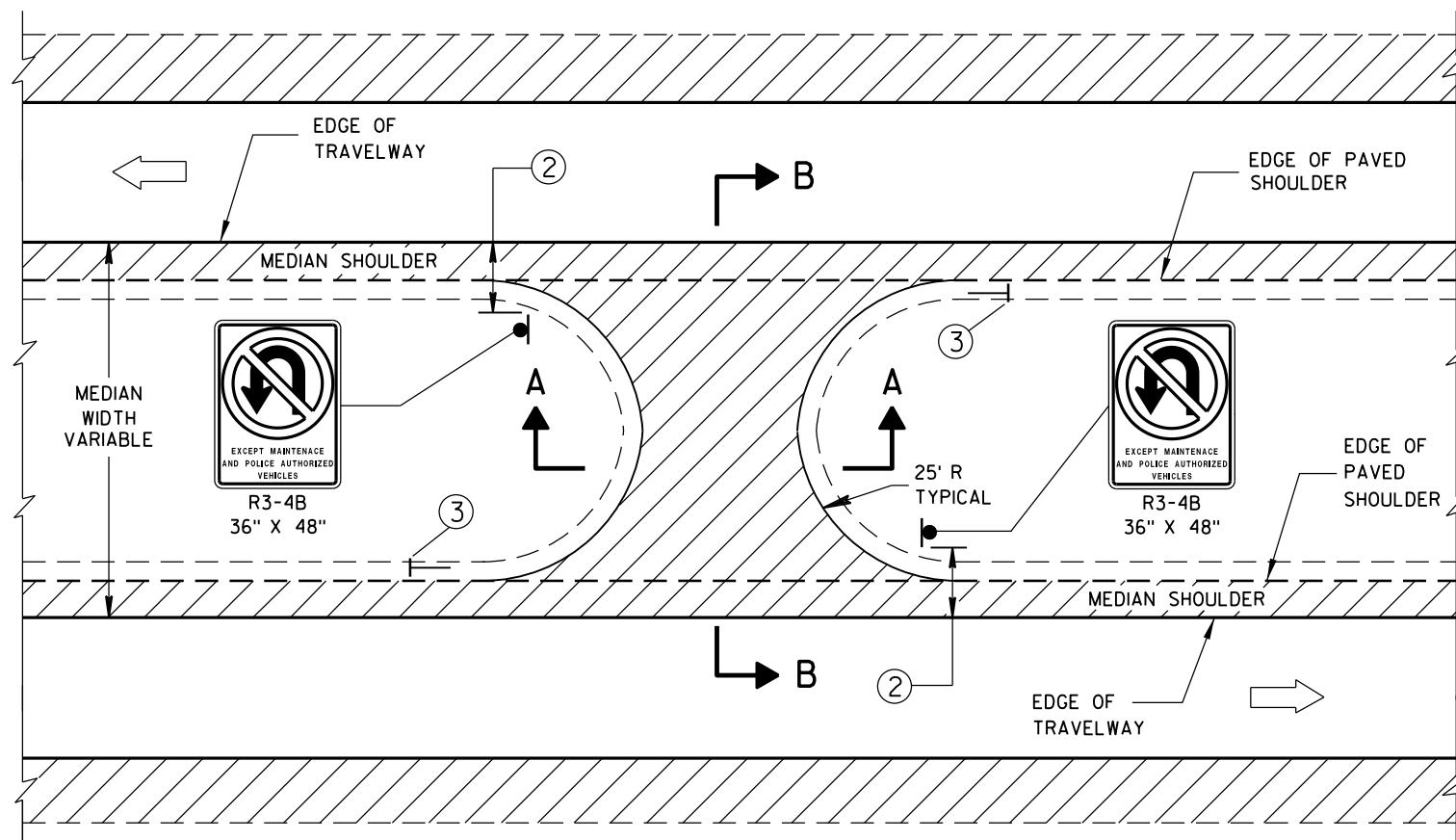
APPROVED
3/2/2011 /S/ Thomas J. Gorman
DATE STATE ELECTRICAL ENGI 144 HWYS
FHWA



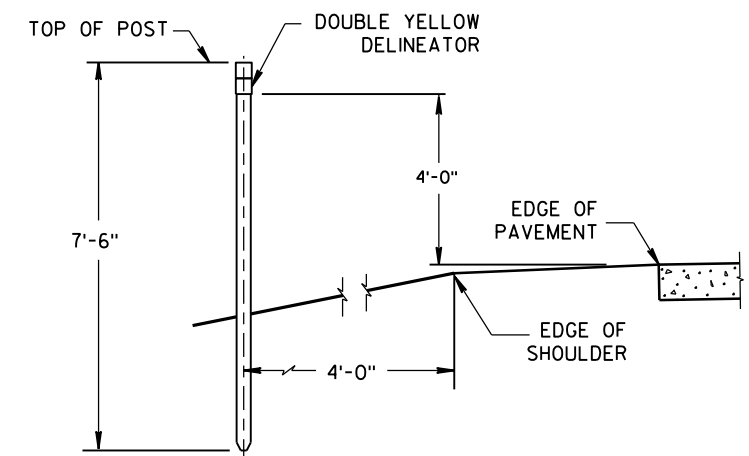
SECTION A-A



SECTION B-B



PLAN VIEW



DOUBLE YELLOW
DELINEATOR INSTALLATION

GENERAL NOTES

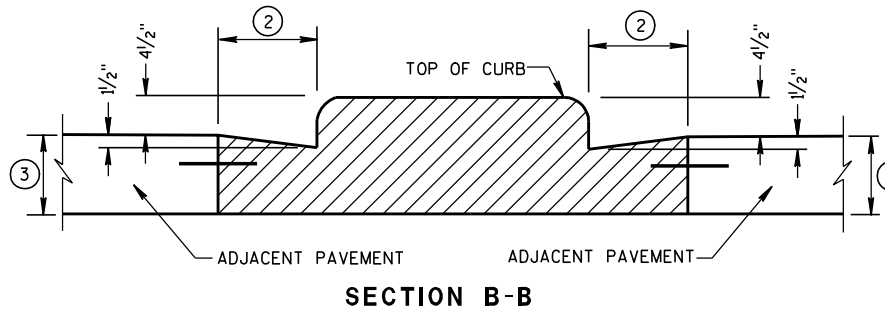
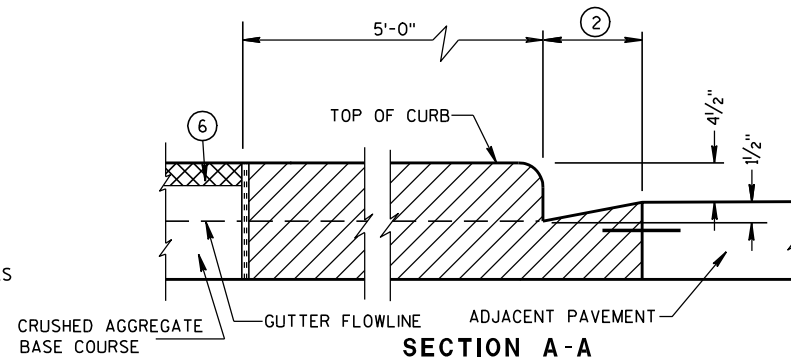
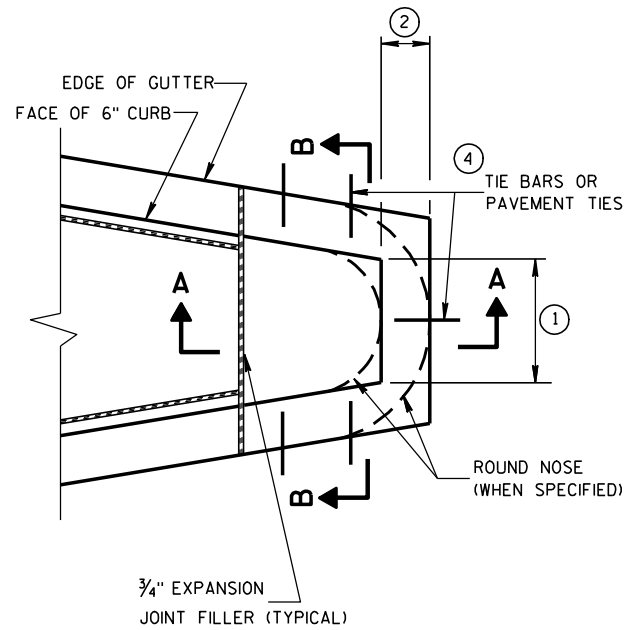
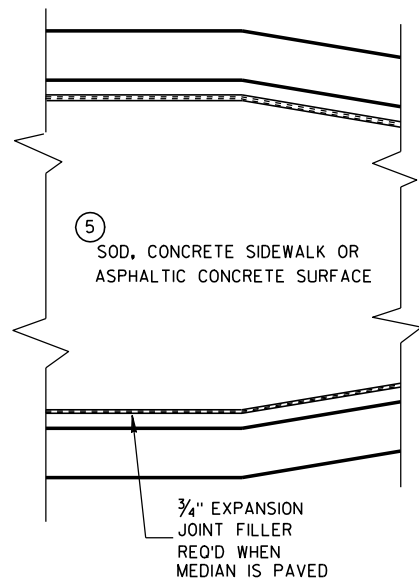
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- ① ADJUST VERTICAL CURVE LOCATION LATERALLY TO MAINTAIN 20:1 MAX.
- ② SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.
- ③ INSTALL DOUBLE YELLOW DELINEATOR. SEE STANDARD DETAIL DRAWING 15A2.

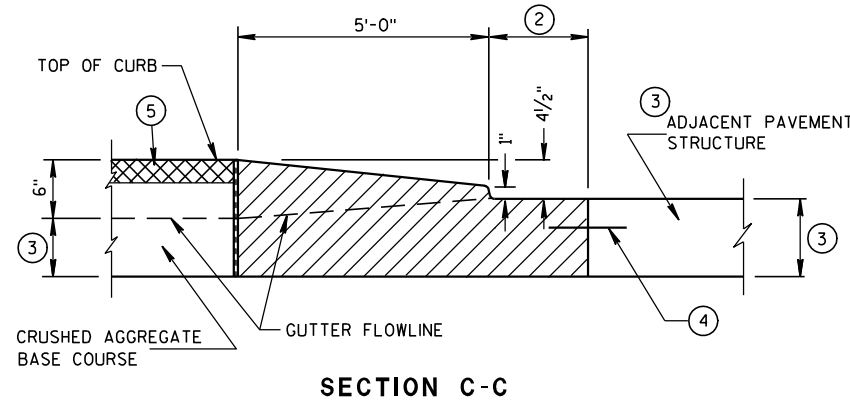
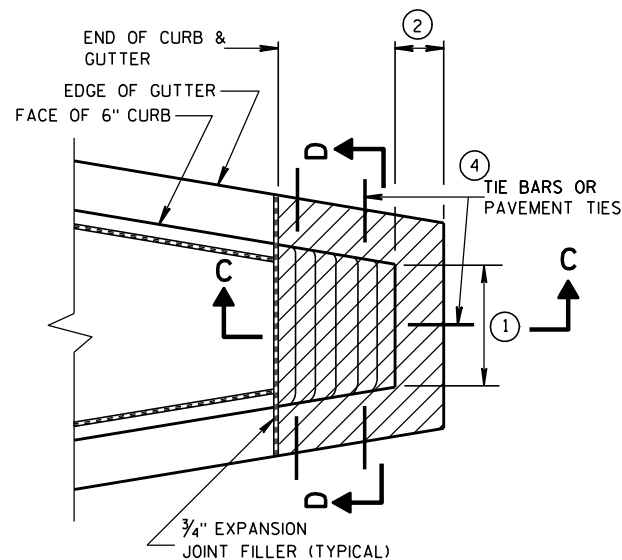
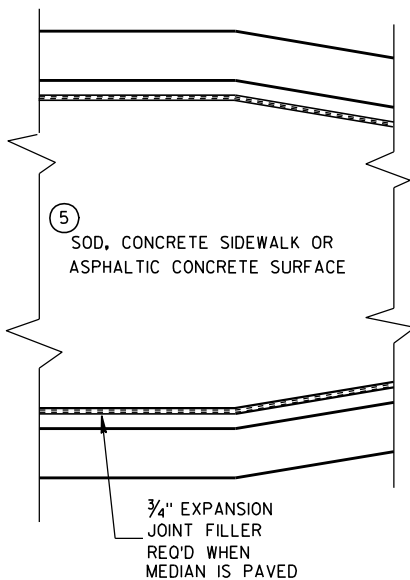
MAINTENANCE CROSSOVER
FOR FREEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

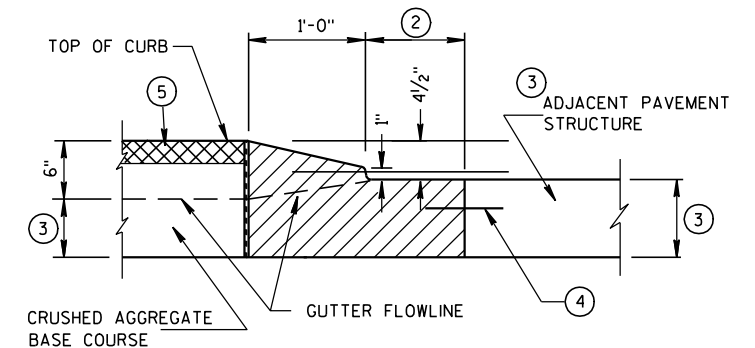
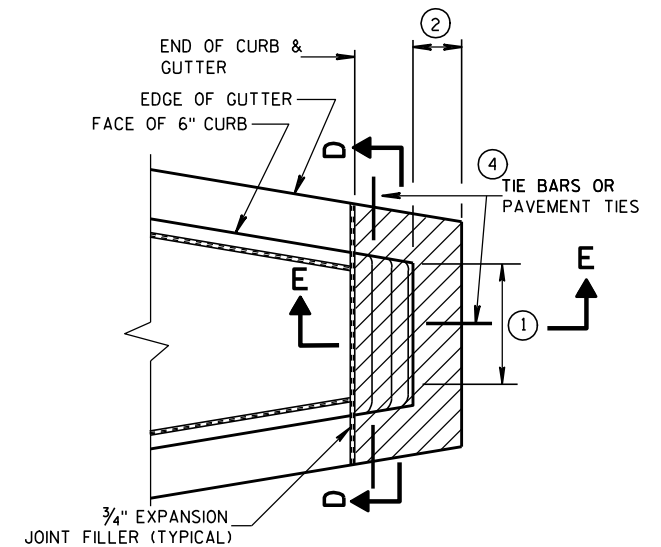
APPROVED
8/2013 DATE /S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER
FHWA



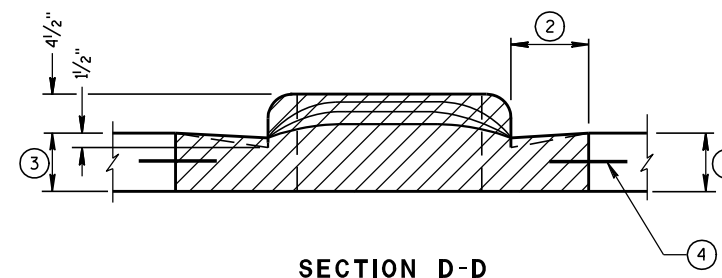
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



GENERAL NOTES

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

- ① SEE PLAN FOR MEDIAN NOSE WIDTH AND RADIUS (FOR ROUND NOSE ALTERNATE).
- ② WIDTH OF GUTTER TO MATCH EXISTING ADJACENT GUTTER OR AS SPECIFIED ELSEWHERE IN THE PLAN.
- ③ DEPTH EQUAL TO ADJACENT PAVEMENT. ADJACENT PAVEMENT STRUCTURE DETAILS ARE SHOWN ON THE PLAN. TYPICAL OPTIONS ARE:
 - (1) NEW OR EXISTING CONCRETE PAVEMENT.
 - (2) ASPHALTIC CONCRETE PAVEMENT OVER NEW OR EXISTING CONCRETE BASE COURSE.
 - (3) ASPHALTIC CONCRETE PAVEMENT OVER CRUSHED AGGREGATE BASE COURSE.

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

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

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

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/8/2006

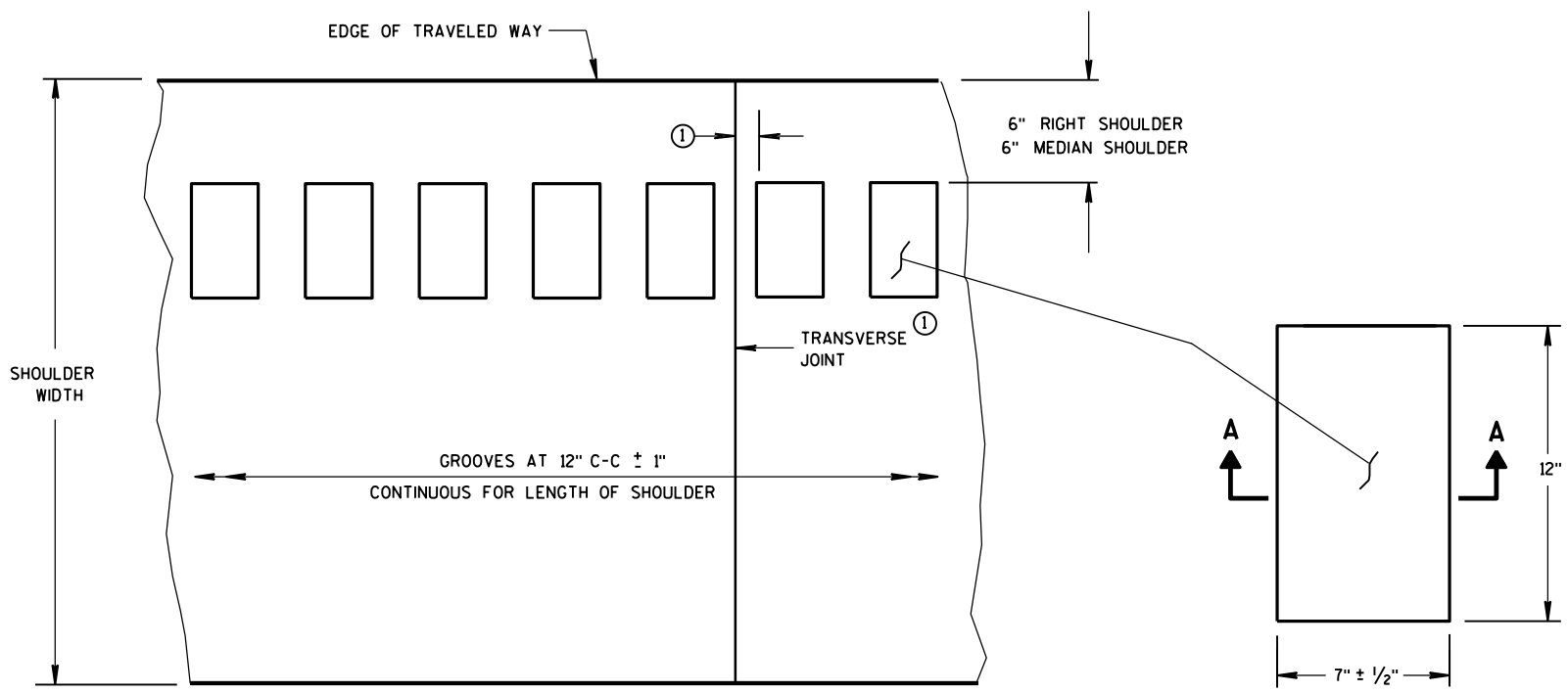
DATE

/S/ Jerry H. 7----

ROADWAY STANDARDS 146

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FHWA



PLAN VIEW
SHOULDER WITH GROOVES

PLAN VIEW
(SINGLE GROOVE)

PLACEMENT DETAIL FOR MILLED RUMBLE STRIP

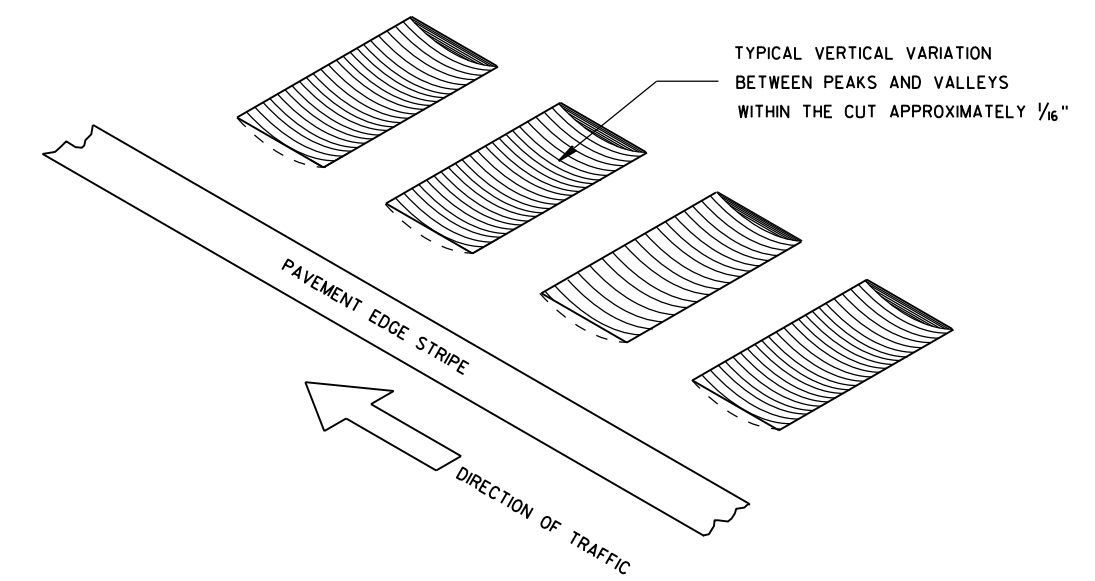
GENERAL NOTES

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

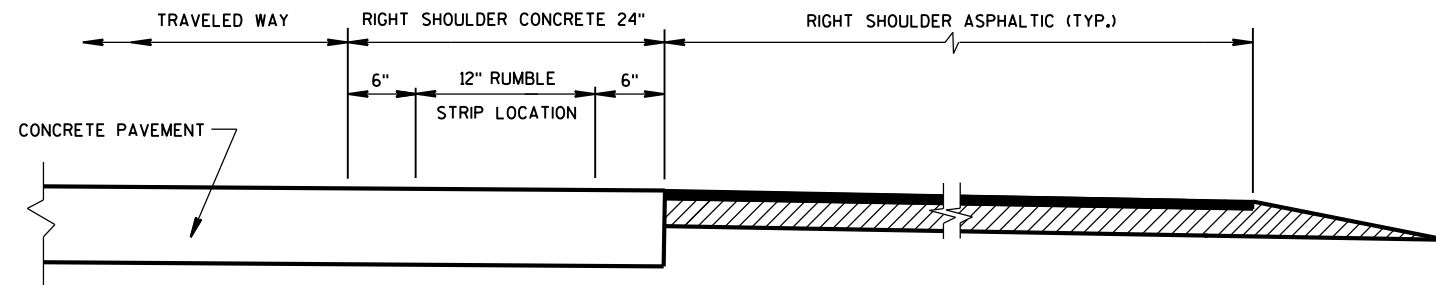
RUMBLE STRIPS ON EXPRESSWAYS

DO NOT INSTALL RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL DRIVEWAYS, PRIVATE DRIVEWAYS OR ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, BRIDGE DECKS, BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSING. THE ATTACHED STANDARD DETAIL DRAWING SHOWS THE LOCATION OF THE RUMBLE STRIPS AT INTERCHANGE AREAS.

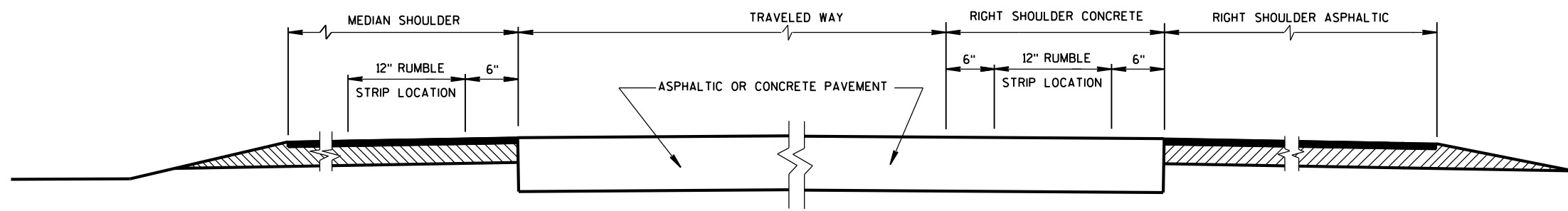
① CONCRETE PAVEMENT - RUMBLE STRIPS SHALL BE A MINIMUM OF 6" AWAY FROM TRANSVERSE JOINTS.



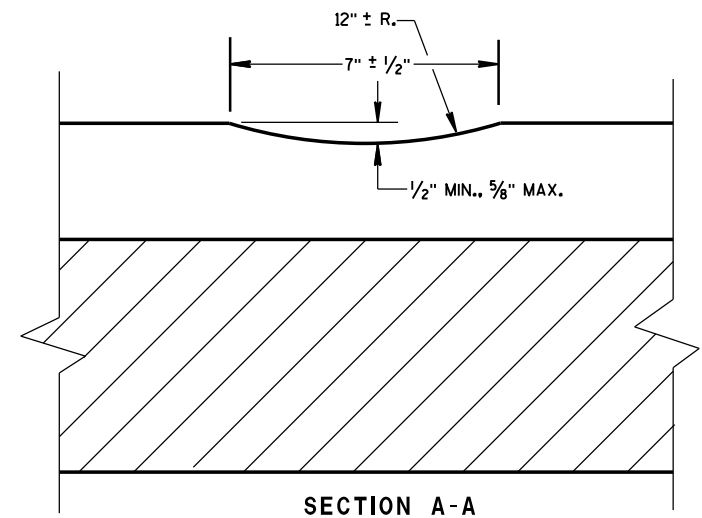
ISOMETRIC



SECTION VIEW
(CONCRETE PAVEMENT EXTENDS INTO RIGHT SHOULDER)



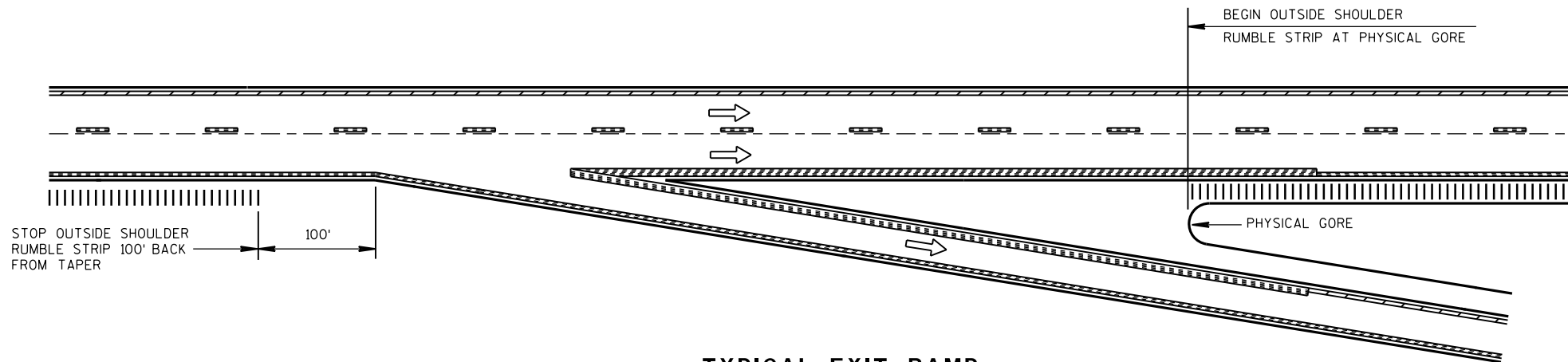
SECTION VIEW
TYPICAL LOCATIONS OF SHOULDER RUMBLE STRIPS
IN RURAL DIVIDED HIGHWAYS
(ONE ROADWAY IS SHOWN)



SECTION A-A

SHOULDER RUMBLE STRIP,
MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 147



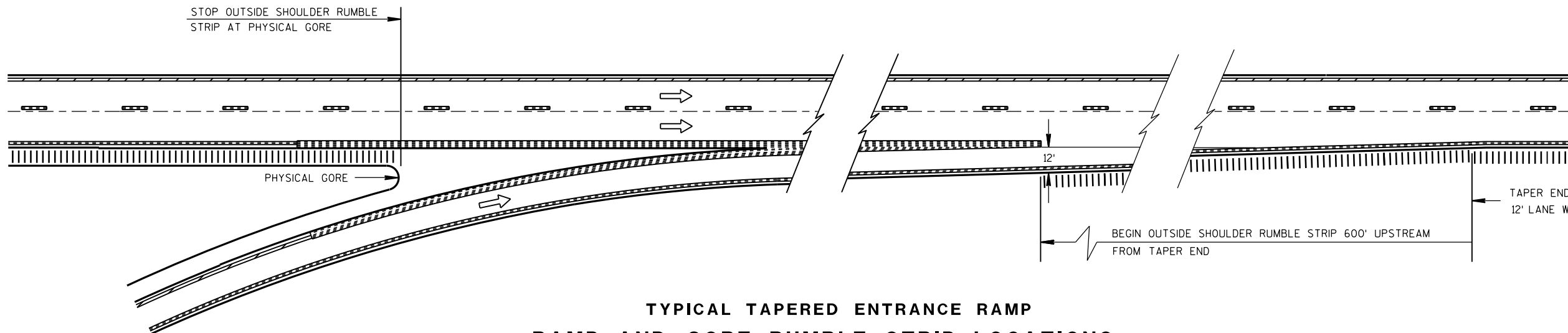
TYPICAL EXIT RAMP

NOTES:

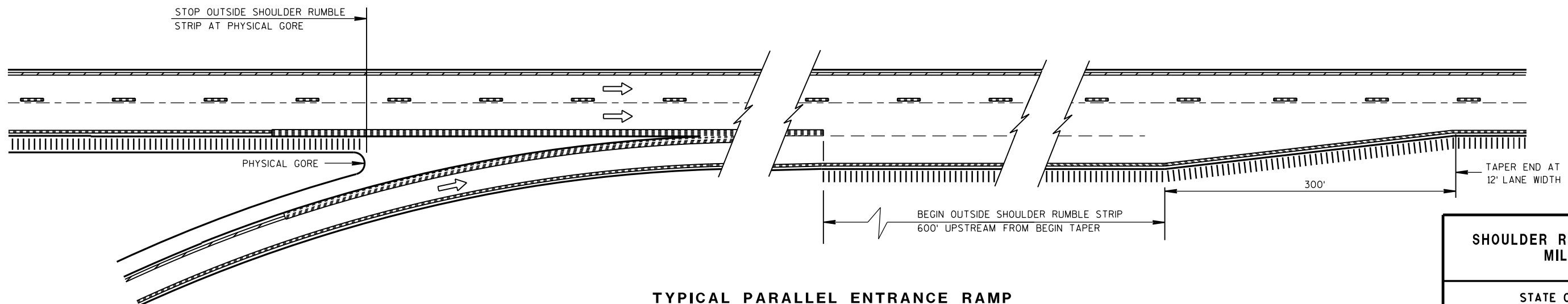
NO RUMBLE STRIP ON EXIT, DIRECTIONAL, OR ENTRANCE RAMPS, EXCEPT NEAR THE ENTRANCE TAPER END AND ALONG THE PARALLEL RAMP AREA AS SHOWN.

PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

NOTE:
ARROW SYMBOL (→)
SHOWS DIRECTION OF TRAVEL



**TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**



**TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE RUMBLE STRIP LOCATIONS**

**SHOULDER RUMBLE STRIP,
MILLING**

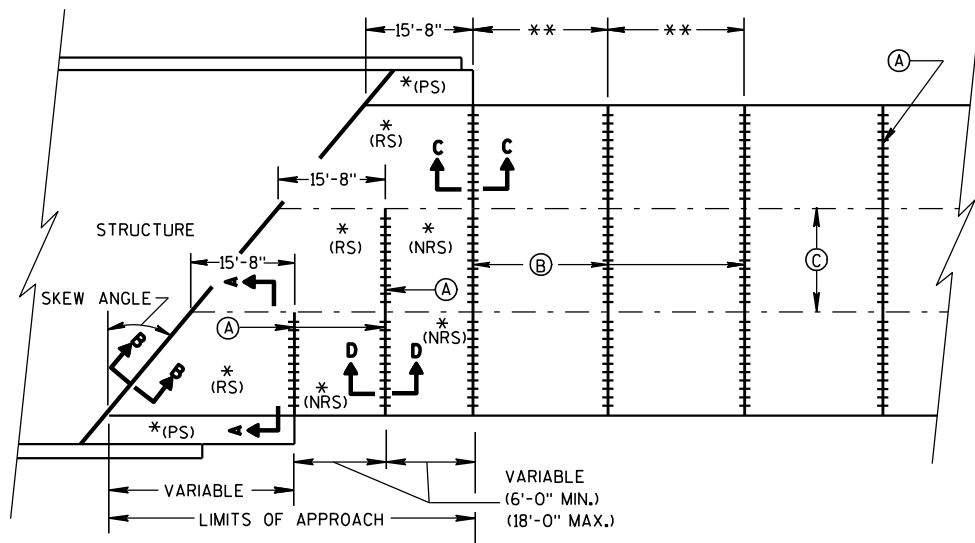
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

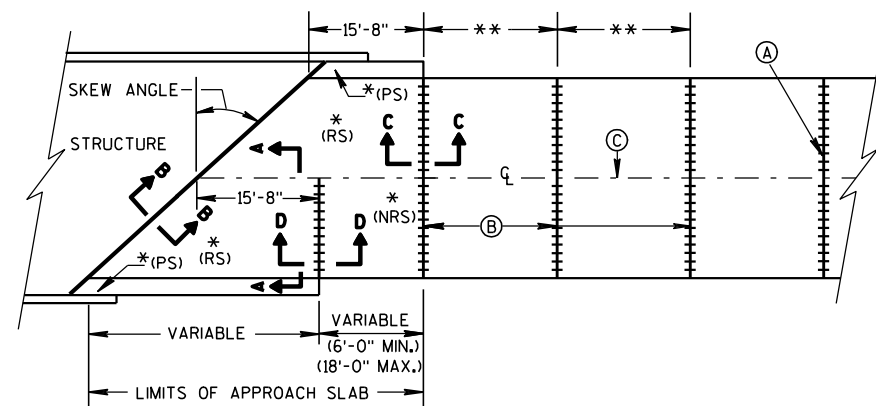
12/17/2012
DATE

FHWA

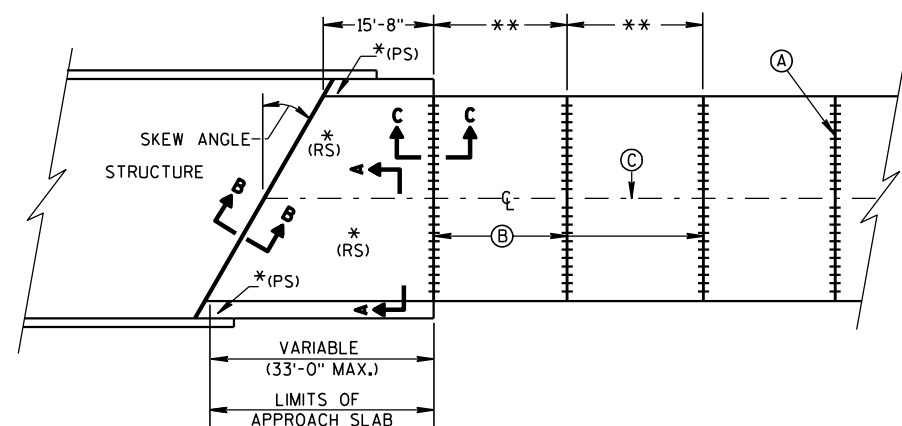
/S/ Jerry H. Zoag
ROADWAY STANDARDS ENGINEER 148 ENT



**SKewed APPROACH
(PAVEMENT MORE THAN 2 LANES)**

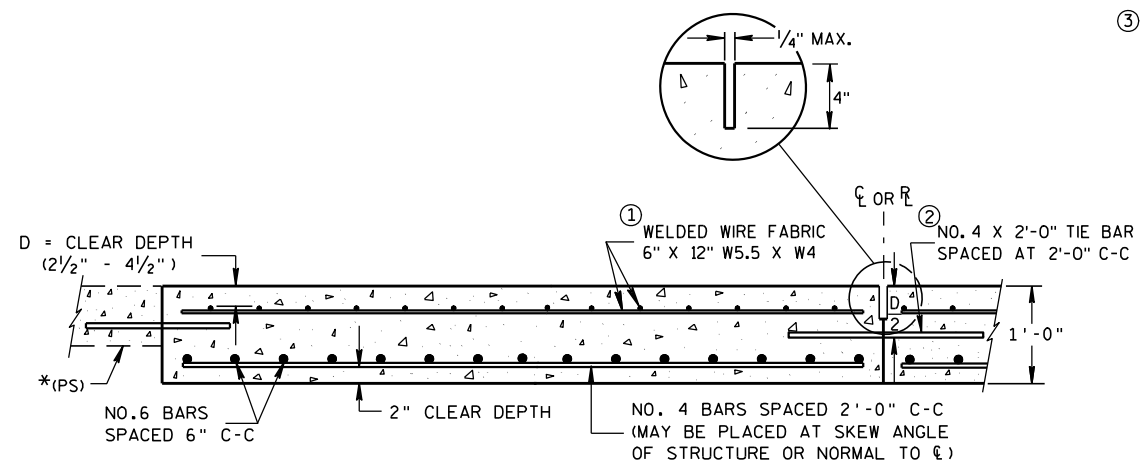


**SKEWS > 30°
(PAVEMENT WIDTH ≤ 30')**

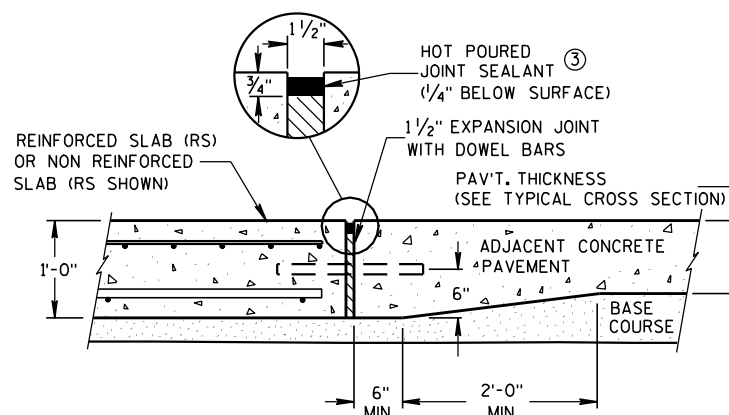


**SKEWS ≤ 30°
(PAVEMENT WIDTH ≤ 30')
APPROACH SLAB AND ADJACENT PAVEMENT**

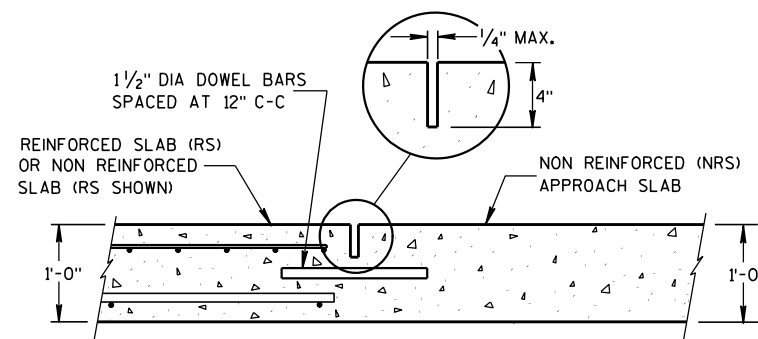
- * (RS) = REINFORCED CONCRETE SLAB
 * (PS) = PAVED CONCRETE SHOULDER: CONCRETE PAVEMENT, OR CONCRETE SURFACE DRAIN
 (SEE DETAILS ELSEWHERE IN THE PLAN)
 * (NRS) = NON-REINFORCED CONCRETE SLAB
 ** STANDARD TRANSVERSE JOINT SPACING
 (SEE SDD 13C4, SDD 13C11, & SDD 13C13)
 (A) STANDARD CONTRACTION JOINT NORMAL TO R_L OR R_C
 (B) 1½" EXPANSION JOINT WITH DOWEL BARS NORMAL TO R_L OR R_C
 (C) STANDARD LONGITUDINAL JOINT AND TIE BARS.



**SECTION A-A
REINFORCEMENT POSITIONING DETAIL**



**SECTION C-C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**



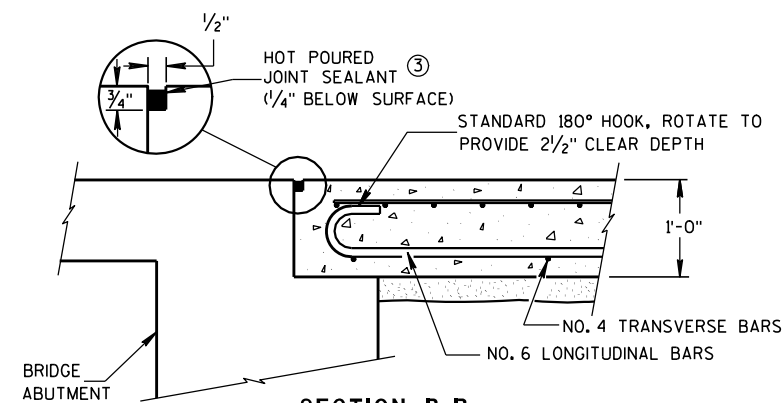
**SECTION D-D
CONTRACTION JOINT**

GENERAL NOTES

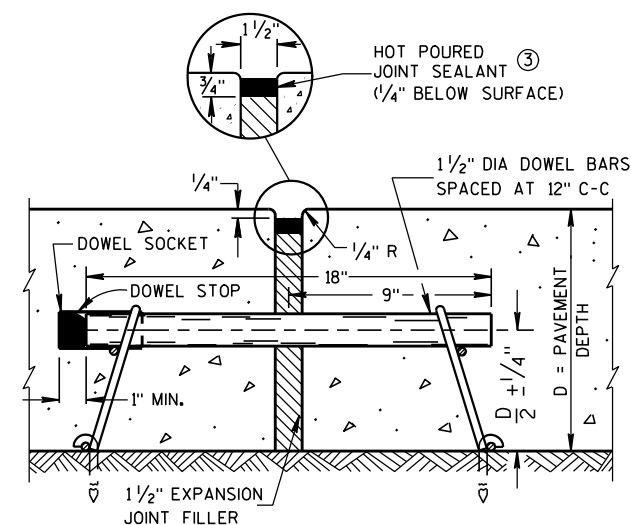
APPROACH SLABS ABUTTING AN HMA PAVEMENT OVER BASE COURSE DO NOT NEED TO BE DOWELED.

THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

- THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2'-0" C-C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- THE CONTRACTOR MAY OMIT TIE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- USE A JOINT SEALANT MEETING THE REQUIREMENTS OF ASTM D6690.



**SECTION B-B
BEND DETAIL
BOTTOM REINFORCEMENT**



EXPANSION JOINT

CONCRETE PAVEMENT APPROACH SLAB

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12/11/2009

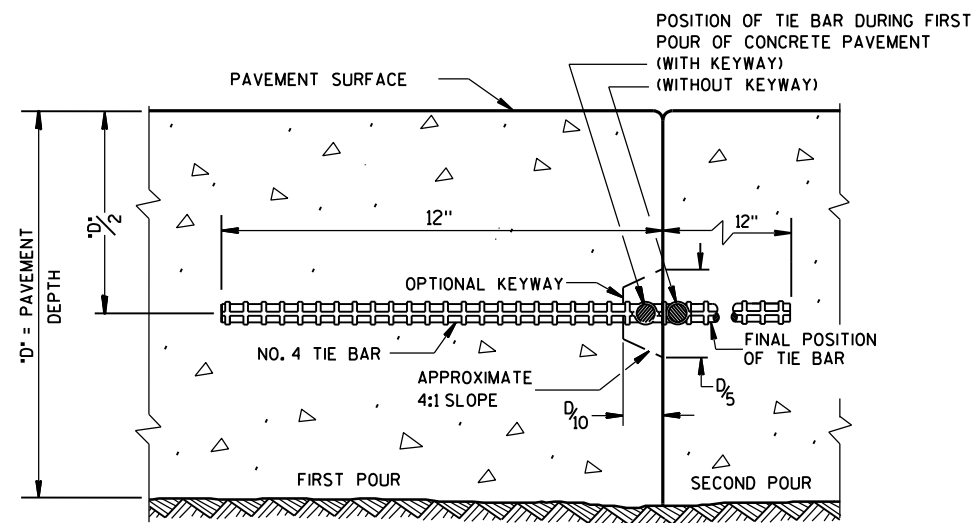
DATE

FHWA

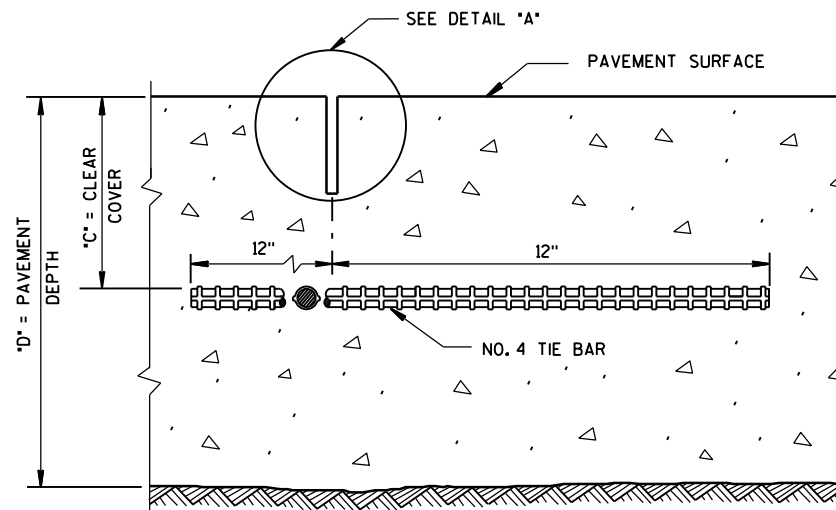
/S/ Deb Bischoff

PAVEMENT POLICY & DE 149

JEER



CONSTRUCTION JOINT



SAWED JOINT

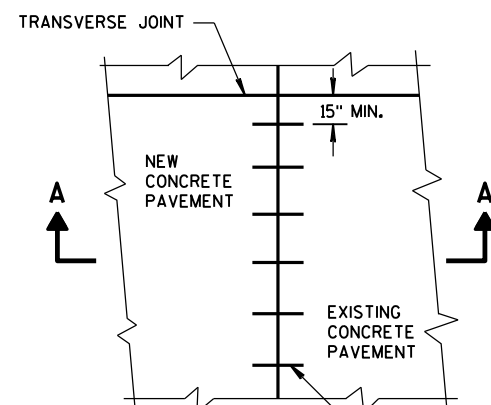
GENERAL NOTES

DO NOT SEAL OR FILL LONGITUDINAL JOINTS.

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

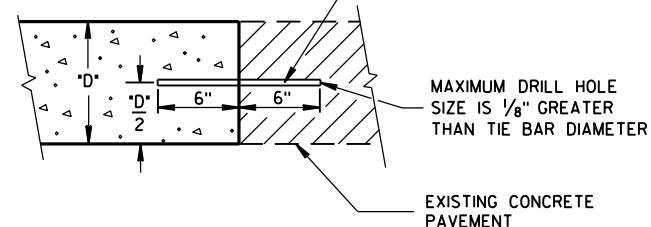
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

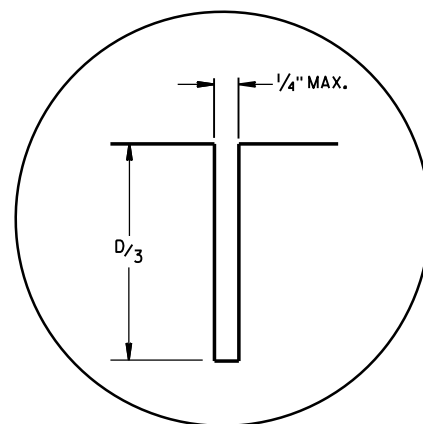


PLAN VIEW

NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



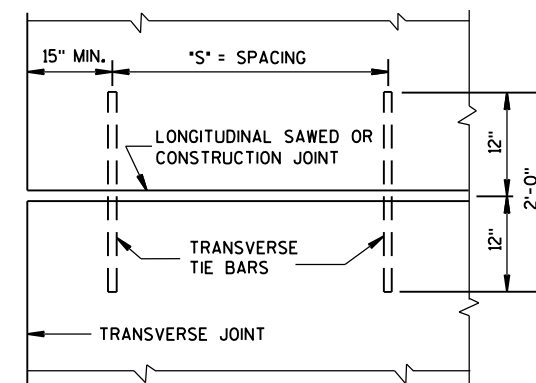
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"

TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH 24' OR 26'	≥ 30'
6, 6 1/2"	3" ± 1/2"	48"	42"
7, 7 1/2"	3 1/4" ± 1"	45"	36"
8, 8 1/2"	3 3/4" ± 1"	39"	30"
9, 9 1/2"	4 1/4" ± 1"	33"	27"
10, 10 1/2"	4 3/4" ± 1"	30"	24"
11, 11 1/2"	5 1/4" ± 1"	27"	21"
12"	5 3/4" ± 1"	24"	21"



PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

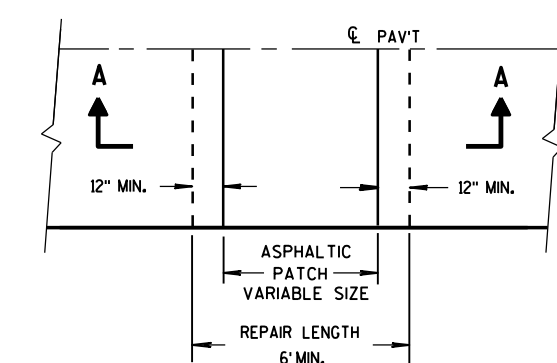
APPROVED

5-3-2013
DATE

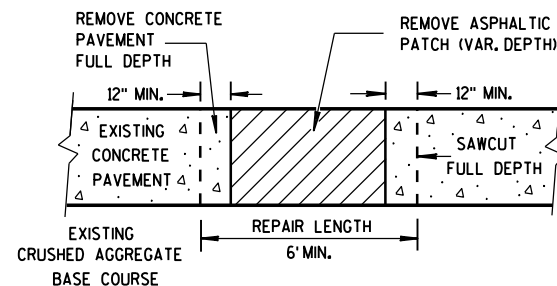
/S/ Deb Bischoff
PAVEMENT POLICY & DE 150

VEER

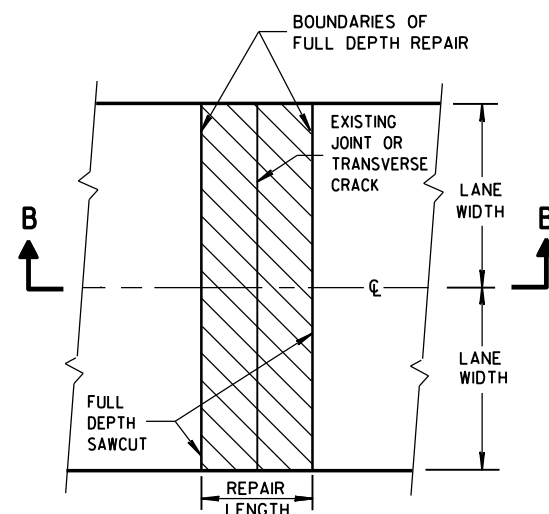
FHWA



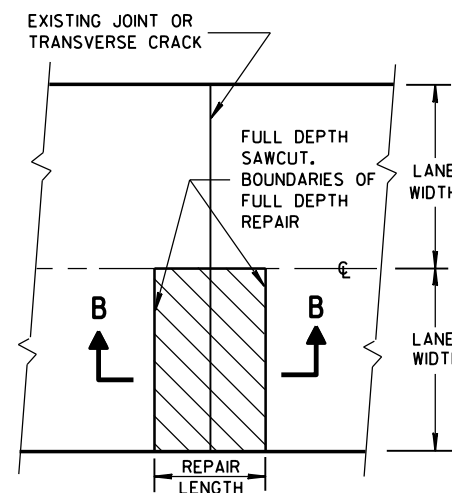
PLAN VIEW



SECTION A-A
HMA PATCH REMOVAL



PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)

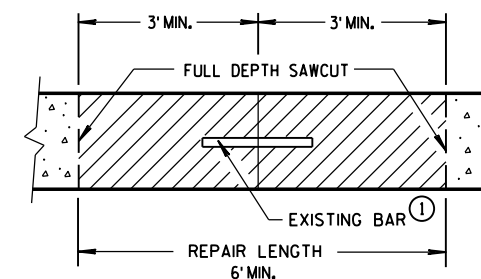
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES. ADDITIONAL SAW CUTS ARE NOT PAID FOR BY THE DEPARTMENT.

PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

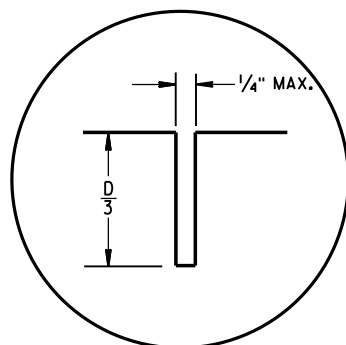
① DOWEL BARS MIGHT NOT EXIST.



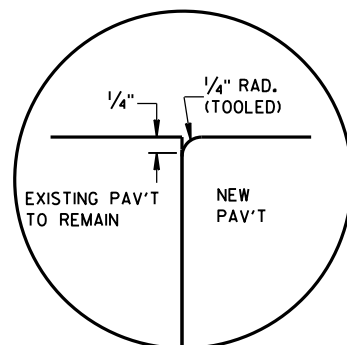
SECTION B-B
CONCRETE REMOVAL

TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH 24' OR 26'	≥ 30'
6, 6 1/2"	3" ± 1/2"	48"	42"
7, 7 1/2"	3 1/4" ± 1"	45"	36"
8, 8 1/2"	3 3/4" ± 1"	39"	30"
9, 9 1/2"	4 1/4" ± 1"	33"	27"
10, 10 1/2"	4 3/4" ± 1"	30"	24"
11, 11 1/2"	5 1/4" ± 1"	27"	21"
12"	5 3/4" ± 1"	24"	21"

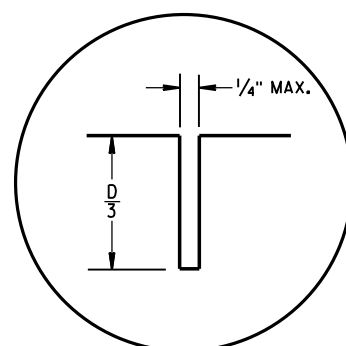


C1

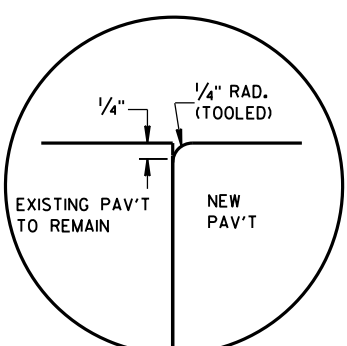


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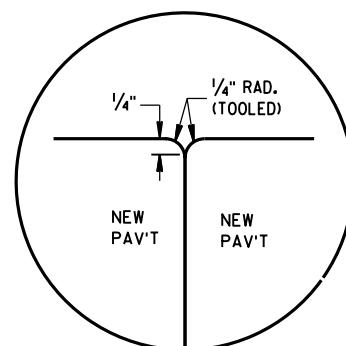
TRANSVERSE JOINTS



L1

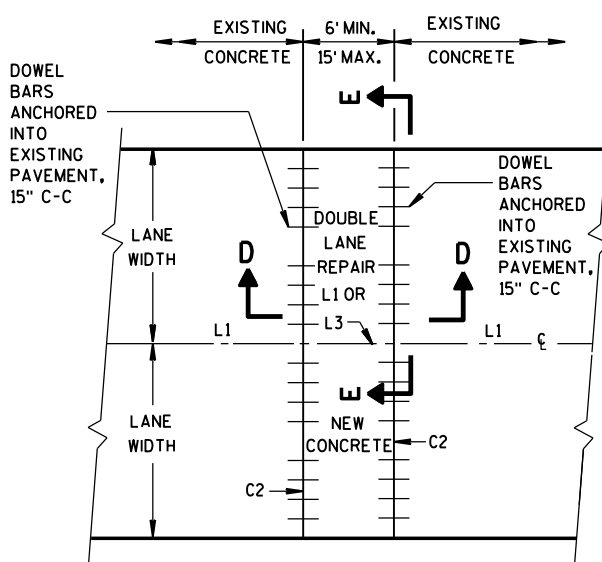


L2



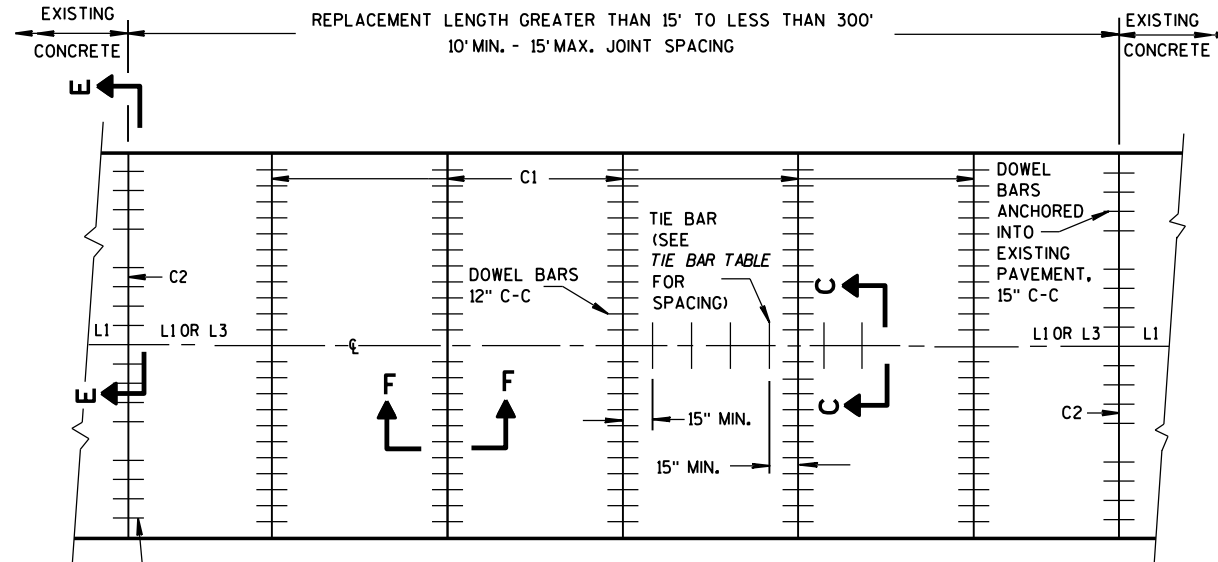
L3

LONGITUDINAL JOINTS



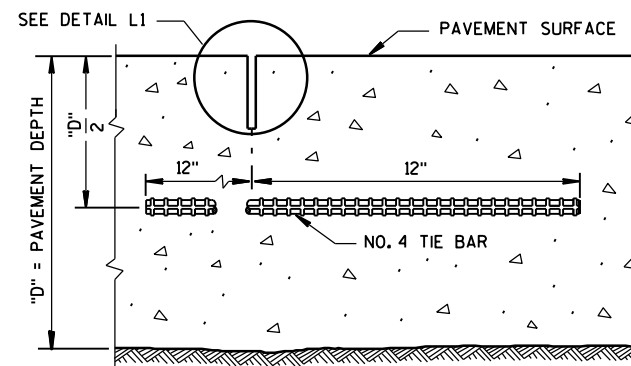
PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



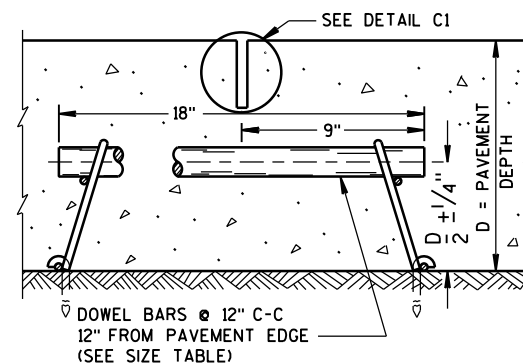
PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT



SECTION C-C

SAWED LONGITUDINAL JOINT

SECTION F-F
CONTRACTION JOINT

GENERAL NOTES

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

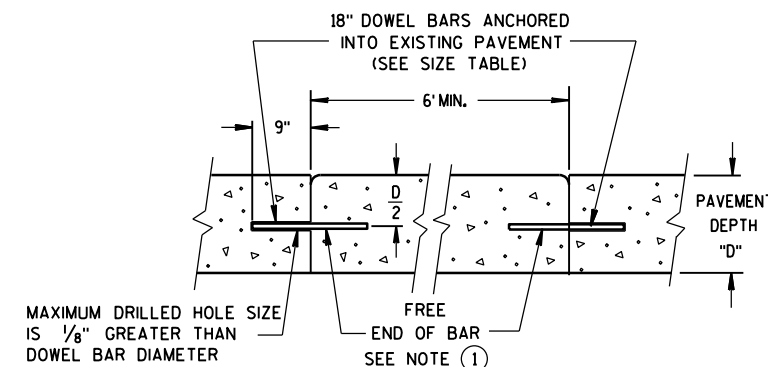
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

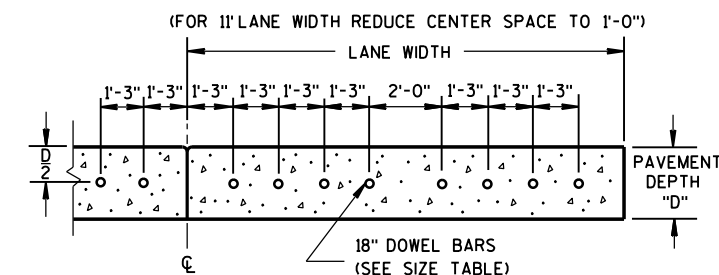
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

- ① APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



SECTION D-D



SECTION E-E

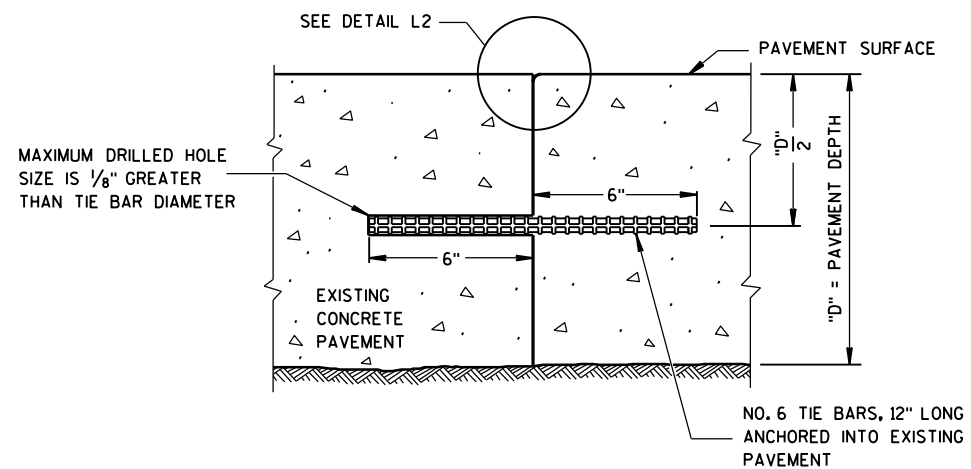
DRILLED DOWEL BAR CONSTRUCTION JOINT

PAVEMENT DEPTH, DOWEL BAR SIZE
AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6, 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

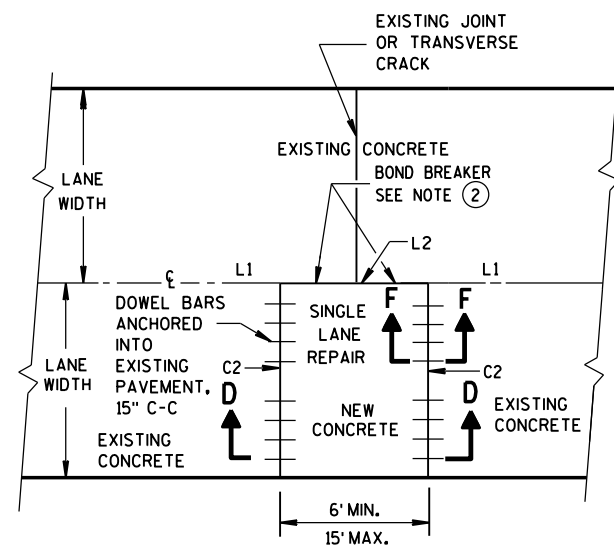
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 152



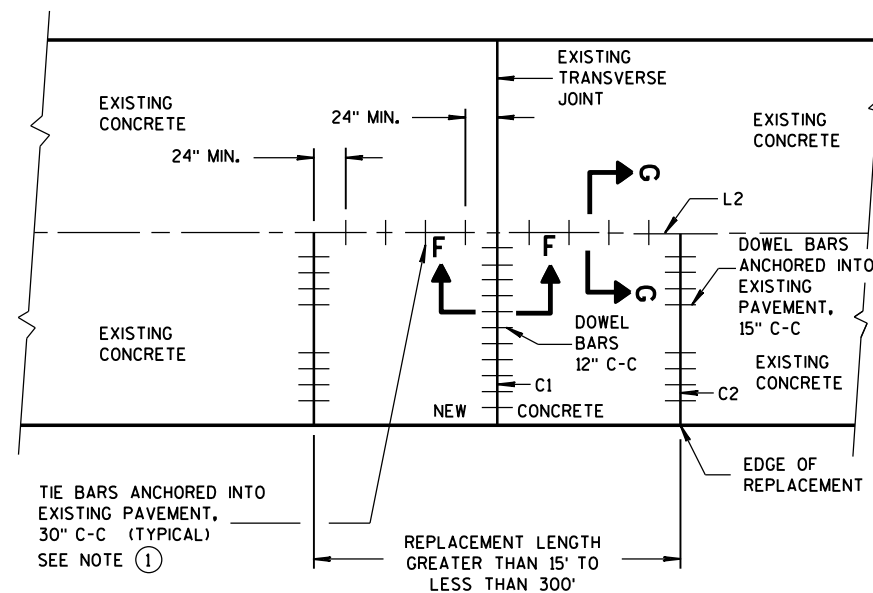
SECTION G-G
TIE BARS ANCHORED
INTO EXISTING PAVEMENT

GENERAL NOTES

- ① WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- ② USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.



PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPAIR



PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

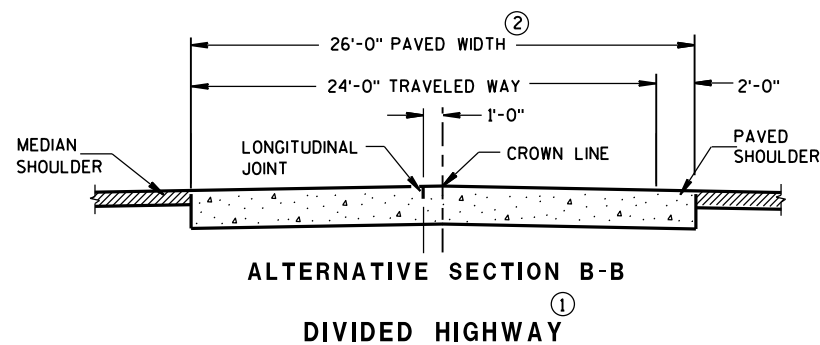
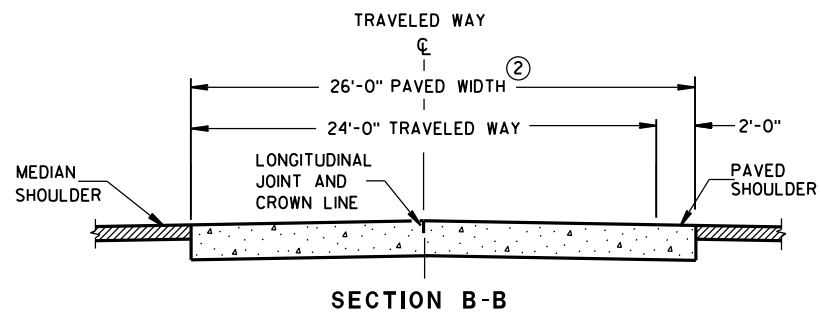
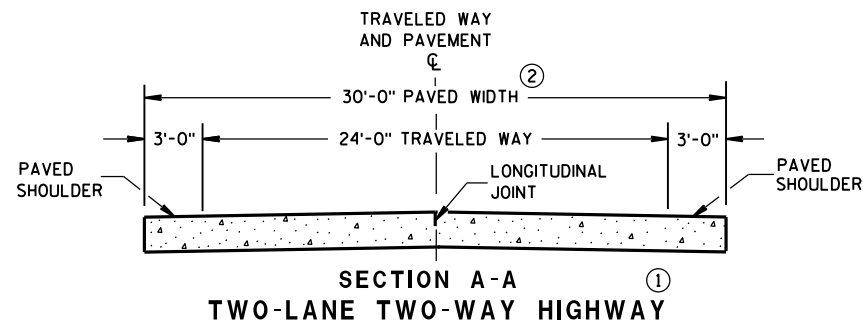
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

12-2013
DATE

FHWA

/S/ Deb Bischoff
PAVEMENT POLICY & DE 153 IER



GENERAL NOTES

CONTRACTION JOINTS

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

DO NOT SEAL OR FILL CONTRACTION JOINTS.

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

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

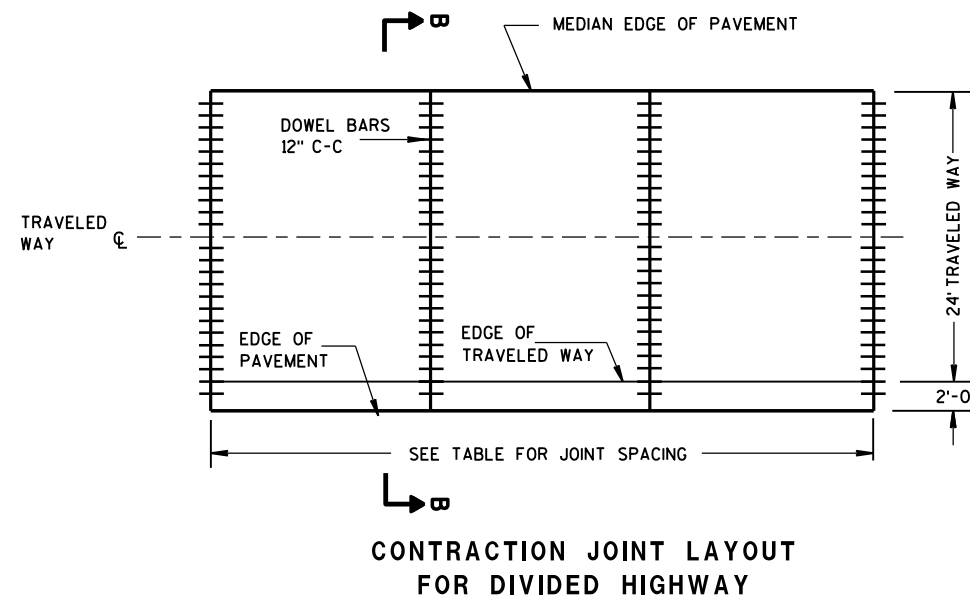
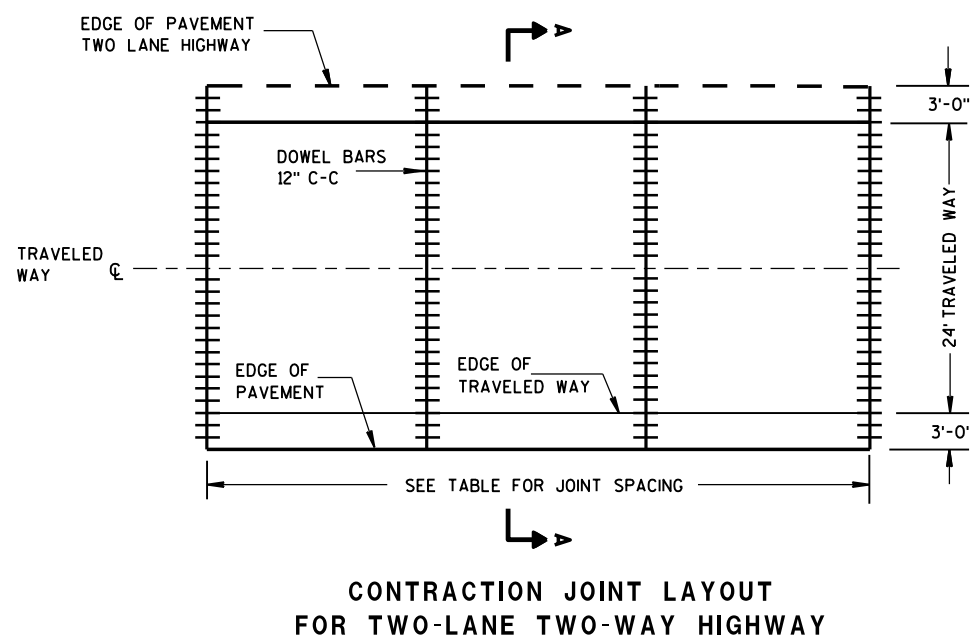
CONSTRUCTION JOINTS

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

- ① REFER TO TYPICAL CROSS SECTIONS FOR ADDITIONAL DETAILS.
- ② MEASURE THE ENTIRE PAVED WIDTH INCLUDING THE PORTION(S) LABELED PAVED SHOULDER AS CONCRETE PAVEMENT.

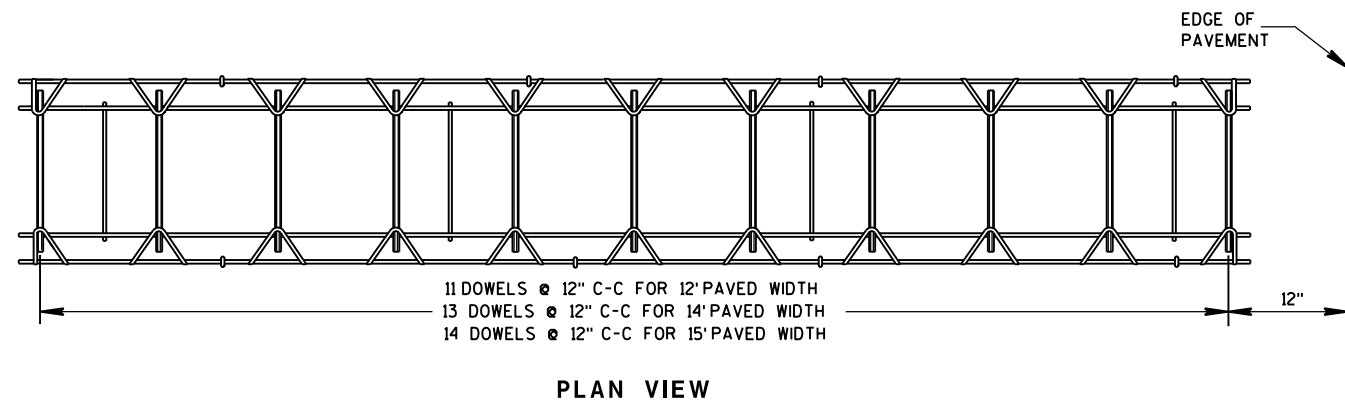
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6", 6 1/2"	NONE	12'
7", 7 1/2"	1"	14'
8", 8 1/2"	1 1/4"	15'
9", 9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'

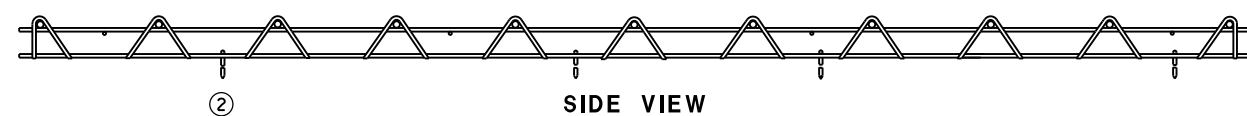


RURAL DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 154



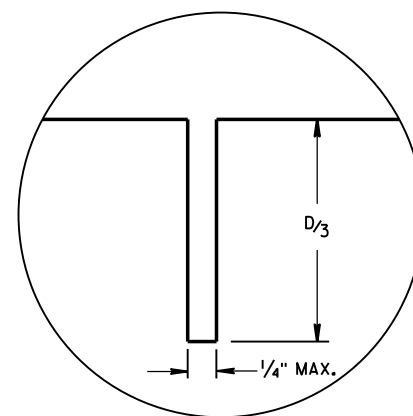
PLAN VIEW



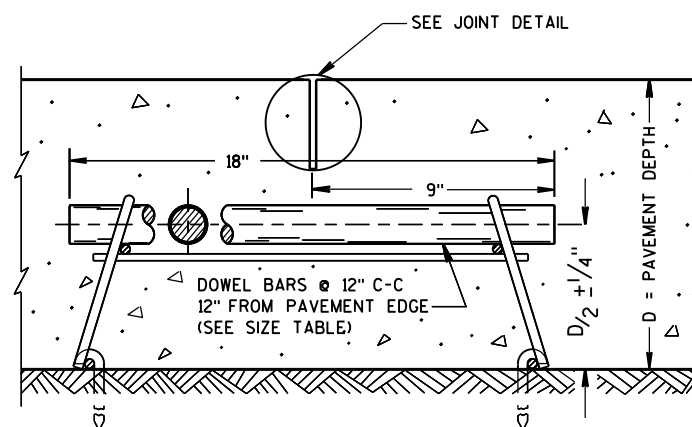
SIDE VIEW

(NORMAL TO CENTERLINE)

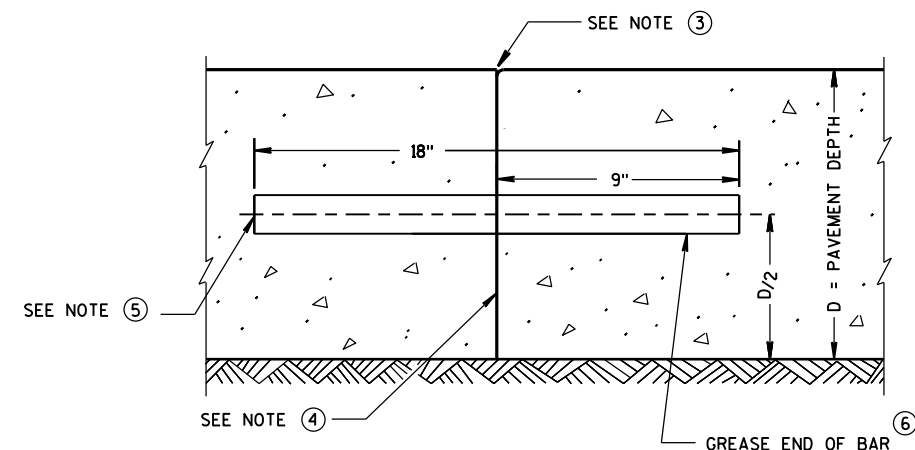
CONTRACTION JOINT DOWEL ASSEMBLY ①



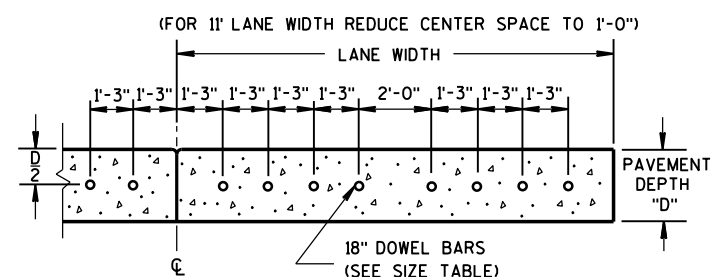
JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT



DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦

GENERAL NOTES

- ① OBTAIN THE ENGINEER'S APPROVAL FOR THE USE OF ALTERNATIVE DESIGNS OF THE DOWEL ASSEMBLY. USE MECHANICAL DOWEL BAR INSERTERS OR DOWEL ASSEMBLIES WHEN CONSTRUCTING CONTRACTION JOINTS.
- ② SECURE BASKETS WITH ANCHORS TO HOLD DOWEL BARS IN THE CORRECT POSITION AND ALIGNMENT. TYPE, LOCATION, NUMBER AND LENGTH OF ANCHORS ARE DEPENDENT UPON FIELD CONDITIONS.
- ③ FORM OR SAW CONSTRUCTION JOINTS. PROVIDE A $1/4$ -INCH RADIUS AT FORMED JOINTS.
- ④ PROVIDE A SMOOTH VERTICAL FACE FOR THE ENTIRE DEPTH OF THE PAVEMENT WHEN FORMING CONSTRUCTION JOINTS.
- ⑤ INSTALL DOWEL BARS AT CONSTRUCTION JOINTS BY FORMING OR DRILLING. INSTALL FORMED DOWEL BARS 12 INCHES C-C AND 12 INCHES FROM PAVEMENT EDGE. REMOVE EXCESS CONCRETE FROM THE FREE END OF THE DOWEL BAR IF DOWEL BARS ARE FORMED THROUGH A HEADER BOARD. INSTALL DRILLED DOWEL BARS ACCORDING TO *DRILLED DOWEL BAR CONSTRUCTION JOINT* DETAIL.
- ⑥ APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.
- ⑦ ANCHOR DOWEL BARS INTO DRILLED HOLES WITH AN EPOXY. MAXIMUM DRILLED HOLE SIZE IS $1/8$ -INCH GREATER THAN DOWEL BAR DIAMETER, 9 INCHES IN LENGTH.

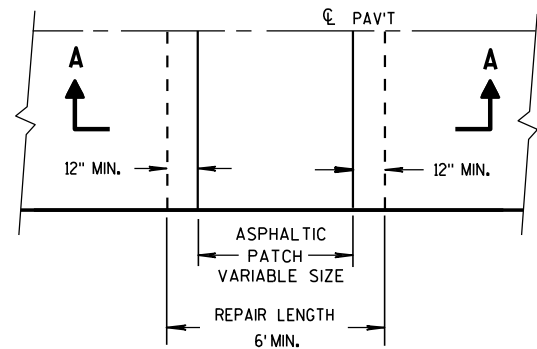
RURAL DOWELED
CONCRETE PAVEMENTSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

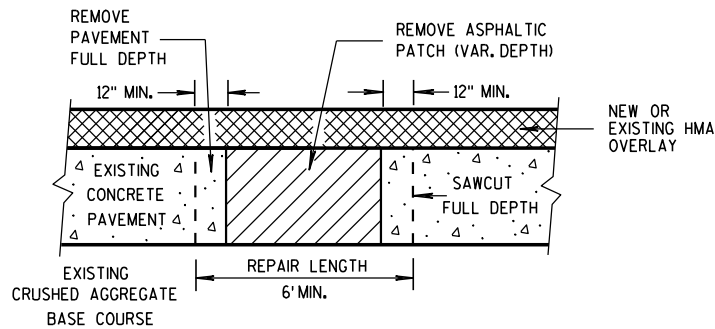
5/3/2013
DATE/S/ Deb Bischoff
PAVEMENT POLICY & DE 155

VEER

FHWA

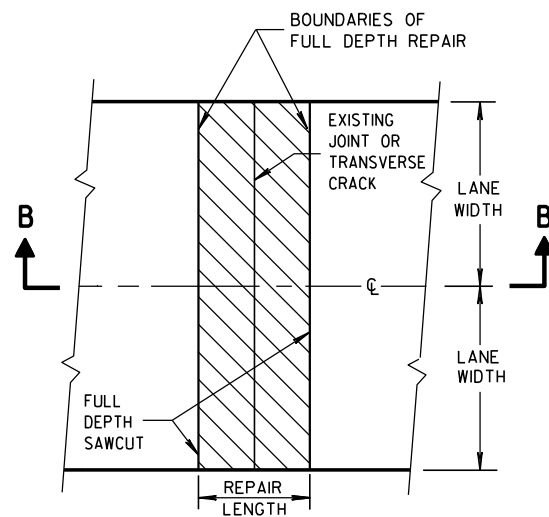


PLAN VIEW

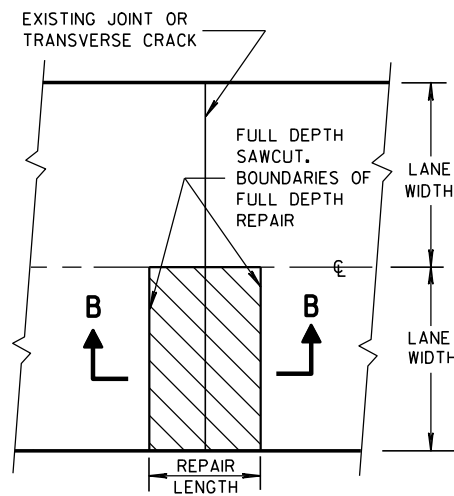


SECTION A-A

HMA PATCH REMOVAL



PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)

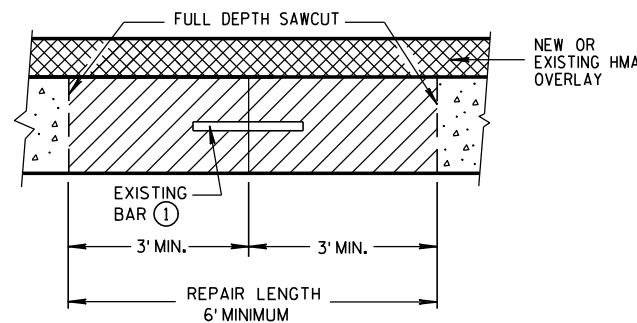
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES. ADDITIONAL SAW CUTS ARE NOT PAID FOR BY THE DEPARTMENT.

PROVIDE 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

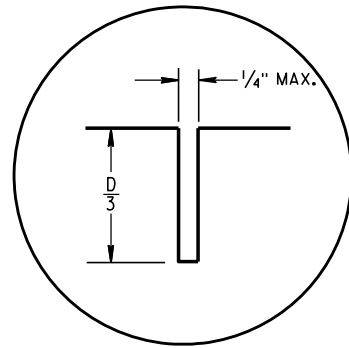
① DOWEL BARS MIGHT NOT EXIST.



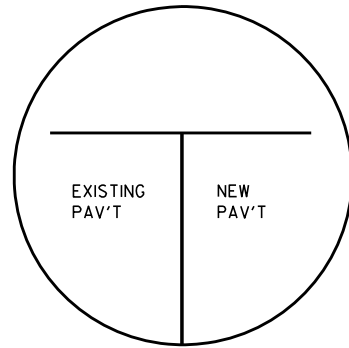
SECTION B-B
CONCRETE REMOVAL

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

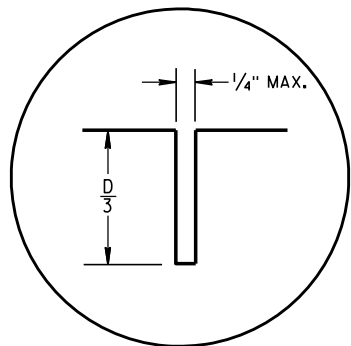


C1

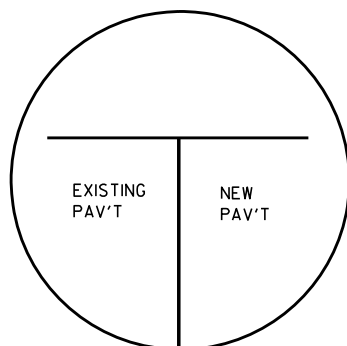


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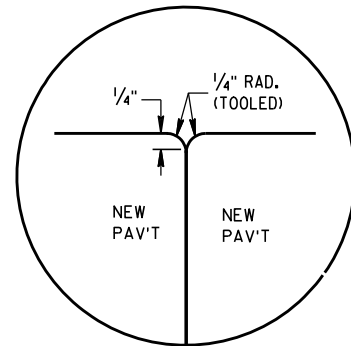
TRANSVERSE JOINTS



L1

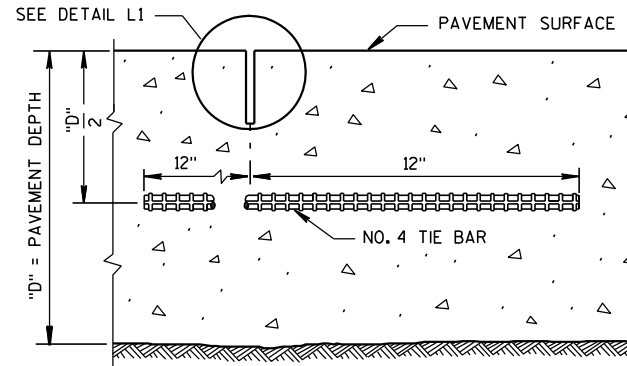


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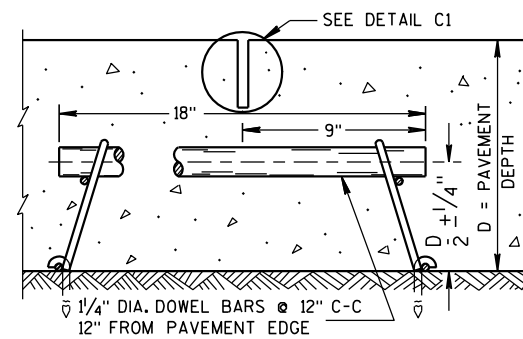


L3

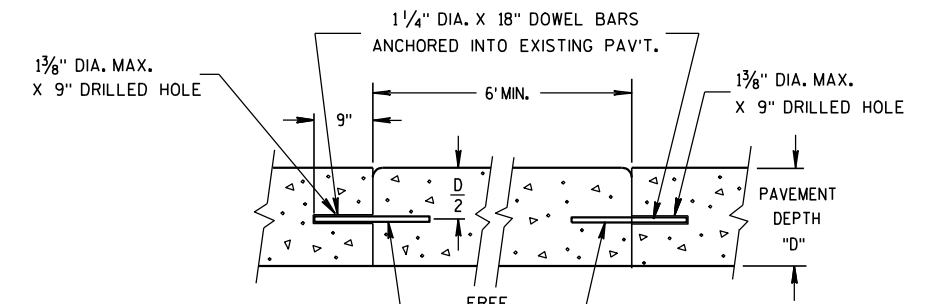
LONGITUDINAL JOINTS



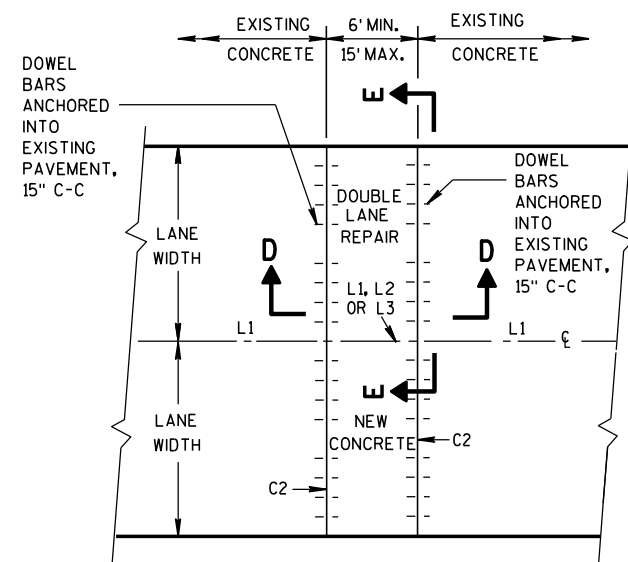
SECTION C-C
SAWED LONGITUDINAL JOINT



SECTION F-F
CONTRACTION JOINT

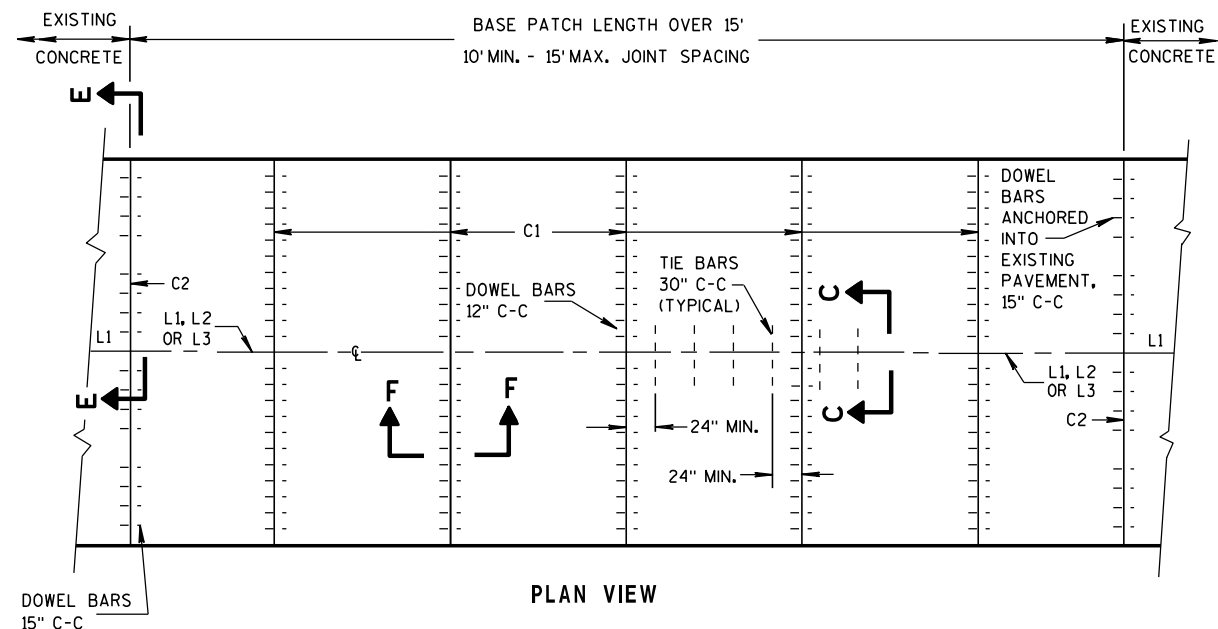


SECTION D-D



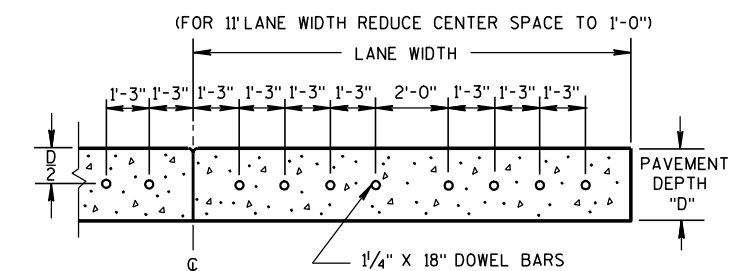
PLAN VIEW

MULTI-LANE CONCRETE BASE PATCH
15' MAXIMUM LENGTH



PLAN VIEW

MULTI-LANE CONCRETE BASE PATCH
GREATER THAN 15' IN LENGTH



SECTION E-E
SPACING OF DOWEL BARS
ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

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

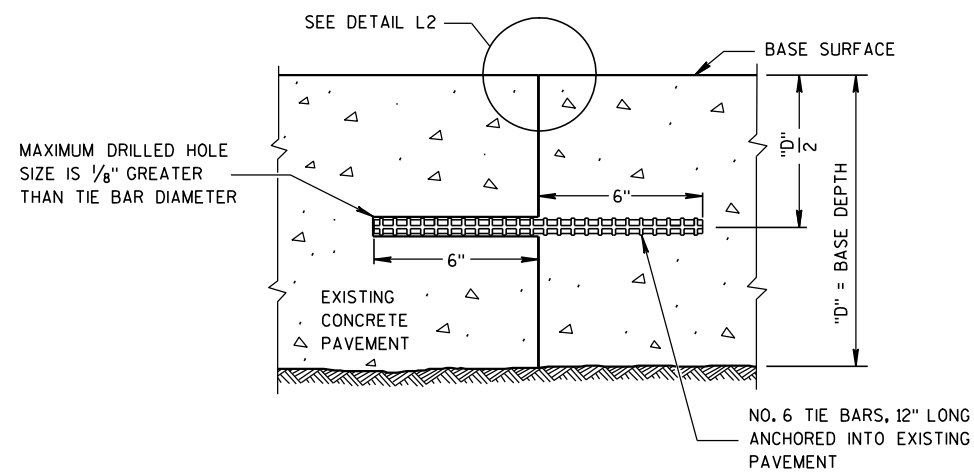
CONCRETE BASE PATCHES OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

PROVIDE A MINIMUM DISTANCE OF 24 INCHES FROM AN EXISTING TRANSVERSE JOINT OR THE EDGE OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

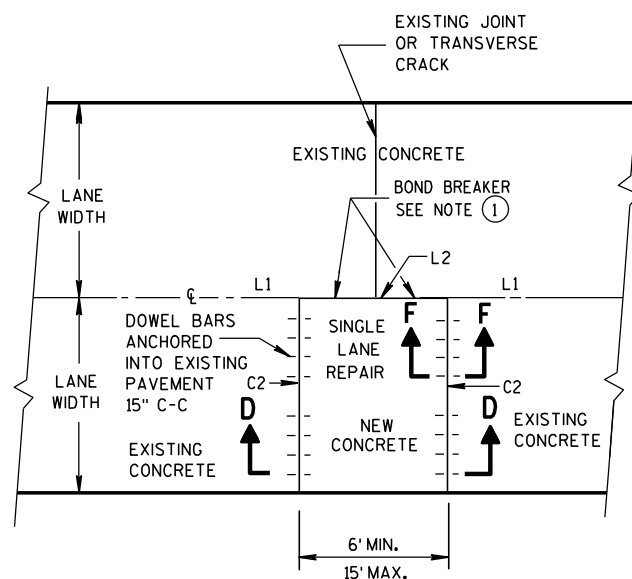
- APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



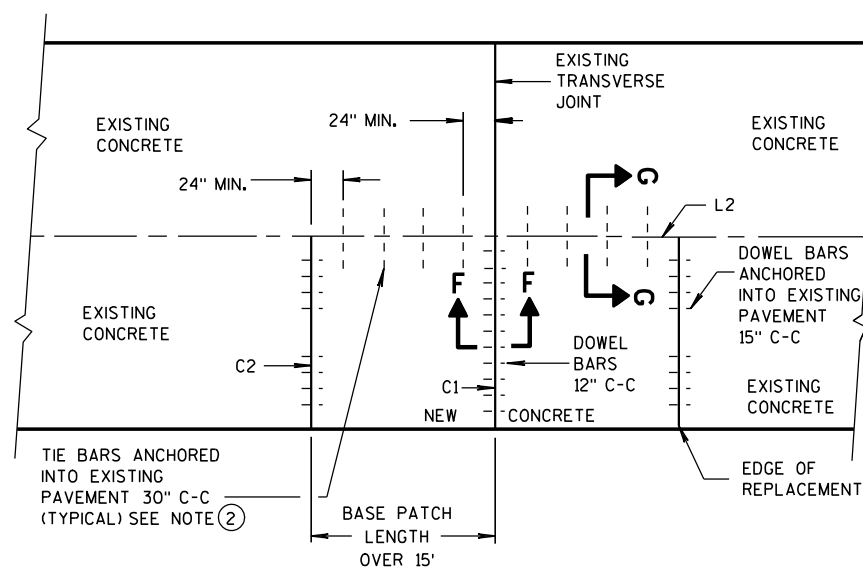
SECTION G-G
TIE BARS ANCHORED
INTO EXISTING PAVEMENT

GENERAL NOTES

- ① USE AN ENGINEER-APPROVED BOND BREAKER FOR SINGLE LANE BASE PATCHES UP TO 15 FEET IN LENGTH.
- ② WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, DRILLED TIE BARS MAY BE INSTALLED ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.



PLAN VIEW
SINGLE LANE CONCRETE BASE PATCH
15' MAXIMUM LENGTH



PLAN VIEW
SINGLE LANE CONCRETE BASE PATCH
GREATER THAN 15' IN LENGTH

BASE PATCHING CONCRETE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

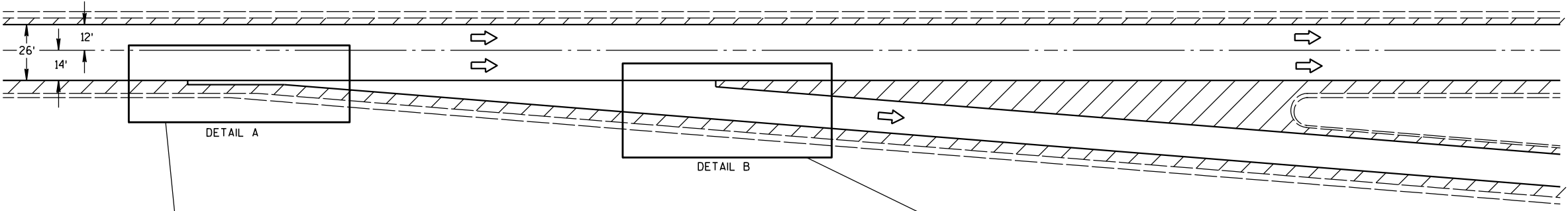
APPROVED

12-11-2009
DATE

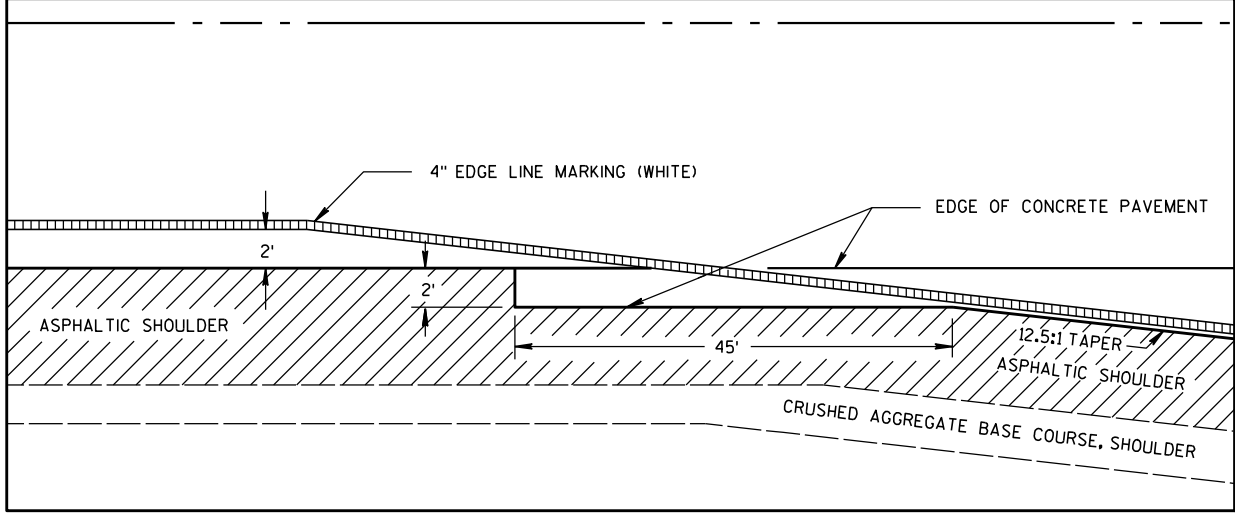
FHWA

/S/ Deb Bischoff
PAVEMENT POLICY & DE 158

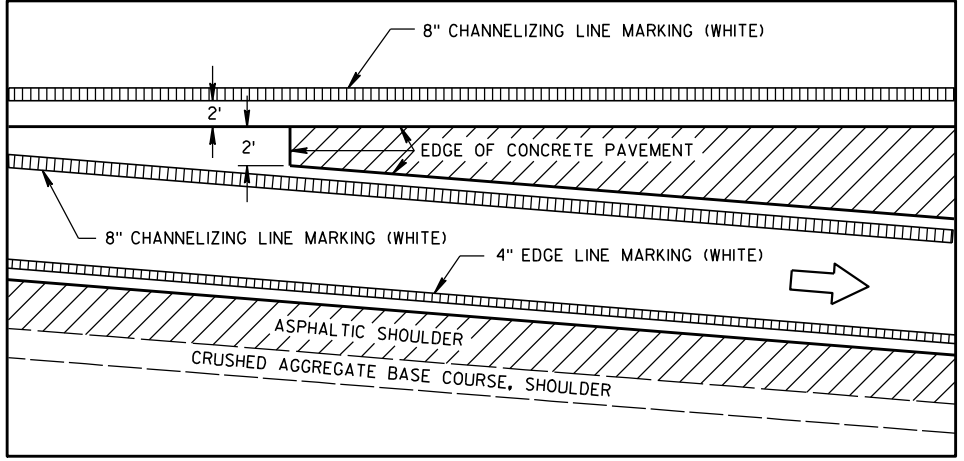
NEER



EXIT RAMP DETAIL



DETAIL A



DETAIL B

CONCRETE JOINT PAVING DETAILS

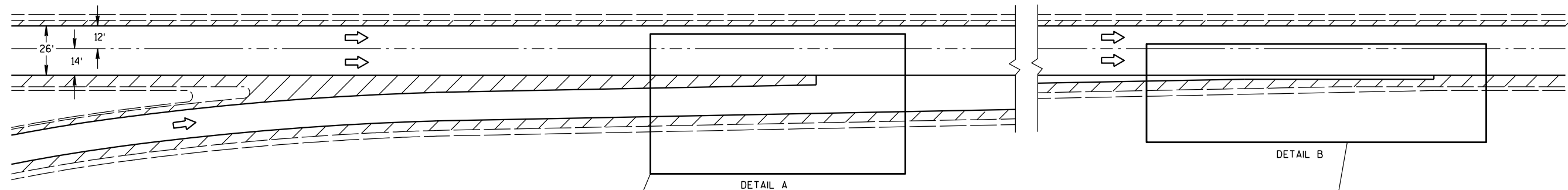
GENERAL NOTES

PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

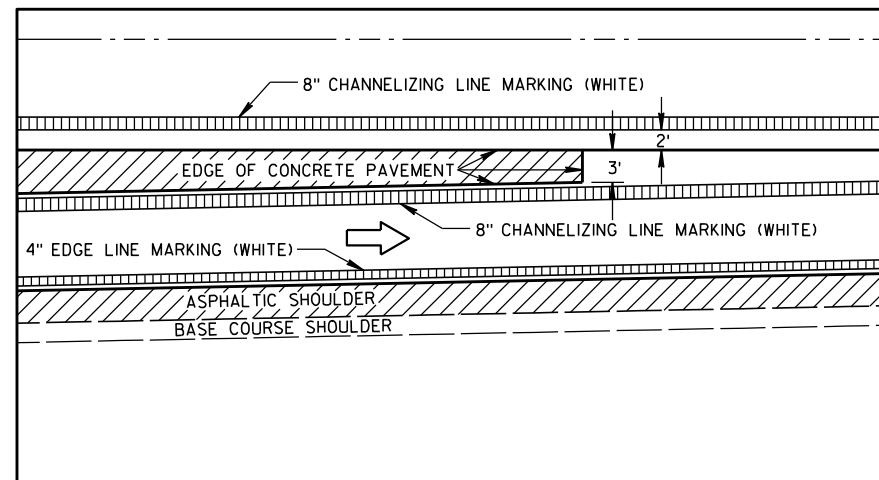
SEE SDD 13 A 4-4c OR SDD 13 A 5-1b FOR RAMP AND GORE RUMBLE STRIP LOCATION.

CONCRETE JOINT DETAIL FOR EXIT RAMP TERMINI

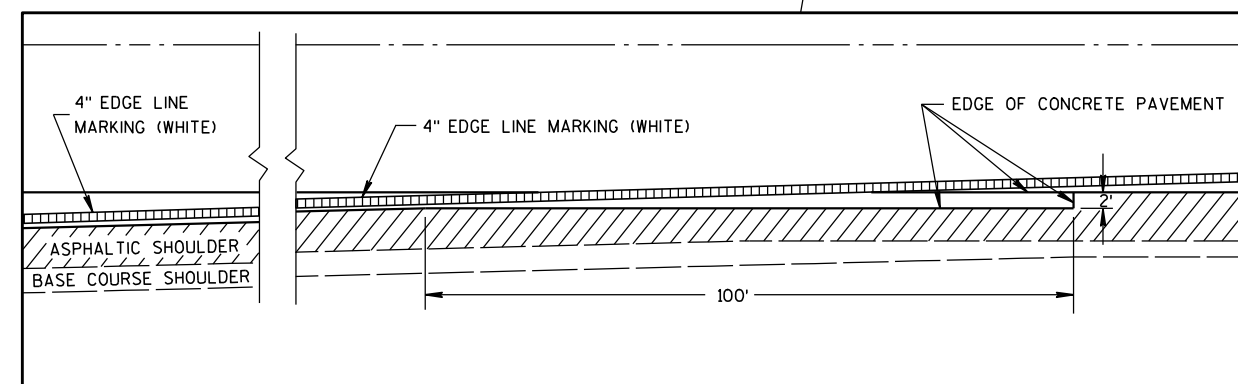
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



ENTRANCE RAMP DETAIL



DETAIL A



DETAIL B

CONCRETE JOINT PAVING DETAILS

GENERAL NOTES

PAVEMENT MARKING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.

SEE SDD 13 A 4-4c OR SDD 13 A 5-1b FOR RAMP AND GORE RUMBLE STRIP LOCATION.

**CONCRETE JOINT DETAIL FOR
ENTRANCE RAMP TERMINI**

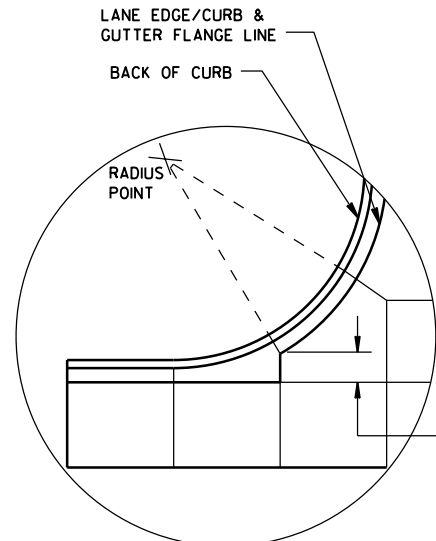
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

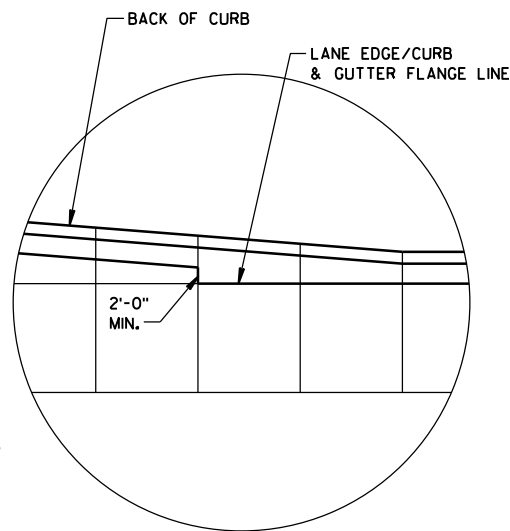
5/27/98
DATE

/S/ Rory L. Rhin...
CHIEF ROADWAY DEVELOP... ENGINEER

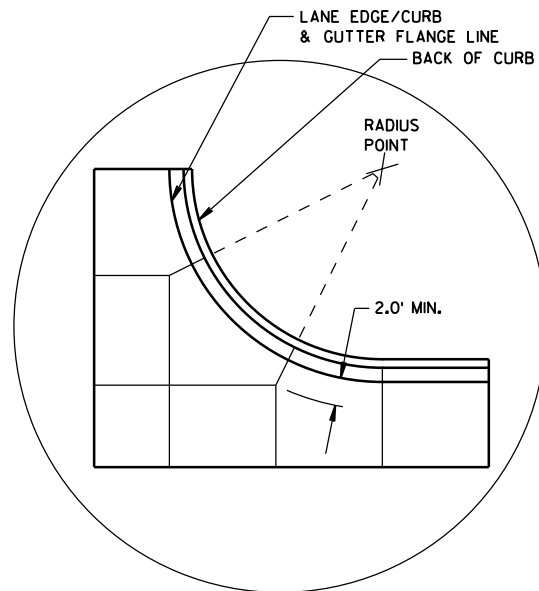
FHWA



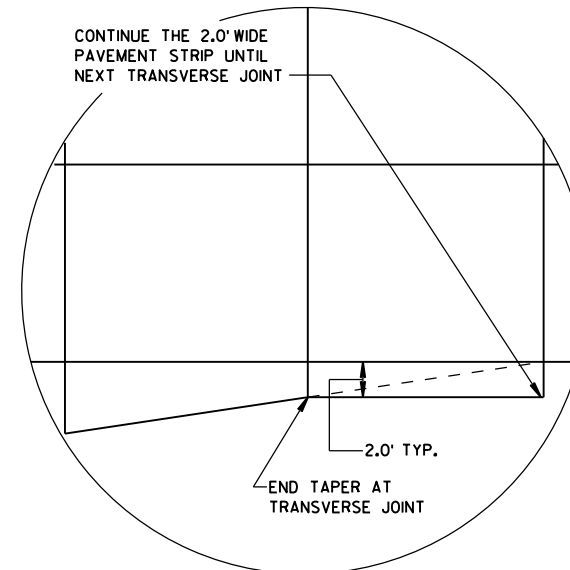
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

GENERAL NOTES

THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.

ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.

CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.

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

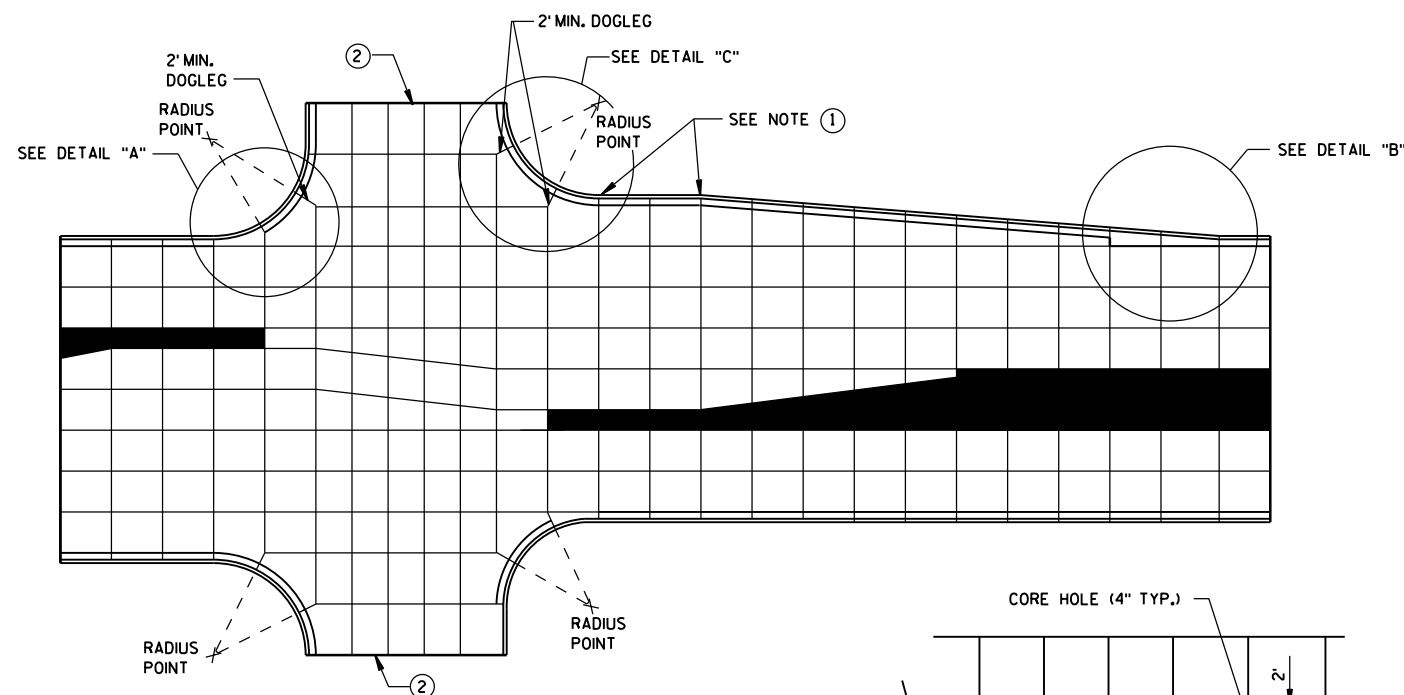
AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.

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

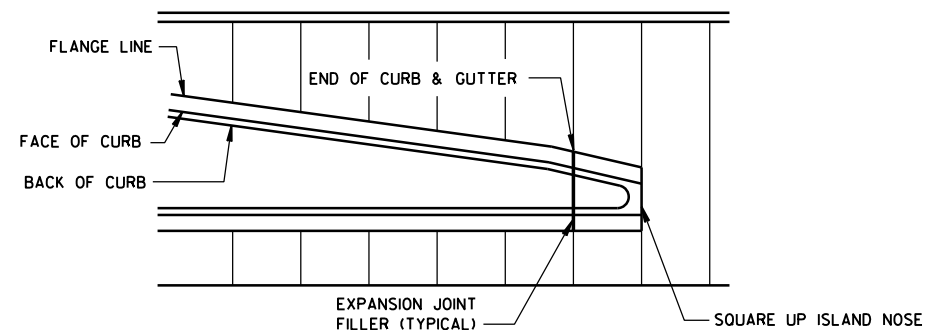
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

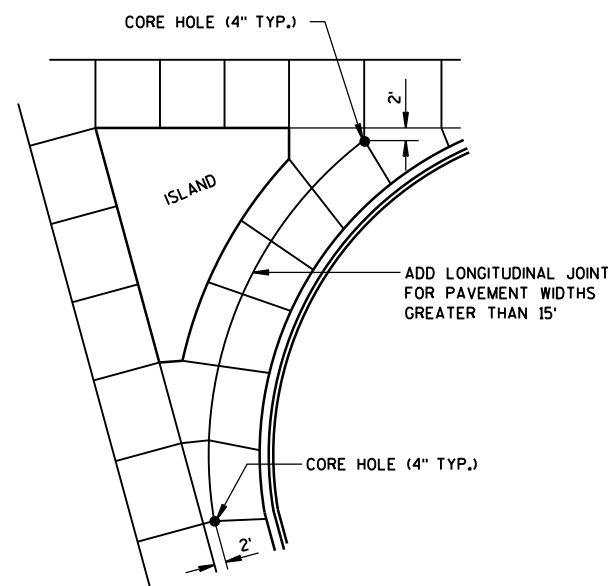
1. PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
2. CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
3. THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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



STANDARD INTERSECTION



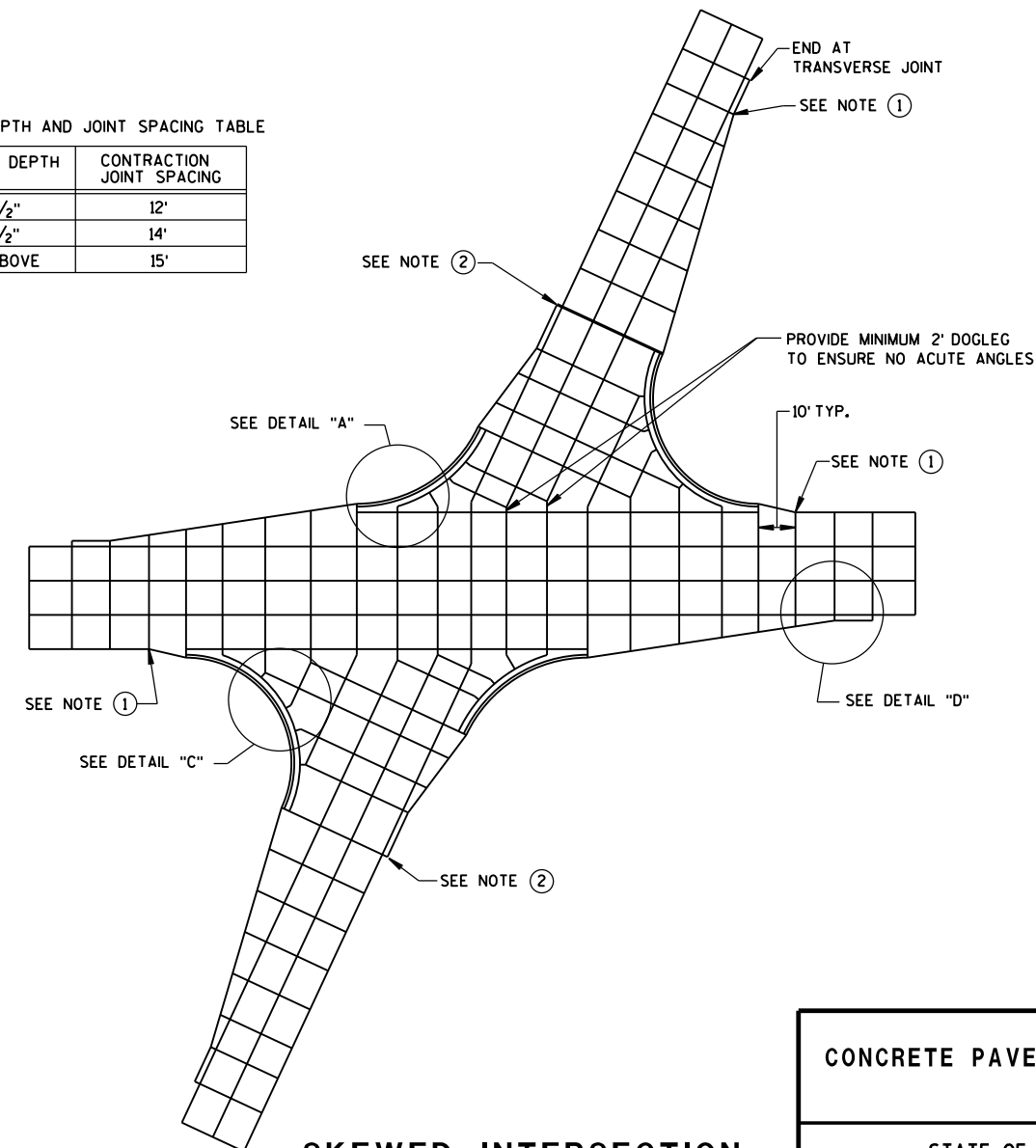
APPROACH TO MEDIAN



LARGE RIGHT TURN

PAVEMENT DEPTH AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



SKewed INTERSECTION

CONCRETE PAVEMENT JOINTING

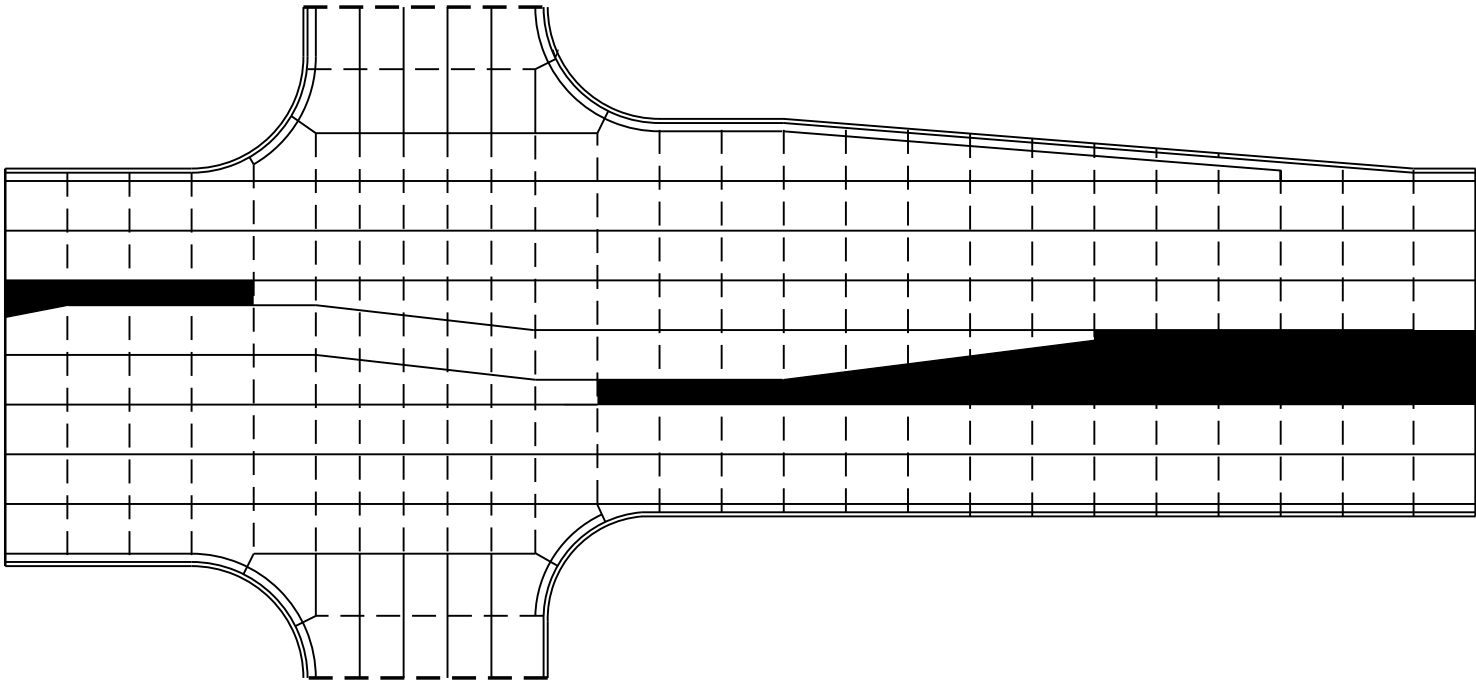
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 161

LEGEND

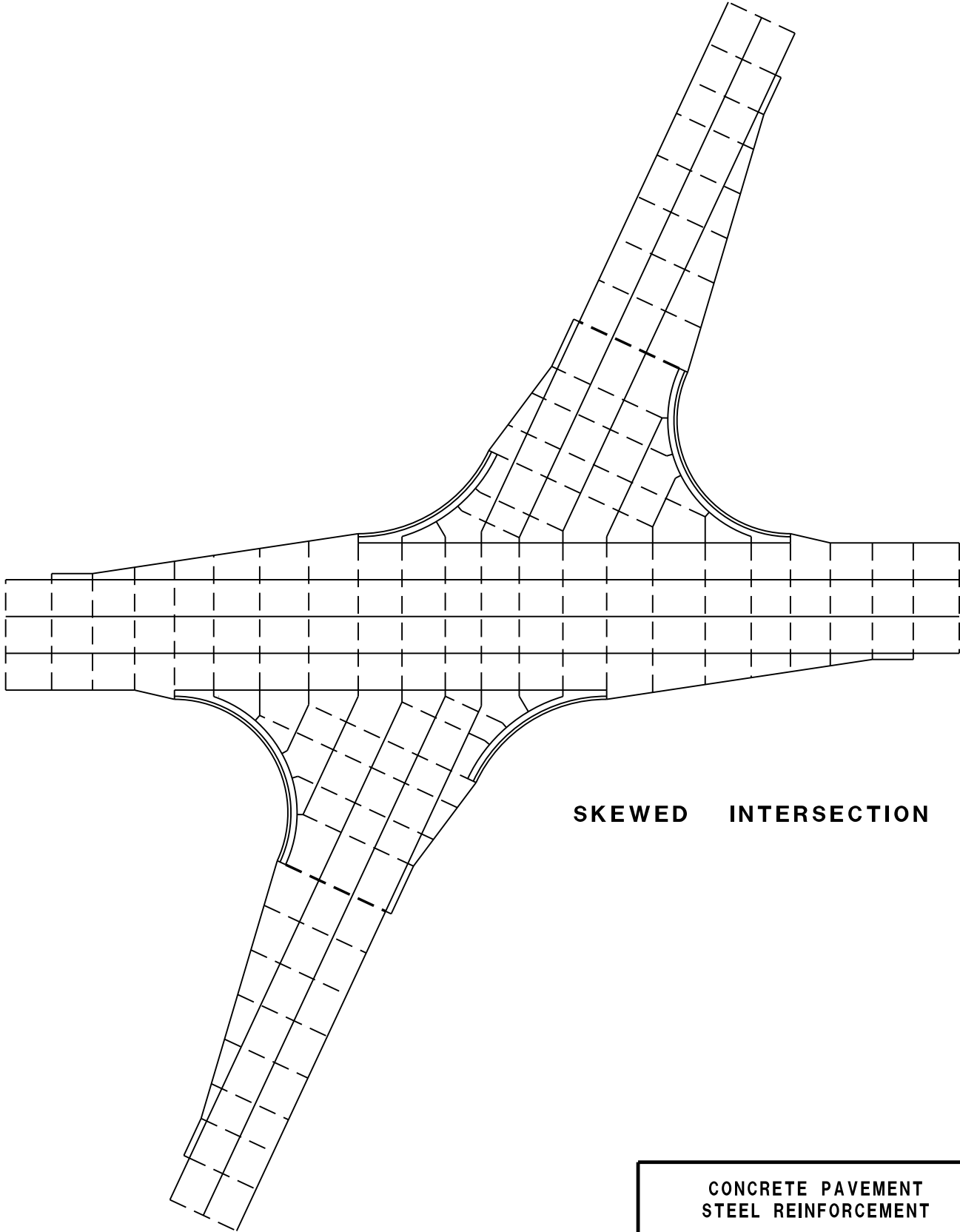
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT

GENERAL NOTES

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



STANDARD INTERSECTION

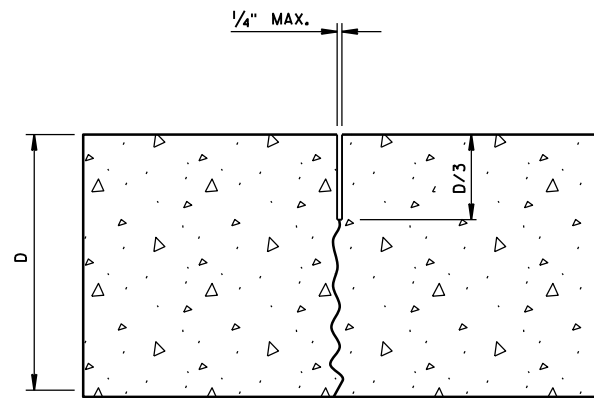


SKewed INTERSECTION

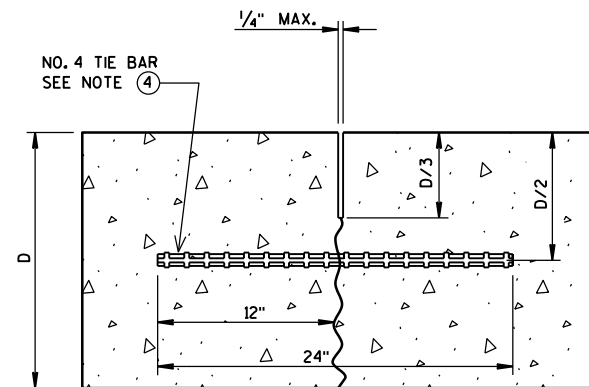
CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

162

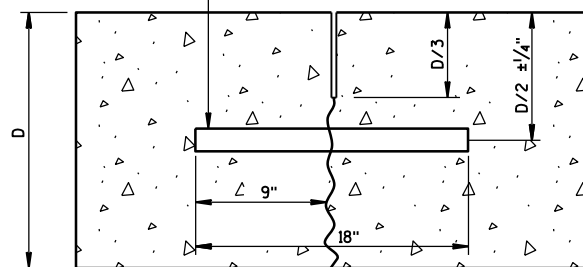


UNDOWELED-TRANSVERSE



TIED LONGITUDINAL

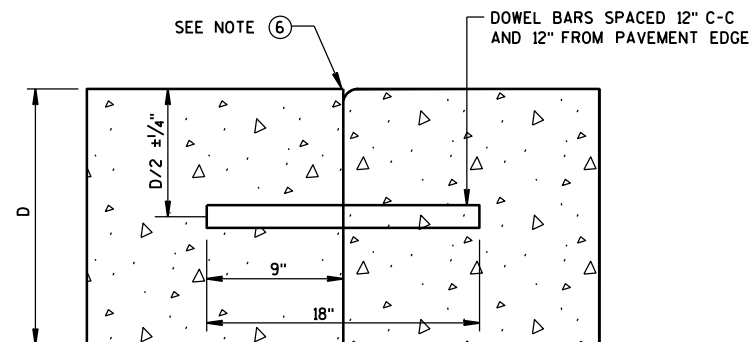
DOWEL BARS AT 12" C-C
12" FROM PAVEMENT EDGE



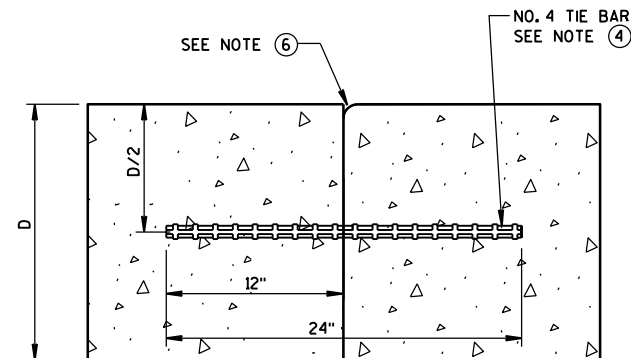
DOWELED-TRANSVERSE

CONTRACTION JOINTS

SEE NOTE ②

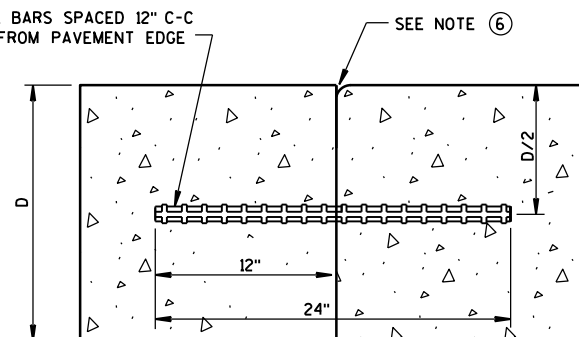
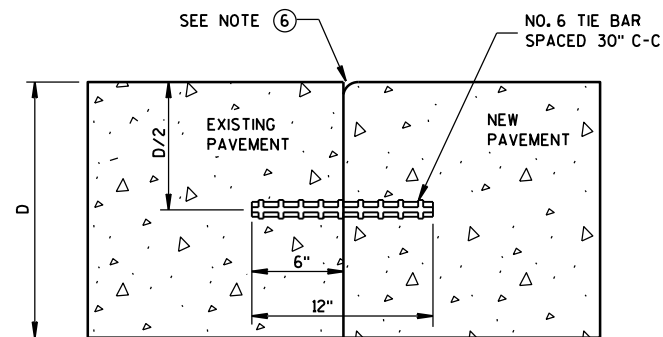


DOWELED TRANSVERSE



TIED LONGITUDINAL

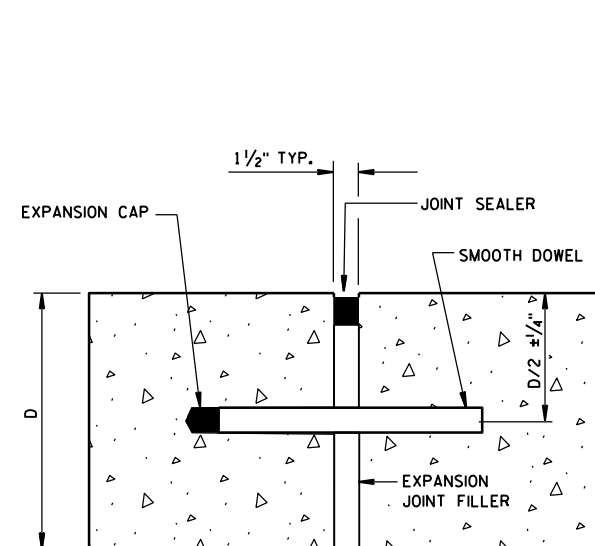
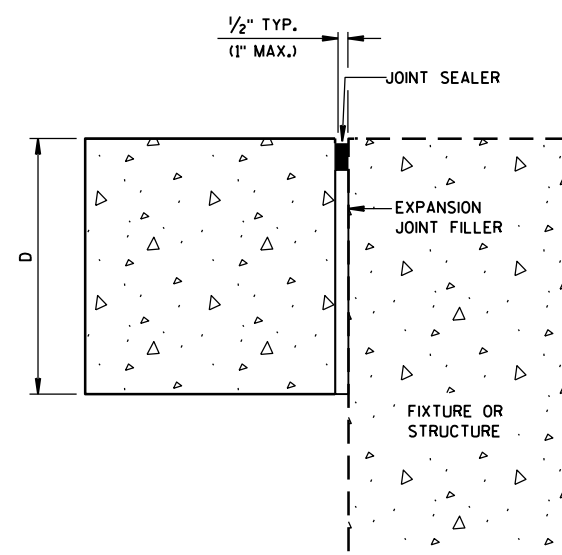
NO. 6 TIE BARS SPACED 12" C-C
AND 12" FROM PAVEMENT EDGE

TIED TRANSVERSE
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)

TIED LONGITUDINAL TO EXISTING

CONSTRUCTION JOINTS

SEE NOTE ⑤

DOWELED-TRANSVERSE
SEE NOTE ①

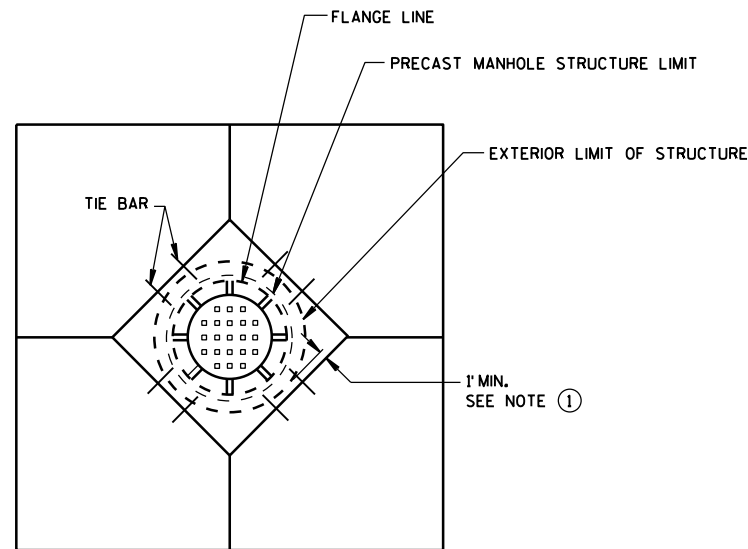
UNTIED-LONGITUDINAL

EXPANSION JOINTS

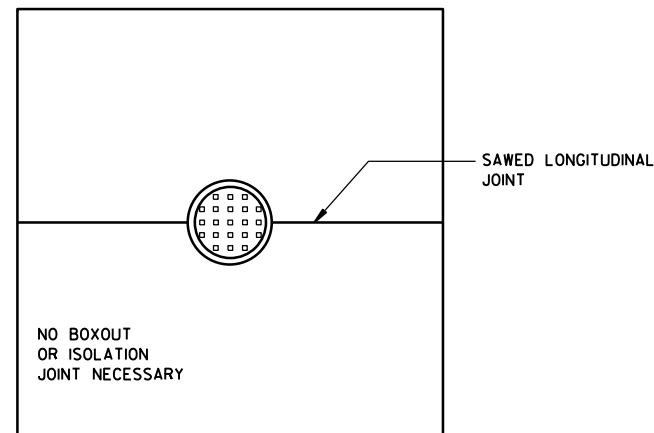
GENERAL NOTES

1. USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
2. SPACE CONTRACTION JOINTS IN ACCORDANCE WITH 13C4, 13C11 OR 13C13.
3. LOCATE CONSTRUCTION JOINTS A MINIMUM OF 6 FEET FROM THE NEAREST CONTRACTION JOINT AND ALIGN PARALLEL TO CONTRACTION JOINTS.
4. SPACE TIE BARS AT LONGITUDINAL CONSTRUCTION OR CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C1.
5. CONSTRUCTION JOINTS CAN BE FORMED OR SAWED.
6. IF JOINT IS FORMED, PROVIDE A 1/4-INCH RADIUS.

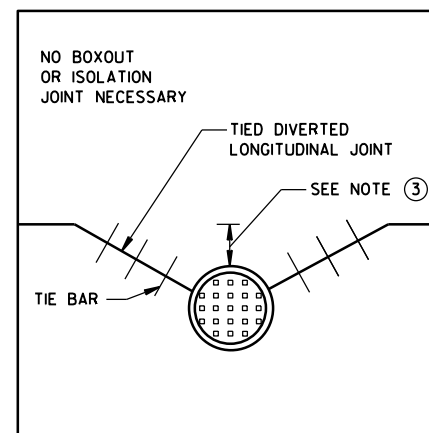
CONCRETE PAVEMENT
JOINT TYPESSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 163



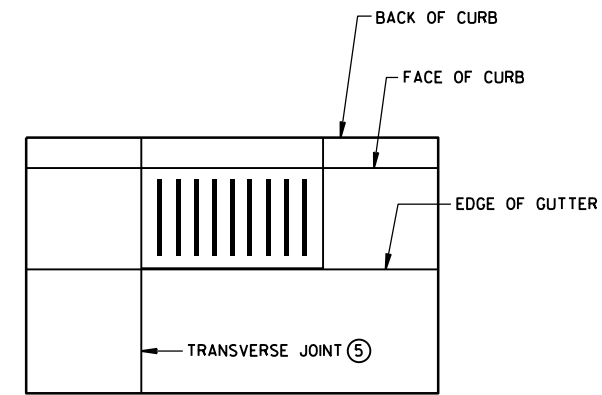
**DIAGONAL MANHOLE BOXOUT
FOR CONSTRUCTION JOINTS**



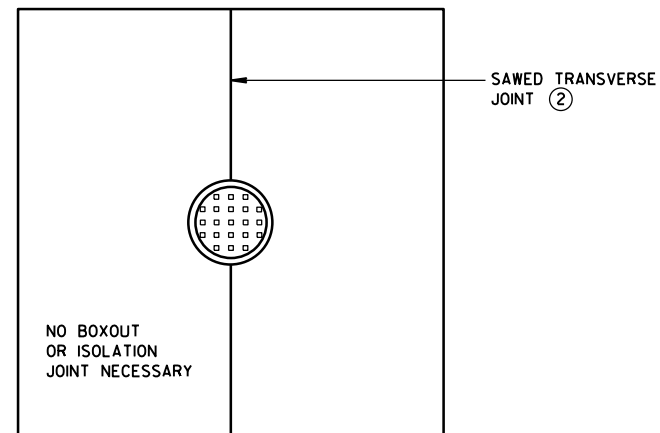
**MANHOLE WITH
LONGITUDINAL JOINT**



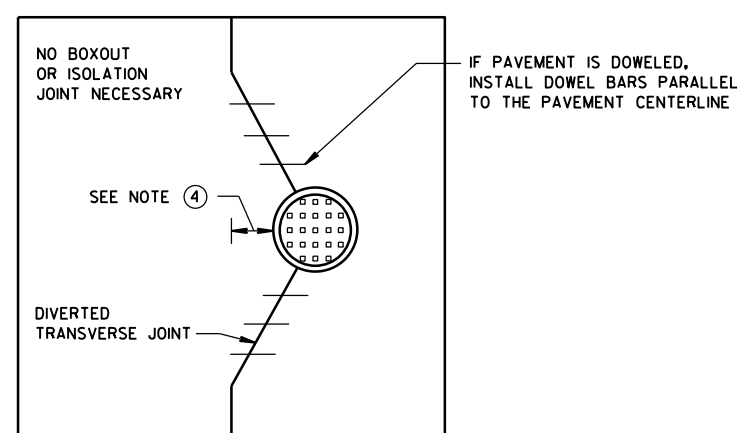
**MANHOLE WITH DIVERTED
LONGITUDINAL CONTRACTION JOINT**



**INLET WITH
TRANSVERSE JOINT**



**MANHOLE WITH
TRANSVERSE JOINT**



**MANHOLE WITH DIVERTED
TRANSVERSE CONTRACTION JOINT**

GENERAL NOTES

- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1-FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE OF MANHOLE IS 2 FEET OR LESS, DIVERT THE LONGITUDINAL JOINT AT A 2:1 TAPER RATE TO THE CENTER OF THE MANHOLE. IF THE DISTANCE IS GREATER THAN 2 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ④ IF DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS 4 FEET OR LESS, REDIRECT JOINT TO INTERSECT THE CENTER OF THE MANHOLE. IF DISTANCE IS GREATER THAN 4 FEET, DO NOT DIVERT THE JOINT AND SAW AS NORMAL. PLACE REBAR REINFORCEMENT AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.

**CONCRETE PAVEMENT
JOINTING AT UTILITY FIXTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

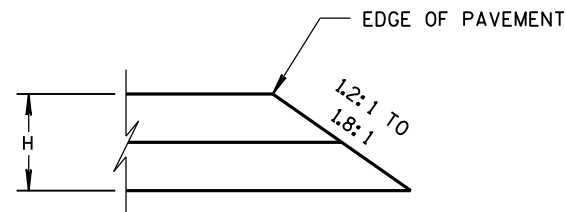
APPROVED

5-3-2013
DATE

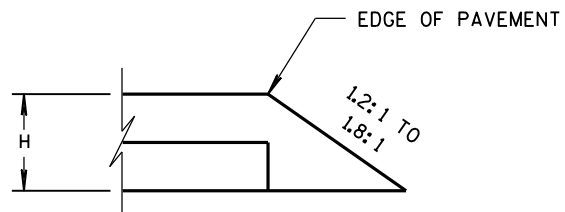
/S/ Deb Bischoff
PAVEMENT POLICY & DE

164
NEER

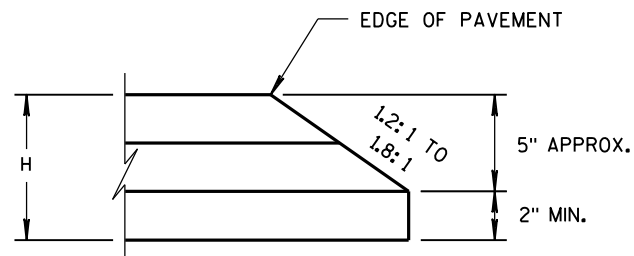
FHWA



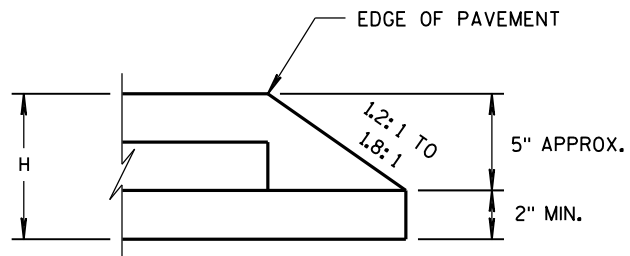
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

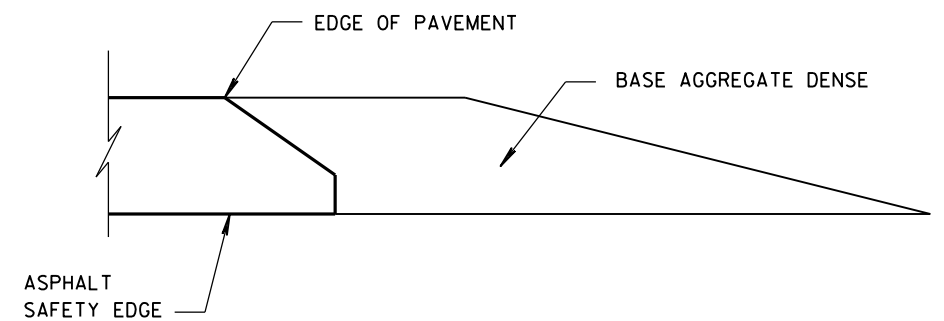


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

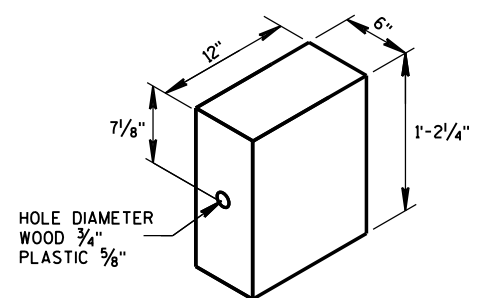
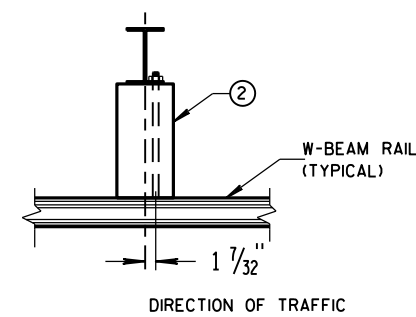
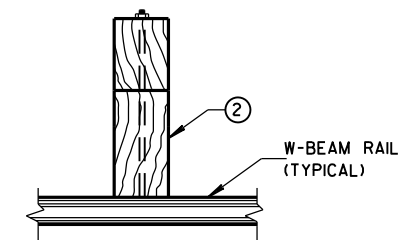
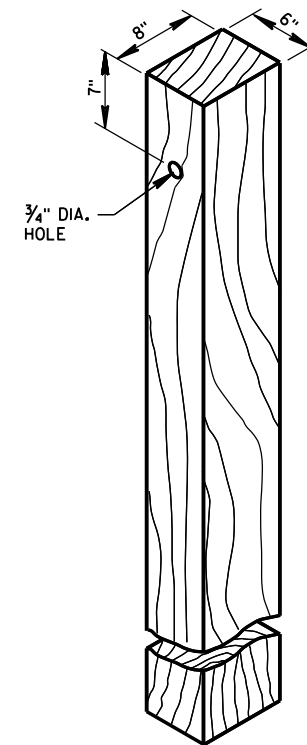
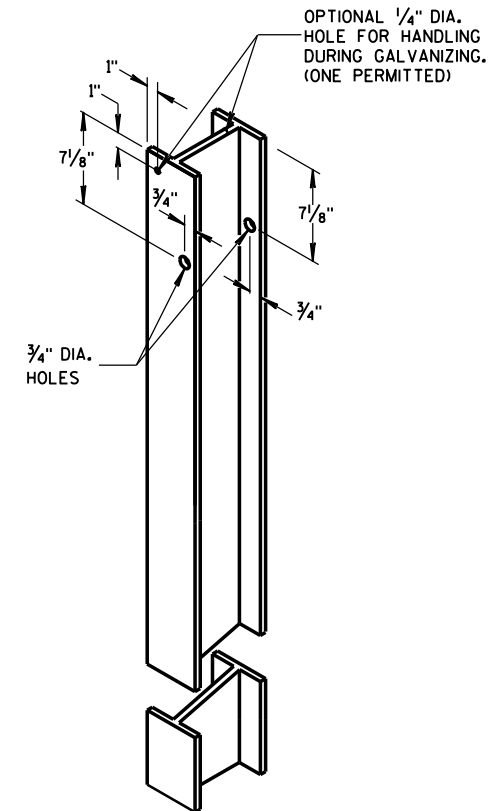
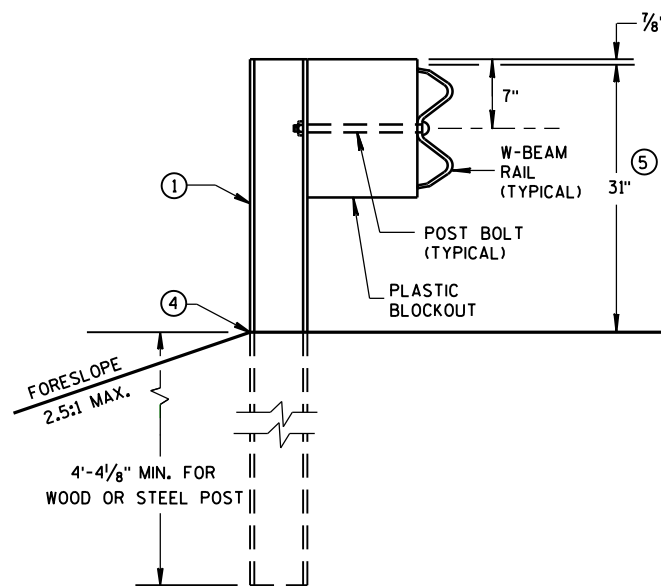
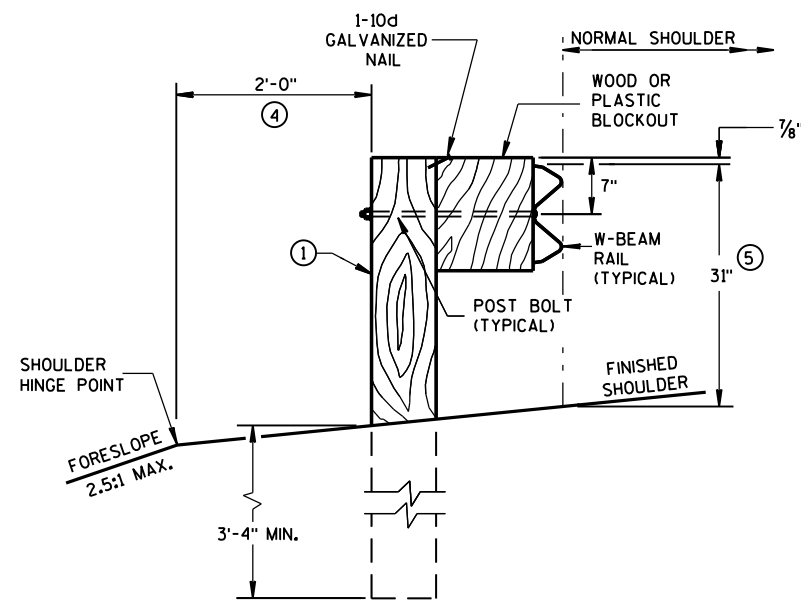
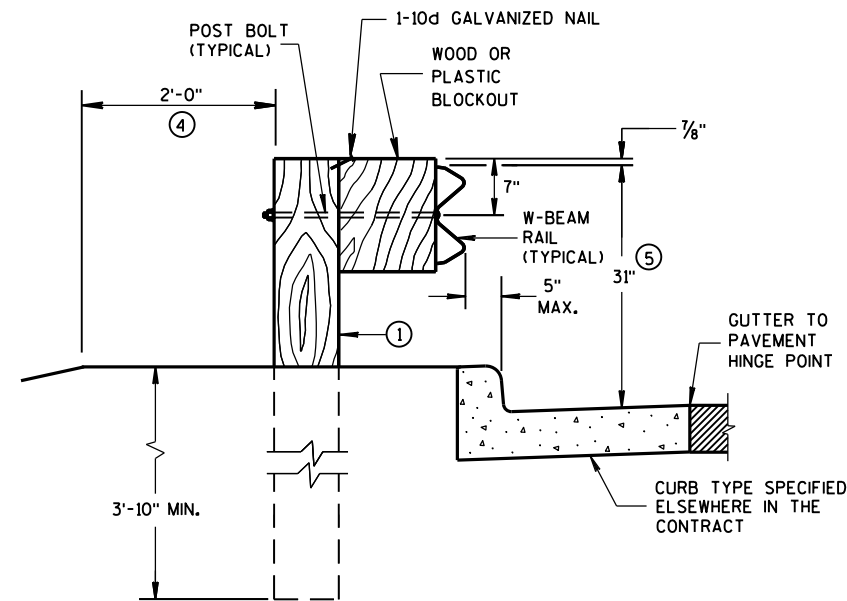
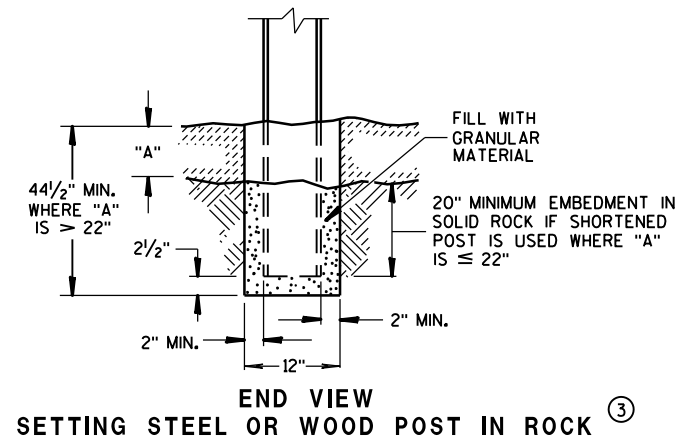
APPROVED
DATE 11/30/2012

/s/ Jerry H. Zoaga
ROADWAY STANDARDS ENGINEER 165 INT

FHWA

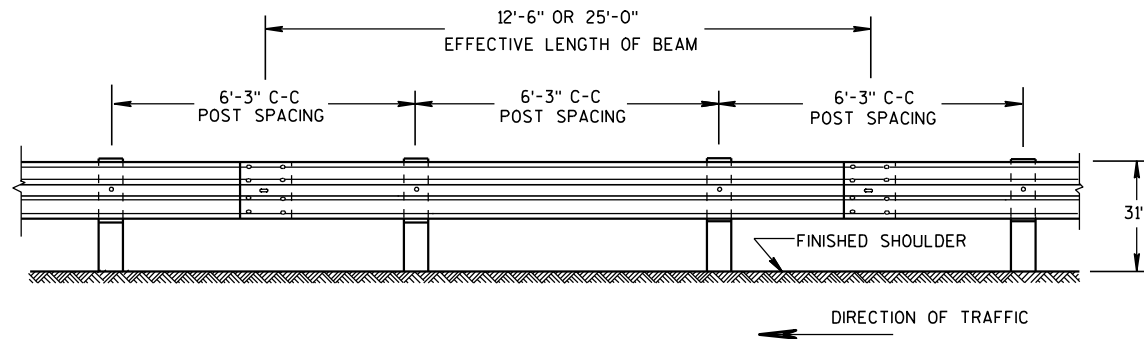
S.D.D. 14 B 42-2a

- S.D.D. 14 B 42-2a**



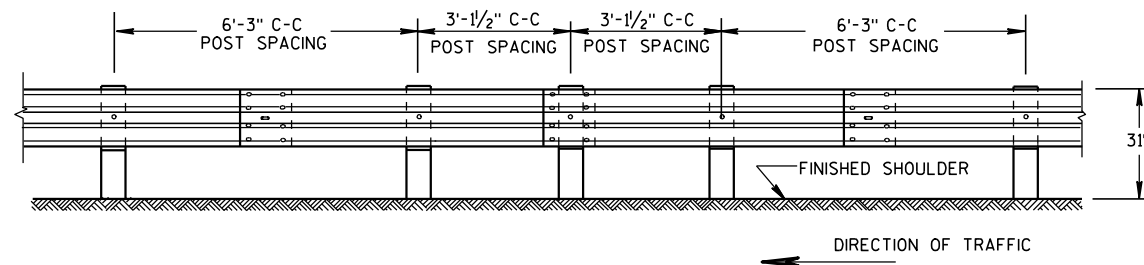
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 166



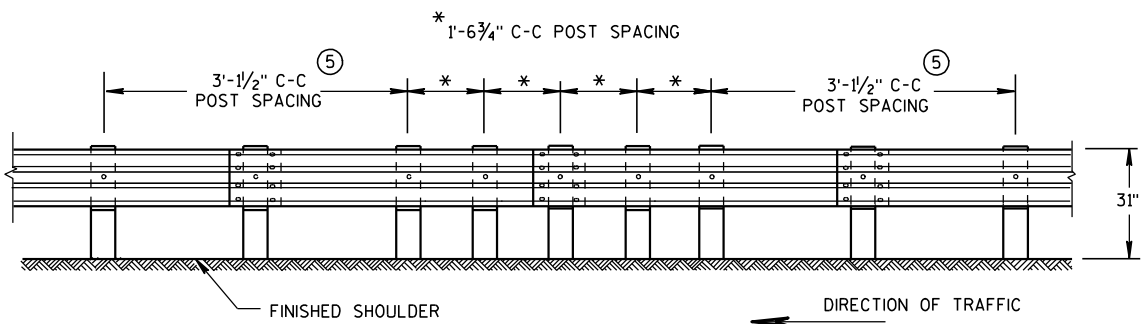
FRONT VIEW

POST SPACING STANDARD INSTALLATION



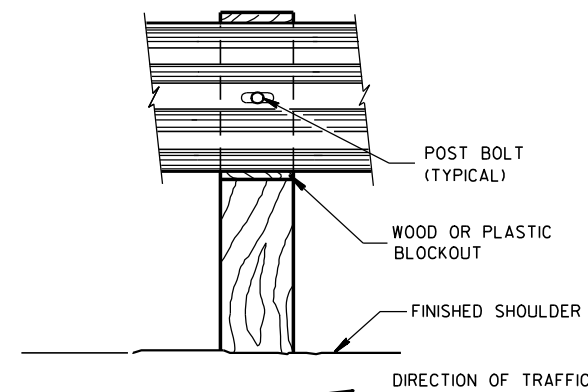
FRONT VIEW

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

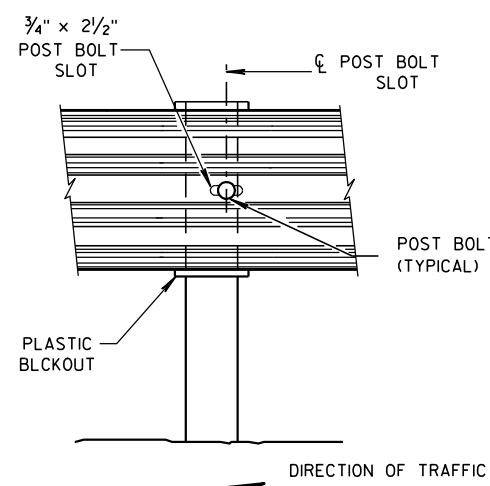


FRONT VIEW

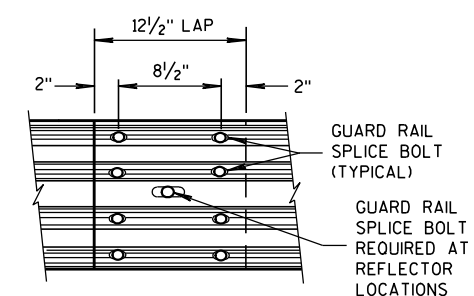
QUARTER POST SPACING (QS)



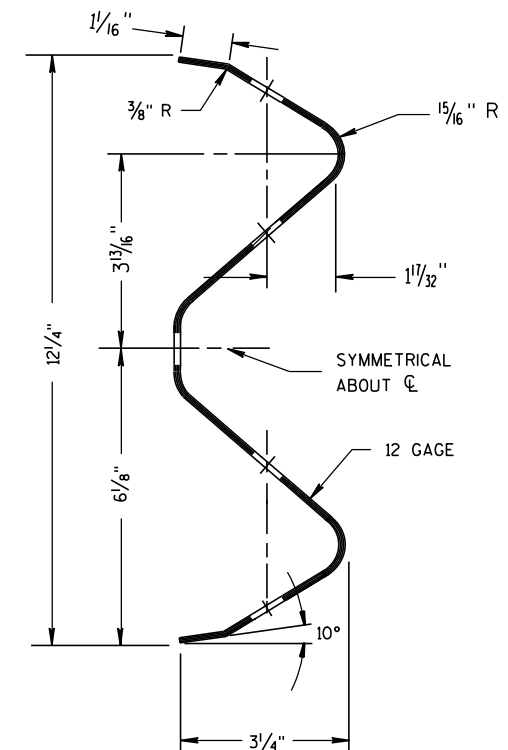
FRONT VIEW AT WOOD POST



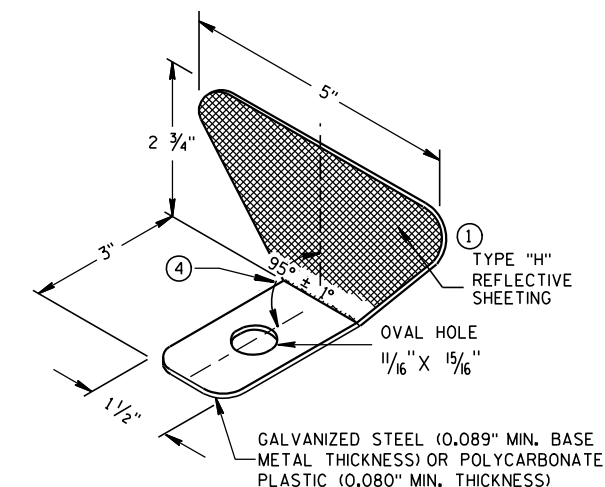
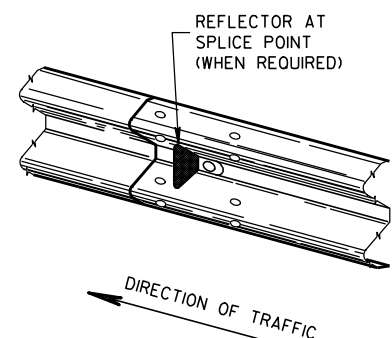
FRONT VIEW AT STEEL POST



FRONT VIEW
MID-SPAN BEAM SPLICE



SECTION THRU W-BEAM RAIL



ONE SIDED REFLECTOR DETAIL AND TYPICAL INSTALLATION

GENERAL NOTES

- 1 PROVIDE TYPE "H" SILVER REFLECTIVE SHEETING ON ALL REFLECTORS EXCEPT THOSE LOCATED ALONG THE LEFT EDGE OF ONE-WAY ROADWAYS, WHICH SHALL BE PROVIDED WITH TYPE "H" YELLOW REFLECTIVE SHEETING.
- 2 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL. RAIL SPLICE LOCATIONS ARE THE ONLY ACCEPTABLE LOCATIONS FOR REFLECTORS.
- 3 REVERSE EVERY OTHER REFLECTOR FOR 2-WAY VISIBILITY. THE CONTRACTOR MAY FURNISH TWO-SIDED REFLECTORS IN LIEU OF ONE-SIDED REFLECTORS.
- 4 PROVIDE AN ANGLE OF BEND OF $90^\circ \pm 1^\circ$ FOR TWO-SIDED REFLECTORS.
- 5 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

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

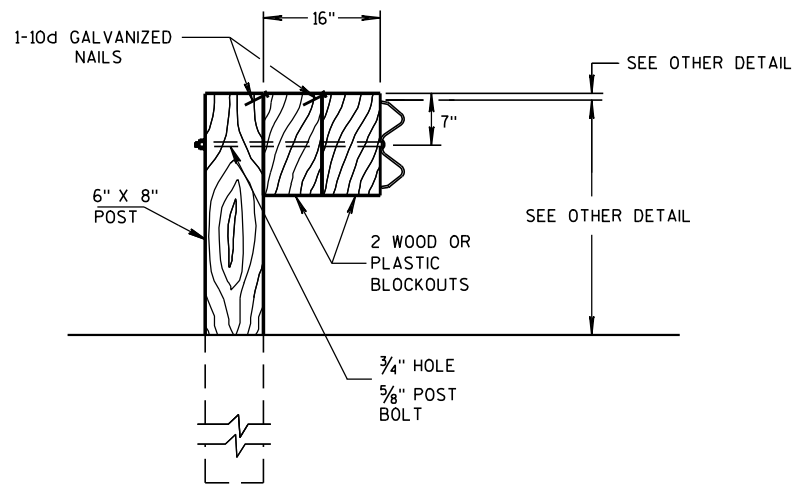
GUARD RAIL SPLICE BOLTS ARE A $\frac{5}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{5}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

REFLECTOR SPACING

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

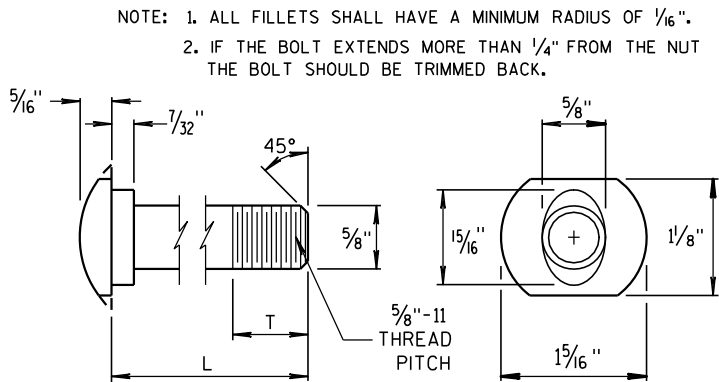
MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

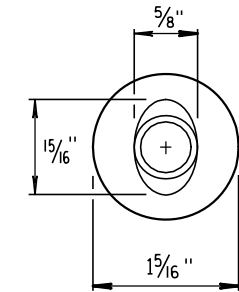


DETAIL FOR 16" BLOCKOUT DEPTH

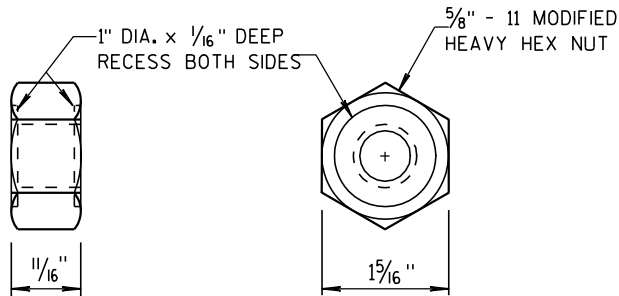
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



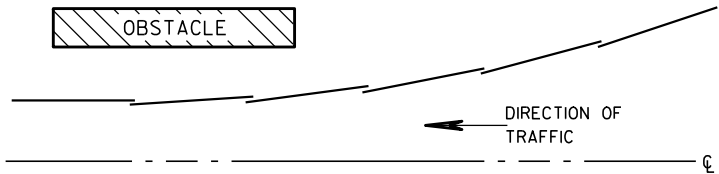
POST BOLT TABLE



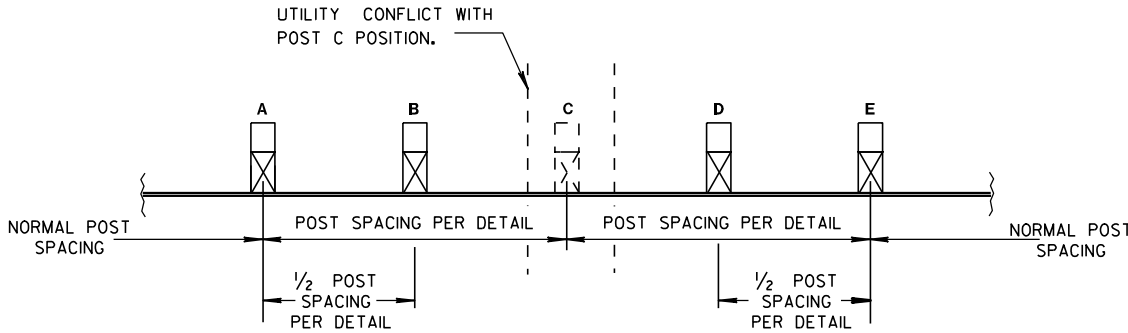
ALTERNATE BOLT HEAD



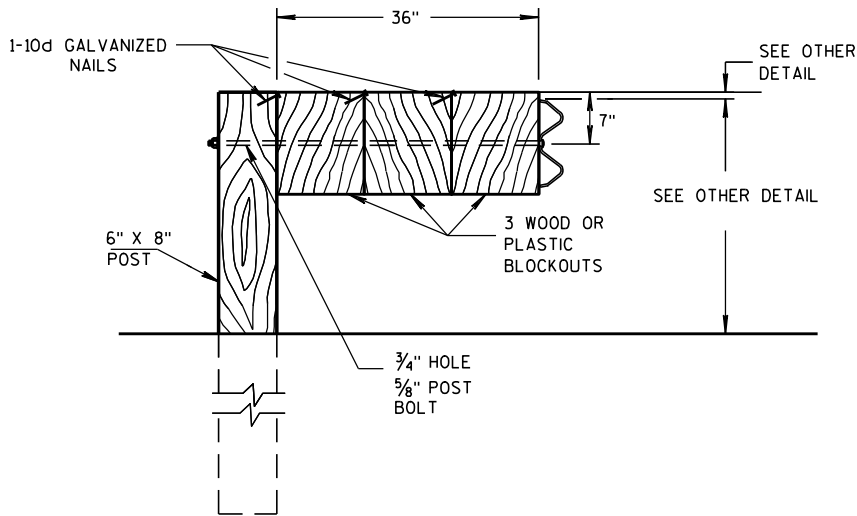
POST BOLT AND RECESS NUT



PLAN VIEW
BEAM LAPPING DETAIL



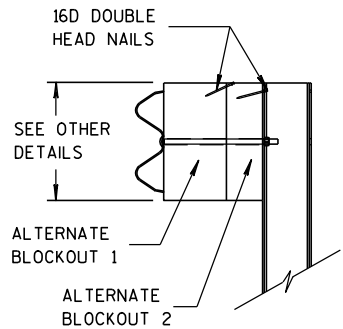
POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



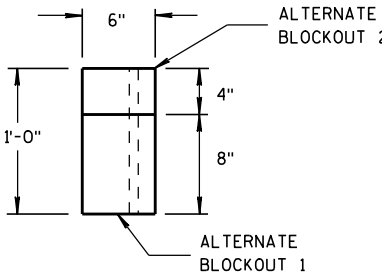
DETAIL FOR 36" BLOCKOUT DEPTH

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.



SIDE VIEW



TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 11/15/2011
FHW

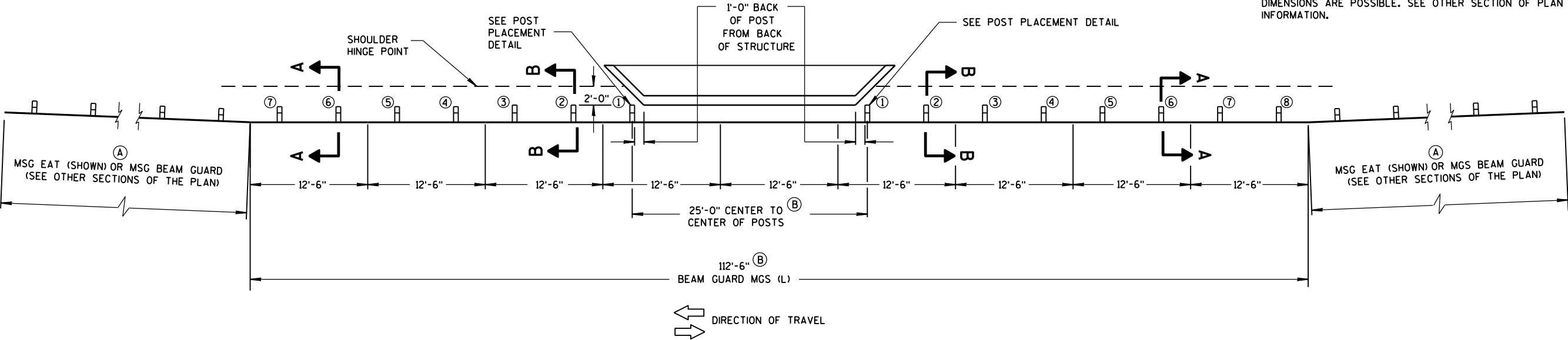
15/ Jerry H. 3000
ROADWAY STANDARDS 168 ENT
ENGINEER

GENERAL NOTES

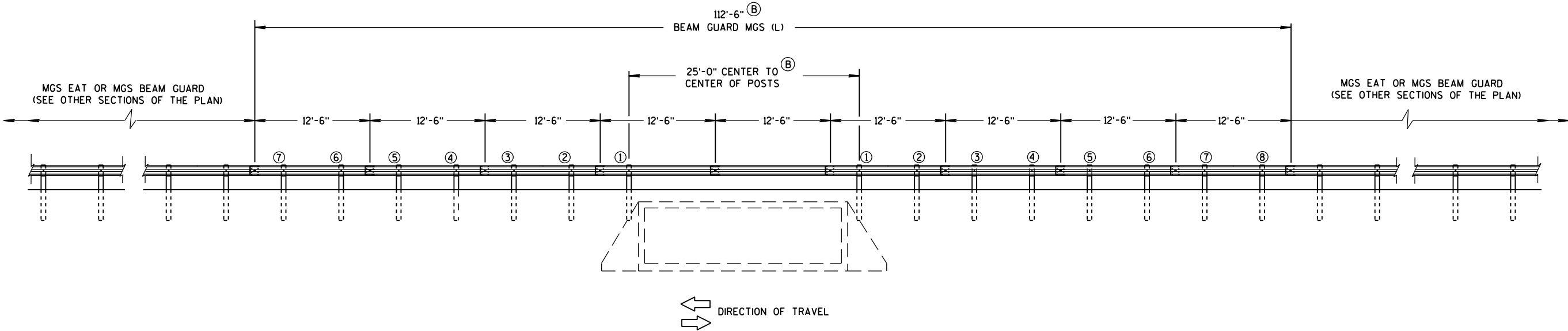
POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

- (A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.
- (B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW



ELEVATION VIEW

MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) TWO-WAY TRAFFIC

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

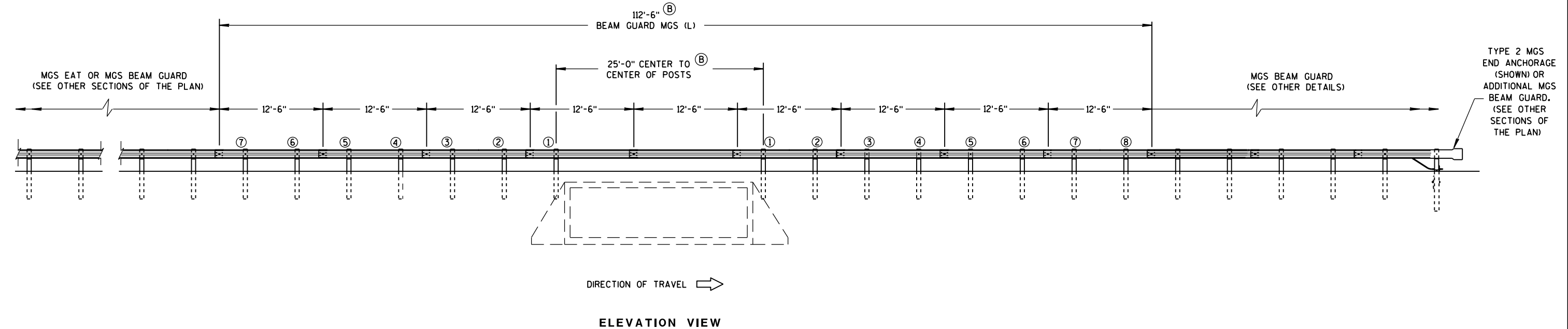
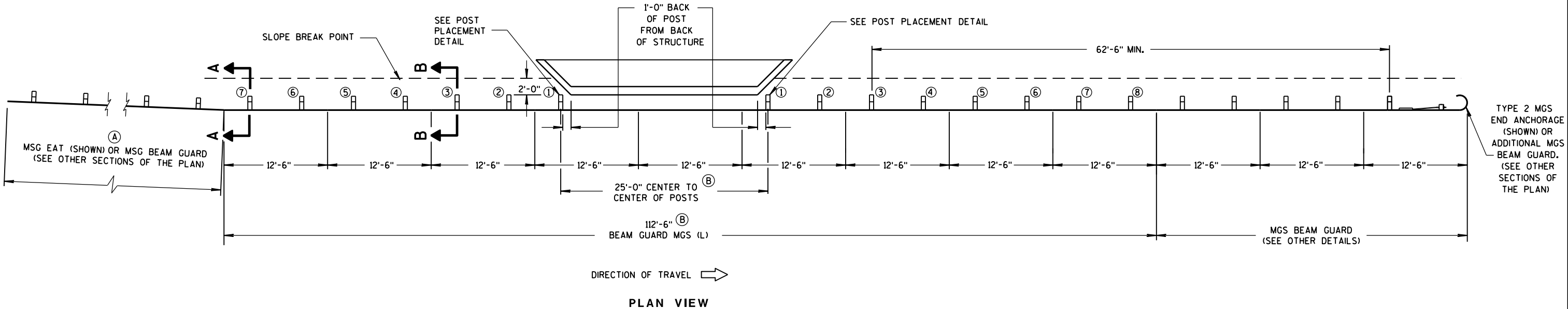
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 169

GENERAL NOTES

POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

- (A) FLARE FOR MGS EAT SHOWN. IF INSTALLING MGS NO FLARE NEEDED.
- (B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.

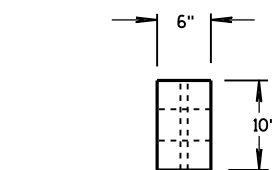


MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L) ONE-WAY TRAFFIC

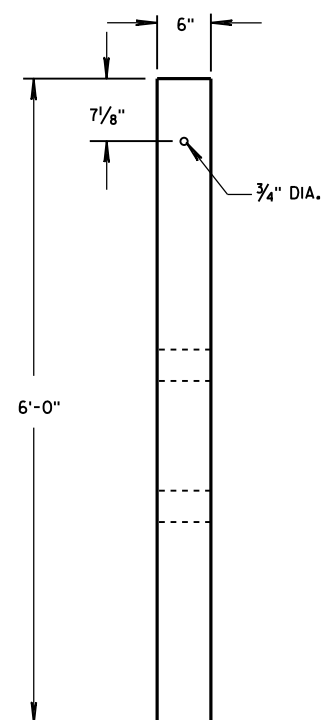
MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

170

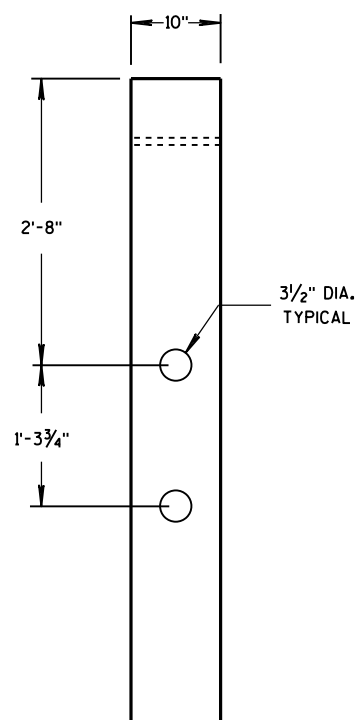


PLAN VIEW

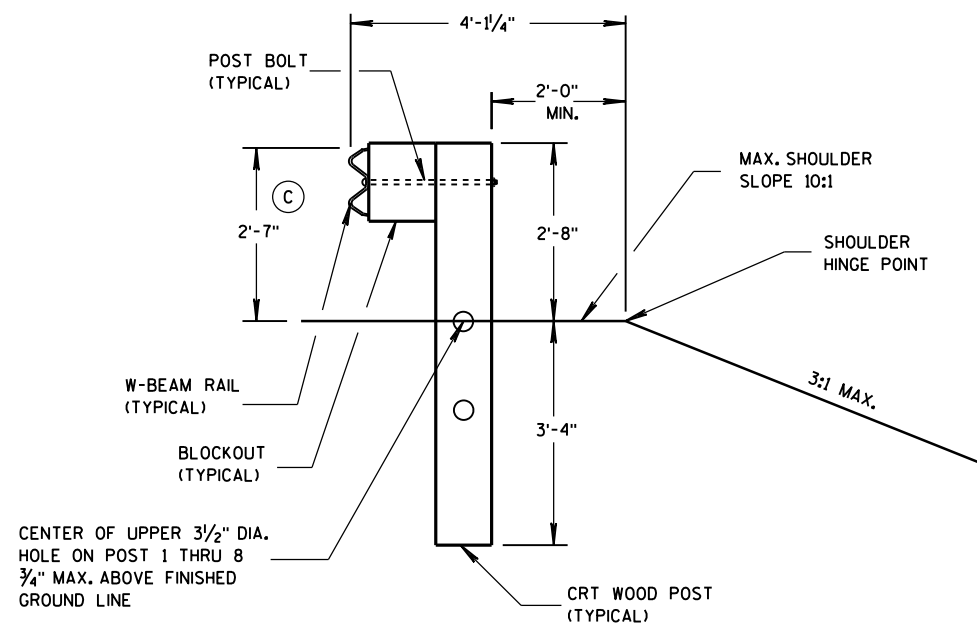


FRONT VIEW

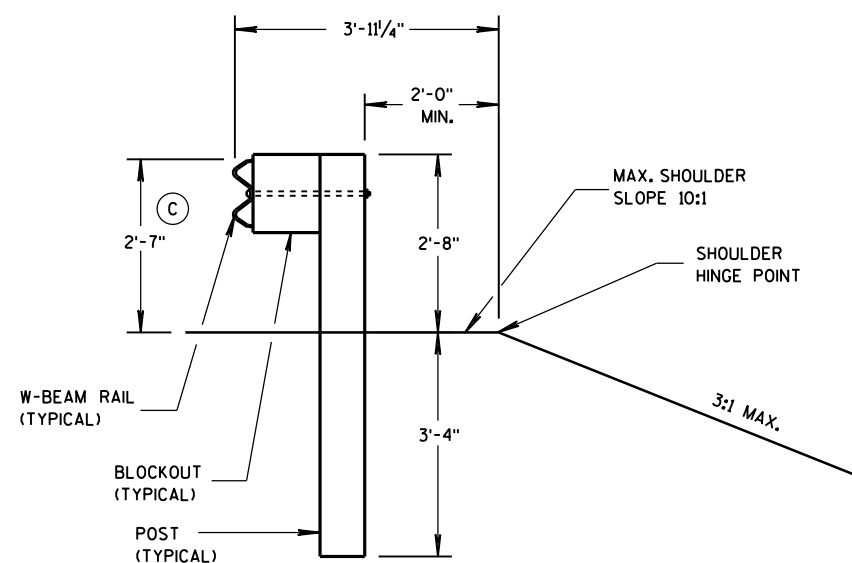
CRT WOOD POST



SIDE VIEW

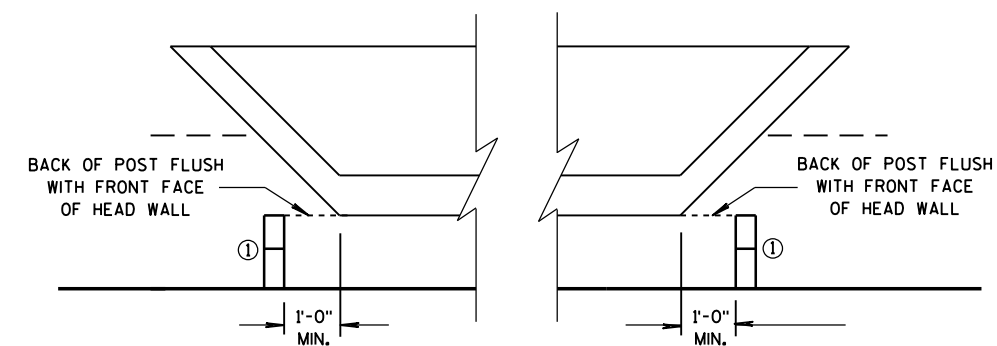
SECTION B-B
POSTS NO. 1-3

SEE OTHER DETAILS

SECTION A-A
POSTS NO. 4-8

SEE OTHER DETAILS

GENERAL NOTES

(C) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.

POST PLACEMENT DETAIL

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5/10/2013

DATE

FHWA

/S/ Jerry H. Zogg

ROADWAY STANDARDS (171)

ENGINEER

6

- S.D.D. 14 B 44-1a**

* DO NOT ATTACH BLOCKOUTS TO POSTS 1 AND 2.

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

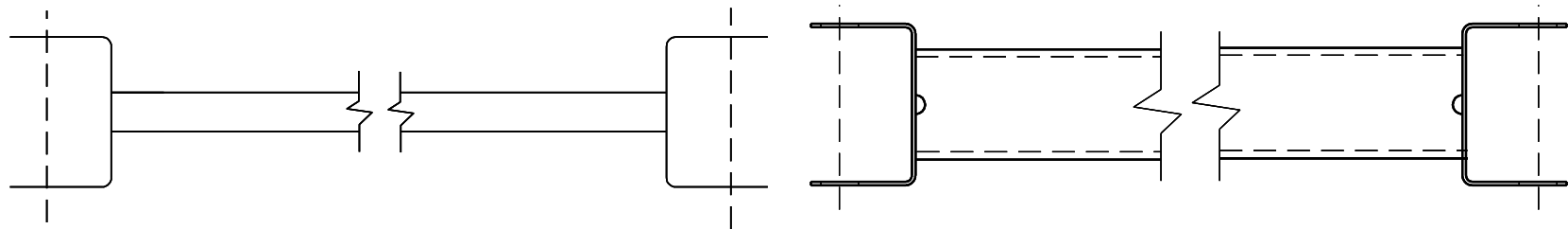
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3
THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE (+ 3/4")



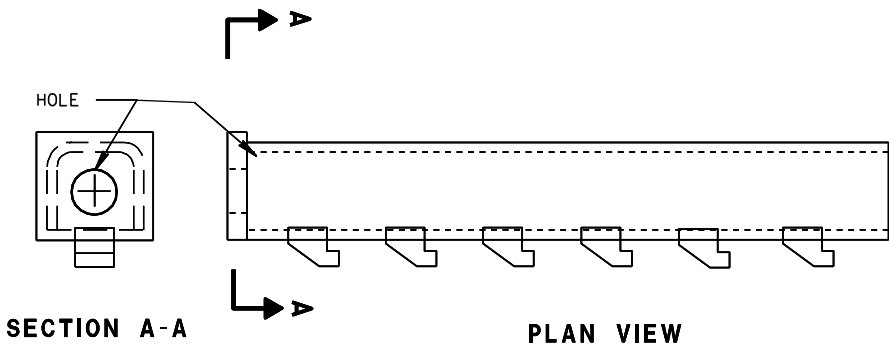
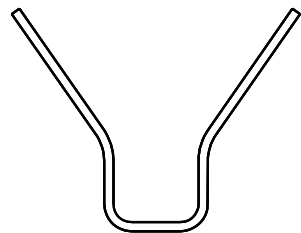
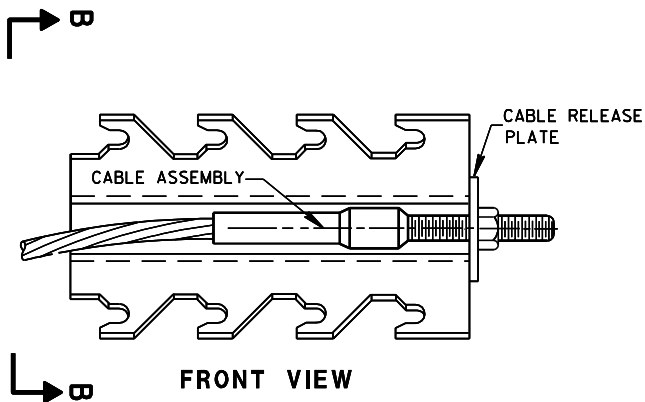
SECTION A-A
TYPICAL AT POST NO. 1*



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



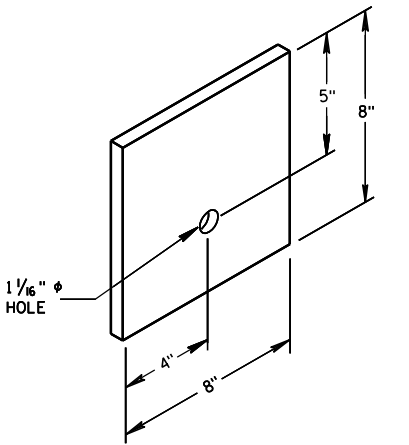
GENERIC GROUND STRUT (9) (H)



GENERIC ANCHOR CABLE BOX (8) (H)

BILL OF MATERIALS

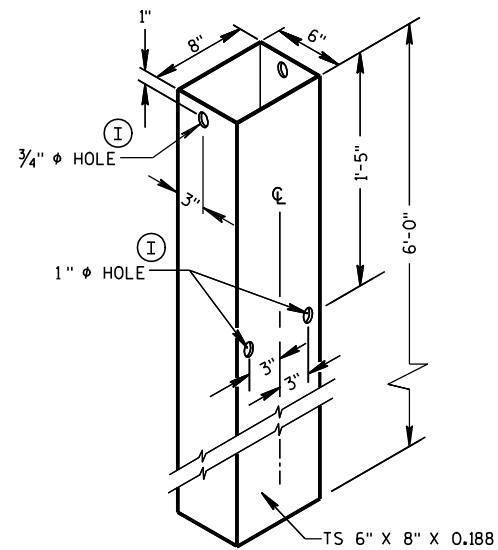
PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
(1)	WOOD BREAKAWAY POST
(2)	6" X 8" X 0.188", 6'-0" LONG FOUNDATION TUBE AT POSTS 1 AND 2
(3)	WOOD CRT
(4)	WOOD BLOCKOUT
(5)	PIPE SLEEVE
(6)	BEARING PLATE
(7)	BCT CABLE ASSEMBLY
(8)	ANCHOR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



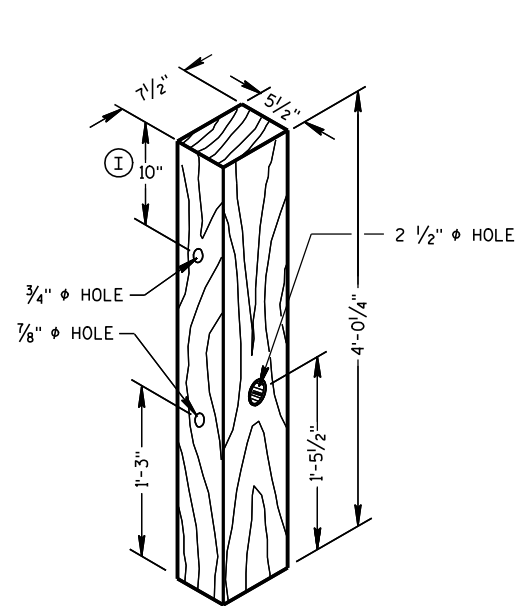
BEARING PLATE (6)

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

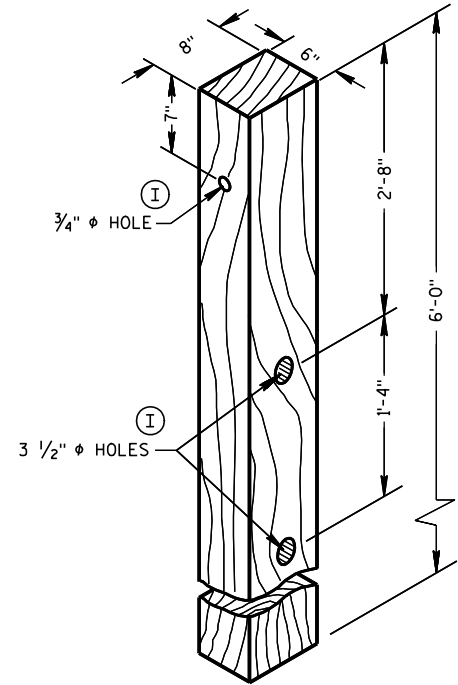
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



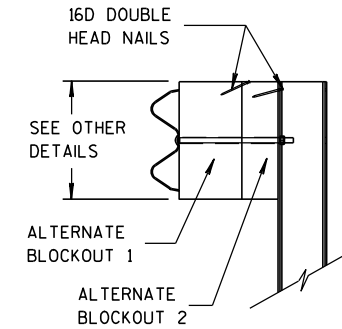
FOUNDATION TUBE ②



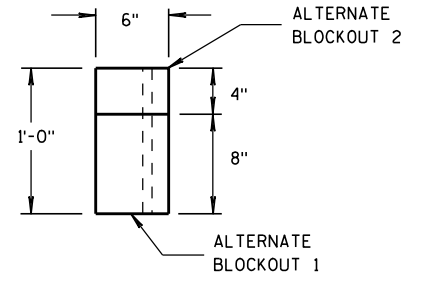
POSTS NUMBER 1 AND 2
WOOD BREAKAWAY POST ①



POSTS NUMBER 3-9
WOOD CRT POST ③

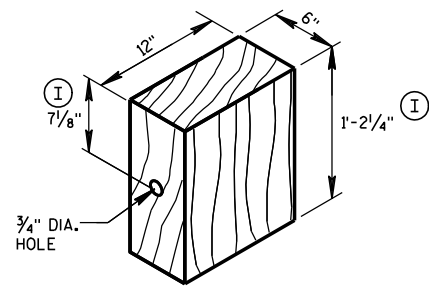


SIDE VIEW



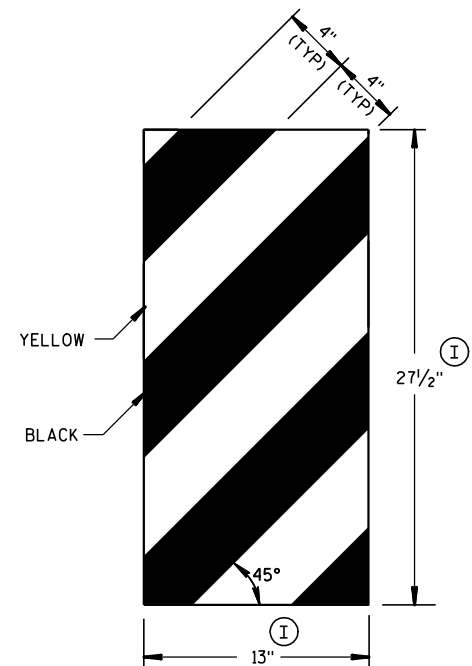
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

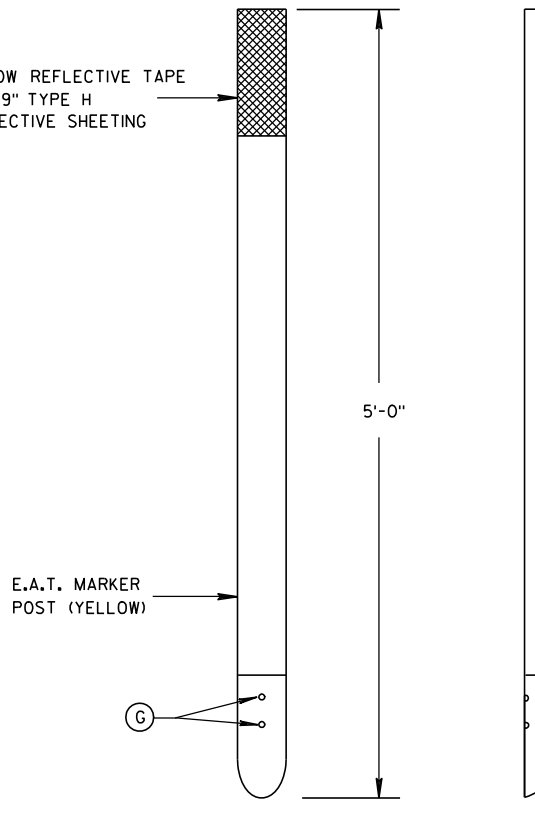
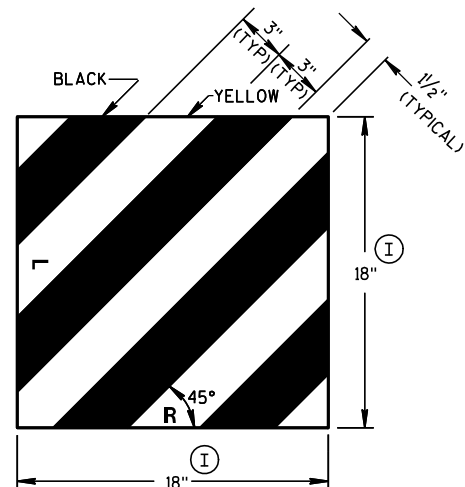


WOOD BLOCKOUT ④
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2

YELLOW REFLECTIVE TAPE
3" X 9" TYPE H
REFLECTIVE SHEETING



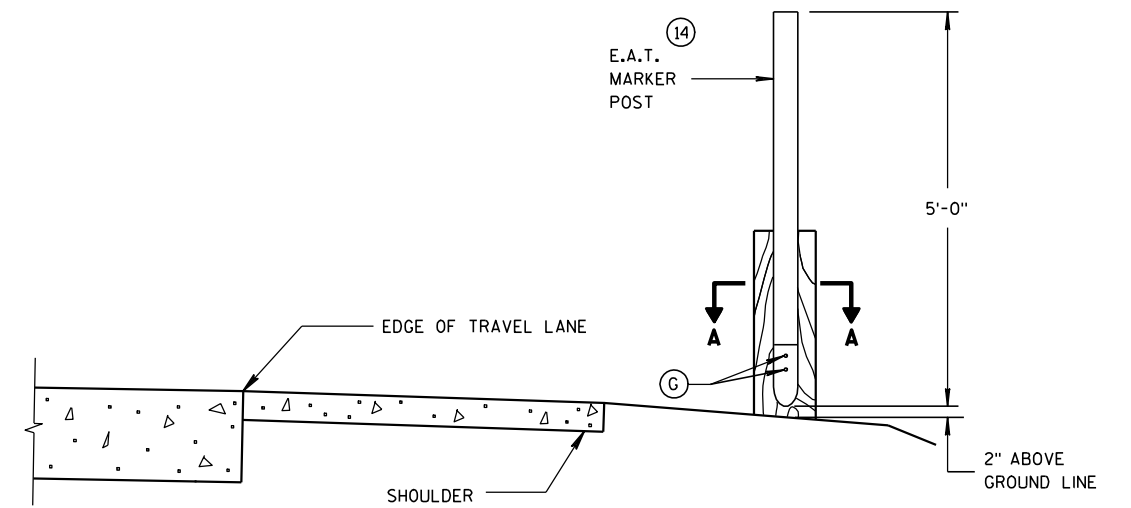
GENERIC REFLECTIVE SHEETING ⑬ ④



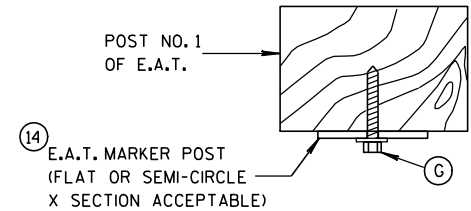
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⑭



TYPICAL INSTALLATION OF E.A.T.
MARKER POST BACKSIDE OF POST NO. 1
(E.A.T. AND RAIL REMOVED FOR CLARITY)

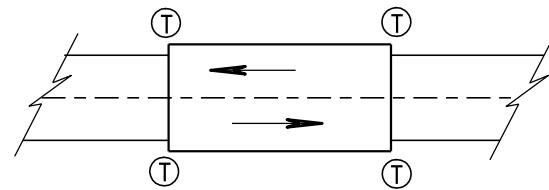


SECTION A-A

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

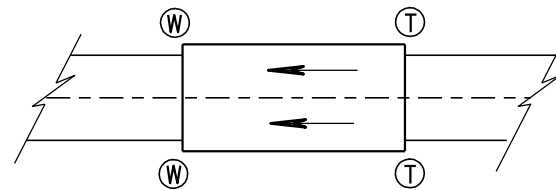
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/23/2011 /S/ Jerry H. 3000
DATE ROADWAY STANDARDS 174 1ENT
FHWA ENGINEER



TWO WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION



ONE WAY TRAFFIC

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

GENERAL NOTES

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

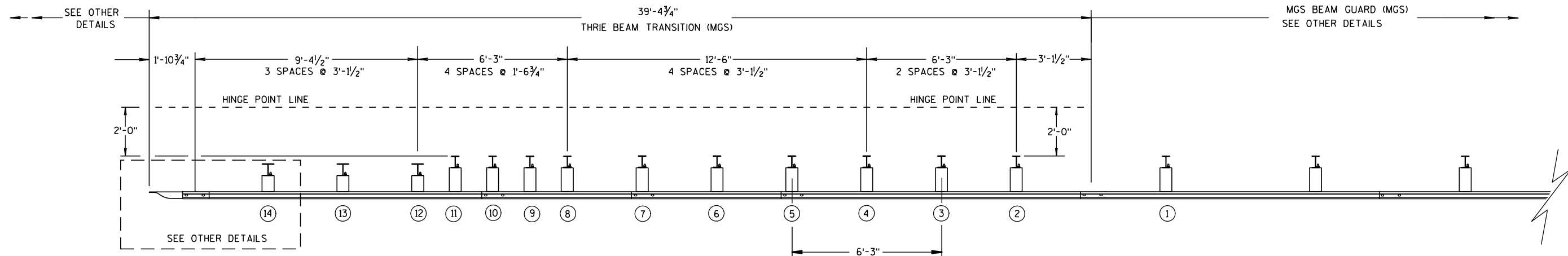
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

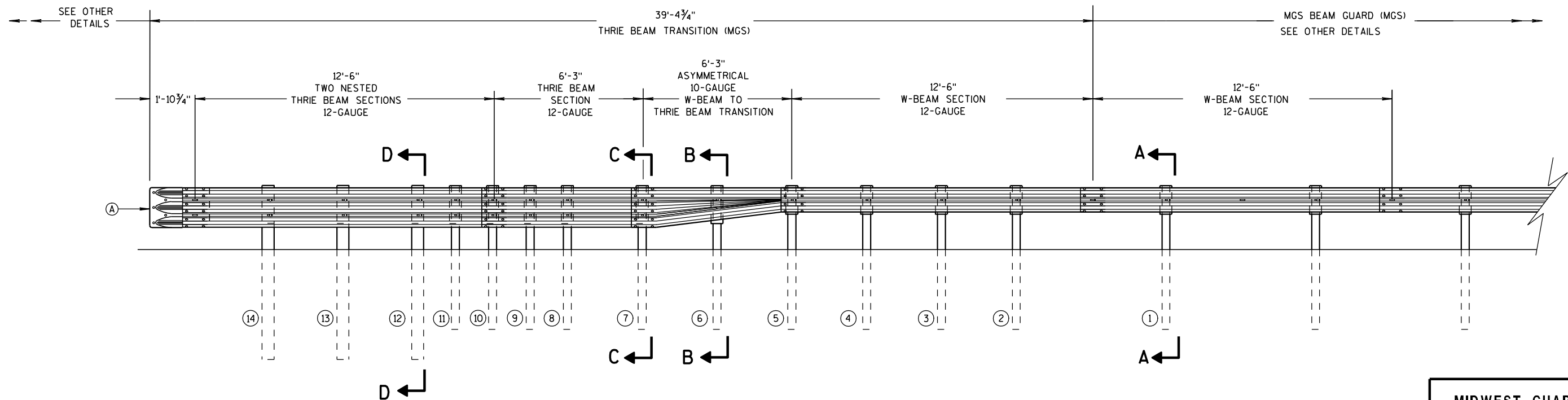
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

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
175

6

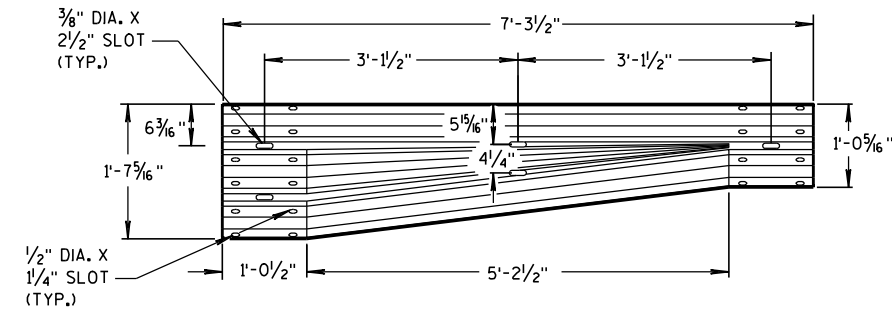
S.D.D. 14 B 45-3b



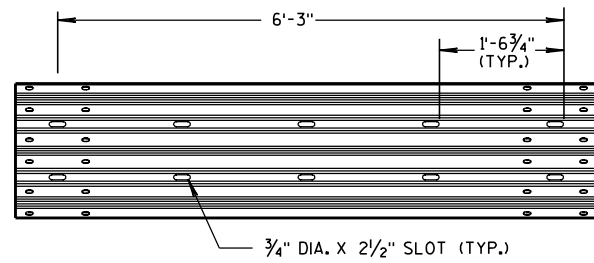
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 176

S.D.D. 14 B 45-3b

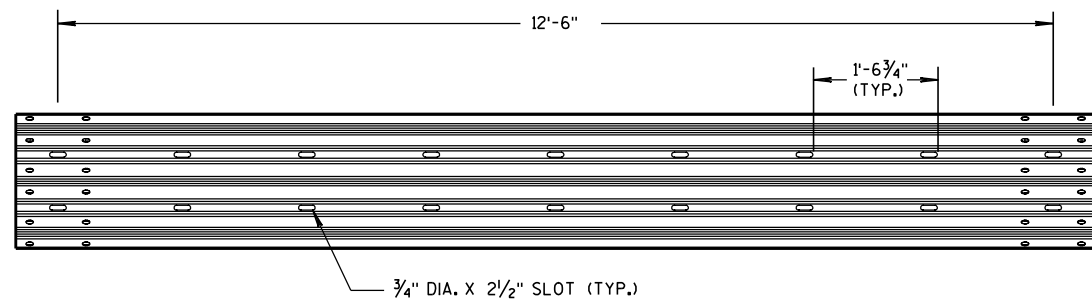
6



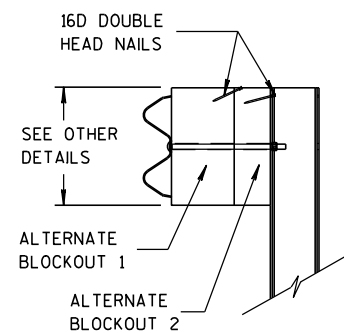
W-BEAM TO THRIE BEAM TRANSITION SECTION



6'-3" THRIE BEAM SECTION

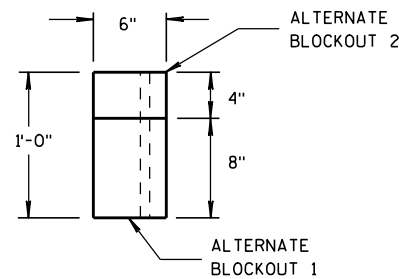


12'-6" THRIE BEAM SECTION

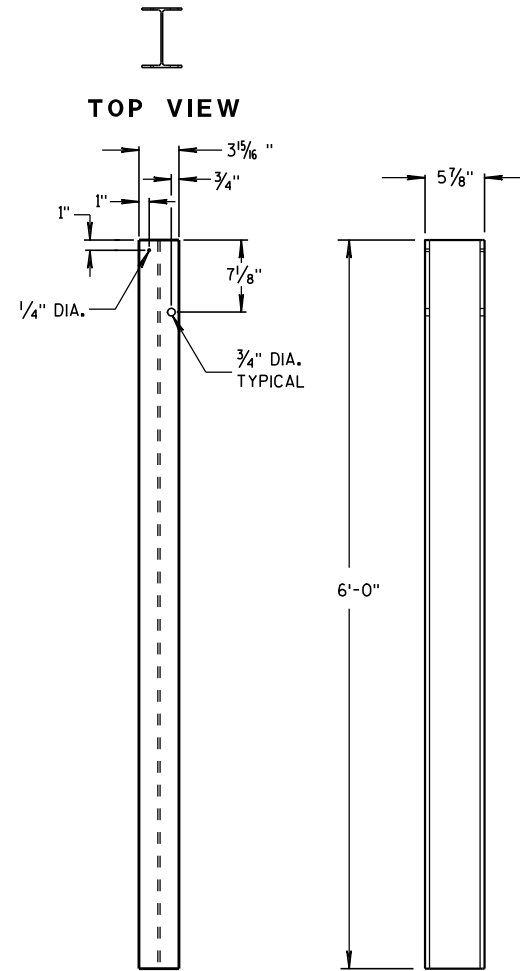


SIDE VIEW

ALTERNATE WOOD BLOCKOUT DETAIL



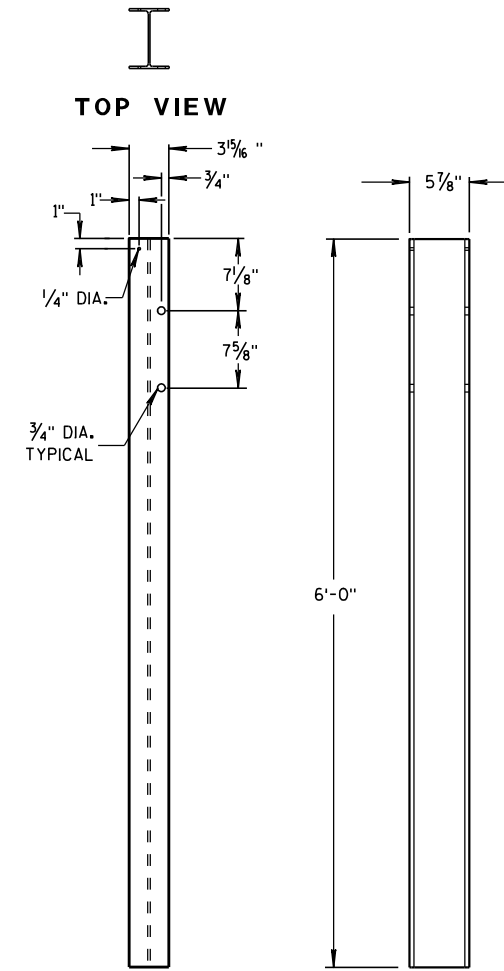
TOP VIEW



FRONT VIEW

SIDE VIEW

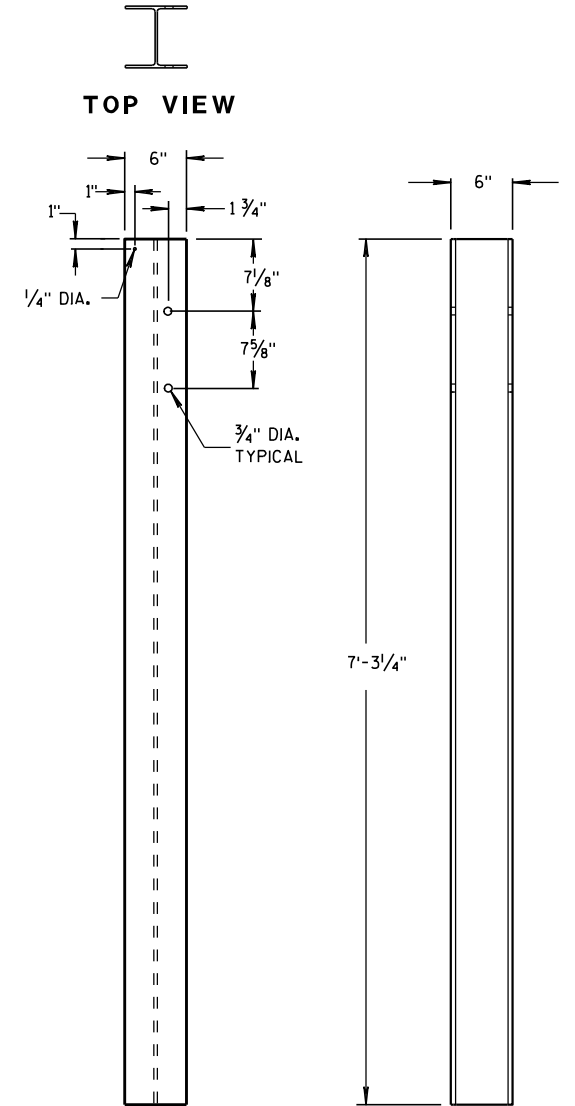
STEEL POSTS 1-5



FRONT VIEW

SIDE VIEW

STEEL POSTS 6-11



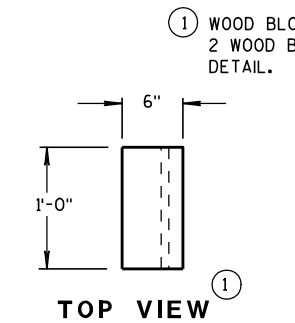
FRONT VIEW

SIDE VIEW

STEEL POSTS 12-14

STEEL POST SIZES

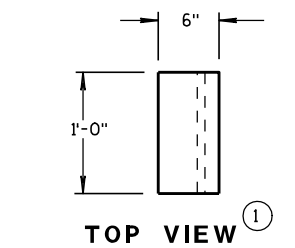
POST NUMBER	SECTION TYPE	LENGTH
①	W6x9	72"
②	W6x9	72"
③	W6x9	72"
④	W6x9	72"
⑤	W6x9	72"
⑥	W6x9	72"
⑦	W6x9	72"
⑧	W6x9	72"
⑨	W6x9	72"
⑩	W6x9	72"
⑪	W6x9	72"
⑫	W6x15	87 1/8"
⑬	W6x15	87 1/8"
⑭	W6x15	87 1/8"



TOP VIEW

FRONT VIEW

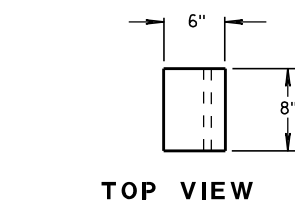
BLOCKOUT POSTS 1-5



TOP VIEW

FRONT VIEW

BLOCKOUT POSTS 6-11

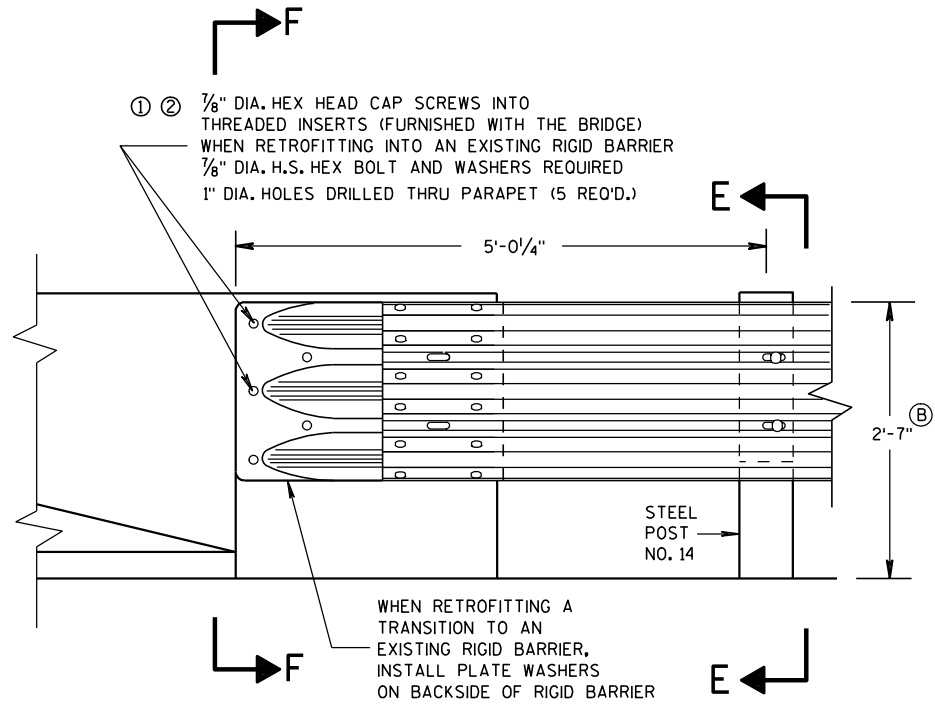


TOP VIEW

FRONT VIEW

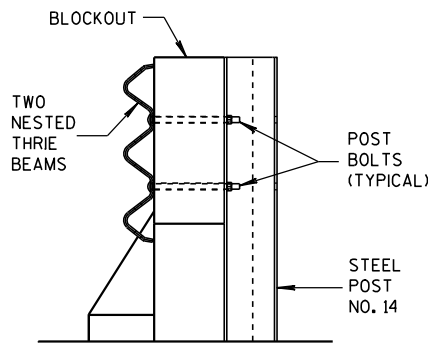
BLOCKOUT POSTS 12-14

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)



FRONT VIEW

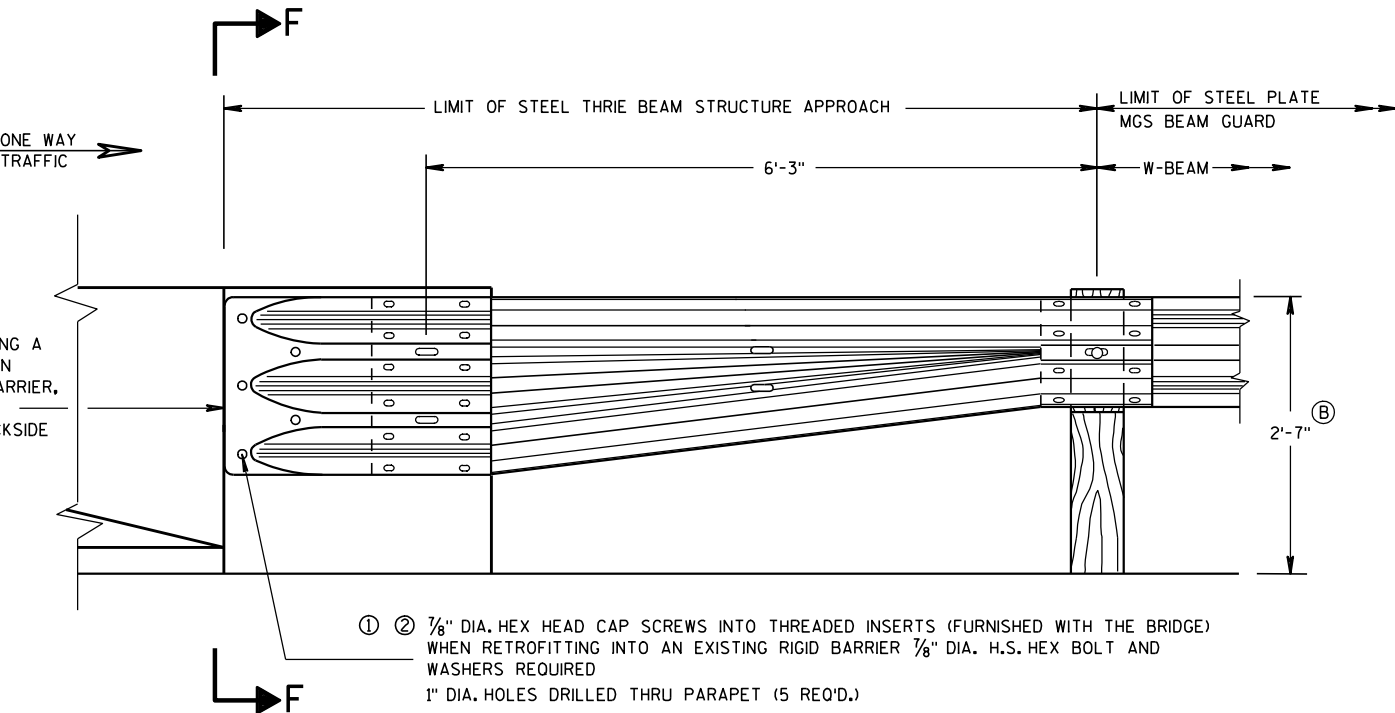
THRIE BEAM CONNECTION TO BRIDGE
PARAPET WITH SQUARE ENDS



SECTION E-E

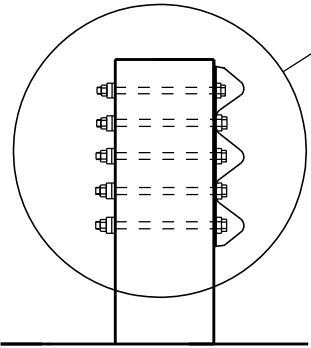
GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
 - ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS, BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
 - ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".
- Ⓑ TOLERANCE FOR TOP OF BEAM IS ± 1".

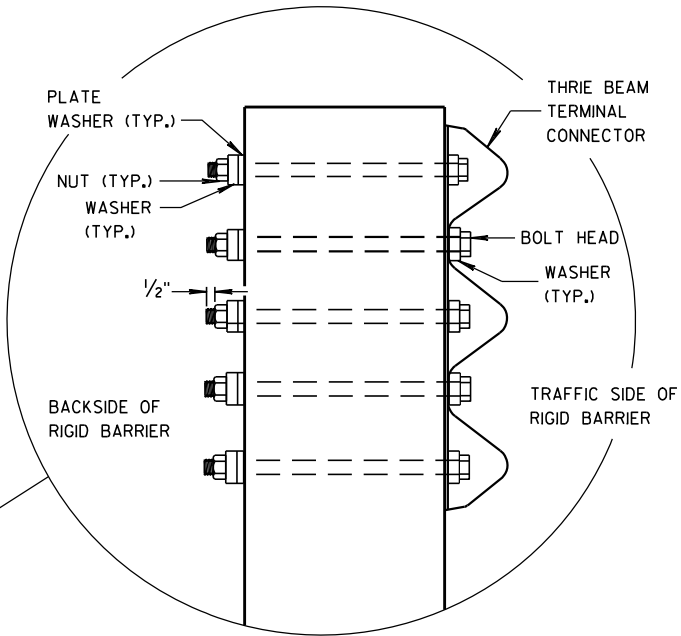


FRONT VIEW

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

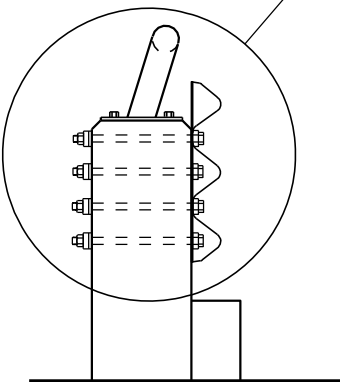
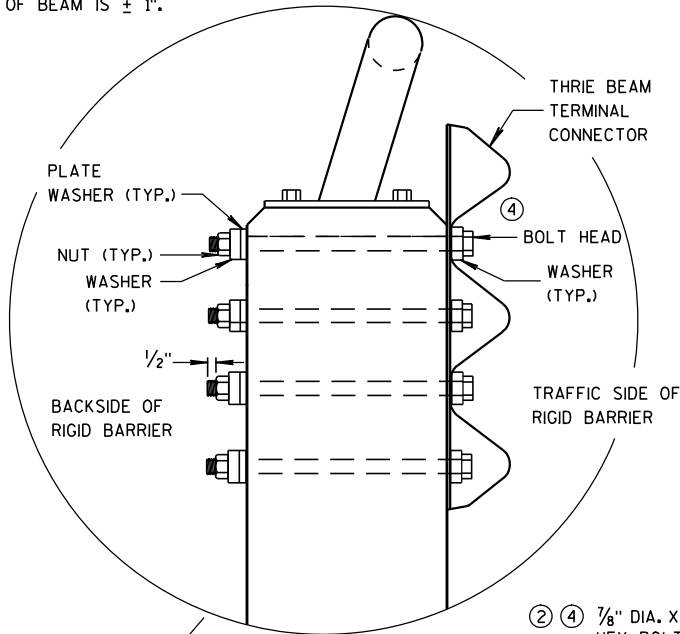


MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED	8/31/2012	/S/ Jerry H. Zapp	ENT
	DATE	ROADWAY STANDARDS	178
FHWA		ENGINEER	

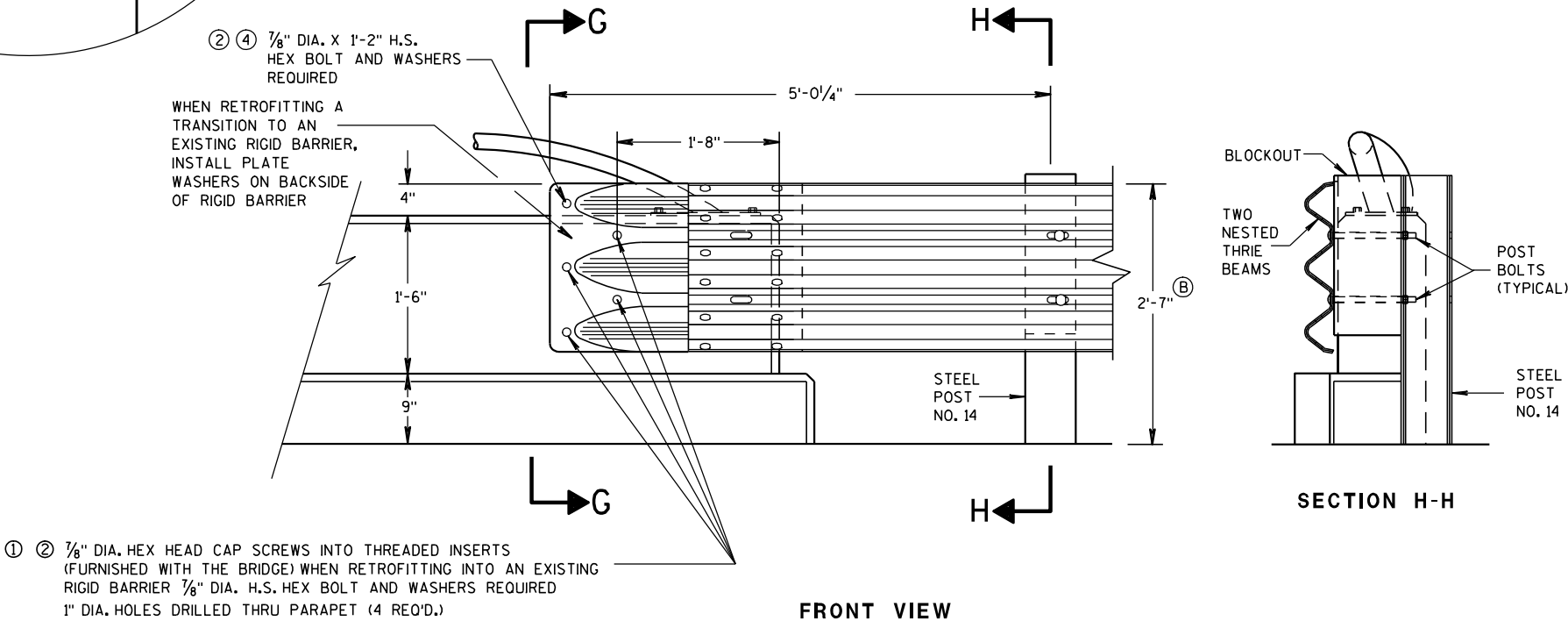
GENERAL NOTES

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

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{8}$ " THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 $\frac{1}{2}$ ". BLOCK IS INCIDENTAL TO THE CONTRACT.
- ④ BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.
- Ⓑ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

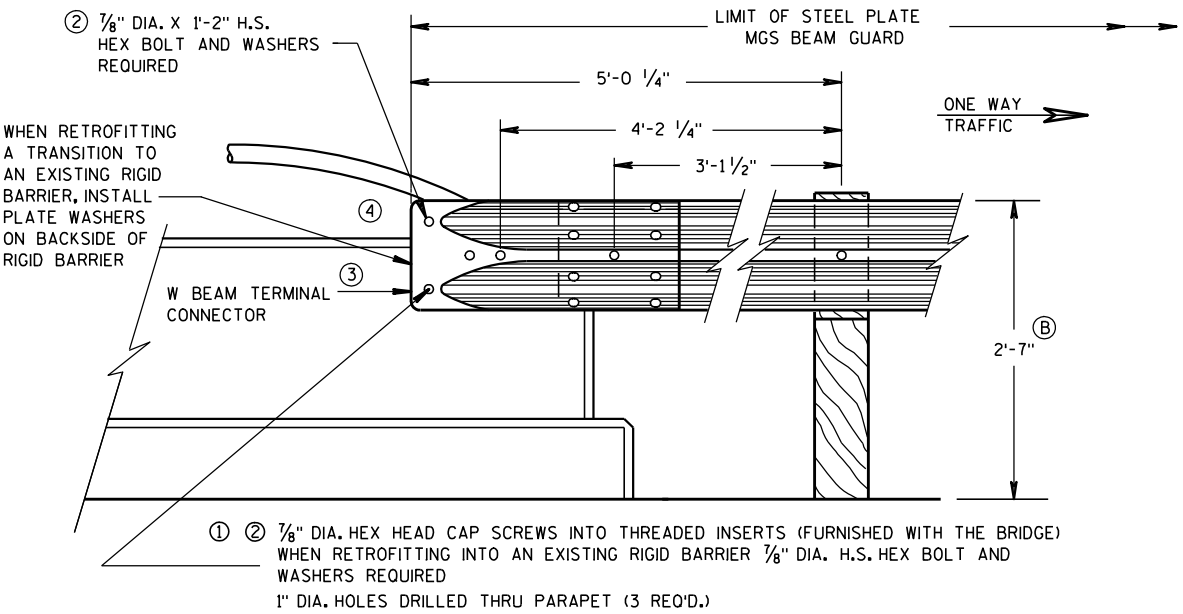


SECTION G-G



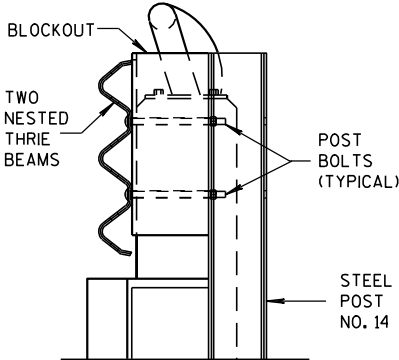
FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

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

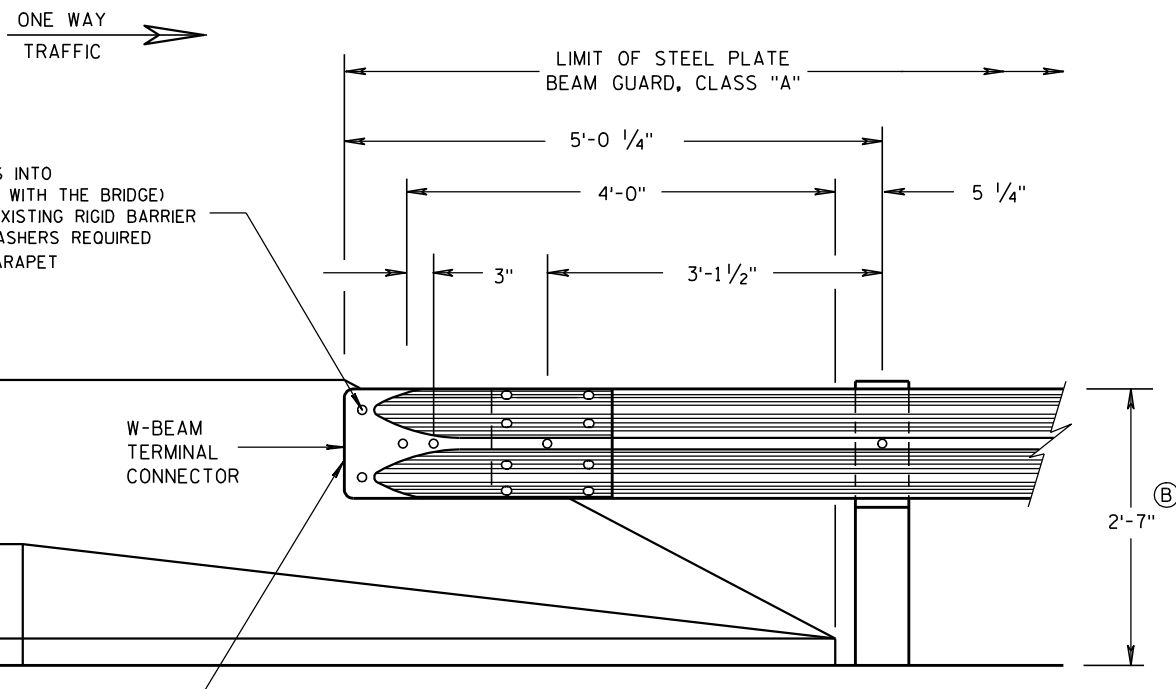


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS 179 ENT
FHWA ENGINEER



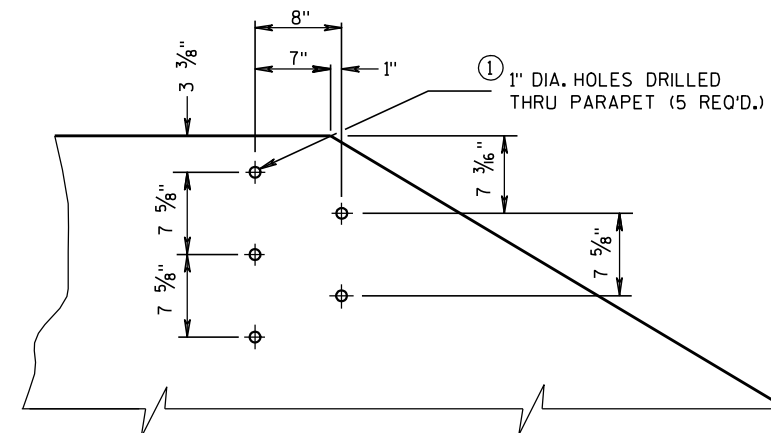
FRONT VIEW

W BEAM CONNECTION TO PARAPETS WITH SLOPED ENDS

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

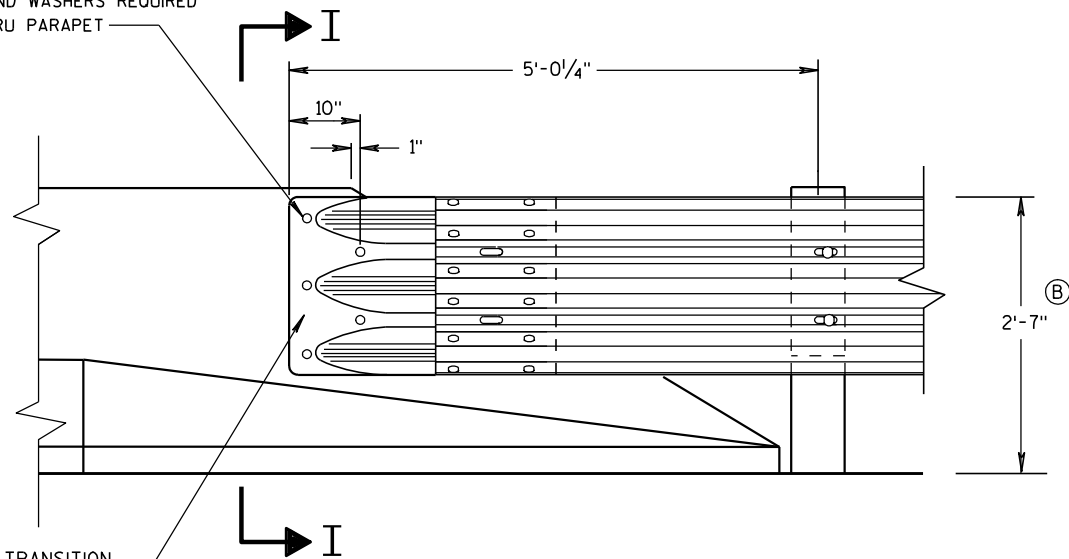
GENERAL NOTES

- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ③ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.



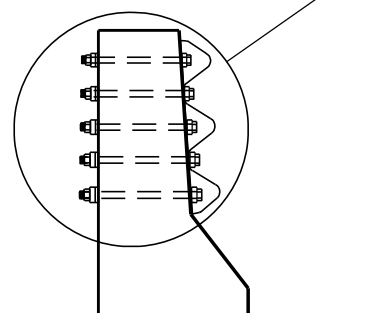
DRILL HOLE LOCATION AND PATTERN FOR THRIE BEAM CONNECTION

- ① ② 1/8" DIA. HEX HEAD CAP SCREWS INTO
THREADED INSERTS (FURNISHED WITH THE BRIDGE)
WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER
1/8" DIA. H.S. HEX BOLT AND WASHERS REQUIRED
1" DIA. HOLES DRILLED THRU PARAPET
(5 REQ'D.)

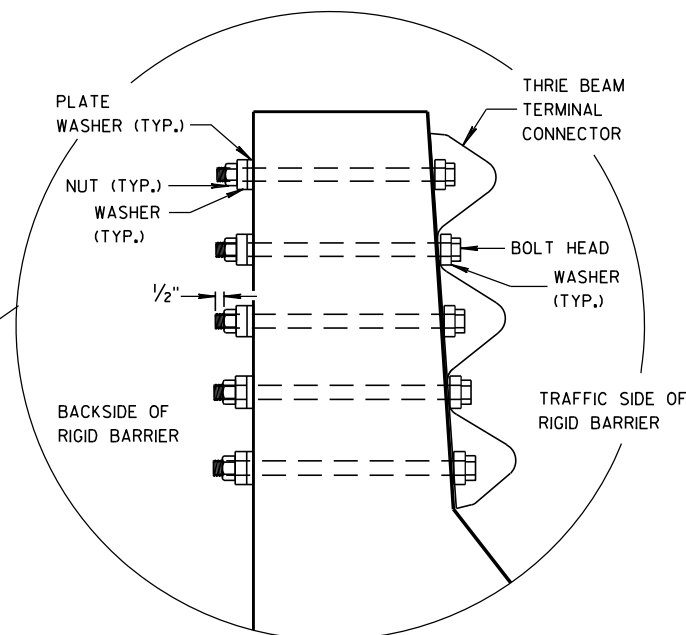


FRONT VIEW

THRIE BEAM CONNECTION TO BRIDGE PARAPETS WITH SLOPED ENDS



SECTION I-I



MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

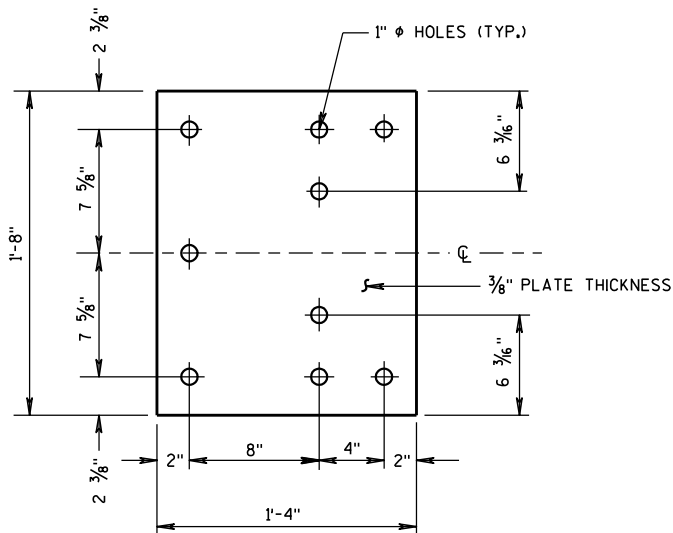
DATE

FHWA

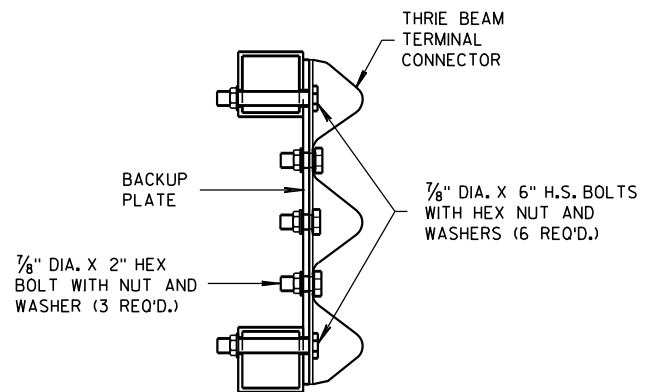
/S/ Jerry H. Zapp

ROADWAY STANDARDS 180

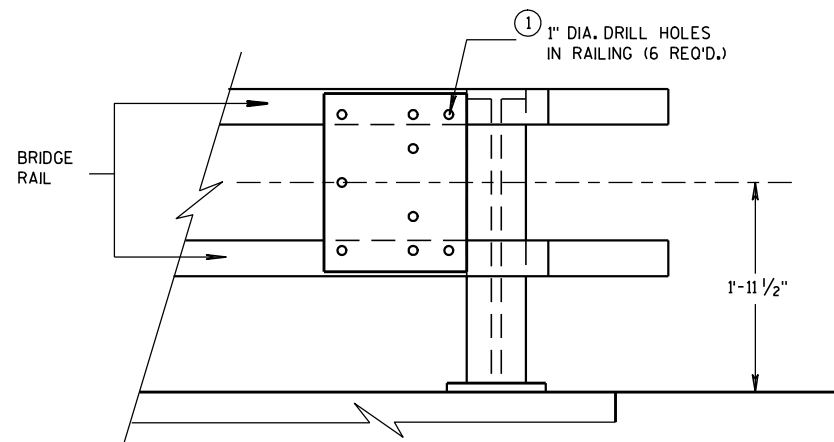
ENGINEER



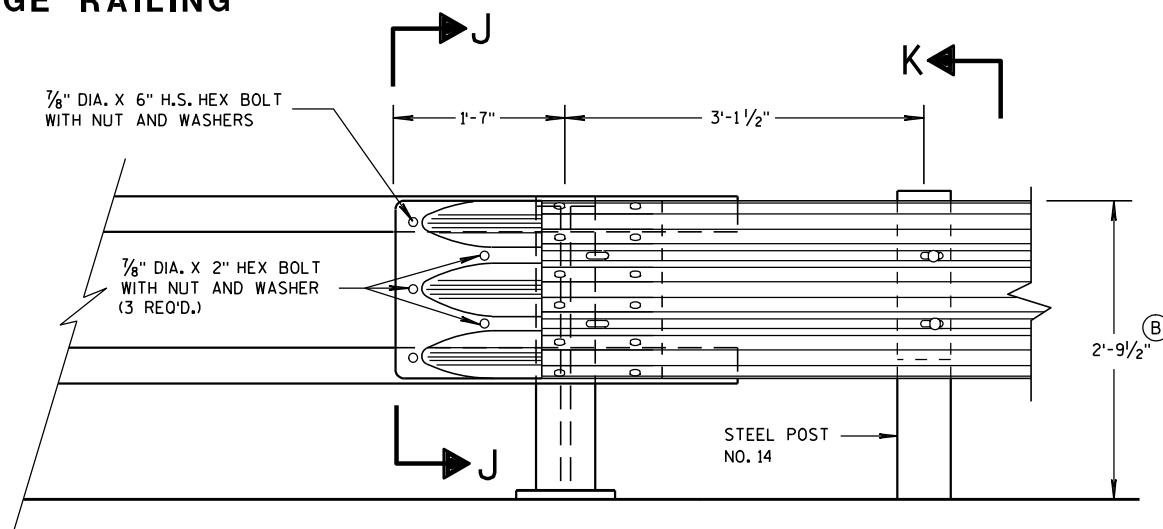
BACK-UP PLATE DETAIL



SECTION J-J

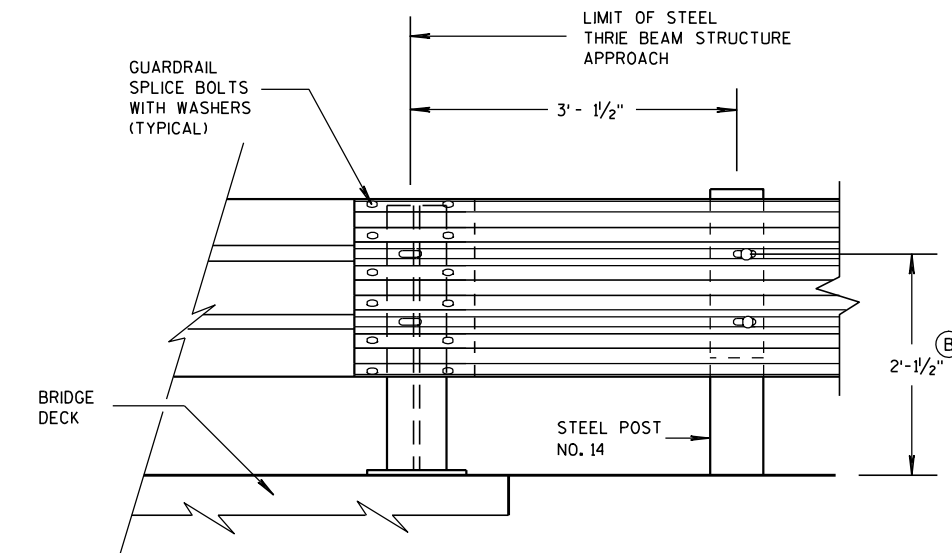


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



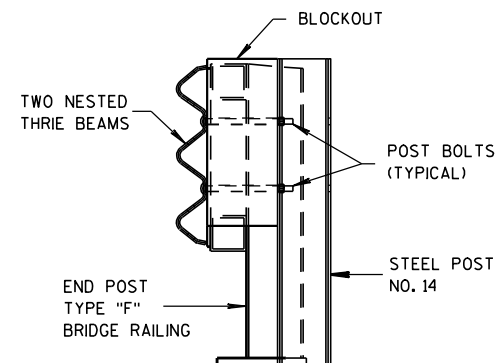
FRONT VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"



SECTION K-K

GENERAL NOTES

- ① DRILLING HOLES THROUGH THE PAPER, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.

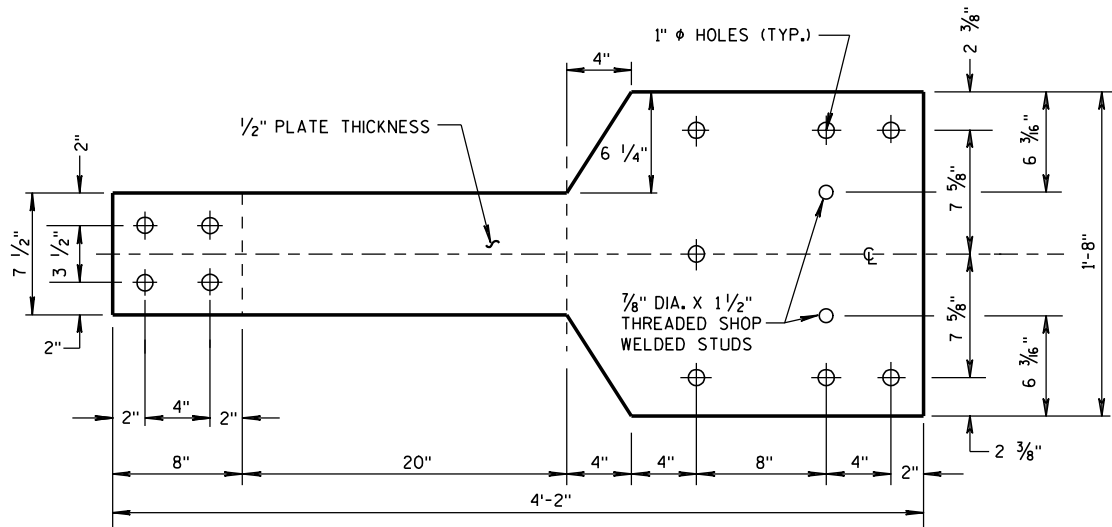
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

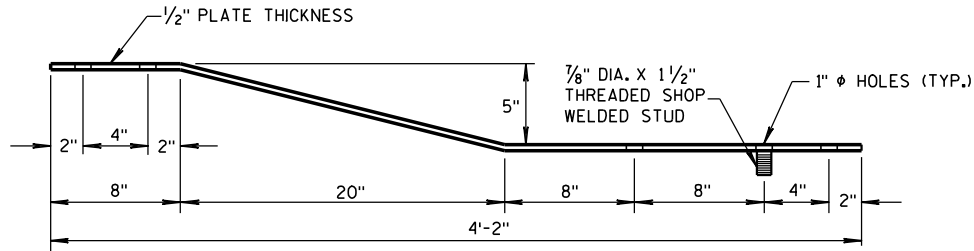
APPROVED
8/31/2012 DATE /S/ Jerry H. Zeng
ROADWAY STANDARDS 181 ENGINEER
FHWA

GENERAL NOTES

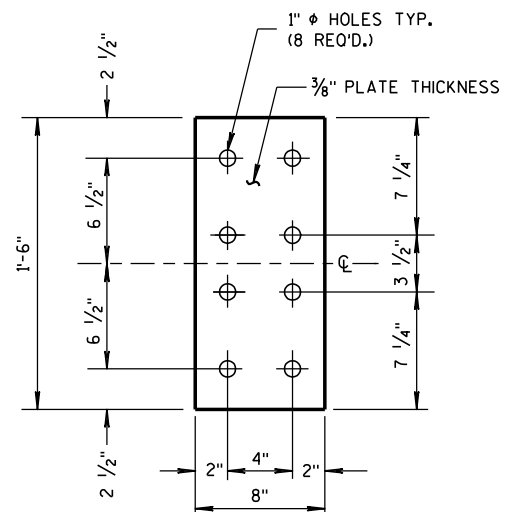
(B) TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

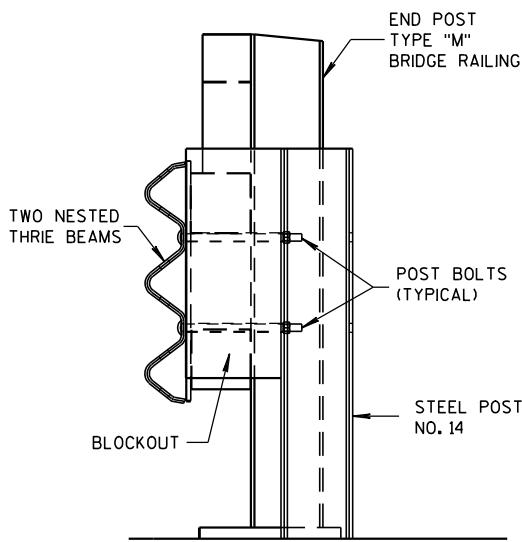


PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"

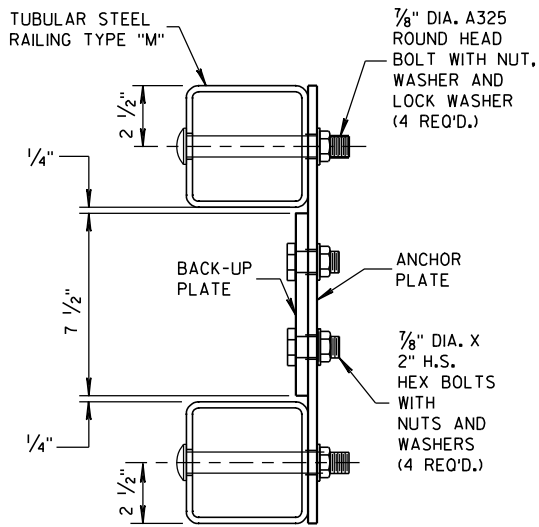


FRONT VIEW

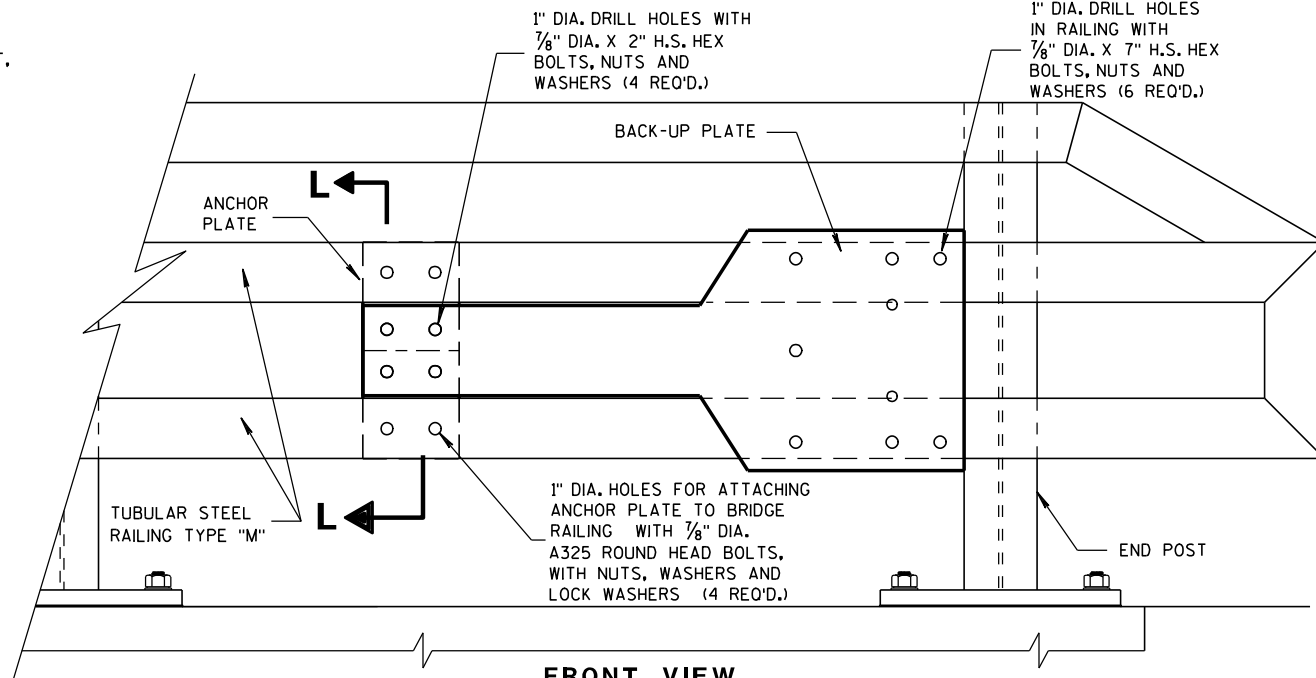
ANCHOR
PLATE DETAIL,
TYPE "M"



SECTION M-M

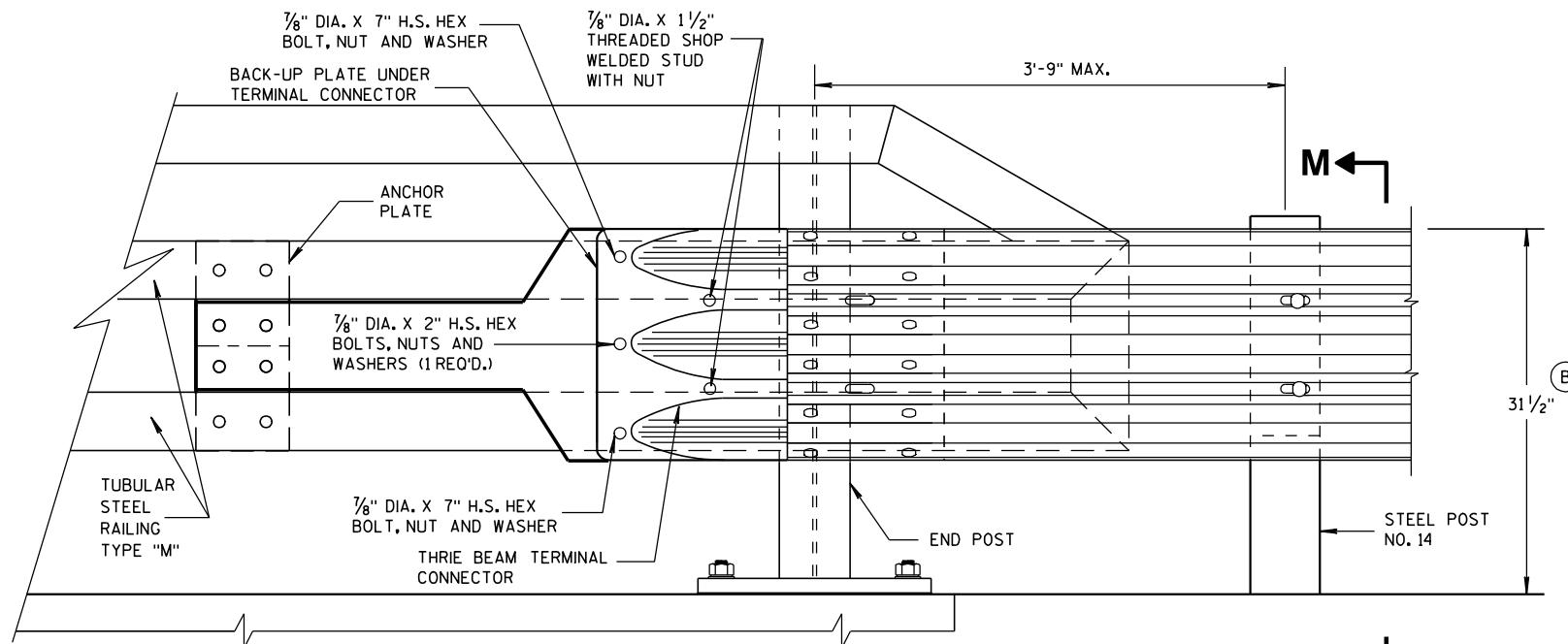


SECTION L-L

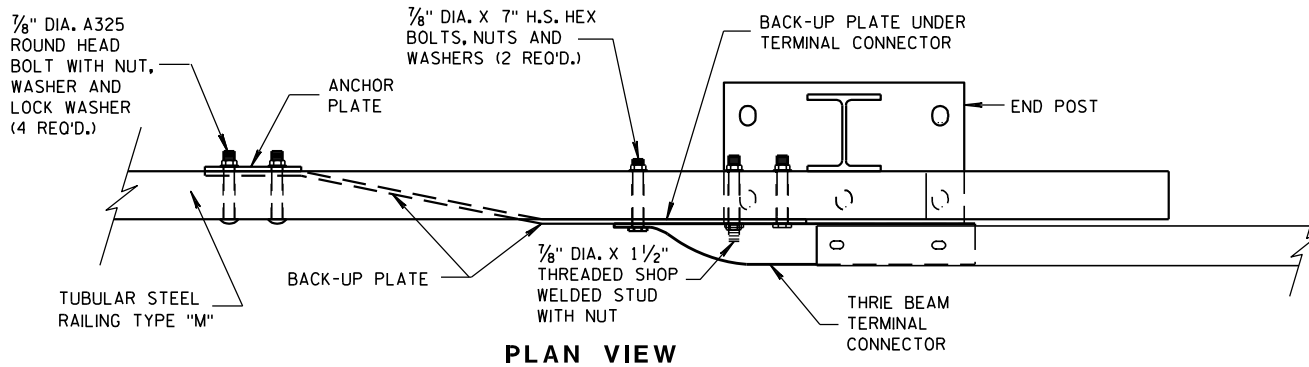


FRONT VIEW

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



FRONT VIEW



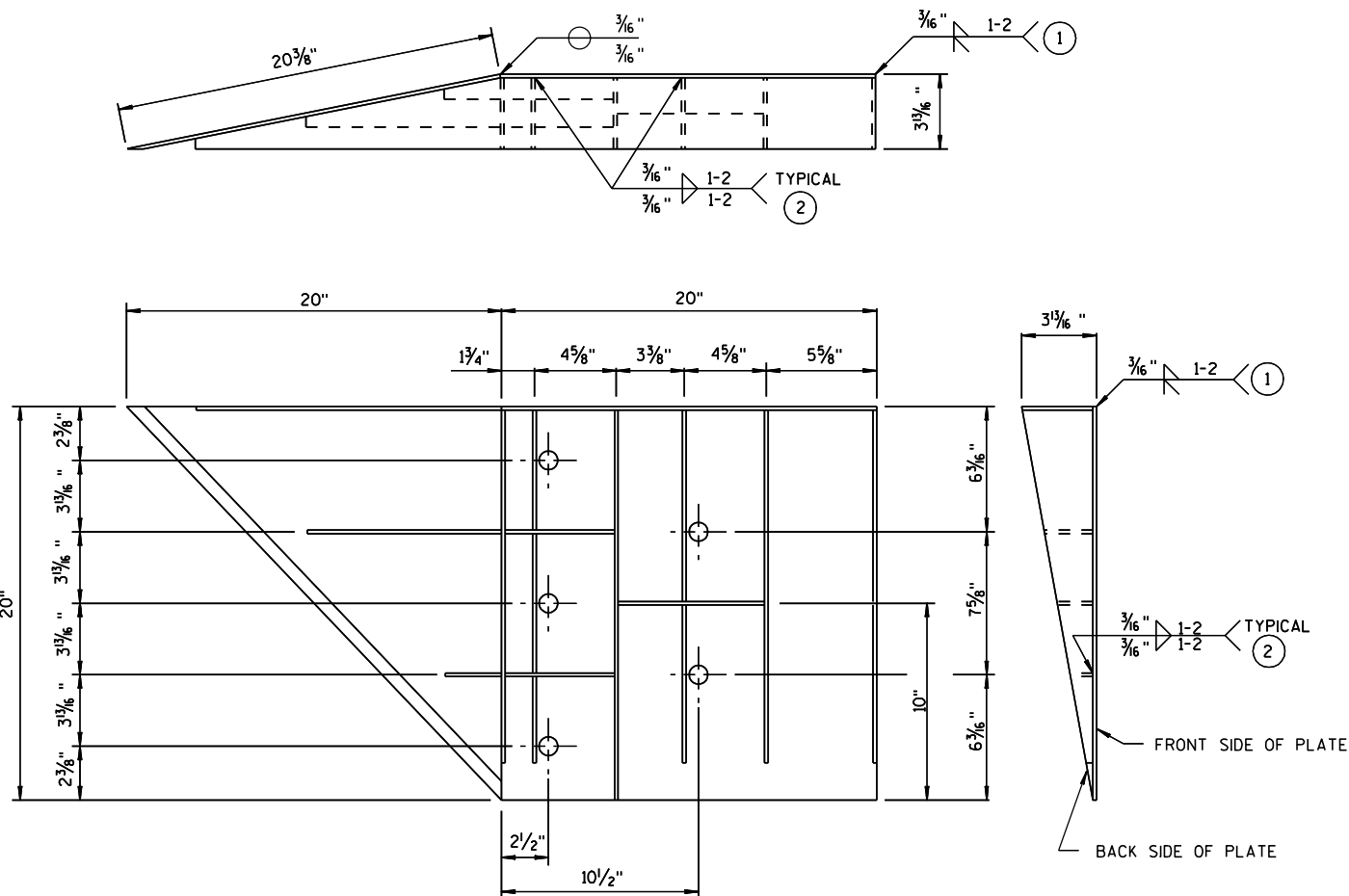
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8-31-2012 DATE
JERRY H. ZIMMERMAN
ROADWAY STANDARDS 182
ENGINEER

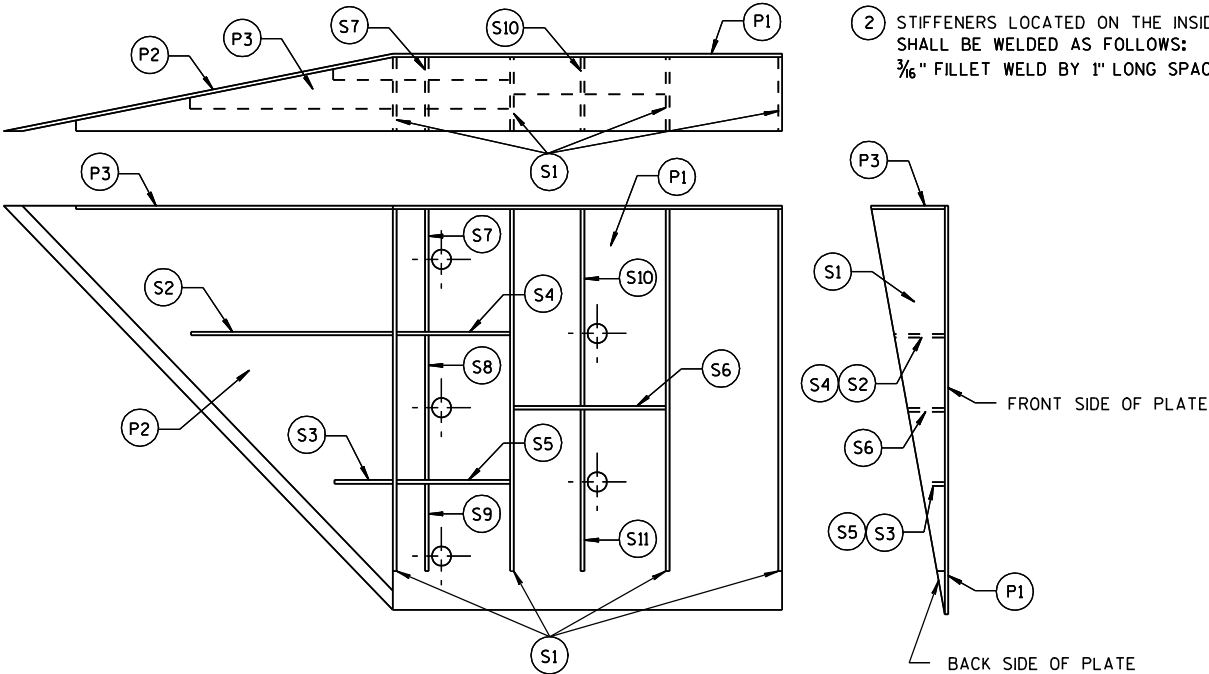


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

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

PLATE AND STIFFENER IDENTIFICATION
(VIEWED FROM BACK SIDE OF PLATE)



GENERAL NOTES

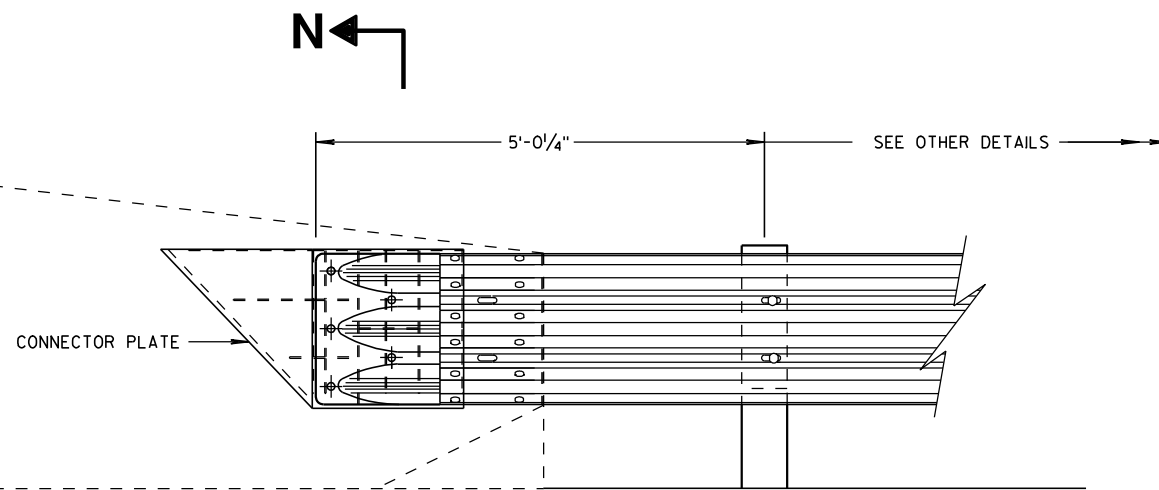
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

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

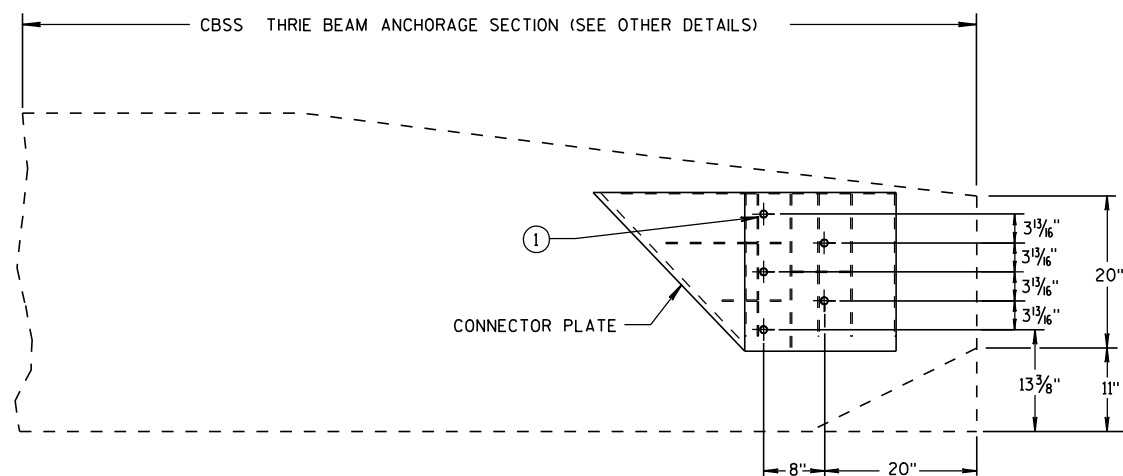
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/31/2012 DATE /S/ Jerry H. 183 JENT
FHWA ROADWAY STANDARDS ENGINEER



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER

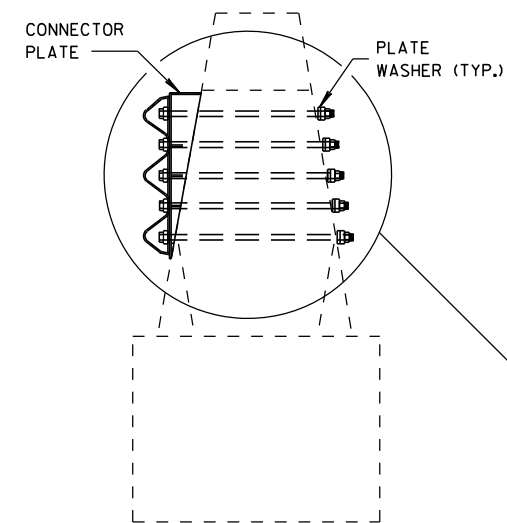


SINGLE SLOPE CONNECTION PLATE PLACEMENT

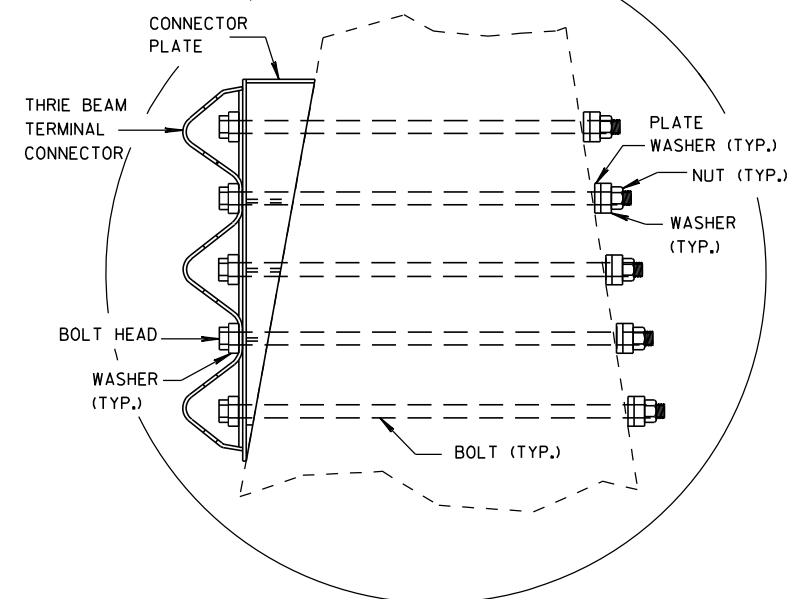
GENERAL NOTES

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

- ① BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/8" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/31/2012

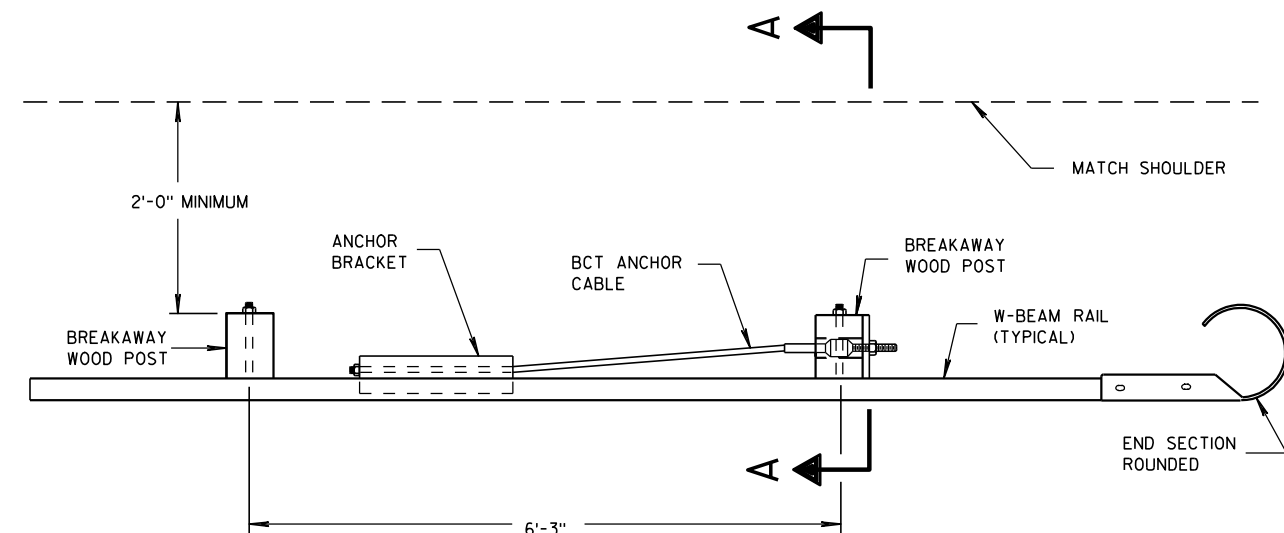
DATE

FHWA

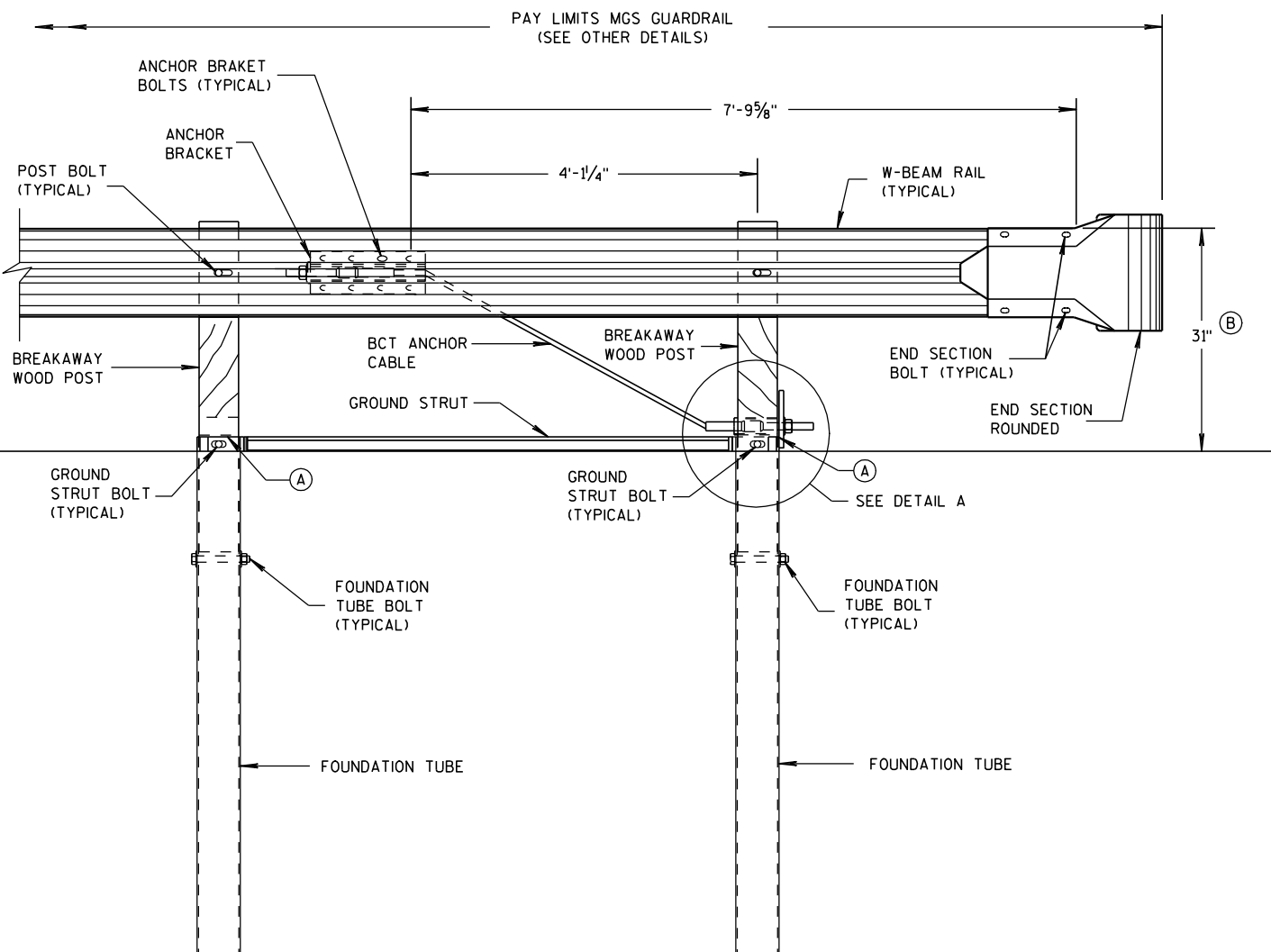
/S/ Jerry H. 7000

ROADWAY STANDARDS 184 ENT

ENGINEER

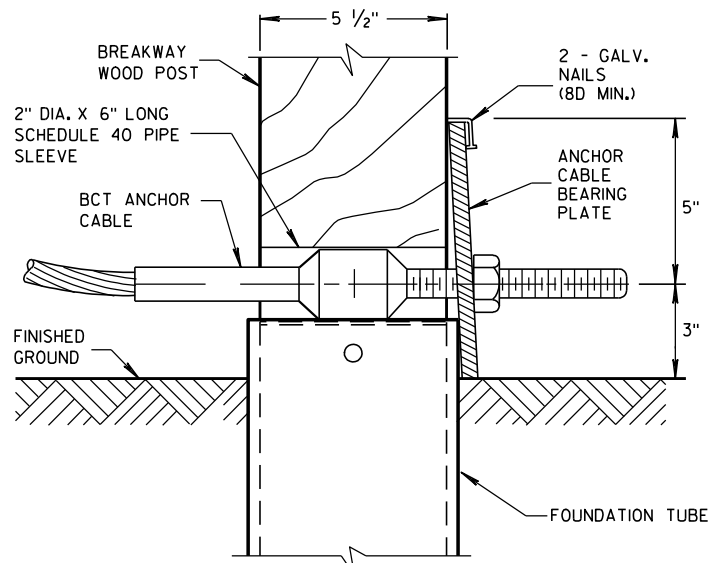


PLAN VIEW



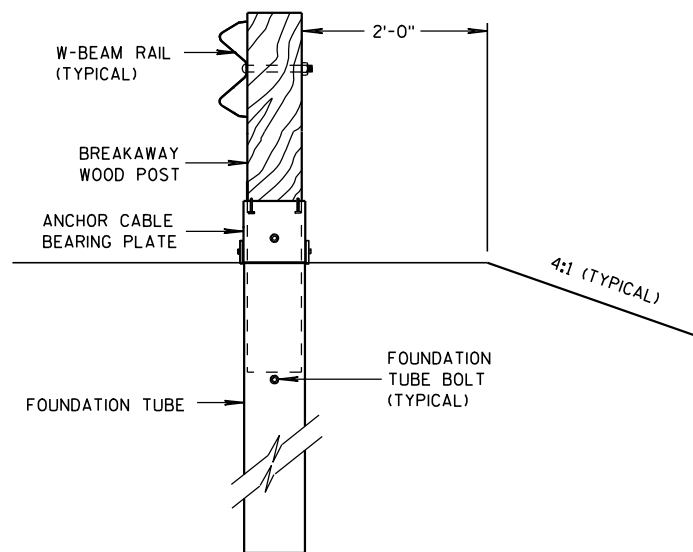
FRONT VIEW

END RAIL DETAIL



DETAIL A

POST NO. 1
GROUND STRUT NOT SHOWN FOR CLARITY.



SECTION A-A

GENERAL NOTES

SEE SDD 14 B 42 FOR MORE INFORMATION.

POST BOLTS ARE A $\frac{5}{8}$ " DIAMETER X 10" LONG GUARDRAIL BOLT. A POST BOLT REQUIRES A $\frac{5}{8}$ " DIAMETER DH MODIFIED (RECESSED) HEAVY HEX NUT AND $\frac{5}{8}$ " DIAMETER FLAT WASHER.

FOUNDATION TUBE BOLTS ARE A $\frac{7}{8}$ " DIAMETER X $7\frac{1}{2}$ " LONG HEAVY HEX HEAD BOLT. A FOUNDATION TUBE BOLT REQUIRES A $\frac{7}{8}$ " DIAMETER DH HEAVY HEX NUT AND A $\frac{5}{8}$ " DIAMETER FLAT WASHER.

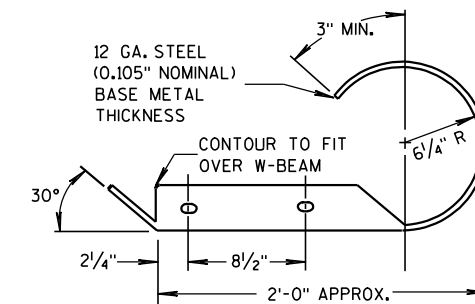
GROUND STRUT BOLTS ARE A $\frac{5}{8}$ " DIAMETER X 10" LONG HEAVY HEX HEAD BOLT. A GROUND STRUT BOLT REQUIRES A $\frac{5}{8}$ " DIAMETER DH HEAVY HEX NUT AND A $\frac{5}{8}$ " DIAMETER FLAT WASHER.

ANCHOR BRACKET BOLTS ARE A $\frac{5}{8}$ " DIAMETER X $1\frac{1}{2}$ " LONG HEAVY HEX HEAD BOLT. AN ANCHOR BRACKET BOLT REQUIRES A $\frac{5}{8}$ " DIAMETER DH HEAVY HEX NUT AND A FLAT WASHER.

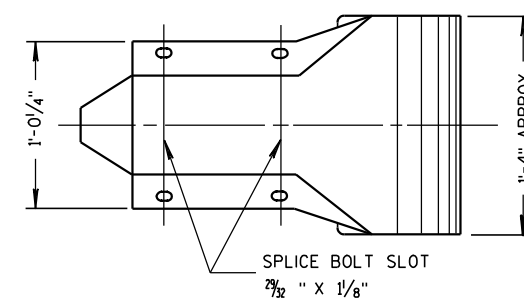
END SECTION BOLTS ARE A $\frac{5}{8}$ " DIAMETER X $1\frac{1}{2}$ " HEAVY HEX HEAD BOLT. AN END SECTION BOLT REQUIRES $\frac{5}{8}$ " DIAMETER DH HEAVY HEX NUT AND A $\frac{5}{8}$ " DIAMETER FLAT WASHER.

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

- (A) TOP OF FOUNDATION TUBE SHALL BE NO MORE THAN 3" ABOVE FINISHED GROUND.
- (B) FOR NEW CONSTRUCTION TOP OF RAIL IS $31" \pm 1"$.
FOR EXISTING INSTALLATIONS TOP OF RAIL IS BETWEEN $27\frac{3}{4}"$ TO $32" \pm 1"$.



PLAN VIEW

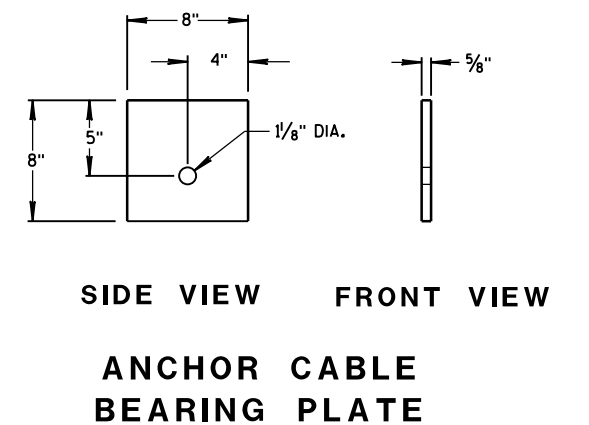
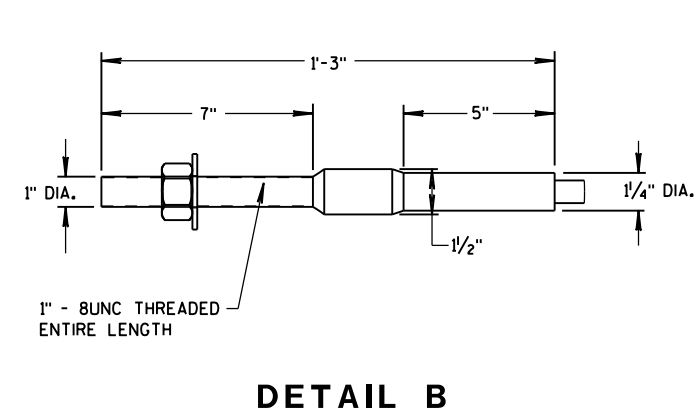
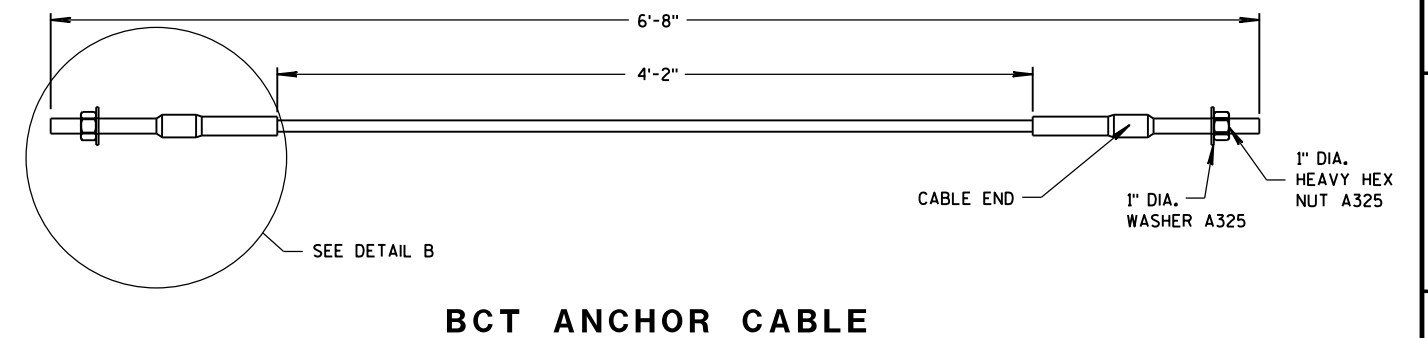
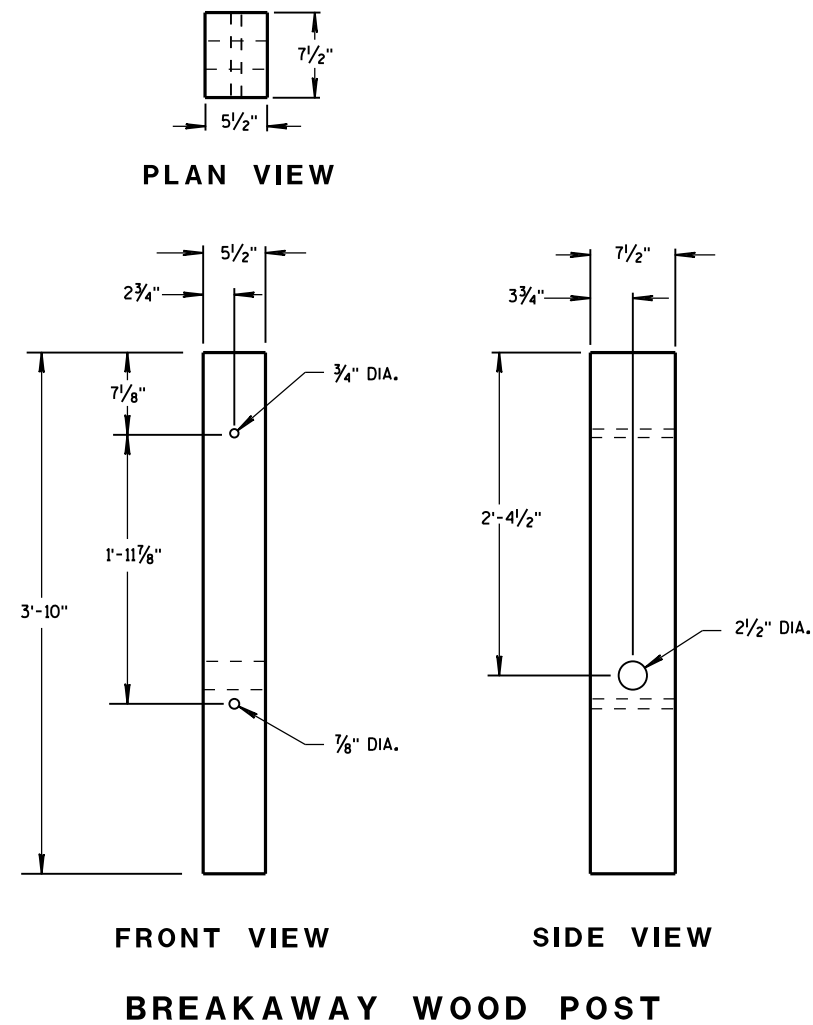
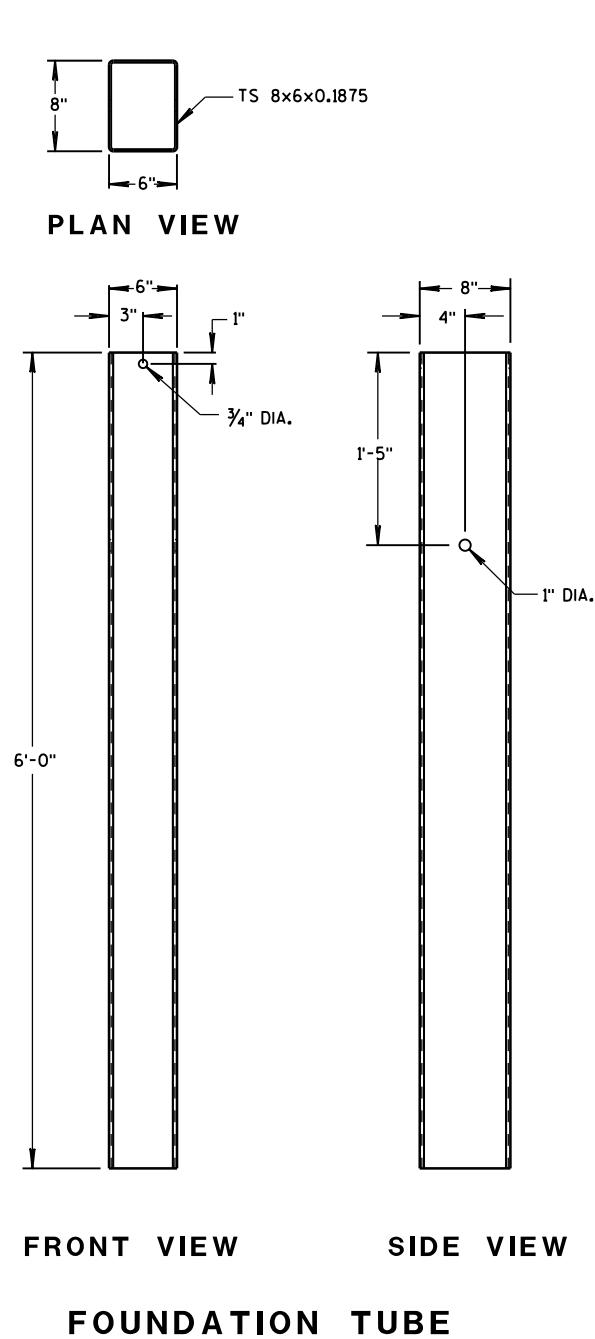


FRONT VIEW

W BEAM END
SECTION ROUNDED

MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MIDWEST GUARDRAIL
SYSTEM (MGS) TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 186

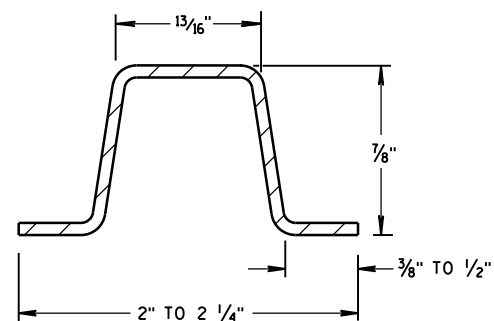
GENERAL NOTES

BCT ANCHOR CABLE IS A $\frac{3}{8}$ " DIAMETER 6X19 IWRC IPS GALVANIZED WIRE ROPE. THE SWAGED FITTINGS AND STUD ARE REQUIRED. THE END FITTING SHALL BE MACHINED FROM HOT-ROLLED CARBON STEEL CONFORMING TO ASTM A576 GRADE 1035 AND GALVANIZED ACCORDING TO ASTM A123. THE TREADED STUD SHOULD CONFORM TO ASTM A325 OR SAE GRADE 5. MINIMUM BREAKING STRENGTH OF WIRE ROPE IS 43,000 LB. WIRE ROPE IS TO BE TAUT.

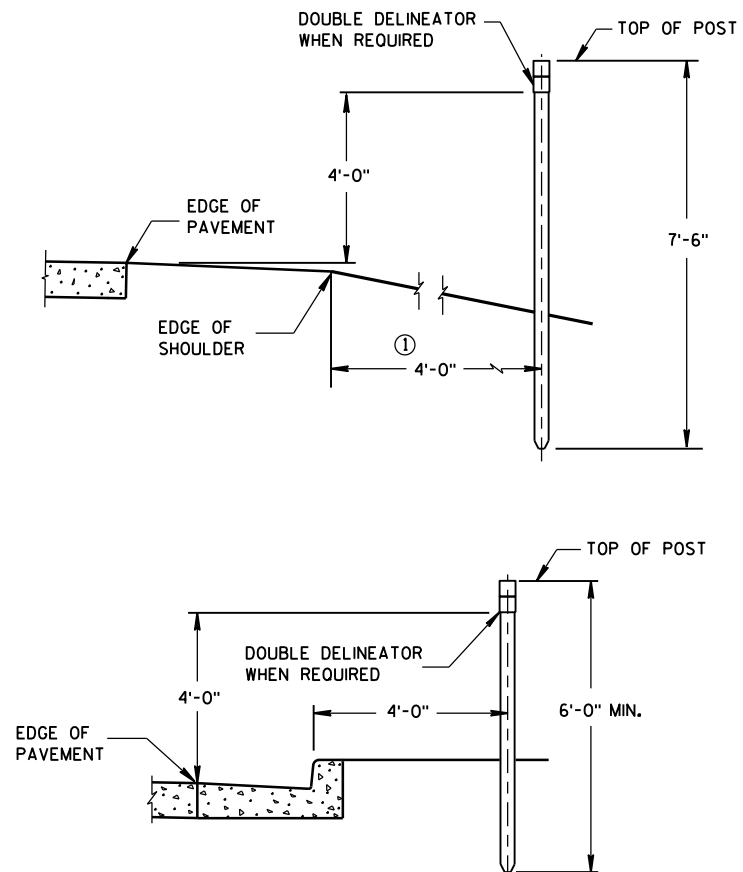


MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED <u>5/23/2011</u> DATE	<u>/s/ Jerry H. F...</u> ROADWAY STANDARDS 187 ENGINEER	<u>1ENT</u>

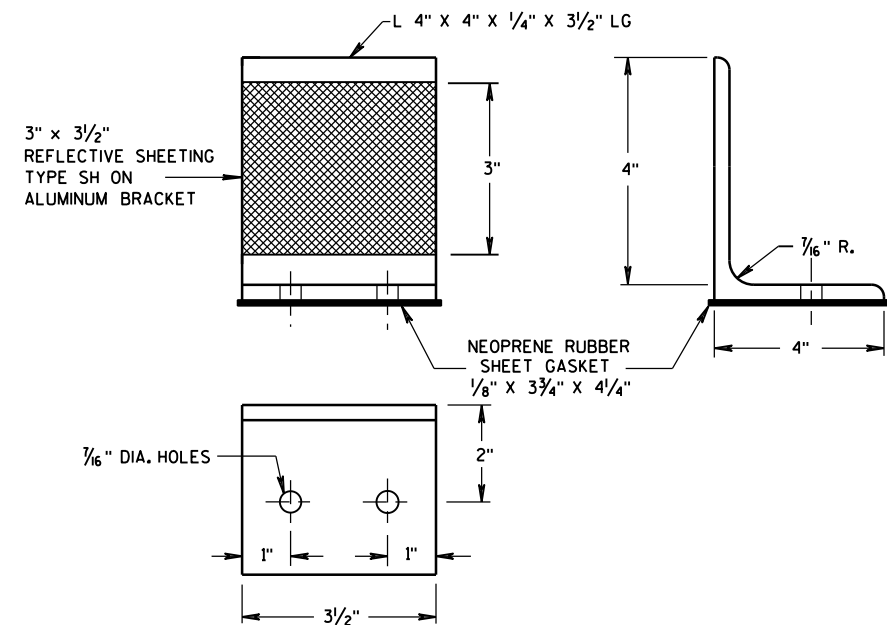
DELINEATOR POST



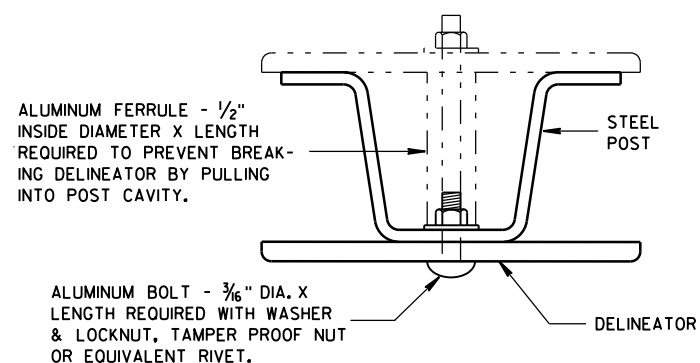
SECTION A-A
WEIGHT 1.12 LBS PER FT. $\pm$ 0.1 LB.



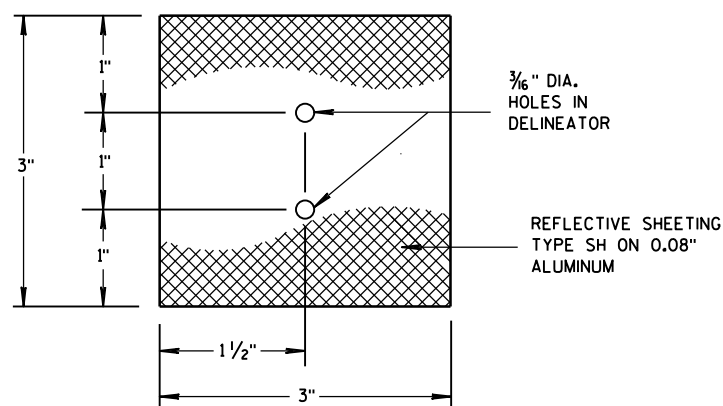
TYPICAL INSTALLATIONS OF DELINEATOR POSTS



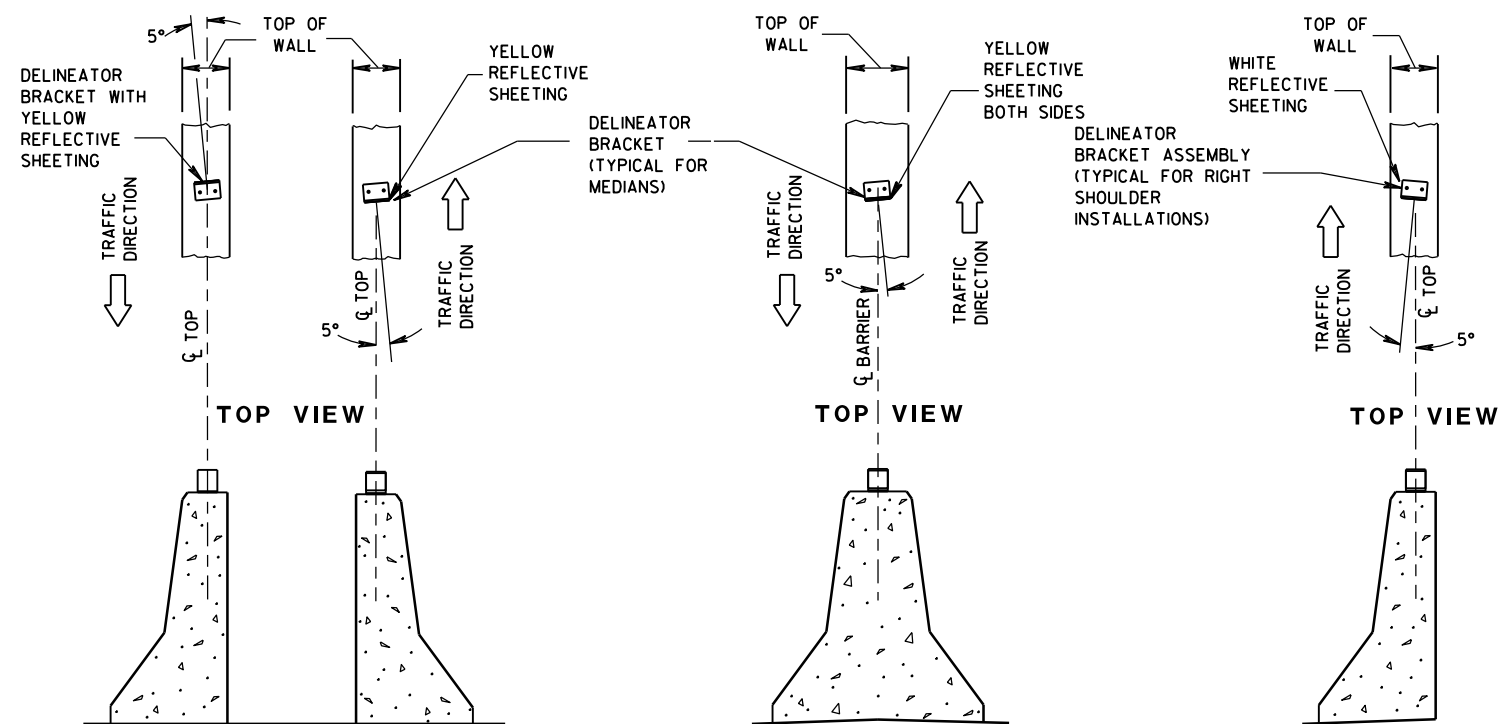
DELINEATOR BRACKET



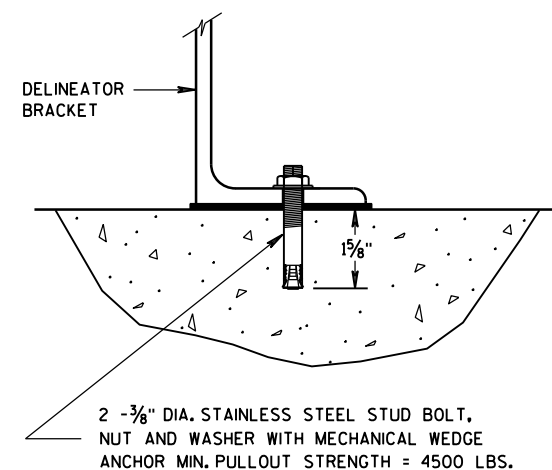
MOUNTING DETAIL FOR DELINEATOR



3" x 3" DELINEATOR



DOUBLE BARRIERS IN MEDIAN	MEDIAN BARRIER	BARRIER LOCATED TO RT. OF TRAFFIC FLOW
LOCATION AND AIMING DETAILS FOR DELINEATOR BRACKETS MOUNTED ON CONCRETE BARRIERS		



DELINEATOR BRACKET MOUNTING DETAIL

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 POST, DELINEATOR, AND DELINEATOR BRACKET WITH REFLECTIVE SHEETING

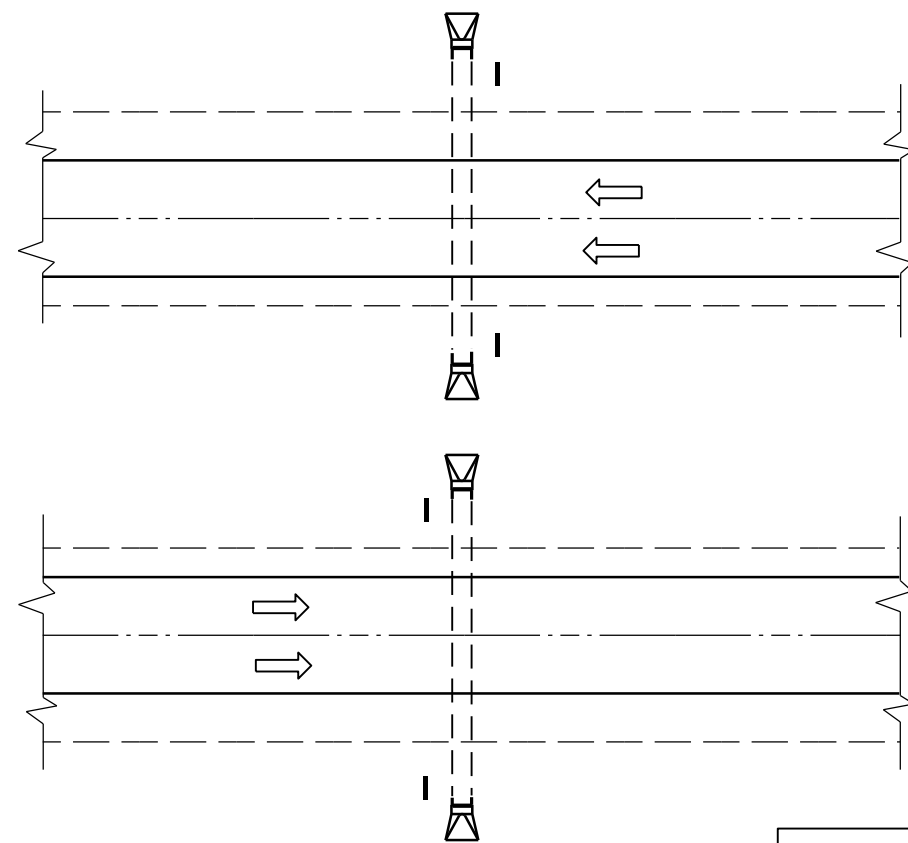
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

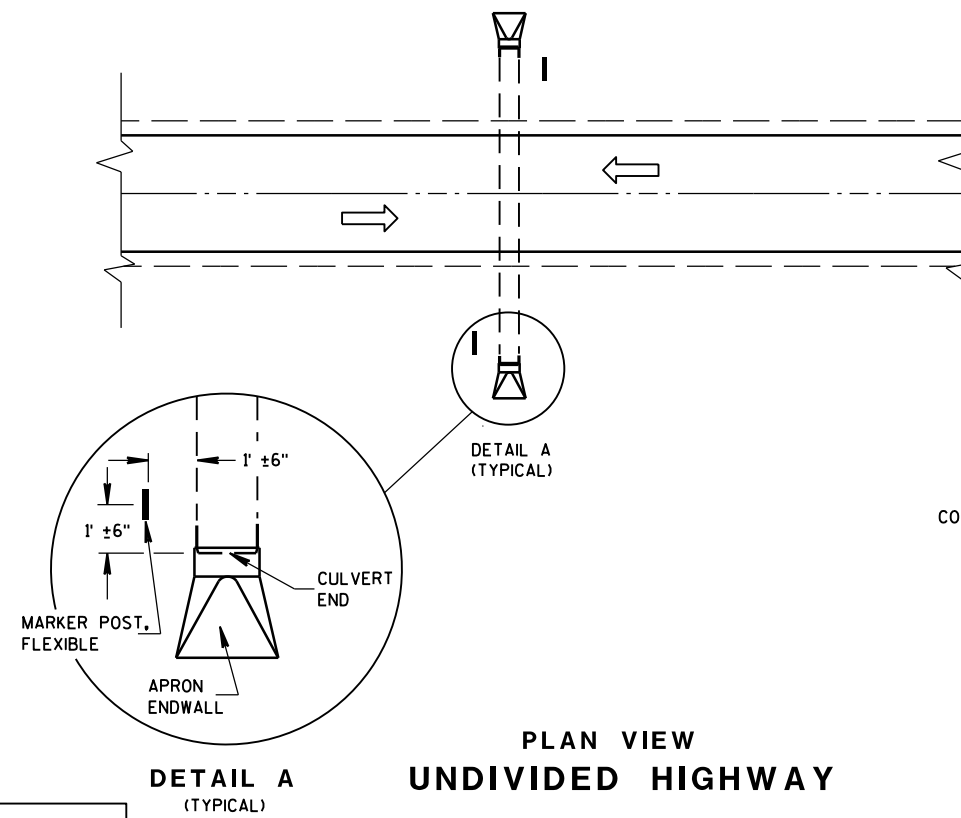
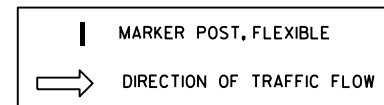
7/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC E 188

FHWA



PLAN VIEW
DIVIDED HIGHWAY

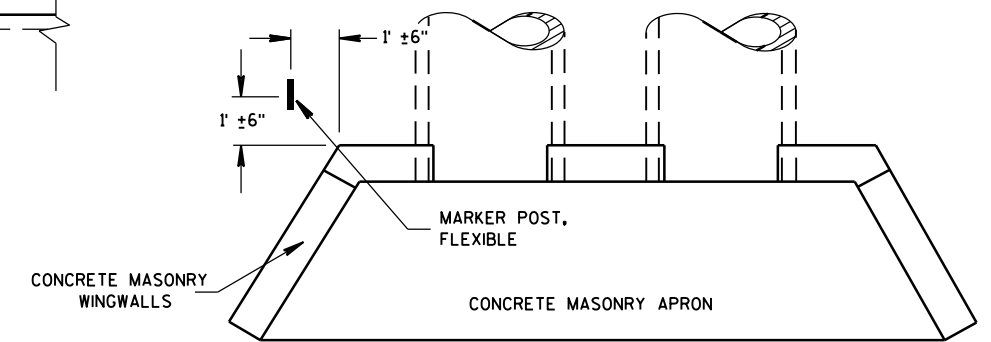


PLAN VIEW
UNDIVIDED HIGHWAY

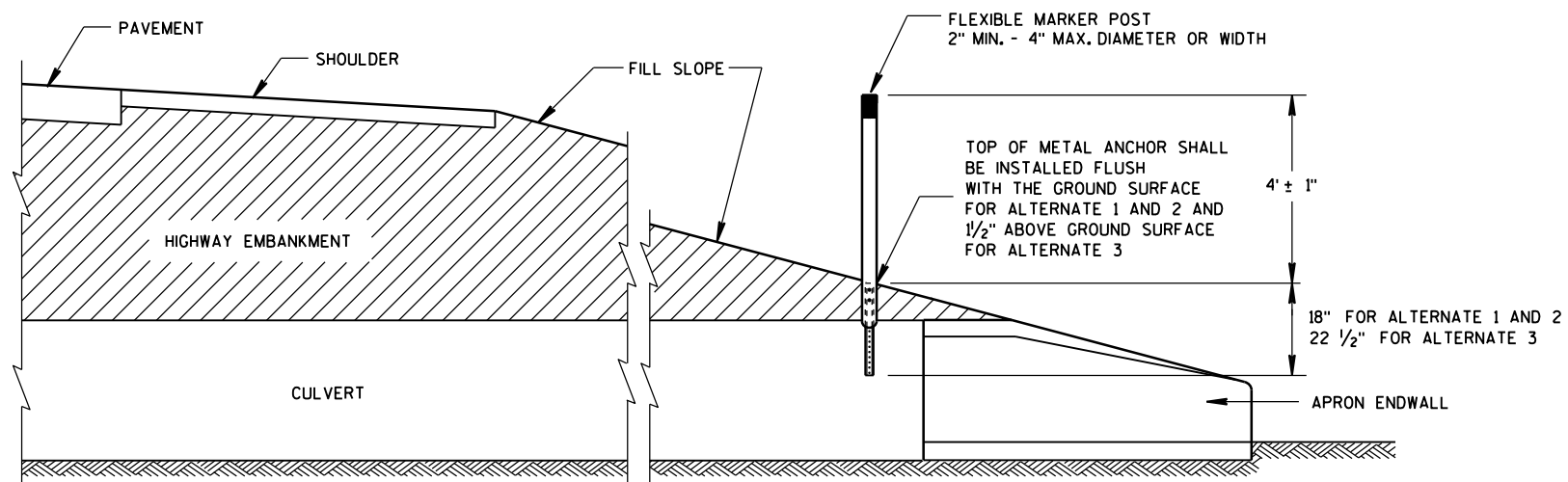
FLEXIBLE MARKER POST LOCATION

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.



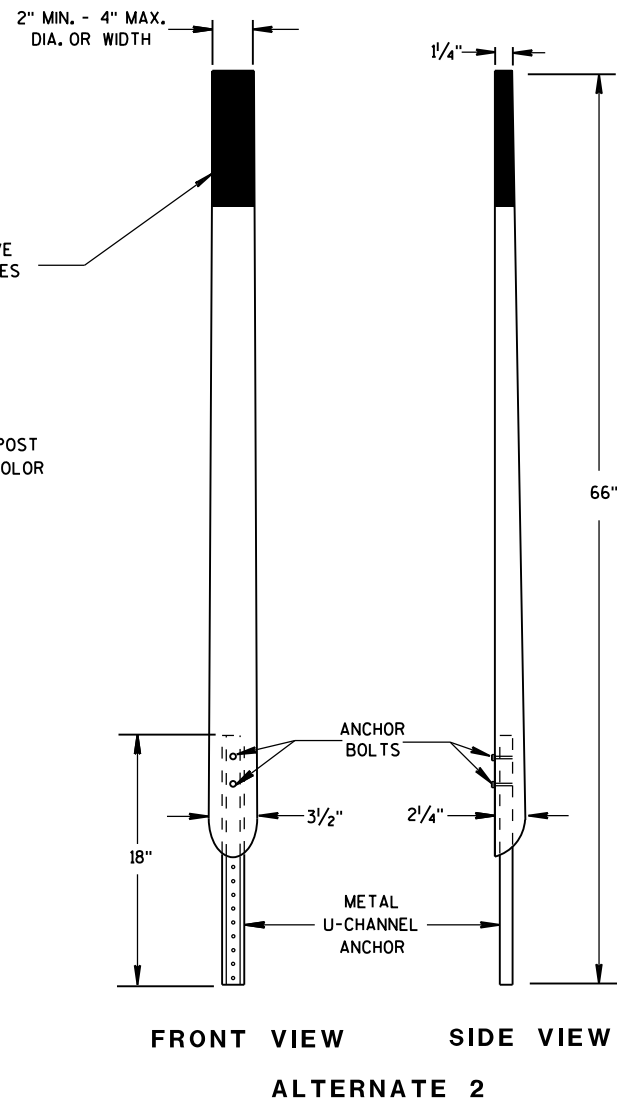
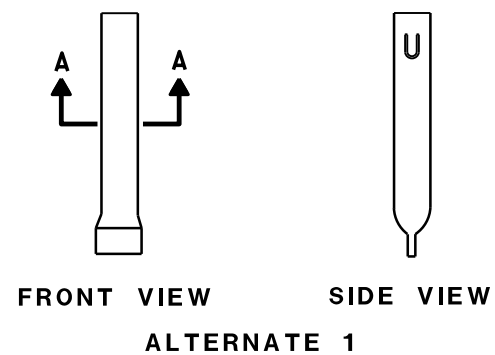
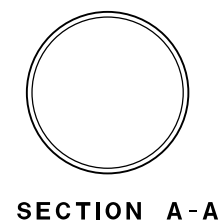
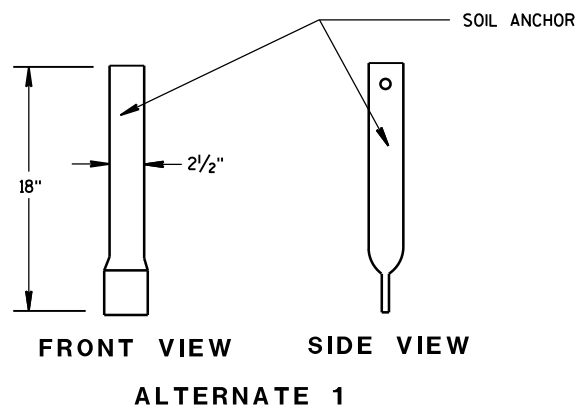
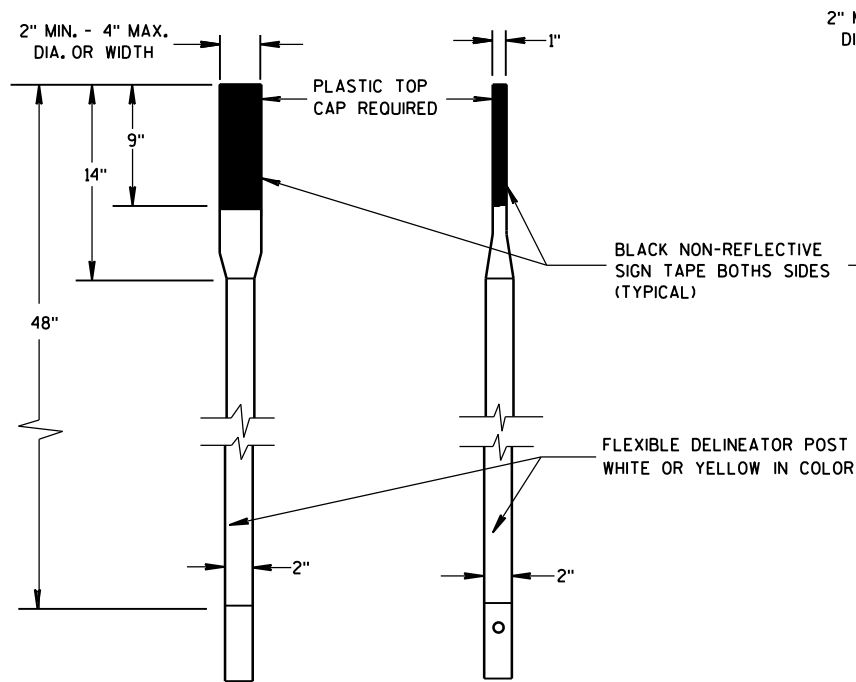
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



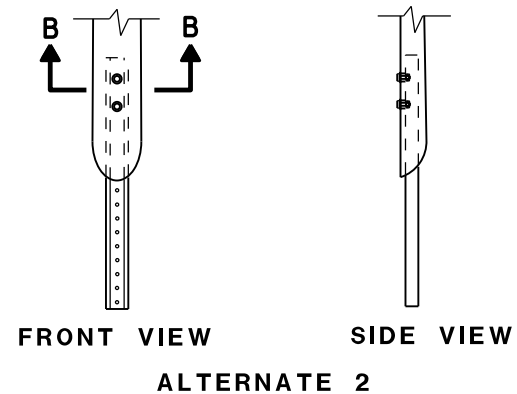
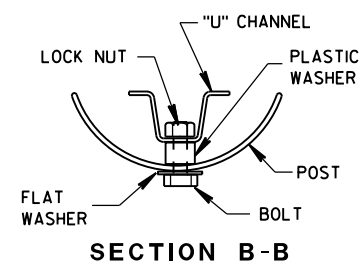
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

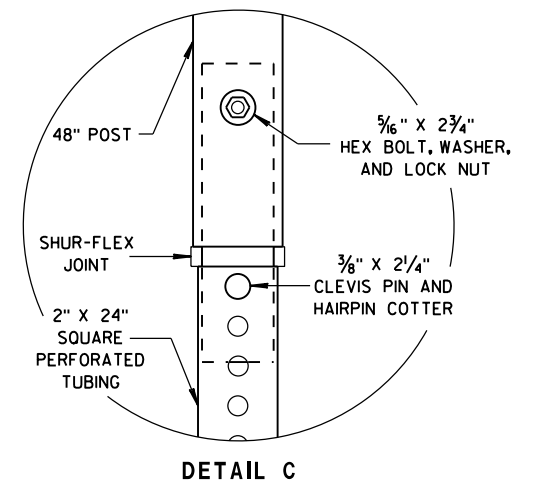
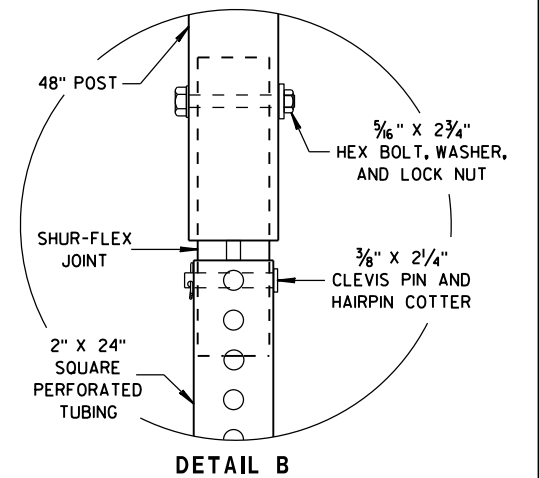
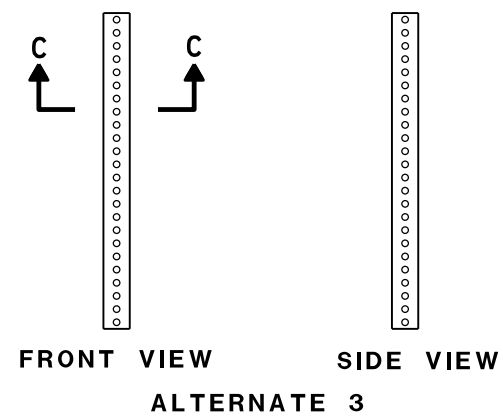
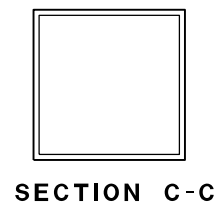
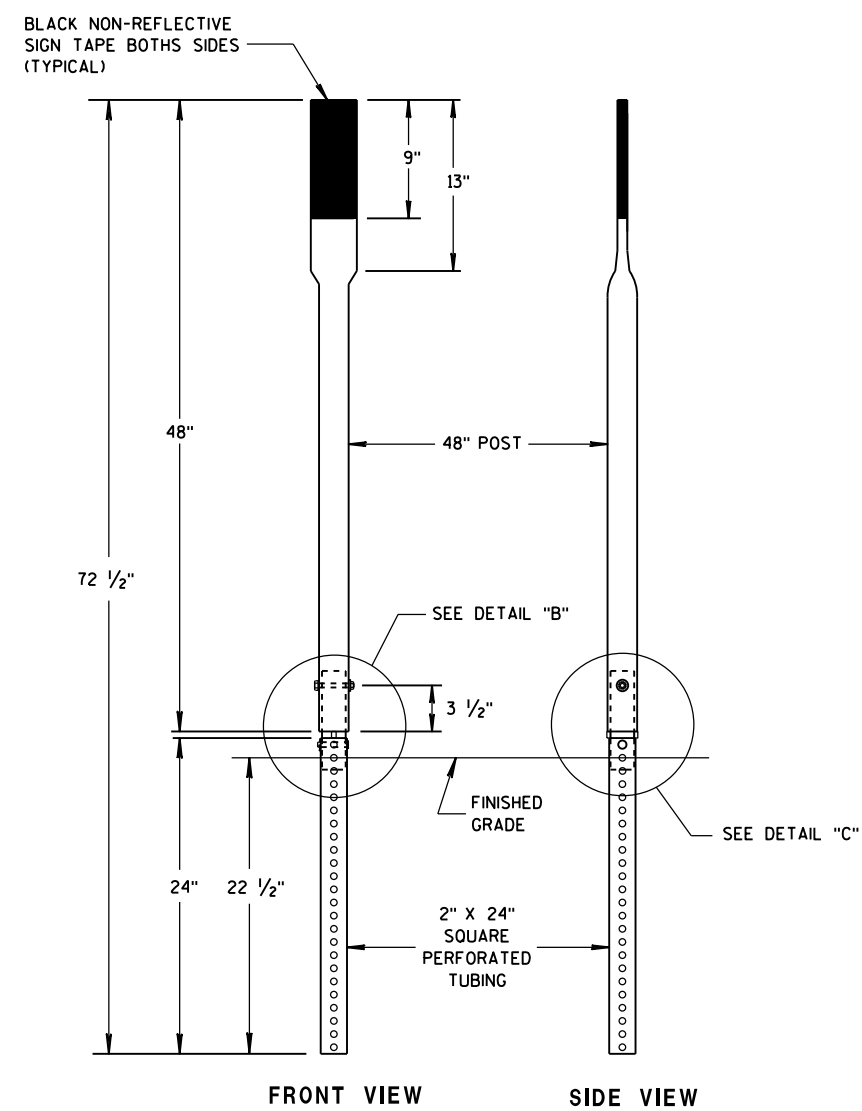
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 189



FLEXIBLE MARKER POSTS



FLEXIBLE MARKER POST ANCHORS



FLEXIBLE MARKER POST FOR CULVERT END

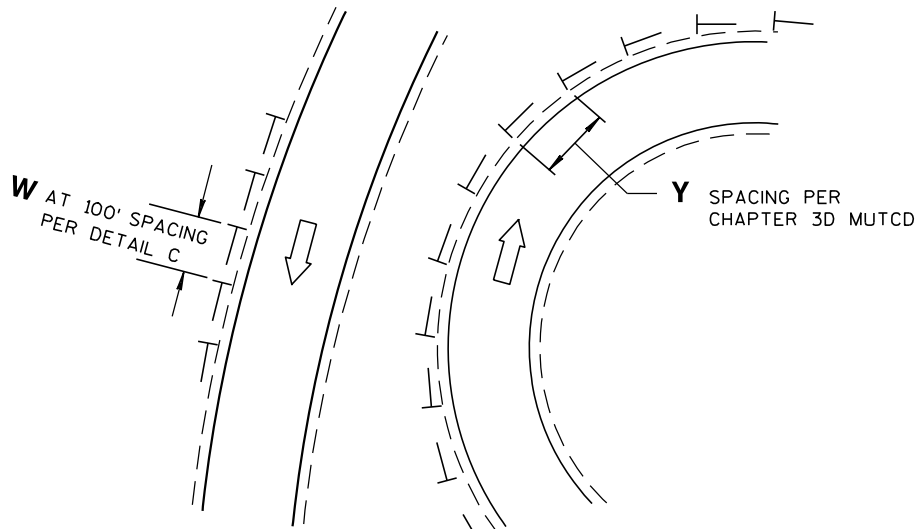
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

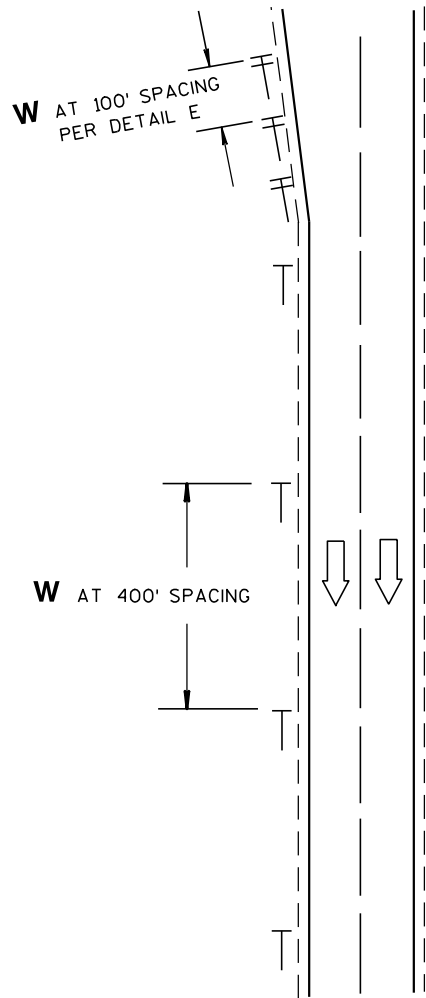
10/1/2012
DATE

FHWA

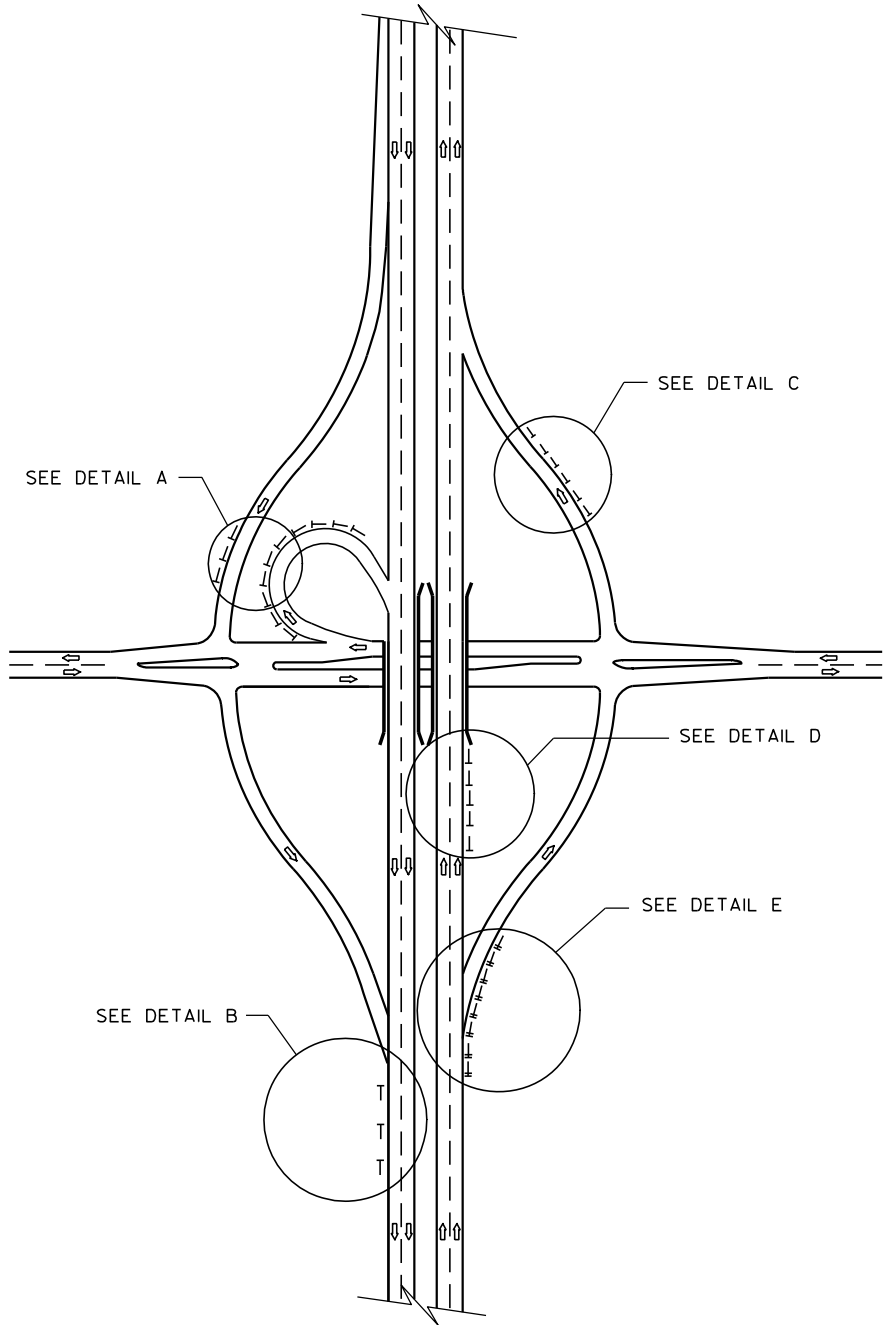
/S/ Travis Feltes
STATE TRAFFIC ENGINEER 190 IGN



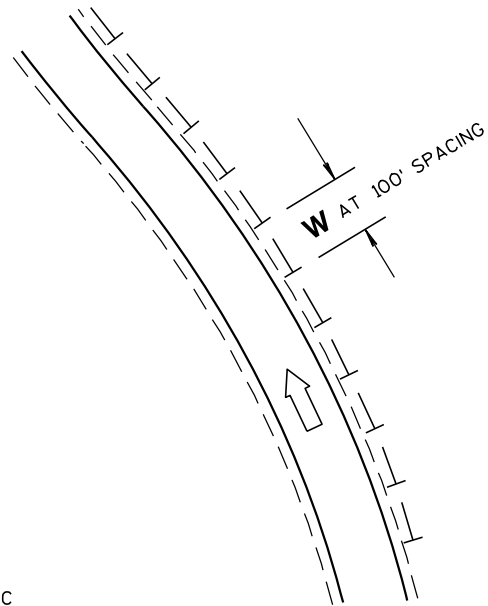
DETAIL A
DELINEATOR LAYOUT AT CURVED RAMP



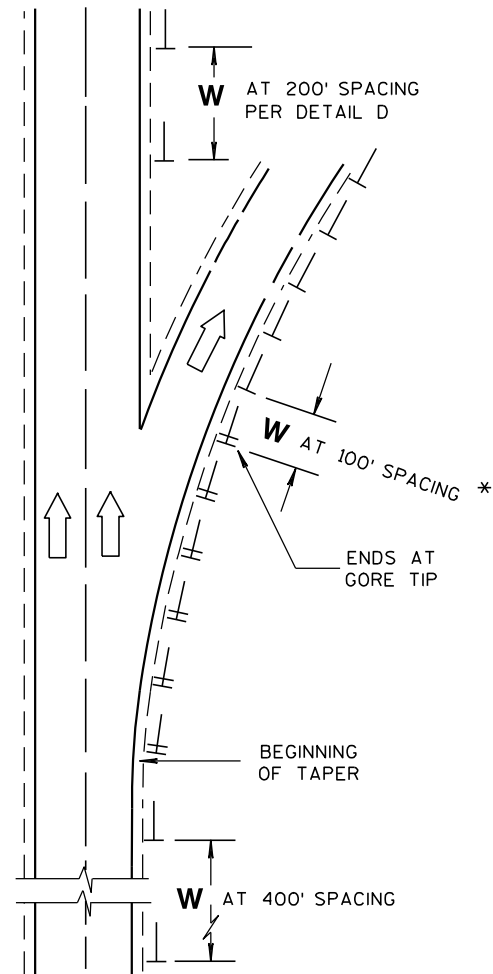
DETAIL B
DELINEATOR LAYOUT
ALONG MAINLINE



DELINEATOR LAYOUT



DETAIL C
DELINEATOR LAYOUT ALONG RAMP



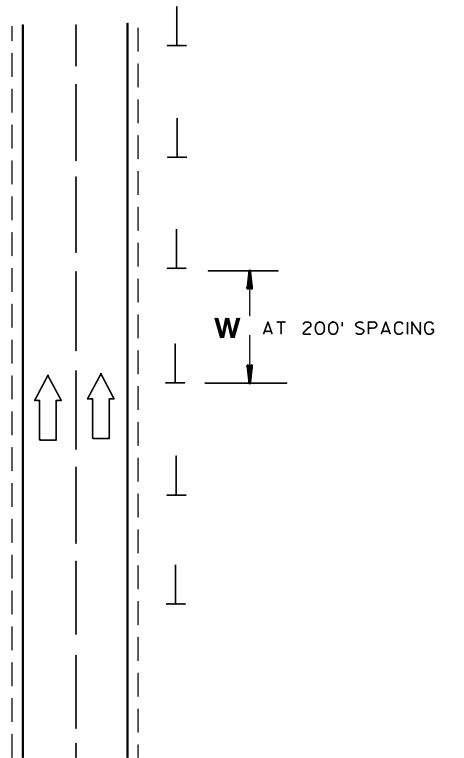
DETAIL E
DELINEATOR LAYOUT FOR ACCELERATION
- DECELERATION LANES AND TAPERS AT RAMPS

GENERAL NOTES

* USE DOUBLE DELINEATOR ALONG ACCELERATION-DECELERATION LANES AND TAPERS.
USE SINGLE DELINEATOR WHEN RAMP PAVEMENT IS FULL WIDTH.

LEGEND

-  DIRECTION OF TRAFFIC FLOW
-  SINGLE DELINEATOR
-  DOUBLE DELINEATOR
- W** WHITE
- Y** YELLOW

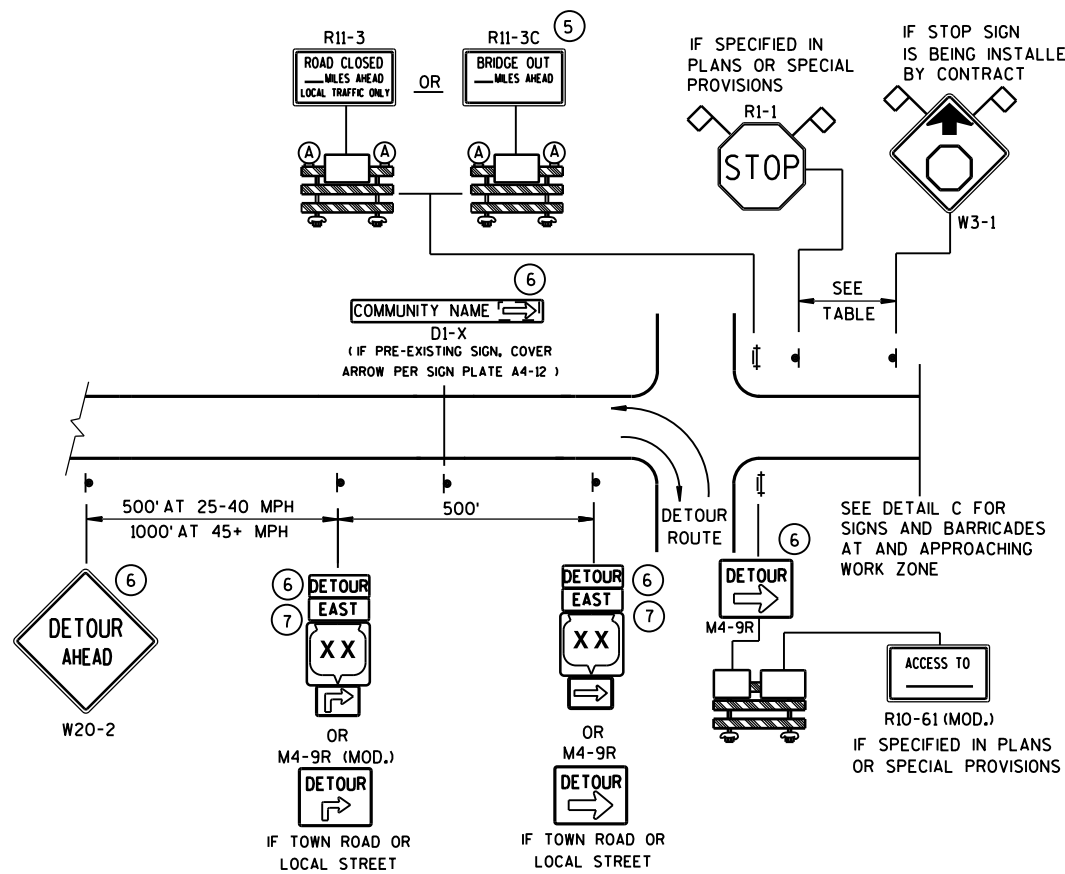


DETAIL D
DELINEATOR LAYOUT
BETWEEN INTERCHANGE RAMPS

DELINEATOR LAYOUT

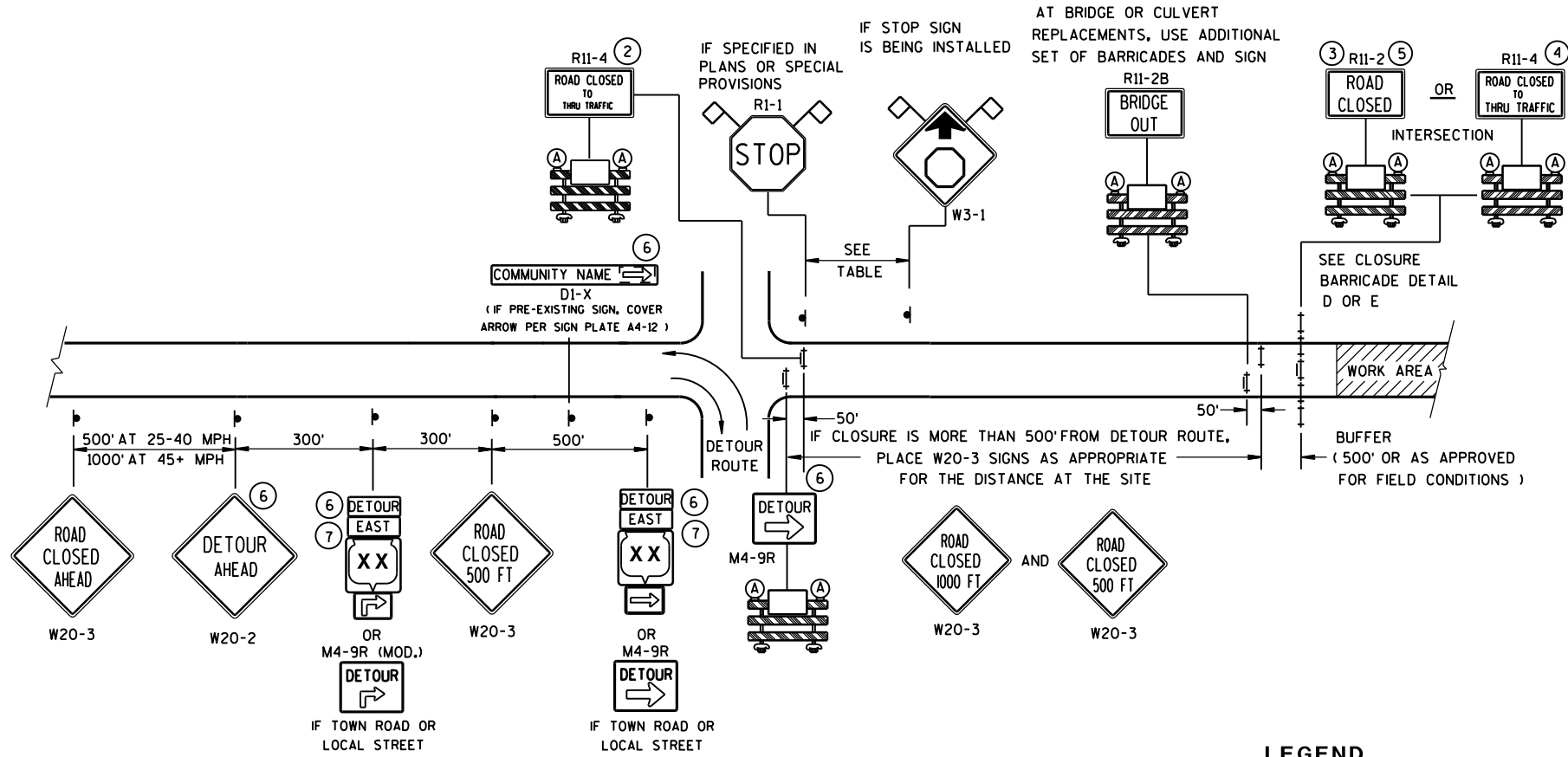
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/5/09 /S/ Thomas N. Nothmann
DATE STATE TRAFFIC ENGINEER SIGN
FHWA



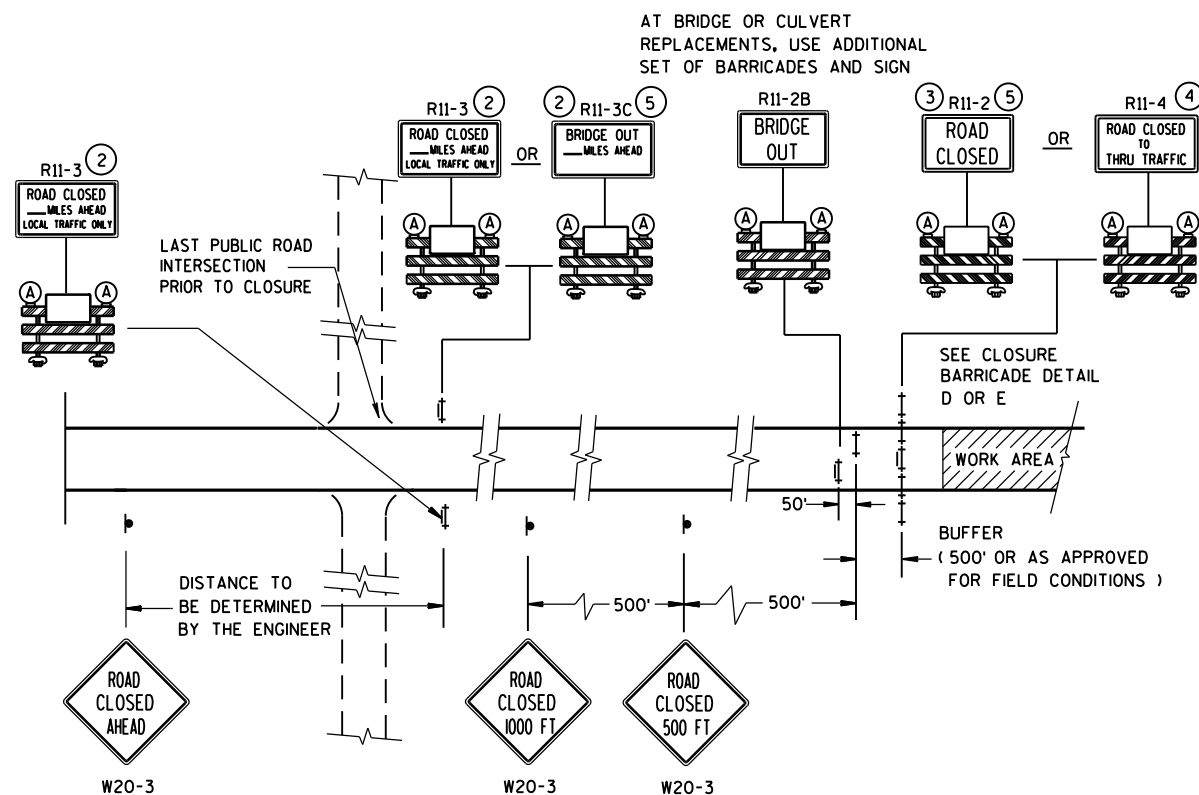
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR

WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE (1000 FEET IF URBAN)

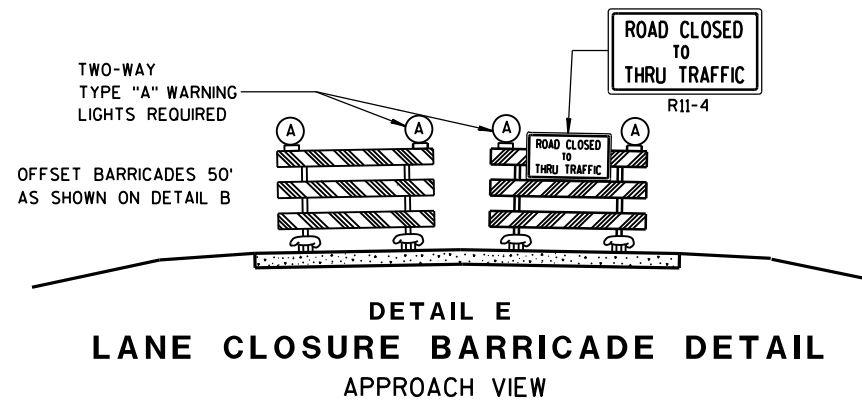
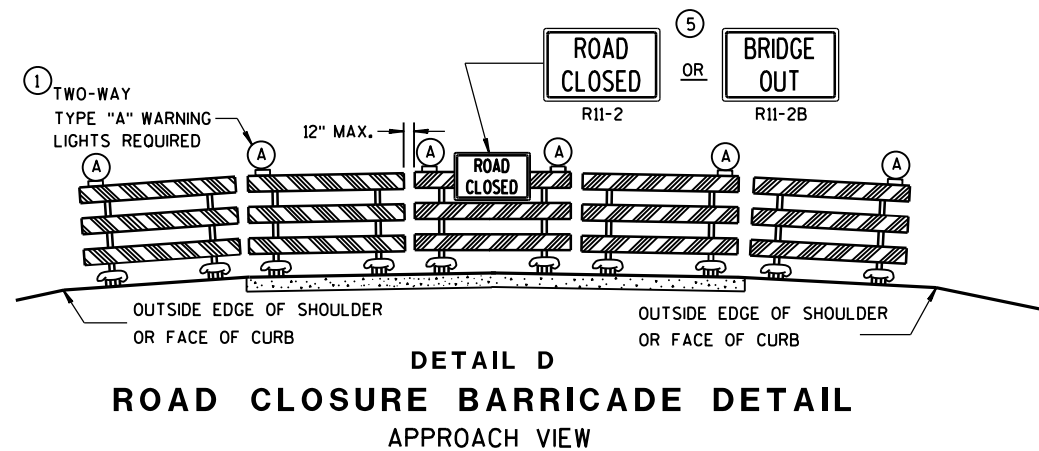


DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

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

BARRICADES AND SIGNS FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINE 192 ESIGN
FHWA	



SEE SDD 15C2-SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

THE R11-2, R11-3, M4-9, R11-4 AND R10-61 SIGNS PLACED ON BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE OR BOTTOM RAILS.

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

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

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

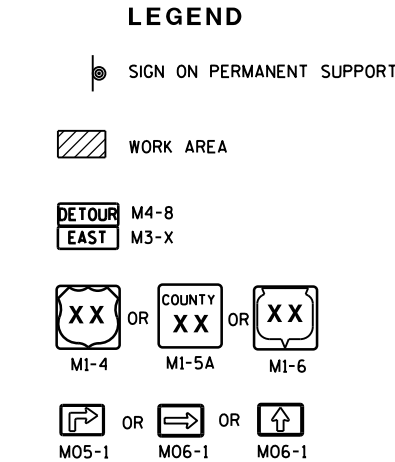
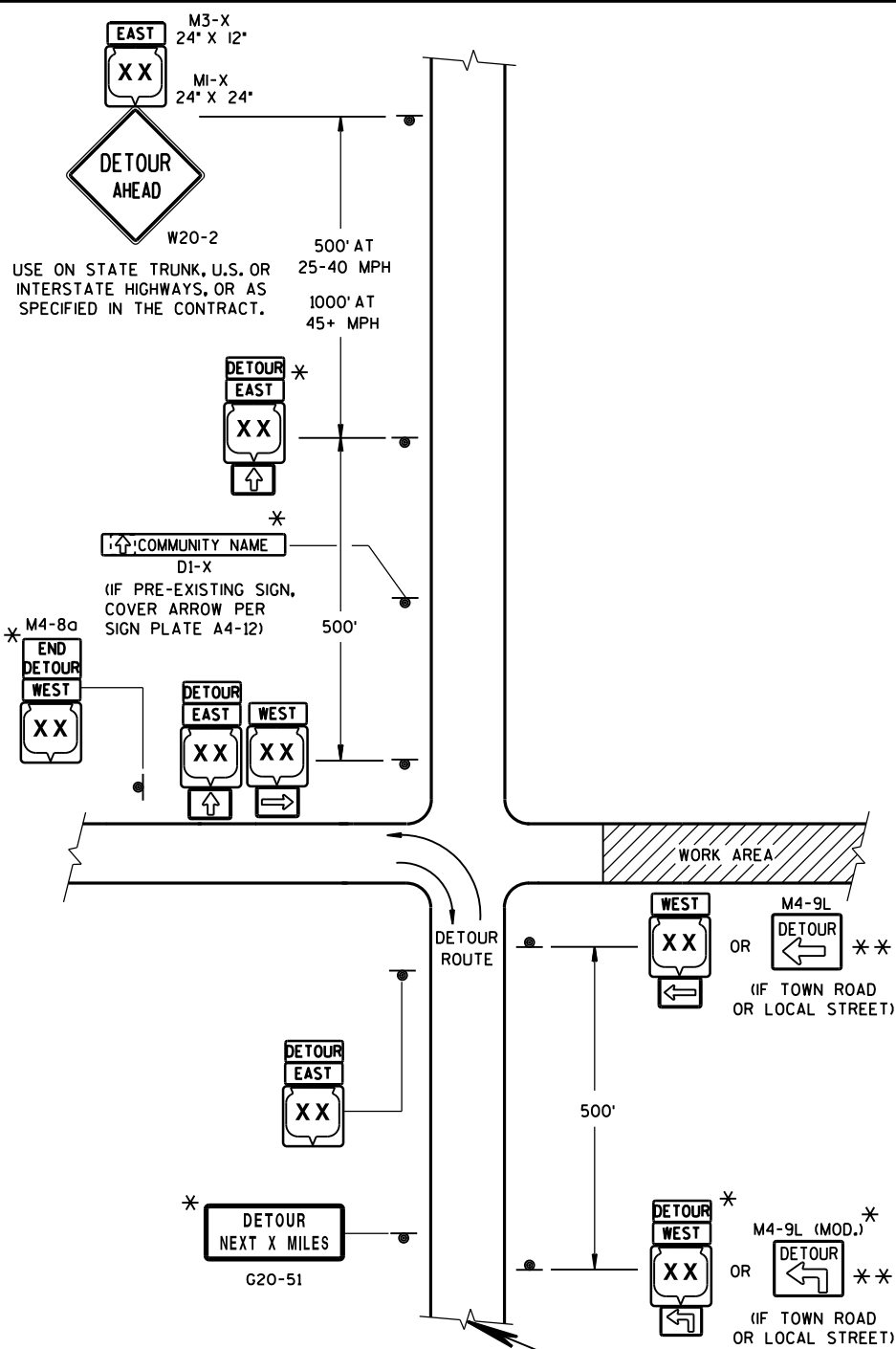
R1-1 SHALL BE 36" X 36".

- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8-FOOT LIGHT SPACING).
- ② THESE SIGNS AND BARRICADES ARE NOT REQUIRED IF ROAD CLOSURE BEGINS AT INTERSECTION.
- ③ FOR ROAD CLOSURE WITHOUT LOCAL ACCESS TO PROJECT, SEE ROAD CLOSURE BARRICADE DETAIL D.
- ④ FOR ROAD CLOSURE WITH LOCAL ACCESS TO PROJECT, SEE LANE CLOSURE BARRICADE DETAIL E.
- ⑤ FOR BRIDGE OR CULVERT REPLACEMENTS, SUBSTITUTE "BRIDGE OUT" INSTEAD OF "ROAD CLOSED" ON R11-2 AND R11-3 SIGNS.
- ⑥ INSTALL DETOUR AND COMMUNITY GUIDE SIGNS AND ARROWS ONLY IF SPECIFIED IN THE CONTRACT. IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. MODIFY EXISTING SIGNS WHERE POSSIBLE. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS. IF DETOUR SIGNS ARE BEING INSTALLED BY OTHERS, PLACE THE CONTRACTED TRAFFIC CONTROL SIGNS TO ALLOW FOR PLACEMENT OF ALL WARNING, DETOUR AND GUIDE SIGNS AS SHOWN.
- ⑦ "EAST" CARDINAL DIRECTION MARKERS AND RIGHT TURN ARROWS ARE SHOWN. USE OTHER CARDINAL DIRECTIONS AND ARROWS AS APPROPRIATE.

BARRICADES AND SIGNS FOR MAINLINE CLOSURES

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FHWA

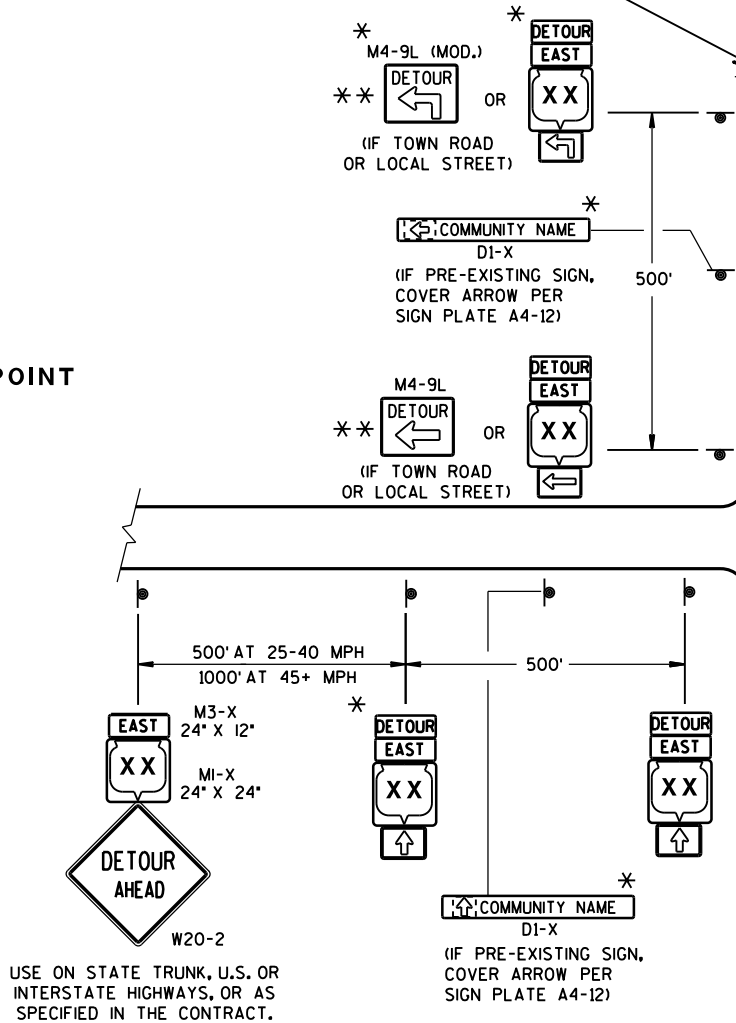


SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS AND DETAIL A OR B ON SDD 15C2-SHEET "a"

THIS DRAWING PROVIDES GENERAL GUIDANCE ON TYPICAL DETOUR SIGN LAYOUT AND SPACING. SEE PROJECT DETOUR SIGNING SHEETS FOR SPECIFIC DETAILS FOR EACH PROJECT.

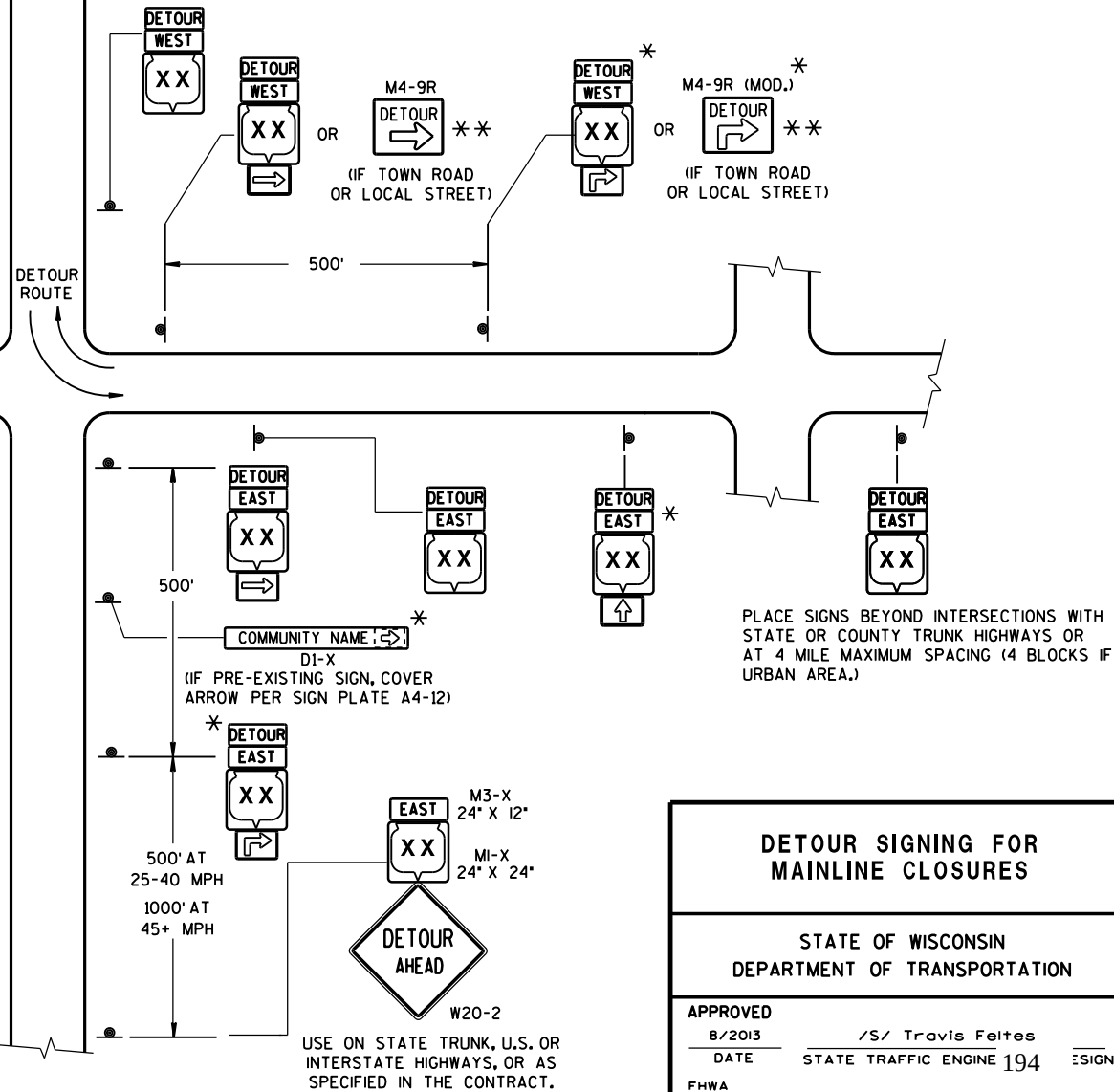
MATCH POINT

DETAIL F
DETOUR SIGNING

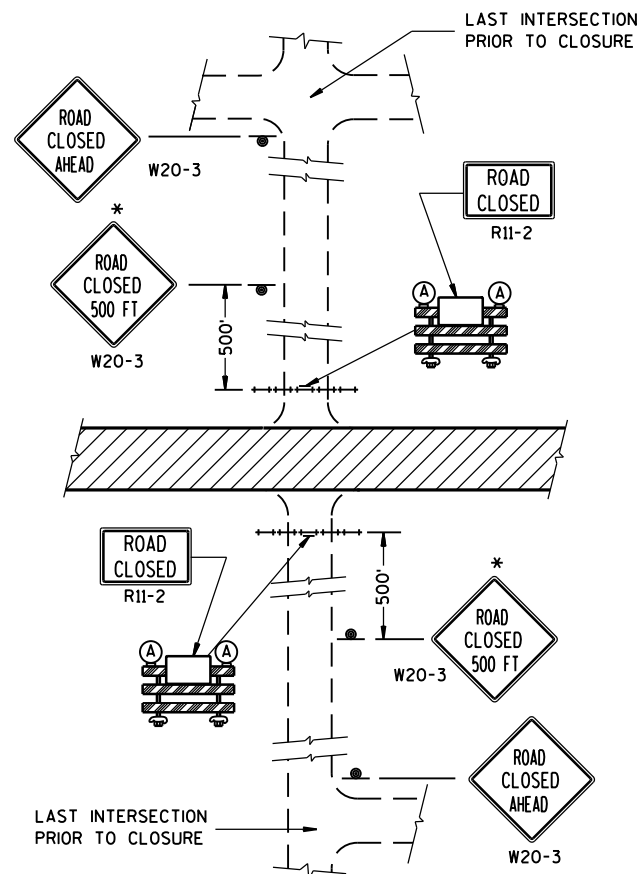


GENERAL NOTES

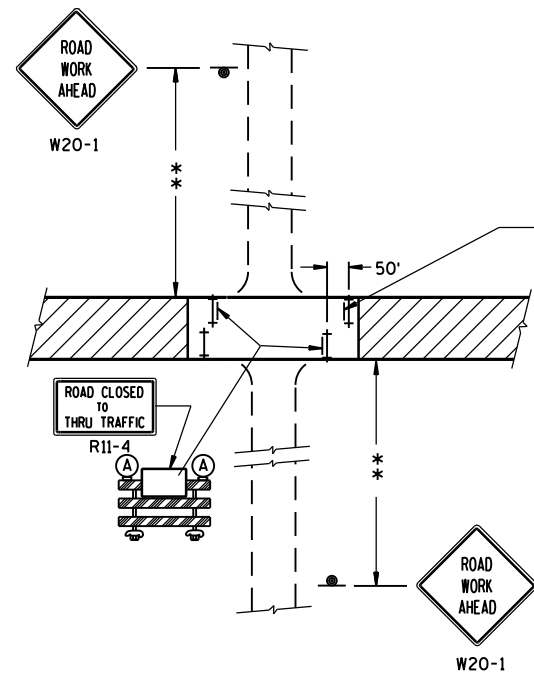
- THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
- IF THERE ARE EXISTING ROUTE MARKER ASSEMBLIES THAT WILL REMAIN IN PLACE, ADJUST THE LOCATION OF THE DETOUR ROUTE SIGNS TO CORRESPOND WITH THE EXISTING ASSEMBLIES. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS, MODIFY EXISTING SIGNS WHERE POSSIBLE.
- THE SPACING BETWEEN TRAFFIC CONTROL AND DETOUR SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND TO PROVIDE A DESIRABLE MINIMUM OF 200 FEET CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.
- ANY SIGNS TEMPORARY OR EXISTING, WHICH CONFLICT WITH TRAFFIC CONTROL "IN USE", SHALL BE REMOVED OR COVERED AS NEEDED AND AS APPROVED BY THE ENGINEER.
- SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.
- "MO" SIGNS ARE THE SAME AS "M" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- SIGN SIZES SHALL BE AS FOLLOWS:
- M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)
 - M4-9 SHALL BE 30" X 24".
 - M4-8a SHALL BE 24" X 18".
 - G20-51 SHALL BE 60" X 24".
 - W20-2 SHALL BE 48" X 48".
 - D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.



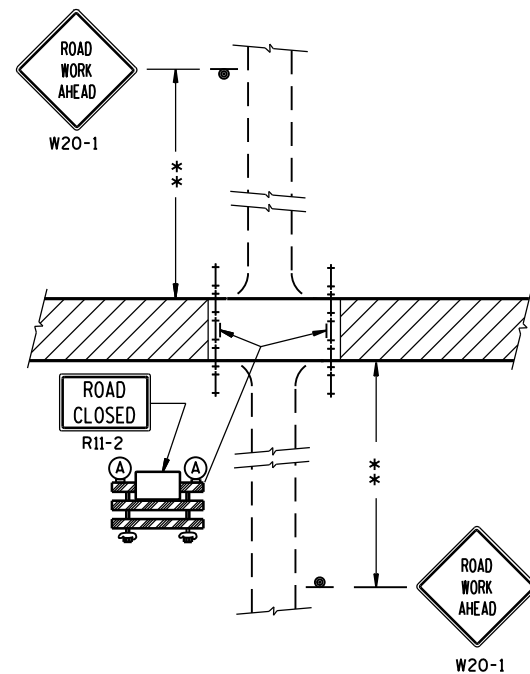
DETOUR SIGNING FOR MAINLINE CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINE 194 SIGN
FHWA	



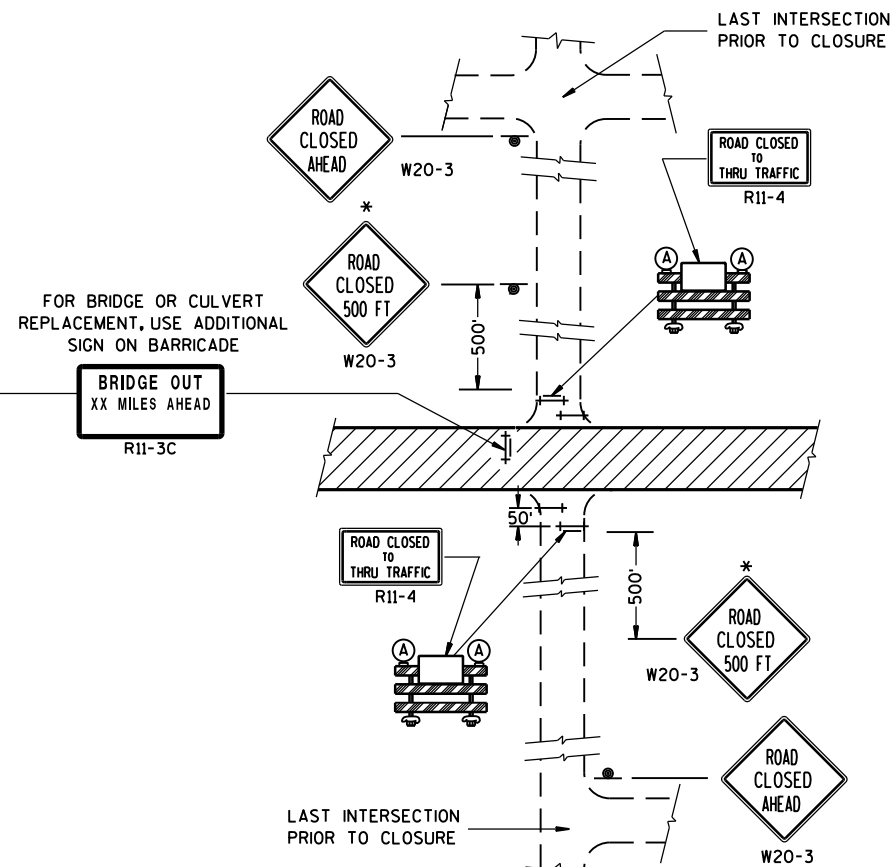
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

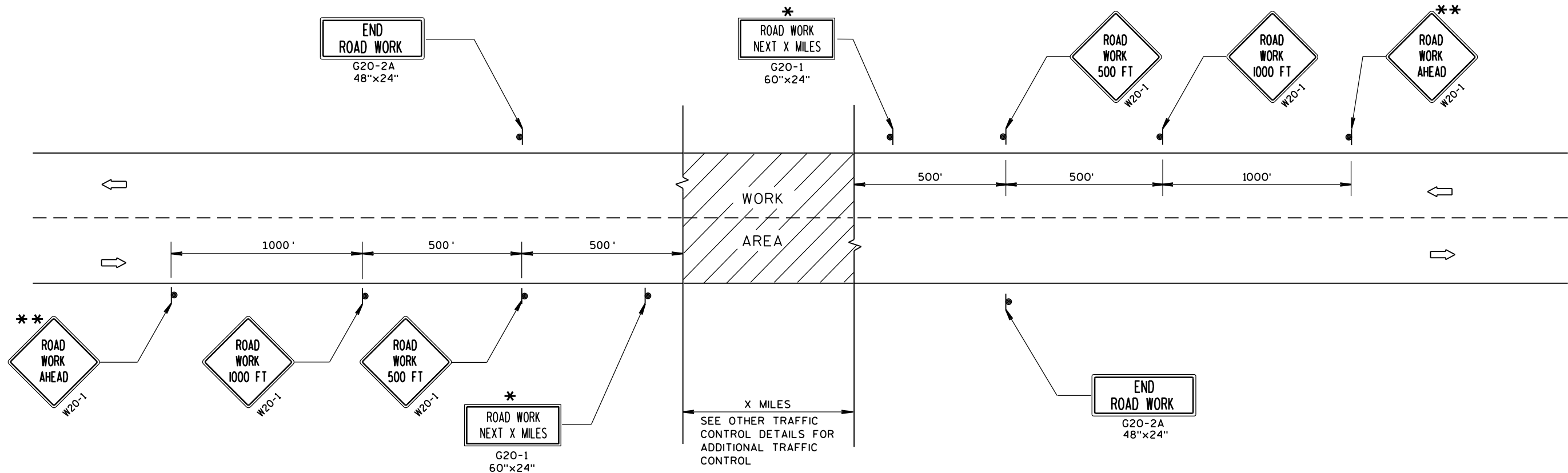
- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- Ⓐ TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 195 SIGN
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.

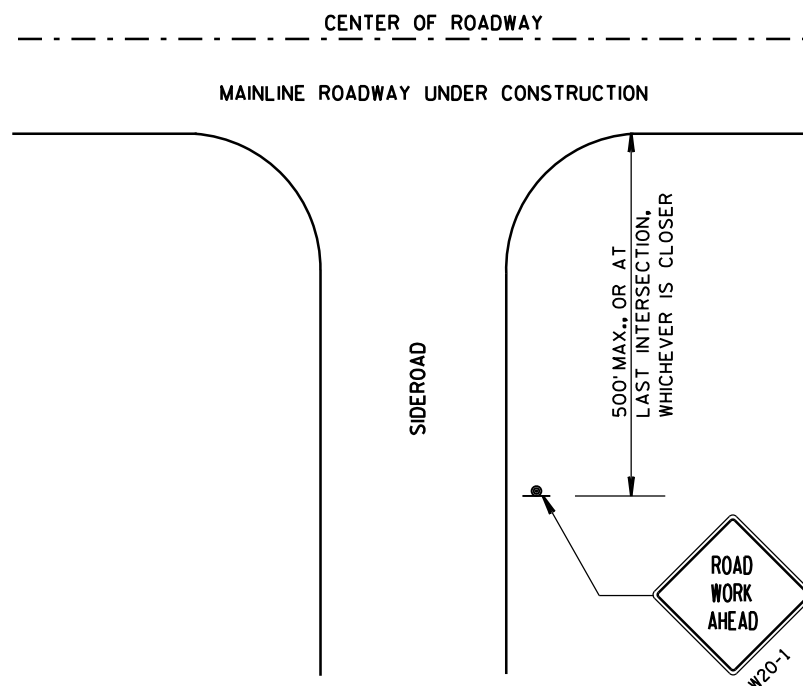
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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.

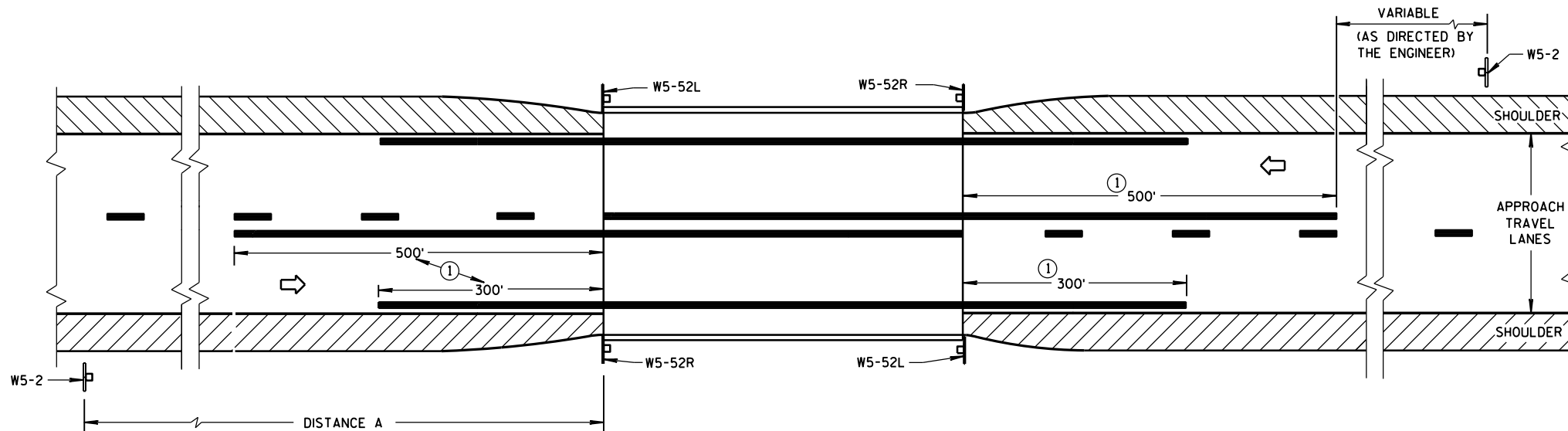
** PLACE ADDITIONAL W20-1 "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



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 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER 196 SIGN
FHWA	



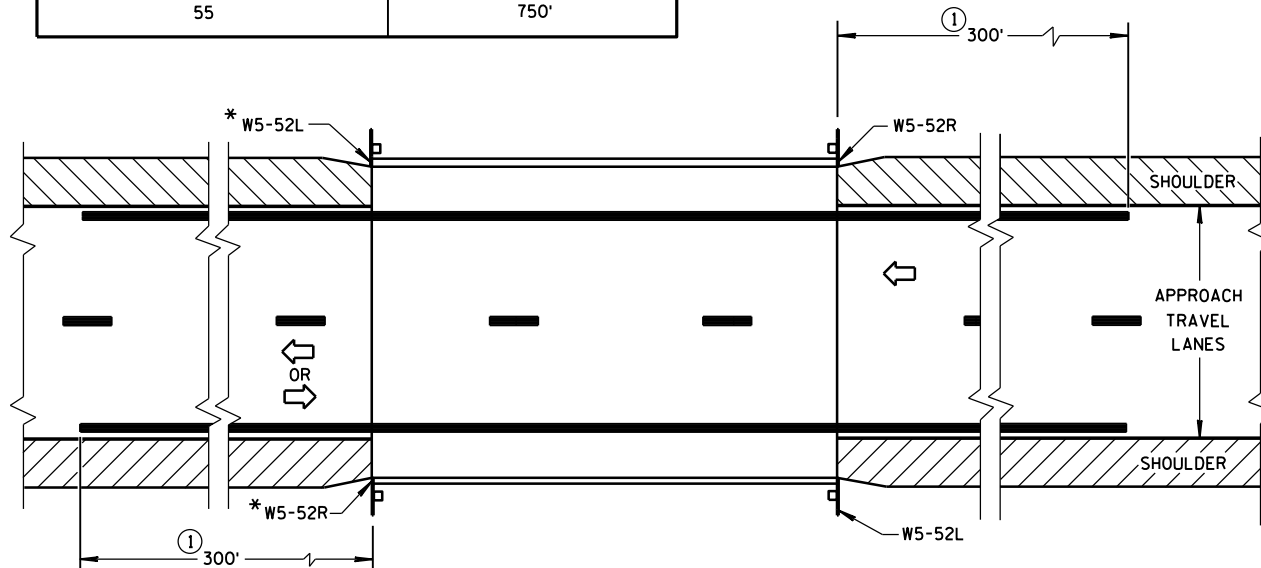
SITUATION 1

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'

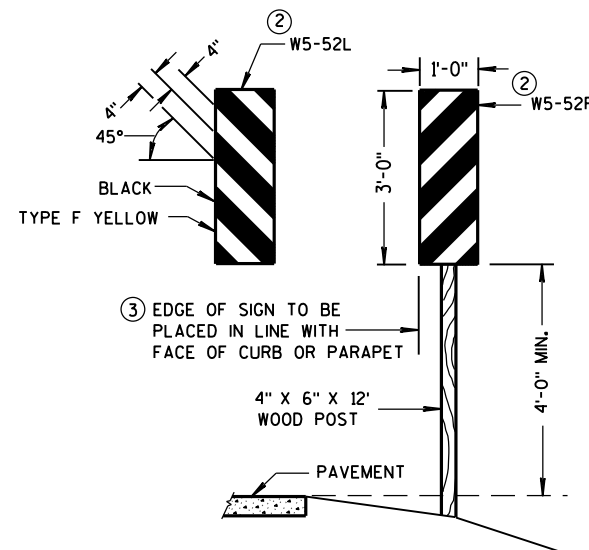


*OMIT ON ONE-WAY TRAVELLED WAYS

SITUATION 2

WARRANTING CRITERIA:

1. BRIDGE WIDTH IS AT LEAST 24 FEET AND
2. BRIDGE IS LESS THAN 6 FEET WIDER (ON EACH SIDE) THAN APPROACH TRAVEL LANES.



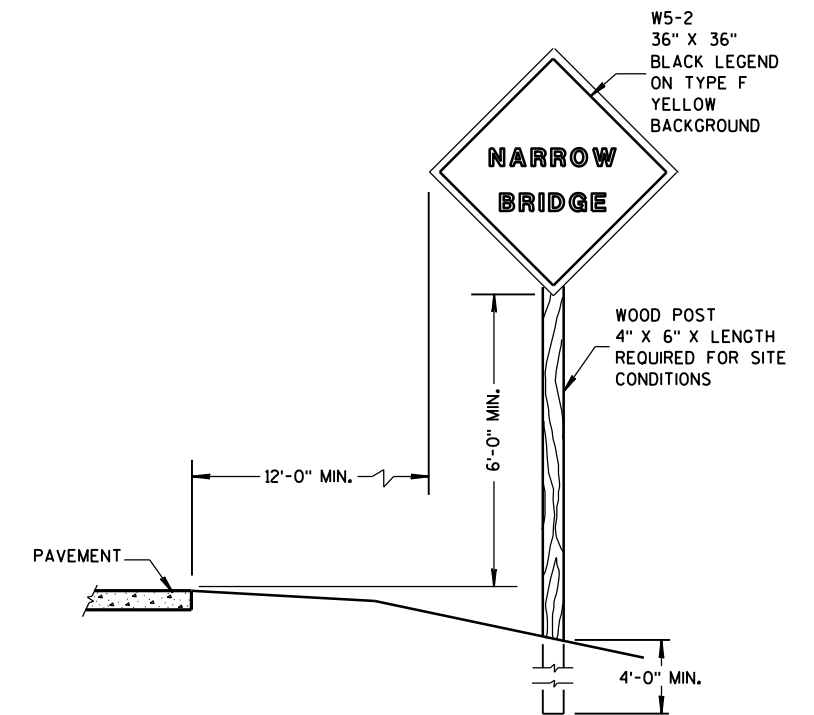
OBJECT MARKER PLACEMENT

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.

PAVEMENT MARKING SHOWN ON THIS DRAWING IS NOT REQUIRED UNLESS OTHERWISE SPECIFIED IN THE CONTRACT. WHEN SPECIFIED, PAVEMENT MARKING SHALL CONFORM TO THIS DRAWING AND OTHER CONTRACT REQUIREMENTS.

- ① MINIMUM DISTANCE UNLESS OTHERWISE SHOWN ON THE PLAN.
- ② FACE OF OBJECT MARKERS W5-52R, AND W5-52L SHALL BE COVERED WITH TYPE F REFLECTIVE SHEETING.
- ③ LOCATE OBJECT MARKER POST(S) BEHIND GUARDRAIL WHEN PRESENT.



SIGN PLACEMENT

SIGNING & MARKING FOR TWO LANE BRIDGES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

3-2014
DATE

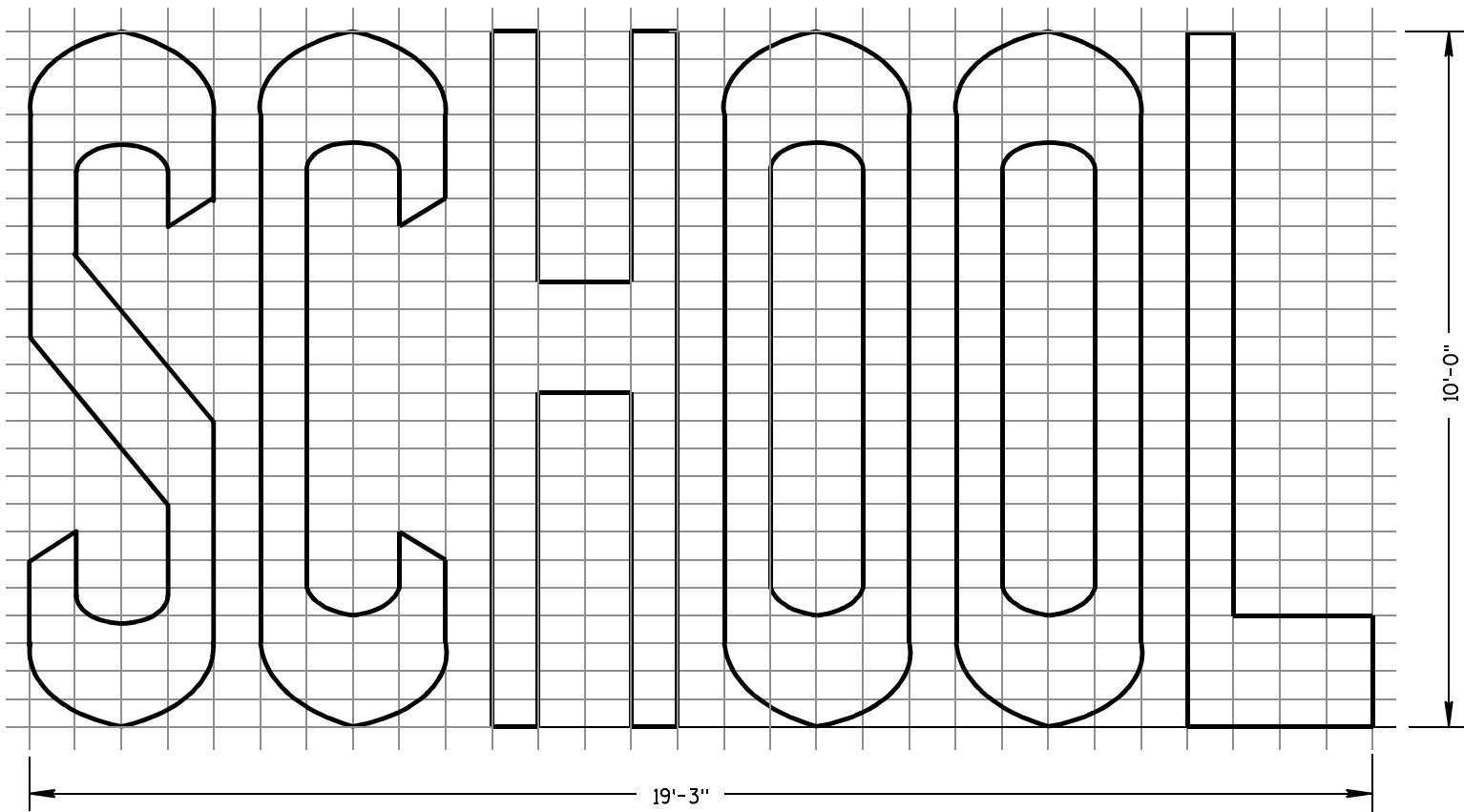
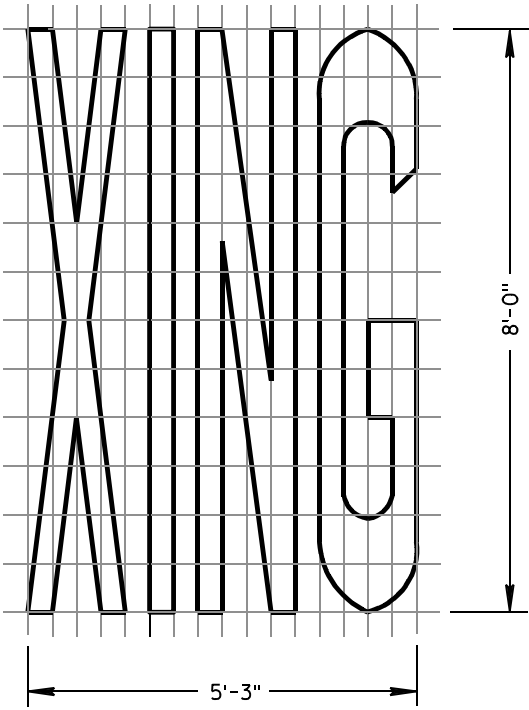
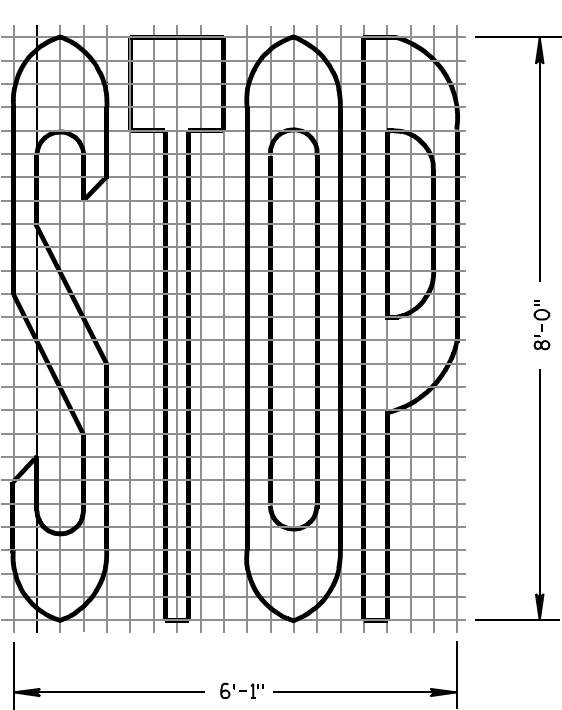
/S/ Travis Feltz
STATE TRAFFIC ENGINEER

FHWA

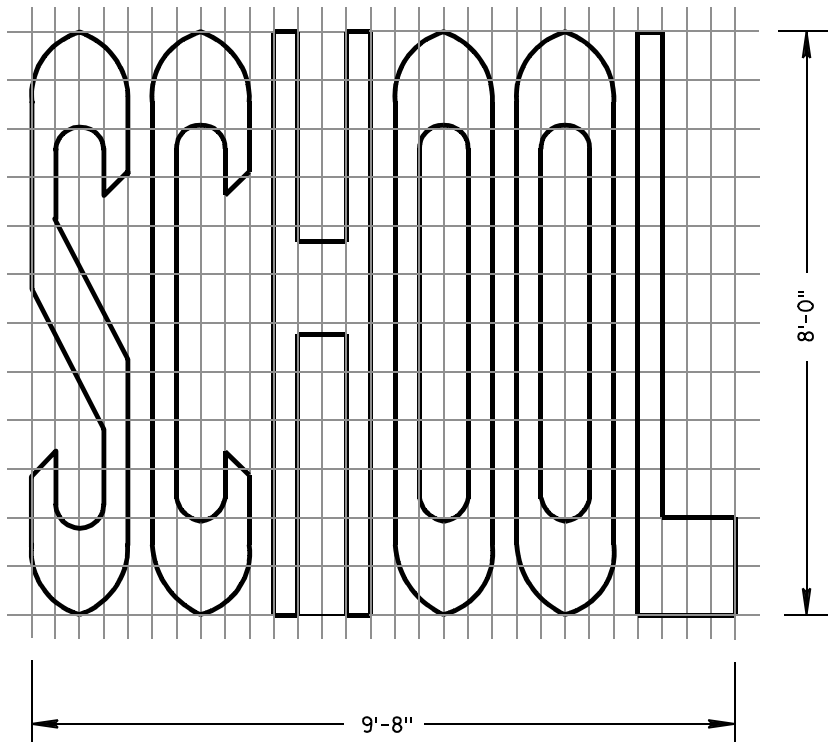
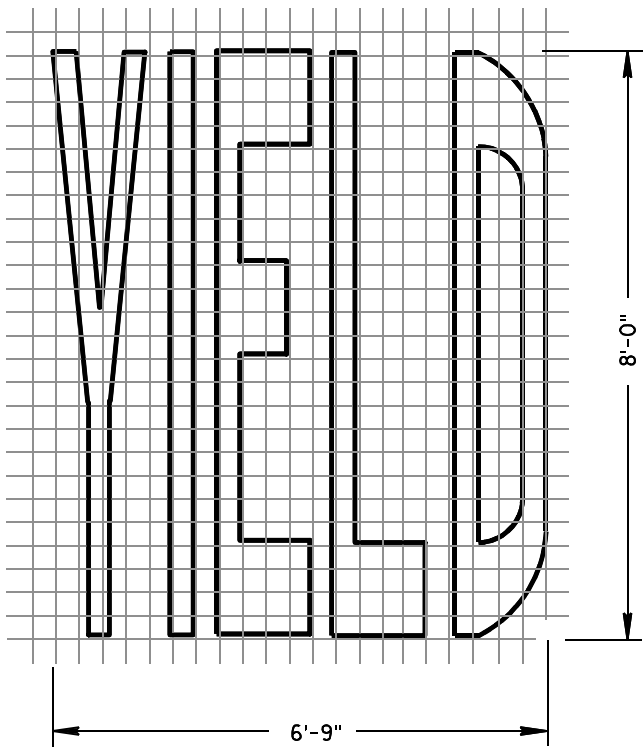
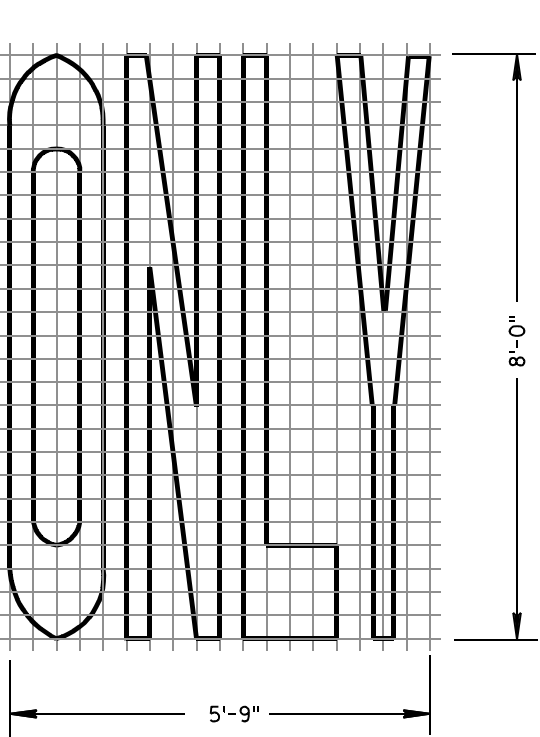
GENERAL NOTES

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

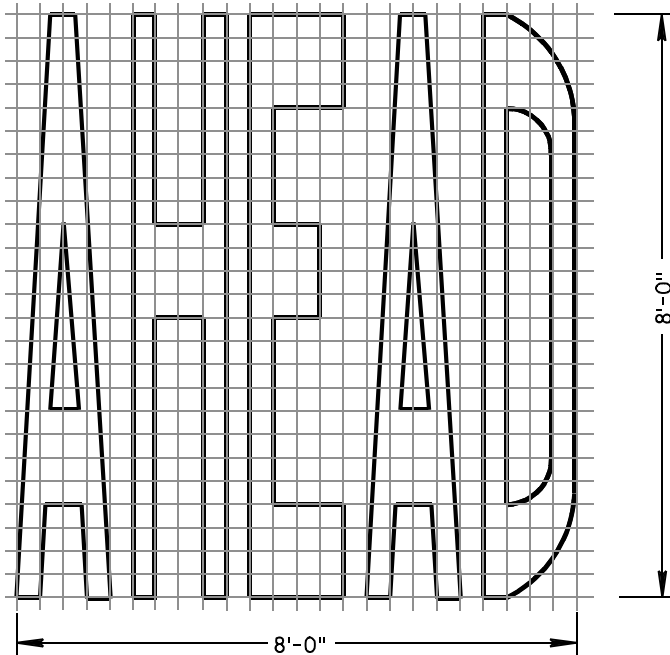
ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.



TWO-LANE



SINGLE-LANE



PAVEMENT MARKING WORDS

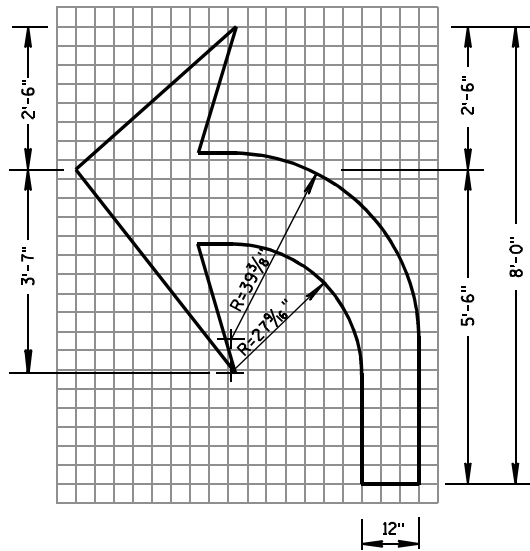
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

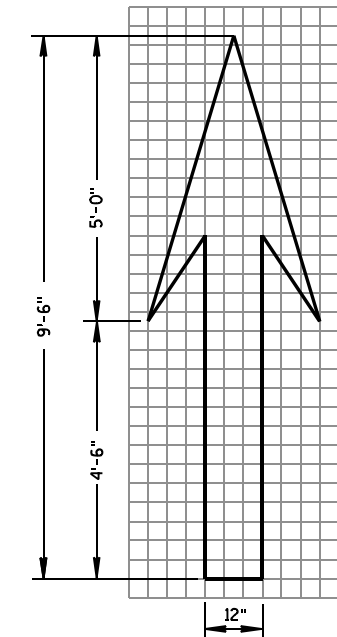
7-1-11
DATE

/S/ Thomas N. Nothmann
STATE TRAFFIC ENGINEER 198 IGN

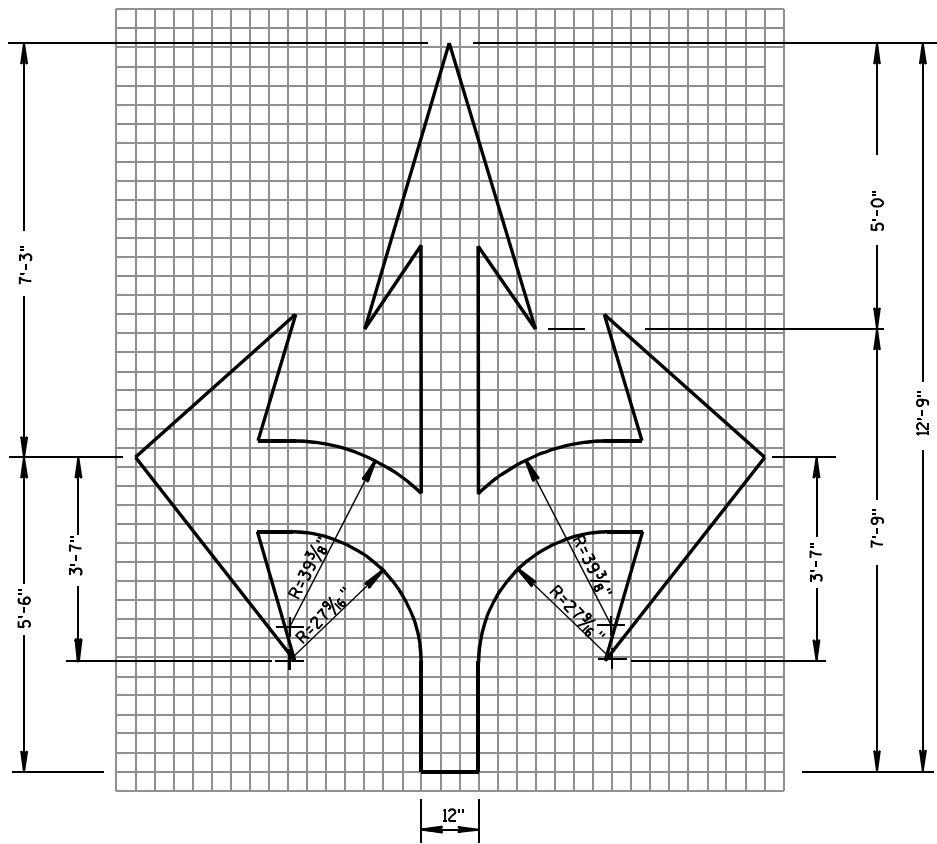
FHWA



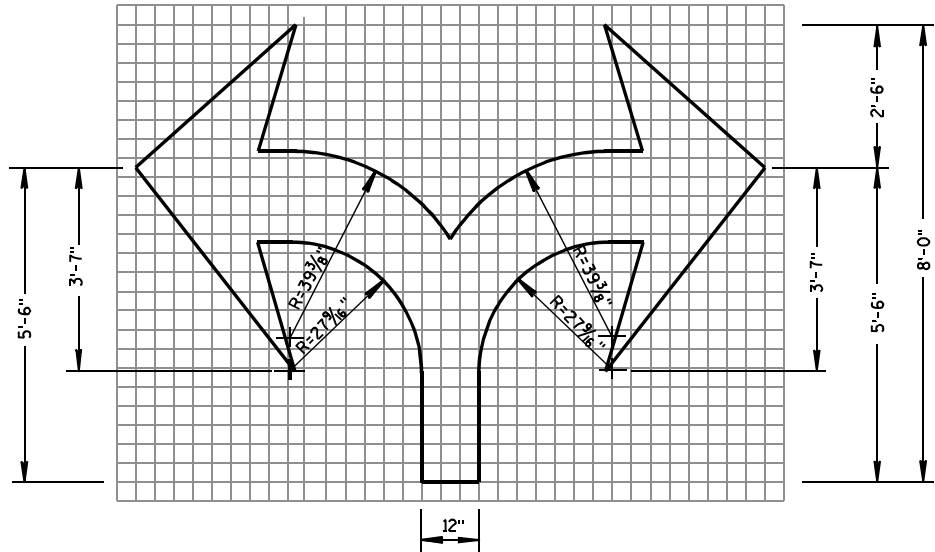
TYPE 2



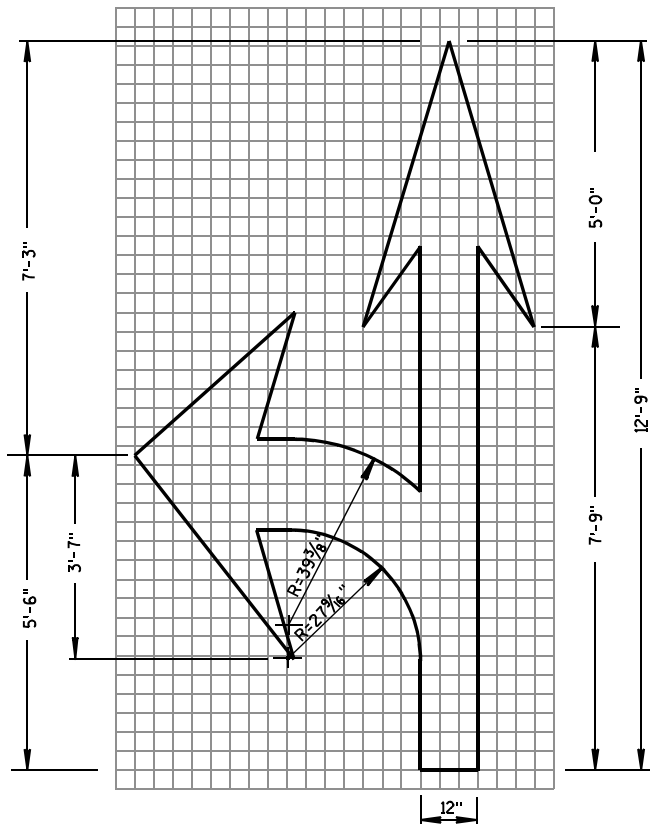
TYPE 1



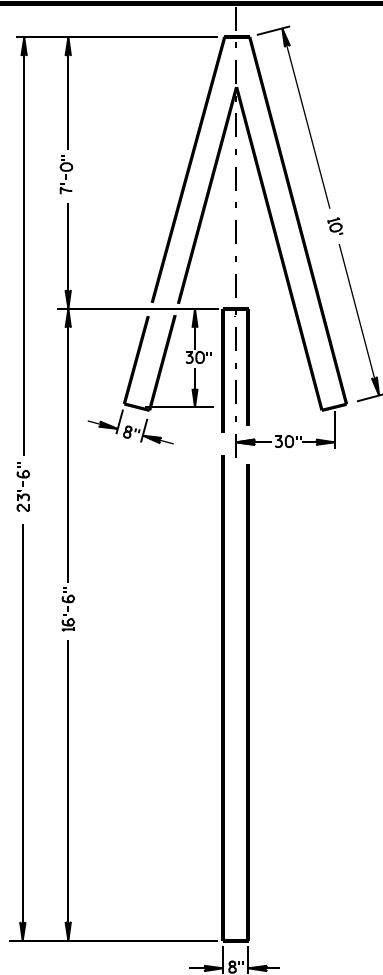
TYPE 6



TYPE 7



TYPE 3

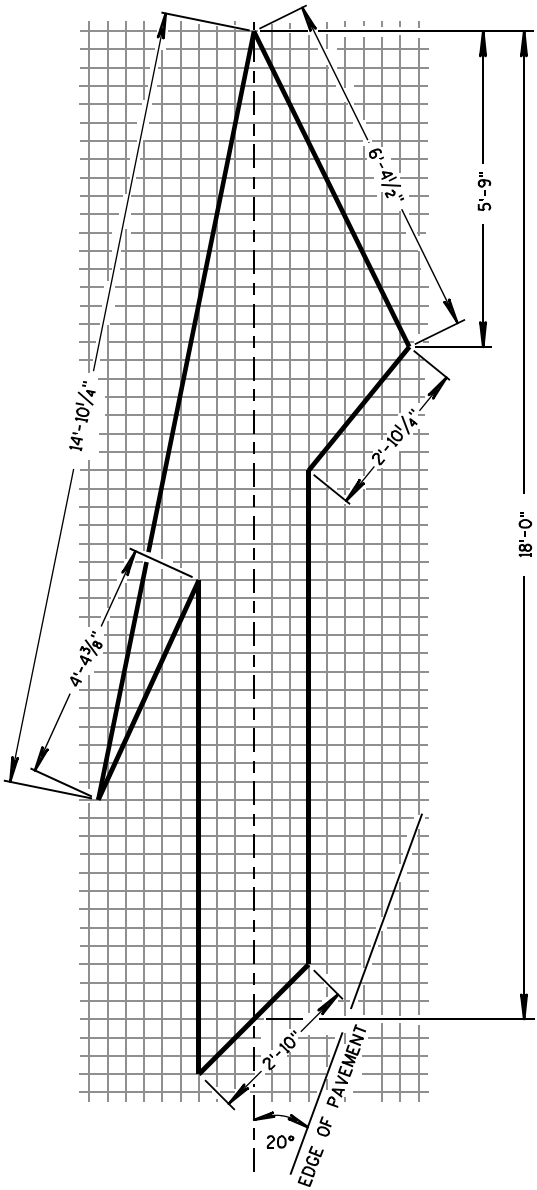


TYPE 4

GENERAL NOTES

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

ALL LETTERS, ARROWS AND SYMBOLS SHALL BE IN CONFORMANCE WITH REQUIREMENTS INCLUDED IN "STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKING" BOOK BY THE FEDERAL HIGHWAY ADMINISTRATION. ALL LETTERS, ARROWS AND SYMBOLS SHALL BE WHITE AND REFLECTORIZED. SMALL DIFFERENCES IN DIMENSIONS WITHIN THE TOLERANCES OF THAT BOOK ARE ACCEPTABLE.

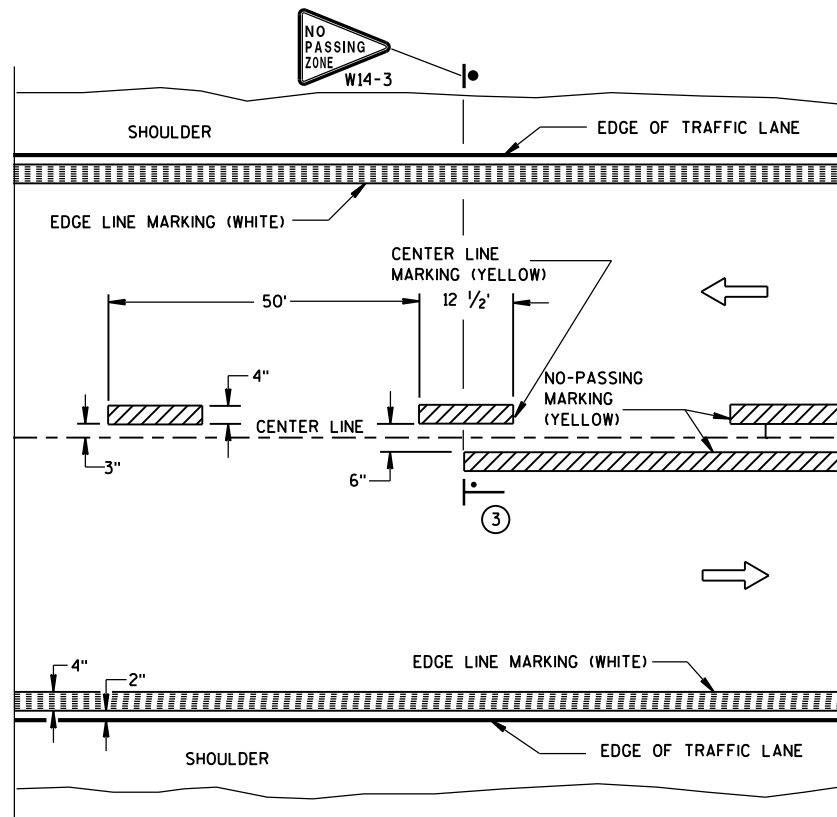


TYPE 5 LANE DROP ARROW

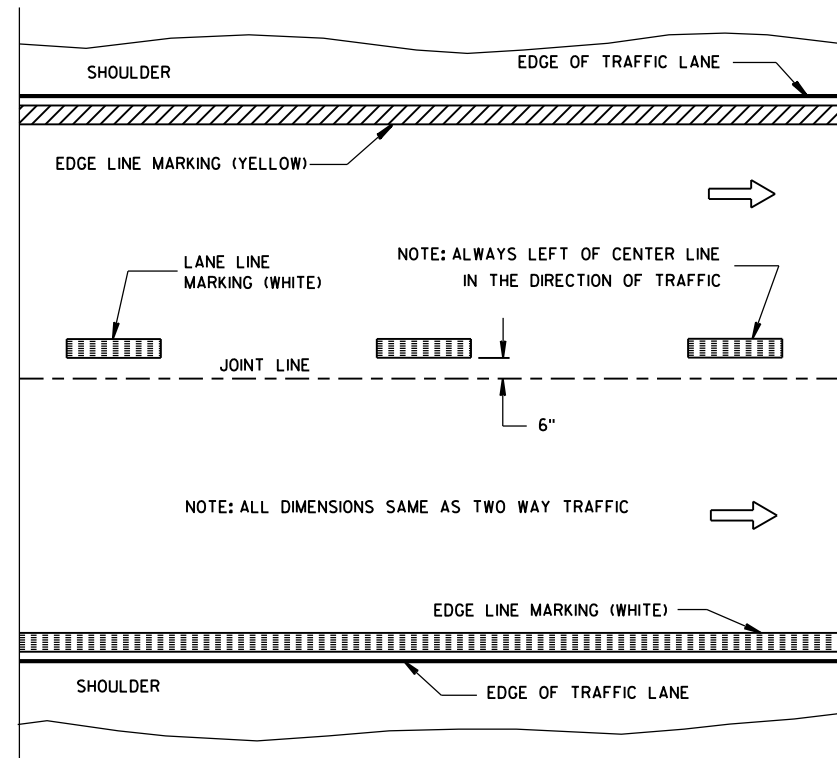
PAVEMENT MARKING ARROWS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/1/11
DATE
/S/ Thomas N. Nathahn
STATE TRAFFIC ENGINEER 199
SIGN
FHWA

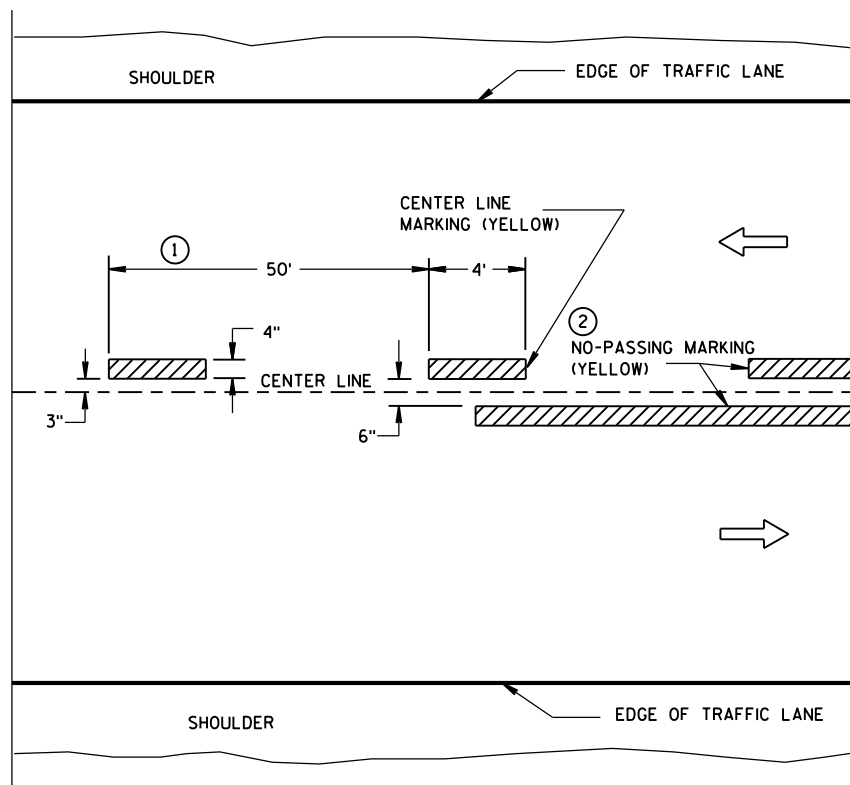


TWO WAY TRAFFIC

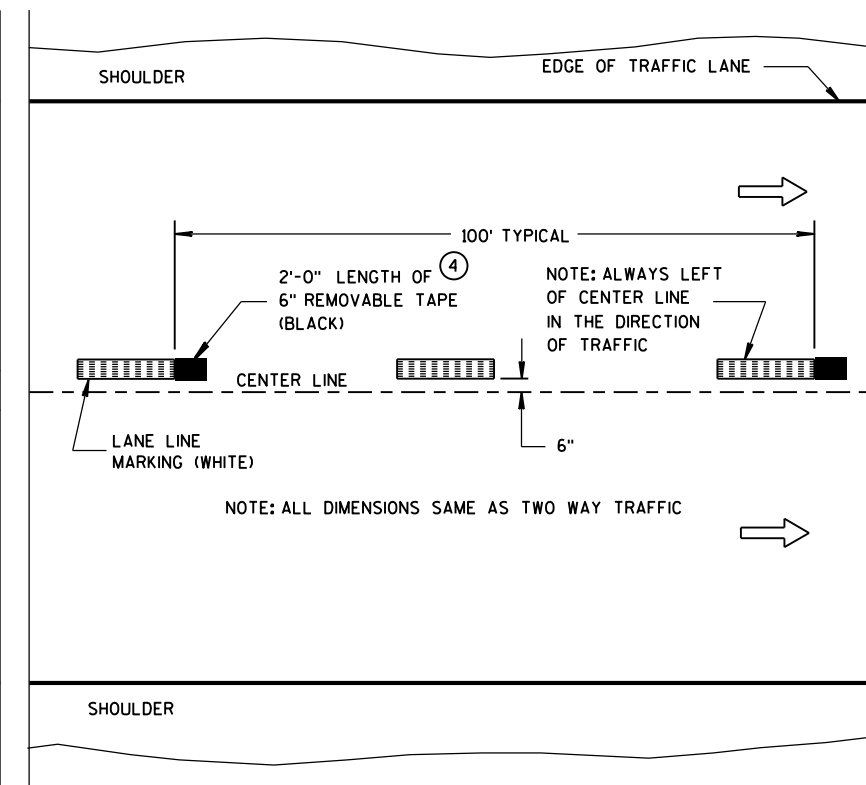


ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

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

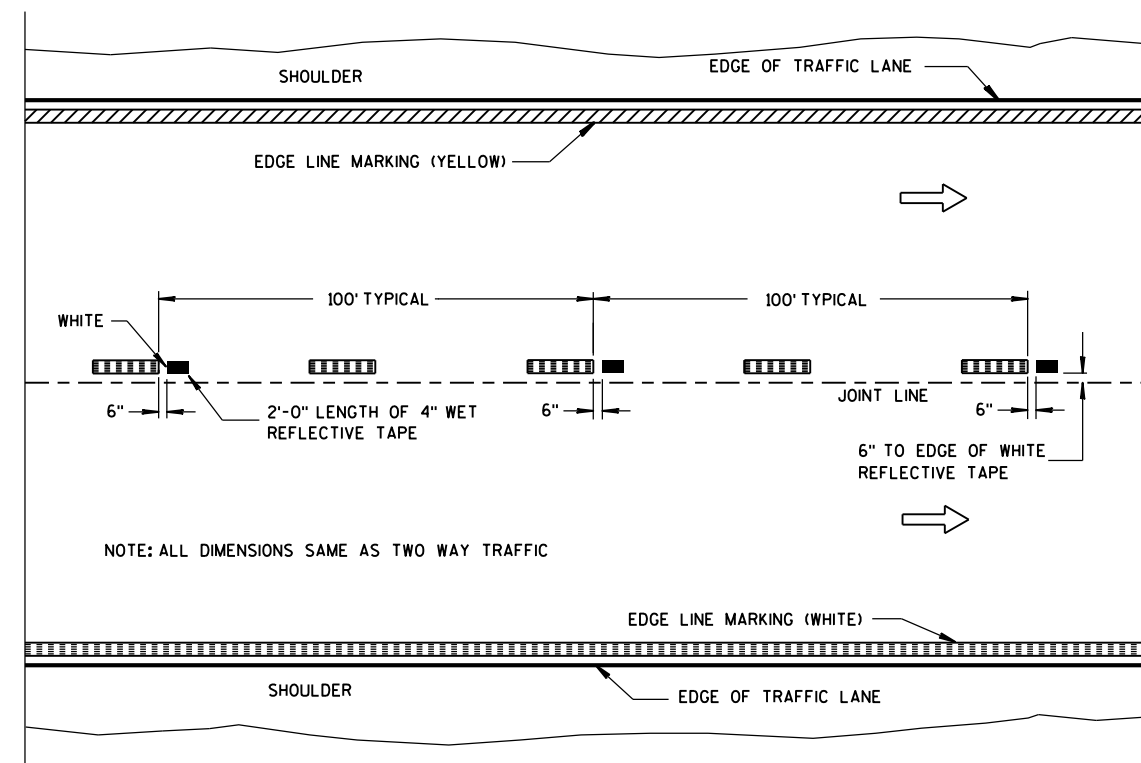
GENERAL NOTES

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

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

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



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

LEGEND

- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

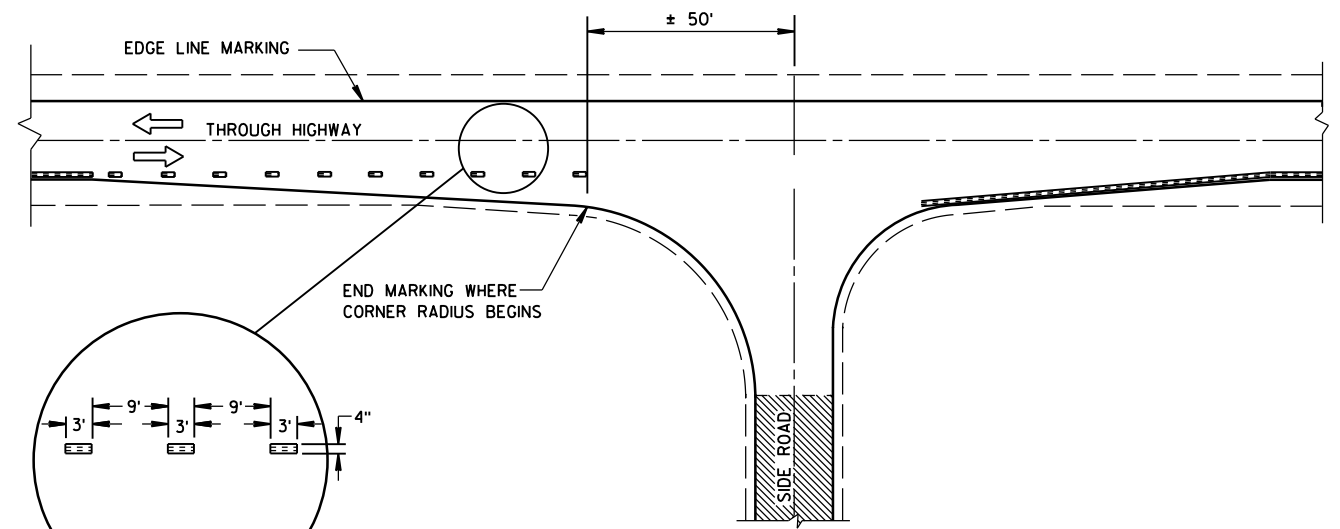
APPROVED

5-13-2013

DATE

FHWA

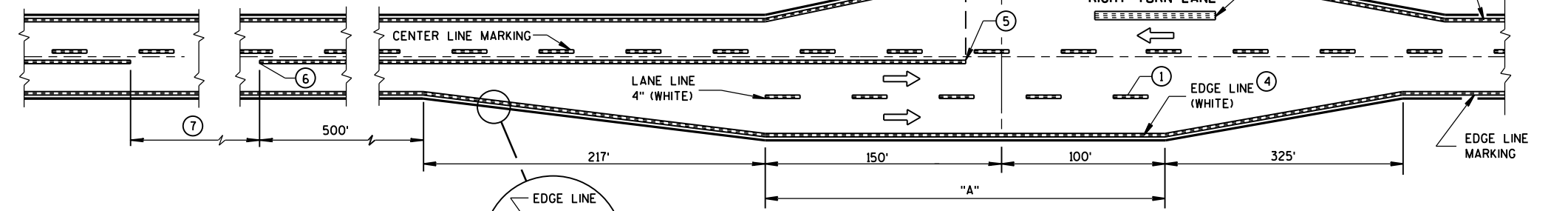
/S/ Travis Feltes
STATE TRAFFIC E 200



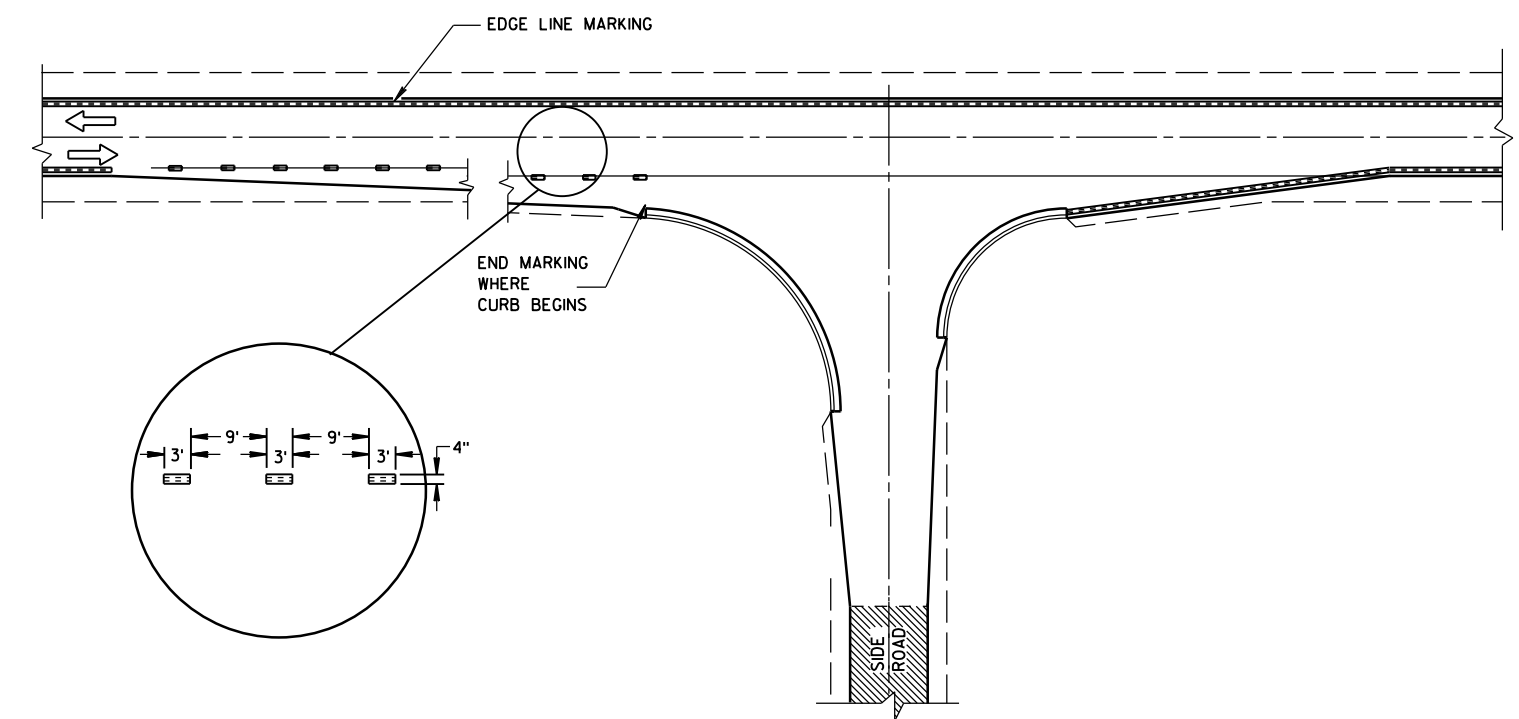
MINOR INTERSECTION WITHOUT CURBS

⑦

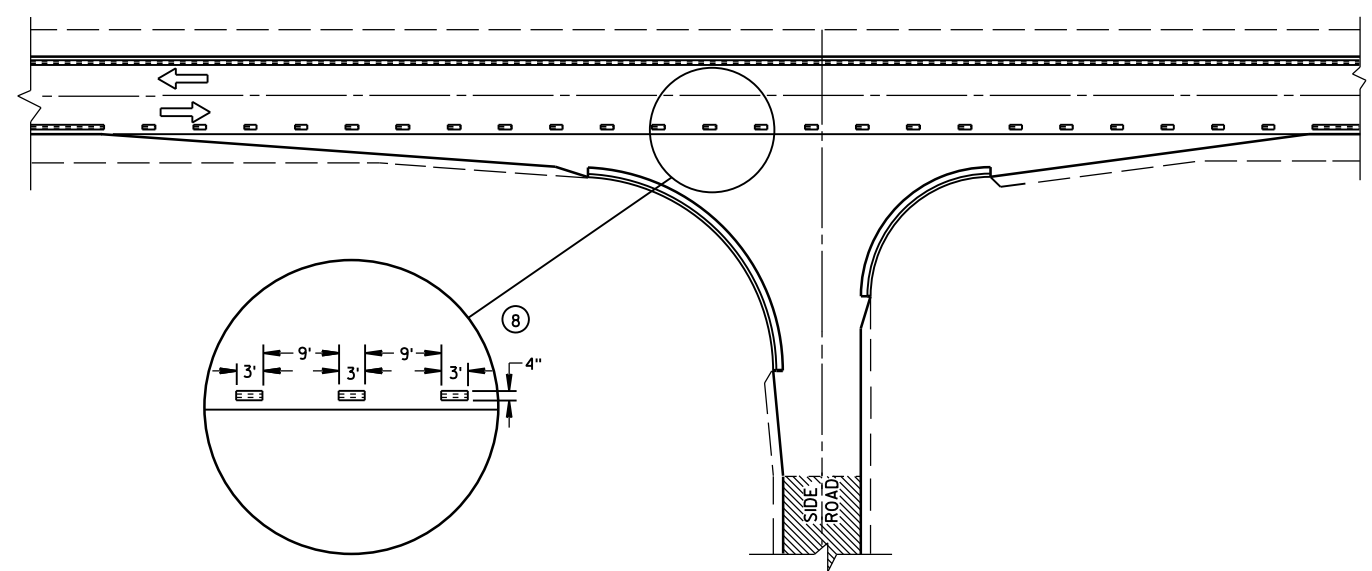
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



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



MINOR INTERSECTION WITH CURBS
(TYPICAL MARKING)

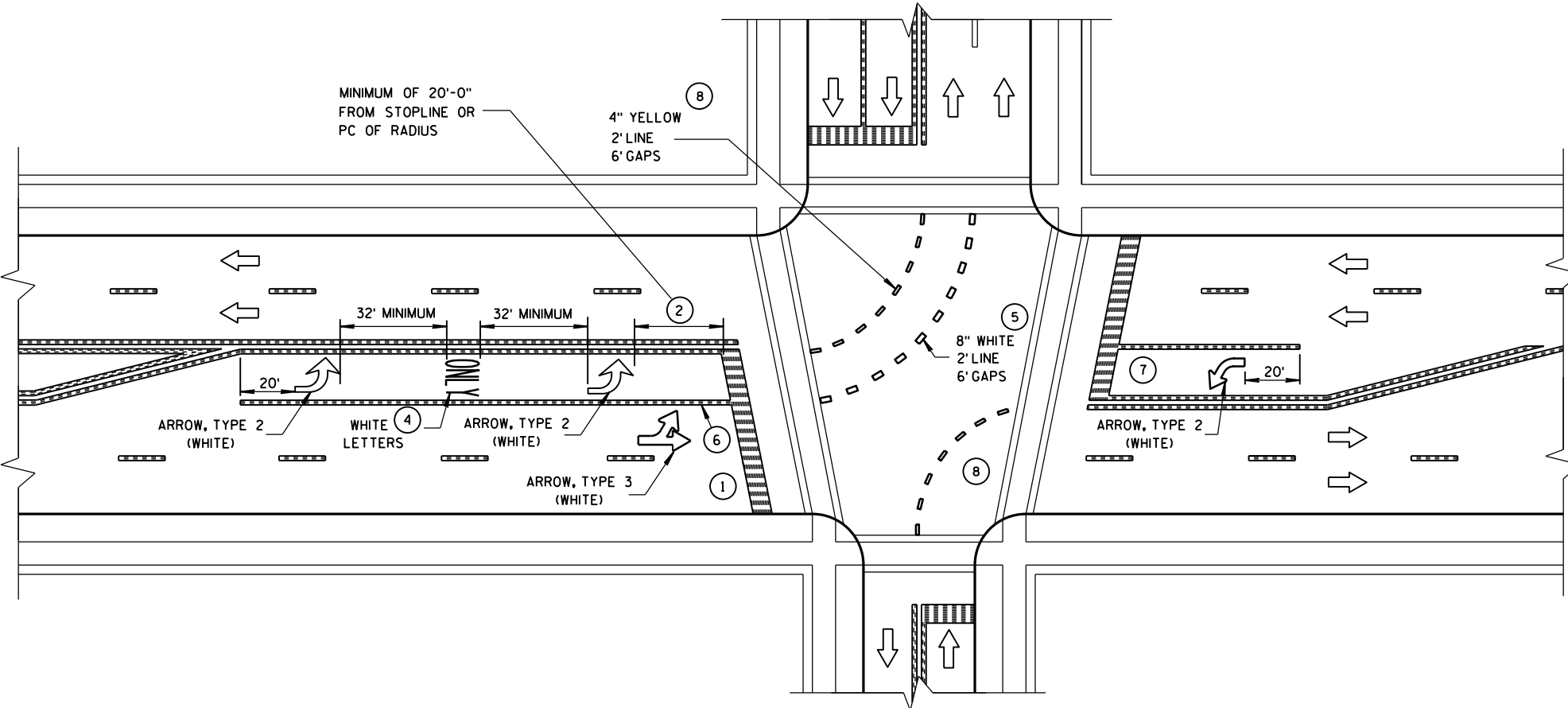


MINOR INTERSECTION WITH CURBS
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)

GENERAL NOTES

- EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED THROUGH DRIVEWAYS.
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
 - ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
 - ③ ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
 - ④ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
 - ⑤ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
 - ⑥ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
 - ⑦ IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
 - ⑧ 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

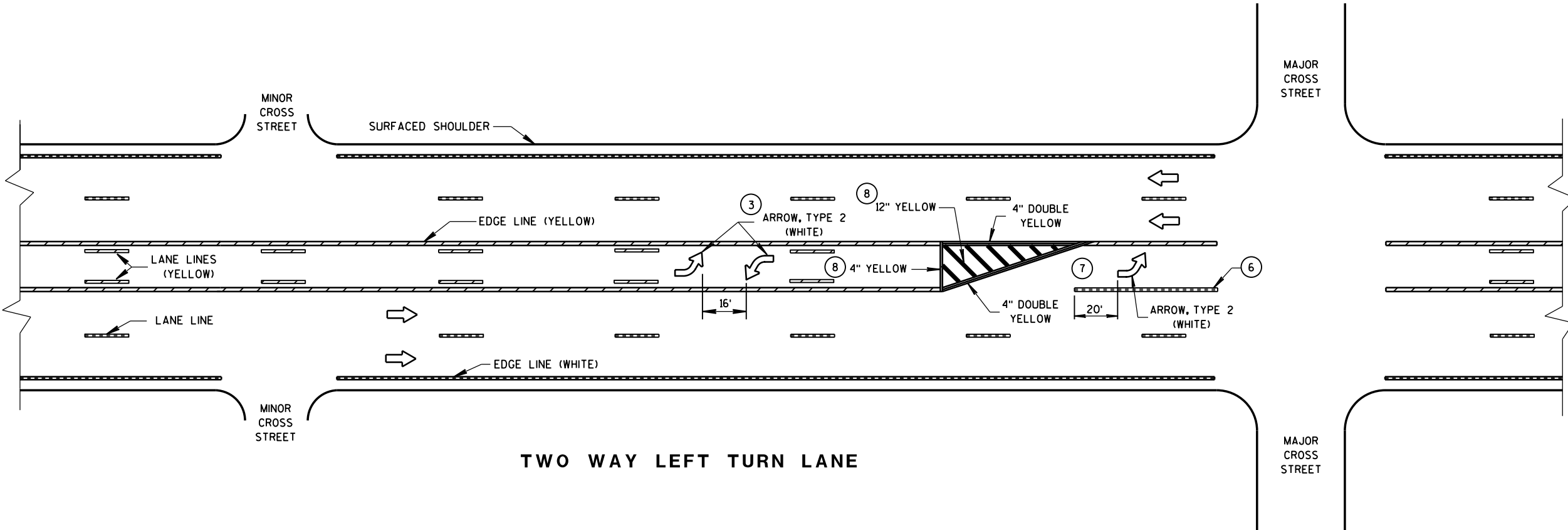
PAVEMENT MARKING (INTERSECTIONS)
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 201



GENERAL NOTES

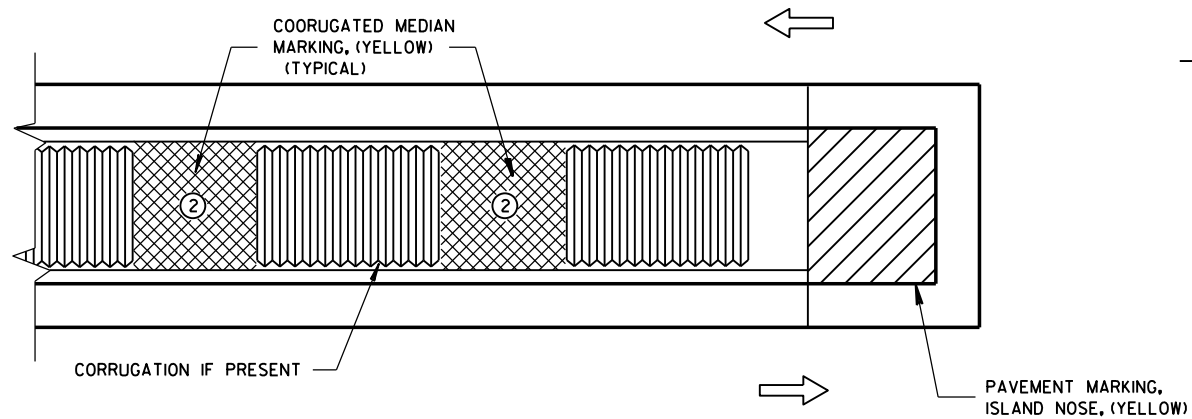
- 1 STOP BAR IS REQUIRED ONLY WHEN SPECIFIED IN THE CONTRACT.
- 2 DISTANCE MAY BE ADJUSTED TO ACCOMODATE SHORT LEFT TURN LANES. AS APPROVED BY THE ENGINEER.
- 3 A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- 4 ADD EXTRA SETS OF ONE ARROW AND ONE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

NOTE:
ARROW SYMBOL (➡)
SHOWS DIRECTION OF TRAVEL

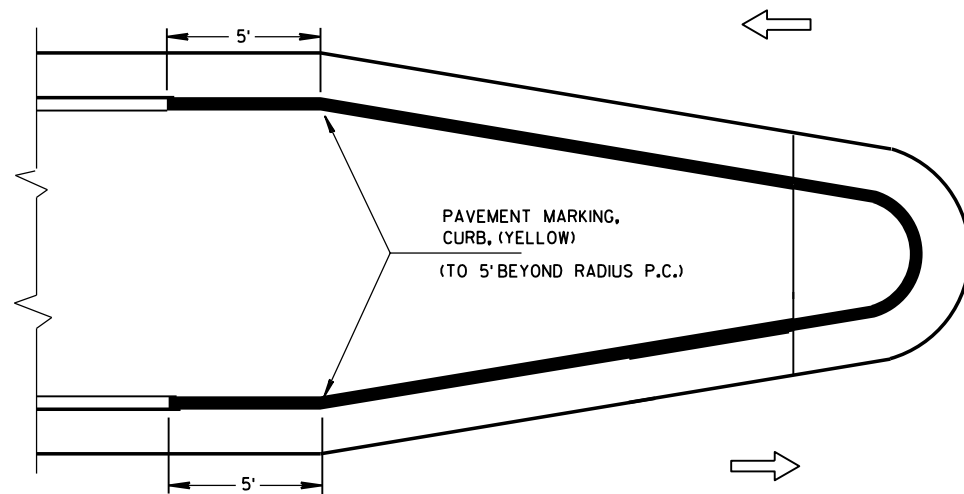


PAVEMENT MARKING
(LEFT TURN LANE)

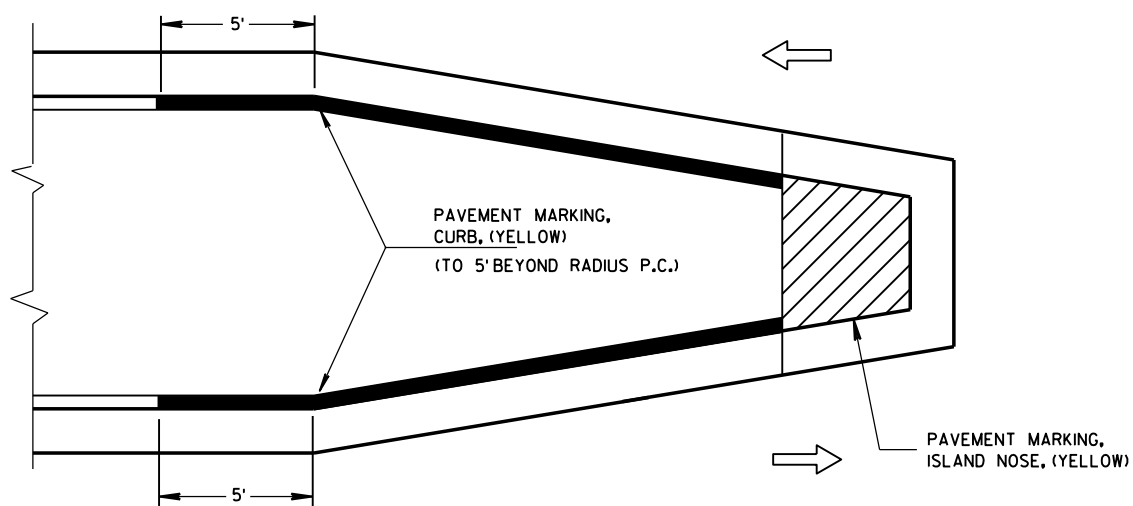
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



MEDIAN ISLAND WITH SQUARE BLUNT NOSE

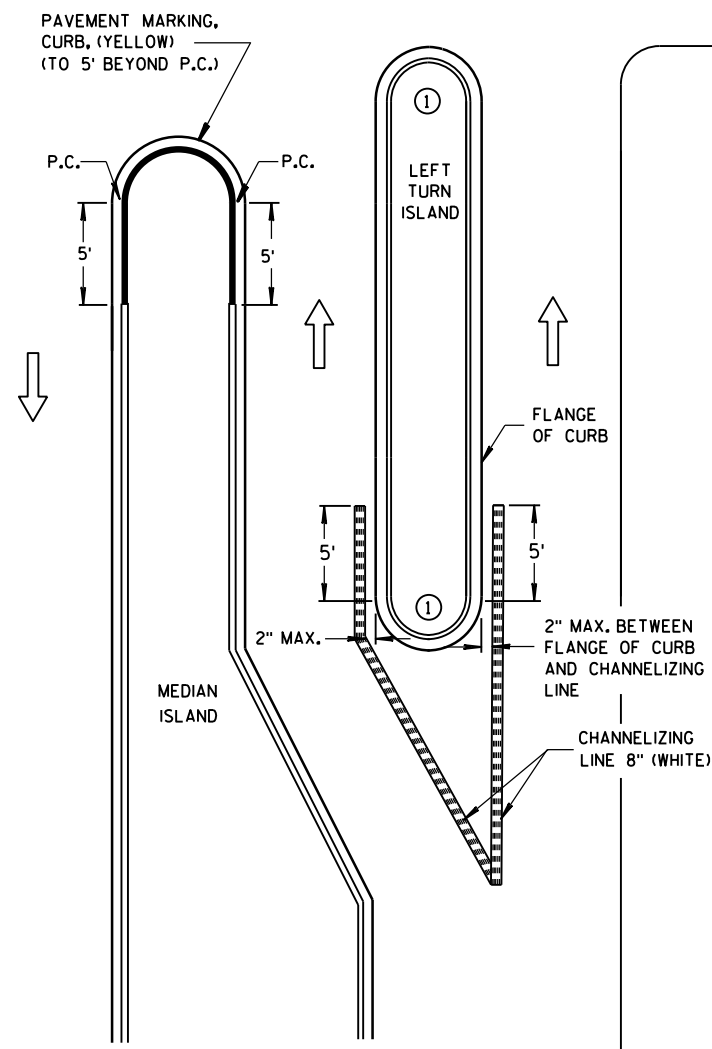


MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

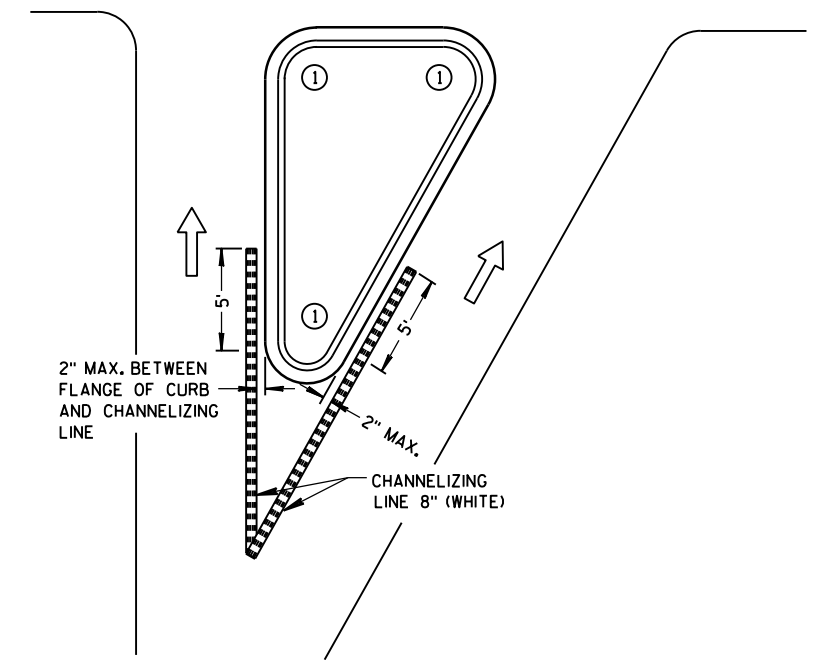
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS



LEFT TURN & MEDIAN ISLAND

GENERAL NOTES

- ① DO NOT MARK CURB NOSES THAT SEPARATE LANES OF TRAFFIC TRAVELING IN THE SAME DIRECTION.
- ② WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN, THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE WITH THE CONTRACT AND PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE FOOT.



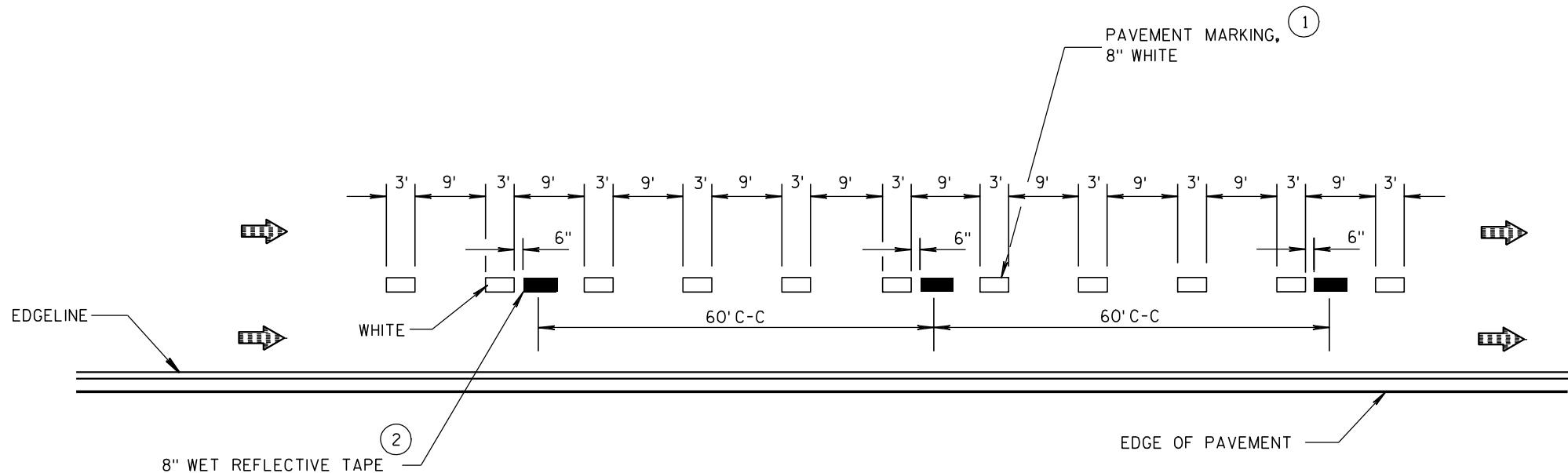
RIGHT TURN ISLAND

LEGEND

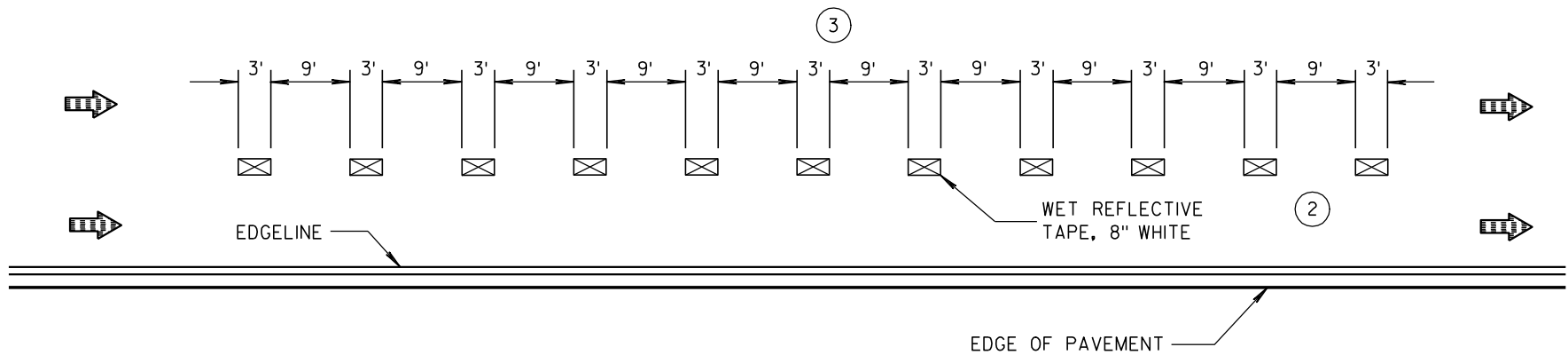
- ISLAND NOSE MARKING
- CURB MARKING
- CORRUGATED MEDIAN MARKING
- DIRECTION OF TRAVEL

PAVEMENT MARKING (ISLANDS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SPRAYED OR NON WET REFLECTIVE DROP LANE
LINE SUPPLEMENTED BY WET REFLECTIVE TAPE SEGMENT



DROP LANE DETAIL FOR
NEW WET REFLECTIVE TAPE INSTALLATIONS

GENERAL NOTES

- ① 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE. RETRACE EXISTING 4" MARKING WITH 8" MARKING.
- ② REPLACE SAME 4" WET REFLECTIVE TAPE WHERE EXISTING 4" TAPE IS IN PLACE.
- ③ 3' LINE 9' GAP, EXCEPT REPLACE THE EXISTING LINE - GAP PATTERN AND WIDTH OF TAPE WHERE EXISTING TAPE IS IN PLACE.

LEGEND

- 2.0' LENGTH OF WET REFLECTIVE TAPE
- ⊠ 3.0' LENGTH OF WET REFLECTIVE TAPE
- DROP LANE MARKING SPRAYED OR NON WET REFLECTIVE TAPE
- ➡ DIRECTION OF TRAFFIC

PAVEMENT MARKINGS FOR DROP LANES FREEWAY/EXPRESSWAY			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED	/S/ Thomas N. Notbohm		
5/13/10 DATE	STATE	TRAFFIC ENGINE 204	DESIGN
FHWA			

LEGEND

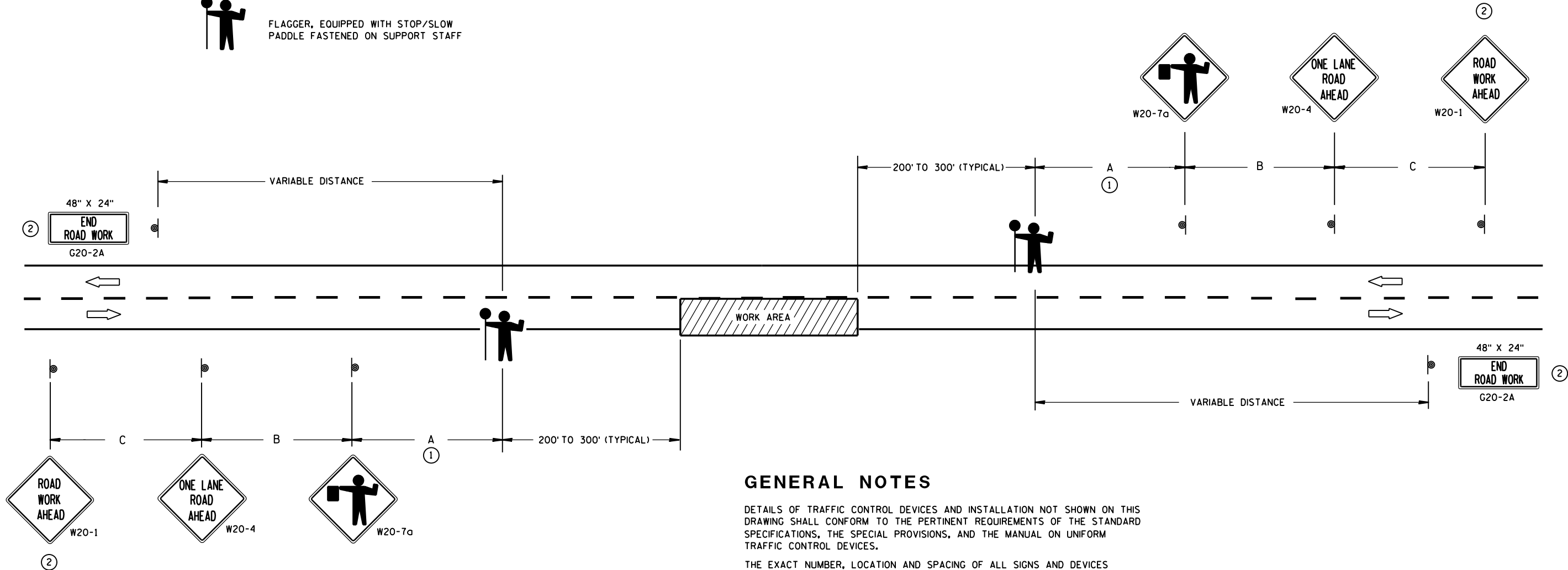
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
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 W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

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.

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.

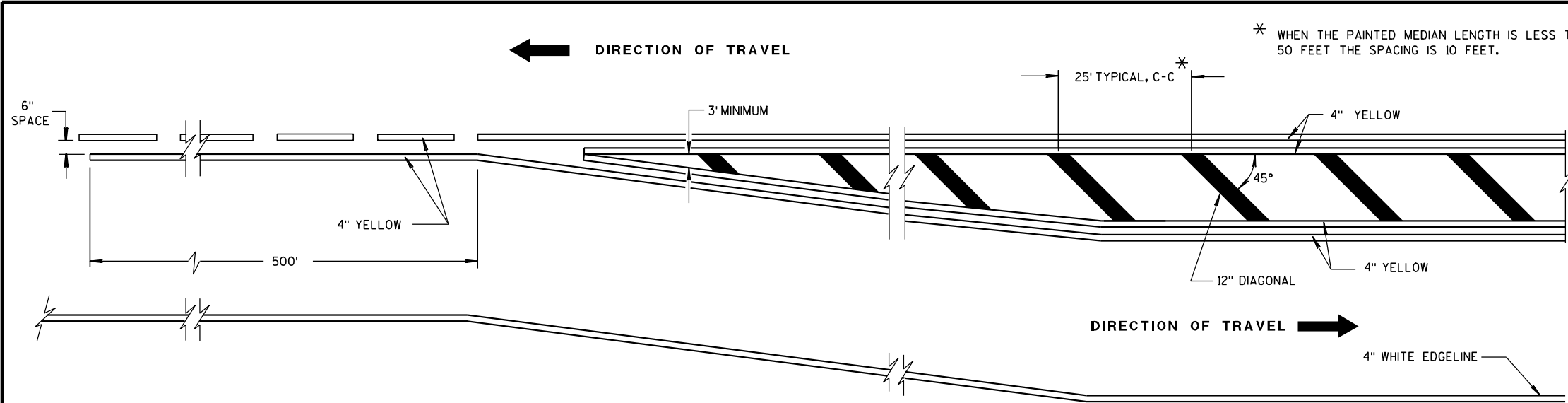
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

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

TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

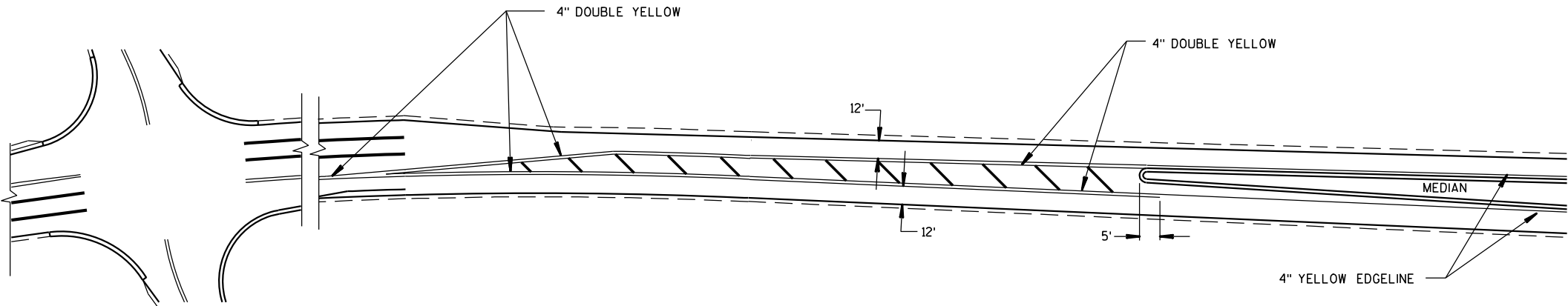
APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 205 SIGN
FHWA



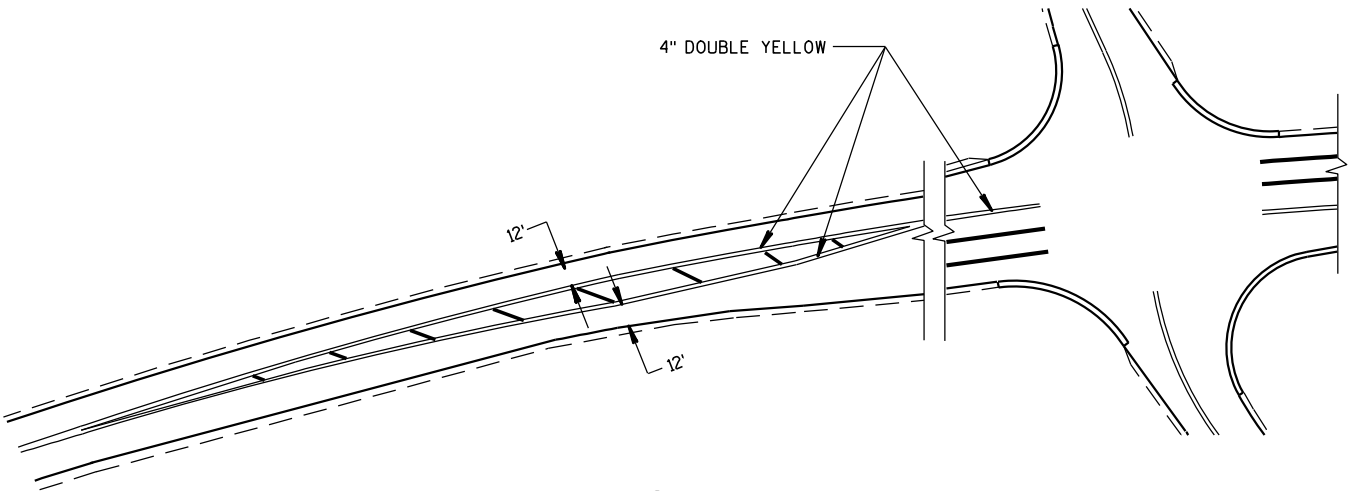
MEDIAN ISLAND DETAIL

GENERAL NOTE

DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT WIDEST POINT.

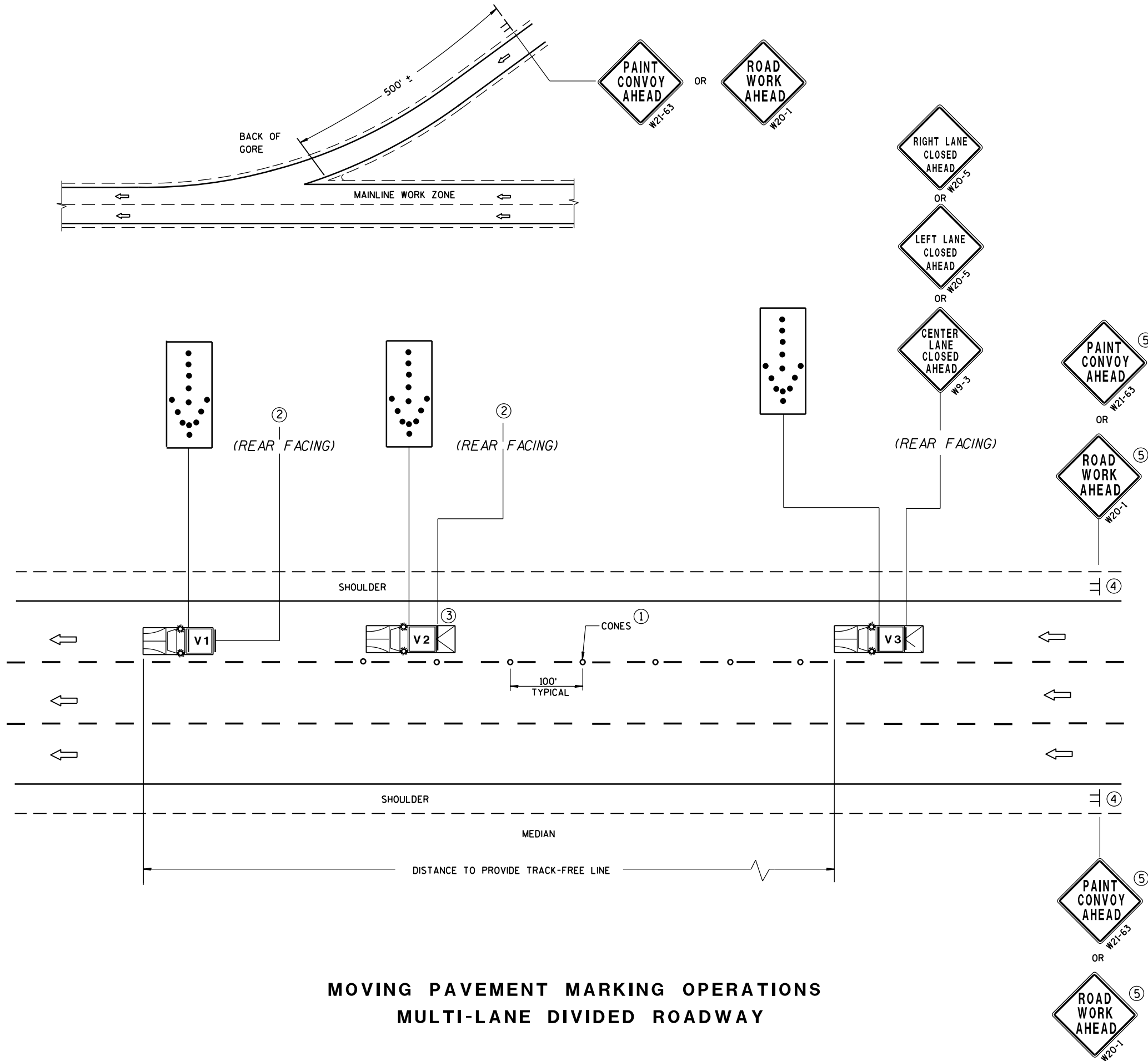


APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON APPROACH MARKINGS

MEDIAN ISLAND MARKING			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED	/S/ Thomas N. Nothohm		
2-5-09	DATE	STATE TRAFFIC ENGINEE 206	IGN
FHWA			



MOVING PAVEMENT MARKING OPERATIONS
MULTI-LANE DIVIDED ROADWAY

GENERAL NOTES

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

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

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

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

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

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

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

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

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

FOR 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. 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 EDGE LINE OR LANELINE MARKING FOR MULTILANE DIVIDED ROADWAYS.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.

WET PAINT

OR

WET PAINT

W21-64

W21-64
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED AFTER EVERY ON RAMP OR EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

LEGEND

- V1 LEAD VEHICLE
- V2 SHADOW VEHICLE
- V3 TRAIL VEHICLE WITH TMA
- TMA TRUCK-MOUNTED ATTENUATOR
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- CONES
- FLASHING ARROW PANEL (MERGE)

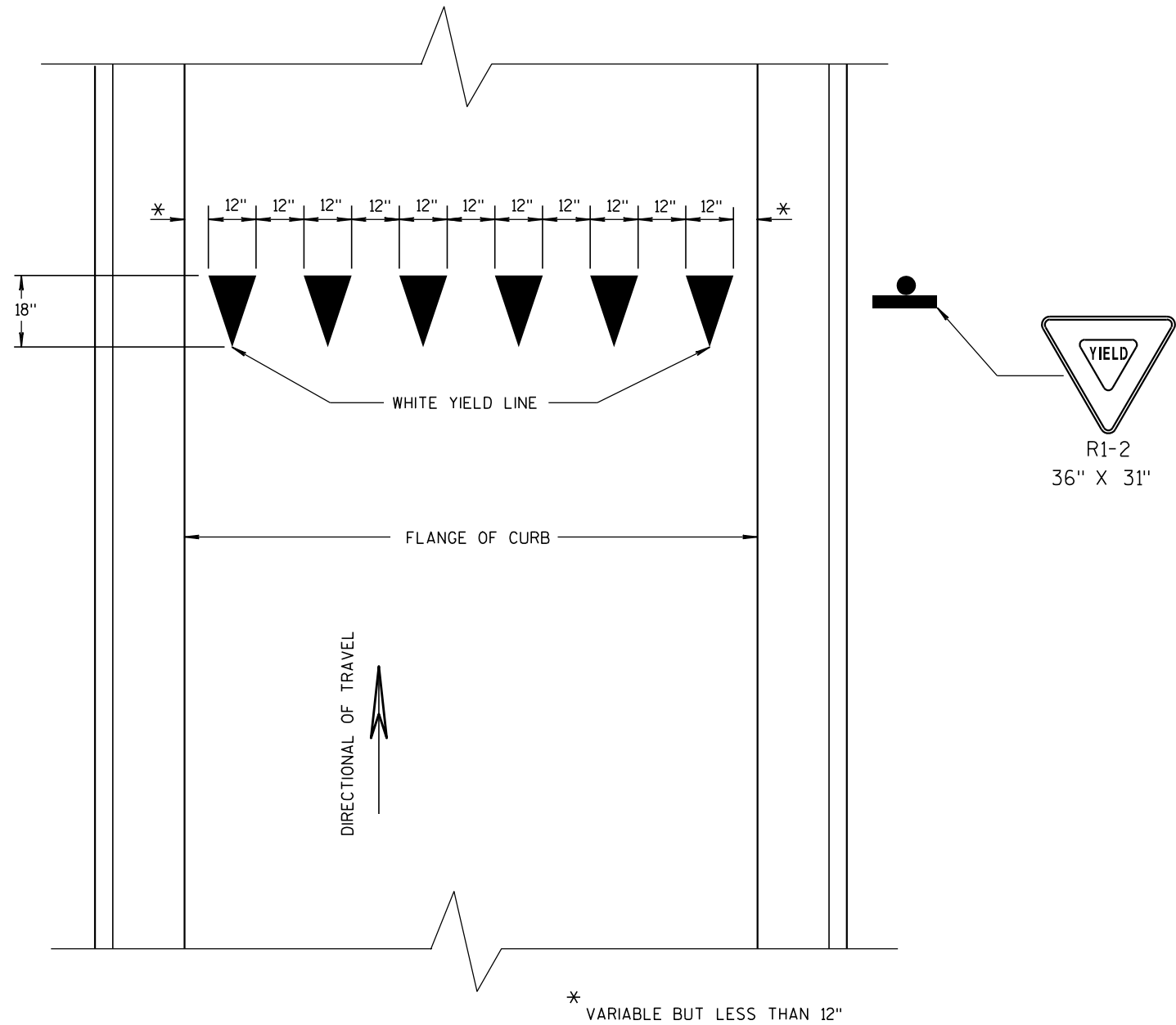
MOVING PAVEMENT MARKING
OPERATION
MULTI-LANE DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

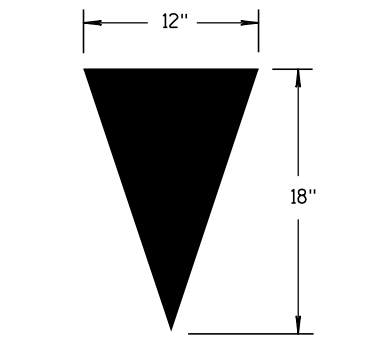
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5/3/2013
DATE

/S/ Travis Feltes
STATE TRAFFIC ENGINEER 207

FHWA



YIELD LINE

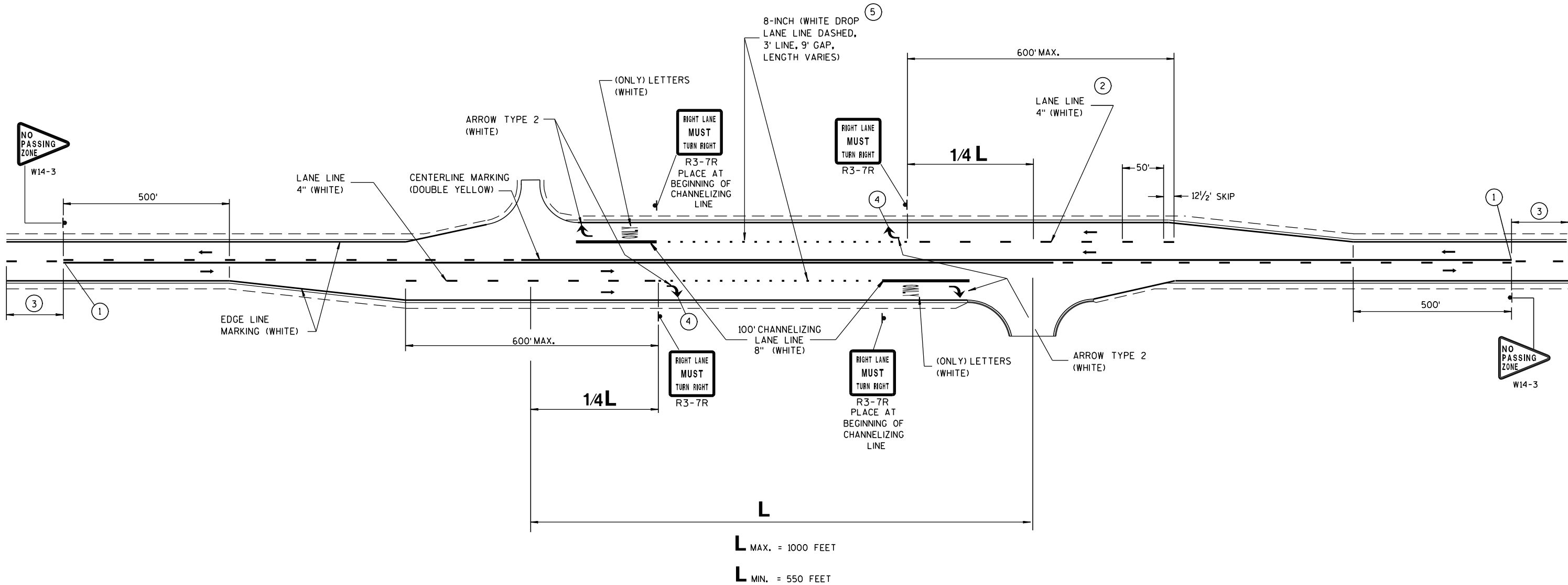


YIELD TRIANGLE

YIELD MARKINGS			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED			
1/28/05	/S/ Thomas N. Notbohm		
DATE	STATE TRAFFIC ENGINEER	208	GN
FHWA			

GENERAL NOTES

- 1 BARRIER LINE STARTS AT 500 FEET PRIOR TO THE BYPASS TAPER.
- 2 PLACE R3-7R SIGNS AT BEGINNING OF WHITE DROP LANE LINE DASHED AND WHITE CHANNEL LINE.
- 3 IF THE DISTANCE BETWEEN TWO SUCCESSIVE NO PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE TWO ZONES.
- 4 REQUIRED ONLY WHEN SPECIFIED IN THE PLANS.
- 5 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.



LEGEND

⇄ DIRECTION OF TRAFFIC

SIGNING AND MARKING
FOR COMBINATION RIGHT TURN
AND BYPASS LANE

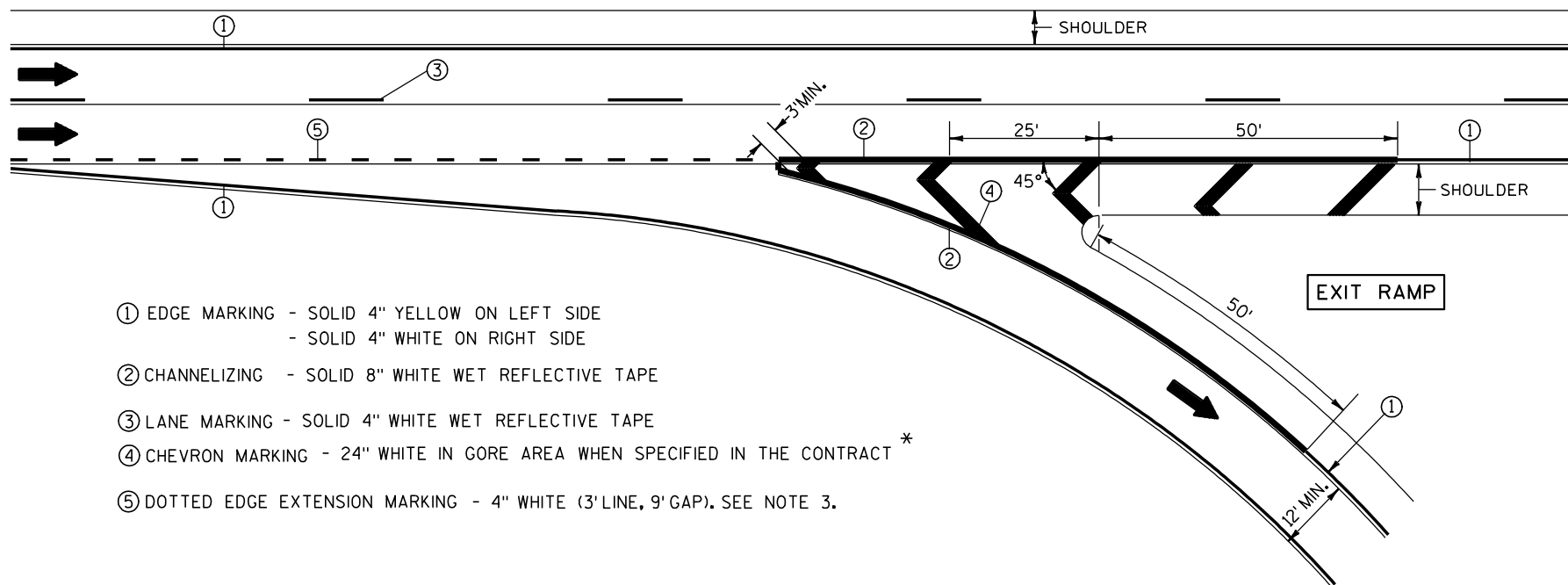
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

5-13-10
DATE

/S/ Thomas N. Neumann
STATE TRAFFIC ENGINEER 209 SIGN

FHWA

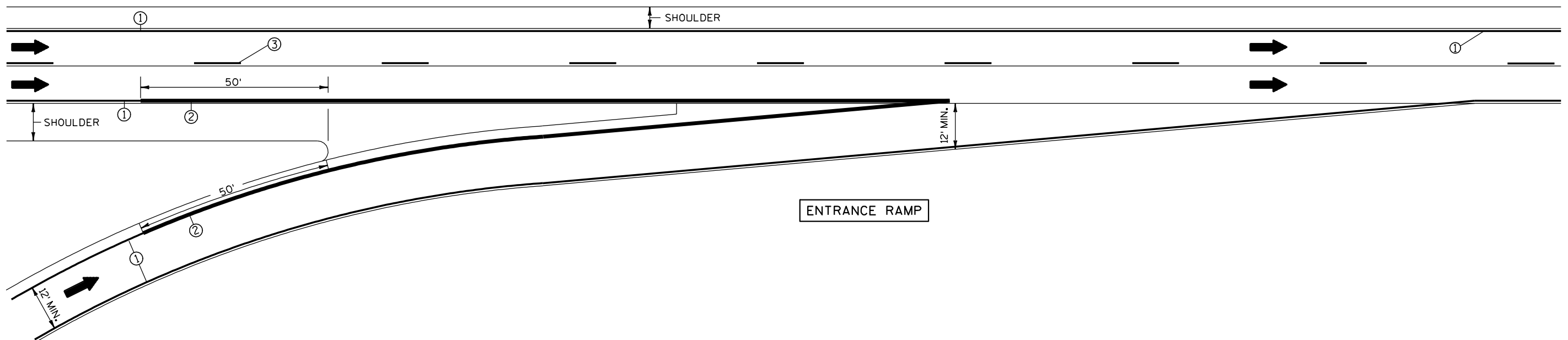


- ① EDGE MARKING - SOLID 4" YELLOW ON LEFT SIDE
- SOLID 4" WHITE ON RIGHT SIDE
- ② CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE
- ③ LANE MARKING - SOLID 4" WHITE WET REFLECTIVE TAPE
- ④ CHEVRON MARKING - 24" WHITE IN GORE AREA WHEN SPECIFIED IN THE CONTRACT *
- ⑤ DOTTED EDGE EXTENSION MARKING - 4" WHITE (3' LINE, 9' GAP). SEE NOTE 3.

NOTES:

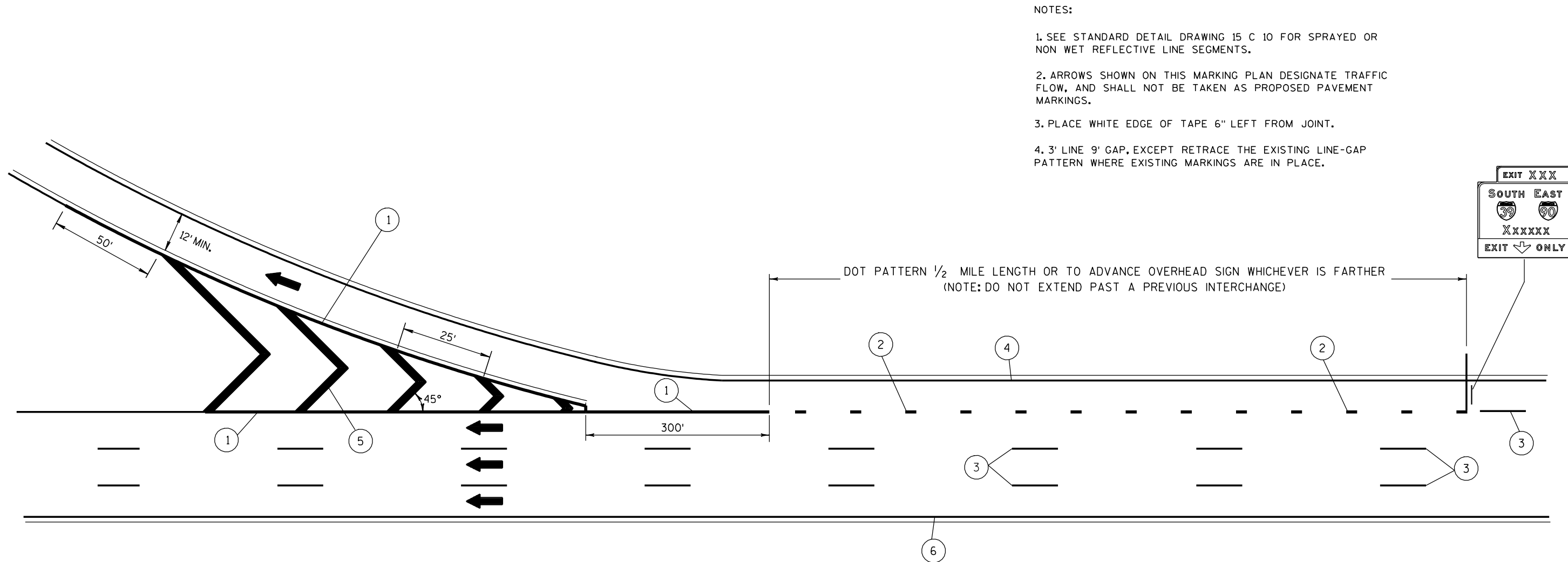
- 1. ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
- 2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.
- 3. 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE-GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- 4. RETRACE EXISTING DIAGONAL MARKINGS.

* REFER TO DESIGN NOTES.



PAVEMENT MARKING
(RAMPS AND GORES)

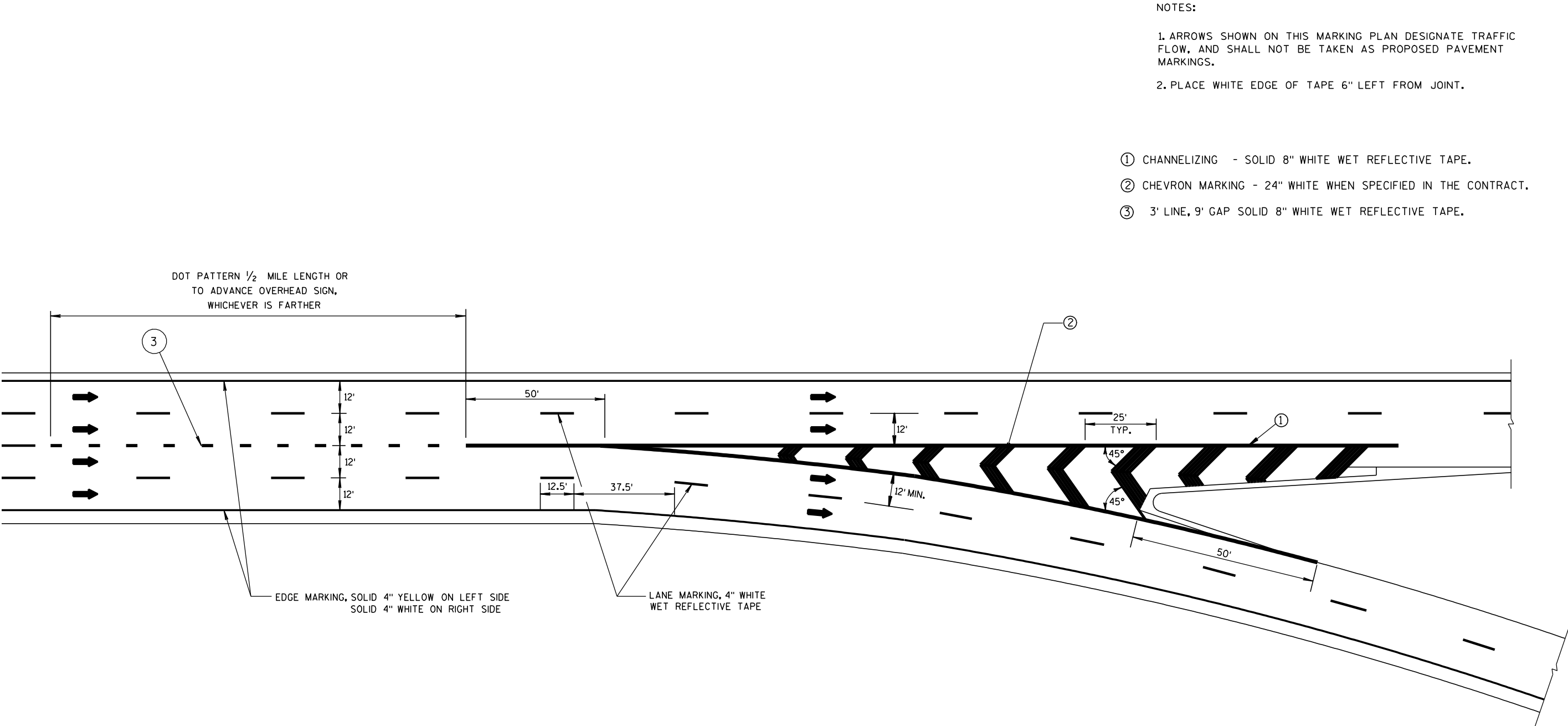
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



- ① CHANNELIZING - SOLID 8" WHITE WET RELECTIVE TAPE
- ② 3' LINE, 9' GAP SOLID 8" WHITE WET REFLECTIVE TAPE. SEE NOTE 4.
- ③ SOLID 4" WHITE WET REFLECTIVE TAPE
- ④ 4" WHITE EDGELINE
- ⑤ CHEVRON MARKING - 24" WHITE WHEN SPECIFIED IN THE CONTRACT
- ⑥ 4" YELLOW EDGELINE

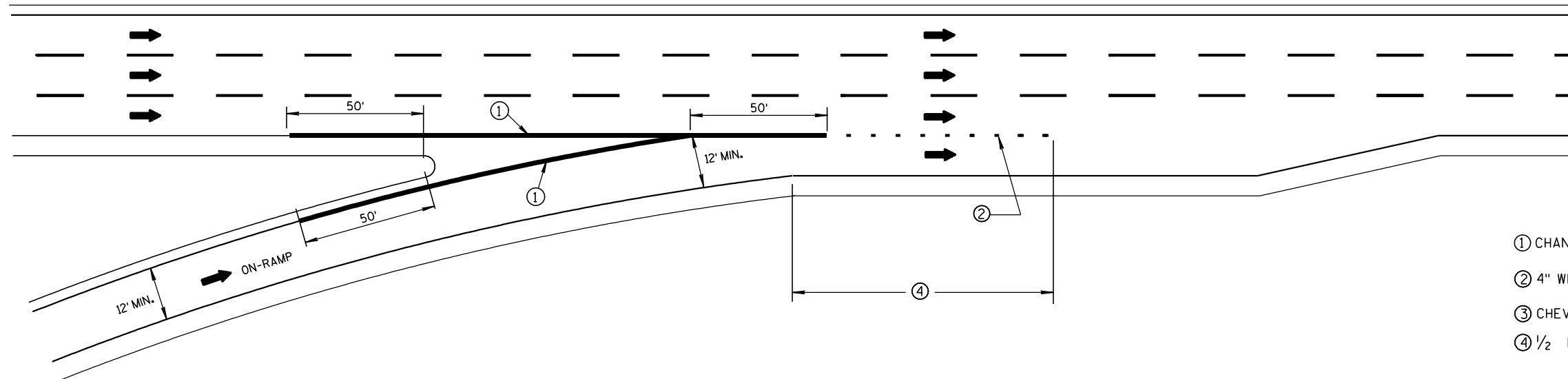
LANE DROP
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PAVEMENT MARKING
MAJOR SPLIT
FREEWAY TO FREEWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

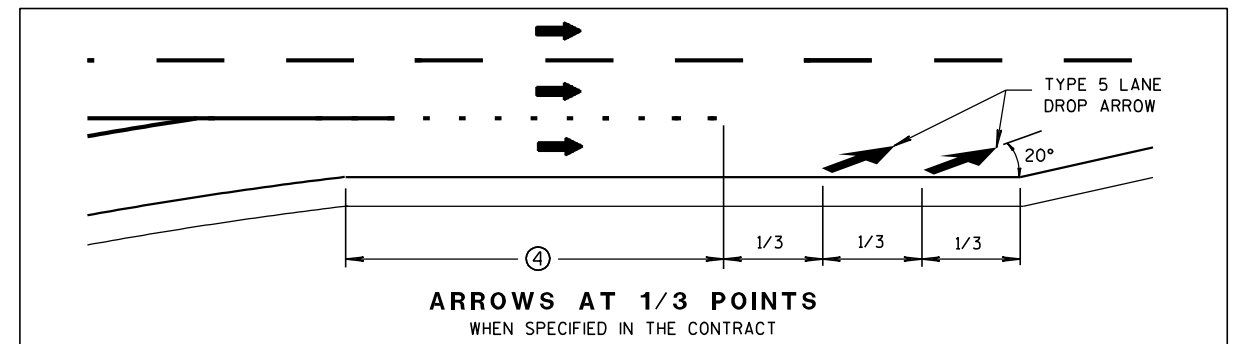
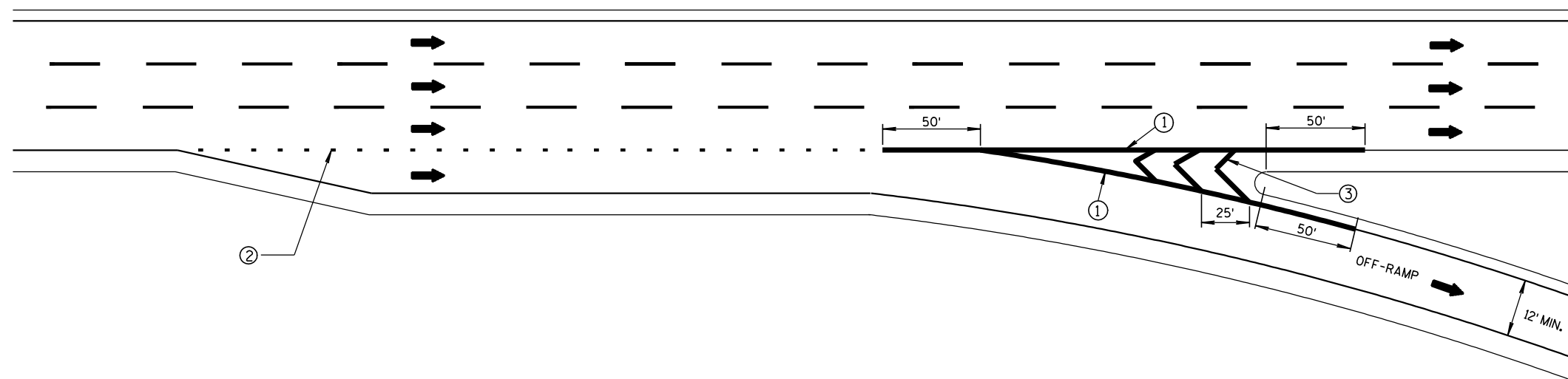


SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE-RAMP

NOTES:

1. AHEAD ARROWS SHOWN ON THIS MARKING PLAN DESIGNATE TRAFFIC FLOW, AND SHALL NOT BE TAKEN AS PROPOSED PAVEMENT MARKINGS.
2. PLACE WHITE EDGE OF TAPE 6" LEFT FROM JOINT.
3. RETRACE EXISTING DIAGONAL MARKINGS.

- ① CHANNELIZING - SOLID 8" WHITE WET REFLECTIVE TAPE IN GORE AREA.
- ② 4" WHITE (3' LINE, 9' GAP).
- ③ CHEVRON MARKING - 24" WHITE WHEN SPECIFIED IN THE CONTRACT.
- ④ 1/2 LENGTH OF FULL WIDTH ACCELERATION LANE.

ARROWS AT 1/3 POINTS
WHEN SPECIFIED IN THE CONTRACT

SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT-RAMP

PAVEMENT MARKING FOR
PARALLEL ON-RAMP AND
PARALLEL OFF-RAMPSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/23/2011

DATE

FHWA

/S/ Thomas N. Notthahn
STATE TRAFFIC ENGINE 213

SIGN

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

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

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

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

REMOVE PAVEMENT MARKINGS IF LANE CLOSURE IS TO BE IN PLACE FOR LONGER THAN 4 OR MORE DAYS AND NIGHTS.

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

* THE LEFT REVERSE CURVE SIGN (W01-4L) IS ONLY REQUIRED WHEN THIS DETAIL IS USED IN COMBINATION WITH "SINGLE LANE CROSSOVER" DETAIL.

TYPE III BARRICADE WITH ATTACHED SIGN

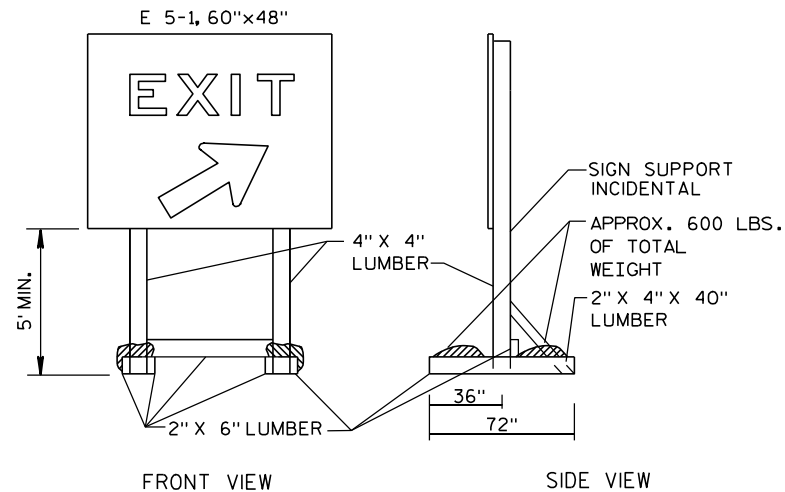
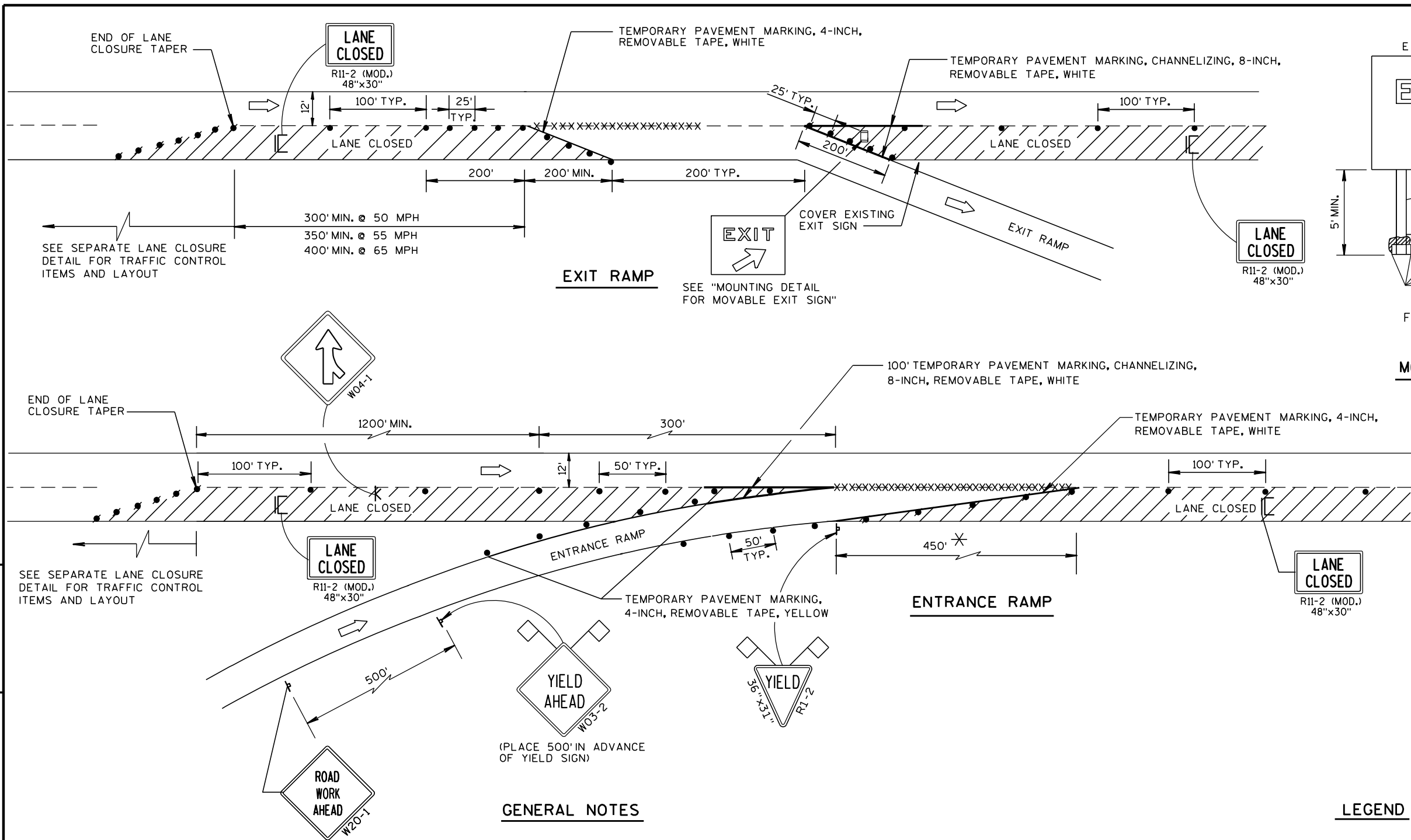
 FLASHING ARROW BOARD

➡ DIRECTION OF TRAFFIC

 WORK AREA

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
3-2014 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER 214 :SIGN
FHWA



NOTE: ALL LUMBER DIMENSIONS ARE NOMINAL
MOUNTING DETAIL FOR MOVABLE EXIT SIGN

GENERAL NOTES

THE INSTALLATIONS SHOWN ON THIS SHEET ARE TYPICAL EXAMPLES AND ARE NOT INTENDED TO REPRESENT ANY PARTICULAR RAMP. AT SPECIFIC FIELD LOCATIONS, SIMILAR INSTALLATIONS SHALL BE USED AND ADJUSTED TO THE GEOMETRICS OF THE RAMP AS COORDINATED WITH THE ENGINEER.

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

SEE SEPARATE LANE CLOSURE DETAIL FOR TYPICAL SPACING OF TYPE III BARRICADES AND R11-2 (MOD.) "LANE CLOSED" SIGNS.

YIELD SIGN AND WARNING SIGNS ON ENTRANCE RAMP ARE ALSO APPROPRIATE FOR CLOSURE OF THE MAINLINE LEFT LANE. OMIT THE YIELD SIGN IF MORE THAN ONE LANE REMAINS OPEN ON THE MAINLINE AND THE RAMP TAPER IS AT LEAST AS LONG AS THE NORMAL ENTRANCE RAMP TAPER AT THE SITE.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 7 OR MORE CONTINUOUS DAYS AND NIGHTS.

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

* LENGTH OF OPENING MAY BE REDUCED TO 150 FEET DURING STAGING OF WORK IN IMMEDIATE AREA OF RAMP TAPER.

LEGEND

- POST MOUNTED SIGN
- SIGN ON PORTABLE SUPPORT
- TRAFFIC CONTROL, DRUM
- TRAFFIC CONTROL, DRUM WITH WARNING LIGHT, TYPE C (STEADY-BURN)
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE (8' EQUIVALENT) WITH SIGN
- FLAGS, 16"x16" MIN., ORANGE
- DIRECTION OF TRAFFIC FLOW

TRAFFIC CONTROL, EXIT AND ENTRANCE RAMP WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
5/24/2000 DATE /S/ Chester J. ---
CHIEF SIGNS AND MAR 215 INEER
FHWA

LEGEND

-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TRAFFIC CONTROL DRUM
-  SIGN ON PERMANENT SUPPORT
-  TYPE "A" WARNING LIGHT (FLASHING)
-  DIRECTION OF TRAFFIC

GENERAL NOTES

THIS RAMP CLOSURE DETAIL IS TYPICAL FOR CLOSING A RIGHT SIDE EXIT RAMP. FOR A LEFT SIDE EXIT RAMP, REVERSE THE TRAFFIC CONTROL.

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

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

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

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.

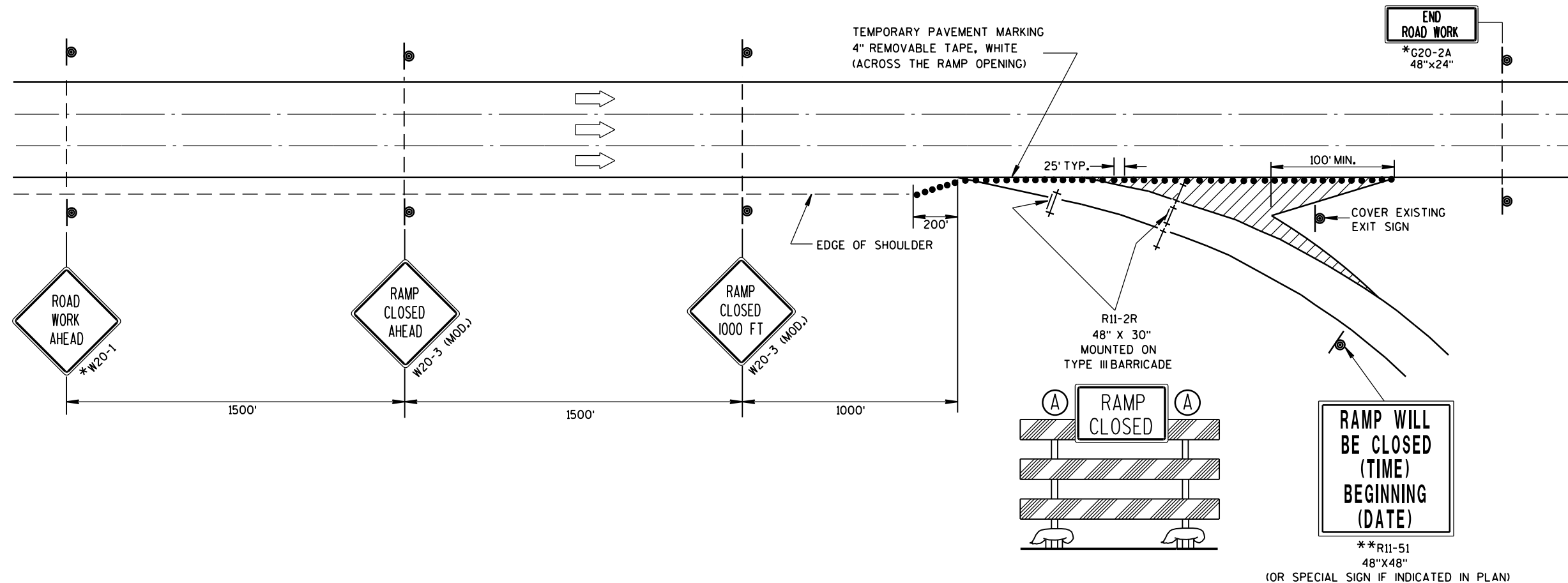
PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF RAMP CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

WORK AREAS WITH A DROPOFF ALONG THE EDGE OF AN OPEN TRAVEL LANE SHALL BE LEVELED WITH TEMPORARY FILL WHEN THE CONTRACTOR IS NOT WORKING ADJACENT TO THE TRAVEL LANE. DRUMS SHALL BE PLACED ENTIRELY OUTSIDE THE TRAVEL LANE, ALLOWING THE FULL UNOBSTRUCTED LANE WIDTH, WHEN THE WORK IS NOT IN PROGRESS.

WHERE MEDIAN BARRIER IS IN PLACE, SIGNS SHOWN ON LEFT SIDE OF ROADWAY MAY BE OMITTED FOR RIGHT SIDE RAMP CLOSURES OF LESS THAN 12-HOUR DURATION.

*W20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE RAMP CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

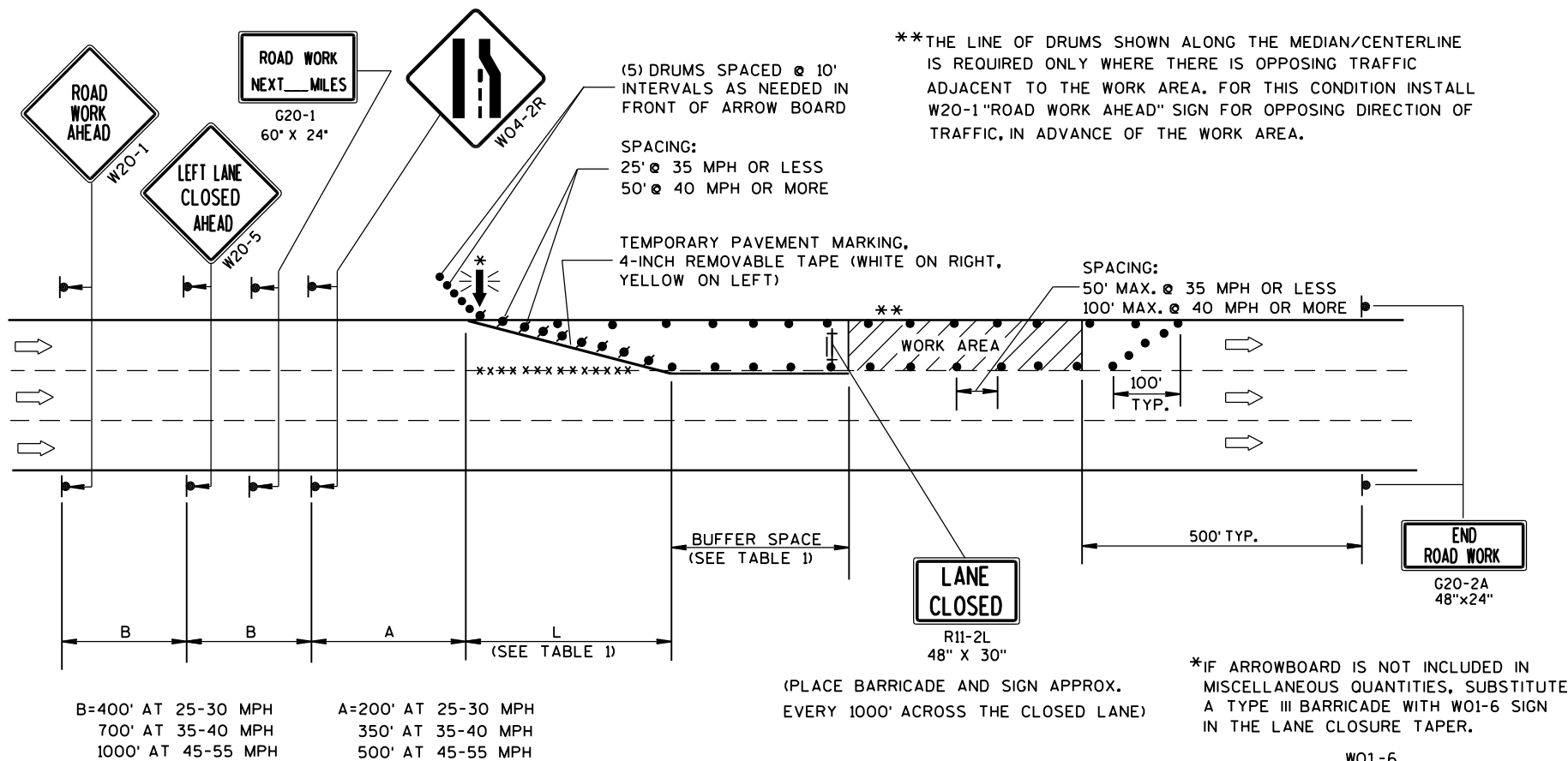
** PLACE "RAMP WILL BE CLOSED" SIGN 10 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.



TRAFFIC CONTROL,
EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED	
8/2013	/S/ Travis Feltes
DATE	STATE TRAFFIC ENGINE 216
FHWA	



GENERAL NOTES

THIS LANE CLOSURE DETAIL IS TYPICAL FOR CLOSING THE LEFT LANE. FOR A RIGHT LANE CLOSURE, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR ROADWAYS WITH EITHER TWO OR THREE LANES IN EACH DIRECTION.

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

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

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36" X 36" SIGNS MAY BE USED IF APPROVED BY DISTRICT TRAFFIC UNIT.

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING, REMOVABLE TAPE IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

ON UNDIVIDED ROADWAYS, OMIT THE SIGNS SHOWN ON LEFT SIDE OF ROAD.

W20-1, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

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

CONSIDER GEOMETRICS WHEN LOCATING SIGNS AND ARROWBOARDS SO THE APPROACHING DRIVER HAS A CLEAR VIEW OF THE ARROWBOARDS AND LANE CLOSURE DRUMS.

PLACE THE ARROWBOARD AS CLOSE AS POSSIBLE TO THE BEGINNING OF THE LANE CLOSURE TAPER, PREFERABLY ON THE SHOULDER OR TERRACE.

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

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

WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

TABLE 1
TAPER AND BUFFER SPACE
FOR 12' LANE WIDTH

S	L	BUFFER SPACE
25	125'	55'
30	180'	85'
35	245'	120'
40	320'	170'
45	540'	220'
50	600'	280'
55	660'	335'

FOR LANE WIDTH OTHER THAN 12':

L = WS AT 45 MPH OR GREATER

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

L = TAPER LENGTH IN FEET

S = NON-CONSTRUCTION SPEED LIMIT (MPH)

W = WIDTH OF LANE CLOSURE

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TRAFFIC CONTROL DRUM
- FLASHING ARROW BOARD
- DIRECTION OF TRAFFIC
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- WORK AREA

TRAFFIC CONTROL,
SINGLE LANE CLOSURE,
NON-FREEWAY/EXPRESSWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINE 217 :SIGN
FHWA

LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ⚡➡ FLASHING ARROW BOARD
- ▨ WORK AREA

GENERAL NOTES

THIS DETAIL IS TYPICAL FOR CLOSING THE RIGHT SHOULDER. FOR CLOSING THE LEFT SHOULDER, REVERSE THE TRAFFIC CONTROL.

THIS DETAIL MAY BE USED FOR DIVIDED ROADWAYS WITH ANY NUMBER OF TRAVEL LANES.

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.

SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

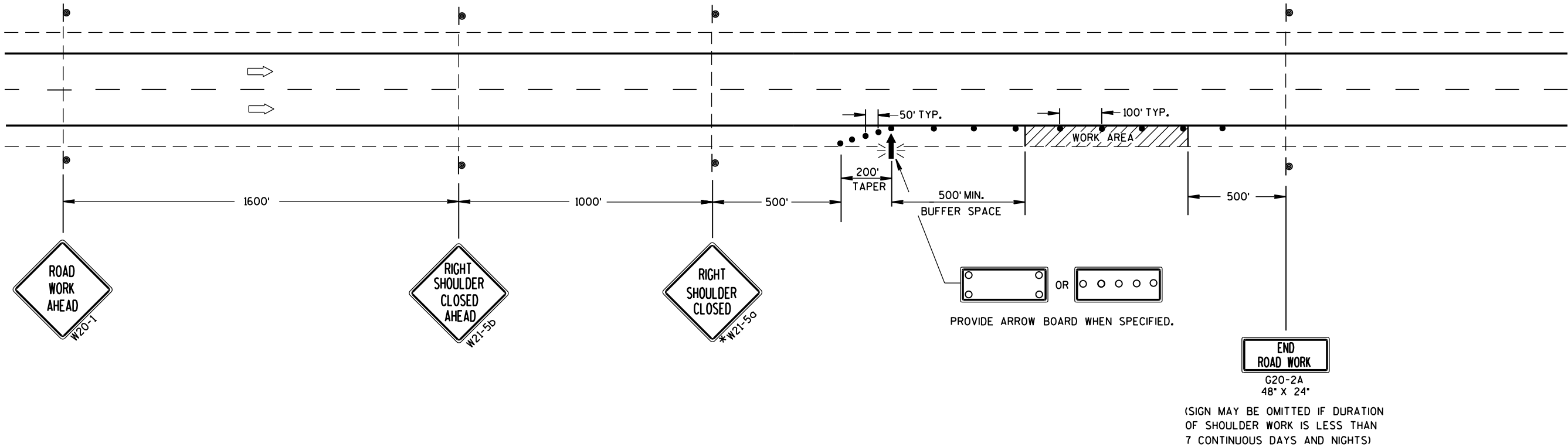
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

WHEN A 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.

*FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR, THE W21-5a SIGN MAY BE OMITTED.



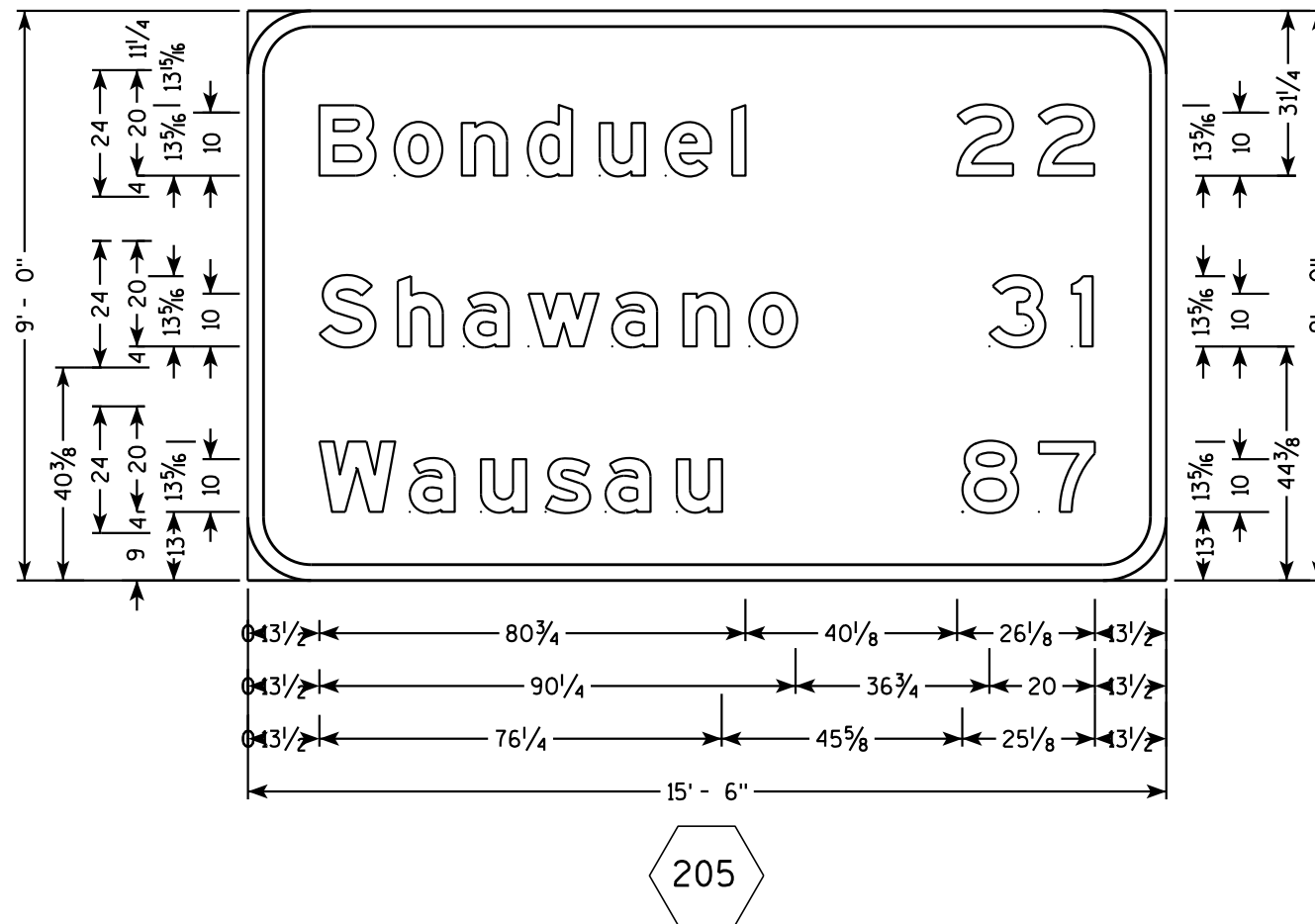
TRAFFIC CONTROL
SHOULDER CLOSURE ON DIVIDED
ROADWAY, SPEEDS GREATER
THAN 40 MPH

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
8/2013 DATE /S/ Travis Feltz
STATE TRAFFIC ENGINE 218 SIGN
FHWA

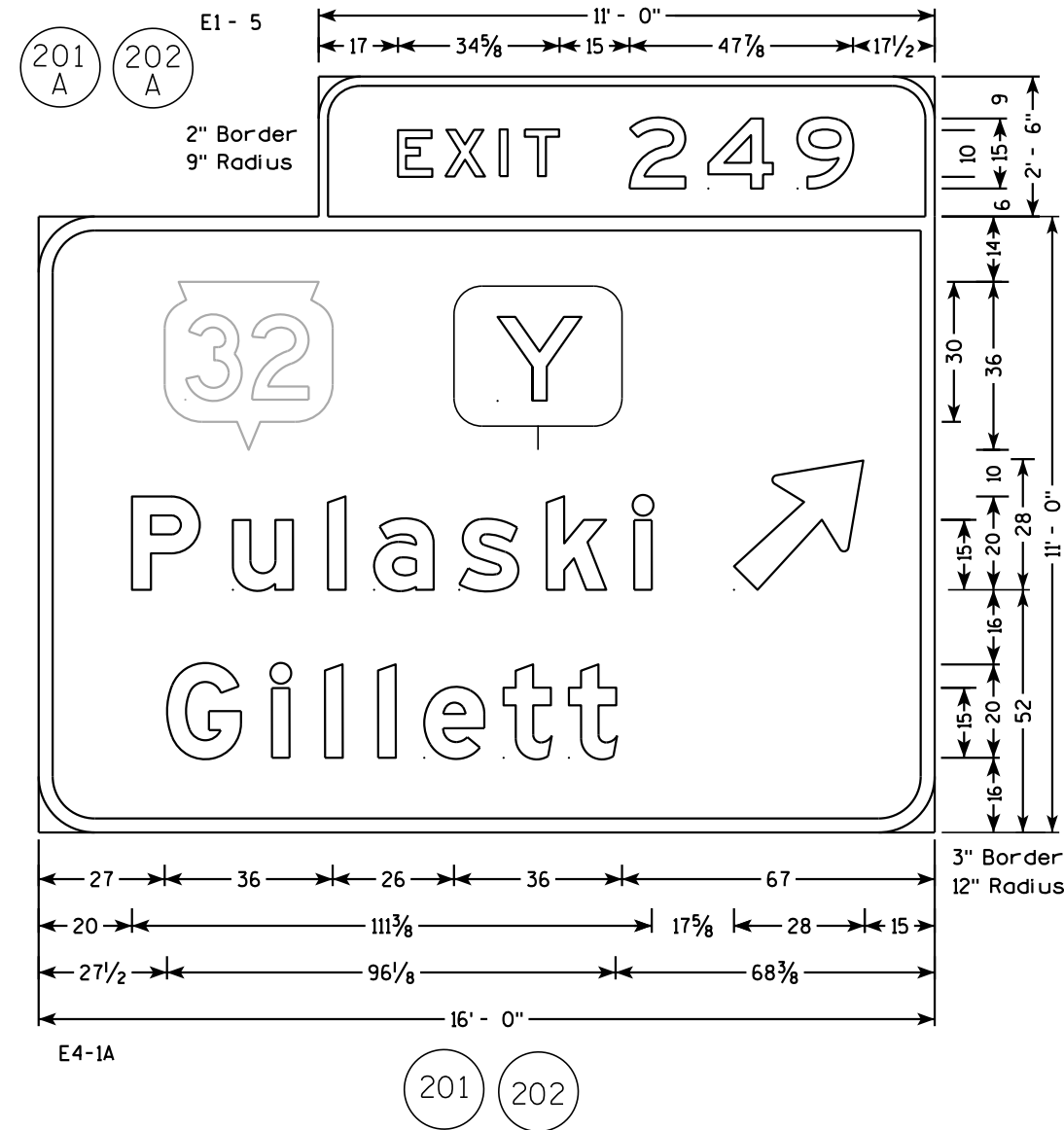
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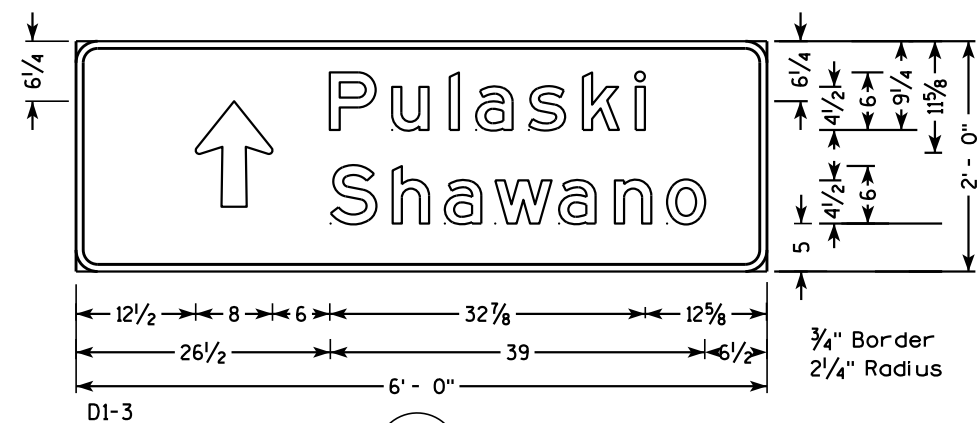
1. All Signs are Type I - Type SH Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E Modified except all cap Words are Series E



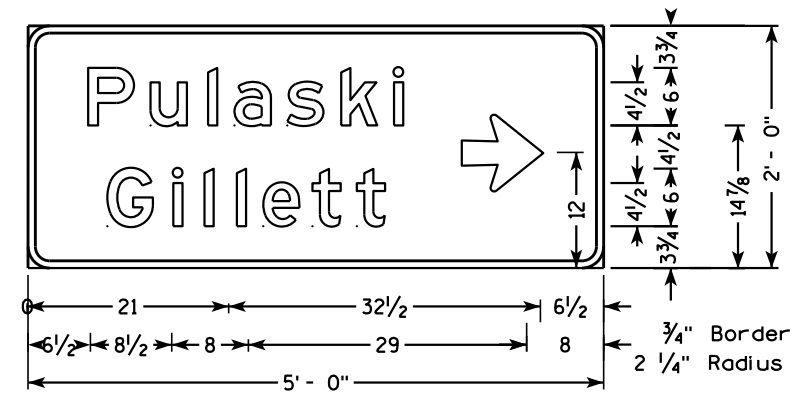
NOTES

1. All Signs are Type I - Type SH Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Green
Message - White
3. Message Series - E Modified except all cap WORDS are Series E

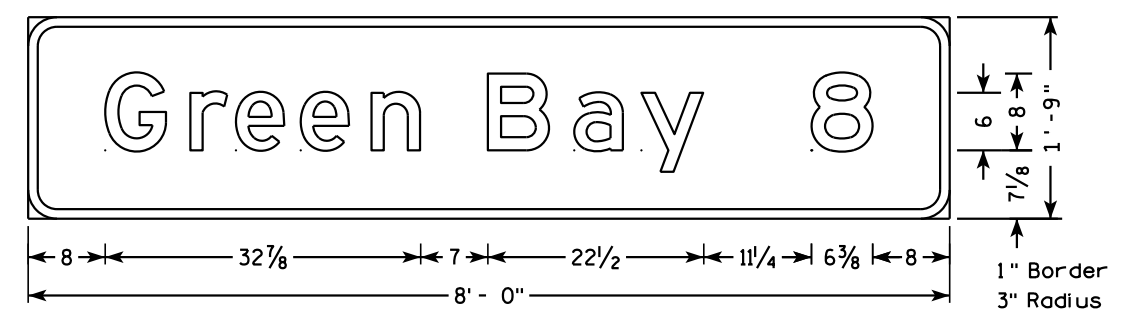




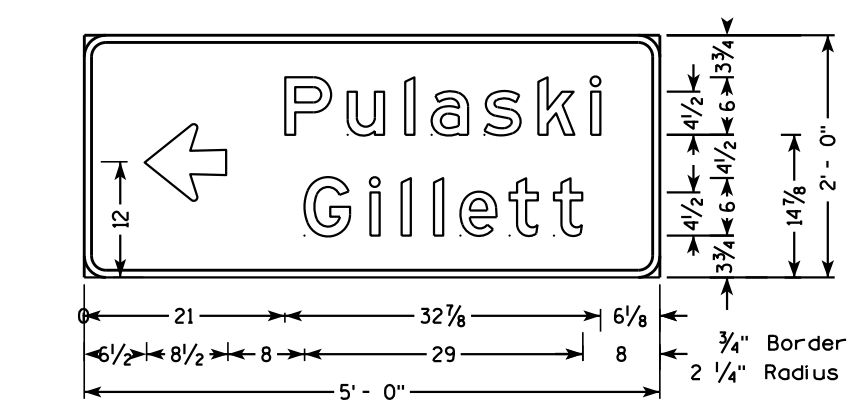
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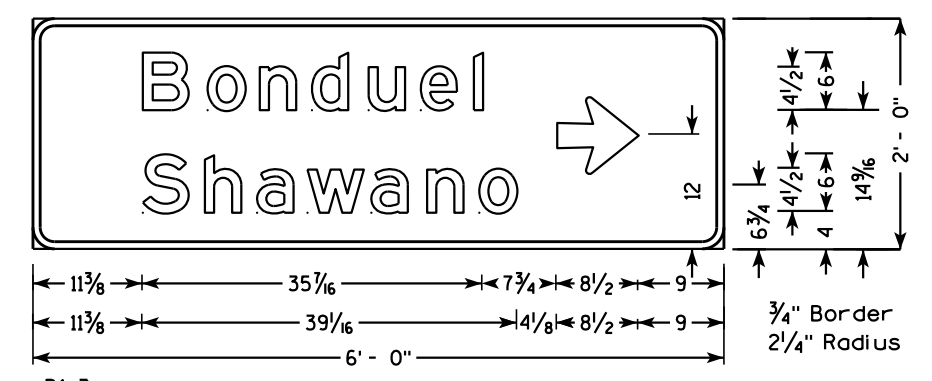
78



106



38



95

NOTES

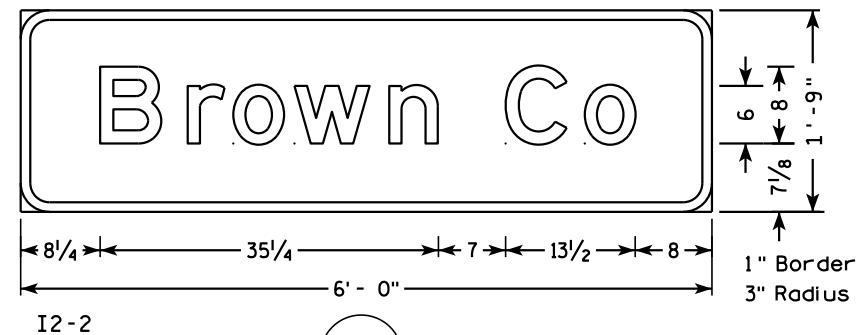
1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - GREEN
Message - WHITE
3. Message Series - E

7

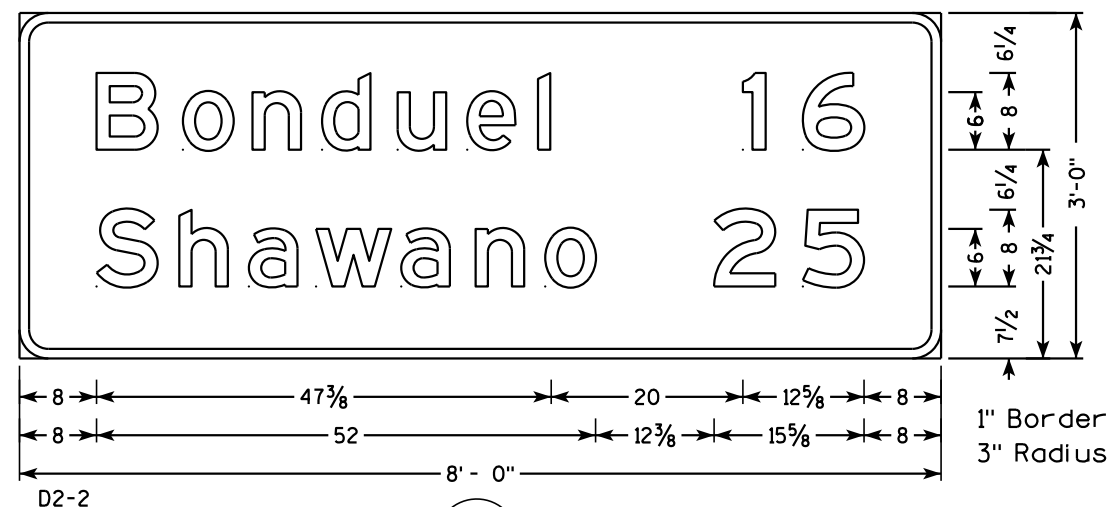
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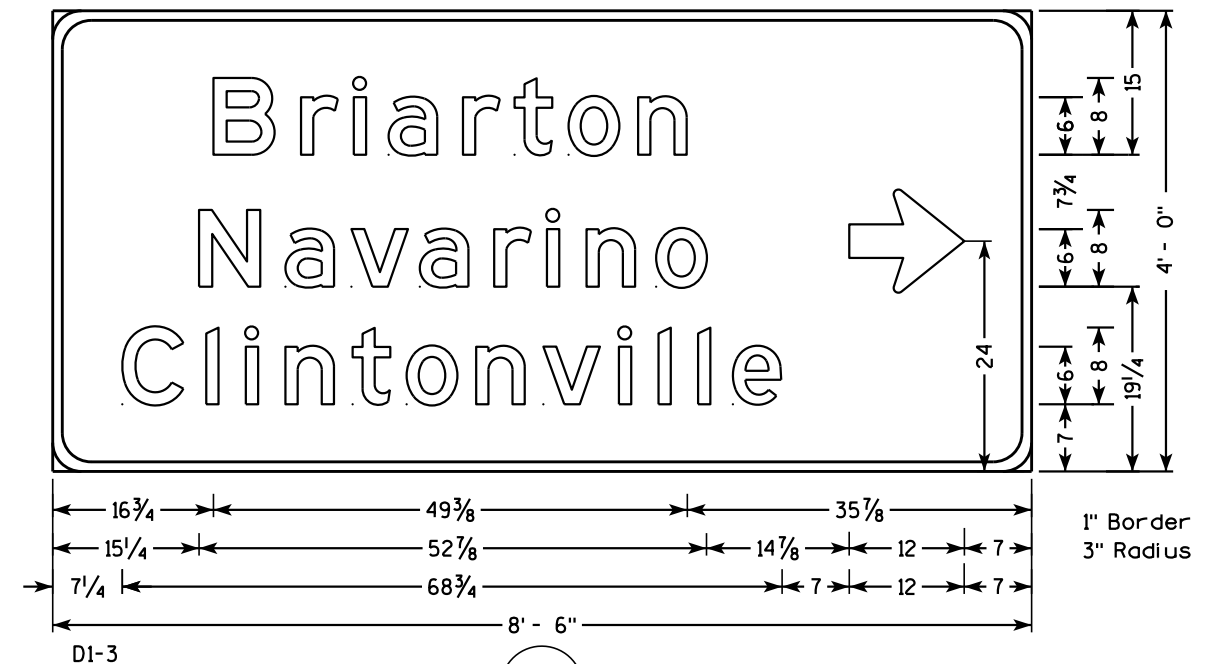
1. All Signs Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - GREEN
Message - WHITE
3. Message Series - E



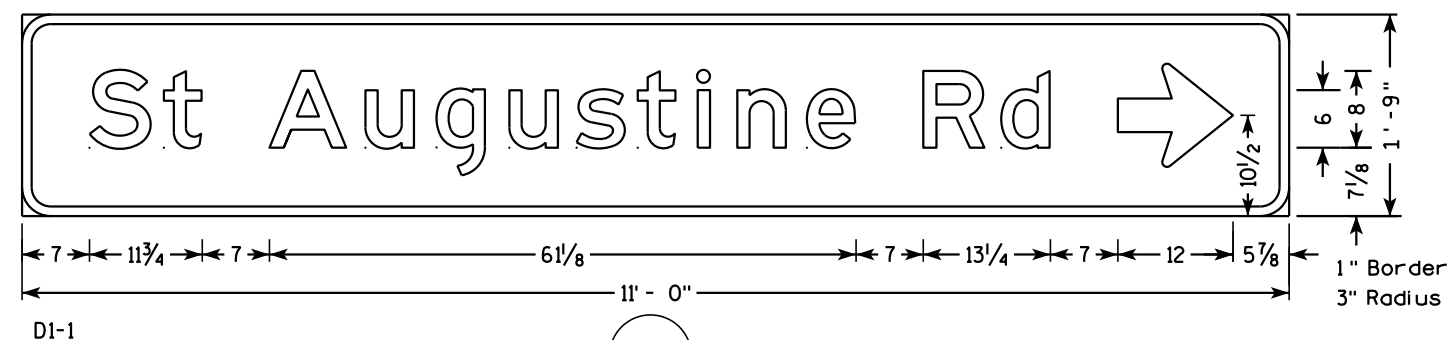
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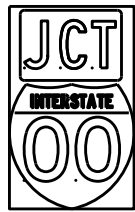


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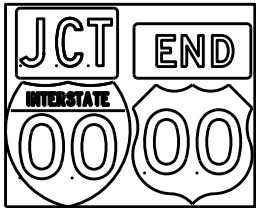


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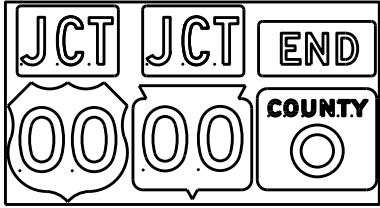
TYPICAL ASSEMBLIES



J1-1



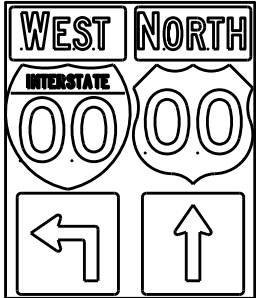
J1-2



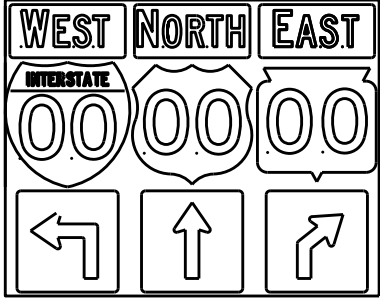
J1-3



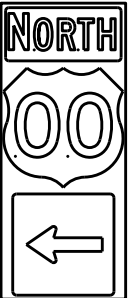
J2-1



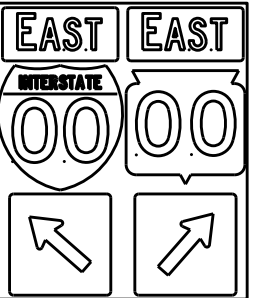
J2-2



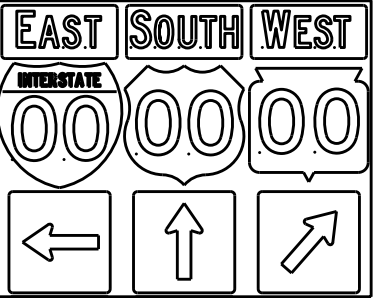
J2-3



J3-1



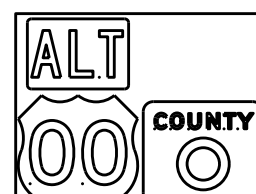
J3-2



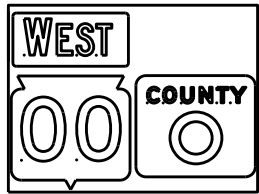
J3-3



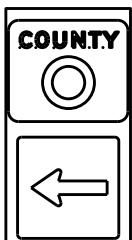
J4-1



J4-2



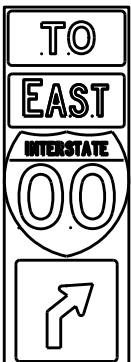
J4-2



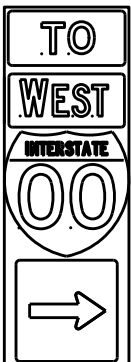
J13-1



J12-1



J32-1



J33-1



J23-1

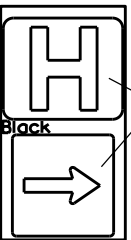


J22-1



JV

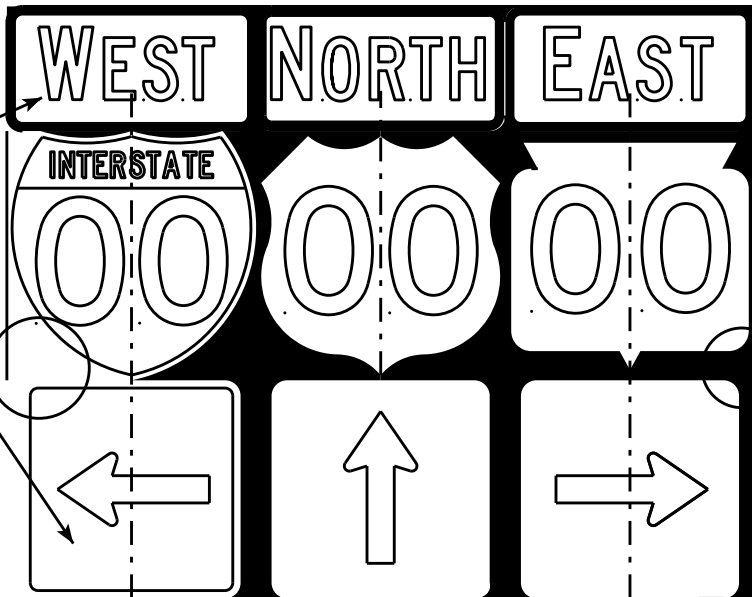
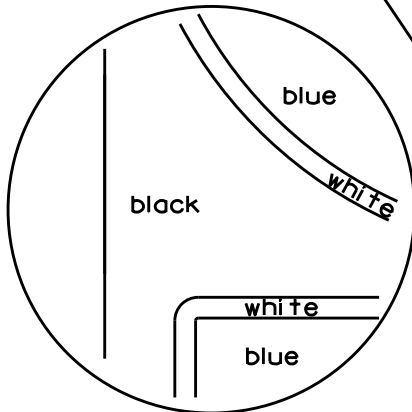
(Typical Vertical J-Assembly
See Note 10 and 11)



JH-1

Blue Background

[blue background
with interstate]



[black background]

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

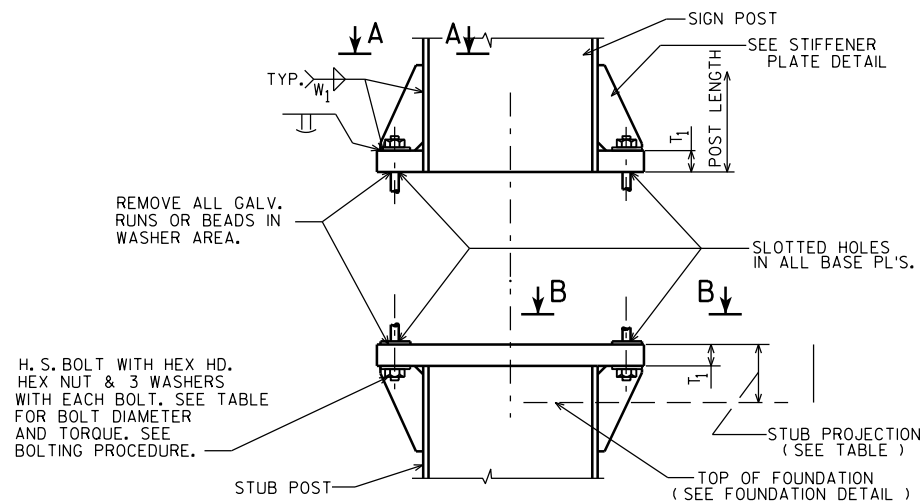
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/06/14 PL 225 A2-1S.8

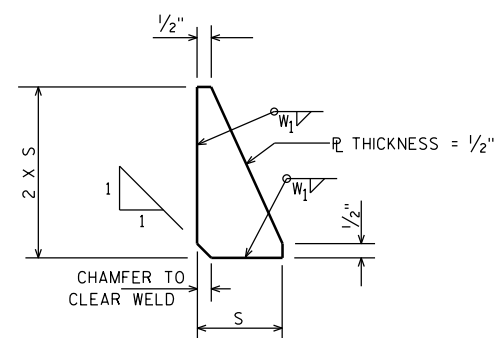
SHEET NO: E

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.

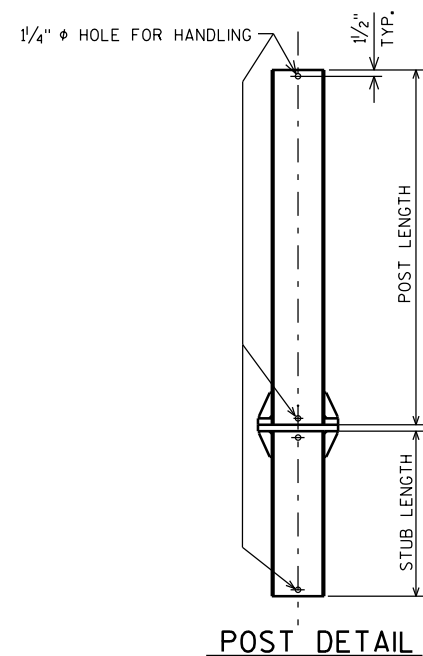


SIGN POST AND STUB POST ELEVATION

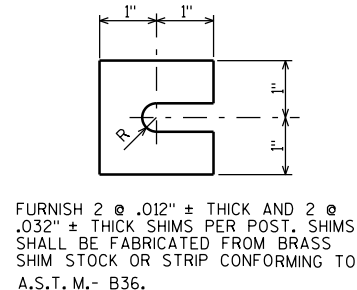


STIFFENER PLATE DETAIL

(SEE TABLE FOR DIMENSIONS)



POST DETAIL



SHIM DETAIL

QUANTITIES FOR 1 FOOTING		
	CONC. MASONRY C.Y.	REINF. STEEL LBS.
A	0.6	34
B	0.8	49
C	0.9	50
D	0.9	56
E	1.0	62

⑦

		TYPE	#3	#4
⑦	REINF.	A	8 @ 4'-5	5 @ 6'-3
		B	8 @ 6'-5	7 @ 6'-3
		C	8 @ 6'-11	7 @ 6'-3
		D	8 @ 7'-5	8 @ 6'-3
		E	8 @ 7'-11	9 @ 6'-3

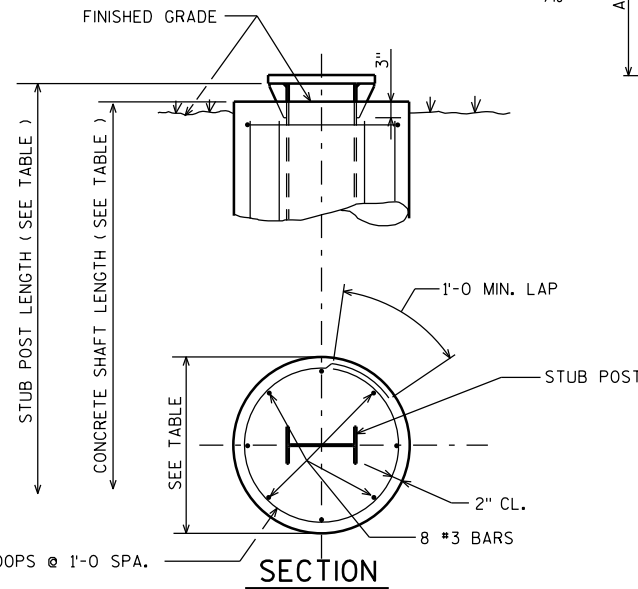
⑦

		BASE CONNECTION DATA TABLE											FOUNDATION DATA				②		
TYPE	DIMENSION POST SIZE	BOLT SIZE & TORQUE	A	B	C	D	E	T ₁	T ₄	W ₁	R	S	STUB LENGTH	STUB PROJECTION	SHAFT DIAMETER	SHAFT LENGTH	K		
④	A	W10"x12.0 #/FT.	3/4" φ @ 75#-FT.	5/4"	1'-0 3/8	7/8"	3 1/2"	7/8"	1"	3/16"	5/16"	13/32"	2 1/8"	3'-6	3"	2'-0 φ	5'-0	76.0#	④
④	B	W12"x16.0 #/FT.	7/8" φ @ 85#-FT.	5 1/2"	1'-4 1/4	1"	3 1/2"	1"	1 1/4"	1/4"	5/16"	15/32"	3"	5'-6	3"	2'-0 φ	7'-0	146.5#	④
	C	W12"x19.0 #/FT.	7/8" φ @ 85#-FT.	5 1/2"	1'-4 1/4	1"	3 1/2"	1"	1 1/2"	5/16"	5/16"	15/32"	3"	6'-0	3"	2'-0 φ	7'-6	182.1#	
	D	W12"x22.0 #/FT.	7/8" φ @ 85#-FT.	5 1/2"	1'-4 1/4	1"	3 1/2"	1"	1 1/2"	3/8"	5/16"	15/32"	3"	6'-6	3"	2'-0 φ	8'-0	210.5#	
③	E	W12"x26.0 #/FT.	1" φ @ 90#-FT.	7"	1'-4 1/4	1 1/4"	4"	1 1/2"	1 1/2"	3/8"	5/16"	17/32"	3"	7'-0	3"	2'-0 φ	8'-6	293.0#	③

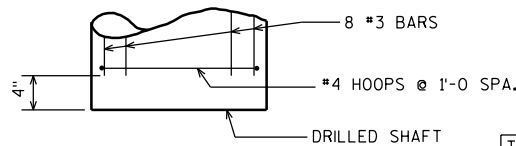
① ⑥ ①

STRUCTURAL CARBON STEEL PAY WTS. (1POST) = K + (POST LENGTH X POST WT.)
 "K" INCLUDES STUB, BASE PLATES, STIFFS., BOLTS, AND WASHERS.

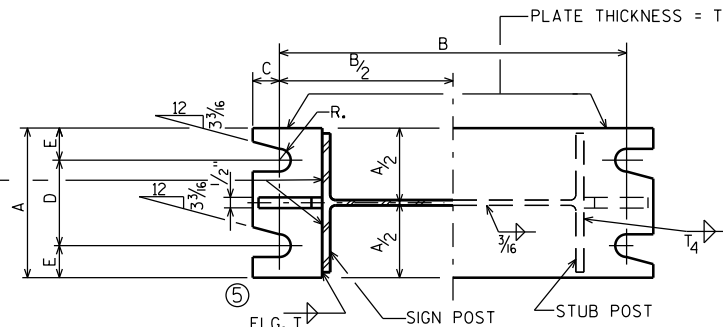
FTG. T + 1/16"
 FTG. T + 1/16"



SECTION

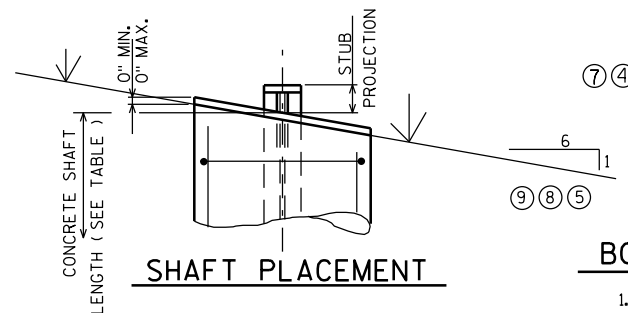


FOUNDATION DETAIL



SECTION A-A

SECTION B-B



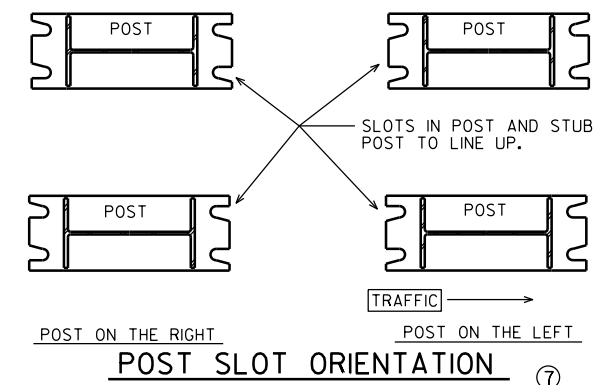
SHAFT PLACEMENT

BOLTING PROCEDURE - BASE CONNECTION

- ASSEMBLE SIGN POST TO STUB POST WITH BOLTS AND ONE OF THE FLAT WASHERS ON EACH BOLT BETW. PLATES.
- SHIM AS REQ'D. TO PLUMB POST.
- PRIOR TO BOLT TIGHTENING LUBRICATE BASE CONNECTION BOLTS WITH BEESWAX OR OTHER HIGH-WAX LUBRICANT.
- TIGHTEN ALL BOLTS THE MAXIMUM POSSIBLE WITH 12" OR 15" WRENCH TO BED WASHERS & SHIMS AND TO CLEAN BOLT THREADS, THEN LOOSEN EACH BOLT IN TURN AND RETIGHTEN IN A SYSTEMATIC ORDER TO THE PRESCRIBED TORQUE. (SEE TABLE)
- BURR THREADS AT JUNCTION WITH NUT USING A CENTER PUNCH TO PREVENT NUT LOOSENING.

NOTE:

TIGHTEN THE HIGH STRENGTH BOLTS TO THE TORQUE SHOWN. DO NOT OVERTIGHTEN.



POST SLOT ORIENTATION

⑦

DESIGN DATA

WIND PRESSURE = 75 M.P.H.
 WIND COMPONENTS - NORMAL = 1.0 TRANSVERSE = 0.0
 ICE LOAD = 3 P.S.F.
 GROUP LOADS PERCENT OF ALLOWABLE STRESS
 1. DEAD 100
 2. DEAD & WIND 140
 3. DEAD, ICE & 1/2 WIND 140 Δ25 P.S.F. MIN.
 ALLOWABLE SOIL PRESSURE = 1/2 T / SQ. FT.
 WIND LOAD WAS APPLIED TO THE AREA OF THE SIGN AND TO THE SUPPORTING MEMBERS.
 ICE LOAD WAS APPLIED TO ONE FACE OF THE SIGN AND AROUND THE SURFACE OF THE SUPPORTING MEMBERS.

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.
 DESIGN CONFORMS WITH A.A.S.H.T.O. SPECIFICATIONS 1985.
 ALL POSTS, POST STUBS & ATTACHMENTS SHALL BE A.S.T.M. A709 GRADE 50.
 THE POST, BASE PLATES, UPPER SIX INCHES OF STUB POST FLANGE SPLICE PLATE AND FUSE PLATE SHALL BE GALVANIZED AFTER FABRICATION.
 H.S. BOLTS, WASHERS & NUTS SHALL BE A325 GALVANIZED WHEN POSTS, POST STUBS, AND ATTACHMENTS ARE A709 GRADE 50 AND GALVANIZED.

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
 For State Traffic Engineer

DATE 2/06/14

PLATE NO. A3-1.14

⑩	1-21-14	LUBRICATION OF BASE BOLTS
⑨	4-26-11	REMOVE NON-GALVANIZED
⑧	10-30-96	NOT GALVANIZED/GALVANIZED
⑦	10-30-92	QUANT., A588 EXCEPT., ADD SLOT VIEW
⑥	8-24-87	BASE CONN. WELD
⑤	10-13-81	BASE CONN. WELD & FUSE R WASHERS
④	10-19-79	POST A & B, A572 GR. 50, & K
②	11-28-78	"K" ③ 4-23-79 TYPE "E"
①	5-4-78	T ₁ • T ₂ & W ₁
NO.	DATE	REVISION

STATE OF WISCONSIN
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

TYPE A, B, C, D, & E

CONST. SPEC. 2011

DRAWN BY JPH

PLANS CK'D.

FTG. & SIGN SUPPORT
 DETAILS
 GROUND MOUNT
 BREAK-AWAY SIGNS

SHEET

226

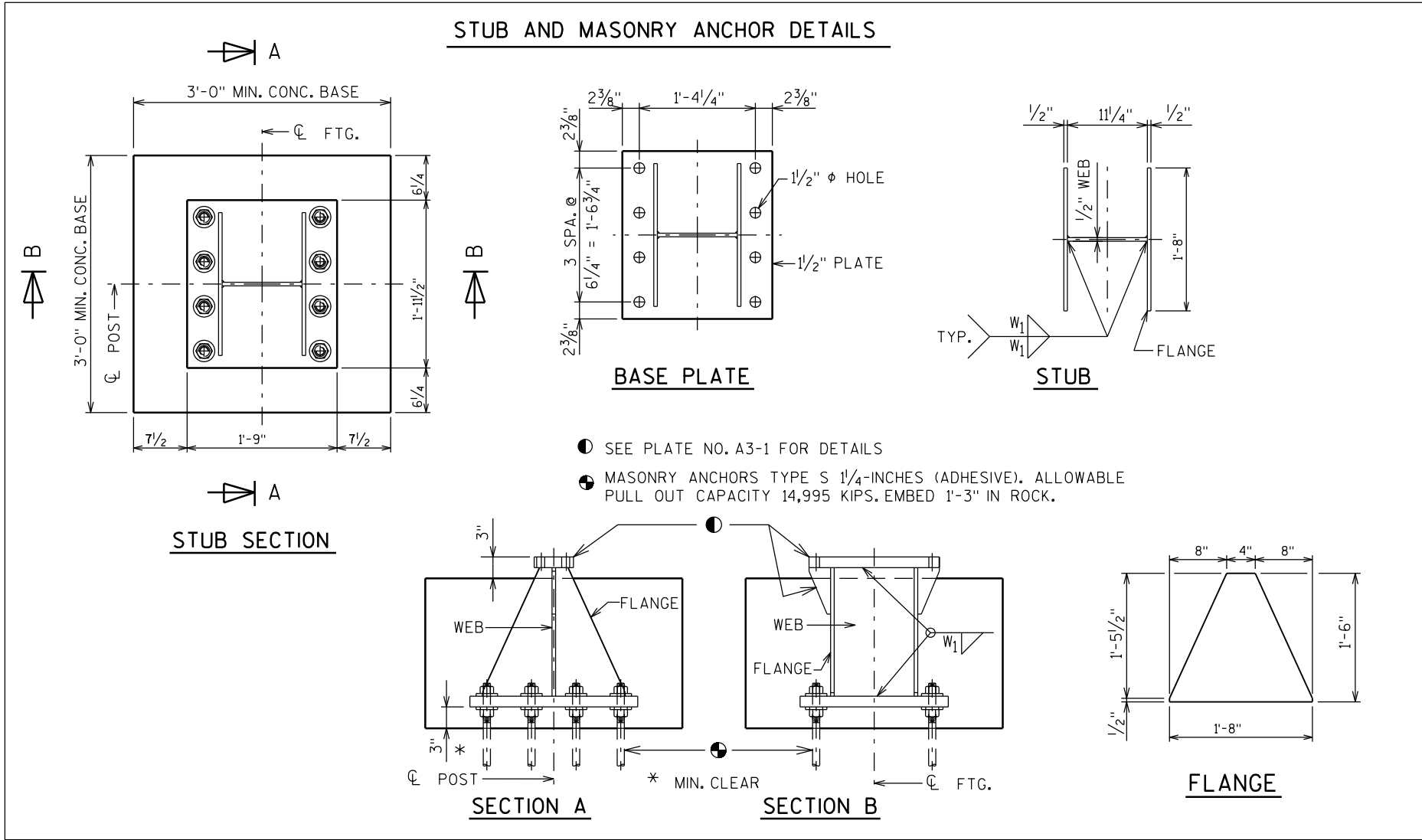
PROJECT NO:

HWY:

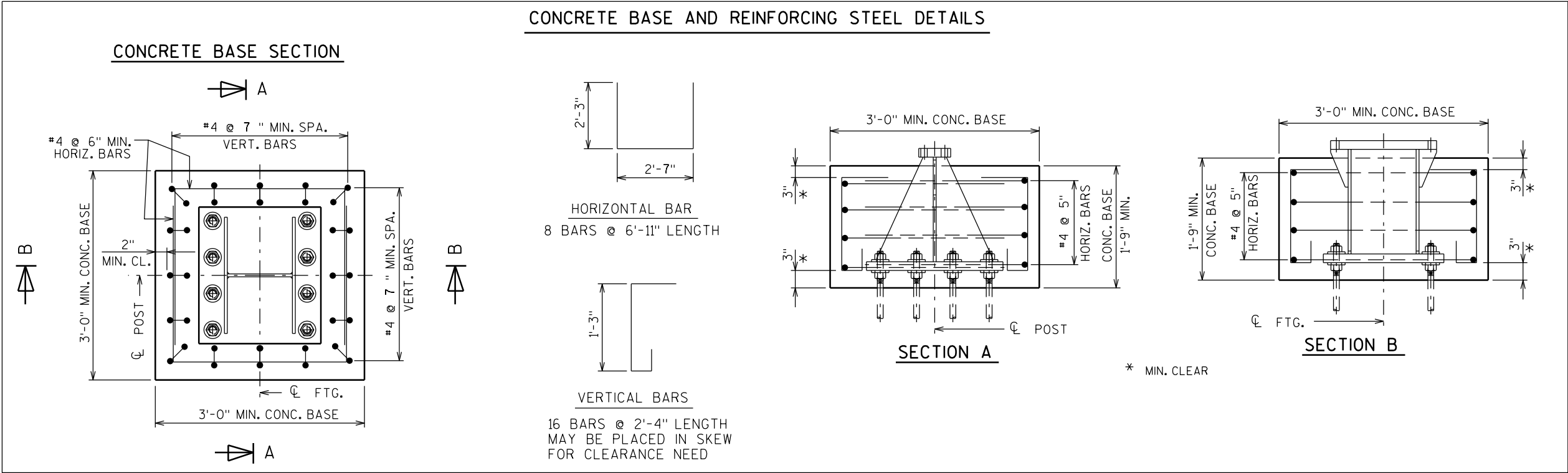
COUNTY:

SHEET NO:

E



- GENERAL NOTES**
- Quantities per Base:
 - REINFORCING BAR STEEL = 62 LBS
 - CONCRETE = 0.6 C.Y.
 - STEEL WEIGHT = 335 LBS
 - All materials, except anchor rod, nuts and washers, are to be A.S.T.M. A709 grade 50. All materials to be galvanized after fabrication.
 - If the contractor encounters rock before reaching the footing depth, per the A3-1 Sign Detail, determine the pull-out capacity of a test adhesive anchor installed in the rock. If the test result equals or exceeds the pull-out capacity of 14,995 KIPS, the contractor may install the breakaway stub for rock, according to this detail.

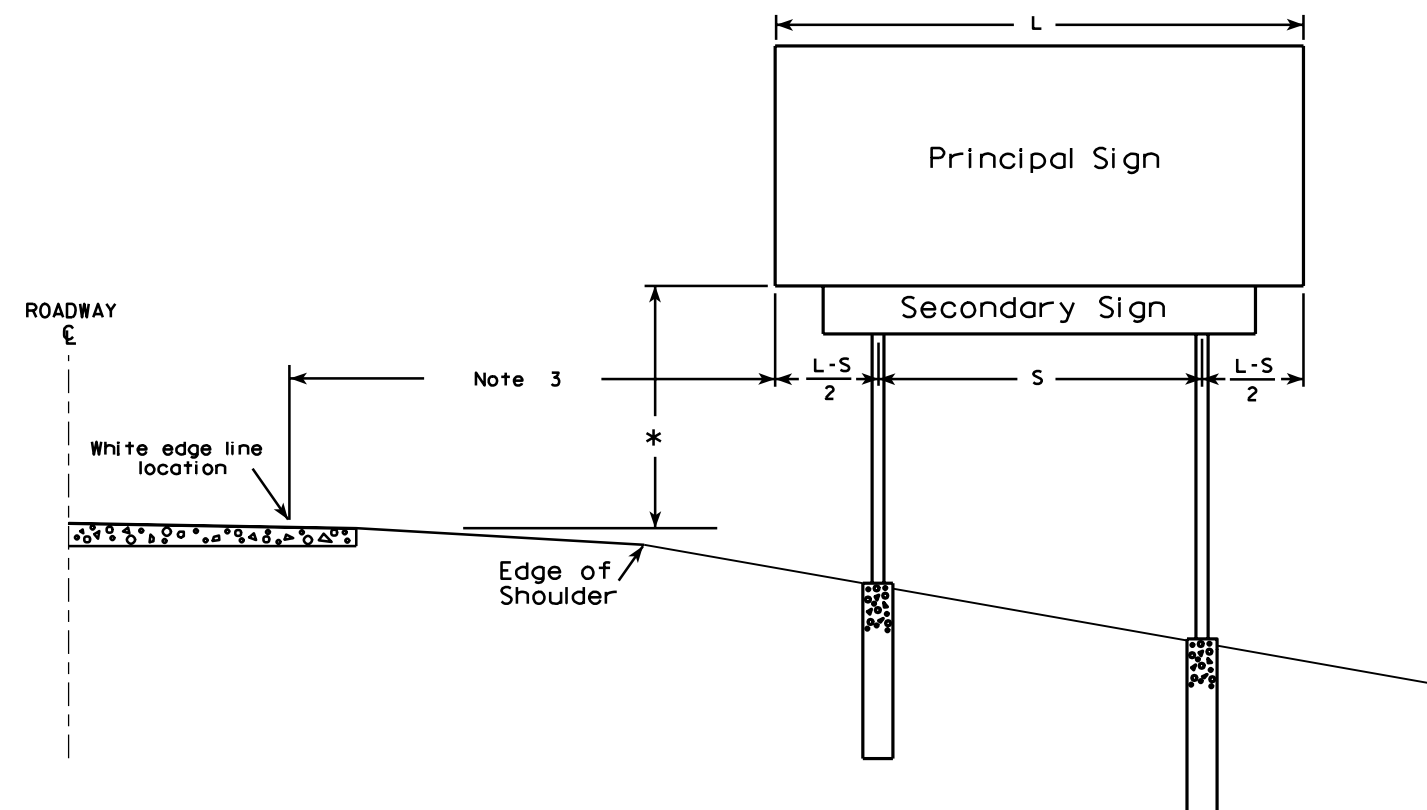
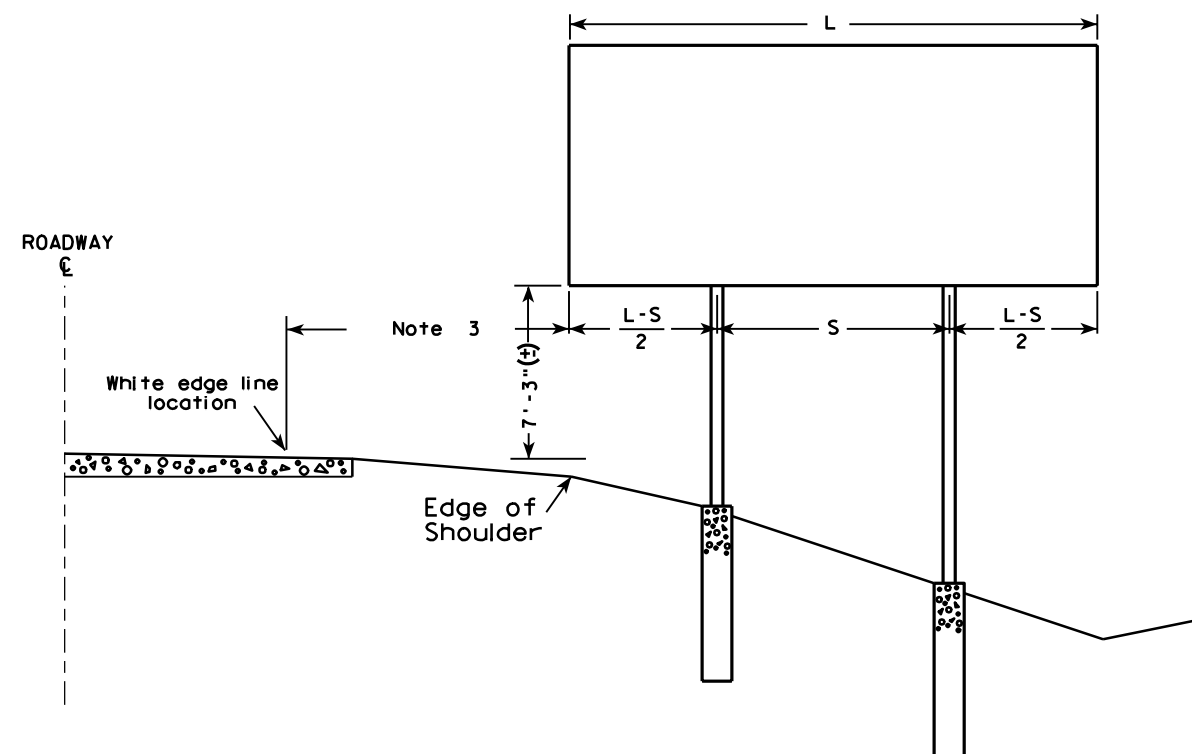


**ALTERNATE BREAK-AWAY
BASE ON ROCK
A3-1M**

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/06/2014 PL 227 A3-1M.1



GENERAL NOTES

1. For a 2 post installation, S equals $3L/5$, but shall not be less than 9 ft.
2. For a 3 post installation, S equals $5L/7$, but shall not be less than 18 ft., and the space between any two posts shall not be less than 9 ft.
3. Unless noted in the plan, the sign offset distance shall be a minimum of 17'-6", desirable 30'-0".
4. The (±) tolerance shown on this sheet is 3 in.
5. The vertical sign height clearance detailed is measured from the bottom of the sign to the near edge of pavement.
6. Post lengths shown in the miscellaneous quantities are estimated lengths. The contractor shall verify post lengths at the time of final grading.
7. Refer to the Traffic Guidelines Manual for further guidance on minimum vertical clearance requirements.

* Clearance is 8'-3" (±) when the secondary sign is 3 ft. or less in height. For secondary signs larger than 3 ft., the clearance to the bottom of the secondary sign shall be 5'-3" (±).

TYPICAL INSTALLATION OF TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 4/02/08

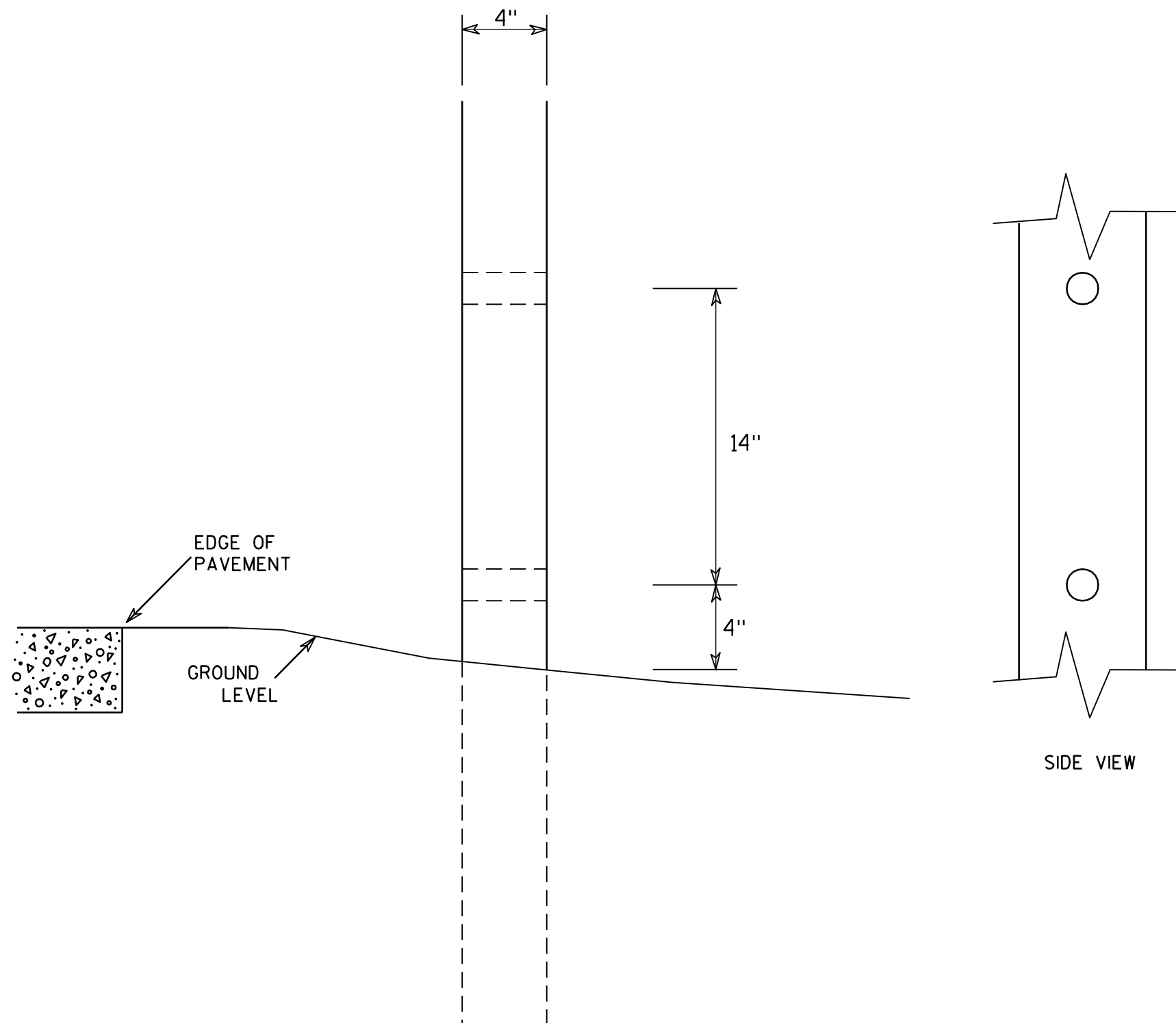
PLATE NO. A4-1.9

PROJECT NO:

SHEET NO: 228

E

7



GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" diameter holes drilled perpendicular to the roadway centerline.

7

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

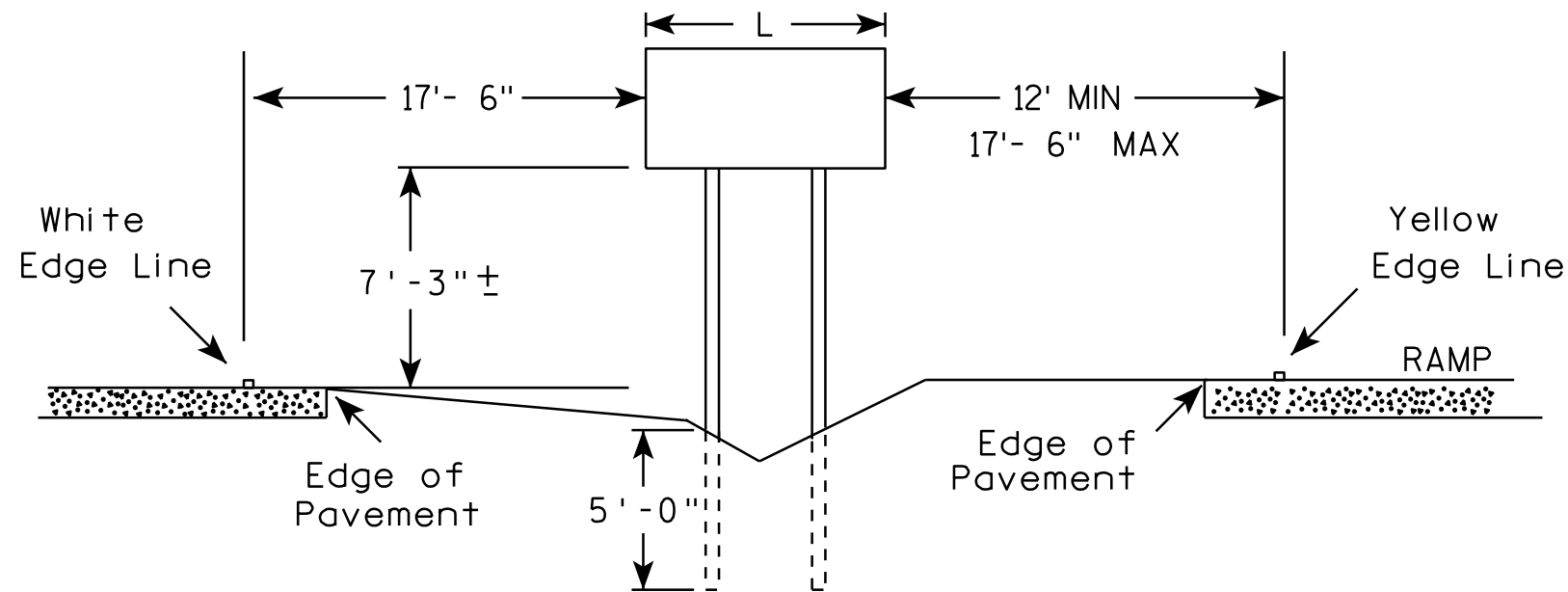
PROJECT NO:

HWY:

COUNTY:

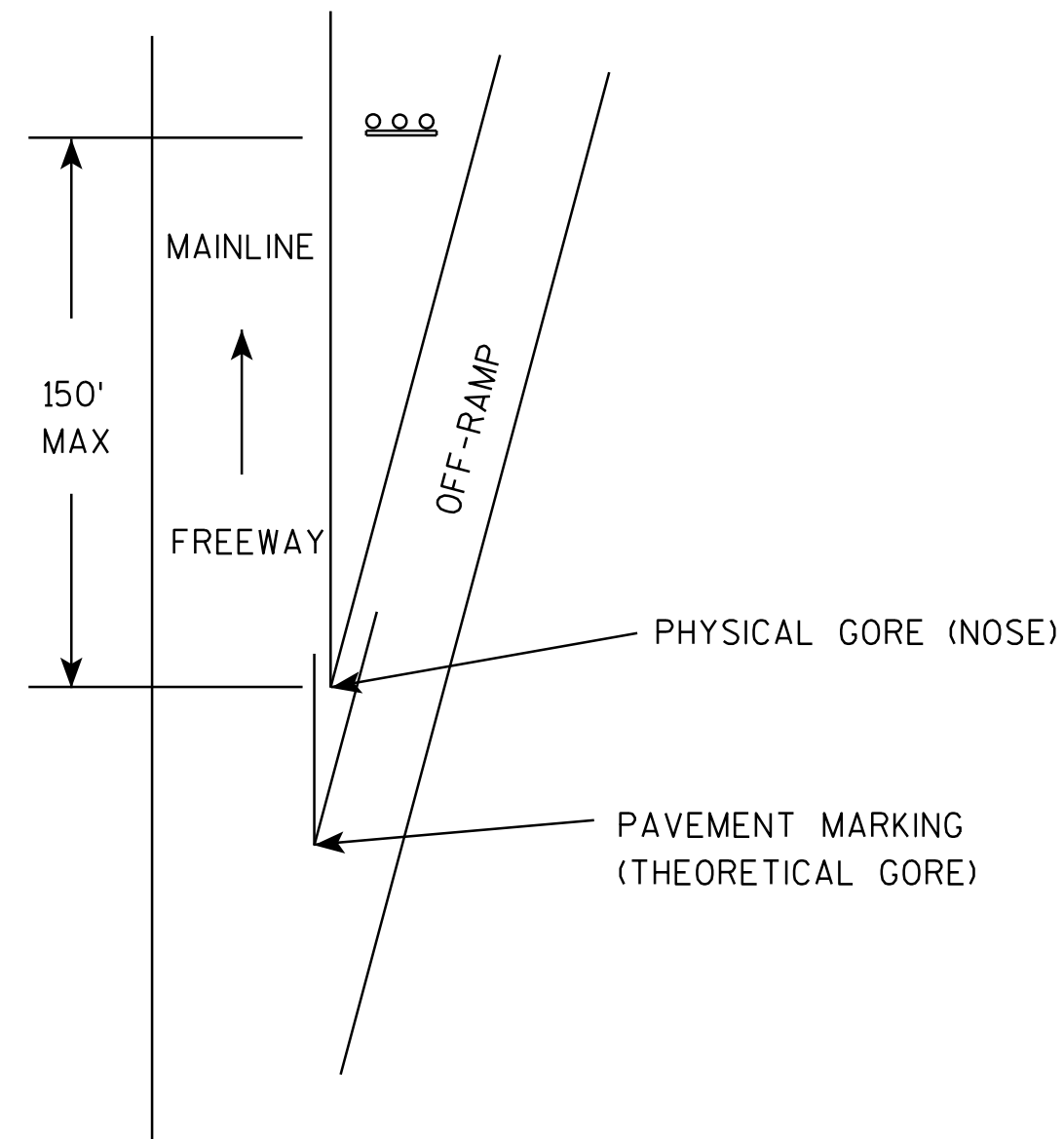
SHEET NO: 229

E



GENERAL NOTES

1. The 150 foot distance from the physical gore (where pavement ends) will normally provide the offsets as shown.
2. If roadway geometrics permit, the sign may be closer than the 150 foot distance as long as the offsets are maintained.
3. At no time shall the location be greater than 150 feet. If the normal offsets cannot be maintained, they can be reduced to 6 feet from the edge of the paved shoulder (both freeway and ramp).
4. The offset from edge of sign to the yellow edge line on the ramp is shown as a minimum of 12 feet and a maximum of 17 feet, 6 inches. Preference is adhering to the maximum rather than the minimum dimension.
5. When L is equal to or exceeds 10 feet, use 3 posts as per A4-4.
6. The ($\pm$) tolerance for the mounting height is 3 inches.



TYPICAL INSTALLATION
OF TYPE II SIGNS ON
WOOD POSTS IN GORE

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

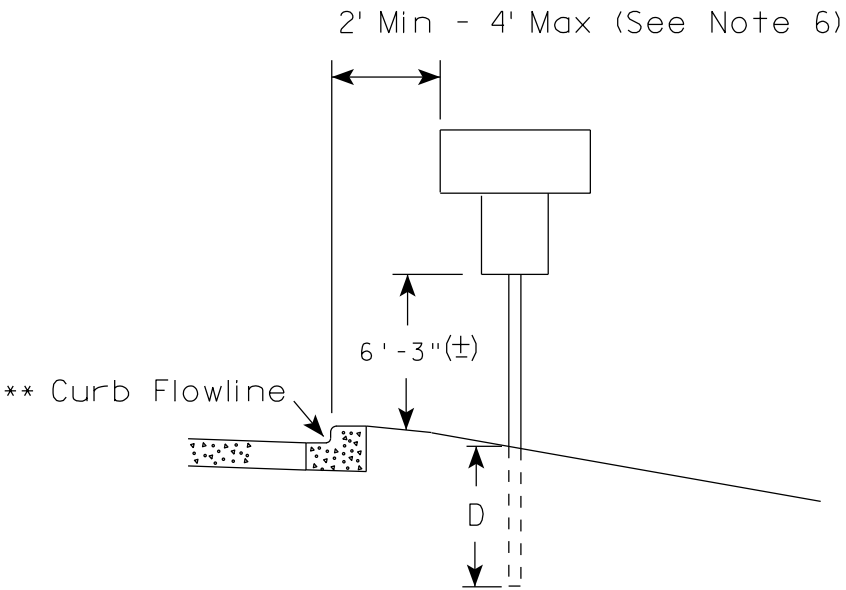
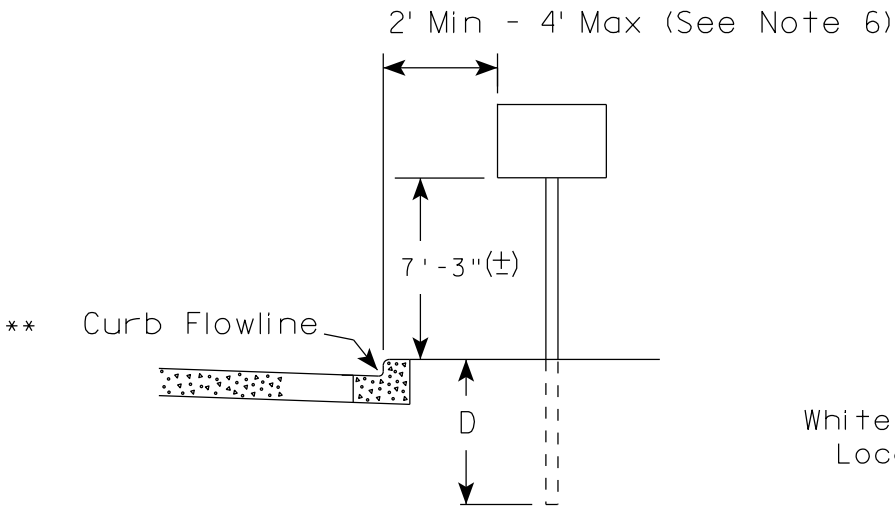
DATE 2/06/14 PLA 230 A4-2.3

PROJECT NO:

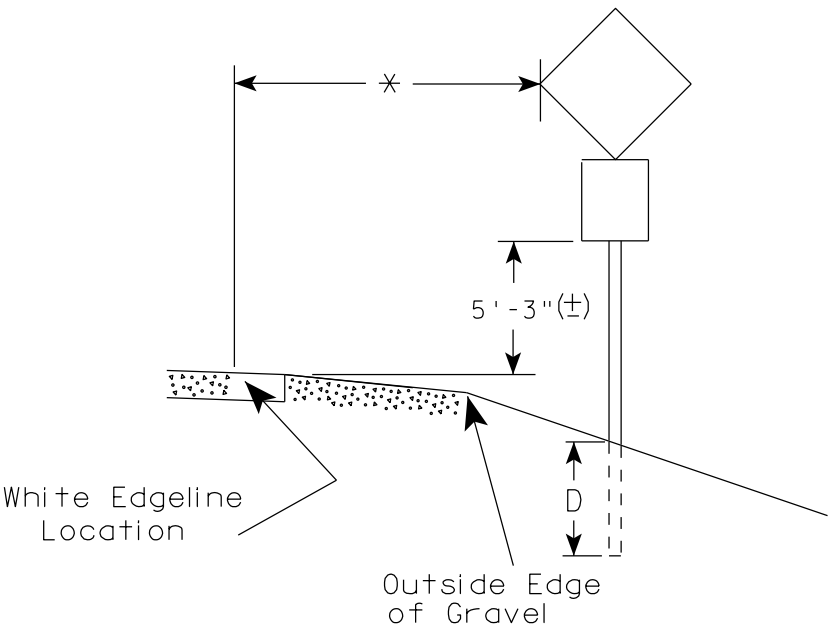
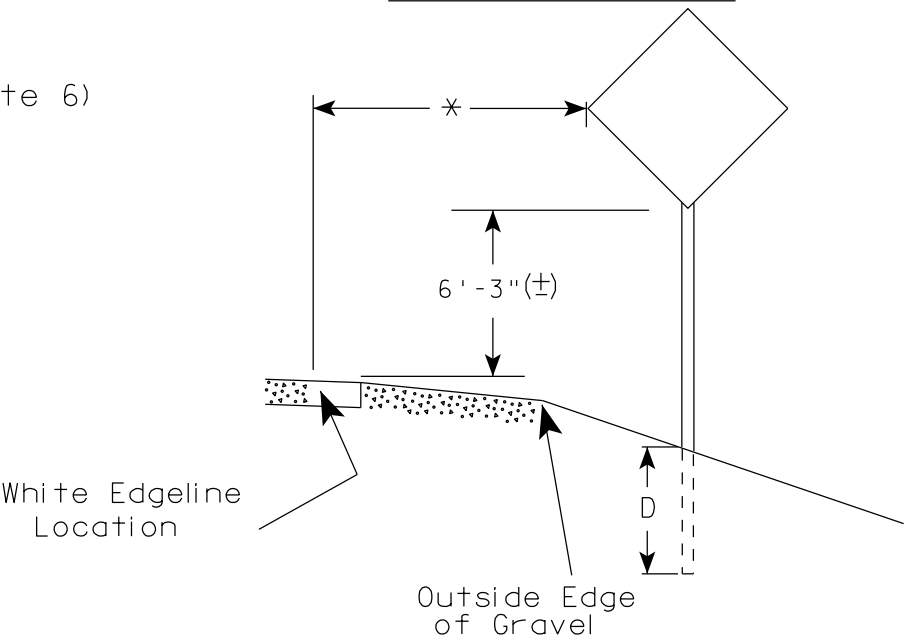
SHEET NO:

E

URBAN AREA



RURAL AREA (See Note 2)



GENERAL NOTES

1. Signs wider than 4 feet, 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on barrier wall, see A4-10 sign plate.
3. For expressways and freeways, mounting height is 7'- 3" (±) or 6'-3" (±) depending upon existence of a sub-sign.
4. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
5. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±).
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. The (±) tolerance for mounting height is 3 inches.
8. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the Engineer.
9. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series) & End of Rod Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (+).

POST EMBEDMENT DEPTH

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

×× 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.

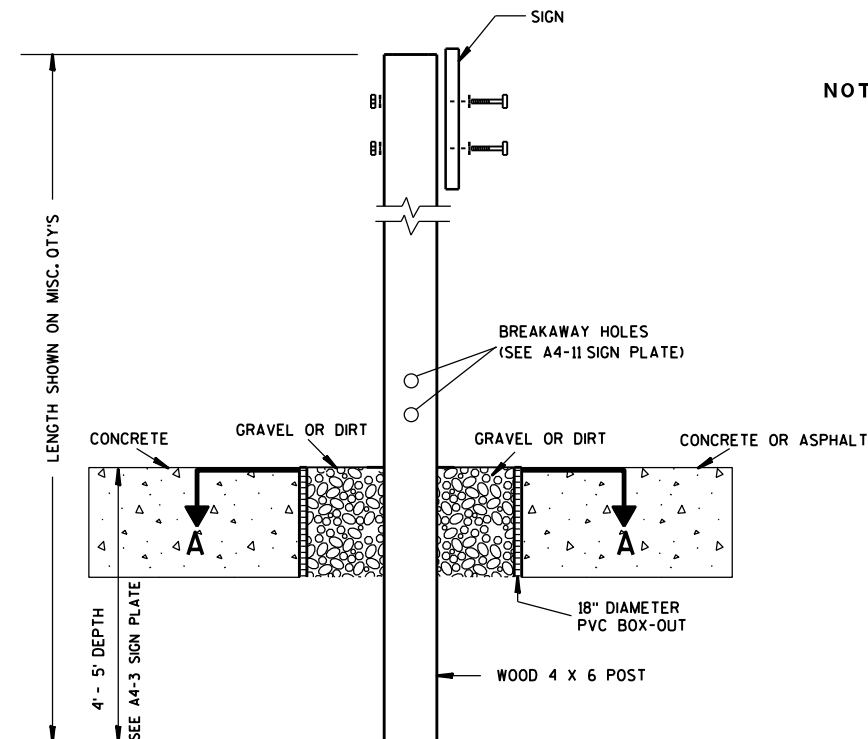
* 6 feet from edge of a paved shoulder or 12 feet from the edge of pavement (edge line location) or 2 feet from outside edge of gravel, whichever is greater unless directed by project engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

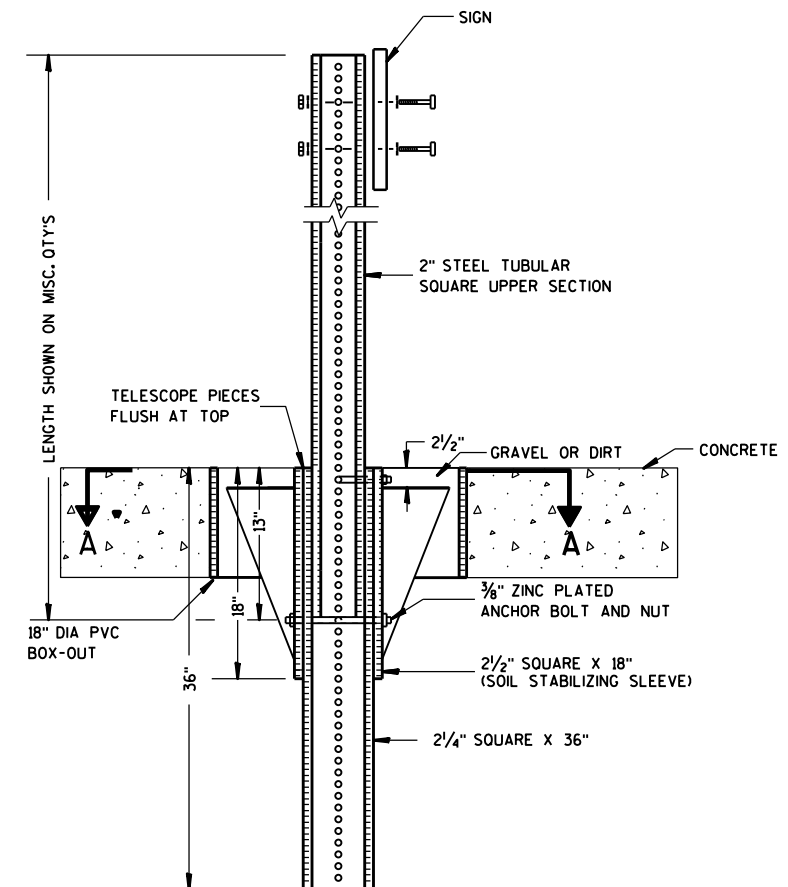
DATE 9/30/13 PLATE NO. A4-3.18
231



ELEVATION VIEW

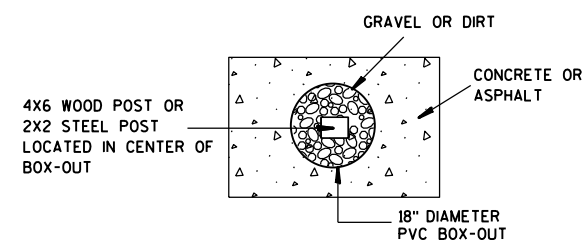
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 232 A4-3B.1

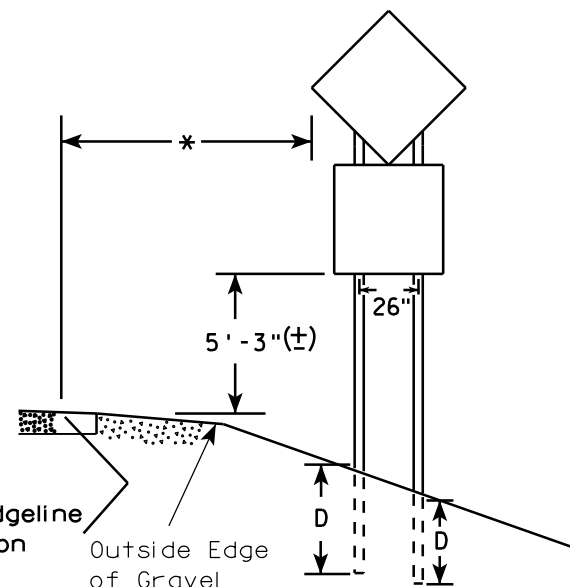
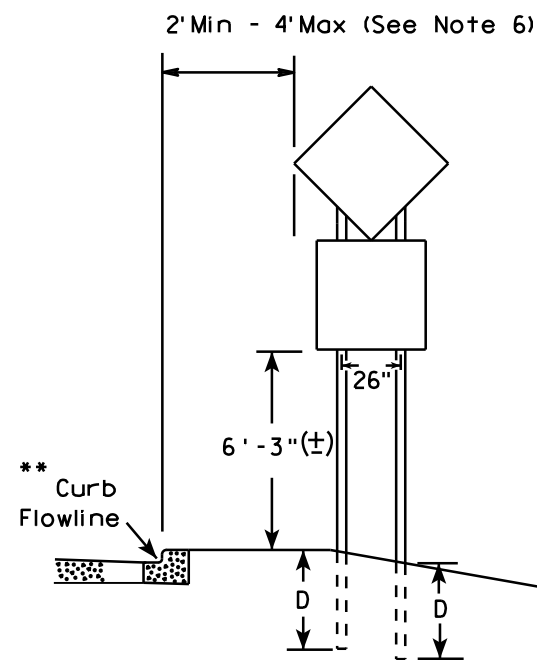
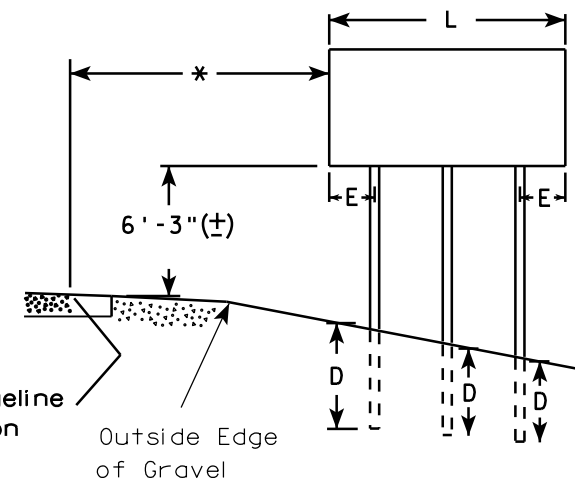
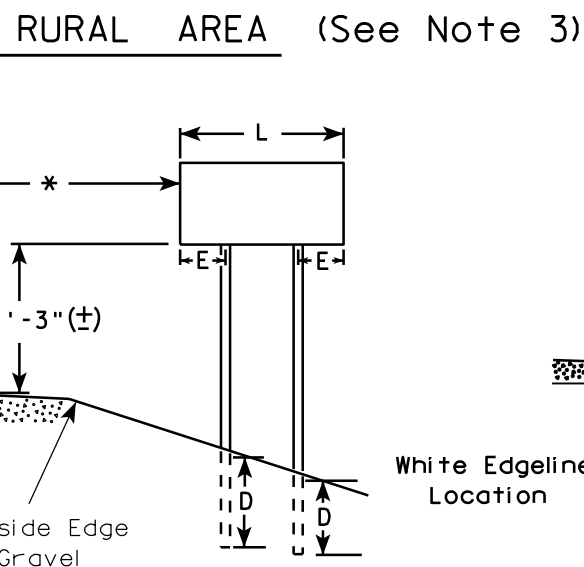
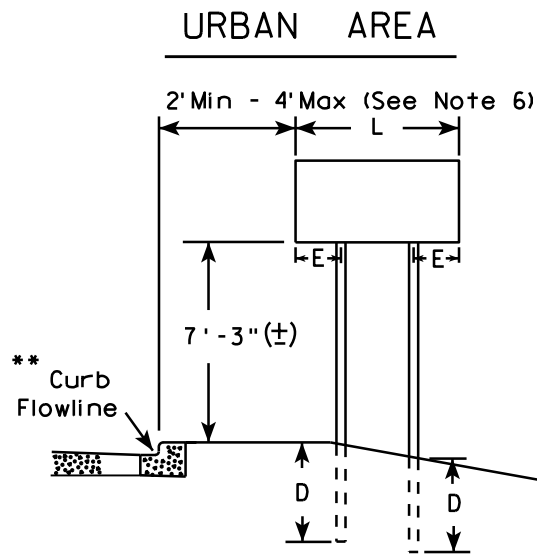
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E



48" DIAMOND WARNING SIGN

48" DIAMOND WARNING SIGN

- GENERAL NOTES**
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
 2. See tables below for required number of posts.
 3. For expressways and freeways, mounting height is 7'-3" (±) or 6'-3" (±) depending upon existence of sub-sign.
 4. The (±) tolerance for mounting height is 3 inches.
 5. Minimum mounting height for J assemblies (A4-5) is 7'-3" (±) or 6'-3" (±) per urban or rural detail respectively.
 6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
 7. Folding stop signs (R1-1F) shall be mounted at a height of 5'-3" (±) or as directed by the engineer.
 8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" (±). The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Clearance Markers (W5-52), Mile Markers (D10 series) & End of Road Markers (W5-56 & W5-56A) shall be mounted at a height of 4'-3" (±).

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

** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs is measured from the flow line.

*** See A4-3 sign plate for signs 4' or less in width or less than 20 S.F. in area.

SIGN SHAPE OTHER THAN DIAMOND (TWO POSTS REQUIRED)	
L	E
Greater than 48" Less than 60"	12"
60" to 120"	L/5

SIGN SHAPE OTHER THAN DIAMOND (THREE POSTS REQUIRED)	
L	E
Greater than 120" less than 168"	12"

SIGN SHAPE OTHER THAN DIAMOND (FOUR POSTS REQUIRED)	
L	E
168" and greater	12"

POST EMBEDMENT DEPTH

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

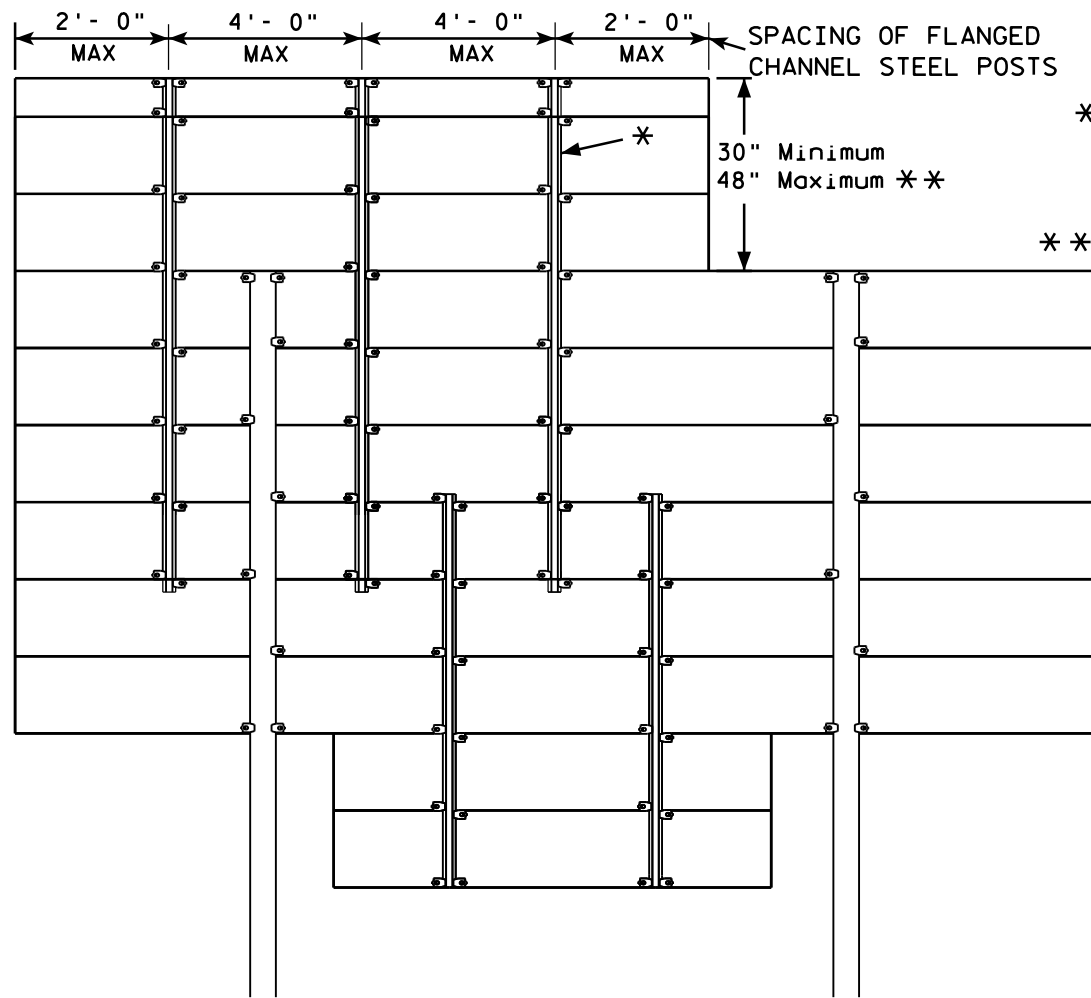
TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 4/29/14 PLATE NO. ^{A4-1} 233 13

GROUND MOUNTED SIGN

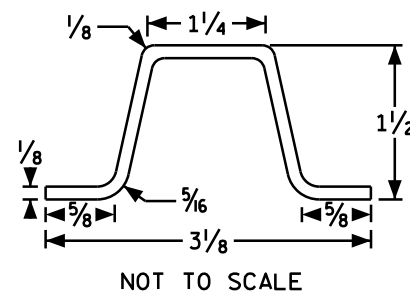


* = 2.00 lb/ft FLANGED CHANNEL, MIN. YIELD STRENGTH = 60,000 PSI (GRADE 60) GALVANIZED

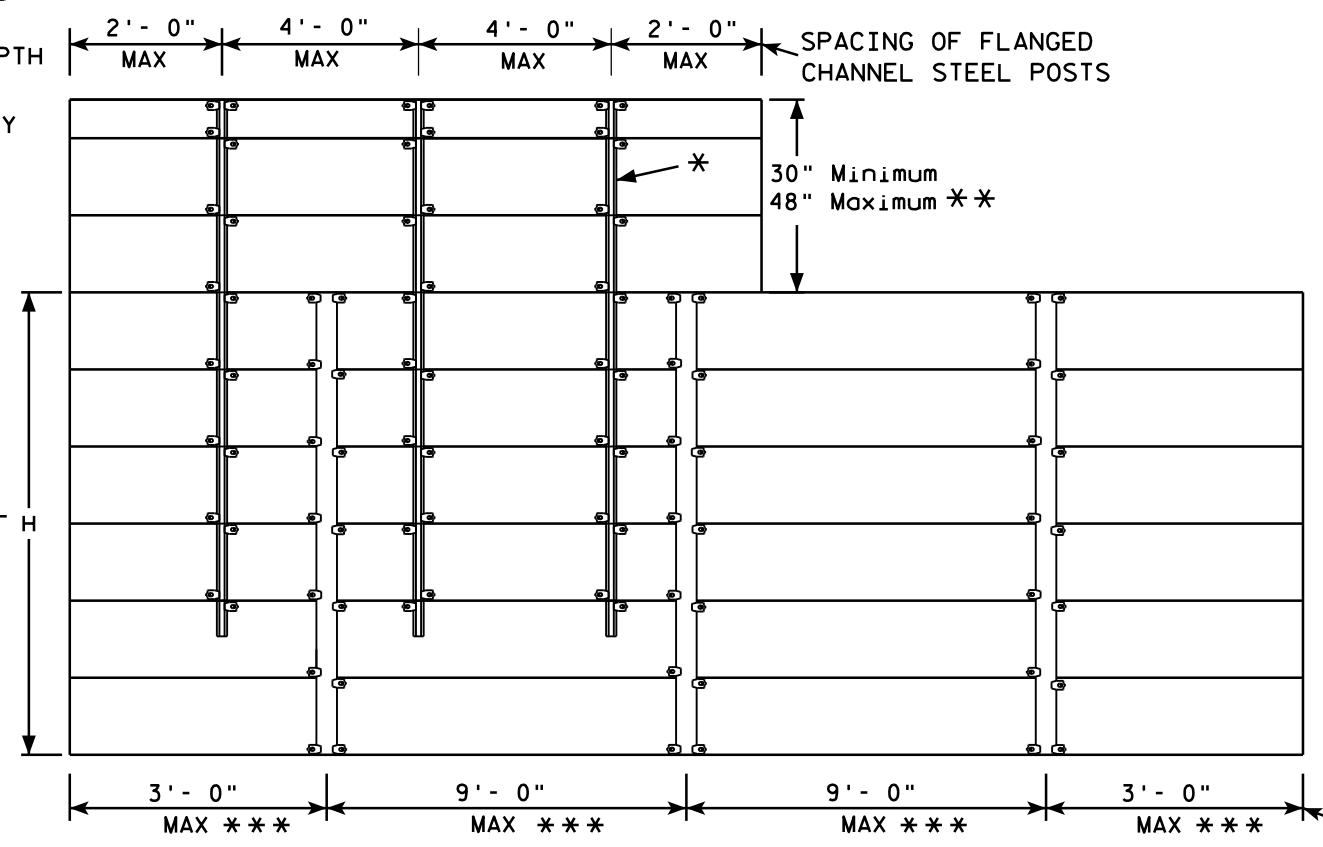
** = FOR 48" HEIGHT PANELS ON OVERHEAD STRUCTURES, ENTIRE SIGN SHALL BE CENTERED VERTICALLY ABOUT THE DEPTH OF THE TRUSS.

*** THESE SPACING DISTANCES SHALL ONLY BE USED WHEN THE MAIN SIGN HAS A MAXIMUM HEIGHT (DIMENSION H) OF 16 FT OR LESS. FOR SIGNS WITH A HEIGHT OF GREATER THAN 16 FT, STRUCTURAL CALCULATIONS SHALL BE PERFORMED.

FLANGE CHANNEL DETAIL



SIGN BRIDGE MOUNTED SIGN



SPACING OF ALUMINUM SIGN SUPPORTS
5" X 3.5" X 3.7 LBS./ft.

GENERAL NOTES

1. Flanged channel steel posts shall conform to size and material above, and shall be considered as incidental to other items in the contract.
2. Number of Flanged channel steel supports varies with length of panel and shall be spaced as shown:
PANEL LENGTH 8'-0" OR LESS = 2 CHANNELS
PANEL LENGTH 9'-0" - 12'-0" = 3 CHANNELS
PANEL LENGTH 13'-0" OR MORE = 4 CHANNELS
If the flanged channel steel posts can not be horizontally spaced as shown, they can be moved so as to securely hold the sign.

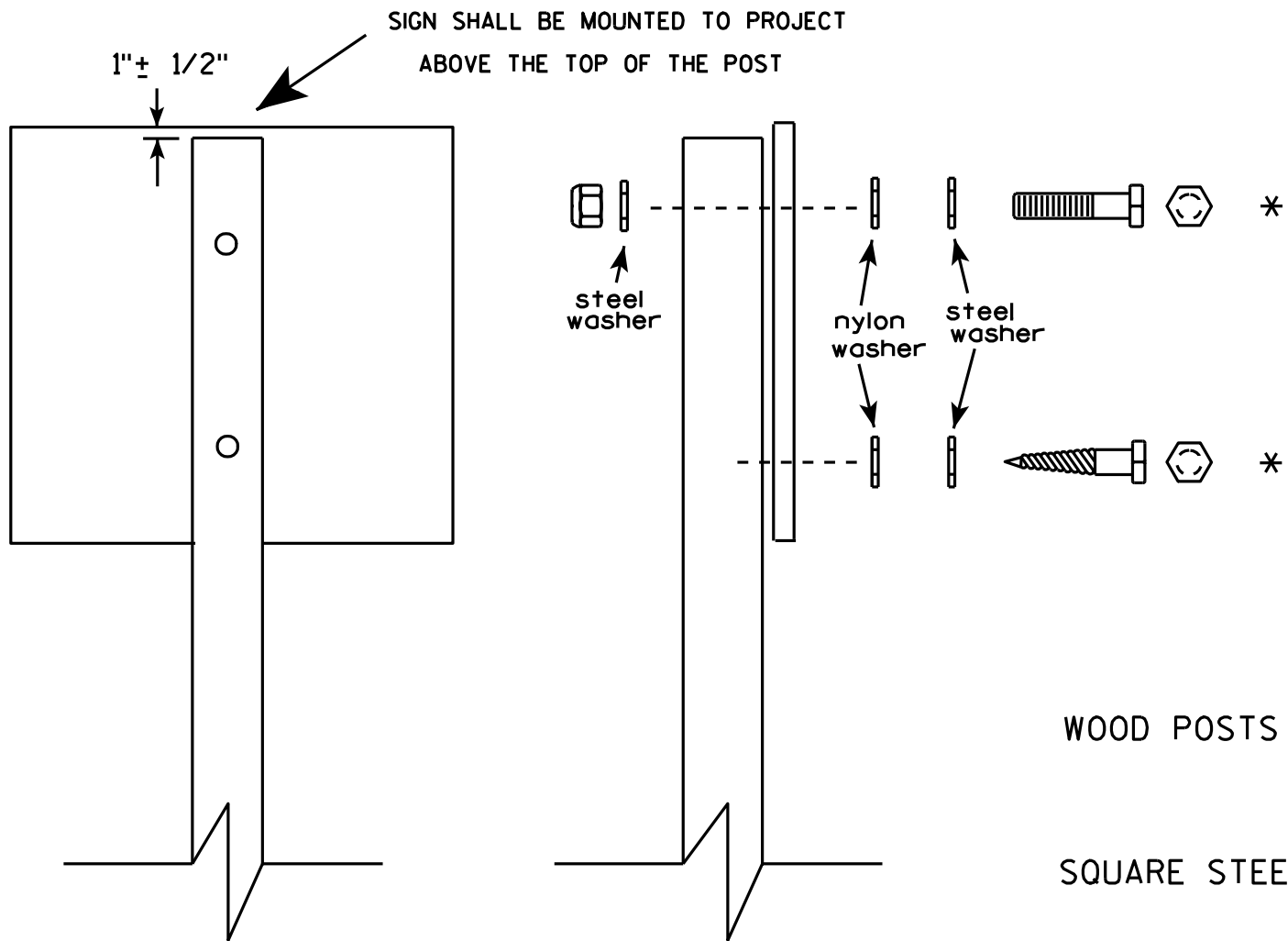
3. The EXIT NUMBER PANEL shall normally be positioned above the guide sign aligned with the right edge of the guide sign. If the guide sign indicates a left exit, the EXIT NUMBER PANEL shall be aligned with the left edge of the guide sign.
4. If the bolt holes in the top panel (EXIT NUMBER), or sub panel (NEXT EXIT) line up with holes in main sign panel, stitch bolts shall be used in addition to the channels.
5. Provide post clips for each sign as shown. (Please note the differences between a ground mounted versus Sign bridge mounted sign as far as number of clips required on the main supports or beams)
6. Structural steel sign supports shall extend to the top of the main signs, as shown on the above details.

ATTACHMENT OF GUIDE SIGNS TO SUPPORTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/05/13 PLAT 234 ^4-6.12

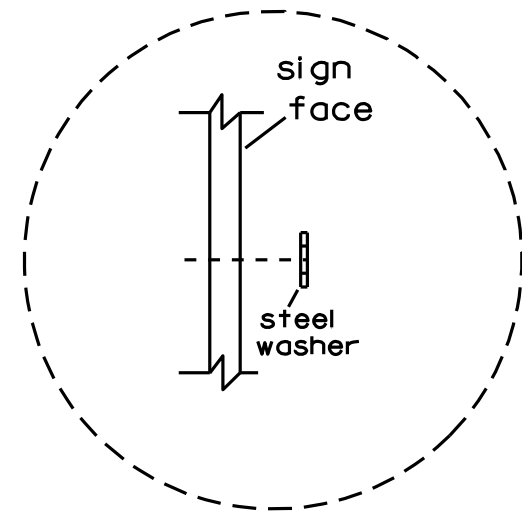


Nuts, bolts and lags used for mounting signs shall have hexagonal heads and shall be either :

- a. Hot dip galvanized in accordance with ASTM Designation: A 153, Class D, or SC 3
- b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3.

Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- WOOD POSTS (4" x 4" or 4" x 6")
LAG SCREWS - 3/8" X 3"
MACHINE BOLTS - 5/16" X 6-1/2" or 7" Length w/ nuts
- SQUARE STEEL POSTS (2" x 2")
MACHINE BOLTS - 3/8" X 3-1/4" Length w/ nuts
RIVETS - 9/32" (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON for all Type H signs.



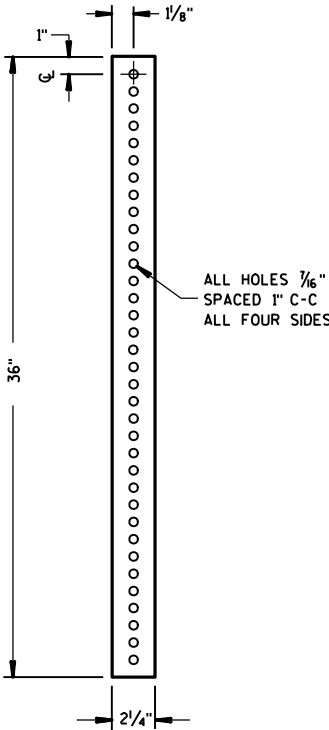
Washer Placement when Sign Has Other Than Type H or Type F Face

* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require the use of 3 fasteners.

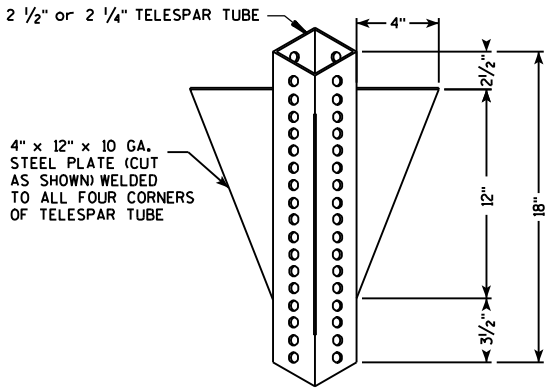
ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 3/23/10	PLATE NO. A4-8.7

TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM

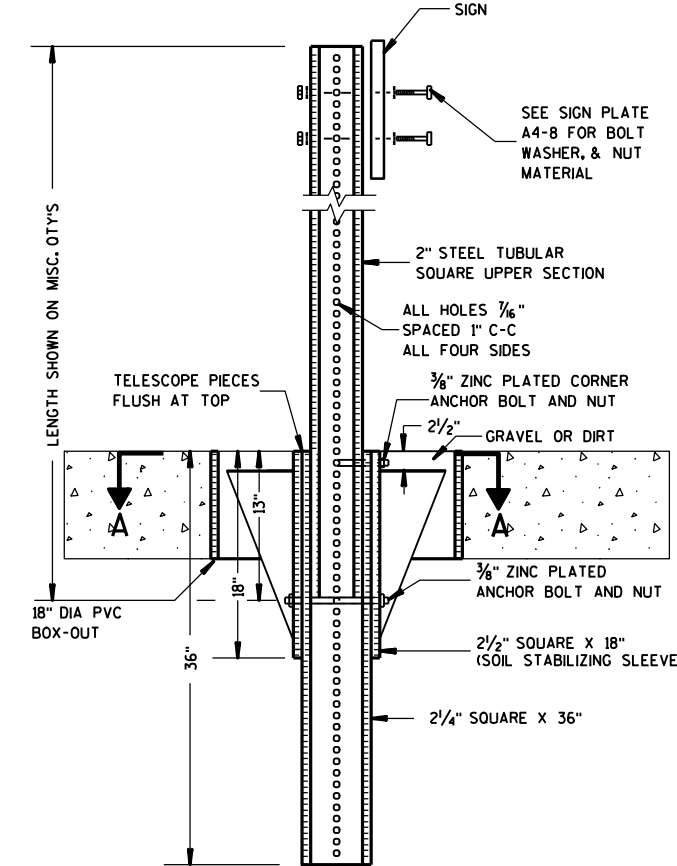
2 1/4" SQUARE
12 GAUGE
PERFORATED
GALVANIZED FINISH



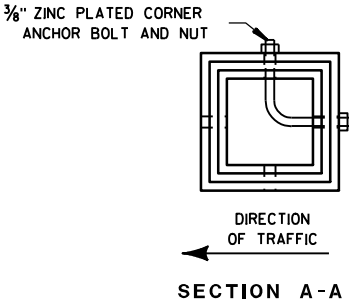
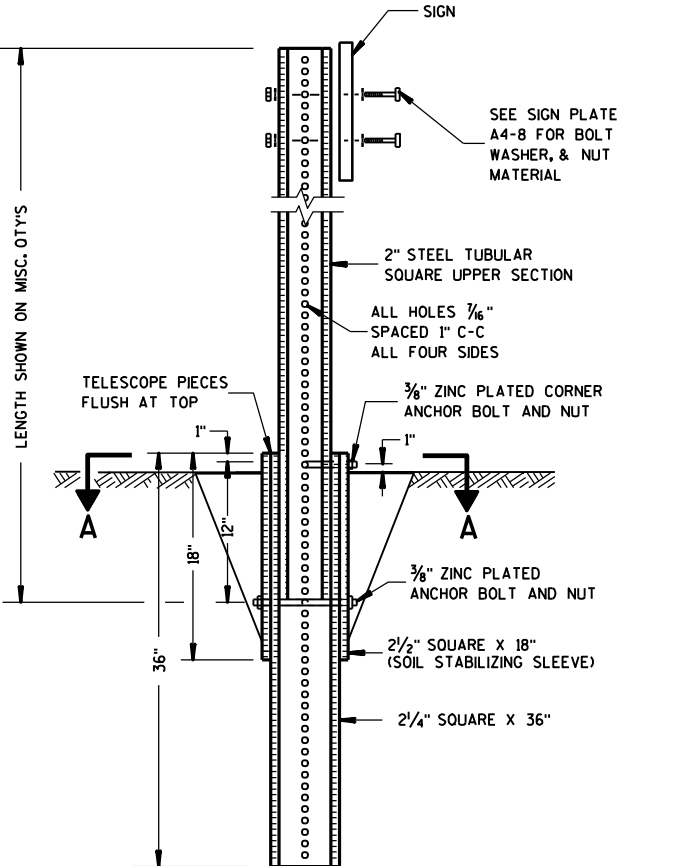
2 1/2" SQUARE
12 GAUGE
OMNI-DIRECTIONAL
PERFORATED
SOIL STABILIZING SLEEVE
GALVANIZED FINISH



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



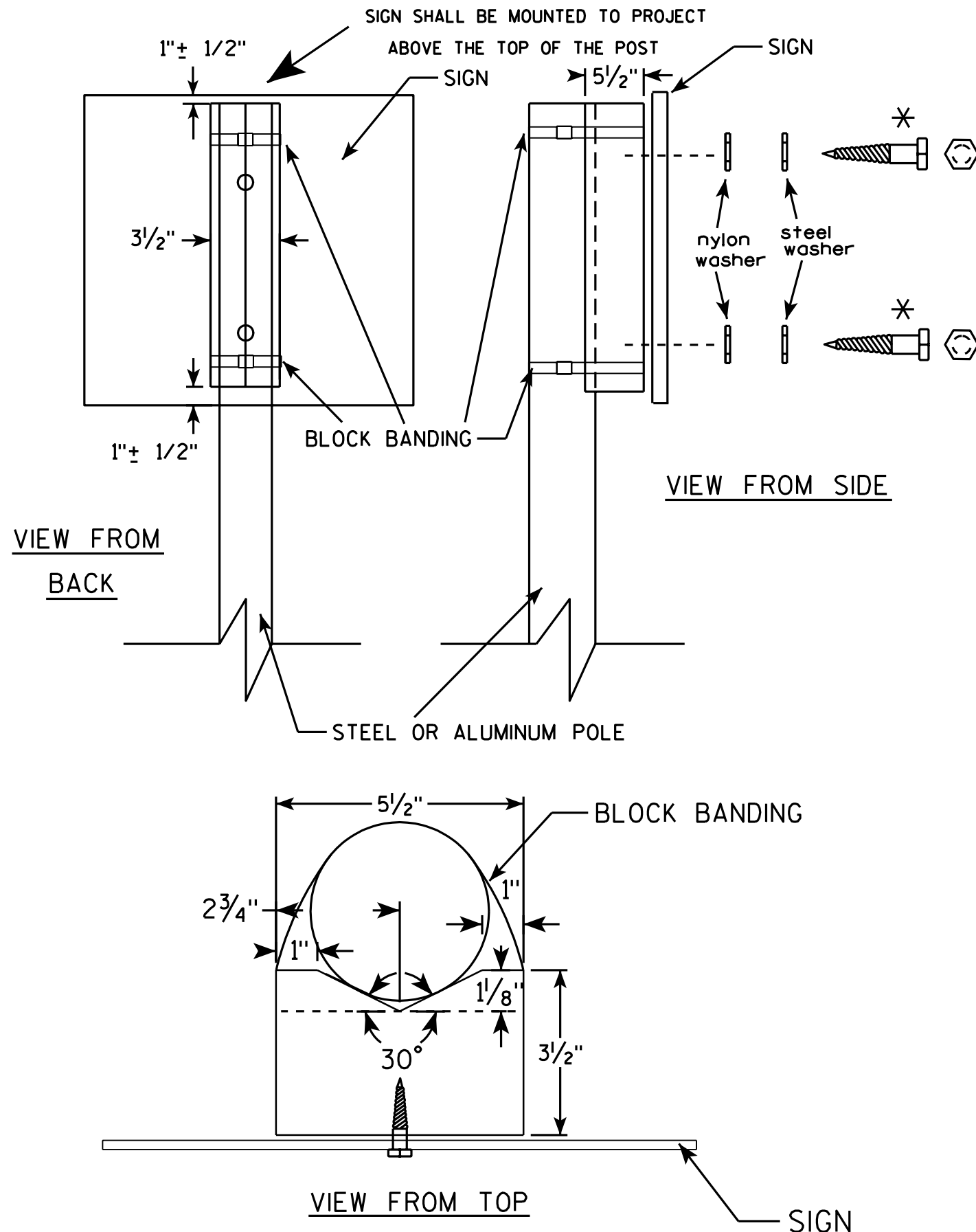
DETAIL OF TUBULAR STEEL SIGN POST
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)



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	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 5/30/12	PLATE NO. A4-9.7



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

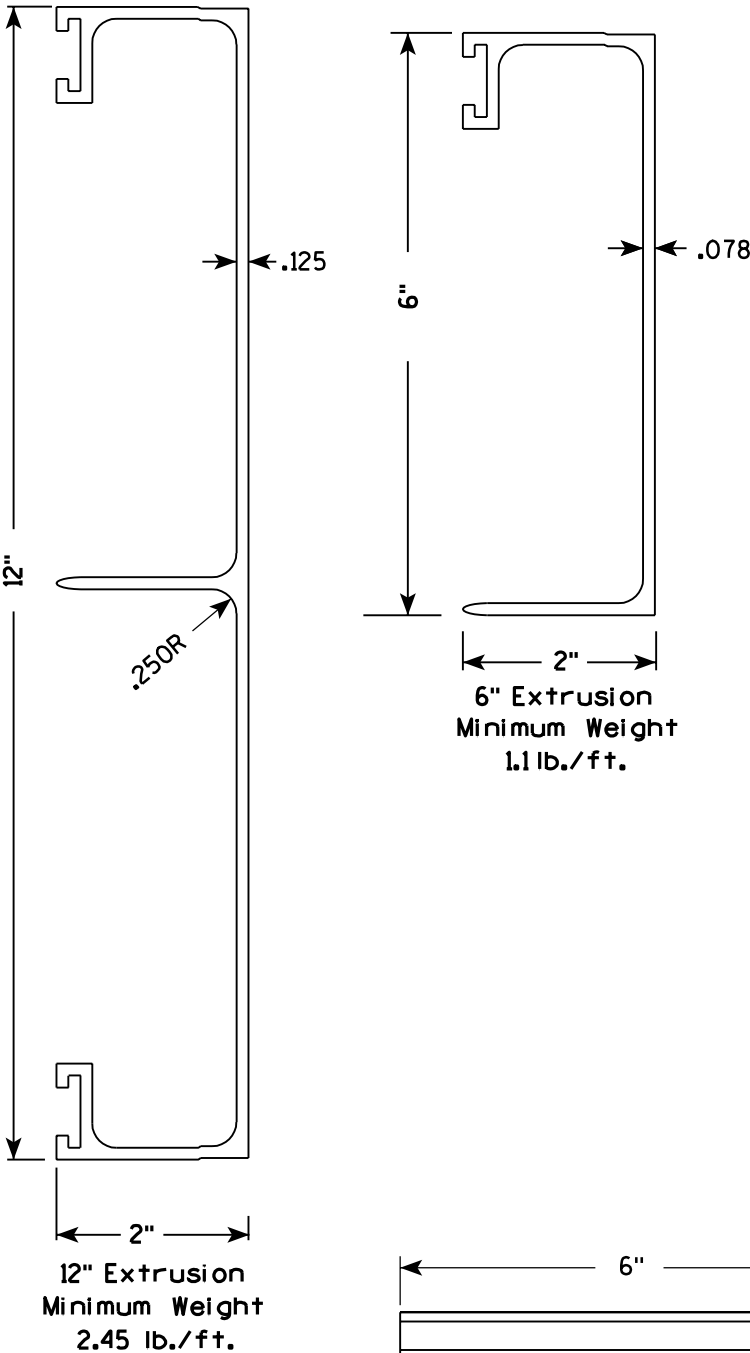
PROJECT NO:

SHEET NO: 237

E

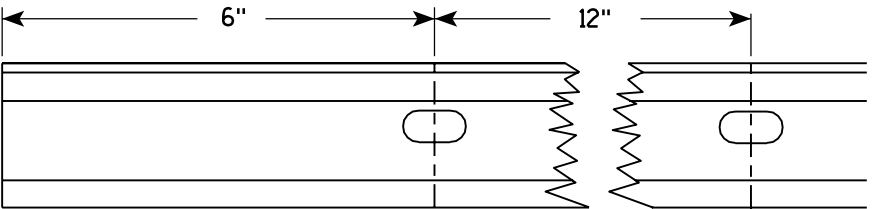
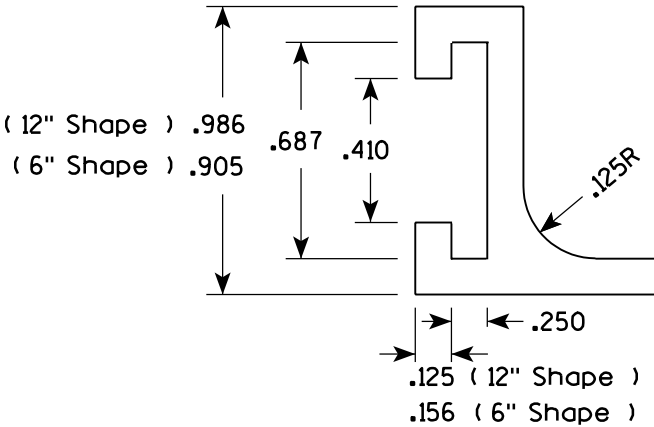
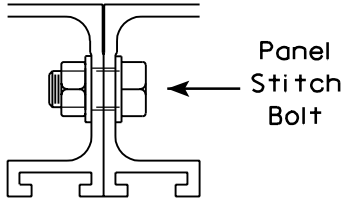
Extruded Shape

Hardware

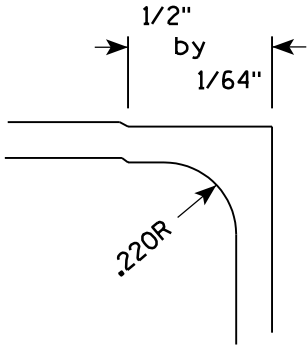


STITCH BOLT, WASHER & NUT

The hardware includes:
3/8 " - 16 X 3/4 " Economy Bolt 2024-T4 alloy
3/8 " - Stainless steel stop nut
3/8" X .064 Flat Washers, Alclad 2024-T4 alloy

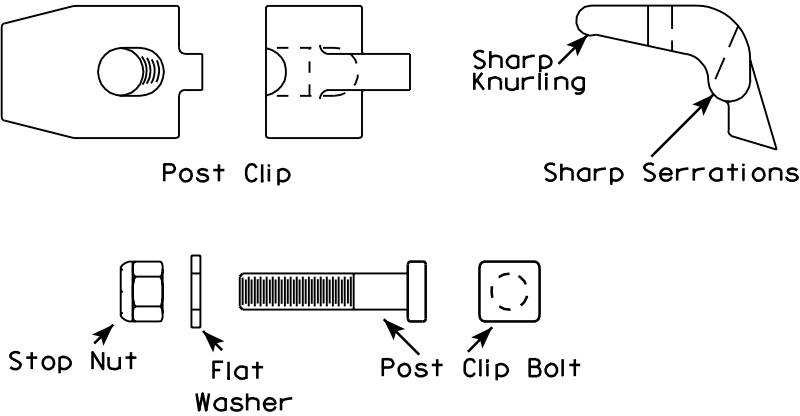


Punch 7/16" x 7/8" oval holes beginning 6" in from end of extrusion 12" CC on both edges of 6" and 12" panels.



POST CLIP, POST CLIP BOLT, WASHER & NUT

Post Clip shall be Alum. Alloy 356-T6
Post Clip Bolt shall be Stainless Steel.
Flat washer shall be 3/8" X .091, Stainless Steel.
Stop nut shall be stainless steel.



NOTES

1. The contractor may select any brand of extrusion that conforms to the illustrations or meets with the approval of the engineer, but all extrusions used on this contract shall be of the same brand.
2. Panel Stitch Bolts shall be used to assemble adjacent panels. Maximum stitch bolt spacing shall be 24" C-C, and a minimum of 4 bolts shall be used to connect any two extrusions.
3. Post Clips shall be used to attach the sign panel to the sign support.

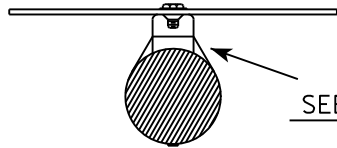
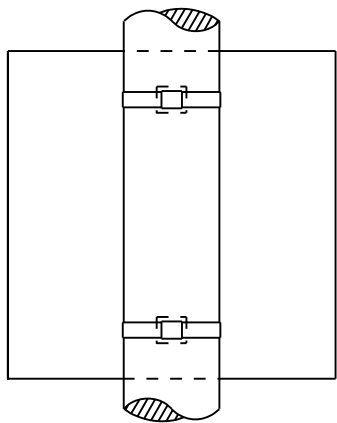
ALUMINUM EXTRUSIONS FOR
TYPE I SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Chester J. Spang*
for State Traffic Engineer
DATE 11/18/99 PLATE NO. A5-2.9

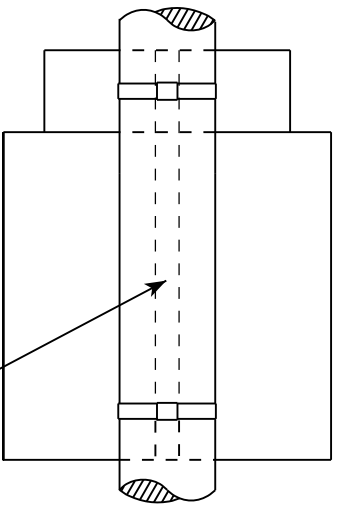
BANDING

SINGLE SIGN

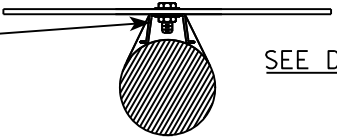


SEE DETAIL A

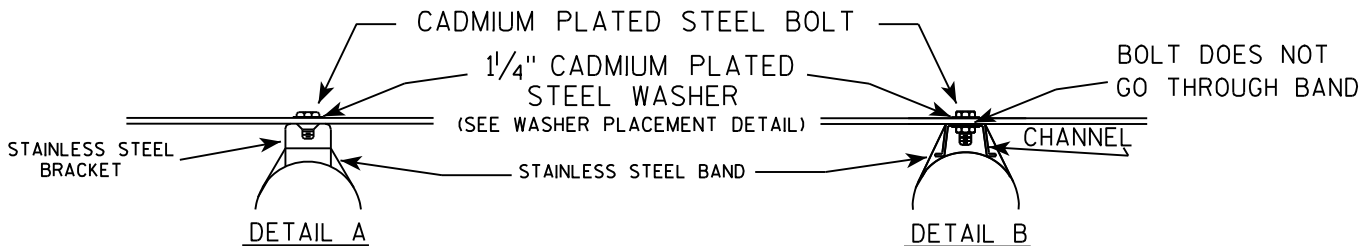
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



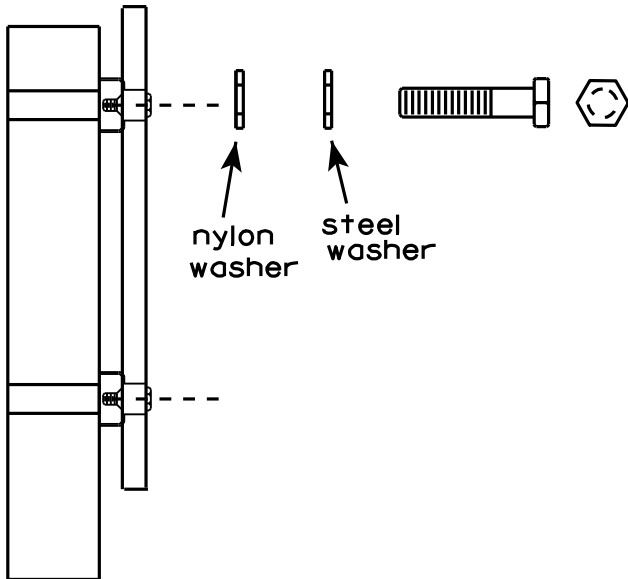
SEE DETAIL B



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



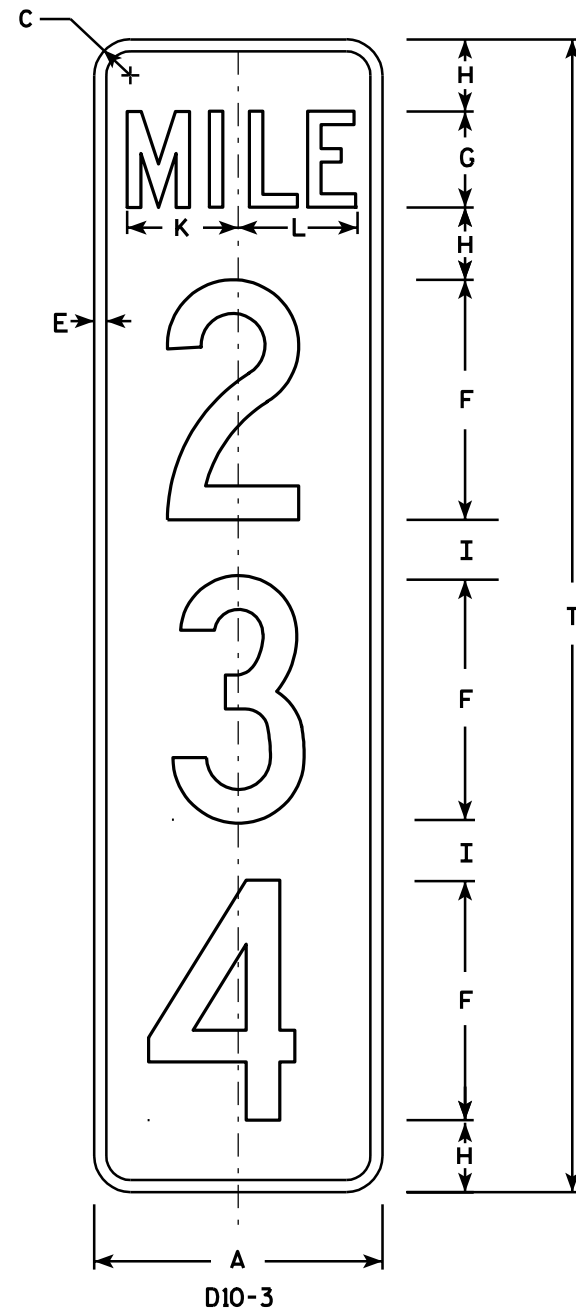
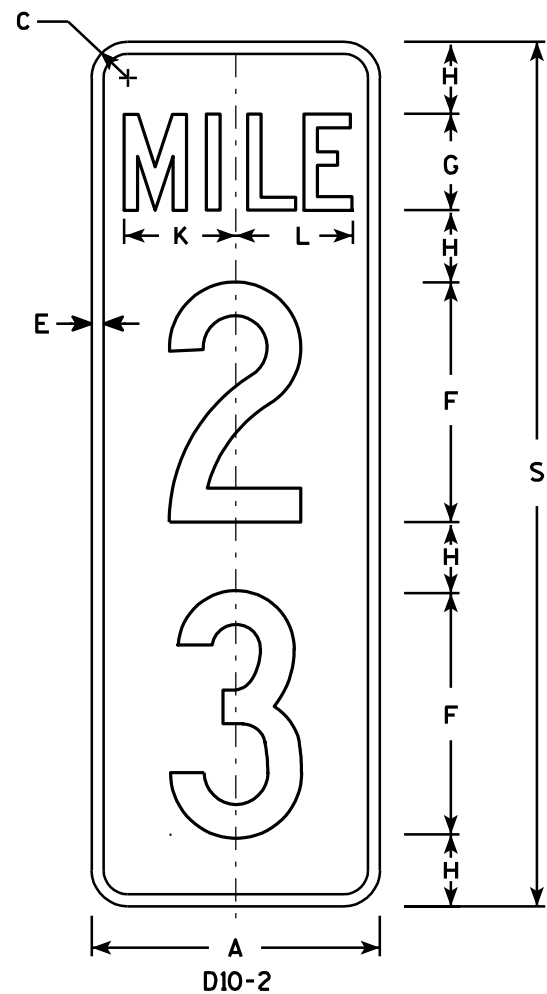
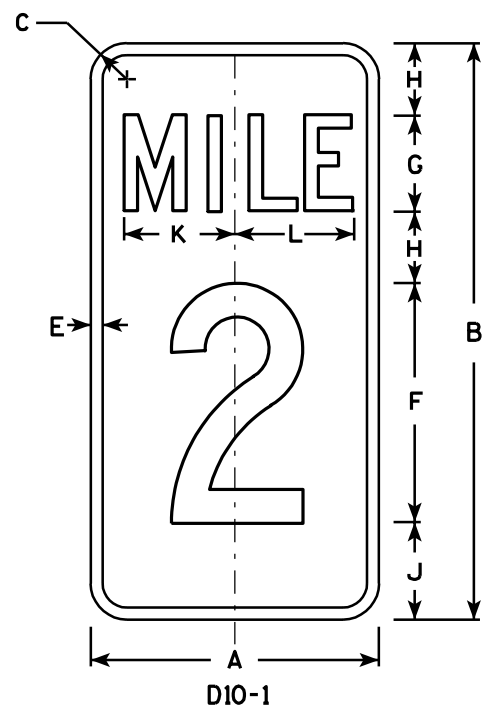
WASHERS (ALL POSTS) -
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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



NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - Green
Message - White - Type H Reflective
- Message Series - C
- 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.
- Optically adjust numerals about the centerline of the sign to achieve proper balance.

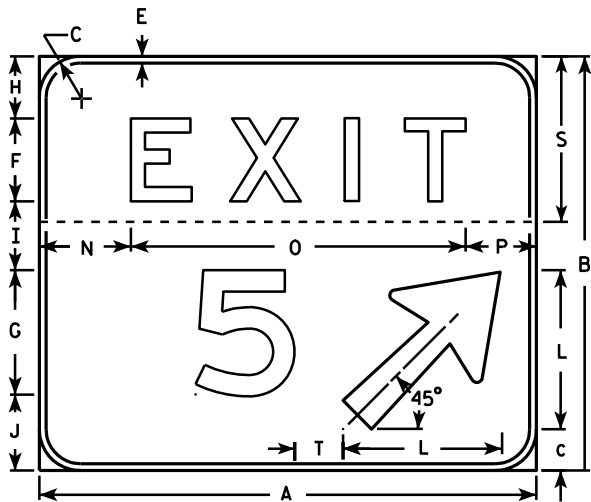
Metric equivalent
for this sign is:

PHY. SIZE	
12 X 24	300 mm X 600 mm
12 X 36	300 mm X 900 mm
12 X 48	300 mm X 1200 mm

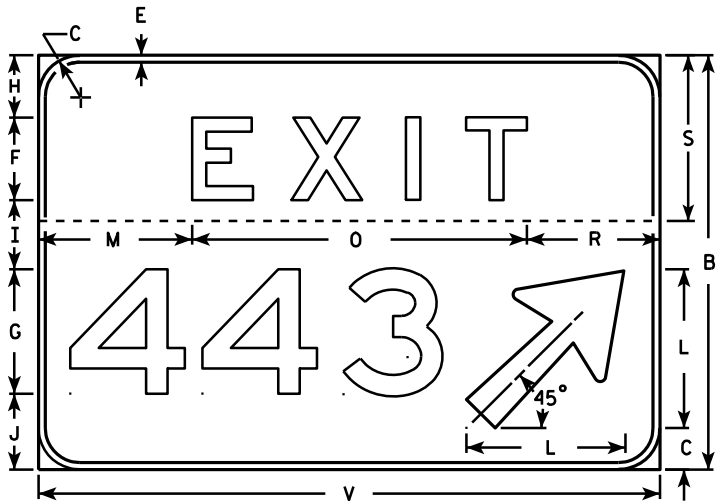
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1																										
2																										
3																										
4	12	24	1 1/2		1/2	10	4	3	2 1/2	4	4 5/8	4 7/8							36	48						
5	12	24	1 1/2		1/2	10	4	3	2 1/2	4	4 5/8	4 7/8							36	48						

D10-1	D10-2	D10-3
Area sq. ft.	Area sq. ft.	Area sq. ft.
2.0	3.0	4.0
Area m2	Area m2	Area m2
.19	.28	.38

STANDARD SIGN D10-1 , D10-2 & D10-3	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Chester J. Spore</i> for Director, Office of Traffic
DATE 1/16/02	PLATE NO. D10-3.2



NOTE: T dimension shall be measured from the back of the number to the front of the arrow



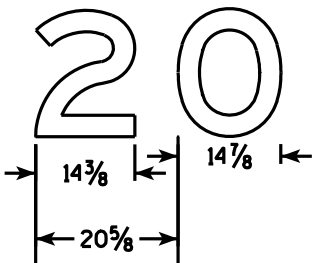
NOTES

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 (Type H reflective)
3. Message Series - E
4. Corners may be square or rounded but the border shall be rounded as shown.
5. Base material for this sign shall be plywood and shall be split into two separate pieces as shown on each detail by the dashed line (-----).
6. Arrow is Type "A" from sign plate A1-1.
7. Substitute appropriate message, space per the table and adjust placement on sign to achieve proper balance.
8. As per the Standard Spec's, these signs shall not have a vertical joint.

SPACING CHART FOR 18" NUMERALS

NUMBERS	WIDTH	0	1	2	3	4	5	6	7	8	9	A	B	C
0	14 7/8	21 5/8	21 5/8	21 1/4	20 3/8	21 1/4	21 1/4	21 5/8	19 7/8	22 1/8	21 5/8			
1	5 7/8	14	14	14	13 1/8	12 1/8	14	14	12 1/4	14	14			
2	14 3/8	20 5/8	21 1/8	20 5/8	19 3/4	20 1/4	20 5/8	20 5/8	18 7/8	21 1/8	20 5/8			
3	14 3/8	20 3/4	21 1/8	20 3/4	20 1/4	19 3/4	20 3/4	20 3/4	19 3/8	21 1/8	20 3/4			
4	16 5/8	22 7/8	22	22 1/2	21 5/8	21 5/8	22 7/8	22 7/8	20 5/8	23 3/8	22 7/8			
5	14 1/4	20 5/8	20 5/8	20 1/8	18 3/4	18 3/4	20 5/8	20 5/8	18 3/8	20 5/8	20 5/8			
6	14 1/2	21 1/4	20 3/4	20 3/4	19 7/8	19 1/2	20 3/8	20 3/4	19	20 3/4	20 3/8			
7	14 3/8	19 3/4	19 3/4	20 1/4	19 3/4	17	19 3/4	20 5/8	18 7/8	20 5/8	19 3/4			
8	14 1/4	21 1/2	21 1/2	20 5/8	19 1/4	19 3/4	20 5/8	21 1/2	19 5/8	21 1/2	20 5/8			
9	14 1/2	21 1/4	21 1/4	20 7/8	20	20 7/8	20 7/8	21 1/4	19 1/2	21 3/4	21 1/4			
A	18	19 3/4	19 3/4	20 1/4	19 3/4	17	19 3/4	20 5/8	18 7/8	20 5/8	19 3/4	21 5/8	23 7/8	23
B	14 1/4	21 1/2	21 1/2	20 5/8	19 1/4	19 3/4	20 5/8	21 1/2	19 5/8	21 1/2	20 5/8	19 1/2	22 3/8	21 1/2
C	14 1/4	21 1/4	21 1/4	20 7/8	20	20 7/8	20 7/8	21 1/4	19 1/2	21 3/4	21 1/4	18 3/8	21	19 3/4

EXAMPLE FOR USING SPACING CHART



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
2																										
3																										
4																										
5	72	60	6		1	12	18	9	10	11	8 ⁷ / ₈	23	22 ¹ / ₄	13 ¹ / ₄	48 ¹ / ₂	10 ¹ / ₄		19 ¹ / ₄	24	7		90		96	7 ¹ / ₂	

1-2 Digit Bid Area	3 Digit Bid Area
Sq. Ft.	
30	37.5

STANDARD SIGN
E5-1A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 5/11/10 PLATE NO. E5-1A.12

PROJECT NO:

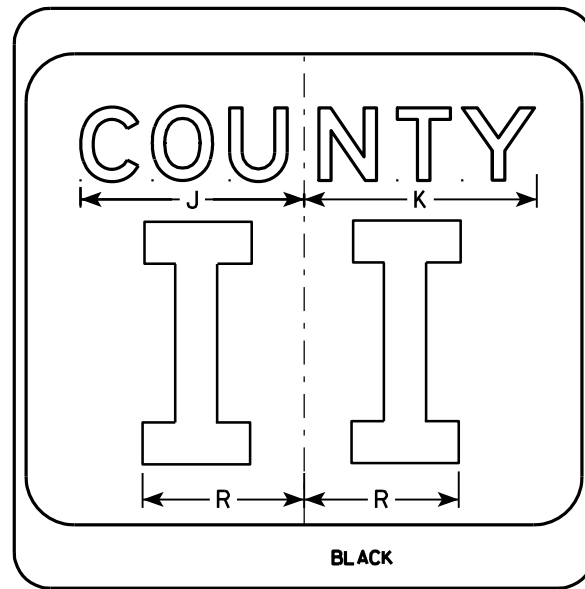
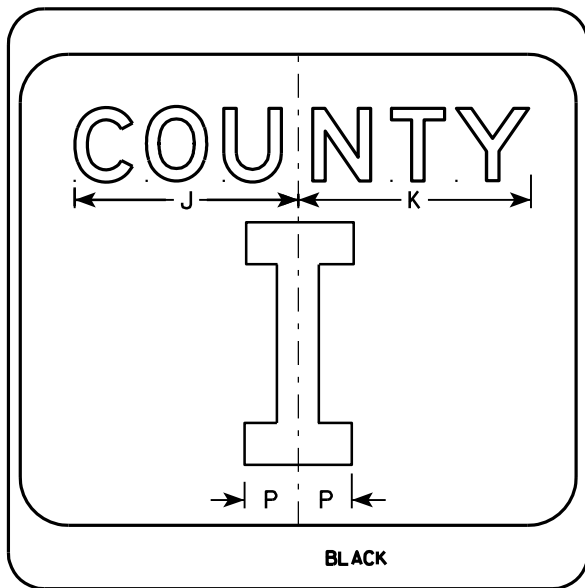
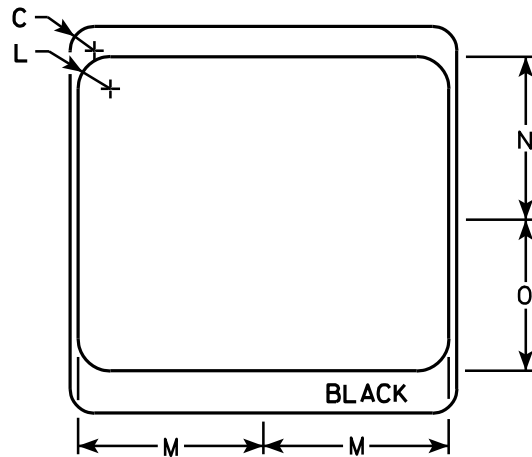
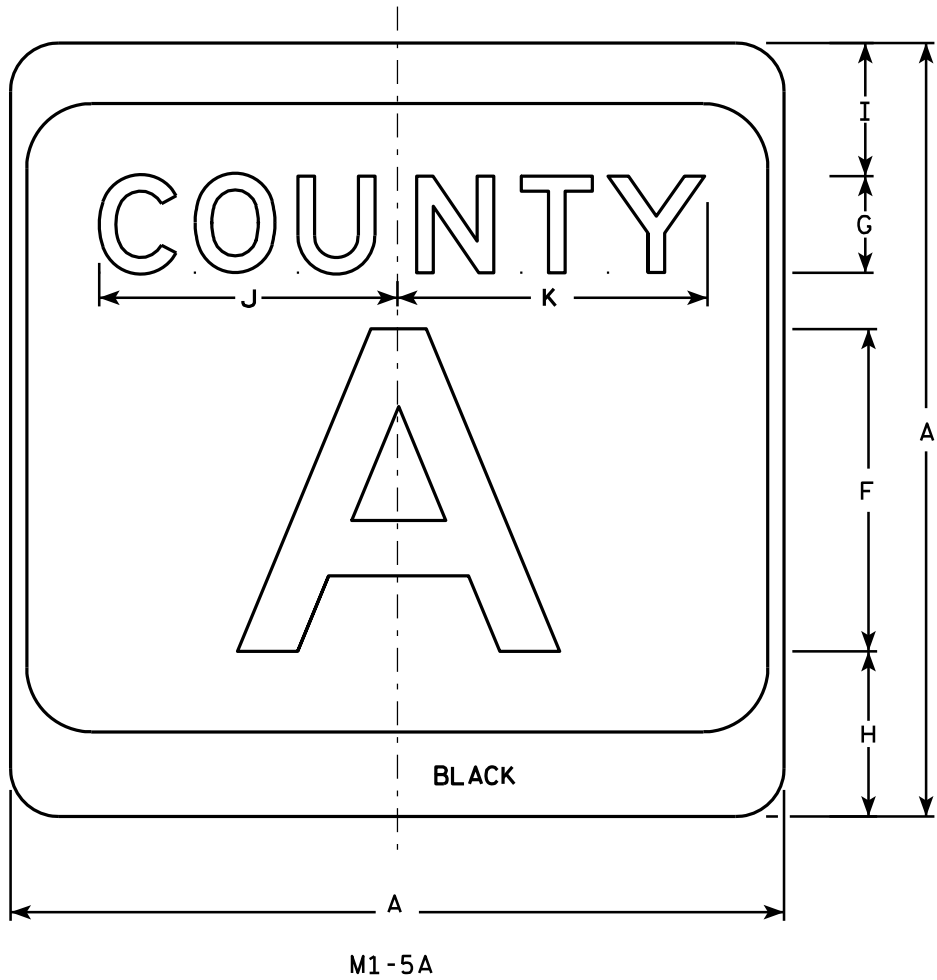
HWY:

COUNTY:

SHEET NO: 241

E

7



NOTES

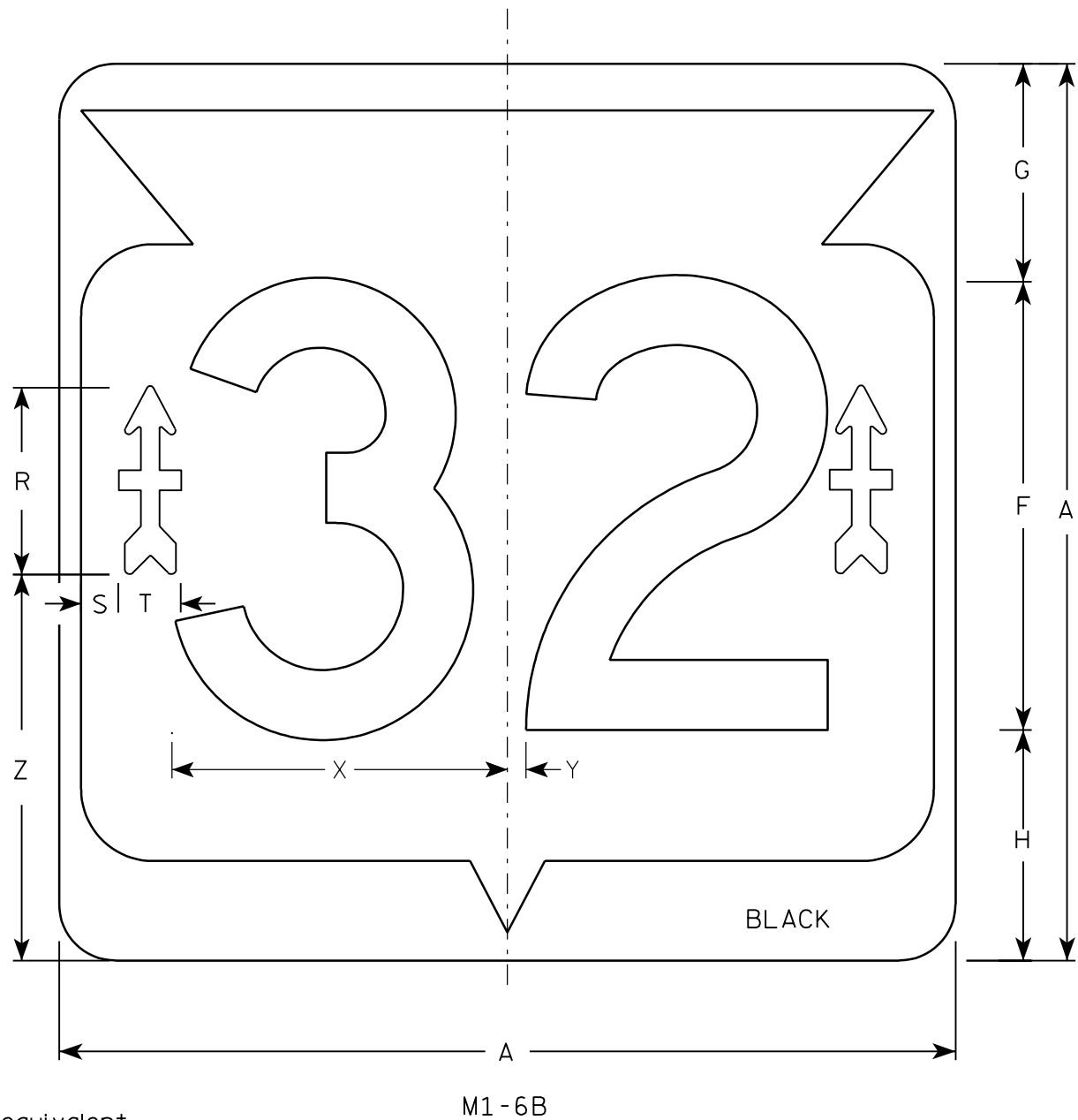
1. Sign is Type II - see Note 7 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White & Black - See Note 7
Message - Black
3. Message Series - see Note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
6. Substitute appropriate letters & optically center to achieve proper balance.
7. Permanent Signs
Background - Type H Reflective
Detour or temporary Signs
Background - Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER	
M1-5A FOR ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 9/27/11	PLATE NO. M1-5A.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 242	E
-------------	------	---------	---------------	---

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		5 1/8	3/4	1 7/8	1 1/2	5/8	5/8	9	1/2	10 1/2	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		7 1/2	1 1/2	2 1/2	2	7/8	3/4	13 1/2	3/4	15 1/2	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		7 1/2	1 1/2	2 1/2	2	7/8	3/4	13 1/2	3/4	15 1/2	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		7 1/2	1 1/2	2 1/2	2	7/8	3/4	13 1/2	3/4	15 1/2	9.0	.81

PROJECT NO:

HWY:

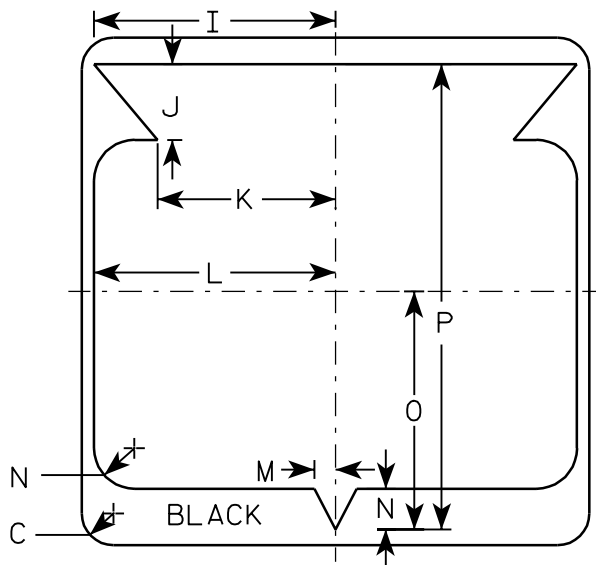
COUNTY:

SHEET NO: 243

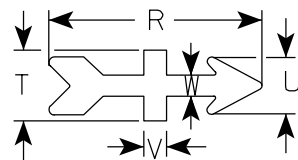
E

NOTES

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



32nd DIVISION ARROW
ACTUAL SIZE



STATE ROUTE MARKER "32"
M1-6B FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

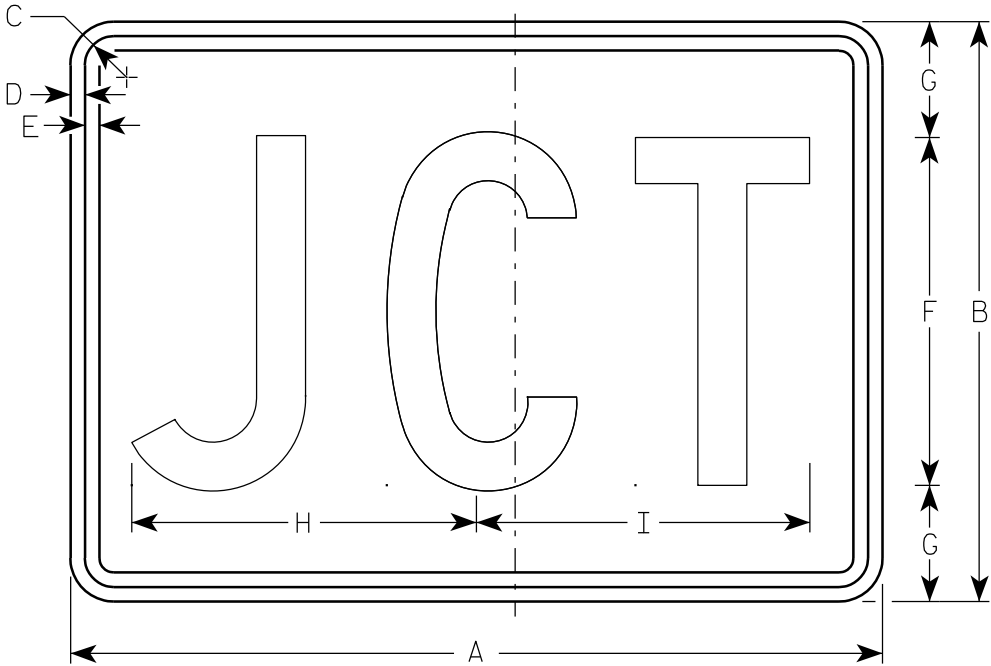
Matthew R. Rauch
for State Traffic Engineer

DATE 12/5/05

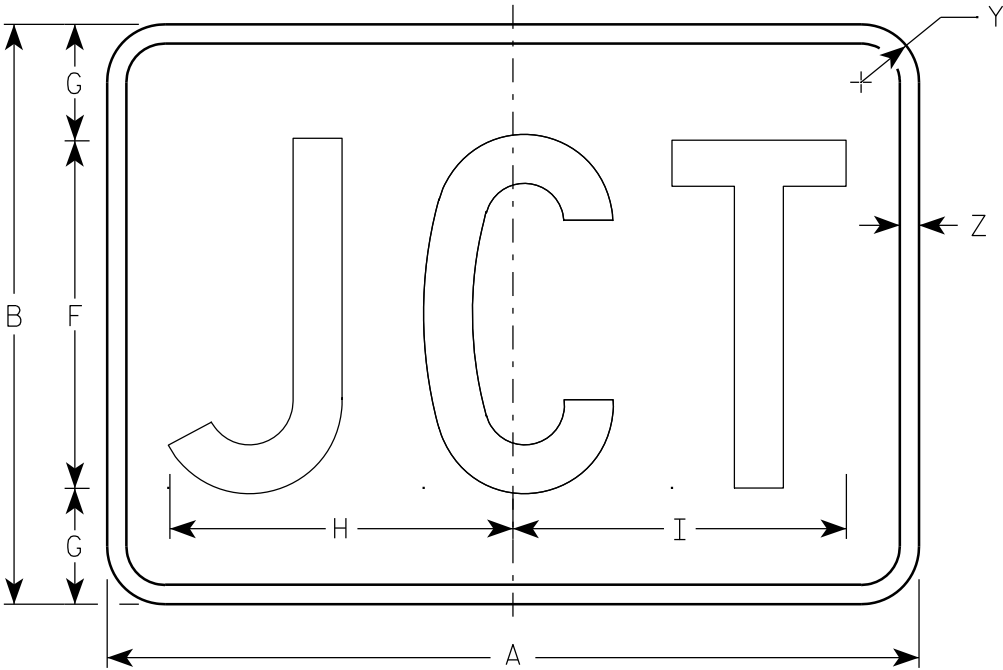
PLATE NO. M1-6B.2

NOTES

1. Sign is Type II - See Note 5 - reference
WIS DOT Standard Specification for HIGHWAY
and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - 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 - Type H Reflective
(Detour or temporary Signs - Reflective)
Message - Black
MB2-1 Background - Blue
Message - White - Type H Reflective
(Detour or temporary Signs - Reflective)
MG2-1 Background - Green
Message - White - Type H Reflective
MK2-1 Background - Green
Message - White - Type H Reflective
MM2-1 Background - White - Type H Reflective
Message - Green
MN2-1 Background - Brown
Message - White - Type H Reflective
MR2-1 Background - Brown
Message - Yellow - Type H Reflective



M2-1
MK2-1
MM2-1
MR2-1



MB2-1
MG2-1
MN2-1

Metric equivalent
for this sign is:

SIZE	
1	
2	525 mm X 375 mm
3	750 mm X 525 mm
4	750 mm X 525 mm
5	750 mm X 525 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	21	15	1 1/8	3/8	3/8	9	3	8 7/8	8 5/8																1 1/2	1/2	2.20	0.20
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	0.20
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	0.20
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	0.20

STANDARD SIGN
M2-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 3/16/10

PLATE NO. M2-1.10

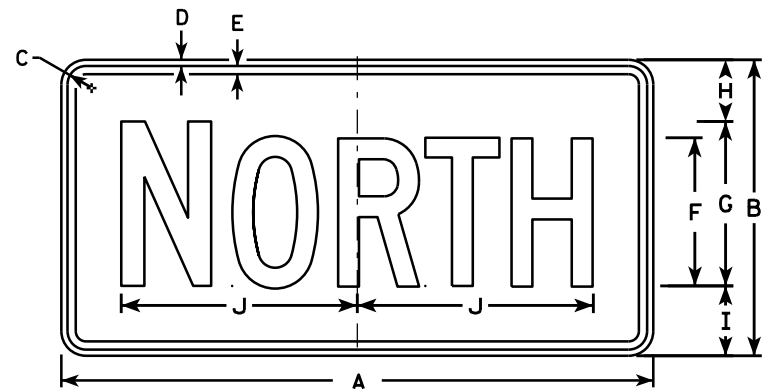
PROJECT NO:

HWY:

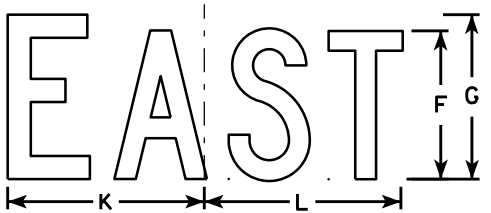
COUNTY:

SHEET NO: 244

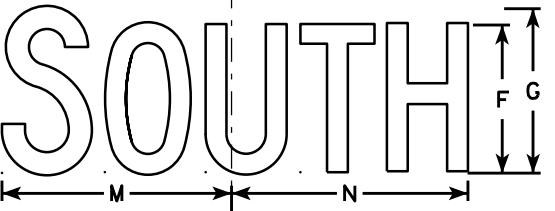
E



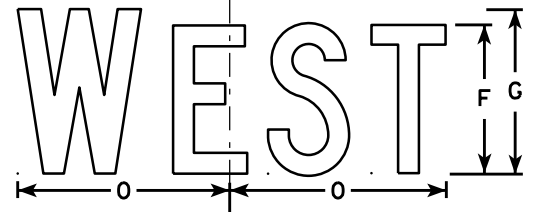
M3-1
MK3-1



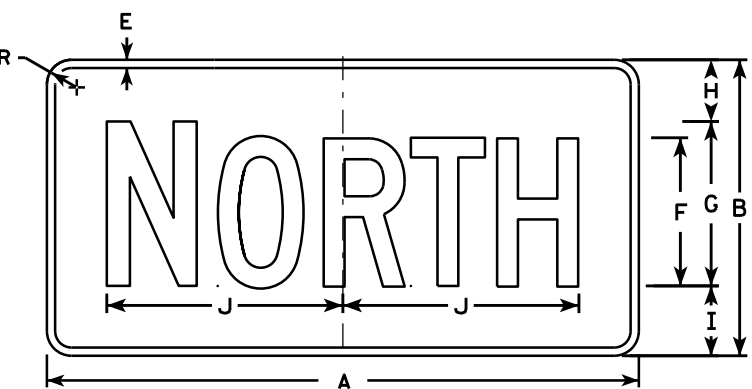
M3-2
MK3-2



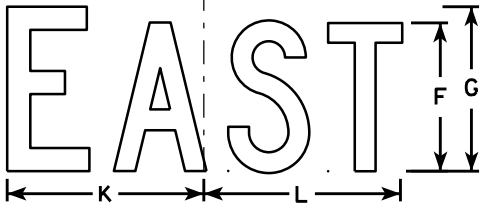
M3-3
MK3-3



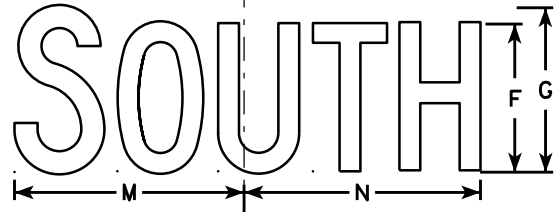
M3-4
MK3-4



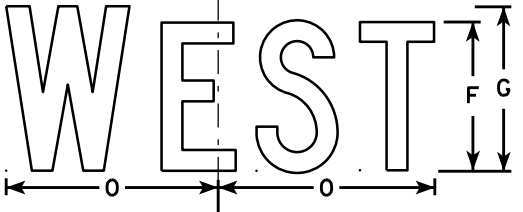
MB3-1
MG3-1
MM3-1
MN3-1



MB3-2
MG3-2
MM3-2
MN3-2



MB3-3
MG3-3
MM3-3
MN3-3



MB3-4
MG3-4
MM3-4
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
MG3-1 thru MG3-4 Background - Green
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

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

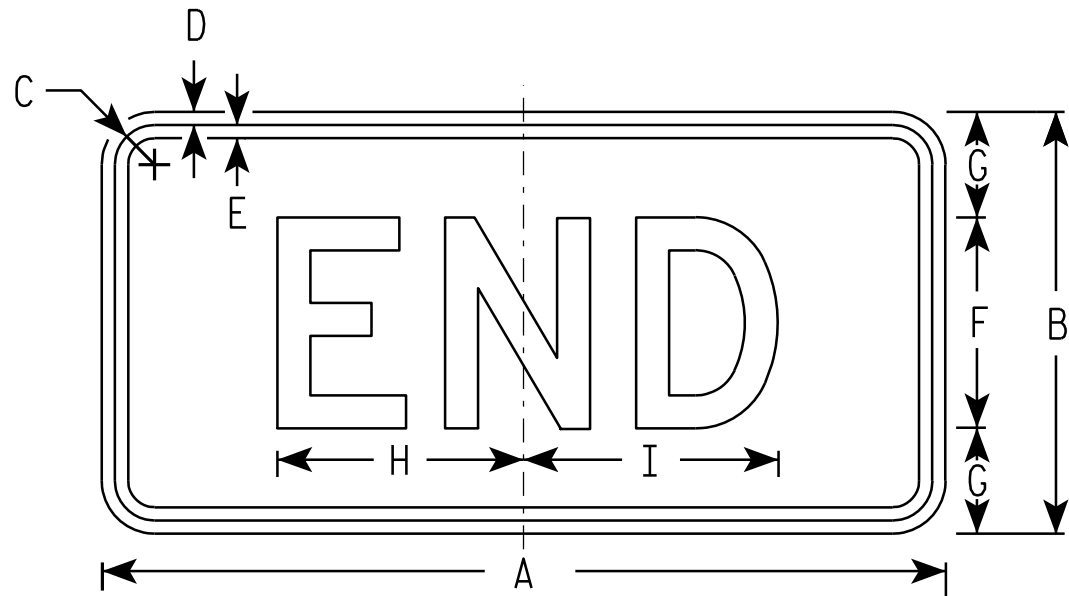
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

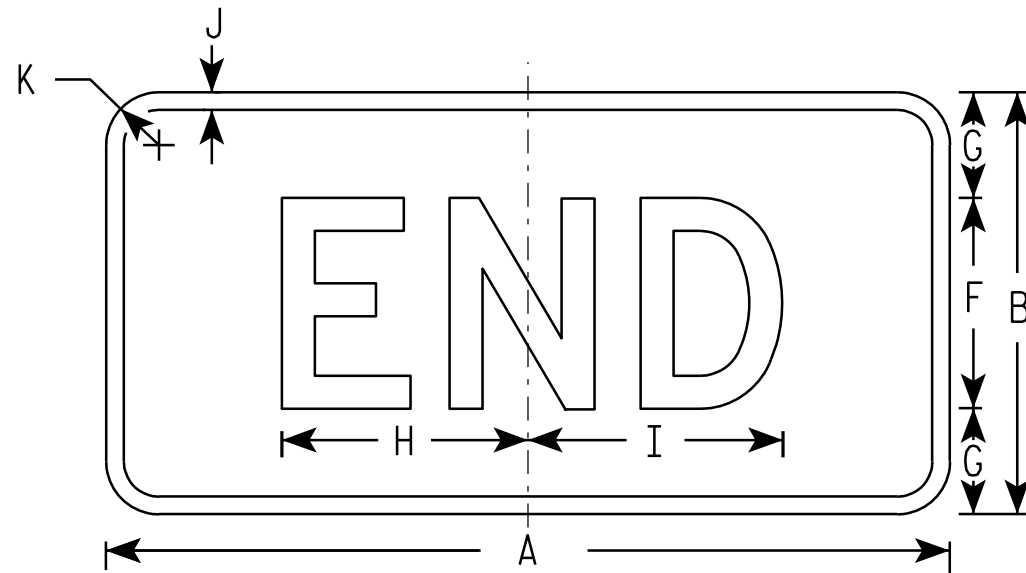
DATE 6/19/14

PLAT 245

M3-1.13



M4-6
MK4-6
MM4-6
MR4-6



MB4-6
MG4-6
MN4-6

NOTES

- Sign is Type II - See Note 5 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - See note 5
Message - See note 5
- 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.
- M4-6 Background - White - Type H Reflective
(Detour or temporary Signs - Reflective)
Message - Black
MB4-6 Background - Blue
Message - White - Type H Reflective
(Detour or temporary Signs - Reflective)
MG4-6 Background - Green
Message - White - Type H Reflective
MK4-6 Background - Green
Message - White - Type H Reflective
MM4-6 Background - White - Type H Reflective
Message - Green
MN4-6 Background - Brown
Message - White - Type H Reflective
MR4-6 Background - Brown
Message - Yellow - Type H Reflective

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	7	7 1/4	1/2	1 1/2																2.00
3	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
4	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5
5	36	18	1 1/8	3/8	1/2	9	4 1/2	12	11 7/8	1/2	1 1/2																4.5

PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: 246 **E**

STANDARD SIGN
M4 - 6

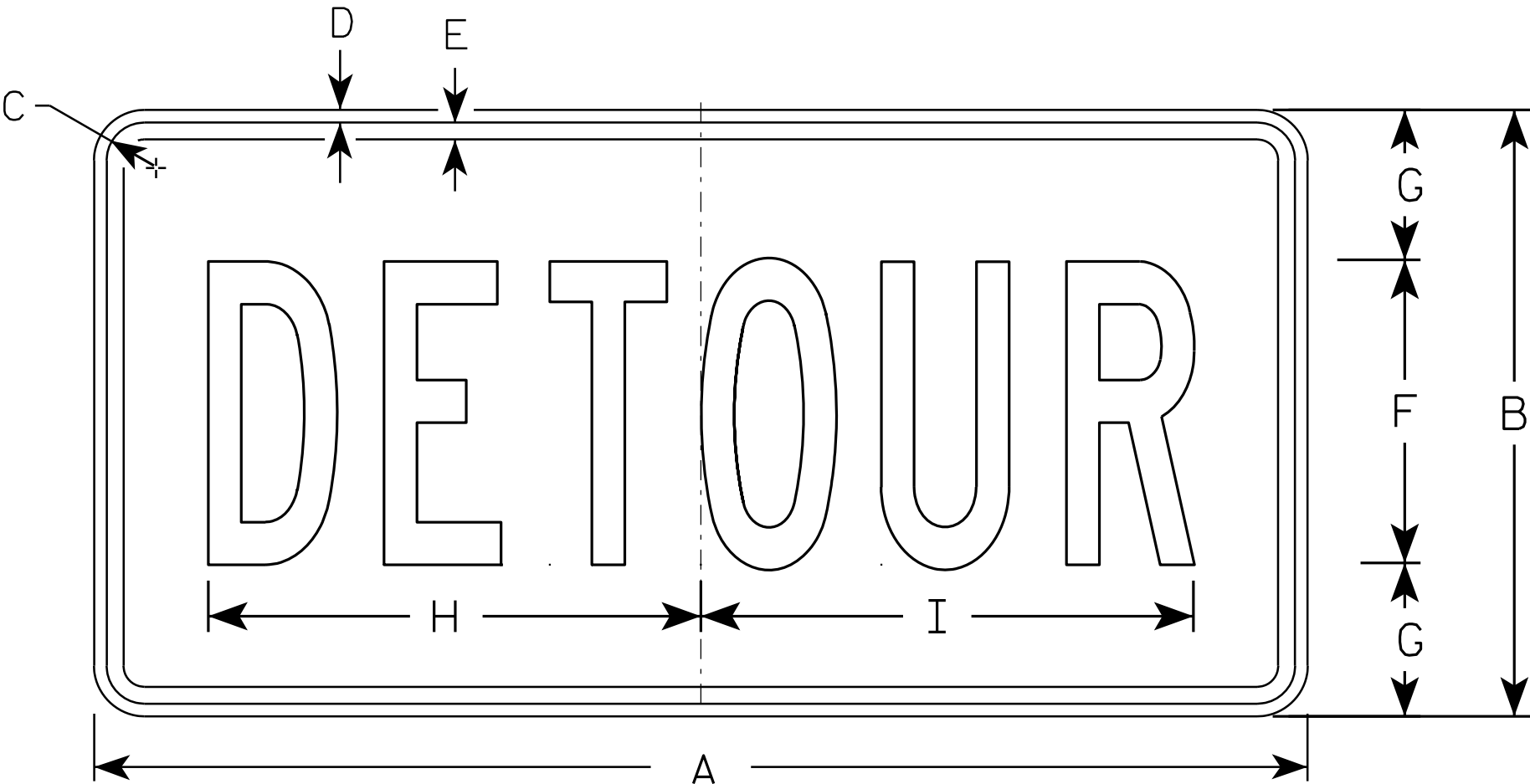
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/10/10 PLATE NO. M4-6.7

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



M4 - 8

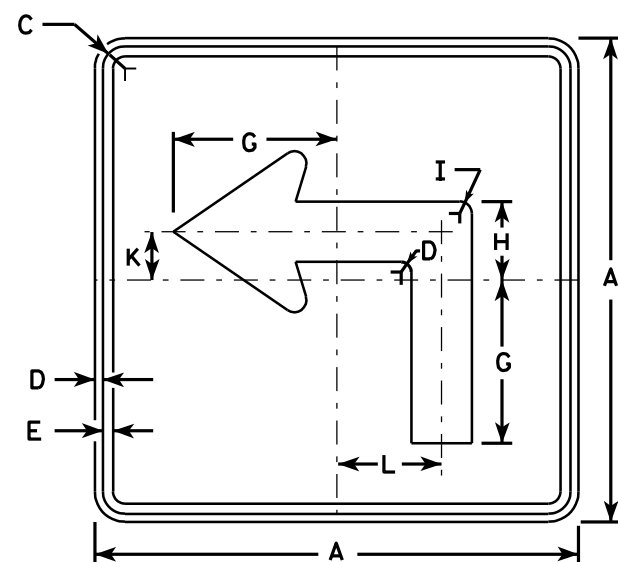
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	12	1 1/8	3/8	3/8	6	3	10	10 1/4																		2.0
3	36	18	1 1/8	3/8	1/2	9	4 1/2	14 5/8	14 1/2																		4.5
4																											
5																											

STANDARD SIGN
M4 - 8

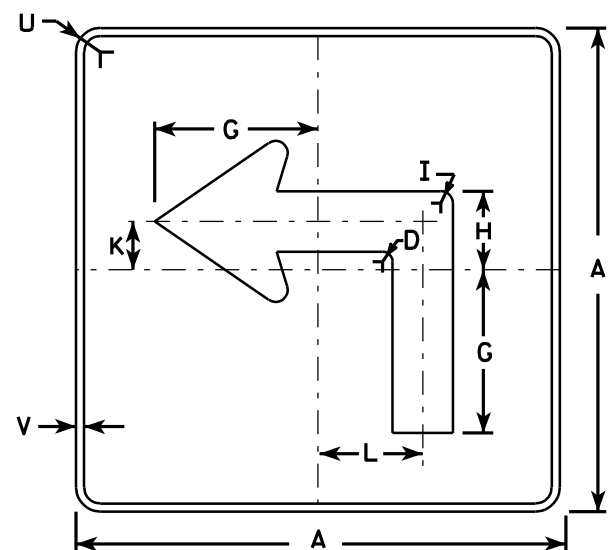
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

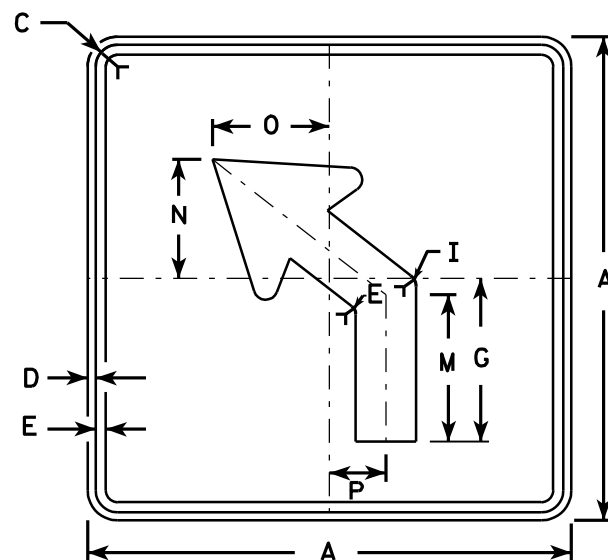
DATE 11/10/10 PLATE NO. M4-8.2



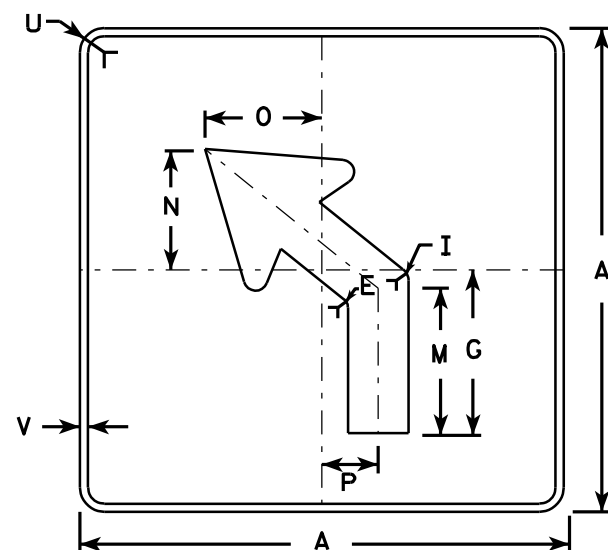
M5-1L
MK5-1L
MM5-1L
M05-1L
MP5-1L
MR5-1L



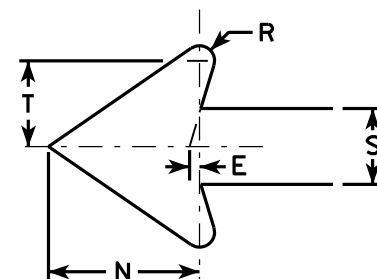
MB5-1L
MG5-1L
MN5-1L



M5-2L
MK5-2L
MM5-2L
M05-2L
MP5-2L
MR5-2L



MB5-2L
MG5-2L
MN5-2L

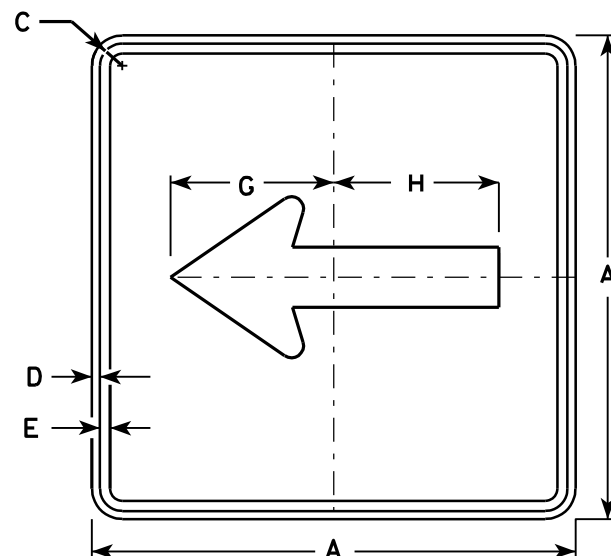


NOTES

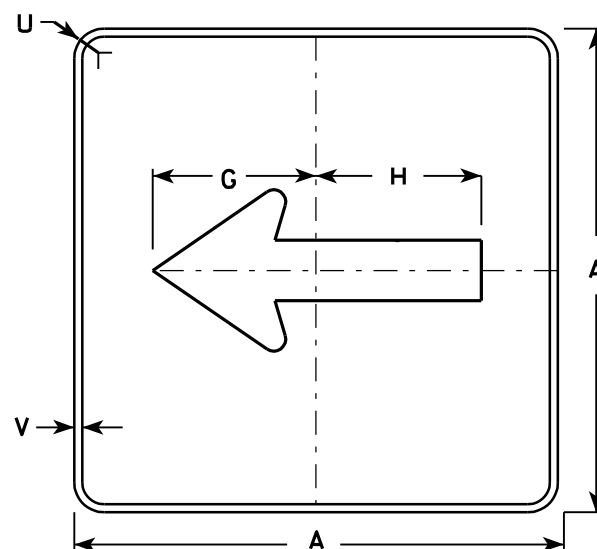
- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M5-1 and M5-2 Background - White - Type H Reflective
Message - Black
MB5-1 and MB5-2 Background - Blue
Message - White - Type H Reflective
MG5-1 and MG5-2 Background - Green
Message - White - Type H Reflective
MK5-1 and MK5-2 Background - Green
Message - White Type H Reflective
MM5-1 and MM5-2 Background - White - Type H Reflective
Message - Green
MN5-1 and MN5-2 Background - Brown
Message - White - Type H Reflective
M05-1 and M05-2 Background - Orange - Type F Reflective
Message - Black
MP5-1 and MP5-2 Background - White - Type H Reflective
Message - Blue
MR5-1 and MR5-2 Background - Brown
Message - Yellow - Type H Reflective
- M5-1R same as M5-1L except arrow points right.
- M5-2R same as M5-2L except arrow tilts right.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3	1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25
5	30		1 3/8	1/2	5/8		10 1/8	4 7/8	7/8		3	6 1/2	9 1/8	7 1/2	7 1/4	3 1/2		3/4	3 3/4	4 1/4	1 7/8	1/2					6.25

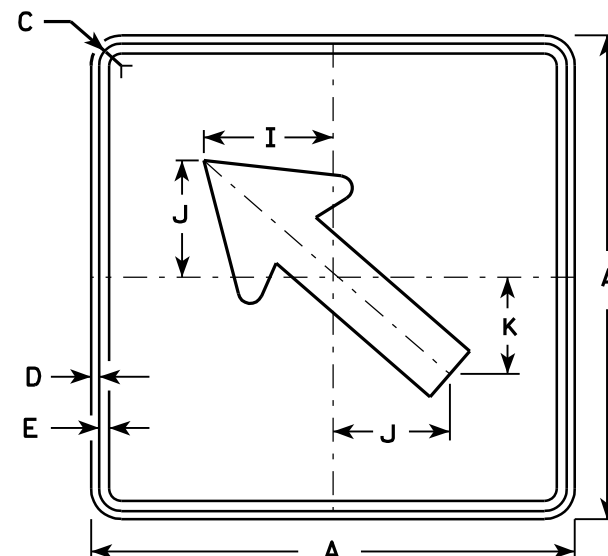
STANDARD SIGN	
M5-1 & M5-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 7/29/13	PLATE NO. M5-1.12



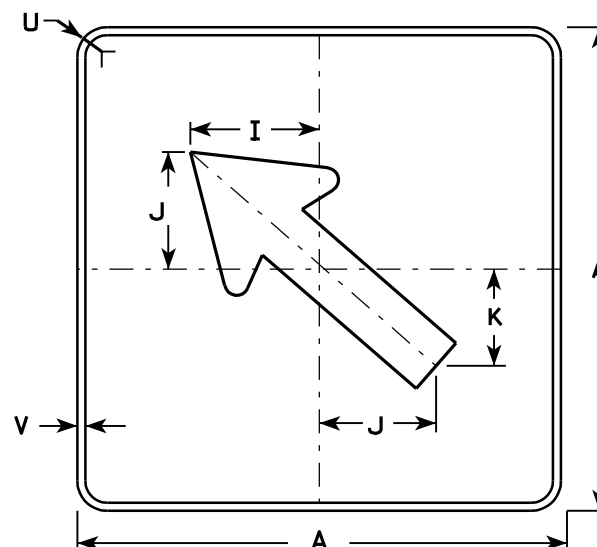
M6-1
MK6-1
MM6-1
MO6-1
MP6-1
MR6-1



MB6-1
MG6-1
MN6-1



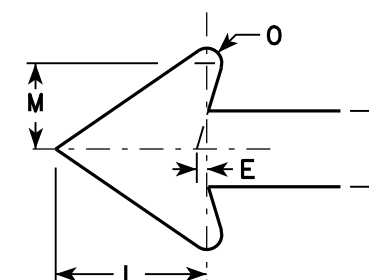
M6-2
MK6-2
MM6-2
MO6-2
MP6-2
MR6-2



MB6-2
MG6-2
MN6-2

NOTES

- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 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 - Type H Reflective Message - Black
 - MB6-1 and MB6-2 Background - Blue Message - White - Type H Reflective
 - MG6-1 and MG6-2 Background - Green Message - White - Type H Reflective
 - MK6-1 and MK6-2 Background - Green Message - White - Type H Reflective
 - MM6-1 and MM6-2 Background - White - Type H Reflective Message - Green
 - MN6-1 and MN6-2 Background - Brown Message - White - Type H Reflective
 - MO6-1 and MO6-2 Background - Orange - Type F Reflective Message - Black
 - MP6-1 and MP6-2 Background - White - Type H Reflective Message - Blue
 - MR6-1 and MR6-2 Background - Brown Message - Yellow - Type H Reflective

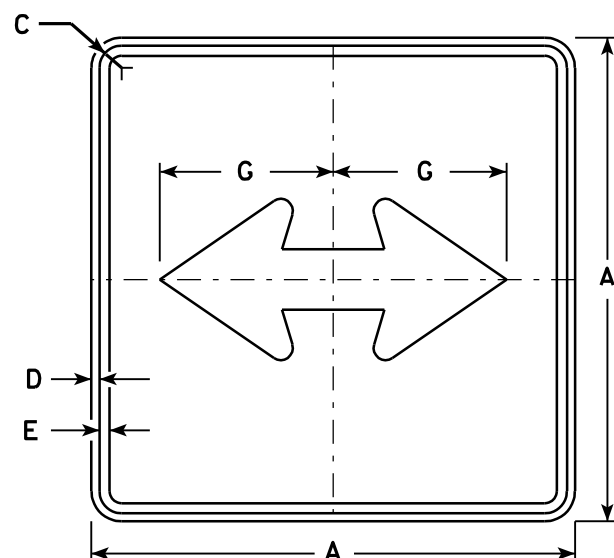


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	21		1 1/8	3/8	3/8		7 1/2	7 1/8	5 5/8	5	4 1/4	5 1/4	3	2 5/8	1/2						1 1/2	1/2					3.06
3	30		1 3/8	1/2	5/8		10 3/4	10 1/4	8	7 1/4	6	7 1/2	4 1/4	3 3/4	3/4						1 7/8	1/2					6.25
4	30		1 3/8	1/2	5/8		10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

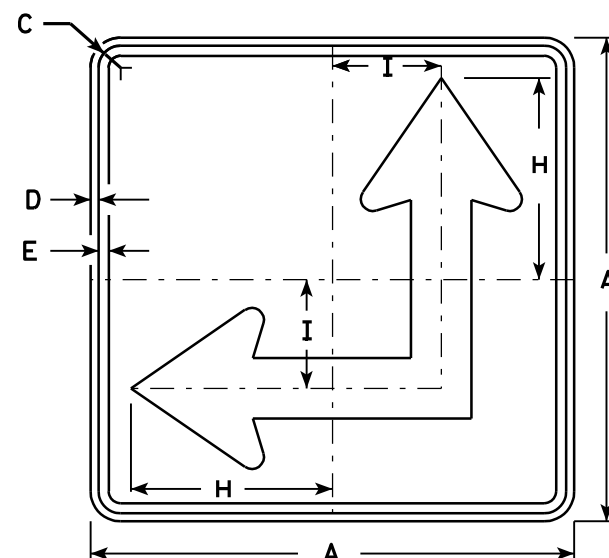
PROJECT NO: HWY: COUNTY: SHEET NO: 249 E

STANDARD SIGN
M6-1 & M6-2
SERIES

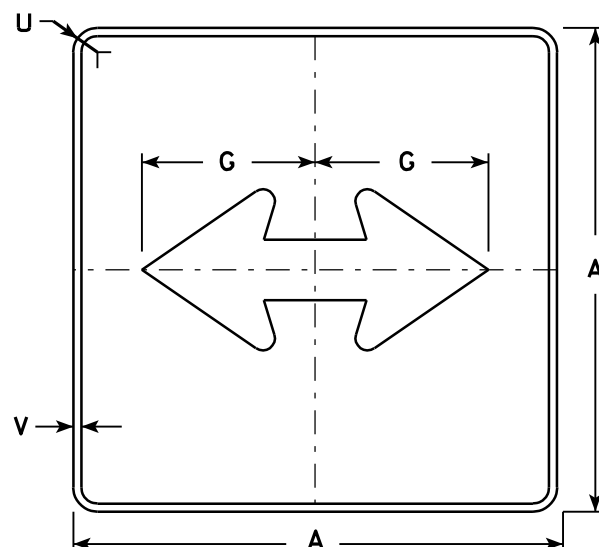
WISCONSIN DEPT OF TRANSPORTATION
APPROVED
Matthew R. Rauch
for State Traffic Engineer
DATE 7/29/13 PLATE NO. M6-1.13



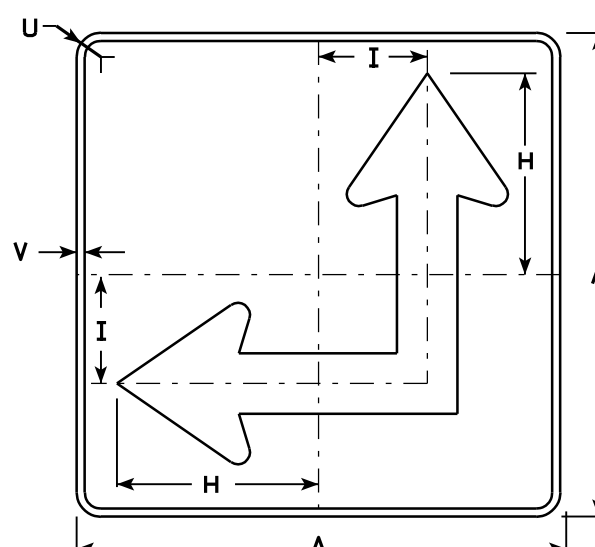
M6 - 4
MK6 - 4
MM6 - 4
MO6 - 4
MP6 - 4
MR6 - 4



M6 - 6
MK6 - 6
MM6 - 6
MO6 - 6
MP6 - 6
MR6 - 6



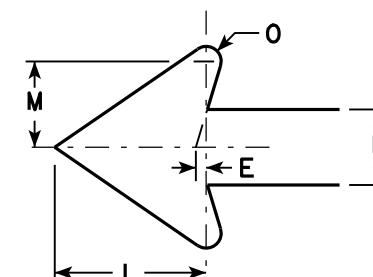
MB6 - 4
MG6 - 4
MN6 - 4



MB6 - 6
MG6 - 6
MN6 - 6

NOTES

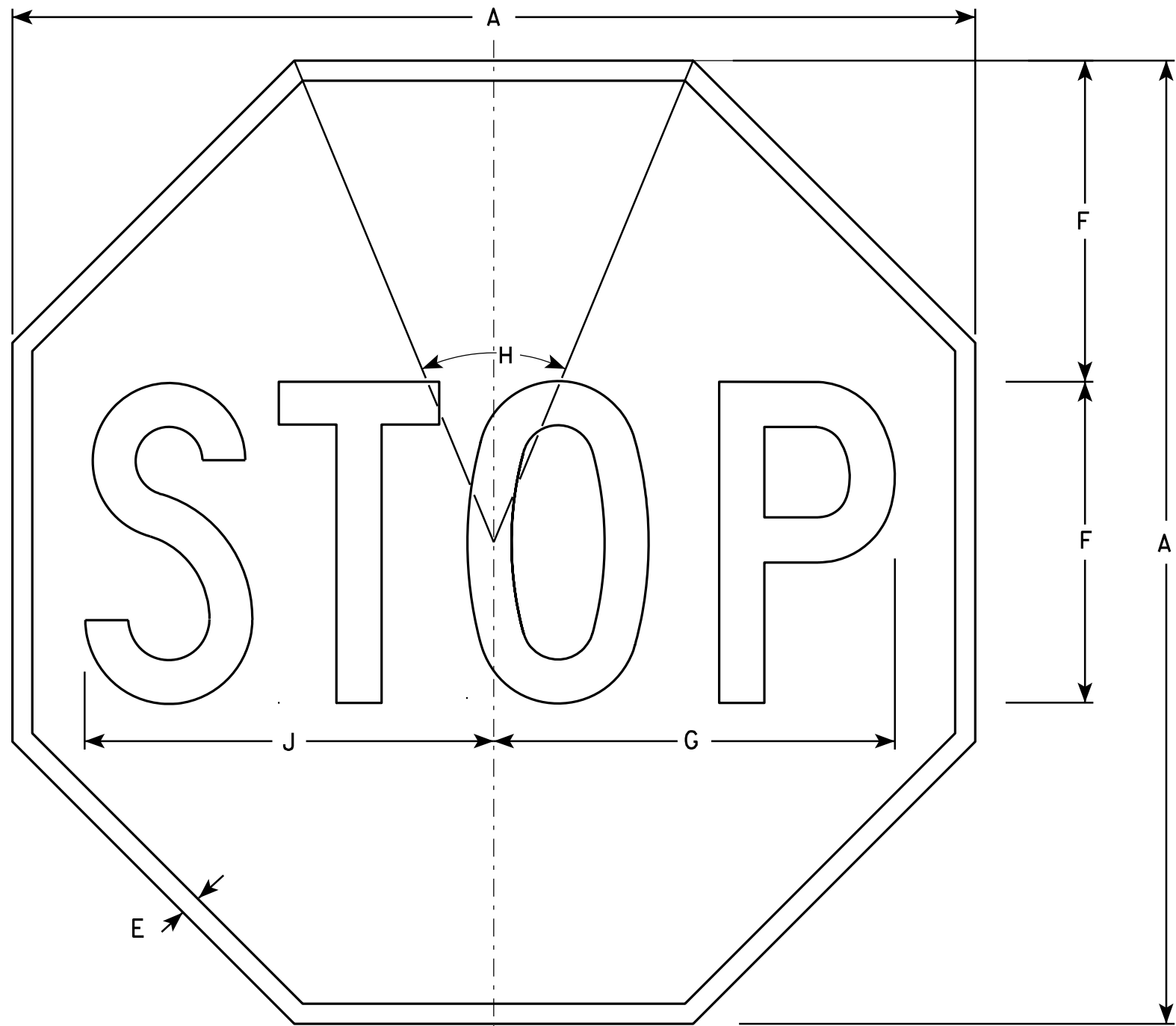
- Signs are Type II - See Note 4 - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - See Note 4
Message - See Note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- M6-4 and M6-6 Background - White - Type H Reflective
Message - Black
MB6-4 and MB6-6 Background - Blue
Message - White - Type H Reflective
MG6-4 and MG6-6 Background - Green
Message - White - Type H Reflective
MK6-4 and MK6-6 Background - Green
Message - White - Type H Reflective
MM6-4 and MM6-6 Background - White - Type H Reflective
Message - Green
MN6-4 and MN6-6 Background - Brown
Message - White - Type H Reflective
MO6-4 and MO6-6 Background - Orange - Type F Reflective
Message - Black
MP6-4 and MP6-6 Background - White - Type H Reflective
Message - Blue
MR6-4 and MR6-6 Background - Brown
Message - Yellow - Type H Reflective
- 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

STANDARD SIGN M6 - 4 & M6 - 6 SERIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 7/29/13	PLATE NO. M6-4.8

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 250	E
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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

R1-1

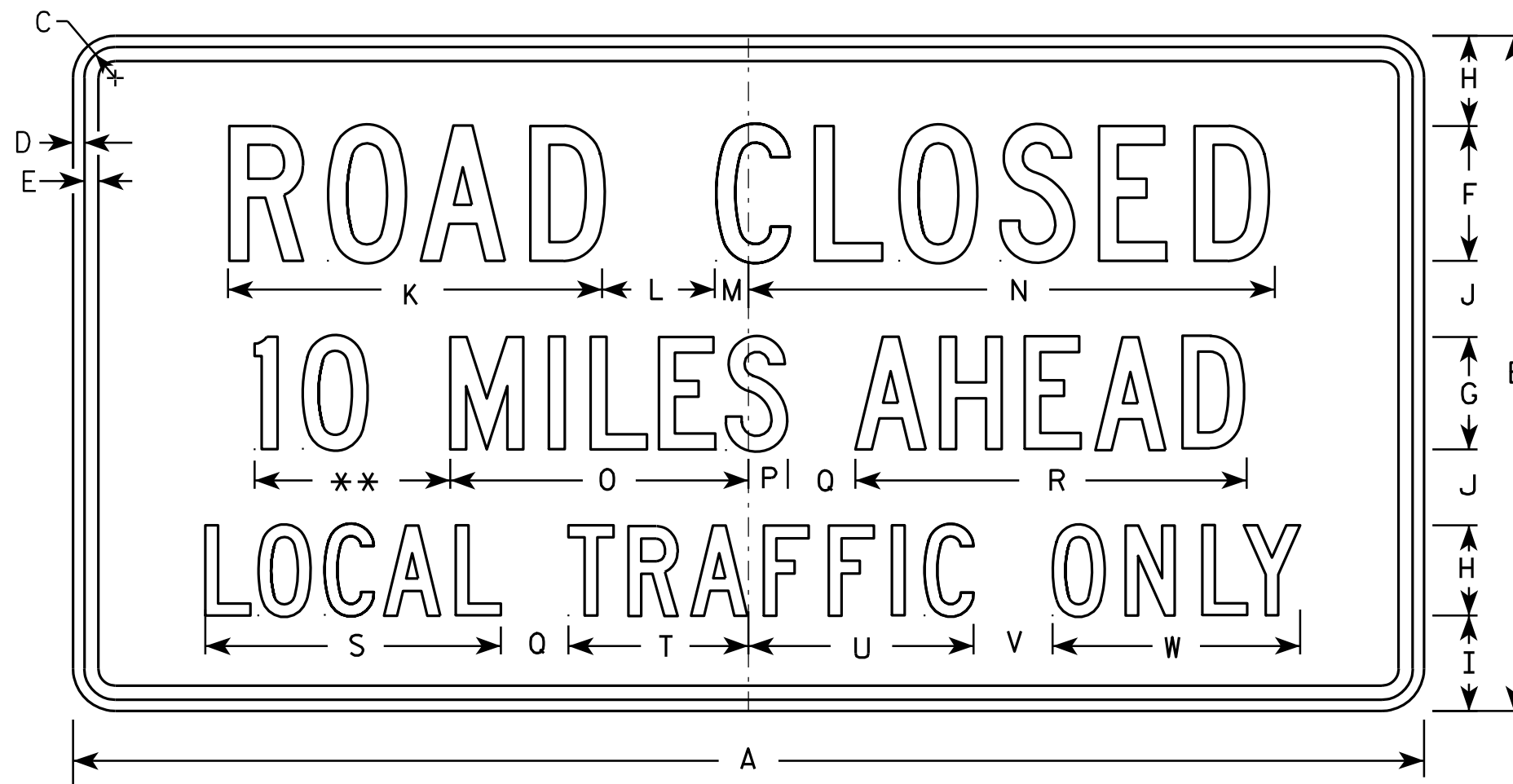
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24				3/8	8	10	45°		10 1/4																	3.31
2S	30				5/8	10	12 1/2	45°		12 3/4																	5.18
2M	36				3/4	12	15	45°		15 3/8																	7.46
3	36				3/4	12	15	45°		15 3/8																	7.46
4	48				1	16	20	45°		20 1/2																	13.25
5	48				1	16	20	45°		20 1/2																	13.25
6	18				3/8	6	7 3/4	45°		7 3/4																	1.86
7	12				1/4	4	5	45°		5 1/8																	0.78

STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/03/10 PLATE NO. R1-1.12



R11-3

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - 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 and optically adjust spacing to achieve proper balance.

** See Note 5

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 3/8	1/2	5/8	4	3	2 1/2	2	2	11 1/8	3	1 1/8	15 1/4	8	1 1/2	2	10 3/4	8 3/8	4 3/4	6 1/2	2	6 3/4				4.5
2S	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	16 5/8	5	1 1/2	23	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11				12.5
2M	60	30	1 3/8	1/2	5/8	6	5	4	4 1/4	3 3/8	16 5/8	5	1 1/2	23	13 1/4	1 3/4	3	17 3/8	13 1/8	8	10	3 1/2	11				12.5
3																											
4																											
5																											

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 4/1/11 PLATE NO. R11-3.6

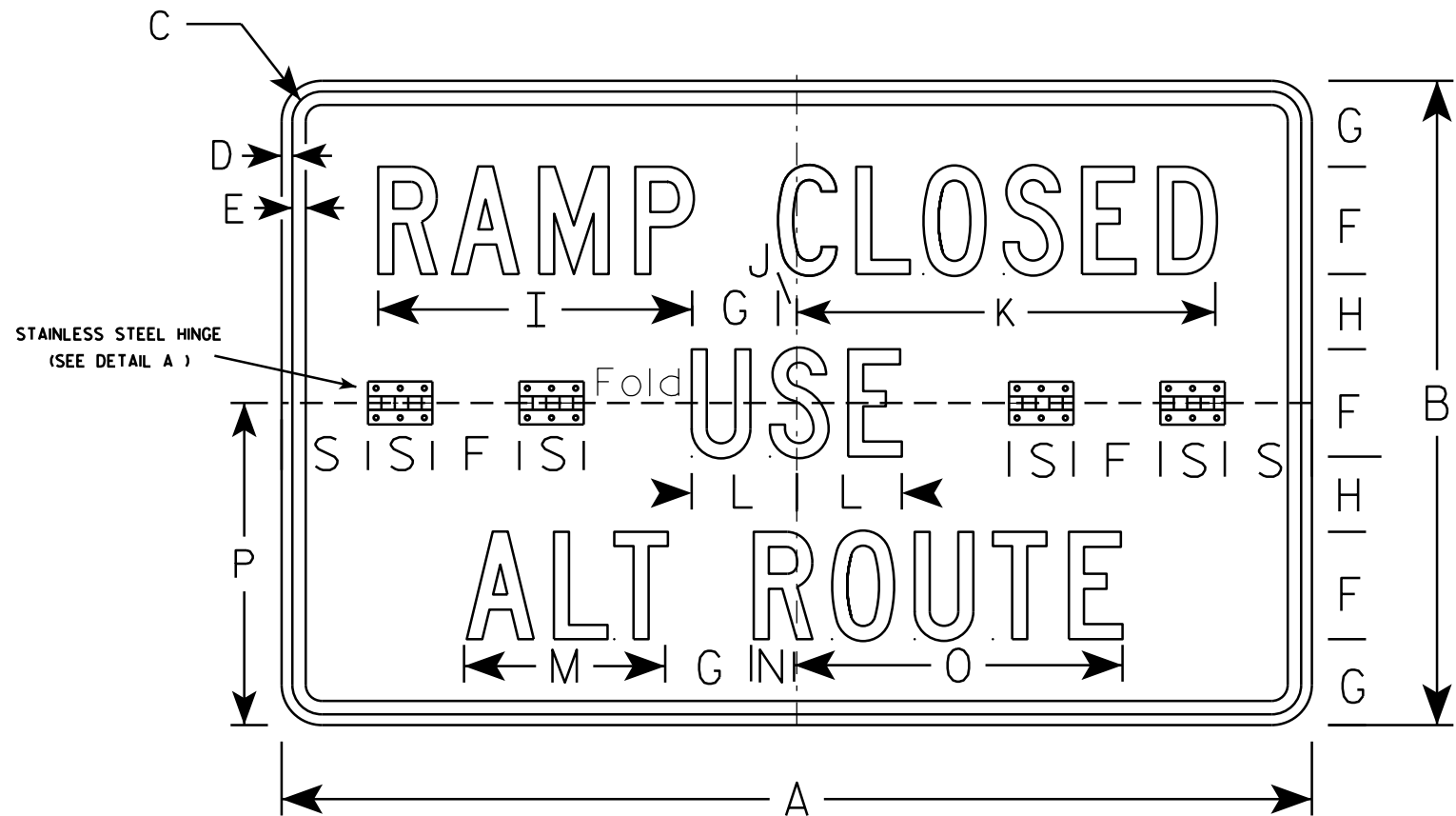
PROJECT NO:

HWY:

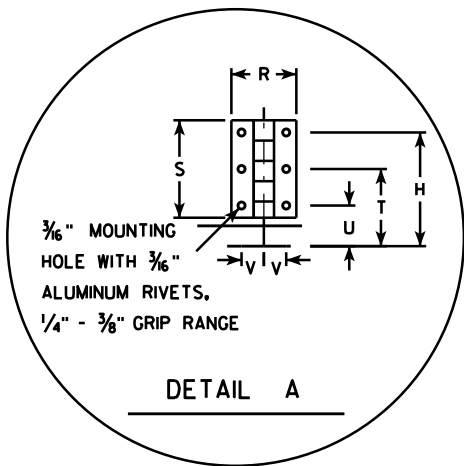
COUNTY:

SHEET NO: 252

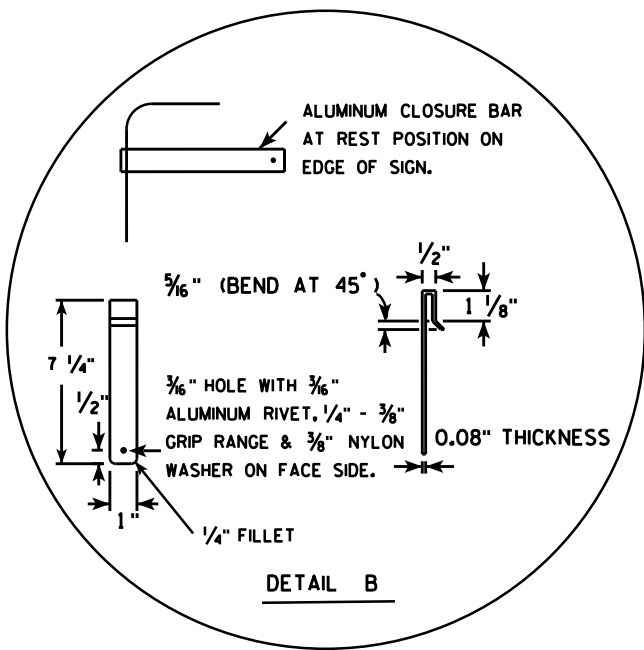
E



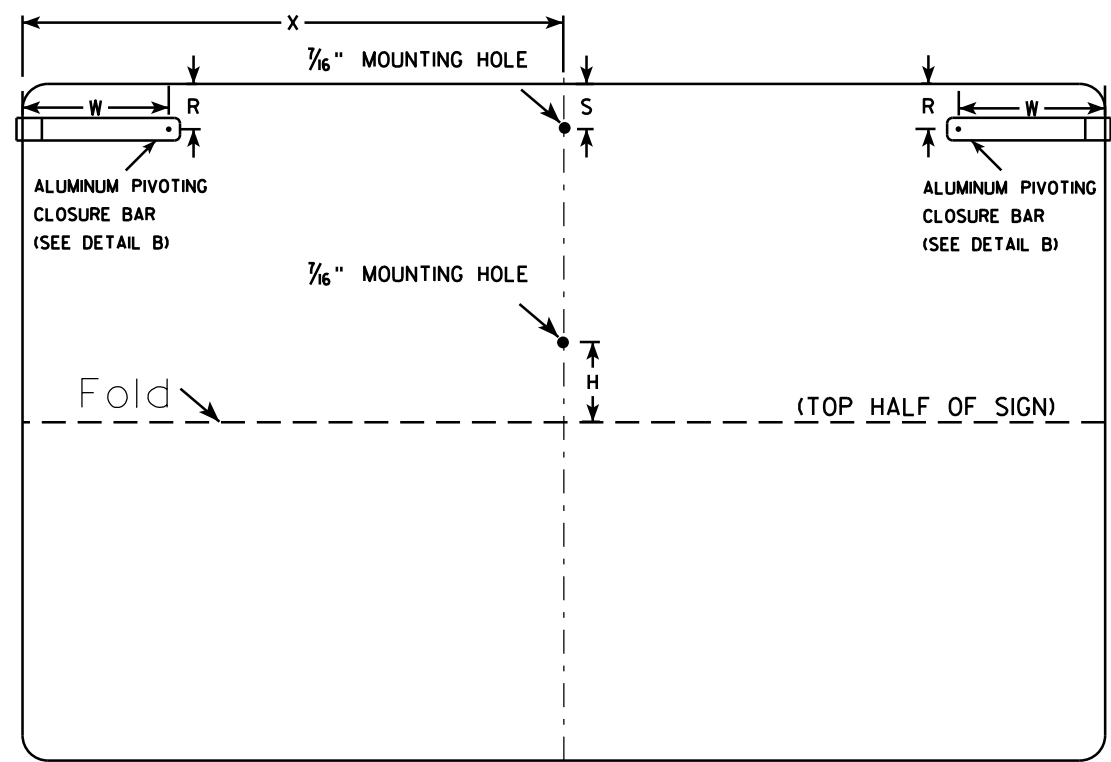
R11-54F



DETAIL A



DETAIL B



(BACK VIEW)

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - WHITE
Message - BLACK
3. Message Series - C
4. Sign Base Material shall be aluminum, corners and borders shall be rounded.
5. All hardware used on the folding sign installation shall conform to 637.2.4 of the WIS DOT Standard Specification.
6. Refer to plate A5-3A for sign blank layout.

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	½	5⁄8	5	4	3 ½	14 5⁄8	7⁄8	19 ½	4 7⁄8	9 3⁄8	2	15 ¼	15		2	3	2 5⁄8	1 ¼	11⁄16	6 ½	24			10.0
2M	48	30	1 3⁄8	½	5⁄8	5	4	3 ½	14 5⁄8	7⁄8	19 ½	4 7⁄8	9 3⁄8	2	15 ¼	15		2	3	2 5⁄8	1 ¼	11⁄16	6 ½	24			10.0
3																											
4																											
5																											

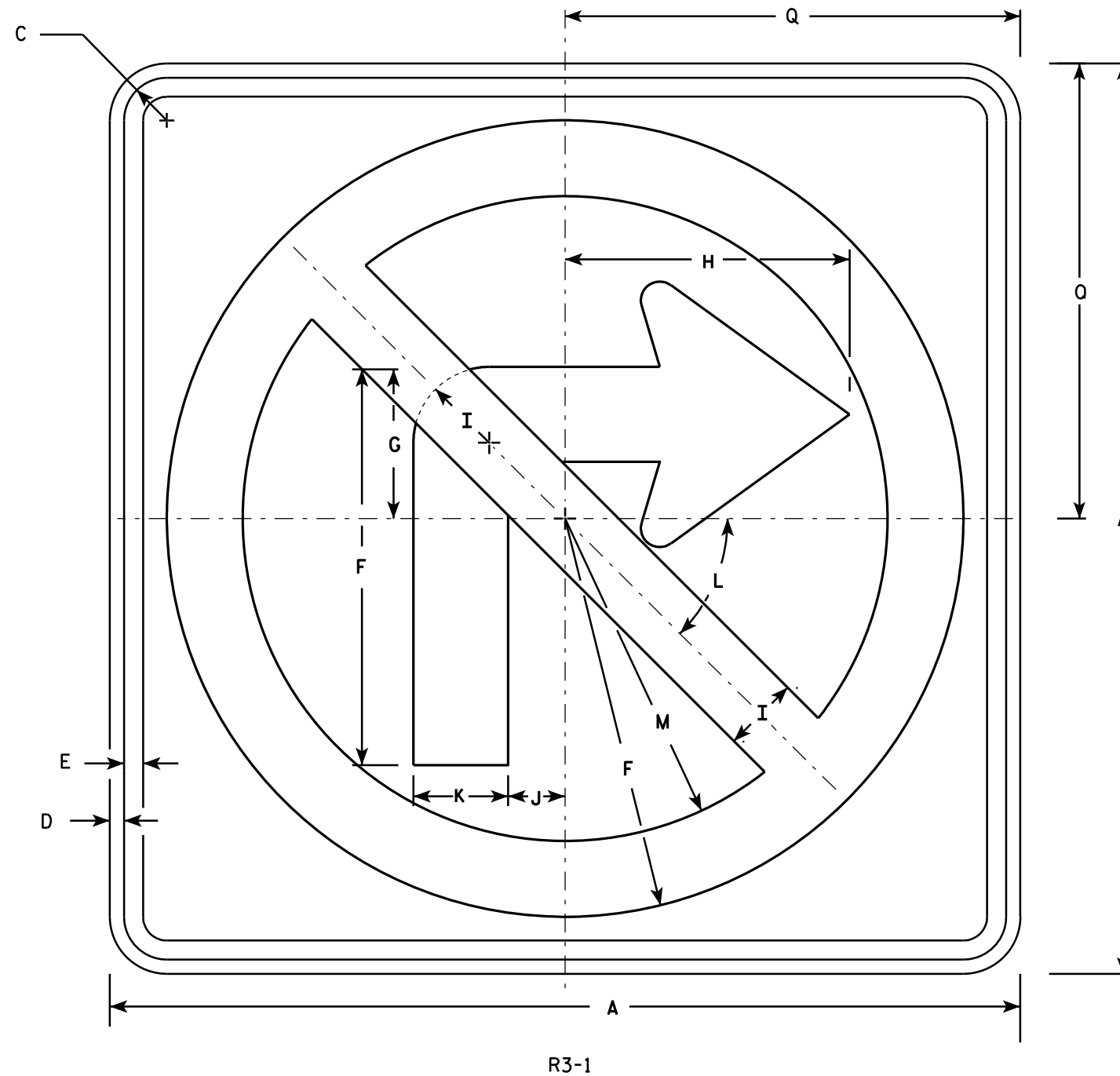
PROJECT NO: _____ HWY: _____ COUNTY: _____ SHEET NO: _____ E

STANDARD SIGN
R11-54F

WISCONSIN DEPT OF TRANSPORTATION

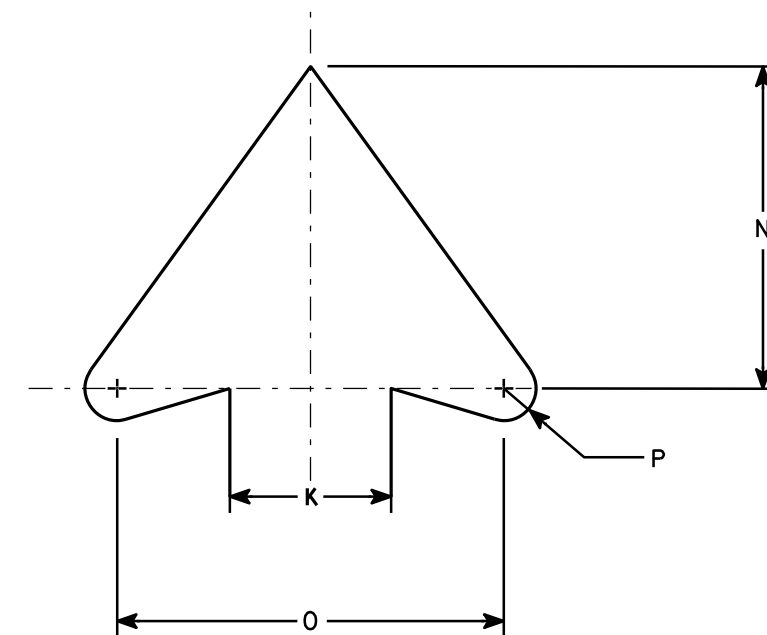
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/28/14 PLATE NO. 253 11-54F.3



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - 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	12										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	12										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	18										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	18										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	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

STANDARD SIGN

R3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/08/10 PLATE NO. R3-1.5

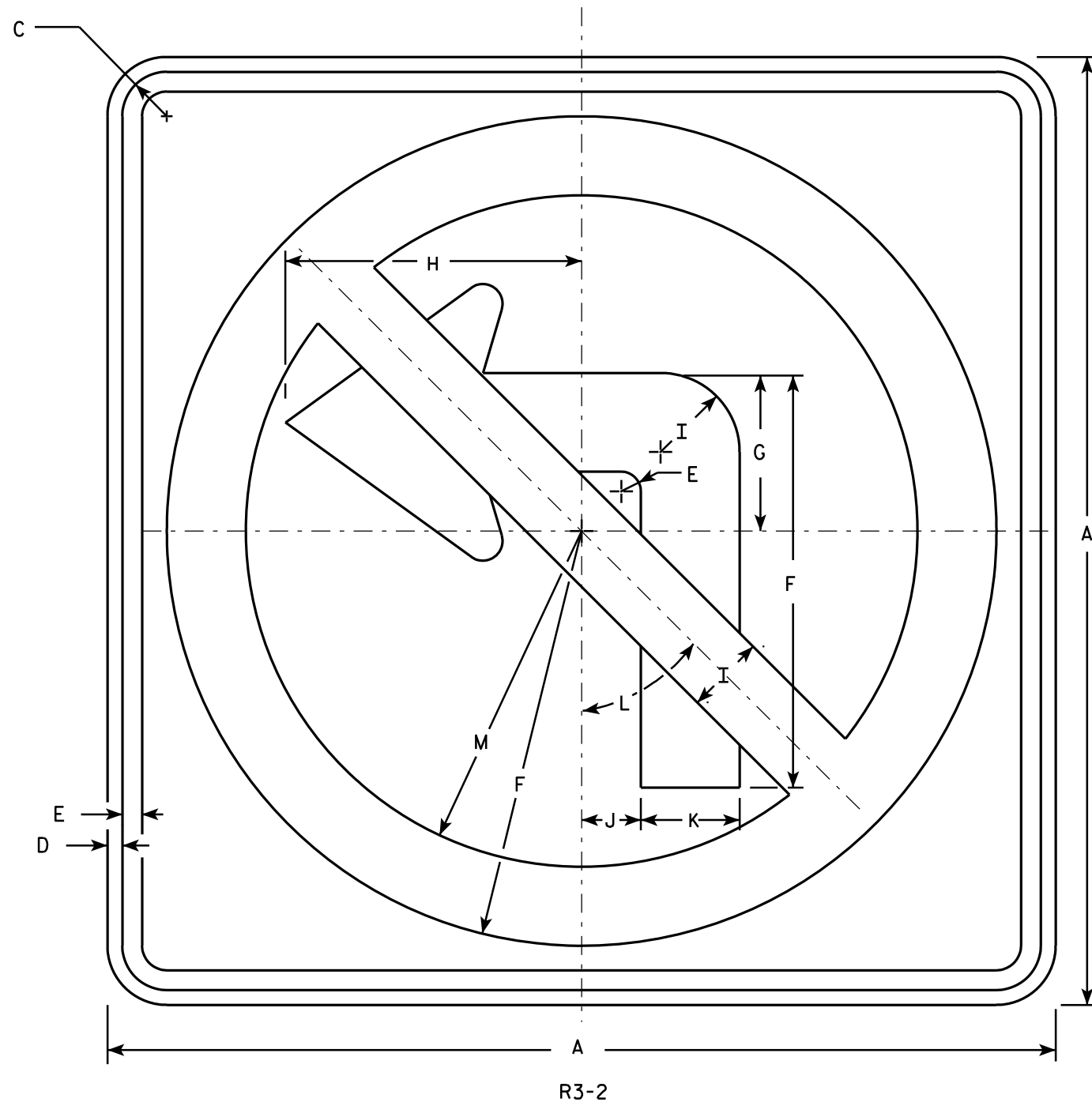
PROJECT NO:

HWY:

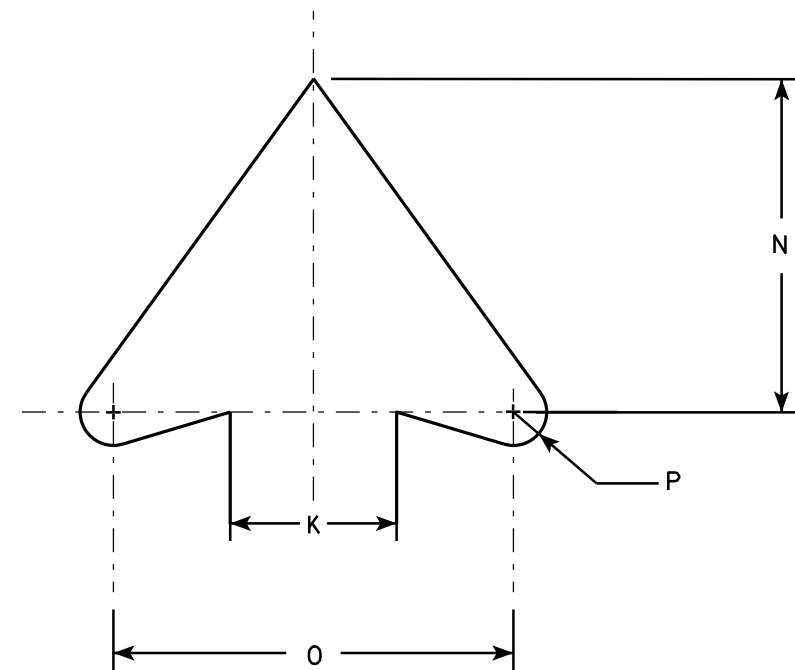
COUNTY:

SHEET NO: 254

E



- NOTES**
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
 2. Color:
Background - White
Message - 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

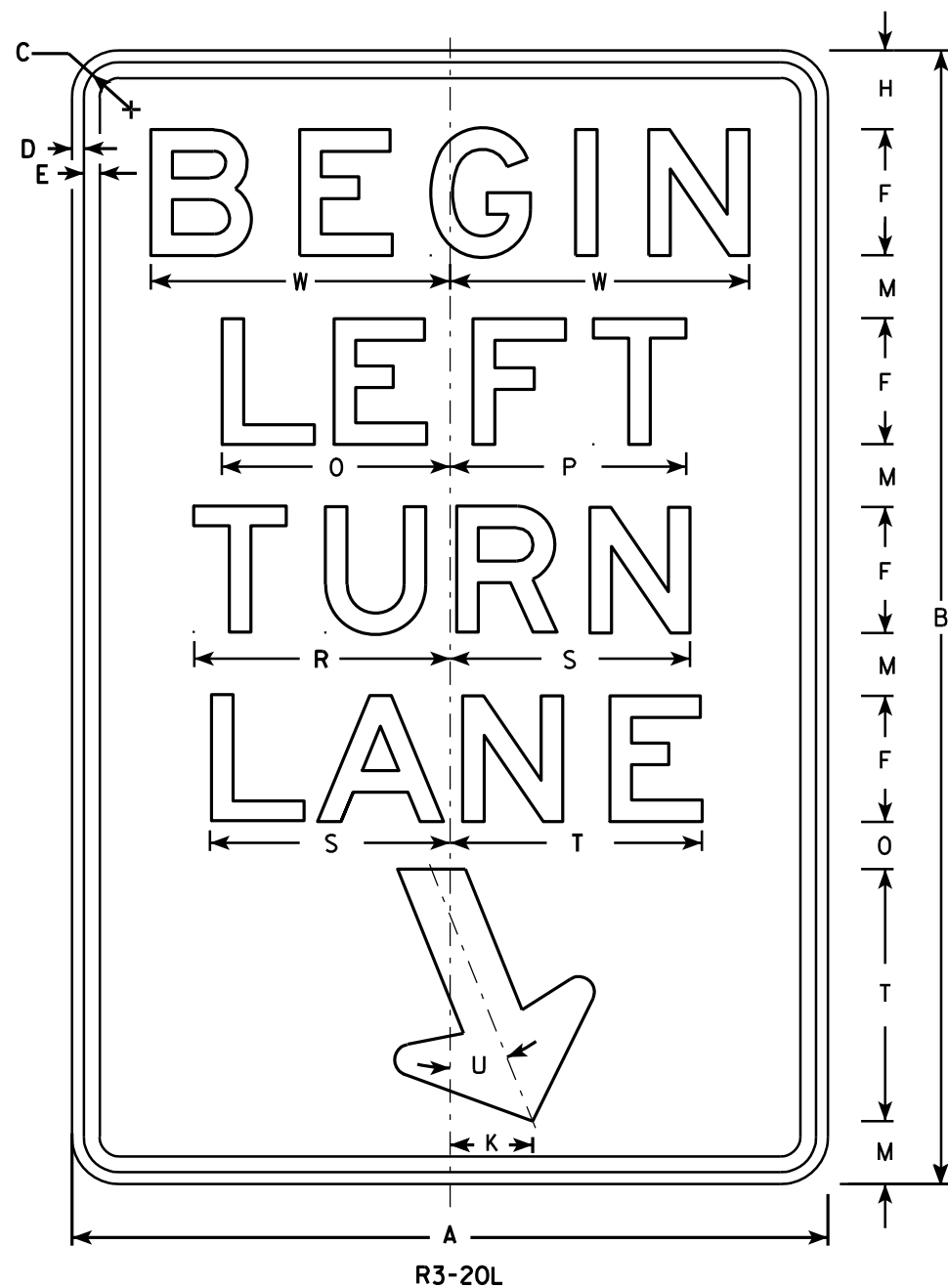
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/8	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		1 5/8	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	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

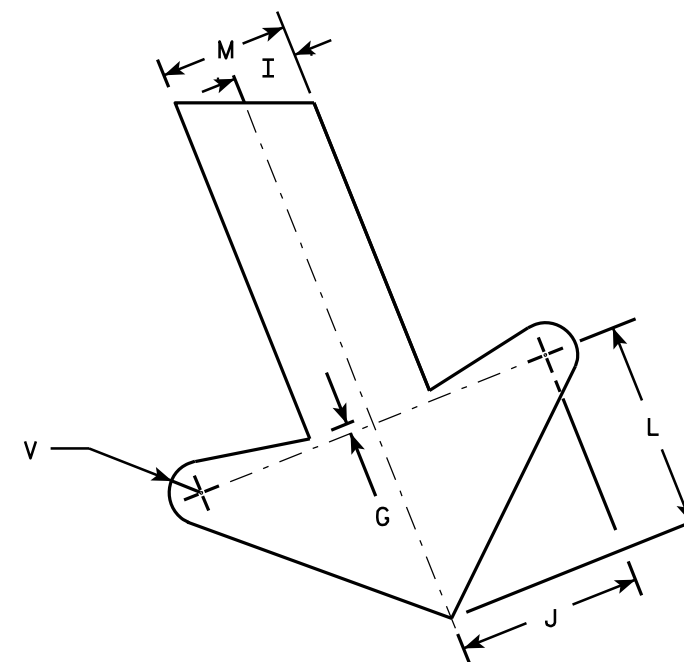
DATE 12/08/10 PLATE NO. R3-2.10



R3-20L

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
2M	24	36	1 1/8	3/8	1/2	4	1/4	2 1/2	1	2 7/8	2 5/8	3 1/4	2	1 1/2	7 1/4	7 1/2		8 1/8	7 5/8	8	22°	1/2	9 1/2				6.0
3	36	54	1 3/4	1/2	5/8	6	3/8	3 3/4	1 1/2	4 1/4	4	4 7/8	3	2 1/4	10 7/8	11 1/4		12 1/4	11 1/2	12	22°	3/4	13 1/4				13.5
4																											
5																											

STANDARD SIGN
R3-20L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

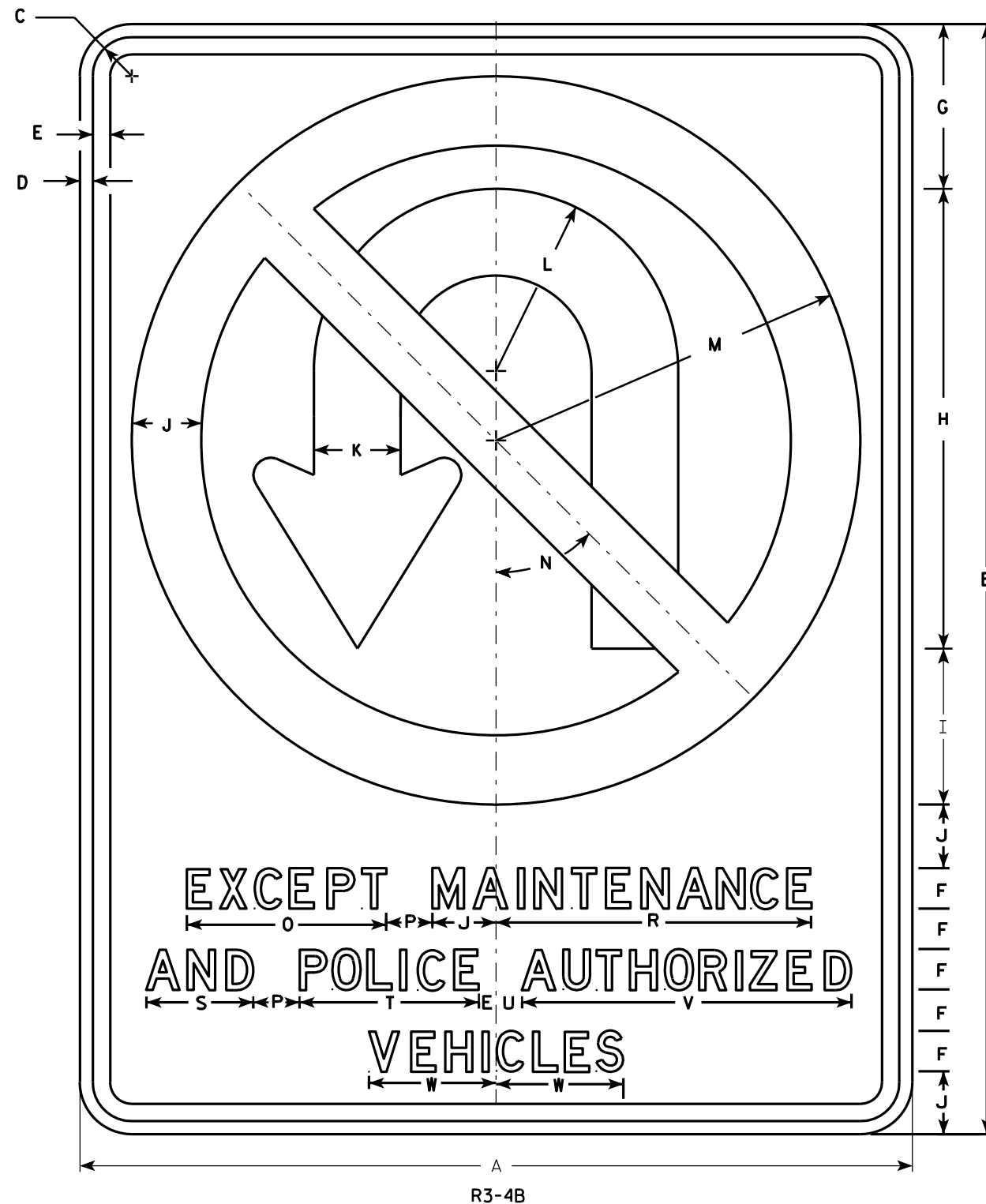
PROJECT NO:

HWY:

COUNTY:

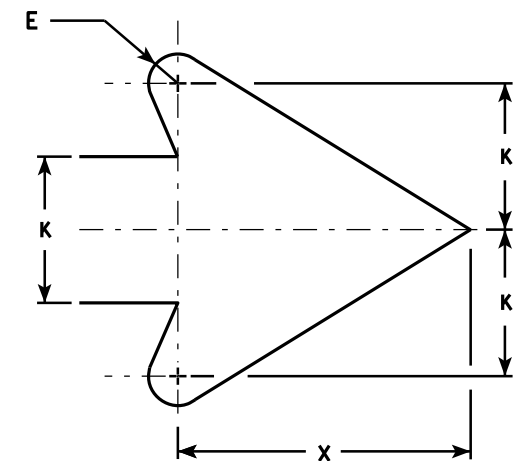
SHEET NO: 256

E



NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - 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																											
2S																											
2M																											
3																											
4	36	48	1 5⁄8	5⁄8	3⁄4	1 3⁄4	7 1⁄8	19 7⁄8	6 3⁄4	2 3⁄4	3 3⁄4	7 7⁄8	15 3⁄4	45°	8 5⁄8	2		13 5⁄8	4 5⁄8	7 3⁄4	1 1⁄8	14 1⁄4	5 1⁄2	7 5⁄8			12.0
5	36	48	1 5⁄8	5⁄8	3⁄4	1 3⁄4	7 1⁄8	19 7⁄8	6 3⁄4	2 3⁄4	3 3⁄4	7 7⁄8	15 3⁄4	45°	8 5⁄8	2		13 5⁄8	4 5⁄8	7 3⁄4	1 1⁄8	14 1⁄4	5 1⁄2	7 5⁄8			12.0

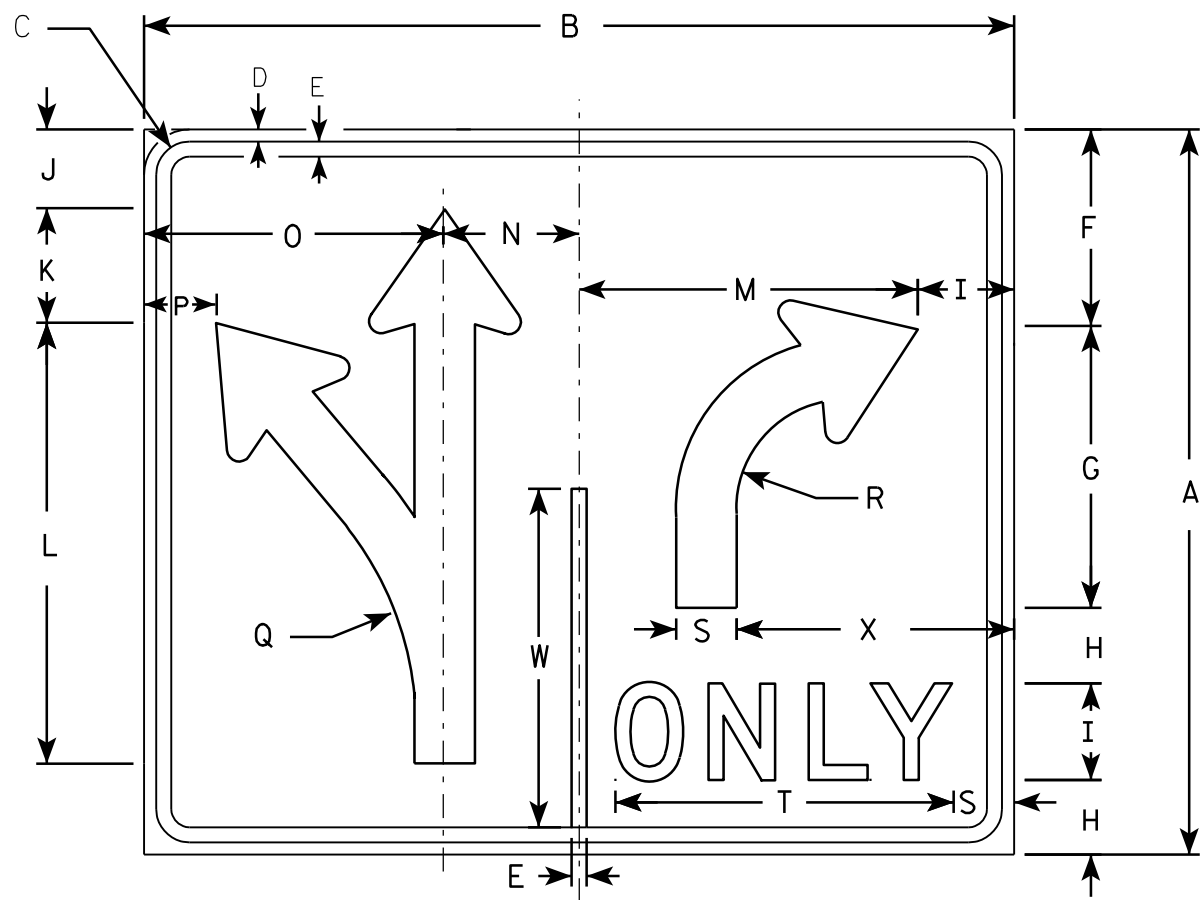
STANDARD SIGN R3-4B

WISCONSIN DEPT OF TRANSPORTATION

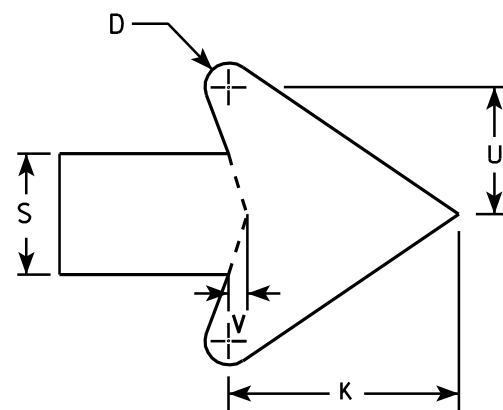
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/17/2011 PLATE NO. R3-4B.2

PROJECT NO: HWY: COUNTY: SHEET NO: 257



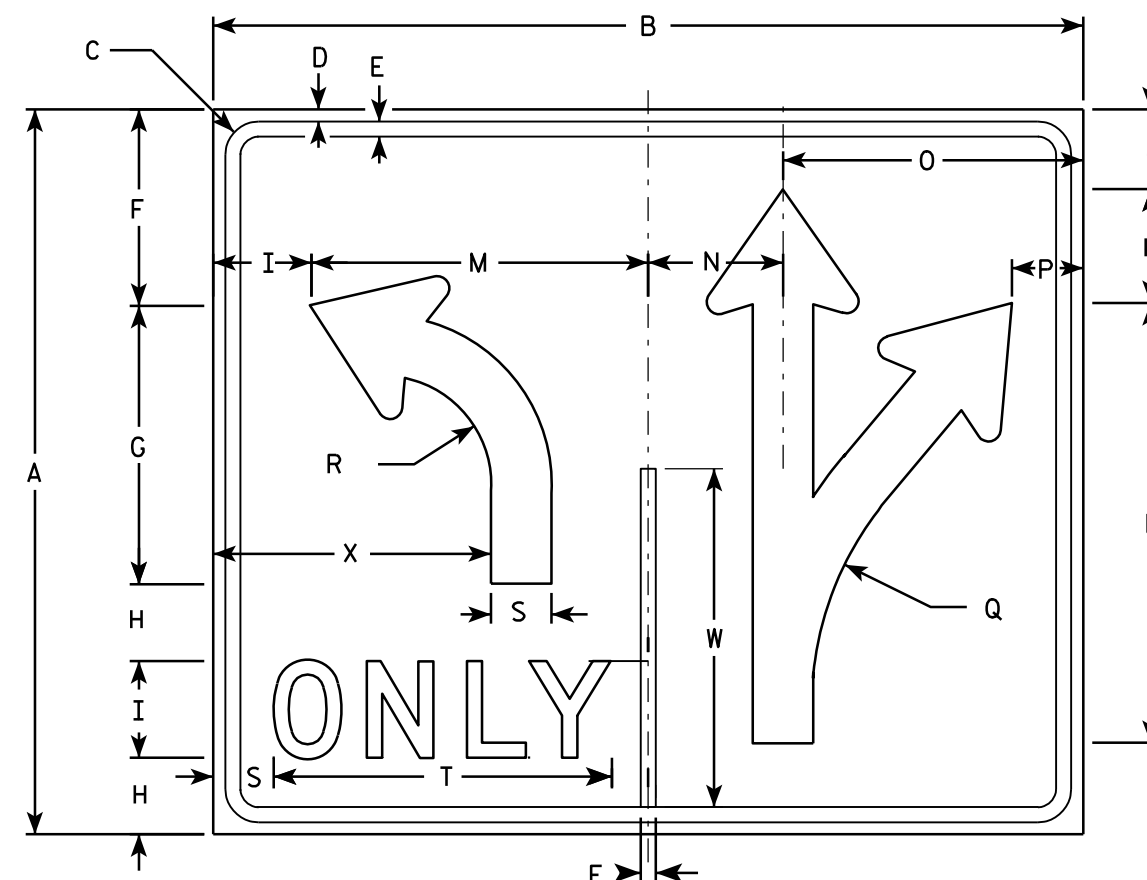
R3-8



ARROW DETAIL

NOTES

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



R3-8A

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30	36	1 ³ / ₈	¹ / ₂	⁵ / ₈	8 ¹ / ₈	11 ⁵ / ₈	3 ¹ / ₈	4	3 ¹ / ₄	4 ³ / ₄	18 ¹ / ₄	14	5 ⁵ / ₈	12 ³ / ₈	3	13 ¹ / ₄	4 ¹ / ₂	2 ¹ / ₂	14	2 ⁵ / ₈	³ / ₈	14	11 ¹ / ₂			7.5
2M	30	36	1 ³ / ₈	¹ / ₂	⁵ / ₈	8 ¹ / ₈	11 ⁵ / ₈	3 ¹ / ₈	4	3 ¹ / ₄	4 ³ / ₄	18 ¹ / ₄	14	5 ⁵ / ₈	12 ³ / ₈	3	13 ¹ / ₄	4 ¹ / ₂	2 ¹ / ₂	14	2 ⁵ / ₈	³ / ₈	14	11 ¹ / ₂			7.5
3																											
4	48	54	2 ¹ / ₄	³ / ₄	1	13 ¹ / ₄	18 ¹ / ₂	5 ¹ / ₈	6	5 ¹ / ₄	7 ¹ / ₈	29 ¹ / ₈	21	8 ³ / ₈	18 ⁵ / ₈	4 ³ / ₈	21 ⁷ / ₈	7 ¹ / ₄	3 ³ / ₄	20 ⁵ / ₈	4	⁵ / ₈	22 ³ / ₈	17 ¹ / ₄			18.0
5	48	54	2 ¹ / ₄	³ / ₄	1	13 ¹ / ₄	18 ¹ / ₂	5 ¹ / ₈	6	5 ¹ / ₄	7 ¹ / ₈	29 ¹ / ₈	21	8 ³ / ₈	18 ⁵ / ₈	4 ³ / ₈	21 ⁷ / ₈	7 ¹ / ₄	3 ³ / ₄	20 ⁵ / ₈	4	⁵ / ₈	22 ³ / ₈	17 ¹ / ₄			18.0

STANDARD SIGN R3-8 & R3-8A

WISCONSIN DEPT OF TRANSPORTATION

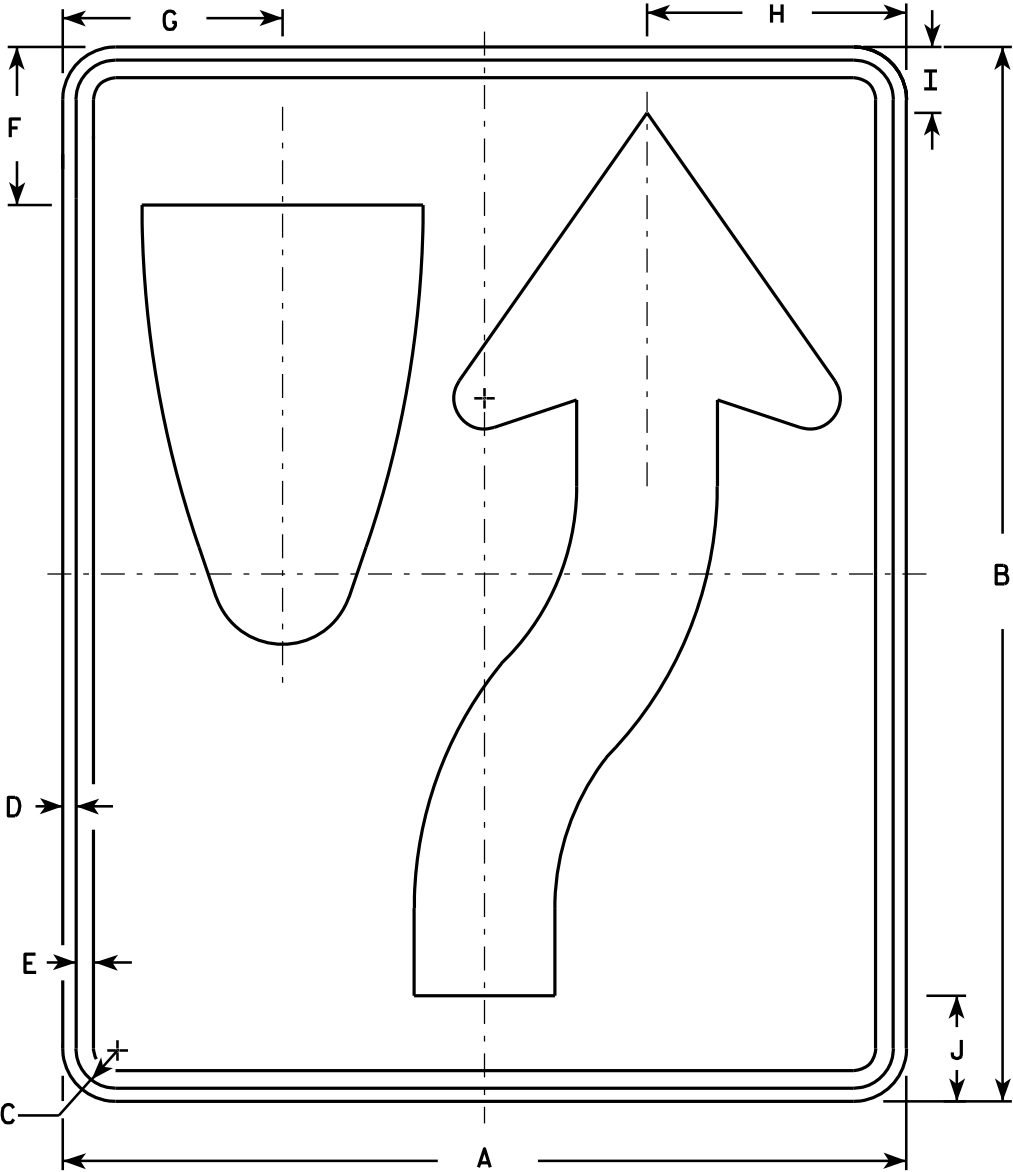
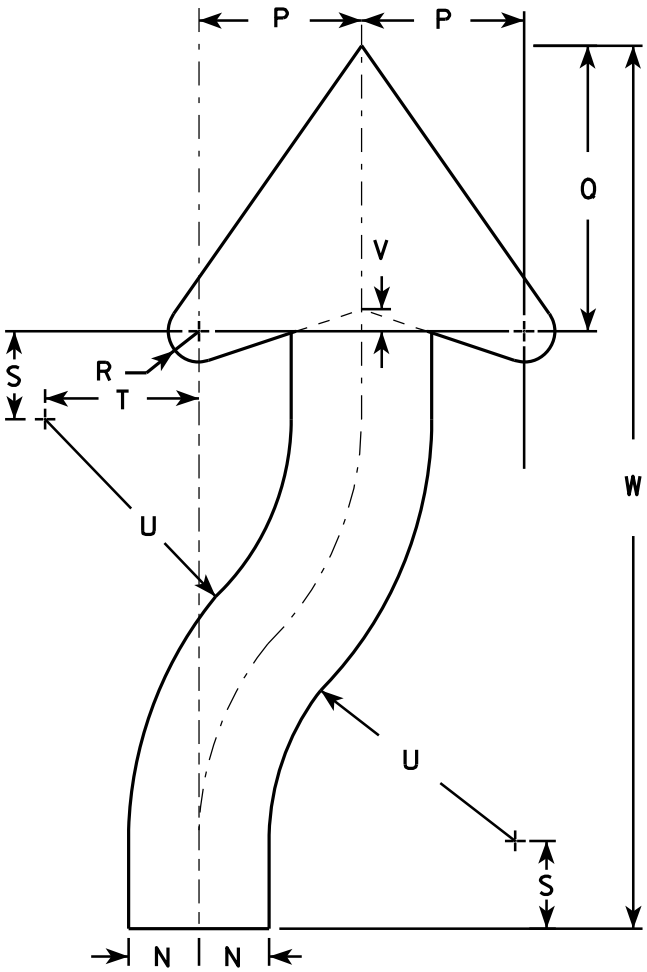
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/2011 PLATE NO. R3-8.5

PROJECT NO: HWY: COUNTY: SHEET NO: 258 E

NOTES

1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition. material is plywood but borders shall be rounded
2. Color:
Background - White
Message - Black
3. Corners may be square or rounded when base as shown. When base material is metal, the corners and borders shall be rounded.
4. R4-8 is the same as R4-7 except Legend is reversed.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/8	3/8	1/2	3 3/8	4 3/4	5 1/2	1 3/8	2 1/4	6	3	9 3/8	1 1/2	22 1/2	3 1/2	6 1/8	5/8	1 7/8	3 1/4	6 3/4	1/2	20 3/8				3.0
2S	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
2M	24	30	1 1/8	3/8	1/2	4 1/2	6 1/4	7 3/8	1 7/8	3	8	4	12 1/2	2	30	4 5/8	8 1/8	7/8	2 1/2	4 3/8	9	5/8	25 1/8				5.0
3	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
4	36	48	1 3/4	1/2	5/8	6 3/4	9 3/8	11 1/8	2 7/8	4 1/2	12	6	18 3/4	3	45	6 7/8	12 1/4	1 1/4	3 3/4	6 5/8	13 1/2	1	40 3/4				12.0
5	48	60	2 1/4	3/4	1	9	12 1/2	14 3/4	3 3/4	6	16	8	25	4	60	9 1/4	16 1/4	1 5/8	5	8 3/4	18	1 1/4	50 1/4				20.0

STANDARD SIGN
R4-7 & R4-8

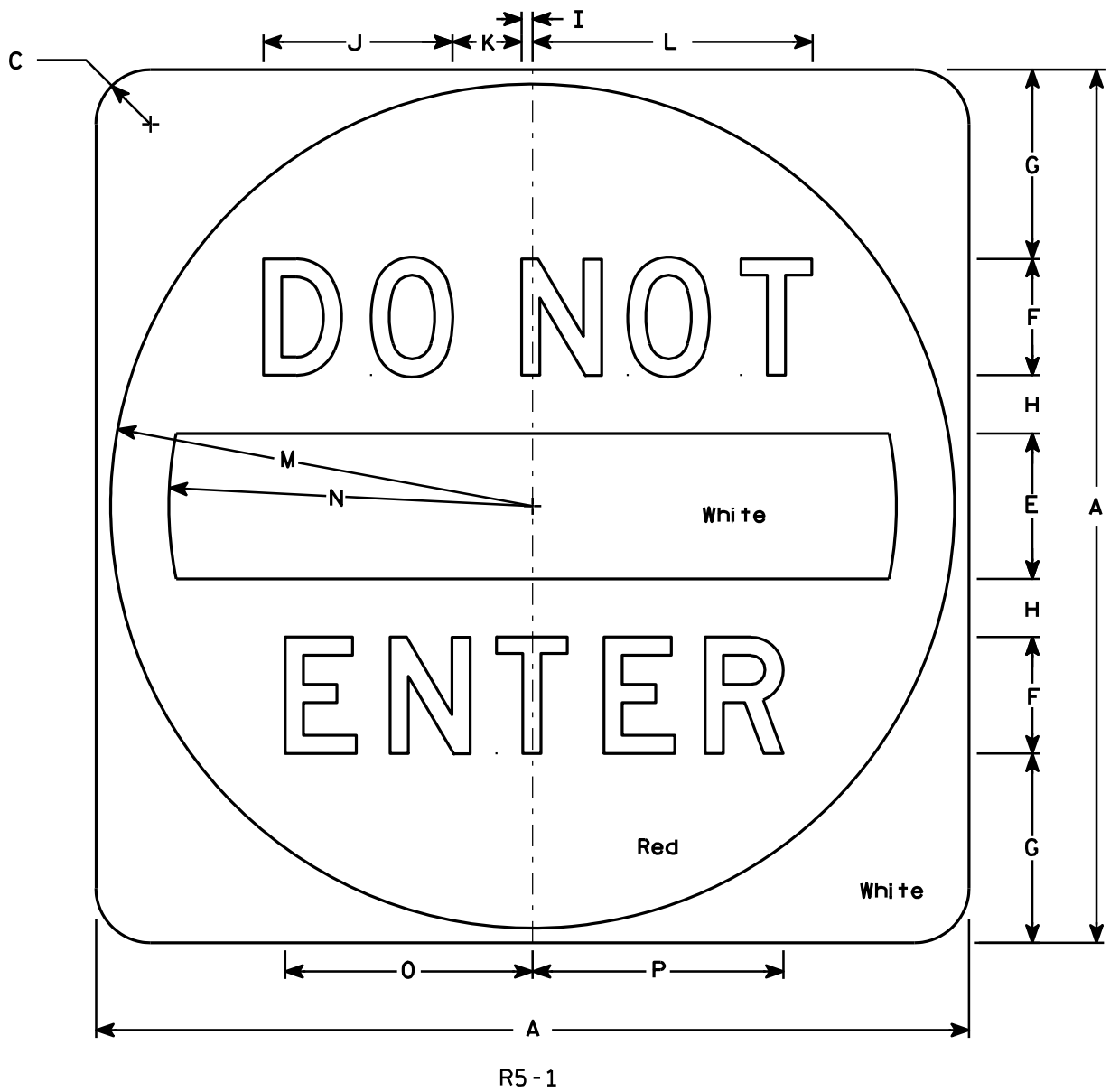
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/25/2011 PLATE NO. R4-7.8

NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:
 - Background - See detail
 - Message - White - Type H Reflective
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but when base material is metal, the corners shall be rounded.



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	30		1 7⁄8		5	4	6 1⁄2	2	3⁄8	6 1⁄2	2 3⁄8	9 5⁄8	14 1⁄2	12 1⁄2	8 1⁄2	8 5⁄8											6.26
2M	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
3	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
4	36		2 1⁄4		6	5	7 1⁄2	2 1⁄2	1⁄2	8 1⁄8	3	12 1⁄8	17 1⁄2	15	10 5⁄8	10 3⁄4											9.0
5	48		3		8	6	11	3	5⁄8	9 3⁄4	3 5⁄8	14 1⁄2	23 1⁄2	20	12 3⁄4	12 7⁄8											16.0

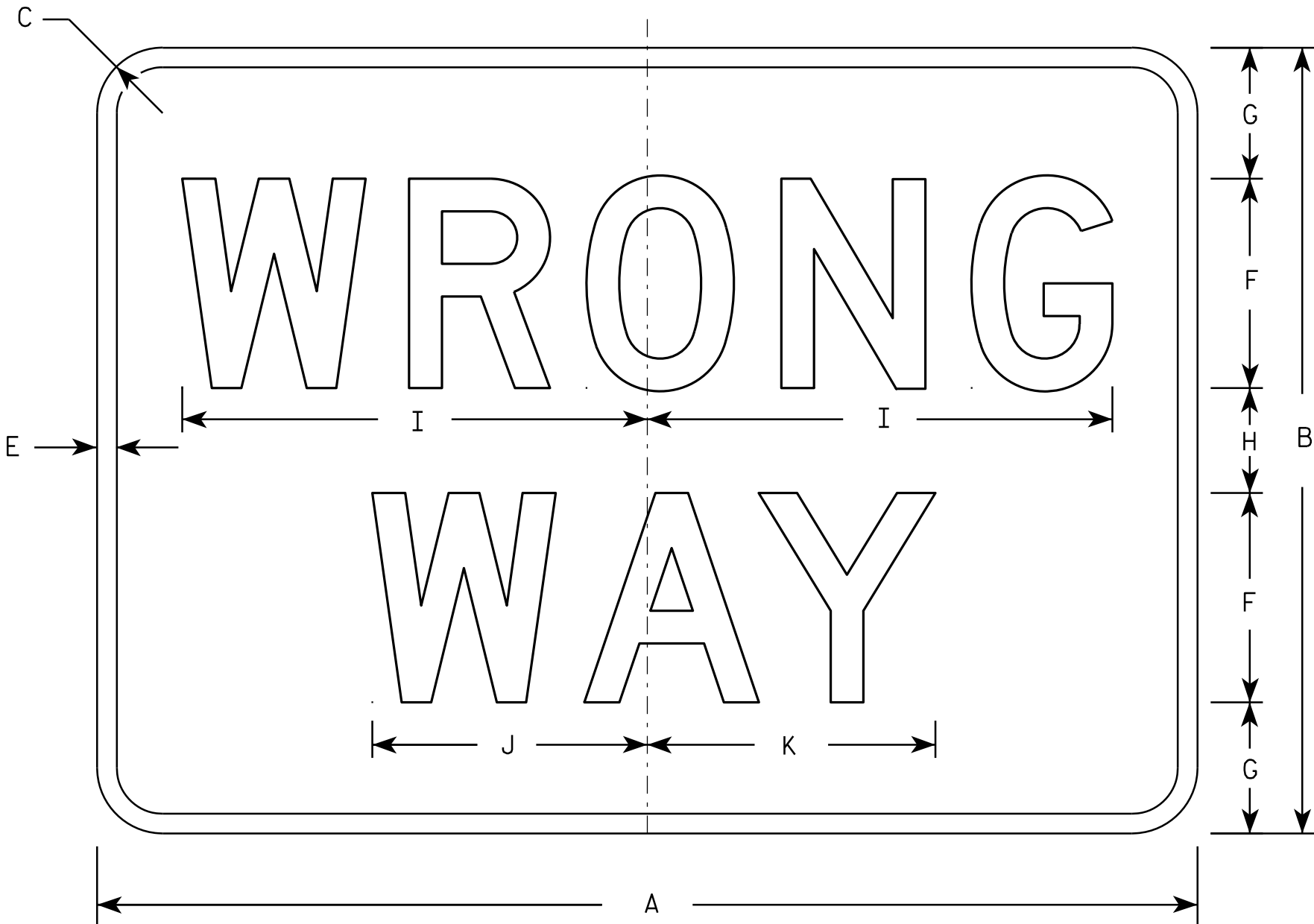
STANDARD SIGN

R5 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/17/10 PLATE NO. R5-1.15



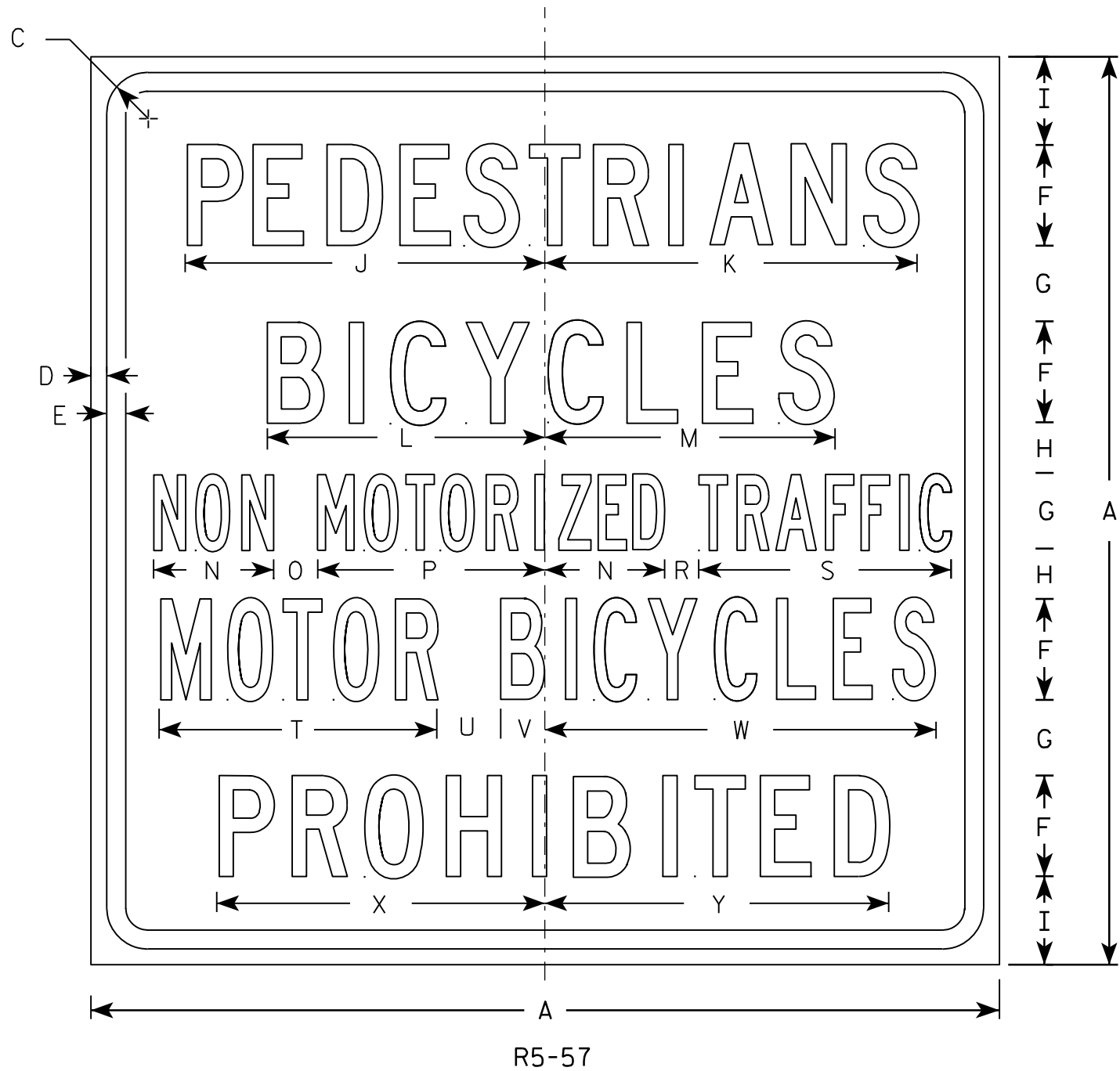
R5-1A

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	2 1/2		3/4	8	5	4	17 3/4	10 1/2	11																8.75

STANDARD SIGN R5-1A	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 12/17/10	PLATE NO. R5-1A.2

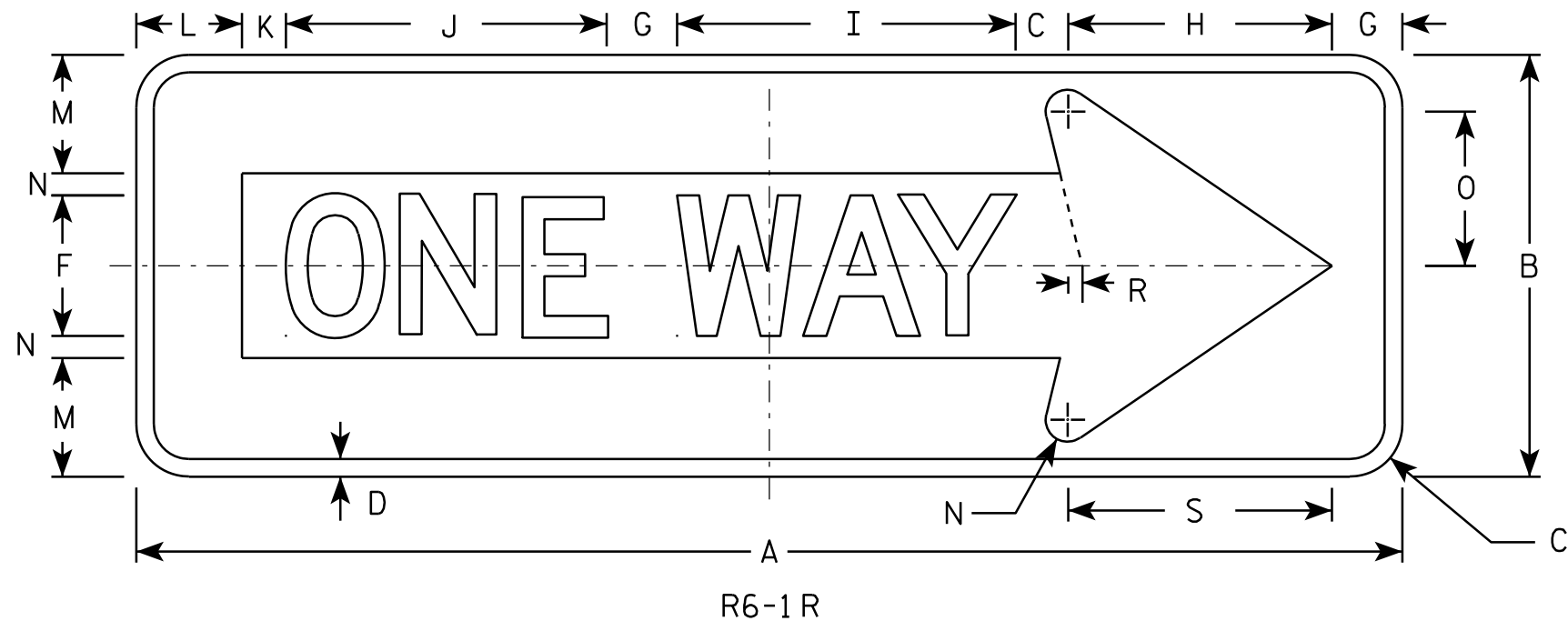


NOTES

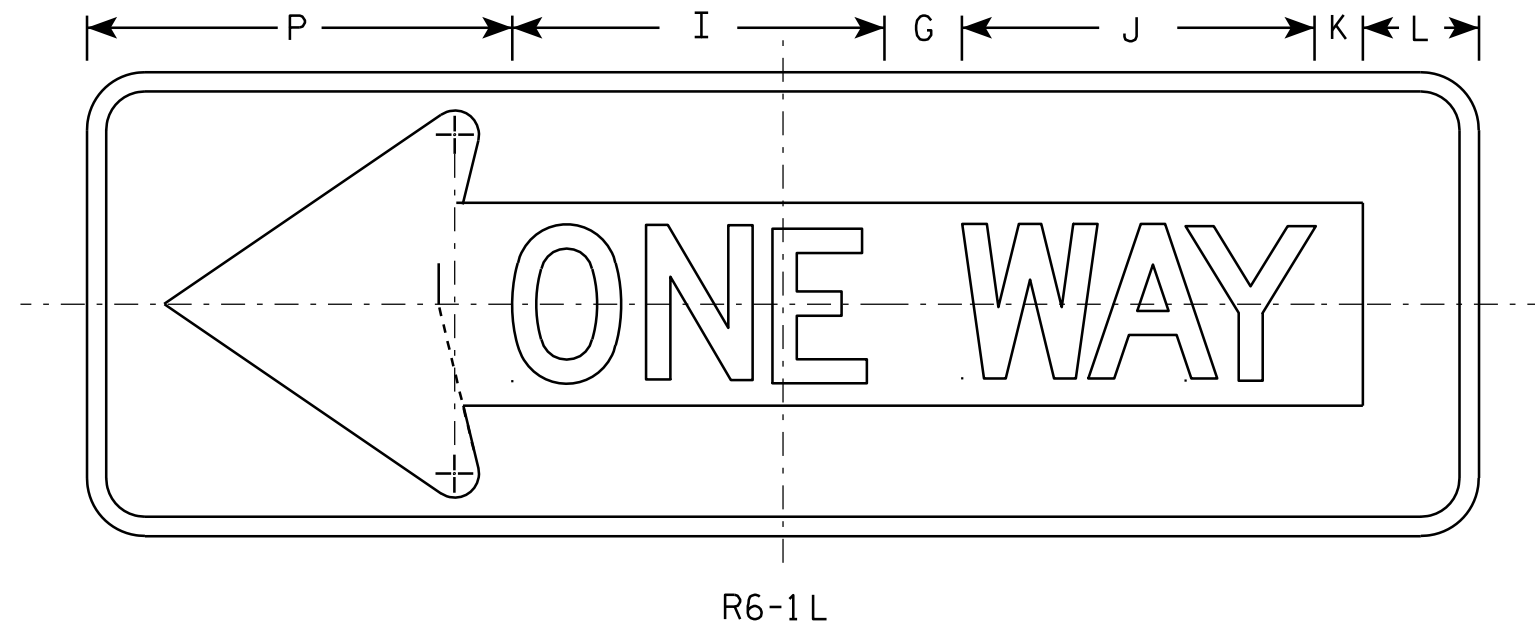
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - White
Message - Black
3. Message Series - Lines 1, 2, and 5 are Series C. Lines 3 and 4 are Series B.
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S																											
2M																											
3																											
4	36		1 5⁄8	5⁄8	3⁄4	4	3	2	3 1⁄2	14 1⁄4	14 7⁄8	11	11 1⁄2	4 3⁄4	1 3⁄4	9		1 3⁄8	10	11	2 1⁄2	1 3⁄4	15 1⁄2	13	13 5⁄8		9.0
5	36		1 5⁄8	5⁄8	3⁄4	4	3	2	3 1⁄2	14 1⁄4	14 7⁄8	11	11 1⁄2	4 3⁄4	1 3⁄4	9		1 3⁄8	10	11	2 1⁄2	1 3⁄4	15 1⁄2	13	13 5⁄8		9.0

STANDARD SIGN R5-57	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/29/2011	PLATE NO. R5-57.10

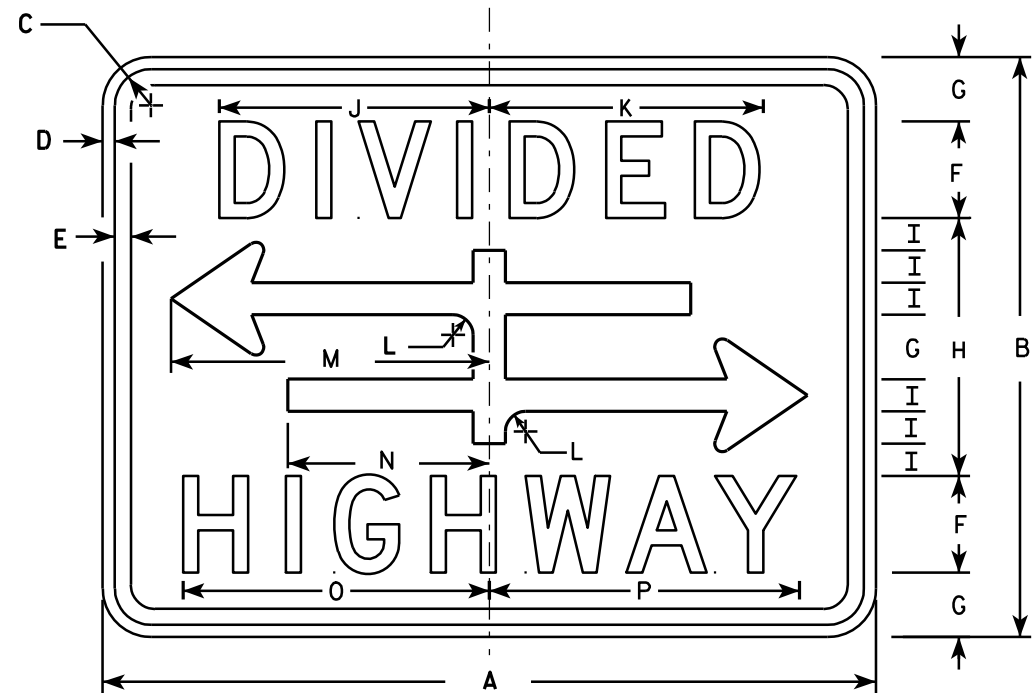


- NOTES
1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
 2. Color:
Background - BLACK
Message - BLACK LEGEND & WHITE ARROW & BORDER
 3. Message Series - D
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

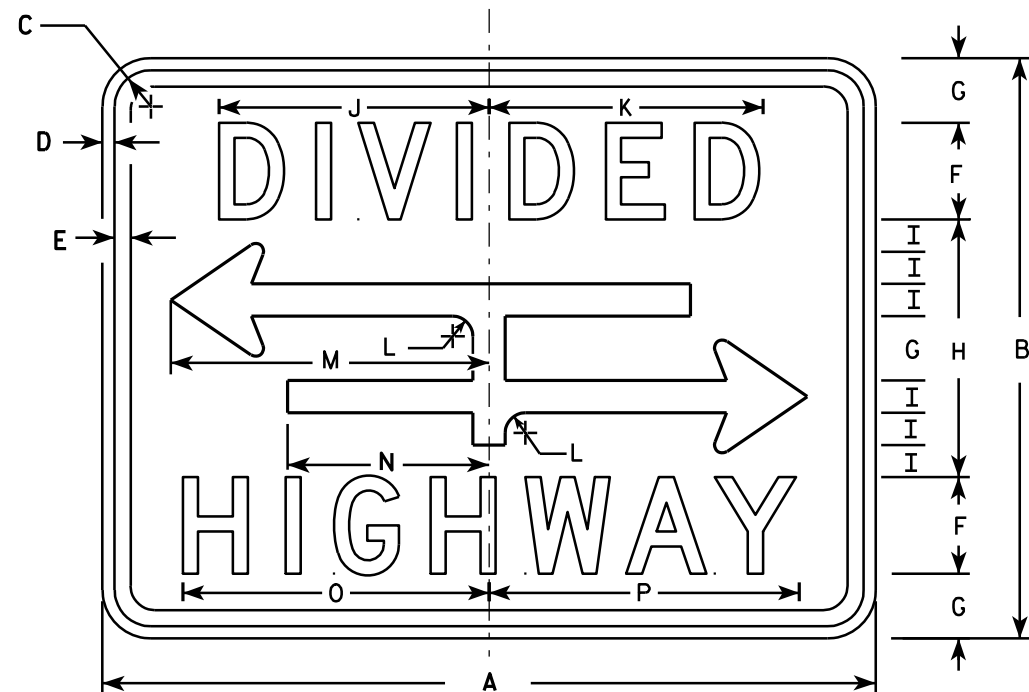


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36	12	1 1/2	1/2		4	2	7 1/2	9 5/8	9 1/8	1 1/4	3	3 3/8	5/8	4 3/8	11		3/8	7 1/2							3.0	
2M	54	18	2 1/4	3/4		6	3	11 1/4	14 1/2	13 5/8	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4							6.75	
3	54	18	2 1/4	3/4		6	3	11 1/4	14 1/2	13 5/8	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4							6.75	
4	54	18	2 1/4	3/4		6	3	11 1/4	14 1/2	13 5/8	1 7/8	4 1/2	5	1	6 1/2	16 1/2		5/8	11 1/4							6.75	
5																											

STANDARD SIGN	
R6-1 L & R	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	 For State Traffic Engineer
DATE 12/17/10	PLATE NO. R6-1.2



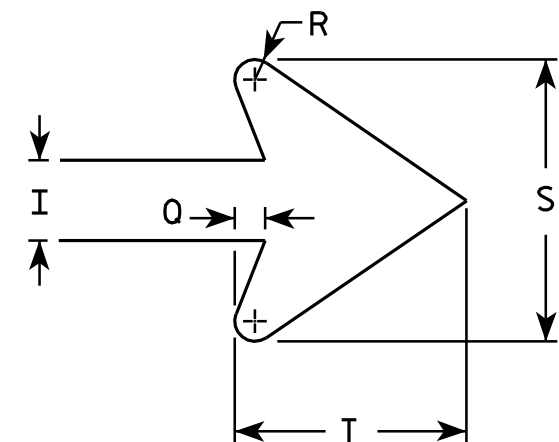
R6-3



R6-3A

NOTES

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



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24	18	1 1/8	3/8	3/8	3	2	8	1	8 3/8	8 1/2	5/8	9 7/8	6 1/4	9 1/2	9 5/8	3/8	1/4	3 1/2	2 3/4							3.0
2S	30	24	1 1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
2M	30	24	1 1/8	3/8	1/2	4	2 5/8	10 3/4	1 3/8	10 1/2	10 5/8	7/8	12 1/2	7 7/8	12 1/4	12 3/8	1/2	3/8	4 5/8	3 5/8							5.0
3																											
4																											
5																											

STANDARD SIGN R6-3 & R6-3A

WISCONSIN DEPT OF TRANSPORTATION

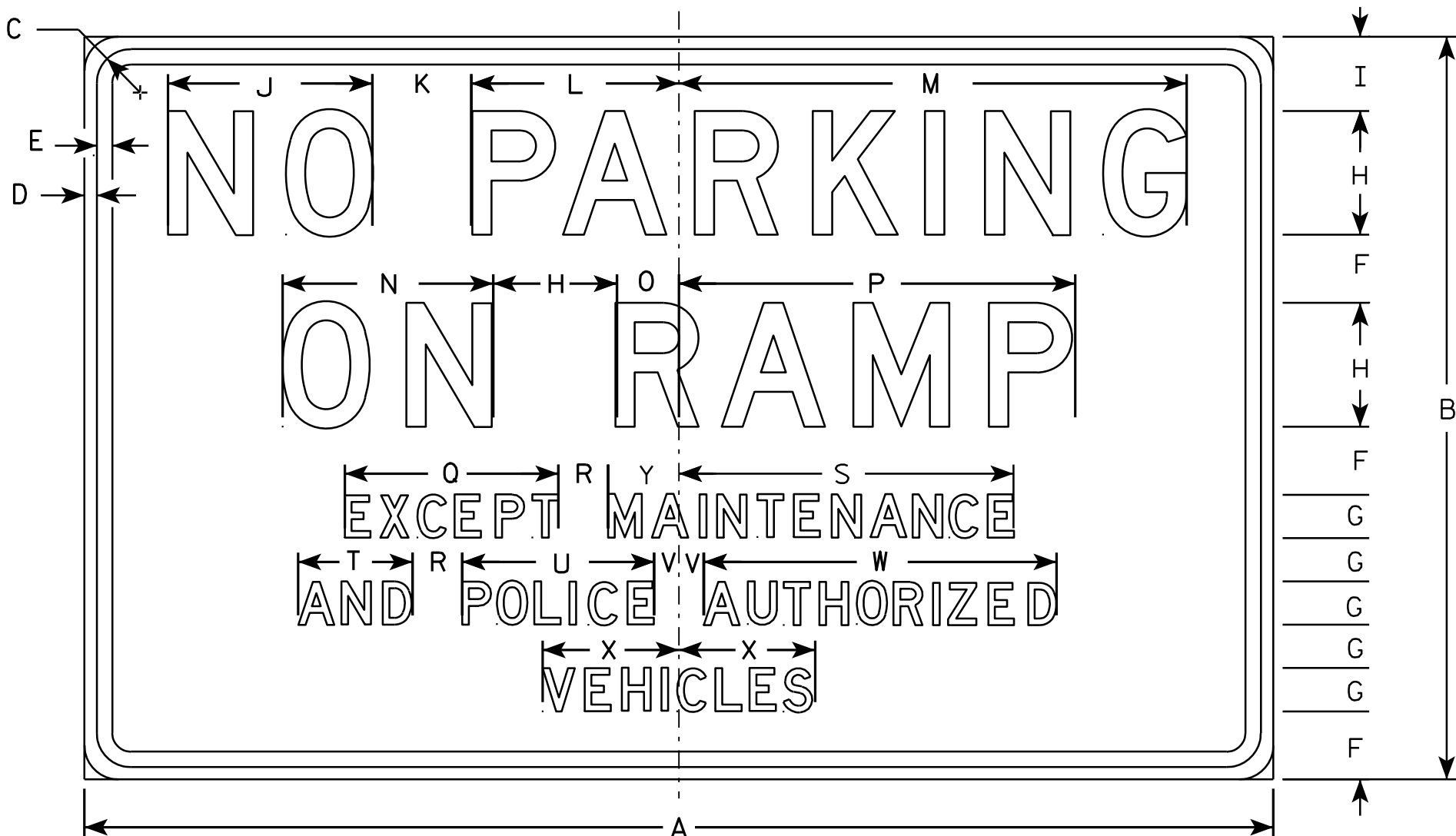
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/31/2011 PLATE NO. R6-3.5

PROJECT NO:

SHEET NO: 264

E



NOTES

- Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- Color:
Background - WHITE
Message - Lines 1 & 2 and Border are RED
Lines 3, 4, & 5 are 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.

R7-64

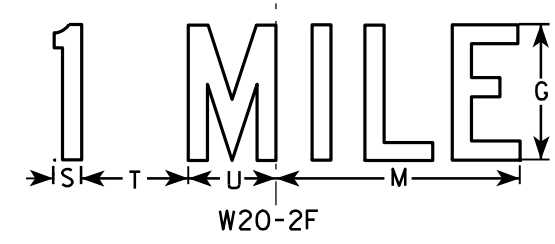
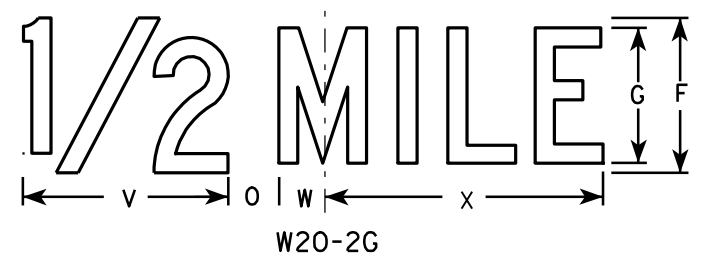
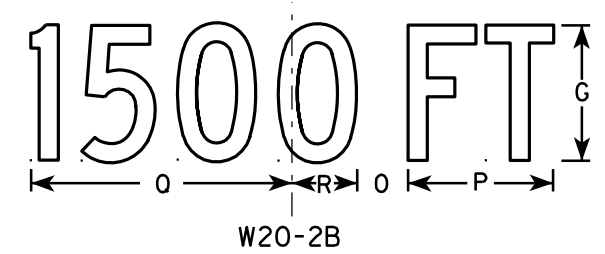
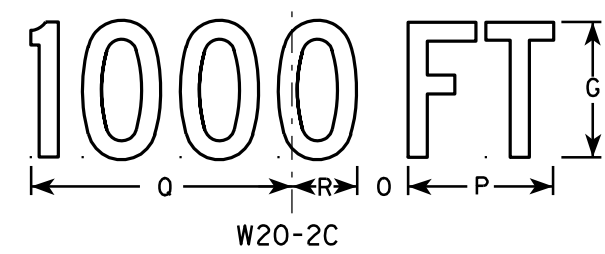
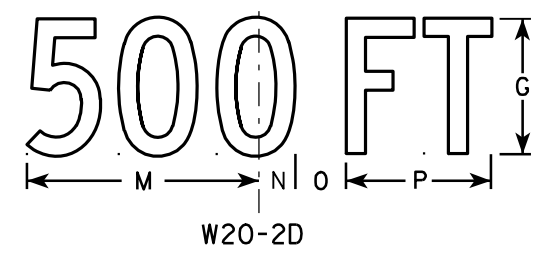
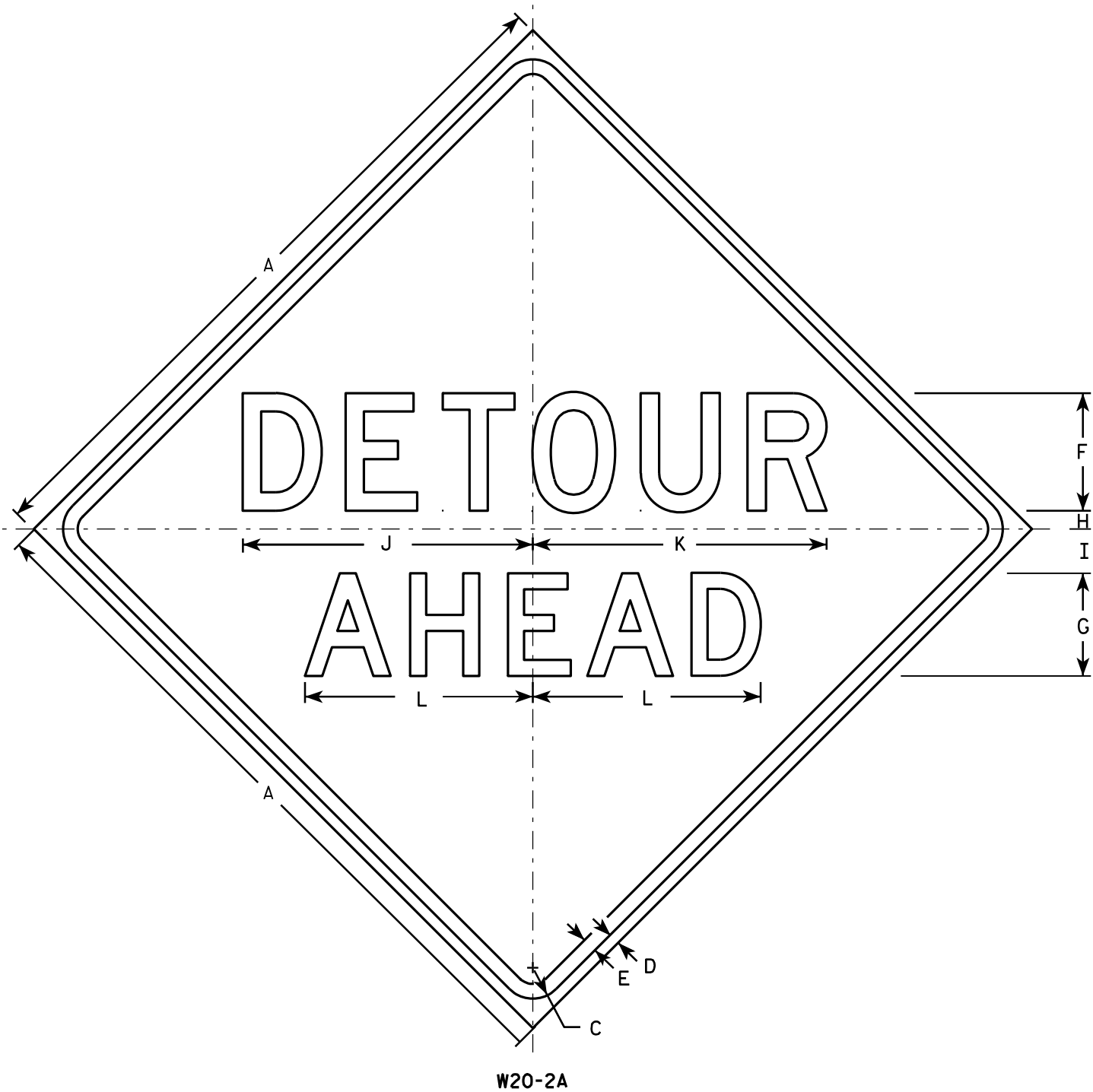
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S																											
2M																											
3	48	30	1 3⁄8	1⁄2	5⁄8	2 3⁄4	1 3⁄4	5	3	8 1⁄4	4	8 3⁄8	20 1⁄2	8 1⁄2	2 1⁄2	16	8 5⁄8	2	13 5⁄8	4 5⁄8	7 3⁄4	1	14 1⁄4	5 1⁄2			10.0
4																											
5																											

STANDARD SIGN R7-64

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 3/31/2011 PLATE NO. R7-64.3

PROJECT NO: SHEET NO: 265 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 - 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. Line 1 is Series D.
Line 2 is Series D for AHEAD and Series C for all other distances.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		1 5/8	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		2 1/4	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/18/11 PLATE NO. W20-2.6

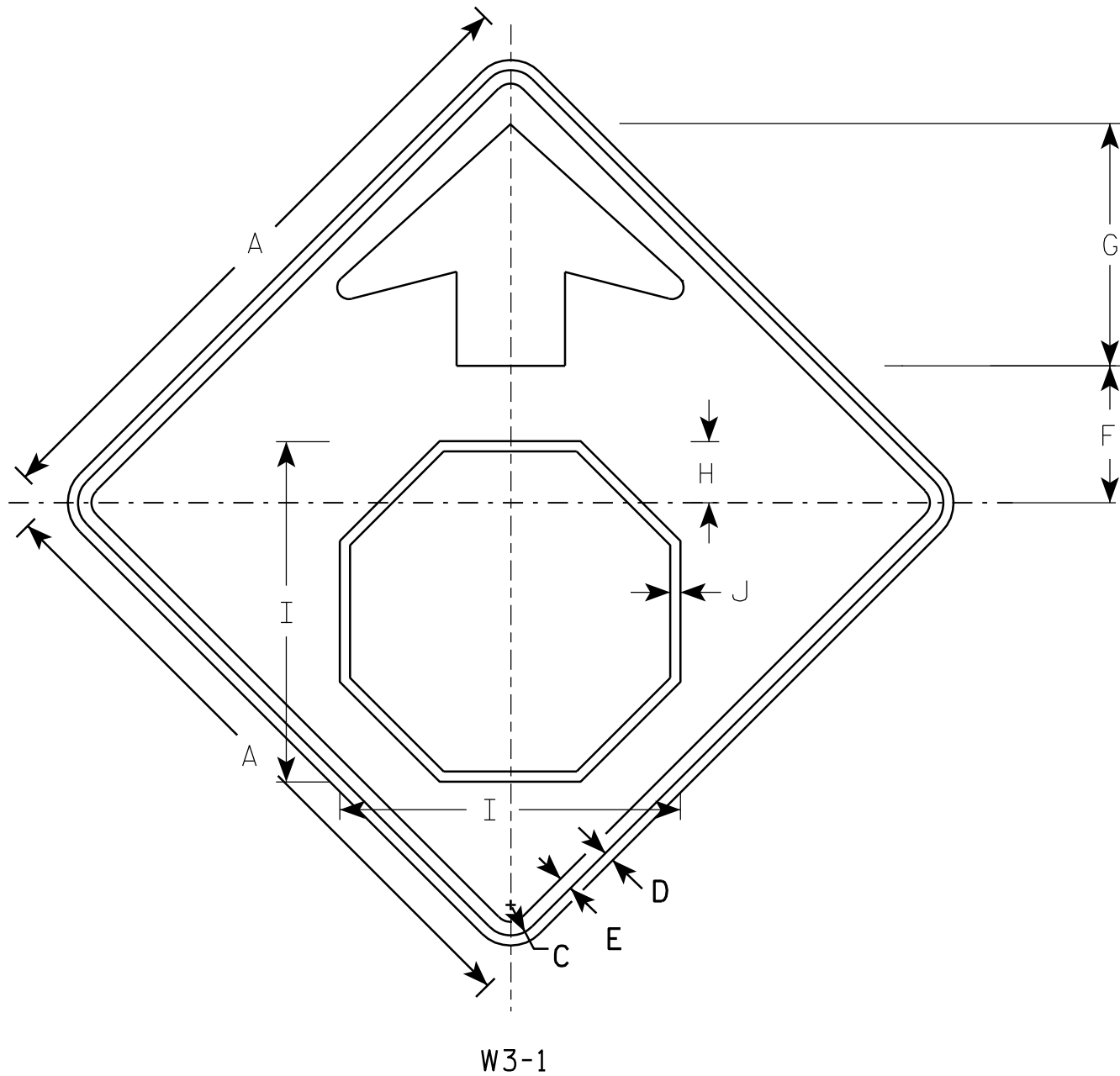
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 266

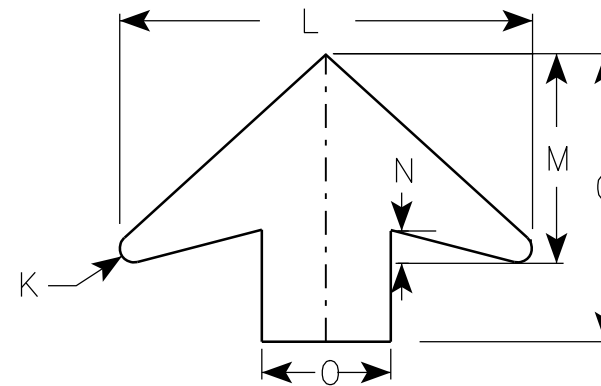
E



W3-1

NOTES

1. All Signs Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - YELLOW
Arrow & Border - BLACK
Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	6 1/4	11 1/4	2 7/8	15 3/4	1/2	1/2	16	8	1 1/4	5												6.25
2S	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
2M	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
3	36		1 5/8	5/8	3/4	7 1/2	13 1/2	3 1/2	19	5/8	5/8	19 1/4	9 3/4	1 5/8	6												9.0
4	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0
5	48		2 1/4	3/4	1	10	17 7/8	4 1/2	25 1/8	3/4	7/8	25 5/8	13	2	8												16.0

PROJECT NO:

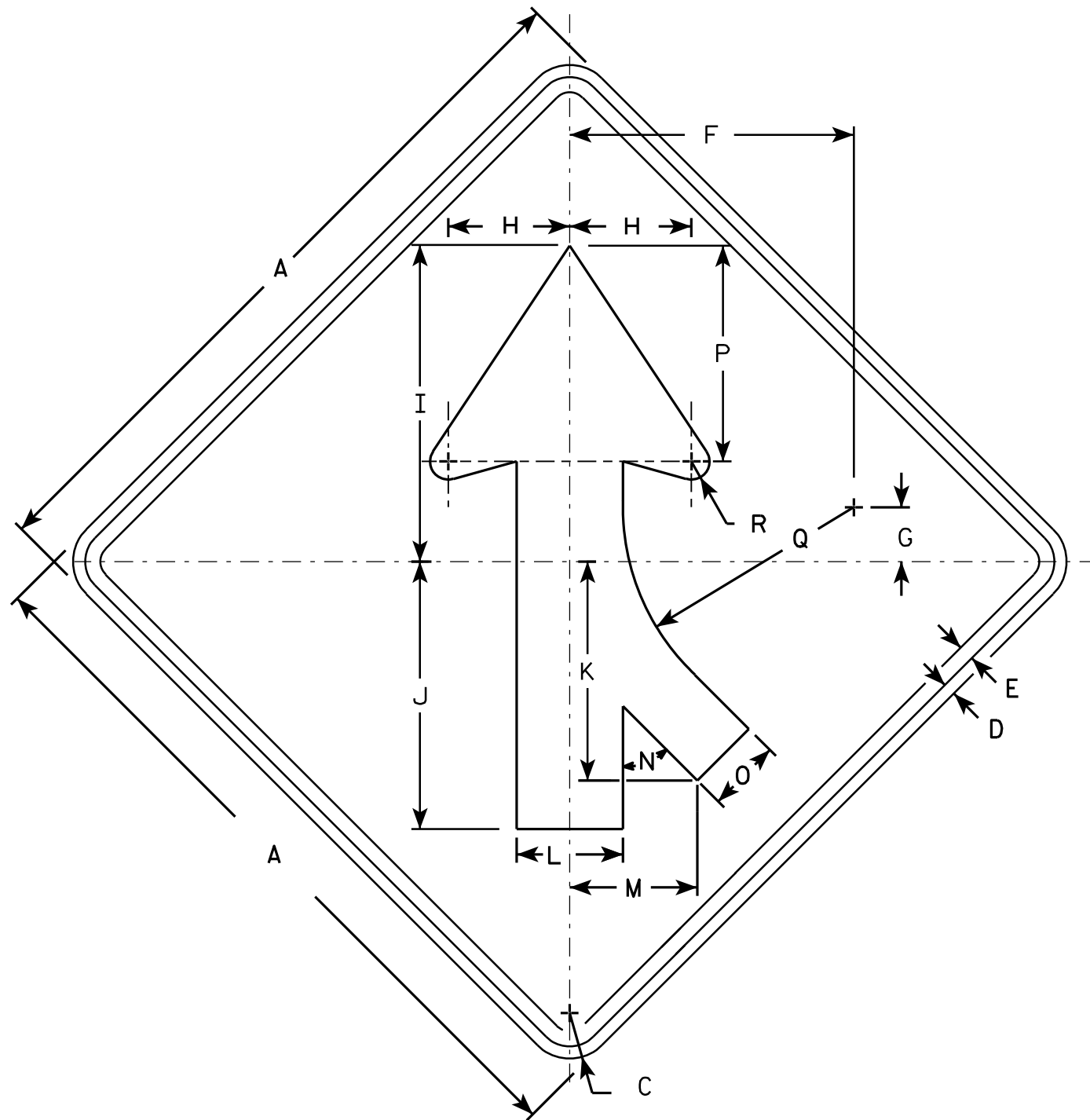
STANDARD SIGN
W3-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/7/10 PLATE NO. W3-1.12

SHEET NO: 267

E



W4-1 R

NOTES

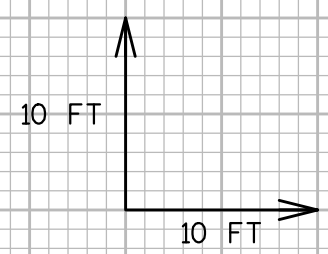
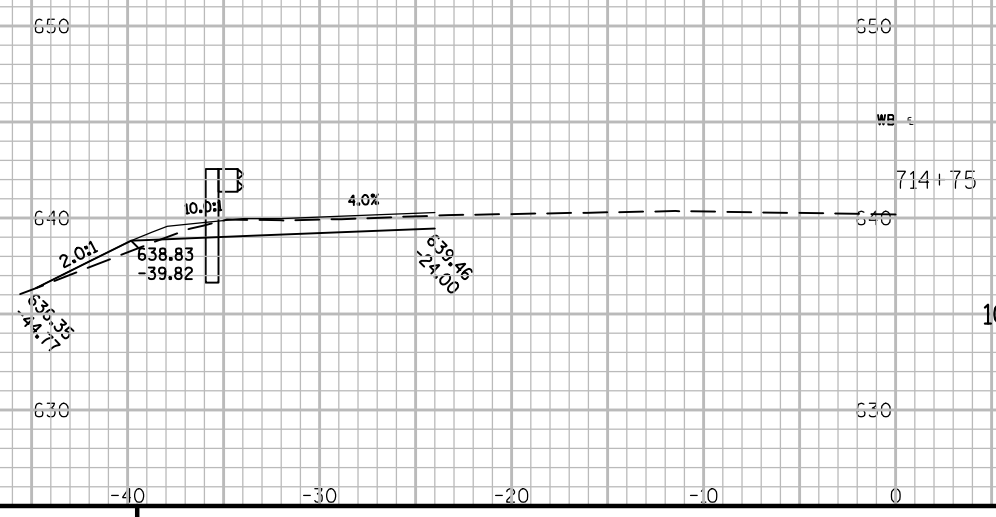
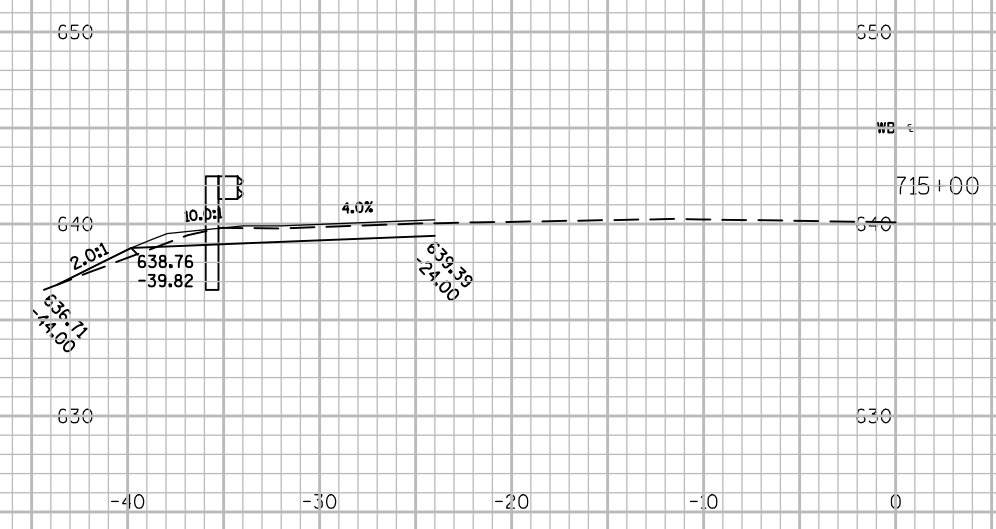
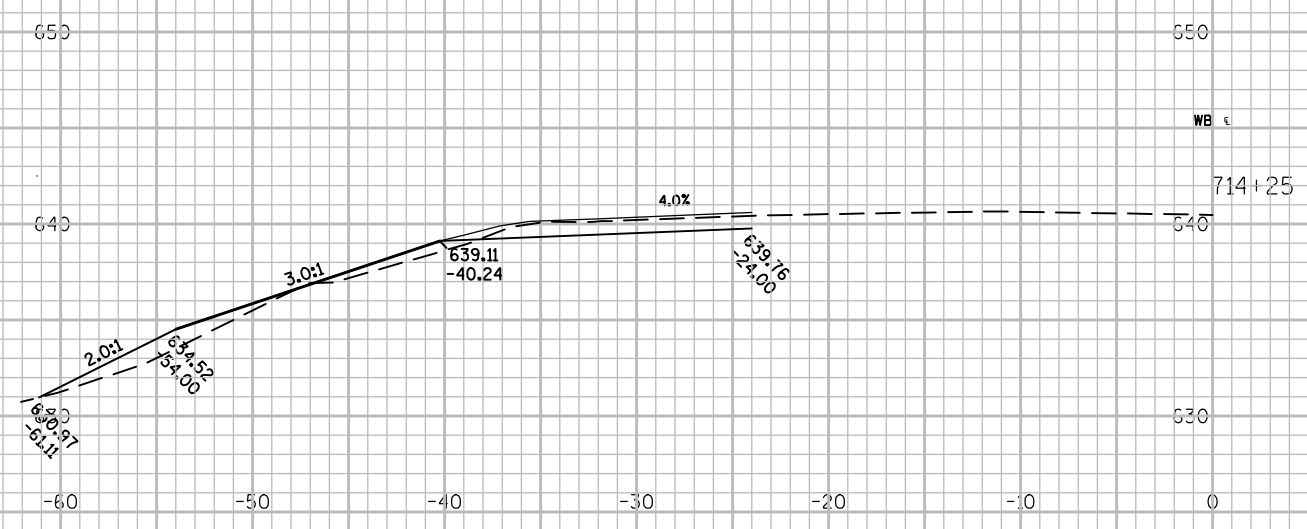
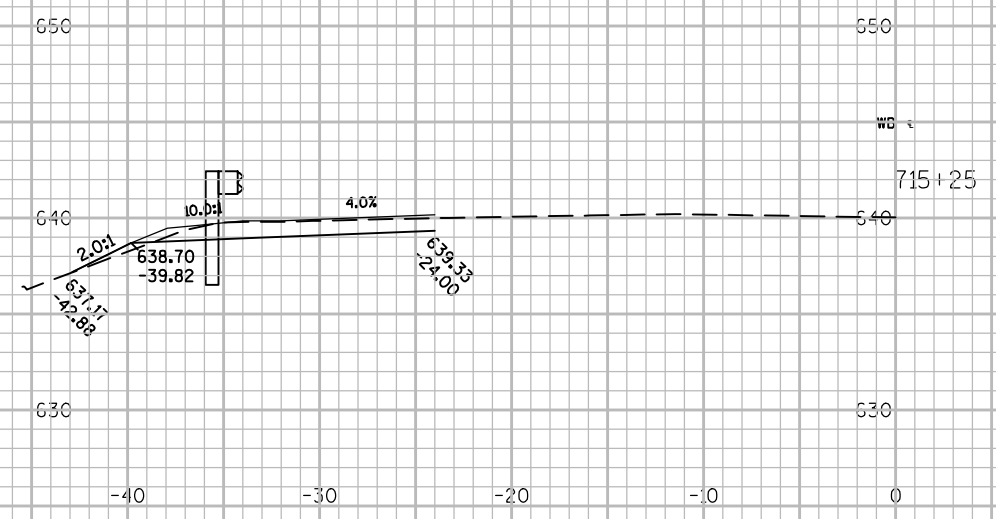
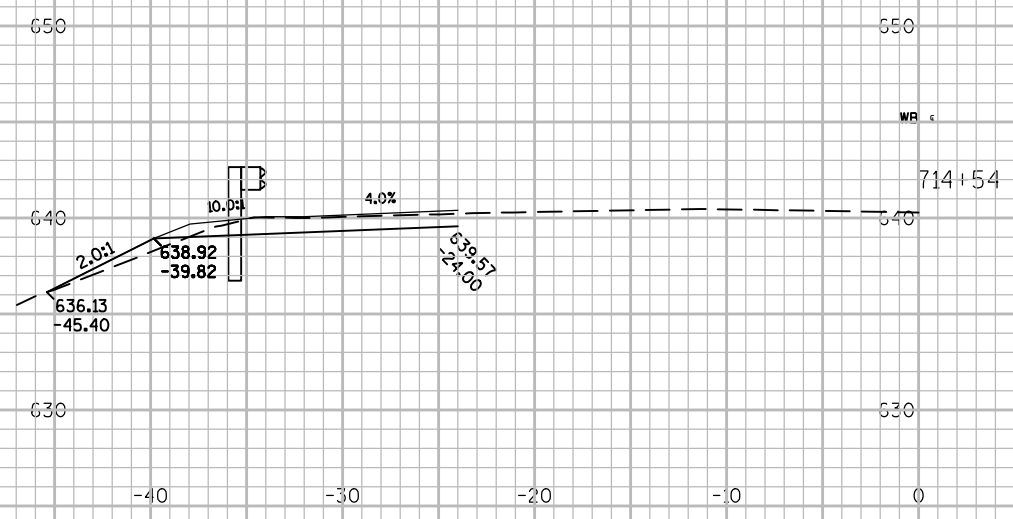
1. Sign is Type II - Type F Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
2. Color:
Background - Yellow
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W4-1L is the same as W4-1R except the arrow is reversed along the vertical centerline.

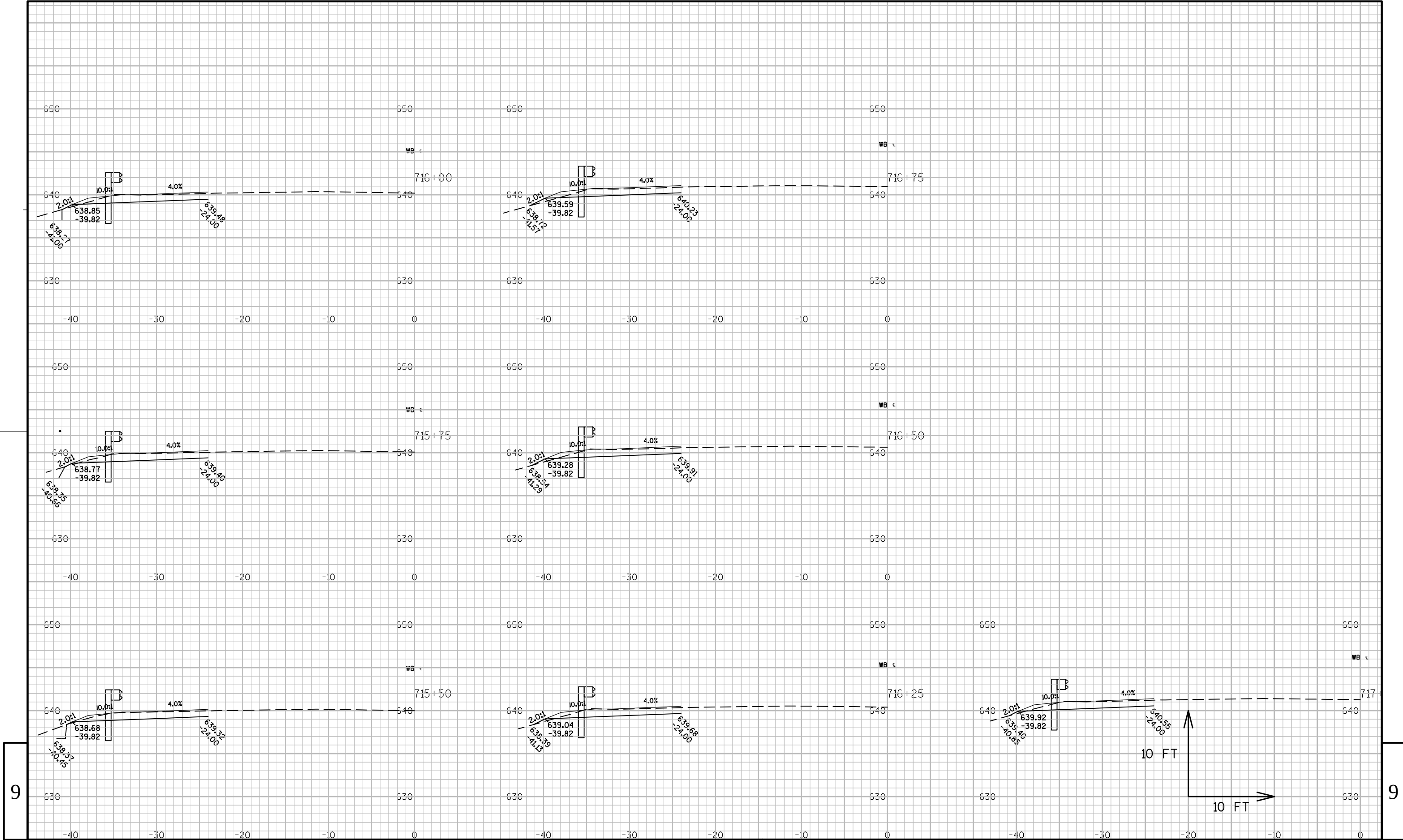
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	O	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30		1 3/8	1/2	5/8	11 5/8	2 1/2	5	13	11	9	4 3/8	5 1/4	45°	3	8 7/8	9 1/2	3/4									6.25
2S	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
2M	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
3	36		1 5/8	5/8	3/4	14	2 3/4	6	15 3/4	13 1/4	10 1/4	5 1/4	6 3/8	45°	3 5/8	10 5/8	11 3/8	7/8									9.0
4	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0
5	48		2 1/4	3/4	1	18 3/4	3 5/8	8	20 1/2	17 1/2	14 3/8	7	8 3/8	45°	4 3/4	14 1/4	15 1/4	1 1/4									16.0

STANDARD SIGN
W4 - 1

WISCONSIN DEPT OF TRANSPORTATION
APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 03/12/13 PLATE NO. W4-1.14

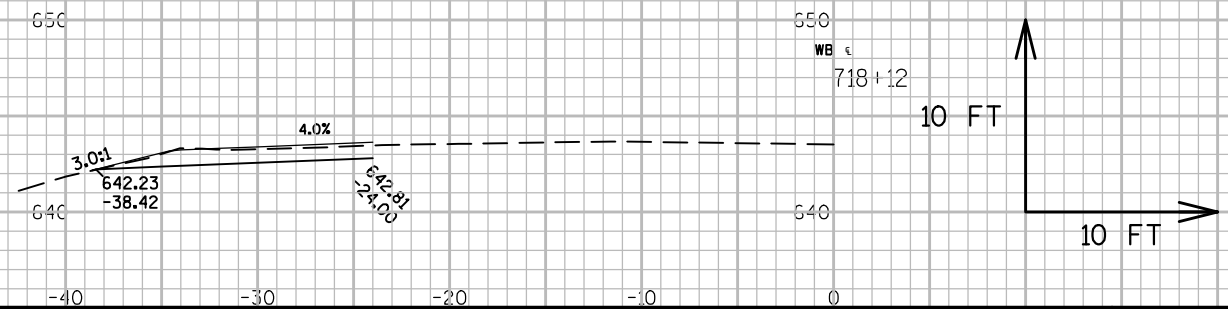
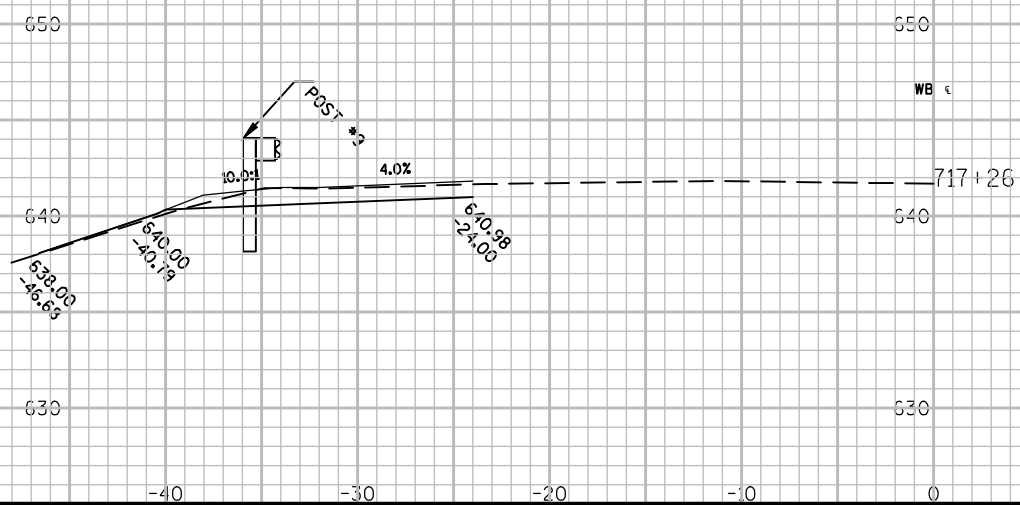
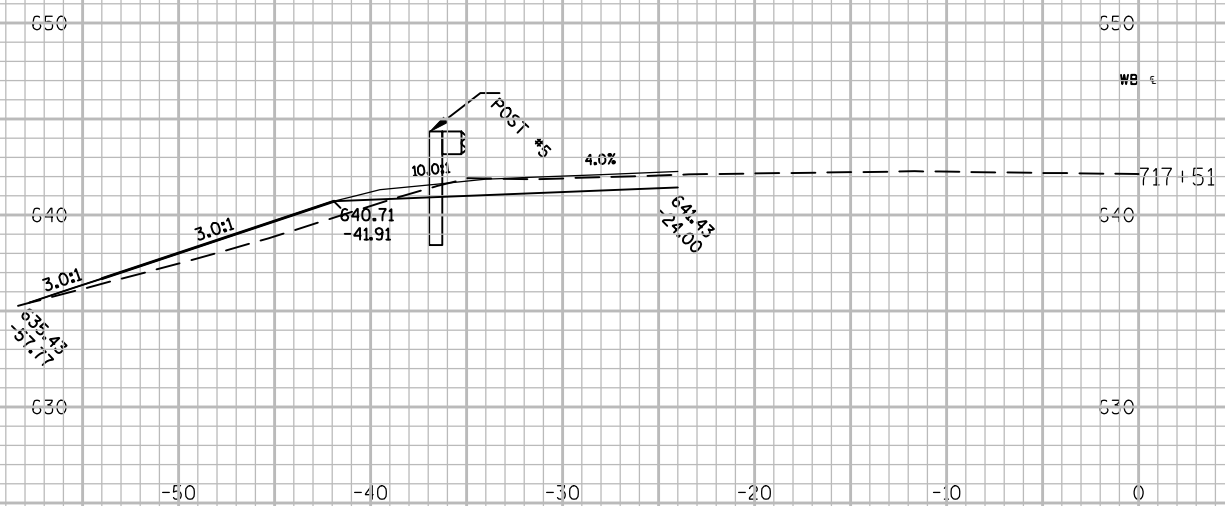
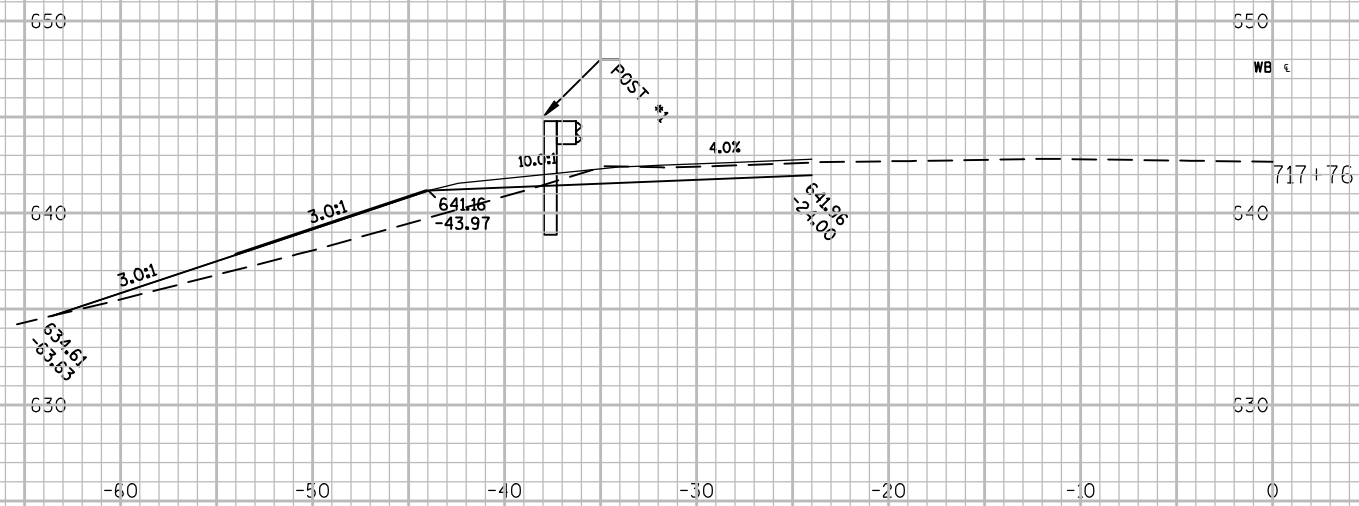
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 268	E
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9

9



PROJECT NO: 9202-10-71

HWY: STH 29

COUNTY: BROWN

CROSS SECTIONS: 29 WB OUTSIDE SHOULDER

SHEET

271

E

FILE NAME : N:\PDS\C3D\92021000\SHEETSPLAN\BEAM GUARD\BEAM GUARD_XS.DWG

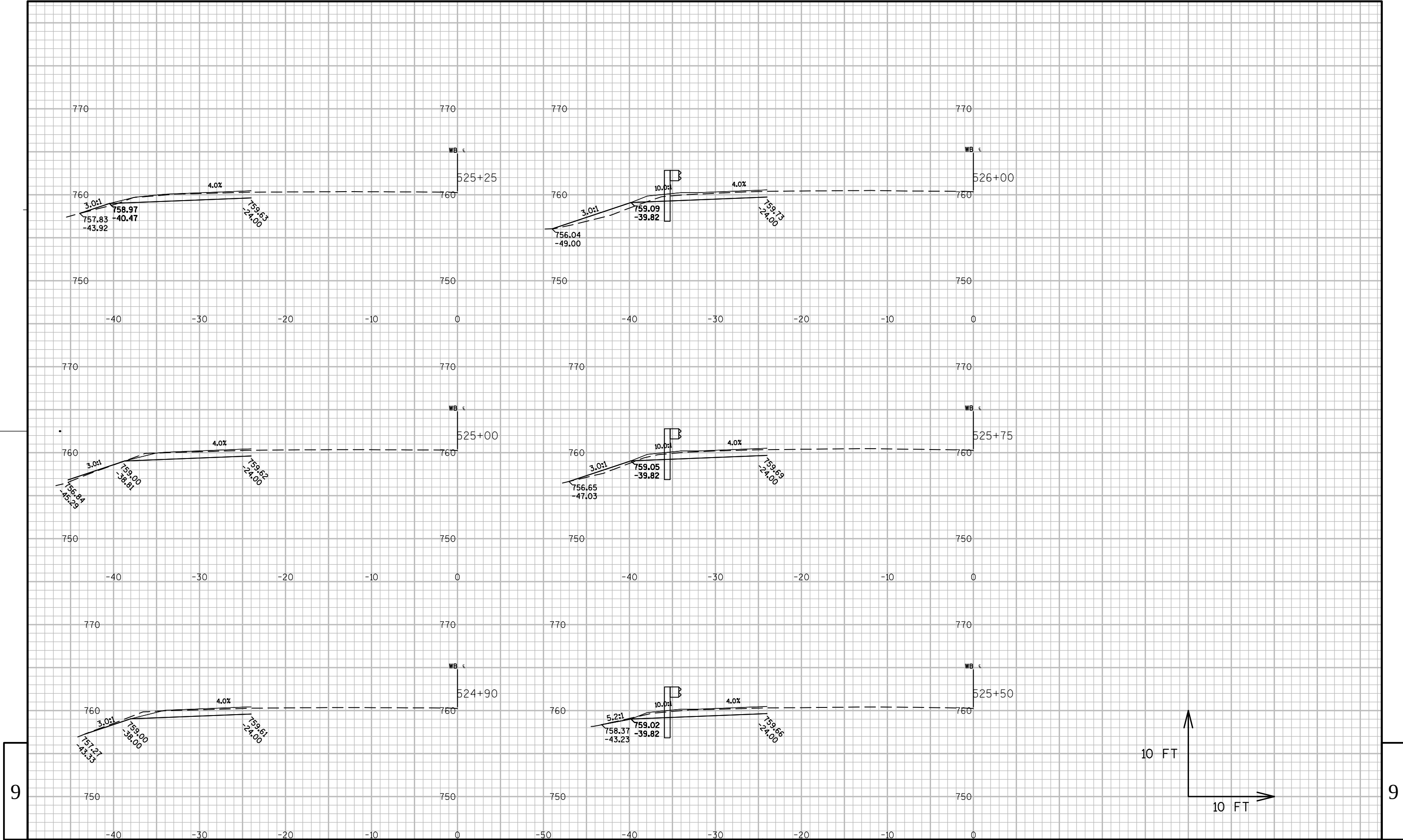
PLOT DATE : 5/31/2014 5:39 PM

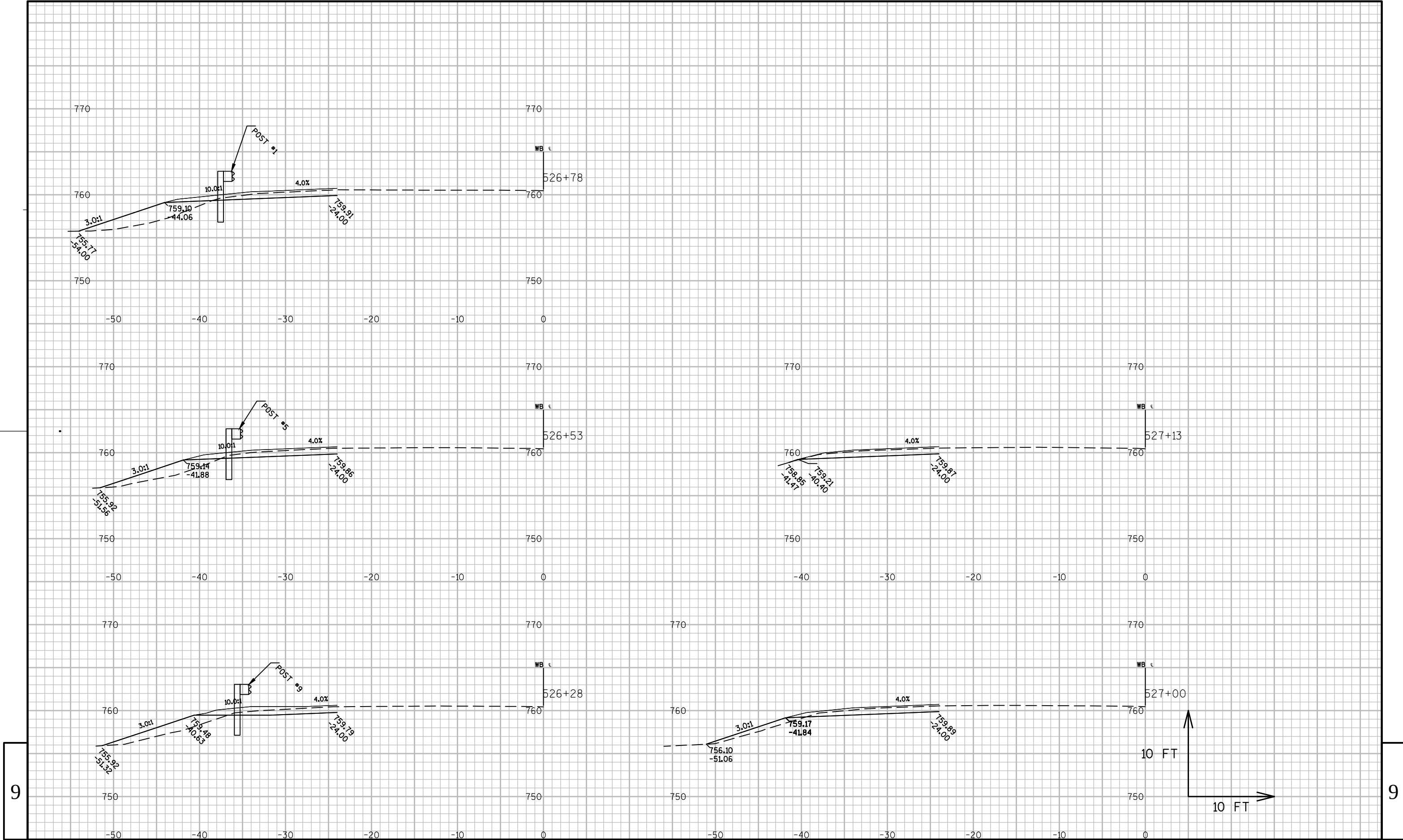
PLOT BY : GRASSE, ALEX D

PLOT NAME :

PLOT SCALE : 1:10-XREF

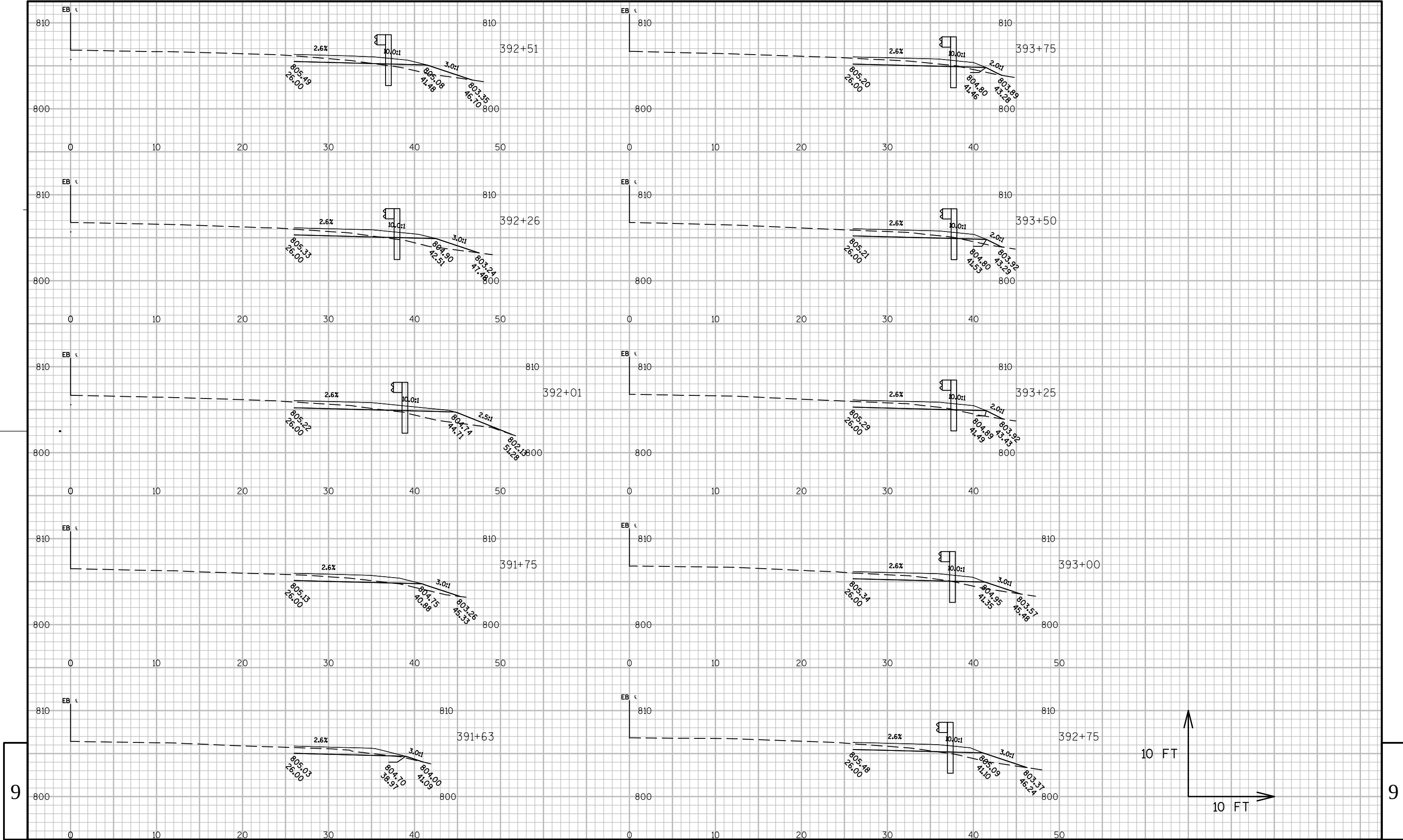
WISDOT/CADDs SHEET 49





9

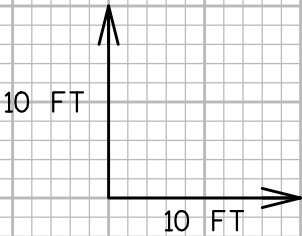
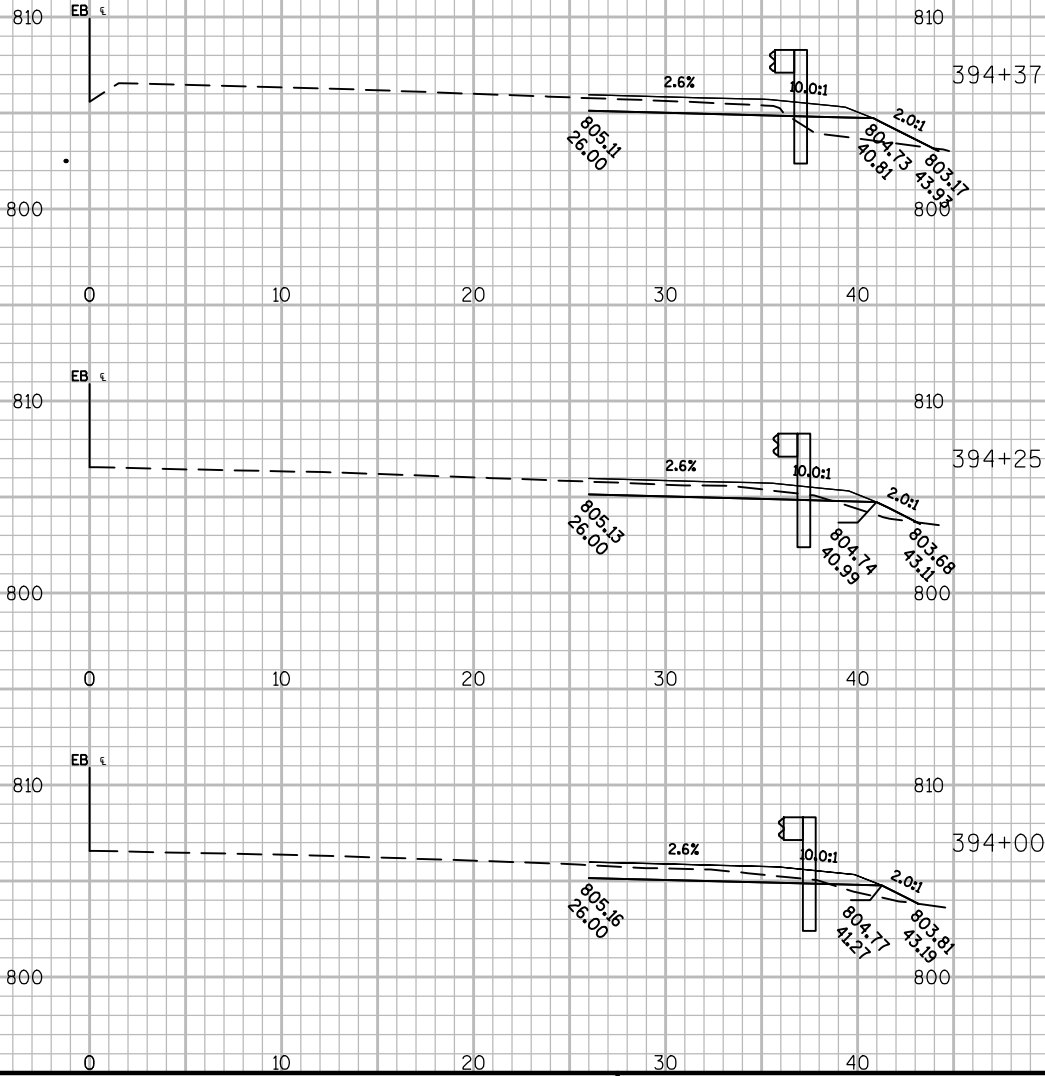
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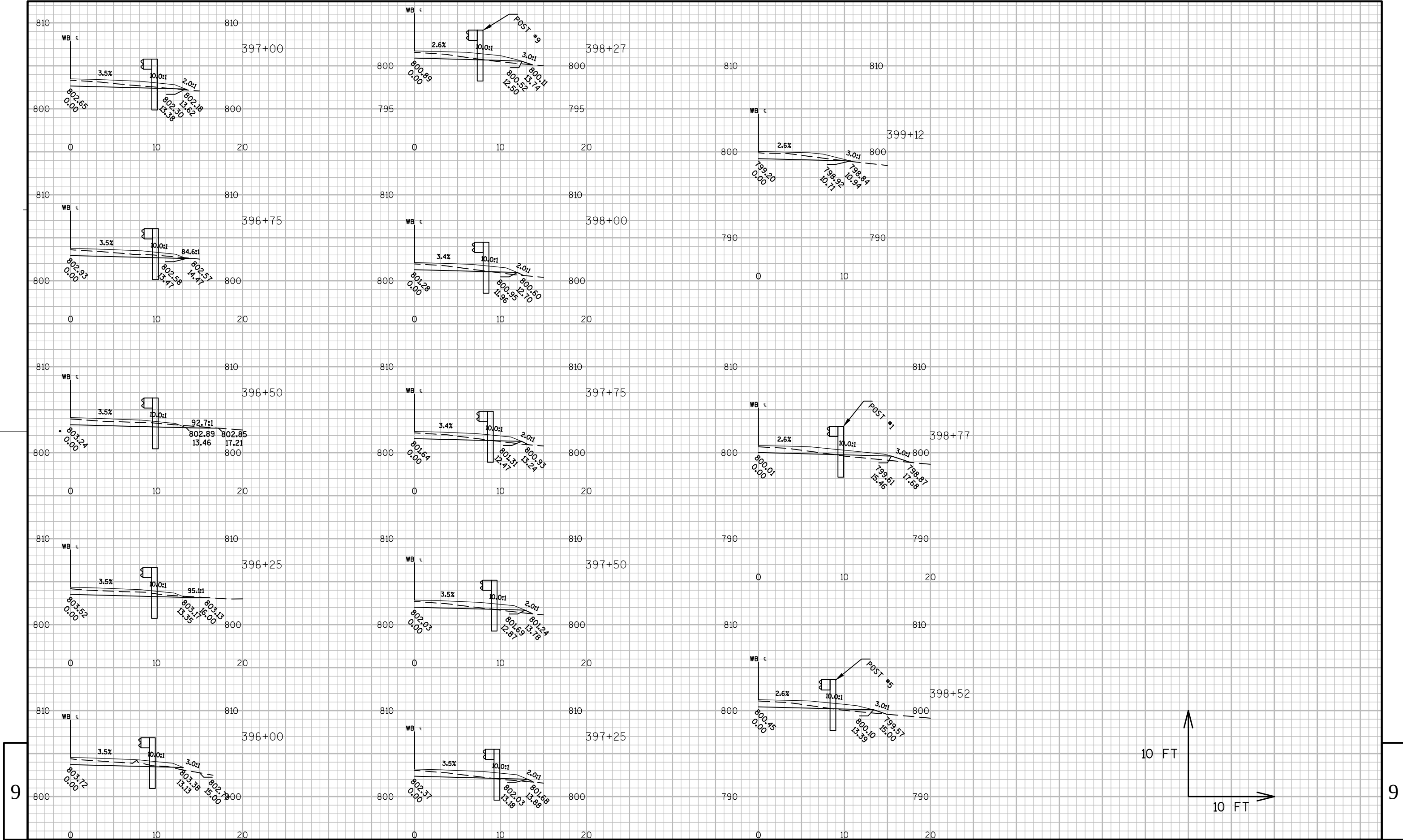
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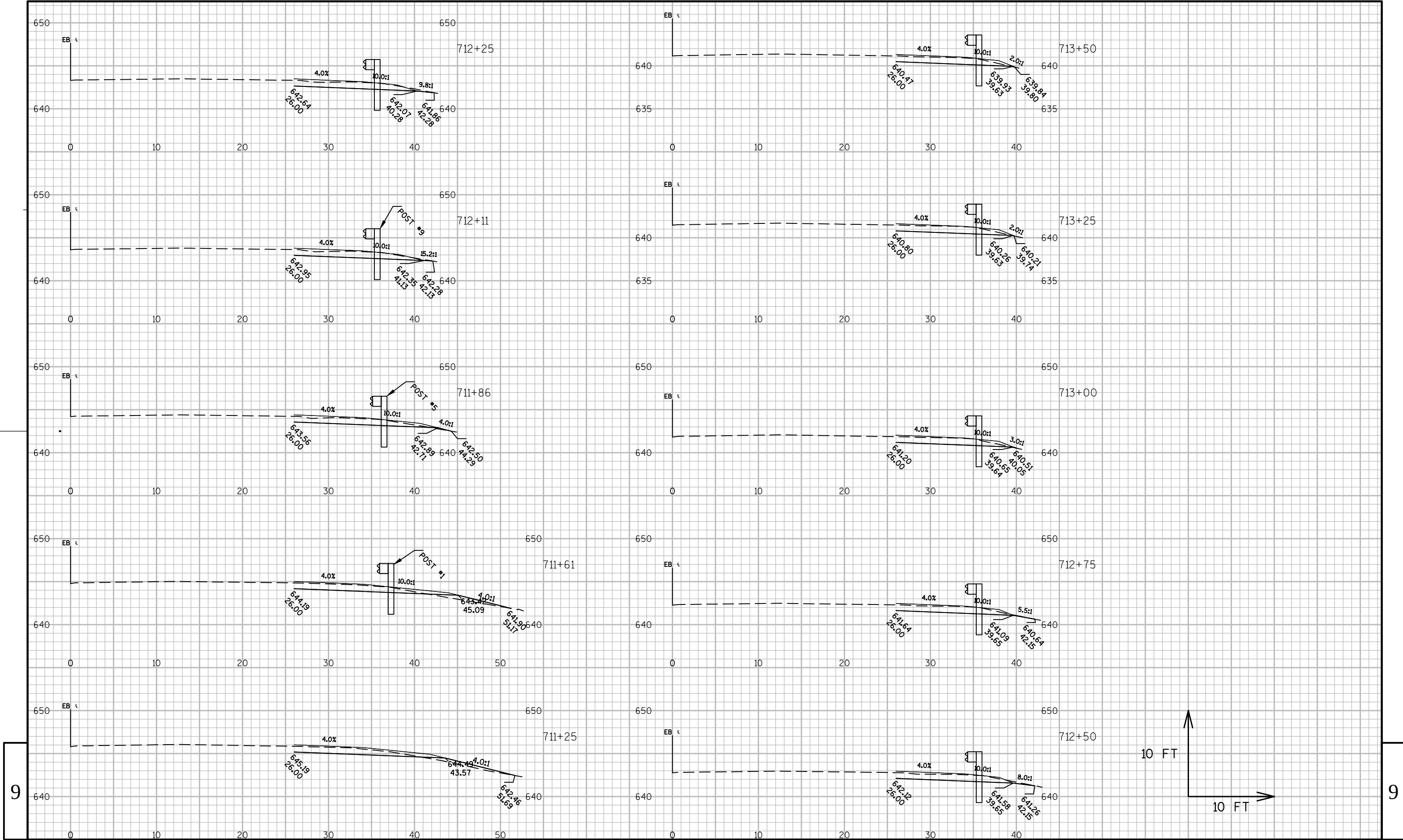
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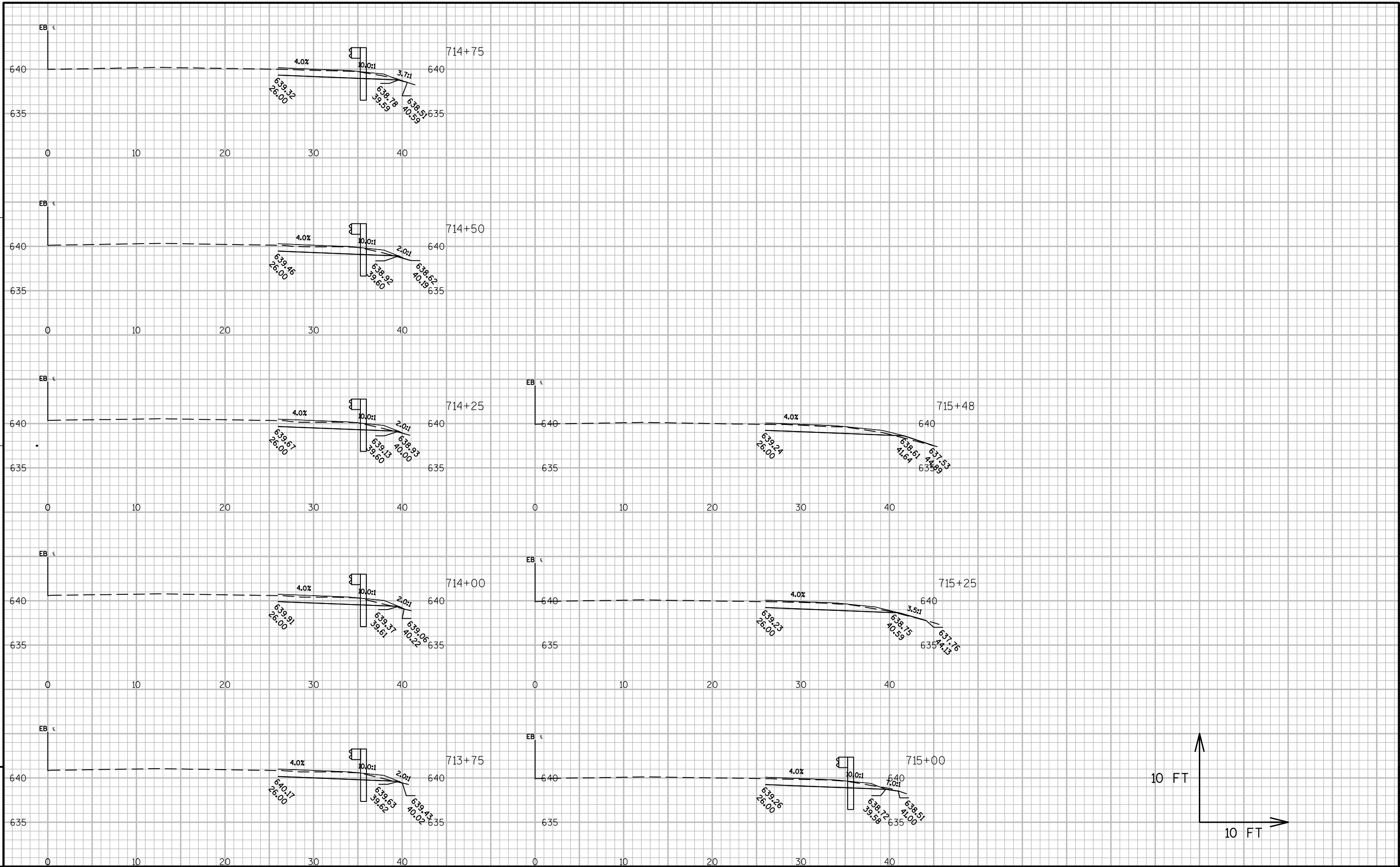
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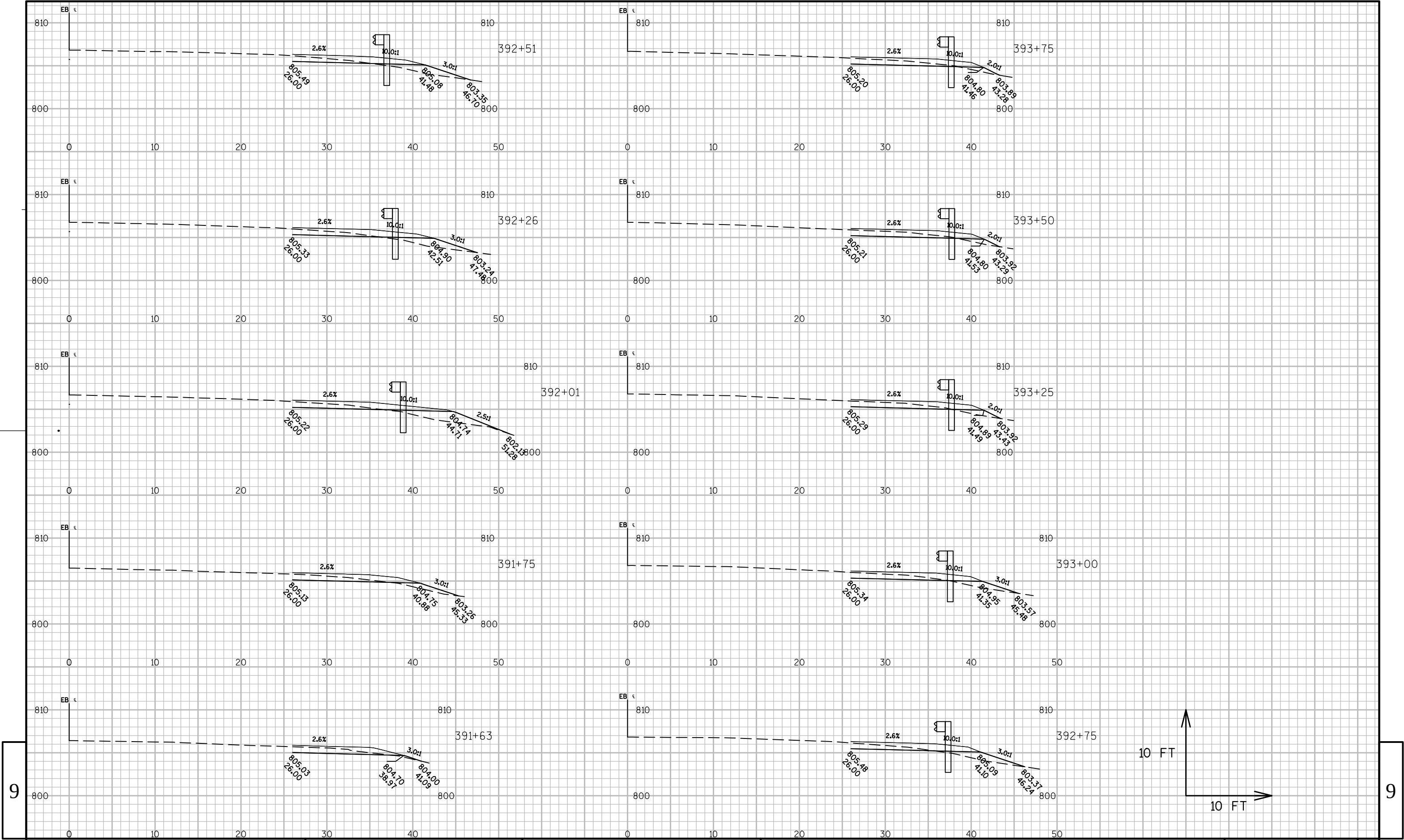


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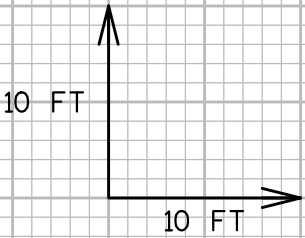
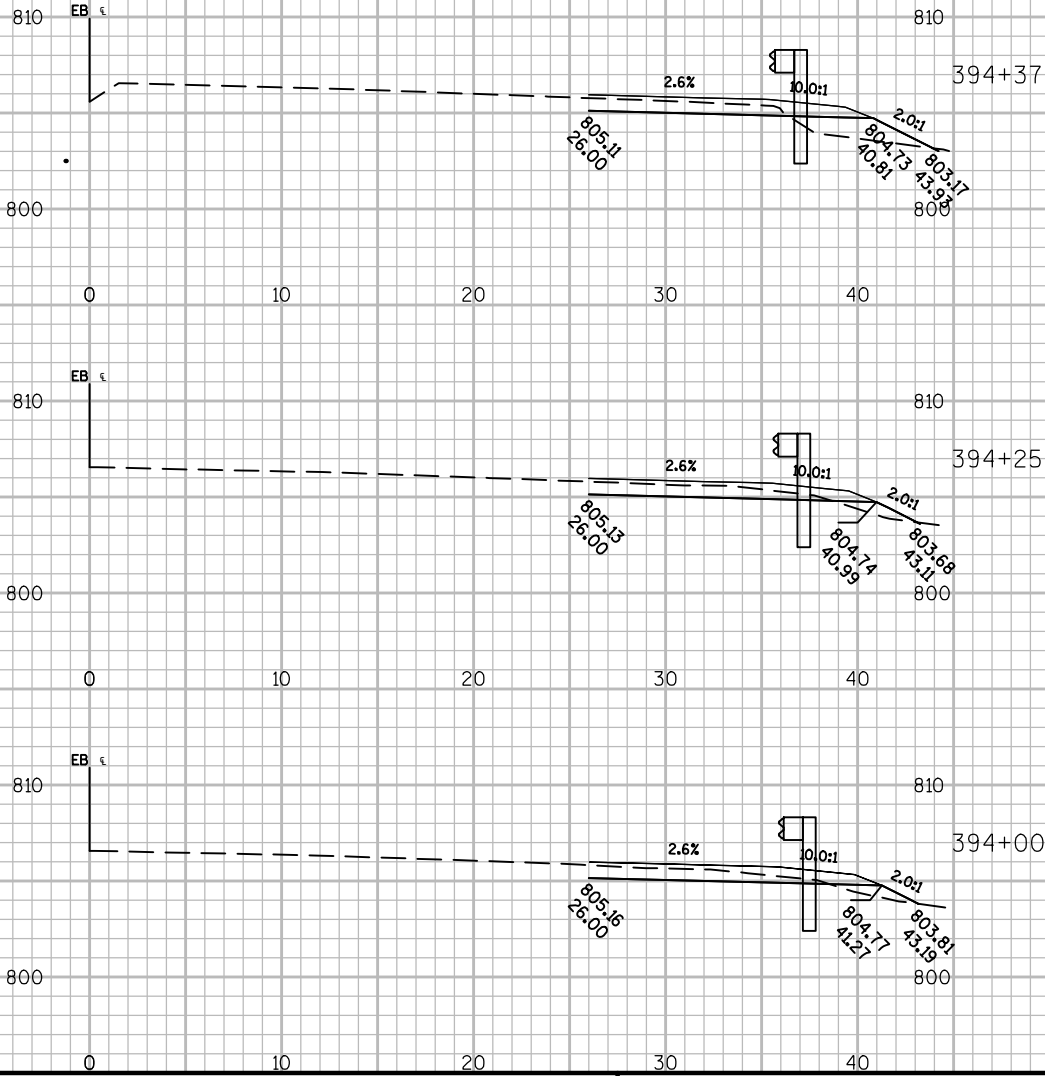




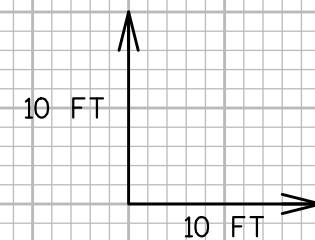
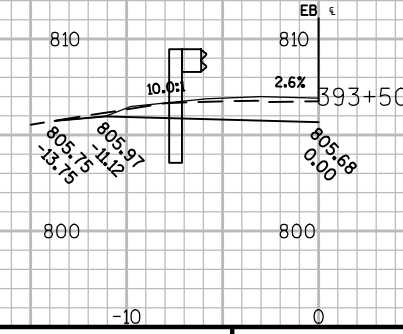
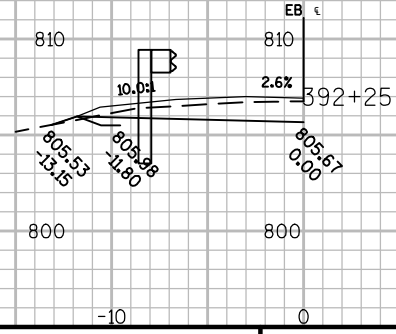
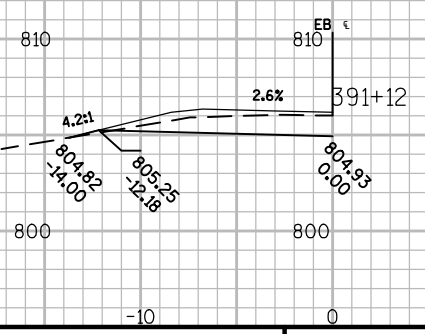
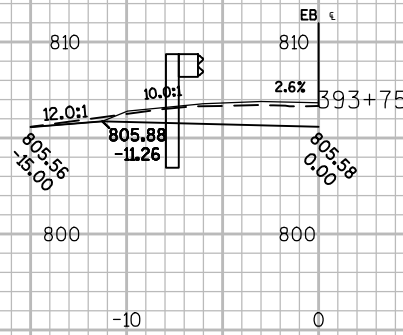
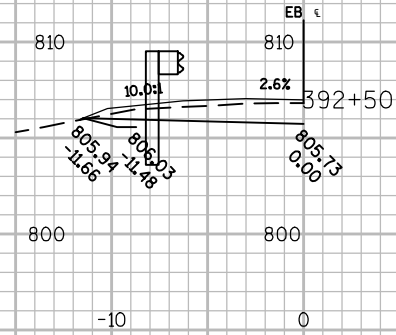
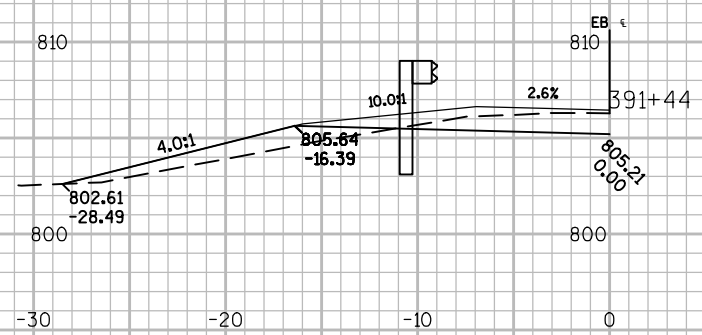
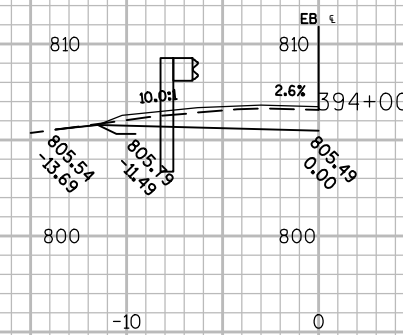
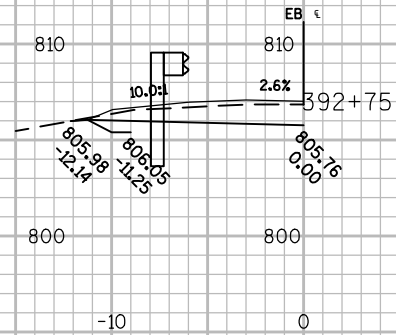
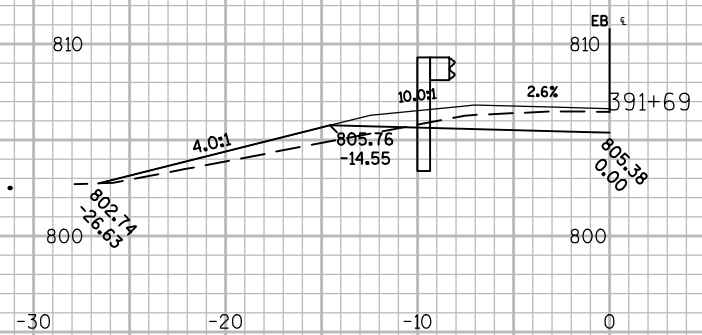
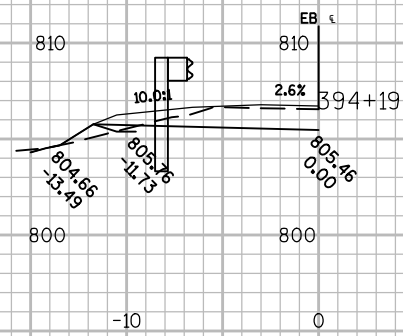
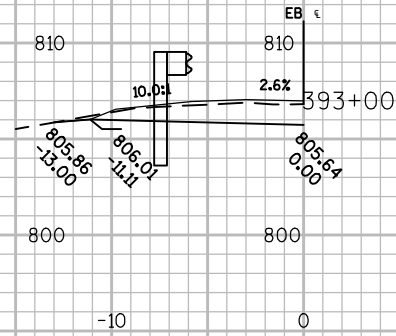
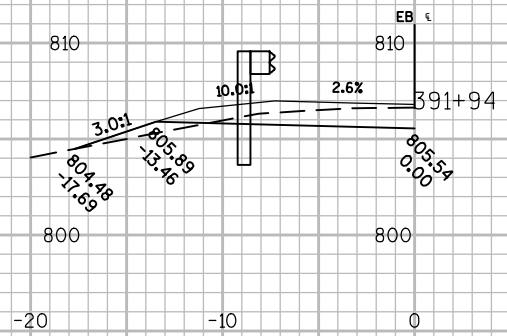
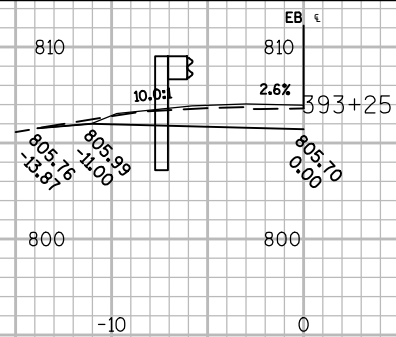
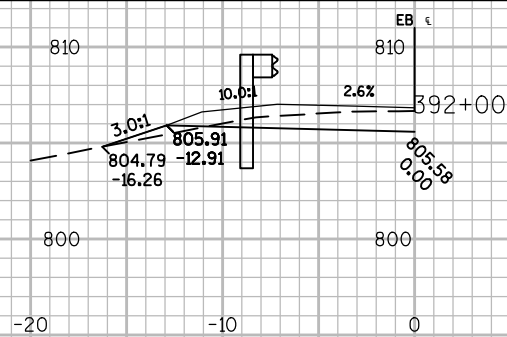
9

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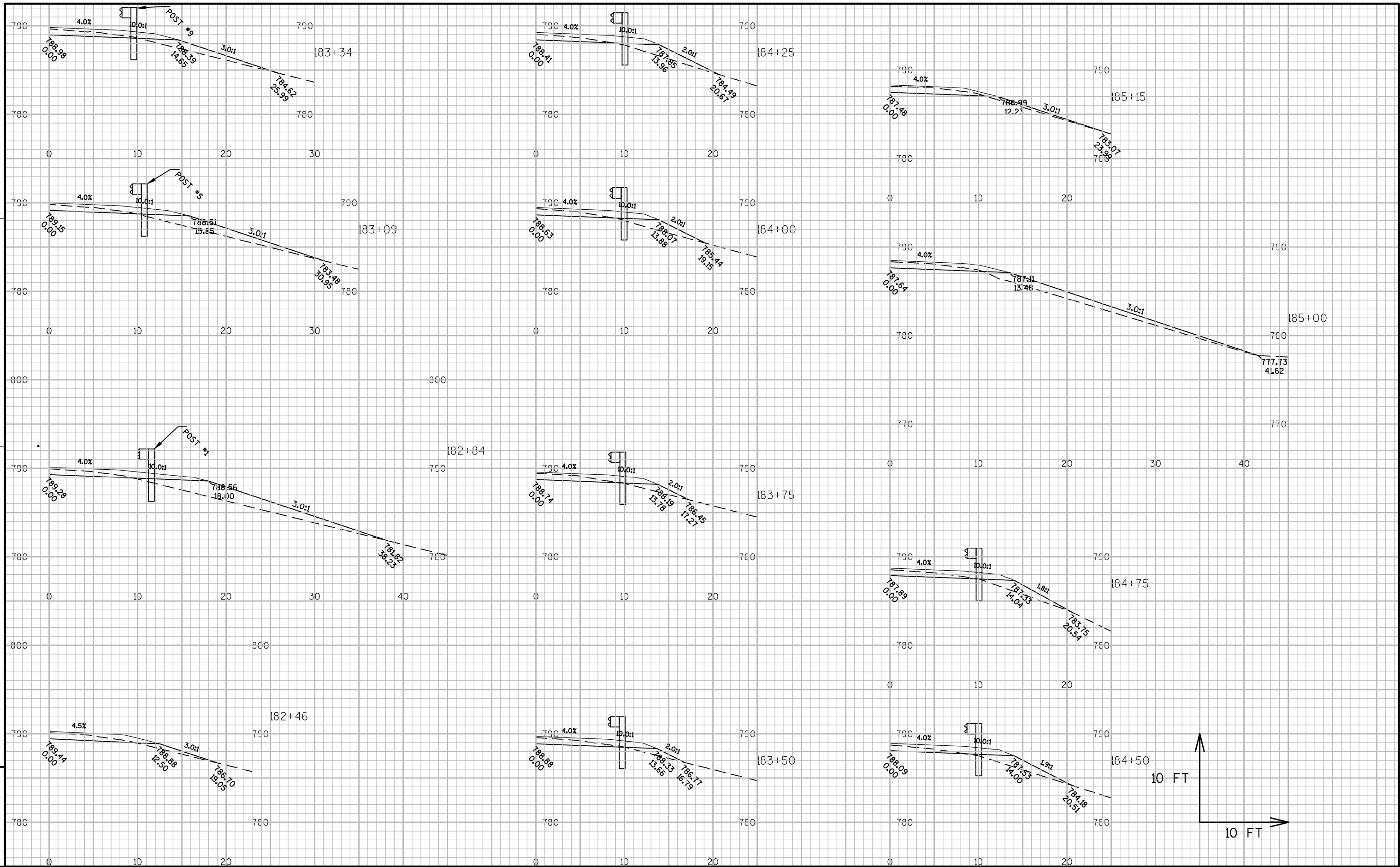


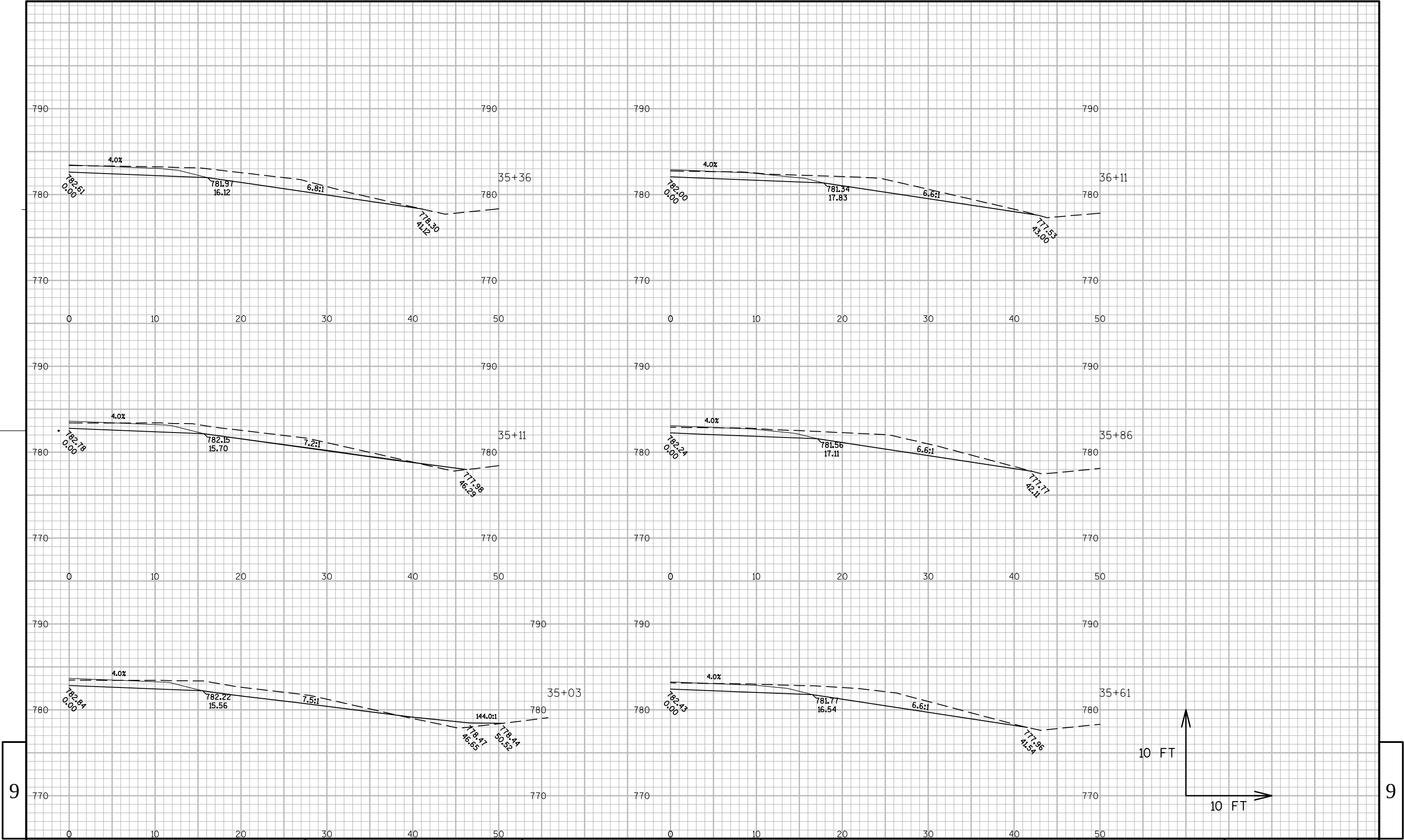
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9

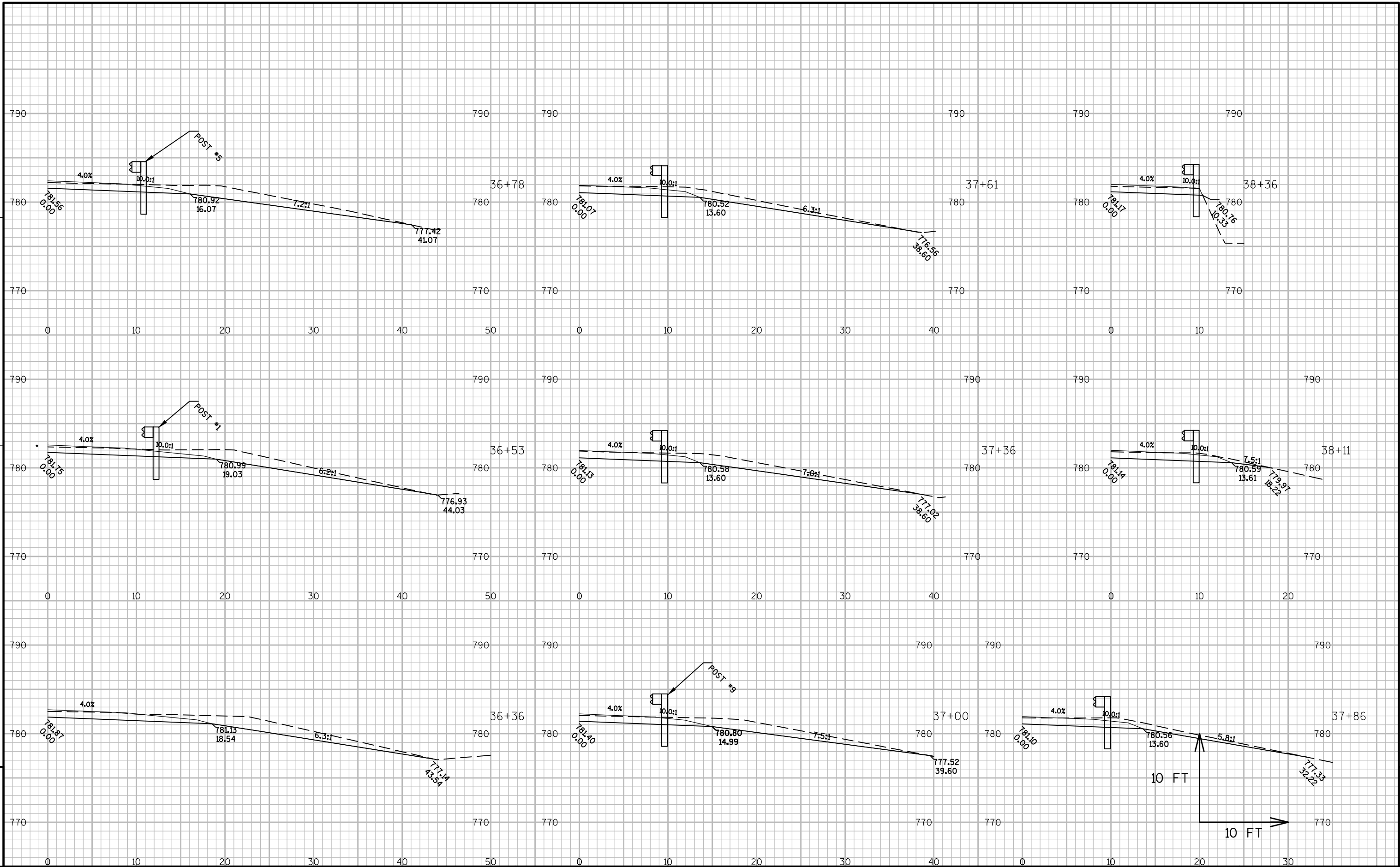
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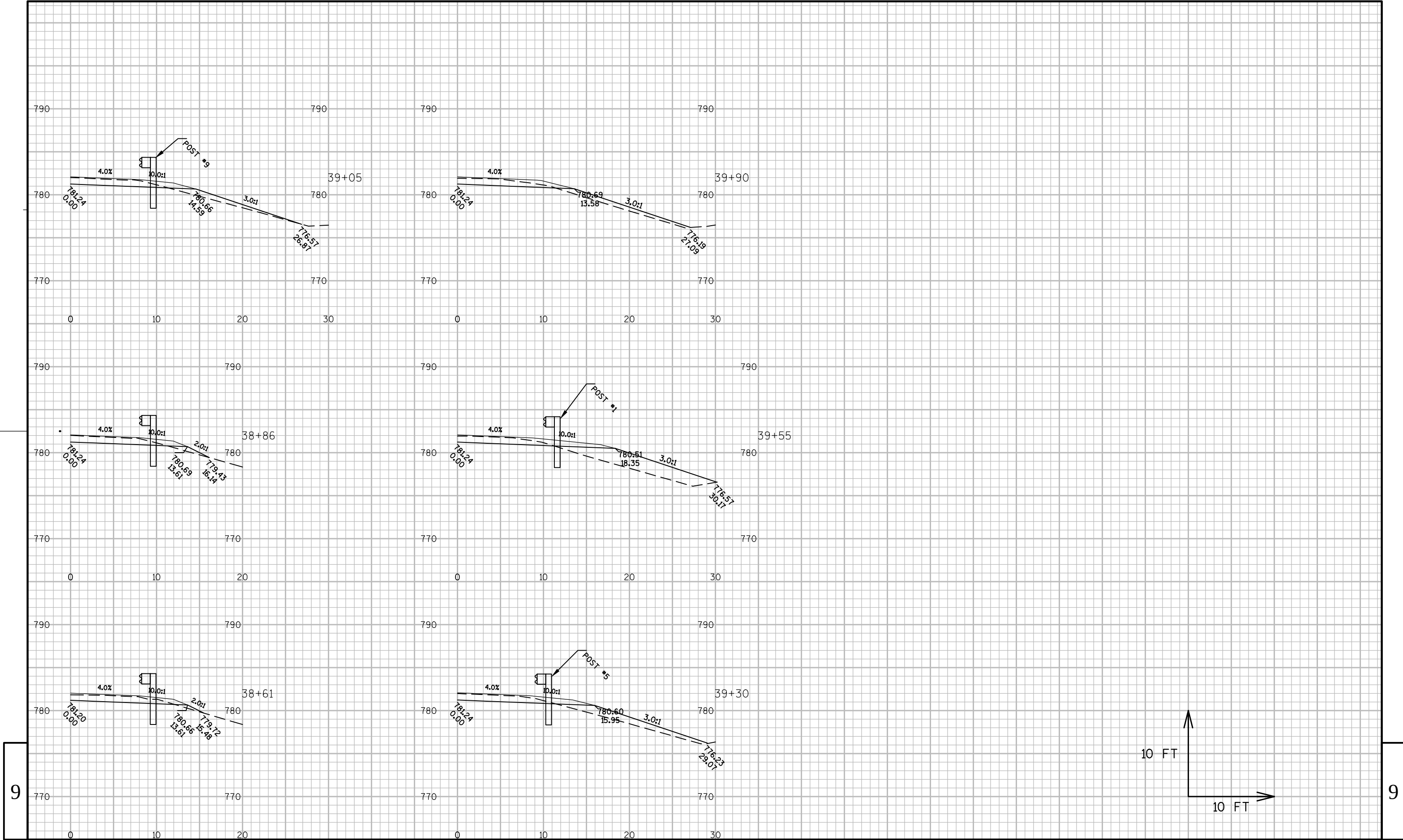


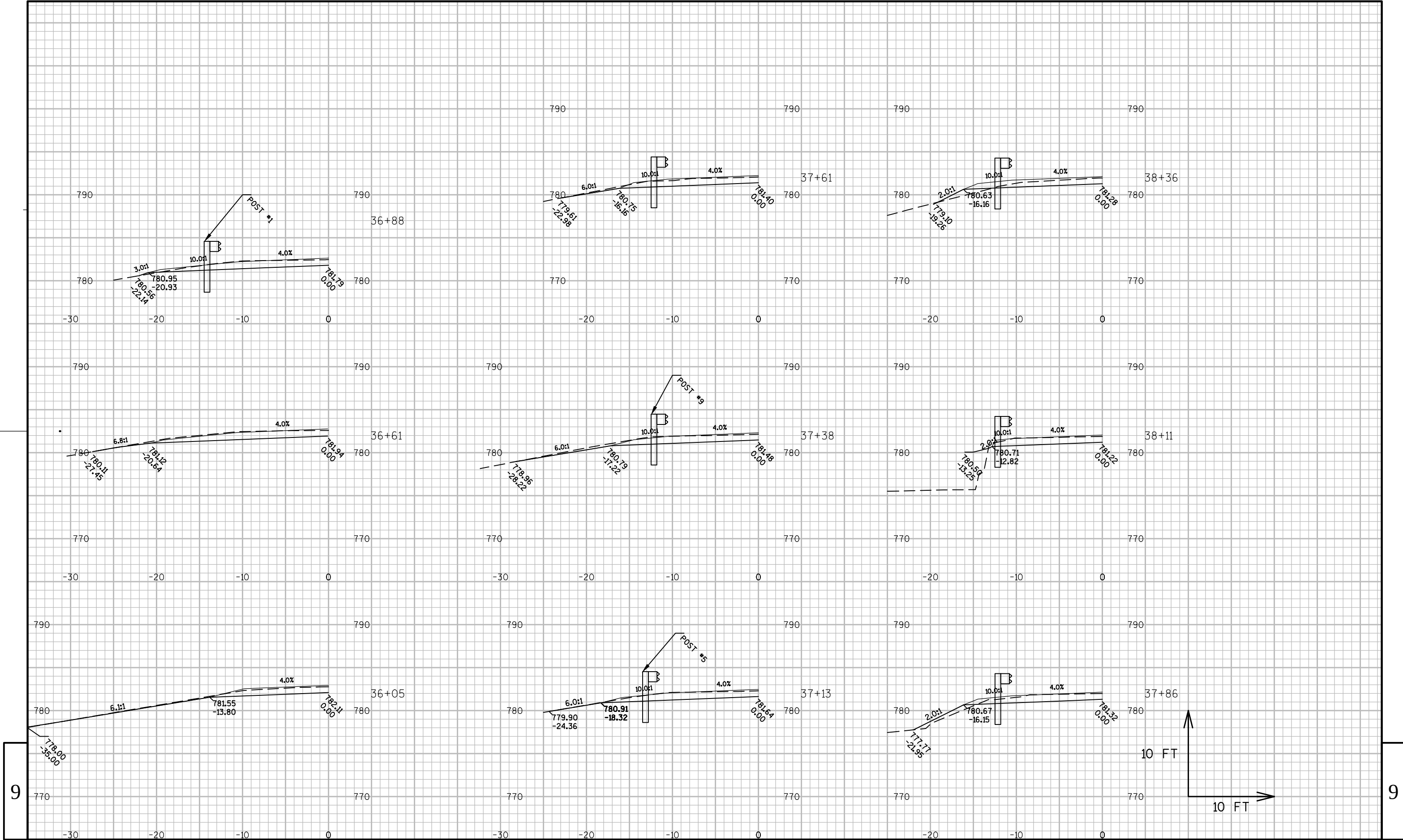


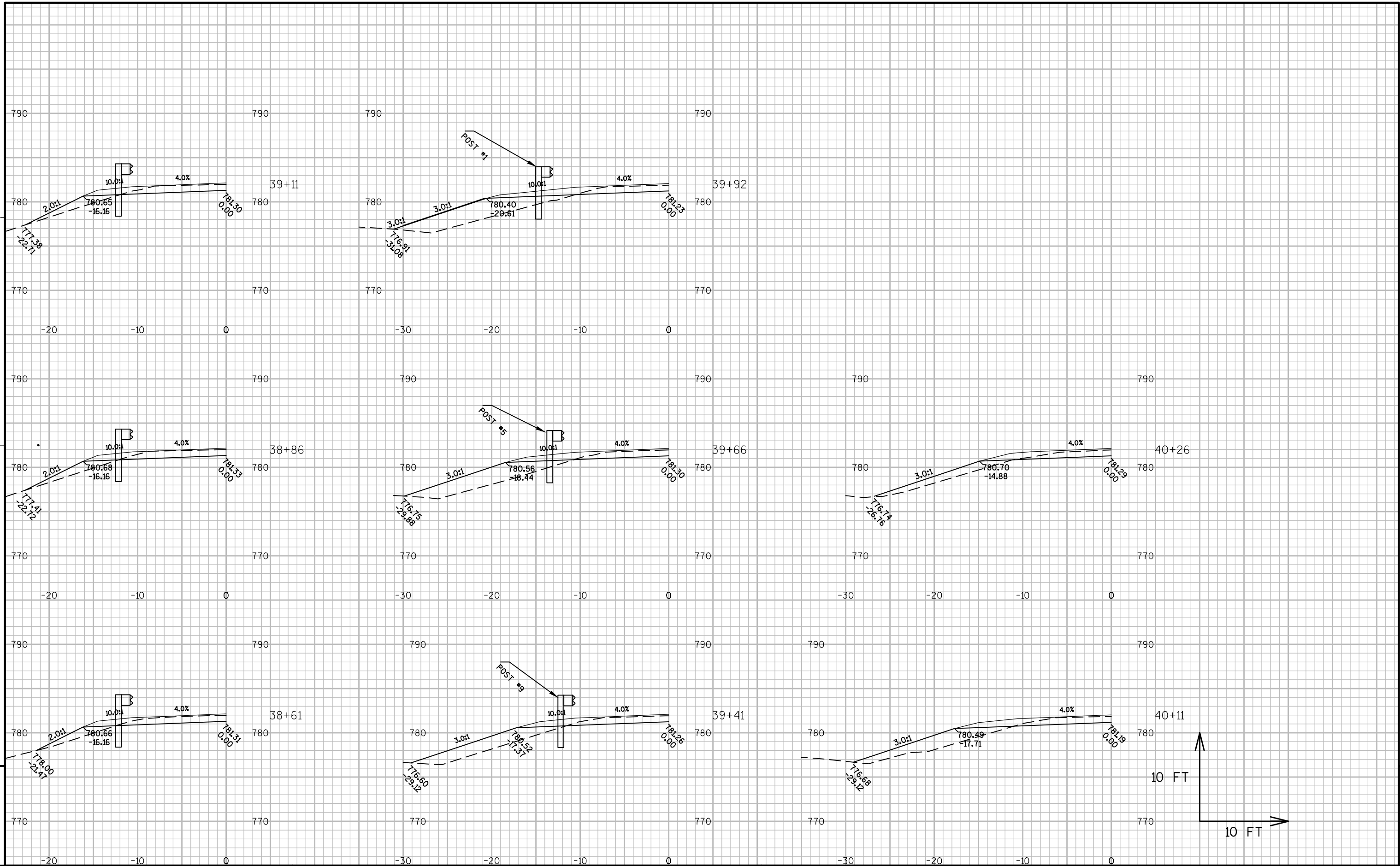
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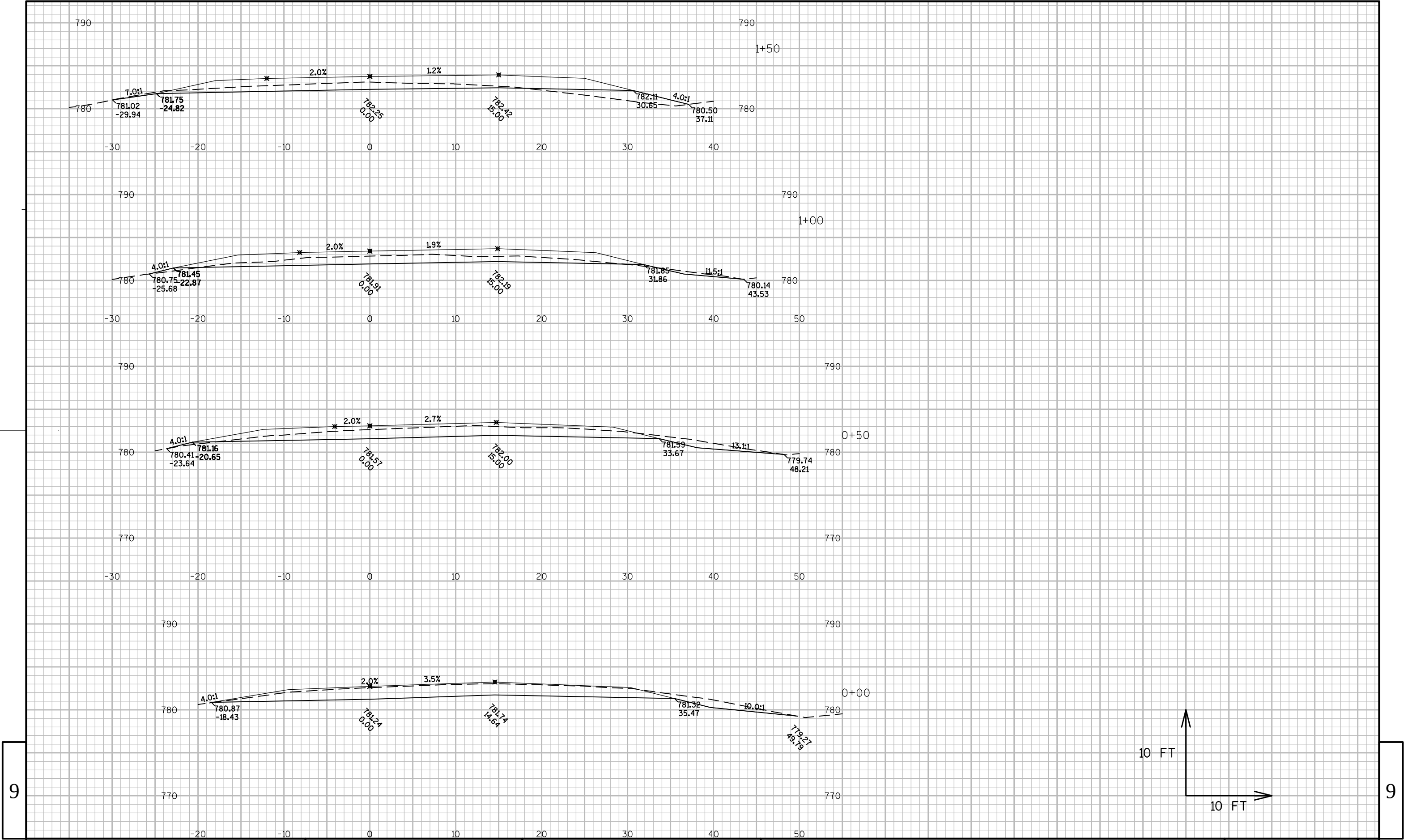
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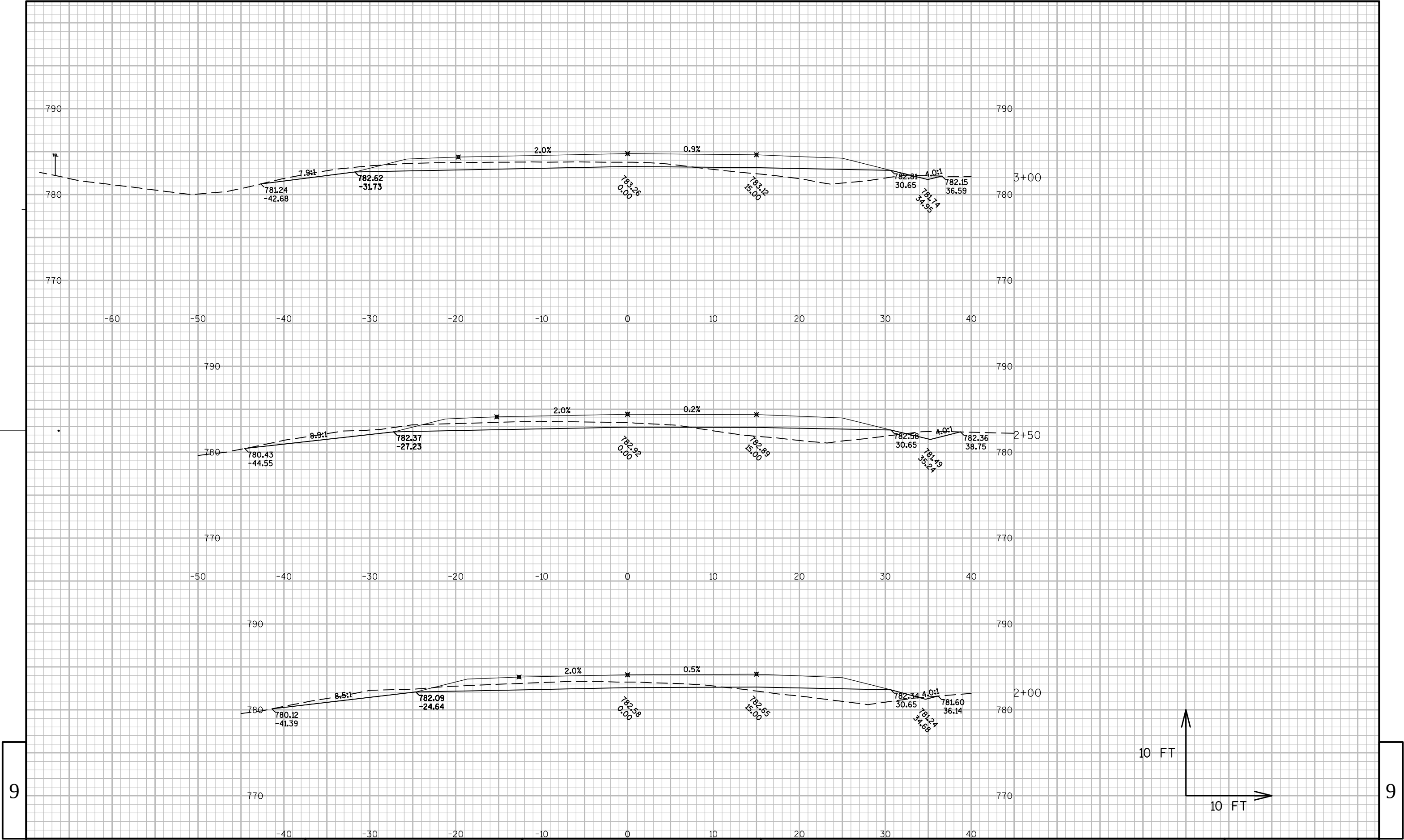






9

9



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9

PROJECT NO: 9202-10-71

HWY: STH 29

COUNTY: BROWN

CROSS SECTIONS: STH 29-STH 32 NE RAMP

SHEET

289

E

FILE NAME : N:\PDS\C3D\92021000\SHEETSPLAN\29-32 RAMP\RAMP INTERSECTION.XS.DWG

PLOT DATE : 5/31/2014 5:46 PM

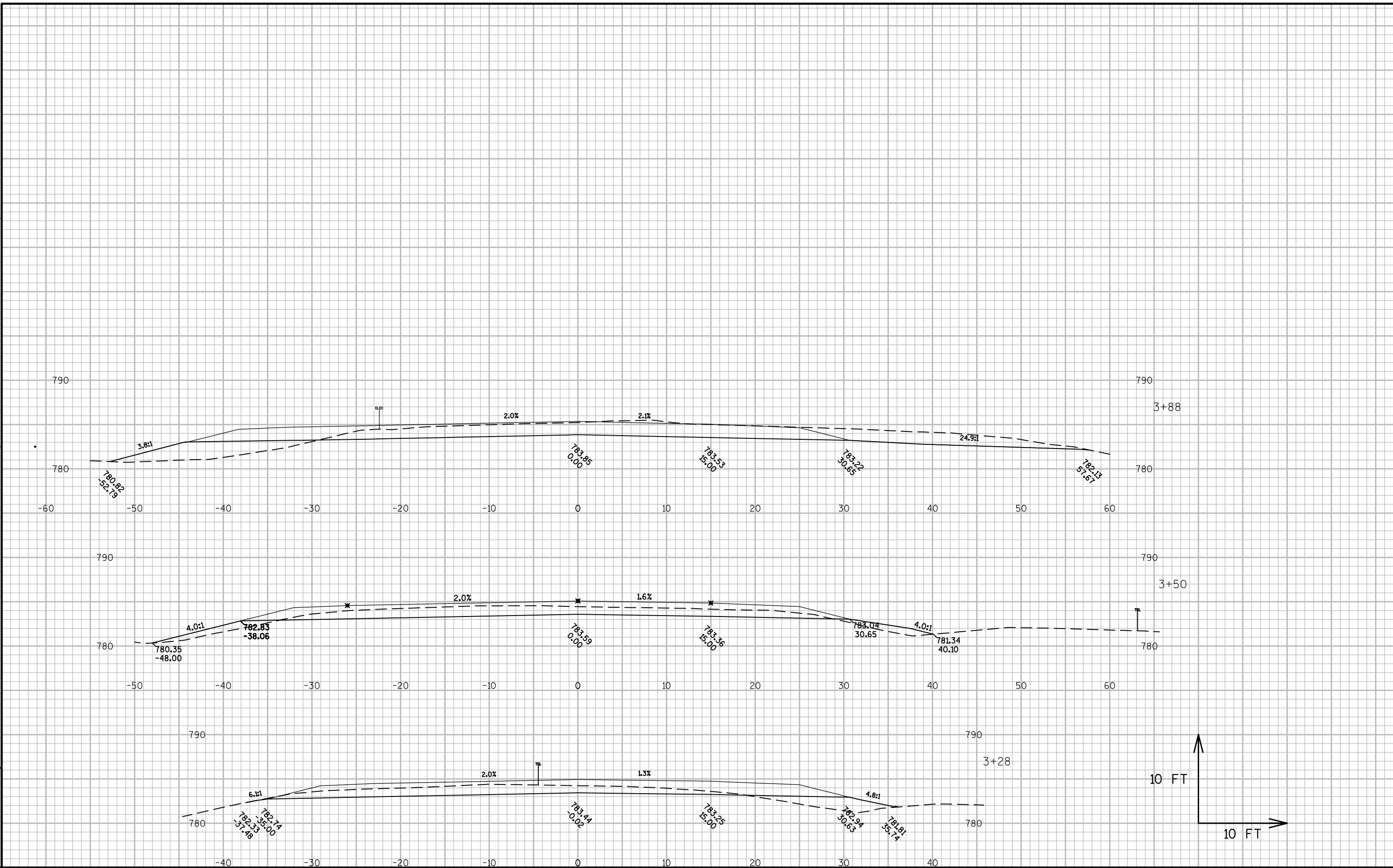
PLOT BY : GRASSE, ALEX D

PLOT NAME :

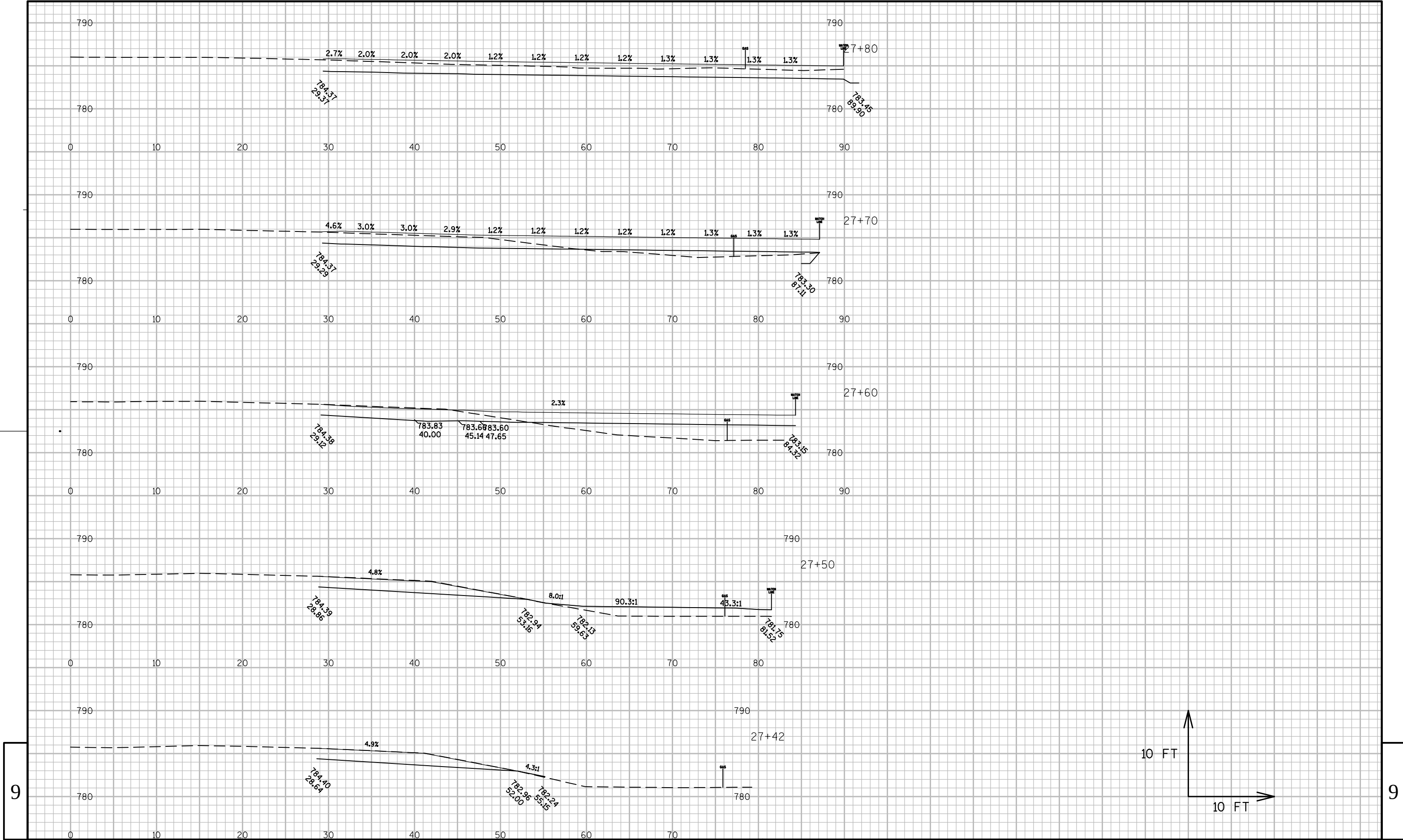
PLOT SCALE : 1:10-XREF

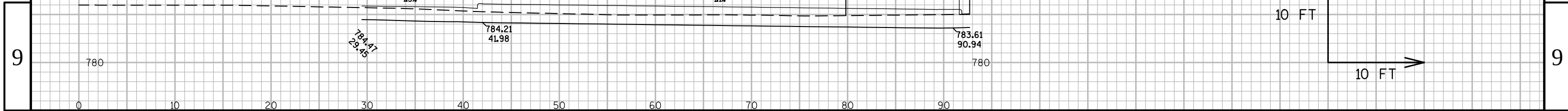
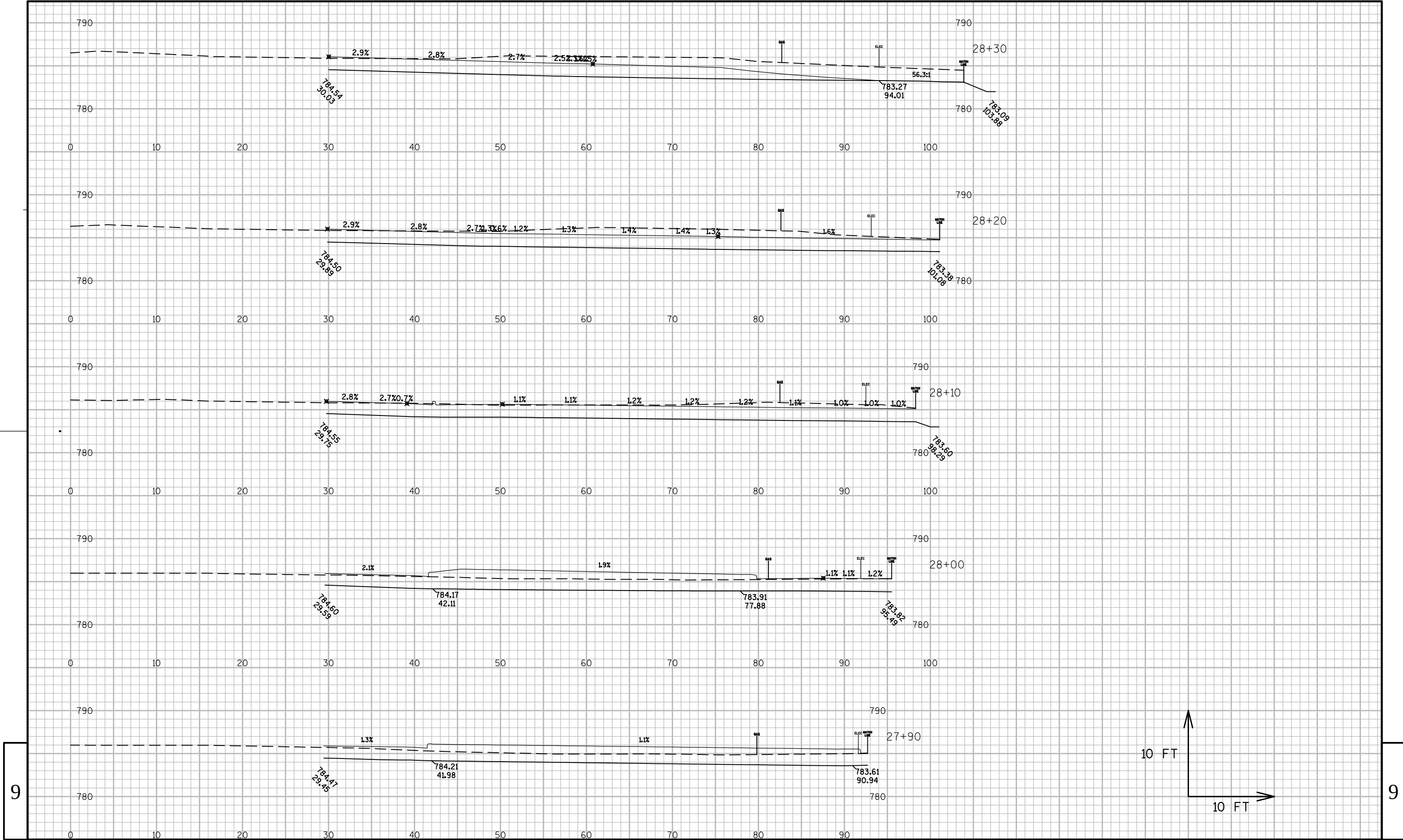
WISDOT/CADDs SHEET 49

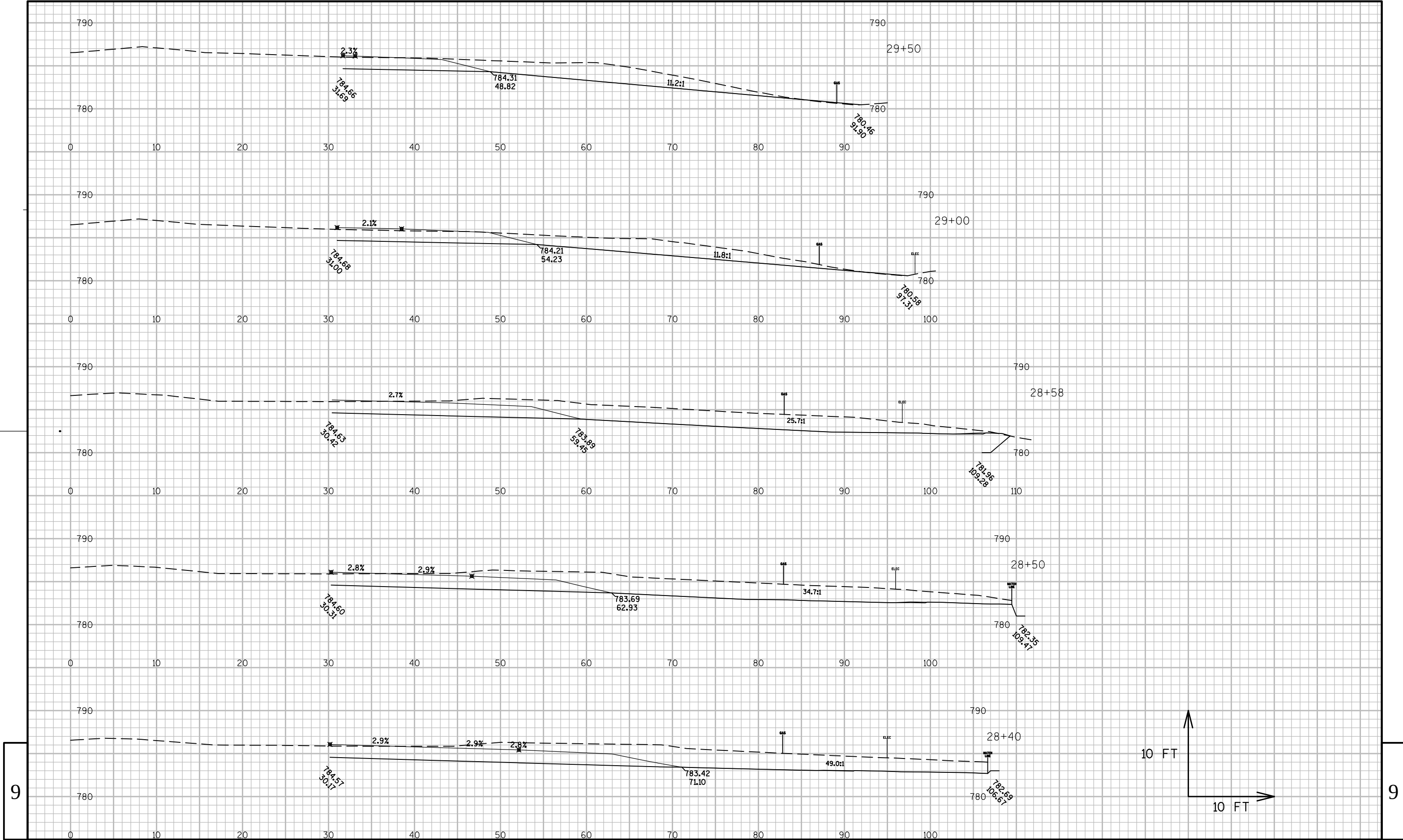
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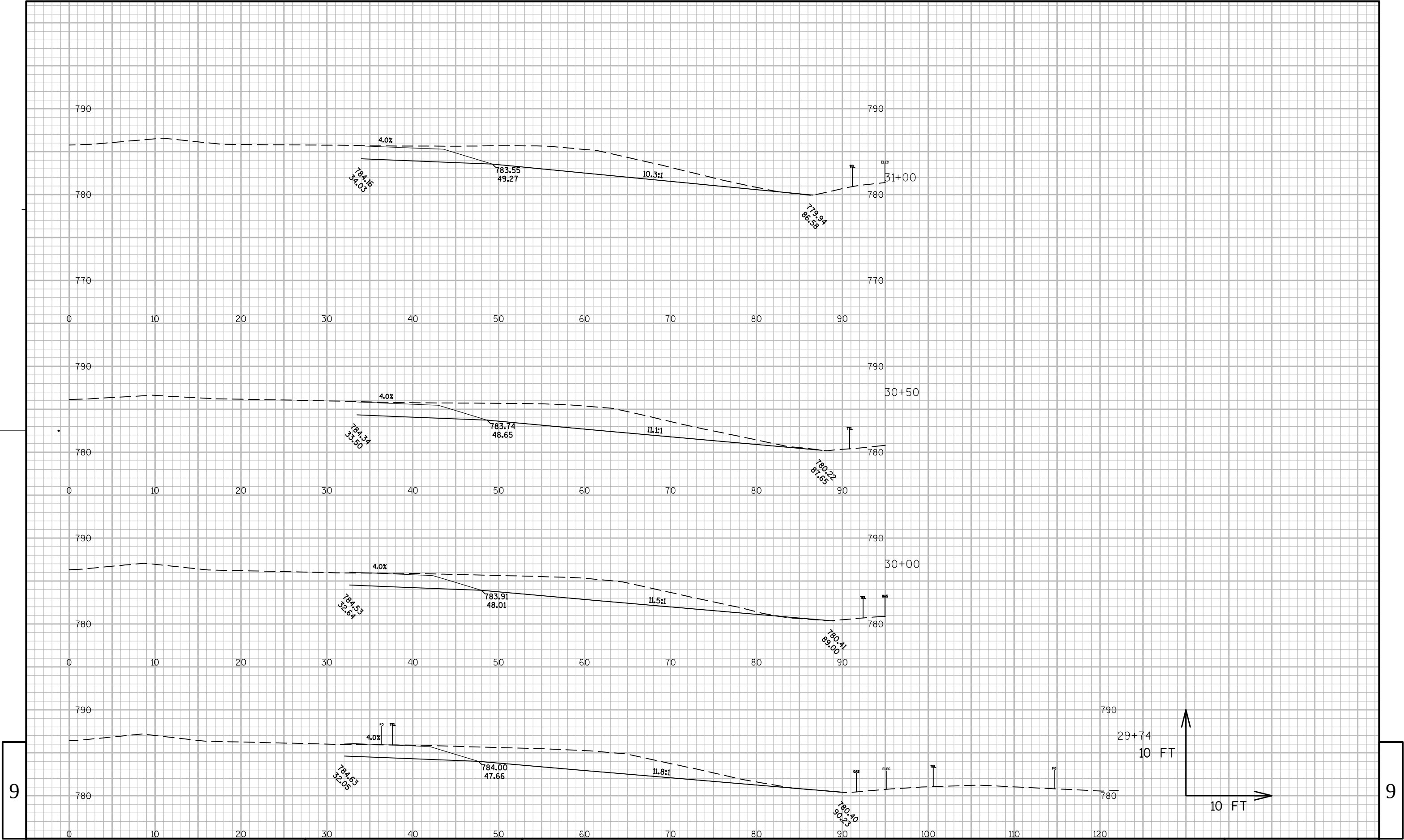


9









9

9

PROJECT NO: 9202-10-71

HWY: STH 29

COUNTY: BROWN

CROSS SECTIONS: STH 29-STH 32 NE RAMP

SHEET

294

E

FILE NAME : N:\PDS\C3D\92021000\SHEETSPLAN\29-32 RAMP\RAMP INTERSECTION.XS.DWG

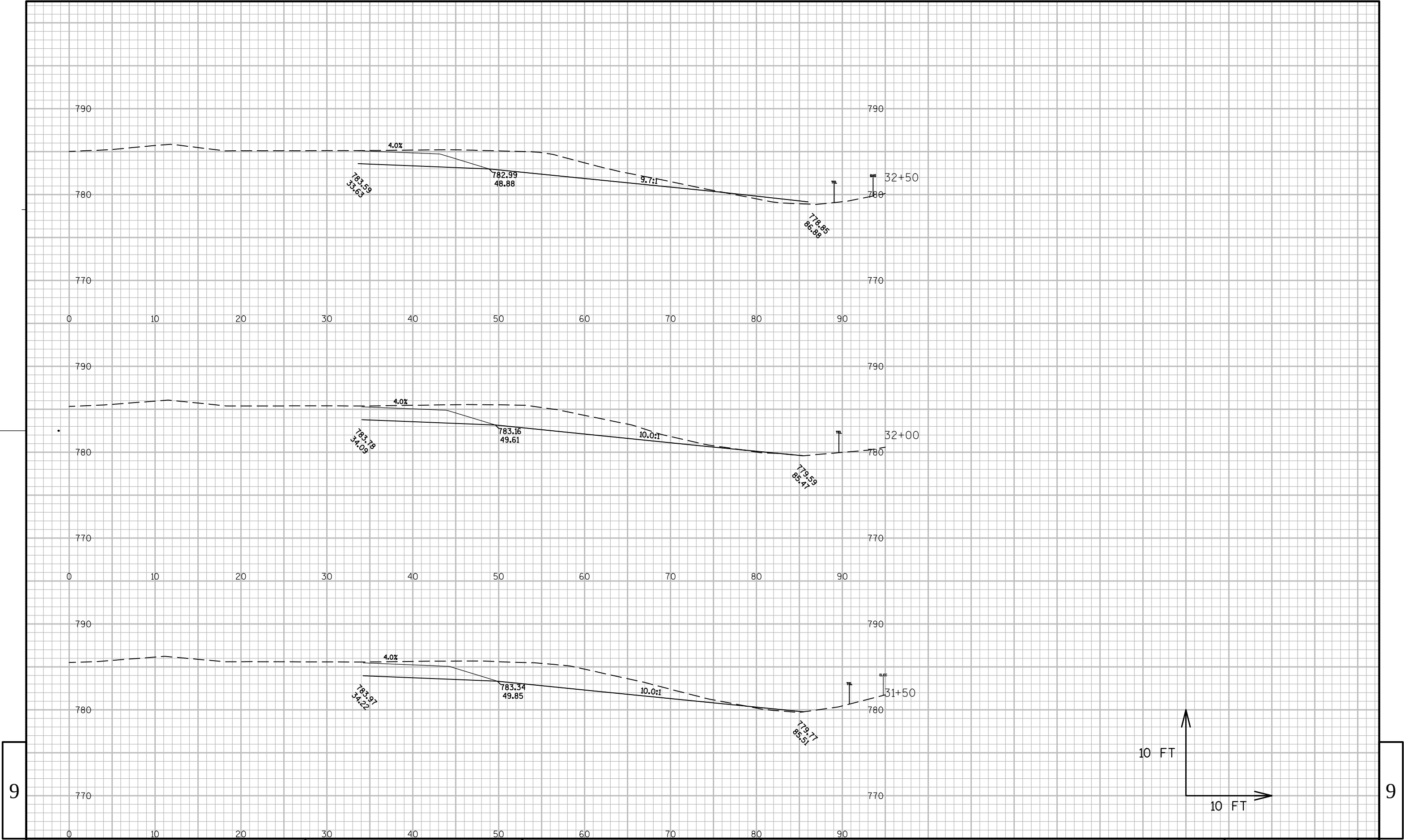
PLOT DATE : 5/31/2014 5:46 PM

PLOT BY : GRASSE, ALEX D

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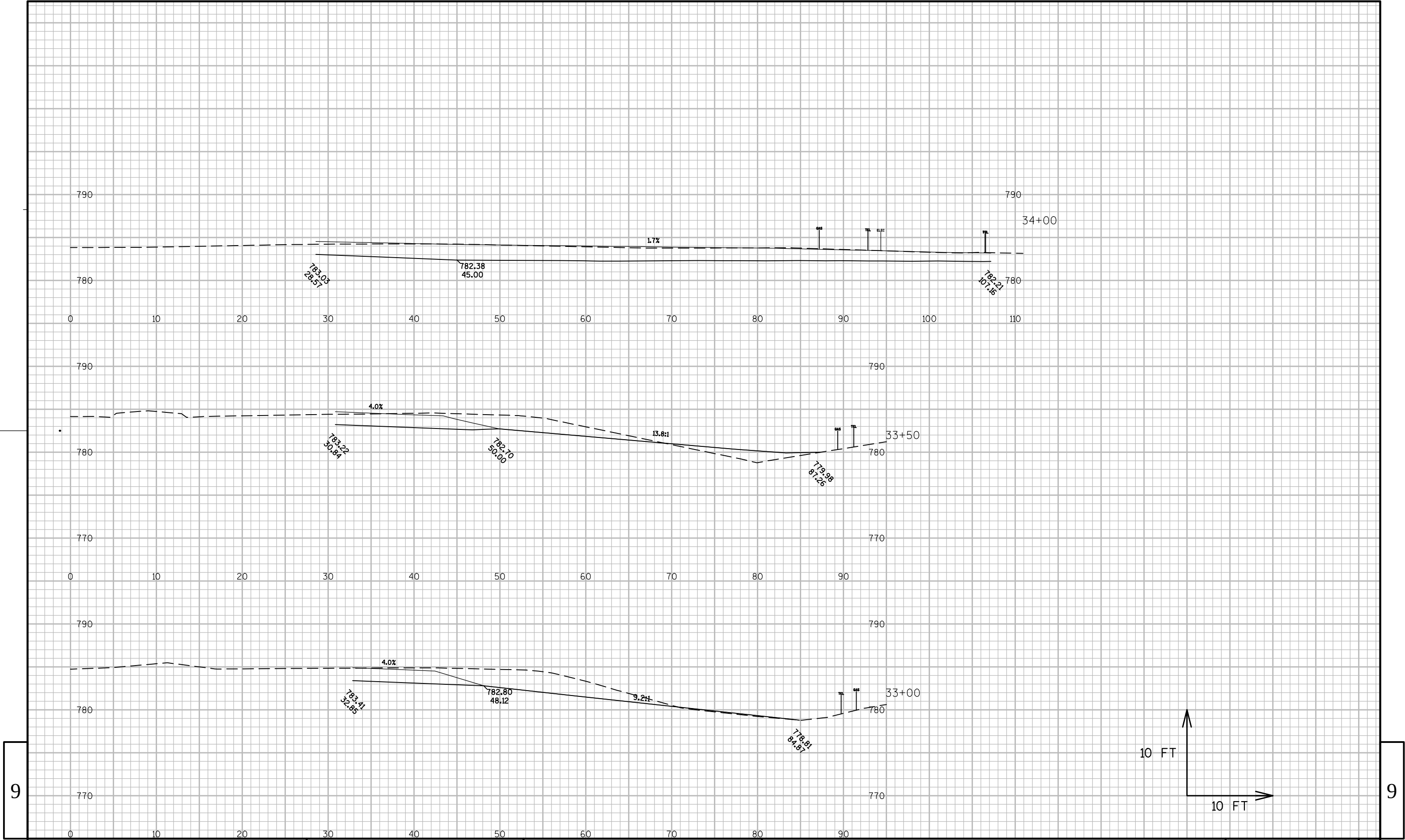
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WISDOT/CADDs SHEET 49



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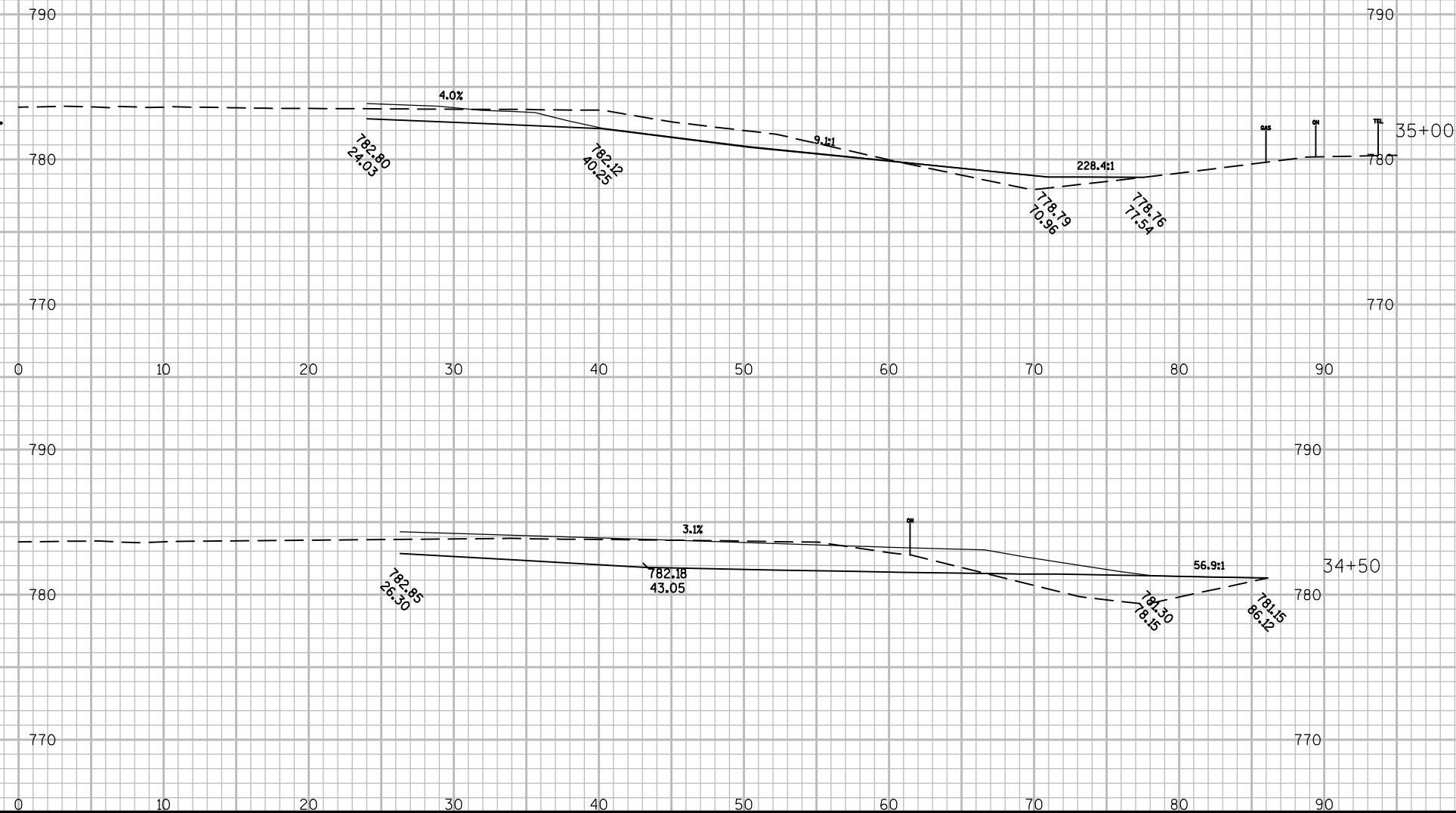
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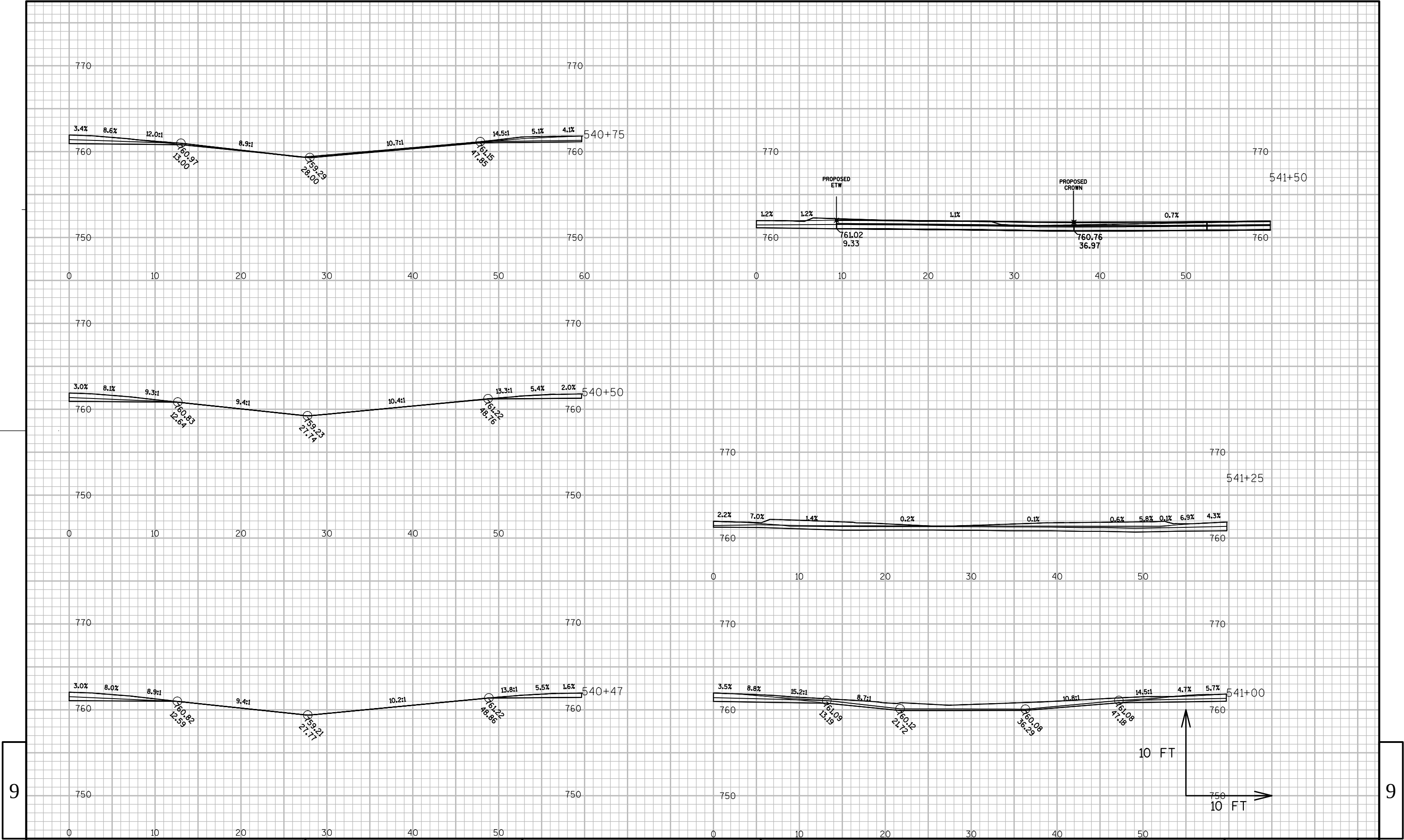
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PROJECT NO: 9202-10-71

HWY: STH 29

COUNTY: BROWN

CROSS SECTIONS: J-TURNS

SHEET

298

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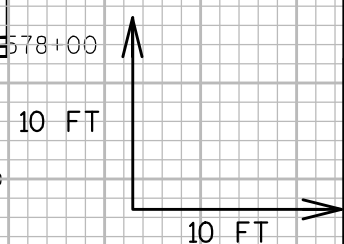
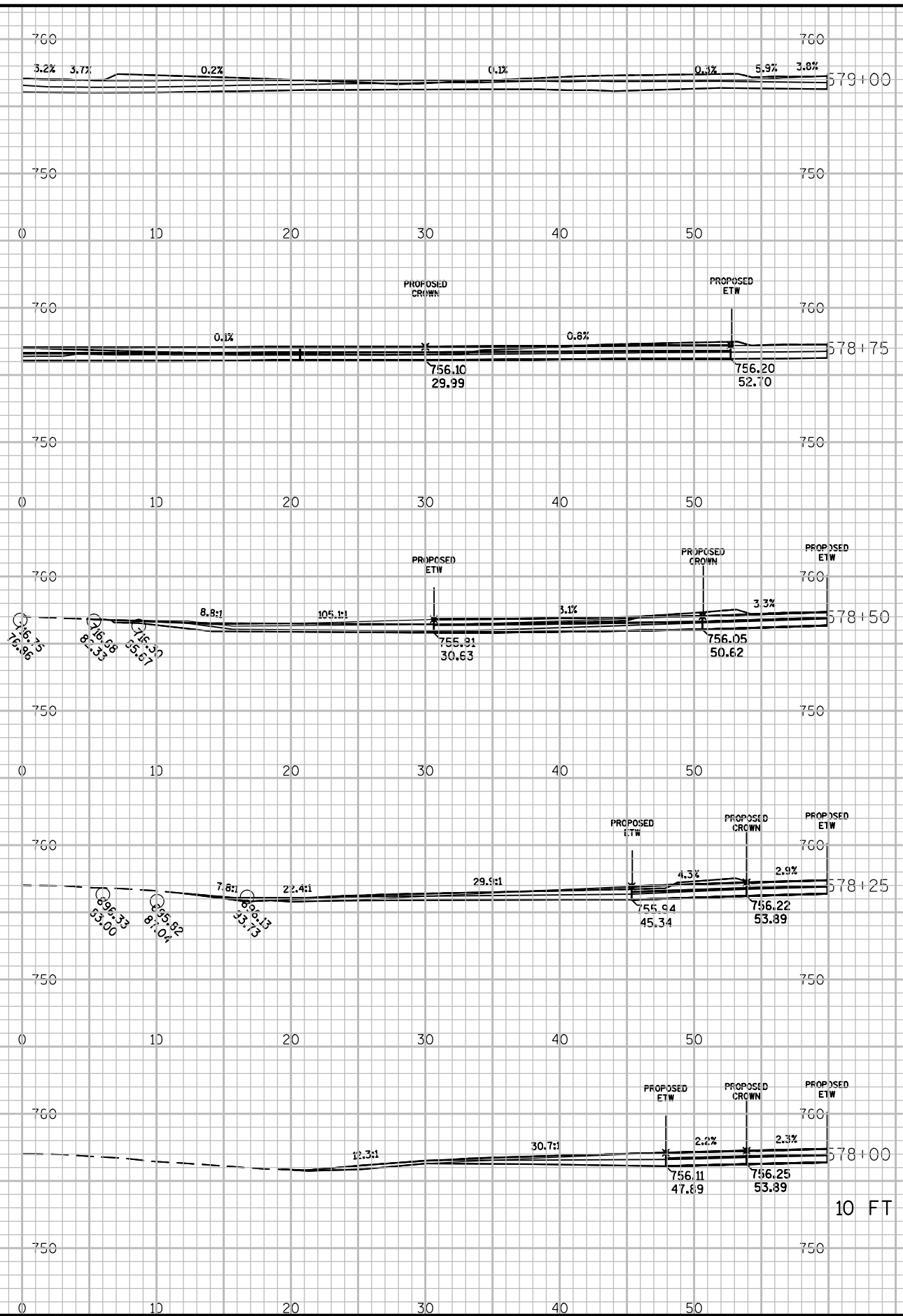
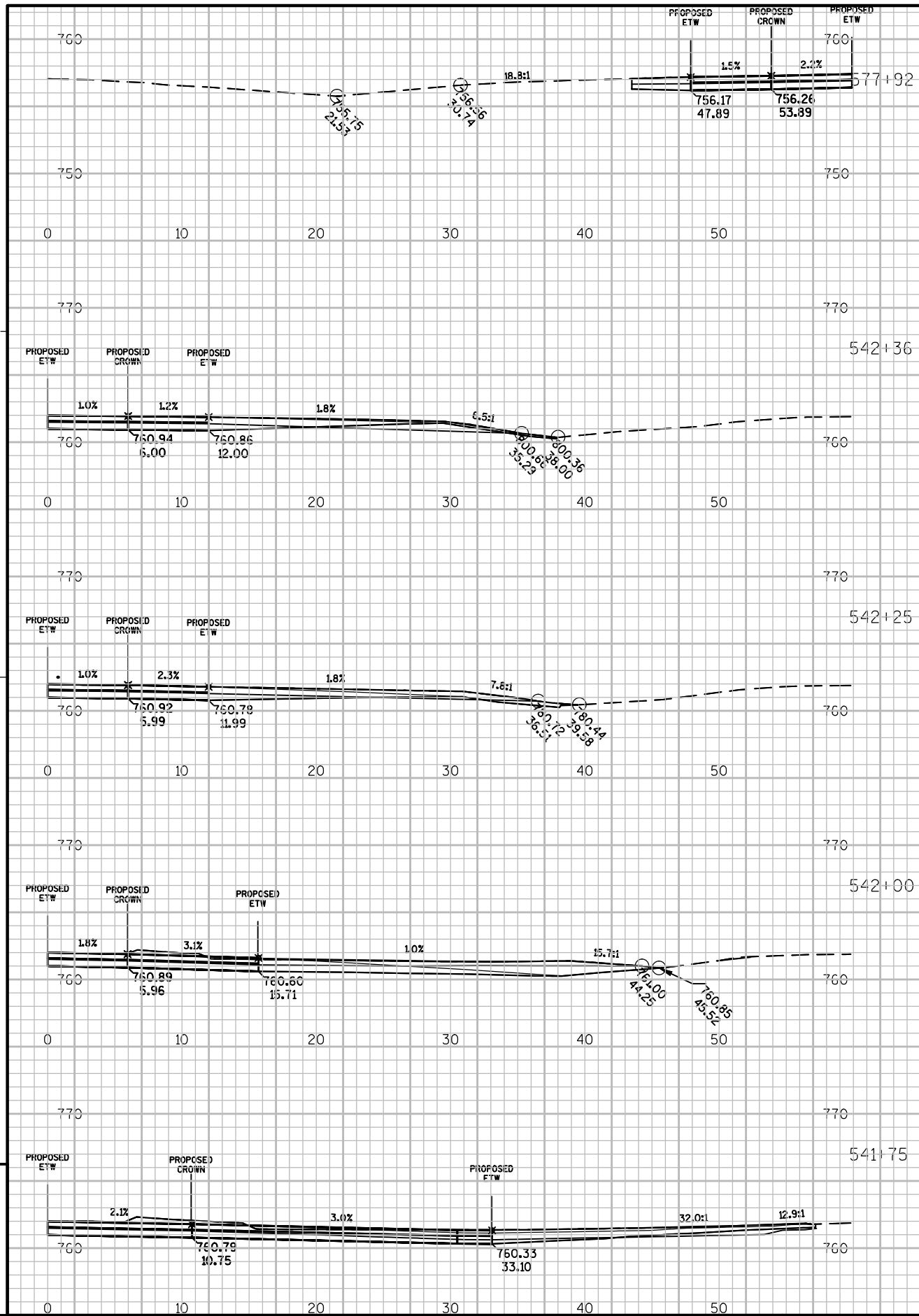
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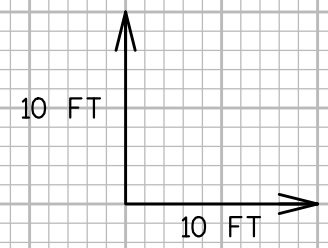
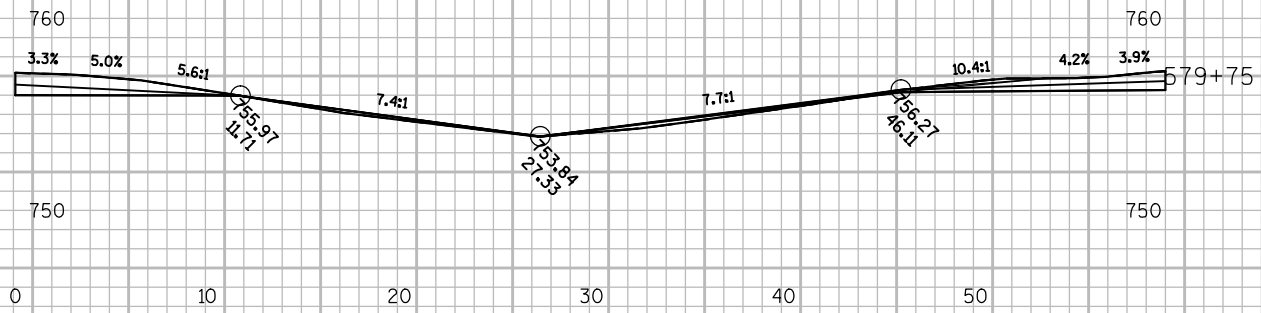
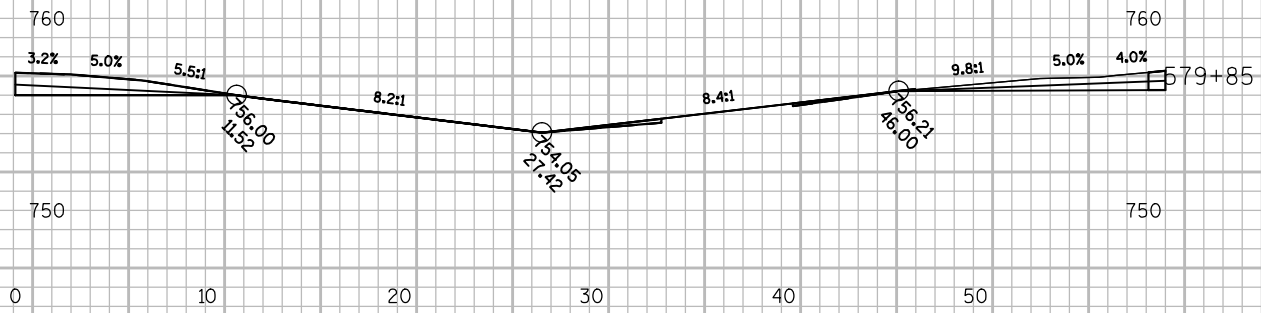
PLOT BY : GRASSE, ALEX D

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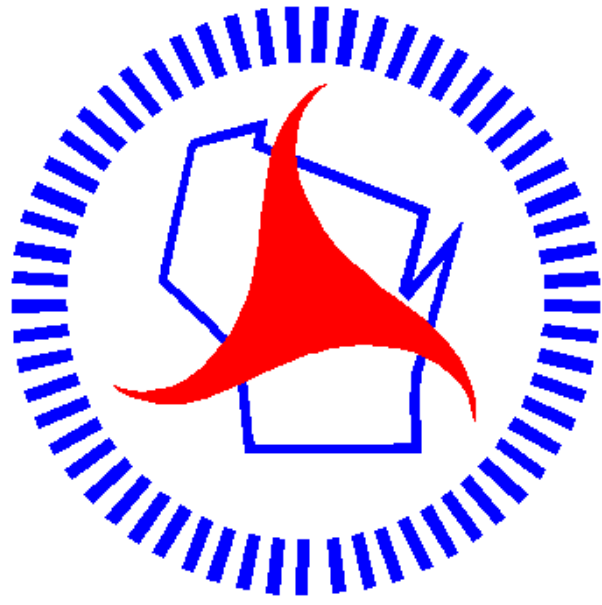
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Notes



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