

GRE

AUGUST 2026

PROJECT ID:

6240-32-71

COUNTY:

OUTAGAMIE

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 = 206



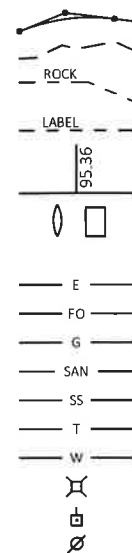
DESIGN DESIGNATION 6240-32-71

A.A.D.T. (2027)	=	6,800
A.A.D.T. (2047)	=	7,600
D.H.V.	=	480
D.D.	=	60/40
T (AADT)	=	10.4%
DESIGN SPEED	=	60 MPH
ESALS	=	2,400,000

CONVENTIONAL SYMBOLS

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

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



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

APPLETON - BLACK CREEK

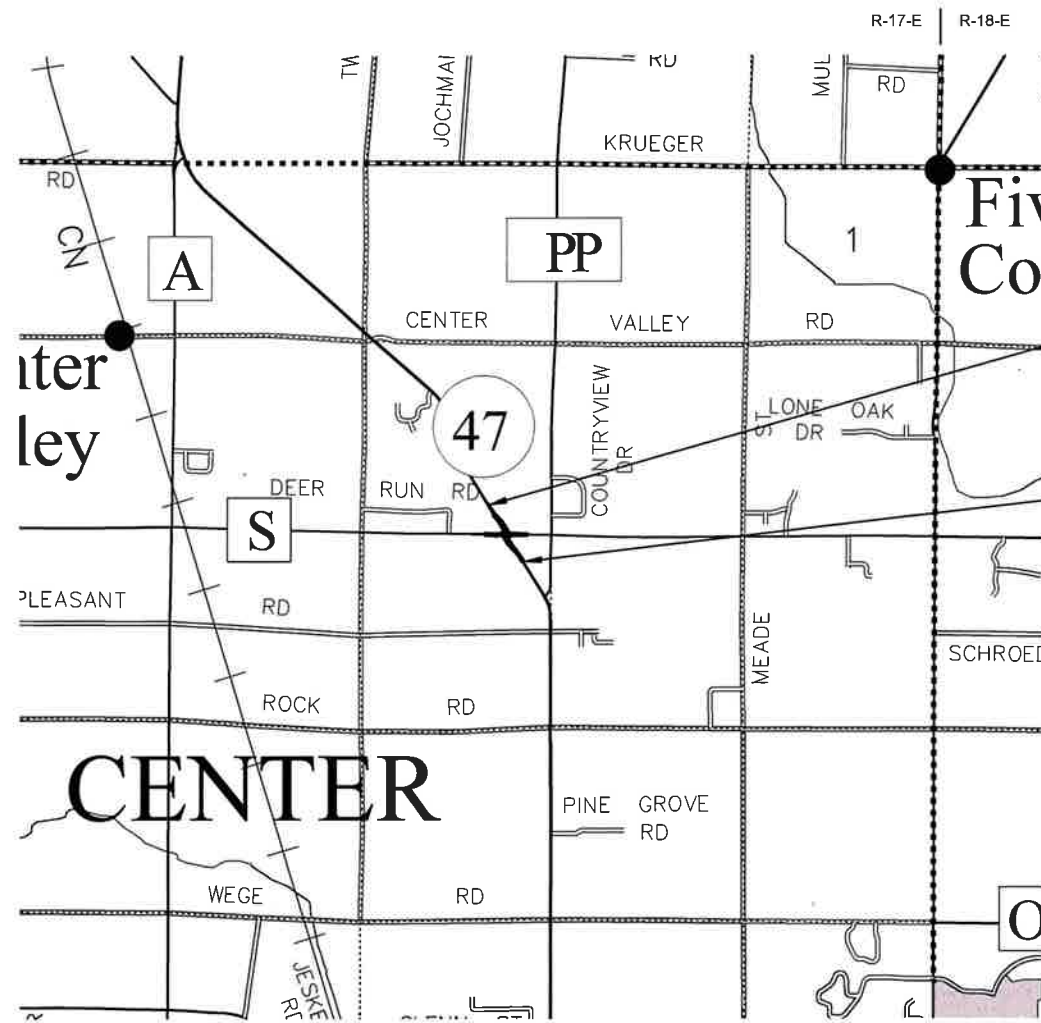
CTH S INTERSECTION

STH 47

OUTAGAMIE COUNTY

STATE PROJECT NUMBER

6240-32-71



END PROJECT
STA 120+60.37"NB"

BEGIN PROJECT
STA 101+93.38"NB"
Y = 607,176.219
X = 824,388.992

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), OUTAGAMIE COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 18.

STATE PROJECT

6240-32-71

FEDERAL PROJECT

PROJECT

WISC 2026394

CONTRACT

1

ORIGINAL PLANS PREPARED BY

Westwood



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WESTWOOD
Designer	WESTWOOD
Project Manager	JESSE HANSEN
Regional Examiner	JILL HILBERT
Regional Supervisor	TAMMY RABE

APPROVED FOR THE DEPARTMENT

DATE: 4/27/2026

E

GENERAL NOTES

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

UTILITIES CONTACTS

AT&T WISCONSIN - COMMUNICATION LINE
MICHAEL DECET
221 W WASHINGTON ST
APPLETON, WI 54911
920-840-4844
MD4321@ATT.COM

SPECTRUM - COMMUNICATIONS
JODY THIEL
3545 EAST PLANK ROAD
APPLETON, WI 54915
PHONE: 920-378-5835
MOBILE: 920.378.5835
JODY.THIEL@CHARTER.COM

WE ENERGIES - ELECTRICITY
REIJO MURTO
800 S. LYNNDAL E DR.
APPLETON, WI, 54914
920-380-3369
REIJO.MURTO@WE-ENERGIES.COM

WE ENERGIES - GAS/PETROLEUM
EDDIE A. HEDLUND
800 S. LYNNDAL E DRIVE
APPLETON, WI, 54912
PHONE: 920-380-3240
MOBILE: 920-470-0418

DNR LIASION

MATT SCHAEVE
DNR NORTHEAST REGIONAL
HEADQUARTERS
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
PHONE: 920-662-5472
MATTHEW.SCHAEVE@WISCONSIN.GOV

COUNTY HIGHWAY
COMMISSIONER

CURTIS RIEDY
1313 HOLLAND RD
APPLETON, WI 54911-8946
920-832-5673
CURTIS.RIEDY@OUTAGAMIE.ORG

NE REGION SURVEY COORDINATOR

CORMAC MCINNIS
944 VANDER PERREN WAY
GREEN BAY, WI 54304
920-492-5635
CORMAC.MCINNIS@DOT.WI.GOV

WISDOT PROJECT MANAGER

JESSE HANSEN
WISDOT NORTHEAST REGION
944 VANDERPERREN WAY
GREEN BAY, WI 54304
920-362-6095
JESSE.HANSEN@DOT.WI.GOV

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 9.28 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 8.03 ACRES

ORDER OF SECTION 2 DETAIL SHEETS

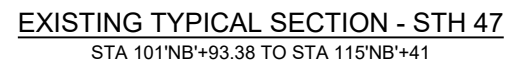
- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PAVING DETAILS
- EROSION CONTROL
- STORM SEWER
- PERMANENT SIGNING
- LIGHTING PLAN
- PERMANENT MARKING
- TRAFFIC CONTROL
- DETOURS
- ALIGNMENT DETAILS



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



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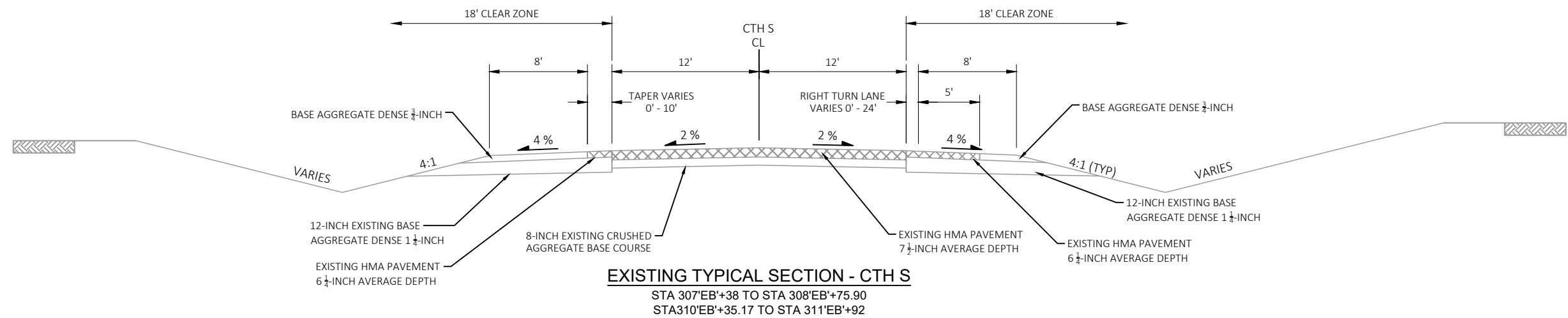
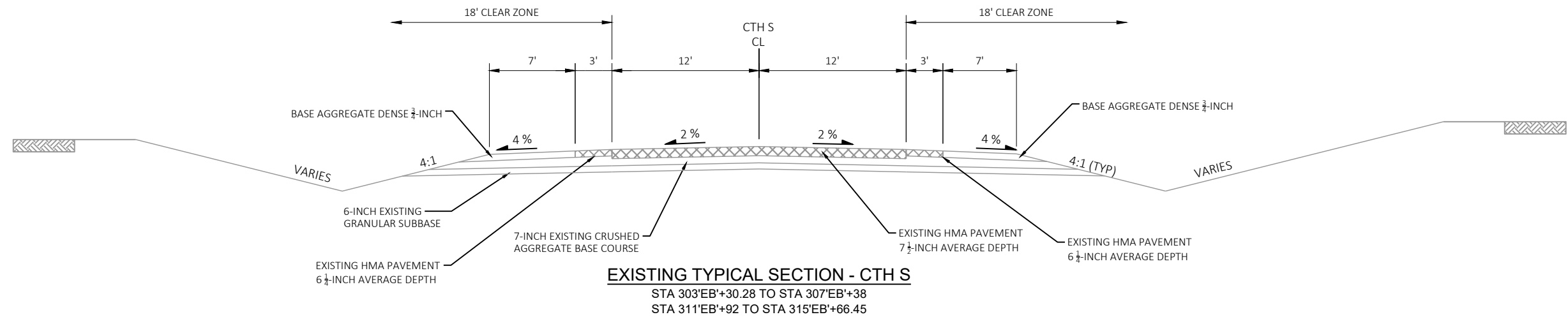


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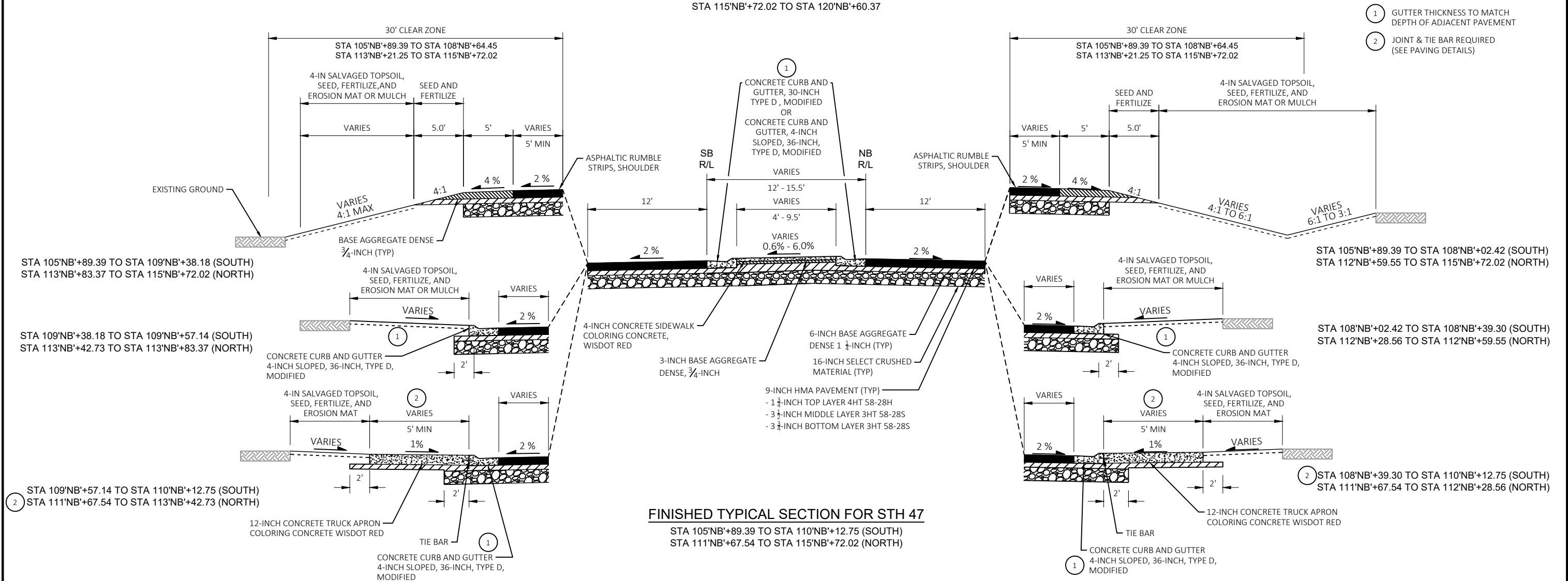
WISDOT/CADDS SHEET 42

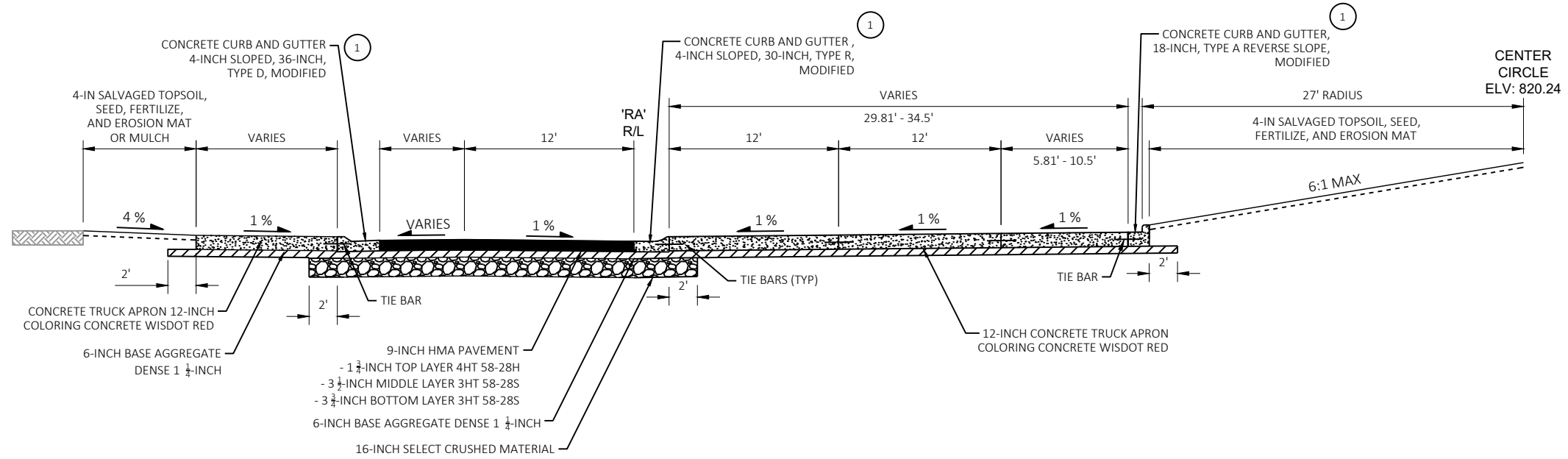
2

2 |



STA 101'NB'+93.38 TO STA 105'NB'+89.39
STA 115'NB'+72.02 TO STA 120'NB'+60.37

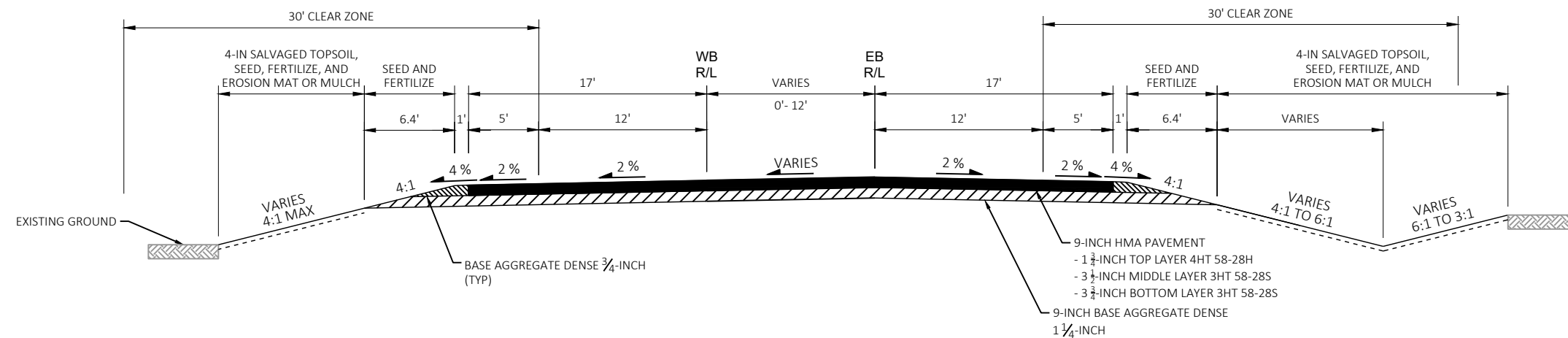




FINISHED TYPICAL SECTION FOR ROUNDABOUT

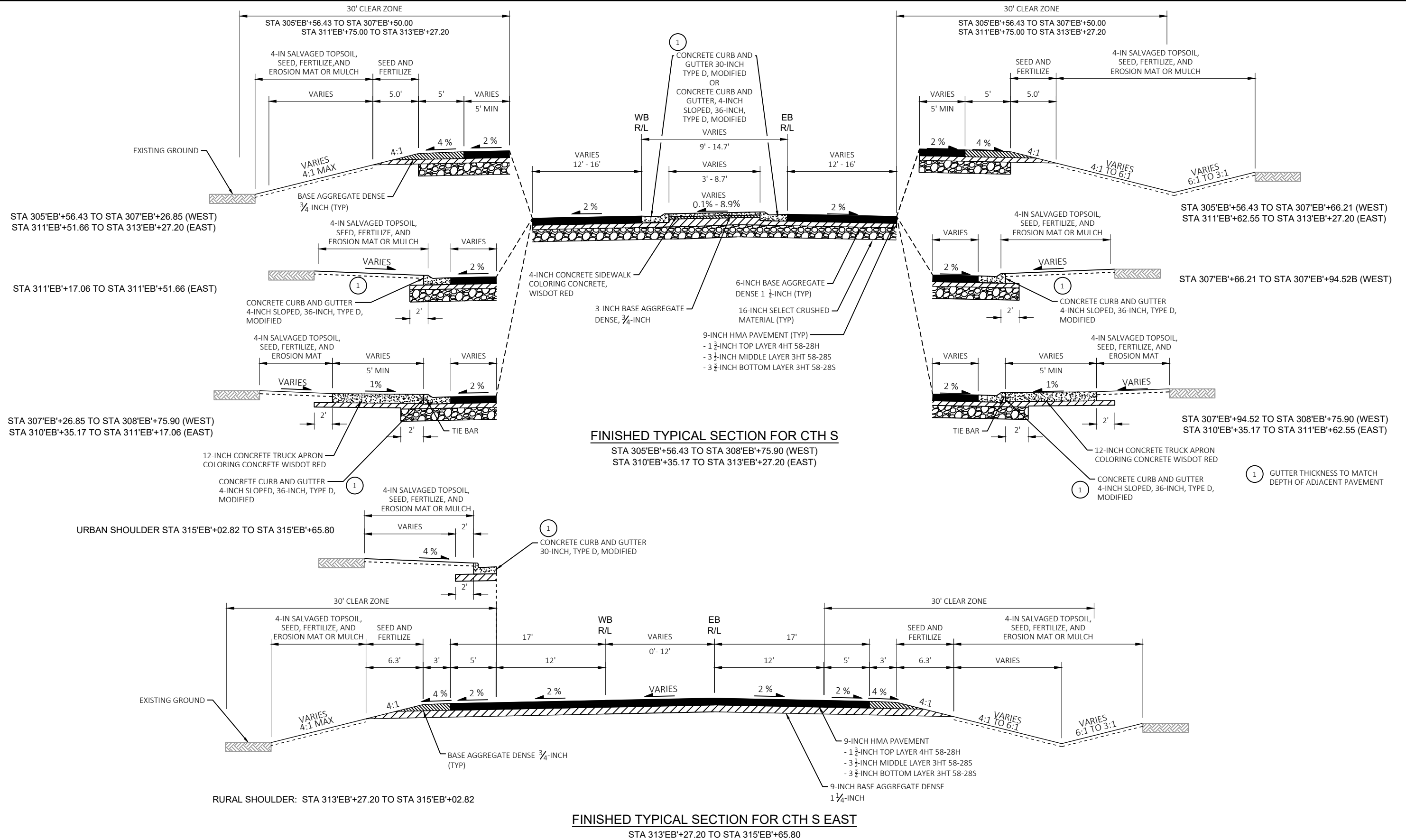
STA 10'RA'+00.00 TO STA 13'RA'+97.04

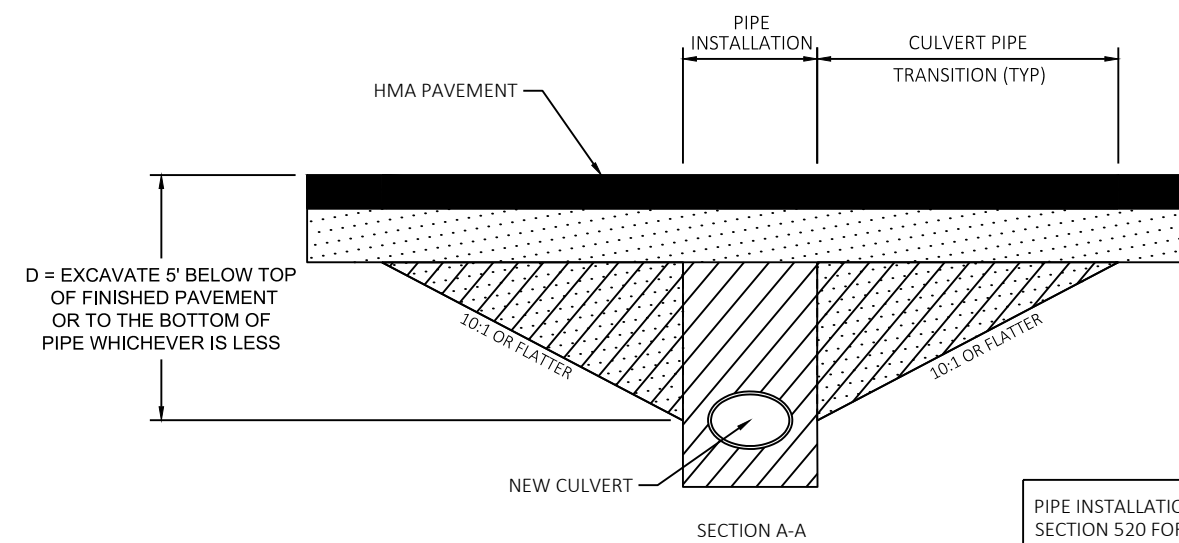
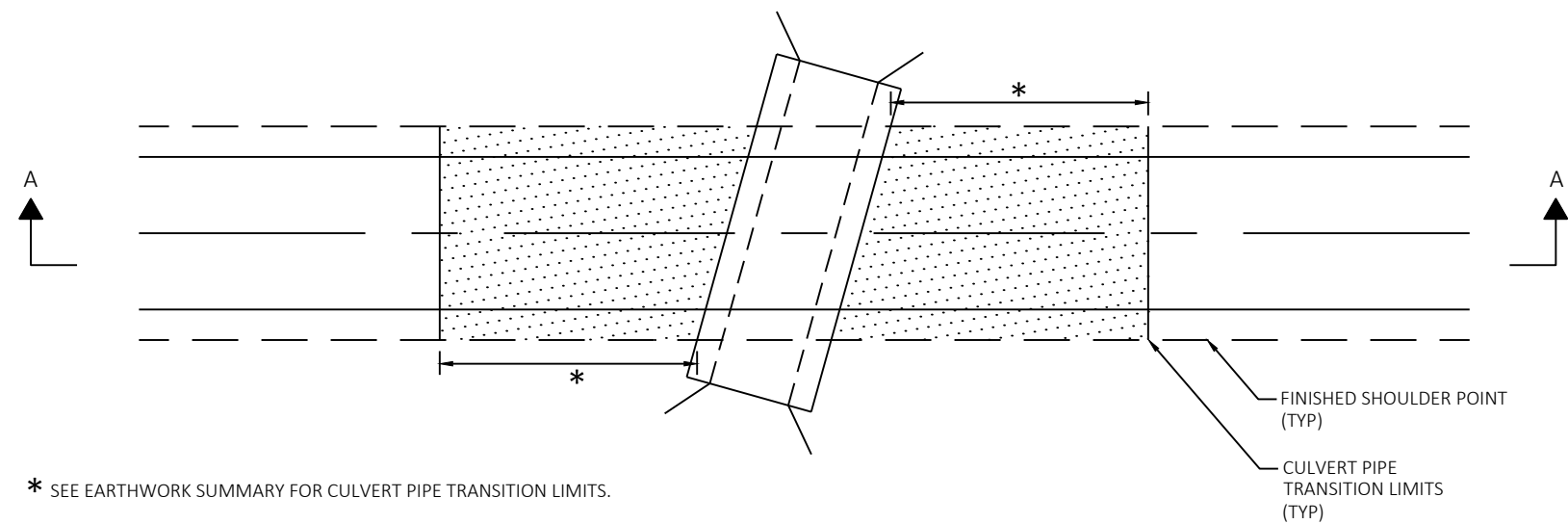
1 GUTTER THICKNESS TO MATCH DEPTH OF ADJACENT PAVEMENT



FINISHED TYPICAL SECTION FOR CTH S WEST

STA 303'EB'+30.28 TO STA 305'EB'+56.43





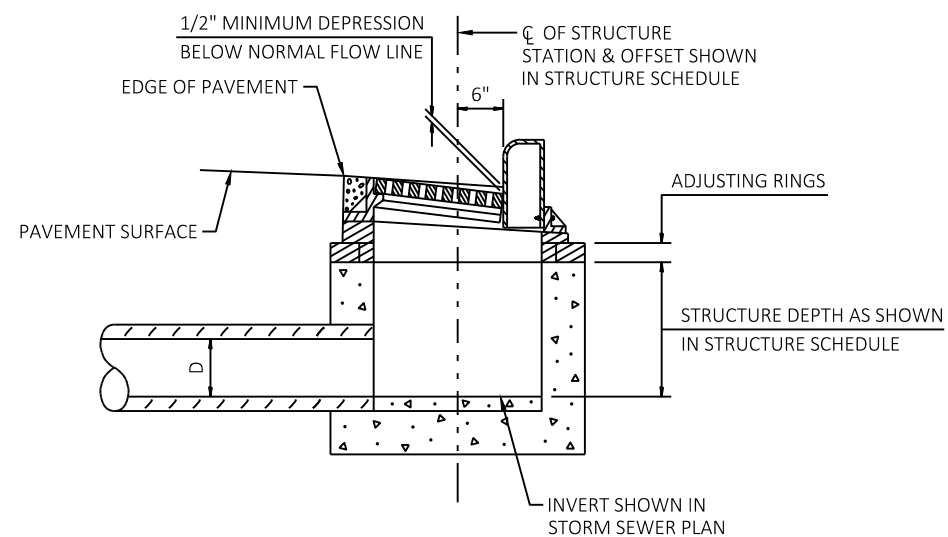
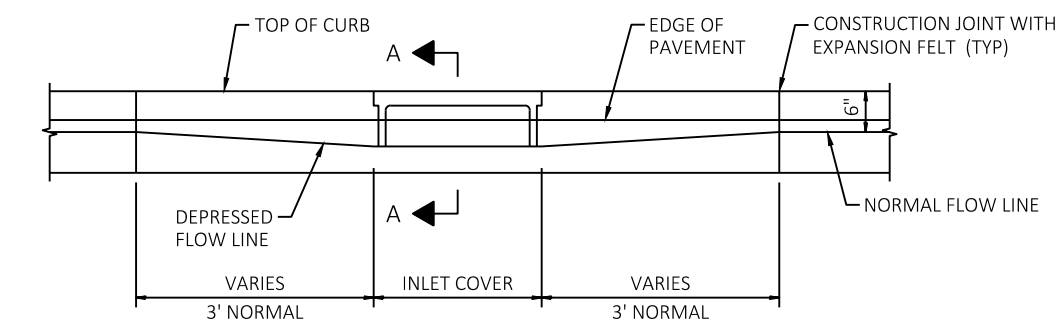
COMMON EXCAVATION
FOUNDATION BACKFILL

PIPE INSTALLATION AREA WILL FOLLOW
SECTION 520 FOR INSTALLATION,
WIDTHS AND PAYMENT.

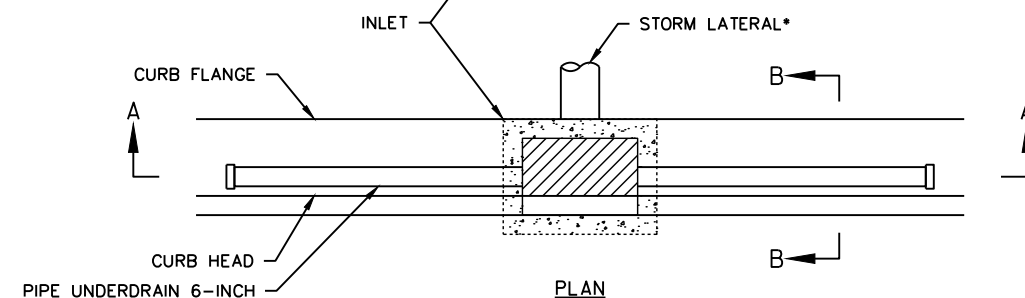
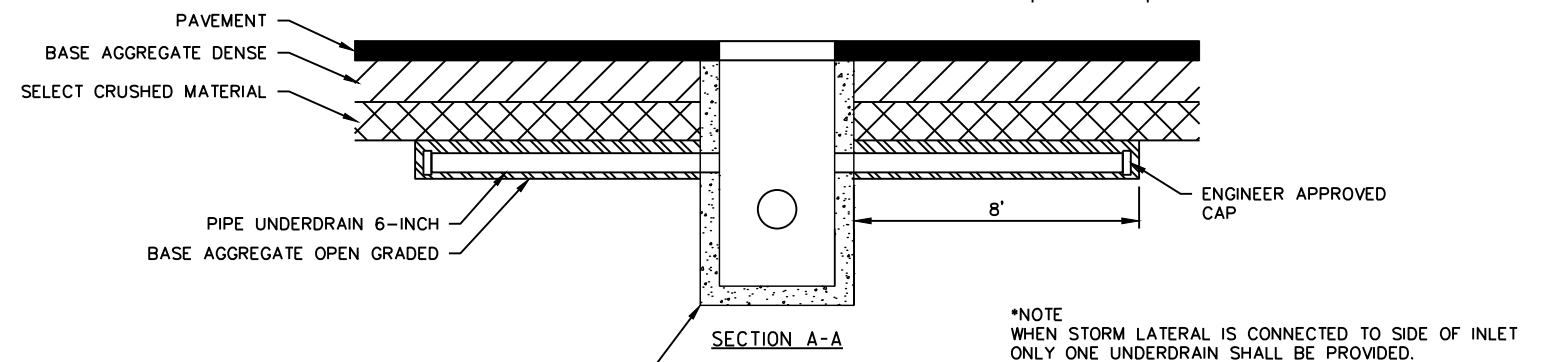
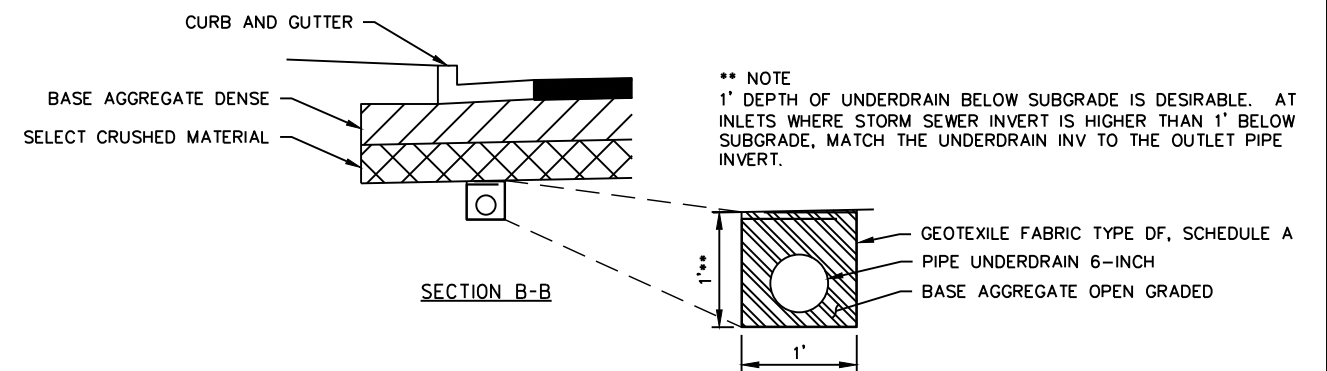
CONSTRUCT TRANSITION
PERPENDICULAR TO CULVERT PIPE.

CULVERT PIPE TRANSITION AREAS WILL
BE PAID BY COMMON EXCAVATION &
SPV FOUNDATION BACKFILL.

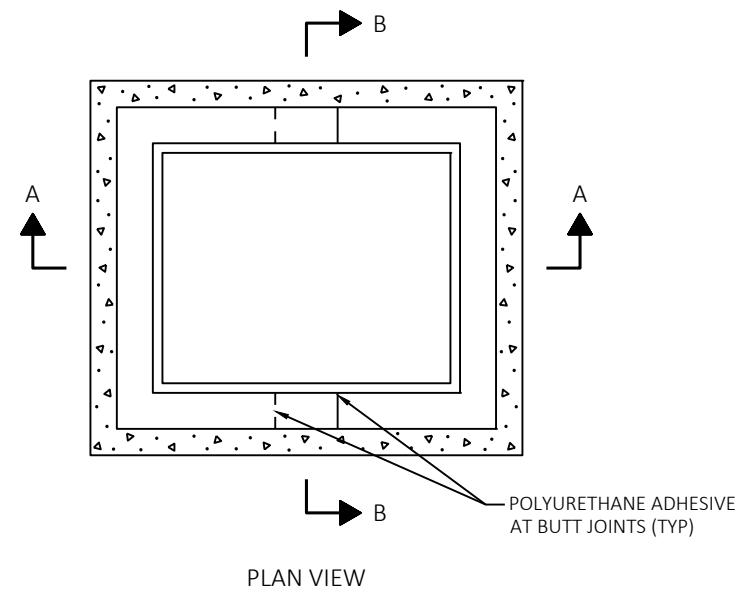
NEW CULVERT PIPES WITH TRANSITION



DETAIL OF CURB AND GUTTER AT INLETS

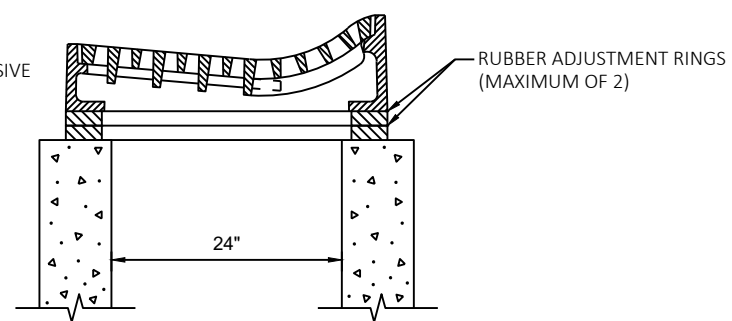
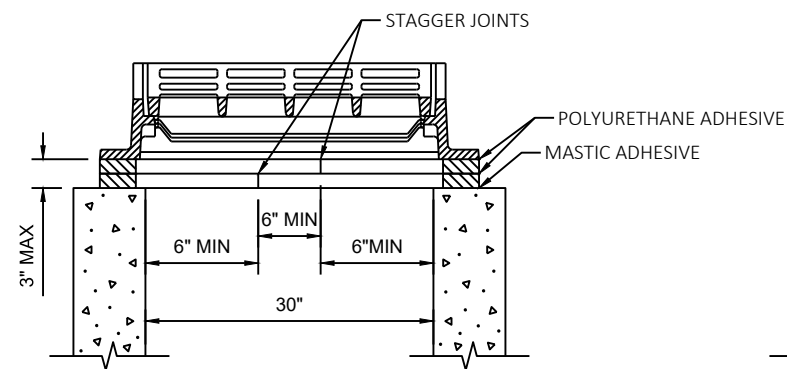


PIPE UNDERDRAIN DETAIL
SEE PLAN FOR LOCATIONS

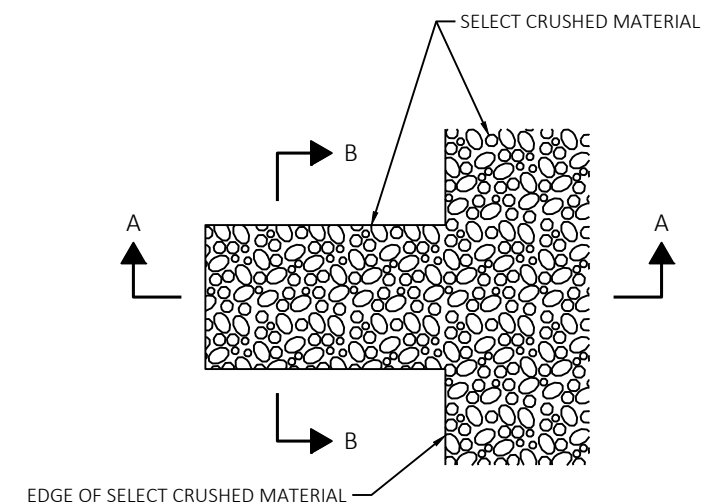
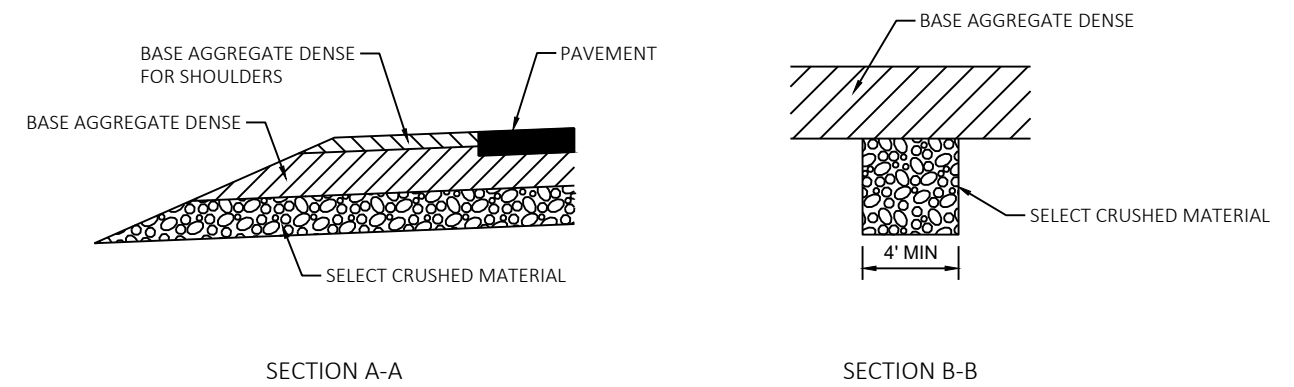


TO BE USED WITH INLETS IN THE CIRCULATING ROADWAY OF ROUNDABOUTS AND OTHER LOCATIONS WHERE IT IS LIKELY VEHICLES WILL RUN OVER THE GRATES. INCLUDE CORRESPONDING SPV

NOTE:
ALL CUTS MADE TO RUBBER ADJUSTMENT RINGS WILL BE PERPENDICULAR AND PROVIDE A TIGHT JOINT.



RUBBER RING CUTTING DETAIL FOR INLET 2 X 2.5-FT, SPECIAL

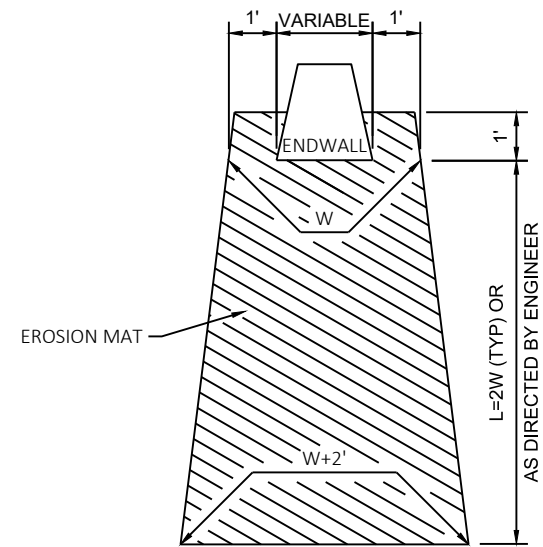


DRAINS ARE TO BE CONSTRUCTED AT LEAST EVERY 250' AND AT EACH SAG VERTICAL CURVE IN THE PROFILE.

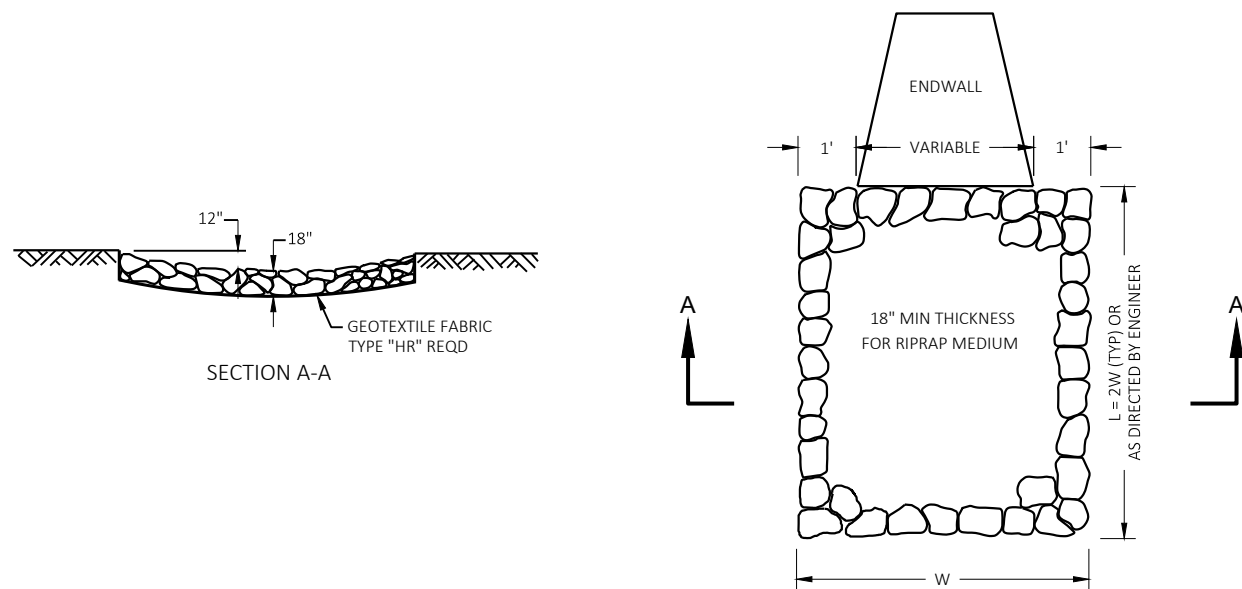
LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.

EXCAVATION REQUIRED TO CONSTRUCT FRENCH DRAINS SHALL BE CONSIDERED INCIDENTAL TO THE ITEM SELECT CRUSHED MATERIAL.

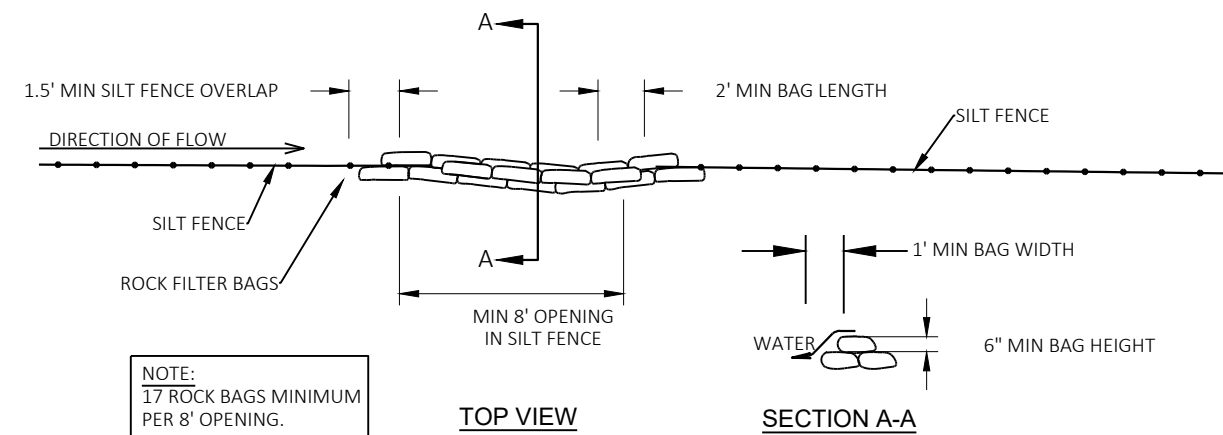
2



EROSION MAT TREATMENT AT CULVERTS



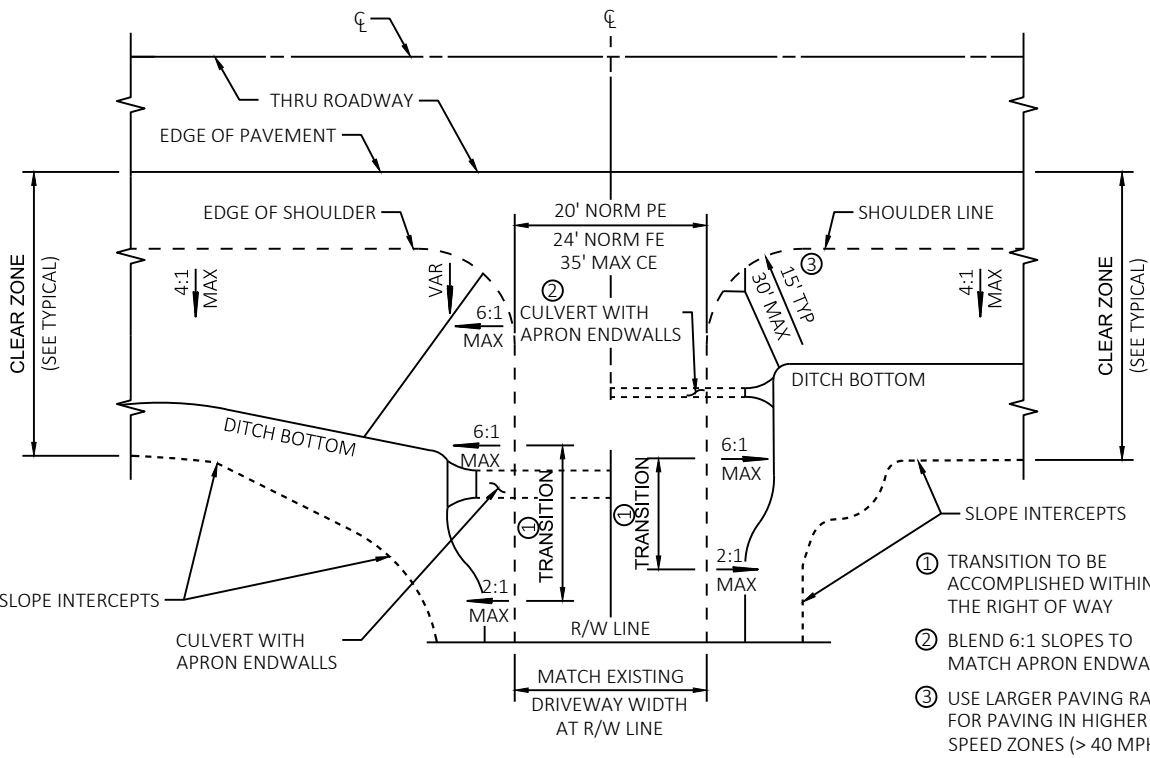
RIPRAP MEDIUM TREATMENT AT CULVERTS



ROCK BAGS USED FOR SILT FENCE RELIEF

2

2

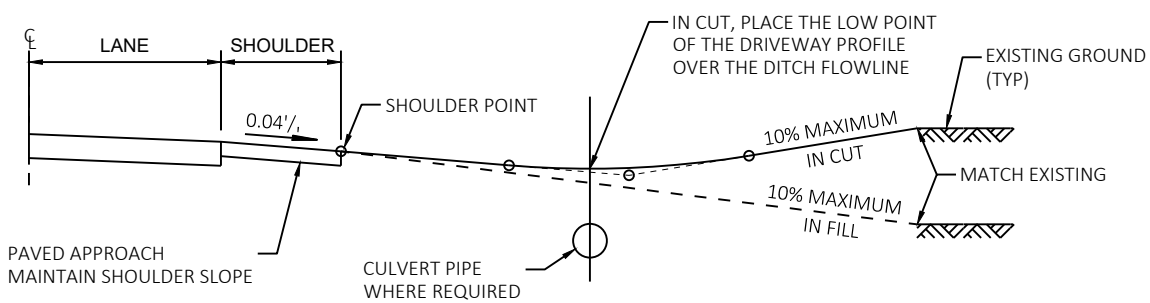


FOR CULVERTS OVER 24" DIAMETER

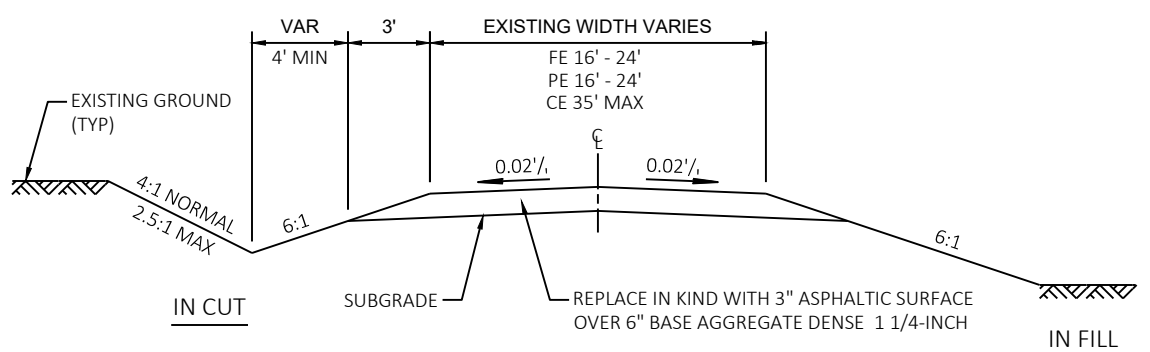
FOR CULVERTS 24" DIAMETER & LESS

PLAN VIEW

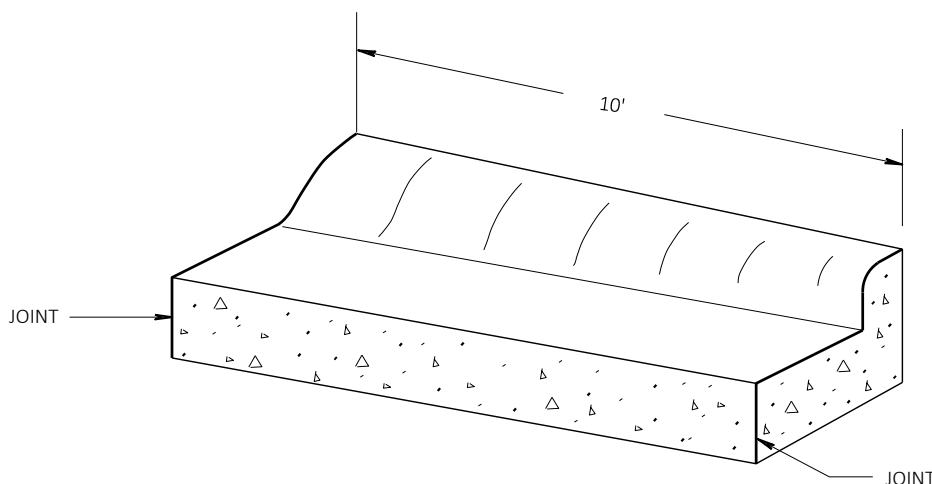
RURAL DRIVEWAY GRADING AND/OR PAVING DETAIL



TYPICAL DRIVEWAY PROFILES

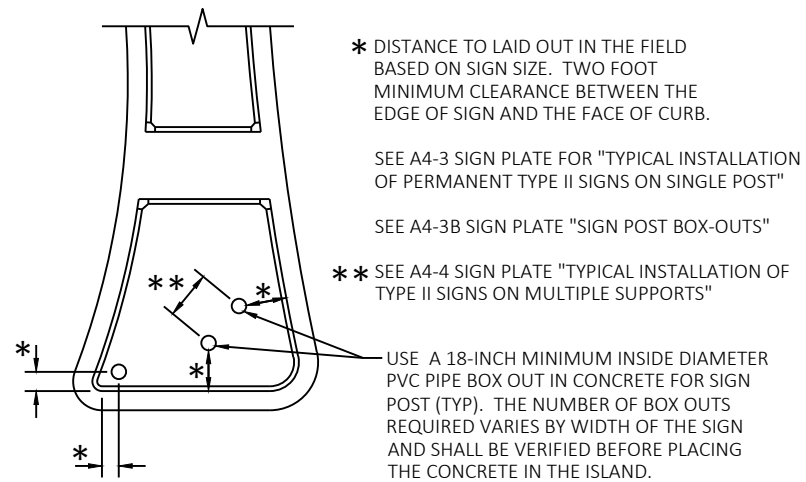


TYPICAL CROSS SECTION FOR DRIVEWAYS

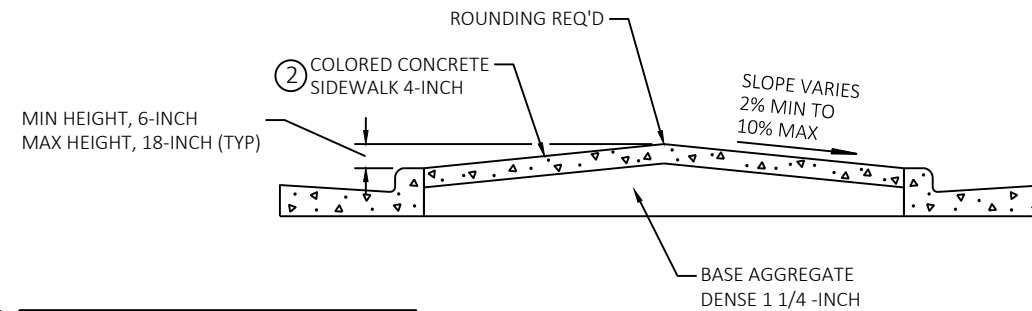


TRANSITION DETAIL

36" TYPE "D" CURB & GUTTER TO 30" TYPE "D" CURB & GUTTER
(TO BE MEASURED & PAID FOR AS 36" CONC. C&G)

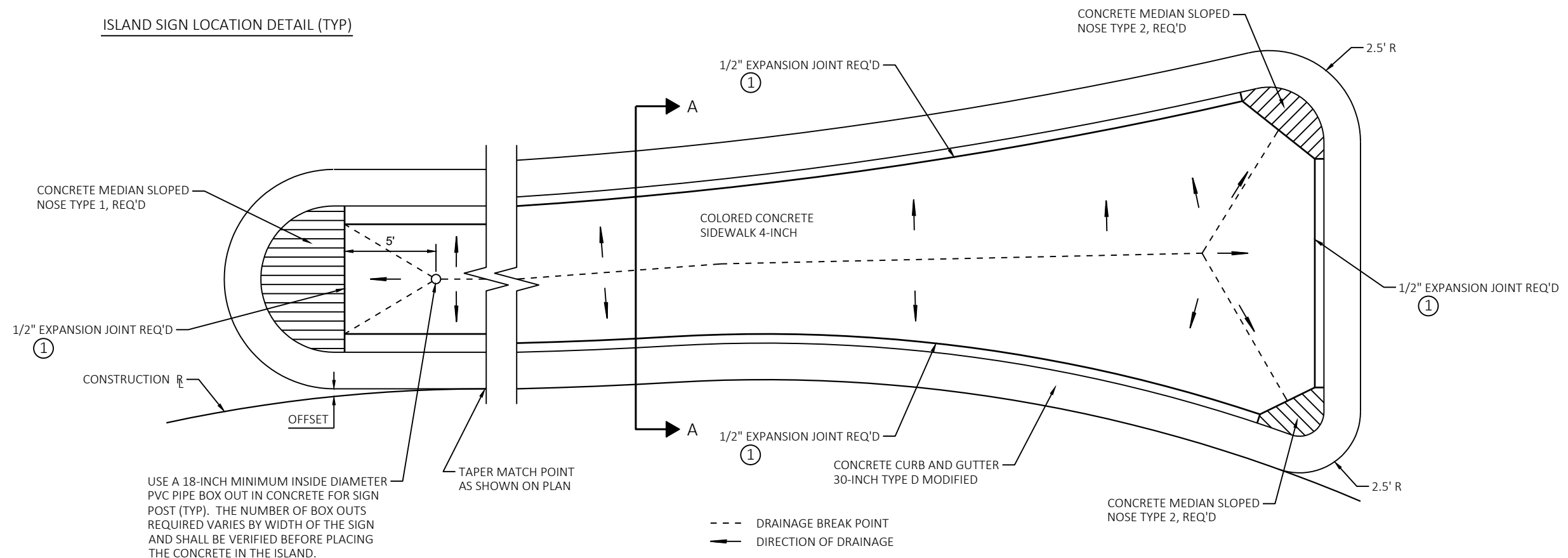


ISLAND SIGN LOCATION DETAIL (TYP)

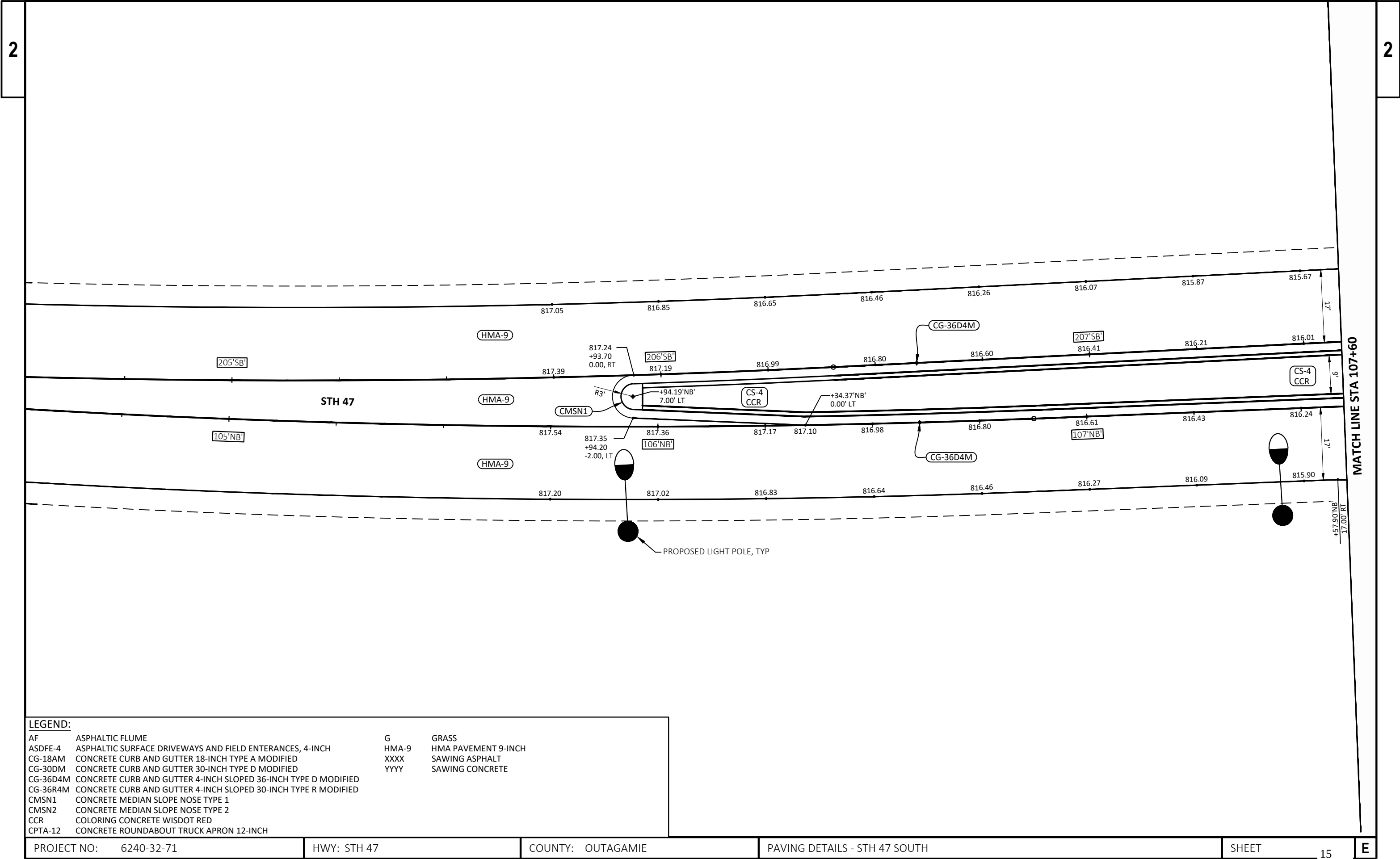


SECTION A-A

- ① EXPANSION MATERIAL TO BE 1" LONGER THAN ABUTTING MEDIAN CONCRETE THICKNESS. (i.e. 5" IN HEIGHT WHEN ADJACENT TO CONCRETE SIDEWALK 4-INCH)
- ② HMA DRIVEWAY
CTH S, STA 306+35 - 307+40

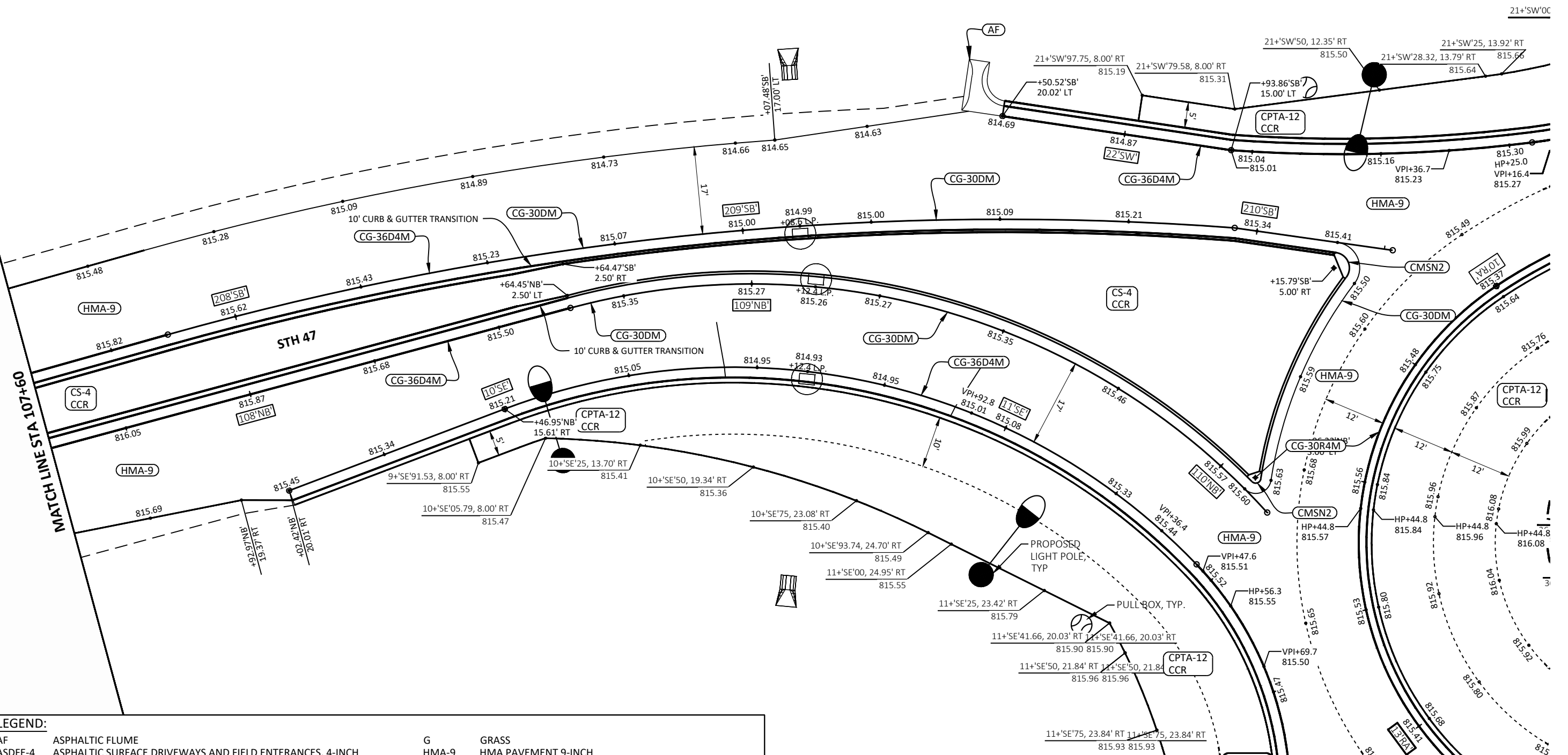


CONCRETE SPLITTER ISLAND DETAIL WITHOUT CROSSWALK



LEGEND:

AF	ASPHALTIC FLUME	G	GRASS
ASDFE-4	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTERANCES, 4-INCH	HMA-9	HMA PAVEMENT 9-INCH
CG-18AM	CONCRETE CURB AND GUTTER 18-INCH TYPE A MODIFIED	XXXX	SAWING ASPHALT
CG-30DM	CONCRETE CURB AND GUTTER 30-INCH TYPE D MODIFIED	YYYY	SAWING CONCRETE
CG-36D4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE D MODIFIED		
CG-36R4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE R MODIFIED		
CMSN1	CONCRETE MEDIAN SLOPE NOSE TYPE 1		
CMSN2	CONCRETE MEDIAN SLOPE NOSE TYPE 2		
CCR	COLORING CONCRETE WISDOT RED		
CPTA-12	CONCRETE ROUNDABOUT TRUCK APRON 12-INCH		

**LEGEND:**

AF	ASPHALTIC FLUME	G	GRASS
ASDFE-4	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTERANCES, 4-INCH	HMA-9	HMA PAVEMENT 9-INCH
CG-18AM	CONCRETE CURB AND GUTTER 18-INCH TYPE A MODIFIED	XXXX	SAWING ASPHALT
CG-30DM	CONCRETE CURB AND GUTTER 30-INCH TYPE D MODIFIED	YYYY	SAWING CONCRETE
CG-36D4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE D MODIFIED		
CG-36R4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE R MODIFIED		
CMSN1	CONCRETE MEDIAN SLOPE NOSE TYPE 1		
CMSN2	CONCRETE MEDIAN SLOPE NOSE TYPE 2		
CCR	COLORING CONCRETE WISDOT RED		
CPTA-12	CONCRETE ROUNDABOUT TRUCK APRON 12-INCH		

PROJECT NO: 6240-32-71

HWY: STH 47

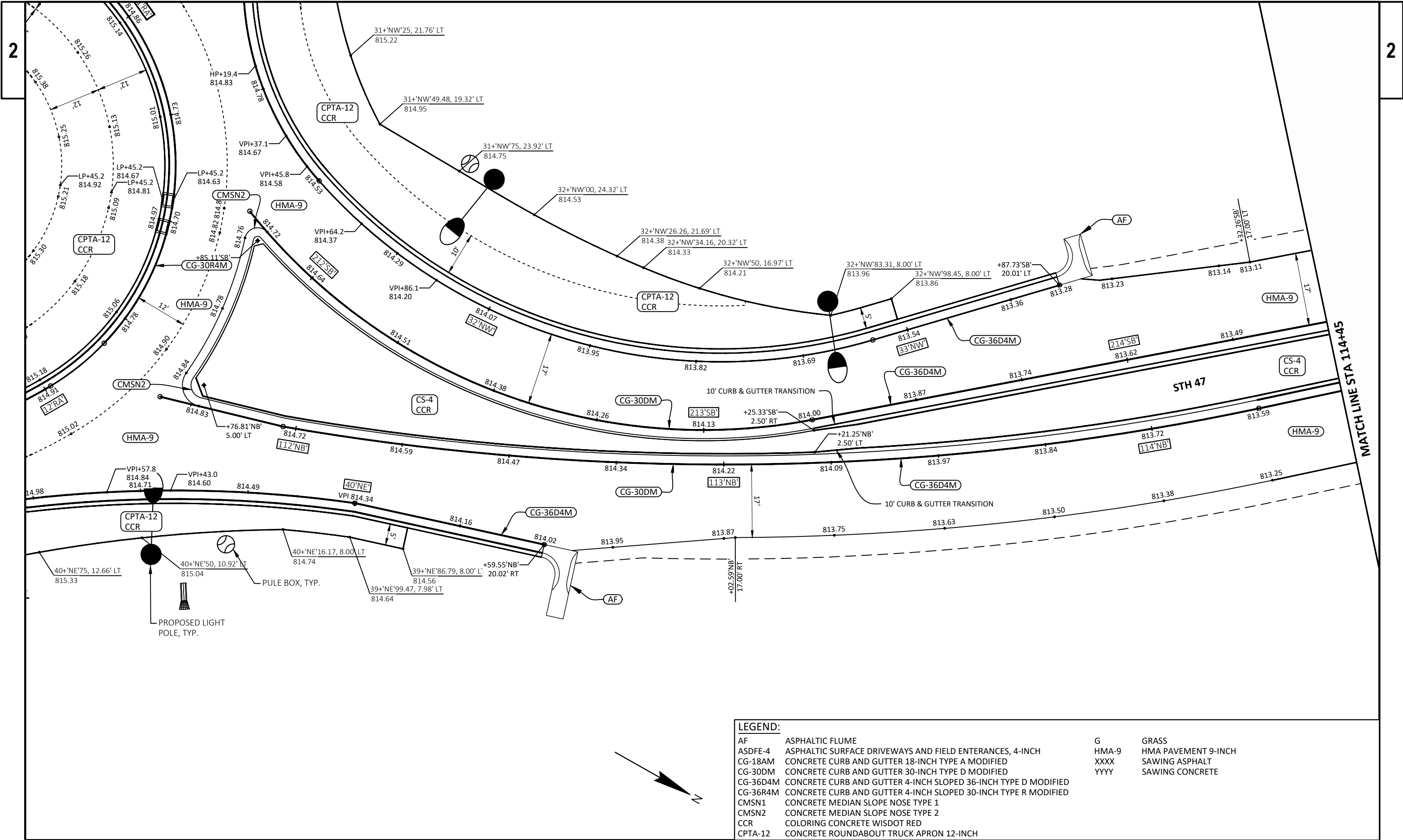
COUNTY: OUTAGAMIE

PAVING DETAILS - STH 47 SOUTH

SHEET

16

E



LEGEND:

AF	ASPHALTIC FLUME	G	GRASS
ASDFE-4	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTERANCES, 4-INCH	HMA-9	HMA PAVEMENT 9-INCH
CG-18AM	CONCRETE CURB AND GUTTER 18-INCH TYPE A MODIFIED	XXXX	SAWING ASPHALT
CG-30DM	CONCRETE CURB AND GUTTER 30-INCH TYPE D MODIFIED	YYYY	SAWING CONCRETE
CG-36D4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE D MODIFIED		
CG-36R4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE R MODIFIED		
CMSN1	CONCRETE MEDIAN SLOPE NOSE TYPE 1		
CMSN2	CONCRETE MEDIAN SLOPE NOSE TYPE 2		
CCR	COLORING CONCRETE WISDOT RED		
CPTA-12	CONCRETE ROUNDABOUT TRUCK APRON 12-INCH		

PROJECT NO: 6240-32-71

HWY: STH 47

COUNTY: OUTAGAMIE

PAVING DETAILS - STH 47 NORTH

SHEET

17

E

FILE NAME: N:\3001723.00\CIVIL 3D\SHEETS\62403200-021200-PD.DWG
LAYOUT NAME: 62403200-021205-pd

PLOT DATE: 6/22/2026 7:18 AM

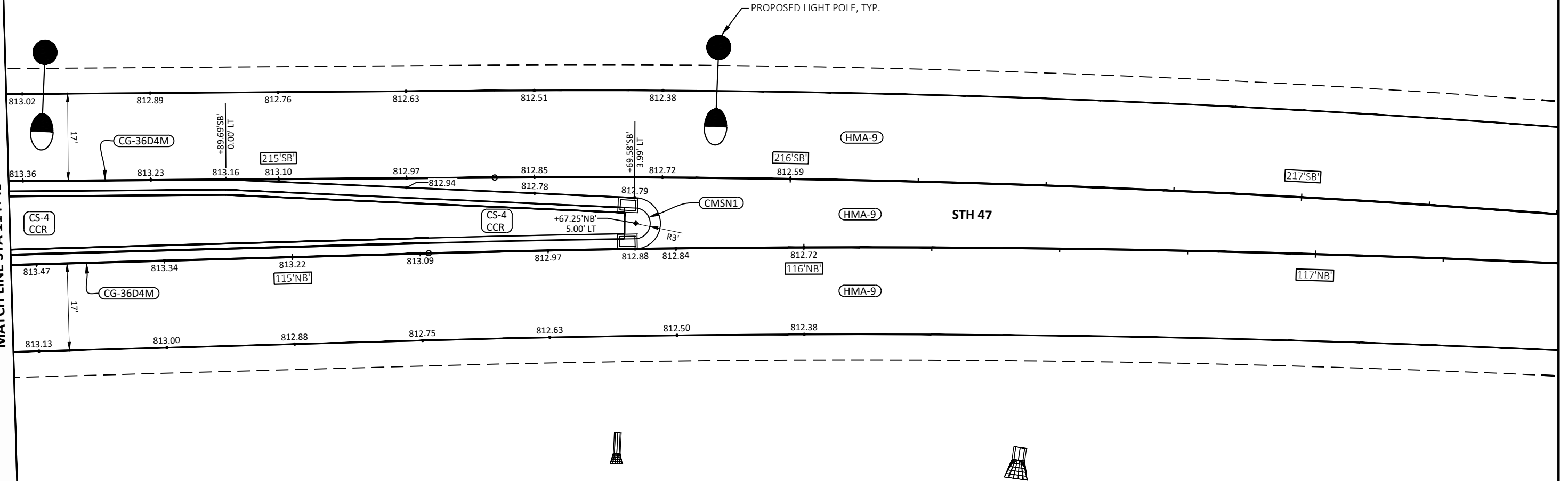
PLOT BY: MATT TOMSOVIC

PLOT NAME:

PLOT SCALE: 1 IN=20 FT

WISDOT/CADDs SHEET 42

MATCH LINE STA 114+45



LEGEND:

AF	ASPHALTIC FLUME	G	GRASS
ASDFE-4	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTERANCES, 4-INCH	HMA-9	HMA PAVEMENT 9-INCH
CG-18AM	CONCRETE CURB AND GUTTER 18-INCH TYPE A MODIFIED	XXXX	SAWING ASPHALT
CG-30DM	CONCRETE CURB AND GUTTER 30-INCH TYPE D MODIFIED	YYYY	SAWING CONCRETE
CG-36D4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE D MODIFIED		
CG-36R4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE R MODIFIED		
CMSN1	CONCRETE MEDIAN SLOPE NOSE TYPE 1		
CMSN2	CONCRETE MEDIAN SLOPE NOSE TYPE 2		
CCR	COLORING CONCRETE WISDOT RED		
CPTA-12	CONCRETE ROUNDABOUT TRUCK APRON 12-INCH		

PROJECT NO: 6240-32-71

HWY: STH 47

COUNTY: OUTAGAMIE

PAVING DETAILS - STH 47 NORTH

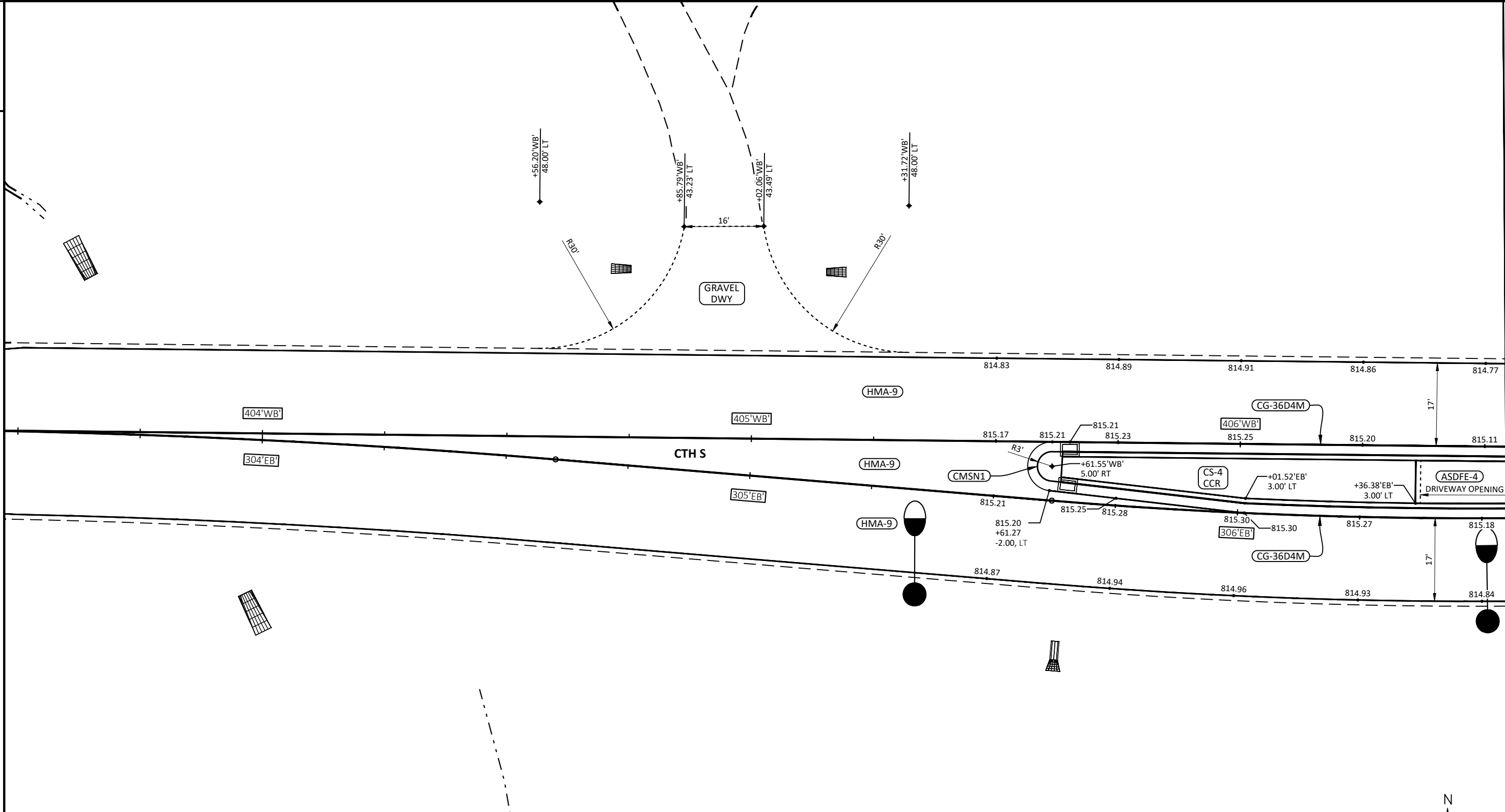
SHEET

18

E

2

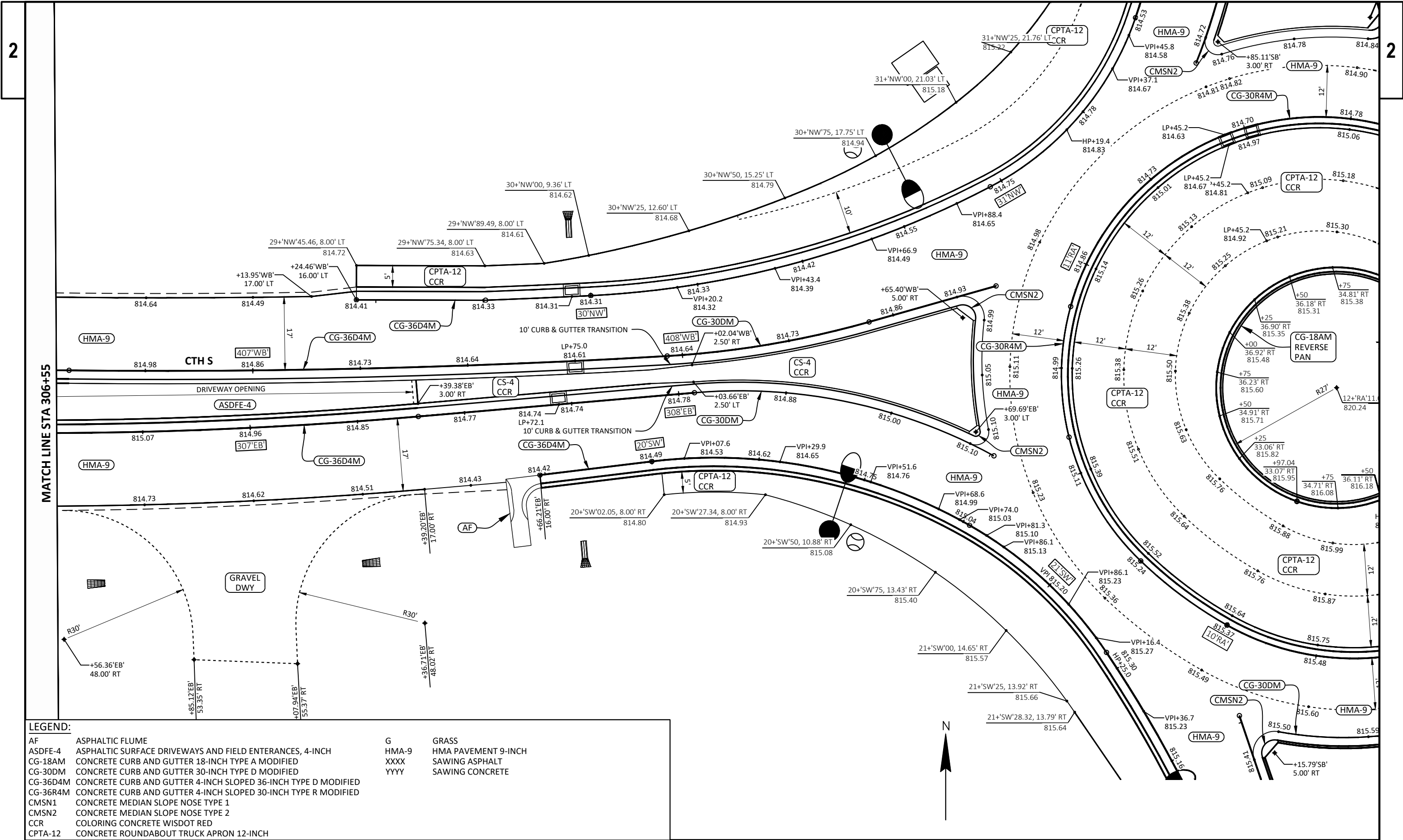
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LEGEND:			
AF	ASPHALTIC FLUME	G	GRASS
ASDFE-4	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTERANCES, 4-INCH	HMA-9	HMA PAVEMENT 9-INCH
CG-18AM	CONCRETE CURB AND GUTTER 18-INCH TYPE A MODIFIED	XXXX	SAWING ASPHALT
CG-30DM	CONCRETE CURB AND GUTTER 30-INCH TYPE D MODIFIED	YYYY	SAWING CONCRETE
CG-36D4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE D MODIFIED		
CG-36R4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE R MODIFIED		
CMSN1	CONCRETE MEDIAN SLOPE NOSE TYPE 1		
CMSN2	CONCRETE MEDIAN SLOPE NOSE TYPE 2		
CCR	COLORING CONCRETE WISDOT RED		
CPTA-12	CONCRETE ROUNDABOUT TRUCK APRON 12-INCH		

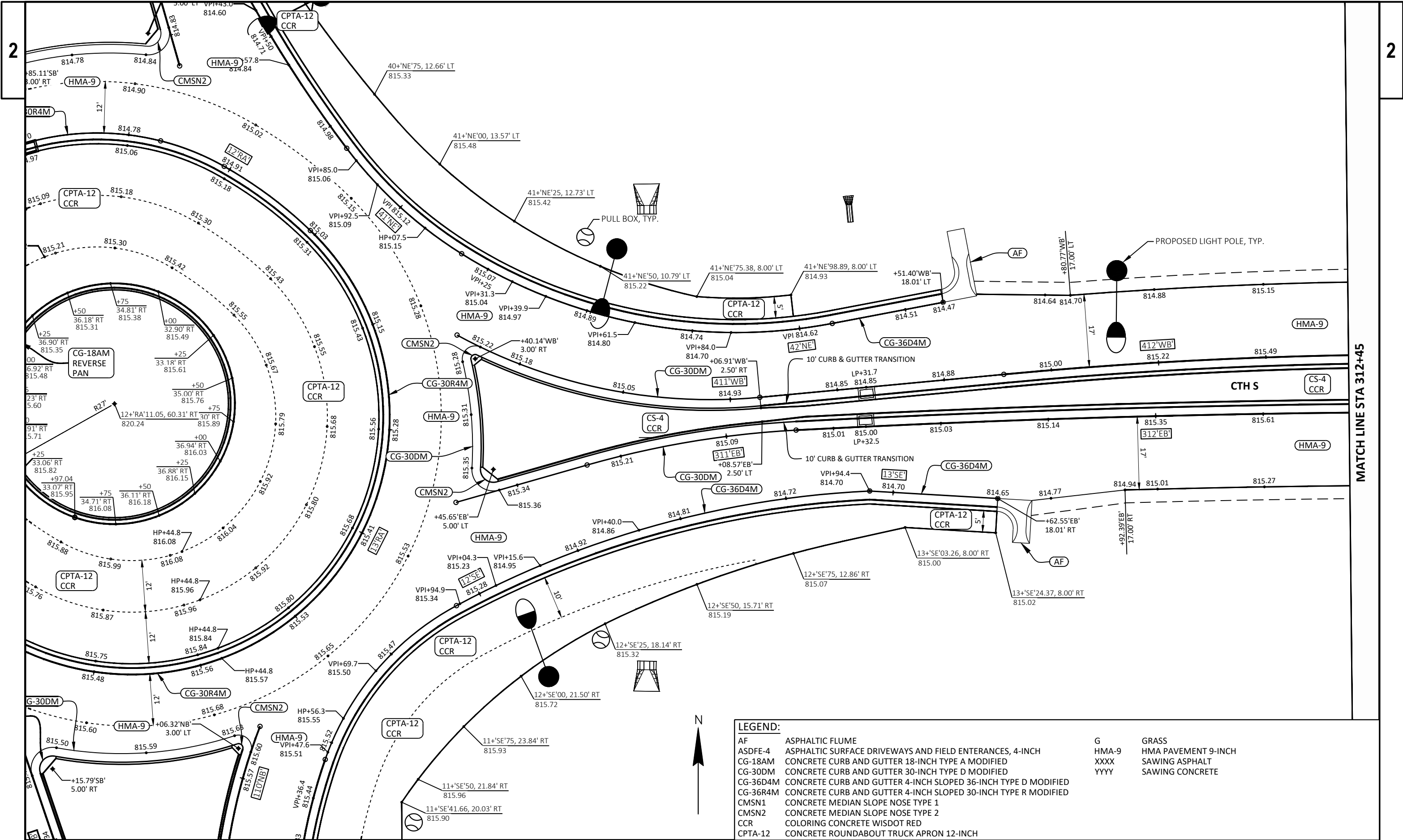


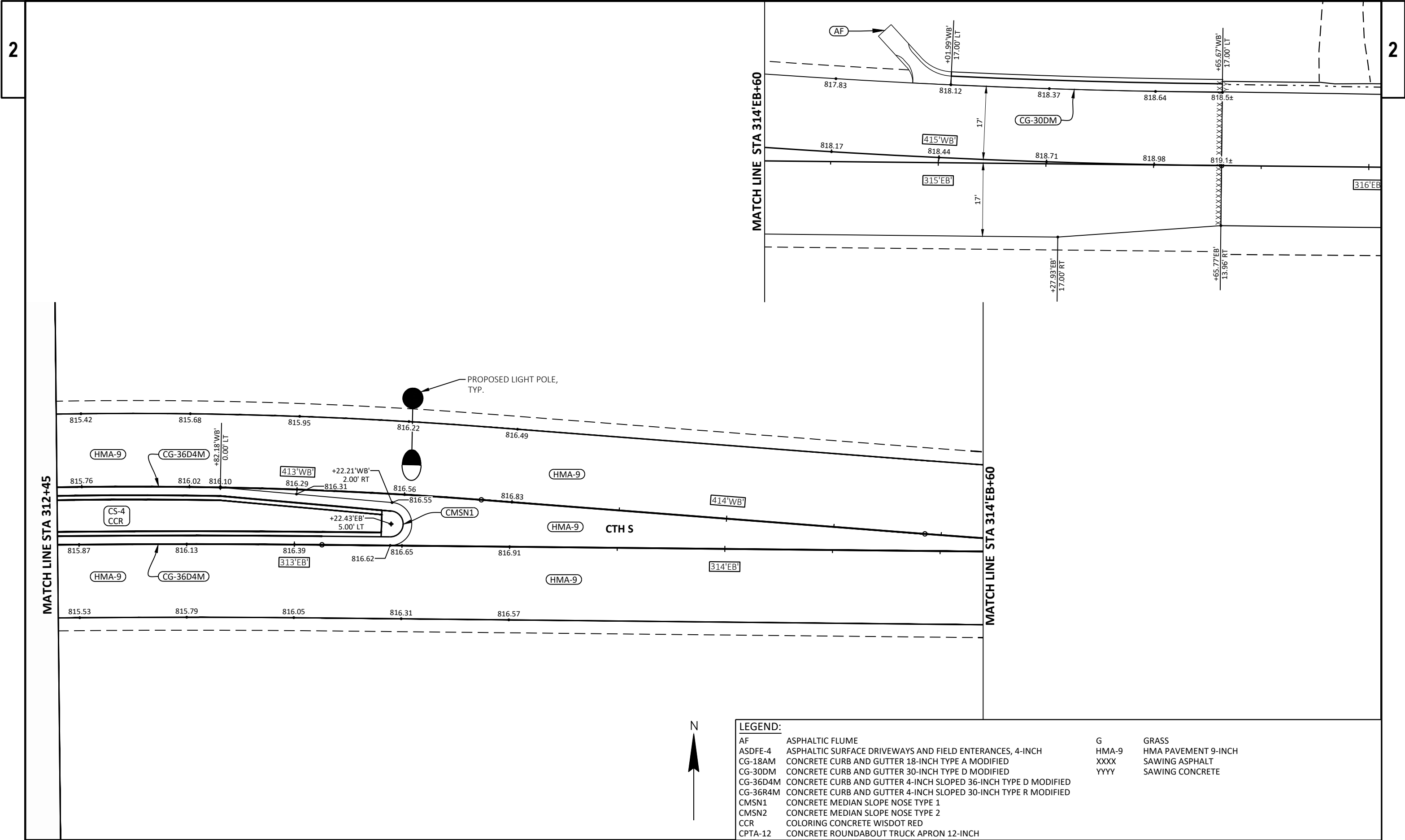
PROJECT NO: 6240-32-71	HWY: STH 47	COUNTY: OUTAGAMIE	PAVING DETAILS - CTH S WEST	SHEET 19	E
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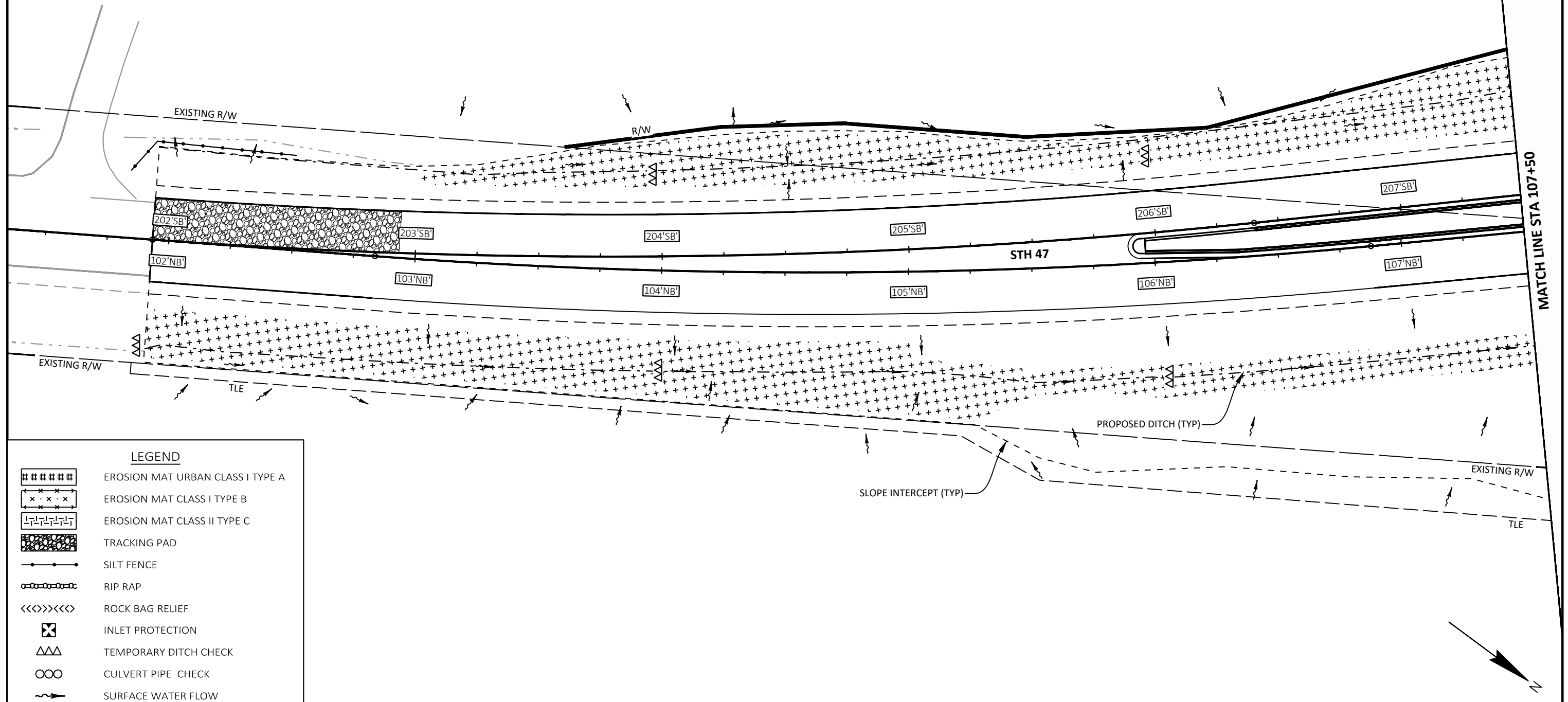


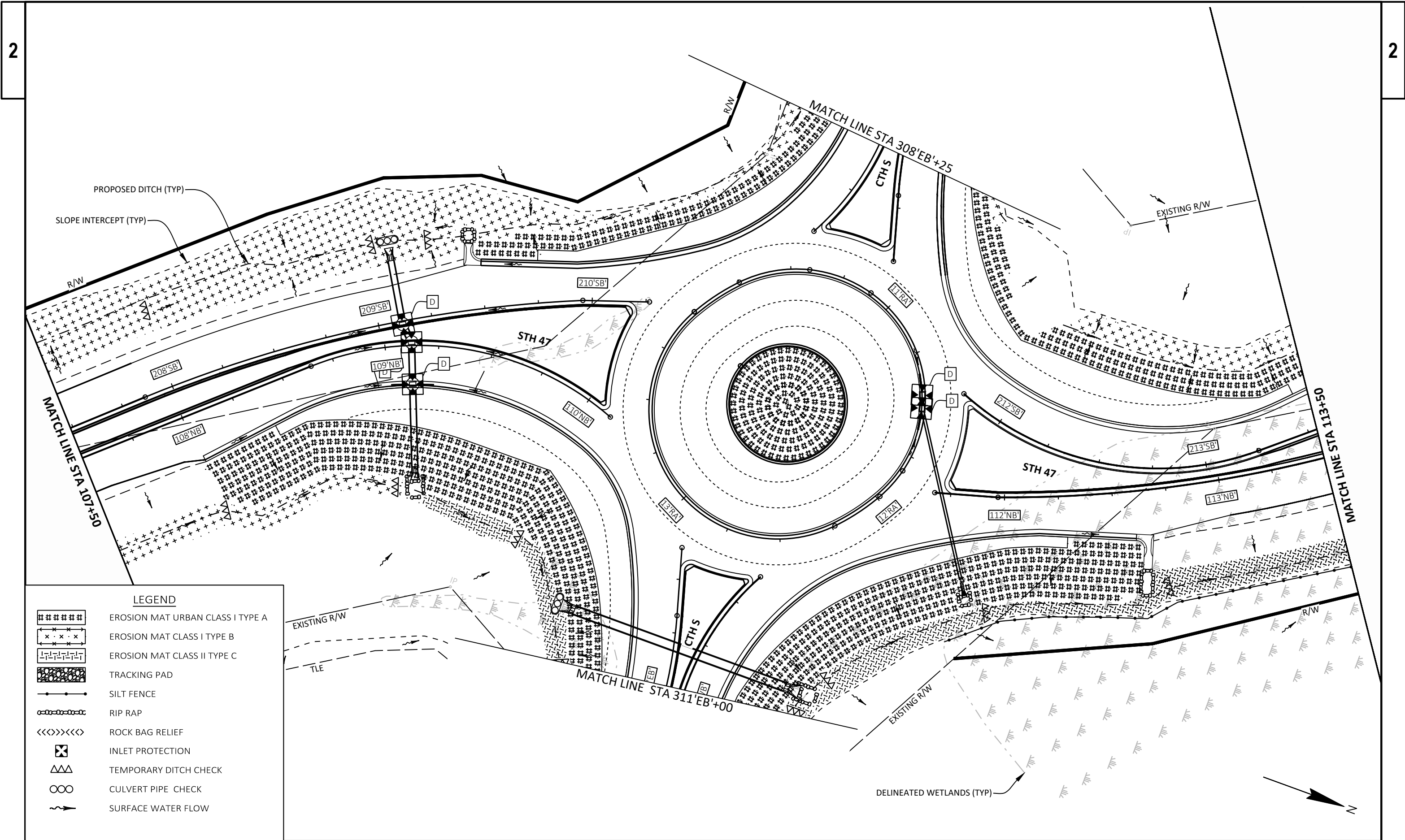
LEGEND:			
AF	ASPHALTIC FLUME	G	GRASS
ASDFE-4	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTERANCES, 4-INCH	HMA-9	HMA PAVEMENT 9-INCH
CG-18AM	CONCRETE CURB AND GUTTER 18-INCH TYPE A MODIFIED	XXXX	SAWING ASPHALT
CG-30DM	CONCRETE CURB AND GUTTER 30-INCH TYPE D MODIFIED	YYYY	SAWING CONCRETE
CG-36D4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE D MODIFIED		
CG-36R4M	CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE R MODIFIED		
CMSN1	CONCRETE MEDIAN SLOPE NOSE TYPE 1		
CMSN2	CONCRETE MEDIAN SLOPE NOSE TYPE 2		
CCR	COLORING CONCRETE WISDOT RED		
CPTA-12	CONCRETE ROUNDABOUT TRUCK APRON 12-INCH		

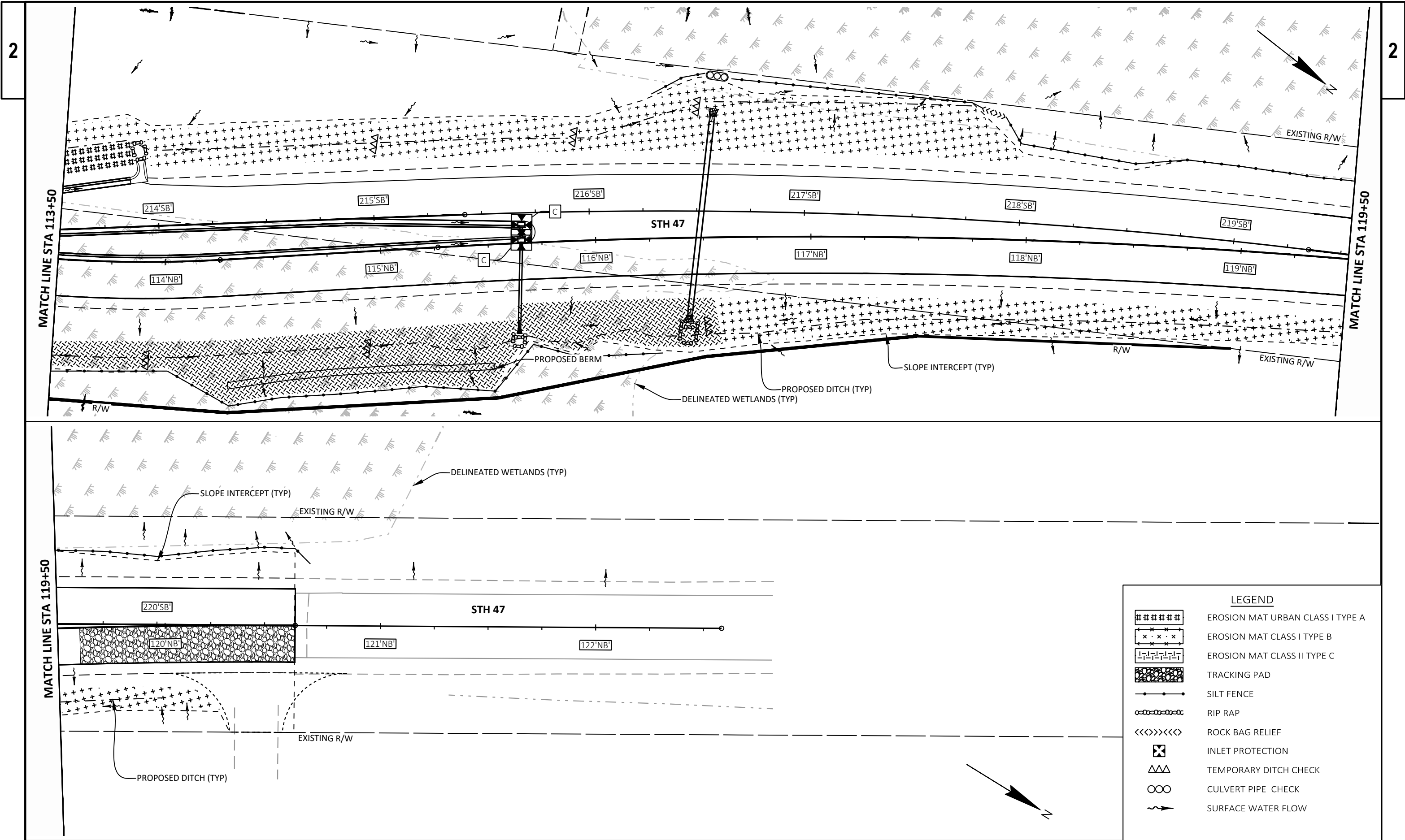
PROJECT NO: 6240-32-71	HWY: STH 47	COUNTY: OUTAGAMIE	PAVING DETAILS - CTH S WEST	SHEET 20	E
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PROJECT NO: 6240-32-71

HWY: STH 47

COUNTY: OUTAGAMIE

EROSION CONTROL - STH 47

SHEET

25

E

FILE NAME : N:\3001723.00\CIVIL 3D\SHEETS\62403200-022000-EC.DWG
LAYOUT NAME - 62403200-022003-ec

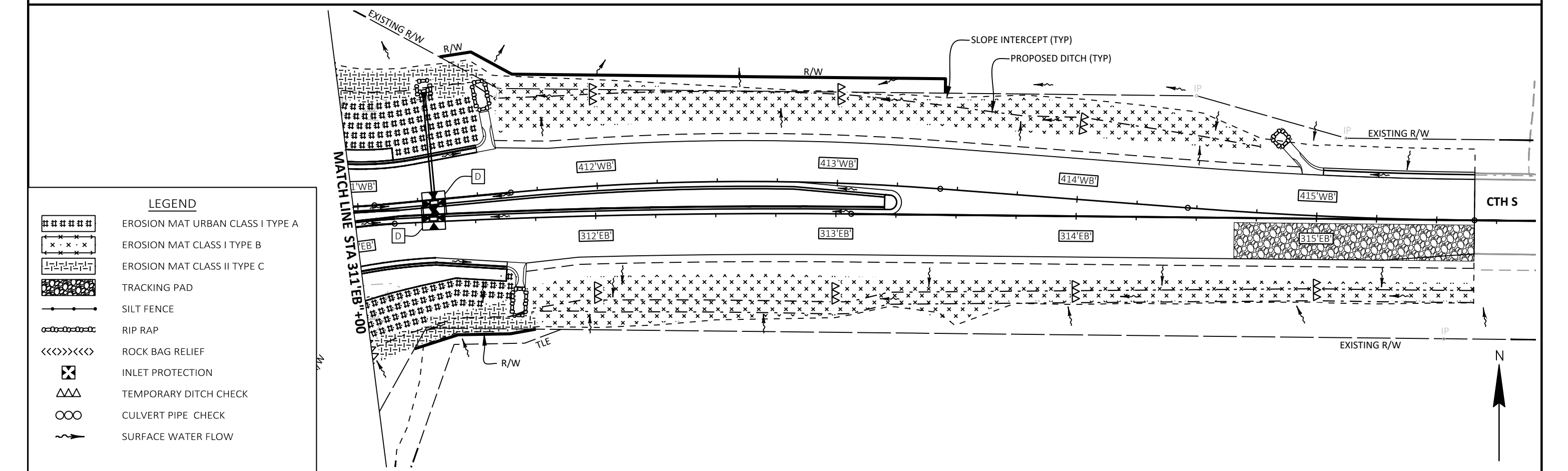
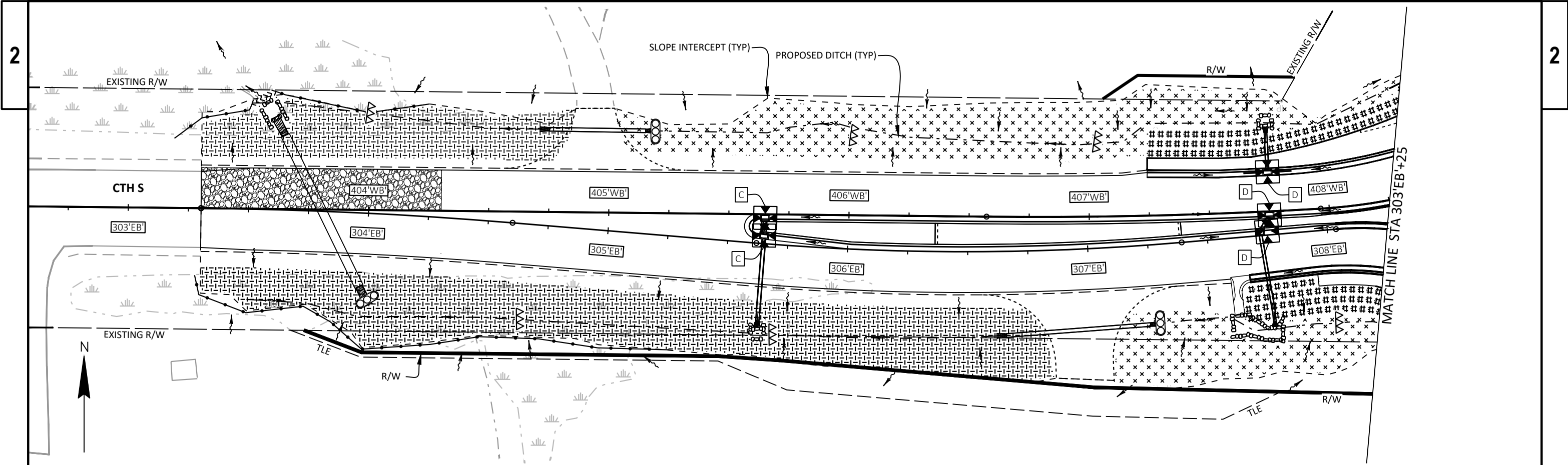
PLOT DATE : 4/23/2026 10:27 AM

PLOT BY : MATT TOMSOVIC

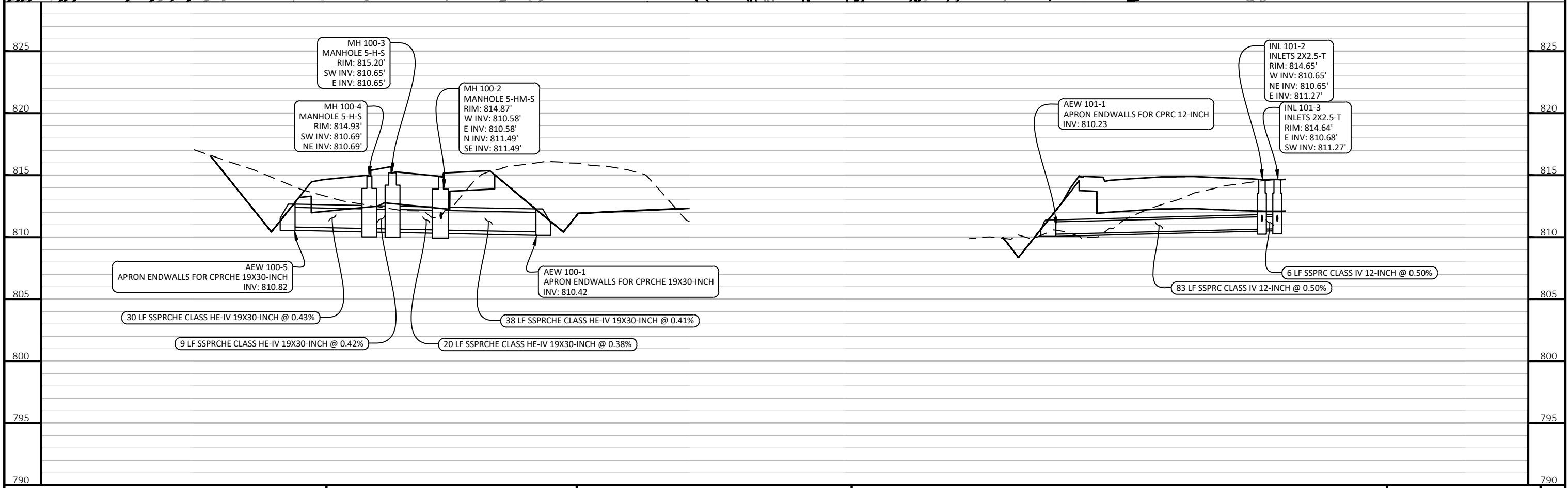
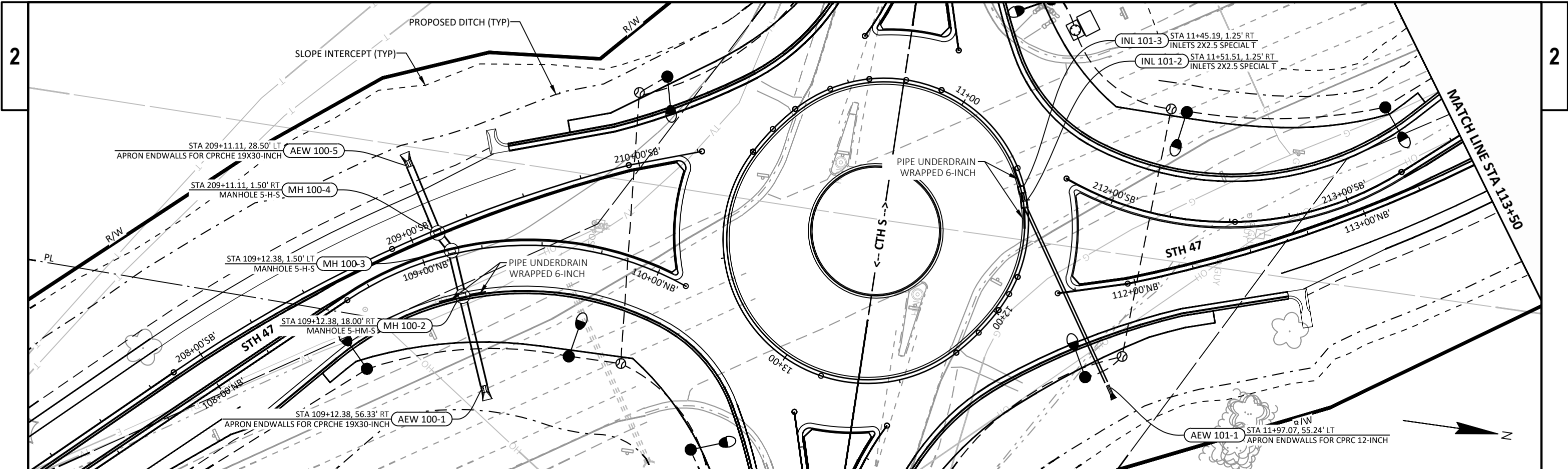
PLOT NAME :

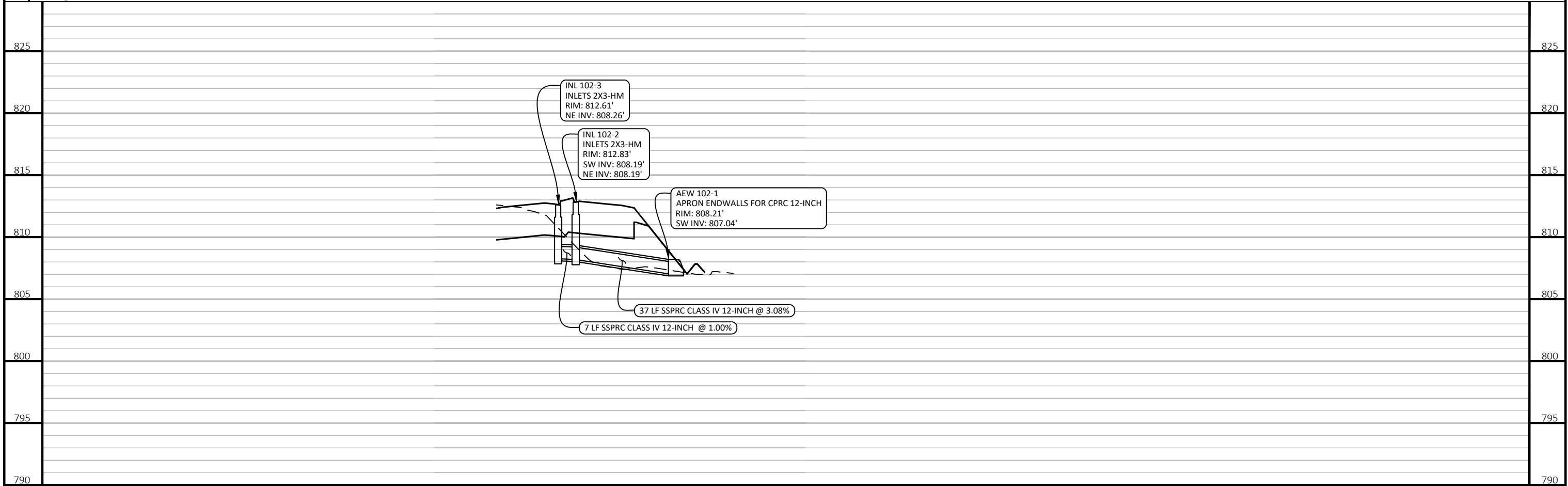
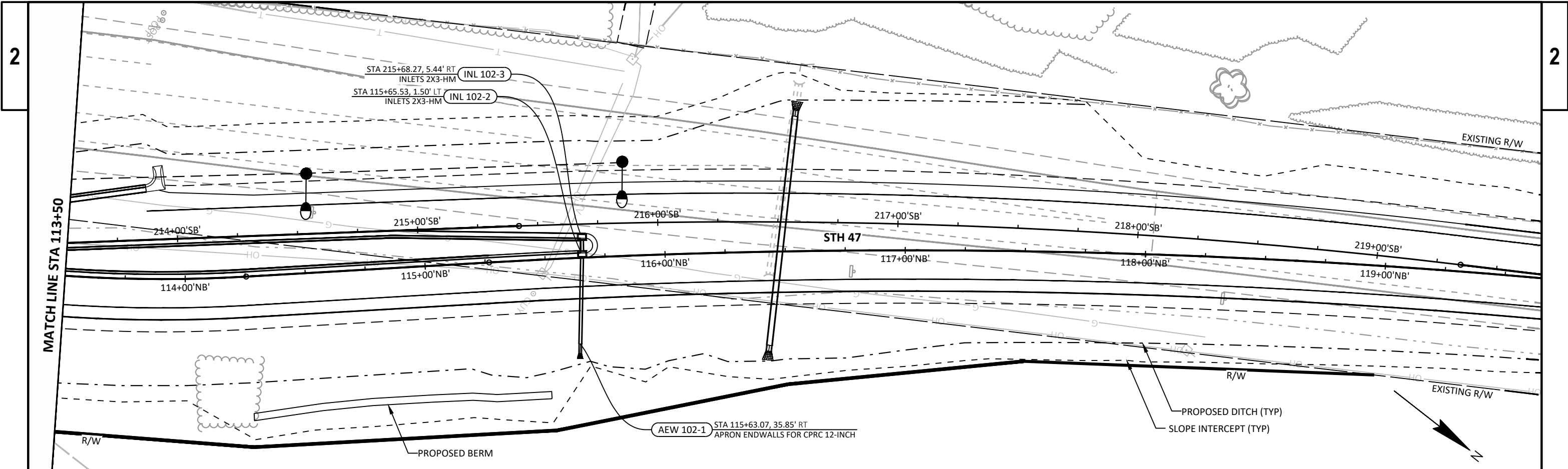
PLOT SCALE : 1 IN=40 FT

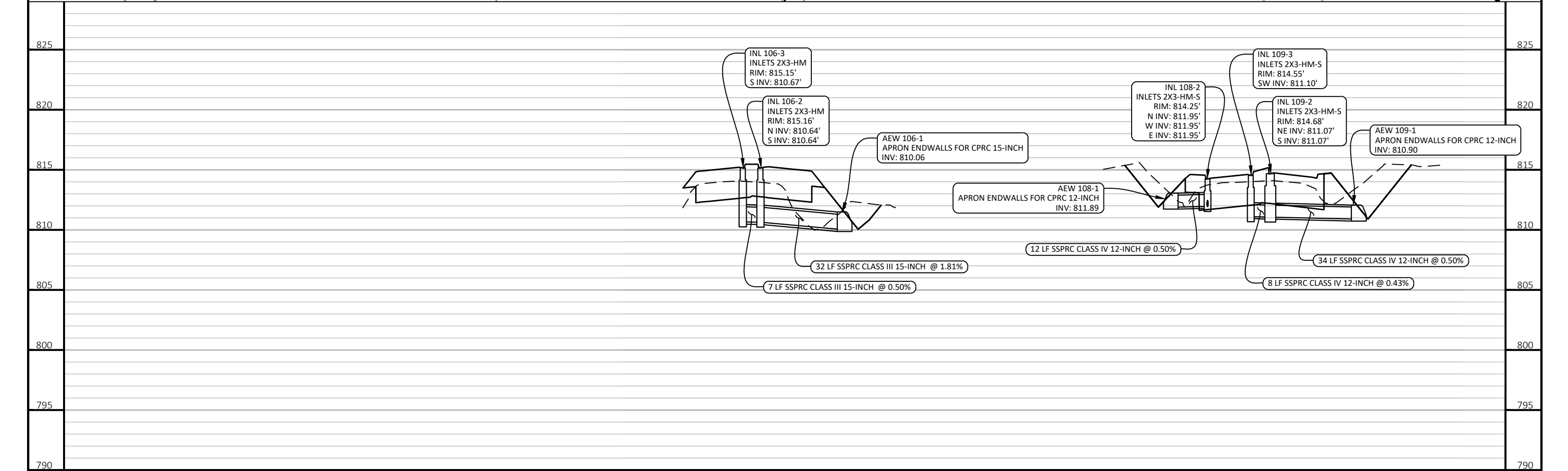
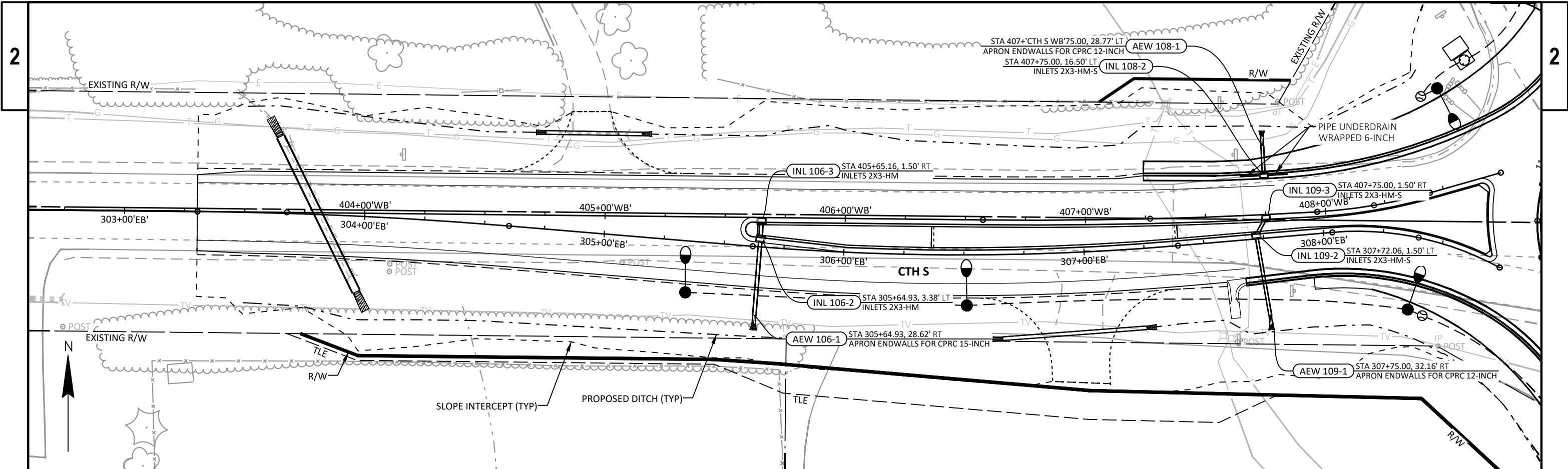
WISDOT/CADDs SHEET 42

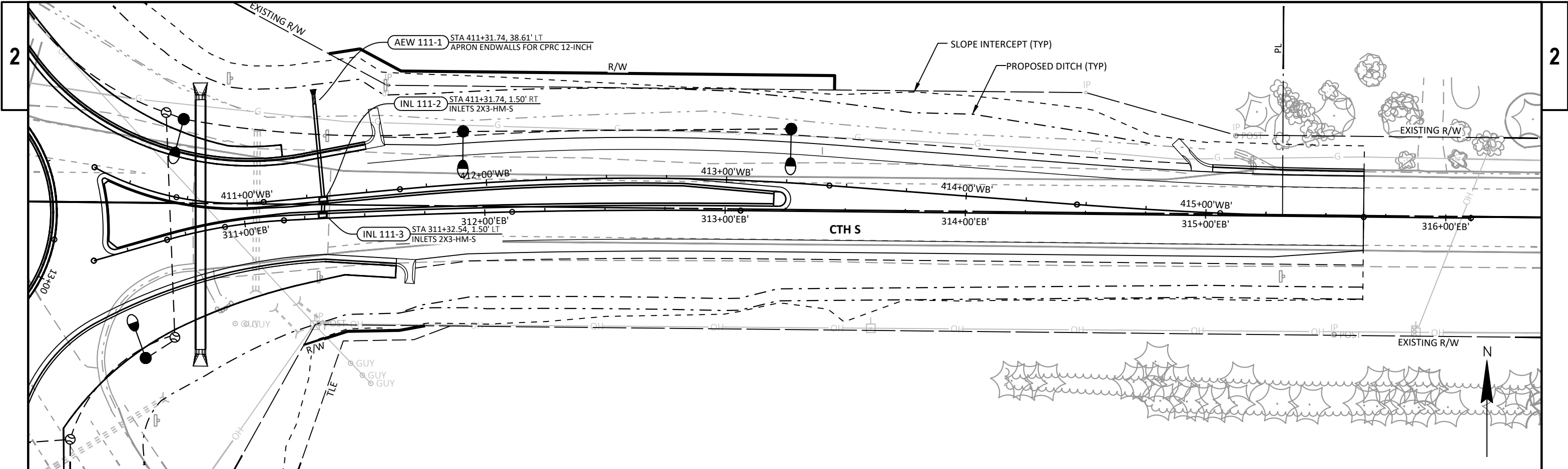


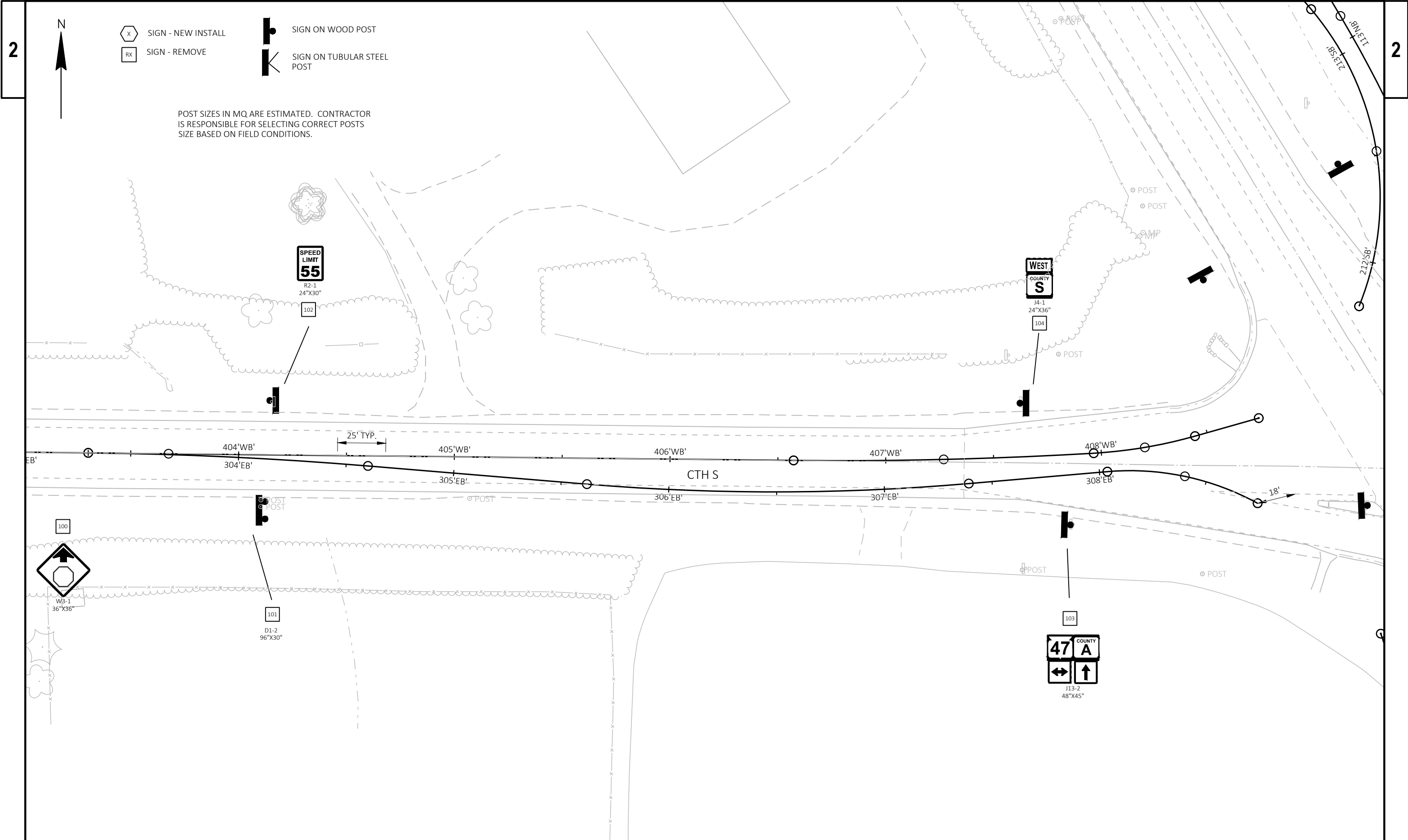
LEGEND	
#####	EROSION MAT URBAN CLASS I TYPE A
x x x x	EROSION MAT CLASS I TYPE B
- - - - - - - - - -	EROSION MAT CLASS II TYPE C
	TRACKING PAD
—●—●—●—●—●—●—	SILT FENCE
—○—○—○—○—○—○—	RIP RAP
<<<>>><<<	ROCK BAG RELIEF
⊗	INLET PROTECTION
△△△	TEMPORARY DITCH CHECK
○○○	CULVERT PIPE CHECK
~>	SURFACE WATER FLOW

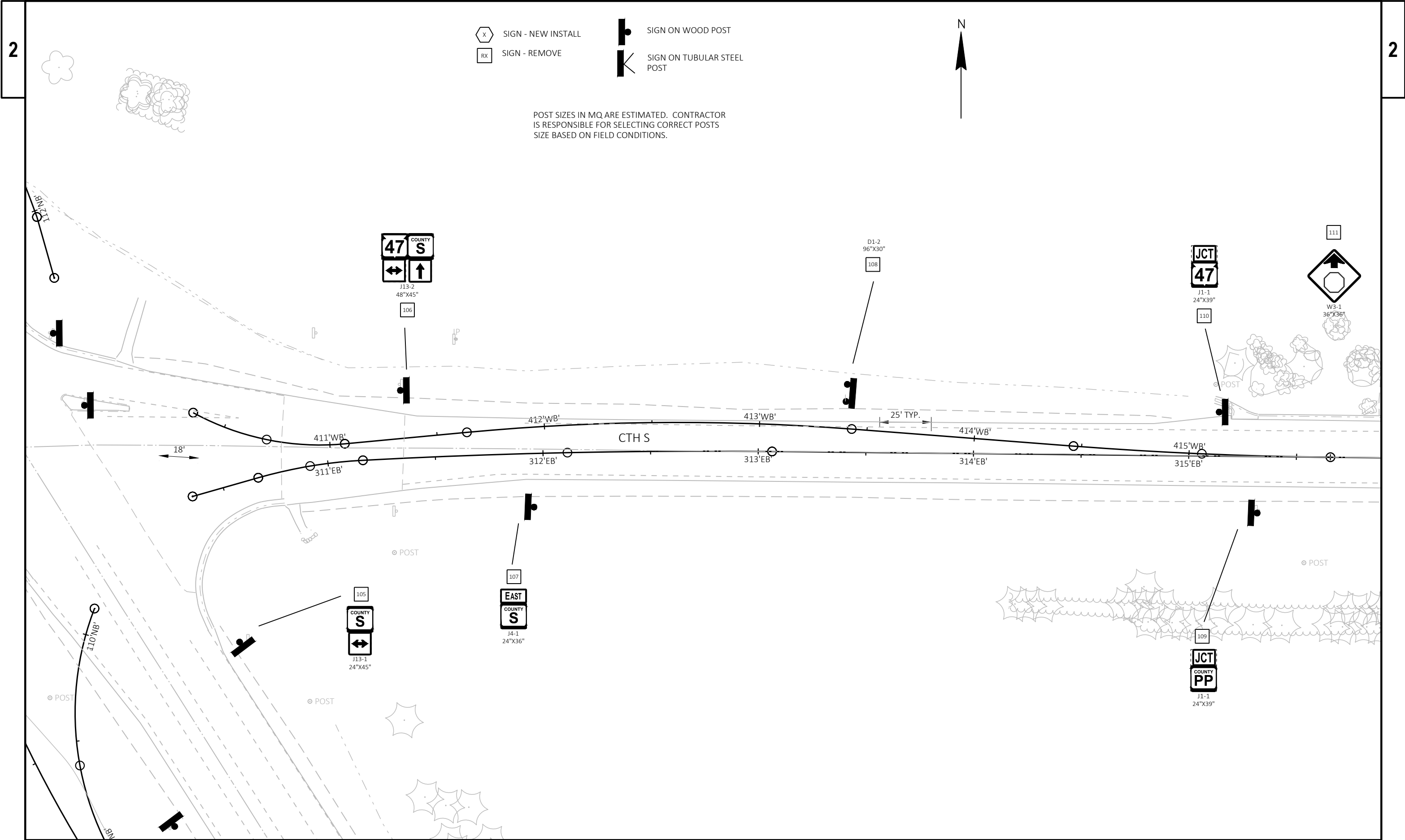


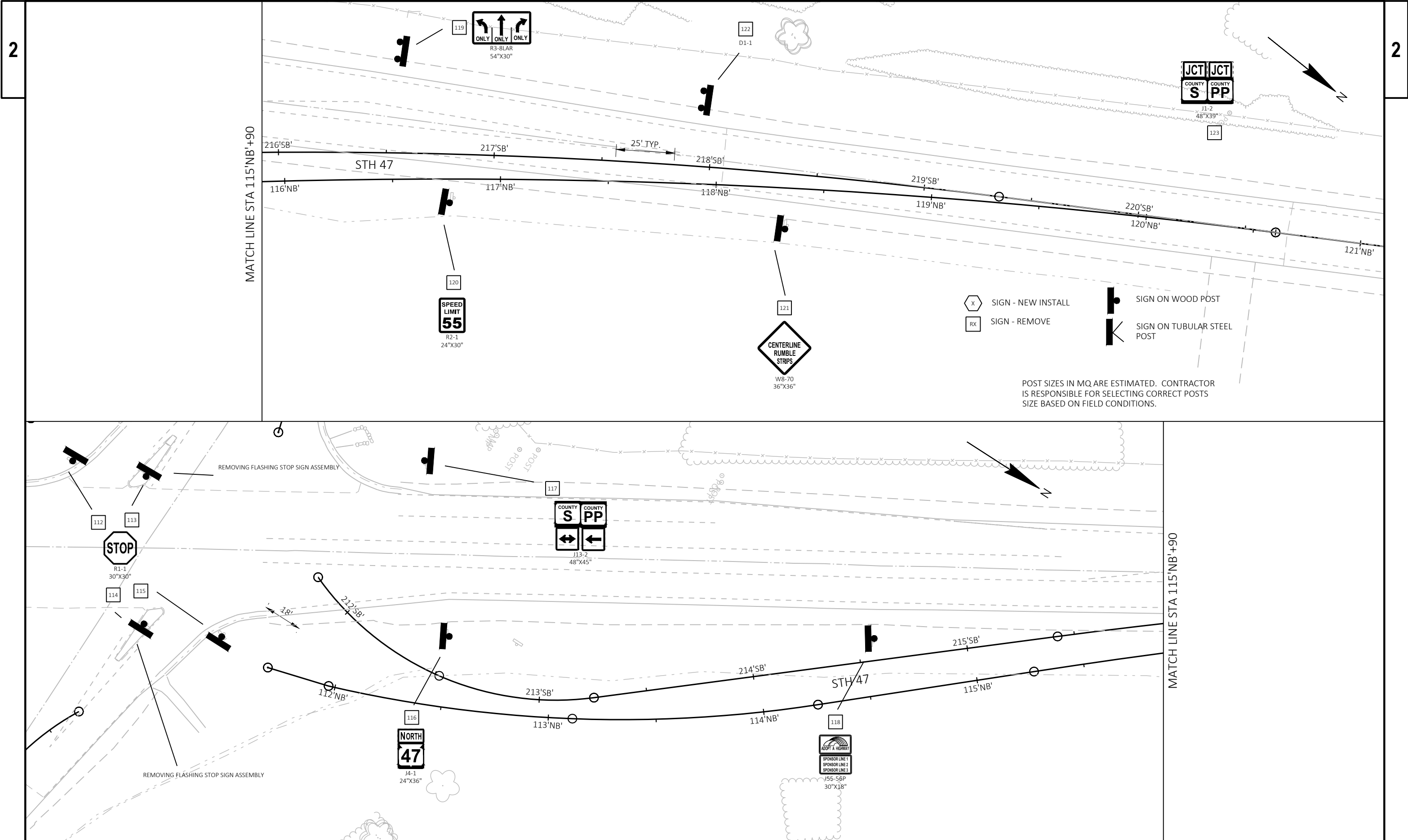


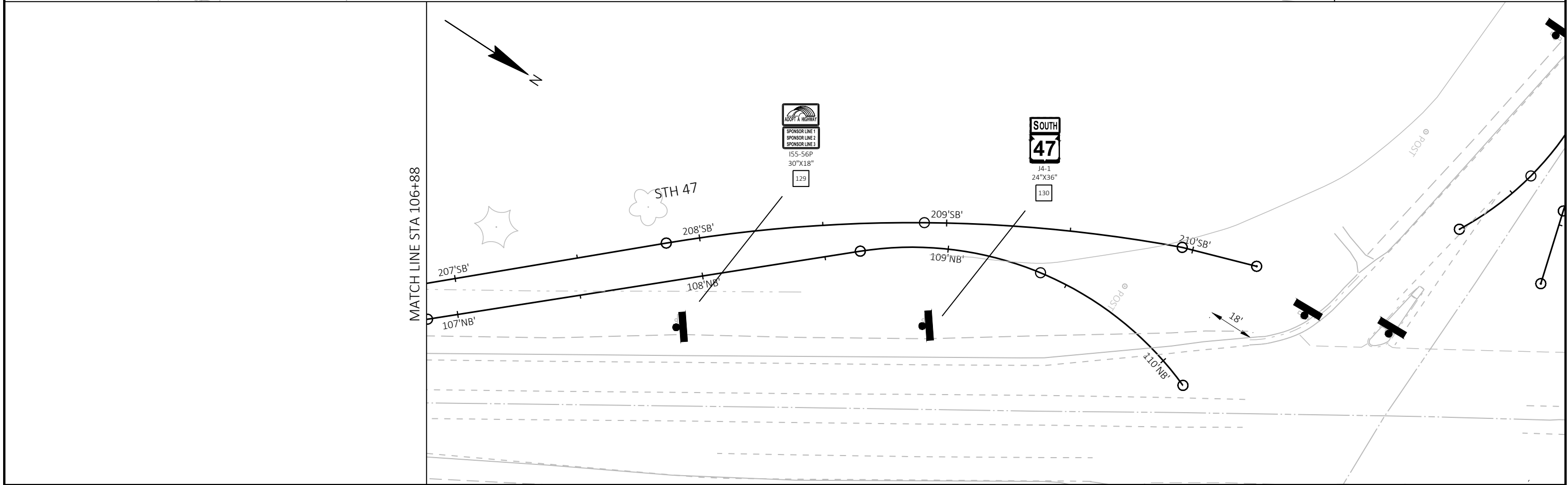
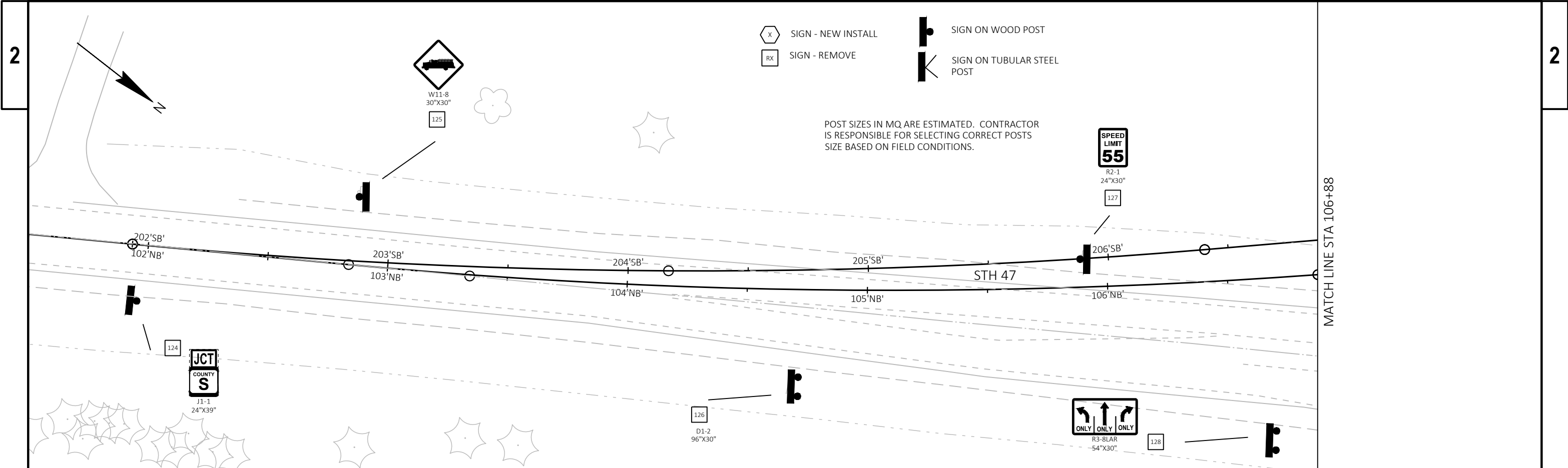














SIGN - REMOVE



SIGN ON TUBULAR STEEL
POST

A white triangular sign with a black border and the text "NO PASSING ZONE" in black capital letters.

W14-3
48"X36"
START OF NO PASSING
ZONE



R5-1
30"X30"



R2-1
24"X30"



36"X24"



J4-1
24"X36"



D1-1E
36"X18"



R1-2
36"X31"



W2-6
30"X30"



15

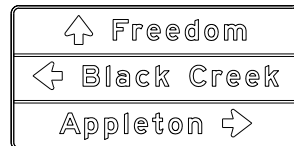


W13-1
18"X18"

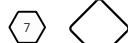
300' WEST OF SIGN 3



J3-2
48"X57"



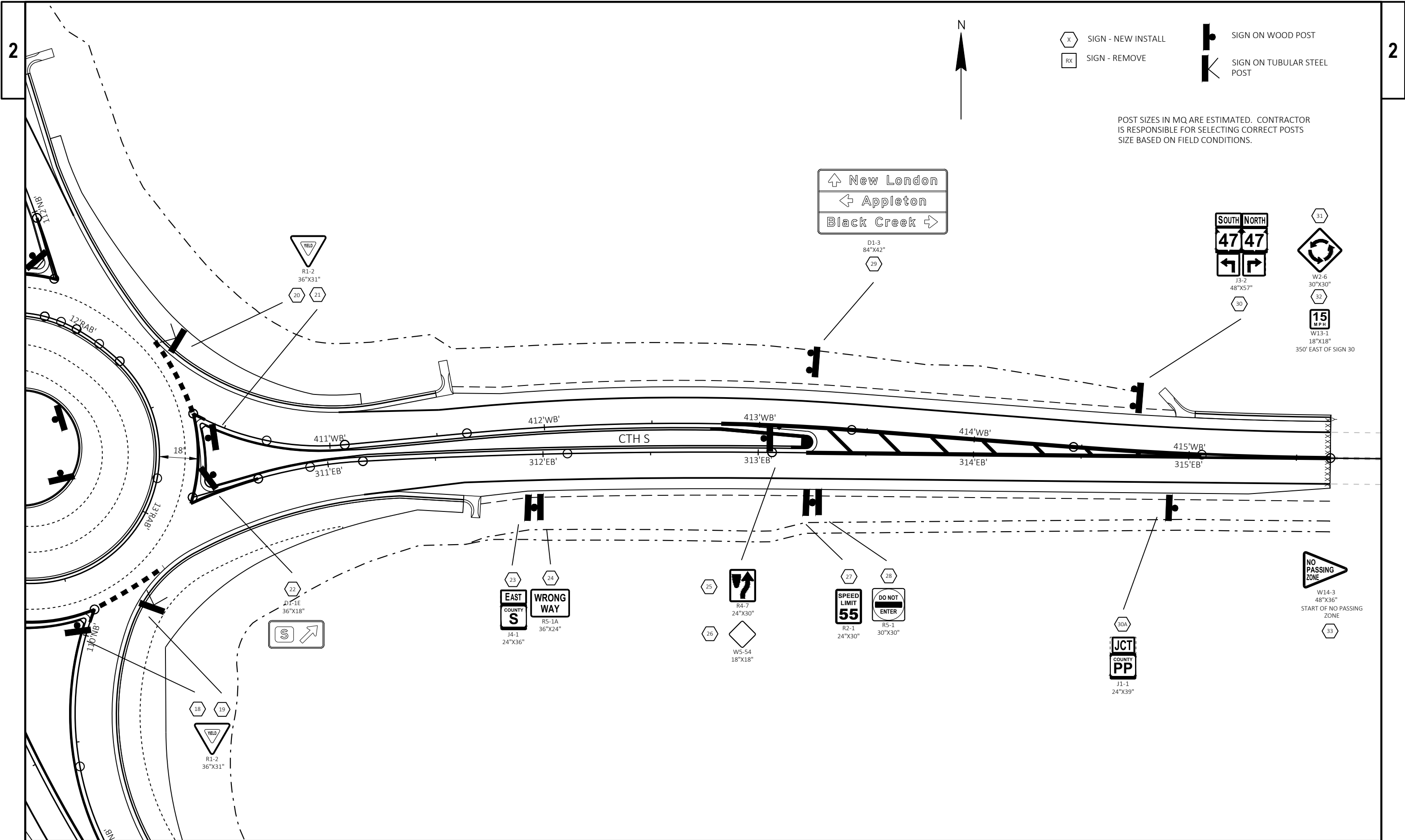
R4-7
24"X30"

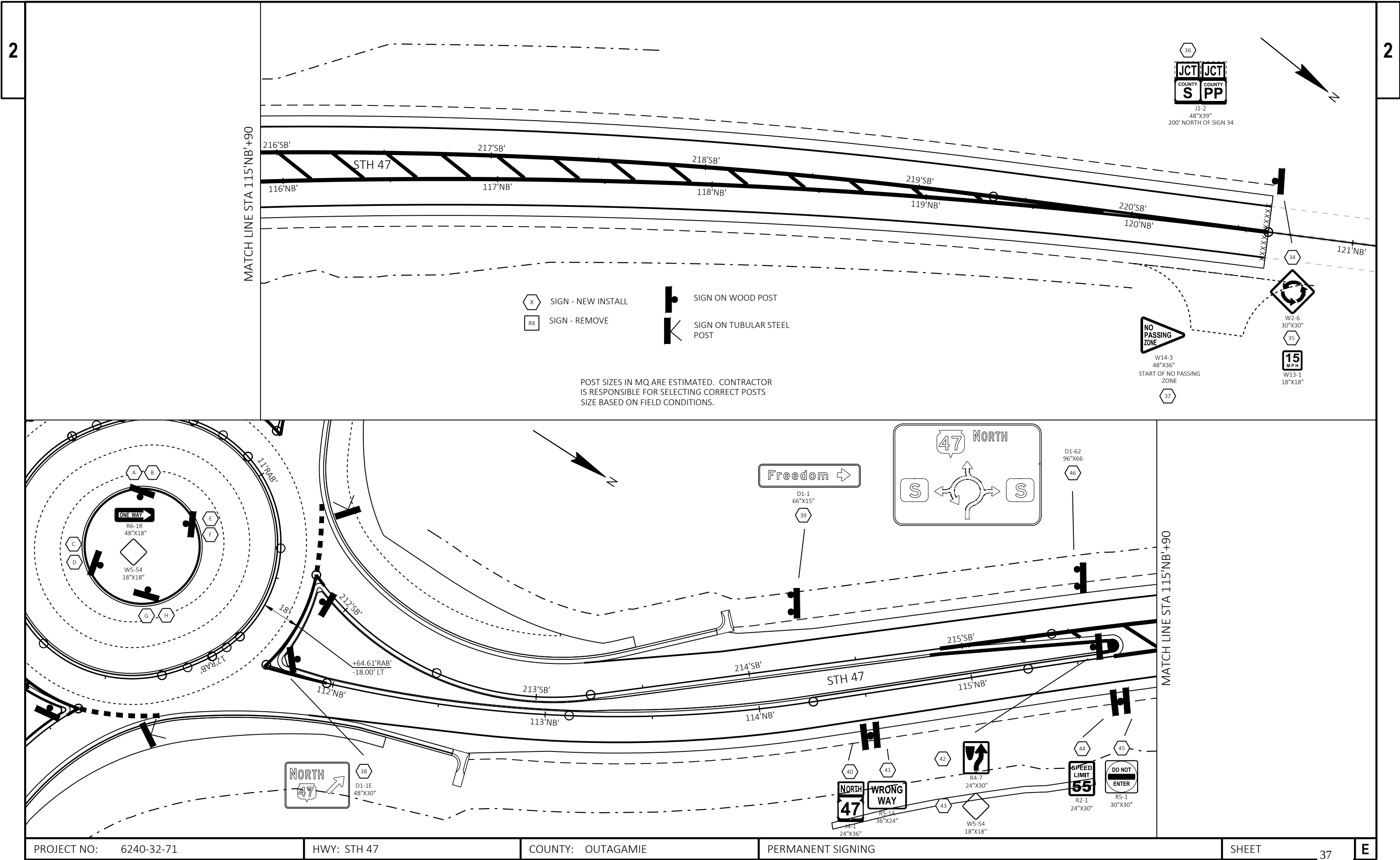


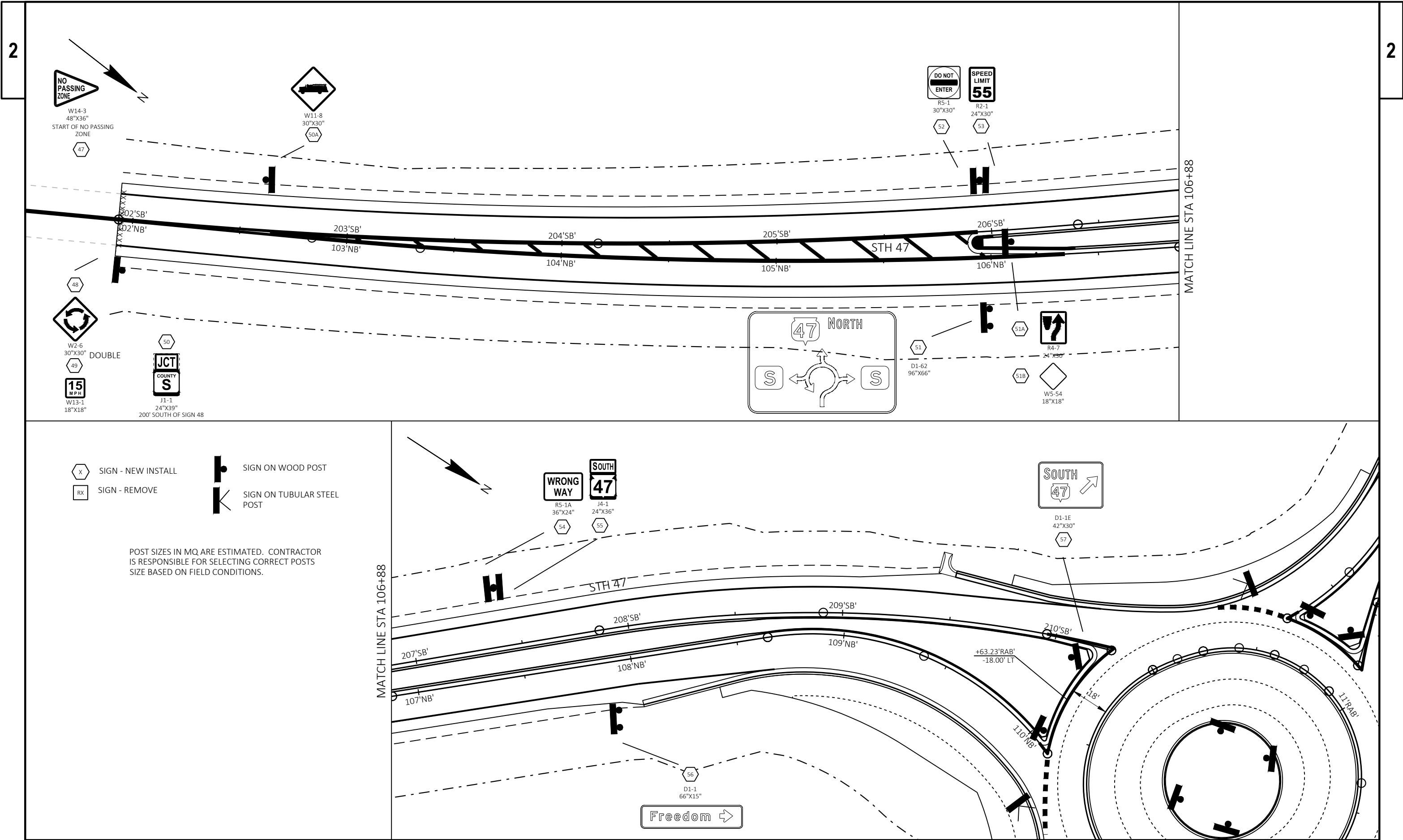
W5-54
18"X18"



R1-2
36"X31"



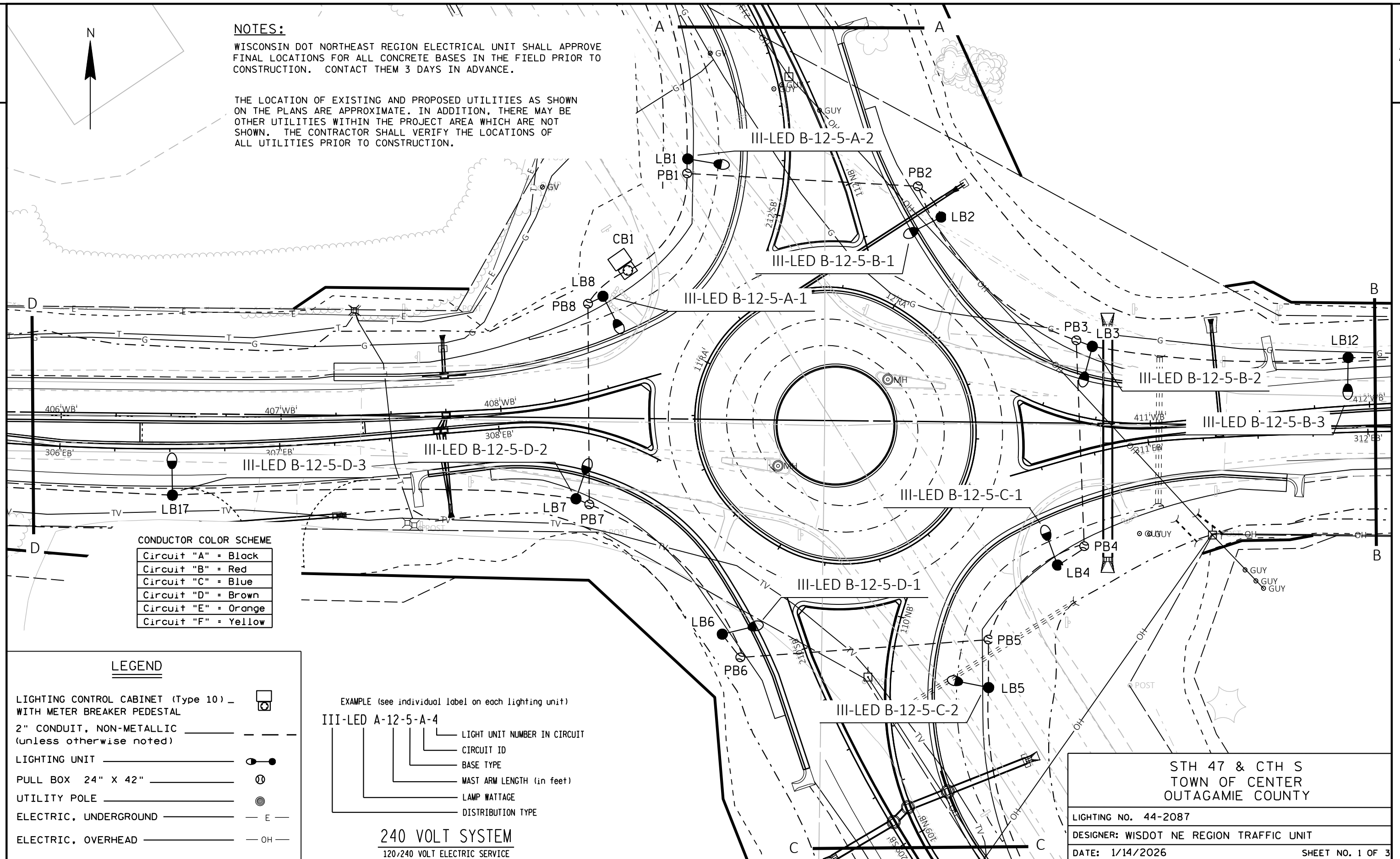




NOTES:

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.

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.



PROJECT NO: 6240-32-71

HWY: STH 47

COUNTY: OUTAGAMIE

CONSTRUCTION DETAIL - ROUNDABOUT LIGHTING

SHEET

39

E



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.

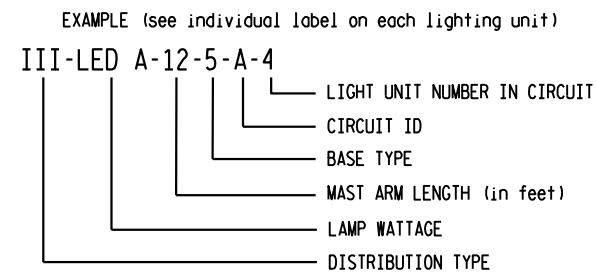
THE LOCATION OF EXISTING AND PROPOSED UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE. IN ADDITION, THERE MAY BE OTHER UTILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION.

CONDUCTOR COLOR SCHEME

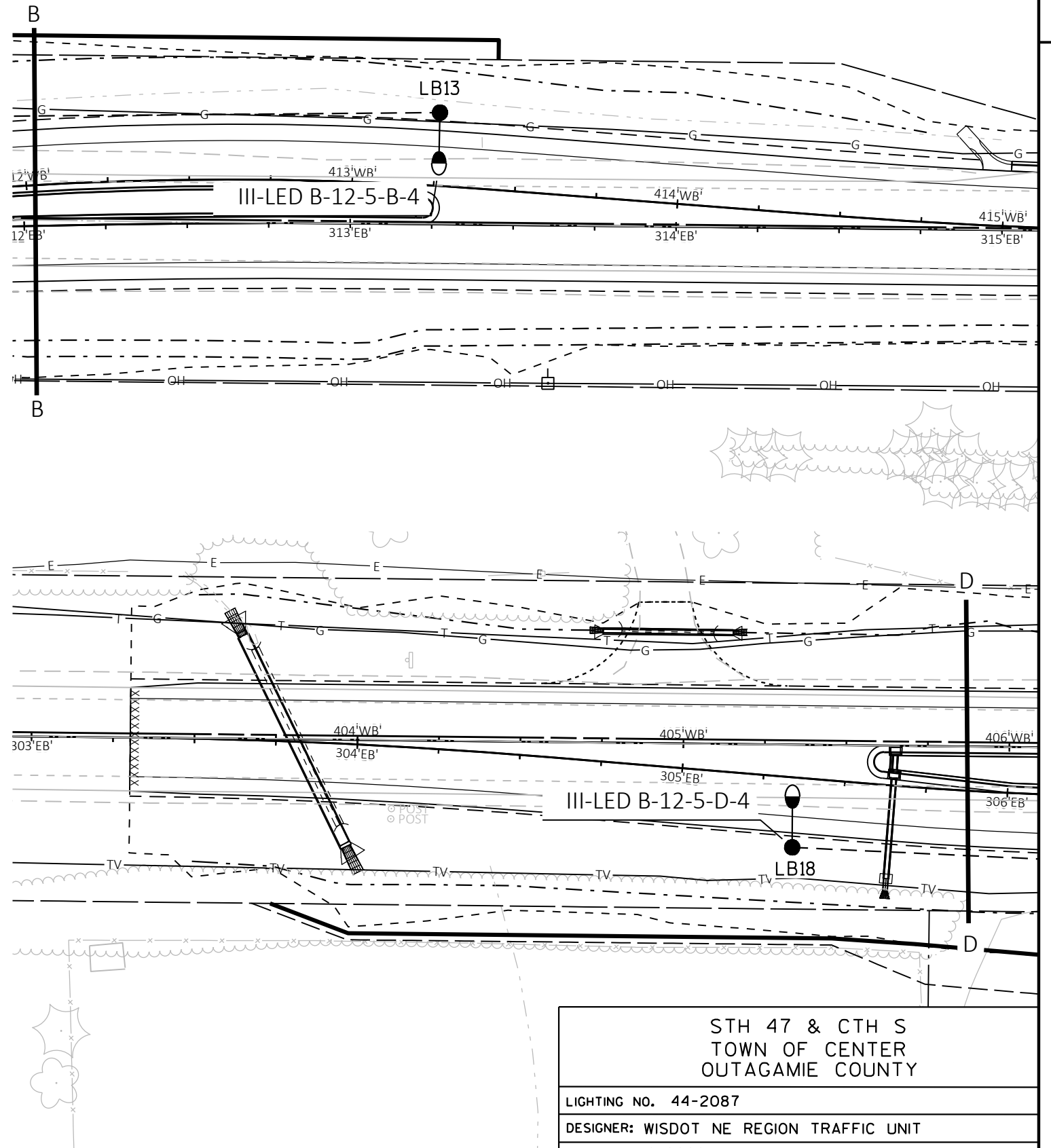
Circuit "A"	=	Black
Circuit "B"	=	Red
Circuit "C"	=	Blue
Circuit "D"	=	Brown
Circuit "E"	=	Orange
Circuit "F"	=	Yellow

LEGEND

LIGHTING CONTROL CABINET (Type 10) - WITH METER BREAKER PEDESTAL	
2" CONDUIT, NON-METALLIC (unless otherwise noted)	
LIGHTING UNIT	
PULL BOX 24" X 42"	
UTILITY POLE	
ELECTRIC, UNDERGROUND	
ELECTRIC, OVERHEAD	

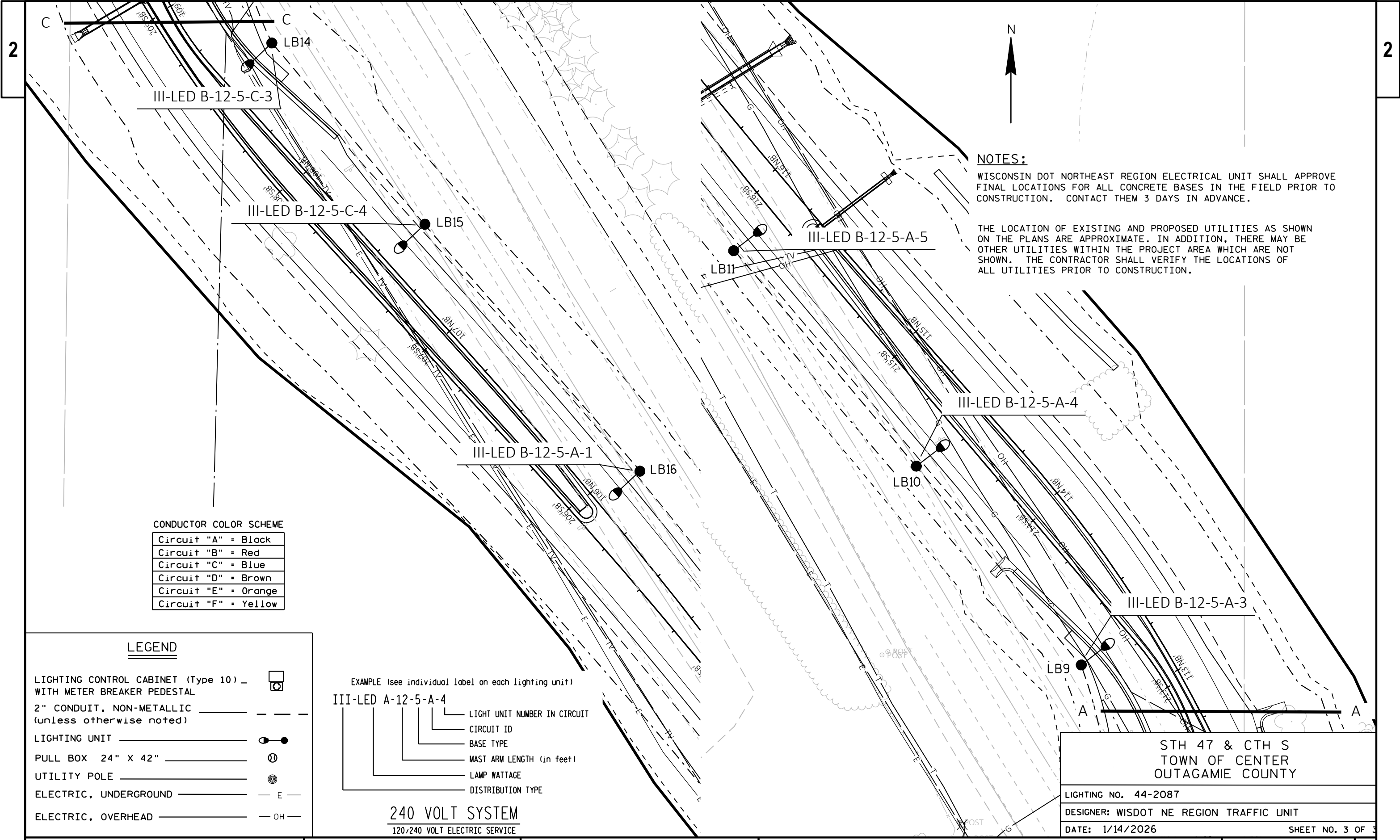


240 VOLT SYSTEM
120/240 VOLT ELECTRIC SERVICE



STH 47 & CTH S
TOWN OF CENTER
OUTAGAMIE COUNTY

LIGHTING NO. 44-2087	SHEET NO. 2 OF 3
DESIGNER: WISDOT NE REGION TRAFFIC UNIT	
DATE: 1/14/2026	



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.

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.

CONDUCTOR COLOR SCHEME

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

LEGEND

- LIGHTING CONTROL CABINET (Type 10) _ WITH METER BREAKER PEDESTAL
- 2" CONDUIT, NON-METALLIC (unless otherwise noted)
- LIGHTING UNIT
- PULL BOX 24" X 42"
- UTILITY POLE
- ELECTRIC, UNDERGROUND
- ELECTRIC, OVERHEAD

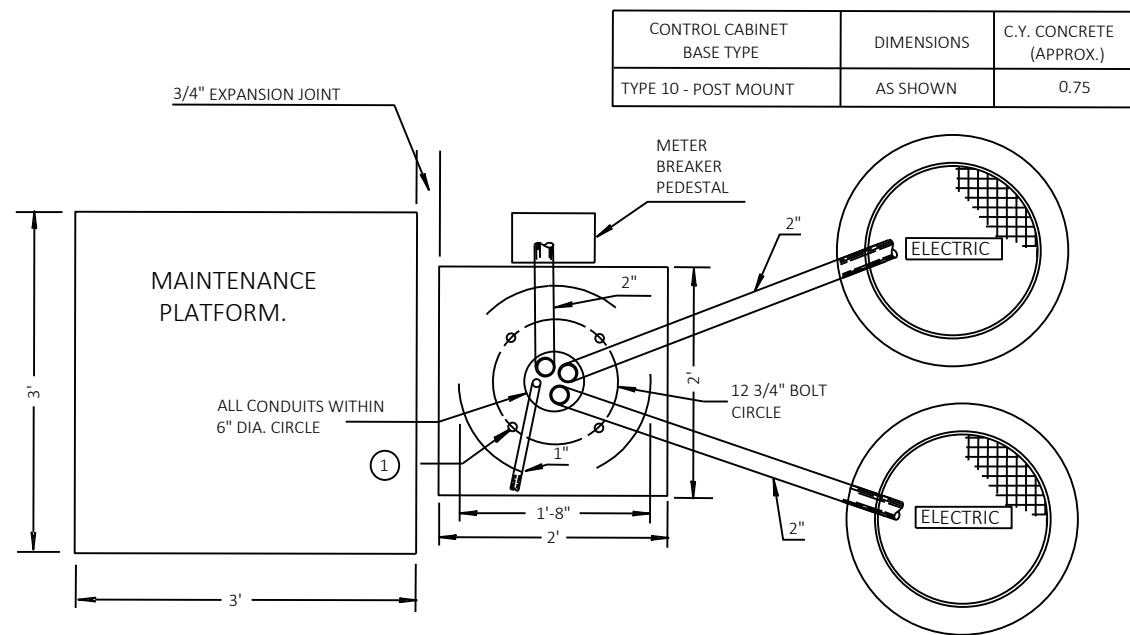
EXAMPLE (see individual label on each lighting unit)

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

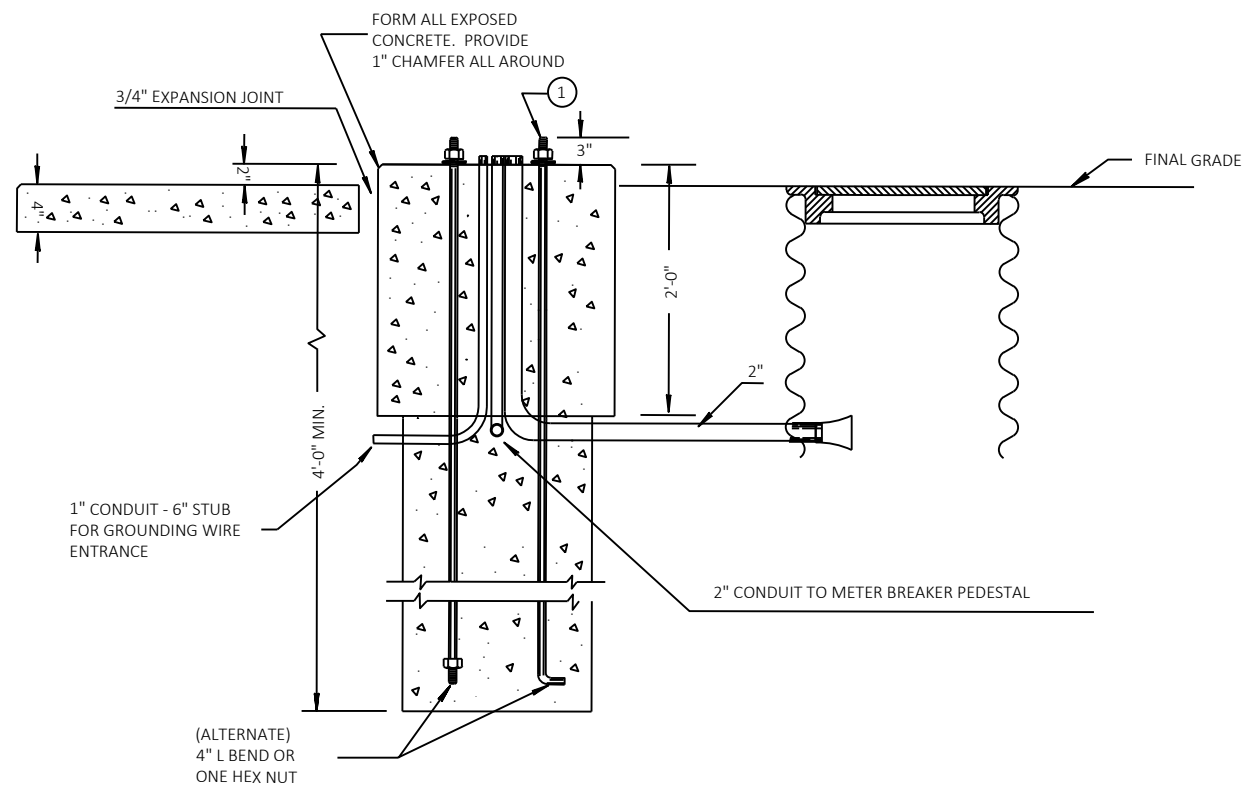
- LIGHT UNIT NUMBER IN CIRCUIT
- CIRCUIT ID
- BASE TYPE
- MAST ARM LENGTH (in feet)
- LAMP WATTAGE
- DISTRIBUTION TYPE

240 VOLT SYSTEM
120/240 VOLT ELECTRIC SERVICE

STH 47 & CTH S TOWN OF CENTER OUTAGAMIE COUNTY	
LIGHTING NO. 44-2087	
DESIGNER: WISDOT NE REGION TRAFFIC UNIT	
DATE: 1/14/2026	SHEET NO. 3 OF 3

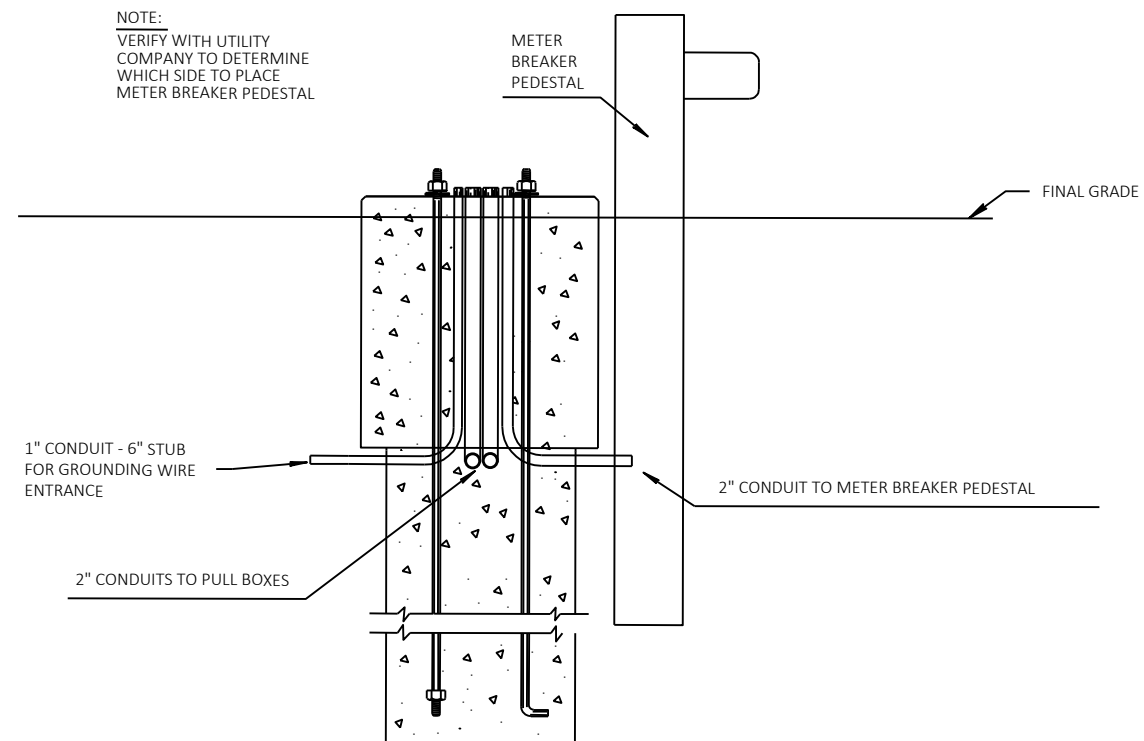


PLAN VIEW



PROFILE VIEW

NOTE:
VERIFY WITH UTILITY
COMPANY TO DETERMINE
WHICH SIDE TO PLACE
METER BREAKER PEDESTAL



FRONT VIEW

GENERAL NOTES

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

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.

CONTROL CABINET BASE TOP SURFACES SHALL BE TROWEL FINISHED AND LEVEL.

WHEN A TYPE 10 CONTROL CABINET BASE IS USED TO POST MOUNT A CONTROL CABINET, A 36" SQUARE 4" THICK CONCRETE MAINTENANCE PLATFORM SHALL BE REQUIRED ON THE DOOR SIDE OF THE CABINET. THE TOP 1 INCH SHALL BE ABOVE FINISHED GRADE AND BE BROOM FINISHED AND LEVEL.

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

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

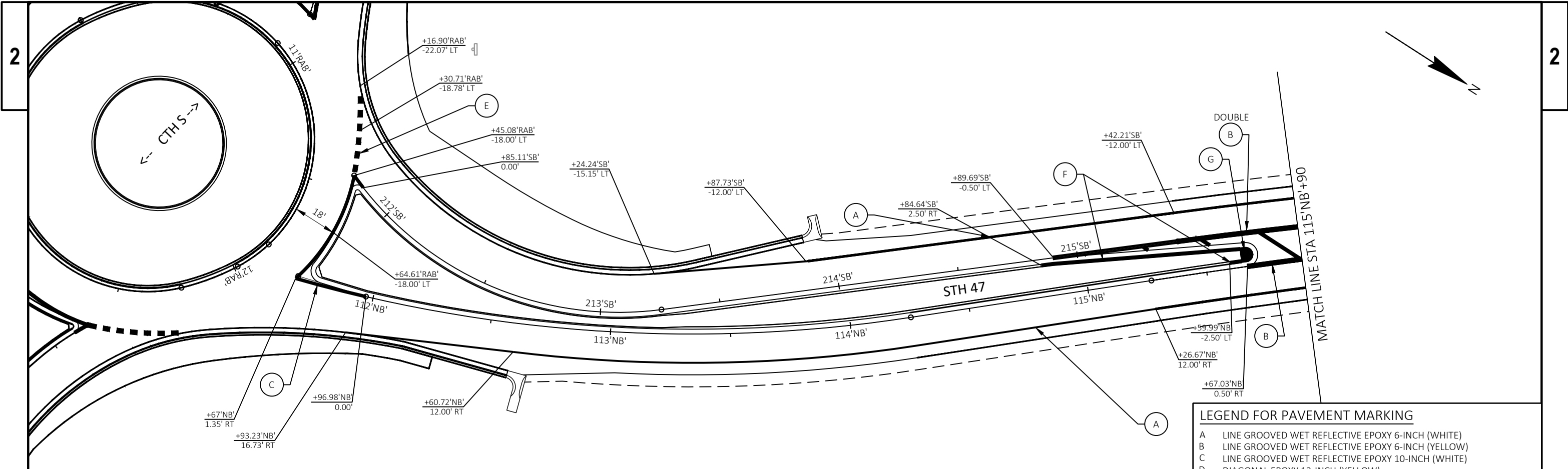
BELL ENDS SHALL BE INSTALLED ON ALL PVC CONDUIT EXPOSED AT THE TOP OF THE CONCRETE BASE BEFORE INSTALLATION OF CABLE OR WIRE.

WHEN ANCHOR RODS USING THE ALTERNATE L BEND ARE FURNISHED FOR THE TYPE 10 BASE, THE 4" L BEND SHALL BE IN ADDITION TO THE SPECIFIED ANCHOR ROD BAR LENGTH.

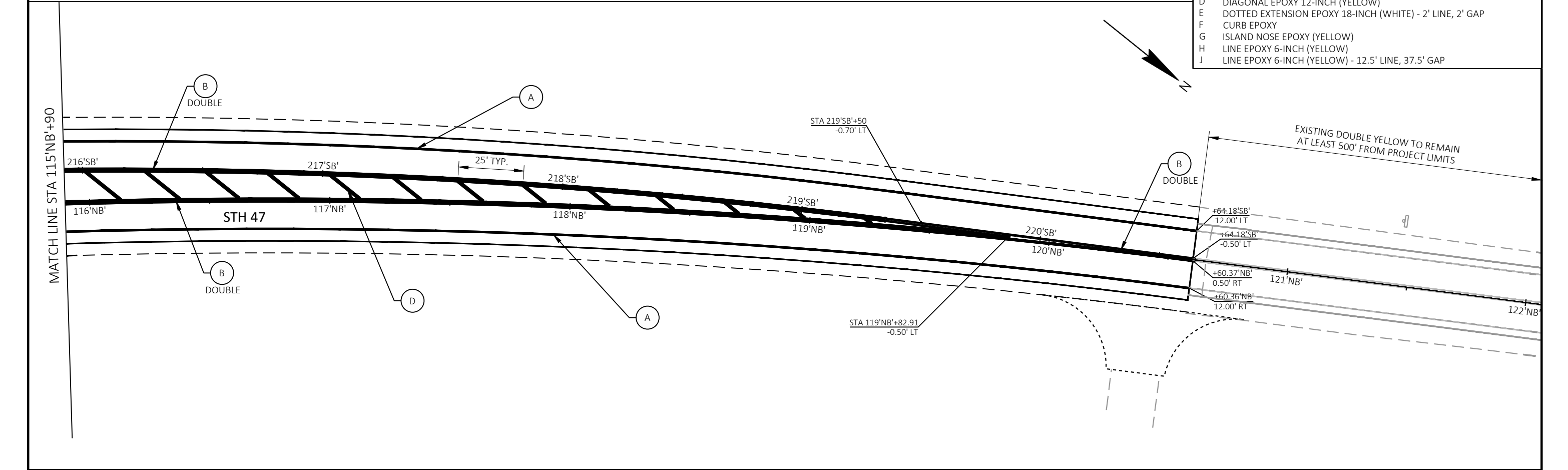
THE "L" BEND SHALL NOT BE THREADED.

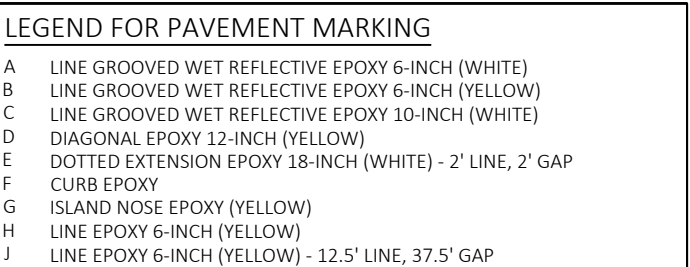
STRAIGHT ANCHOR RODS SHALL BE THREADED 12" IN LENGTH ON EACH END OF THE ROD.

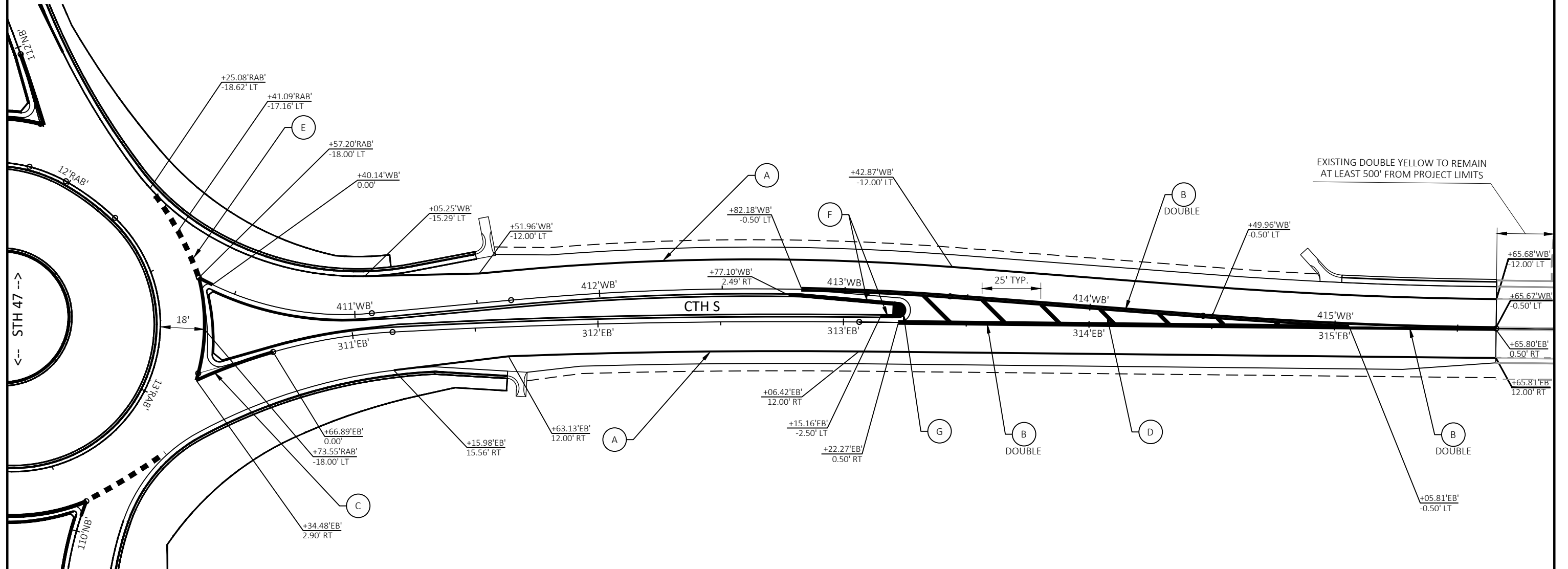
FOUR (4) ANCHOR RODS, 1" DIA. X 3'-6"
ANCHOR RODS SHALL BE MANUFACTURED IN ACCORDANCE WITH SECTION 654.2.1 AND 641.2.2 OF THE STANDARD SPECIFICATIONS AND IN ACCORDANCE WITH A-449, OR ASTM.



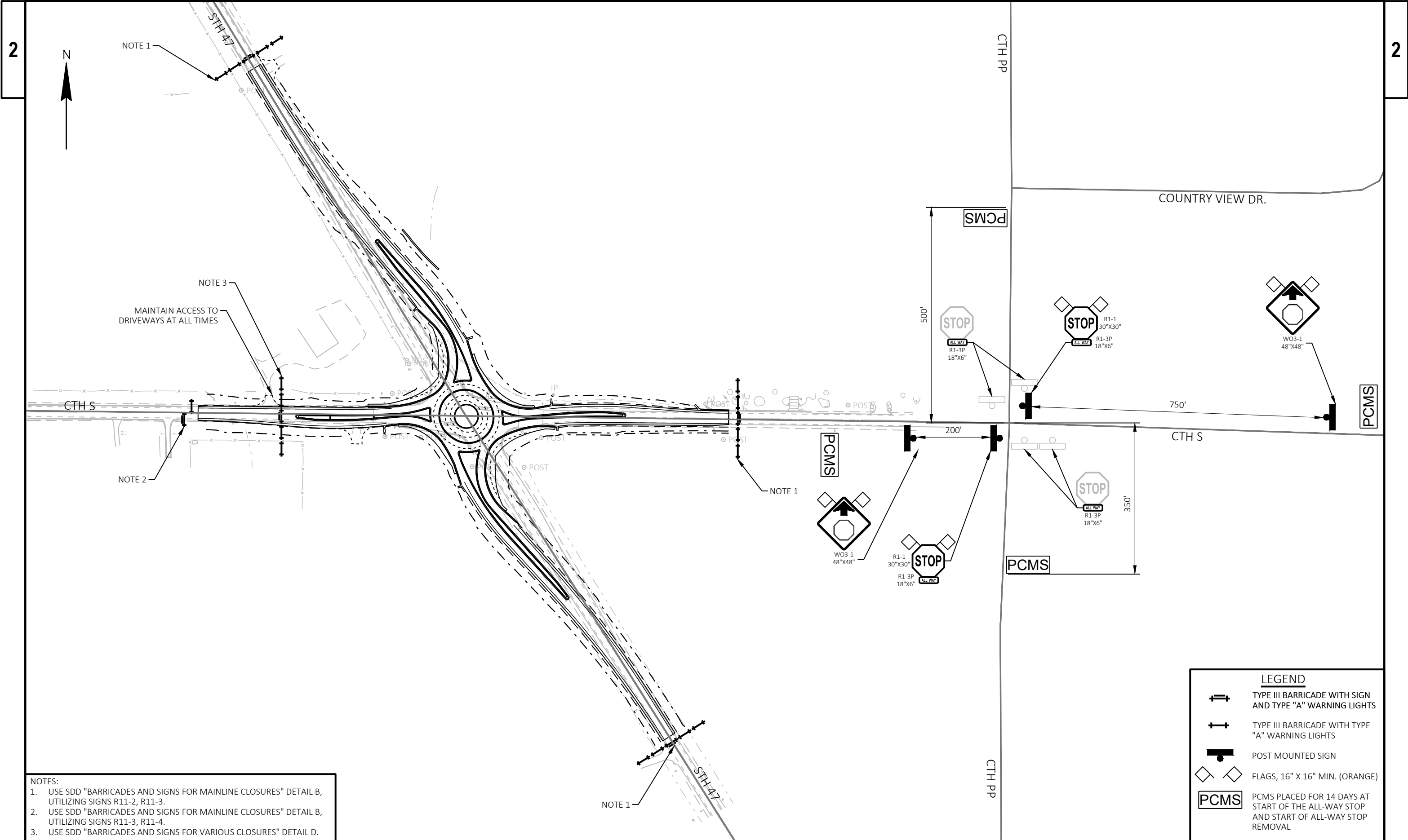
LEGEND FOR PAVEMENT MARKING	
A	LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
B	LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
C	LINE GROOVED WET REFLECTIVE EPOXY 10-INCH (WHITE)
D	DIAGONAL EPOXY 12-INCH (YELLOW)
E	DOTTED EXTENSION EPOXY 18-INCH (WHITE) - 2' LINE, 2' GAP
F	CURB EPOXY
G	ISLAND NOSE EPOXY (YELLOW)
H	LINE EPOXY 6-INCH (YELLOW)
J	LINE EPOXY 6-INCH (YELLOW) - 12.5' LINE, 37.5' GAP







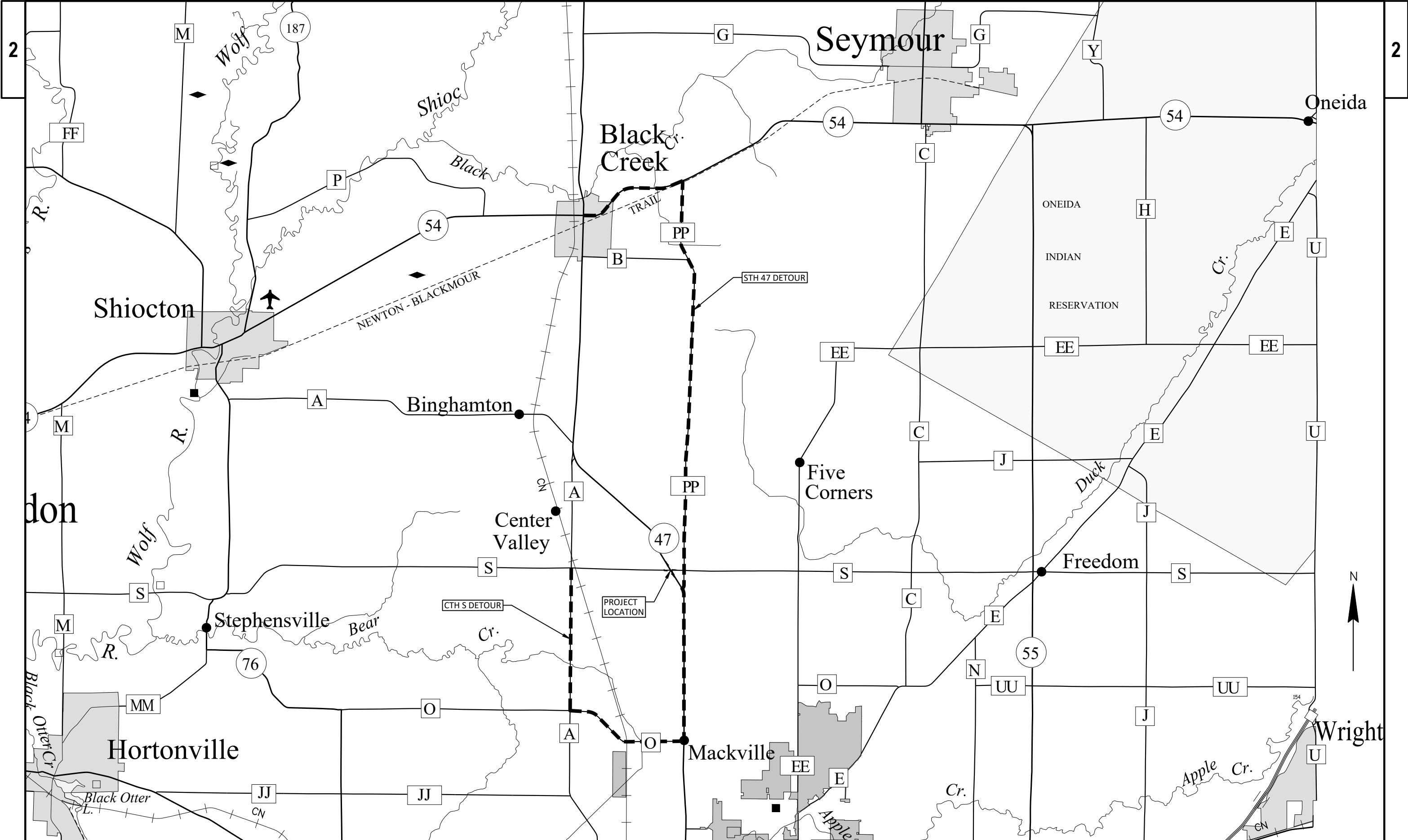
LEGEND FOR PAVEMENT MARKING	
A	LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (WHITE)
B	LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW)
C	LINE GROOVED WET REFLECTIVE EPOXY 10-INCH (WHITE)
D	DIAGONAL EPOXY 12-INCH (YELLOW)
E	DOTTED EXTENSION EPOXY 18-INCH (WHITE) - 2' LINE, 2' GAP
F	CURB EPOXY
G	ISLAND NOSE EPOXY (YELLOW)
H	LINE EPOXY 6-INCH (YELLOW)
J	LINE EPOXY 6-INCH (YELLOW) - 12.5' LINE, 37.5' GAP

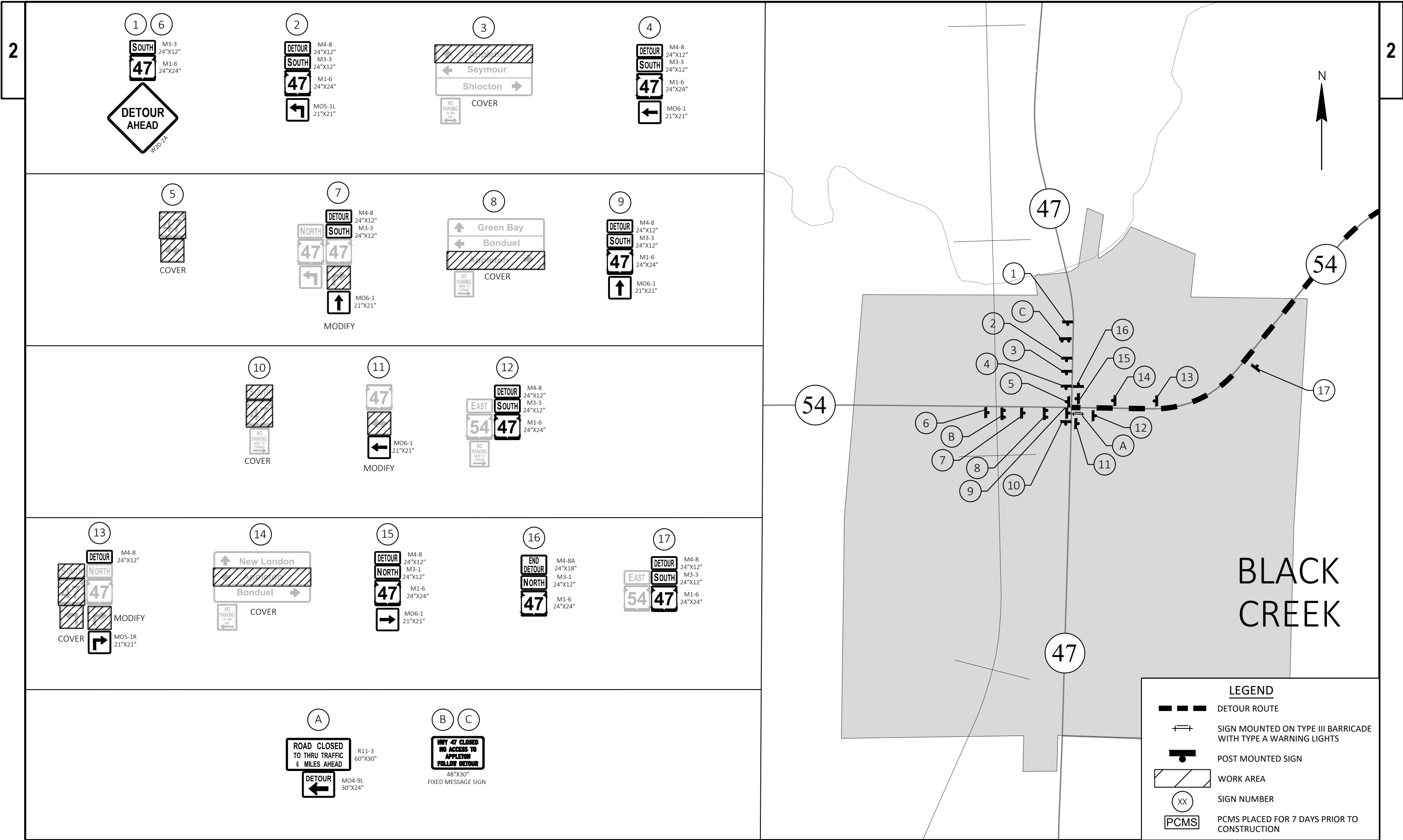


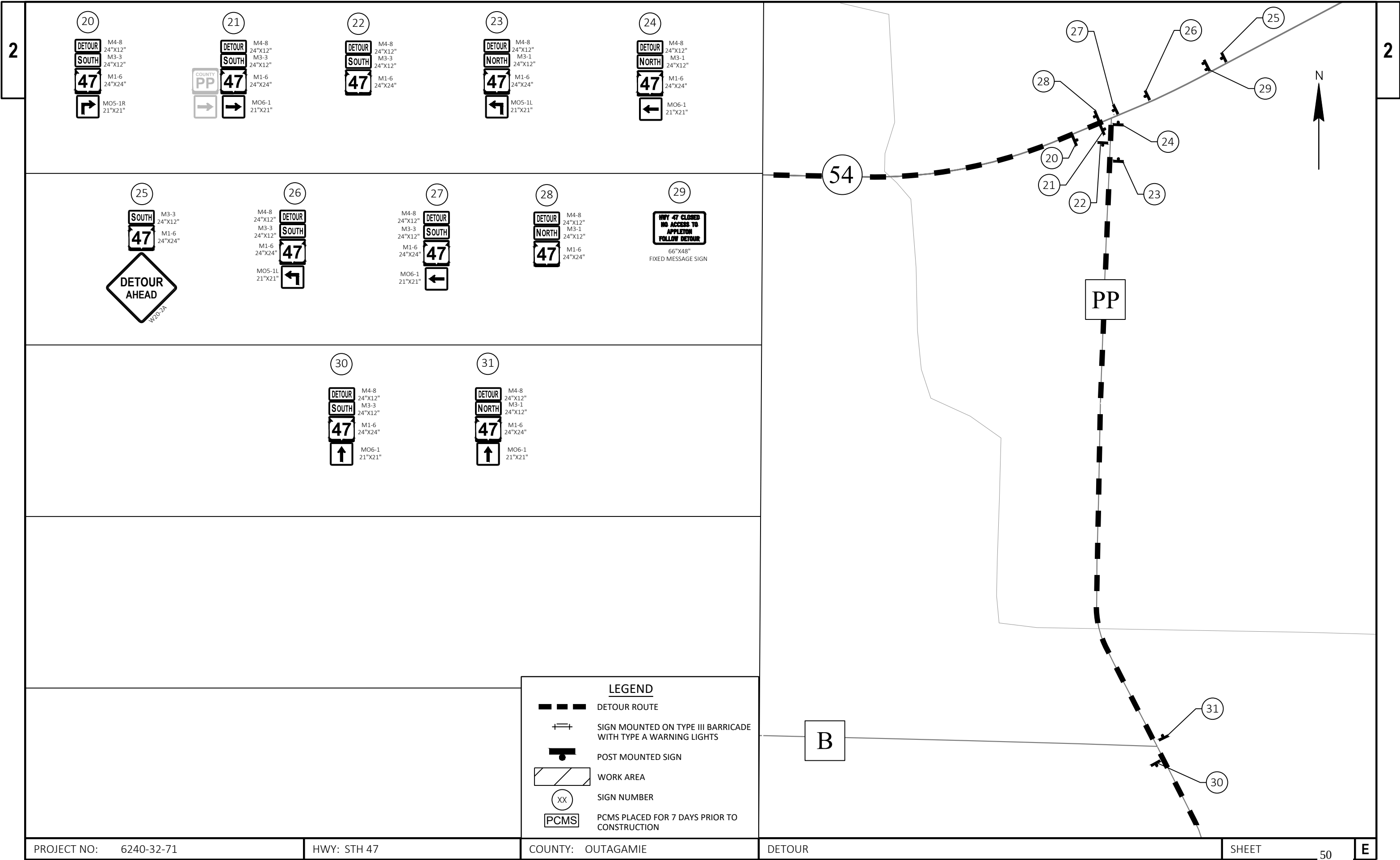
- NOTES:
1. USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL B, UTILIZING SIGNS R11-2, R11-3.
 2. USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL B, UTILIZING SIGNS R11-3, R11-4.
 3. USE SDD "BARRICADES AND SIGNS FOR VARIOUS CLOSURES" DETAIL D.

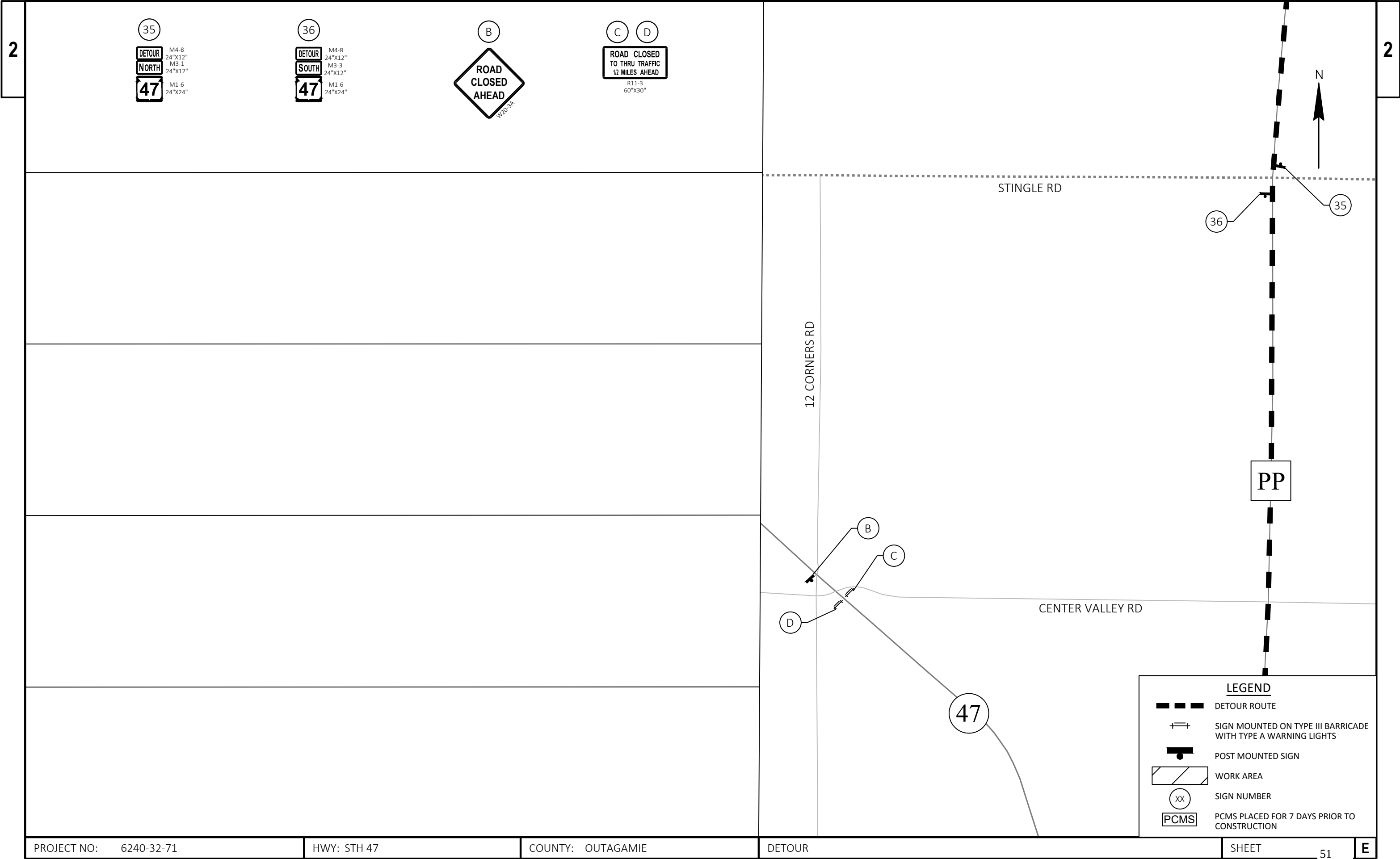
LEGEND

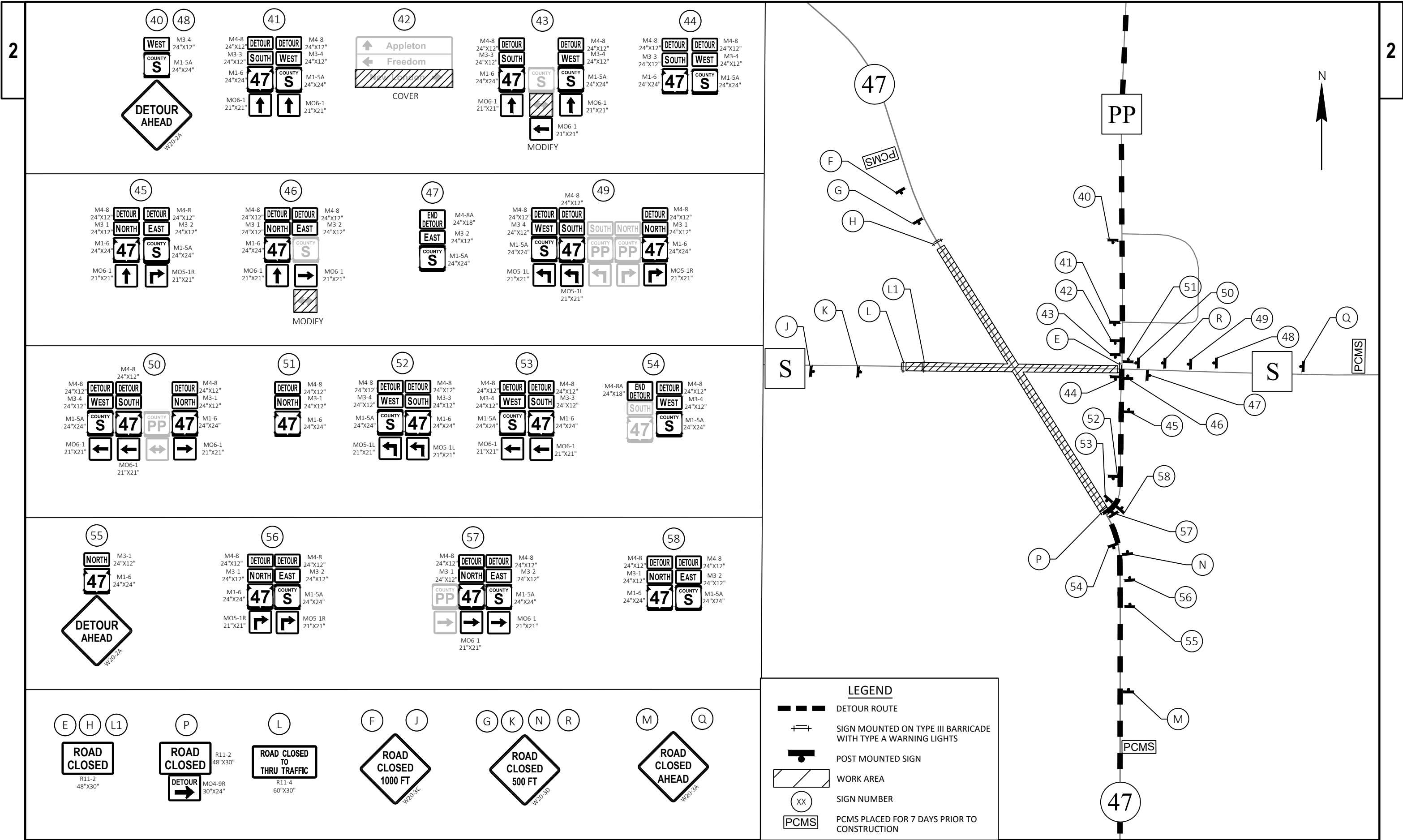
- TYPE III BARRICADE WITH SIGN AND TYPE "A" WARNING LIGHTS
- TYPE III BARRICADE WITH TYPE "A" WARNING LIGHTS
- POST MOUNTED SIGN
- FLAGS, 16" X 16" MIN. (ORANGE)
- PCMS PLACED FOR 14 DAYS AT START OF THE ALL-WAY STOP AND START OF ALL-WAY STOP REMOVAL

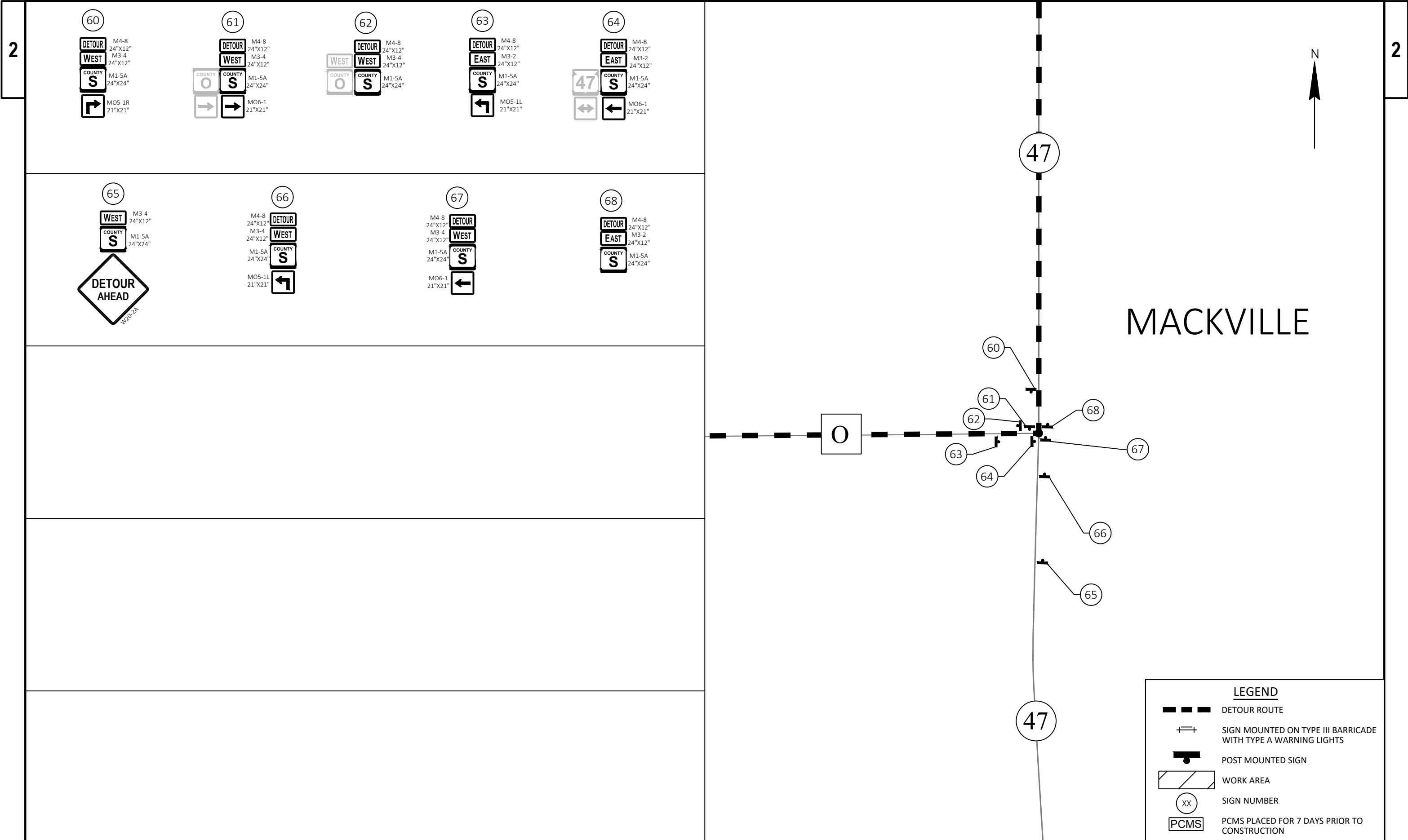












60

DETOUR

WEST

COUNTY

S

MO5-1R

M4-8
24"x12"
M3-4
24"x12"
M1-5A
24"x24"

MO5-1R
21"x21"

61

DETOUR

WEST

COUNTY

S

MO6-1

M4-8
24"x12"
M3-4
24"x12"
M1-5A
24"x24"

MO6-1
21"x21"

62

DETOUR

WEST

COUNTY

S

M4-8
24"x12"
M3-4
24"x12"
M1-5A
24"x24"

63

DETOUR

EAST

COUNTY

S

MO5-1L

M4-8
24"x12"
M3-2
24"x12"
M1-5A
24"x24"

MO5-1L
21"x21"

64

DETOUR

EAST

COUNTY

S

MO6-1

M4-8
24"x12"
M3-2
24"x12"
M1-5A
24"x24"

MO6-1
21"x21"

65

WEST

COUNTY

S

M3-4
24"x12"
M1-5A
24"x24"

DETOUR
AHEAD

66

DETOUR

WEST

COUNTY

S

MO5-1L

M4-8
24"x12"
M3-4
24"x12"
M1-5A
24"x24"

MO5-1L
21"x21"

67

DETOUR

WEST

COUNTY

S

MO6-1

M4-8
24"x12"
M3-4
24"x12"
M1-5A
24"x24"

MO6-1
21"x21"

68

DETOUR

EAST

COUNTY

S

M4-8
24"x12"
M3-2
24"x12"
M1-5A
24"x24"

LEGEND

DETOUR ROUTE

SIGN MOUNTED ON TYPE III BARRICADE WITH TYPE A WARNING LIGHTS

POST MOUNTED SIGN

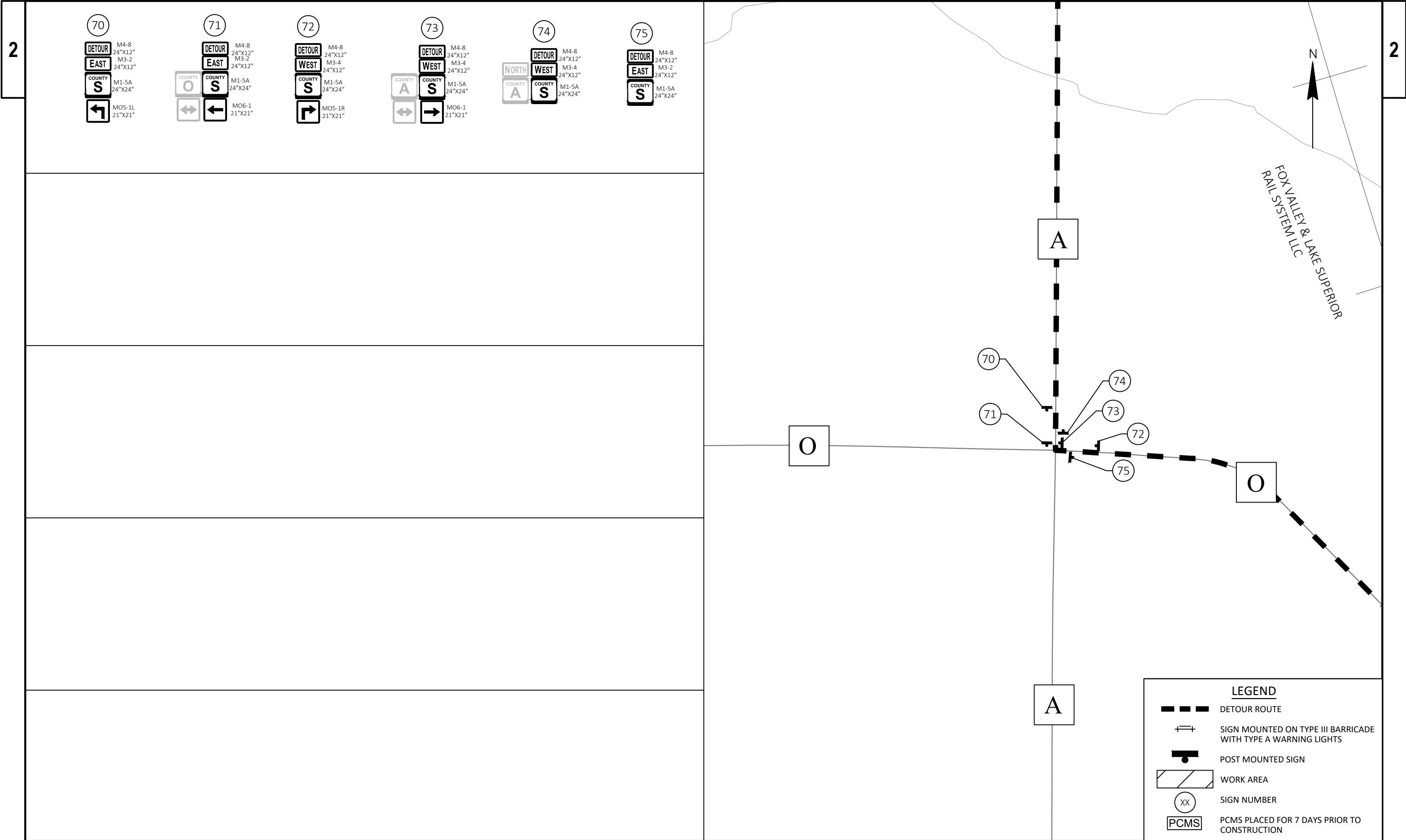
WORK AREA

XX

SIGN NUMBER

PCMS

PCMS PLACED FOR 7 DAYS PRIOR TO CONSTRUCTION



2

2

70

DETOUR

EAST

COUNTY S

←

M4-8
24"X12"
M3-2
24"X12"
M1-5A
24"X24"
MO5-1L
21"X21"

71

DETOUR

EAST

COUNTY S

←

M4-8
24"X12"
M3-2
24"X12"
M1-5A
24"X24"
MO6-1
21"X21"

72

DETOUR

WEST

COUNTY S

→

M4-8
24"X12"
M3-4
24"X12"
M1-5A
24"X24"
MO5-1R
21"X21"

73

DETOUR

WEST

COUNTY S

→

M4-8
24"X12"
M3-4
24"X12"
M1-5A
24"X24"
MO6-1
21"X21"

74

DETOUR

WEST

COUNTY S

→

M4-8
24"X12"
M3-4
24"X12"
M1-5A
24"X24"

75

DETOUR

EAST

COUNTY S

→

M4-8
24"X12"
M3-2
24"X12"
M1-5A
24"X24"

LEGEND

DETOUR ROUTE

+

+

SIGN MOUNTED ON TYPE III BARRICADE
WITH TYPE A WARNING LIGHTS

+

+

POST MOUNTED SIGN

///

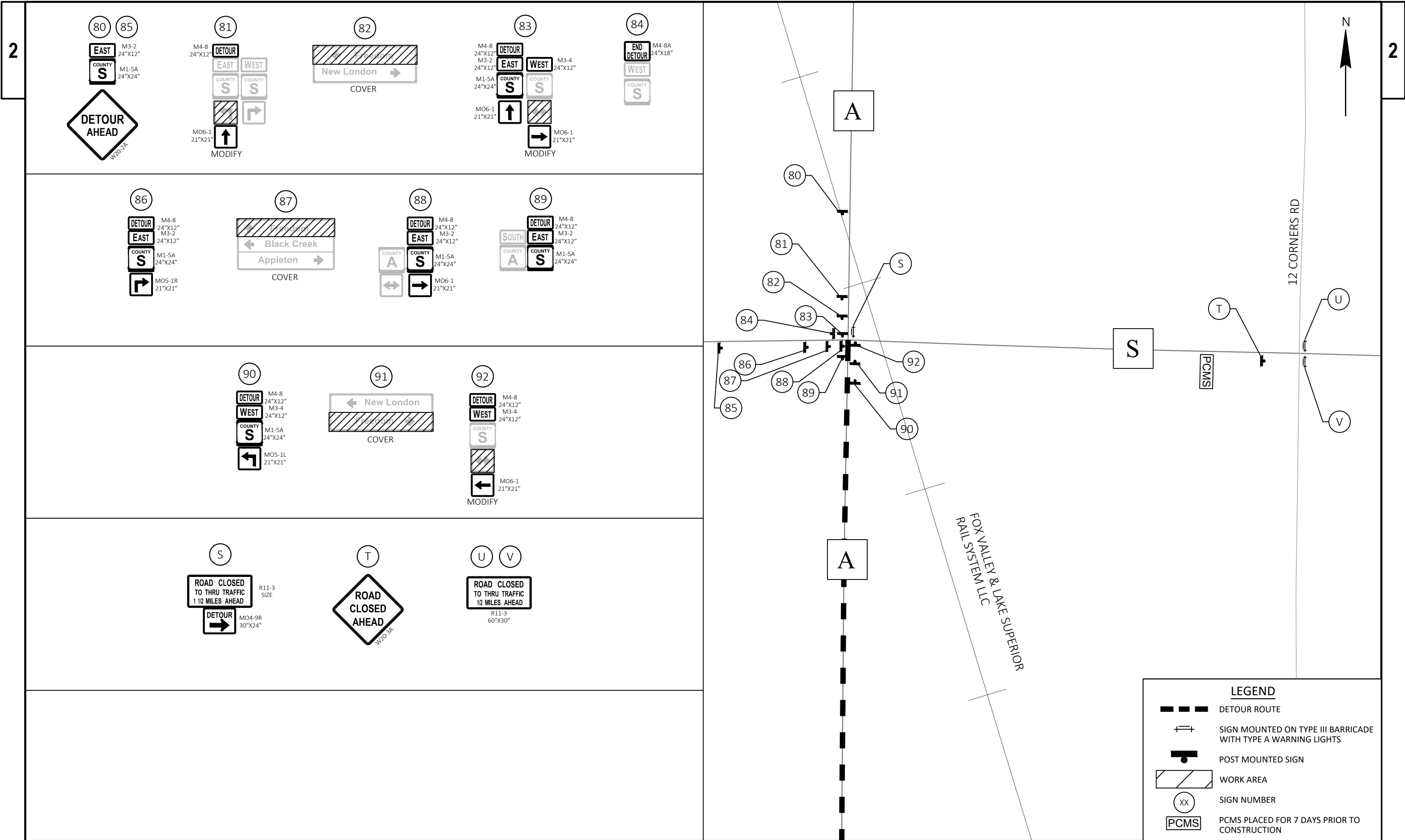
WORK AREA

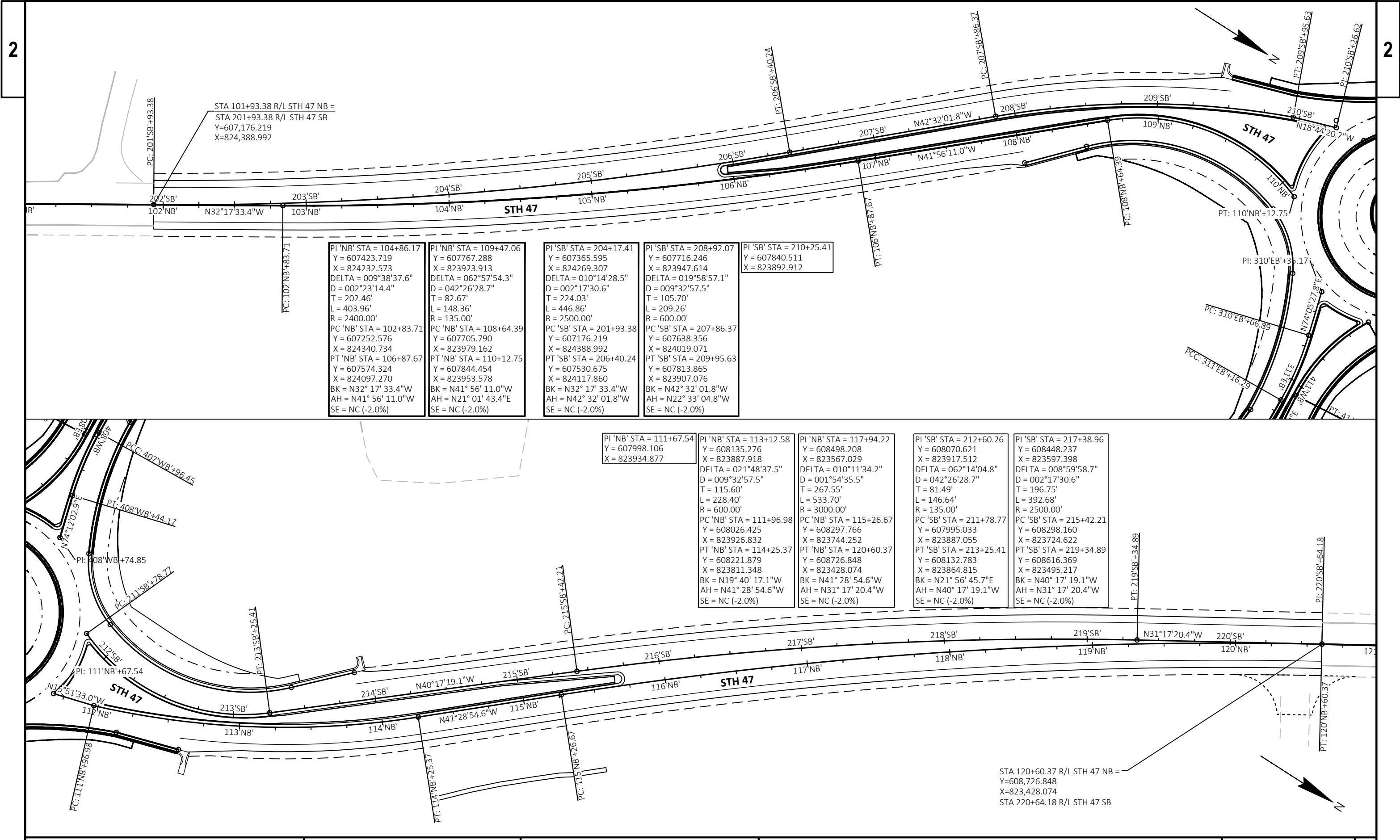
XX

SIGN NUMBER

PCMS

PCMS PLACED FOR 7 DAYS PRIOR TO
CONSTRUCTION





PI 'NB' STA = 104+86.17 Y = 607423.719 X = 824232.573 DELTA = 009°38'37.6" D = 002°23'14.4" T = 202.46' L = 403.96' R = 2400.00' PC 'NB' STA = 102+83.71 Y = 607252.576 X = 824340.734 PT 'NB' STA = 106+87.67 Y = 607574.324 X = 824097.270 BK = N32° 17' 33.4"W AH = N41° 56' 11.0"W SE = NC (-2.0%)
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PI 'NB' STA = 109+47.06 Y = 607767.288 X = 823923.913 DELTA = 062°57'54.3" D = 042°26'28.7" T = 82.67' L = 148.36' R = 135.00' PC 'NB' STA = 108+64.39 Y = 607705.790 X = 823979.162 PT 'NB' STA = 110+12.75 Y = 607844.454 X = 823953.578 BK = N41° 56' 11.0"W AH = N21° 01' 43.4"E SE = NC (-2.0%)
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PI 'SB' STA = 204+17.41 Y = 607365.595 X = 824269.307 DELTA = 010°14'28.5" D = 002°17'30.6" T = 224.03' L = 446.86' R = 2500.00' PC 'SB' STA = 201+93.38 Y = 607176.219 X = 824388.992 PT 'SB' STA = 206+40.24 Y = 607530.675 X = 824117.860 BK = N32° 17' 33.4"W AH = N42° 32' 01.8"W SE = NC (-2.0%)
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PI 'SB' STA = 208+92.07 Y = 607716.246 X = 823947.614 DELTA = 019°58'57.1" D = 009°32'57.5" T = 105.70' L = 209.26' R = 600.00' PC 'SB' STA = 207+86.37 Y = 607638.356 X = 824019.071 PT 'SB' STA = 209+95.63 Y = 607813.865 X = 823907.076 BK = N42° 32' 01.8"W AH = N22° 33' 04.8"W SE = NC (-2.0%)

PI 'SB' STA = 210+25.41 Y = 607840.511 X = 823892.912

PI 'NB' STA = 111+67.54 Y = 607998.106 X = 823934.877

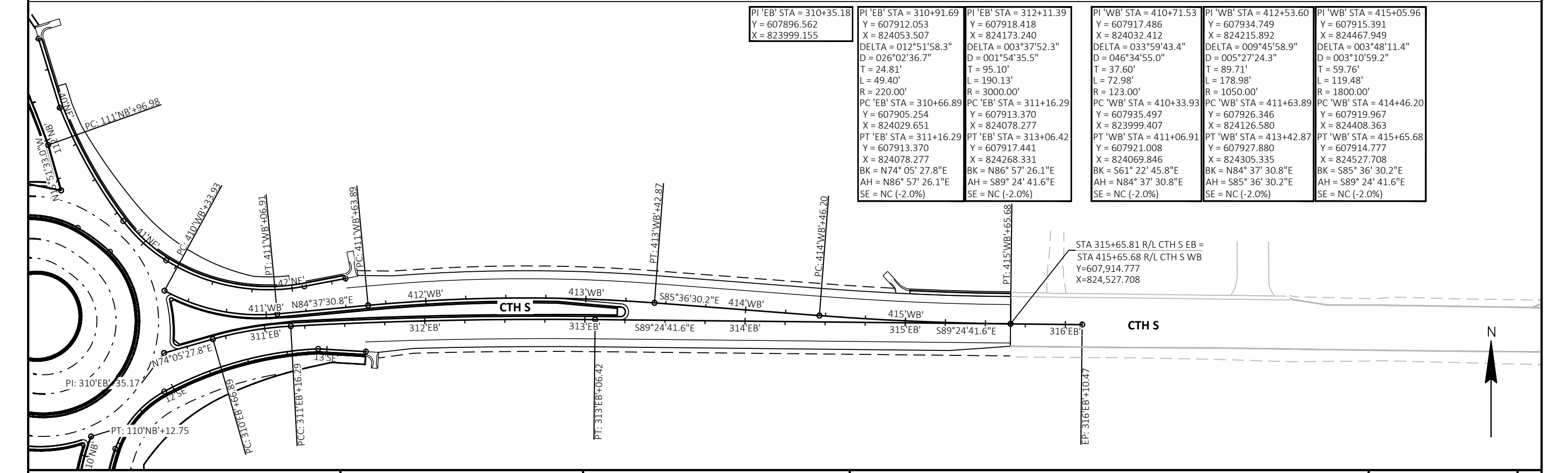
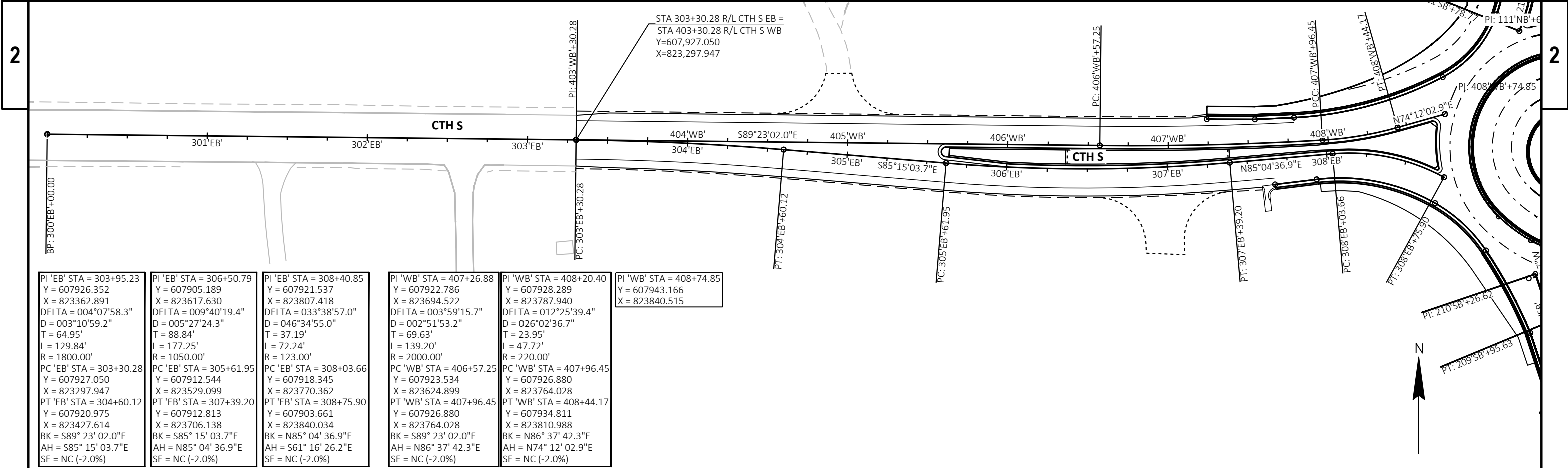
PI 'NB' STA = 113+12.58 Y = 608135.276 X = 823887.918 DELTA = 021°48'37.5" D = 009°32'57.5" T = 115.60' L = 228.40' R = 600.00' PC 'NB' STA = 111+96.98 Y = 608026.425 X = 823926.832 PT 'NB' STA = 114+25.37 Y = 608221.879 X = 823811.348 BK = N19° 40' 17.1"W AH = N41° 28' 54.6"W SE = NC (-2.0%)

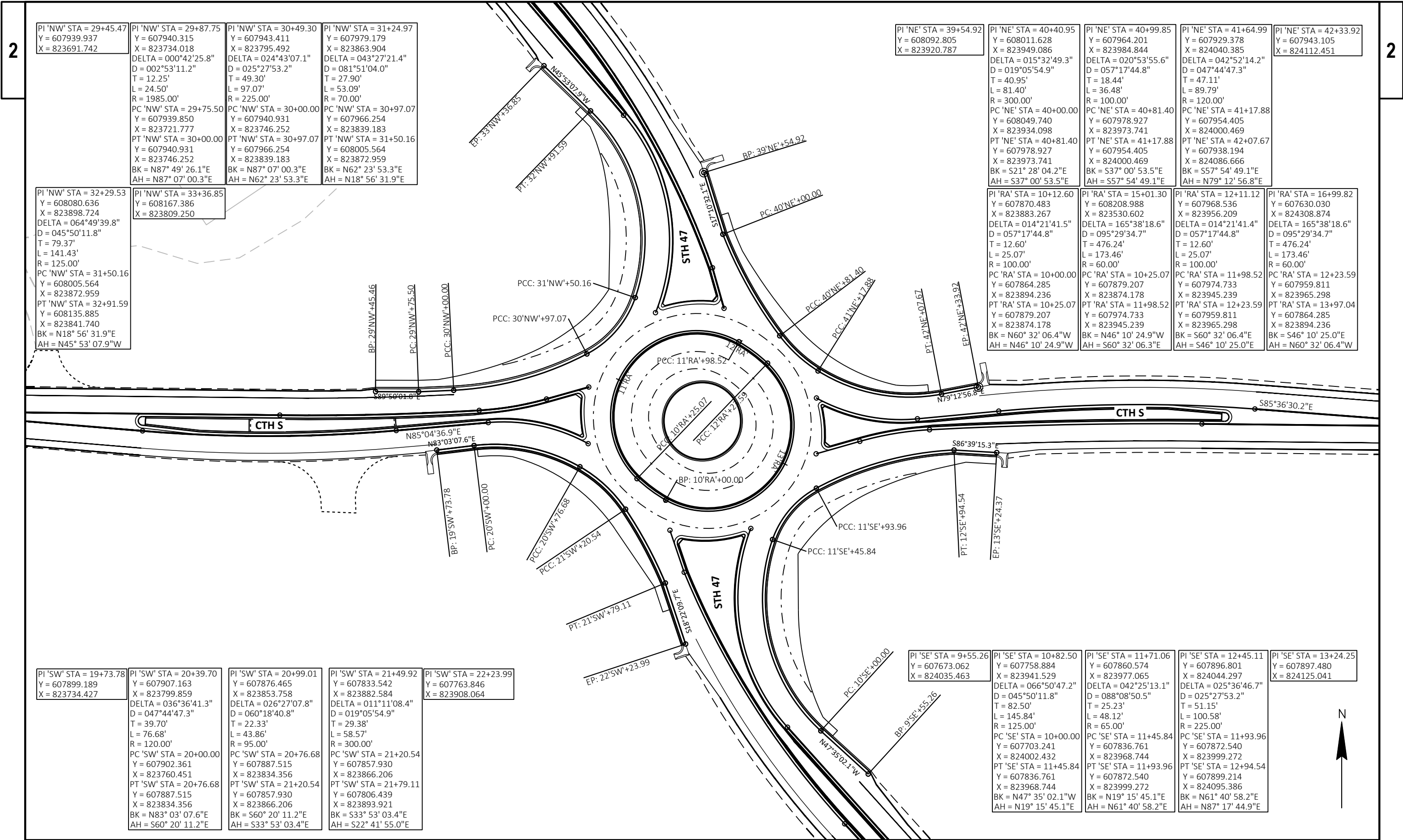
PI 'NB' STA = 117+94.22 Y = 608498.208 X = 823567.029 DELTA = 010°11'34.2" D = 001°54'35.5" T = 267.55' L = 533.70' R = 3000.00' PC 'NB' STA = 115+26.67 Y = 608297.766 X = 823744.252 PT 'NB' STA = 120+60.37 Y = 608726.848 X = 823428.074 BK = N41° 28' 54.6"W AH = N31° 17' 20.4"W SE = NC (-2.0%)
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PI 'SB' STA = 212+60.26 Y = 608070.621 X = 823917.512 DELTA = 062°14'04.8" D = 042°26'28.7" T = 81.49' L = 146.64' R = 135.00' PC 'SB' STA = 211+78.77 Y = 607995.033 X = 823887.055 PT 'SB' STA = 213+25.41 Y = 608132.783 X = 823864.815 BK = N21° 56' 45.7"E AH = N40° 17' 19.1"W SE = NC (-2.0%)
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PI 'SB' STA = 217+38.96 Y = 608448.237 X = 823597.398 DELTA = 008°59'58.7" D = 002°17'30.6" T = 196.75' L = 392.68' R = 2500.00' PC 'SB' STA = 215+42.21 Y = 608298.160 X = 823724.622 PT 'SB' STA = 219+34.89 Y = 608616.369 X = 823495.217 BK = N40° 17' 19.1"W AH = N31° 17' 20.4"W SE = NC (-2.0%)
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STA 120+60.37 R/L STH 47 NB =
Y=608,726.848
X=823,428.074
STA 220+64.18 R/L STH 47 SB





PI 'NW' STA = 29+45.47 Y = 607939.937 X = 823691.742	PI 'NW' STA = 29+87.75 Y = 607940.315 X = 823734.018 DELTA = 000°42'25.8" D = 002°53'11.2" T = 12.25' L = 24.50' R = 1985.00' PC 'NW' STA = 29+75.50 Y = 607939.850 X = 823721.777 PT 'NW' STA = 30+00.00 Y = 607940.931 X = 823746.252 BK = N87° 49' 26.1"E AH = N87° 07' 00.3"E	PI 'NW' STA = 30+49.30 Y = 607943.411 X = 823795.492 DELTA = 024°43'07.1" D = 025°27'53.2" T = 49.30' L = 97.07' R = 225.00' PC 'NW' STA = 30+00.00 Y = 607940.931 X = 823746.252 PT 'NW' STA = 30+97.07 Y = 607966.254 X = 823839.183 BK = N87° 07' 00.3"E AH = N62° 23' 53.3"E	PI 'NW' STA = 31+24.97 Y = 607979.179 X = 823863.904 DELTA = 043°27'21.4" D = 081°51'04.0" T = 27.90' L = 53.09' R = 70.00' PC 'NW' STA = 30+97.07 Y = 607966.254 X = 823839.183 PT 'NW' STA = 31+50.16 Y = 608005.564 X = 823872.959 BK = N62° 23' 53.3"E AH = N18° 56' 31.9"E
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PI 'NW' STA = 32+29.53 Y = 608080.636 X = 823898.724 DELTA = 064°49'39.8" D = 045°50'11.8" T = 79.37' L = 141.43' R = 125.00' PC 'NW' STA = 31+50.16 Y = 608005.564 X = 823872.959 PT 'NW' STA = 32+91.59 Y = 608135.885 X = 823841.740 BK = N18° 56' 31.9"E AH = N45° 53' 07.9"W	PI 'NW' STA = 33+36.85 Y = 608167.386 X = 823809.250
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PI 'NE' STA = 39+54.92 Y = 608092.805 X = 823920.787	PI 'NE' STA = 40+40.95 Y = 608011.628 X = 823949.086 DELTA = 015°32'49.3" D = 019°05'54.9" T = 40.95' L = 81.40' R = 300.00' PC 'NE' STA = 40+00.00 Y = 608049.740 X = 823934.098 PT 'NE' STA = 40+81.40 Y = 607978.927 X = 823973.741 BK = S21° 28' 04.2"E AH = S37° 00' 53.5"E	PI 'NE' STA = 40+99.85 Y = 607964.201 X = 823984.844 DELTA = 020°53'55.6" D = 057°17'44.8" T = 18.44' L = 36.48' R = 100.00' PC 'NE' STA = 40+81.40 Y = 607978.927 X = 823973.741 PT 'NE' STA = 41+17.88 Y = 607954.405 X = 824000.469 BK = S37° 00' 53.5"E AH = S57° 54' 49.1"E	PI 'NE' STA = 41+64.99 Y = 607929.378 X = 824040.385 DELTA = 042°52'14.2" D = 047°44'47.3" T = 47.11' L = 89.79' R = 120.00' PC 'NE' STA = 41+17.88 Y = 607954.405 X = 824000.469 PT 'NE' STA = 42+07.67 Y = 607938.194 X = 824086.666 BK = S57° 54' 49.1"E AH = N79° 12' 56.8"E	PI 'NE' STA = 42+33.92 Y = 607943.105 X = 824112.451
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PI 'RA' STA = 10+12.60 Y = 607870.483 X = 823883.267 DELTA = 014°21'41.5" D = 057°17'44.8" T = 12.60' L = 25.07' R = 100.00' PC 'RA' STA = 10+00.00 Y = 607864.285 X = 823894.236 PT 'RA' STA = 10+25.07 Y = 607879.207 X = 823874.178 BK = N60° 32' 06.4"W AH = N46° 10' 24.9"W	PI 'RA' STA = 15+01.30 Y = 608208.988 X = 823530.602 DELTA = 165°38'18.6" D = 095°29'34.7" T = 476.24' L = 173.46' R = 60.00' PC 'RA' STA = 10+25.07 Y = 607879.207 X = 823874.178 PT 'RA' STA = 11+98.52 Y = 607974.733 X = 823945.239 BK = N46° 10' 24.9"W AH = S60° 32' 06.3"E	PI 'RA' STA = 12+11.12 Y = 607968.536 X = 823956.209 DELTA = 014°21'41.4" D = 057°17'44.8" T = 12.60' L = 25.07' R = 100.00' PC 'RA' STA = 11+98.52 Y = 607974.733 X = 823945.239 PT 'RA' STA = 12+23.59 Y = 607959.811 X = 823965.298 BK = S60° 32' 06.4"E AH = S46° 10' 25.0"E	PI 'RA' STA = 16+99.82 Y = 607630.030 X = 824308.874 DELTA = 165°38'18.6" D = 095°29'34.7" T = 476.24' L = 173.46' R = 60.00' PC 'RA' STA = 12+23.59 Y = 607959.811 X = 823965.298 PT 'RA' STA = 13+97.04 Y = 607864.285 X = 823894.236 BK = S46° 10' 25.0"E AH = N60° 32' 06.4"W
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PI 'SW' STA = 19+73.78 Y = 607899.189 X = 823734.427	PI 'SW' STA = 20+39.70 Y = 607907.163 X = 823799.859 DELTA = 036°36'41.3" D = 047°44'47.3" T = 39.70' L = 76.68' R = 120.00' PC 'SW' STA = 20+00.00 Y = 607902.361 X = 823760.451 PT 'SW' STA = 20+76.68 Y = 607887.515 X = 823834.356 BK = N83° 03' 07.6"E AH = S60° 20' 11.2"E	PI 'SW' STA = 20+99.01 Y = 607876.465 X = 823853.758 DELTA = 026°27'07.8" D = 060°18'40.8" T = 22.33' L = 43.86' R = 95.00' PC 'SW' STA = 20+76.68 Y = 607887.515 X = 823834.356 PT 'SW' STA = 21+20.54 Y = 607857.930 X = 823866.206 BK = S60° 20' 11.2"E AH = S33° 53' 03.4"E	PI 'SW' STA = 21+49.92 Y = 607833.542 X = 823882.584 DELTA = 011°11'08.4" D = 019°05'54.9" T = 29.38' L = 58.57' R = 300.00' PC 'SW' STA = 21+20.54 Y = 607857.930 X = 823866.206 PT 'SW' STA = 21+79.11 Y = 607806.439 X = 823893.921 BK = S33° 53' 03.4"E AH = S22° 41' 55.0"E	PI 'SW' STA = 22+23.99 Y = 607763.846 X = 823908.064
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PI 'SE' STA = 9+55.26 Y = 607673.062 X = 824035.463	PI 'SE' STA = 10+82.50 Y = 607758.884 X = 823941.529 DELTA = 066°50'47.2" D = 045°50'11.8" T = 82.50' L = 145.84' R = 125.00' PC 'SE' STA = 10+00.00 Y = 607703.241 X = 824002.432 PT 'SE' STA = 11+45.84 Y = 607836.761 X = 823968.744 BK = N47° 35' 02.1"W AH = N19° 15' 45.1"E	PI 'SE' STA = 11+71.06 Y = 607860.574 X = 823977.065 DELTA = 042°25'13.1" D = 088°08'50.5" T = 25.23' L = 48.12' R = 65.00' PC 'SE' STA = 11+45.84 Y = 607836.761 X = 823968.744 PT 'SE' STA = 11+93.96 Y = 607872.540 X = 823999.272 BK = N47° 35' 02.1"W AH = N61° 40' 58.2"E	PI 'SE' STA = 12+45.11 Y = 607896.801 X = 824044.297 DELTA = 025°36'46.7" D = 025°27'53.2" T = 51.15' L = 100.58' R = 225.00' PC 'SE' STA = 11+93.96 Y = 607872.540 X = 823999.272 PT 'SE' STA = 12+94.54 Y = 607899.214 X = 824095.386 BK = N61° 40' 58.2"E AH = N87° 17' 44.9"E	PI 'SE' STA = 13+24.25 Y = 607897.480 X = 824125.041
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Estimate Of Quantities

6240-32-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	5.000	5.000
0004	201.0120	Clearing	ID	8.000	8.000
0006	201.0205	Grubbing	STA	5.000	5.000
0008	201.0220	Grubbing	ID	8.000	8.000
0010	203.0100	Removing Small Pipe Culverts	EACH	7.000	7.000
0012	204.0100	Removing Concrete Pavement	SY	920.000	920.000
0014	204.0150	Removing Curb & Gutter	LF	440.000	440.000
0016	204.0170	Removing Fence	LF	75.000	75.000
0018	204.0195	Removing Concrete Bases	EACH	2.000	2.000
0020	204.9060.S	Removing (item description) 01. Flashing Stop Sign Assembly	EACH	2.000	2.000
0022	205.0100	Excavation Common	CY	17,916.000	17,916.000
0024	208.1100	Select Borrow	CY	5,952.000	5,952.000
0026	213.0100	Finishing Roadway (project) 01. 6240-32-71	EACH	1.000	1.000
0028	214.0100	Obliterating Old Road	STA	4.000	4.000
0030	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,480.000	1,480.000
0032	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	10,290.000	10,290.000
0034	310.0110	Base Aggregate Open-Graded	TON	3.000	3.000
0036	312.0110	Select Crushed Material	TON	12,820.000	12,820.000
0038	405.0100	Coloring Concrete WisDOT Red	CY	889.000	889.000
0040	415.2010	Concrete Truck Apron 12-Inch	SY	2,220.000	2,220.000
0042	455.0605	Tack Coat	GAL	1,255.000	1,255.000
0044	460.2000	Incentive Density HMA Pavement	DOL	4,190.000	4,190.000
0046	460.7223	HMA Pavement 3 HT 58-28 S	TON	5,215.000	5,215.000
0048	460.7424	HMA Pavement 4 HT 58-28 H	TON	1,265.000	1,265.000
0050	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	20.000	20.000
0052	465.0315	Asphaltic Flumes	SY	63.000	63.000
0054	465.0520	Asphaltic Rumble Strips, Shoulder	LF	2,931.000	2,931.000
0056	521.0336	Apron Endwalls for Culvert Pipe Sloped Cross Drains Steel 36-Inch 4 to 1	EACH	2.000	2.000
0058	521.1518	Apron Endwalls for Culvert Pipe Sloped Side Drains Steel 18-Inch 6 to 1	EACH	4.000	4.000
0060	521.3118	Culvert Pipe Corrugated Steel 18-Inch	LF	100.000	100.000
0062	522.0424	Culvert Pipe Reinforced Concrete Class IV 24-Inch	LF	96.000	96.000
0064	522.0436	Culvert Pipe Reinforced Concrete Class IV 36-Inch	LF	72.000	72.000
0066	522.1012	Apron Endwalls for Culvert Pipe Reinforced Concrete 12-Inch	EACH	5.000	5.000
0068	522.1015	Apron Endwalls for Culvert Pipe Reinforced Concrete 15-Inch	EACH	1.000	1.000
0070	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0072	522.2429	Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 29x45-Inch	LF	104.000	104.000
0074	522.2619	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 19x30-Inch	EACH	2.000	2.000
0076	522.2629	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 29x45-Inch	EACH	2.000	2.000
0078	602.0405	Concrete Sidewalk 4-Inch	SF	12,110.000	12,110.000
0080	606.0200	Riprap Medium	CY	47.000	47.000
0082	608.0315	Storm Sewer Pipe Reinforced Concrete Class III 15-Inch	LF	39.000	39.000
0084	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	233.000	233.000
0086	608.2419	Storm Sewer Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 19x30-Inch	LF	97.000	97.000
0088	611.0627	Inlet Covers Type HM	EACH	4.000	4.000
0090	611.0636	Inlet Covers Type HM-S	EACH	6.000	6.000
0092	611.0639	Inlet Covers Type H-S	EACH	2.000	2.000
0094	611.0652	Inlet Covers Type T	EACH	2.000	2.000
0096	611.2005	Manholes 5-FT Diameter	EACH	3.000	3.000
0098	611.3230	Inlets 2x3-FT	EACH	9.000	9.000

Estimate Of Quantities

6240-32-71

Line	Item	Item Description	Unit	Total	Qty
0100	612.0106	Pipe Underdrain 6-Inch	LF	48.000	48.000
0102	618.0100	Maintenance and Repair of Haul Roads (project) 01. 6240-32-71	EACH	1.000	1.000
0104	619.1000	Mobilization	EACH	1.000	1.000
0106	620.0300	Concrete Median Sloped Nose	SF	400.000	400.000
0108	624.0100	Water	MGAL	71.000	71.000
0110	625.0500	Salvaged Topsoil	SY	20,660.000	20,660.000
0112	627.0200	Mulching	SY	6,510.000	6,510.000
0114	628.1504	Silt Fence	LF	815.000	815.000
0116	628.1520	Silt Fence Maintenance	LF	815.000	815.000
0118	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0120	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0122	628.2004	Erosion Mat Class I Type B	SY	7,510.000	7,510.000
0124	628.2006	Erosion Mat Urban Class I Type A	SY	2,940.000	2,940.000
0126	628.2027	Erosion Mat Class II Type C	SY	3,100.000	3,100.000
0128	628.7015	Inlet Protection Type C	EACH	14.000	14.000
0130	628.7504	Temporary Ditch Checks	LF	430.000	430.000
0132	628.7555	Culvert Pipe Checks	EACH	8.000	8.000
0134	628.7560	Tracking Pads	EACH	4.000	4.000
0136	628.7570	Rock Bags	EACH	25.000	25.000
0138	629.0210	Fertilizer Type B	CWT	13.000	13.000
0140	630.0120	Seeding Mixture No. 20	LB	148.000	148.000
0142	630.0130	Seeding Mixture No. 30	LB	735.000	735.000
0144	630.0500	Seed Water	MGAL	464.000	464.000
0146	633.5200	Markers Culvert End	EACH	18.000	18.000
0148	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	29.000	29.000
0150	634.0616	Posts Wood 4x6-Inch X 16-FT	EACH	7.000	7.000
0152	634.0618	Posts Wood 4x6-Inch X 18-FT	EACH	14.000	14.000
0154	634.0812	Posts Tubular Steel 2x2-Inch X 12-FT	EACH	4.000	4.000
0156	637.2210	Signs Type II Reflective H	SF	401.580	401.580
0158	637.2230	Signs Type II Reflective F	SF	100.490	100.490
0160	638.2602	Removing Signs Type II	EACH	15.000	15.000
0162	638.3000	Removing Small Sign Supports	EACH	16.000	16.000
0164	642.5001	Field Office Type B	EACH	1.000	1.000
0166	643.0420	Traffic Control Barricades Type III	DAY	1,980.000	1,980.000
0168	643.0705	Traffic Control Warning Lights Type A	DAY	2,760.000	2,760.000
0170	643.0900	Traffic Control Signs	DAY	19,020.000	19,020.000
0172	643.0920	Traffic Control Covering Signs Type II	EACH	20.000	20.000
0174	643.1000	Traffic Control Signs Fixed Message	SF	52.000	52.000
0176	643.1050	Traffic Control Signs PCMS	DAY	140.000	140.000
0178	643.5000	Traffic Control	EACH	1.000	1.000
0180	645.0111	Geotextile Type DF Schedule A	SY	26.000	26.000
0182	645.0120	Geotextile Type HR	SY	96.000	96.000
0184	646.2020	Marking Line Epoxy 6-Inch	LF	3,225.000	3,225.000
0186	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	10,300.000	10,300.000
0188	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	348.000	348.000
0190	646.6320	Marking Dotted Extension Epoxy 18-Inch	LF	152.000	152.000
0192	646.7120	Marking Diagonal Epoxy 12-Inch	LF	431.000	431.000
0194	646.8120	Marking Curb Epoxy	LF	232.000	232.000
0196	646.8220	Marking Island Nose Epoxy	EACH	4.000	4.000

Estimate Of Quantities

6240-32-71					
Line	Item	Item Description	Unit	Total	Qty
0198	646.9000	Marking Removal Line 4-Inch	LF	125.000	125.000
0200	650.4000	Construction Staking Storm Sewer	EACH	14.000	14.000
0202	650.4500	Construction Staking Subgrade	LF	4,231.000	4,231.000
0204	650.5000	Construction Staking Base	LF	4,231.000	4,231.000
0206	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	4,779.000	4,779.000
0208	650.6000	Construction Staking Pipe Culverts	EACH	4.000	4.000
0210	650.8501	Construction Staking Electrical Installations (project) 01. 6240-32-71	EACH	1.000	1.000
0212	650.9500	Construction Staking Sidewalk (project) 01. 6240-32-71	EACH	1.000	1.000
0214	650.9911	Construction Staking Supplemental Control (project) 01. 6240-32-71	EACH	1.000	1.000
0216	650.9920	Construction Staking Slope Stakes	LF	4,231.000	4,231.000
0218	652.0225	Conduit Rigid Nonmetallic Schedule 40 2-Inch	LF	2,085.000	2,085.000
0220	653.0164	Pull Boxes Non-Conductive 24x42-Inch	EACH	8.000	8.000
0222	653.0905	Removing Pull Boxes	EACH	2.000	2.000
0224	654.0105	Concrete Bases Type 5	EACH	18.000	18.000
0226	654.0220	Concrete Control Cabinet Bases Type 10	EACH	1.000	1.000
0228	655.0610	Electrical Wire Lighting 12 AWG	LF	2,700.000	2,700.000
0230	655.0615	Electrical Wire Lighting 10 AWG	LF	8,519.000	8,519.000
0232	656.0201	Electrical Service Meter Breaker Pedestal (location) 01. STH 47 Roundabout	EACH	1.000	1.000
0234	657.0255	Transformer Bases Breakaway 11 1/2-Inch Bolt Circle	EACH	18.000	18.000
0236	657.0322	Poles Type 5-Aluminum	EACH	18.000	18.000
0238	657.0710	Luminaire Arms Truss Type 4 1/2-Inch Clamp 12-FT	EACH	18.000	18.000
0240	659.1120	Luminaires Utility LED B	EACH	18.000	18.000
0242	690.0150	Sawing Asphalt	LF	136.000	136.000
0244	690.0250	Sawing Concrete	LF	3.000	3.000
0246	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	670.000	670.000
0248	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
0250	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,320.000	1,320.000
0252	SPV.0035	Special 01. Foundation Backfill	CY	1,720.000	1,720.000
0254	SPV.0060	Special 01. Inlet 2 x 2.5-FT Special	EACH	2.000	2.000
0256	SPV.0085	Special 01. Low Maintenance Seed Mix	LB	12.000	12.000
0258	SPV.0090	Special 01. Concrete Curb & Gutter 18-Inch Type A Modified	LF	170.000	170.000
0260	SPV.0090	Special 02. Concrete Curb & Gutter 30-Inch Type D Modified	LF	972.000	972.000
0262	SPV.0090	Special 03. Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type D Modified	LF	3,252.000	3,252.000
0264	SPV.0090	Special 04. Concrete Curb & Gutter 4-Inch Sloped 30-Inch Type R Modified	LF	385.000	385.000

3

CLEARING AND GRUBBING

STATION TO STATION	DIR	LOCATION	201.0105 CLEARING STA	201.0120 CLEARING ID	201.0205 GRUBBING STA	201.0220 GRUBBING ID
CATEGORY 0010						
112+60	RT	STH 47 NB	---	8	---	8
114+00 - 115+00	RT	STH 47 NB	1	---	1	---
207+00 - 208+00	LT	STH 47 SB	1	---	1	---
304+00 - 306+00	RT	CTH S EB	2	---	2	---
407+00 - 408+00	LT	CTH S WB	1	---	1	---
PROJECT TOTALS			5	8	5	8

REMOVING SMALL CULVERT PIPE

STA	DIR	LOCATION	203.0100 REMOVING SMALL CULVERT PIPE EACH	COMMENT
CATEGORY 0010				
109+56	RT	STH 47 NB	1	CMCP 24"
116+45	R/L	STH 47 NB	1	CMCP 36"
303+82	R/L	CTH S EB	1	CMCP 30"
311+05	R/L	CTH S EB	1	CMCP 30"
311+19	RT	CTH S EB	1	PVC 6"
311+26	RT	CTH S EB	1	PVC 4"
405+00	LT	CTH S WB	1	CMCP 12"
PROJECT TOTALS			7	

REMOVING CURB AND GUTTER

LOCATION	204.0150 REMOVING CURB AND GUTTER LF
CATEGORY 0010	
CSTH 47 / CTH S NE QUADRENT	55
CSTH 47 / CTH S SE QUADRENT	80
CSTH 47 / CTH S NW QUADRENT	80
CSTH 47 / CTH S SW QUADRENT	55
CTH S EB SPLITTER ISLAND	65
CTH S WB SPLITTER ISLAND	70
415+30 - 415+62 STH S WB	35
PROJECT TOTALS	440

3

REMOVING CONCRETE PAVEMENT

LOCATION	DIRECTION	204.0100 REMOVING CONCRETE PAVEMENT SY
CATEGORY 0010		
115+41 TO 120+60	NORTHBOUND	920
PROJECT TOTALS		920

OBLITERATE OLD ROADWAY

LOCATION	DIR	214.0100 OBLITERATE OLD ROADWAY STA
CATEGORY 0010		
112+00 - 116+00	STH 47	4
PROJECT TOTALS		4

REMOVING FENCE

STA	TO	STA	DIR	LOCATION	204.0170 REMOVING FENCE LF
CATEGORY 0010					
407+10	-	407+88	LT	CTH S WB	75
PROJECT TOTALS					75

REMOVING CONCRETE BASES AND PULLBOXES

STA	DIR	LOCATION	204.0195 REMOVING CONCRETE BASES EACH	204.9060.S.01 REMOVING FLASHING STOP SIGN ASSEMBLY EACH	653.0905 REMOVING PULL BOXES EACH	COMMENT
CATEGORY 0010						
10+27	RT	RAB	1	1	1	STOP SIGN FLASHER
12+20	RT	RAB	1	1	1	STOP SIGN FLASHER
PROJECT TOTALS			2	2	2	

EARTHWORK

FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/ UNUSABLE PAVEMENT MATERIAL	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL	MASS ORDINATE +/- (14)	WASTE	208.1100 SELECT BORROW	SPV.0035.01 FOUNDATION BACKFILL
		CUT (2)	EBS EXCAVATION (3)				FACTOR 1.33			FACTOR 1.33	FACTOR 1.15
CATEGORY 0010											
101+93/109+75	STH 47 NB S. LEG	4,734	409	892	3,842	627	834	3,008	3,008	524	---
112+00/120+60	STH 47 NB N. LEG	1,019	1,624	1,226	-207	3,606	4,796	-5,003	---	2,177	---
206+00/210+00	STH 47 SB S. LEG	720	474	---	720	755	1,004	-284	-284	633	---
212+00/217+00	STH 47 SB N. LEG	1,211	565	---	1,211	1,148	1,527	-316	-316	765	---
303+30/308+50	CTH S EB W. LEG	1,566	413	326	1,240	889	1,182	58	58	553	---
310+50/316+66	CTH S EB E. LEG	217	533	320	-103	211	281	-384	---	709	---
407+75/408+50	CTH S WB W. LEG	176	---	---	176	40	53	123	123	---	---
410+50/411+31	CTH S WB E. LEG	1,289	127	---	1,289	30	40	1,249	1,249	278	---
10+00/13+97	RAB	1,658	235	---	1,658	965	1,283	375	375	313	---
116+02/116+91	24-INCH CULVERT	334	---	---	334	---	---	334	334	---	565
303+30/304+36	36-INCH CULVERT	282	---	---	282	---	---	282	282	---	482
310+40/311+15	29X45-INCH CULVERT	330	---	---	330	---	---	330	330	---	674
SUBTOTALS		13,536	4,380								
PROJECT TOTALS			17,916							5,952	1,720

NOTES:

- (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) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL.
- (5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
- (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

BASE COURSE

STATION TO STATION	LOCATION	305.0110 BASE AGGREGATE DENSE 3/4-INCH TON	305.0120 BASE AGGREGATE DENSE 1 1/4-INCH TON	312.0110 SELECT CRUSHED MATERIAL TON	624.0100 WATER MGAL	COMMENTS
CATEGORY 0010						
101+93 - 105+89	STH 47 NB	310	1,370	---	10	
115+72 - 120+60	STH 47 NB	380	1,680	---	12	
303+30 - 305+56	CTH S EB	70	870	---	6	
313+27 - 315+65	CTH S EB	110	910	---	6	
105+89 - 110+07	STH 47 NB	210	1,120	2,960	8	
111+70 - 115+72	STH 47 NB	180	1,040	2,760	7	
305+56 - 308+71	CTH S EB	60	830	2,180	5	
310+35 - 313+27	CTH S EB	90	770	2,010	5	
10+00 - 13+97	RAB	---	1,090	2,910	7	
	OSOW AREAS	---	610	---	4	
	DRIVEWAYS	70	---	---	0	
PROJECT TOTALS		1,480	10,290	12,820	71	

ASPHALTIC ITEMS

STATION TO STATION	ROADWAY	455.0605 TACK COAT GAL	460.7223 HMA PAVEMENT 3 HT 58-28 S TON	460.7424 HMA PAVEMENT 4 HT 58-28 H TON	465.0120 ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTERANCES TON	465.0315 ASPHALTIC FLUMES SY	COMMENTS
CATEGORY 0010							
101+93 - 105+89	STH 47 NB	175	720	175	---	---	
105+89 - 110+07	STH 47 NB	80	325	80	---	---	
113+21 - 115+72	STH 47 NB	75	315	75	---	9	
115+72 - 120+60	STH 47 NB	220	925	225	---	---	
205+89 - 210+16	STH 47 SB	80	340	80	---	9	
211+85 - 215+74	STH 47 SB	75	310	75	---	9	
303+30 - 305+56	CTH S EB	95	400	95	---	---	
305+56 - 308+71	CTH S EB	60	240	60	20	9	
310+45 - 313+27	CTH S EB	55	220	55	---	9	
313+27 - 315+65	CTH S EB	100	425	105	---	---	
405+56 - 408+65	CTH S WB	55	235	55	---	---	
410+40 - 413+27	CTH S WB	55	225	55	---	18	
10+00 - 13+97	RAB	130	535	130	---	---	
PROJECT TOTALS		1,255	5,215	1,265	20	63	

CONCRETE PAVEMENT

STATION TO STATION	LOCATION	405.0100 * COLORING CONCRETE WISDOT RED CY	415.2010 CONCRETE TRUCK APRON 12-INCH SY
CATEGORY 0010			
10+00 - 13+97	RAB	302	910
OSOW NE QUADRANT		56	170
OSOW SE QUADRANT		165	490
OSOW NW QUADRANT		159	480
OSOW SW QUADRANT		57	170
PROJECT TOTALS		740	2,220

* ADDITIONAL QUANTITY SHOWN IN CONCRETE SIDEWALK TABLE

ASPHALTIC RUMBLE STRIPS

STATION TO STATION	DIR	ROADWAY	465.0520 ASPHALTIC RUMBLE STRIPS SHOULDER LF
CATERGORY 0010			
101+93 - 108+02	LT	STH 47 NB	609
112+60 - 120+60	LT	STH 47 NB	800
101+93 - 110+38	RT	STH 47 NB	845
113+83 - 120+60	RT	STH 47 NB	677
PROJECT TOTALS			2,931

APRON ENDWALLS FOR CULVERT PIPE

				521.1518	522.1012	522.1015	522.1024	521.0336	522.2619	522.2629	633.5200
				SLOPED SIDE DRAINS	REINFORCED CONCRETE	REINFORCED CONCRETE	REINFORCED CONCRETE	SLOPED CROSS DRAINS	REINFORCED CONCRETE	REINFORCED CONCRETE	MARKERS
				STEEL 18-INCH	12-INCH	15-INCH	24-INCH	STEEL 36-INCH	HORIZONTAL	HORIZONTAL	CULVERT
				6 TO 1				4 TO 1	ELLIPTICAL	ELLIPTICAL	END
STRUCTURE	STATION	OFFSET	LOCATION	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
CATEGORY 0010											
AEW 100-1	109+12.38	56.33' RT	STH 47 NB RAB	---	---	---	---	---	1	---	1
AEW 100-5	209+11.06	28.50' LT	STH 47 SB RAB	---	---	---	---	---	1	---	1
AEW 101-1	11+97.07	55.24' LT	STH 47 RAB	---	1	---	---	---	---	---	1
AEW 102-1	115+63.07	35.85' RT	STH 47 NB RAB	---	1	---	---	---	---	---	1
AEW 103-1	116+42.89	37.50' RT	STH 47 NB RAB	---	---	---	1	---	---	---	1
AEW 103-2	216+56.53	41.60' LT	STH 47 SB RAB	---	---	---	1	---	---	---	1
AEW 104-1	303+64.90	30.19' LT	CTH S EB RAB	---	---	---	---	1	---	---	1
AEW 104-2	303+96.02	28.01' RT	CTH S EB RAB	---	---	---	---	1	---	---	1
AEW 105-1	404+75.00	34.00' LT	CTH S WB RAB	1	---	---	---	---	---	---	1
AEW 105-2	405+15.00	34.00' LT	CTH S WB RAB	1	---	---	---	---	---	---	1
AEW 106-1	305+64.93	28.62' RT	CTH S EB RAB	---	---	1	---	---	---	---	1
AEW 107-1	306+65.58	34.85' RT	CTH S EB RAB	1	---	---	---	---	---	---	1
AEW 107-2	307+23.85	32.94' RT	CTH S EB RAB	1	---	---	---	---	---	---	1
AEW 108-1	407+75.00	28.77' LT	CTH S WB RAB	---	1	---	---	---	---	---	1
AEW 109-1	307+75.00	32.16' RT	CTH S EB RAB	---	1	---	---	---	---	---	1
AEW 110-1	410+72.91	41.82' LT	CTH S WB RAB	---	---	---	---	---	---	1	1
AEW 110-2	310+68.03	47.69' RT	CTH S EB RAB	---	---	---	---	---	---	1	1
AEW 111-1	411+31.74	38.61' LT	CTH S WB RAB	---	1	---	---	---	---	---	1
PROJECT TOTALS				4	5	1	2	2	2	2	18

CONCRETE CURB AND GUTTER

					SPV.0090.01	SPV.0090.02	SPV.0090.03	SPV.0090.04	650.5500
			DIR	ROADWAY	18-INCH	30-INCH	4-INCH SLOPED	4-INCH SLOPED	CONSTRUCTION
					TYPE A	TYPE D	36-INCH	30-INCH	STAKING CURB
					MODIFIED	MODIFIED	TYPE D	TYPE R	GUTTER AND
					LF	LF	MODIFIED	MODIFIED	CURB & GUTTER
CATERGORY 0010									
105+96	-	110+05	LT	STH 47 NB	---	143	268	---	411
111+77	-	115+65	LT	STH 47 NB	---	144	243	---	387
205+96	-	210+15	RT	STH 47 SB	---	150	269	---	419
211+85	-	215+67	RT	STH 47 SB	---	142	242	---	384
305+63	-	308+70	LT	CTH S EB	---	65	240	---	305
310+46	-	313+20	LT	CTH S EB	---	63	212	---	275
405+64	-	408+65	RT	CTH S WB	---	73	229	---	302
410+41	-	415+65	RT	CTH S WB	---	67	276	---	343
10+00	-	13+97	LT	ROUNDABOUT	170	125	---	385	680
39+55	-	42+34	LT	NE QUADRANT	---	---	276	---	276
9+55	-	13+24	RT	SE QUADRANT	---	---	364	---	364
29+45	-	33+37	LT	NW QUADRANT	---	---	386	---	386
19+74	-	22+24	RT	SW QUADRANT	---	---	247	---	247
PROJECT TOTALS					170	972	3,252	385	4,779

CULVERT & STORM SEWER PIPES

STURCT - STRUCT			521.3118	522.0424	522.0436	522.2429	608.0315	608.0412	608.2419	MINIMUM THICKNESS	650.6000
			CULVERT PIPE				STORM SEWER PIPE REINFORCED CONCRETE				
			CORRUGATED STEEL 18-INCH	REINFORCED CONCRETE CLASS IV 24-INCH	REINFORCED CONCRETE CLASS IV 36-INCH	HORIZONTAL ELLIPTICAL CLASS HE-IV 29X45-INCH	CLASS III 15-INCH	CLASS IV 12-INCH	HORIZONTAL ELLIPTICAL CLASS HE-IV 19X30-INCH		CONSTRUCTION STAKING PIPE CULVERTS
LF			LF	LF	LF	LF	LF	LF	LF	INCH	EACH
CATEGORY 0010											
AEW 100-5	-	INL 100-4	---	---	---	---	---	---	30	---	---
AEW 103-2	-	AEW 103-1	---	96	---	---	---	---	---	---	1
AEW 104-2	-	AEW 104-1	---	---	72	---	---	---	---	---	1
AEW 105-1	-	AEW 105-2	40	---	---	---	---	---	---	0.064	1
AEW 107-1	-	AEW 107-2	60	---	---	---	---	---	---	0.064	1
AEW 110-2	-	AEW 110-1	---	---	---	104	---	---	---	---	---
INL 100-2	-	AEW 100-1	---	---	---	---	---	---	38	---	---
INL 100-3	-	INL 100-2	---	---	---	---	---	---	20	---	---
INL 100-4	-	INL 100-3	---	---	---	---	---	---	9	---	---
INL 101-2	-	AEW 101-1	---	---	---	---	---	83	---	---	---
INL 101-2	-	INL 101-3	---	---	---	---	---	6	---	---	---
INL 102-2	-	AEW 102-1	---	---	---	---	---	37	---	---	---
INL 102-2	-	INL 102-3	---	---	---	---	---	7	---	---	---
INL 106-2	-	AEW 106-1	---	---	---	---	32	---	---	---	---
INL 106-3	-	INL 106-2	---	---	---	---	7	---	---	---	---
INL 108-2	-	AEW 108-1	---	---	---	---	---	12	---	---	---
AEW 109-1	-	INL 109-2	---	---	---	---	---	34	---	---	---
INL 109-2	-	INL 109-3	---	---	---	---	---	8	---	---	---
INL 111-2	-	AEW 111-1	---	---	---	---	---	40	---	---	---
INL 111-3	-	INL 111-2	---	---	---	---	---	6	---	---	---
PROJECT TOTALS			100	96	72	104	39	233	97	4	

STORM SEWER STRUCTURES

STRUCTURE	STATION	OFFSET	LOCATION	611.0627 INLET COVERS TYPE HM EACH	611.0636 INLET COVERS TYPE HM-S EACH	611.0639 INLET COVERS TYPE H-S EACH	611.0652 INLET COVERS TYPE T EACH	611.2005 MANHOLES 5-FT DIAMETER EACH	SPV.0060.01 INLETS 2X2.5-FT SPECIAL EACH	611.3230 INLETS 2X3-FT EACH	650.4000 CONSTRUCTION STAKING STORM SEWER EACH
CATEGORY 0010											
INL 100-2	109+12.38	18.00' RT	STH 47 NB	--	1	--	--	1	--	--	1
INL 100-3	109+12.38	1.50' LT	STH 47 NB	--	--	1	--	1	--	--	1
INL 100-4	209+11.11	1.50' RT	STH 47 SB	--	--	1	--	1	--	--	1
INL 101-2	11+51.51	1.25' RT	STH 47 RAB	--	--	--	1	--	1	--	1
INL 101-3	11+45.19	1.25' RT	STH 47 RAB	--	--	--	1	--	1	--	1
INL 102-2	115+65.53	1.50' LT	STH 47 NB	1	--	--	--	--	--	1	1
INL 102-3	215+68.27	5.44' RT	STH 47 SB	1	--	--	--	--	--	1	1
INL 106-2	305+64.93	3.38' LT	CTH S EB	1	--	--	--	--	--	1	1
INL 106-3	405+65.16	1.50' RT	CTH S WB	1	--	--	--	--	--	1	1
INL 108-2	407+75.00	16.50' LT	CTH S WB	--	1	--	--	--	--	1	1
INL 109-2	307+72.06	1.50' LT	CTH S EB	--	1	--	--	--	--	1	1
INL 109-3	407+75.00	1.50' RT	CTH S WB	--	1	--	--	--	--	1	1
INL 111-2	411+31.74	1.50' RT	CTH S WB	--	1	--	--	--	--	1	1
INL 111-3	311+32.54	1.50' LT	CTH S EB	--	1	--	--	--	--	1	1
PROJECT TOTALS				4	6	2	2	3	2	9	14

UNDERDRAIN

S.S. STR #	LOCATION	310.0110	612.0106	645.0111
		BASE AGGREGATE OPEN GRADED	PIPE UNDERDRAIN 6-INCH	GEOTEXTILE FABRIC TYPE DF SCHEDULE A
		TON	LF	SY
CATEGORY 0010				
100-2	STH 47 NB	1.0	16	9
101-2	RAB	0.5	8	4
101-3	RAB	0.5	8	4
108-2	CTH S WB	1.0	16	9
PROJECT TOTALS		3	48	26

CONCRETE SIDEWALK

		405.0100* COLORING CONCRETE WISDOT RED CY	602.0405 CONCRETE SIDEWALK 4-INCH SF	620.0300 CONCRETE MEDIAN SLOPED NOSE SF
STATION TO STATION	LOCATION			
CATEGORY 0010				
105+96 - 110+05	STH 47 NB	57	4,610	100
111+77 - 115+65	STH 47 NB	48	3,910	100
305+63 - 308+70	CTH S EB	20	1,620	100
310+46 - 313+20	CTH S EB	24	1,970	100
PROJECT TOTALS		149*	12,110	400

*ADDITIONAL QUANTITY SHOWN ON CONCRETE PAVEMENT TABLE

EROSION CONTROL

		606.0200 RIPRAP MEDIUM CY	628.1504 SILT FENCE LF	628.1520 SILT FENCE MAINTENANCE LF	628.1905 MOBILIZATIONS EROSION CONTROL EACH	628.1910 MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	628.7015 INLET PROTECTION TYPE C EACH	628.7504 TEMPORARY DITCH CHECKS LF	628.7555 CULVERT PIPE CHECKS EACH	628.7560 TRACKING PAD EACH	628.7570 ROCK BAGS EACH	645.0120 GEOTEXTILE TYPE HR SY
STATION TO STATION	LOCATION											
CATEGORY 0010												
101+93 TO 110+13	STH 47 NB	4	---	---	---	---	2	70	---	---	---	7
111+68 TO 120+60	STH 47 NB	11	195	195	---	---	1	50	---	1	---	21
201+93 TO 210+27	STH 47 SB	2	75	75	---	---	1	70	1	1	---	4
211+79 TO 220+64	STH 47 SB	3	310	310	---	---	1	30	1	---	10	6
303+30 TO 308+76	CTH S EB	9	---	---	---	---	2	30	2	---	---	18
310+35 TO 315+66	CTH S EB	4	---	---	---	---	1	60	1	1	---	8
403+30 TO 408+75	CTH S WB	5	100	100	---	---	3	30	1	1	10	10
410+34 TO 415+66	CTH S WB	11	---	---	---	---	1	50	---	---	---	22
10+00 TO 13+97	RAB	---	---	---	---	---	2	---	---	---	---	---
UNDISTRIBUTED		---	135	135	4	4	---	40	2	---	5	---
PROJECT TOTAL		47	815	815	4	4	14	430	8	4	25	96

RESTORATION

		625.0500 SALVAGED TOPSOIL SY	627.0200 MULCHING SY	628.2004 EROSION MAT CLASS I TYPE B SY	628.2006 EROSION MAT URBAN CLASS I TYPE A SY	628.2027 EROSION MAT CLASS II TYPE C SY	630.0120 SEEDING MIXTURE NO. 20 LB	630.0130 SEEDING MIXTURE NO. 30 LB	629.0210 FERTILIZER TYPE B CWT	630.0500 SEED WATER MGAL	SPV.0085.01 LOW MAINTENANCE SEED MIX LB
STATION TO STATION	LOCATION										
CATEGORY 0010											
101+93 TO 110+13	STH 47 NB	4,610	2,610	1,340	480	170	8	200	2.9	103	---
111+68 TO 120+60	STH 47 NB	2,290	270	---	340	1,090	49	54	1.4	51	---
201+93 TO 210+27	STH 47 SB	2,340	560	1,680	90	---	---	105	1.5	52	---
211+79 TO 220+64	STH 47 SB	2,750	1,460	1,070	220	---	---	124	1.7	62	---
303+30 TO 308+76	CTH S EB	1,460	230	160	170	900	41	25	0.9	33	---
310+35 TO 315+66	CTH S EB	800	---	560	240	0	0	36	0.5	18	---
403+30 TO 408+75	CTH S WB	1,140	---	600	220	320	14	37	0.7	26	---
410+34 TO 415+66	CTH S WB	890	80	480	330	0	0	40	0.6	20	---
10+00 TO 13+97	RAB	250	---	---	250	---	---	---	0.2	6	11
UNDISTRIBUTED		4,130	1,300	1,620	600	620	36	114	2.6	93	1
PROJECT TOTAL		20,660	6,510	7,510	2,940	3,100	148	735	13.0	464	12

ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II

SIGN NO.	LOCATION	SIGN CODE	W X H	637.2210 SIGNS TYPE II REFLECTIVE TYPE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE TYPE F S.F.	634.0614 POSTS WOOD 4x6x14 EACH	634.0616 POSTS WOOD 4x6x16 EACH	634.0618 POSTS WOOD 4x6x18 EACH	634.0812 POSTS TUBULAR STEEL 2X2X12 EACH	REMARKS
CATEGORY 0010										
1	CTH S, W. OF STH 47	W2-6	30" X 30"	---	6.25	---	---	1	---	
2	"	W13-1	18" X 18"	---	2.25	---	---	---	---	MOUNT BELOW SIGN 1
3	"	J3-2	48" X 57"	---	19.00	---	---	1	---	
4	"	W14-3	48" X 36"	---	5.56	---	1	---	---	
5	"	D1-3	84" X 42"	24.50	---	---	---	2	---	
6	"	R4-7	36" X 48"	12.00	---	1	---	---	---	
7	"	W5-54	18" X 18"	2.25	---	---	---	---	---	MOUNT BELOW SIGN 6
8	"	R5-1	30" X 30"	6.25	---	1	---	---	---	
9	"	R2-1	24" X 30"	5.00	---	---	---	---	---	MOUNT TO BACK OF SIGN 8
10	"	R5-1A	36" X 24"	3.88	---	1	---	---	---	
11	"	J4-1	24" X 36"	3.88	---	---	---	---	---	MOUNT TO BACK OF SIGN 10
12	"	D1-1E	36" X 18"	4.50	---	1	---	---	---	
13	"	R1-2	36" X 31"	3.88	---	1	---	---	---	
14	"	R1-2	36" X 31"	3.88	---	---	---	---	1	
15	STH 47, N. OF CTH S	R1-2	36" X 31"	3.88	---	---	---	---	1	
16	"	R1-2	36" X 31"	3.88	---	1	---	---	---	
17	VACANT	---	---	---	---	---	---	---	---	
18	STH 47 S. OF CTH S	R1-2	36" X 31"	3.88	---	1	---	---	---	
19	"	R1-2	36" X 31"	3.88	---	---	---	---	1	
20	CTH S, E. OF STH 47	R1-2	36" X 31"	3.88	---	---	---	---	1	
21	"	R1-2	36" X 31"	3.88	---	1	---	---	---	
22	"	D1-1E	36" X 18"	4.50	---	1	---	---	---	
23	"	J4-1	24" X 36"	3.88	---	1	---	---	---	
24	"	R5-1A	36" X 24"	3.88	---	---	---	---	---	MOUNT TO BACK OF SIGN 23
25	"	R4-7	36" X 48"	12.00	---	1	---	---	---	
26	"	W5-54	18" X 18"	2.25	---	---	---	---	---	MOUNT BELOW SIGN 25
27	"	R2-1	24" X 30"	5.00	---	1	---	---	---	
28	"	R5-1	30" X 30"	6.25	---	---	---	---	---	MOUNT TO BACK OF SIGN 27
29	"	D1-3	84" X 42"	24.50	---	---	---	2	---	
30A	"	J1-1	24" X 39"	6.50	---	---	1	---	---	
30	"	J3-2	48" X 57"	---	19.00	---	---	1	---	
31	"	W2-6	30" X 30"	---	6.25	---	---	1	---	
32	"	W13-1	18" X 18"	---	2.25	---	---	---	---	MOUNT BELOW SIGN 31
33	"	W14-3	48" X 36"	---	5.56	---	1	---	---	
A	CENTER ISLAND	R6-1R	48" X 18"	6.00	---	1	---	---	---	
B	"	W5-54	18" X 18"	2.25	---	---	---	---	---	MOUNT BELOW SIGN A
C	"	R6-1R	48" X 18"	6.00	---	1	---	---	---	
D	"	W5-54	18" X 18"	2.25	---	---	---	---	---	MOUNT BELOW SIGN C
E	"	R6-1R	48" X 18"	6.00	---	1	---	---	---	
F	"	W5-54	18" X 18"	2.25	---	---	---	---	---	MOUNT BELOW SIGN E
G	"	R6-1R	48" X 18"	6.00	---	1	---	---	---	
H	"	W5-54	18" X 18"	2.25	---	---	---	---	---	MOUNT BELOW SIGN G

PAGE SUBTOTALS

195.06

66.12

16

3

8

4

ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II

SIGN NO.	LOCATION	SIGN CODE	W X H	637.2210 SIGNS TYPE II REFLECTIVE TYPE H S.F.	637.2230 SIGNS TYPE II REFLECTIVE TYPE F S.F.	634.0614 POSTS WOOD 4x6x14 EACH	634.0616 POSTS WOOD 4x6x16 EACH	634.0618 POSTS WOOD 4x6x18 EACH	634.0812 POSTS TUBULAR STEEL 2X2X12 EACH	REMARKS
34	STH 47, N. OF CTH S	W2-6	30" X 30"	---	6.25	---	---	1	---	
35	"	W13-1	18" X 18"	---	2.25	---	---	---	---	MOUNT BELOW SIGN 34
36	"	J1-2	48" X 39"	13.00	---	---	1	---	---	
37	"	W14-3	48" X 36"	---	5.56	---	1	---	---	
38	"	D1-1E	48" X 30"	10.00	---	1	---	---	---	
39	"	D1-1	66" X 15"	6.88	---	2	---	---	---	
40	"	J4-1	24" X 36"	3.88	---	1	---	---	---	
41	"	R5-1A	36" X 24"	3.88	---	---	---	---	---	MOUNT TO BACK OF SIGN 40
42	"	R4-7	36" X 48"	12.00	---	1	---	---	---	
43	"	W5-54	18" X 18"	2.25	---	---	---	---	---	MOUNT BELOW SIGN 42
44	"	R2-1	24" X 30"	5.00	---	1	---	---	---	
45	"	R5-1	30" X 30"	6.25	---	---	---	---	---	MOUNT TO BACK OF SIGN 44
46	"	D1-62	96" X 66"	44.00	---	---	---	2	---	
47	STH 47, S. OF CTH S	W14-3	48" X 36"	---	5.56	---	1	---	---	
48	"	W2-6	30" X 30"	---	6.25	---	---	1	---	
49	"	W13-1	18" X 18"	---	2.25	---	---	---	---	MOUNT BELOW SIGN 48
50	"	J1-1	24" X 39"	6.50	---	---	1	---	---	
50A	"	W11-8	30" X 30"	---	6.25	1	---	---	---	
51	"	D1-62	96" X 66"	44.00	---	---	---	2	---	
51A	"	R4-7	36" X 48"	12.00	---	1	---	---	---	
51B	"	W5-54	18" X 18"	2.25	---	---	---	---	---	MOUNT BELOW SIGN 51A
52	"	R5-1	30" X 30"	6.25	---	1	---	---	---	
53	"	R2-1	24" X 30"	5.00	---	---	---	---	---	MOUNT TO BACK OF SIGN 52
54	"	R5-1A	36" X 24"	3.88	---	1	---	---	---	
55	"	J4-1	24" X 36"	3.88	---	---	---	---	---	MOUNT TO BACK OF SIGN 54
56	"	D1-1	66" X 15"	6.88	---	2	---	---	---	
57	"	D1-1E	42" X 30"	8.75	---	1	---	---	---	
PAGE SUBTOTALS				206.52	34.37	13	4	6	0	
PROJECT TOTALS				401.58	100.49	29	7	14	4	

ERECTION & REMOVAL OF PERMANENT SIGNING, TYPE II

SIGN NO.	LOCATION	SIGN CODE	638.2602 REMOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH
CATEGORY 0010				
100	USH 10, W. OF CTH D	D1-2	1	2
101	"	J4-1	1	1
102	"	J13-1	1	1
103	N .MARX ROAD	R1-1	1	1
104	CTH D	J13-1	1	1
105	"	R1-1	1	1
106	"	R1-1	1	1
107	USH 10, E. OF CTH D	J13-1	1	1
108	"	J4-1	1	1
109	"	D1-2	1	1
110	N .MARX ROAD	W3-1	1	1
111	"	R2-1	1	1
112	CTH D	J1-2	1	1
113	"	W3-1	1	1
114	"	W3-1	1	1
PROJECT TOTALS			15	16

TRAFFIC CONTROL

INTERSECTION OR SEGMENT	DAYS	643.0420		643.0705		643.0900		643.0920	643.1000	643.1050		643.1050	COMMENTS	
		BARRICADES TYPE III	TYPE A	WARNING LIGHTS	SIGNS	COVERING SIGNS	SIGNS FIXED MESSAGE	TRAFFIC CONTROL PCMS (7 DAYS)	TRAFFIC CONTROL PCMS (14 DAYS)					
										NO.	DAYS	NO.		DAYS
CATEGORY 0010														
STH 47 AND STH 54	60	1	60	2	120	39	2340	13	20	--	--	--	--	
STH 54 AND CTH PP	60	--	--	--	--	41	2460	--	22	--	--	--	--	
CTH PP AND CTH B	60	--	--	--	--	6	360	--	--	--	--	--	--	
STINGLE RD TO CENTER VALLEY RD	60	2	120	4	240	3	180	--	--	--	--	--	--	
CTH PP AND CTH S	60	22	1320	28	1680	86	5160	1	--	1	7	8	112	
CTH PP AND STH 47	60	5	300	6	360	49	2940	--	--	2	14	--	--	
STH 47 AND CTH O	60	--	--	--	--	33	1980	--	--	--	--	--	--	
CTH O AND CTH A	60	--	--	--	--	22	1320	--	--	--	--	--	--	
CTH A AND CTH S	60	3	180	6	360	38	2280	6	--	1	7	--	--	
PROJECT TOTALS		1,980		2,760		19,020		20	42	140				

MARKING

		646.2020	646.2040		646.4040	646.6320	646.7120	646.8120	646.8220
		LINE EPOXY 6-INCH (YELLOW)	LINE GROOVED WET REFLECTIVE EPOXY 6-INCH (YELLOW) (WHITE)		LINE GROOVED WET REFLECTIVE EPOXY 10-INCH (WHITE)	DOTTED EXTENSION EPOXY 18-INCH (WHITE)	DIAGONAL EPOXY 12-INCH (YELLOW)	CURB EPOXY (YELLOW)	ISLAND NOSE EPOXY (YELLOW)
STATION TO STATION	LOCATION	LF	LF	LF	LF	LF	LF	LF	EACH
CATEGORY 0010									
CTH PP - 101+93	STH 47	2,600	---	---	---	---	---	---	---
101+93 - 110+13	STH 47	---	1,541	1,501	98	35	119	48	1
111+68 - 120+60	STH 47	---	1,981	1,613	87	38	199	88	1
298+30 - 303+30	CTH S	625	---	---	---	---	---	---	---
303+30 - 308+76	CTH S	---	884	935	81	37	52	48	1
310+35 - 315+66	CTH S	---	934	911	82	42	61	48	1
SUBTOTALS		3,225	5,340	4,960	348	152	431	232	4
PROJECT TOTALS		3,225	10,300		348	152	431	232	4

CONSTRUCTION STAKING

		650.4500	650.5000	650.8501	650.9500	650.9911	650.9920
		SUBGRADE	BASE	ELECTRICAL INSTALLATIONS 01. 6240-32-71	SIDEWALK 01. 6240-32-71	SUPPLEMENTAL CONTROL 01. 6240-32-71	SLOPE STAKES
STATION TO STATION	LOCATION	LF	LF	EACH	EACH	LS	LF
CATEGORY 0010							
101+93 - 109+75	STH 47 NB S. LEG	782	782	---	---	---	782
112+00 - 120+60	STH 47 NB N. LEG	860	860	---	---	---	860
206+00 - 210+00	STH 47 SB S. LEG	400	400	---	---	---	400
212+00 - 217+00	STH 47 SB N. LEG	500	500	---	---	---	500
303+30 - 308+50	CTH S EB W. LEG	520	520	---	---	---	520
310+50 - 316+66	CTH S EB E. LEG	616	616	---	---	---	616
407+75 - 408+50	CTH S WB W. LEG	75	75	---	---	---	75
410+50 - 411+31	CTH S WB E. LEG	81	81	---	---	---	81
10+00 - 13+97	RAB	397	397	---	---	---	397
UNDISTRIBUTED		---	---	1	1	1	---
PROJECT TOTALS		4,231	4,231	1	1	1	4,231

MARKING REMOVAL

		646.9000
STATION TO STATION	LOCATION	MARKING REMOVAL LINE 4-INCH LF
CATEGORY 0010		
500' WEST OF PROJECT LIMITS	CTH S	125
PROJECT SUBTOTALS		125
PROJECT TOTALS		125

SAW CUTTING

			690.0150	690.0250
STATION TO STATION	DIR	LOCATION	SAWING ASPHALT LF	SAWING CONCRETE LF
CATEGORY 0010				
101+93	R/L	STH 47 NB	34	0
120+60	R/L	STH 47 NB	34	0
303+30	R/L	CTH S EB	34	0
316+66	R/L	CTH S EB	34	3
PROJECT TOTALS			136	3

CONDUIT RIGID NONMETALLIC SCHEDULE 40

LOCATION		652.0225
STH 47 & CTH S		2-INCH
FROM	TO	LF
CATEGORY 0010		
CB1	PB1	55
PB1	LB1	5
PB1	LB9	85
LB9	LB10	120
LB10	LB11	135
PB1	PB2	105
PB2	LB2	20
PB2	PB3	100
PB3	LB3	10
LB3	LB12	120
LB12	LB13	140
PB3	PB4	90
PB4	LB4	15
PB4	PB5	60
PB5	LB5	20
LB5	LB14	85
LB14	LB15	110
LB15	LB16	155
PB5	PB6	110
PB6	LB6	15
PB6	PB7	100
PB7	LB7	5
LB7	LB17	185
LB17	LB18	120
PB7	PB8	90
PB8	LB8	10
PB8	CB1	20

PROJECT TOTAL2,085

ROUNDABOUT LIGHTING

	653.0164	656.0201
	PULL BOXES	ELECTRICAL SERVICE METER
	NON-CONDUCTIVE	BREAKER PEDESTAL
	24X42-INCH	01. STH 47 ROUNDABOUT
LOCATION	EACH	LS
CATEGORY 0010		
STH 47 & CTH S	8	1

PROJECT TOTALS81

BASES

				654.0105	654.0220	657.0255	657.0322	657.0710	659.1120
				CONCRETE	CONCRETE	TRANSFORMER BASES	POLES	LUMINAIRE ARMS	LUMINAIRES
				BASES	CONTROL CABINET	BREAKAWAY	TYPE 5	TRUSS TYPE	UTILITY
				TYPE 5	BASES	11 1/2-INCH	ALUMINUM	4 1/2-INCH CLAMP	LED-B
					TYPE 10	BOLT CIRCLE		12-FT	
LOCATION	ALIGNMENT	STATION	OFFSET	EACH	EACH	EACH	EACH	EACH	EACH
CATEGORY 0010									
CB1	CTH S WB	408+73.02 WB	-49.24	---	1	---	---	---	---
LB1	STH 47 NB	112+39.98 NB	-63.69	1	---	1	1	1	1
LB2	CTH S WB	409+98.77 WB	-77.11	1	---	1	1	1	1
LB3	CTH S WB	410+65.38 WB	-32.41	1	---	1	1	1	1
LB4	CTH S WB	410+71.11 WB	68.33	1	---	1	1	1	1
LB5	STH 47 NB	109+69.60 NB	44.64	1	---	1	1	1	1
LB6	STH 47 NB	109+81.31 NB	-78.30	1	---	1	1	1	1
LB7	CTH S WB	408+25.89 WB	45.17	1	---	1	1	1	1
LB8	CTH S WB	408+58.89 WB	-40.88	1	---	1	1	1	1
LB9	STH 47 NB	113+25.90 NB	-37.31	1	---	1	1	1	1
LB10	STH 47 NB	114+52.72 NB	-41.53	1	---	1	1	1	1
LB11	STH 47 NB	115+83.77 NB	-39.13	1	---	1	1	1	1
LB12	CTH S WB	411+91.97 WB	-21.82	1	---	1	1	1	1
LB13	CTH S WB	413+25.57 WB	-22.47	1	---	1	1	1	1
LB14	STH 47 NB	108+55.21 NB	28.35	1	---	1	1	1	1
LB15	STH 47 NB	107+44.42 NB	24.63	1	---	1	1	1	1
LB16	STH 47 NB	105+92.50 NB	24.59	1	---	1	1	1	1
LB17	CTH S WB	406+50.87 WB	35.75	1	---	1	1	1	1
LB18	CTH S WB	405+33.72 WB	31.50	1	---	1	1	1	1

PROJECT TOTALS18118181818

ELECTRICAL WIRE LIGHTING

LOCATION STH 47 & CTH S (240 VOLT SYSTEM)			10AWG	12AWG	
			655.0615* UNGROUND CONDUCTOR (SEE CIRCUIT COLOR) LF	655.0610 UNGROUND CONDUCTOR (BLACK)/(RED) LF	655.0610 EQUIPMENT GROUNDING CONDUCTOR (GREEN) LF
CIRCUIT	FROM	TO			
CATEGORY 0010					
A	CB1	LB1	196		
(BLACK)	LB1	LUMINAIRES		100	50
	CB1	LB8	136		
	LB8	LUMINAIRES		100	50
	LB1	LB9	202		
	LB9	LUMINAIRES		100	50
	LB9	LB10	272		
	LB10	LUMINAIRES		100	50
	LB10	LB11	302		
	LB11	LUMINAIRES		100	50
B	CB1	LB2	466		
(RED)	LB2	LUMINAIRES		100	50
	LB2	LB3	352		
	LB3	LUMINAIRES		100	50
	LB3	LB12	272		
	LB12	LUMINAIRES		100	50
	LB12	LB13	312		
	LB13	LUMINAIRES		100	50
C	CB1	LB5	846		
(BLUE)	LB5	LUMINAIRES		100	50
	LB5	LB4	282		
	LB4	LUMINAIRES		100	50
	LB5	LB14	202		
	LB14	LUMINAIRES		100	50
	LB14	LB15	252		
	LB15	LUMINAIRES		100	50
	LB15	LB16	342		
	LB16	LUMINAIRES		100	50
D	CB1	LB7	336		
(BROWN)	LB7	LUMINAIRES		100	50
	LB7	LB6	332		
	LB6	LUMINAIRES		100	50
	LB7	LB17	402		
	LB17	LUMINAIRES		100	50
	LB17	LB18	272		
	LB18	LUMINAIRES		100	50

SUB-TOTALS1,800900

PROJECT TOTALS5,776*2,700

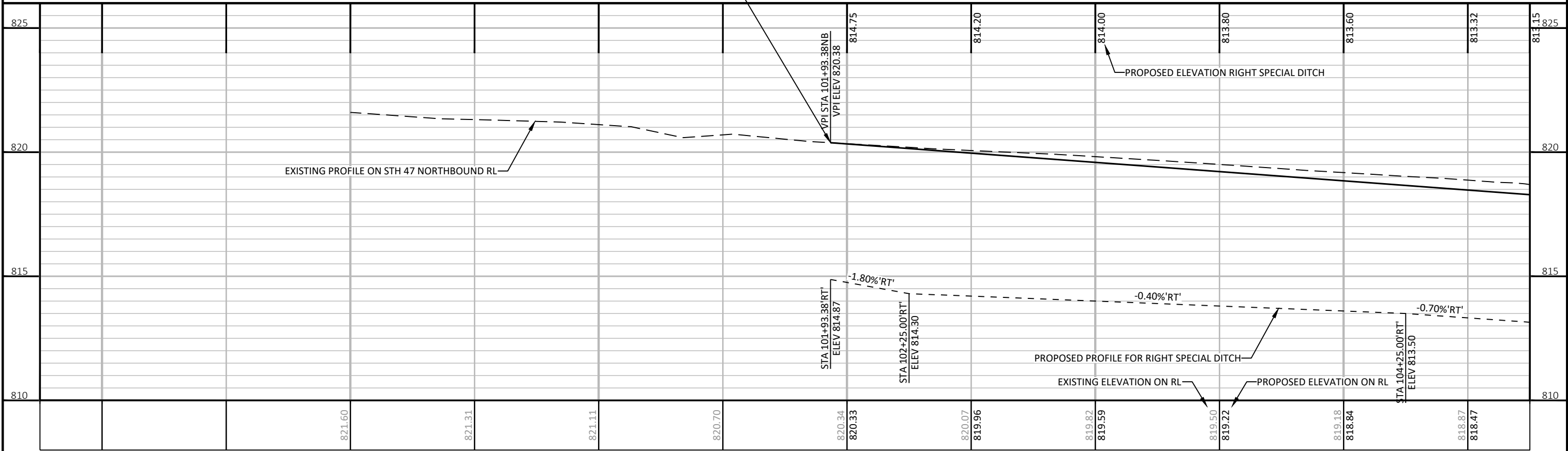
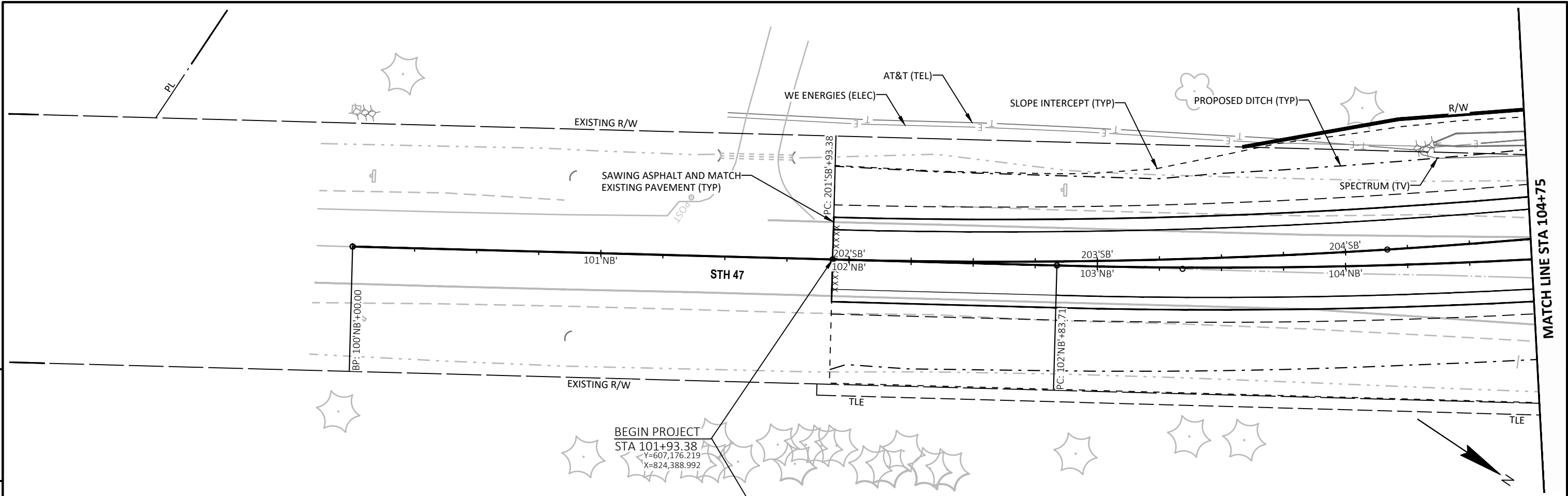
*ADDITIONAL QUANTITY IN ELECTRICAL WIRE LIGHTING 10AWG TABLE

ELECTRICAL WIRE LIGHTING 10AWG

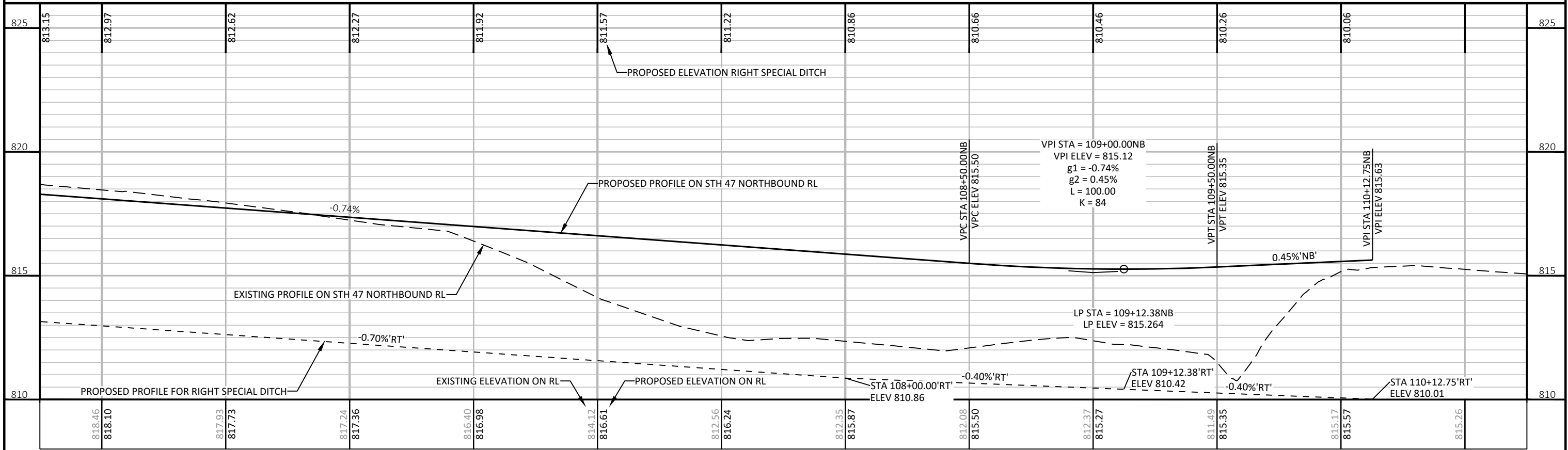
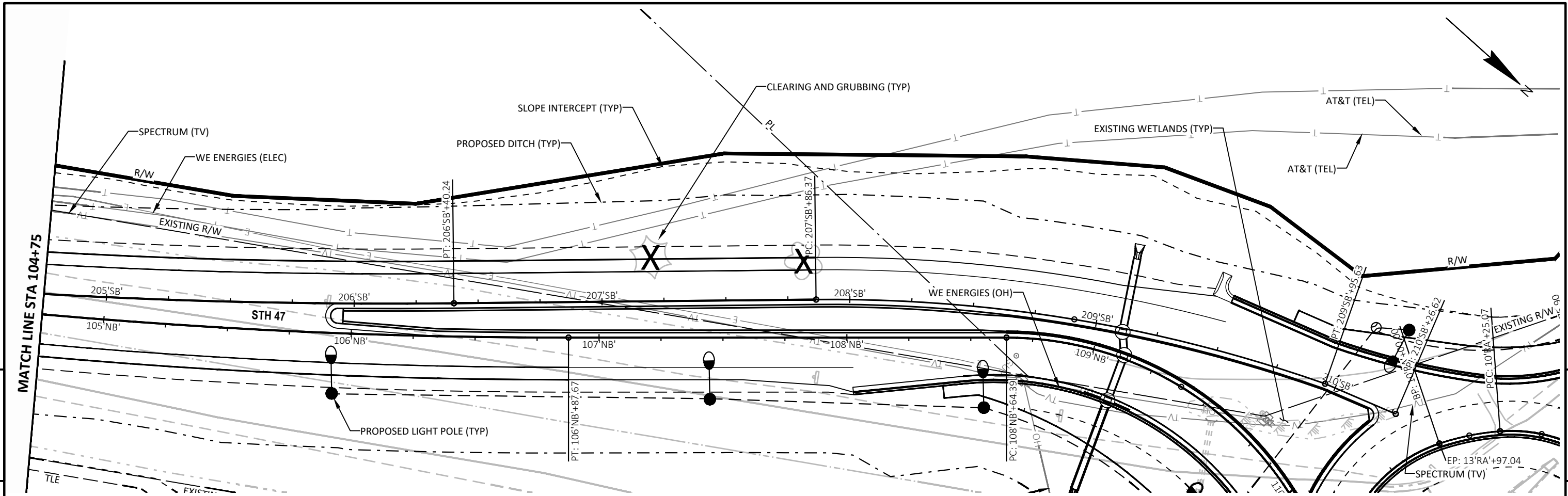
LOCATION STH 47 & CTH S (240 VOLT SYSTEM)		655.0615* EQUIPMENT GROUNDING CONDUCTOR (GREEN) LF
FROM	TO	
CATEGORY 0010		
CB1	LB1	98
LB1	LB9	101
LB9	LB10	136
LB10	LB11	151
LB1	LB2	176
LB2	LB3	176
LB3	LB12	136
LB12	LB13	156
LB3	LB4	161
LB4	LB5	141
LB5	LB14	101
LB14	LB15	126
LB15	LB16	171
LB5	LB6	191
LB6	LB7	166
LB7	LB17	201
LB17	LB18	136
LB7	LB8	151
LB8	CB1	68

PROJECT TOTAL2,743*

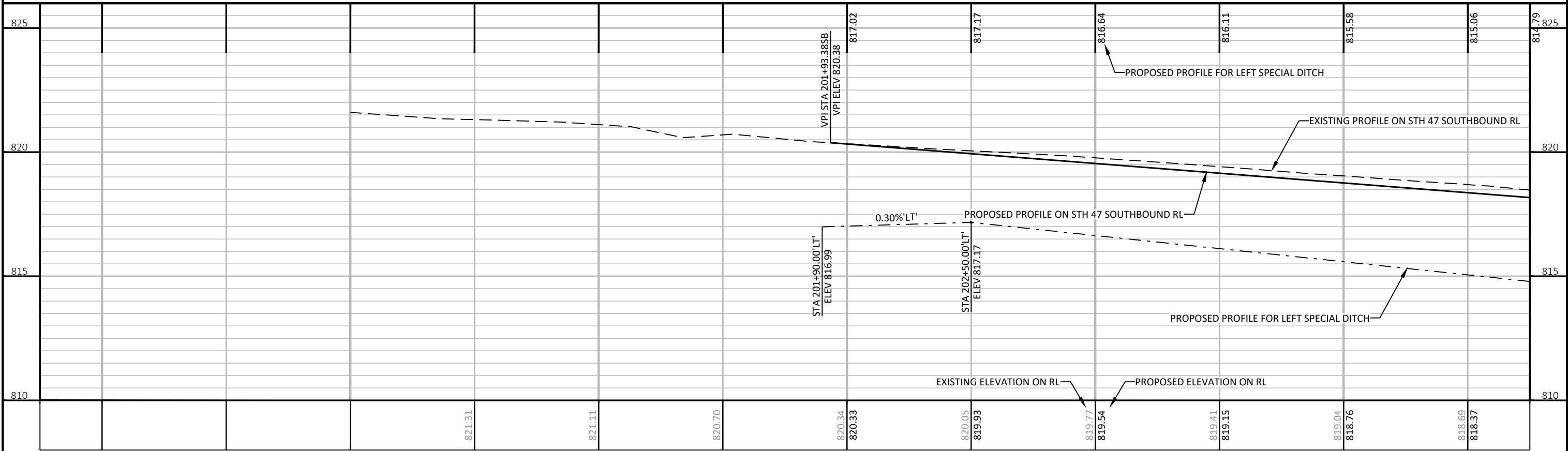
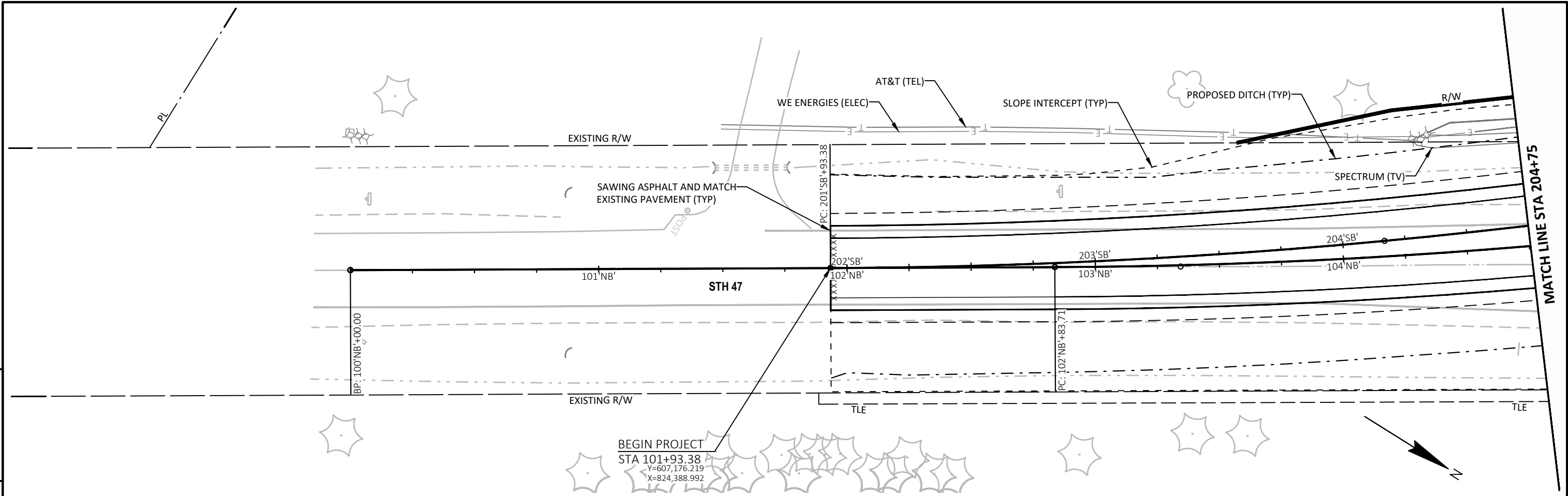
*ADDITIONAL QUANTITY IN ELECTRICAL WIRE LIGHTING TABLE



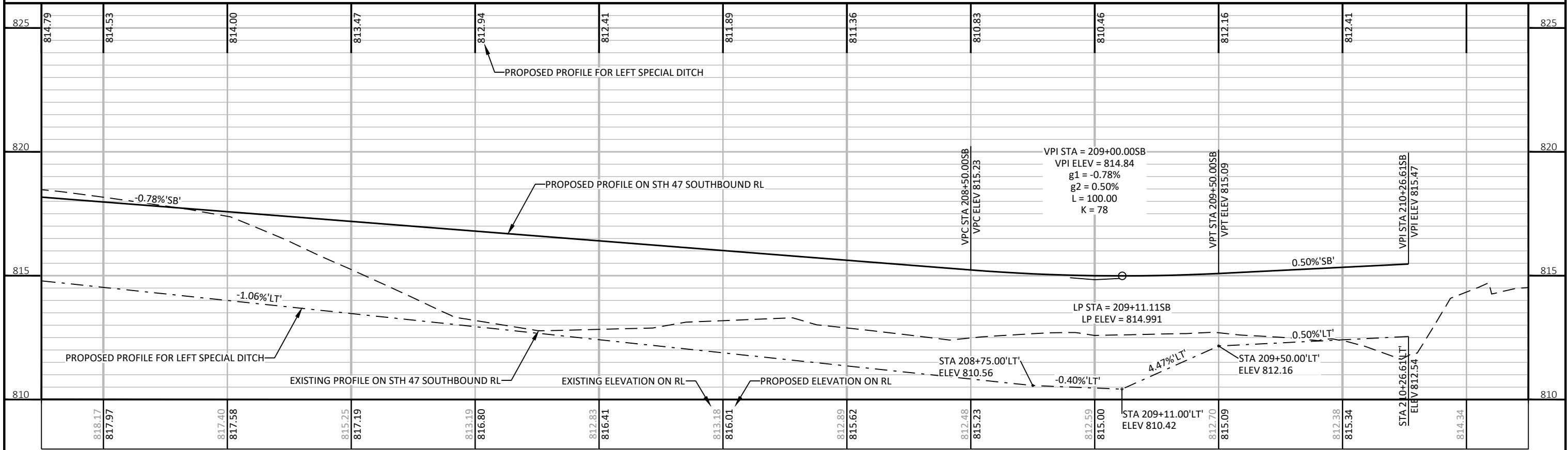
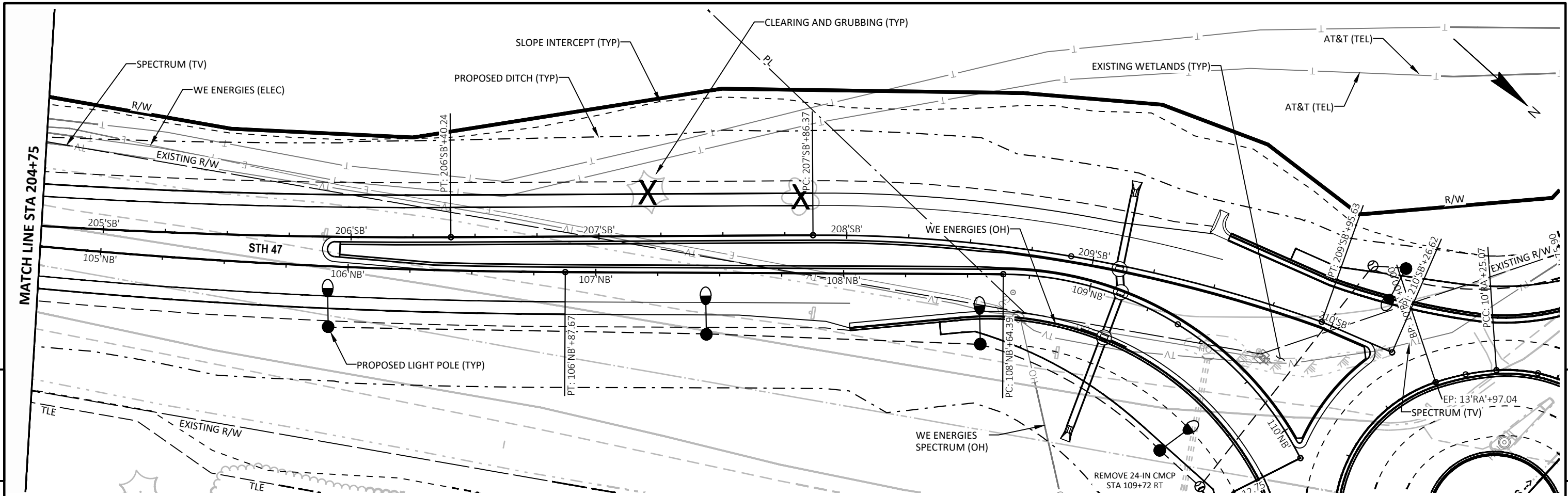
PROJECT NO:	6240-32-71	HWY:	STH 47	COUNTY:	OUTAGAMIE	PLAN AND PROFILE:	STH 47 NORTHBOUND	SHEET	75	E
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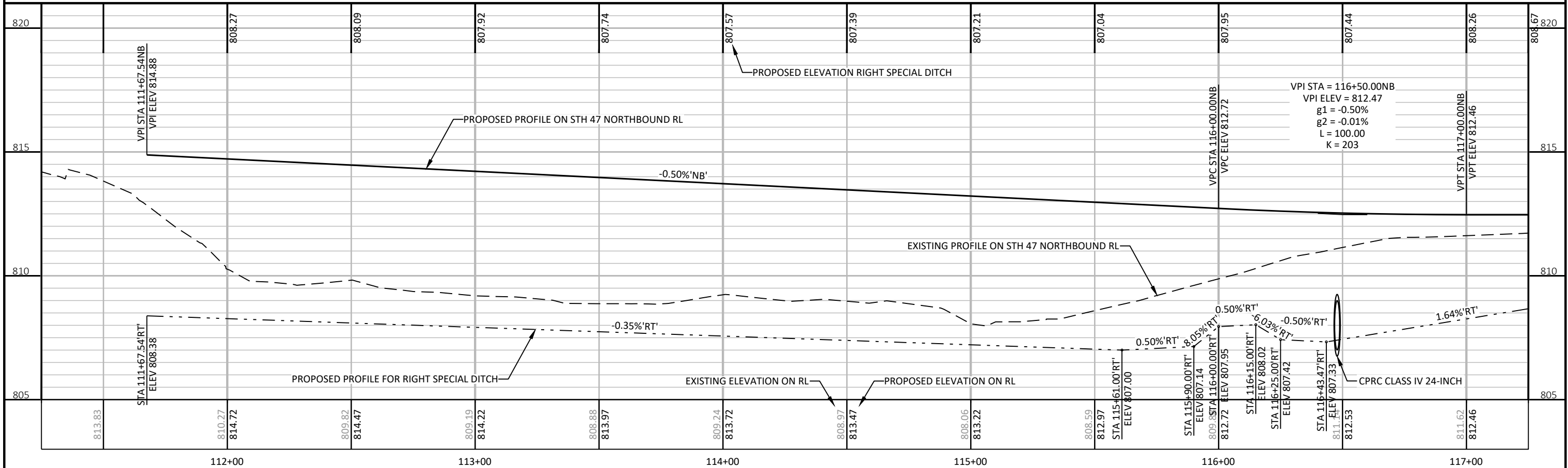
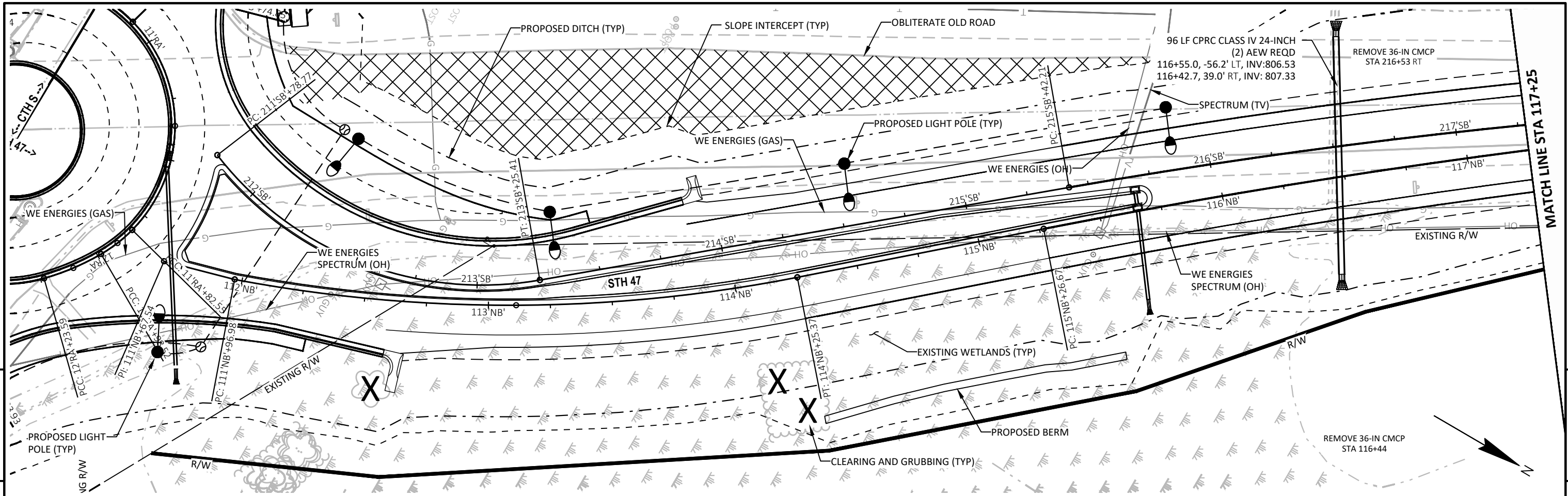
PROJECT NO:	6240-32-71	HWY:	STH 47	COUNTY:	OUTAGAMIE	PLAN AND PROFILE:	STH 47 NORTHBOUND	SHEET	76	E
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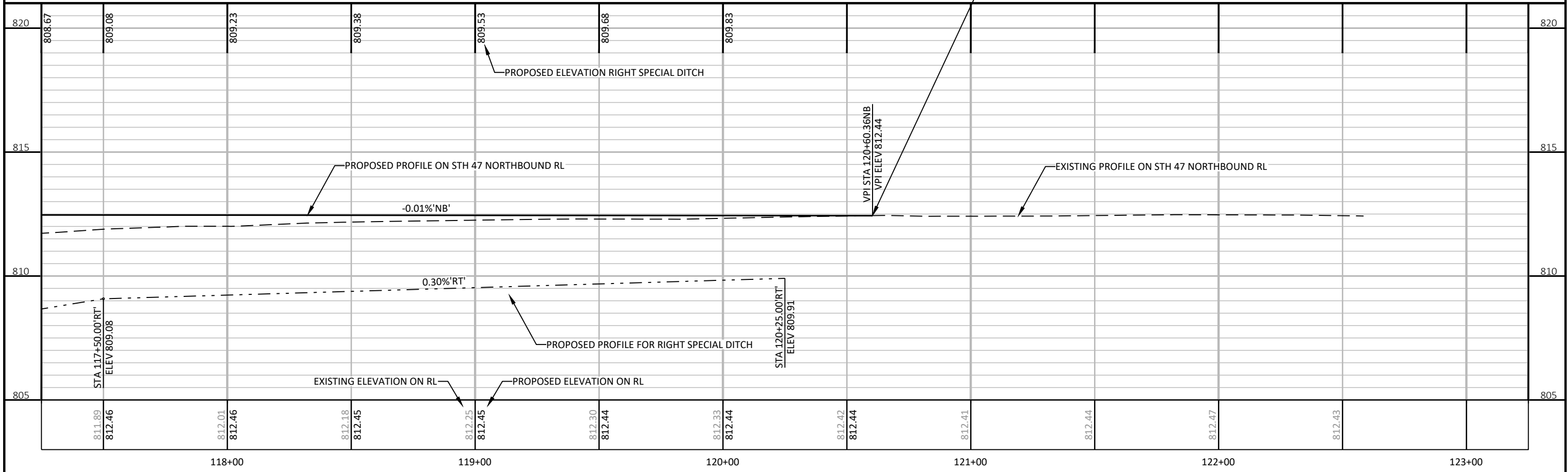
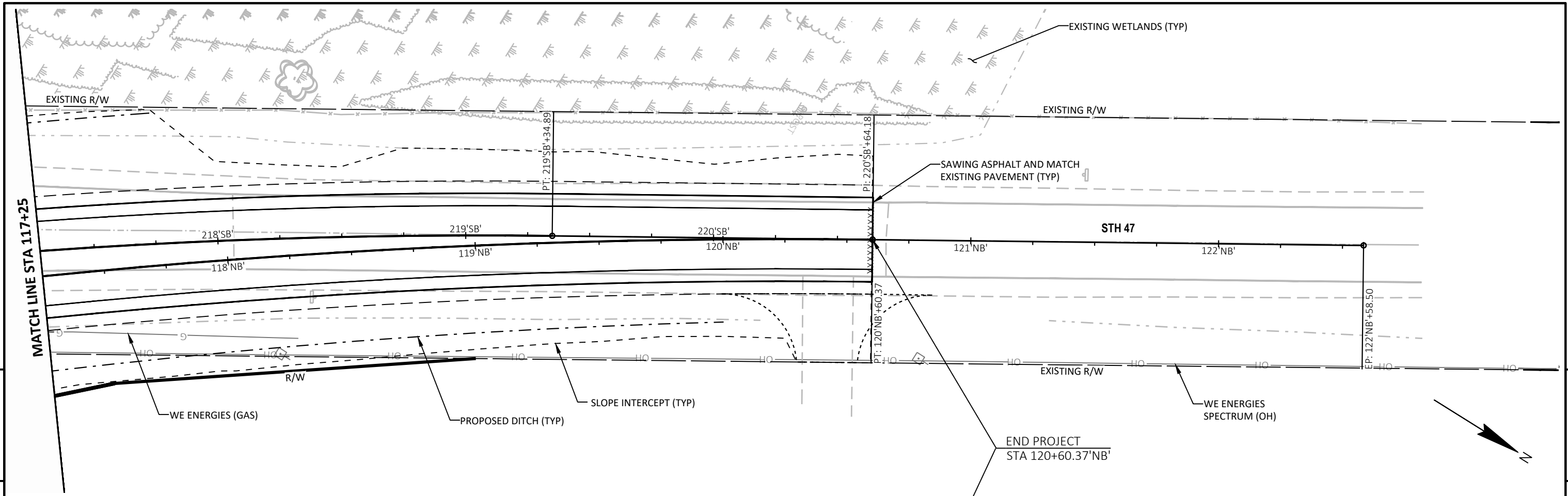


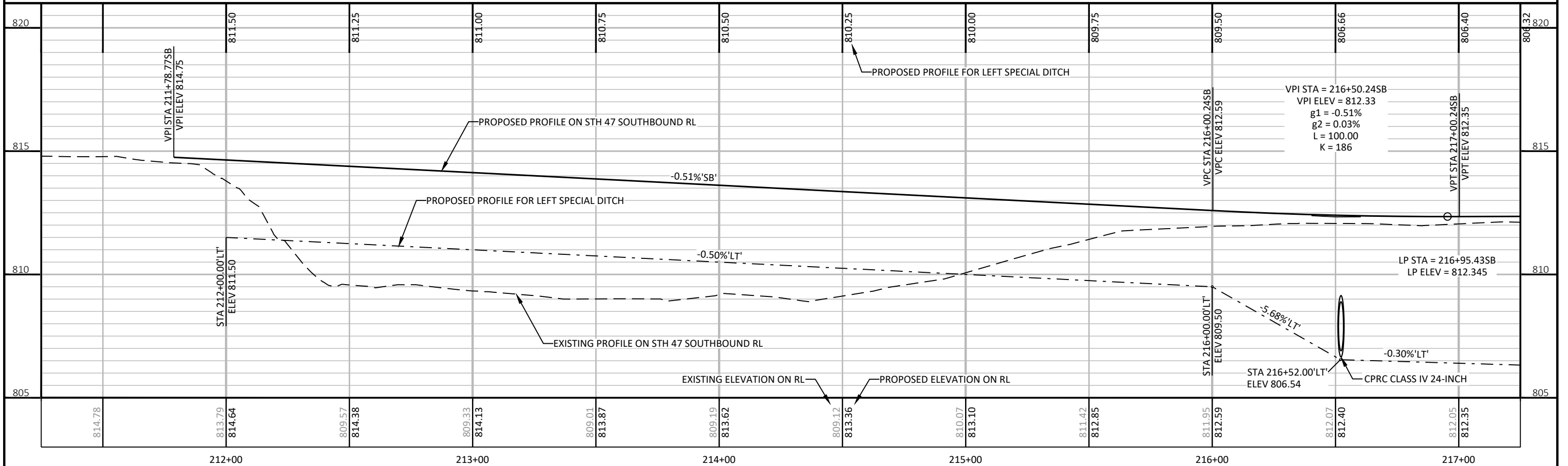
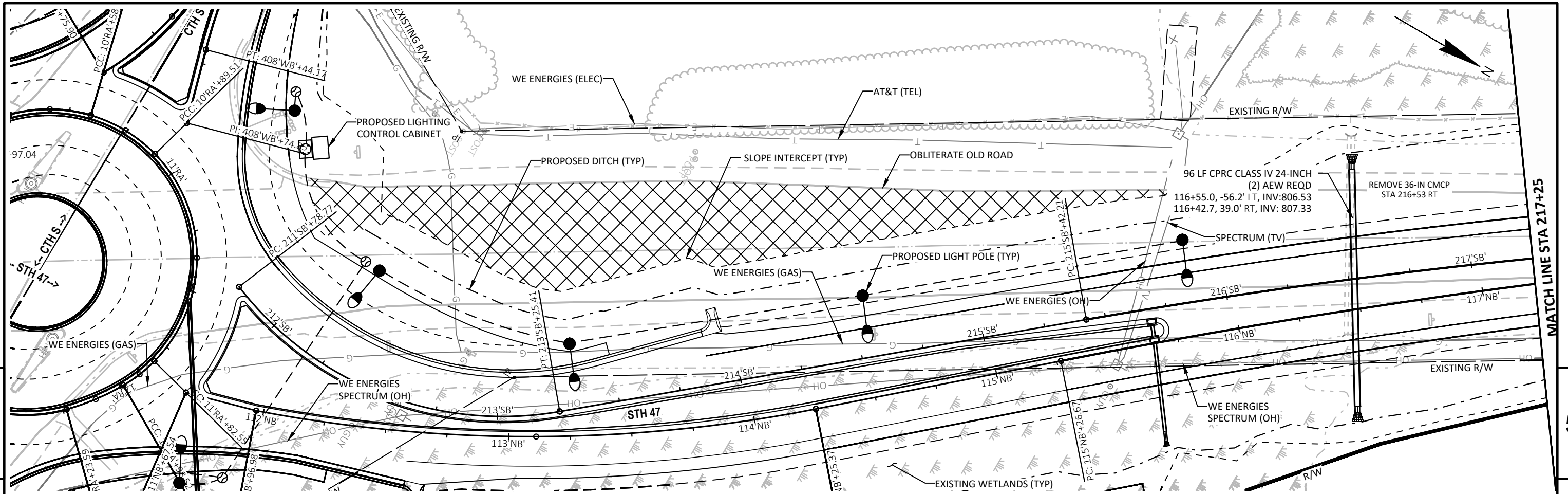
PROJECT NO:	6240-32-71	HWY:	STH 47	COUNTY:	OUTAGAMIE	PLAN AND PROFILE:	STH 47 SOUTHBOUND	SHEET	77	E
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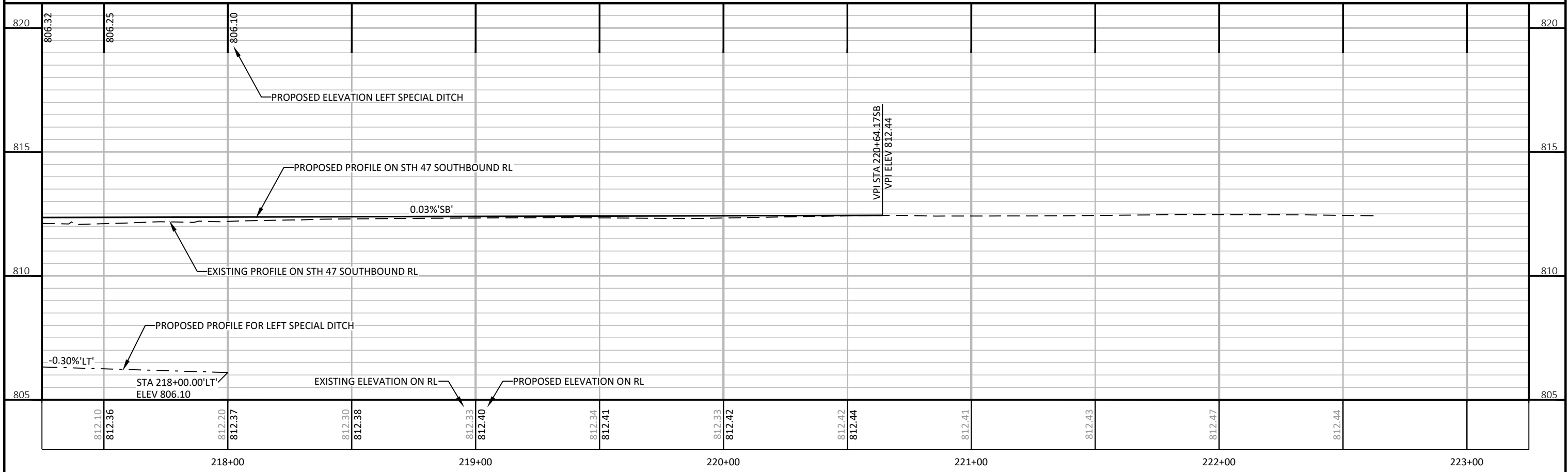
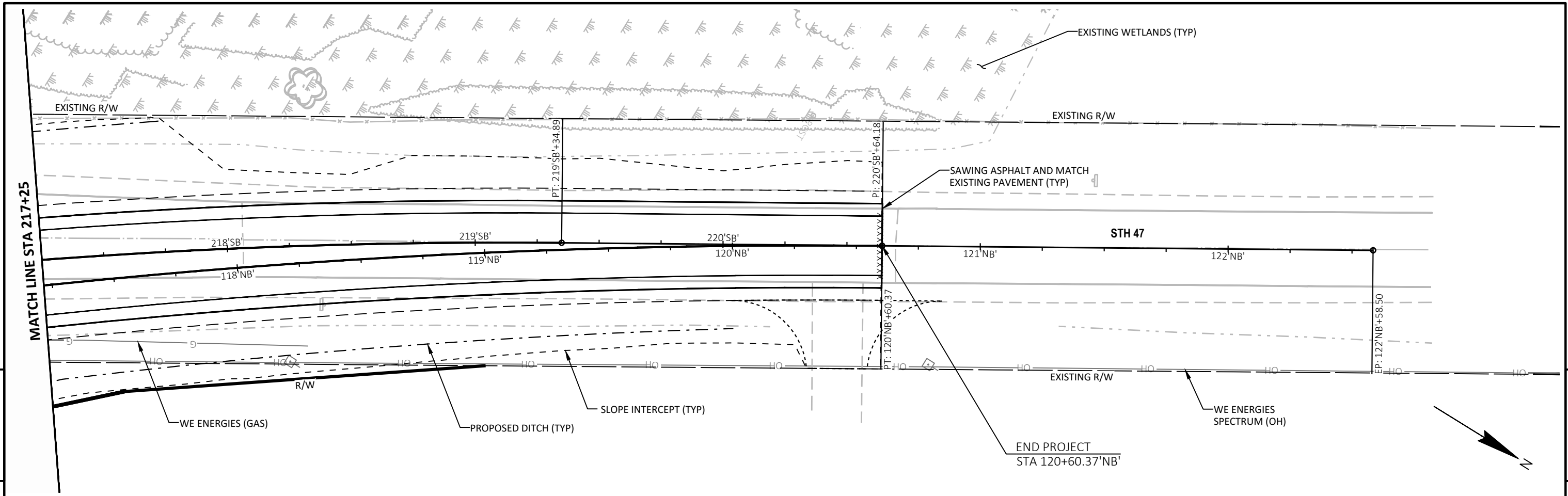
PROJECT NO:	6240-32-71	HWY:	STH 47	COUNTY:	OUTAGAMIE	PLAN AND PROFILE:	STH 47 SOUTHBOUND	SHEET	78	E
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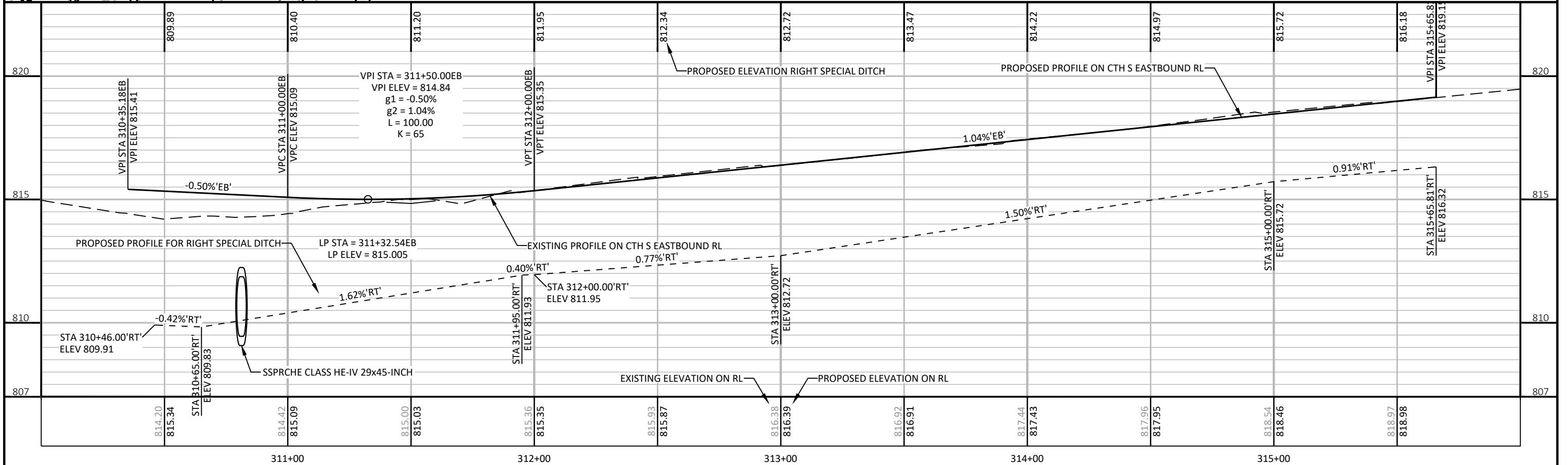
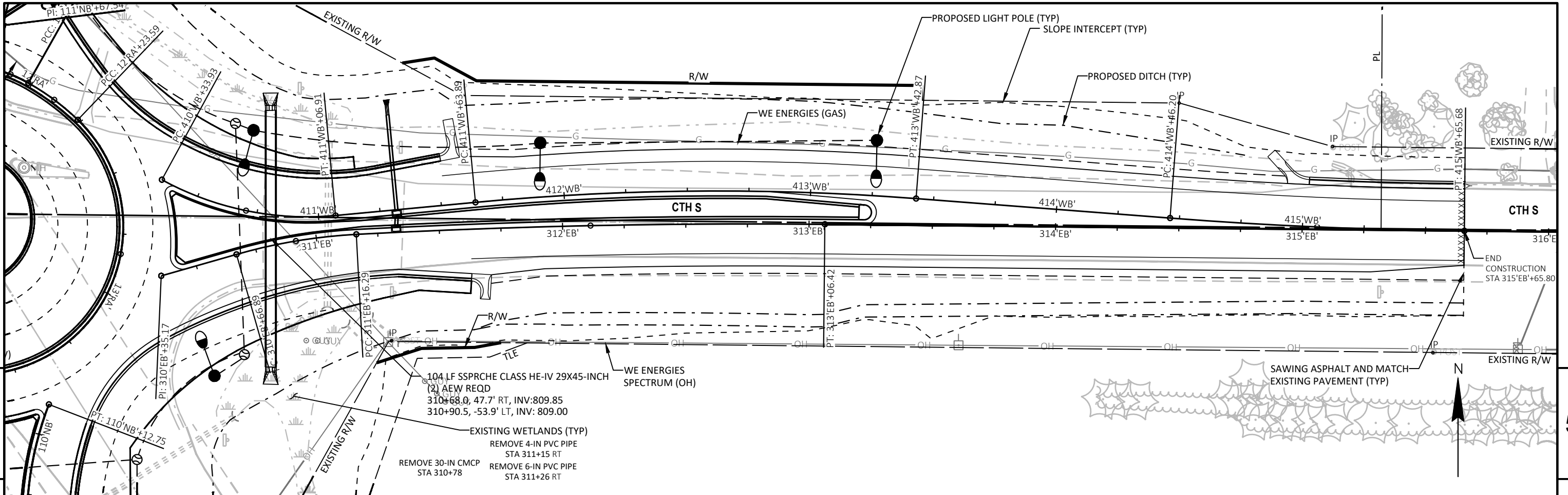




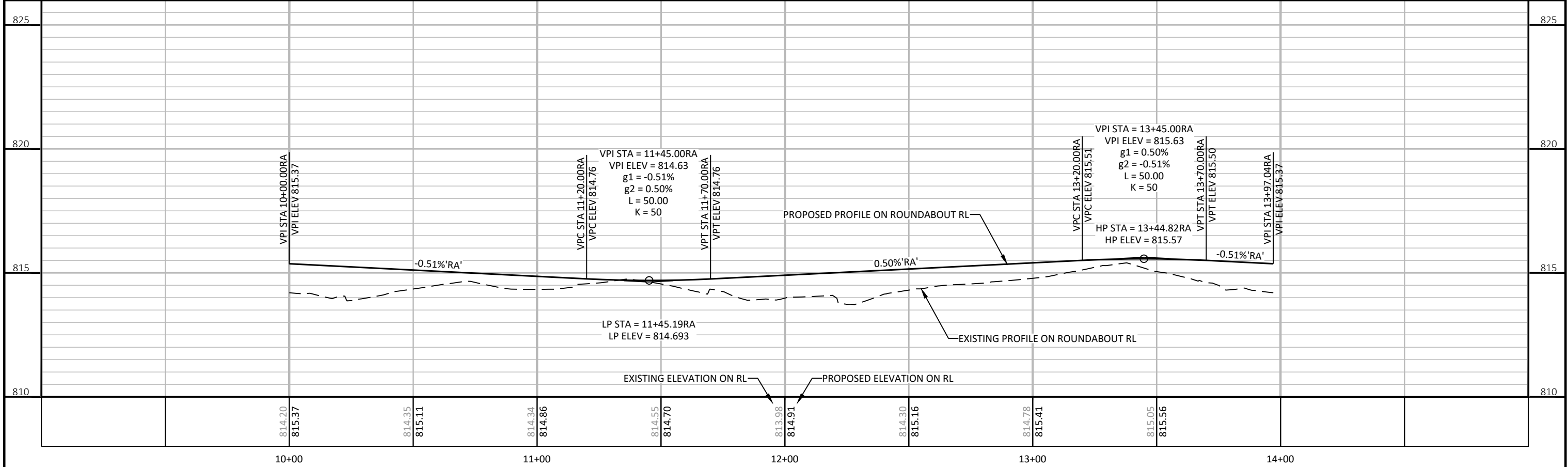
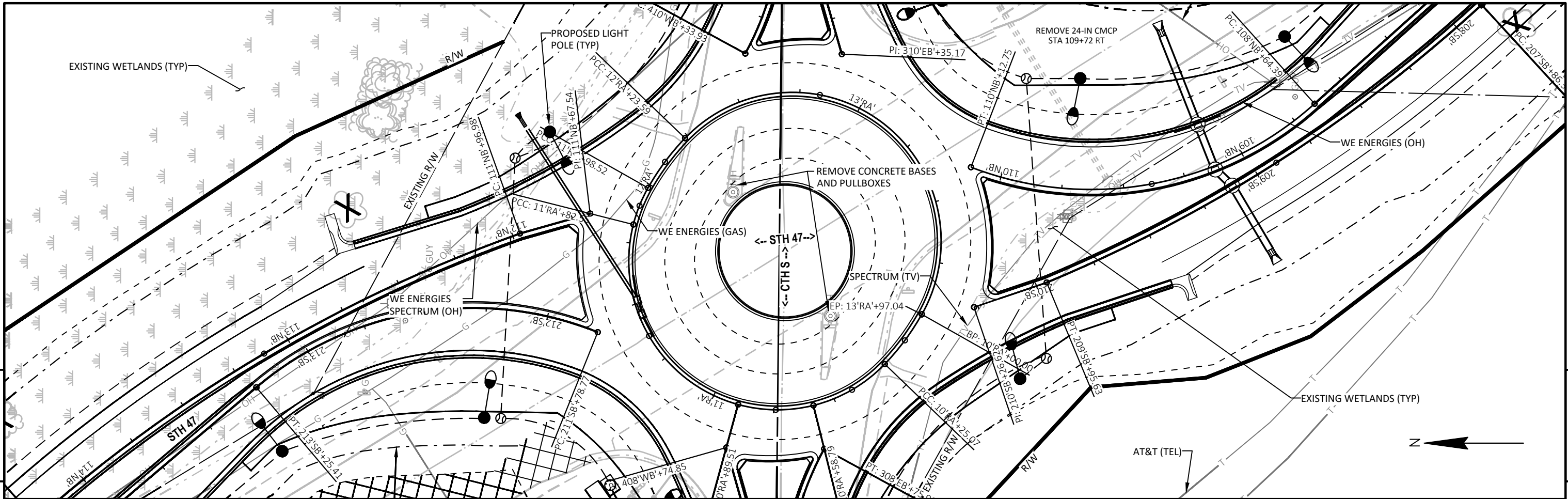


PROJECT NO: 6240-32-71	HWY: STH 47	COUNTY: OUTAGAMIE	PLAN AND PROFILE: STH 47 SOUTHBOUND	SHEET 81
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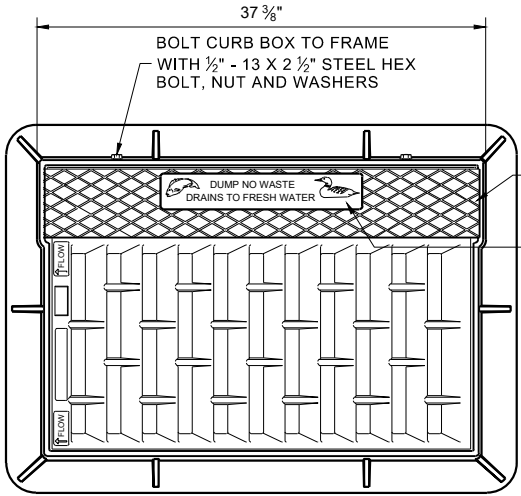


PROJECT NO: 6240-32-71	HWY: STH 47	COUNTY: OUTAGAMIE	PLAN AND PROFILE: CTH S EASTBOUND	SHEET 85
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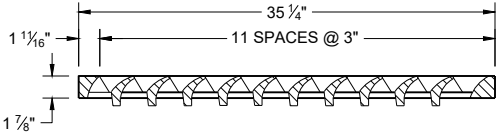
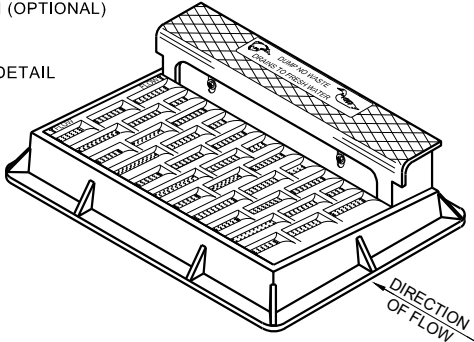
Standard Detail Drawing List

08A05-22A	INLET COVERS TYPE A, H, A-S, H-S & Z
08A05-22C	INLET COVERS TYPE F, HM, HM-S, S, T, HM-GJ & HM-GJ-S
08C07-03	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT, 2.5X3-FT & 2X3.5-FT
08D01-24A	CONCRETE CURB & GUTTER
08D01-24B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E14-01	TRACKING PAD
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F07-05	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE DRAINS
08F08-02	STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS
09B02-10	CONDUIT
09B16-04	PULL BOX NON-CONDUCTIVE
09C02-09	CONCRETE BASES, TYPES 1, 2, 5, & 6
09C03-04	TRANSFORMER/PEDESTAL BASES
09D01-05	CABINET SERVICE INSTALLATION (METER BREAKER PEDESTAL)
09E01-17D	POLE MOUNTINGS FOR LIGHTING UNITS, TYPE 5 (30 FEET)
09E02-05	FREEWAY LIGHTING UNIT POLE WIRING
10A01-04	ELECTRICAL HANDHOLE WIRING
11B02-02	CONCRETE MEDIAN NOSE
13A10-03A	SHOULDER RUMBLE STRIPS - ASPHALT
13A10-03G	SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A10-03H	SHOULDER AND EDGE LINE RUMBLE STRIPS - RAILROAD, PASSING, CLIMBING AND BYPASS LANES
13C18-08A	CONCRETE PAVEMENT JOINTING
13C18-08B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-08C	CONCRETE PAVEMENT JOINT TYPES
13C18-08D	CONCRETE PAVEMENT JOINTING AT UTILITY FIXTURES
13C18-08E	CONCRETE PAVEMENT JOINTING AND STEEL REINFORCEMENT IN ROUNDABOUTS
13C18-08F	CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER
13C19-03	HMA LONGITUDINAL JOINTS
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-10A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-10B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-10C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C18-09A	MEDIAN ISLAND PAVEMENT MARKINGS
15C18-09B	PAVEMENT MARKINGS, MEDIAN ISLAND NOSE

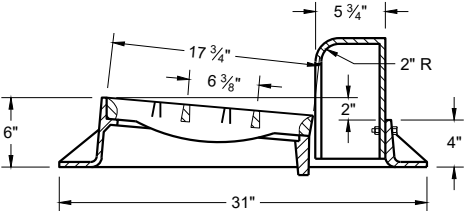
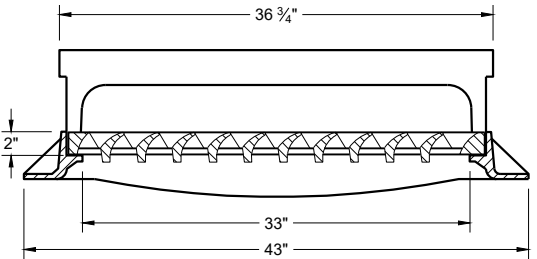
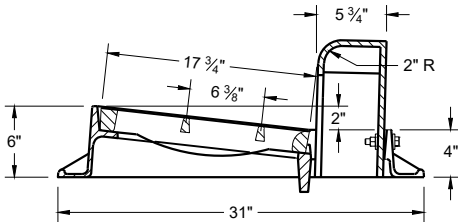
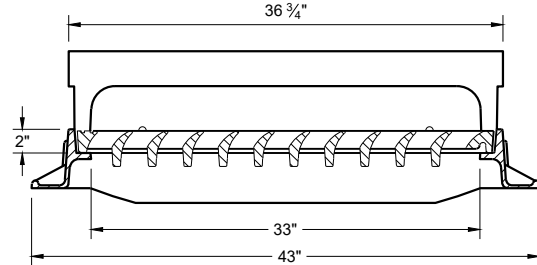


NOTE: EITHER CASTING IS ACCEPTABLE

TYPE "C" CHECKERED TOP DESIGN (OPTIONAL)
SEE LOGO DETAIL

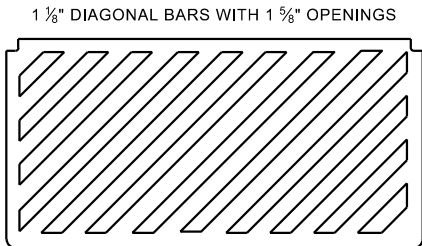


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

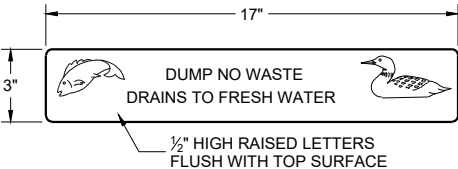


TYPE "H"

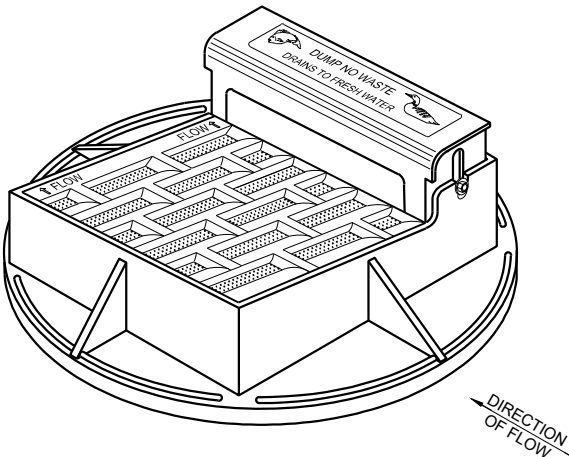
NOTE: EITHER CASTING IS ACCEPTABLE



SPECIAL GRATE FOR TYPE "H" COVER
(MEASURES 35" X 17 3/4" X 2")
(NOTED AS TYPE H-S ON DRAINAGE TABLE)

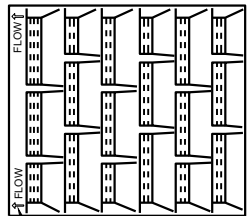


LOGO DETAIL

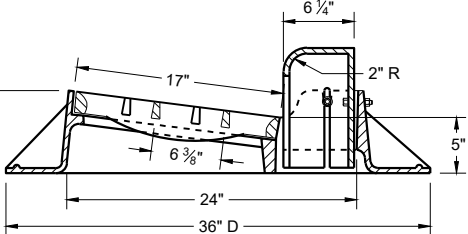
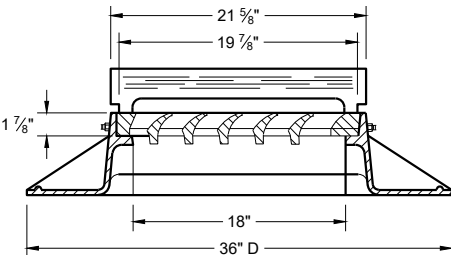
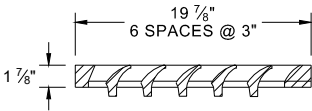


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

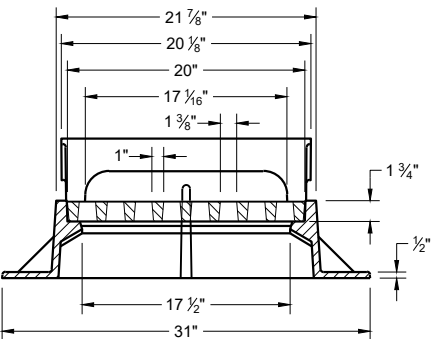
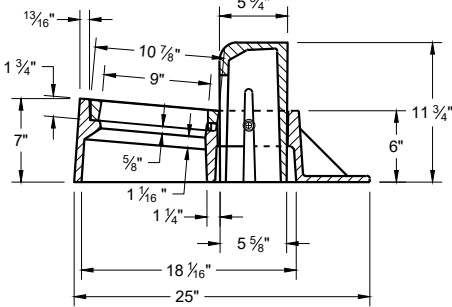
NOTE: EITHER CASTING IS ACCEPTABLE



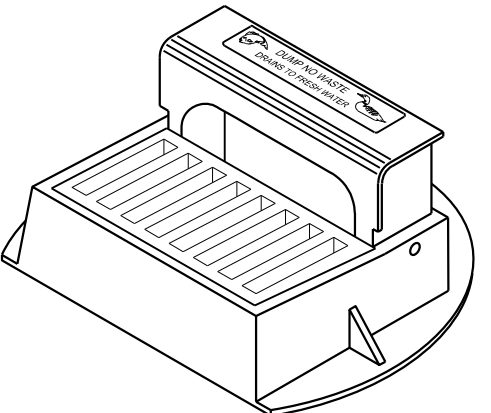
DIRECTION OF FLOW ARROWS



TYPE "A"



TYPE "Z"



**INLET COVERS
TYPES A, H, A-S, H-S AND Z**

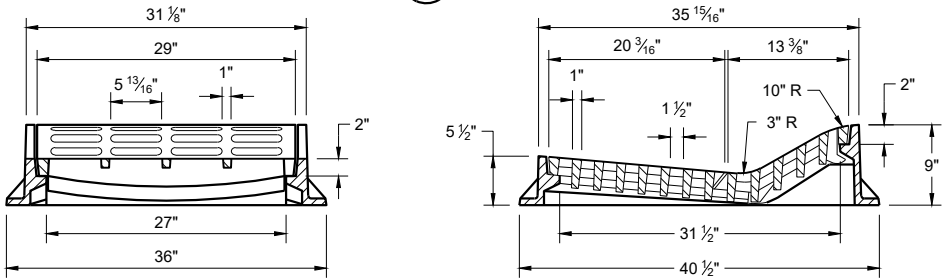
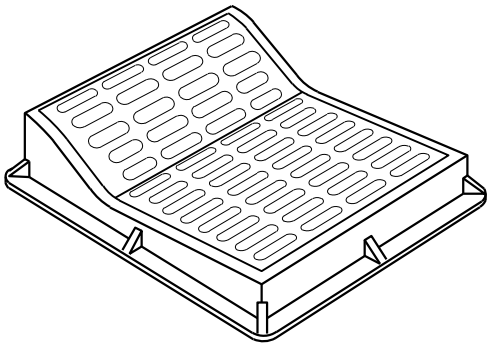
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

GENERAL NOTES

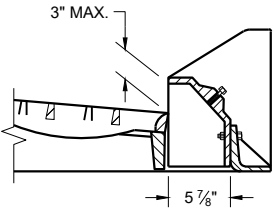
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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



TYPE "F"

USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"

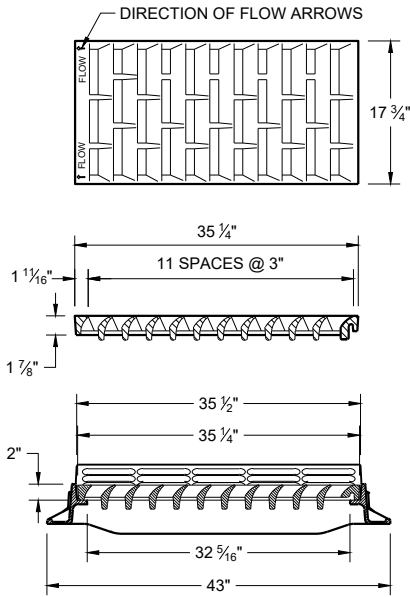


ALTERNATIVE CURB BOX
FOR TYPE "HM" COVER

USE WITH TYPES "G" AND "J" CONCRETE CURB AND GUTTER, 30 INCH
NOTED AS TYP "HM-GJ" ON DRAINAGE TABLE

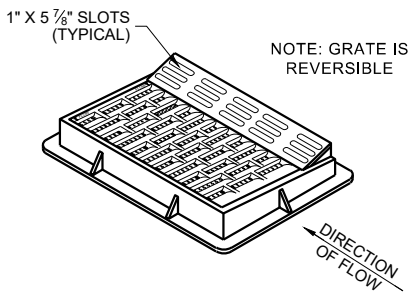
NOTE:
SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.

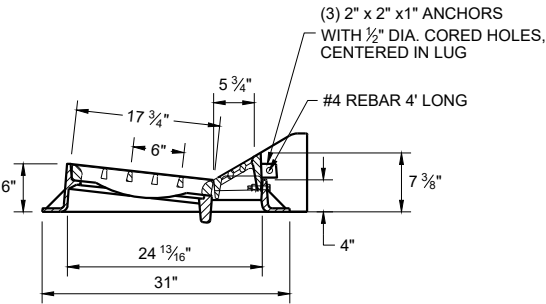


TYPE "HM"

USE WITH TYPES "A" AND "D" CONCRETE CURB AND GUTTER, 36"

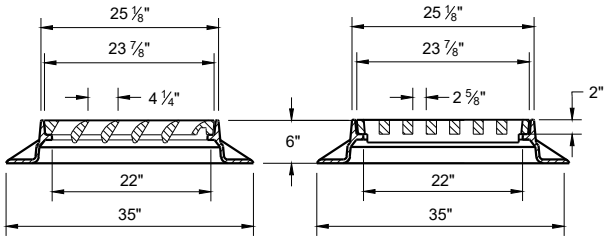
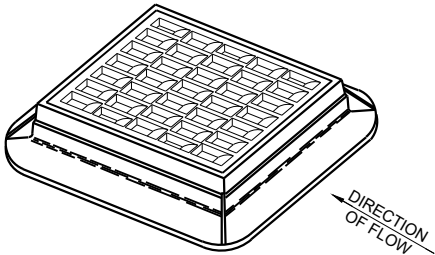


NOTE: GRATE IS REVERSIBLE

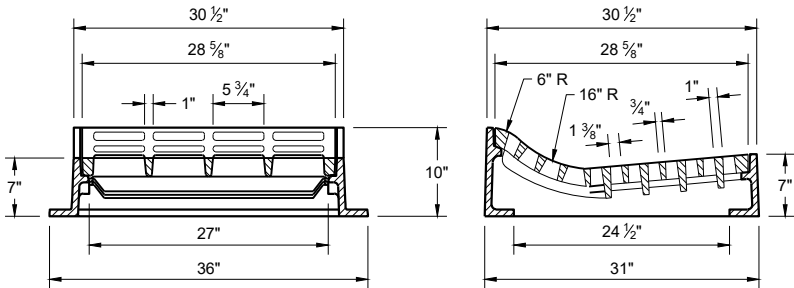
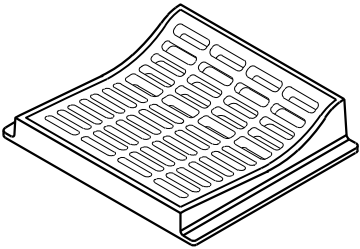


NOTE:
SPECIAL GRATE FOR THE TYPE "H" COVER MAY ALSO BE USED FOR THE TYPE "HM-GJ" COVER.

NOTED AS TYPE HM-GJ-S ON THE DRAINAGE TABLE.



TYPE "S"



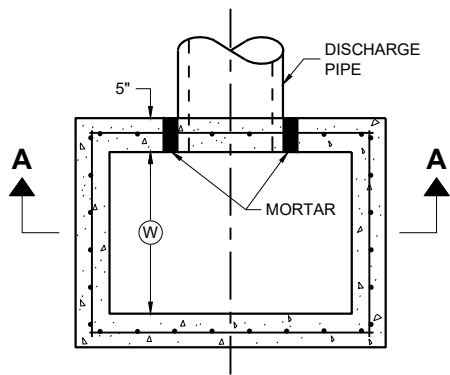
TYPE "T"

USE WITH TYPES "R" AND "T" CONCRETE CURB AND GUTTER, 36"

INLET COVERS
TYPES F, HM, HM-S, S, T,
HM-GJ AND HM-GJ-S

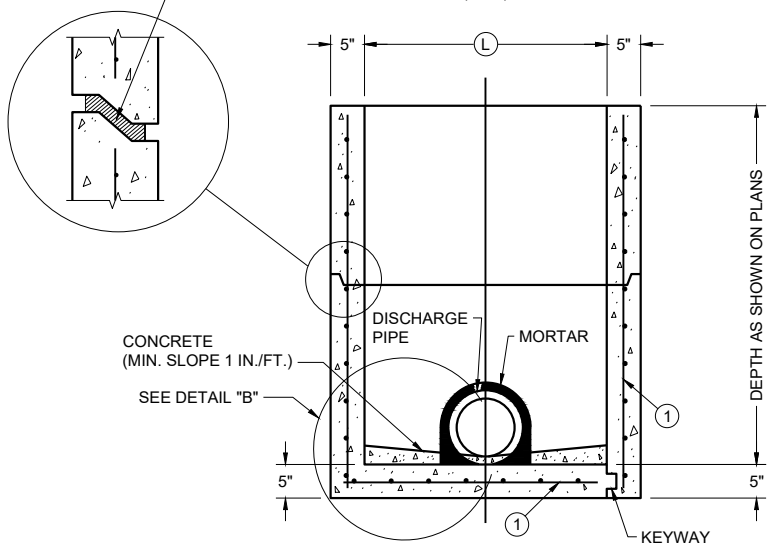
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
FHWA



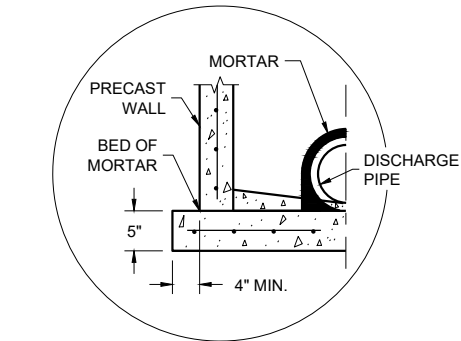
PLAN VIEW

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



PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

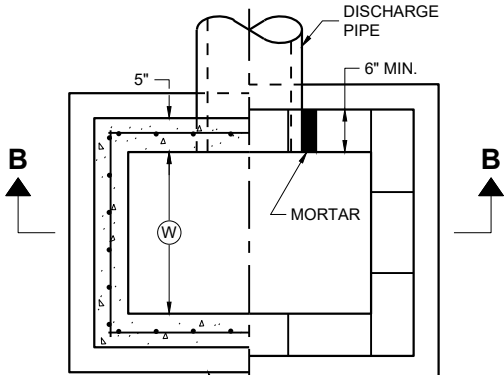
SECTION A - A



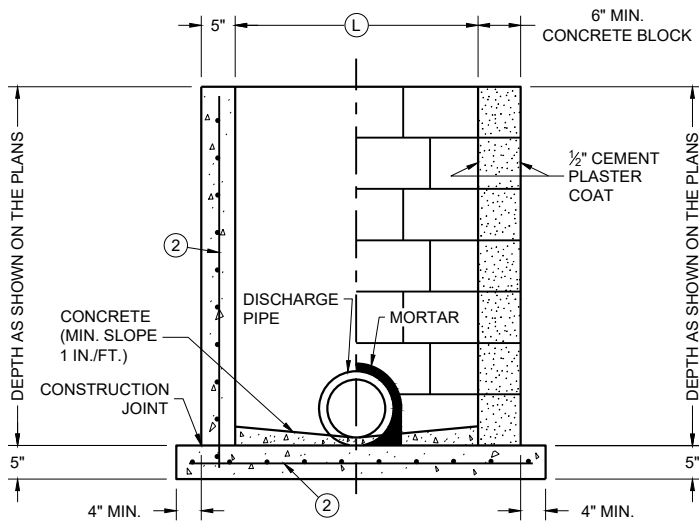
SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

DETAIL "B"

INLETS 2 X 2-FT, 2 X 2.5-FT, 2 X 3-FT, 2.5 X 3-FT AND 2X3.5-FT



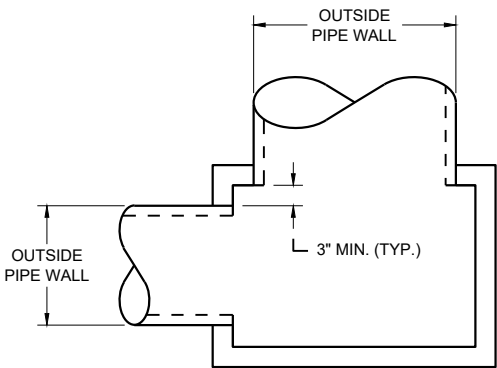
PLAN VIEW



CAST IN PLACE
REINFORCED
CONCRETE

SECTION B - B

CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE ①



DETAIL "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.

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

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

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

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

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

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

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

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

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

- ① FOR PRECAST INLETS AND REINFORCED CONCRETE BASES PROVIDE REINFORCING STEEL IN ACCORDANCE TO ASTM C 913
- ② CONTRACTOR TO PROVIDE DRAWING(S) STAMPED BY A PROFESSIONAL ENGINEER FOR STEEL REINFORCING DESIGN FOR CAST-IN-PLACE STRUCTURES.

CATCH BASIN COVER MATRIX

INLET SIZE	WIDTH (W) (FT.)	LENGTH (L) (FT.)	INLET COVER TYPE									
			ALL A'S	ALL B'S	BW	F	ALL H'S	S	T	V	WM	V V-B
2 X 2-FT	2	2	X	X				X				
2 X 2.5-FT	2	2.5			X			X	X	X	X	
2 X 3-FT	2	3					X					
2.5 X 3-FT	2.5	3				X						
2 X 3.5-FT	2	3.5										X

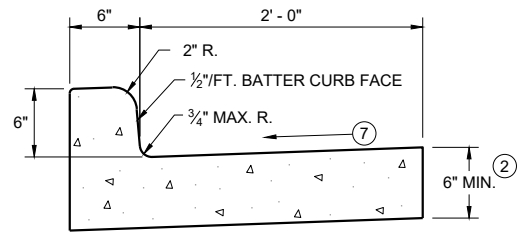
PIPE MATRIX

CATCH BASIN SIZE	MAXIMUM INSIDE PIPE DIAMETER FOR TWO PIPES	
	WIDTH (IN)	LENGTH (IN)
2 X 2-FT	12	12
2 X 2.5-FT	12	18
2 X 3-FT	12	24
2.5 X 3-FT	18	24
2 X 3.5-FT	12	30

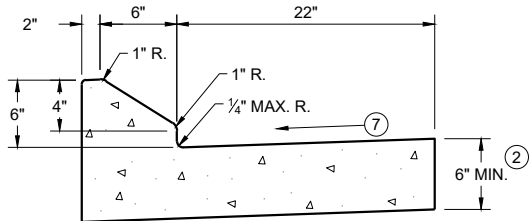
INLETS 2 X 2-FT, 2 X 2.5-FT,
2 X 3-FT, 2.5 X 3-FT
AND 2 X 3.5-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

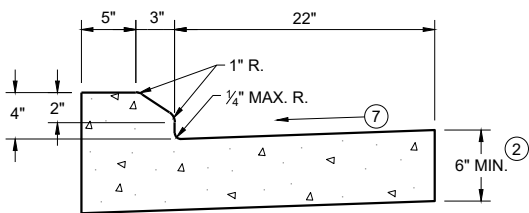
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



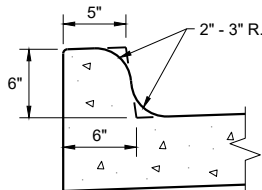
TYPES A^① & D



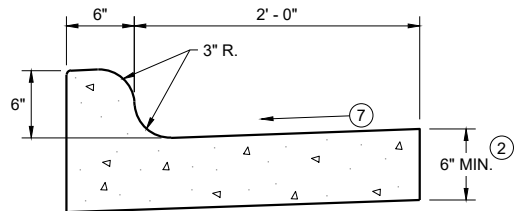
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

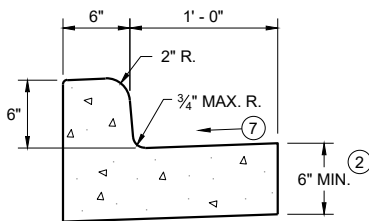


TYPES K^① & L
(OPTIONAL CURB SHAPE)



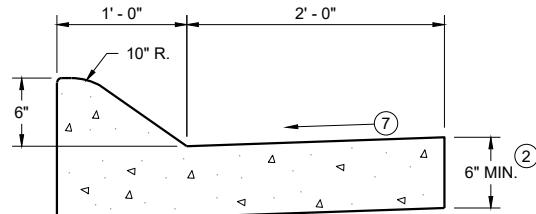
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

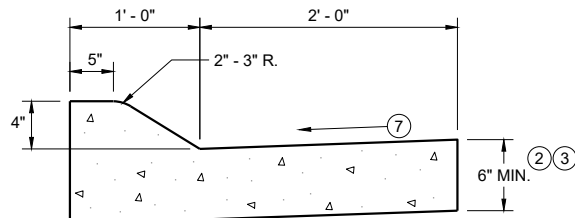


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

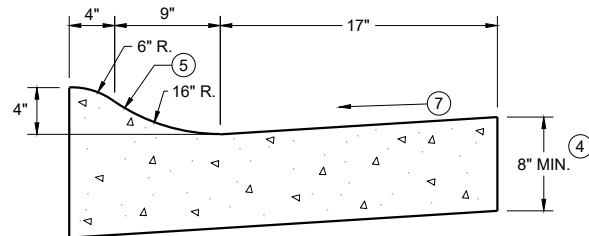


6" SLOPED CURB TYPES A^① & D



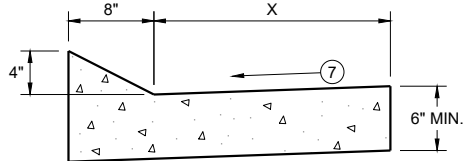
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T
CONCRETE CURB AND GUTTER 30"

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

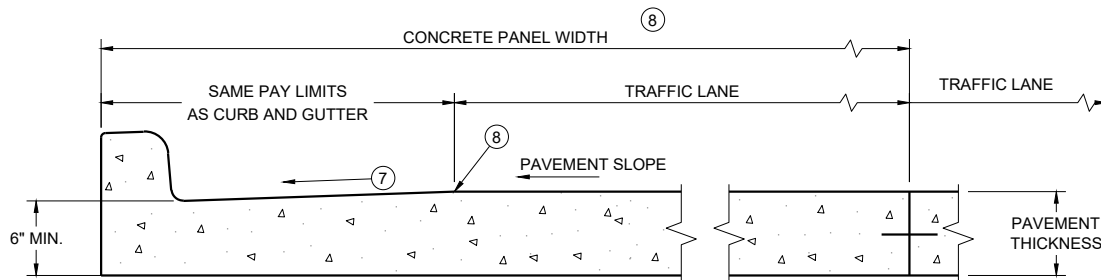


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

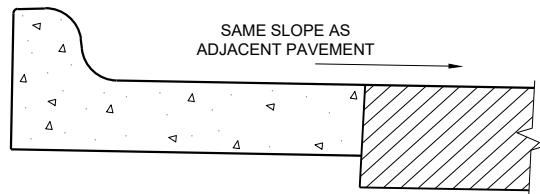
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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

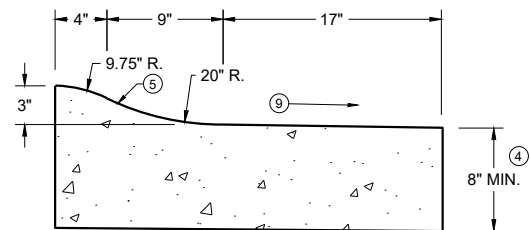


PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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



3" SLOPED CURB TYPES R^① & T

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

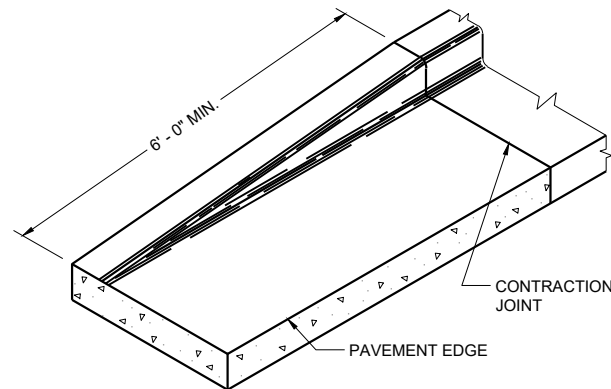
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

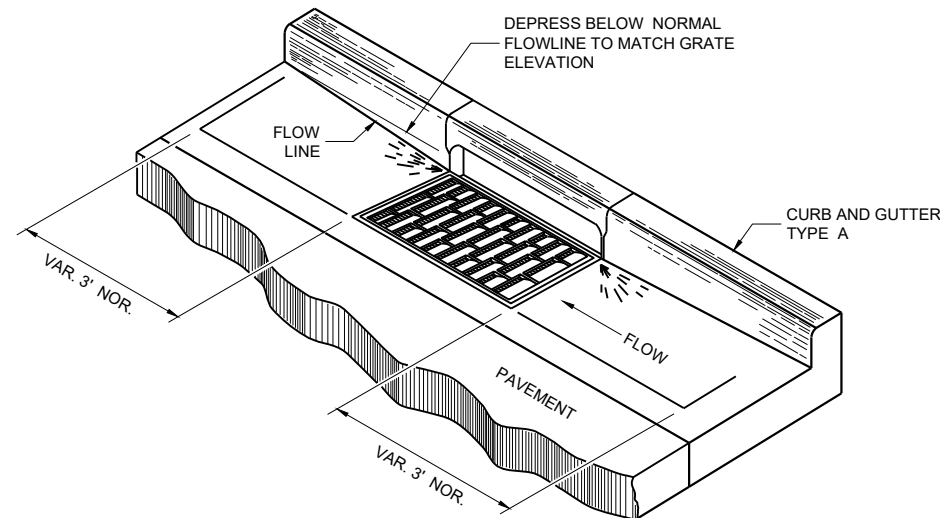
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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 GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ SLOPE TO BE REVERSE SLOPE MATCHING THE SLOPE OF THE PAVEMENT AND THE CIRCULATORY ROADWAY

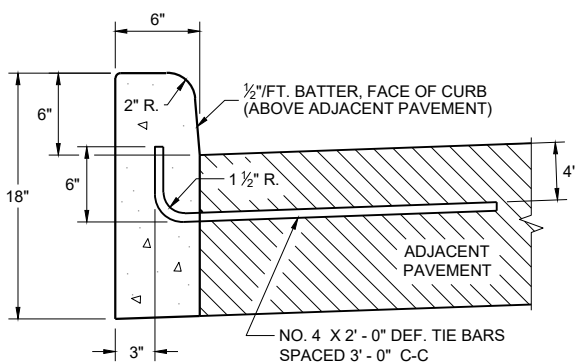


END SECTION CURB AND GUTTER

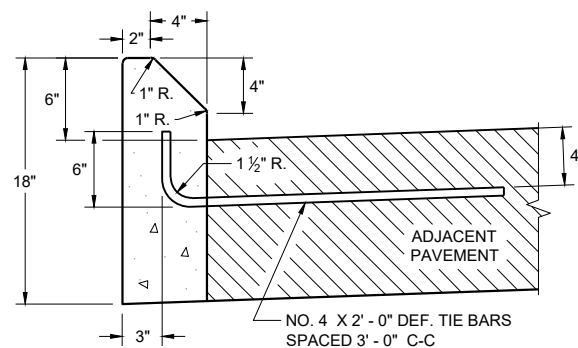


DETAIL OF CURB AND GUTTER AT INLETS

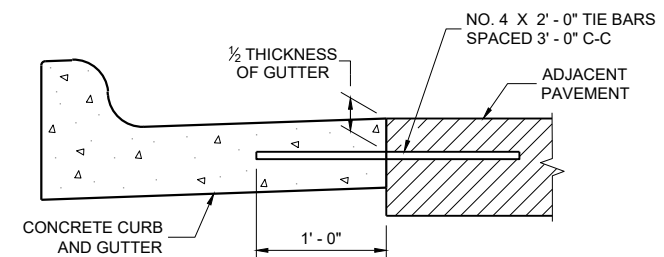
(TYPICAL H INLET COVER SHOWN)



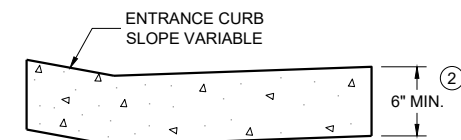
TYPES A^① & D



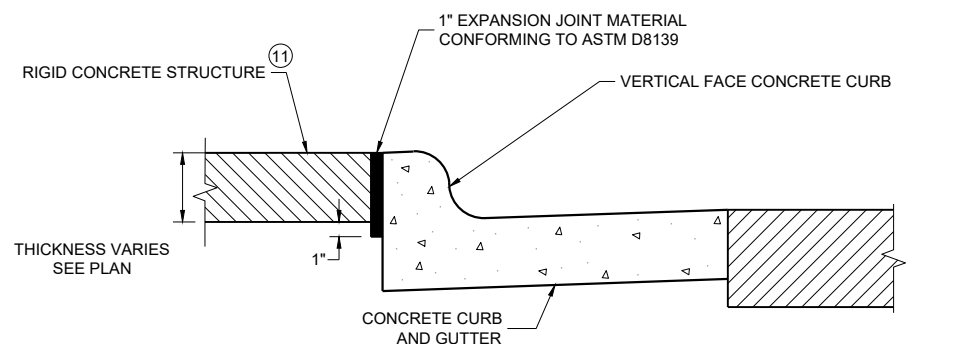
**TYPES G^① & J
CONCRETE CURB**



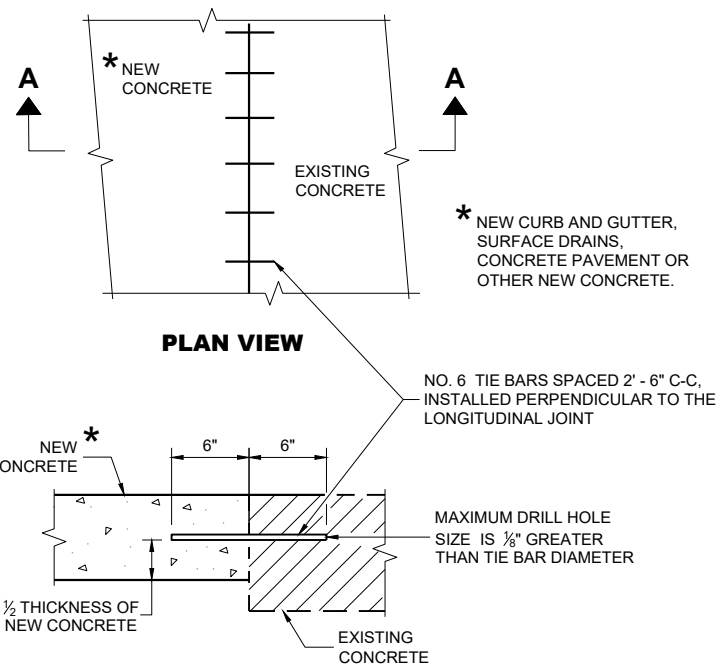
TYPICAL TIE BAR LOCATION^①



**DRIVEWAY ENTRANCE CURB^⑩
(WHEN DIRECTED BY THE ENGINEER)**



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE^⑪



**SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT**

GENERAL NOTES

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

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

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑩ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.
- ⑪ PLACE 1" THICK EXPANSION JOINT MATERIAL BETWEEN VERTICAL FACE CURB TYPES EXTENDING FROM THE TOP OF CURB TO 1 INCH BELOW THE ADJOINING CONCRETE SURFACE. RIGID CONCRETE STRUCTURES INCLUDE RAISED CONCRETE MEDIANS, CONCRETE SAFETY ISLANDS, SPLITTER ISLANDS, OR LOCATIONS IDENTIFIED ON THE PLANS.

6

SDD 08D01-24b

6

SDD 08D01-24b

**CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS**

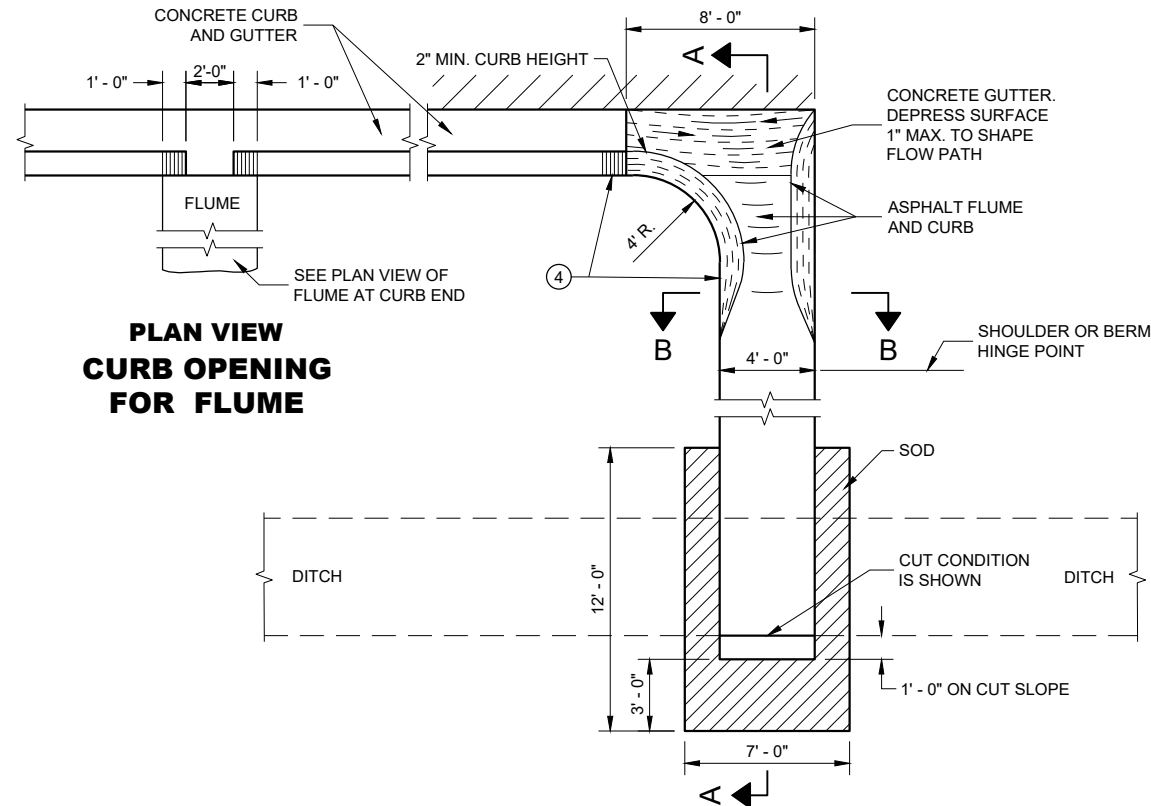
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

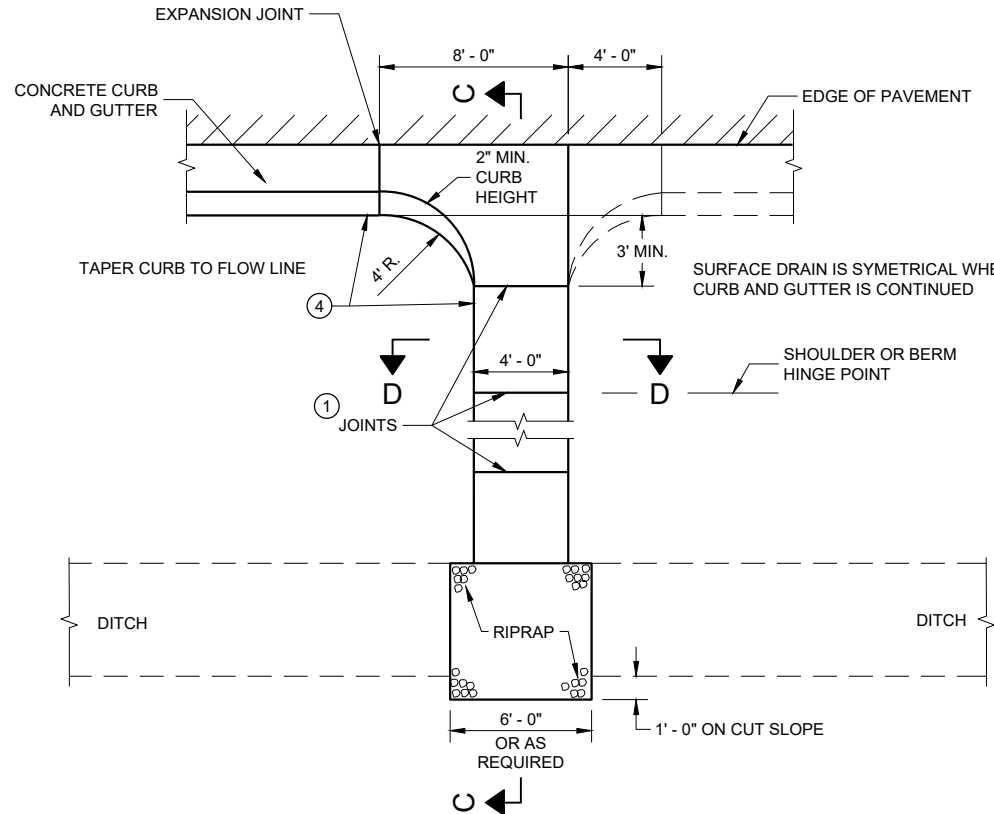
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING
FOR FLUME

PLAN VIEW
FLUME AT CURB END



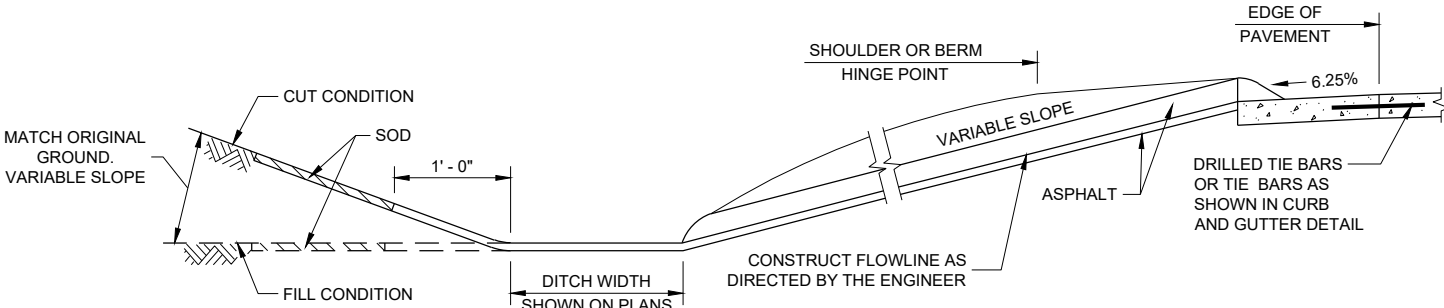
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

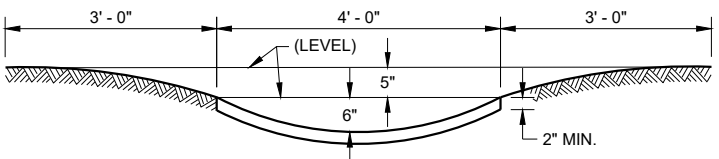
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

4" X 4" - W3.0 X W3.0 CONCRETE REINFORCEMENT SHALL BE IN ACCORDANCE WITH AASHTO SPECIFICATION M55.

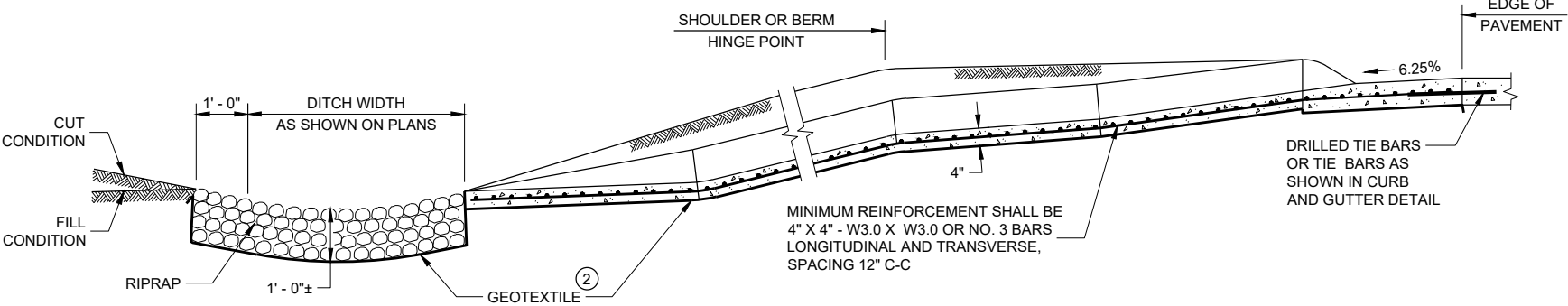
- JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



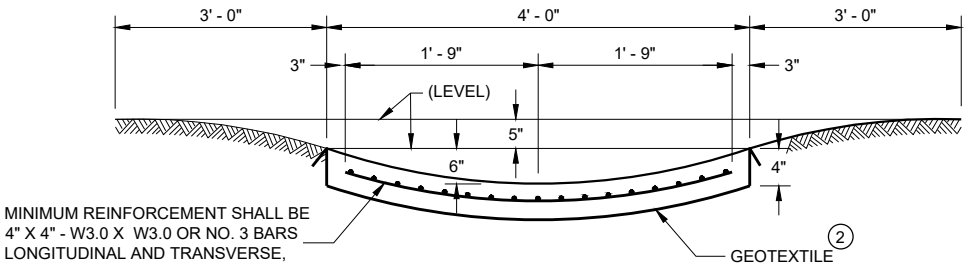
SECTION A - A



SECTION B - B



SECTION C - C

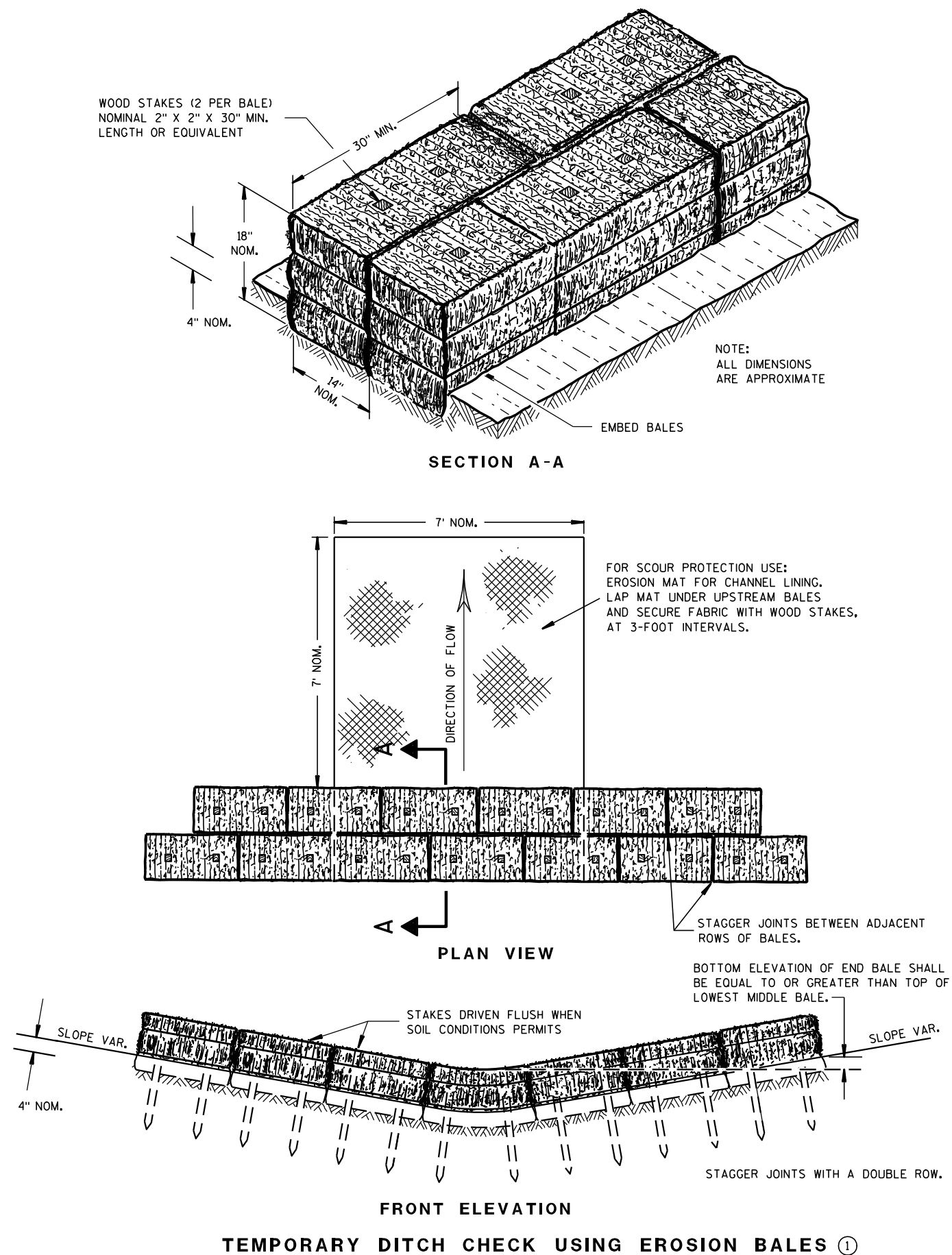


SECTION D - D

CONCRETE SURFACE
DRAINS AND
ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

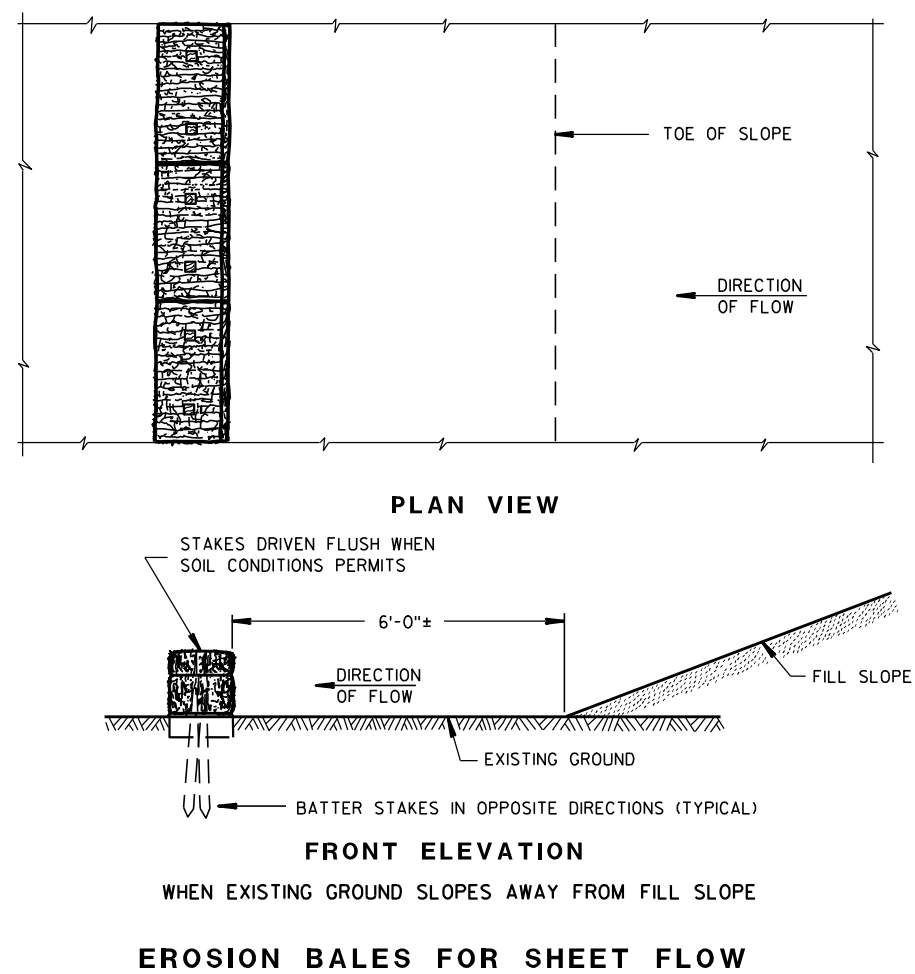
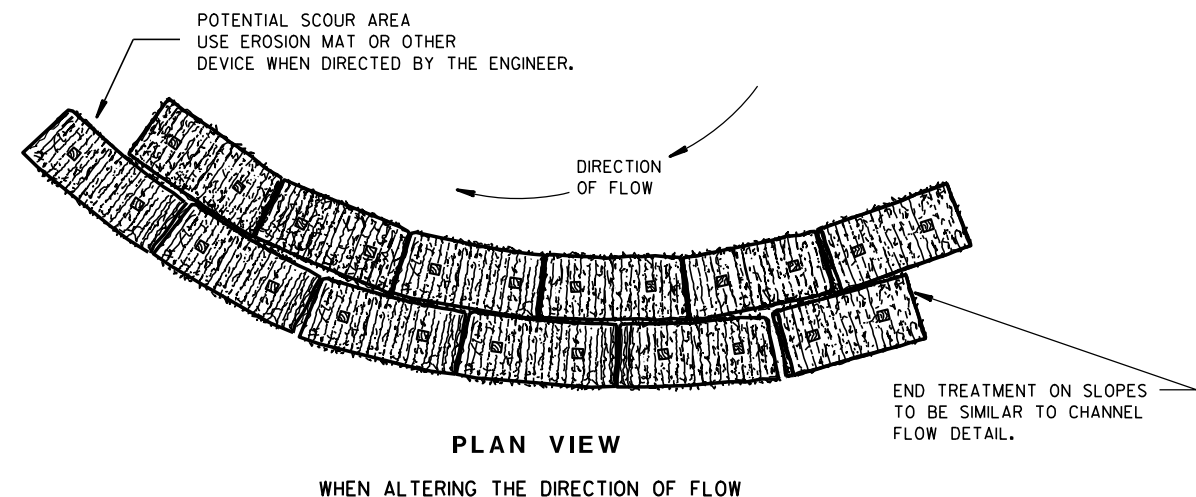
APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER
94
FHWA



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

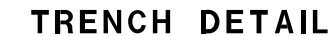
6/04/02
DATE/S/ Beth Connors
CHIEF ROADWAY DEVELOPER

ENGINEER

FHWA



- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1½" X 1½" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

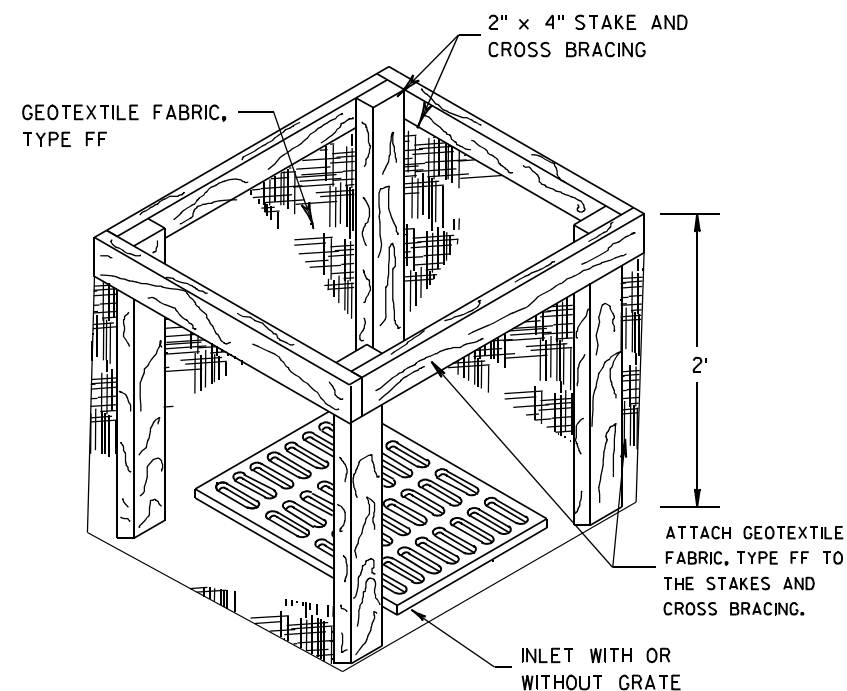
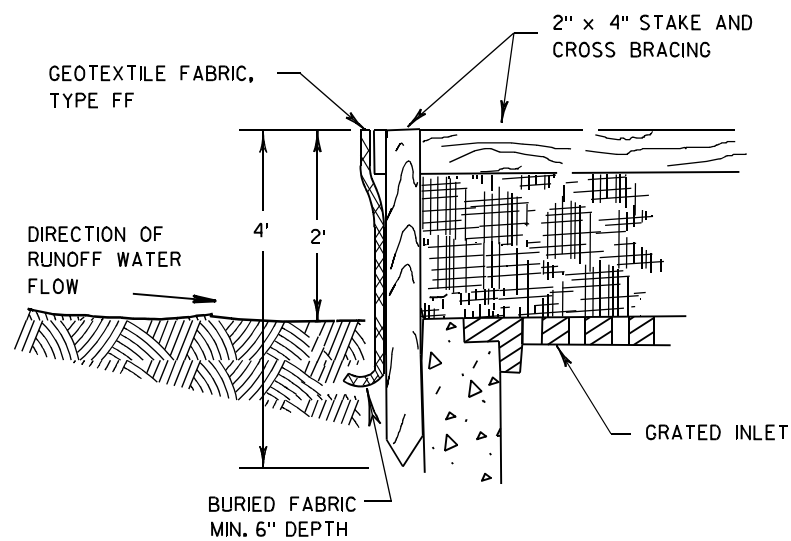
APPROVED
4-29-05
DATE

/S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT

96

ENGINEER

FHWA



INLET PROTECTION, TYPE A

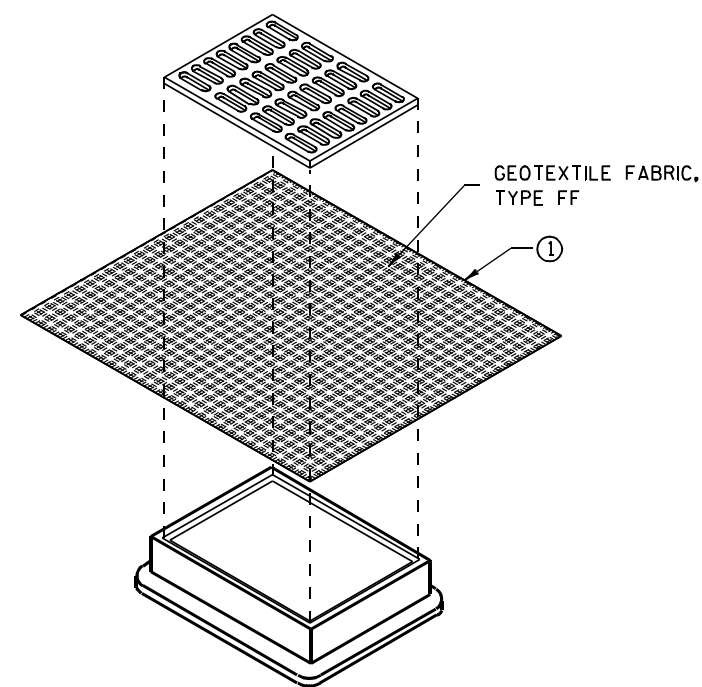
GENERAL NOTES

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

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

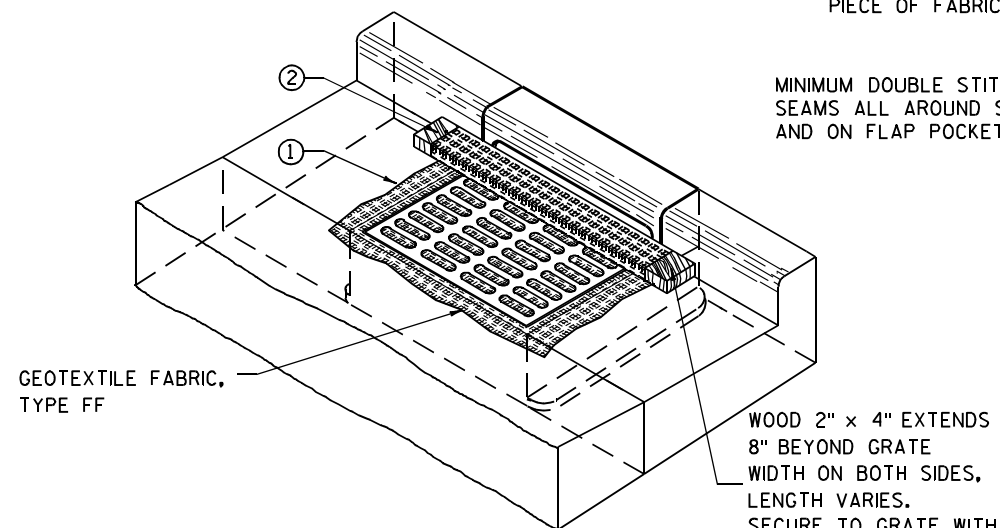
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

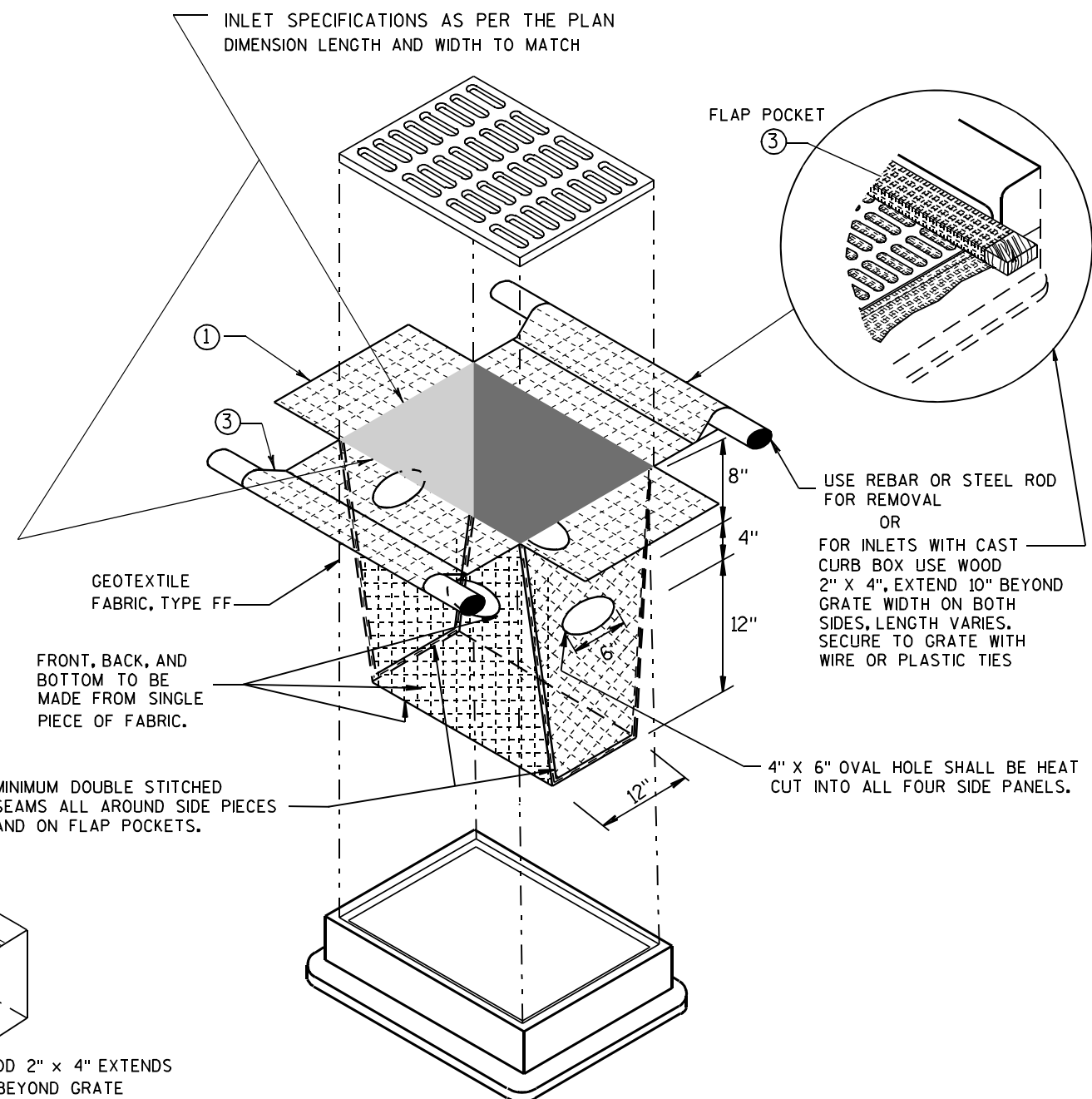
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



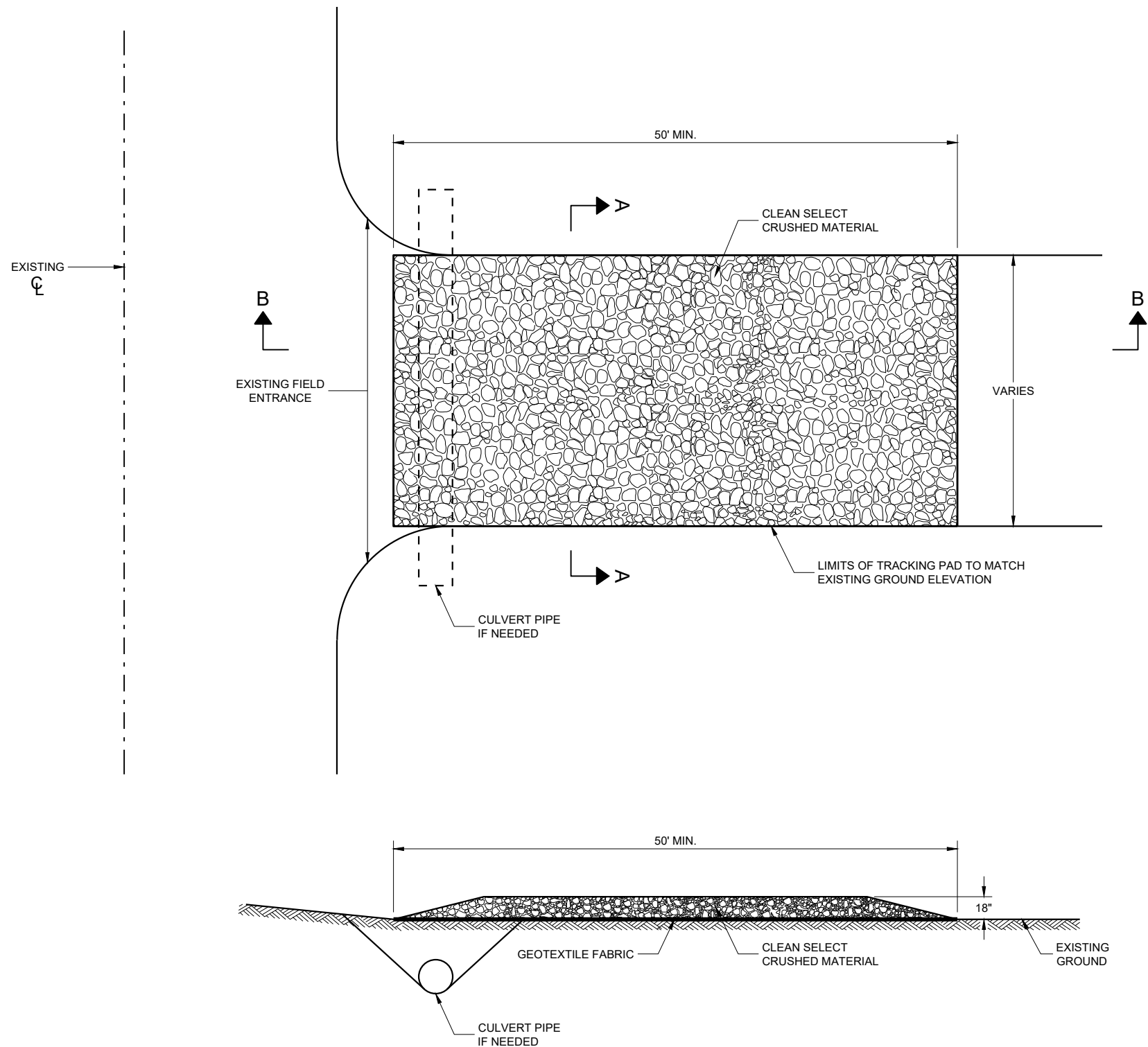
INLET PROTECTION, TYPE D

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 97
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



GENERAL NOTES

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

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

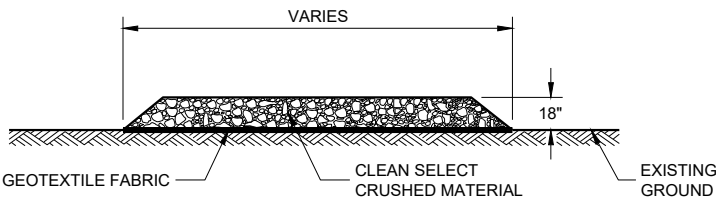
TRACKING PAD TO BE REMOVED AFTER CONSTRUCTION IS COMPLETED.

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

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

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

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



SECTION A - A

TRACKING PAD

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

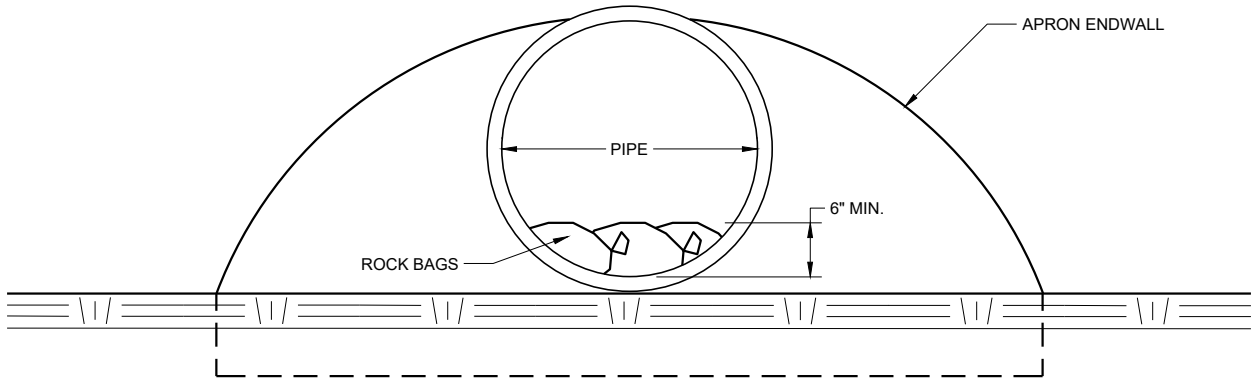
3/24/2011

DATE

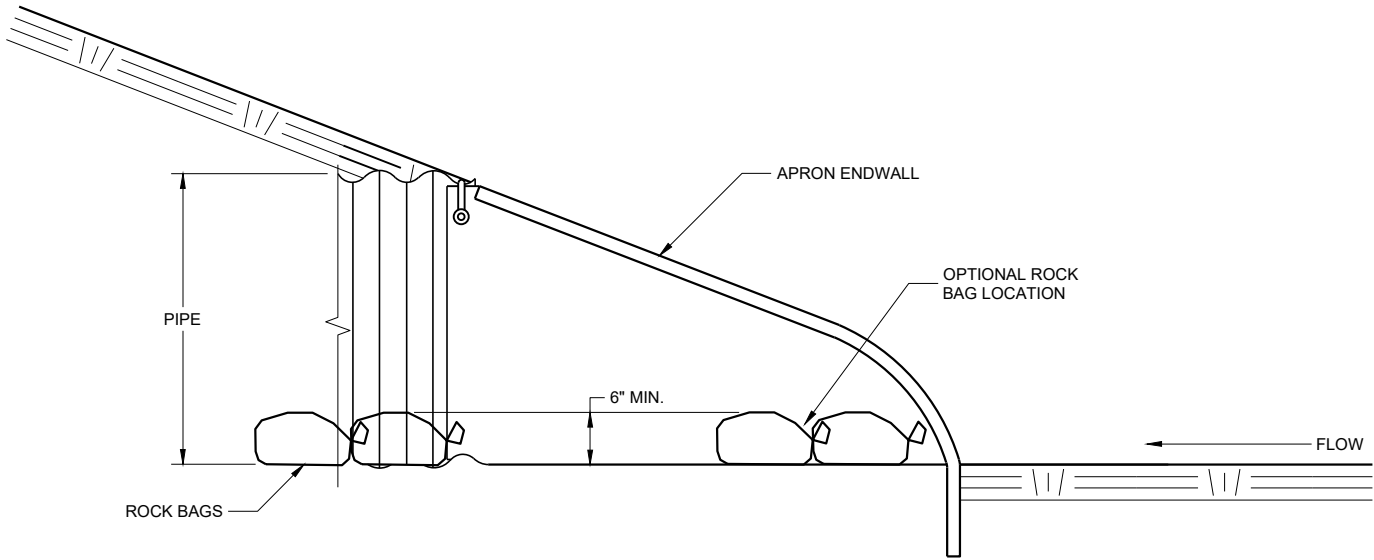
FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT ENGINEER

98



END VIEW



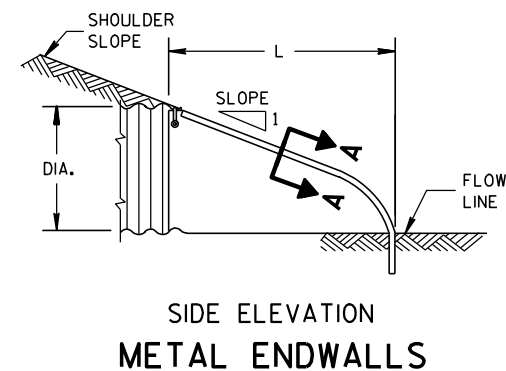
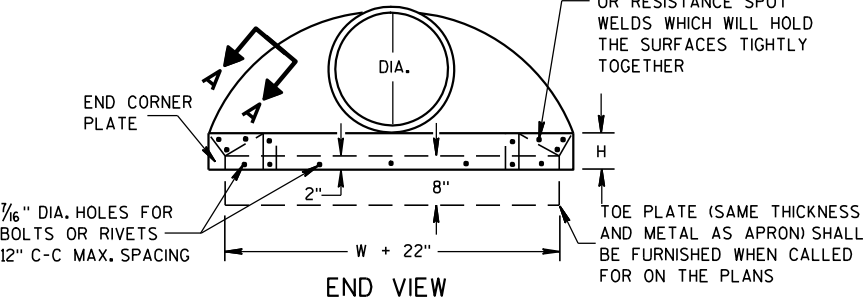
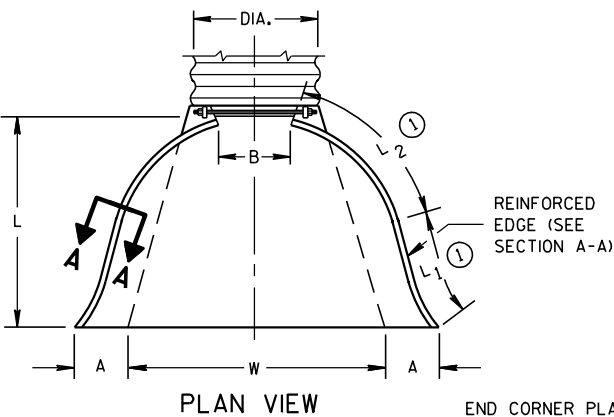
SIDE VIEW

CULVERT PIPE CHECK
(INSTALL ON INLET END ONLY)

CULVERT PIPE CHECK		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED May 2019 DATE	/S/ Daniel Schave EROSION CONTROL ENGR	99

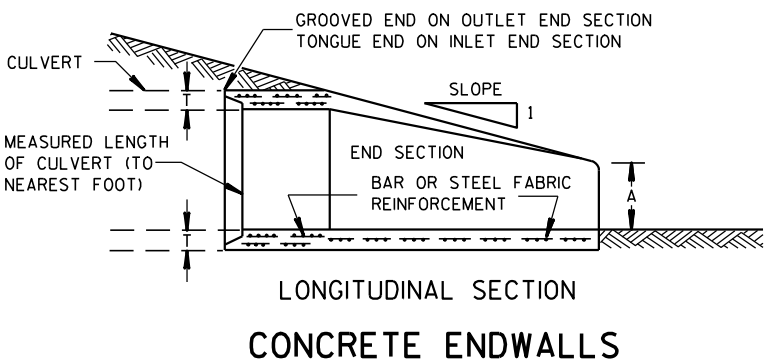
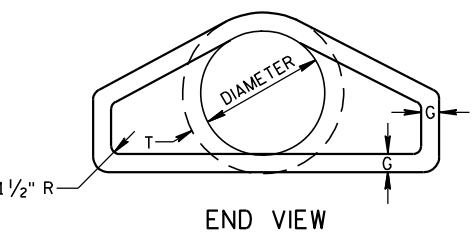
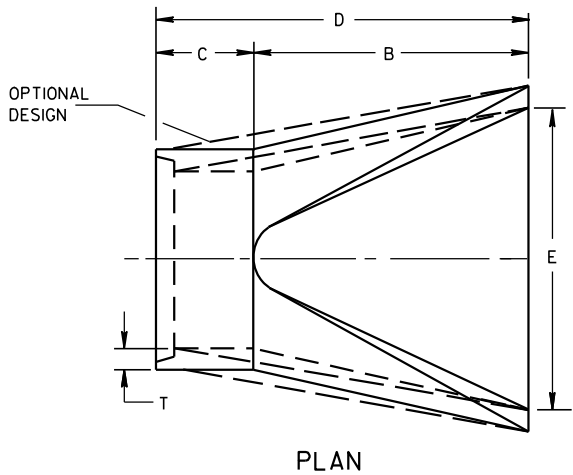
METAL APRON ENDWALLS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)		DIMENSIONS (Inches)						APPROX. SLOPE	BODY	
	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1½")	L ₁ ①	L ₂ ①			W (±2")
12	.064	.060	6	6	6	21	12	17½	24	2½ to 1	1 Pc.
15	.064	.060	7	8	6	26	14	21¾	30	2½ to 1	1 Pc.
18	.064	.060	8	10	6	31	15	28¼	36	2½ to 1	1 Pc.
21	.064	.060	9	12	6	36	18	29⅝	42	2½ to 1	1 Pc.
24	.064	.075	10	13	6	41	18	37¼	48	2½ to 1	1 Pc.
30	.079	.075	12	16	8	51	18	52¼	60	2½ to 1	1 Pc.
36	.079	.105	14	19	9	60	24	59¾	72	2½ to 1	2 Pc.
42	.109	.105	16	22	11	69	24	75⅝	84	2½ to 1	2 Pc.
48	.109	.105	18	27	12	78	24	81	90	2¼ to 1	3 Pc.
54	.109	.105	18	30	12	84	30	85½	102	2¼ 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	1½ to 1	3 Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1½ to 1	3 Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1½ to 1	3 Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1½ to 1	3 Pc.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

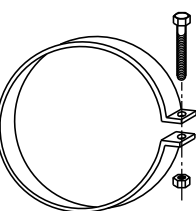


REINFORCED CONCRETE APRON ENDWALLS								
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE
	T	A	B	C	D	E	G	
12	2	4	24	48 ⁷ / ₈	72 ¹ / ₈	24	2	3 to 1
15	2 ¹ / ₄	6	27	46	73	30	2 ¹ / ₄	3 to 1
18	2 ¹ / ₂	9	27	46	73	36	2 ¹ / ₂	3 to 1
21	2 ³ / ₄	9	36	37 ¹ / ₂	73 ¹ / ₂	42	2 ³ / ₄	3 to 1
24	3	9 ¹ / ₂	43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

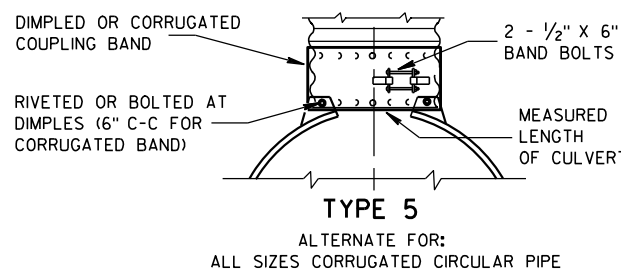
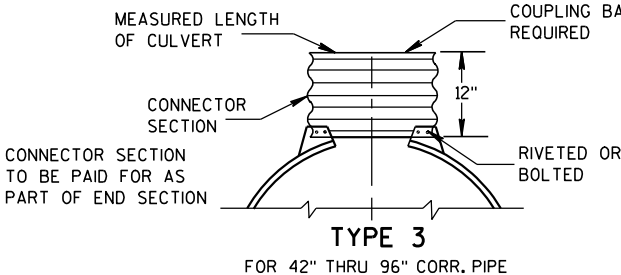
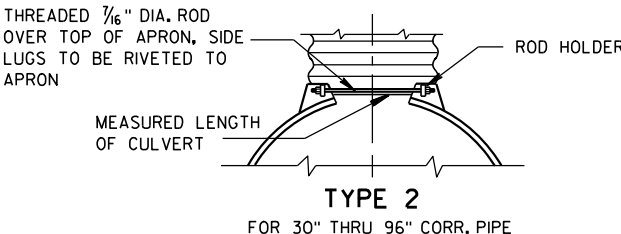
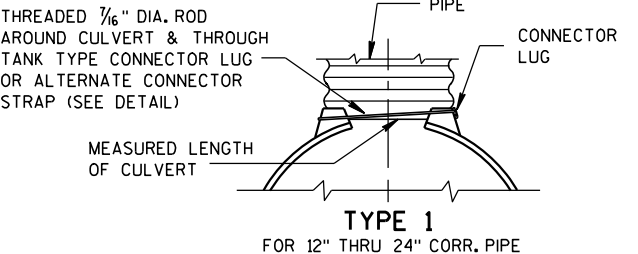
* MINIMUM
** MAXIMUM



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



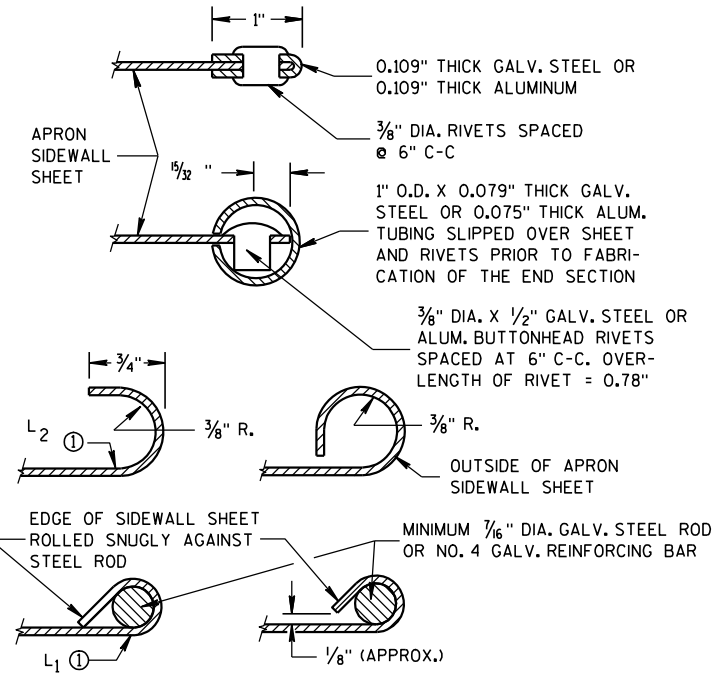
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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



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.

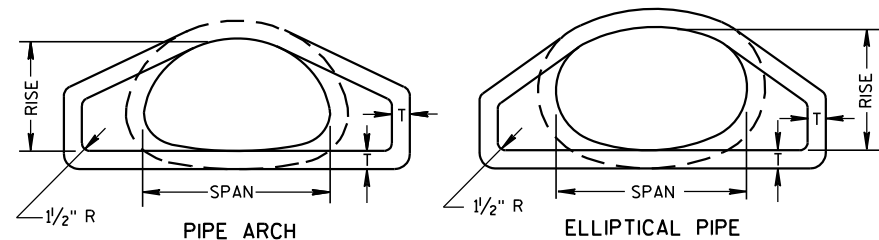
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

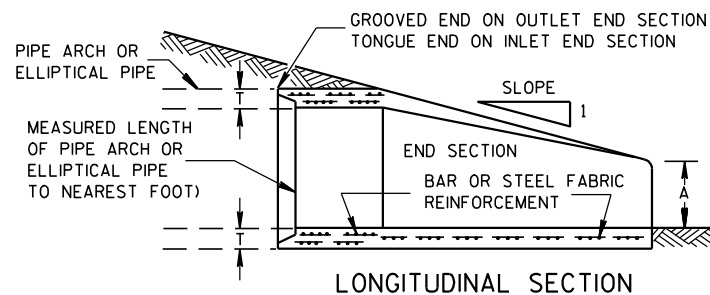
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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. Rhinehart CHIEF ROADWAY DEVELOP 100	NEER	
FHWA			

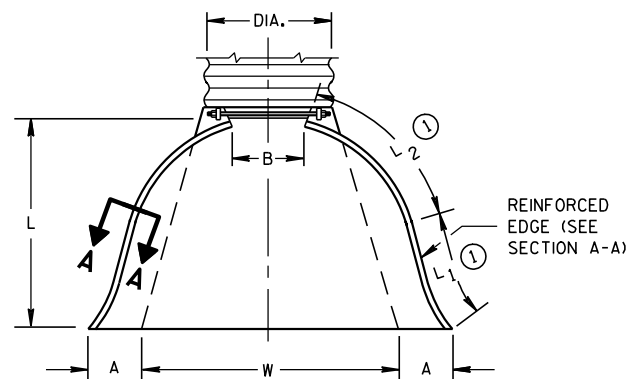


END VIEW



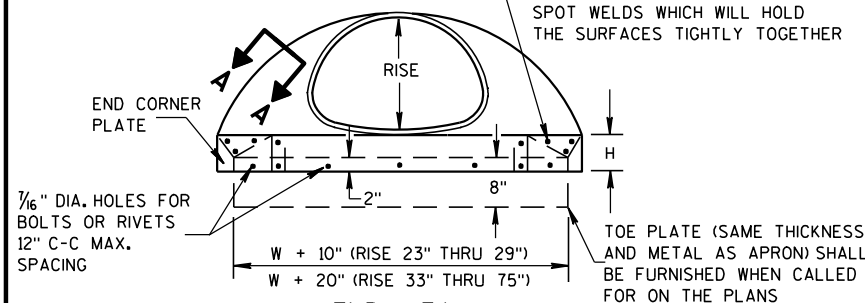
LONGITUDINAL SECTION

CONCRETE ENDWALLS

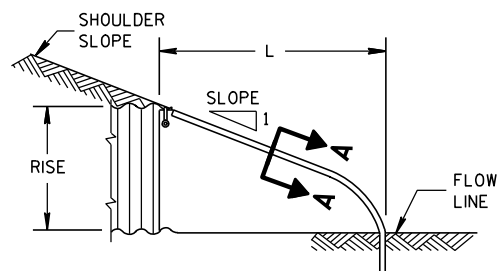
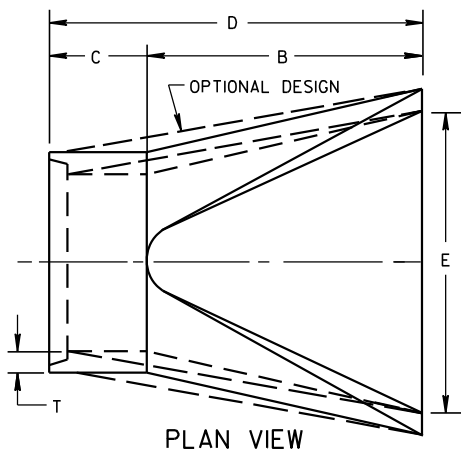


PLAN VIEW

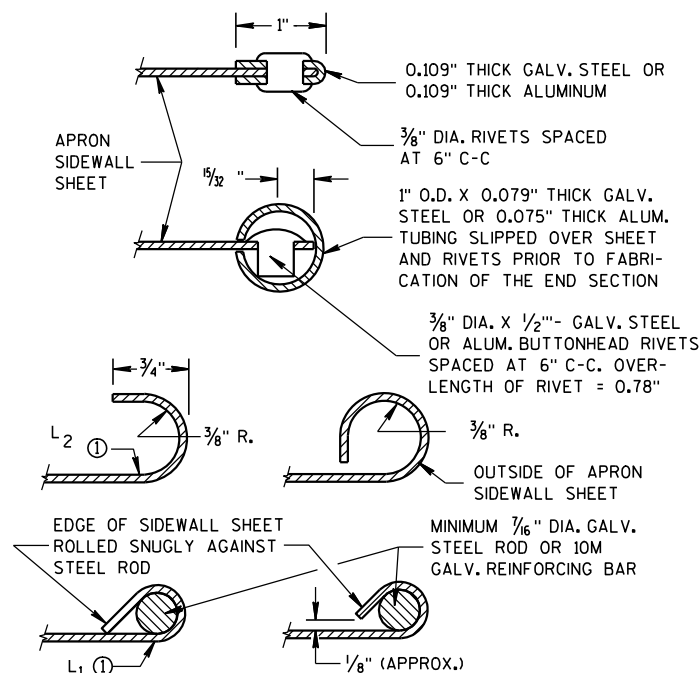
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



END VIEW

SIDE ELEVATION
METAL ENDWALLS

PLAN VIEW



SECTION A-A

2- 2 ² / ₃ " x 1 ¹ / ₂ " CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 ¹ / ₂ ")	L ₁ ①	L ₂ ①	W (±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 ¹ / ₂ to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 ³ / ₈	36	2 ¹ / ₂ to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 ³ / ₄	42	2 ¹ / ₂ to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 ¹ / ₂	48	2 ¹ / ₂ to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 ⁵ / ₈	60	2 ¹ / ₂ to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 ³ / ₈	75	2 ¹ / ₂ to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 ³ / ₄	85	2 ¹ / ₂ to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 ¹ / ₂ to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 ³ / ₄	102	2 ¹ / ₄ to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 ¹ / ₄	114	2 ¹ / ₄ to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

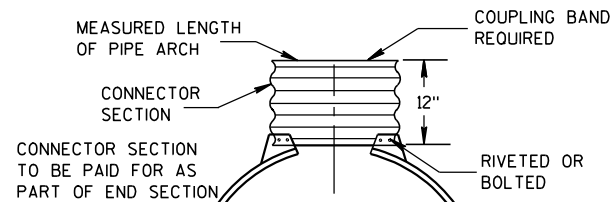
3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L ₁ ①	L ₂ ①	W (±2")		
48	53	41	.109	.105	18	26	12	63	24	72¾	90	2½ to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30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

NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES

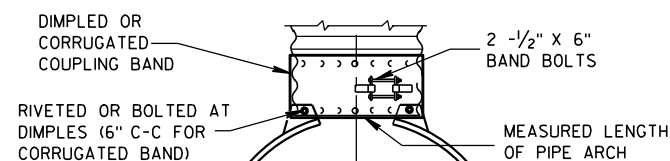
TYPE 2

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



TYPE 3

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



TYPE 5

ALTERNATE FOR:

ALL SIZES CORRUGATED PIPE ARCHES

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

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	29	18	3	8 1/2	39	33	72	48	3 to 1
30	36	22	3 1/2	9 1/2	50	46	96	60	3 to 1
36	44	27	4	11 1/8	60	36	96	72	3 to 1
42	51	31	4 1/2	15 1/16	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5 1/2	25 1/2	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28 1/2	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE

EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	30	19	3 1/4	8 1/2	39	33	72	48	3 to 1
30	38	24	3 3/4	9 1/2	54	18	72	60	3 to 1
36	45	29	4 1/2	11 1/8	60	24	84	72	2 1/2 to 1
42	53	34	5	15 1/4	60	36	96	78	2 1/2 to 1
48	60	38	5 1/2	21	60	36	96	84	2 1/2 to 1
54	68	43	6	25 1/2	60	36	96	90	2 1/2 to 1
60	76	48	6 1/2	30	60	36	96	96	2 1/2 to 1

**NOMINAL SIZE

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPESTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94

DATE

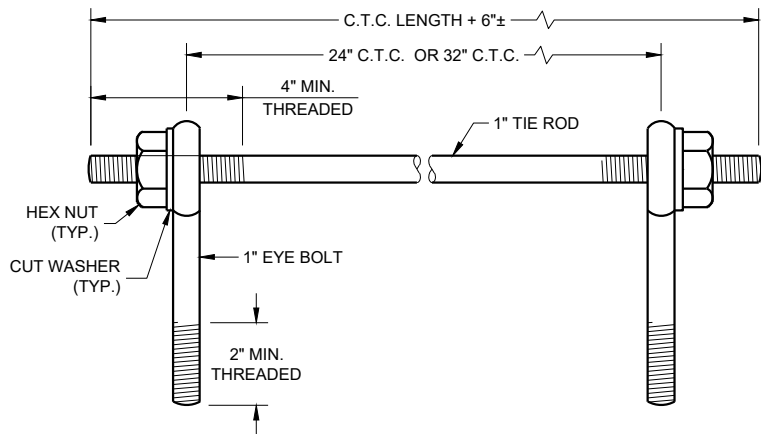
FHWA

/S/ Rory L. Rhinehart

CHIEF ROADWAY DEVELOPER

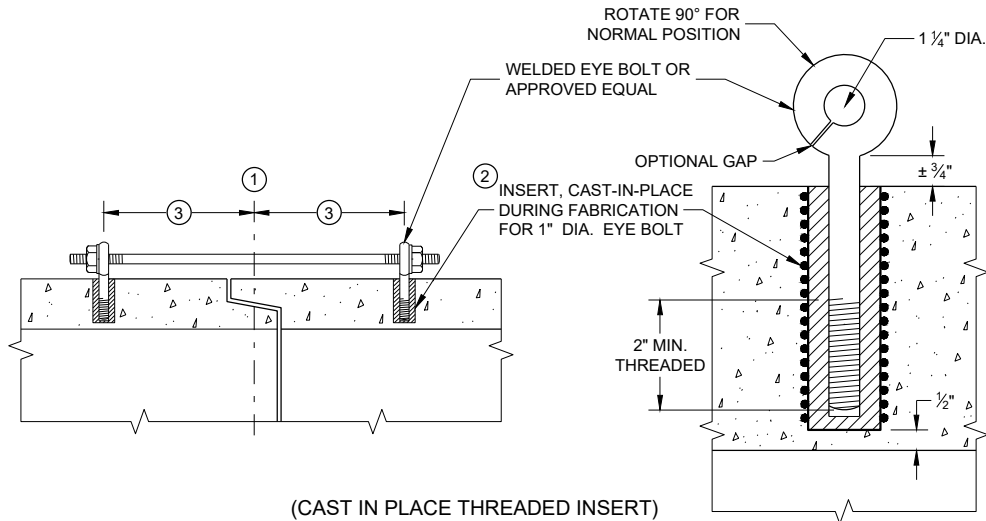
101

ENGINEER



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)
LONGITUDINAL SECTIONS

GENERAL NOTES

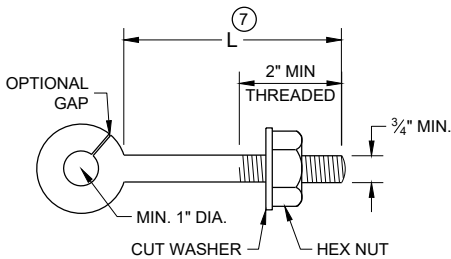
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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

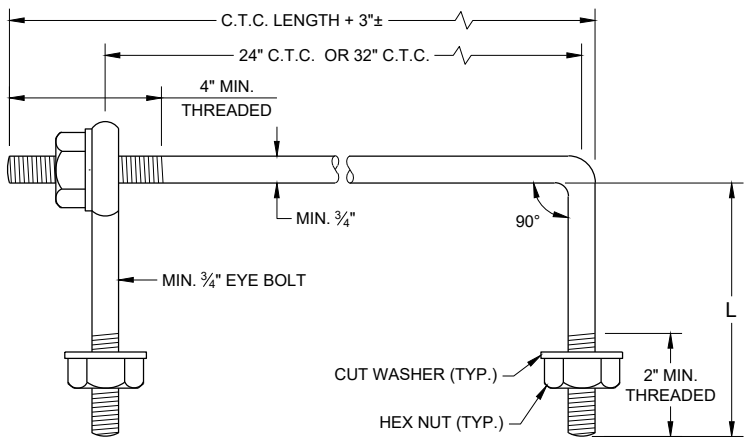
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 1 CENTER LINE OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- 2 THE INSIDE OF THE THREADED INSERTS SHALL BE CLEAN TO ALLOW THE INSERTION OF THREADED EYE BOLTS.
- 3 HOLES SHALL BE CAST-IN-PLACE OR DRILLED PER THE APPLICABLE DETAIL, AND EQUAL DISTANCE FROM THE CENTERLINE OF THE JOINT.
- 4 BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2 INCHES.
- 5 OPENING TO BE ROD DIAMETER PLUS 1 INCH.
- 6 LENGTH ADEQUATE TO EXTEND TO WITHIN 1/2 INCH OF THE INNER SURFACE OF THE PIPE.
- 7 EYE BOLT LENGTH DETERMINED BY WALL THICKNESS, BELL THICKNESS AND BOLT PROJECTION INSIDE PIPE.

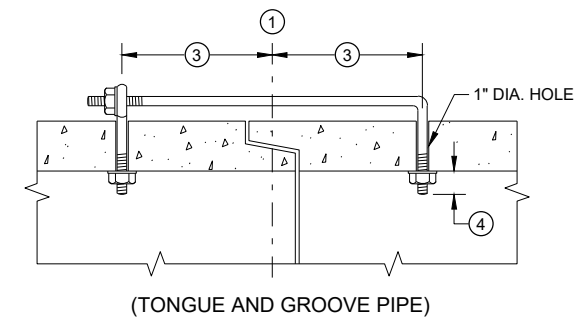


EYE BOLT 7

NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" OR 38" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.



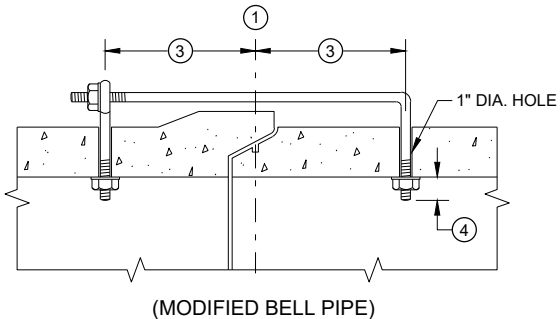
EYE BOLT AND TIE ROD



LONGITUDINAL SECTION

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

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

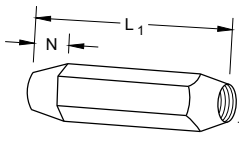


(MODIFIED BELL PIPE)

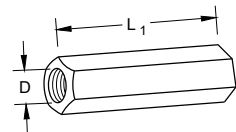
ADJUSTABLE TIE ROD TABLE

PIPE DIAMETER	TIE ROD DIAMETER	D	L ₁	N
12 - 60	5/8	5/8	5	1/2
66 - 84	3/4	3/4	5	1/2
90 - 144	1	1	7	1 1/16

DIMENSIONS SHOWN ARE IN INCHES

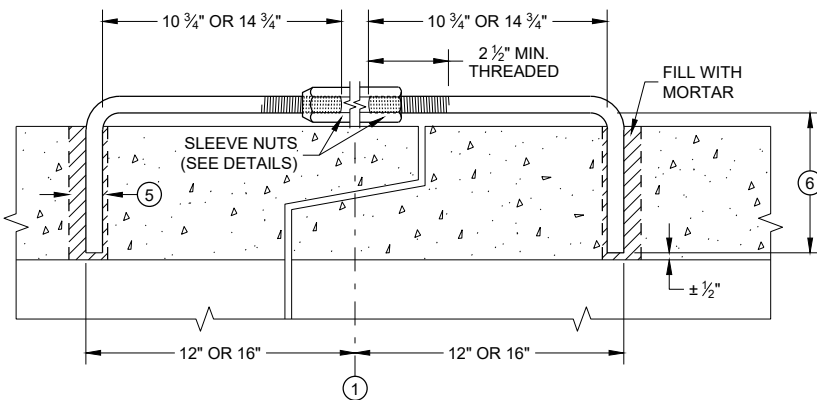


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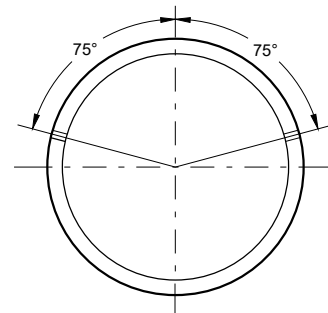
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



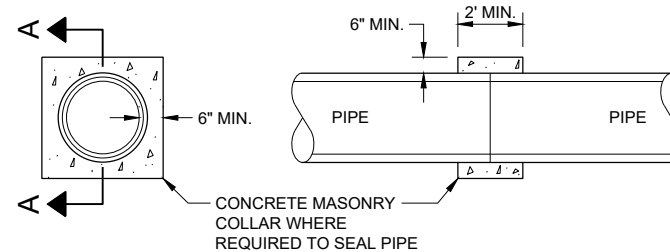
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



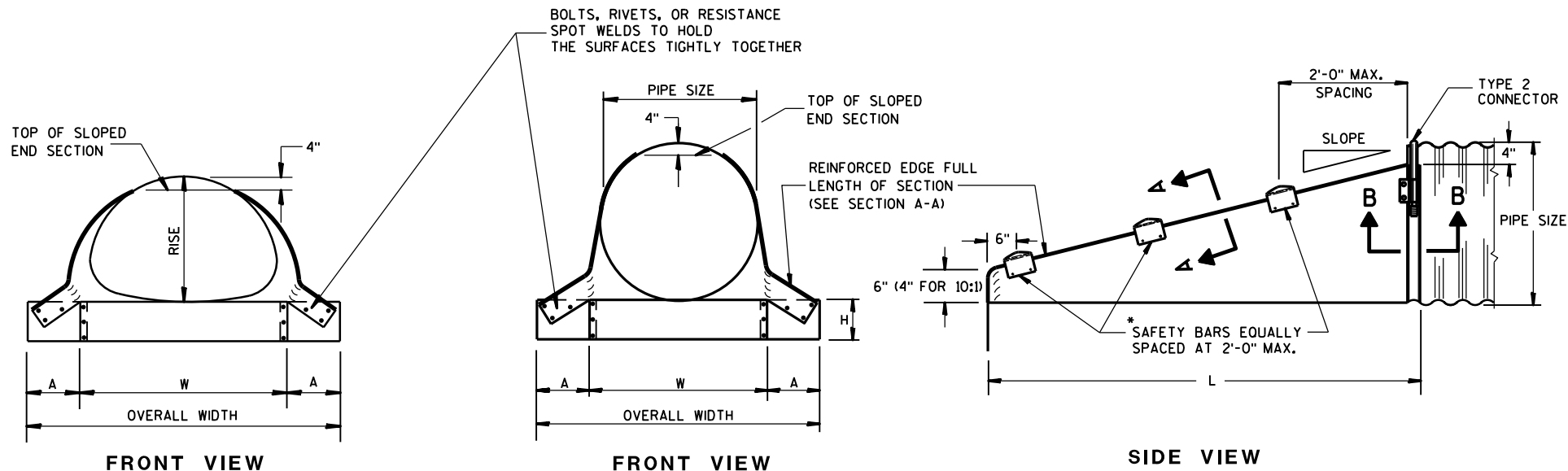
SECTION A - A

CONCRETE COLLAR DETAIL

JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA 102



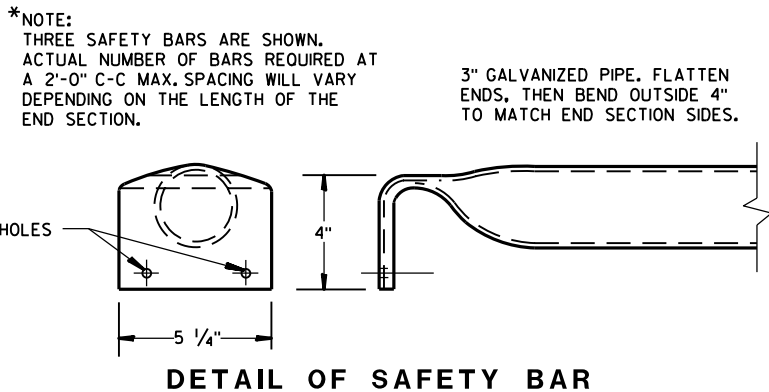
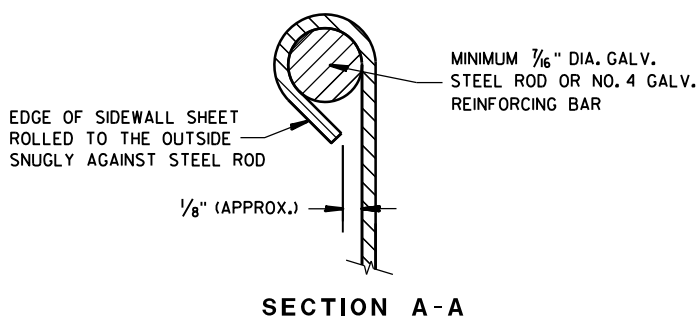
GENERAL NOTES

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

SLOPED END SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, SECTION 521 FOR STEEL APRON ENDWALLS.

SAFETY BARS SHALL BE FABRICATED FROM GALVANIZED STEEL PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL.

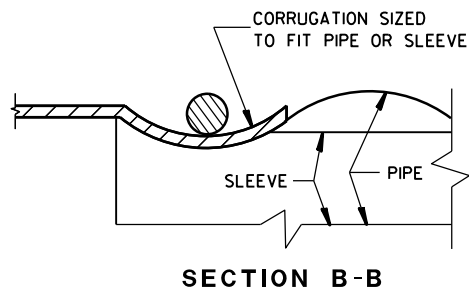
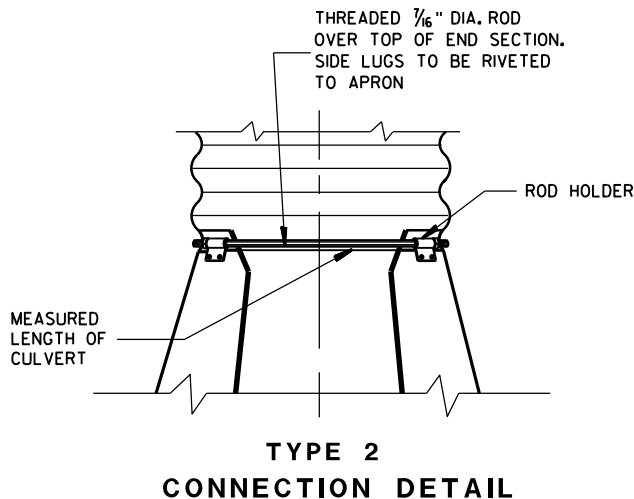
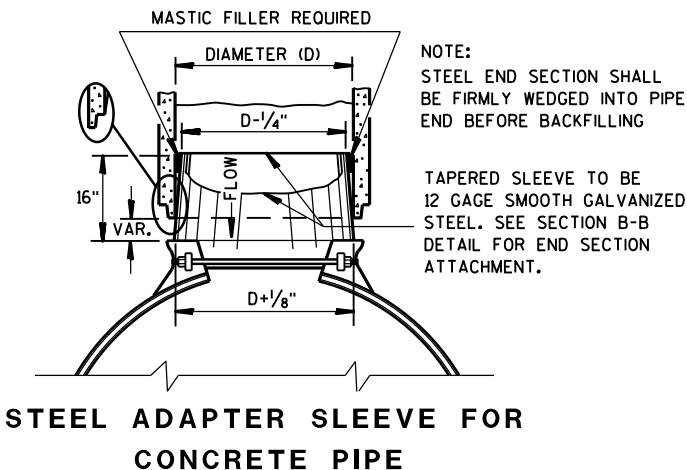
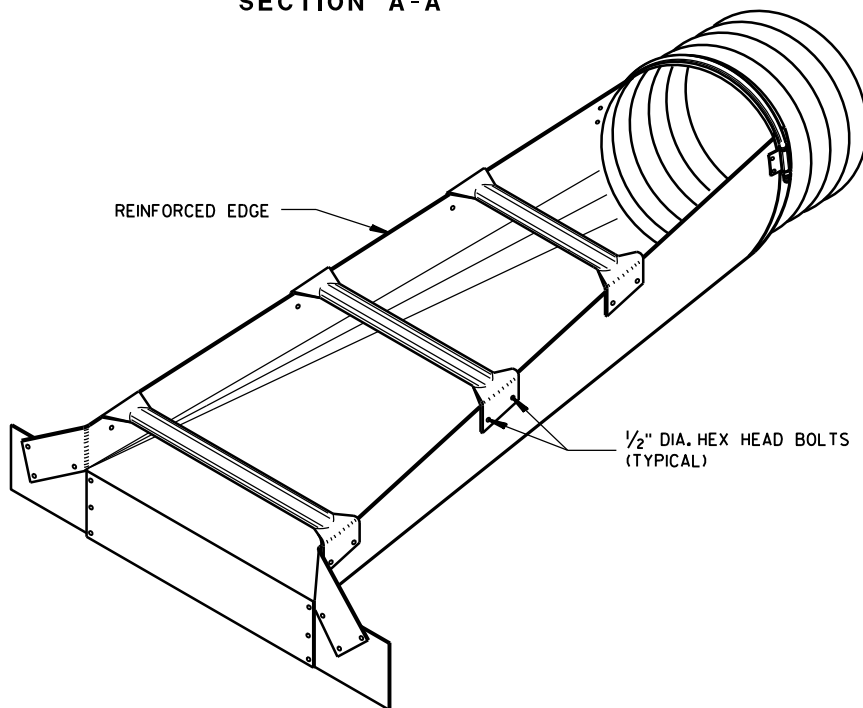
STEEL APRON ENDWALLS FOR CULVERT PIPE SLOPED SIDE DRAINS											
PIPE DIA. (IN.)	MIN. THICK. (Inches)	DIMENSIONS (Inches)				L DIMENSIONS					
		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	.064	8	6	21	37	4:1	20	6:1	30	10:1	70
18	.064	8	6	24	40	4:1	32	6:1	48	10:1	100
21	.064	8	6	27	43	4:1	44	6:1	66	10:1	130
24	.064	8	6	30	46	4:1	56	6:1	84	10:1	160
30	.109	12	9	36	60	4:1	80	6:1	120	10:1	220
36	.109	12	9	42	66	4:1	104	6:1	156	10:1	280
42	.109	16	12	48	80	4:1	128	6:1	192	—	—
48	.109	16	12	54	86	4:1	152	6:1	228	—	—
54	.109	16	12	60	92	4:1	176	6:1	264	—	—
60	.109	16	12	66	98	4:1	200	6:1	300	—	—



STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED SIDE DRAINS													
EQUIV. DIA. (inches)	(inches)		MIN. THICK. (inches) ①	DIMENSIONS (inches)				L DIMENSIONS					
	SPAN	RISE		A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
15	17	13	.064 *	7	6	30	44	4:1	19	6:1	30	10:1 ②	70
18	21	15	.064 *	8	6	27	43	4:1	20	6:1	30	10:1	70
21	24	18	.064 *	8	6	30	46	4:1	32	6:1	48	10:1	100
24	28	20	.064 *	8	6	34	50	4:1	40	6:1	60	10:1	120
30	35	24	.079 *	12	9	41	65	4:1	56	6:1	84	10:1	160
36	42	29	.109 *	12	9	48	72	4:1	76	6:1	114	10:1	210
42	49	33	.109	16	12	55	87	4:1	92	6:1	138	——	——
48	57	38	.109	16	12	63	95	4:1	112	6:1	168	——	——
54	64	43	.109	16	12	70	102	4:1	132	6:1	198	——	——

① * MINIMUM THICKNESS OF ALL 10:1 SLOPED SIDE DRAINS IS 0.109".

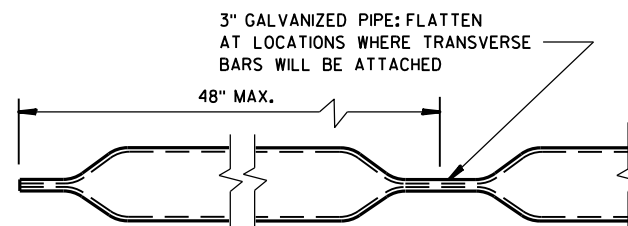
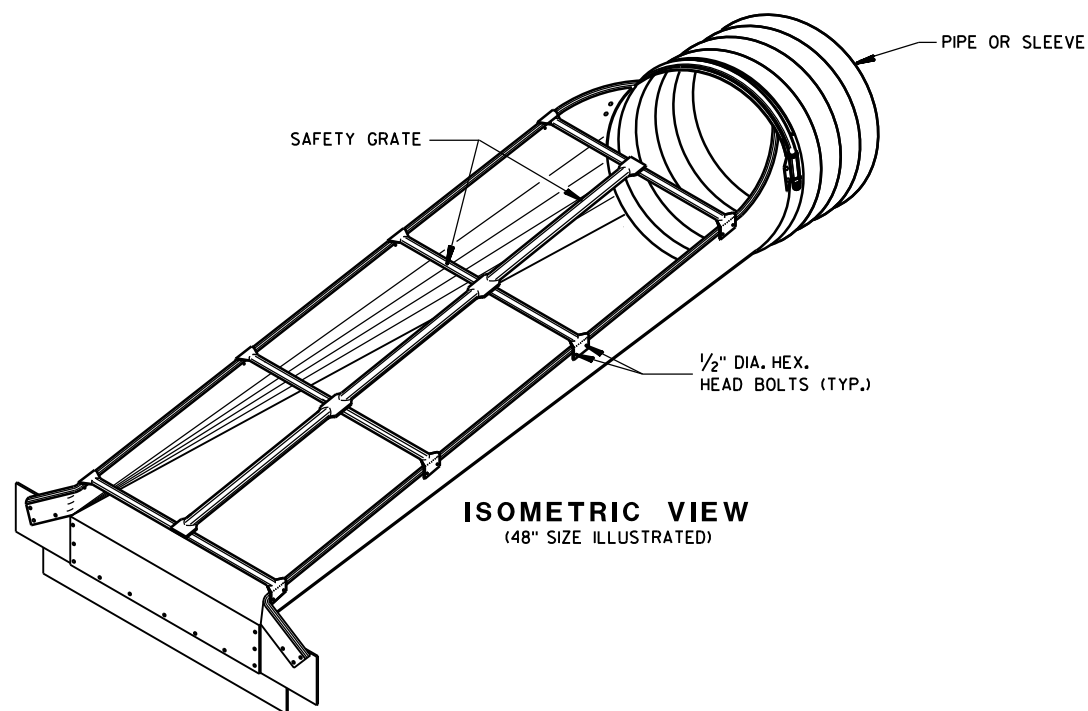
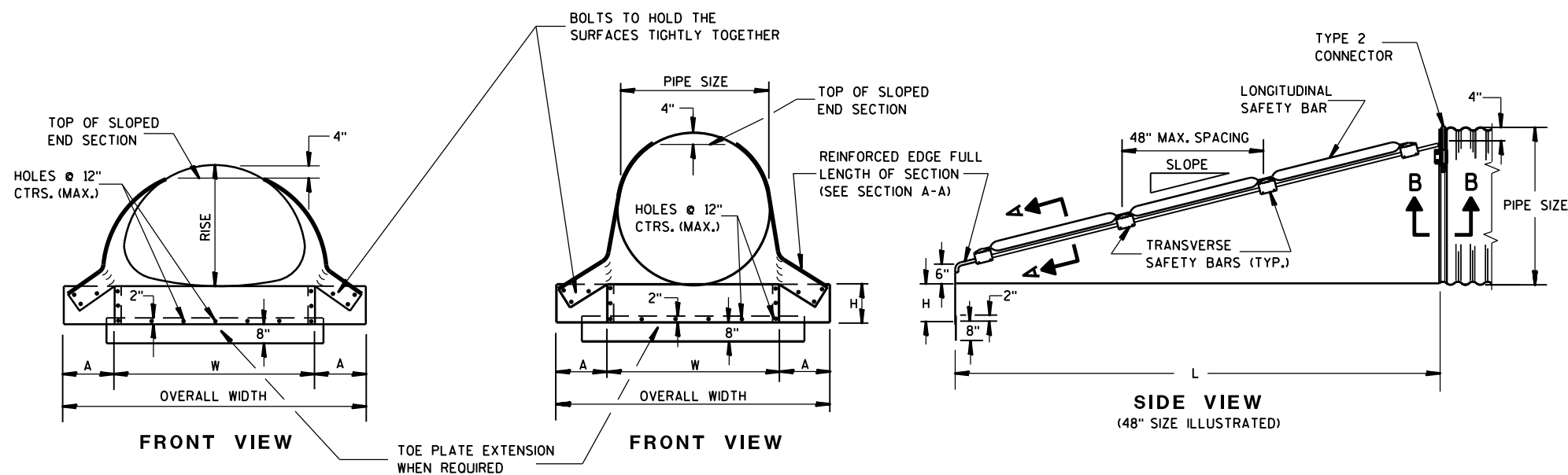
② ACTUAL SLOPE GREATER THAN 10:1.



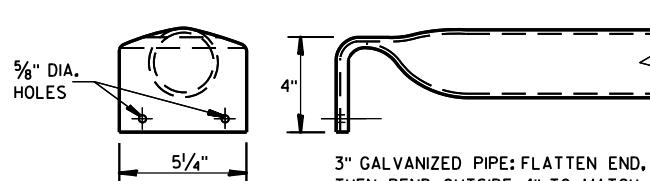
STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED SIDE DRAINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

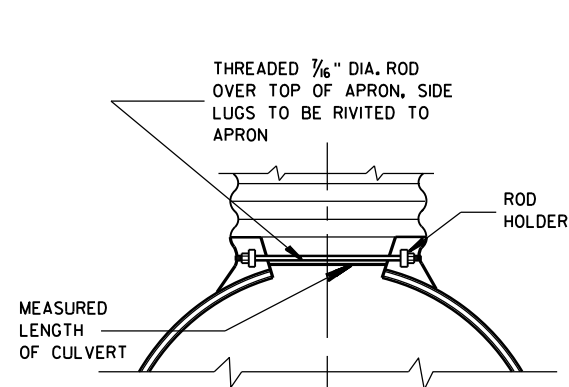
APPROVED
9/14/2012
DATE
/S/ Jerry H. Zoog
ROADWAY STANDARDS ENGINEER
103
NT
FHWA



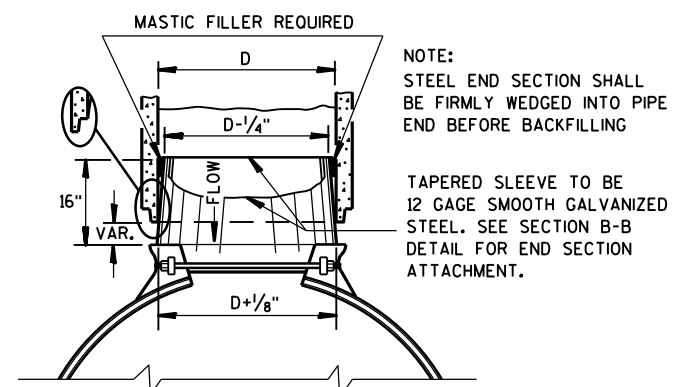
LONGITUDINAL SAFETY BAR



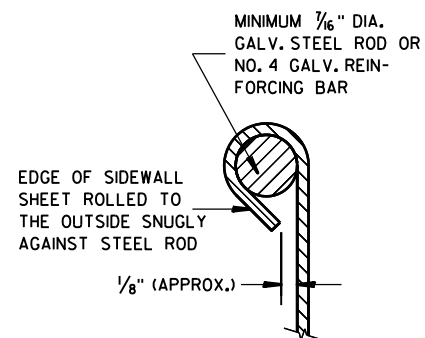
TRANSVERSE SAFETY BAR



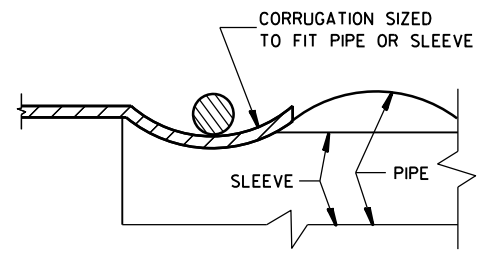
TYPE 2 CONNECTOR DETAIL



STEEL ADAPTER SLEEVE FOR CONCRETE PIPE



SECTION A-A



SECTION B-B

GENERAL NOTES

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

SAFETY GRATES SHALL BE FABRICATED FROM 3-INCH DIAMETER GALVANIZED PIPE MEETING THE REQUIREMENTS OF ASTM A-53, GRADE B, SCHEDULE 40 OR APPROVED EQUAL. THE LONGITUDINAL BAR SHALL BE WELDED TO THE TRANSVERSE BARS WHERE THE BARS CROSS. THE NUMBER OF TRANSVERSE BARS REQUIRED WILL VARY DEPENDING ON THE LENGTH OF THE END SECTION.

SLOPED STEEL ENDWALLS LOCATED AT THE ENDS OF CONCRETE CULVERT PIPE SHALL BE FURNISHED WITH STEEL ADAPTER SLEEVES.

STEEL APRON ENDWALLS FOR CULVERT PIPE CROSS DRAINS

PIPE DIA. (IN.)	MIN. THICK. IN.	GAGE	DIMENSIONS (inches)				L DIMENSIONS			
			A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
36	.109	12	12	9	42	66	4:1	104	6:1	156
42	.109	12	16	12	48	80	4:1	128	6:1	192
48	.109	12	16	12	54	86	4:1	152	6:1	228
54	.109	12	16	12	60	92	4:1	176	6:1	264
60	.109	12	16	12	66	98	4:1	200	6:1	300

STEEL APRON ENDWALLS FOR PIPE ARCH SLOPED CROSS DRAINS

EQUIV. DIA. (IN.)	INCHES		MIN. THICK. IN.	GAGE	DIMENSIONS (inches)				L DIMENSIONS			
	SPAN	RISE			A	H	W	OVERALL WIDTH	SLOPE	LENGTH INCHES	SLOPE	LENGTH INCHES
30	35	24	.079	14	12	9	41	65	4:1	56	6:1	84
36	42	29	.109	12	12	9	48	72	4:1	76	6:1	114
42	49	33	.109	12	16	12	55	87	4:1	92	6:1	138
48	57	38	.109	12	16	12	63	95	4:1	112	6:1	168
54	64	43	.109	12	16	12	70	102	4:1	132	6:1	198
60	71	47	.109	12	16	12	77	109	4:1	148	6:1	222

STEEL APRON ENDWALLS FOR CULVERT PIPE AND PIPE ARCH SLOPED CROSS DRAINS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

6/5/2012

DATE

FWHA

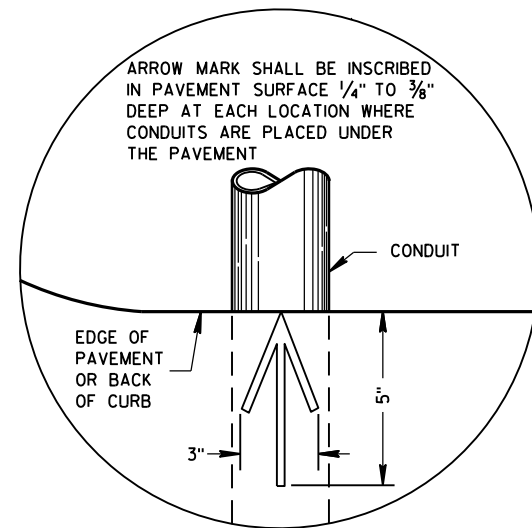
/S/ Jerry H. Zoega

ROADWAY STANDARDS

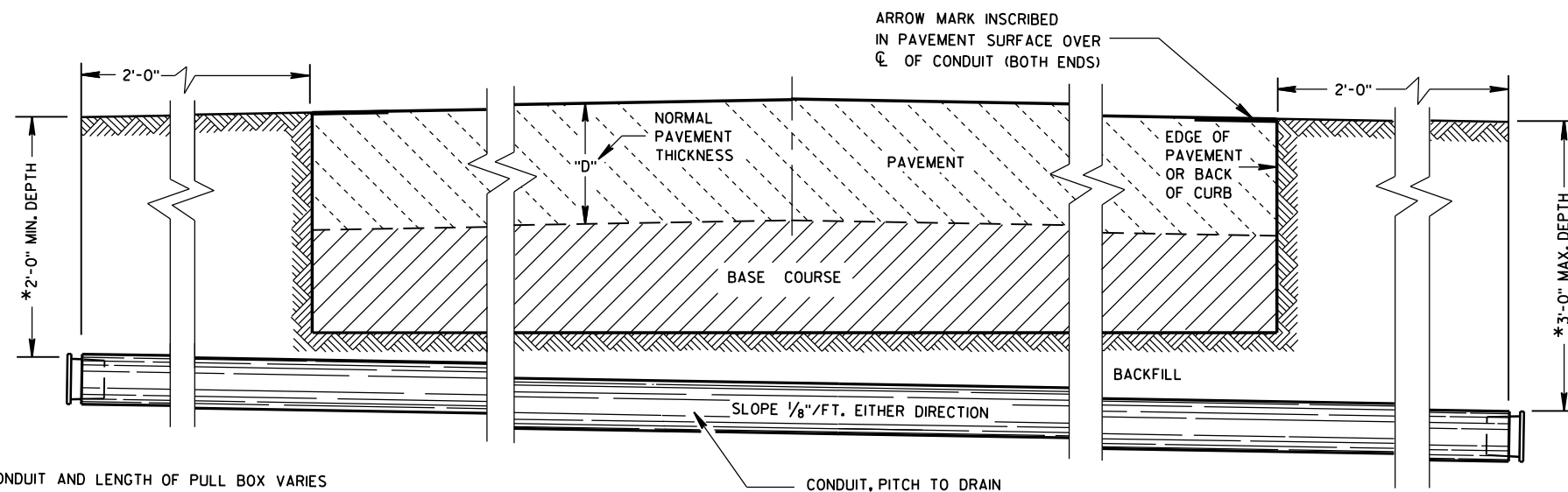
ENGINEER

104

VENT



PLAN VIEW
ARROW MARK



SIDE ELEVATION
DETAIL FOR CONDUIT UNDER PAVED HIGHWAYS

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

GENERAL NOTES

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

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

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

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

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

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

ALL METALLIC CONDUIT RACEWAY ENDS SHALL BE REAMED AND THREADED.

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

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

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

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

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

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

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

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

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

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

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

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

CONDUIT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

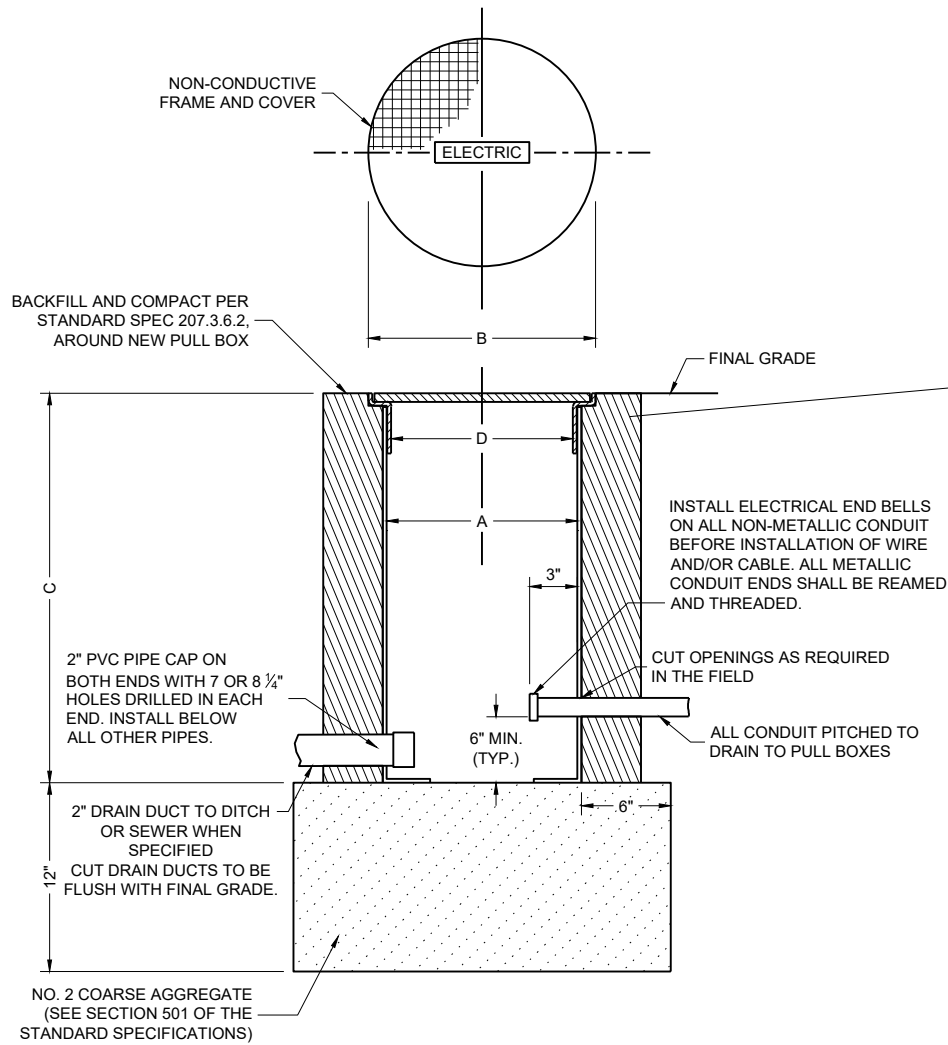
APPROVED
March, 2017 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL 105
FHWA

TABLE OF NOMINAL DIMENSIONS
AND WEIGHTS

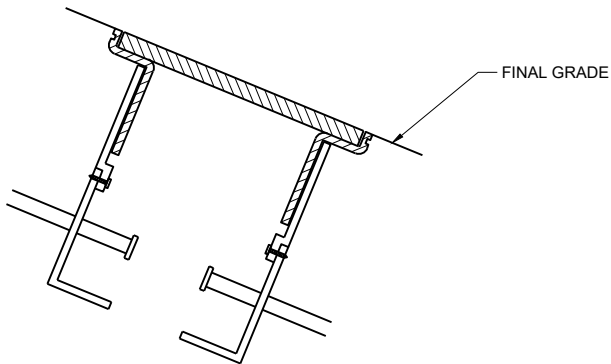
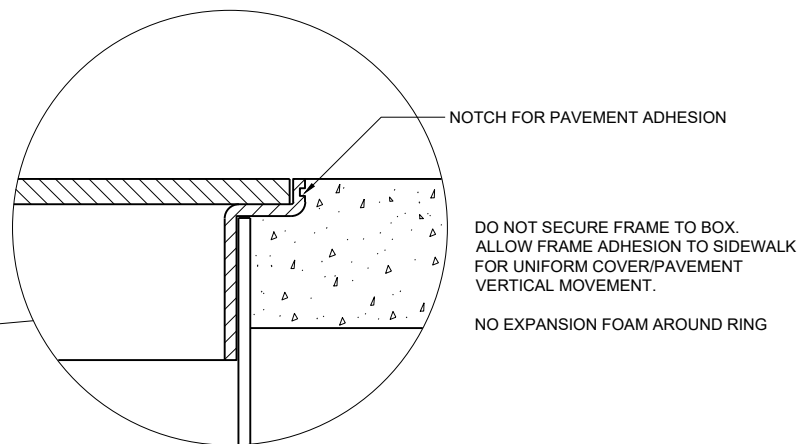
DIMENSION IN INCHES		NON- CONDUCTIVE PULL BOX	
BOX DIAMETER ** (INSIDE)	A	24	24
BOX OVERALL OUTSIDE DIAMETER	B	27	27
BOX LENGTH	C	36	42
FRAME OPENING	D	22 ½	22 ½
WEIGHT IN POUNDS *			
COVER		50	50
BOX ONLY		75	85

*THE ACTUAL WEIGHT OF THE COVER OR BOX ONLY MAY VARY NOT TO EXCEED 100 LBS INDIVIDUALLY.

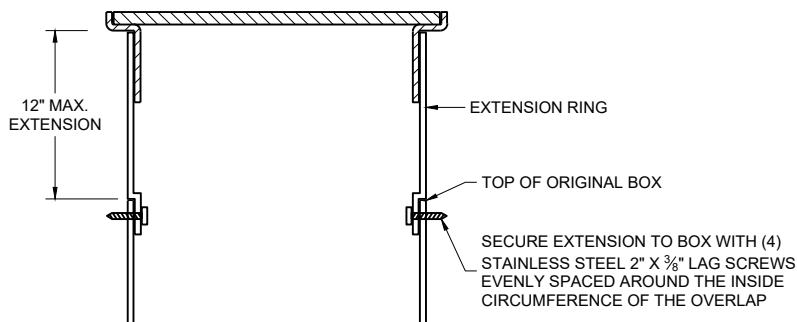
** DIAMETER VARIES FROM TOP TO BOTTOM WITH THE DIAMETER LARGER AT THE BOTTOM TO PREVENT FROST HEAVE.



NON-CONDUCTIVE PULL BOX

INSTALLED IN SOD
OR CRUSHED AGGREGATE

INSTALLED IN SIDEWALK



BOX EXTENSION

GENERAL NOTES

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

ALL BOXES, FRAMES AND COVERS SHALL BE SUITABLE FOR TIER 15 LOADING AS SPECIFIED IN ANSI/SCTE 77.

PROVIDE AN OPENING FOR TOOL ASSISTED COVER REMOVAL NOT LARGE ENOUGH TO PERMIT PASSAGE OF A SPHERE MORE THAN ½" DIAMETER

ENSURE COVER SURFACE IS SKID RESISTANT WITH A COEFFICIENT OF FRICTION OF AT LEAST 0.5 AND VERTICAL SURFACE DISCONTINUITIES LESS THAN ¼".

COVER SHALL BE MAGNETICALLY LOCATABLE.

BOXES AND EXTENSIONS ARE TRIMMABLE FOR CUSTOM LENGTHS. TRIMMED PIECES SHALL MAINTAIN A UNIFORM LENGTH.

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 ¼".

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

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

ENTIRE BOX MUST BE CONSTRUCTED OF NON-CONDUCTIVE MATERIALS WITH THE EXCEPTION OF STAINLESS STEEL FASTENERS AND MAGNETIC LOCATABLE DEVICE.

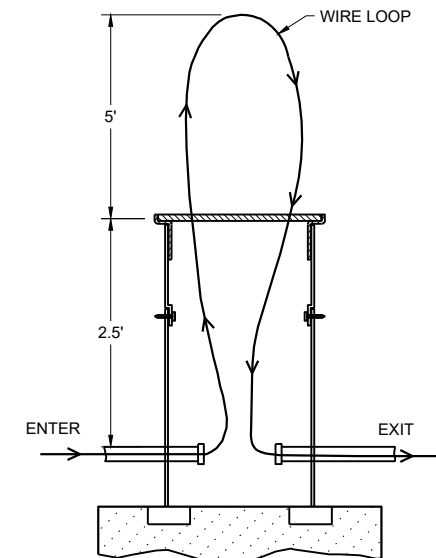
WHEN A PULL BOX IS INSTALLED IN CRUSHED AGGREGATE SHOULDERS, PLACE IT 2-3 INCHES BELOW GRADE AND COVER IT WITH 2-3 INCHES OF CRUSHED AGGREGATE.

LABEL ON COVER SHALL READ "ELECTRIC" FOR SIGNAL AND LIGHTING SYSTEMS, "WISDOT ITS" FOR COMMUNICATIONS AND ITS EQUIPMENT SYSTEMS.

INSTALL PULL BOX TO MATCH GRADE UP TO 3:1 MAX.

RING SHALL BE FLUSH WITH TOP OF PULL BOX.

COMPACT AROUND PULL BOX.

MEASUREMENT DETAIL FOR
WIRE/CABLE IN THE PULL BOXPULL BOXES
NON-CONDUCTIVE

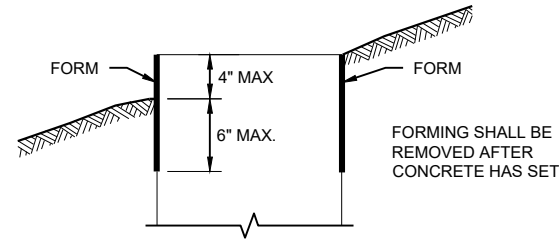
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2026 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGINEER

FHWA

106

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



FORMING DETAIL

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

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 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.

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

MINIMUM BENDING RADIUS OF CONDUIT IS EQUAL TO 6X 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 NON-METALLIC IMMEDIATELY AFTER PLACEMENT AND BEFORE CONCRETE IS POURED. CONDUITS IN WHICH WIRE OR CABLE IS NOT INSTALLED SHALL REMAIN CAPPED OR PLUGGED.

GENERAL NOTES

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

WHEN REQUIRED TO CONNECT NON-METALLIC 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, TYPE 5 AND TYPE 6 BASES.

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

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

WASHERS AND LOCK WASHERS ARE REQUIRED ON ALL ANCHOR RODS.

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

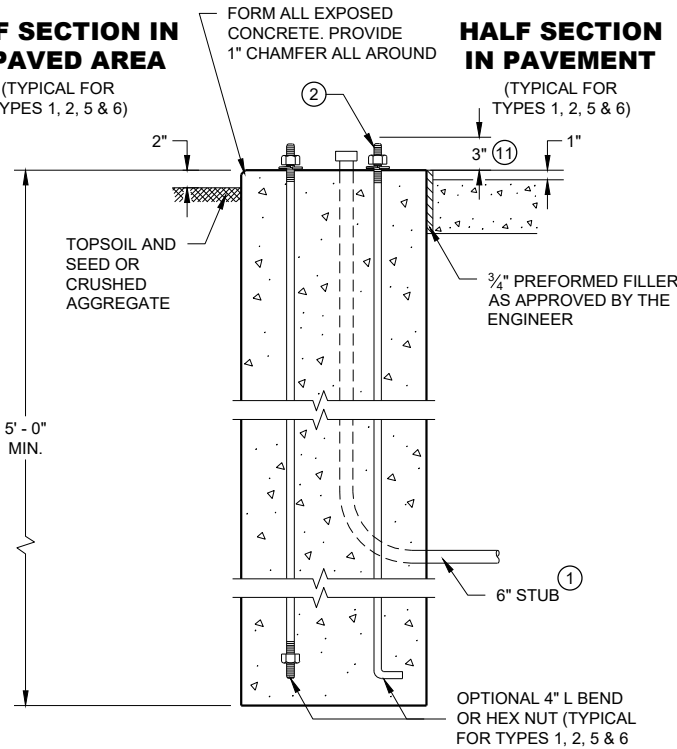
ANCHOR RODS SHALL BE INSTALLED WITH MISALIGNMENTS OF LESS THAN 1:40 FROM VERTICAL.

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).

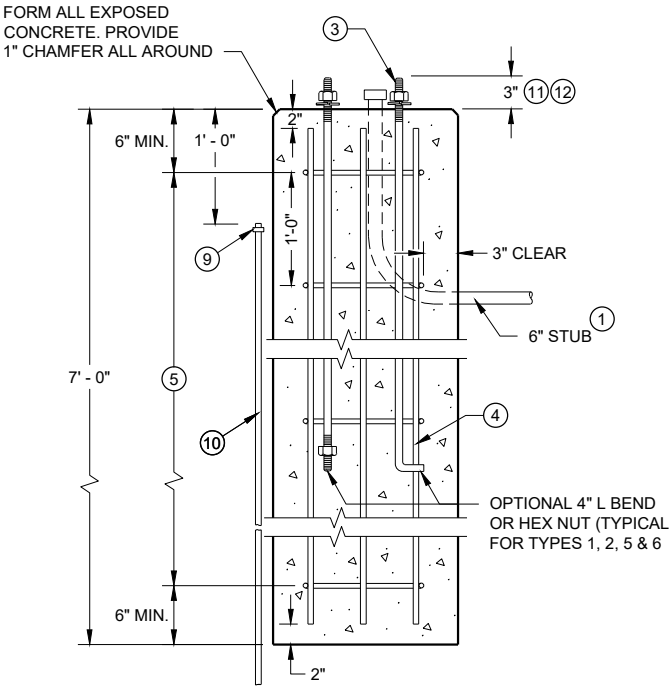
- 1 THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE AND INSTALLED BELOW THE TRAVELED WAY SHALL BE 24 INCHES. THE MINIMUM DEPTH OF CONDUIT EXITING THE CONCRETE BASE THAT IS NOT INSTALLED BELOW THE TRAVELED WAY SHALL BE 18 INCHES. THE MAXIMUM DEPTH OF ALL CONDUIT SHALL BE 36 INCHES EXCEPT WITH WRITTEN APPROVAL OF 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.
- 9 EXOTHERMIC CONNECTION TO EQUIPMENT GROUNDING CONDUCTOR
- 10 5/8" DIA. X 8' - 0" COPPERCLAD EQUIPMENT GROUNDING ELECTRODE REQUIRED
- 11 ANY ANCHOR ROD PROJECTION SHORTER THAN 2 3/4" OR LONGER THAN 3 1/2" SHALL REQUIRE THE BASE TO BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- 12 FOR NON - BREAKAWAY INSTALLATIONS, 4 1/2" ± ANCHOR ROD PROJECTION WITH THE USE OF LEVELING NUTS. RODENT SCREEN REQUIRED.

HALF SECTION IN UNPAVED AREA



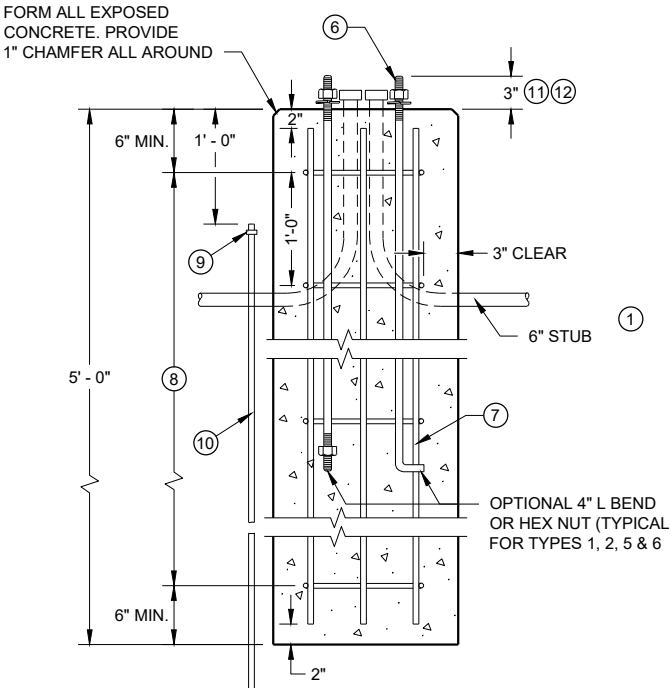
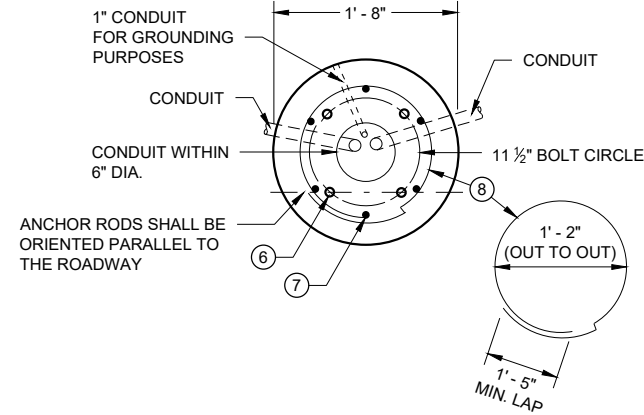
TYPE 1

HALF SECTION IN PAVEMENT



TYPE 2

CONCRETE BASES

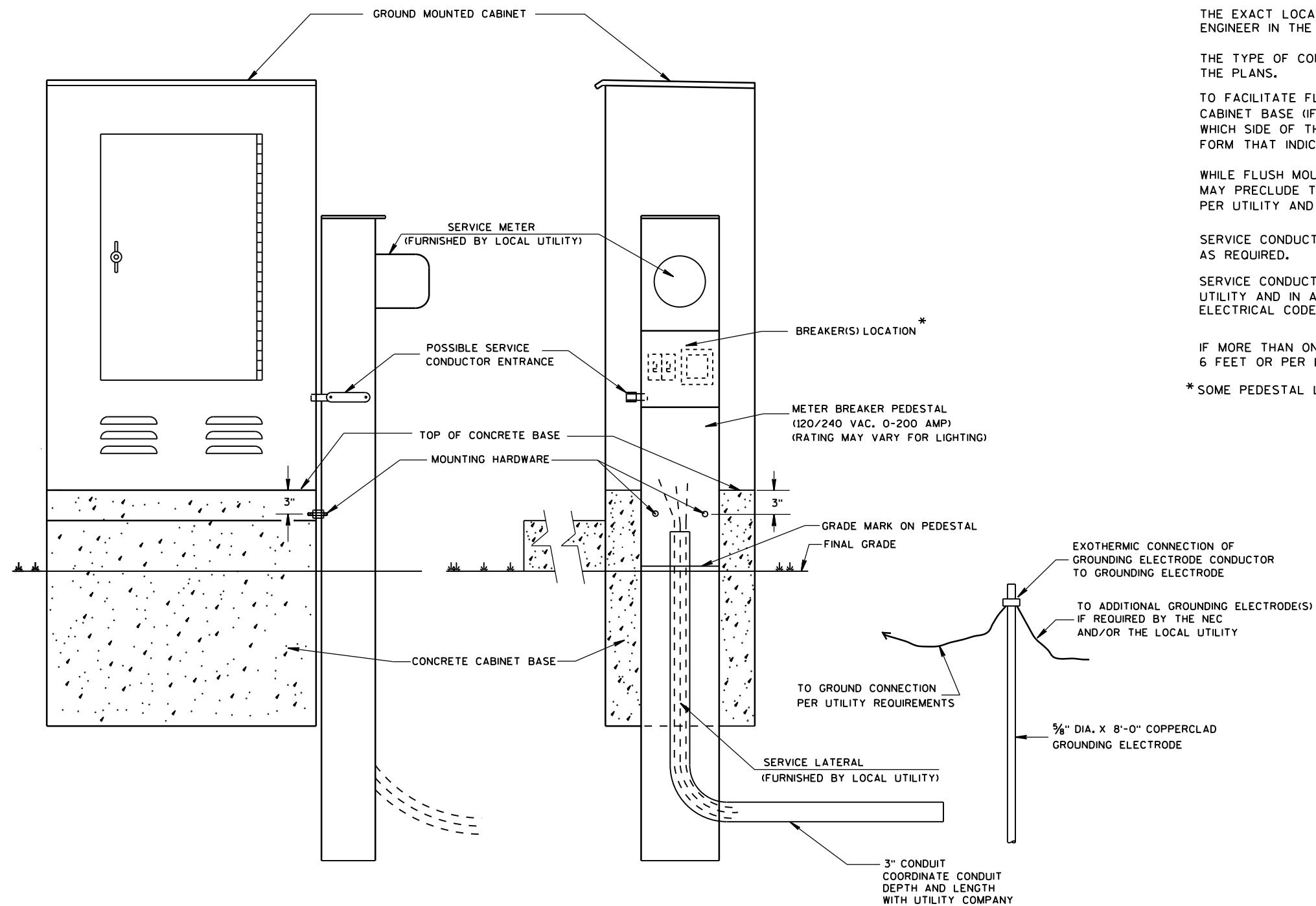


TYPE 5 & 6

6

S.D.D. 9 C 3-4

S.D.D. 9 C 3-4



TYPICAL CABINET SERVICE INSTALLATION

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, NIPPLES AND/OR CONDULETS AS REQUIRED.

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 LOCAL UTILITY REGULATIONS.

* SOME PEDESTAL LIGHTING PLANS SHOW MAIN LUGS ONLY.

CABINET SERVICE INSTALLATION
(METER BREAKER PEDESTAL)

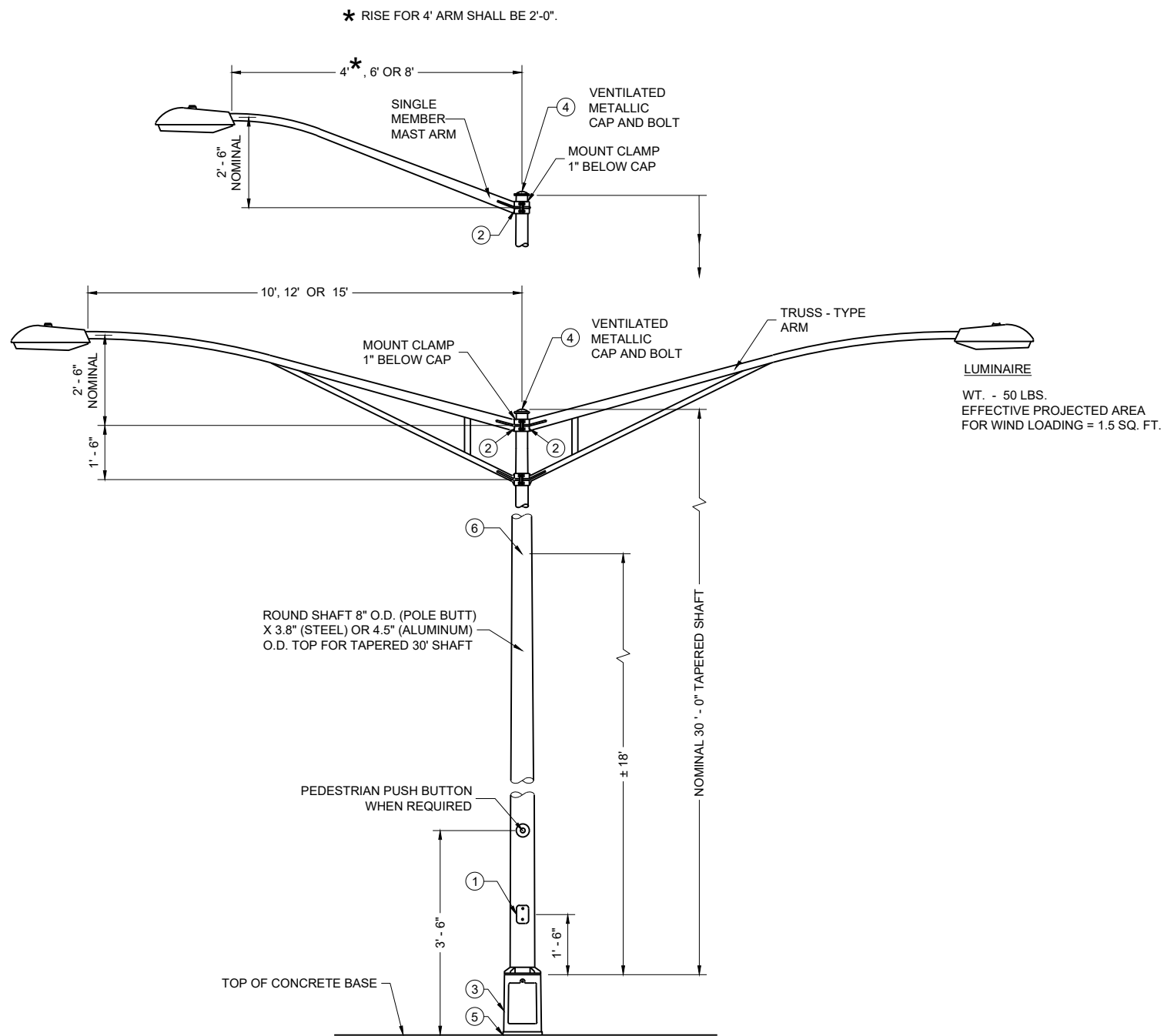
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

Sept. 2014
DATE

/S/ Ahmet Demirbilek
STATE ELECTRICAL 109

FHWA



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.

SECTION 657, POLES, OF THE STANDARD SPECIFICATIONS SHALL APPLY TO THIS DRAWING.

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.

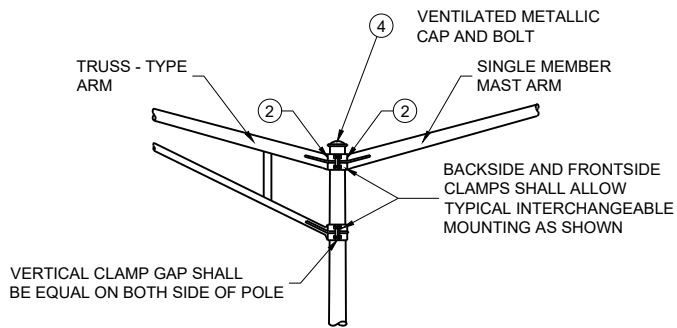
TYPE 5 ALUMINUM POLES SHALL HAVE A MINIMUM WALL THICKNESS OF 0.1888".

TYPE 5 STEEL POLES SHALL HAVE A MINIMUM WALL THICKNESS OF U.S. STANDARD 11 GAGE (0.1196").

THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 2 3/8" INCHES IN OUTSIDE DIAMETER. THE STRAIGHT PORTION OF THE SLIPFITTER END OF THE LUMINAIRE MAST ARM SHALL BE A NOMINAL 12 INCHES IN LENGTH.

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

- ① 4" X 6" REINFORCED HANDHOLE AND COVER ASSEMBLY WITH TWO (2) 1/4"X3/4" - 20 TPI , STAINLESS STEEL, HEX HEAD BOLTS.
- ② GROMMETS. 1" CHASE NIPPLES OR 1" CLOSE CONDUIT NIPPLES WITH BUSHINGS SHALL BE PROVIDED FOR 1 3/8" HOLE IN POLE SHAFT FOR WIRING.
- ③ CAST ALUMINUM TRANSFORMER BASE.
- ④ FURNISH AND INSTALL VENTILATED, CAST METALLIC (ALUMINUM ALLOY) CAPS. FASTEN CAPS WITH 1/4"X3/4" - 20 TPI STAINLESS STEEL, HEX HEAD BOLT. ONE (1)
- ⑤ SHIMMING, IF NEEDED, SHALL BE LOCATED BETWEEN THE CONCRETE FOUNDATION AND POLE.
- ⑥ INTERNAL DUMBBELL - TYPE VIBRATION DAMPER.



INTERCHANGEABLE MOUNTING DETAIL

**POLE MOUNTINGS FOR
LIGHTING UNITS, TYPE 5
(30 FEET)**

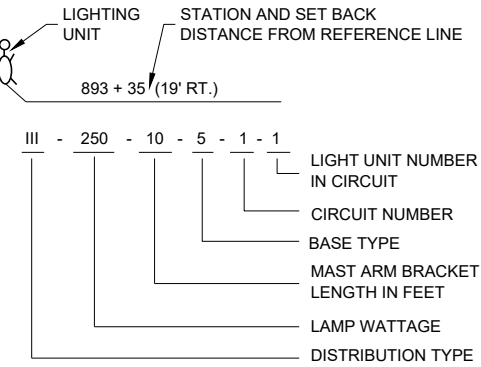
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

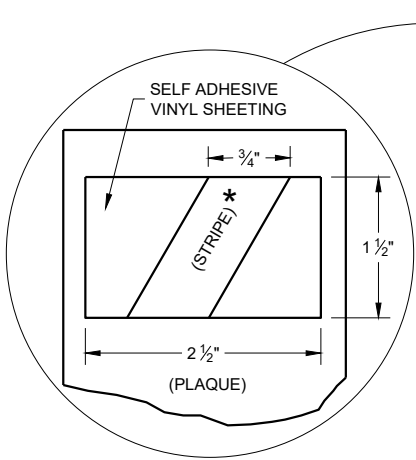
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

THE EQUIPMENT GROUND CONNECTOR SHALL BE TAPED WITH 3 WRAPS (MINIMUM) OF APPROVED RUBBER TAPE AND 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.

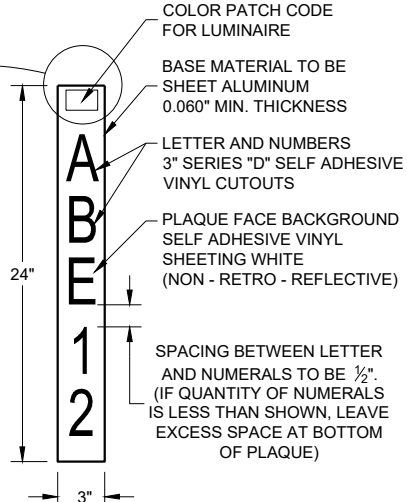


LIGHTING UNIT CODE (TYPICAL)

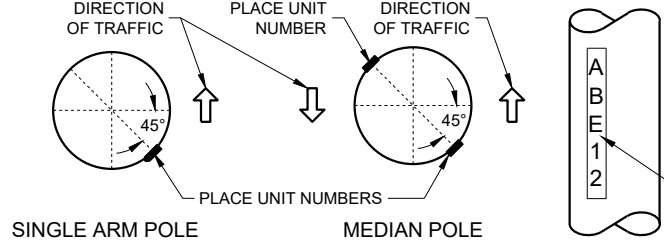


COLOR PATCH CODE FOR LUMINAIRES

(HIGH PRESSURE SODIUM)	(MERCURY VAPOR)
1000 WATT - NO PATCH	400 WATT - NO PATCH
400 WATT - ORANGE	250 WATT - YELLOW
310 WATT - BLUE	
250 WATT - ORANGE W / WHITE STRIPE *	
200 WATT - RED	
150 WATT - GREEN	
100 WATT - BROWN	

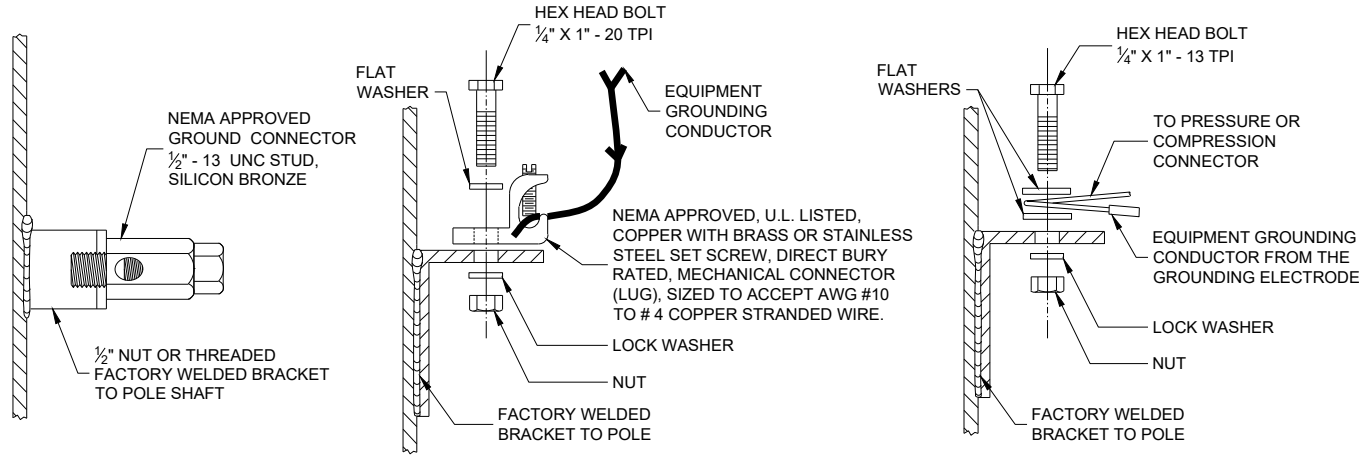


IDENTIFICATION PLAQUE



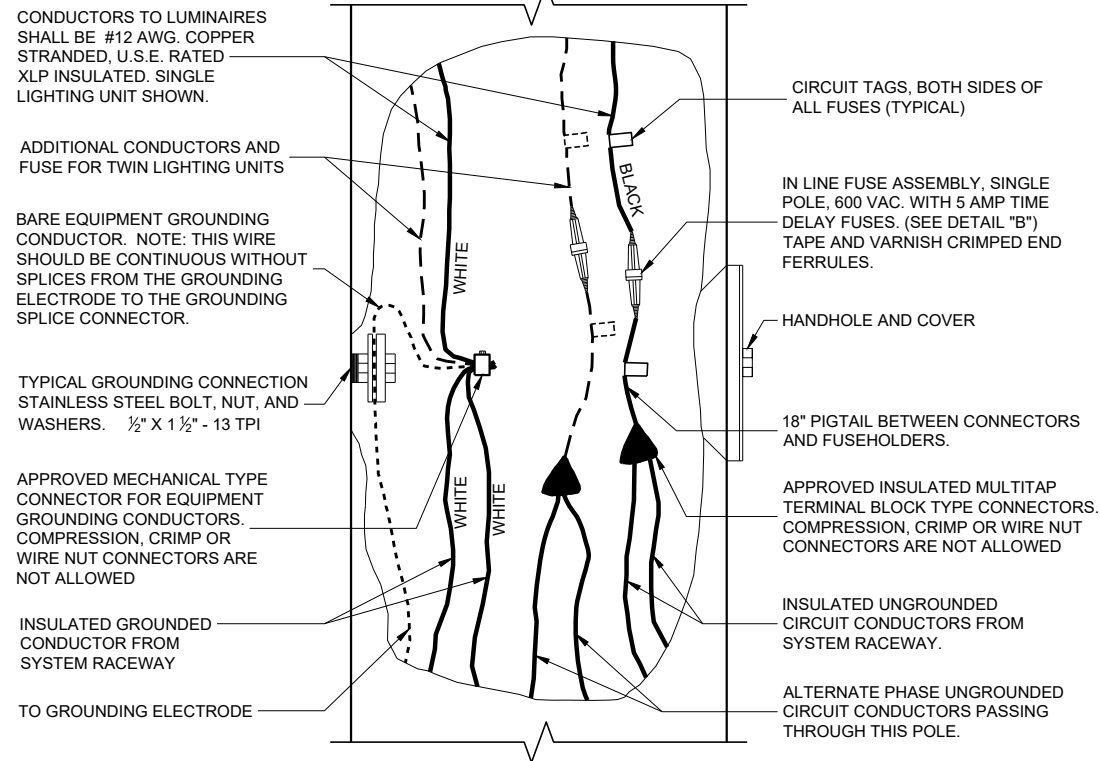
LIGHTING UNIT IDENTIFICATION PLAQUE REQUIREMENTS AND PLACEMENT (TYPICAL, ALL LIGHTING UNITS)

FURNISH PLAQUE WHEN CALLED FOR BY SPECIAL PROVISIONS

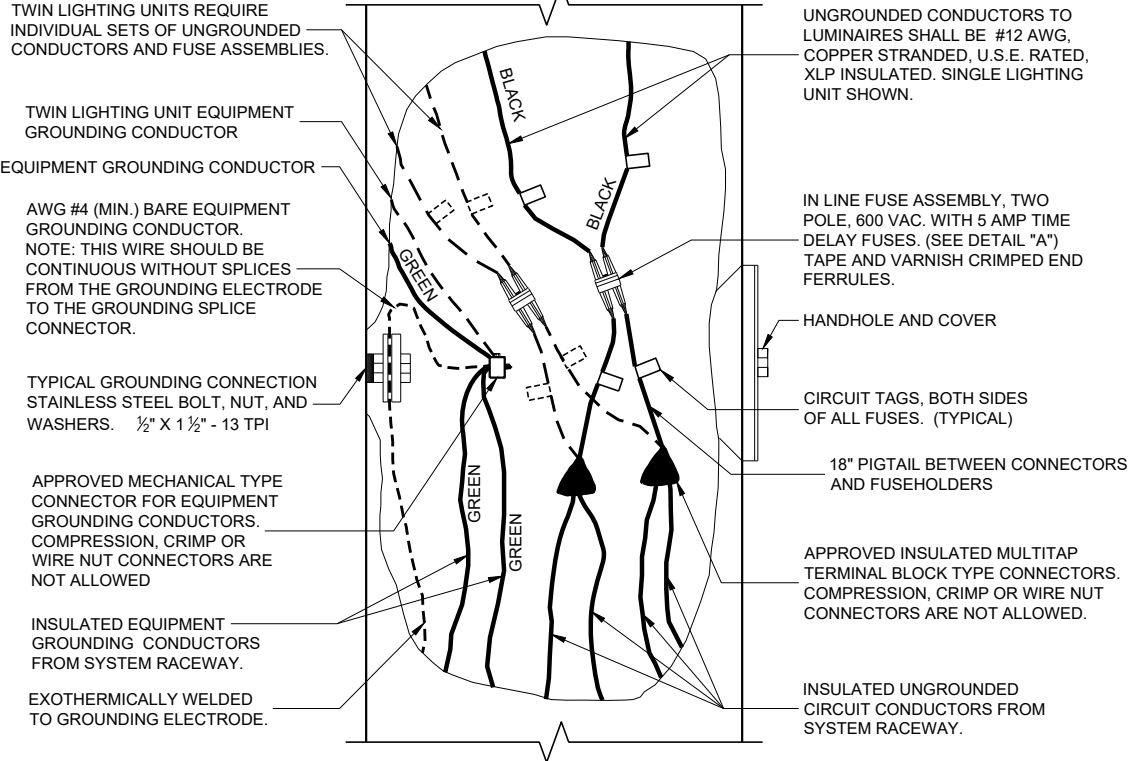


TYPICAL GROUNDING CONNECTIONS
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

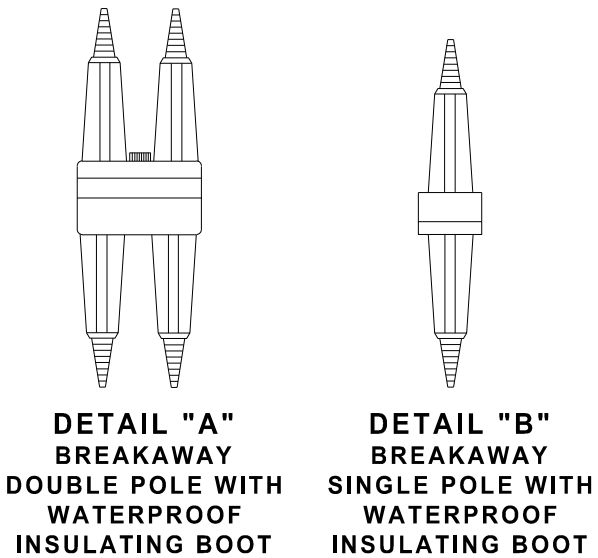
6



2 WIRE - 120, 240, OR 480 VAC TO GROUND



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



DETAIL "A" BREAKAWAY
DOUBLE POLE WITH
WATERPROOF
INSULATING BOOT

DETAIL "B" BREAKAWAY
SINGLE POLE WITH
WATERPROOF
INSULATING BOOT

FREEWAY LIGHTING UNIT
POLE WIRING

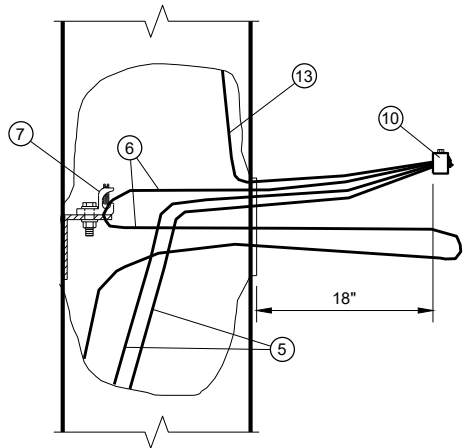
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Ahmet Demirelek
DATE
STATE ELECTRICAL ENGI 111

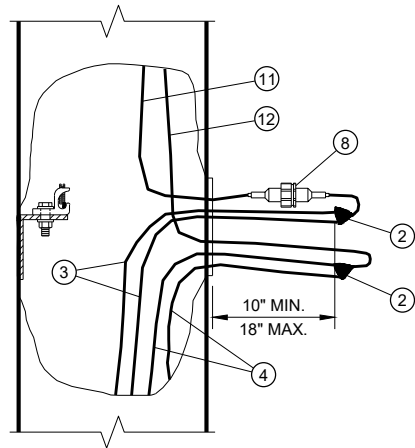
FHWA

SDD 09E02 - 05

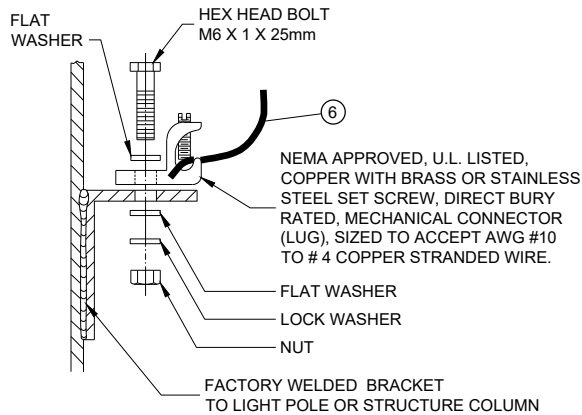
SDD 09E02 - 05



**EQUIPMENT GROUNDING
CONDUCTOR SLACK**



**UNGROUND CONDUCTOR SLACK
(AND GROUNDED NEUTRAL SLACK
IN GROUNDED NEUTRAL SYSTEM)**



HANDHOLE GROUNDING LUG
NUT, BOLT AND WASHERS SHALL BE STAINLESS STEEL

**TYPICAL CONDUCTOR SLACK
AT HANDHOLES**

GENERAL NOTES

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

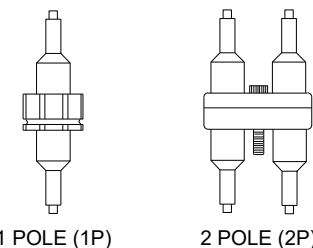
USE THIS DETAIL IN CONJUNCTION WITH THE ELECTRICAL DETAILS FOR THE APPLICATION, WHICH MAY BE A LIGHT POLE, SIGN BRIDGE, ETC.

THE GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS WITHOUT SPLICES FROM THE GROUNDING ELECTRODE THROUGH THE HANDHOLE GROUNDING LUG TO THE CONNECTOR.

THREE POLE WIRES ARE SHOWN FOR A SINGLE LUMINAIRE LIGHT POLE. THREE ADDITIONAL POLE WIRES REQUIRED FOR TWIN LUMINAIRE LIGHT POLES ARE OMITTED FROM THE DRAWING FOR CLARITY. IN THE TWIN POLE CASE, BUNDLE EACH SET OF THREE WIRES WITH A NYLON CABLE TIE.

IN 3-PHASE SYSTEMS, THERE WILL BE ONE MORE UNGROUNDED LINE WIRE, WHICH IS OMITTED FROM THE DRAWING FOR CLARITY.

CIRCUIT TAGS SHALL BE INSTALLED ONLY WHERE REQUIRED IN THE SPECIAL PROVISIONS.

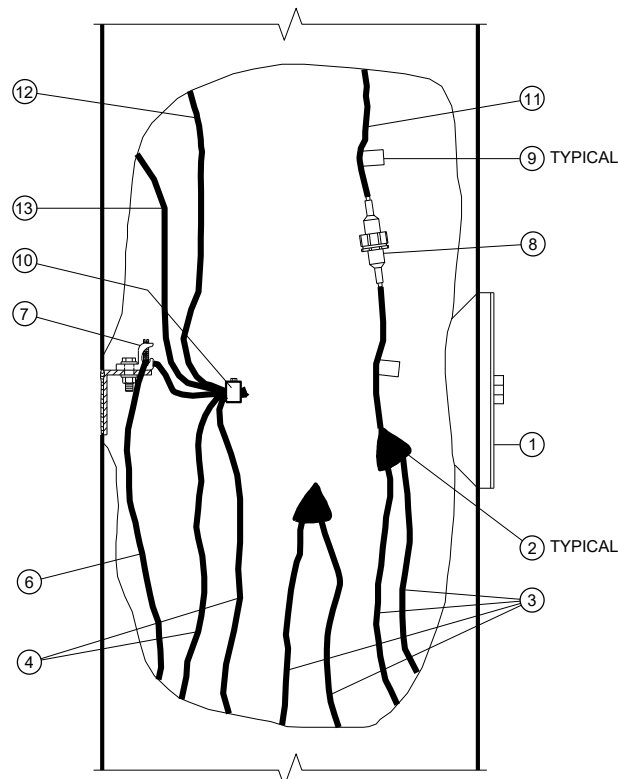


FUSE ASSEMBLIES

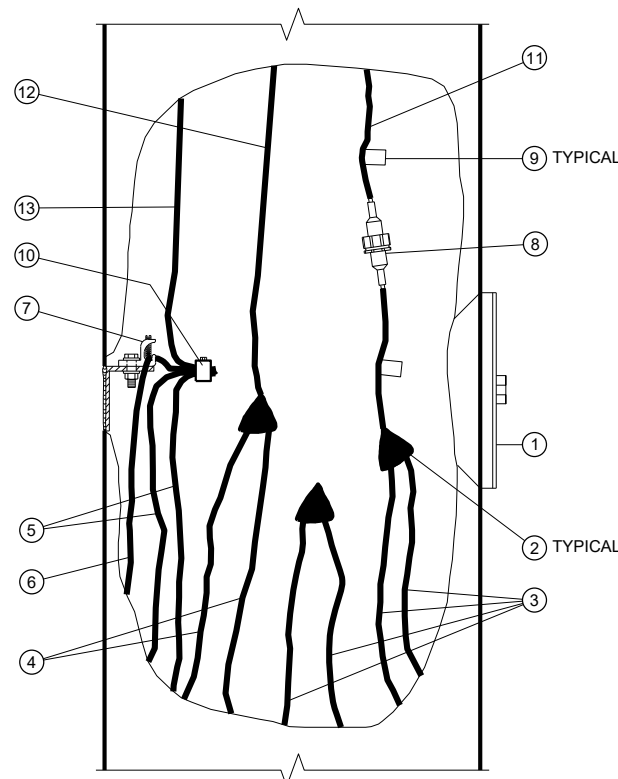
CONDUCTOR COLOR CODES

KEY	CONDUCTOR	COLOR
3	UNGROUND LINE WIRE	★
4	GROUNDED LINE WIRE	WHITE
5	SYSTEM GROUNDING LINE WIRE	GREEN
6	GROUNDING ELECTRODE CONDUCTOR	BARE
11	UNGROUND POLE WIRE	★
12	GROUNDED POLE WIRE	WHITE
13	EQUIPMENT GROUNDING POLE WIRE	GREEN

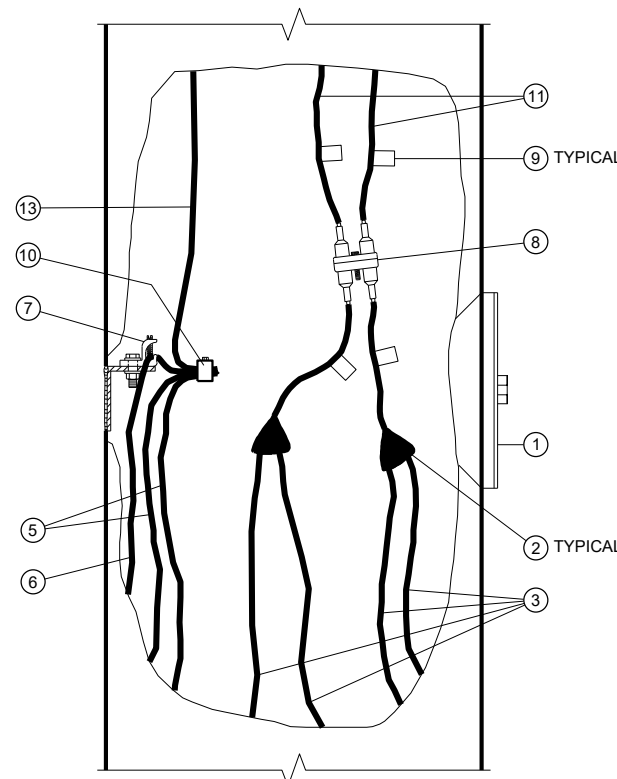
★ FOLLOW COLOR CODING SHOWN IN THE PLANS. WHERE THE PLANS DO NOT SHOW COLOR CODING, USE BLACK FOR SINGLE LUMINAIRE POLES; BLACK AND RED FOR TWIN LUMINAIRE POLES.



CUTAWAY HANDHOLE DETAIL
GROUNDED NEUTRAL SYSTEMS
1-φ



CUTAWAY HANDHOLE DETAIL
ISOLATED NEUTRAL SYSTEMS
1-φ SHOWN; 3-φ WYE SIMILAR
(SEE GENERAL NOTE)



CUTAWAY HANDHOLE DETAIL
PHASE TO PHASE SYSTEMS
1-φ SHOWN; 3-φ DELTA SIMILAR
(SEE GENERAL NOTE)

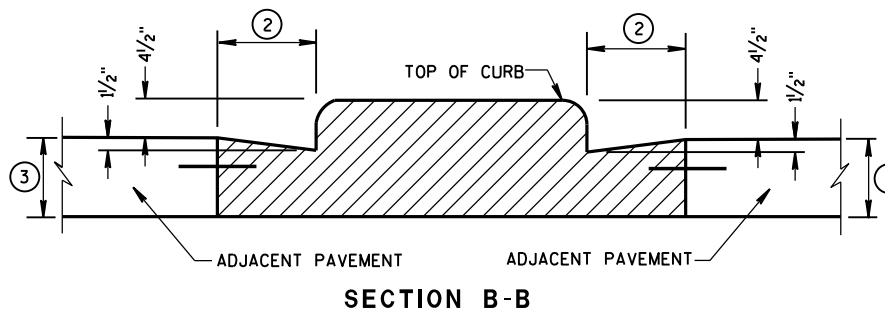
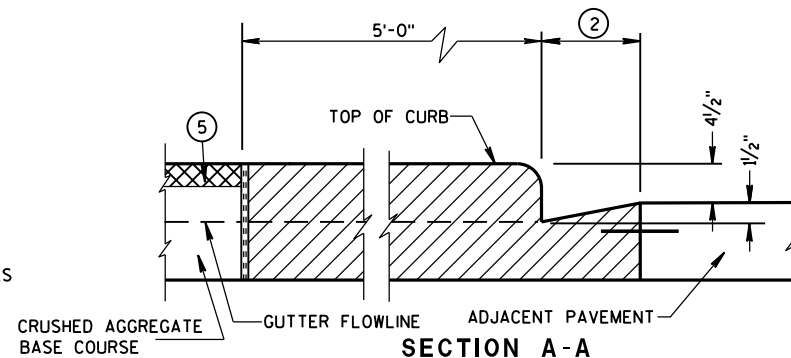
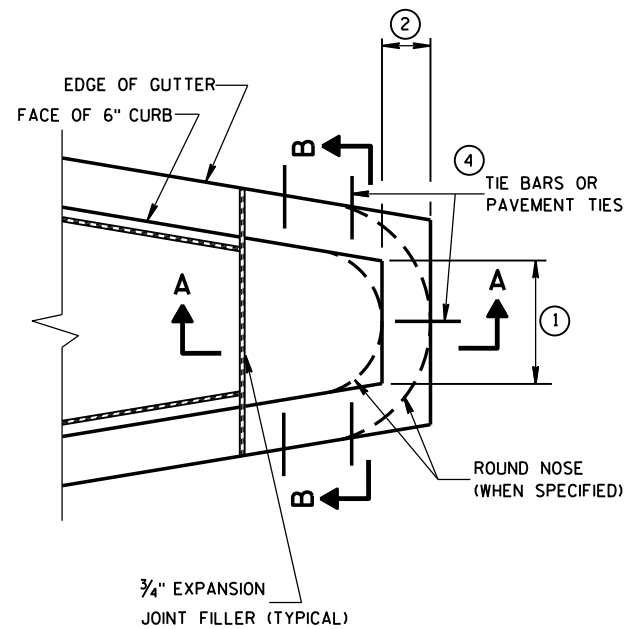
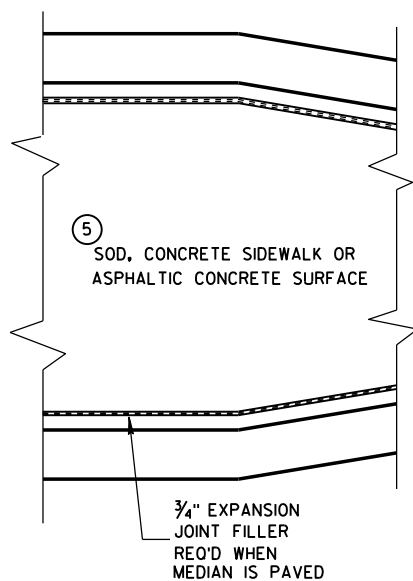
- ① HANDHOLE AND COVER
- ② INSULATED SPLICE
- ③ UNGROUNDED LINE WIRE
- ④ GROUNDED LINE WIRE
- ⑤ SYSTEM GROUNDING LINE WIRE
- ⑥ GROUNDING ELECTRODE CONDUCTOR
- ⑦ HANDHOLE GROUNDING LUG
- ⑧ FUSE ASSEMBLY, 1P OR 2P AS REQUIRED
- ⑨ CIRCUIT TAG (SEE GENERAL NOTE)
- ⑩ REVERSIBLE PRESSURE OR COMPRESSION GROUNDING CONNECTOR (NOT INSULATED)
- ⑪ UNGROUNDED POLE WIRE
- ⑫ GROUNDED POLE WIRE
- ⑬ EQUIPMENT GROUNDING POLE WIRE

**ELECTRICAL HANDHOLE
WIRING**

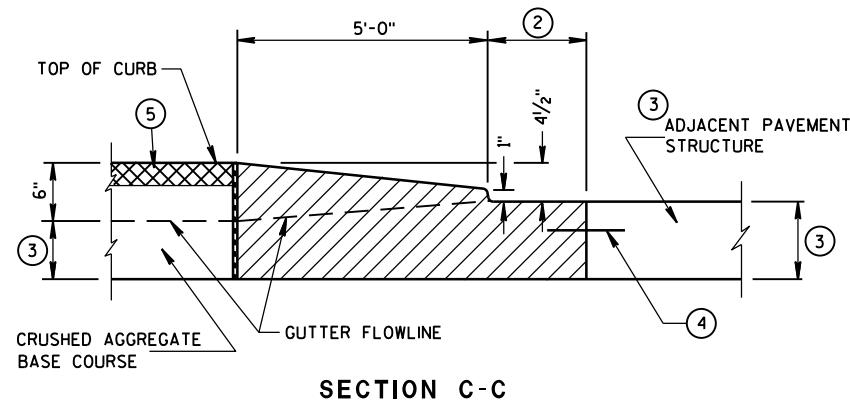
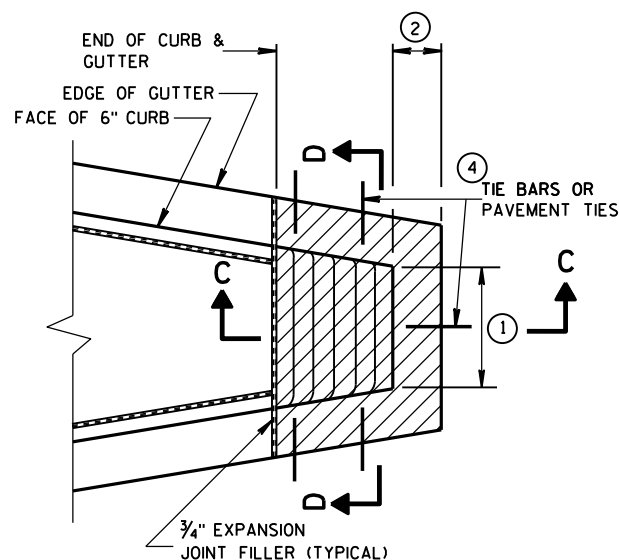
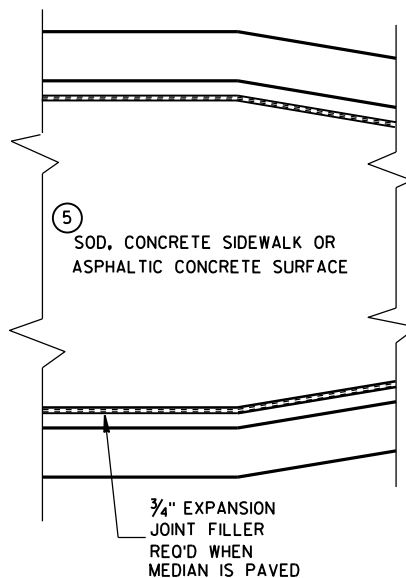
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2022 /S/ Ahmet Demirbilek
DATE STATE ELECTRICAL ENGI 112
FHWA

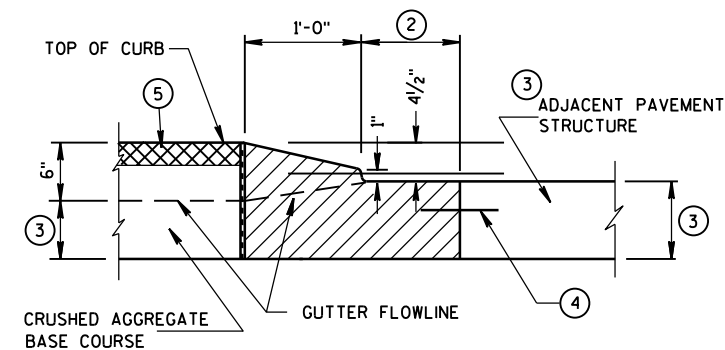
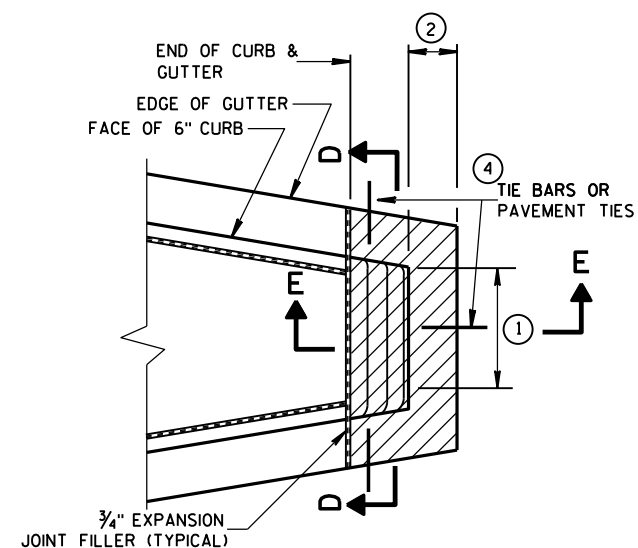
NOTE: REQUIRED CONDUCTOR SLACK NOT SHOWN ON "CUTAWAY HAND HOLE" DETAILS FOR DRAWING CLARITY, SEE "TYPICAL CONDUCTOR SLACK AT HANDHOLES" ON THIS SHEET.



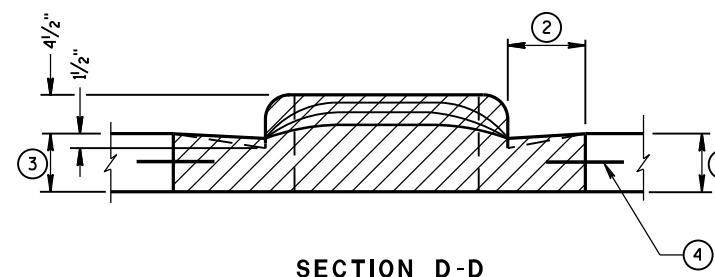
CONCRETE MEDIAN BLUNT NOSE DETAIL



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

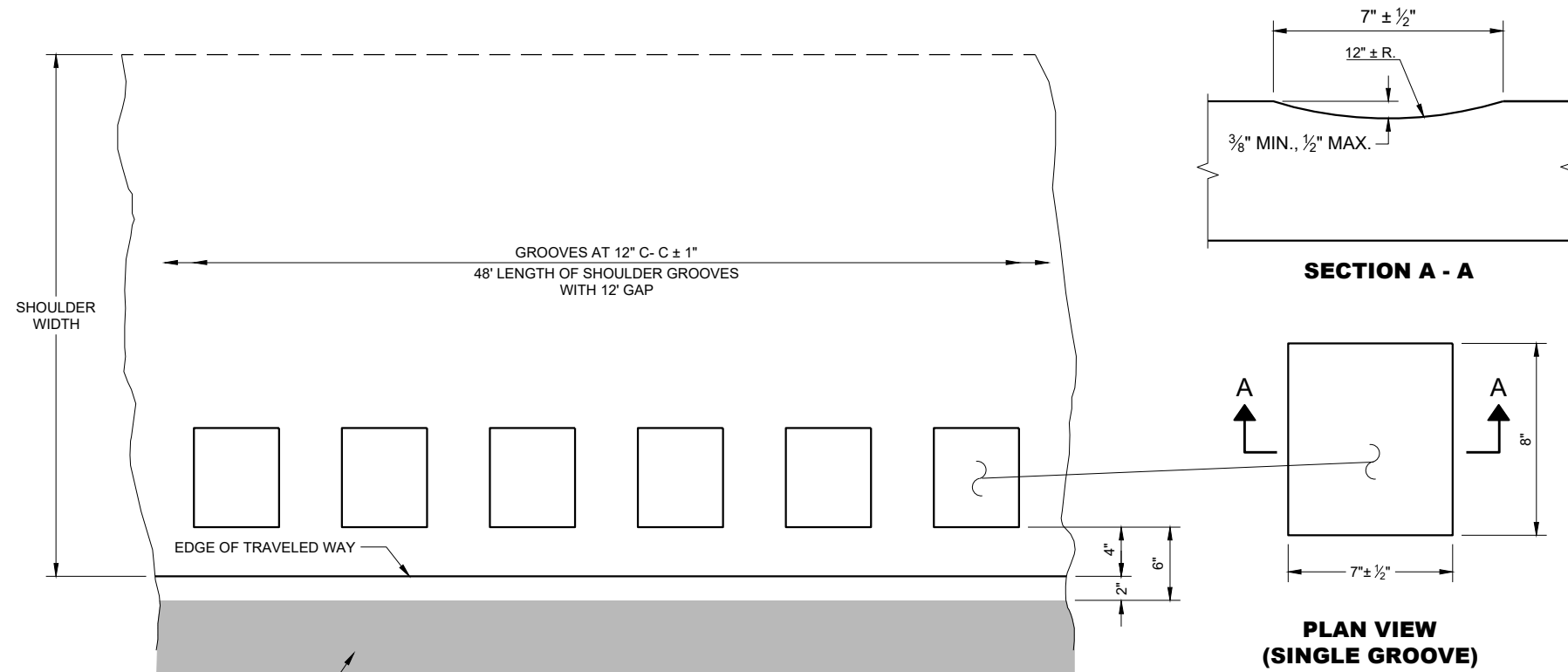
DATE

FHWA

/S/ Jerry H. Zogg
ROADWAY STANDARDS ENGINEER

113

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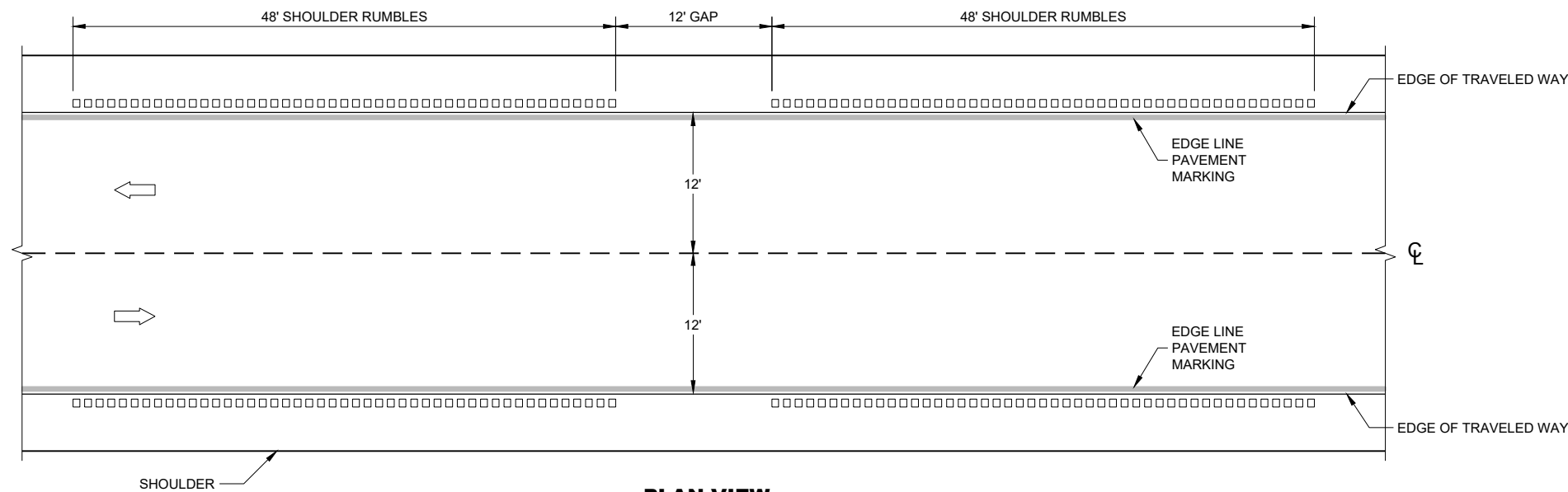
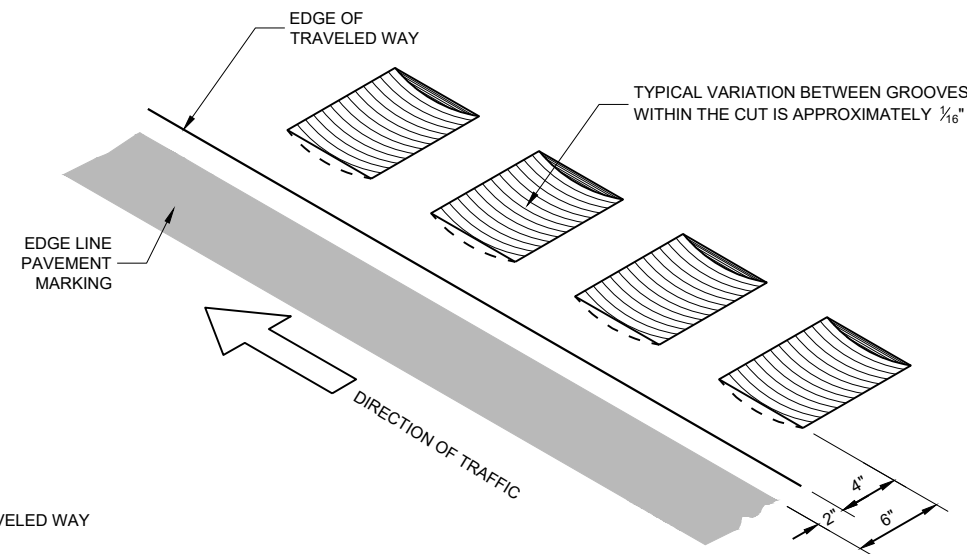


PLAN DETAIL VIEW
SHOULDER WITH GROOVES

GENERAL NOTES

DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A10 SHEETS "g" AND "h".

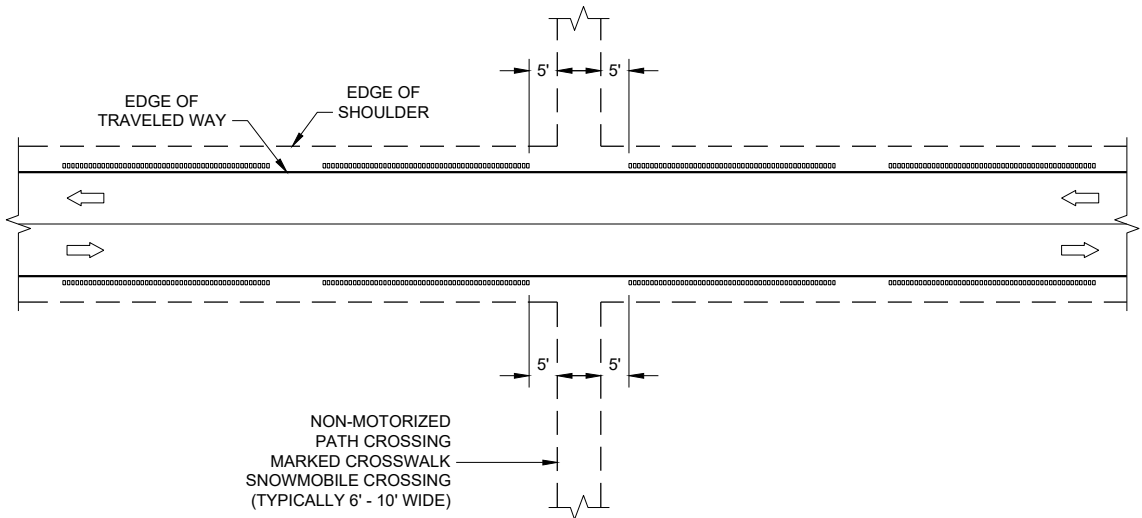
SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



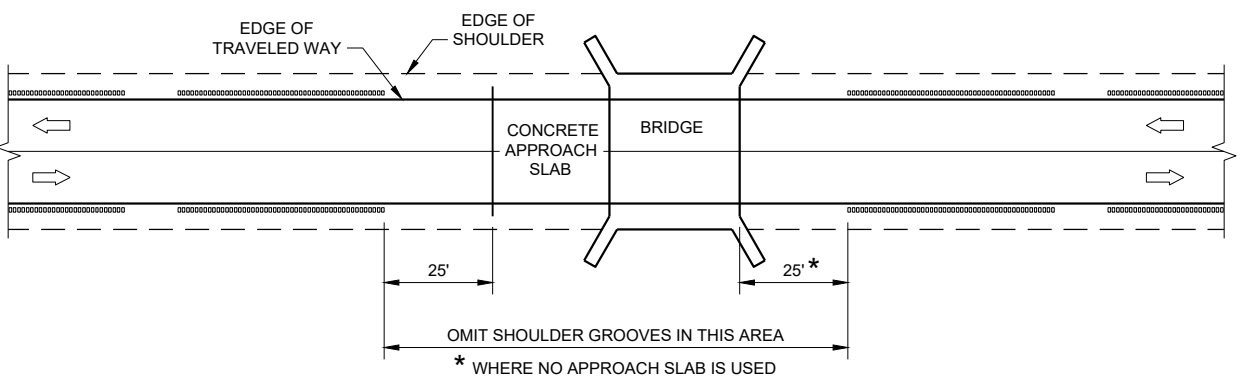
SHOULDER RUMBLE STRIPS - ASPHALT

**SHOULDER RUMBLE
STRIPS ASPHALT**

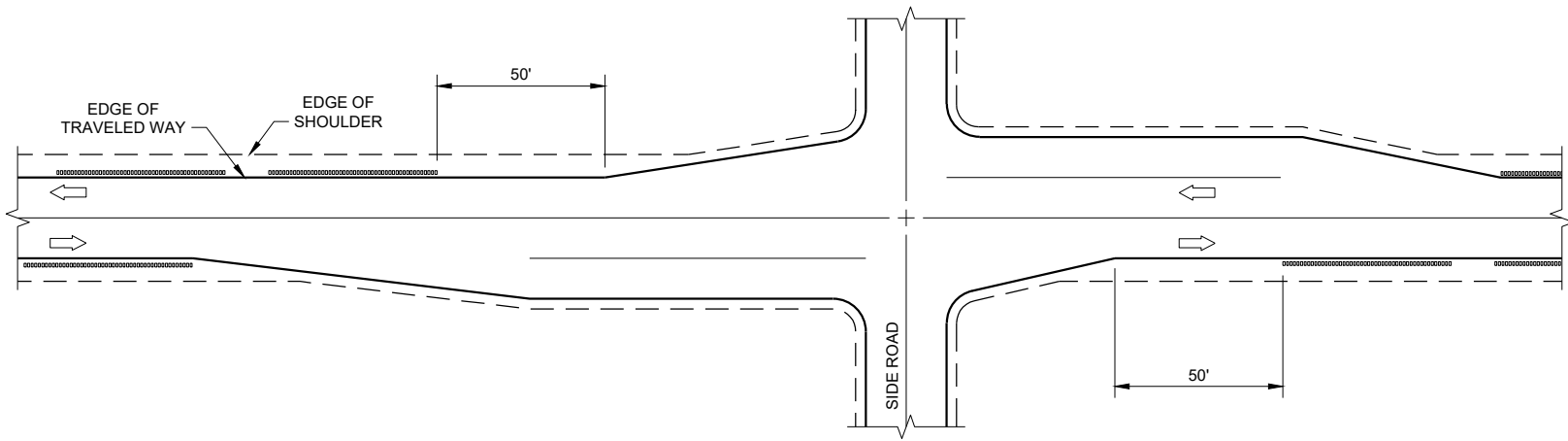
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 114



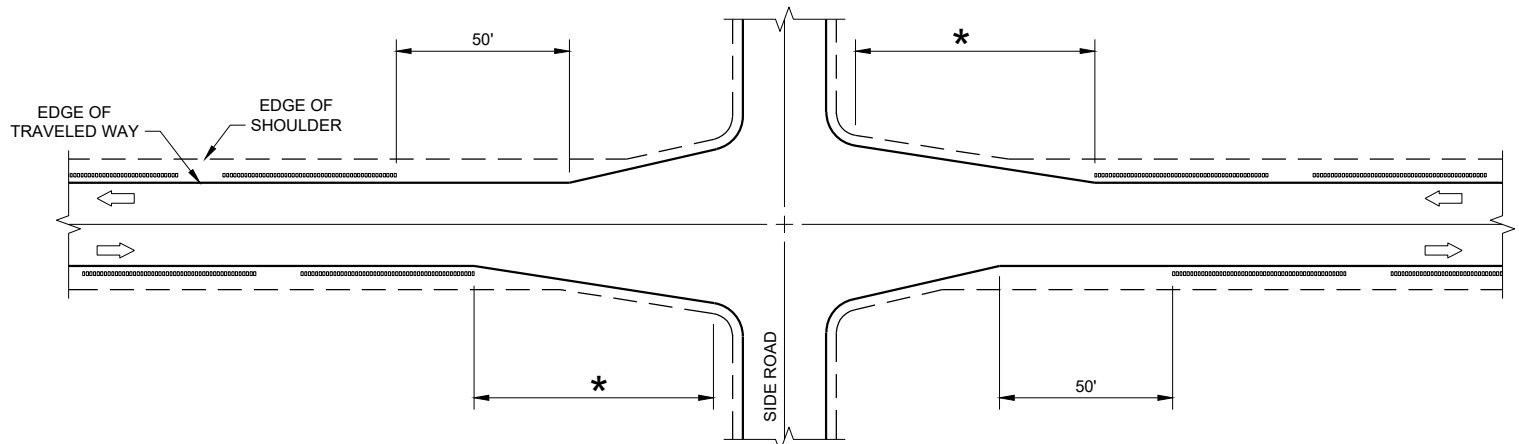
GROOVES AT MISCELLANEOUS CROSSINGS



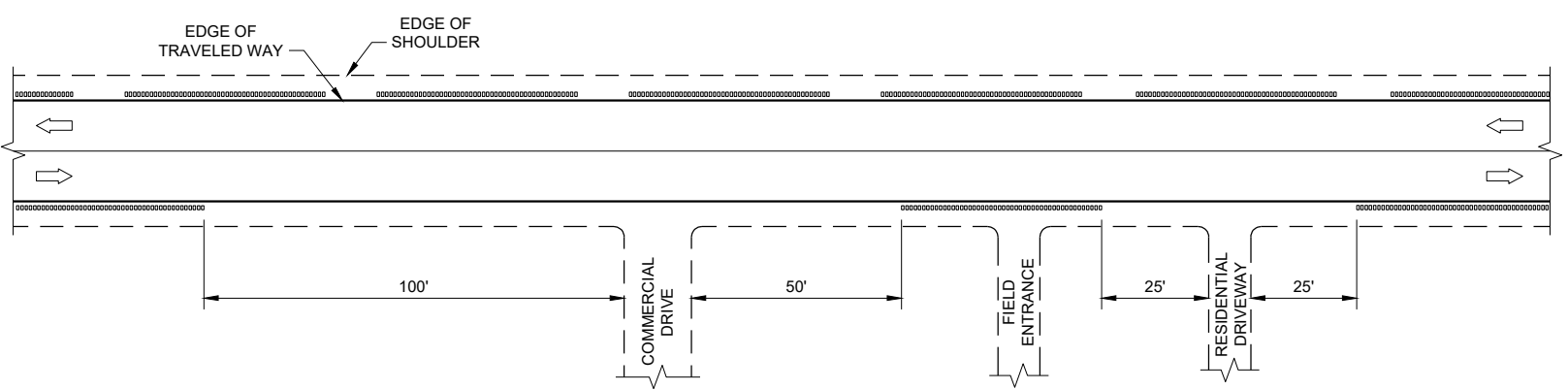
GROOVES AT BRIDGES



GROOVES AT RIGHT TURN LANE



GROOVES AT INTERSECTIONS WITH APPROACH TAPER



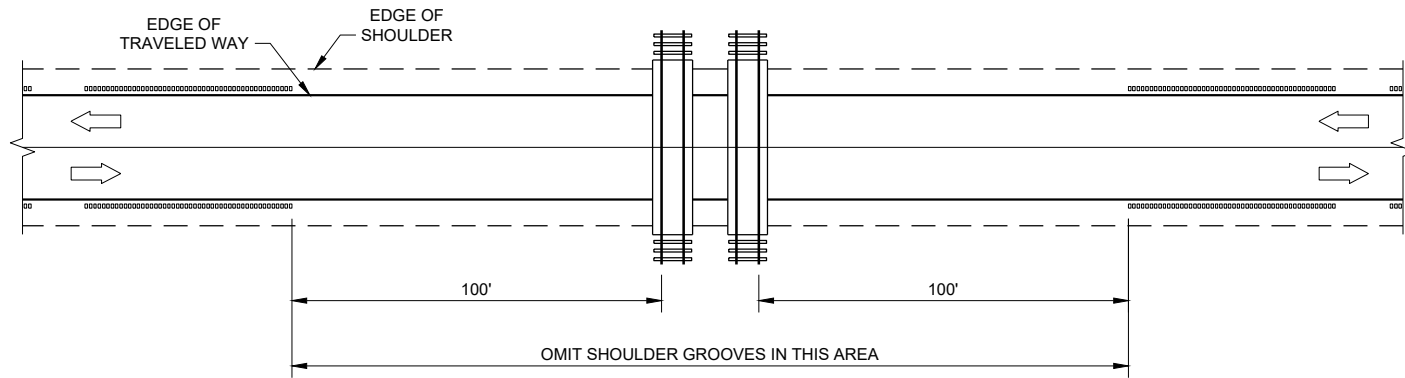
GROOVES AT DRIVEWAYS

GENERAL NOTES

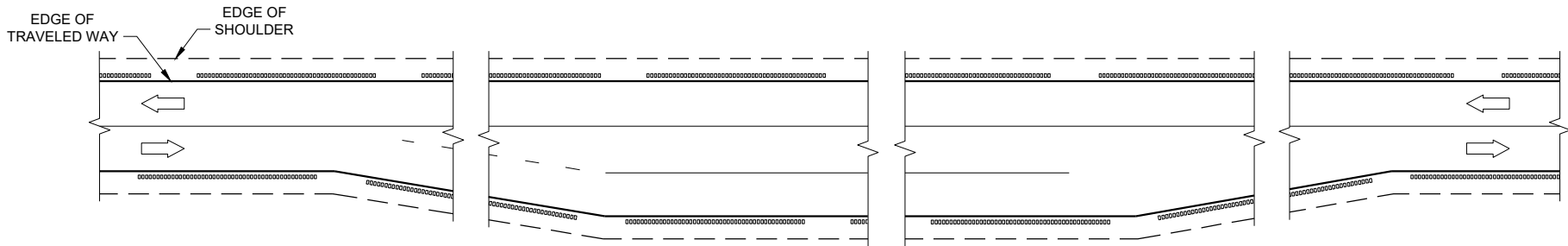
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

SHOULDER AND EDGE LINE
RUMBLE STRIPS
CROSSINGS, INTERSECTIONS,
BRIDGES, DRIVEWAYS

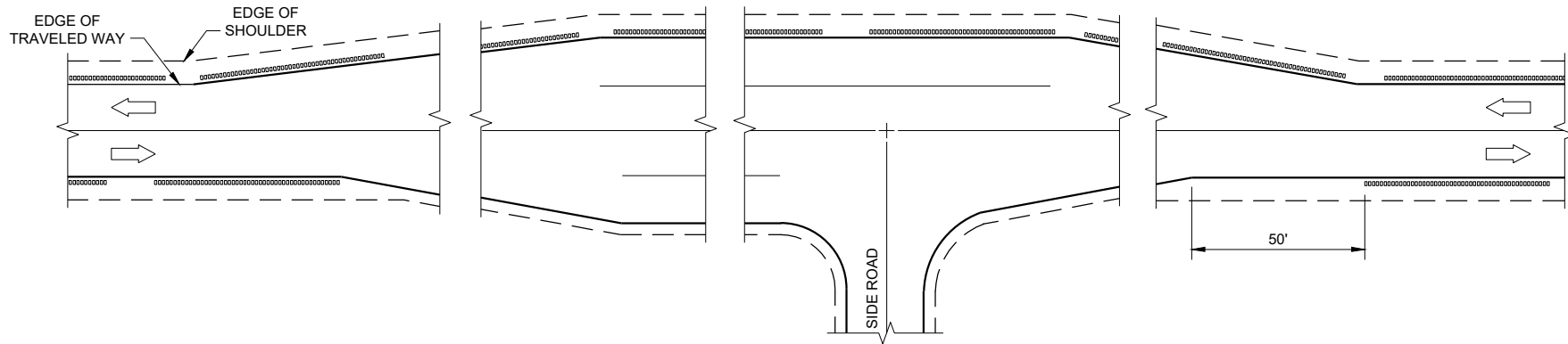
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GROOVES AT RAILROADS



GROOVES AT PASSING AND CLIMBING LANES

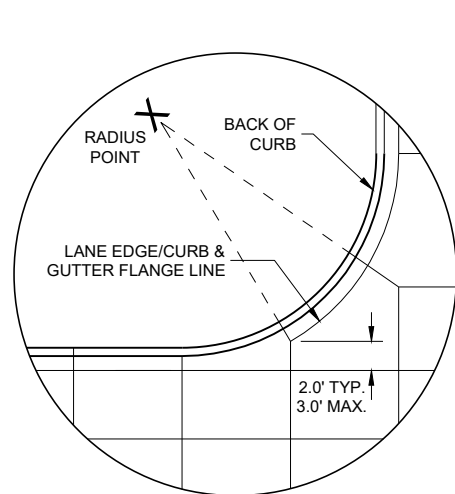


GROOVES AT BYPASS LANES

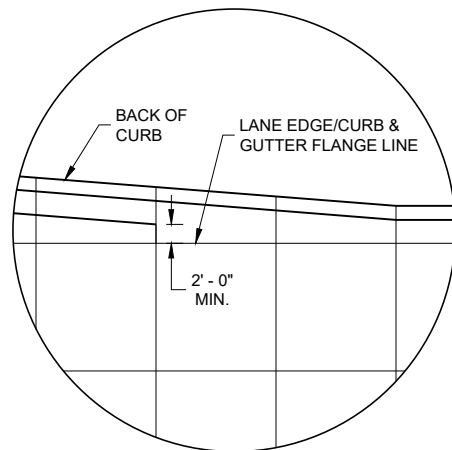
**SHOULDER AND EDGE LINE
RUMBLE STRIPS -
RAILROAD, PASSING,
CLIMBING AND BYPASS LANES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

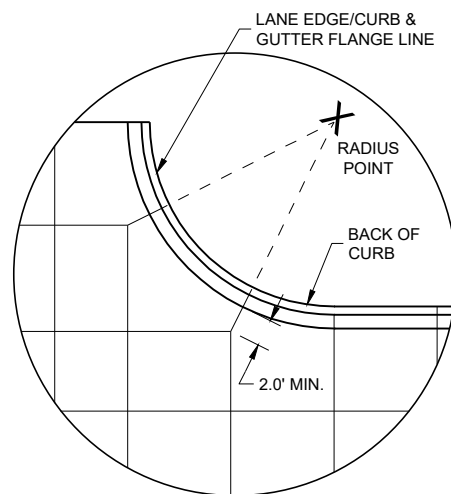
APPROVED
May 2023 /S/ John Jenkins
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA 116



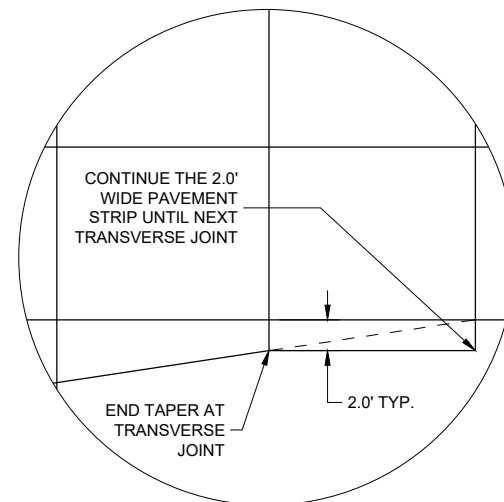
DETAIL "A"



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.

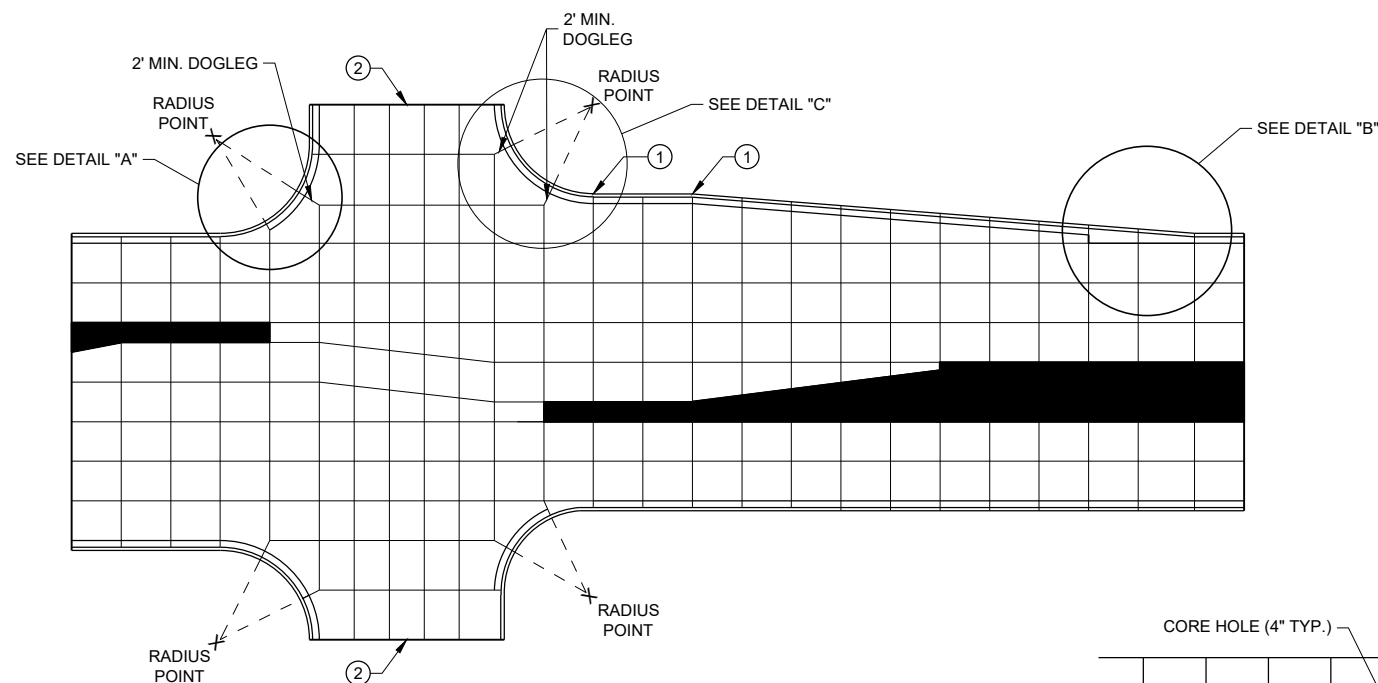
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

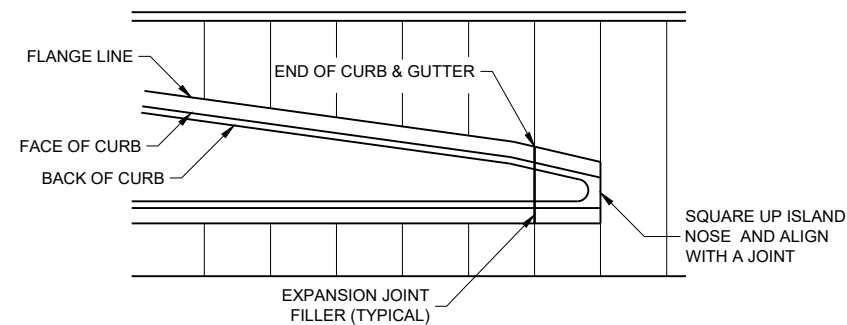
- ① PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
- ② CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
- ③ THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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

PAVEMENT DEPTH AND JOINT SPACING TABLE

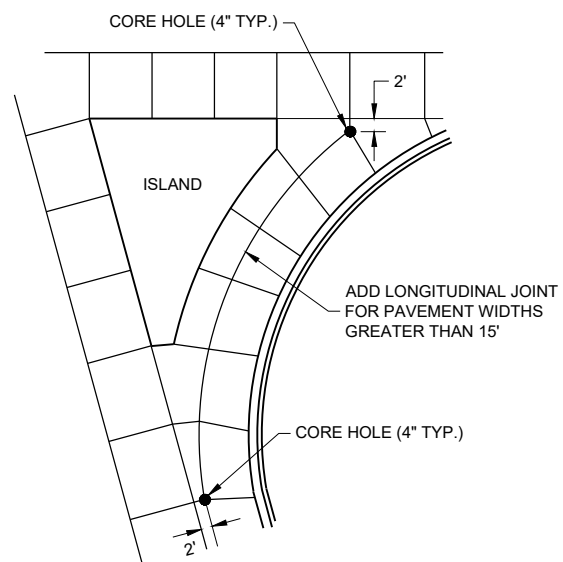
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 ½"	12'
7", 7 ½"	14'
8" & ABOVE	15'



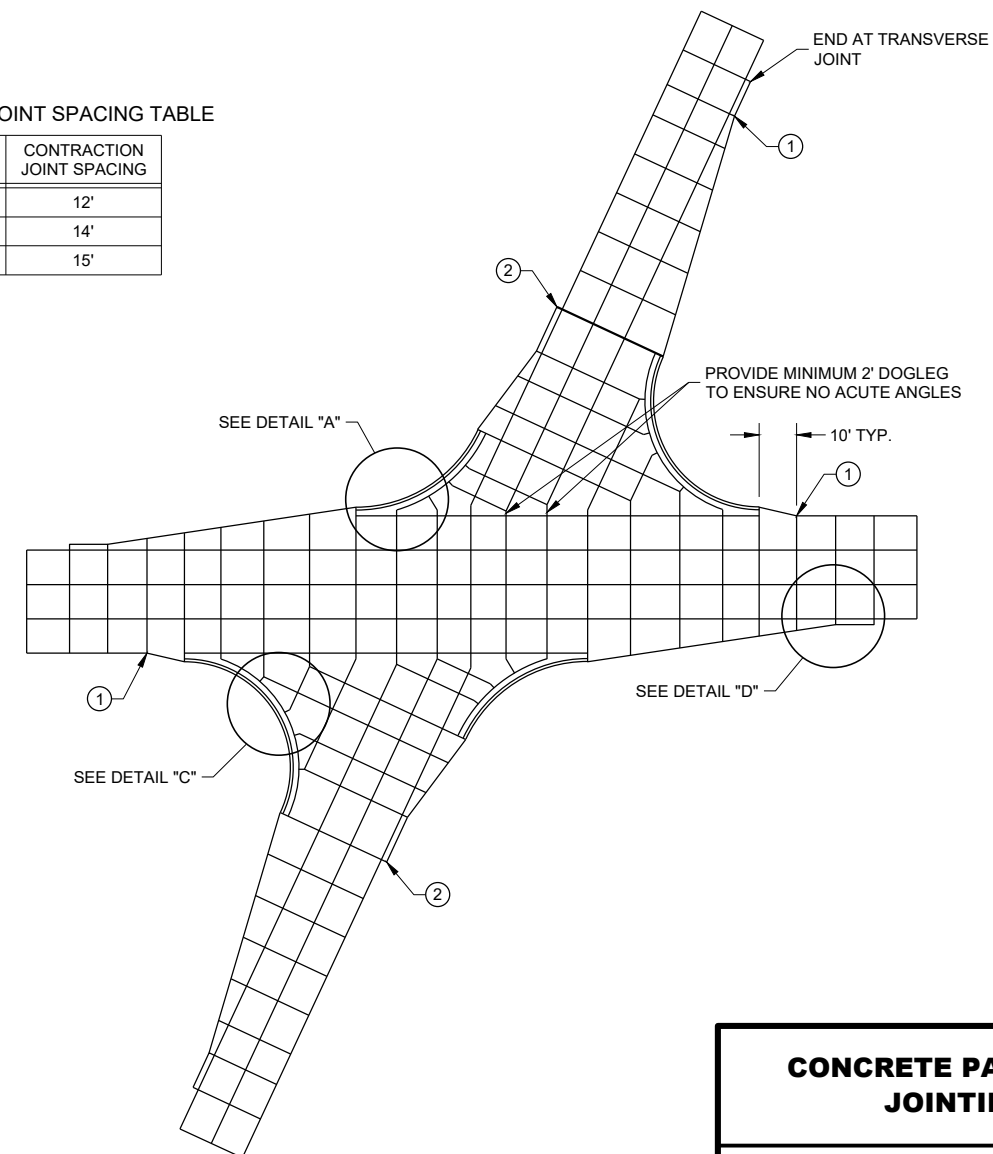
STANDARD INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN



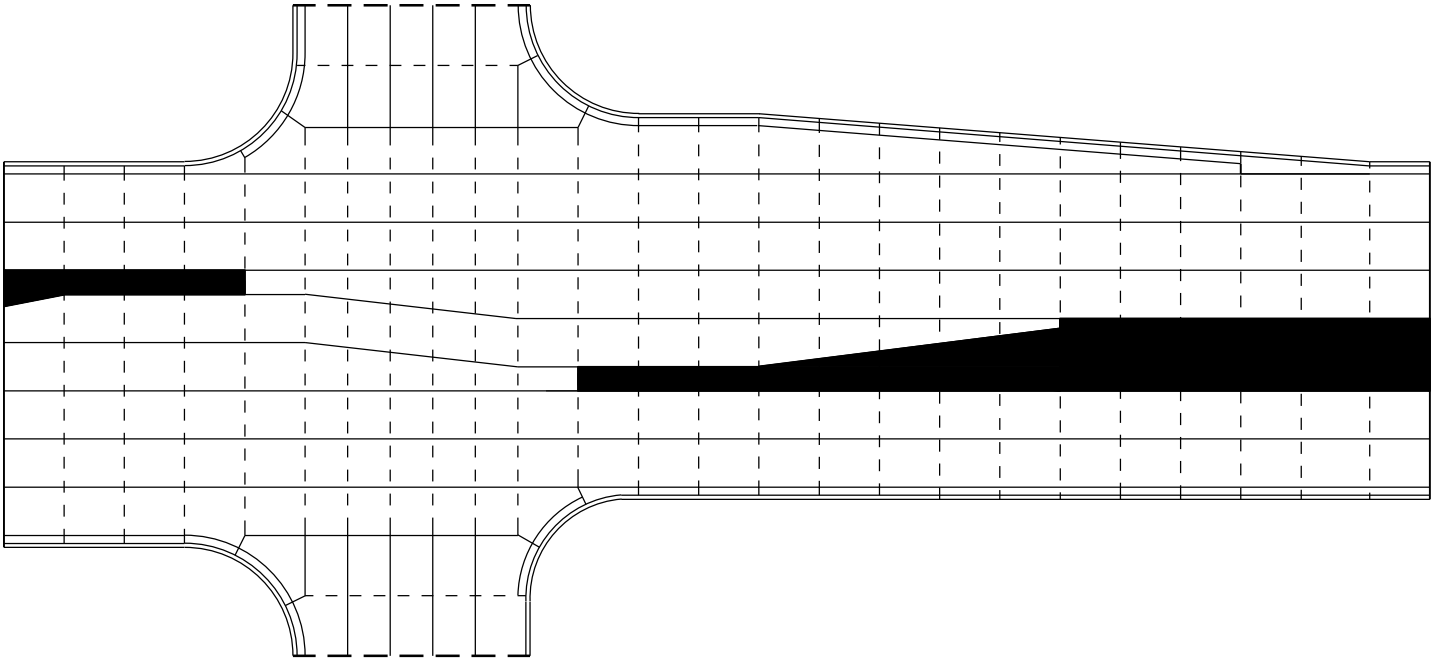
SKEWED INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

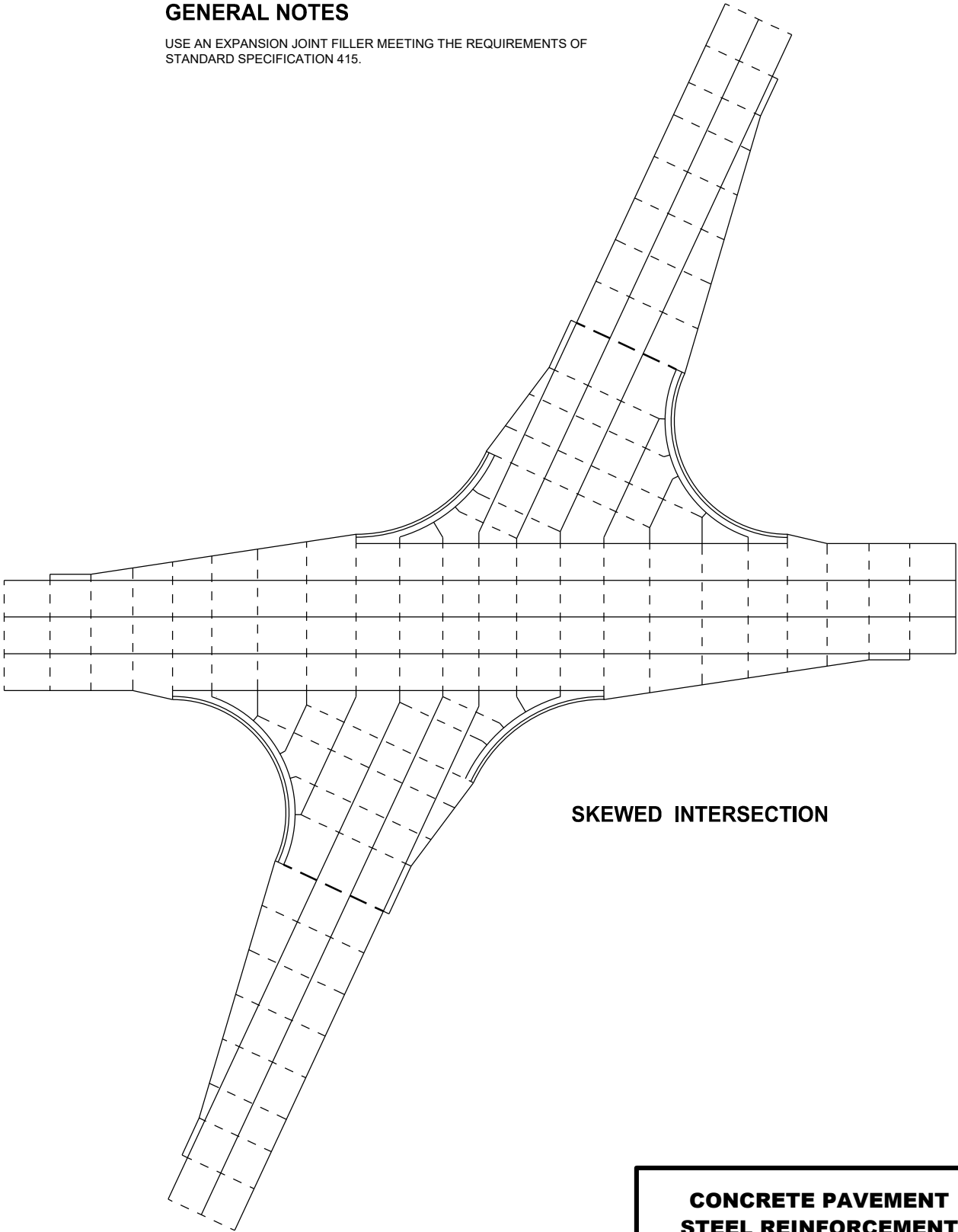
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

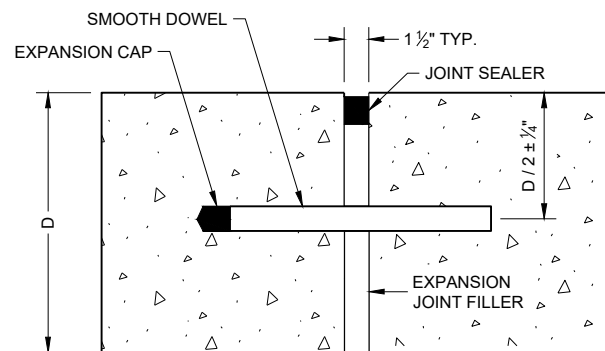
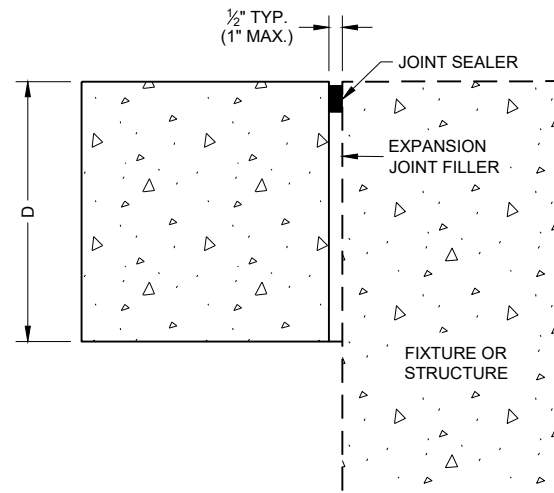
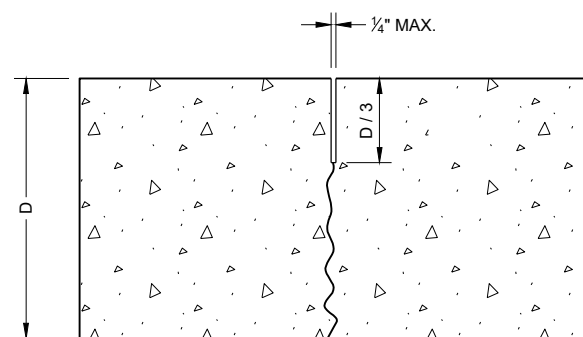
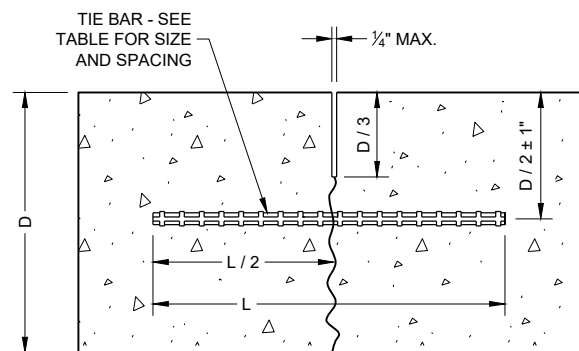
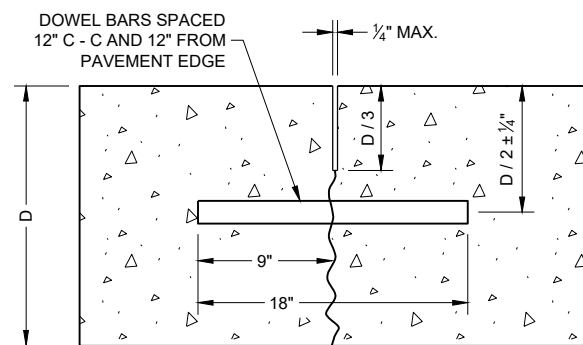
USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
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**DOWELED TRANSVERSE** ①**UNTIED - LONGITUDINAL****EXPANSION JOINTS****UNDOWELED TRANSVERSE****TIED LONGITUDINAL****DOWELED TRANSVERSE****CONTRACTION JOINTS** ②**TIE BAR TABLE**

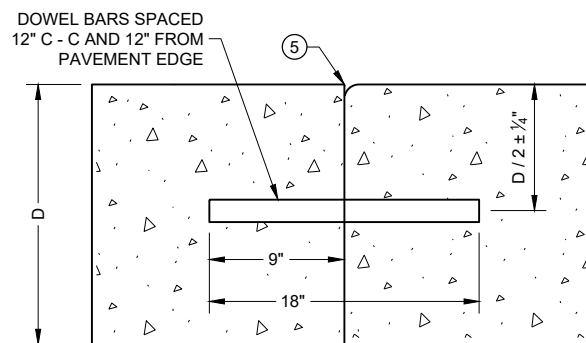
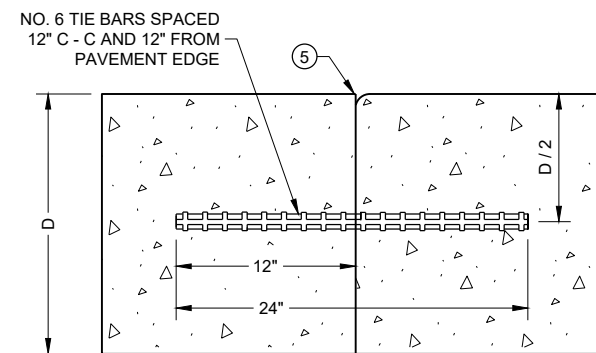
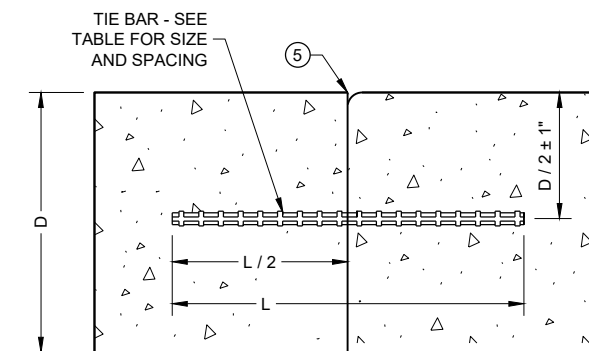
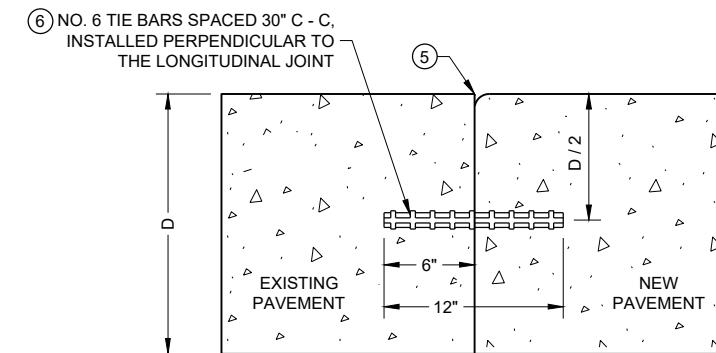
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

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

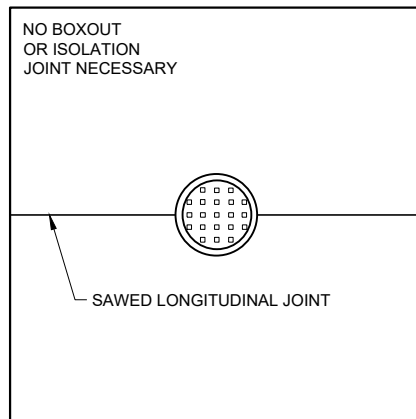
** CONFORM TO 15" MINIMUM SPACING FROM TRANSVERSE JOINTS; SPACING BETWEEN TIE BARS WILL BE 30" AT TRANSVERSE JOINTS.

GENERAL NOTES

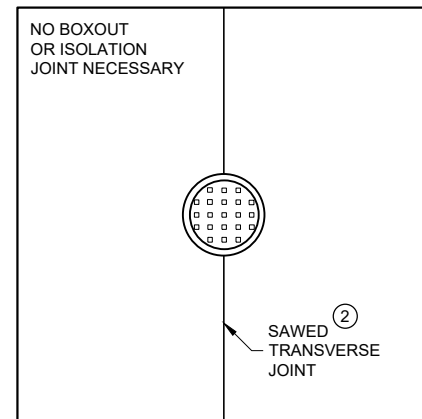
- ① USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
- ② SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
- ③ LOCATE CONSTRUCTION JOINTS A MINIMUM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

**DOWELED TRANSVERSE** ③**TIED TRANSVERSE** ③
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)**CONSTRUCTION JOINTS** ④**TIED LONGITUDINAL****TIED LONGITUDINAL TO EXISTING****CONCRETE PAVEMENT
JOINT TYPES**

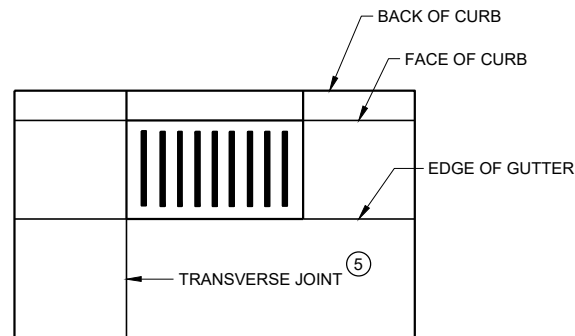
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



**MANHOLE WITH
LONGITUDINAL JOINT**



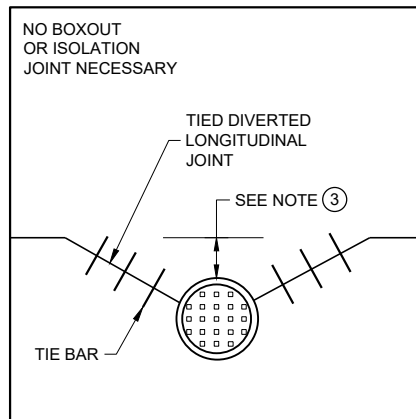
**MANHOLE WITH
TRANSVERSE JOINT**



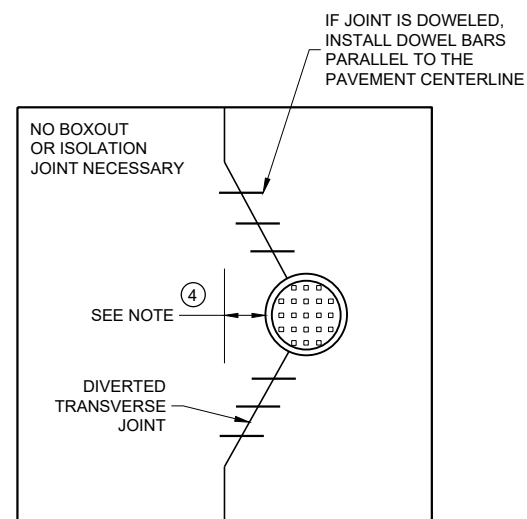
**INLET WITH
TRANSVERSE JOINT**

GENERAL NOTES

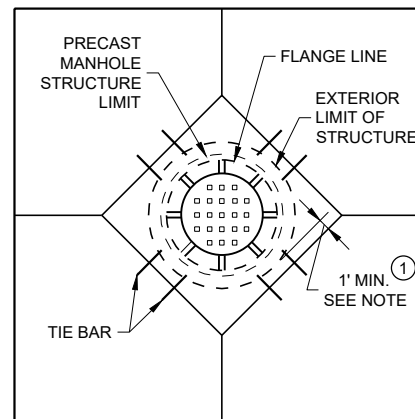
- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE 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 REINFORCEMENT REBAR AROUND THE MANHOLE.
- ④ IF THE DISTANCE FROM THE EDGE OF THE MANHOLE TO THE NEAREST TRANSVERSE JOINT IS LESS 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 REINFORCEMENT REBAR AROUND THE MANHOLE.
- ⑤ ALIGN TRANSVERSE JOINT WITH ONE EDGE OF INLET WHEN PRACTICAL.



**MANHOLE WITH DIVERTED
LONGITUDINAL CONTRACTION JOINT**



**MANHOLE WITH DIVERTED
TRANSVERSE CONTRACTION JOINT**

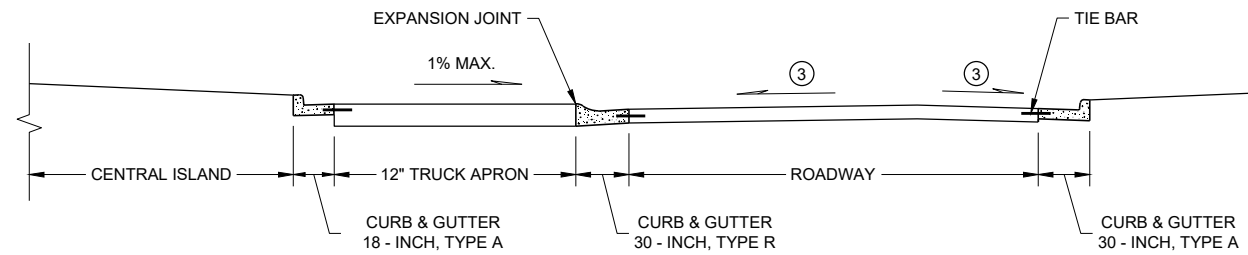


**DIAGONAL MANHOLE BOXOUT
FOR CONSTRUCTION JOINTS**

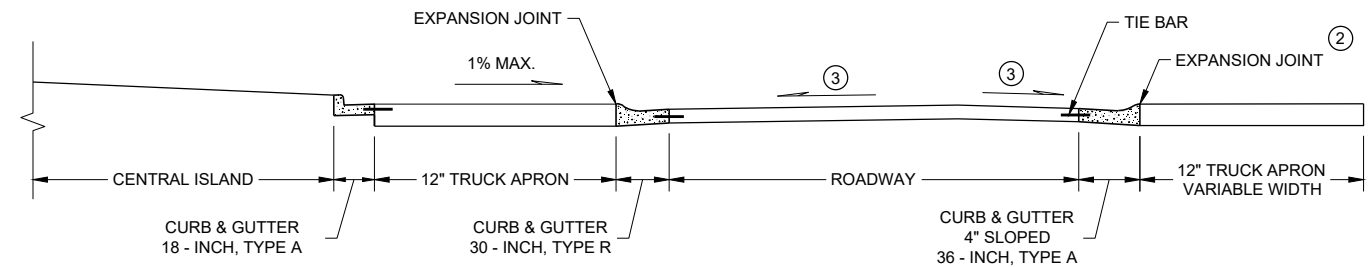
**CONCRETE PAVEMENT
JOINTING AT UTILITY
FIXTURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

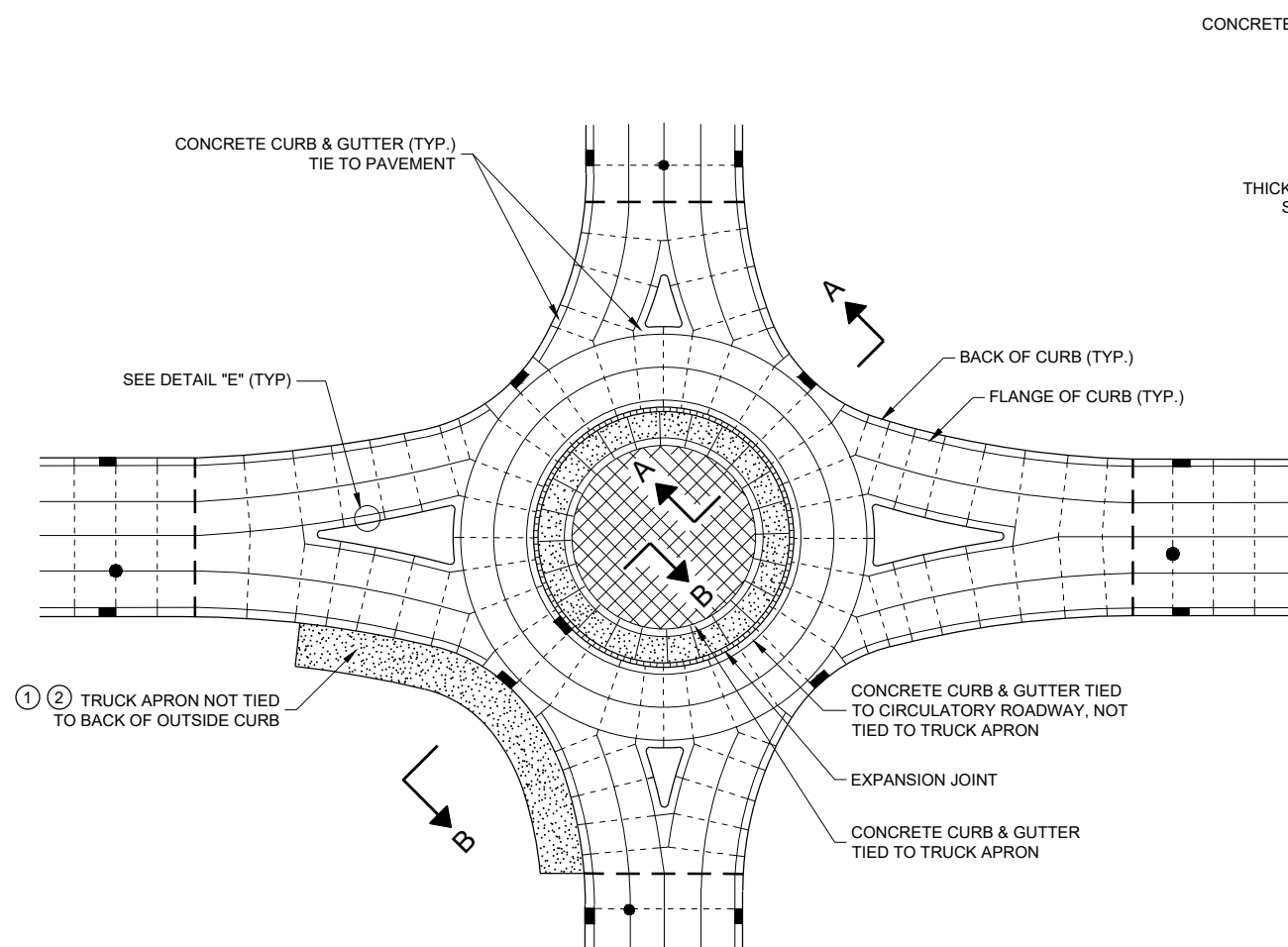
APPROVED
May 2023 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 120
FHWA



SECTION A - A



SECTION B - B

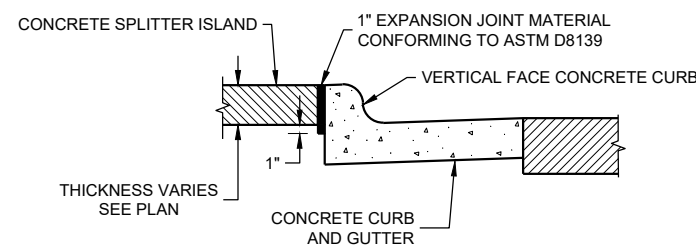


ISOLATED CIRCLE JOINT LAYOUT FOR ROUNDABOUTS

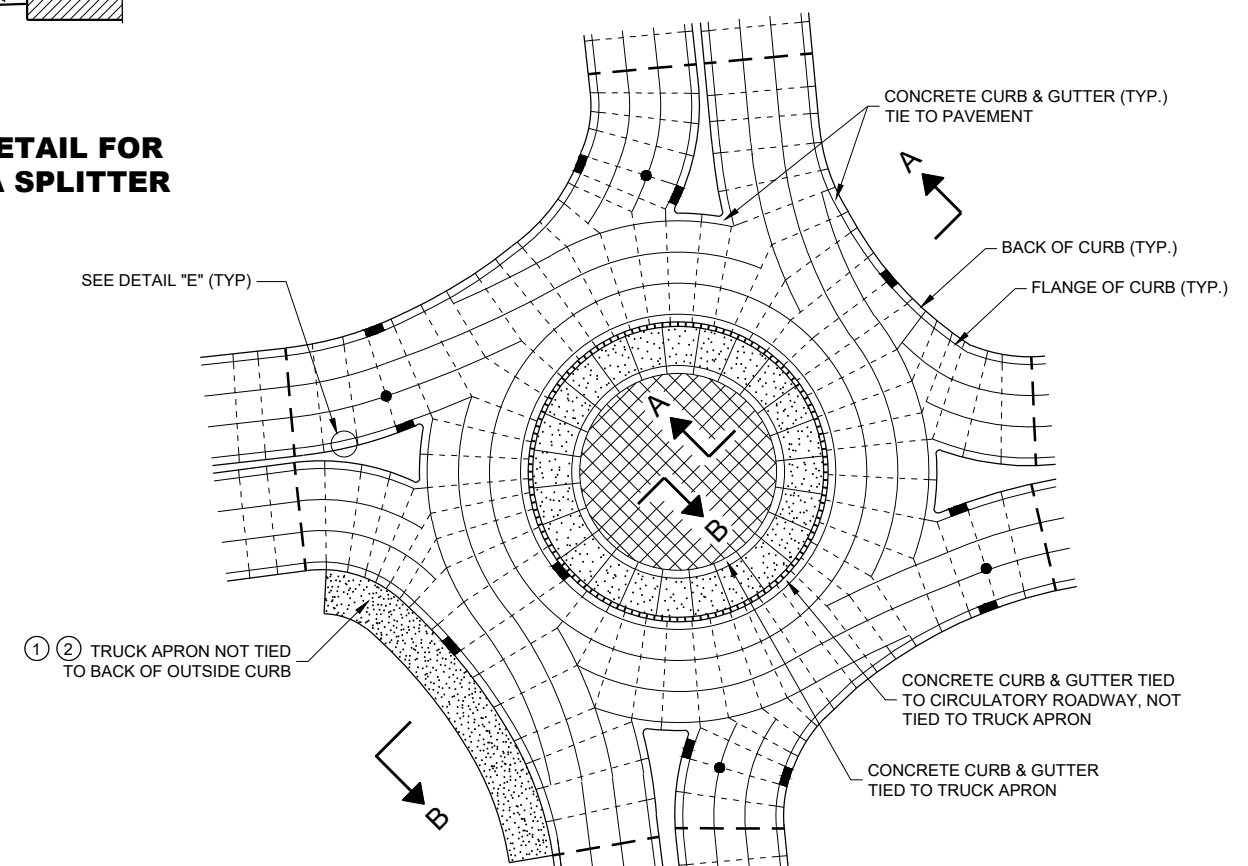
GENERAL NOTES

MAXIMUM JOINT SPACING IS IN ACCORDANCE WITH THE TABLE SHOWN ON SDD 13C18 - SHEET "a"
USE EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.
DO NOT DOWEL OR TIE THE TRUCK APRON TRANSVERSE JOINTS.

- ① DESIGNER DETERMINES SIZE AND LOCATION(S) OF TRUCK APRON TO ACCOMMODATE TRACKING OF OVERSIZE / OVERWEIGHT VEHICLES.
- ② TIE THE OUTSIDE TRUCK APRON TO THE BACK SIDE OF CURB ONLY WHEN ENTIRE TRUCK APRON IS LESS THAN 3 FEET.
- ③ CONFORM TO PLAN CONSTRUCTION DETAILS FOR CIRCULATORY ROADWAY CROSS SLOPE.



**DETAIL 'E'
EXPANSION JOINT DETAIL FOR
VERTICAL CURB AT A SPLITTER
ISLAND**



PINWHEEL JOINT LAYOUT FOR ROUNDABOUTS

LEGEND

- DOWELED JOINT
- TIED JOINT
- ===== EXPANSION JOINT
- — — — — POTENTIAL DOWELED EXPANSION JOINT
- [Pattern] TRUCK APRON
- [Pattern] CENTRAL ISLAND
- ● UTILITY STRUCTURES

**CONCRETE PAVEMENT JOINTING
AND STEEL REINFORCEMENT
IN ROUNDABOUTS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Peter Kemp P.E.
DATE
PAVEMENT SUPERVISOR 121
FHWA

LEGEND

DOWELED JOINT

————

TIED JOINT

=====

EXPANSION JOINT

— — — —

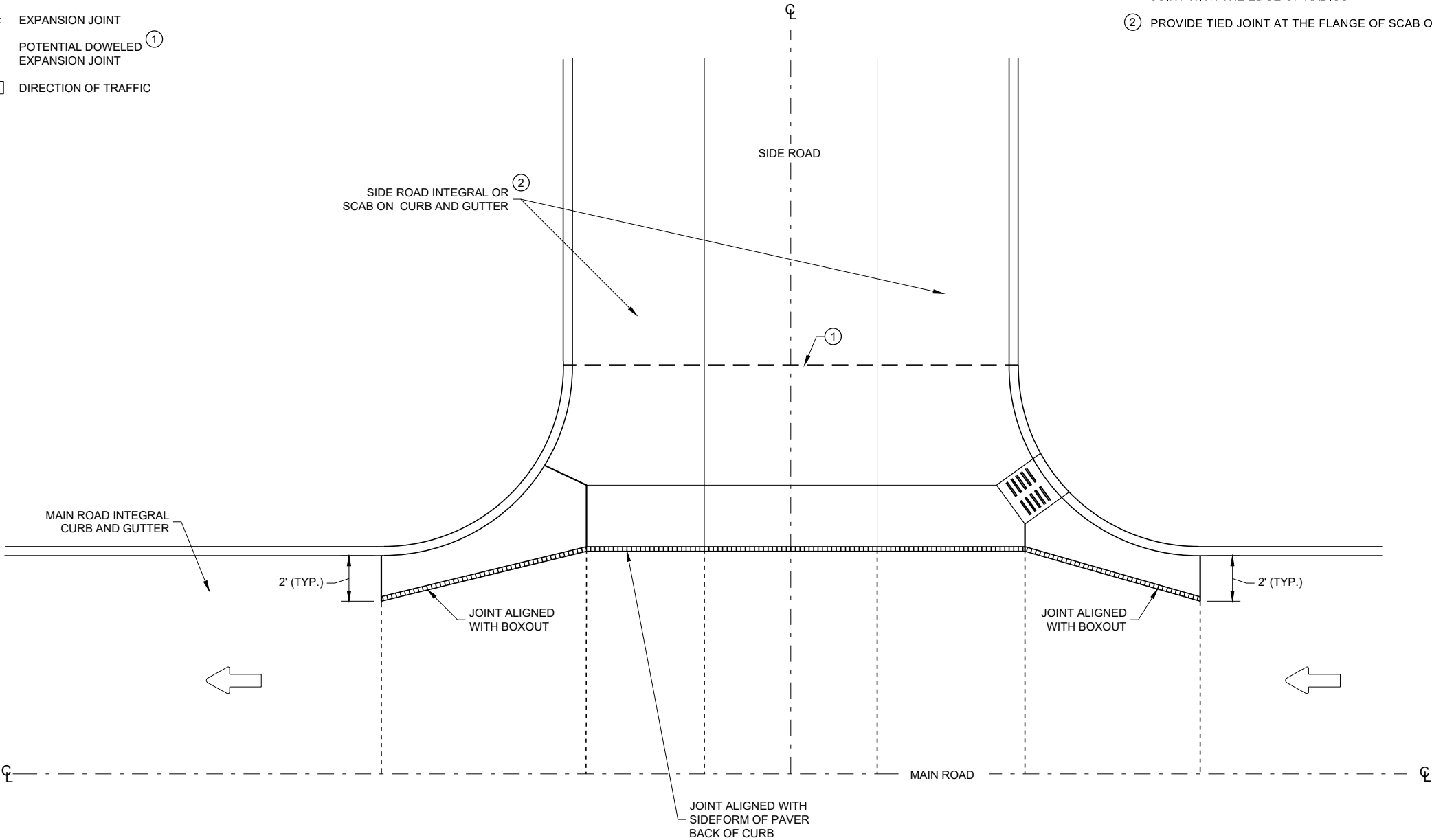
POTENTIAL DOWELED
EXPANSION JOINT ①

←

DIRECTION OF TRAFFIC

GENERAL NOTES

- ① 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 THE EDGE OF RADIUS.
- ② PROVIDE TIED JOINT AT THE FLANGE OF SCAB ON CURB IF SCAB ON CURB AND GUTTER IS USE.

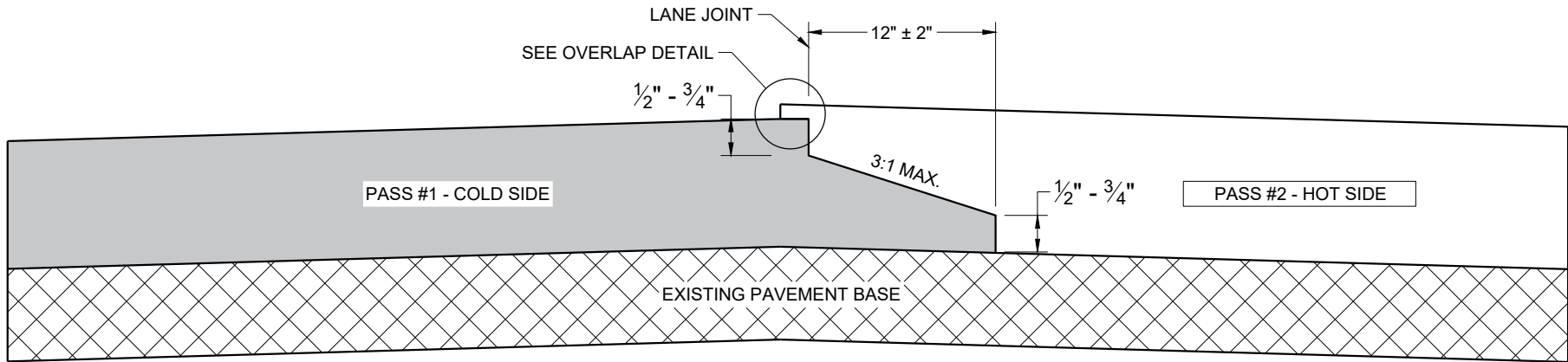


INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

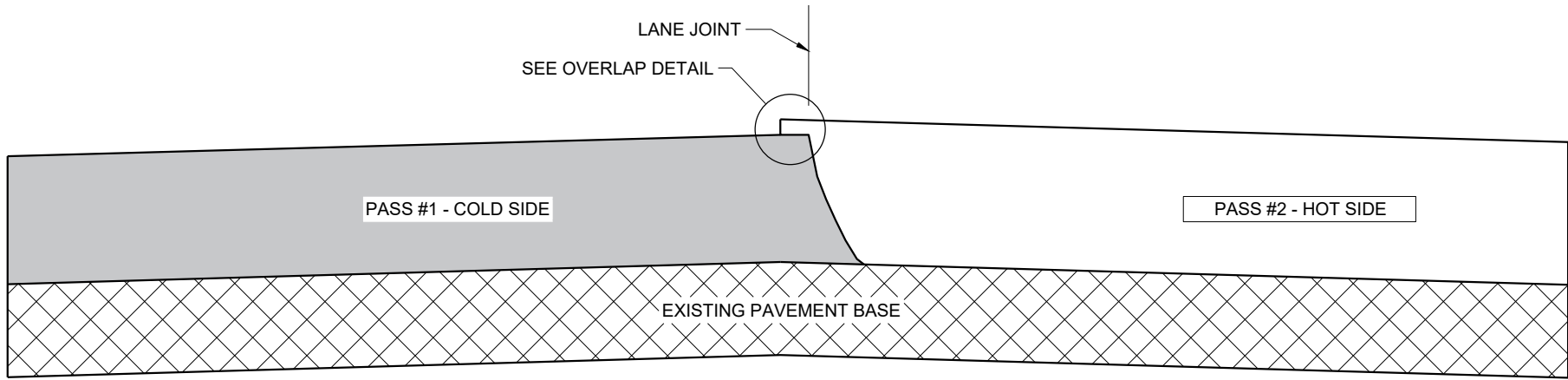
CONCRETE PAVEMENT
INTERSECTION BOXOUT FOR
INTEGRAL CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

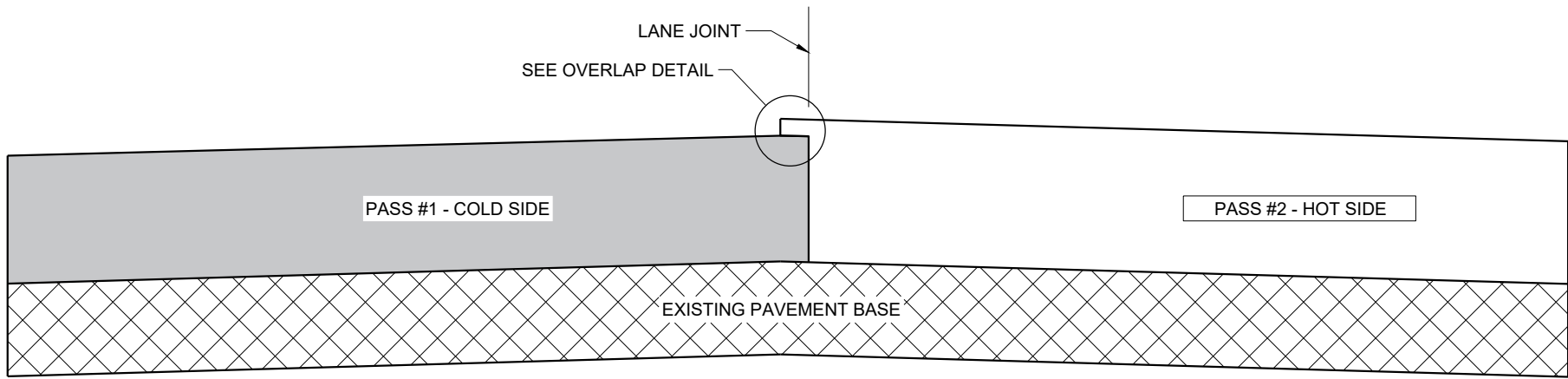
APPROVED
May 2023 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 122
FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

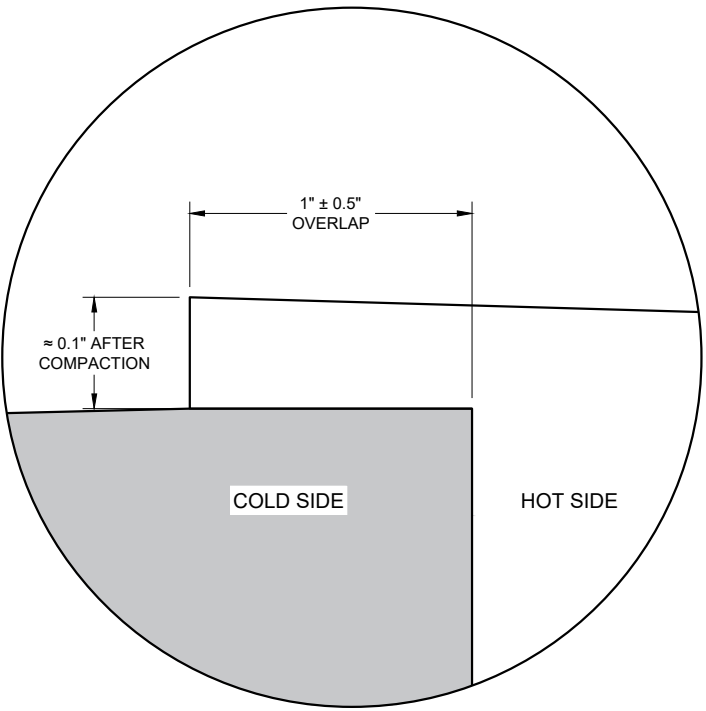
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY $1" \pm 0.5"$ AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO 2" FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.

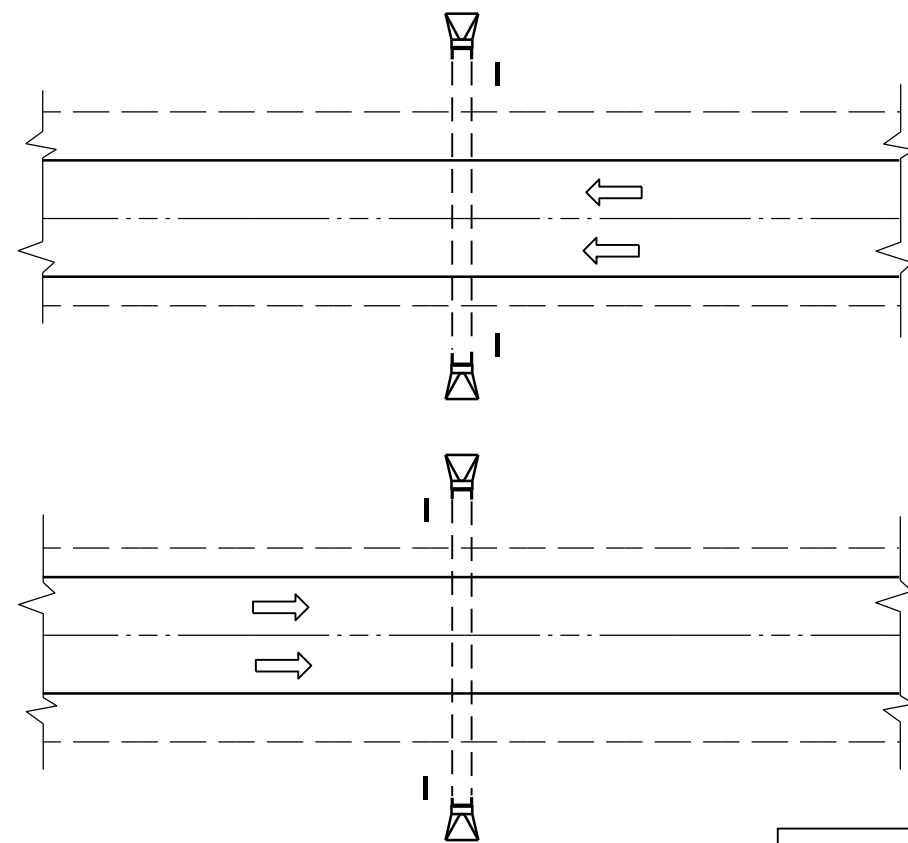


OVERLAP DETAIL (TYPICAL)

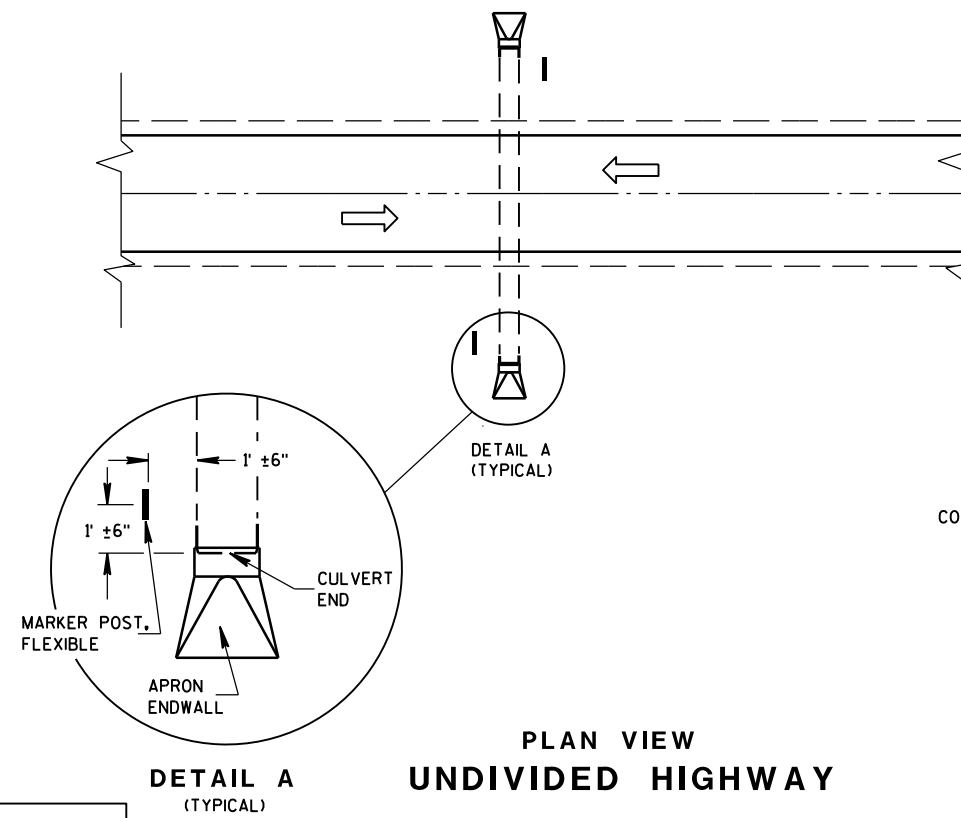
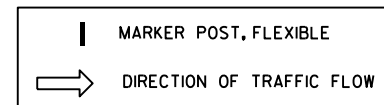
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 123
FHWA



PLAN VIEW
DIVIDED HIGHWAY

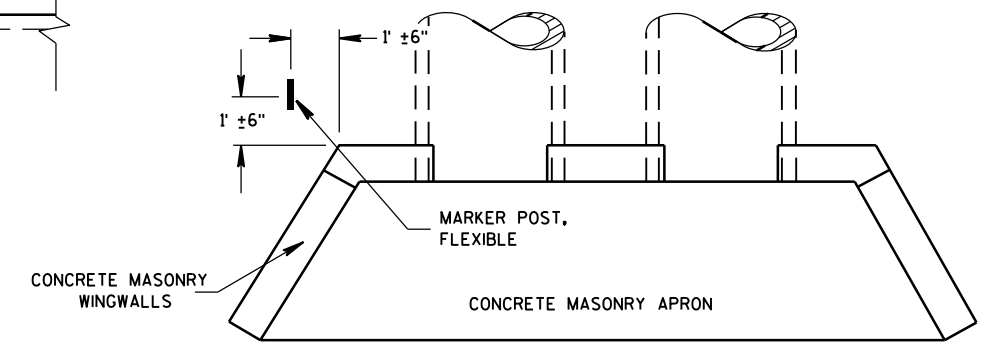


PLAN VIEW
UNDIVIDED HIGHWAY

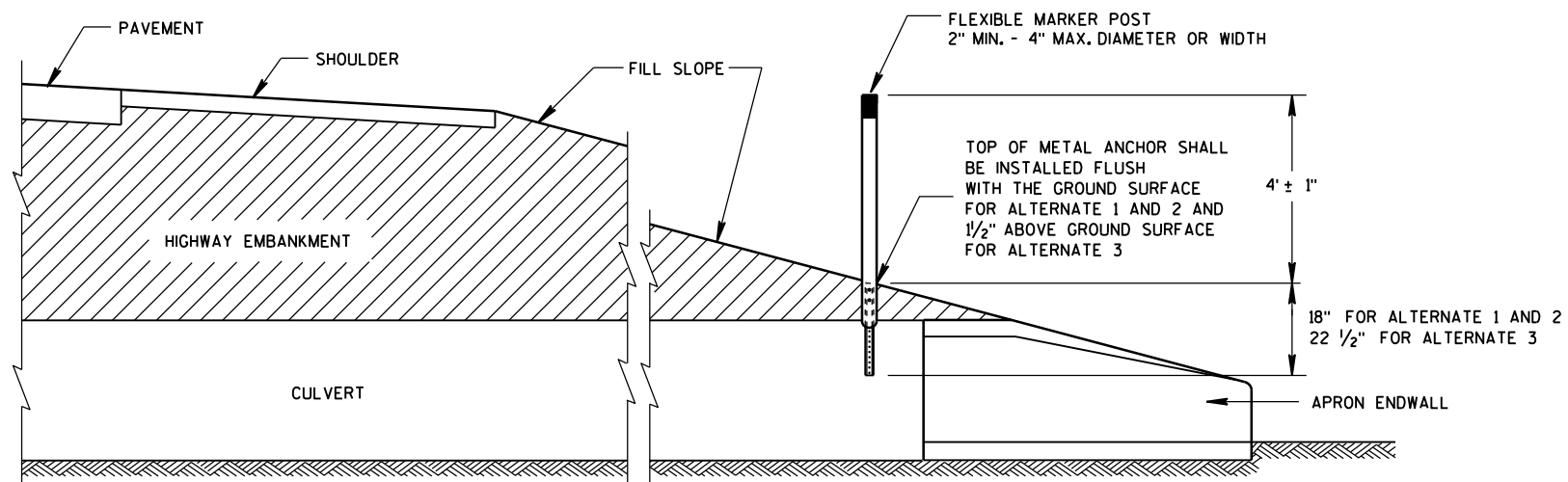
FLEXIBLE MARKER POST LOCATION

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.



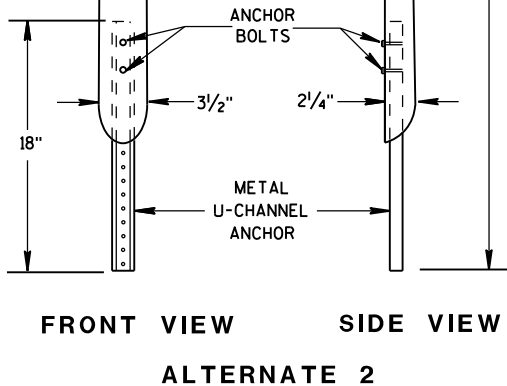
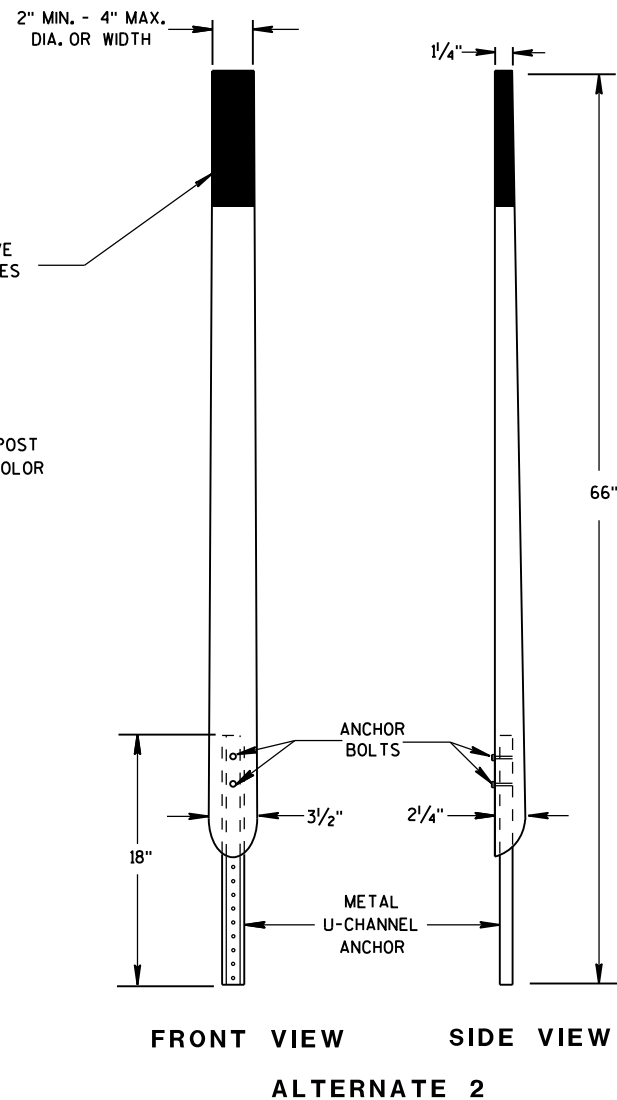
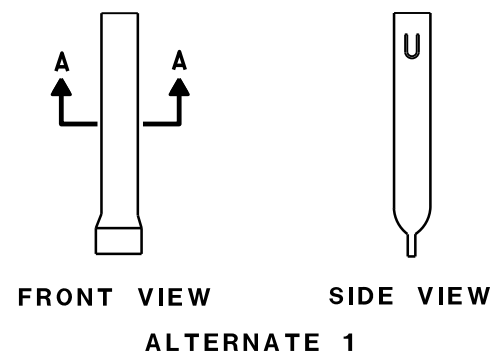
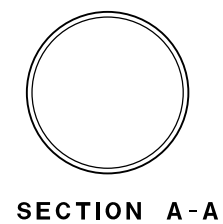
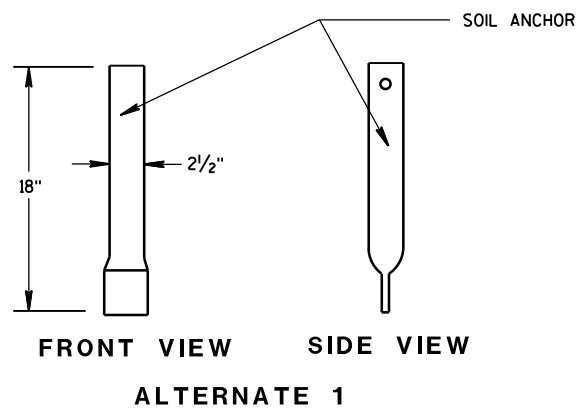
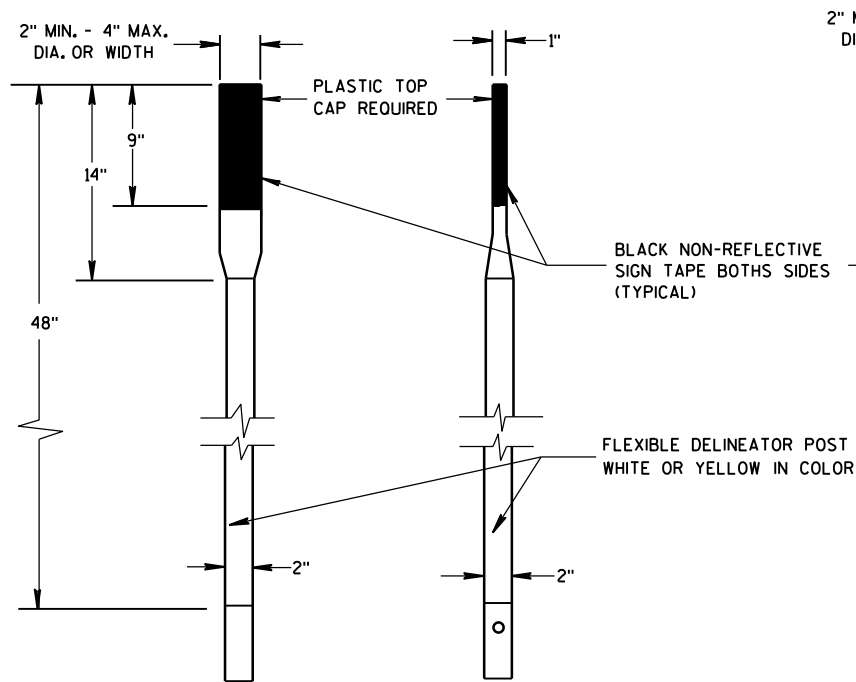
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



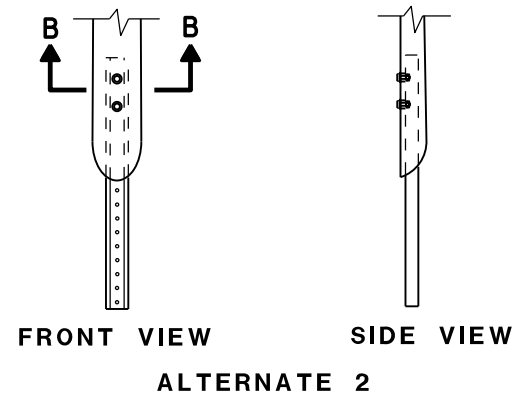
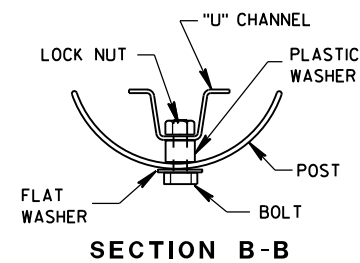
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

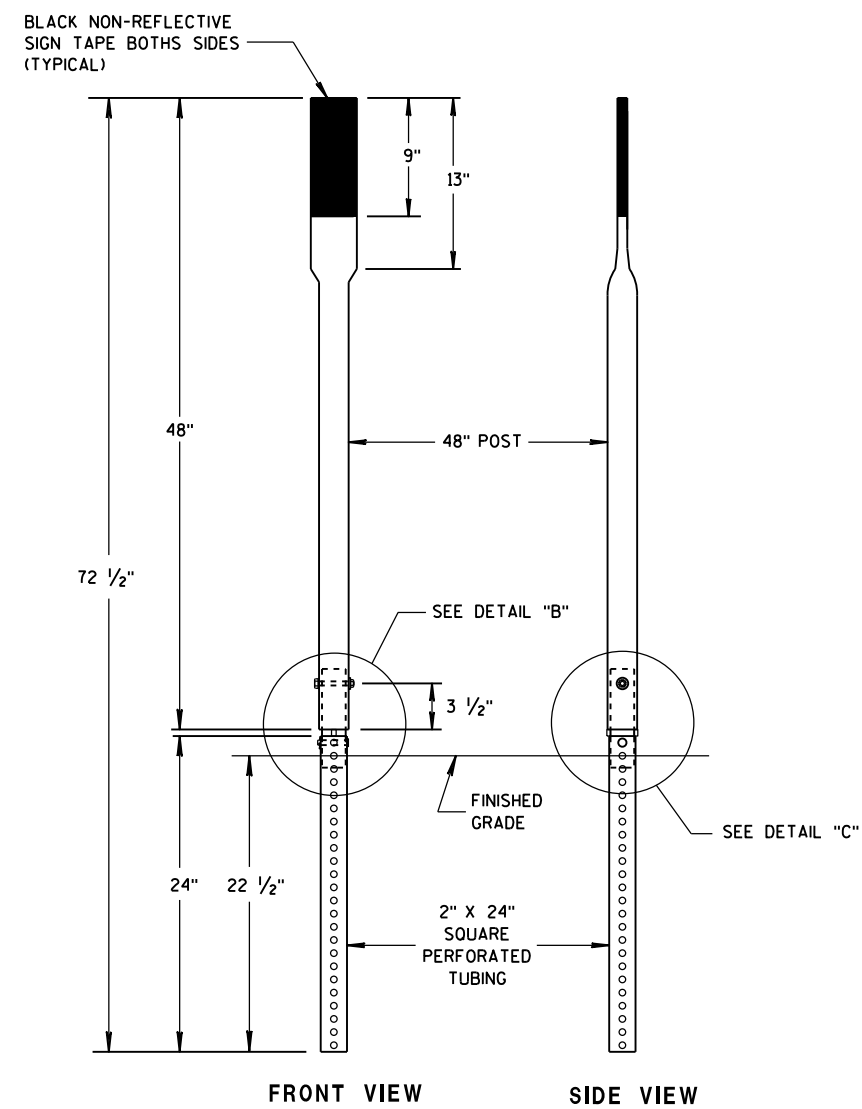
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 124



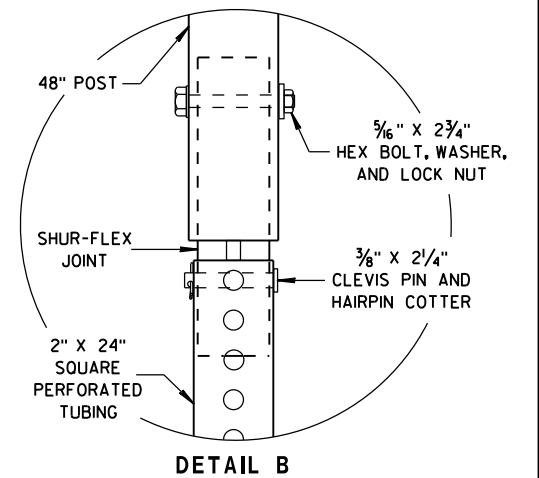
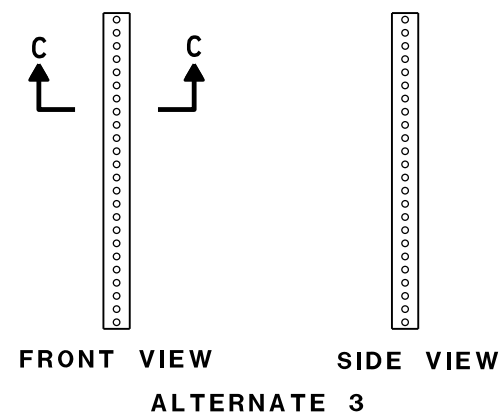
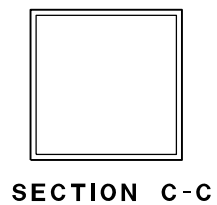
FLEXIBLE MARKER POSTS



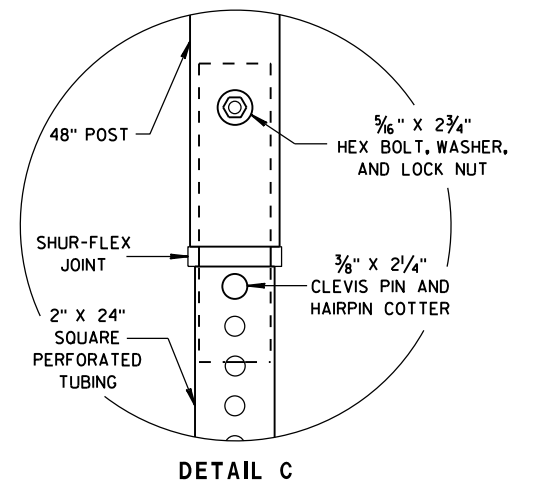
FLEXIBLE MARKER POST ANCHORS



FRONT VIEW SIDE VIEW
ALTERNATE 3



DETAIL B



DETAIL C

FLEXIBLE MARKER POST FOR CULVERT END

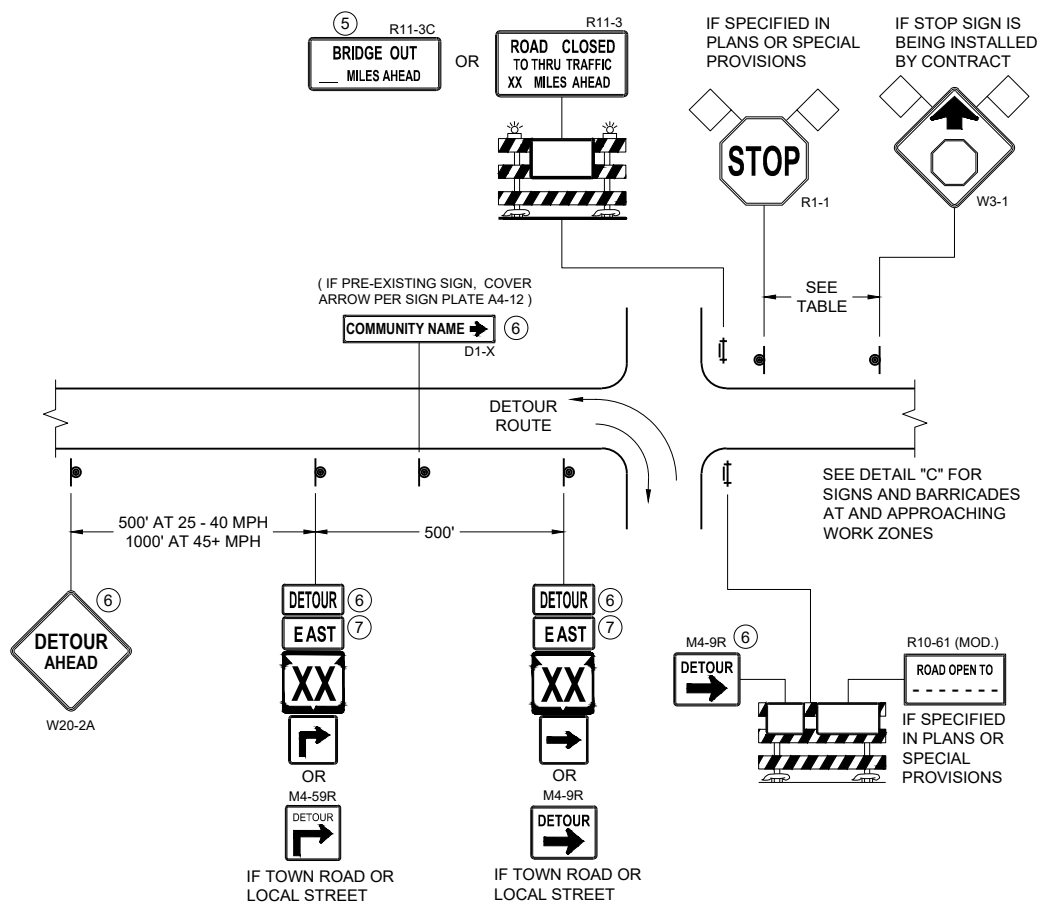
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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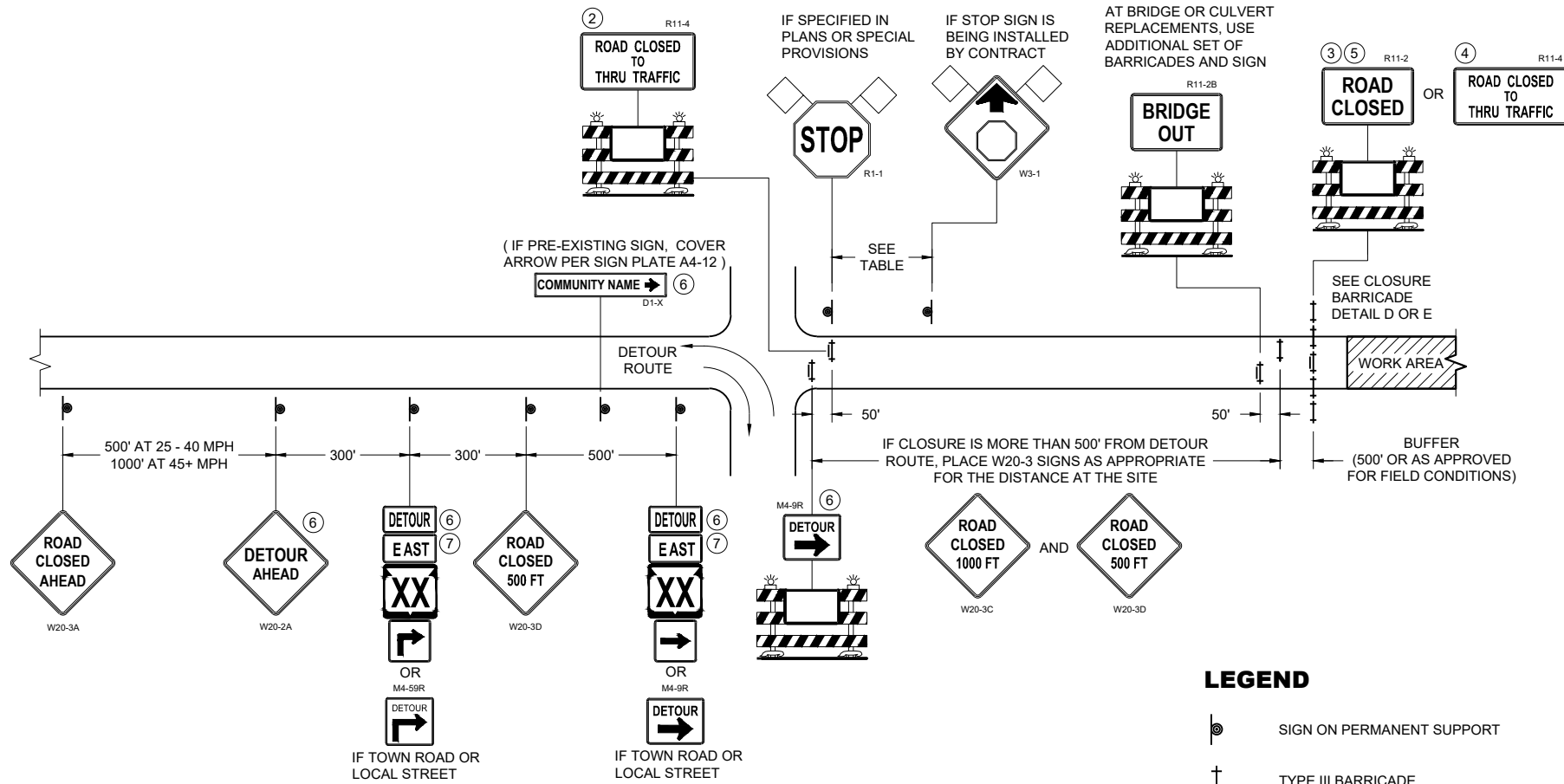
10/1/2012
DATE

FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER 125 IGN



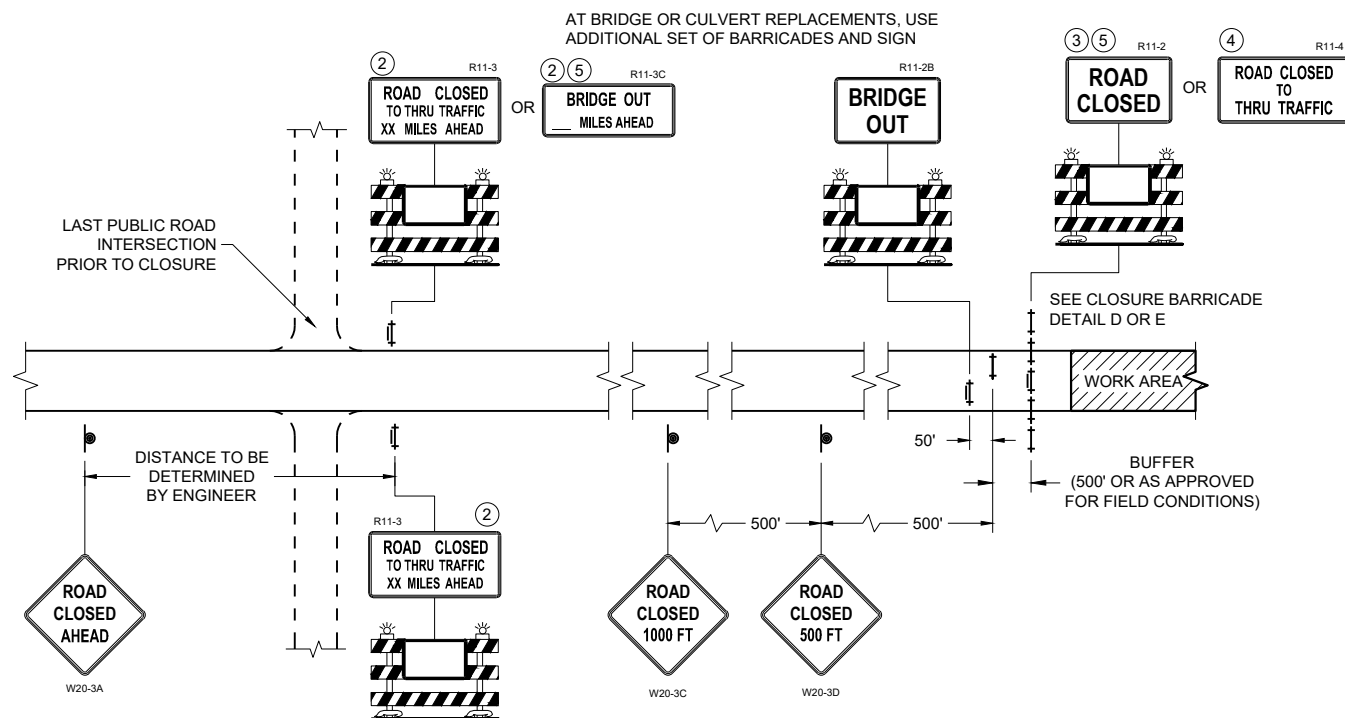
DETAIL A
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)



DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

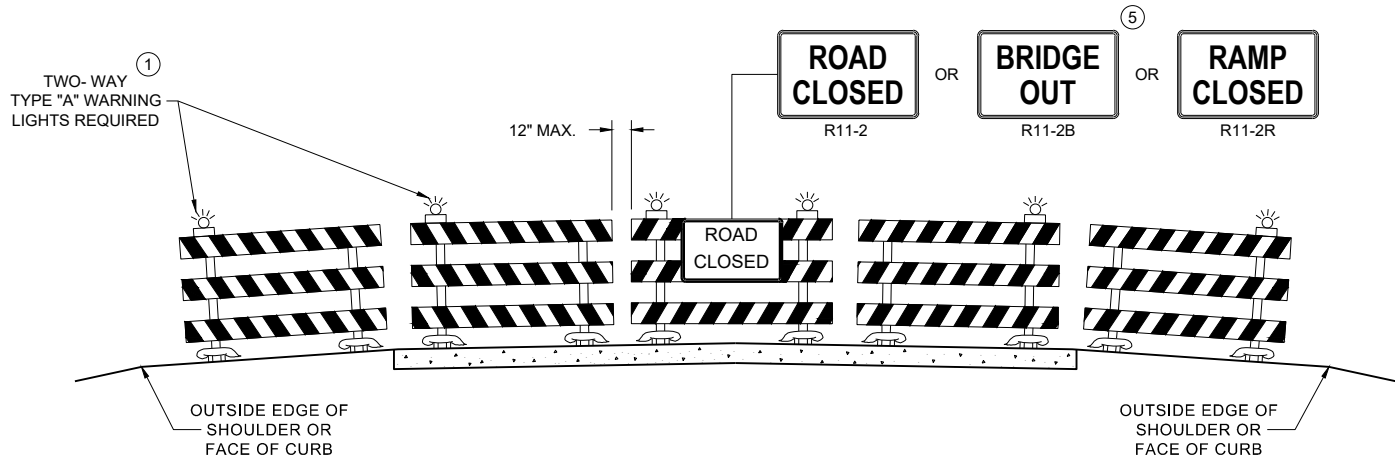
LEGEND

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

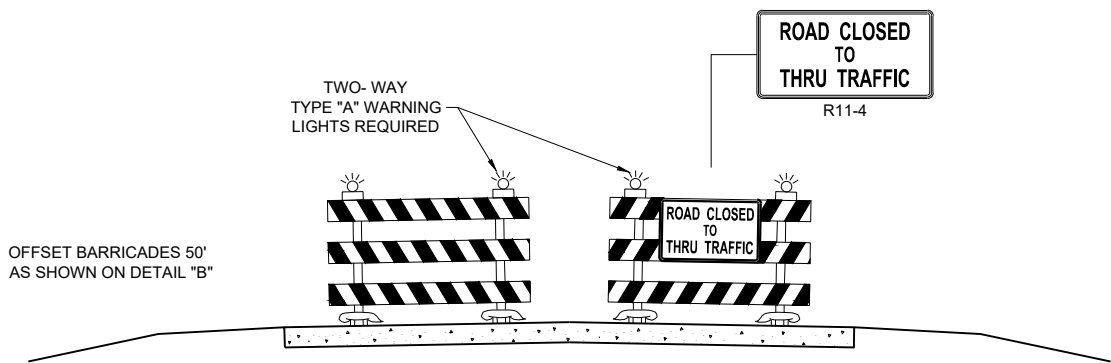
**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER
FHWA



DETAIL D
ROAD CLOSURE BARRICADE DETAIL
APPROACH VIEW



DETAIL E
LANE CLOSURE BARRICADE DETAIL
APPROACH VIEW

SEE SDD 15C2 - SHEET "a" FOR LEGEND

GENERAL NOTES

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

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

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

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

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

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

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

PARTIAL NUMBERS ON SIGNS SHALL BE DISPLAYED AS A WHOLE NUMBER(AS NEEDED) FOLLOWED BY A FRACTION. SIGNS SHALL NOT DISPLAY NUMBERS IN DECIMAL FORM.

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

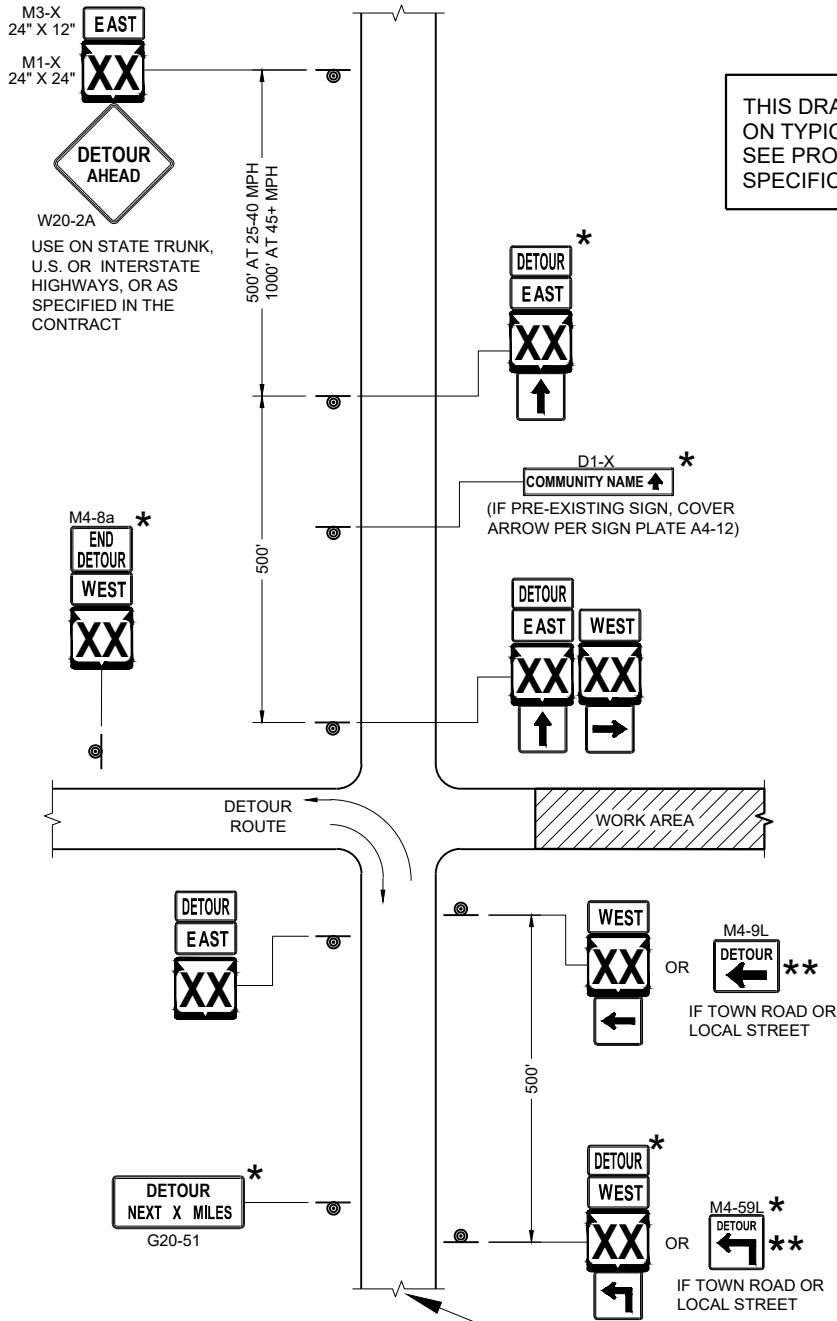
ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 SHALL, 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" (36" X 18" 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)
- MO5 - 1 AND MO6 - 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"

SIGNS PLACED ON TYPE III BARRICADES THAT ARE SIZES OTHER THAN 48"X30" SHALL HAVE A CORRUGATED POLYPROPYLENE OR POLYETHYLENE PLASTIC SIGN BASE.

- 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 AN 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 ROAD 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.

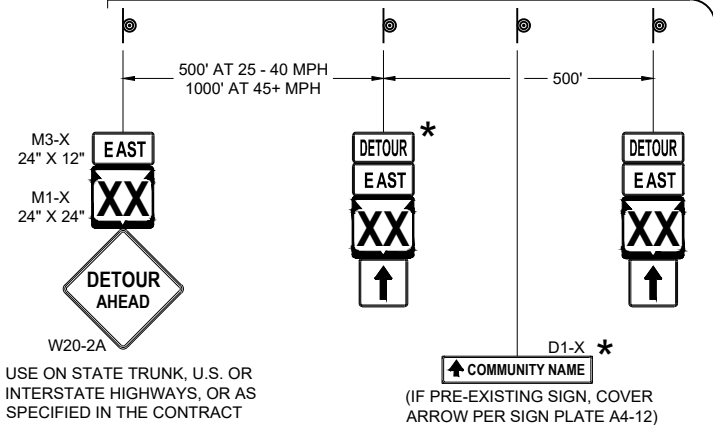
BARRICADES AND SIGNS FOR VARIOUS CLOSURES	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2025 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



SEE SPECIFIC PROJECT DETOUR
SIGNING DETAIL SHEETS AND
DETAIL A OR B ON SDD SHEET 15C02 - SHEET "a"

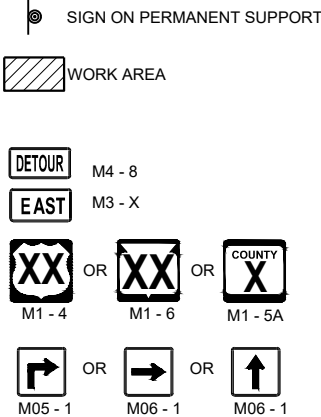
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

MATCH POINT



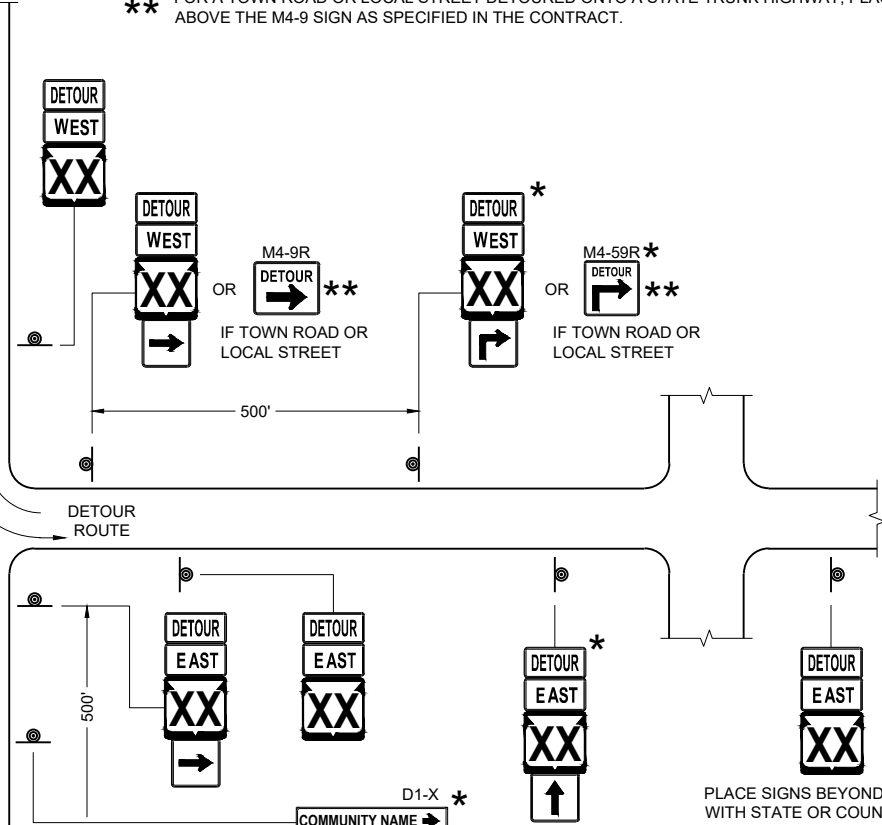
DETAIL F
DETOUR SIGNING

LEGEND



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" (36" X 18" 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 AND M4-59 SHALL BE 30" X 24"
M4-8a SHALL BE 24" X 18"
G20-51 SHALL BE 60" X 24"
W20-2A 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.



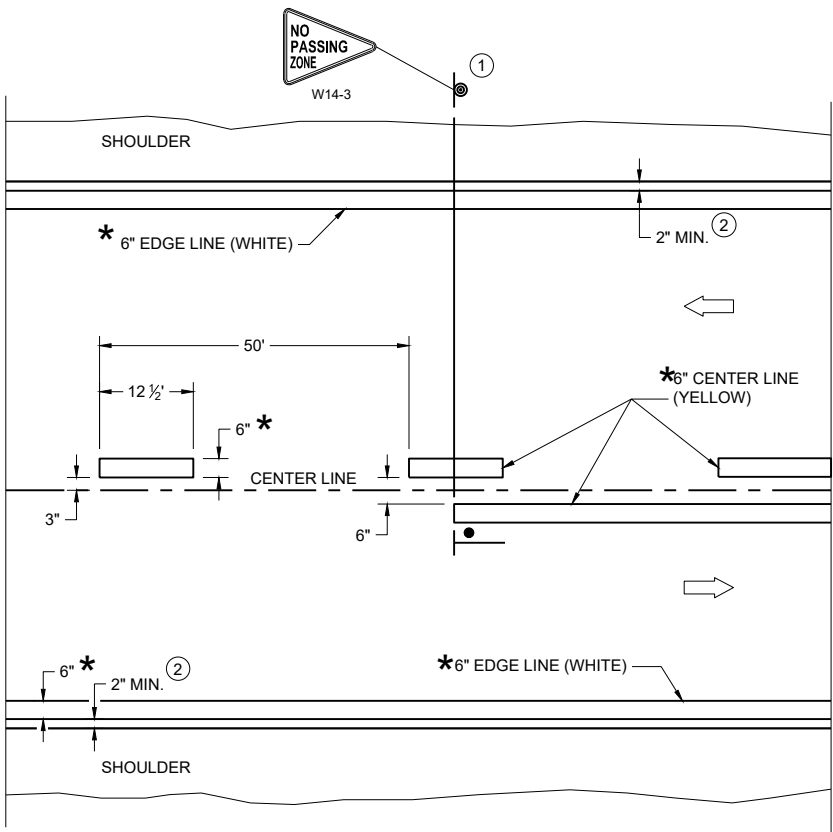
DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

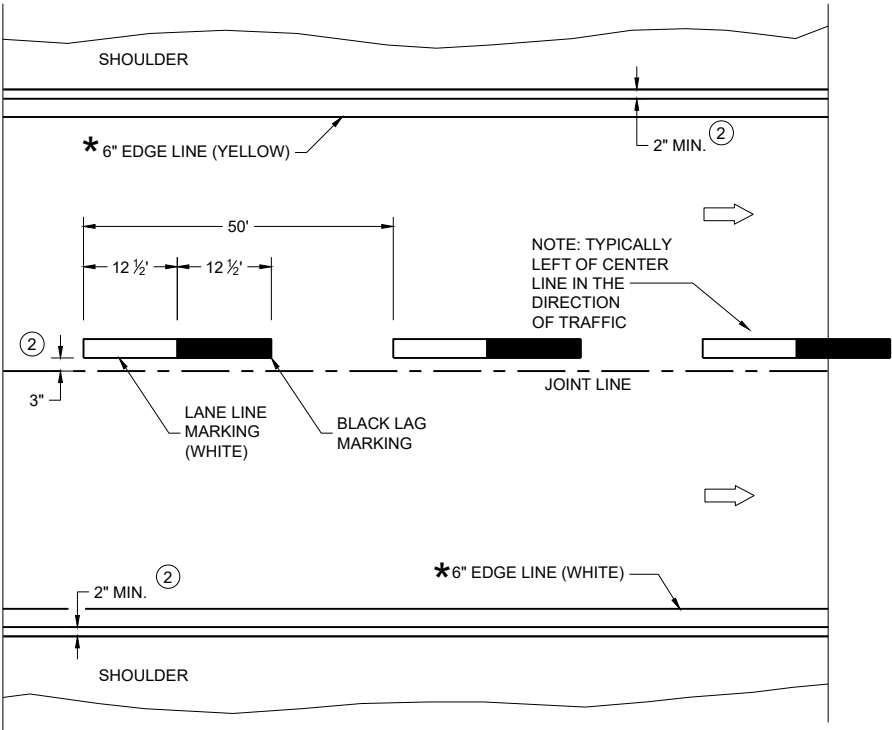
APPROVED
November 2025
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

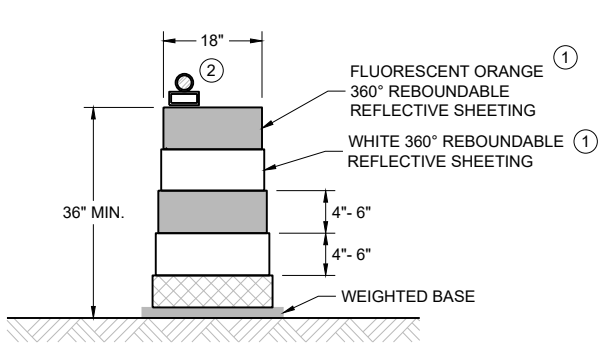
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

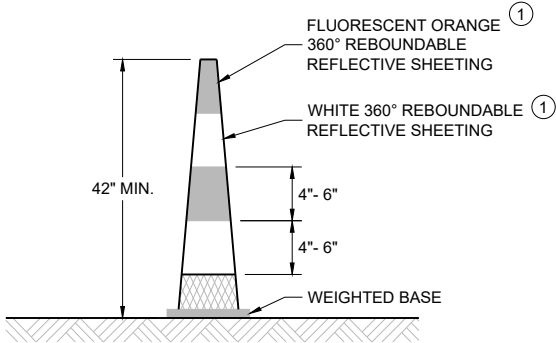
LEGEND

- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

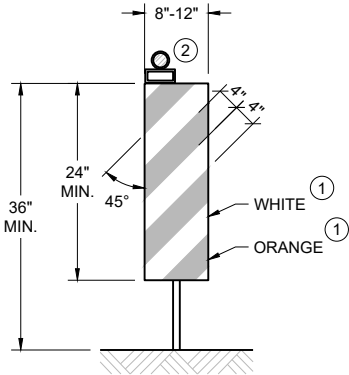
PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA 129	



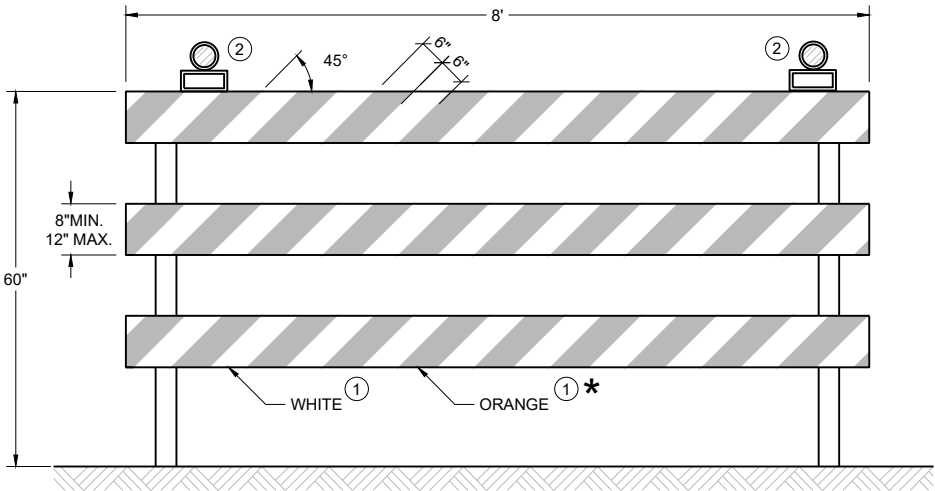
DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



42" CONE
DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



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

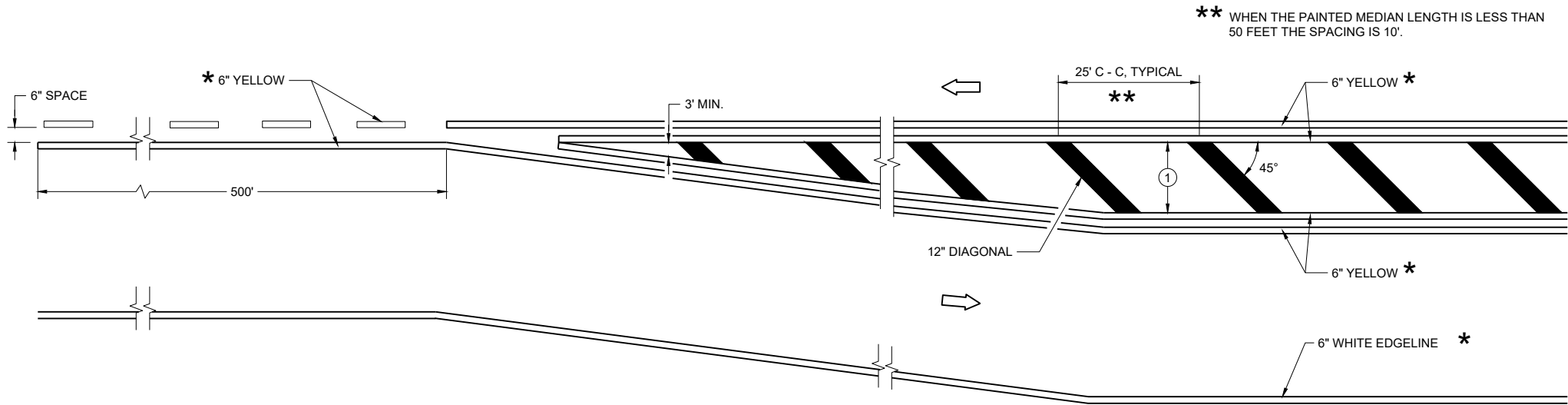


TYPE III BARRICADE
IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.
★ IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

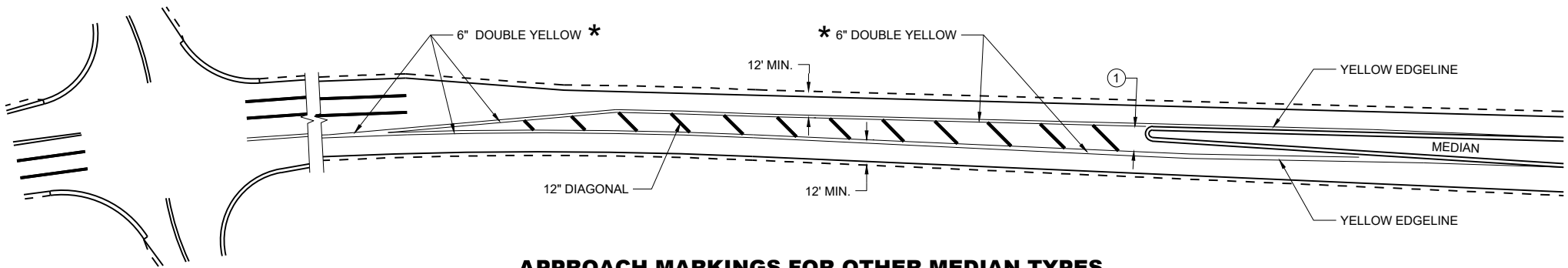
GENERAL NOTES

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

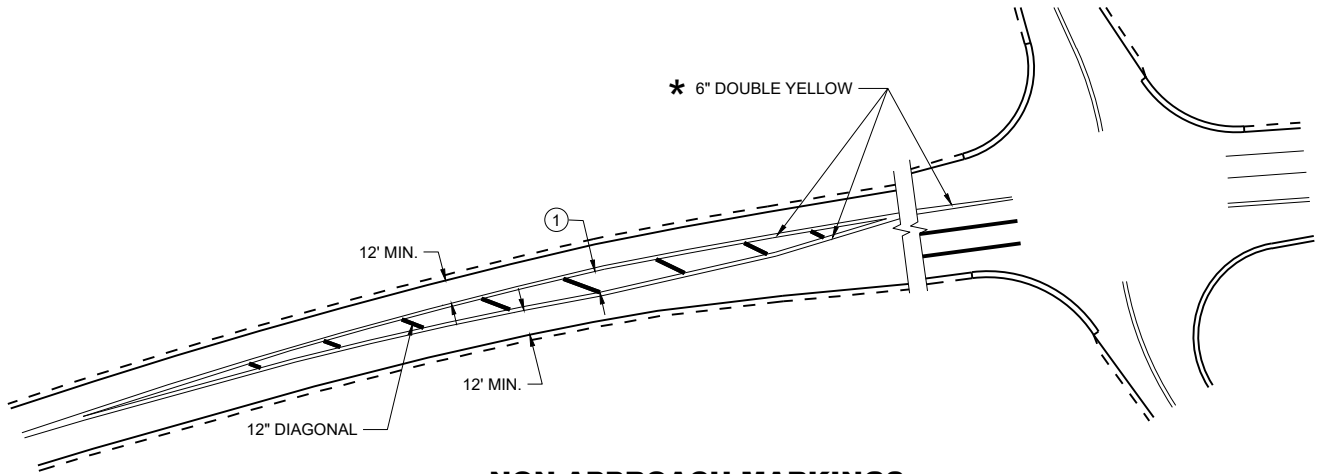
CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2026 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	



MEDIAN ISLAND DETAIL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON-APPROACH MARKINGS

GENERAL NOTES

- ① DIAGONALS ARE OPTIONAL WHEN PAINTED ISLAND IS LESS THAN 6 FEET AT THE WIDEST POINT. OMIT DIAGONALS IF WIDTH IS LESS THAN 4 FEET.

➡ DIRECTION OF TRAVEL

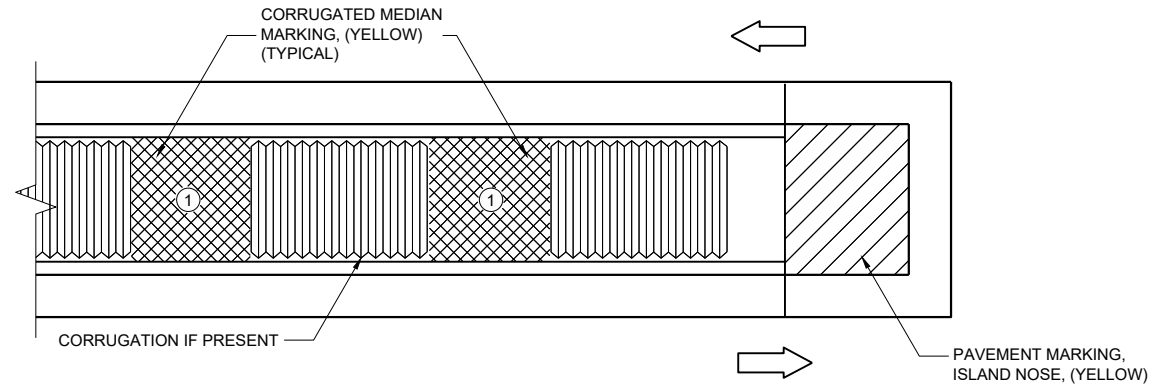
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

MEDIAN ISLAND
PAVEMENT MARKINGS

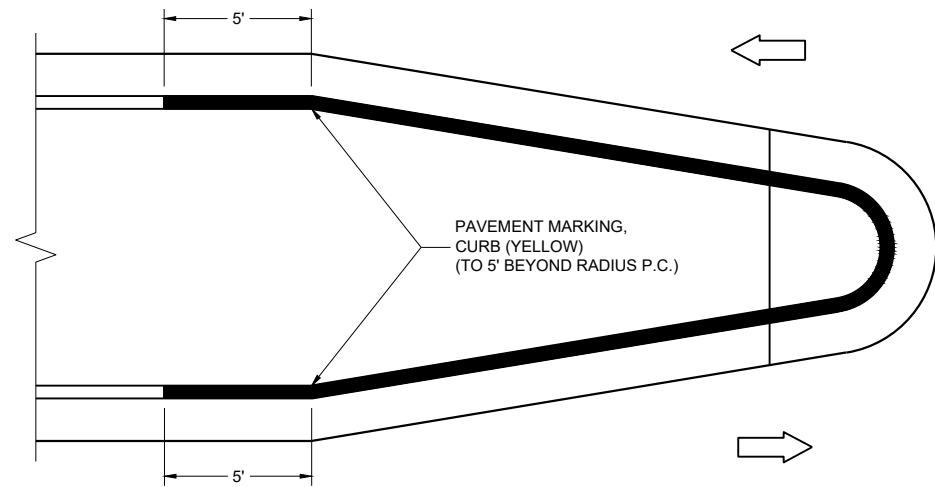
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2024 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer

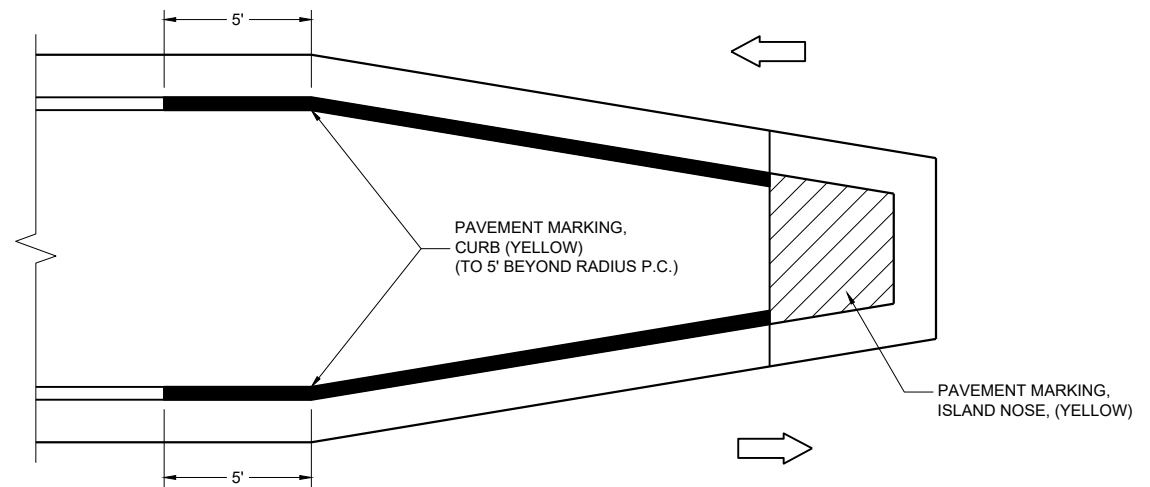
FHWA 131



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

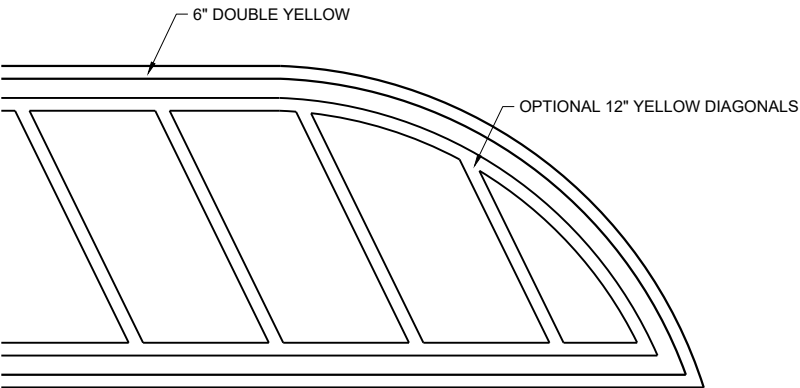
**TYPICAL PLACEMENT OF
PAVEMENT MARKING ON MEDIAN ISLANDS**

GENERAL NOTES

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.

① APPLY PAVEMENT MARKING TO THE FLAT PORTION OF CORRUGATED MEDIAN.

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

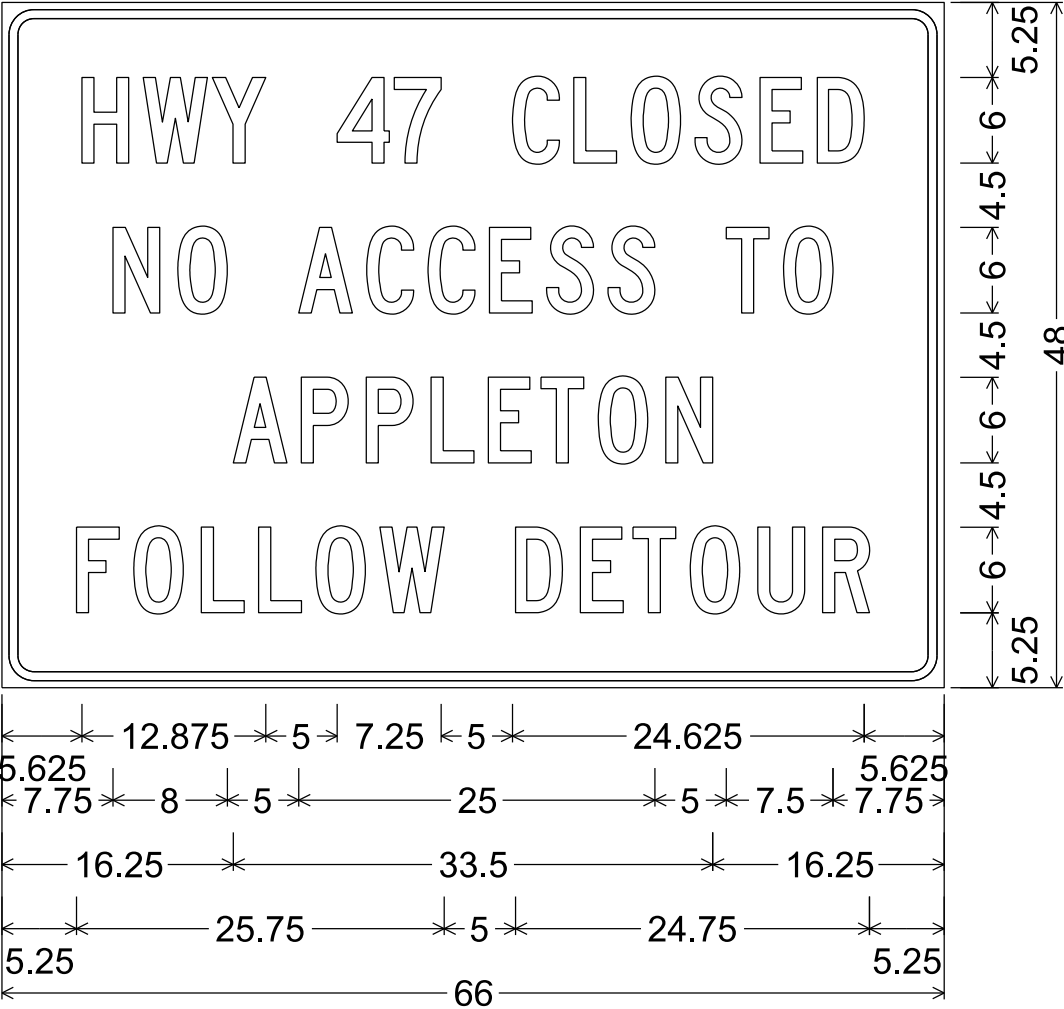


FLUSH MEDIAN ISLAND NOSE

**PAVEMENT MARKINGS,
MEDIAN ISLAND NOSE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

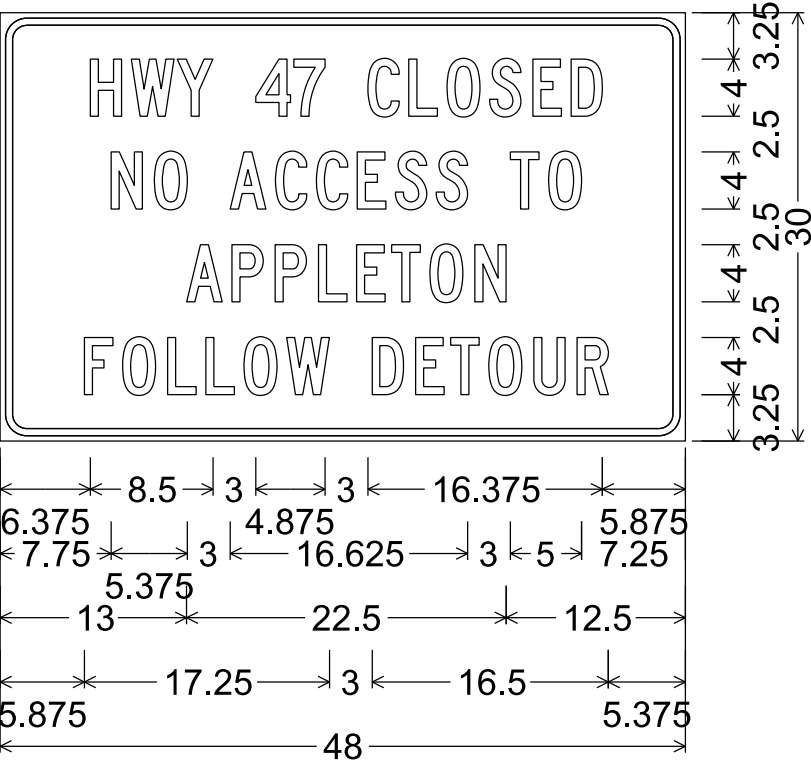
APPROVED
August 2024 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer
FHWA



2.250" Radius, 0.625" Border, 0.500" Indent

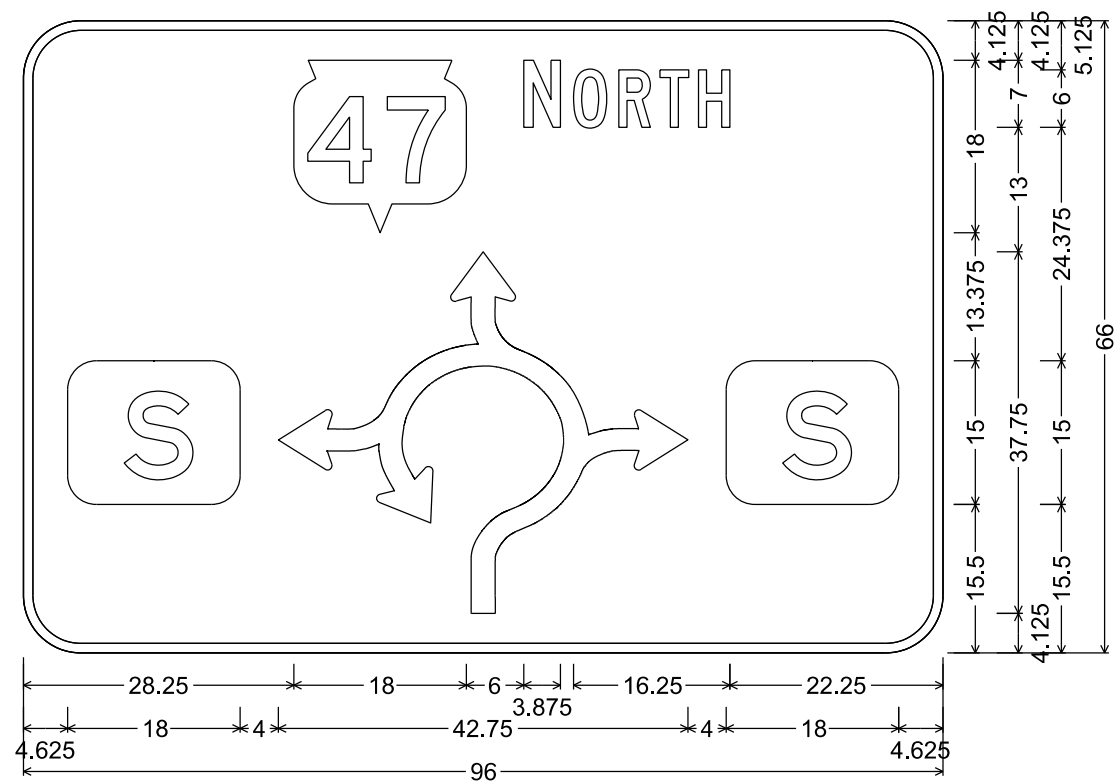
NOTES

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



1.875" Radius, 0.500" Border, 0.375" Indent

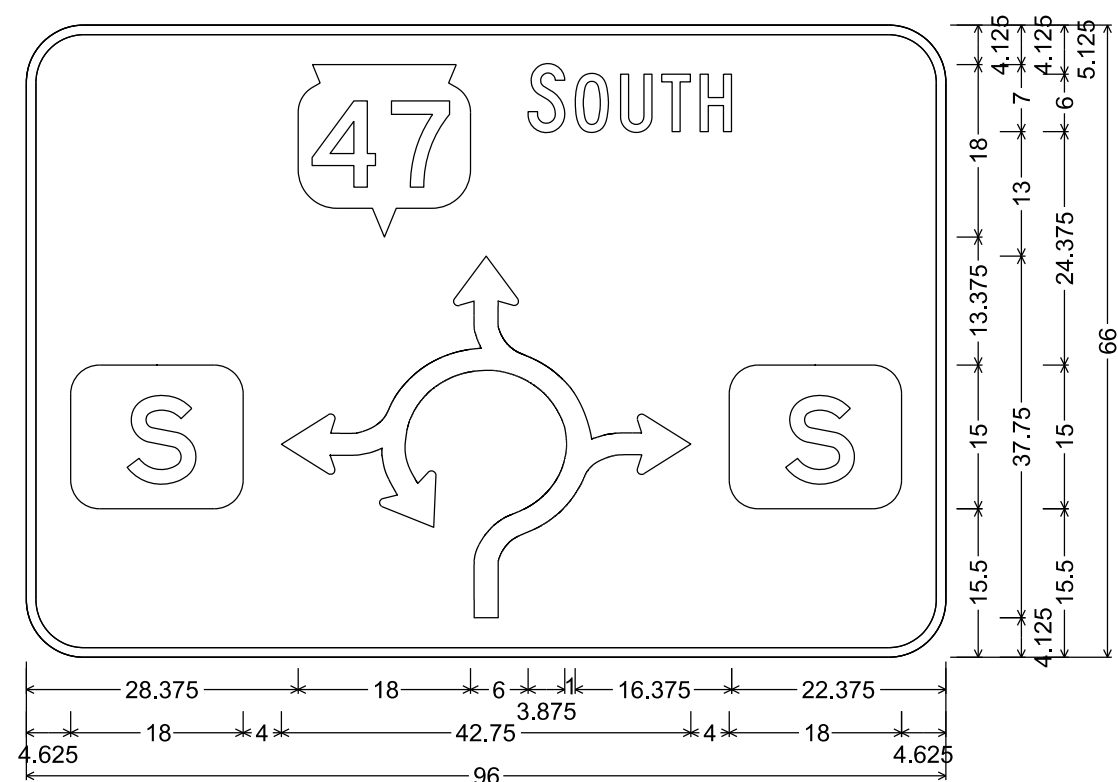
7



D1-62; 6.000" Radius, 1.000" Border

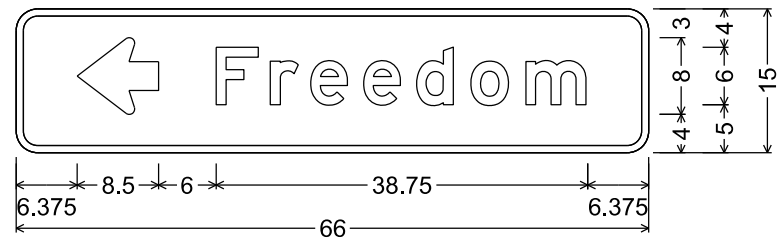
NOTES

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

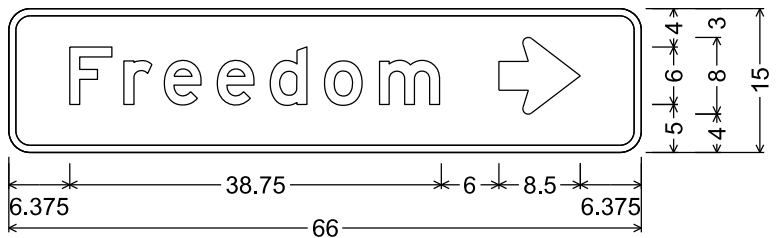


D1-62; 6.000" Radius, 1.000" Border

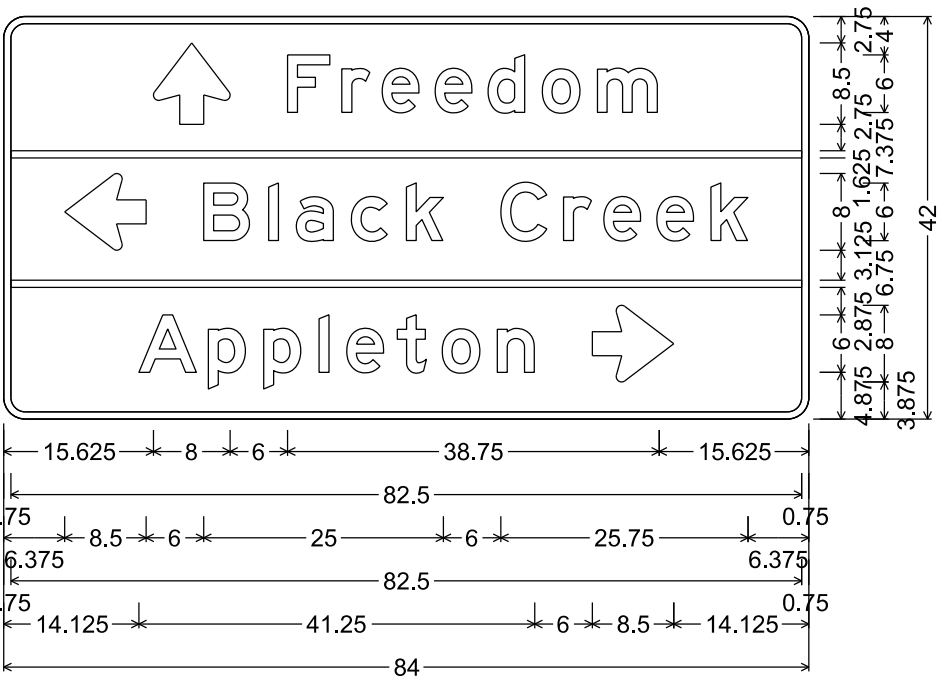
7



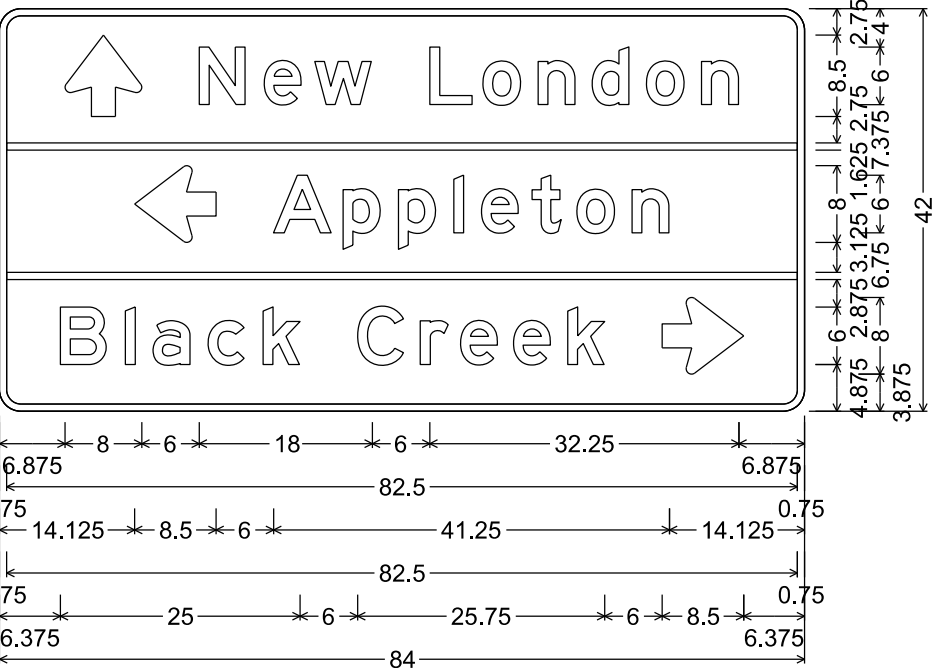
D1-1; 2.250" Radius, 0.750" Border



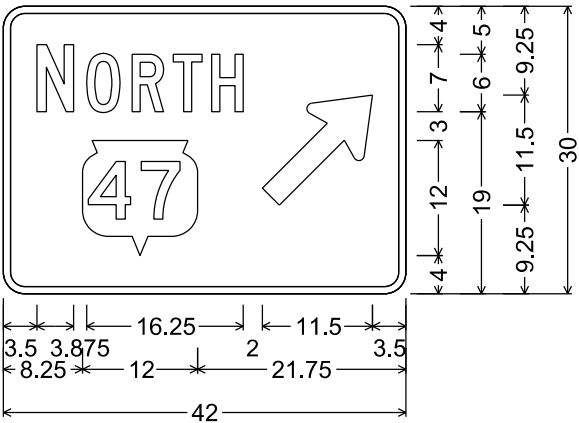
D1-1; 2.250" Radius, 0.750" Border



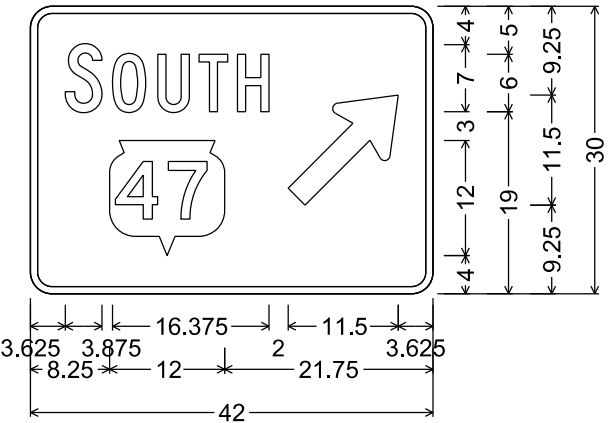
D1-3; 2.250" Radius, 0.750" Border



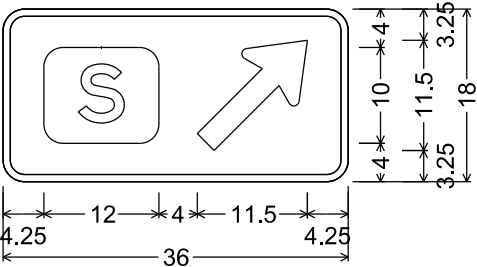
D1-3; 2.250" Radius, 0.750" Border



D1-1E; 2.250" Radius, 0.750" Border
"NORTH", C



D1-1E; 2.250" Radius, 0.750" Border
"SOUTH", C

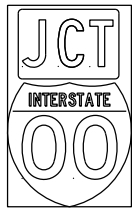


D1-1E; 2.250" Radius, 0.750" Border

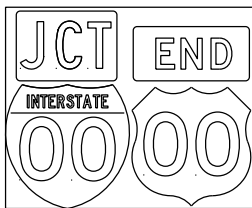
NOTES

1. Signs are Type II - Type H Reflective
2. Color:
Background - Green
Message - White
3. Message Series - E or as noted

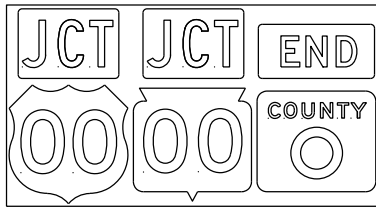
TYPICAL ASSEMBLIES



J1-1



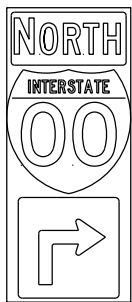
J1-2



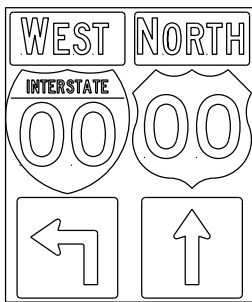
J1-3



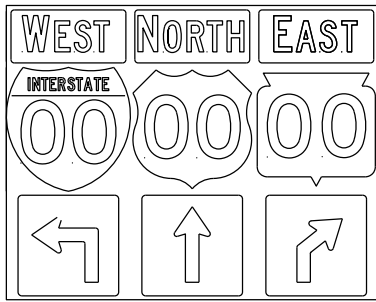
JR1-1



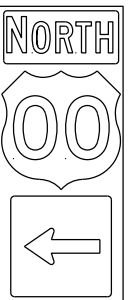
J2-1



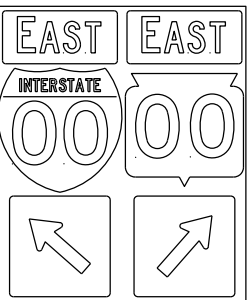
J2-2



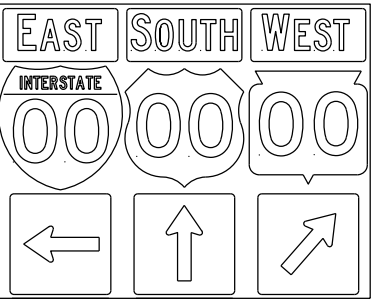
J2-3



J3-1



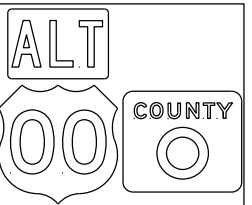
J3-2



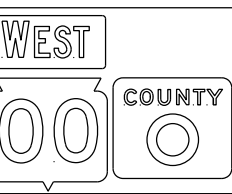
J3-3



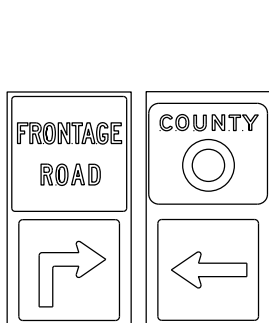
J4-1



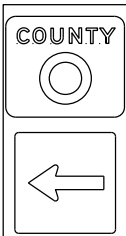
J4-2



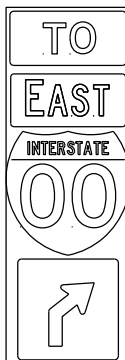
J4-2



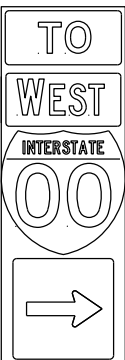
J12-1



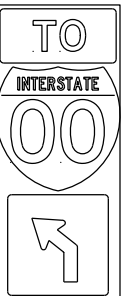
J13-1



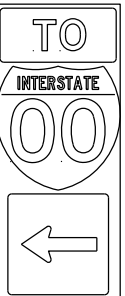
J32-1



J33-1



J22-1



J23-1



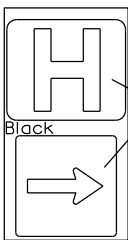
JR13-1



JR23-1



JR99-1

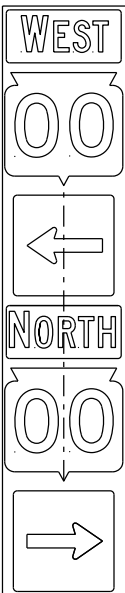
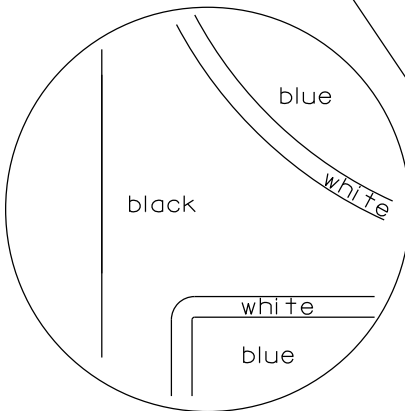


JH-1

Blue Background

Black

blue background with interstate

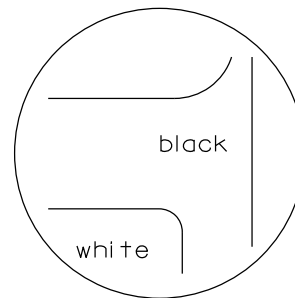
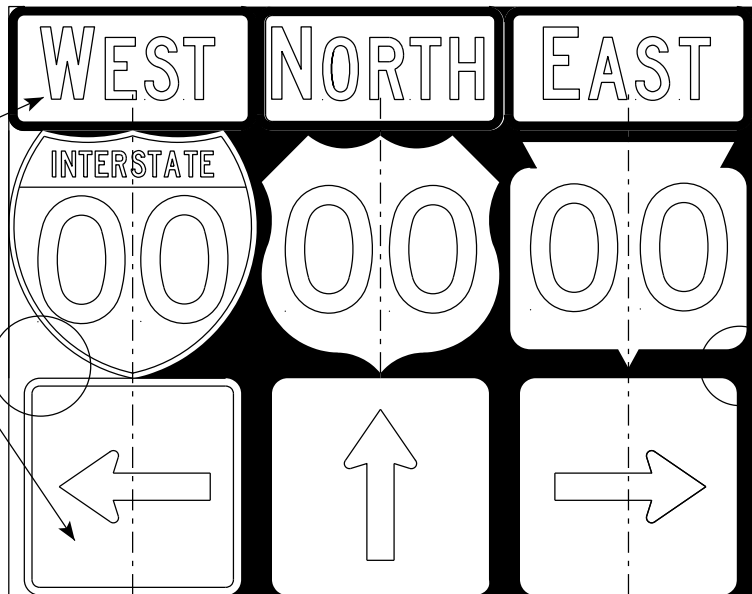


JV

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

NOTES

1. Signs are Type II - Type H Reflective
2. Color:
Background - Black Non-reflective
Message - see Note 4
3. Message Series - See Note 4
4. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
5. 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.
6. 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.
7. 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.
8. 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.
9. All Vertical J Assemblies are given a Sign Code of JV
10. For JV Assemblies that have a mixture of Interstate and Non-Interstate shields, arrows and cardinals shall be white on blue.
11. For JV Assemblies that have a mixture of Non-Interstate and Auto-Tour shields, arrows and cardinals shall be black on white.



black background

ROUTE MARKERS & COMPONENTS
IN TYPICAL ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

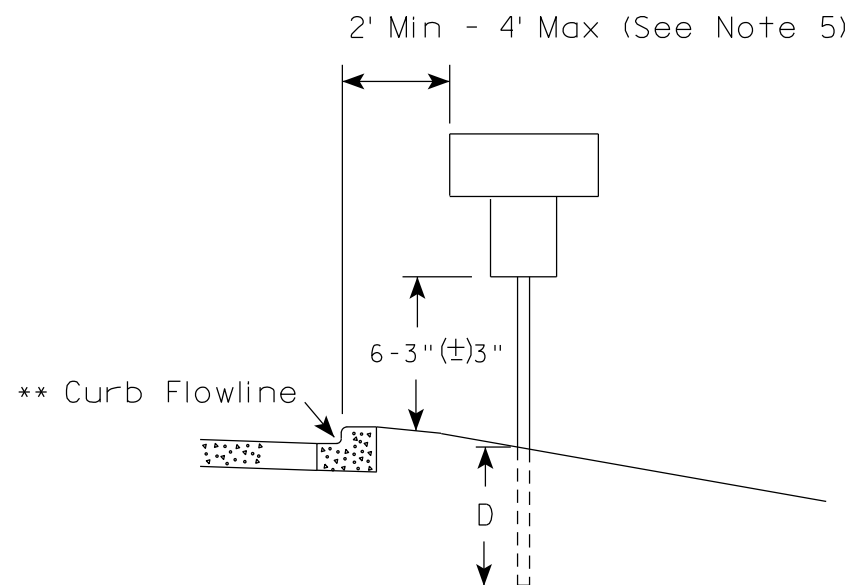
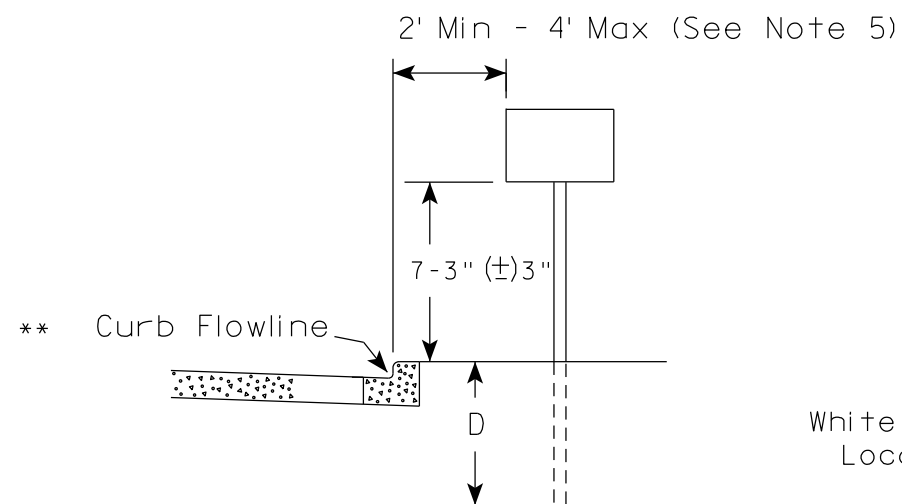
DATE 6/7/23 PLATE NO. A2-1S.10

PROJECT NO:

SHEET NO: 136

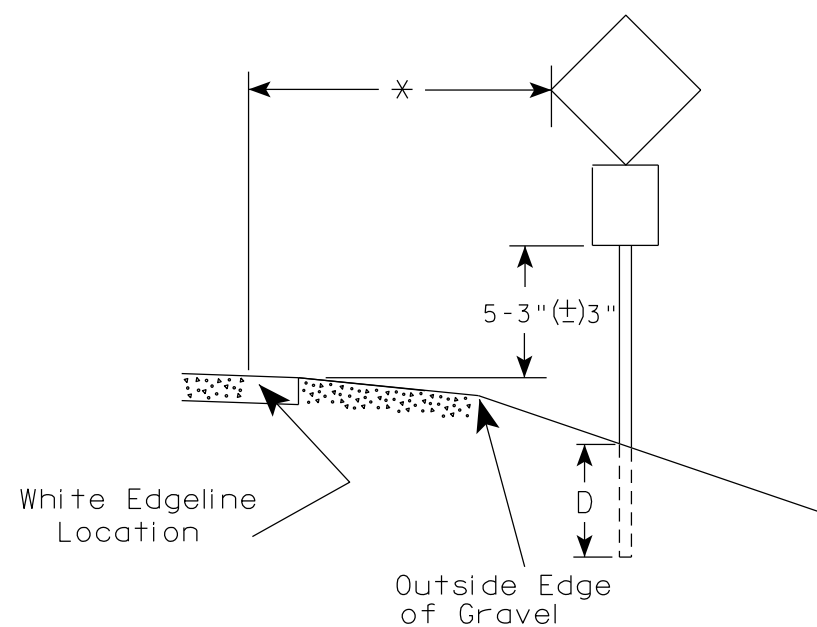
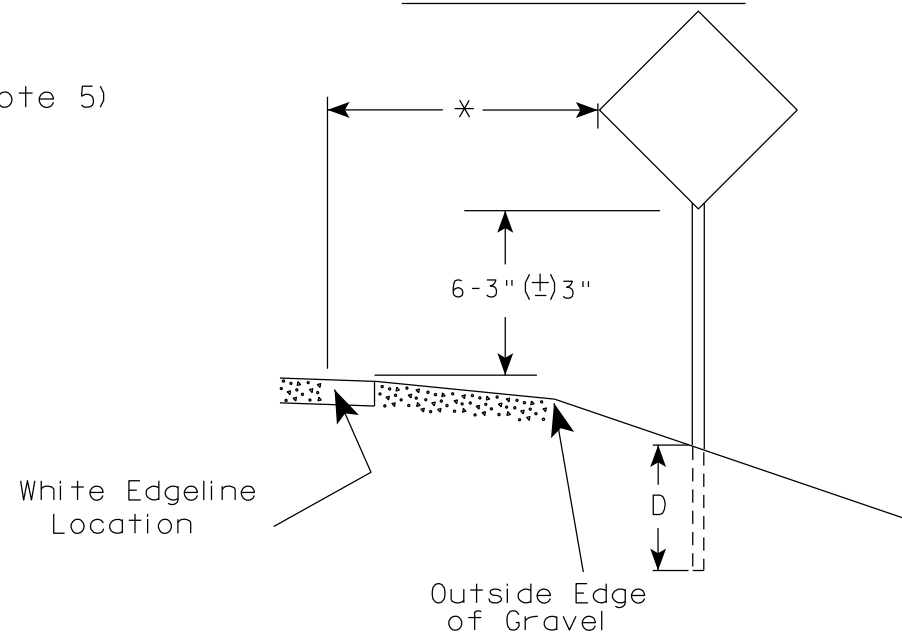
E

URBAN AREA



* * 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.

RURAL AREA (See Note 2)



* 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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".
- For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 12/6/23

PLATE NO. A4-3.23

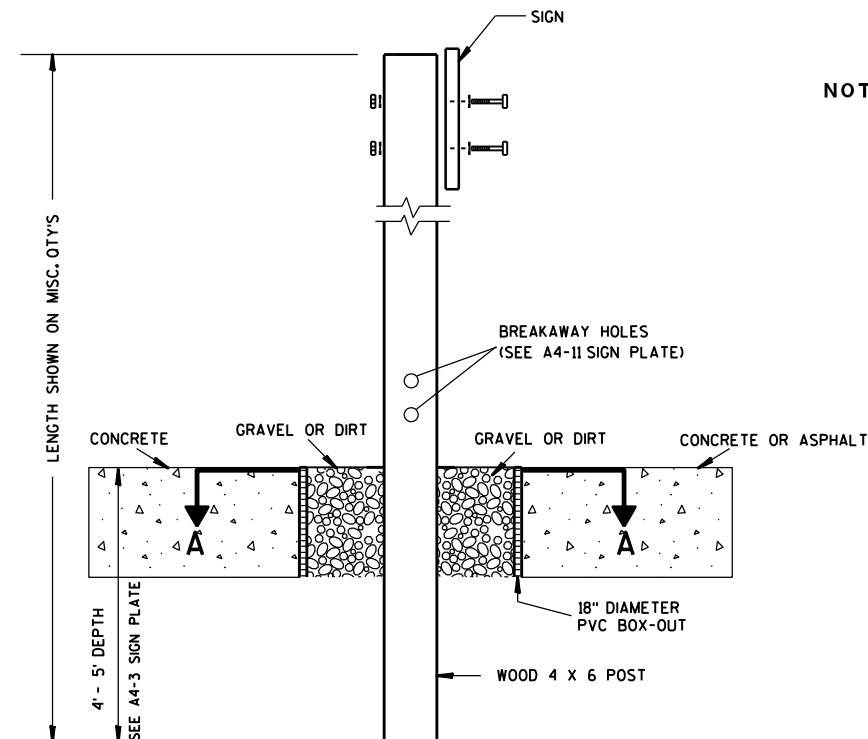
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 137

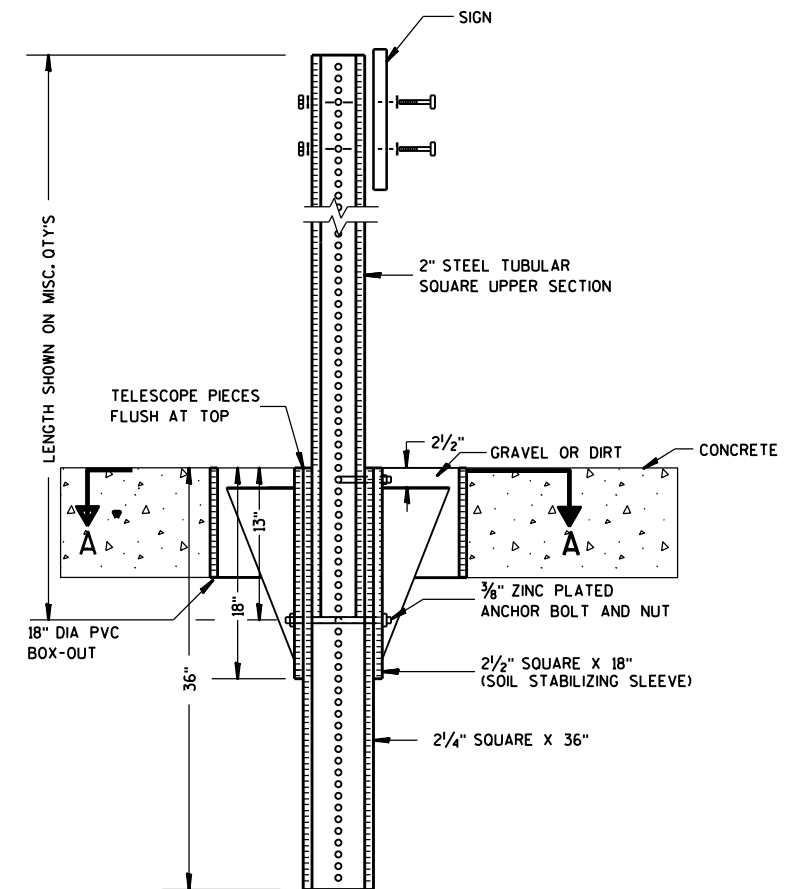
E



ELEVATION VIEW

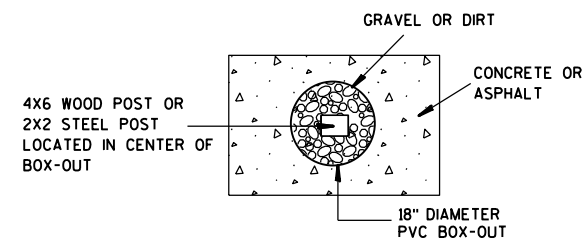
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 138 A4-3B.1

PROJECT NO:

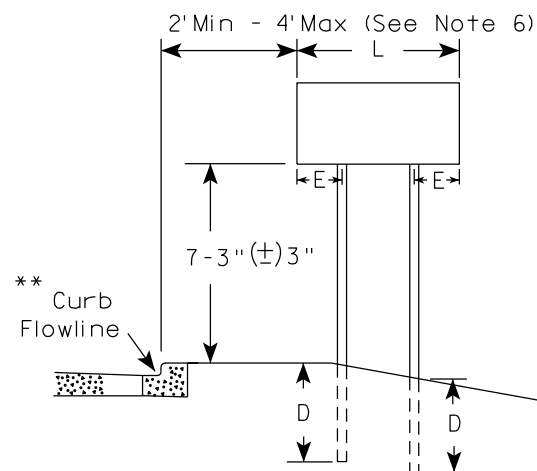
HWY:

COUNTY:

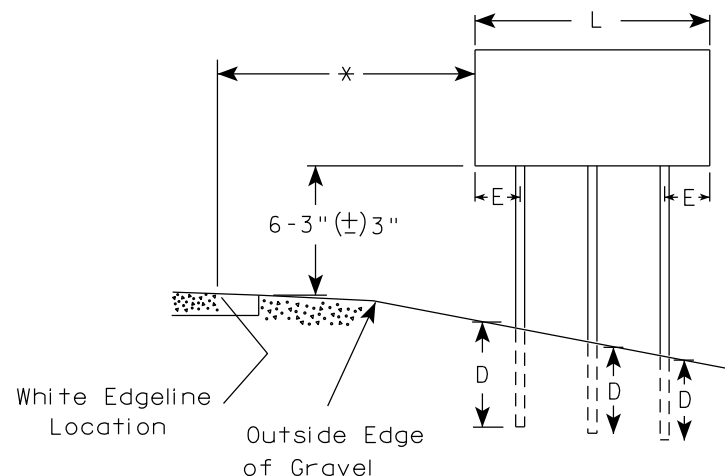
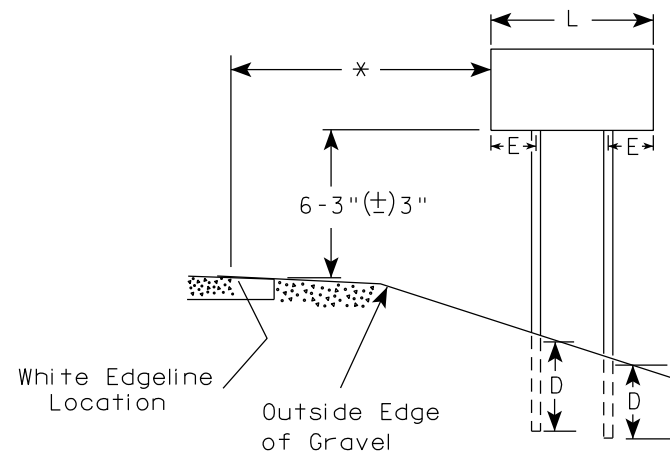
SHEET NO:

E

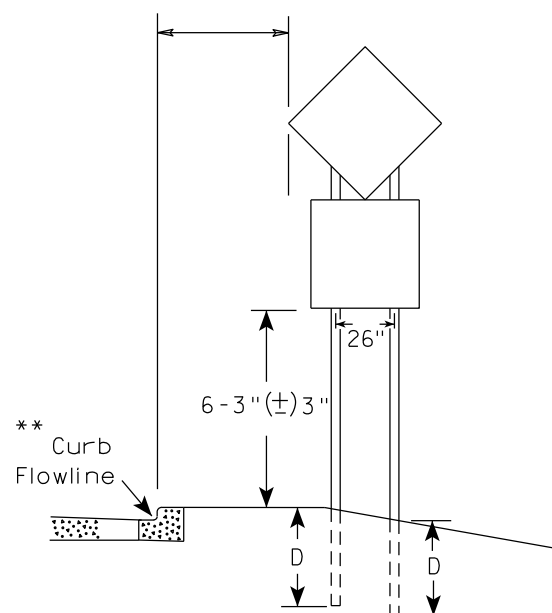
URBAN AREA



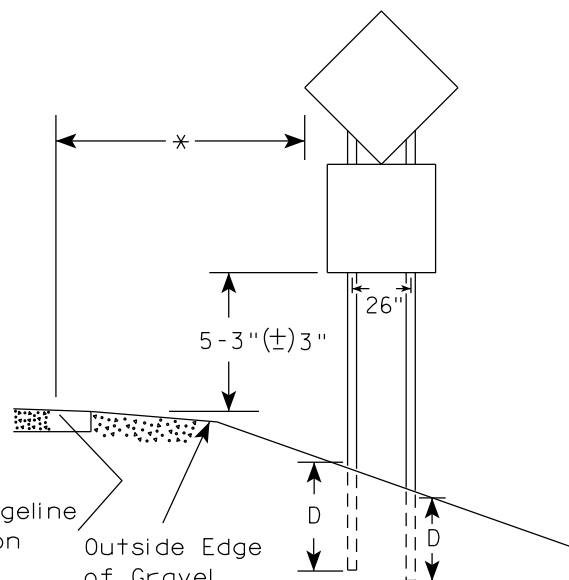
RURAL AREA (See Note 3)



2' Min - 4' Max (See Note 6)



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

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 12/6/23 PLATE NO. A4-4.16

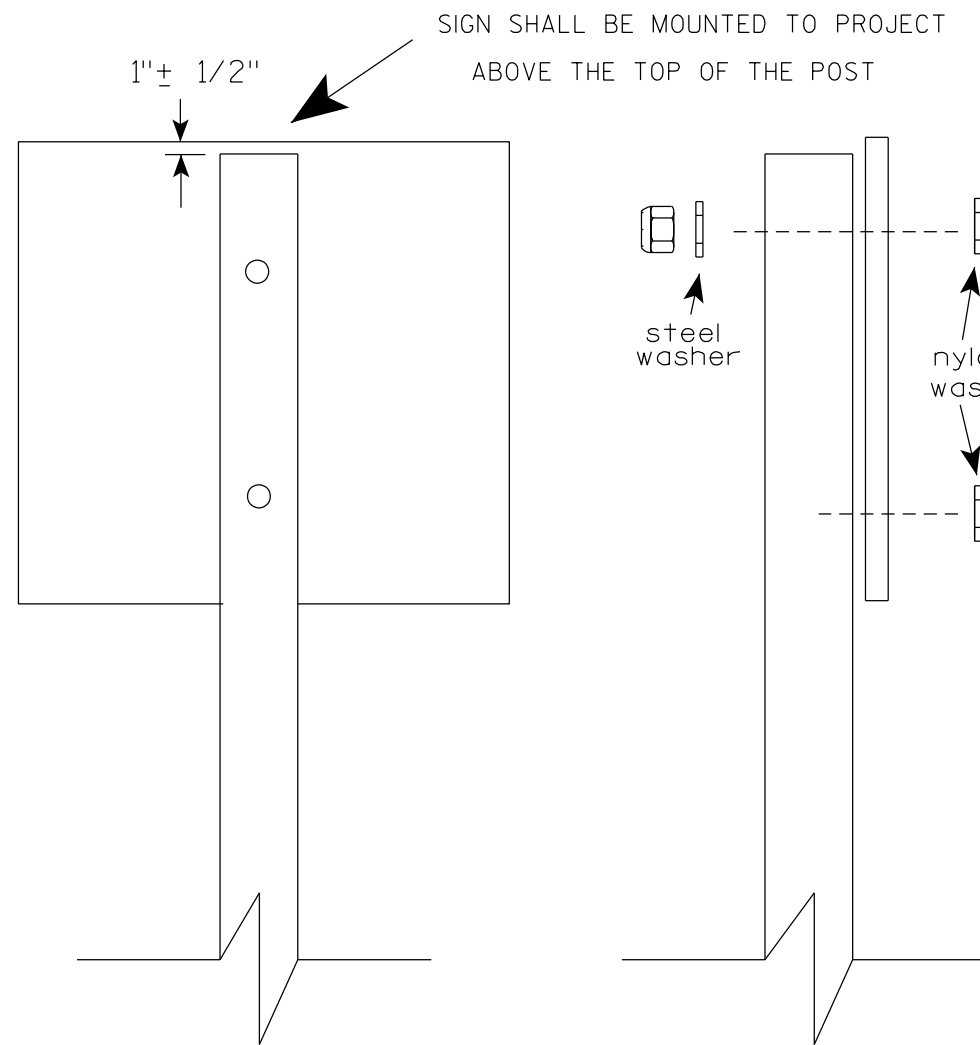
GENERAL NOTES

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

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

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

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



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

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

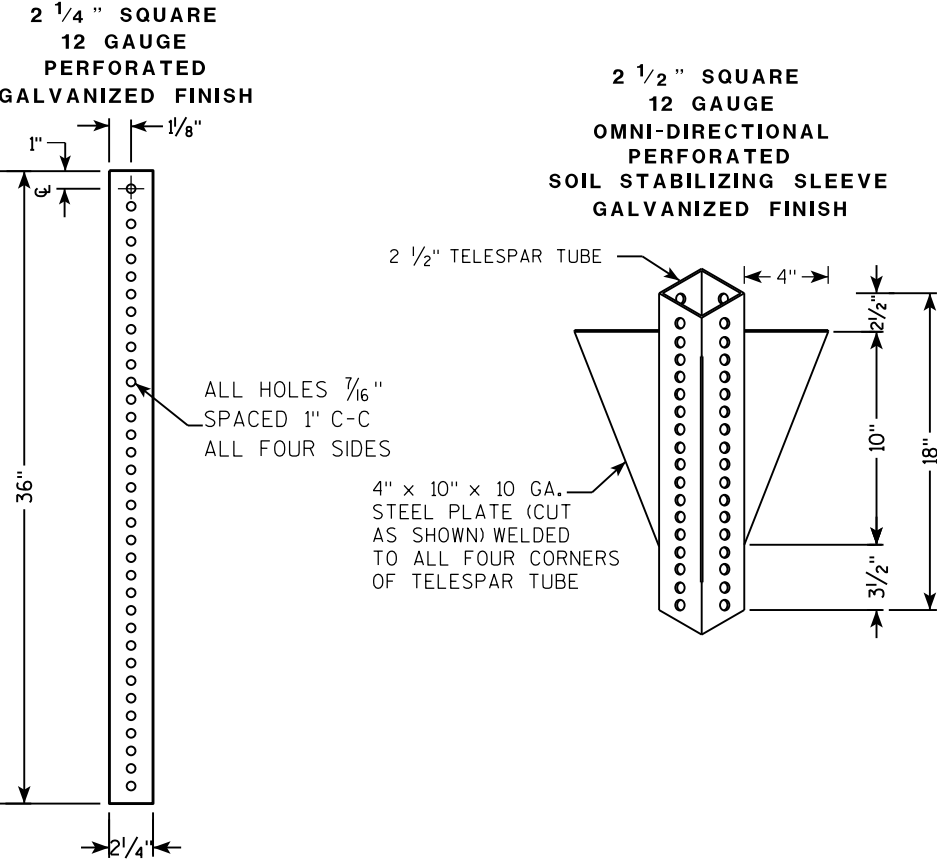
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (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 $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

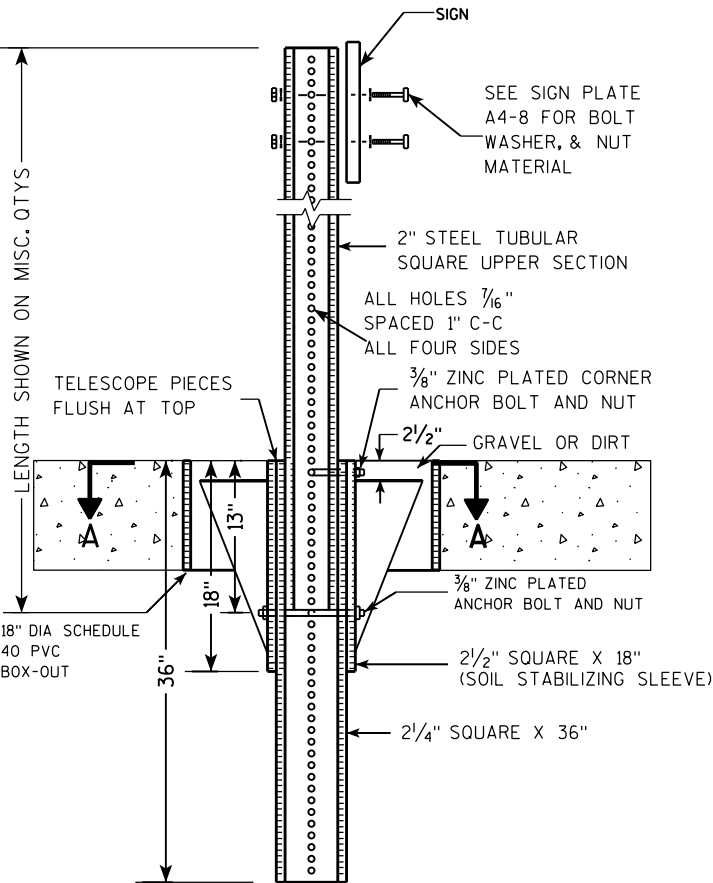
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

ATTACHMENT OF SIGNS TO POSTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 4/1/2020	PLATE NO. A4-8.9

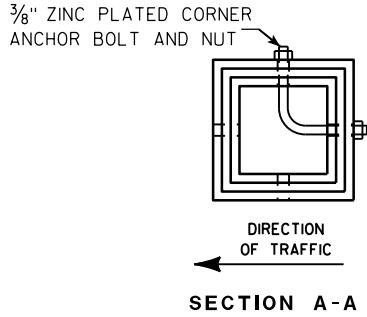
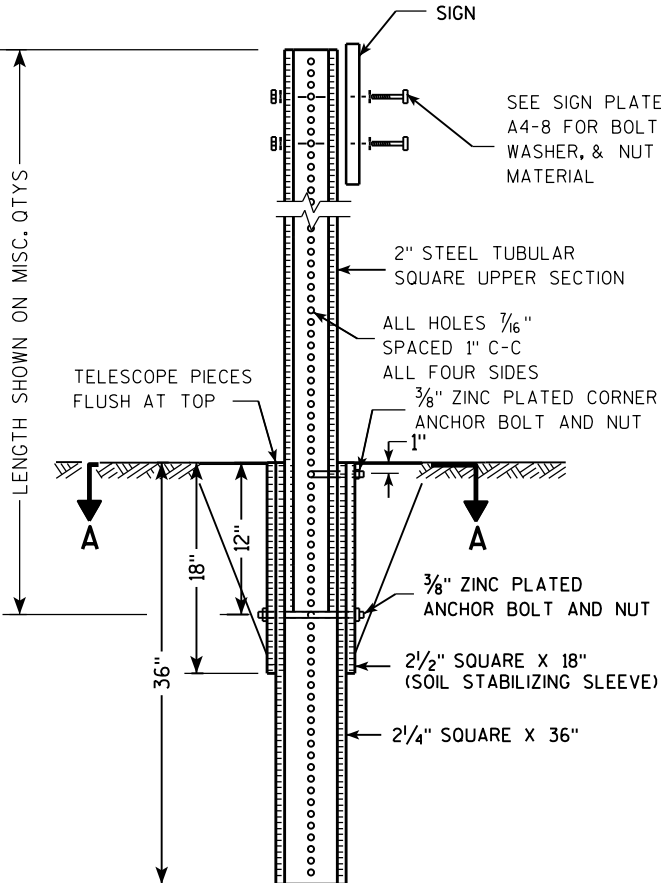
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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

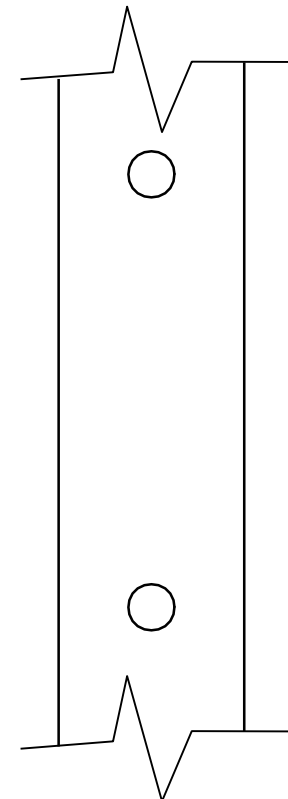
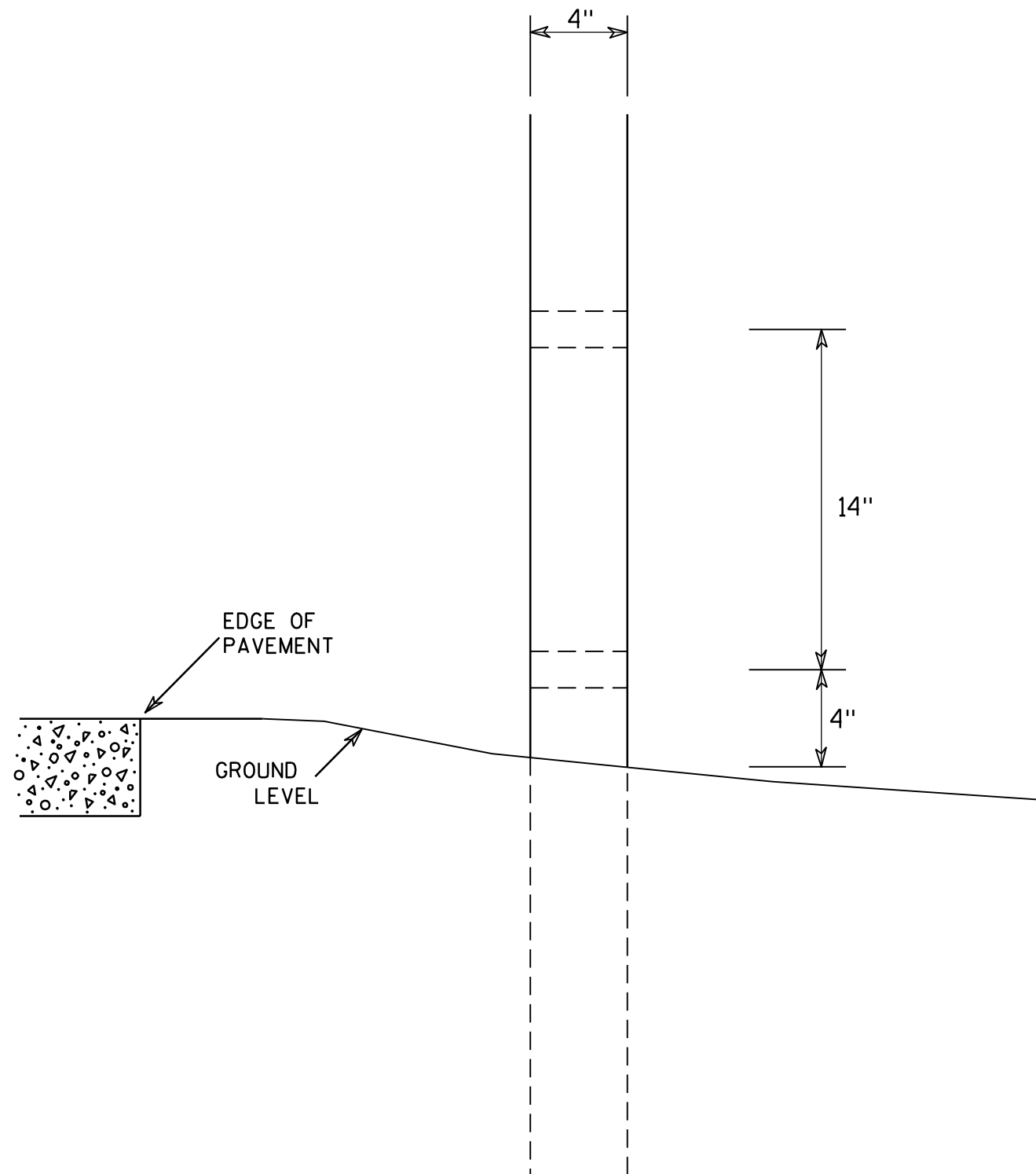
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 141 14-9.9



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1 1/2" diameter holes drilled perpendicular to the roadway centerline.

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

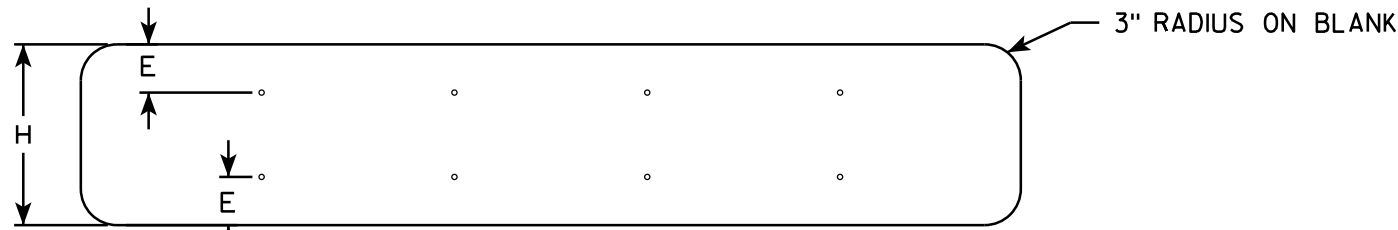
PROJECT NO:

HWY:

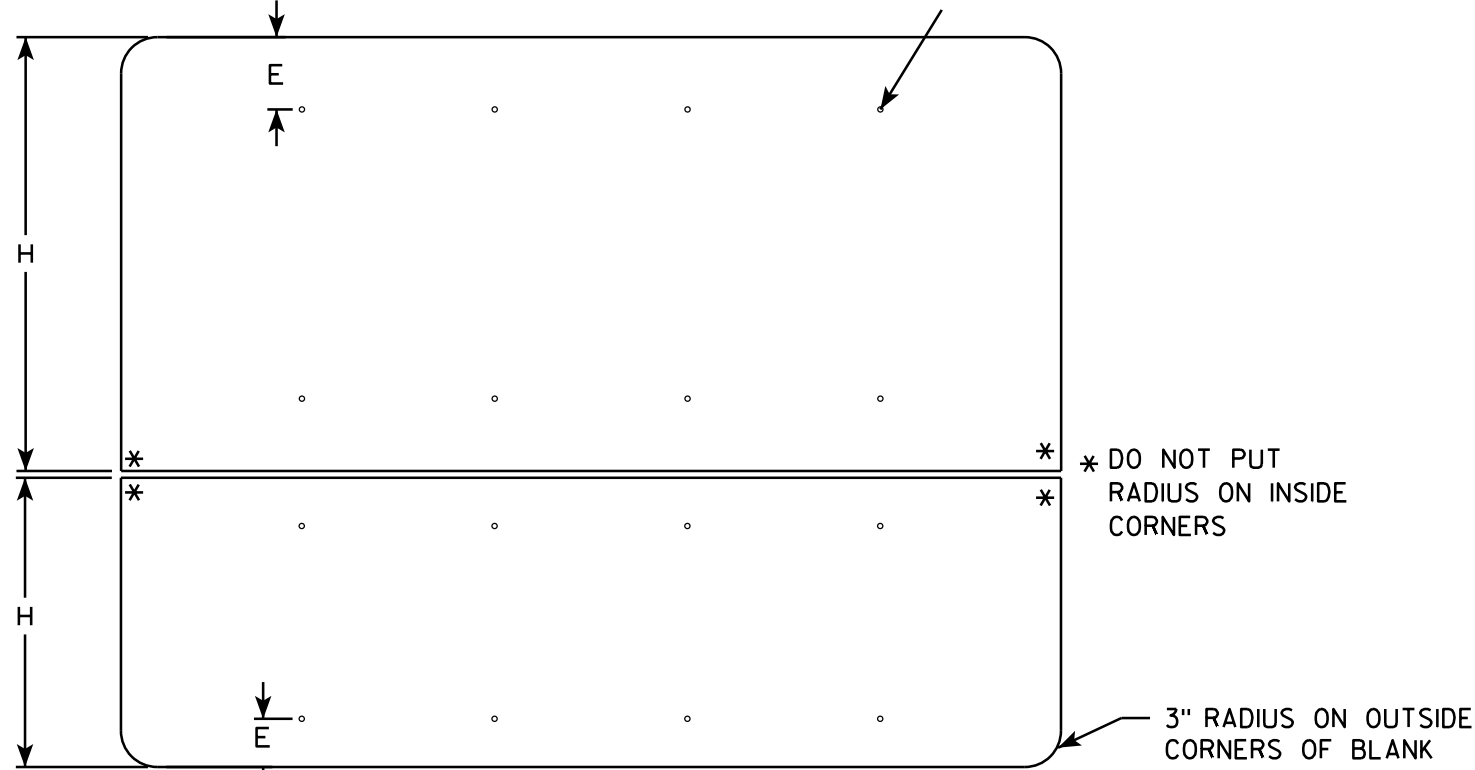
COUNTY:

SHEET NO: 142

E



SINGLE PIECE ALUMINUM SIGN 1/16" MOUNTING HOLES



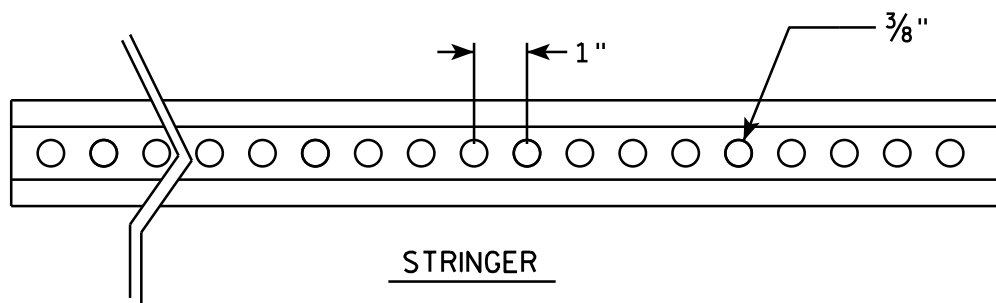
MULTI-PIECE ALUMINUM SIGN

* DO NOT PUT
RADIUS ON INSIDE
CORNERS

GENERAL NOTES

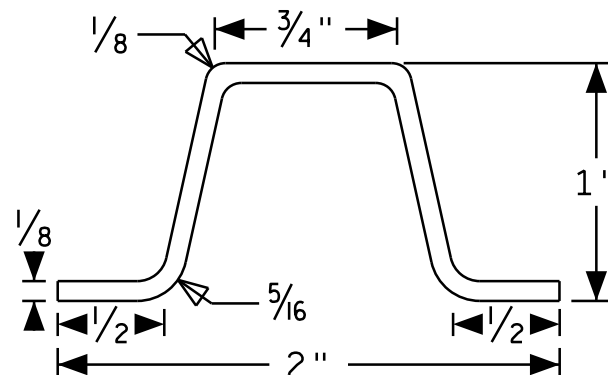
- ALL SIGNS OVER 60" IN WIDTH SHALL HAVE A 3" RADIUS ON THE OUTSIDE CORNERS OF THE ALUMINUM BLANK.
- MOUNTING HOLES SHALL BE 7/16" DIAMETER.
- SEE CHART FOR HOLE SPACING REQUIREMENTS
- FOR SIGN PANELS WITH DIMENSION (H) 36" AND OVER, DIMENSION E SHALL BE 6"
- FOR SIGN PANELS WITH DIMENSION (H) UNDER 36", DIMENSION E SHALL BE 4"
- SIGN STRINGER MATERIAL SHALL CONSIST OF STEEL CHANNEL POST SECTIONS, WEIGHING 1.12 LBS/FT IN ACCORDANCE WITH SECTION 633.2.1 OF THE STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
- SEE SIGN PLATE A4-8 FOR SIGN STRINGER BOLTING REQUIREMENTS.

SIGN WIDTH	STRINGER WIDTH	POSTS	HOLE SPACING	MOUNTING HOLES			
78"	72"	2	16"	15"	31"	47"	63"
84"	72"	2	17"	16 1/2"	33 1/2"	50 1/2"	67 1/2"
90"	72"	2	18"	18"	36"	54"	72"
96"	90"	2	19"	19 1/2"	38 1/2"	57 1/2"	76 1/2"
102"	90"	2	20"	21"	41"	61"	81"
108"	90"	2	21"	22 1/2"	43 1/2"	64 1/2"	85 1/2"
114"	108"	3	15"	12"	27"	42"	57" 72" 87" 102"
120"	108"	3	16"	12"	28"	44"	60" 76" 92" 108"
126"	108"	3	17"	12"	29"	46"	63" 80" 97" 114"
132"	126"	3	18"	12"	30"	48"	66" 84" 102" 120"
138"	126"	3	19"	12"	31"	50"	69" 88" 107" 126"
144"	126"	3	20"	12"	32"	52"	72" 92" 112" 132"

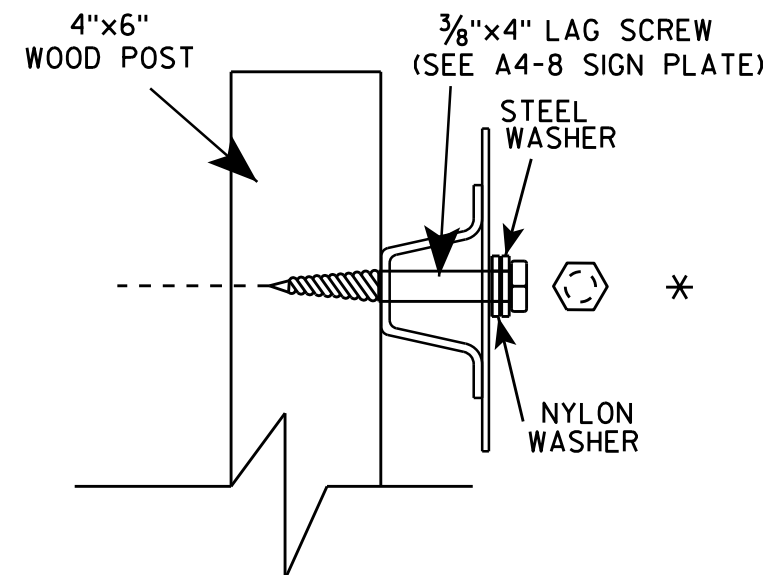


STRINGER

CROSS SECTION
VIEW OF CHANNEL



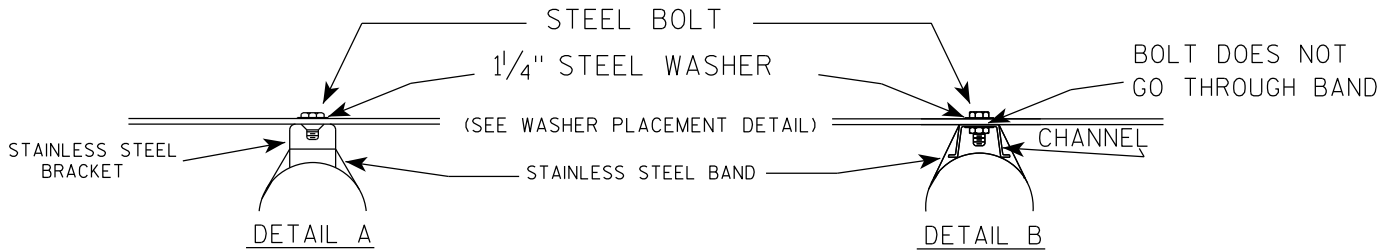
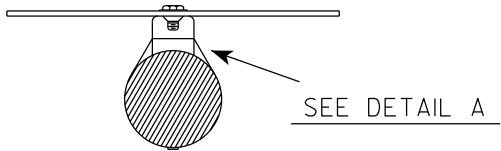
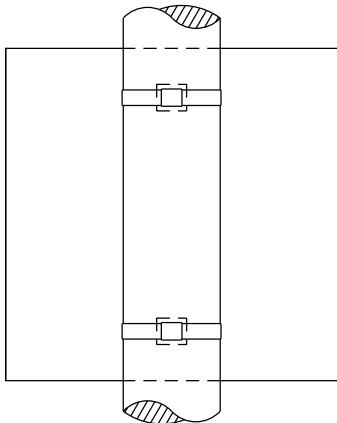
POST MOUNTING



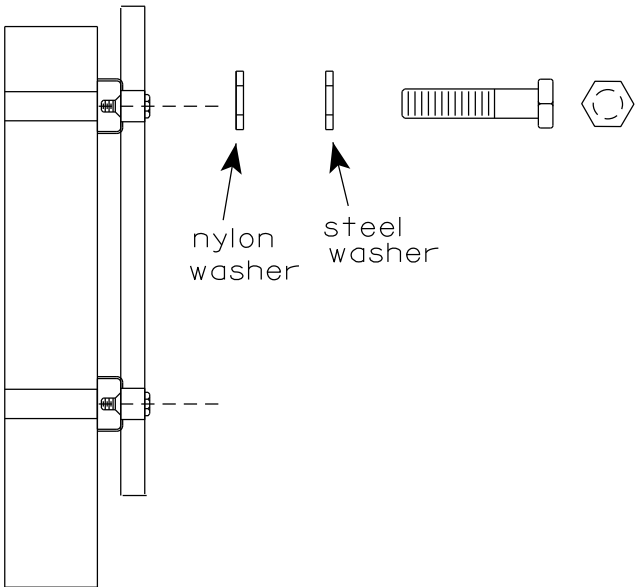
SIGN STRINGER MOUNTING REQUIREMENTS	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 4/26/16	PLATE No A4-18.1 143

BANDING

SINGLE SIGN



WASHER PLACEMENT

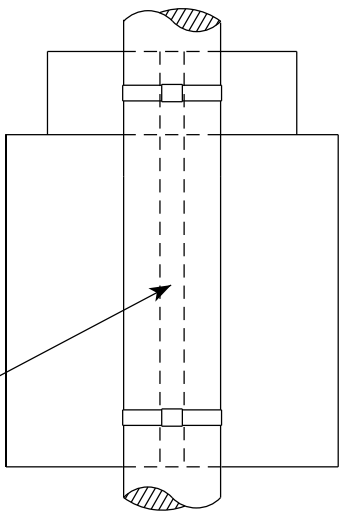


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

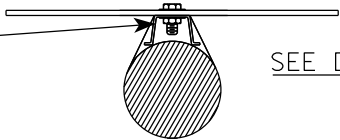
GENERAL NOTES

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 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



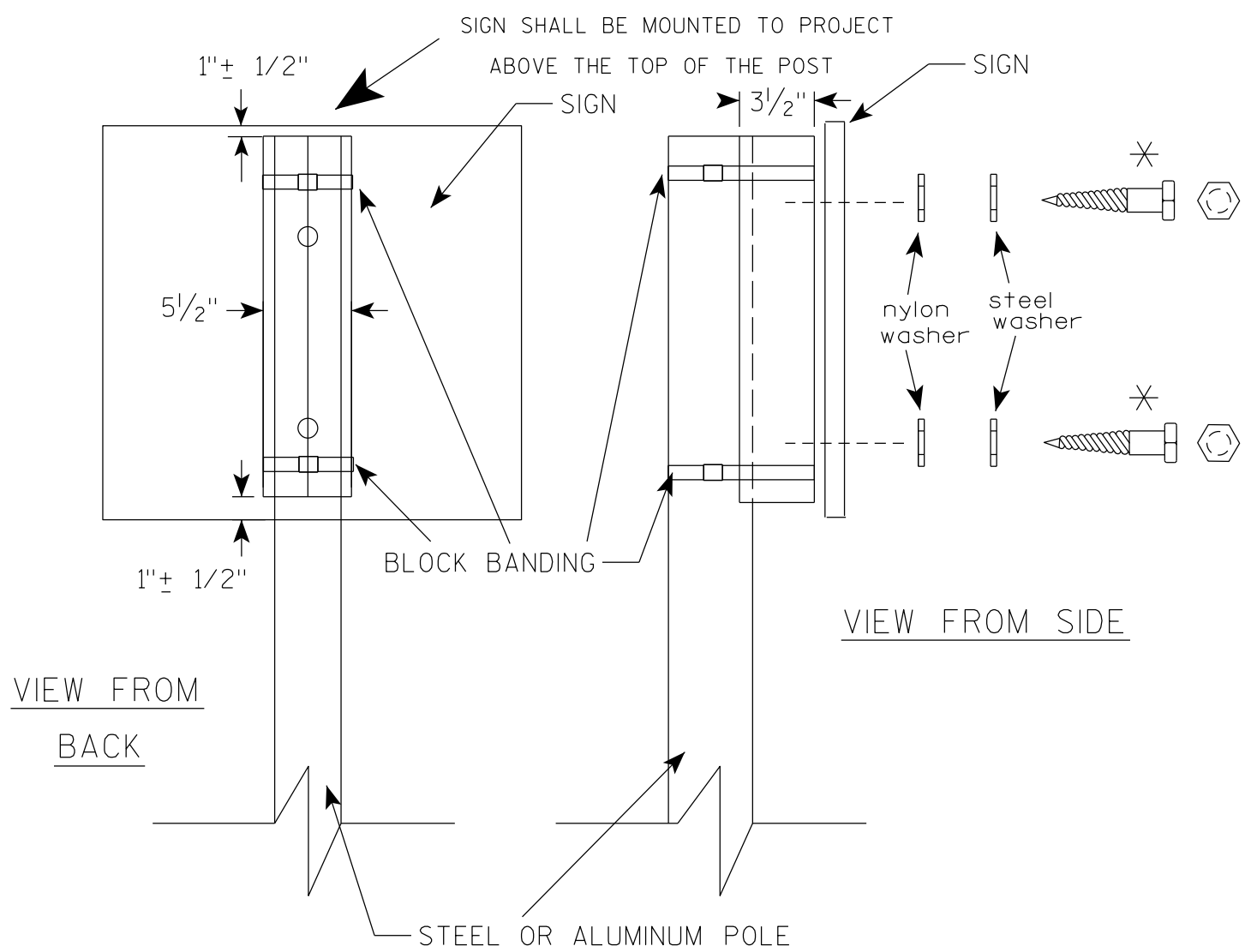
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

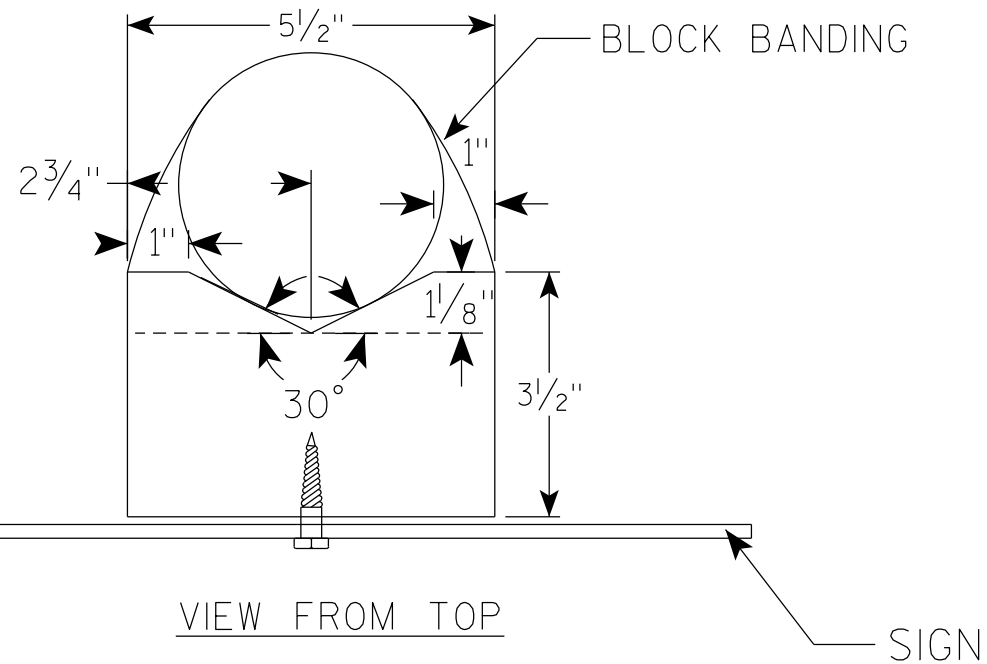
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer
DATE 6/10/19 PLATE NO. A5-9.4



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

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, $\frac{3}{4}$ " 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
 - b. 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 $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

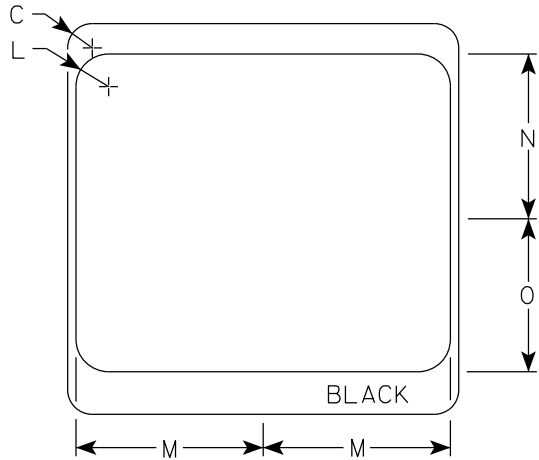
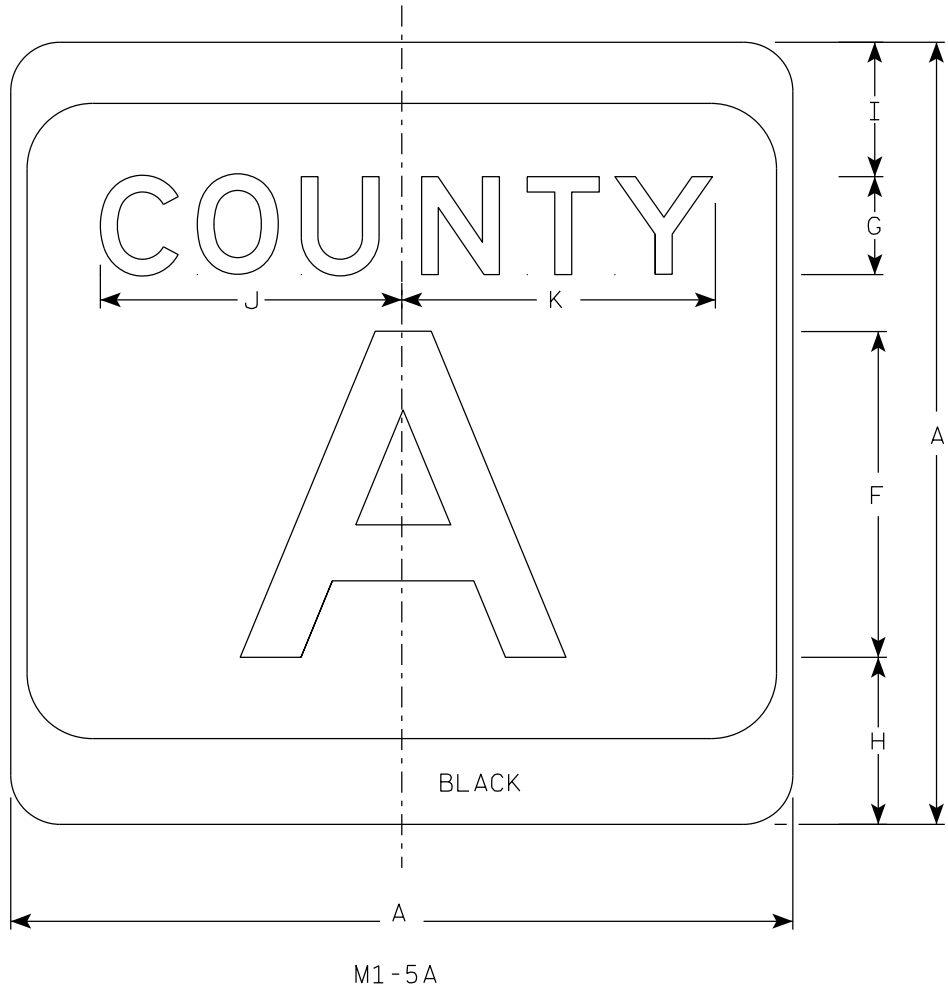
DATE 4/19/2022 PLATE NO. A5-10.3

PROJECT NO:

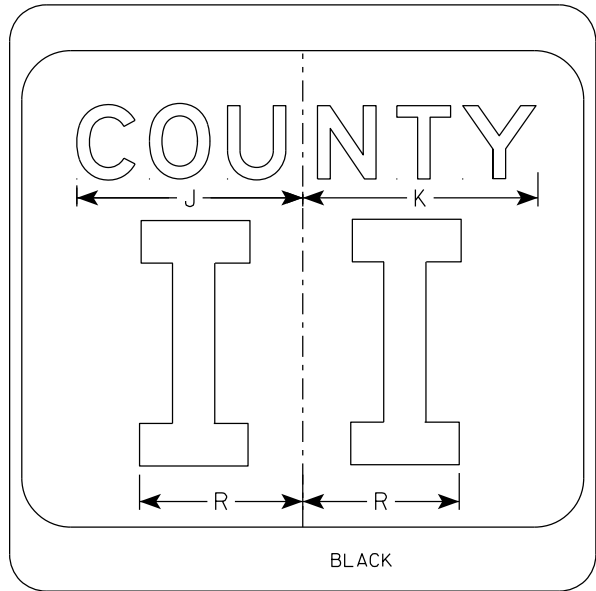
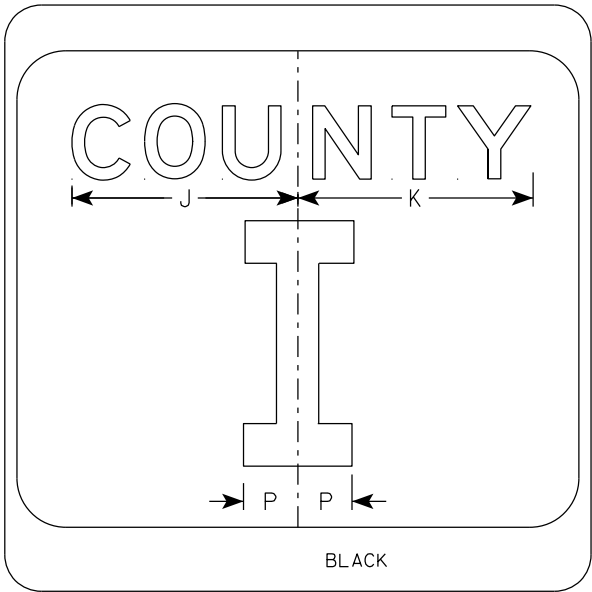
SHEET NO: 145

E

7



- NOTES
- Sign is Type II - Type H Reflective
 - Color:
Background - White & Black
Message - Black
 - Message Series - see Note 4
 - Message Series E for 1 letter.
Message Series D for 2 letters unless message is too big then Series C.
Message Series C for 3 letters unless message is too big then Series B.
 - Substitute appropriate letters & optically center to achieve proper balance.



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
2M	24		1 1/2			10	3	5 1/8	4 1/8	9 1/4	9 5/8	2	11 1/2	10 1/8	9 3/8	2 1/4		6 5/8									4.0
3	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
4	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0
5	36		2 1/4			16	4	7 5/8	5 5/8	12 1/4	12 7/8	3	17 1/8	15 1/4	14	3 3/8		10									9.0

CTH MARKER

M1-5A FOR ASSEMBLIES

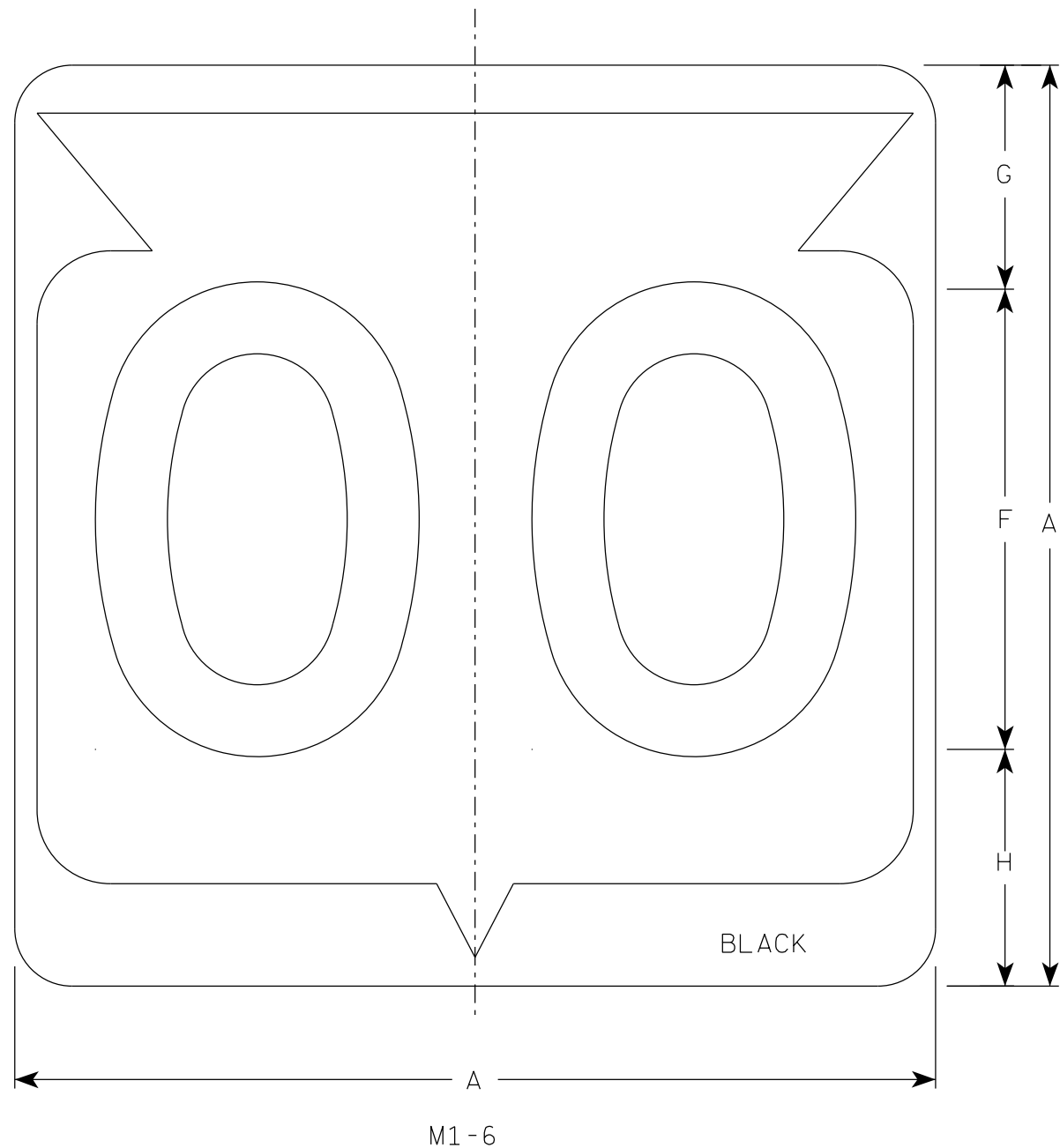
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-5A.9

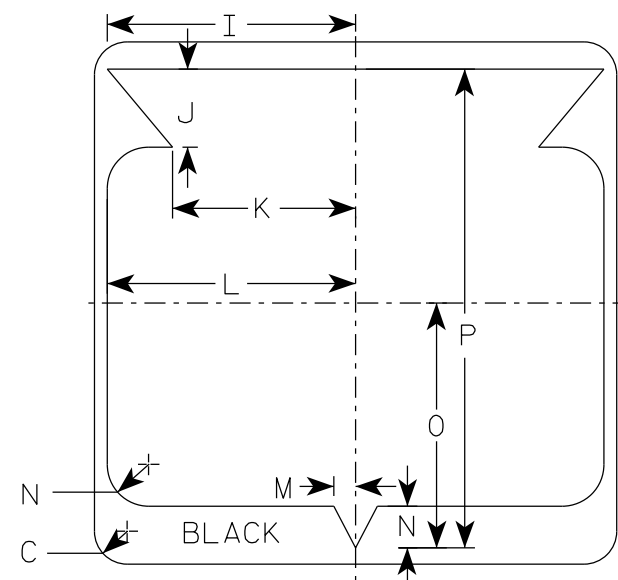
7

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs Series C



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
2M	24		1 1/2			12	5 1/2	6 1/2	10 1/4	2 1/2	8 7/8	11 1/2	1	1 7/8	11 1/4	21 7/8											4.0
3	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
4	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0
5	36		2 1/4			18	8 3/4	9 1/4	15 3/8	5 3/8	12 5/8	17 1/8	1 1/2	2 7/8	16 7/8	33											9.0

STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

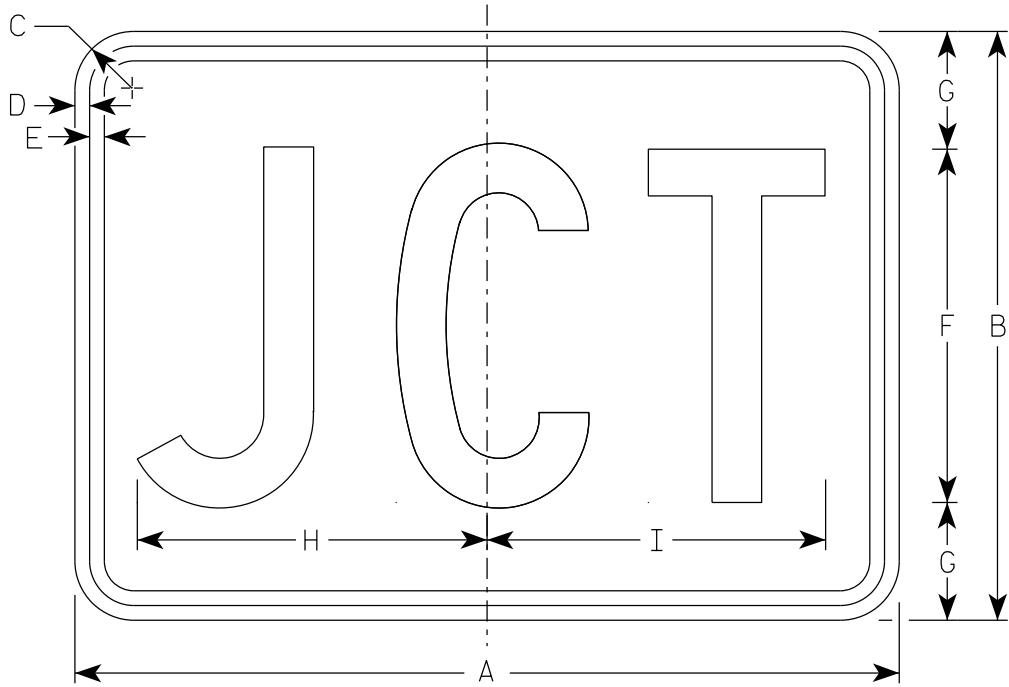
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 11/8/2022 PLATE NO. M1-6.11

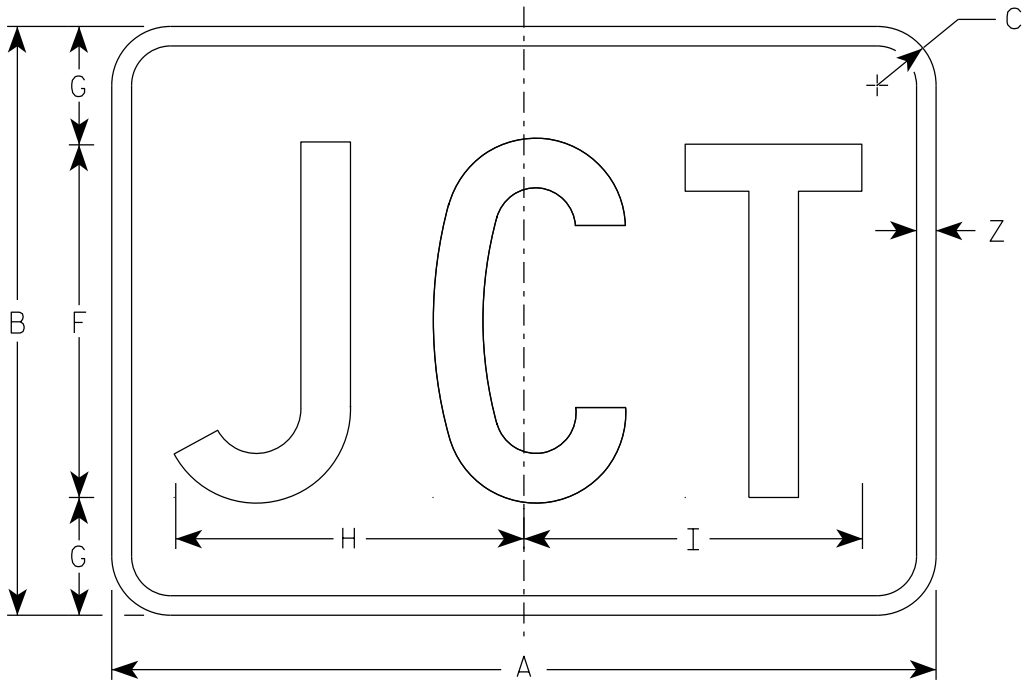
PROJECT NO: HWY: COUNTY: SHEET NO: 147 E

7

7



M2-1
MM2-1
MP2-1



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

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - See note 5
 - Message - See note 5
- 3. Message Series - C
- 4. M2-1 Background - White
Message - Black
- MB2-1 Background - Blue
Message - White
- MK2-1 Background - Green
Message - White
- MM2-1 Background - White
Message - Green
- MN2-1 Background - Brown
Message - White
- MP2-1 Background - White
Message - Blue
- MR2-1 Background - Brown
Message - Yellow

7

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 148

E

STANDARD SIGN

M2 - 1

WISCONSIN DEPT OF TRANSPORTATION

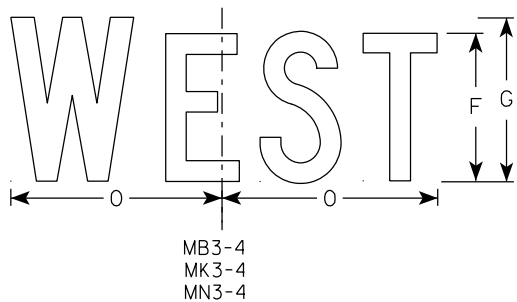
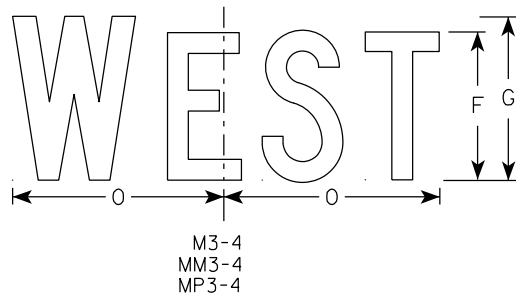
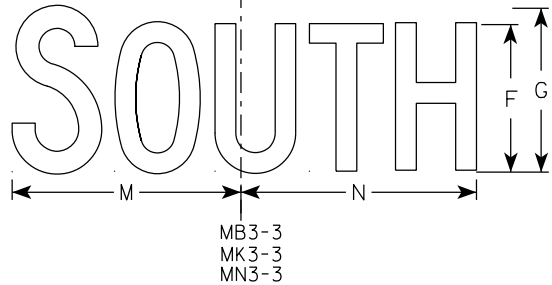
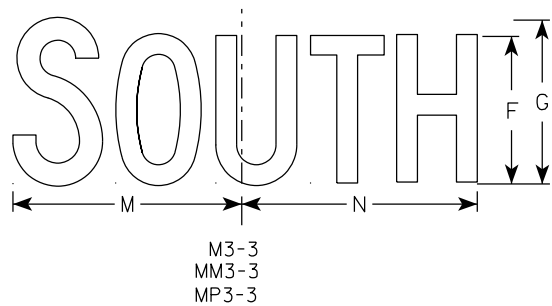
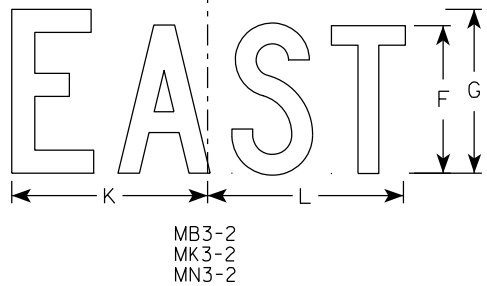
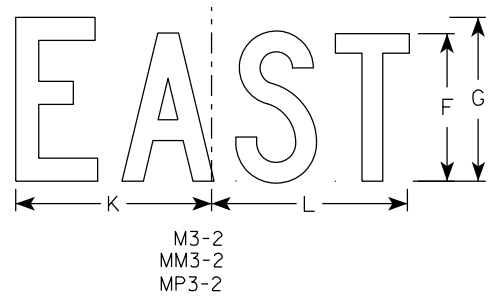
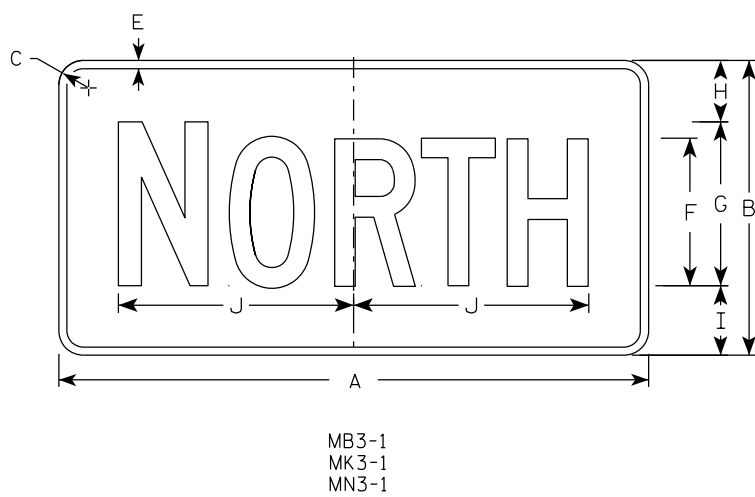
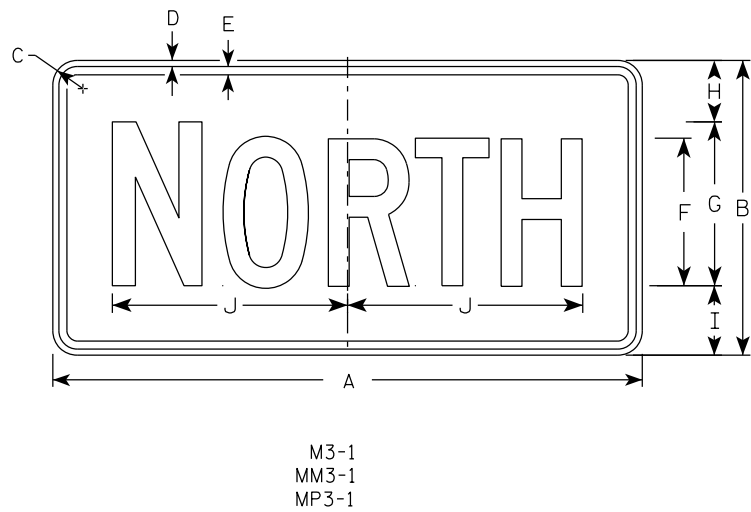
APPROVED

Matthew R. Rauch

State Traffic Engineer

DATE 2/8/2023

PLATE NO. M2-1.14



NOTES

1. All Signs Type II - Type H Reflective
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M3-1 thru M3-4 Background - White
Message - Black
MB3-1 thru MB3-4 Background - Blue
Message - White
MK3-1 thru MK3-4 Background - Green
Message - White
MM3-1 thru MM3-4 Background - White
Message - Green
MN3-1 thru MN3-4 Background - Brown
Message - White
MP3-1 thru MP3-4 Background - White
Message - Blue
6. Note the first letter of each direction is larger than the remainder of the message.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	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												2.00
2M	24	12	1 1/2	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												2.00
3	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
4	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5
5	36	18	1 1/2	3/8	1/2	9	10	3 3/4	4 1/4	14 3/8	12	12 1/8	14	14 1/8	13												4.5

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 149	E
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STANDARD SIGNS
M3-1 THRU M3-4
SERIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

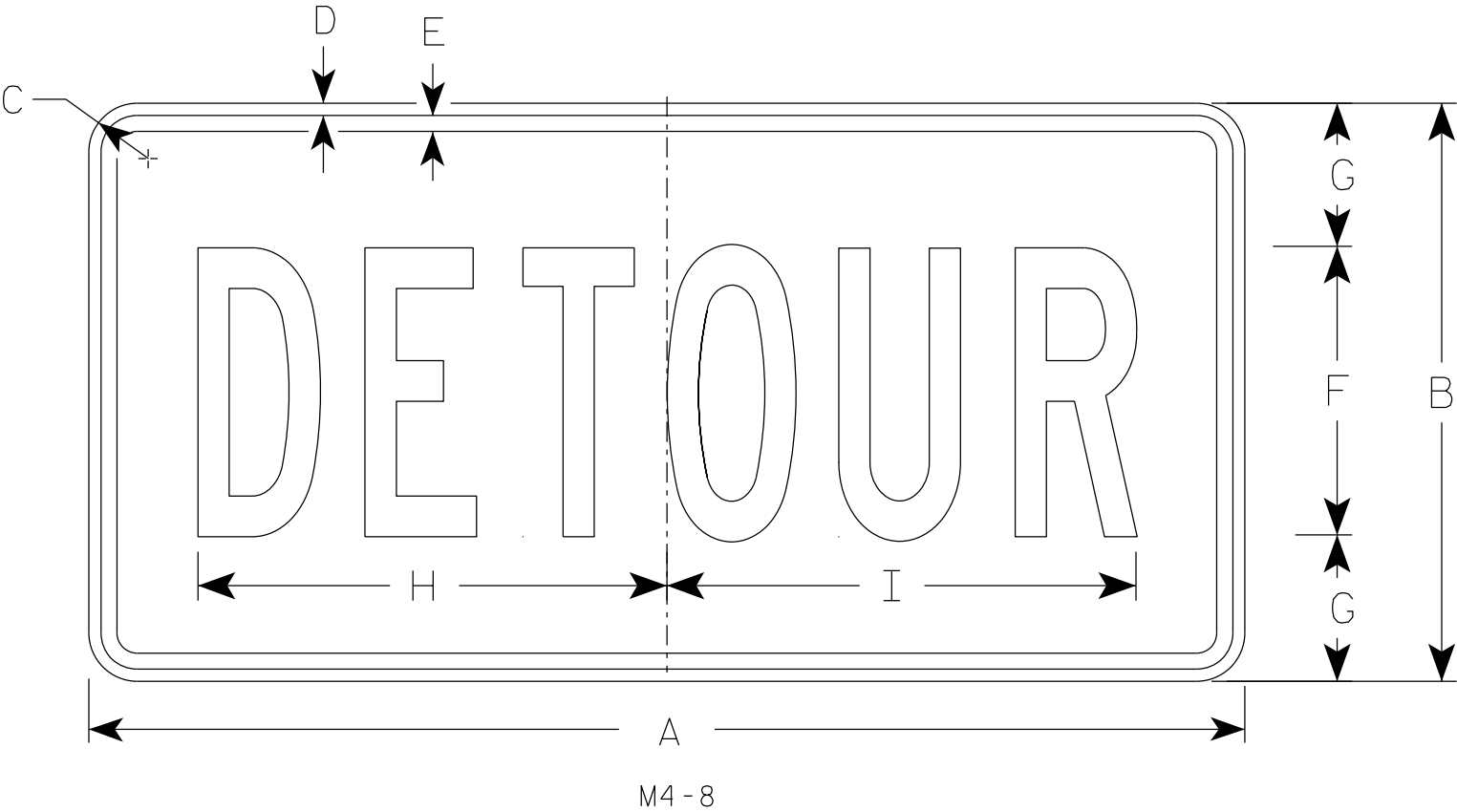
DATE 2/8/2023 PLATE NO. M3-1.15

7

7

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - B
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



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

STANDARD SIGN

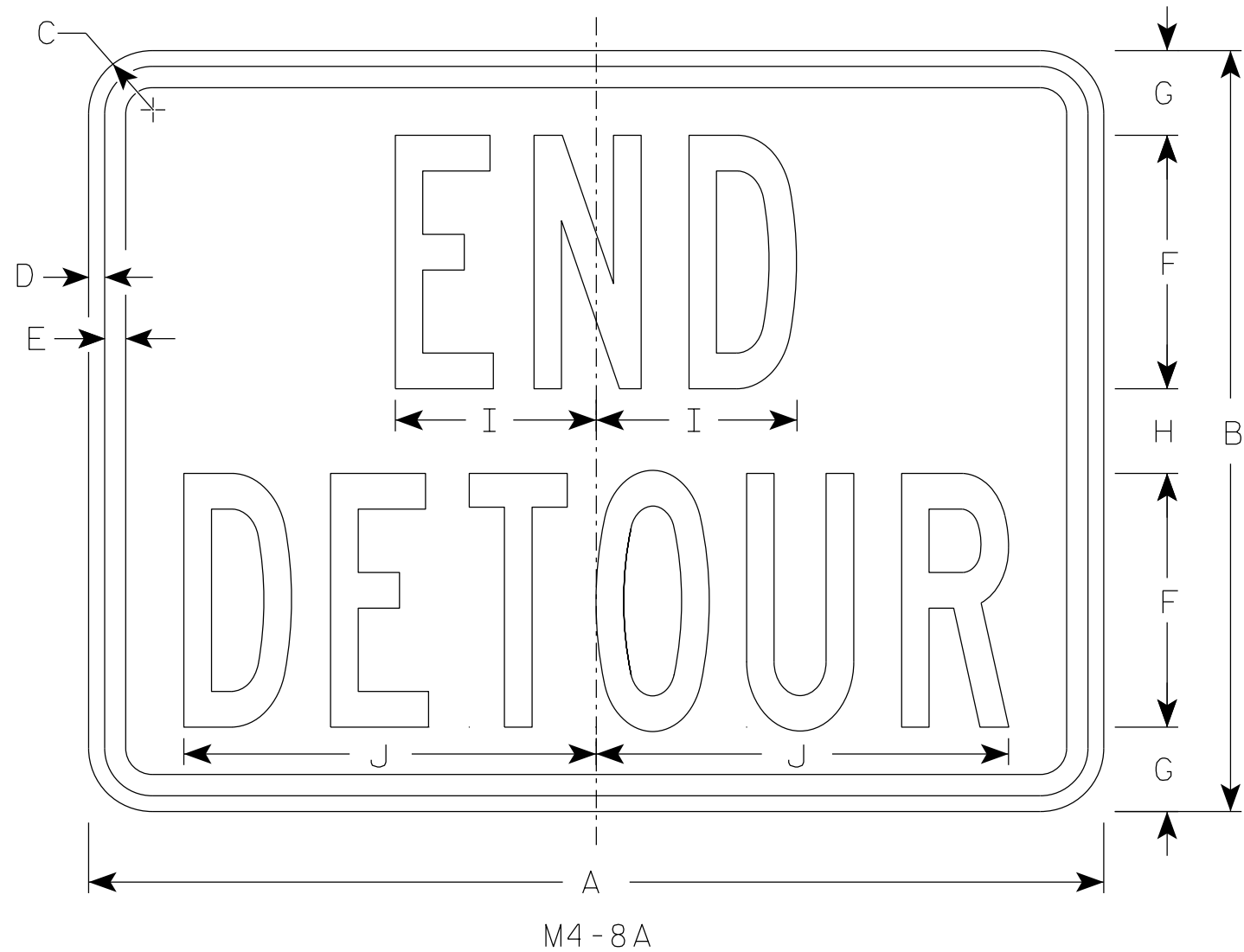
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8.4

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 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.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
2M	24	18	1 1/2	3/8	1/2	6	2	2	4 3/4	9 3/4																	3.0
3	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
4	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0
5	30	24	1 1/2	3/8	1/2	8	2 1/2	3	6 3/4	13																	5.0

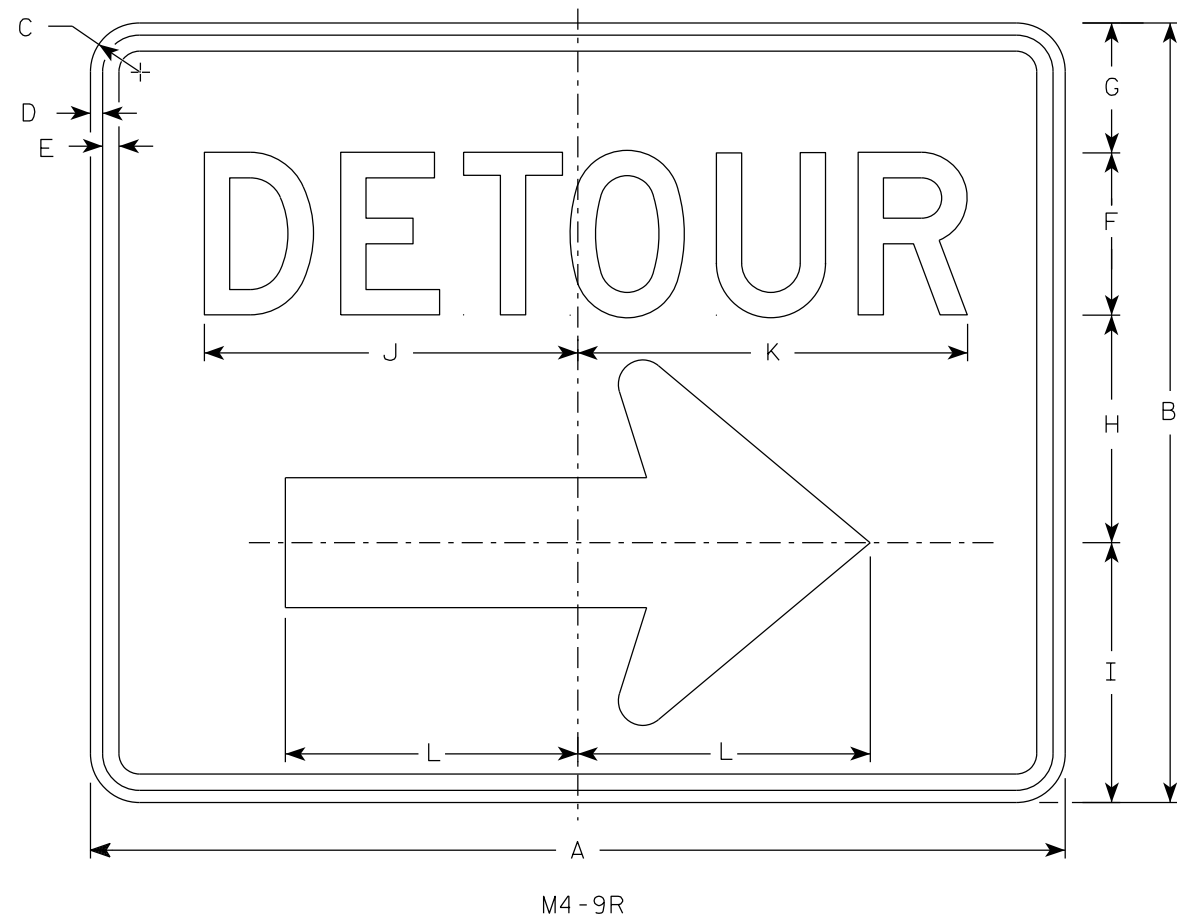
STANDARD SIGN

M4-8A

WISCONSIN DEPT OF TRANSPORTATION

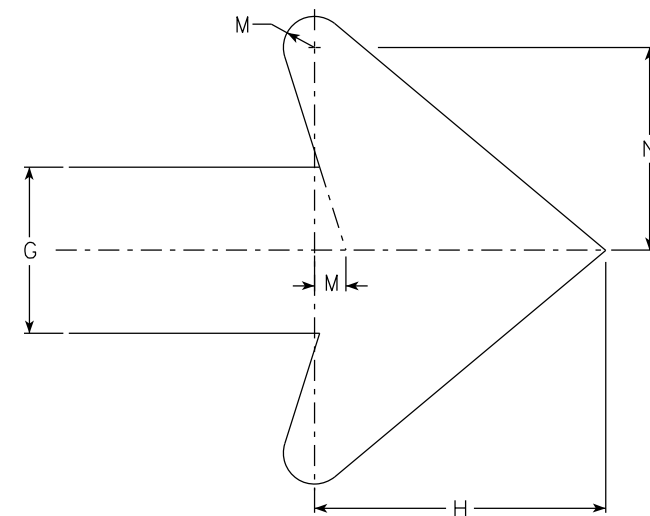
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-8A.4



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
2M	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
3	30	24	1 1/2	3/8	1/2	5	4	7	8	11 1/2	12	9	3/4	4 7/8													5.00
4	48	36	1 7/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0
5	48	36	1 7/8	1/2	5/8	8	6	10 1/2	11 5/8	20 5/8	20 1/2	13 1/4	1 1/8	6 7/8													12.0

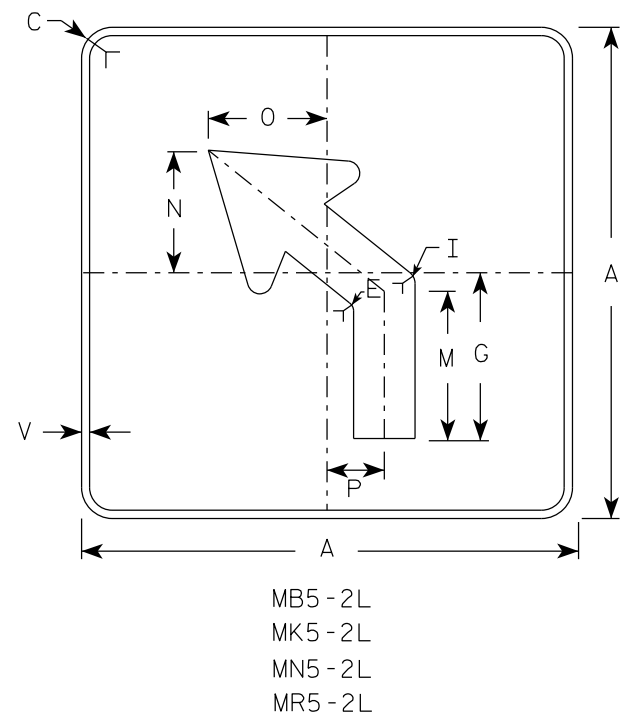
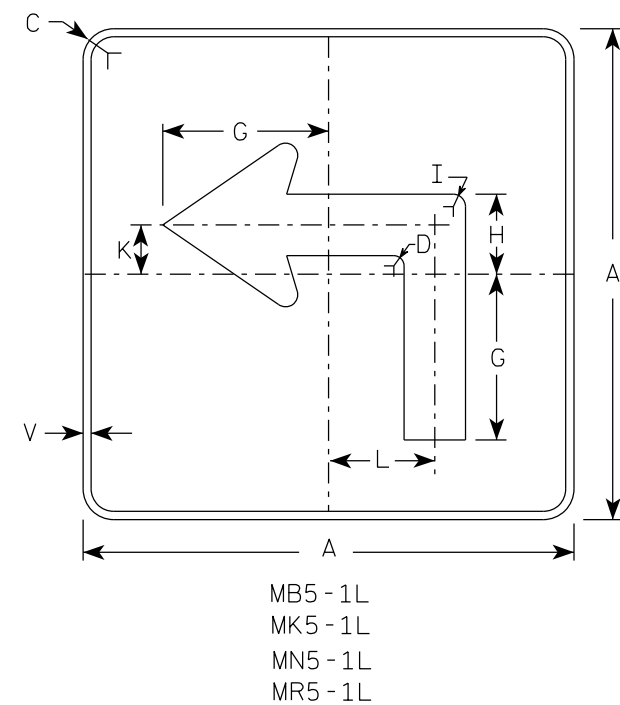
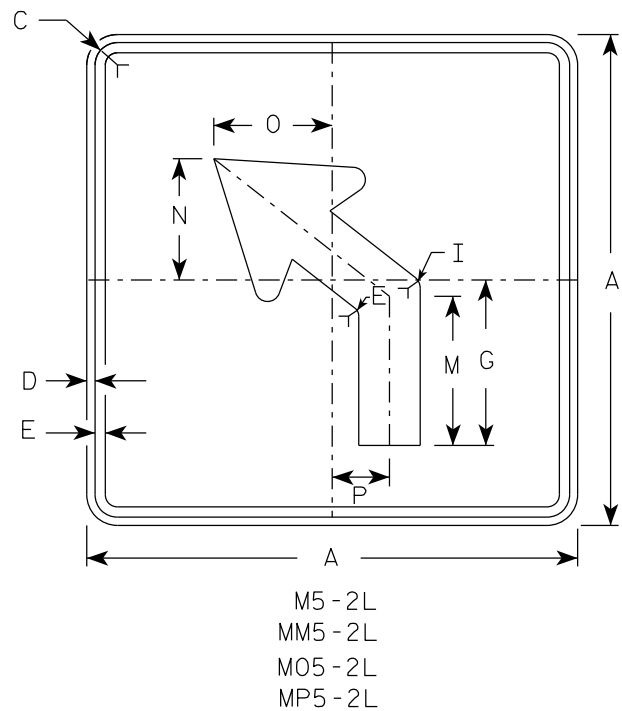
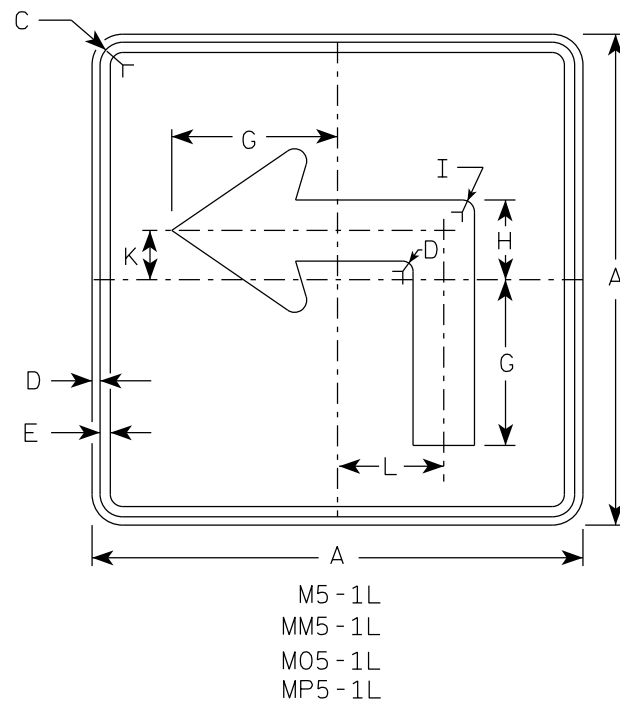
STANDARD SIGN
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-9R.6

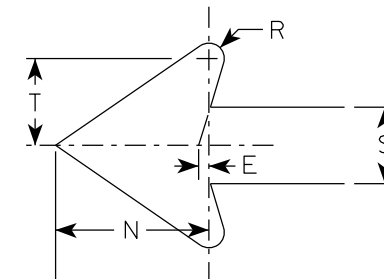
PROJECT NO: HWY: COUNTY: SHEET NO: 152 E



NOTES

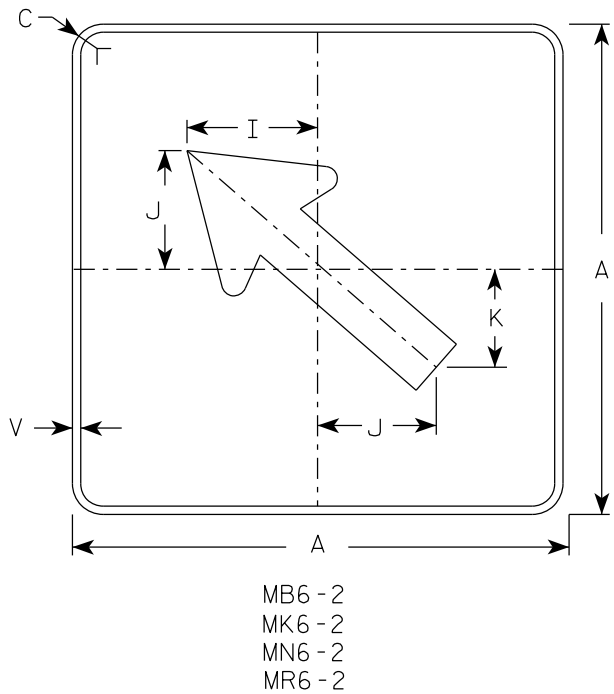
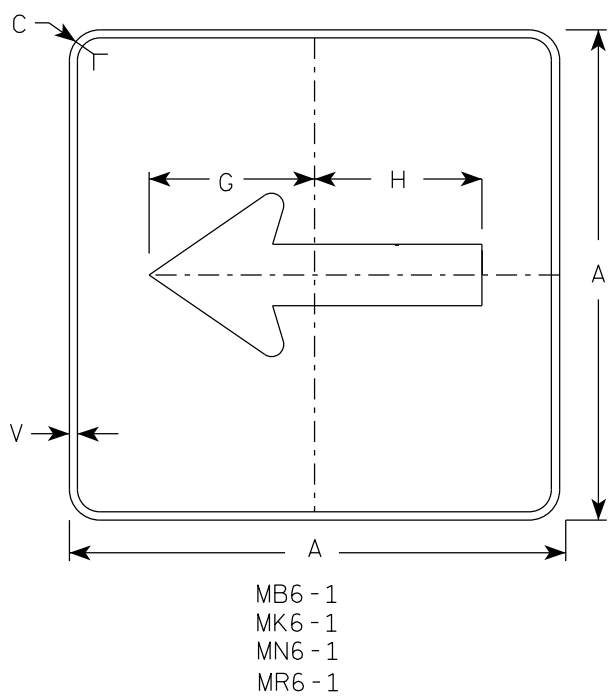
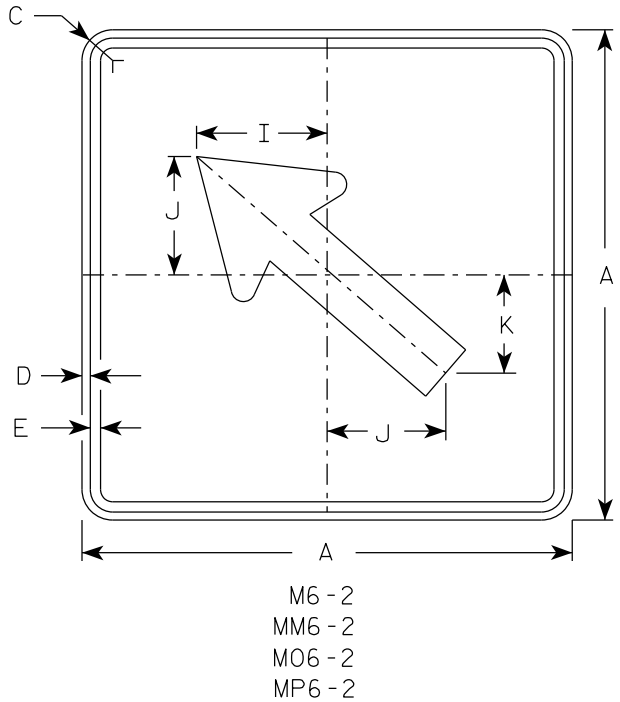
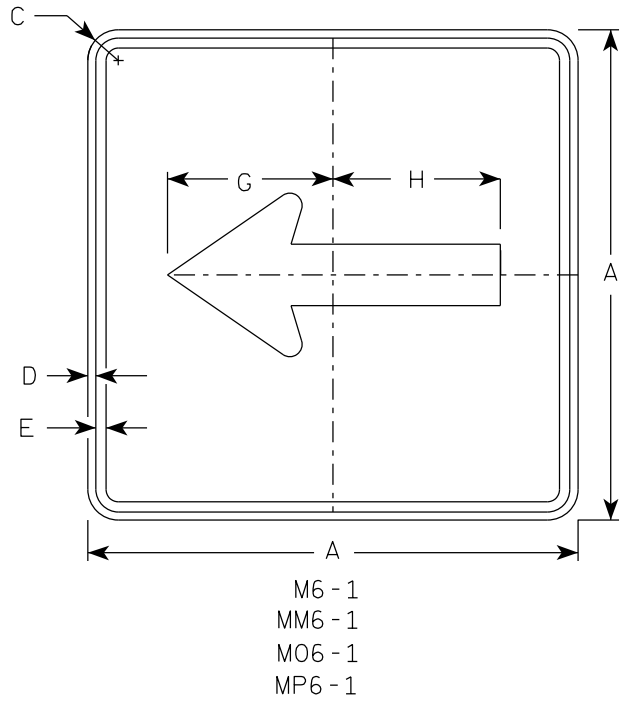
- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | | |
|-----------|-------|---|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

ARROW DETAIL

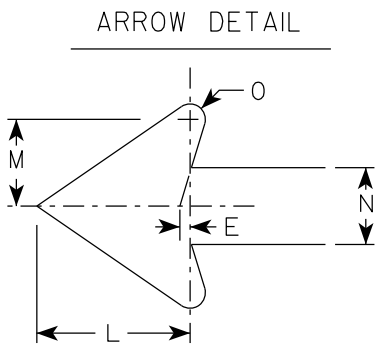


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2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

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 153	E
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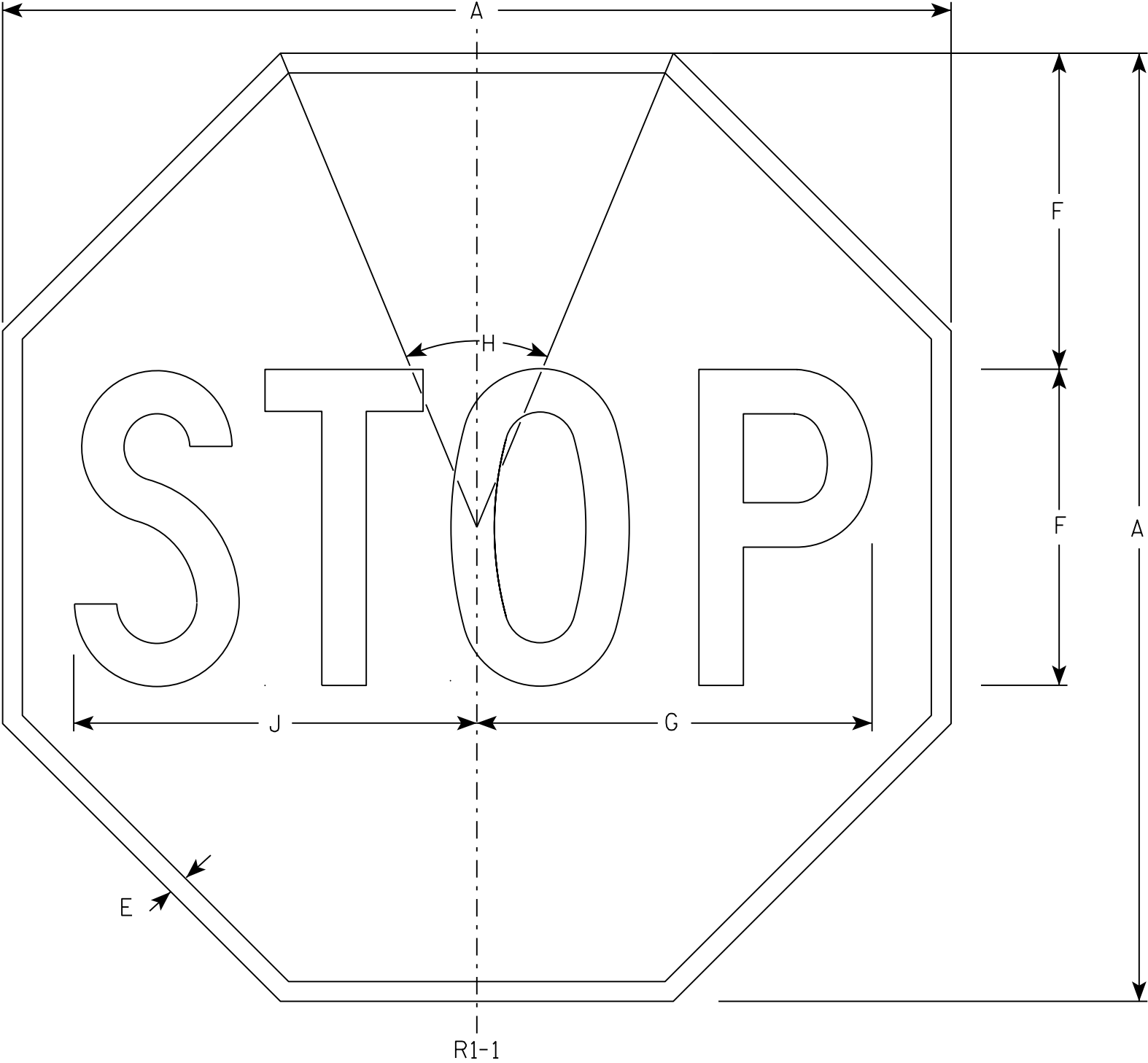


- NOTES
- Signs are Type II - Type H Reflective except as Shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - M6-1 and M6-2 Background - White
Message - Black
MB6-1 and MB6-2 Background - Blue
Message - White
MK6-1 and MK6-2 Background - Green
Message - White
MM6-1 and MM6-2 Background - White
Message - Green
MN6-1 and MN6-2 Background - Brown
Message - White
M06-1 and M06-2 Background - Orange - Type F Reflective
Message - Black
MP6-1 and MP6-2 Background - White
Message - Blue
MR6-1 and MR6-2 Background - Brown
Message - Yellow



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

7



NOTES

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

7

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

STANDARD SIGN

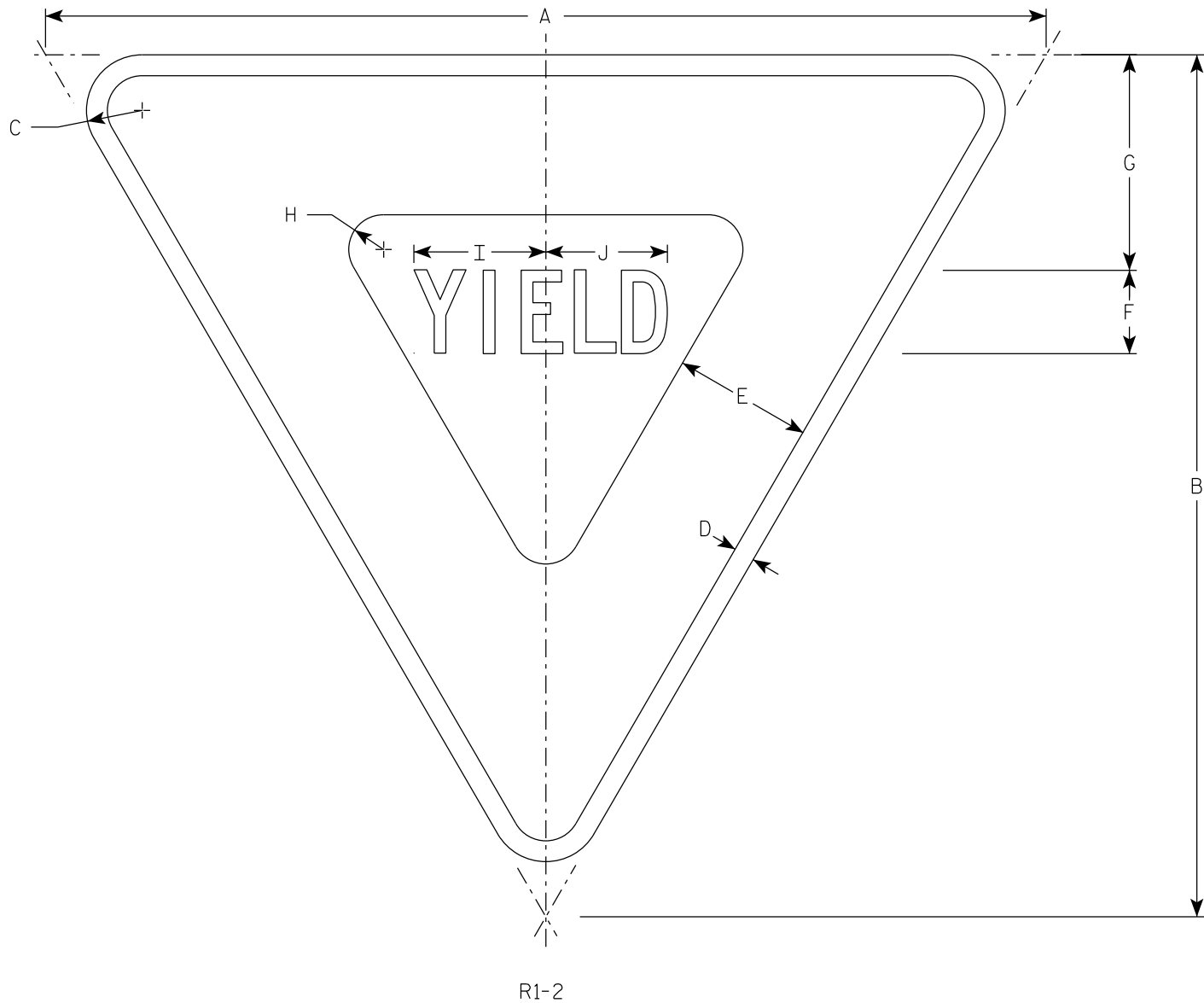
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - See note 4
- 3. Message Series - C
- 4. The border strip and word message are reflectorized red.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	26	2	5⁄8	4	2 1⁄2	6 3⁄8	7⁄8	4	3 5⁄8																	2.71
2S	36	31	2	3⁄4	5	3	7 3⁄4	1 1⁄4	4 3⁄4	4 3⁄8																	3.88
2M	48	42	3	1	6	4	9 3⁄4	2	6 1⁄4	5 7⁄8																	7.00
3	48	42	3	1	6	4	9 3⁄4	2	6 1⁄4	5 7⁄8																	7.00
4	48	42	3	1	6	4	9 3⁄4	2	6 1⁄4	5 7⁄8																	7.00
5	60	52	3	1 1⁄2	8	5	13	2 1⁄2	7 7⁄8	7 1⁄4																	10.83
6																											
7	18	15 1⁄2	1	3⁄8	2 1⁄2	1 1⁄2	3 7⁄8	5⁄8	2 3⁄8	2 1⁄4																	0.97

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 156

E

STANDARD SIGN
R1-2

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

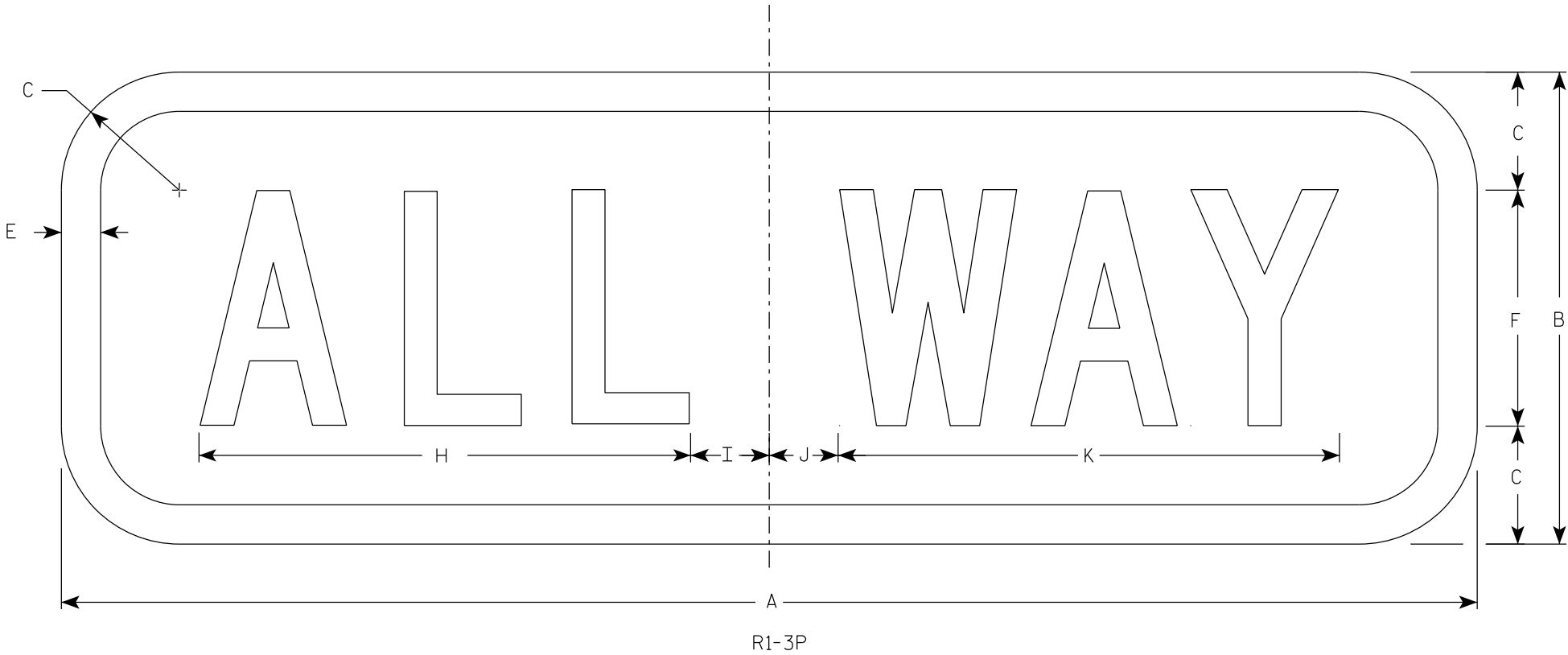
DATE 9/10/2024 PLATE NO. R1-2.13

7

7

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - Red
Message - White
- 3. Message Series - C
- 4. For 30"x30" R1-1 use 18"x6" R1-3P sign
For 36"x36" R1-1 use 24"x9" R1-3P sign
For 48"x48" R1-1 use 30"x12" R1-3P sign



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	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																0.75
2S	18	6	1 1/2		1/2	3		6 1/4	1 1/4	7/8	6 3/8																0.75
2M	24	9	1 1/2		1/2	5		9 1/4	1 1/4	3/4	9 3/4																1.5
3	24	9	1 1/2		1/2	5		9 1/4	1 1/4	3/4	9 3/4																1.5
4	30	12	1 1/2		5/8	6		11	2 1/4	1 1/2	11 3/4																2.5
5	30	12	1 1/2		5/8	6		11	2 1/4	1 1/2	11 3/4																2.5

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 157

E

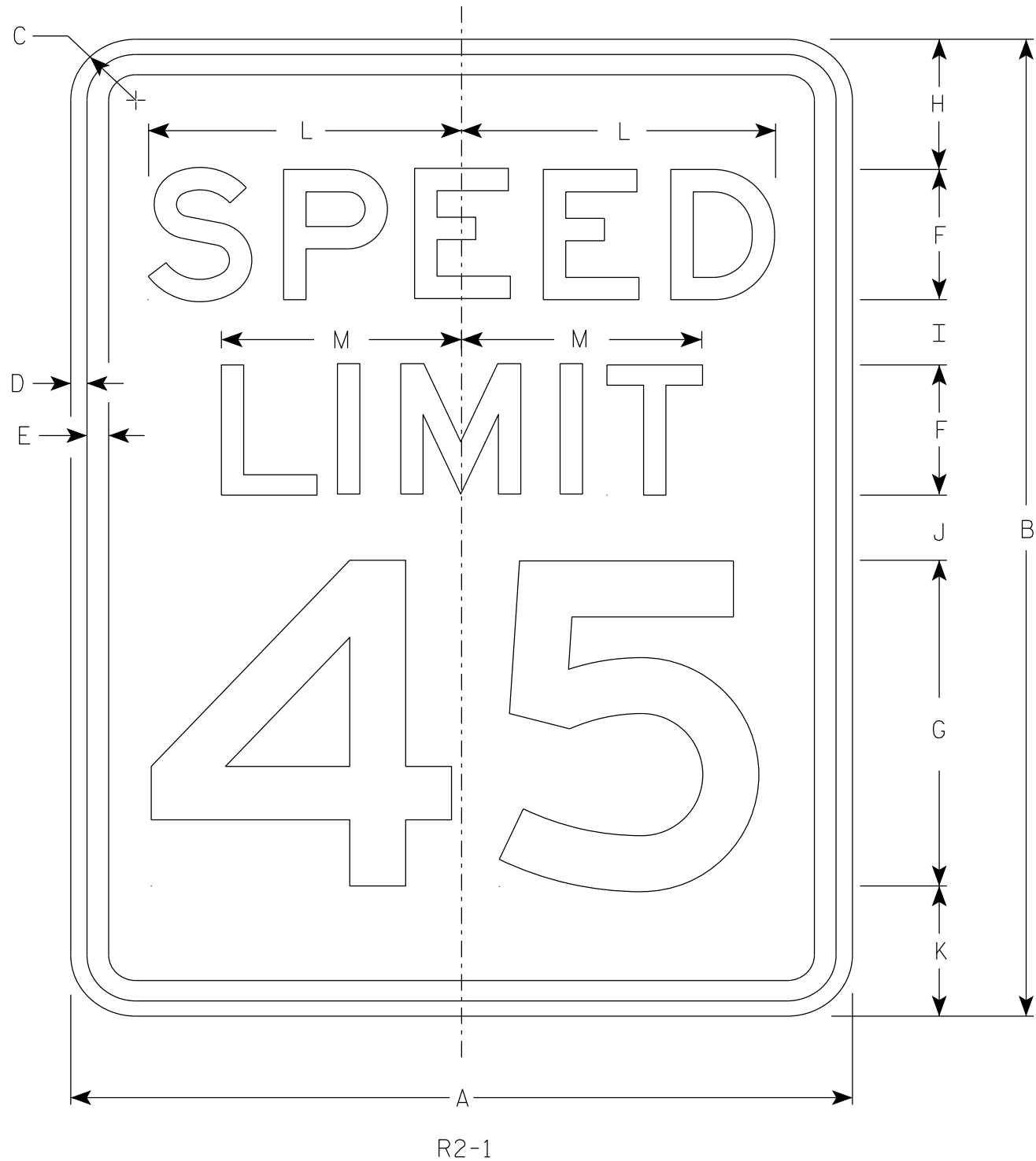
STANDARD SIGN
R1-3P

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/19/23 PLATE NO. R1-3P.4

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - E
- 4. Substitute appropriate numerals and optically adjust spacing to achieve proper balance.

7

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 1/2	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/2	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 7/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	3	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN

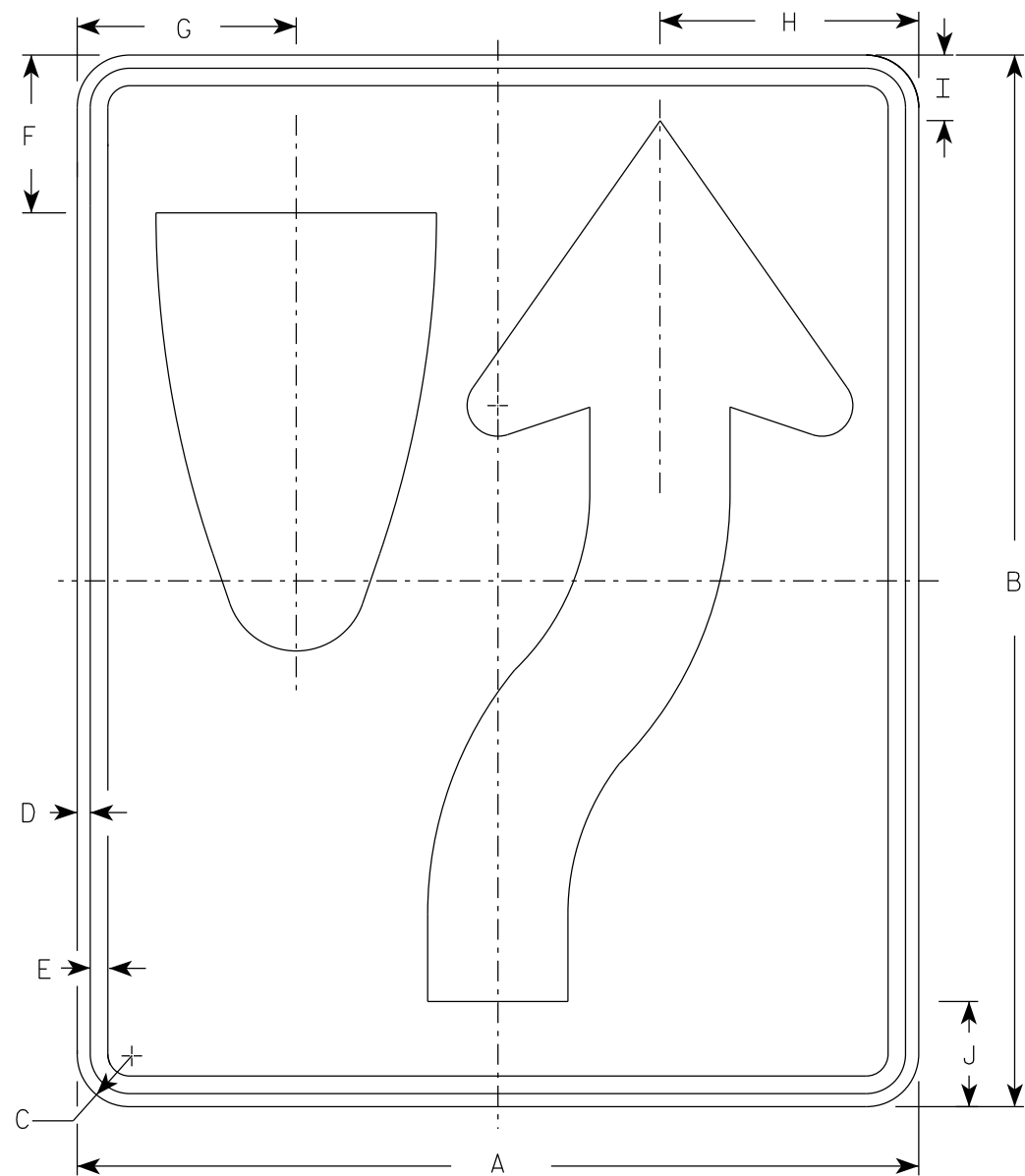
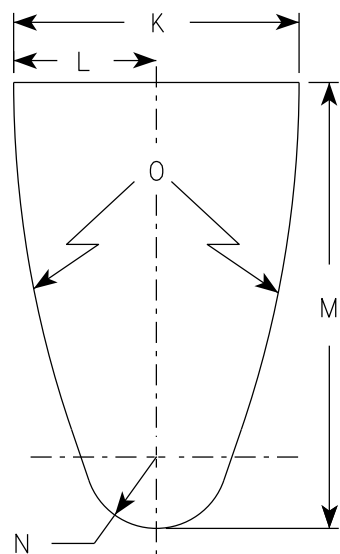
R2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/1/23 PLATE NO. R2-1.14

DIVIDER DETAIL

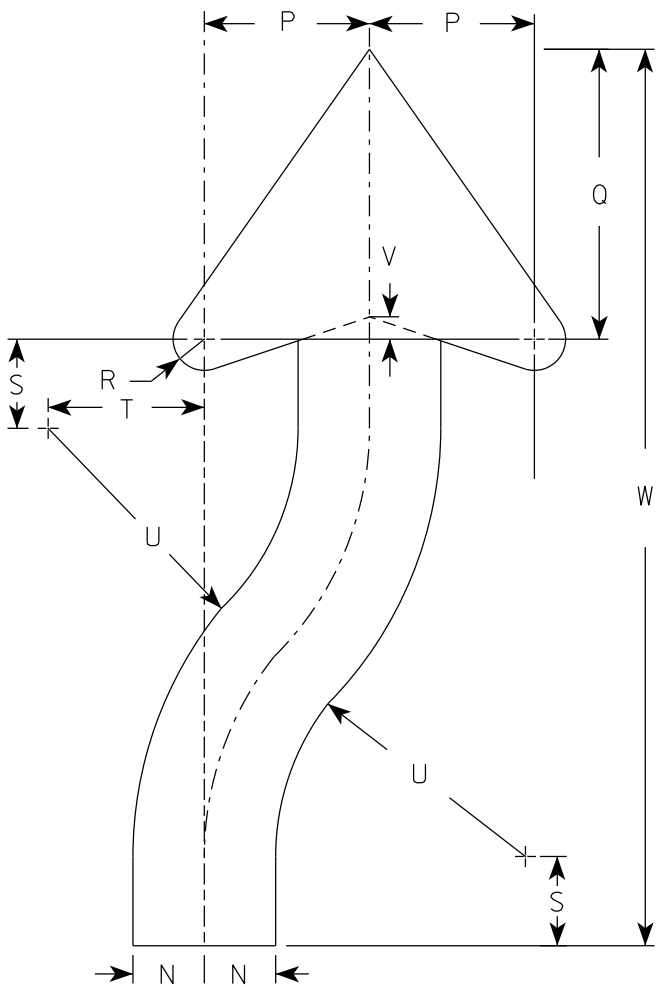


R4-7

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. R4-8 is the same as R4-7 except Legend is reversed.

ARROW DETAIL



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/2	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 1/2	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 1/2	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 7/8	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 7/8	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	3	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

PROJECT NO:

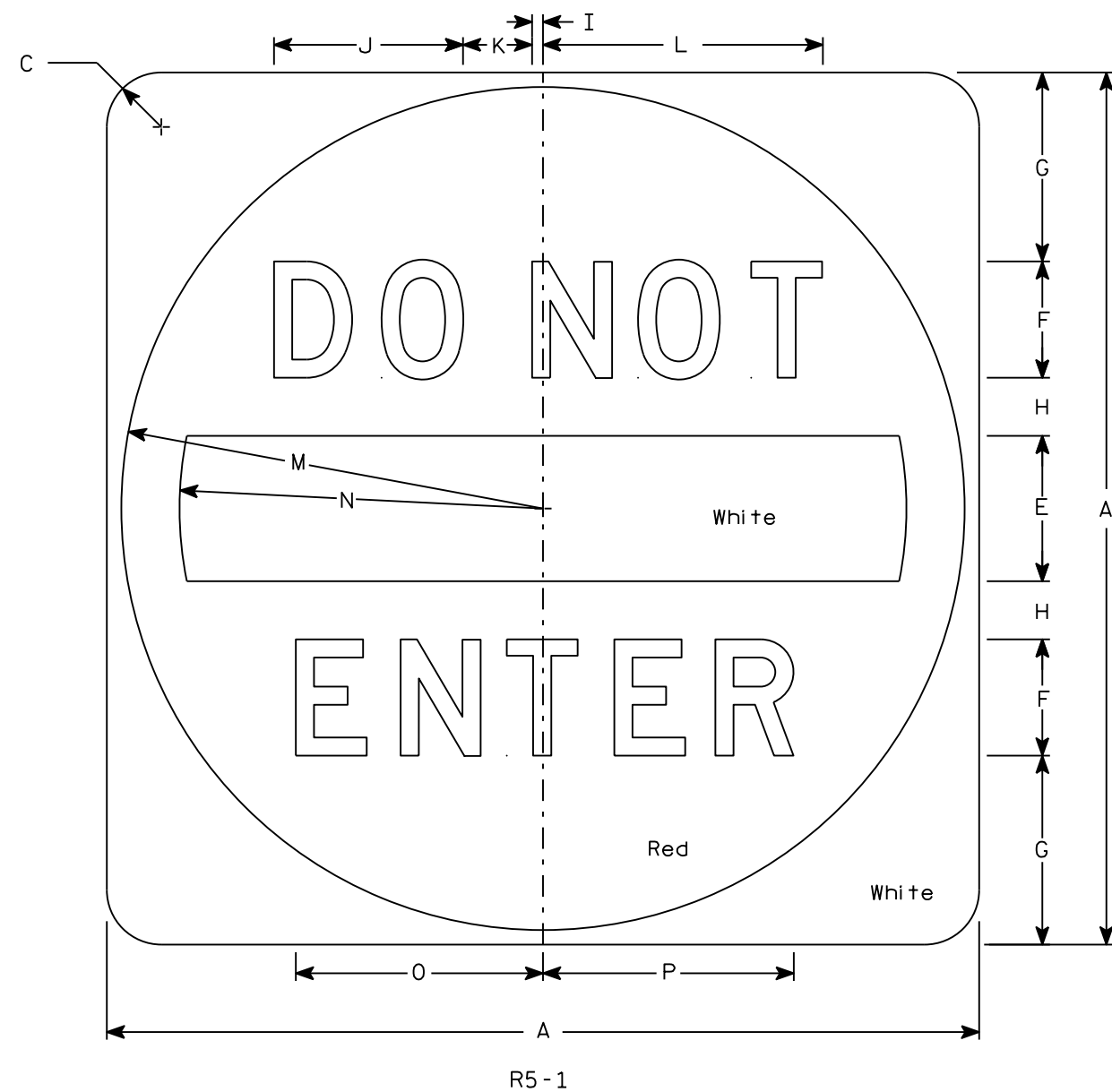
HWY:

COUNTY:

SHEET NO: 159

E

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NOTES

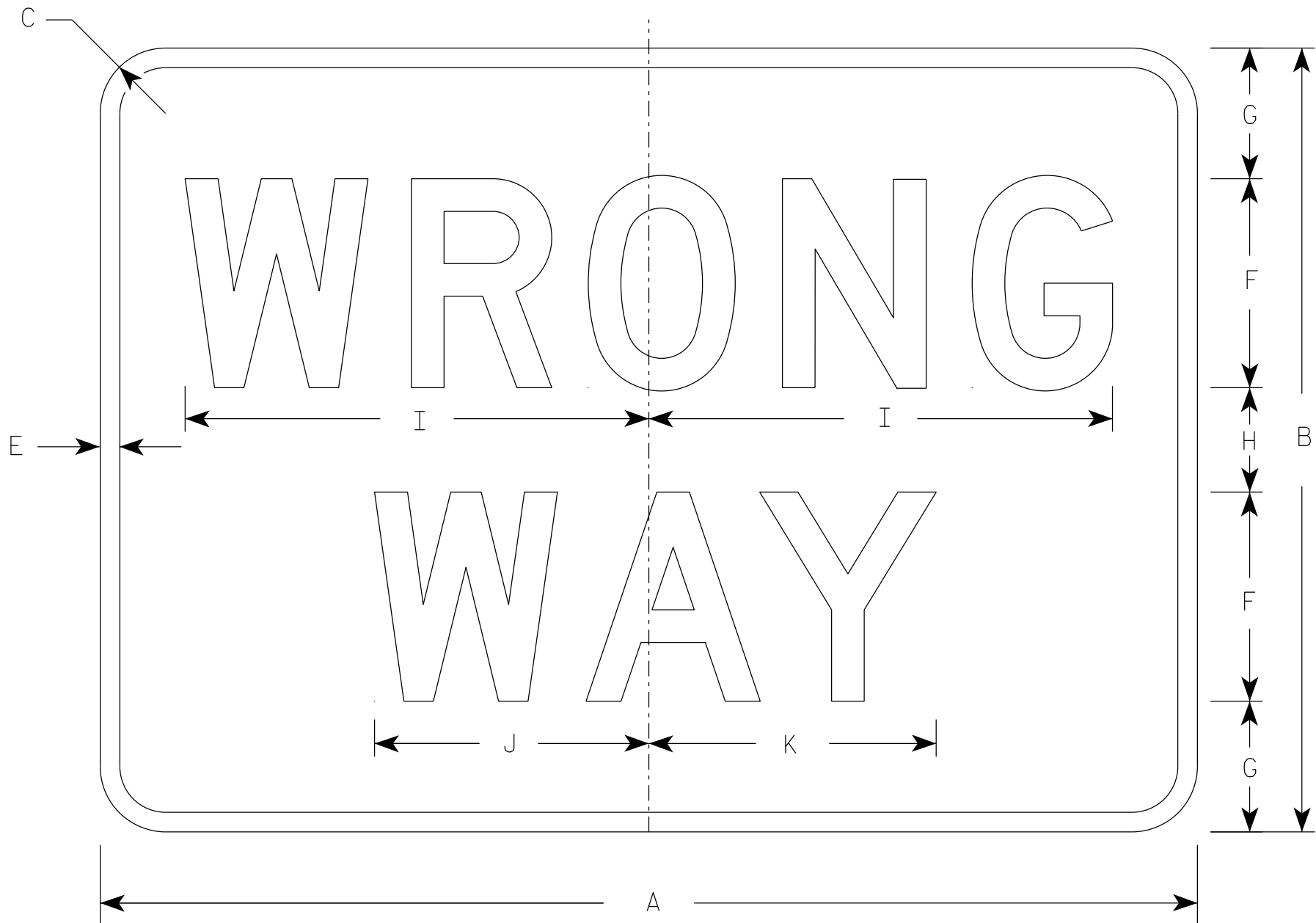
1. Sign is Type II - Type H Reflective
2. Color:
Background - See detail
Message - White
3. Message Series - D

7

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											6.25
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	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 3/15/18	PLATE NO. R5-1.16

7



R5-1A

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - Red
 - Message - White
- 3. Message Series - D

7

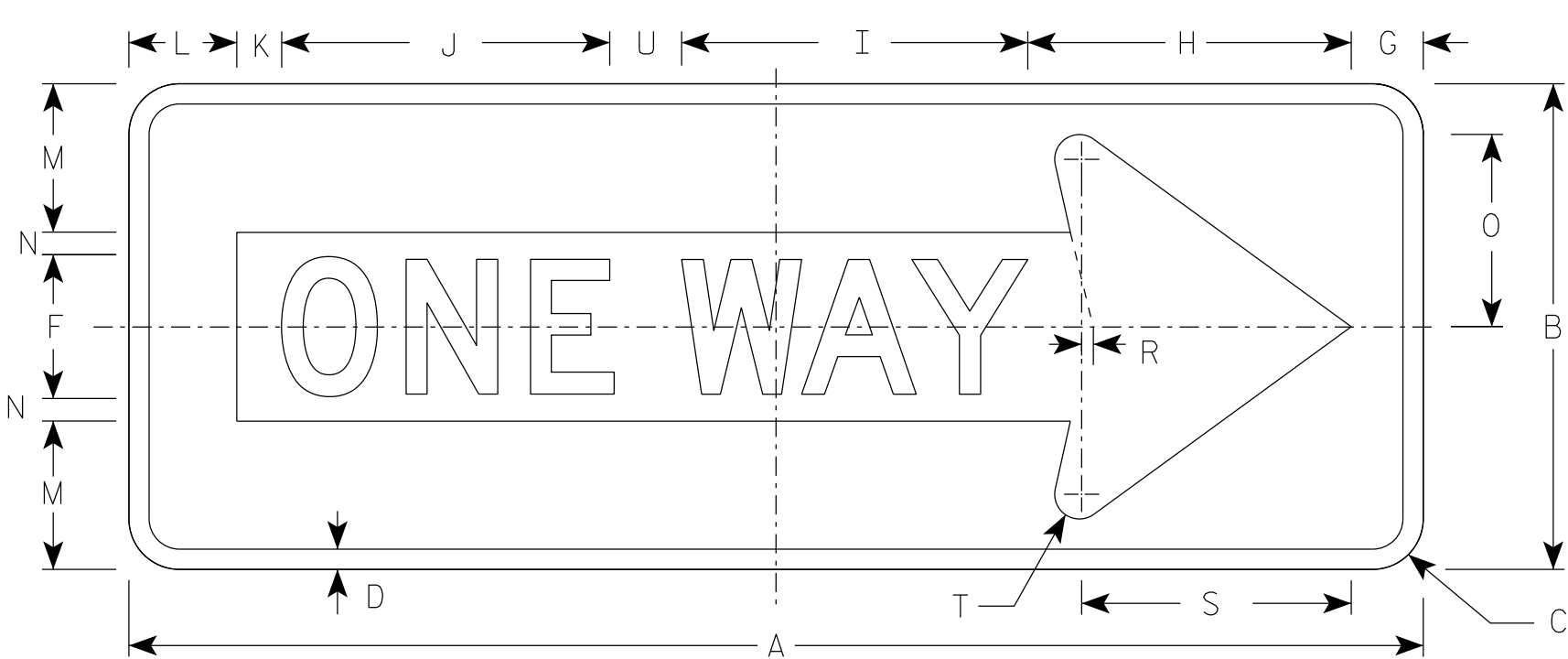
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	30	18	1 1/2		1/2	5	3	2	11	6 1/2	6 7/8																3.75
2S	36	24	1 1/2		5/8	6	4 1/2	3	13 1/4	7 7/8	8 1/4																6.00
2M	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
3	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
4	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75
5	42	30	1 7/8		3/4	8	5	4	17 3/4	10 1/2	11																8.75

STANDARD SIGN
R5-1A

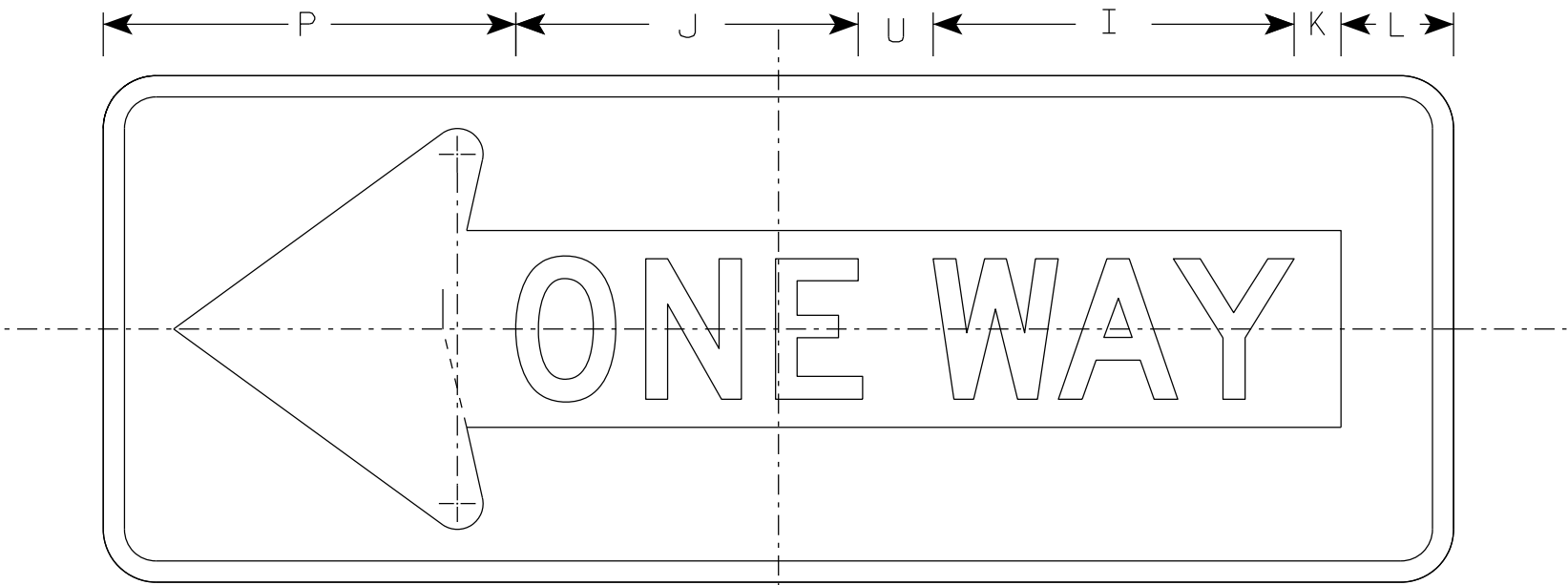
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 8/17/23 PLATE NO. R5-1A.3



R6-1 R



R6-1 L

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - Black
Message - Black Legend & White Arrow & Border
- 3. Message Series - D

7

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	36	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	3/4	2						3.0
2M	48	18	1 7/8	3/4		5	2 1/2	11	13	12 1/4	2 3/4	3 1/2	5 1/2	1	7 1/8	13 1/2		1/2	10 1/8	7/8	3						6.0
3	48	18	1 7/8	3/4		5	2 1/2	11	13	12 1/4	2 3/4	3 1/2	5 1/2	1	7 1/8	13 1/2		1/2	10 1/8	7/8	3						6.0
4	48	18	1 7/8	3/4		5	2 1/2	11	13	12 1/4	2 3/4	3 1/2	5 1/2	1	7 1/8	13 1/2		1/2	10 1/8	7/8	3						6.0
5																											

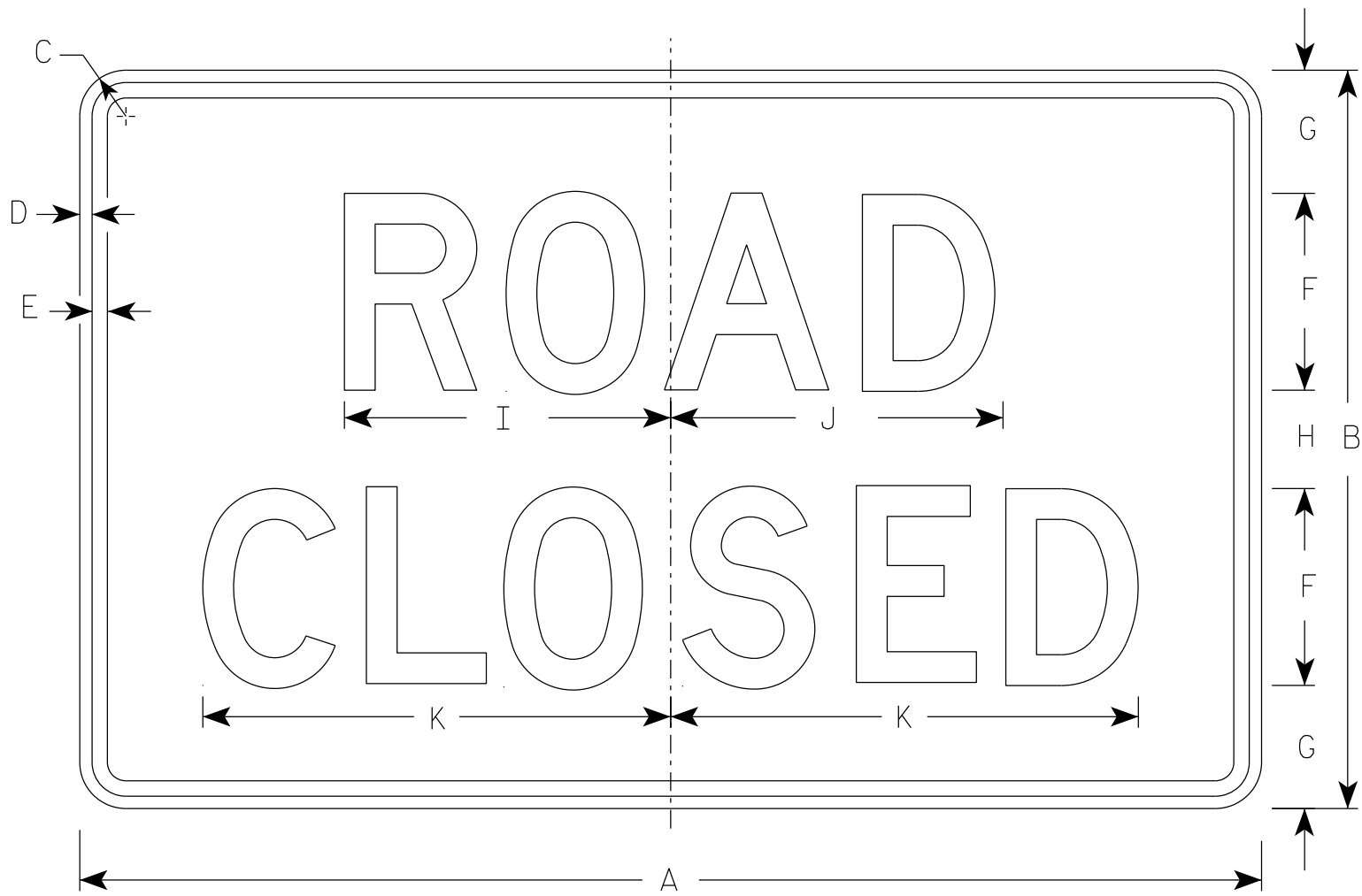
STANDARD SIGN
R6-1 L&R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

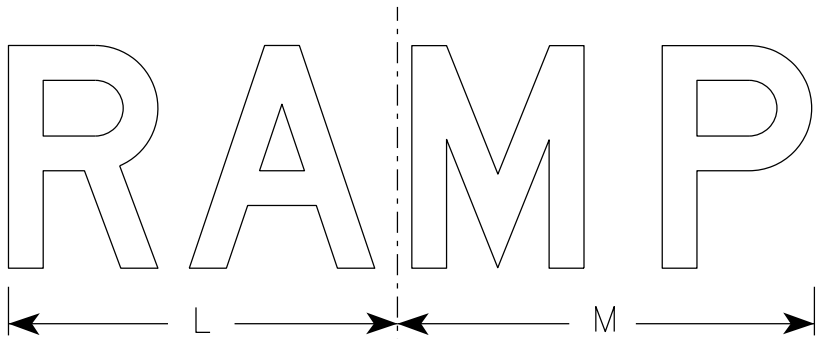
DATE 4/7/2025 PLATE NO. R6-1.5

SHEET NO: 162

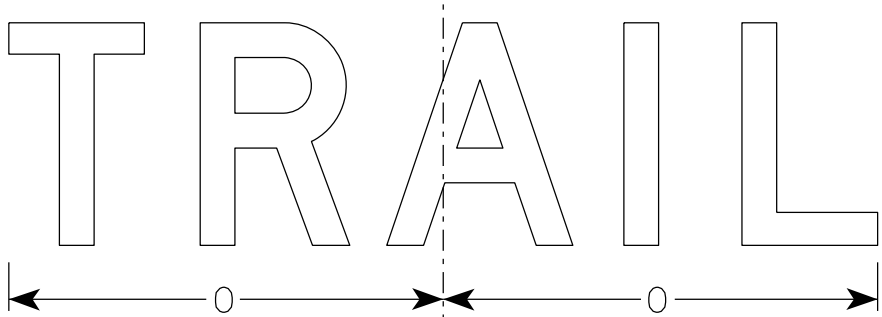


R11-2

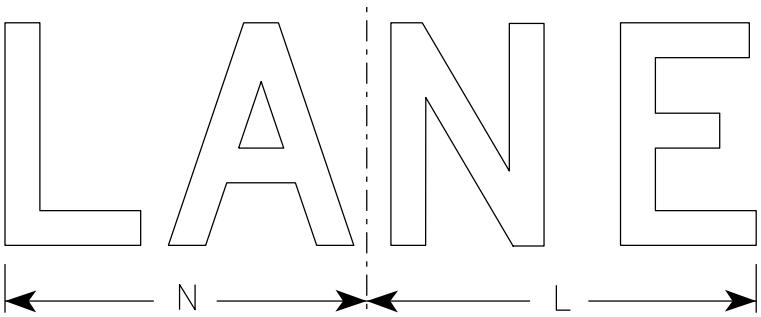
- NOTES
1. Sign is Type II - Type H Reflective
 2. Color:
Background - White
Message - Black
 3. Message Series - D
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 5. Modify the message as required.



R11-2R



R11-2T



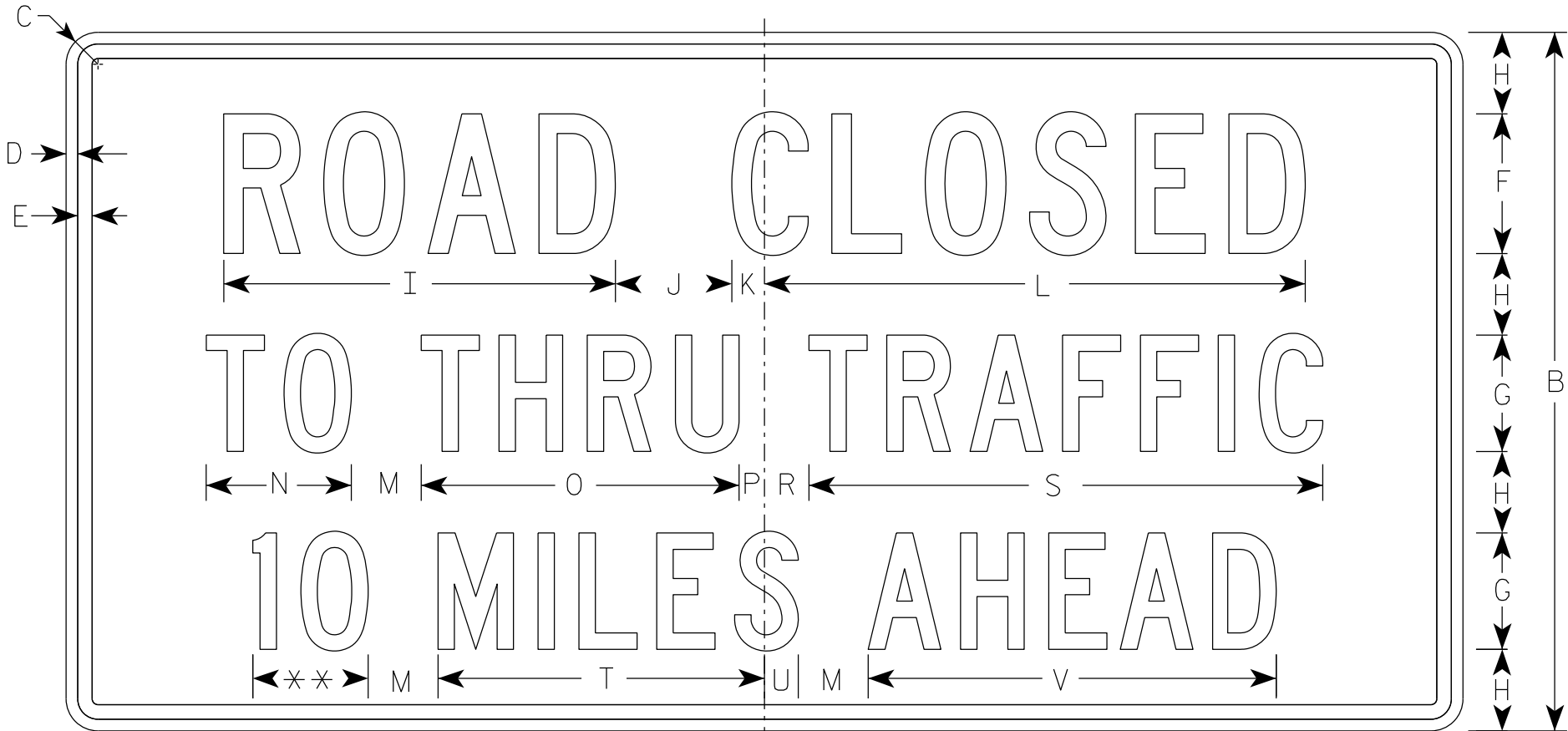
R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
2M	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
3	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
4	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0
5	48	30	1 7/8	1/2	5/8	8	5	4	13 1/4	13 1/2	19	14	15	13	15 5/8												10.0

STANDARD SIGN R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 2/5/24	PLATE NO. R11-2.12

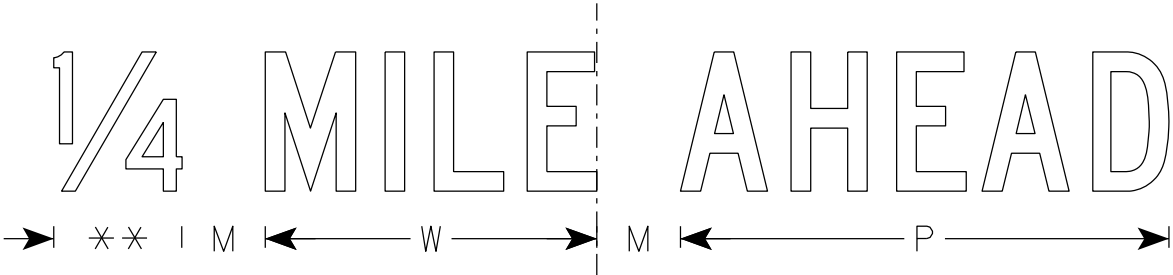
NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3

** See Note 5



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	18	1 1/2	3/8	3/8	4	3	2	11 1/4	3	1 1/8	15 3/8	2	3 3/4	8 1/4	5/8		1 3/8	13 1/4	8 3/8	7/8	10 1/2	7 1/8				4.5
2S	60	30	1 7/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5
2M	60	30	1 7/8	1/2	5/8	6	5	3 1/2	16 7/8	5	1 3/8	23 1/4	3	6 1/4	13 5/8	1 1/8		1 7/8	22 1/8	14	1 1/2	17 1/2	11 7/8				12.5
3																											
4																											
5																											

STANDARD SIGN
R11-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/5/24 PLATE NO. R11-3.10

PROJECT NO:

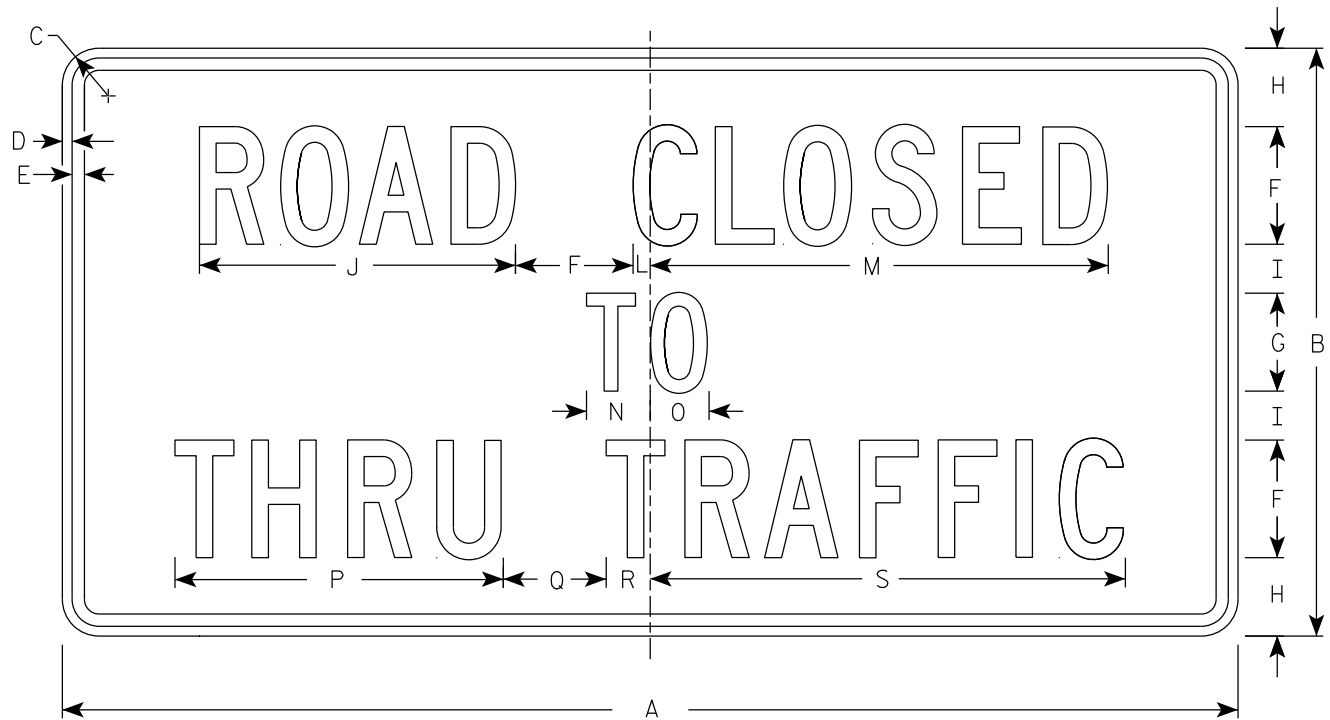
HWY:

COUNTY:

SHEET NO: 164

E

7



R11-4

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - C
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	60	30	1 7⁄8	1⁄2	5⁄8	6	5	4	2 1⁄2	16 1⁄8		7⁄8	23 3⁄8	3 1⁄4	3	16 3⁄4	5 1⁄4	2 1⁄4	24 1⁄4								12.5
2M	60	30	1 7⁄8	1⁄2	5⁄8	6	5	4	2 1⁄2	16 1⁄8		7⁄8	23 3⁄8	3 1⁄4	3	16 3⁄4	5 1⁄4	2 1⁄4	24 1⁄4								12.5
3																											
4																											
5																											

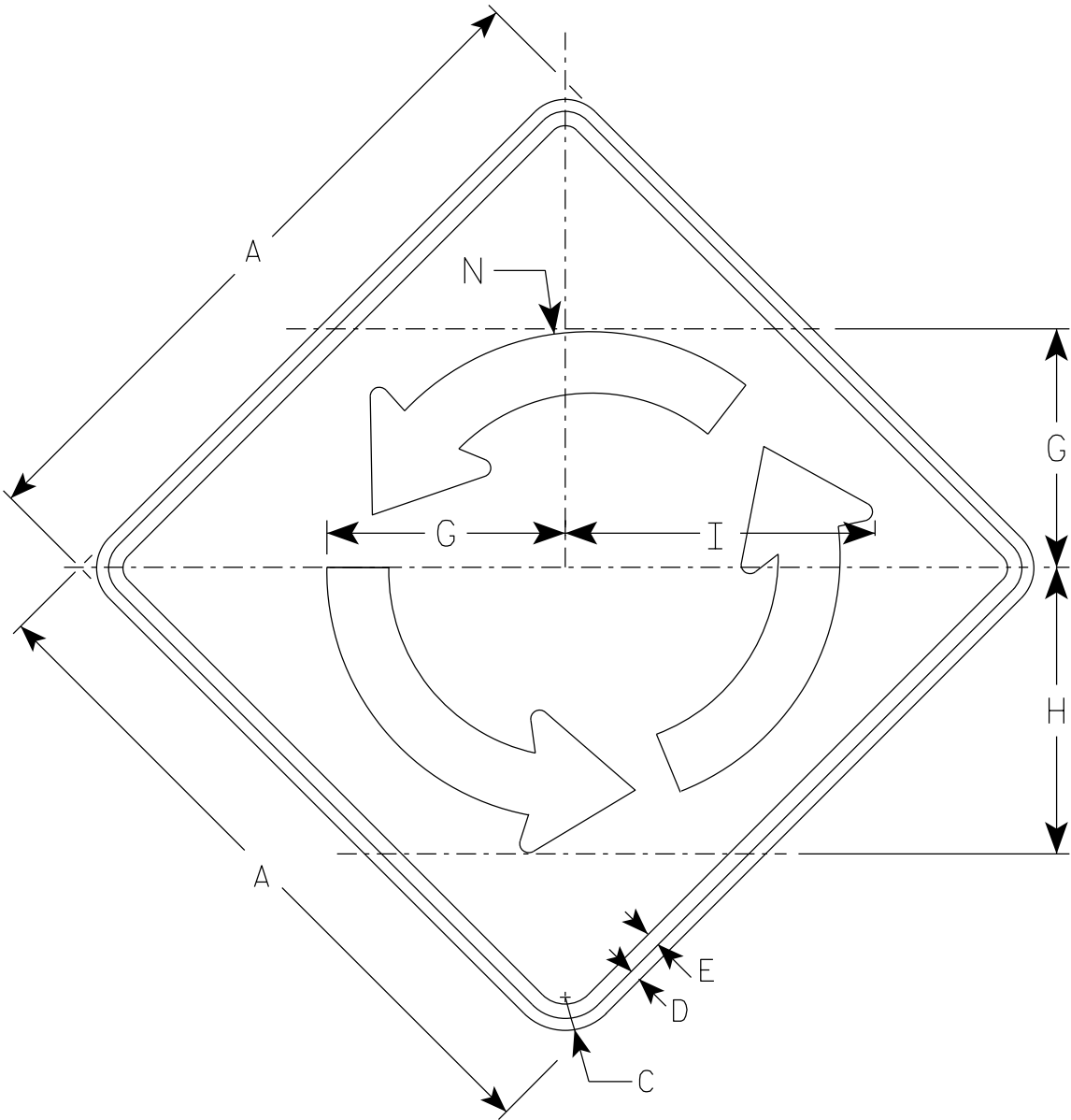
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 165

E

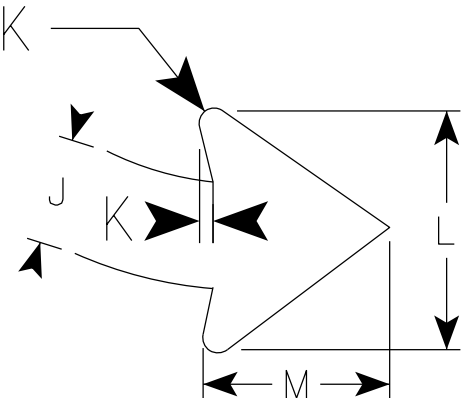


W2-6

NOTES

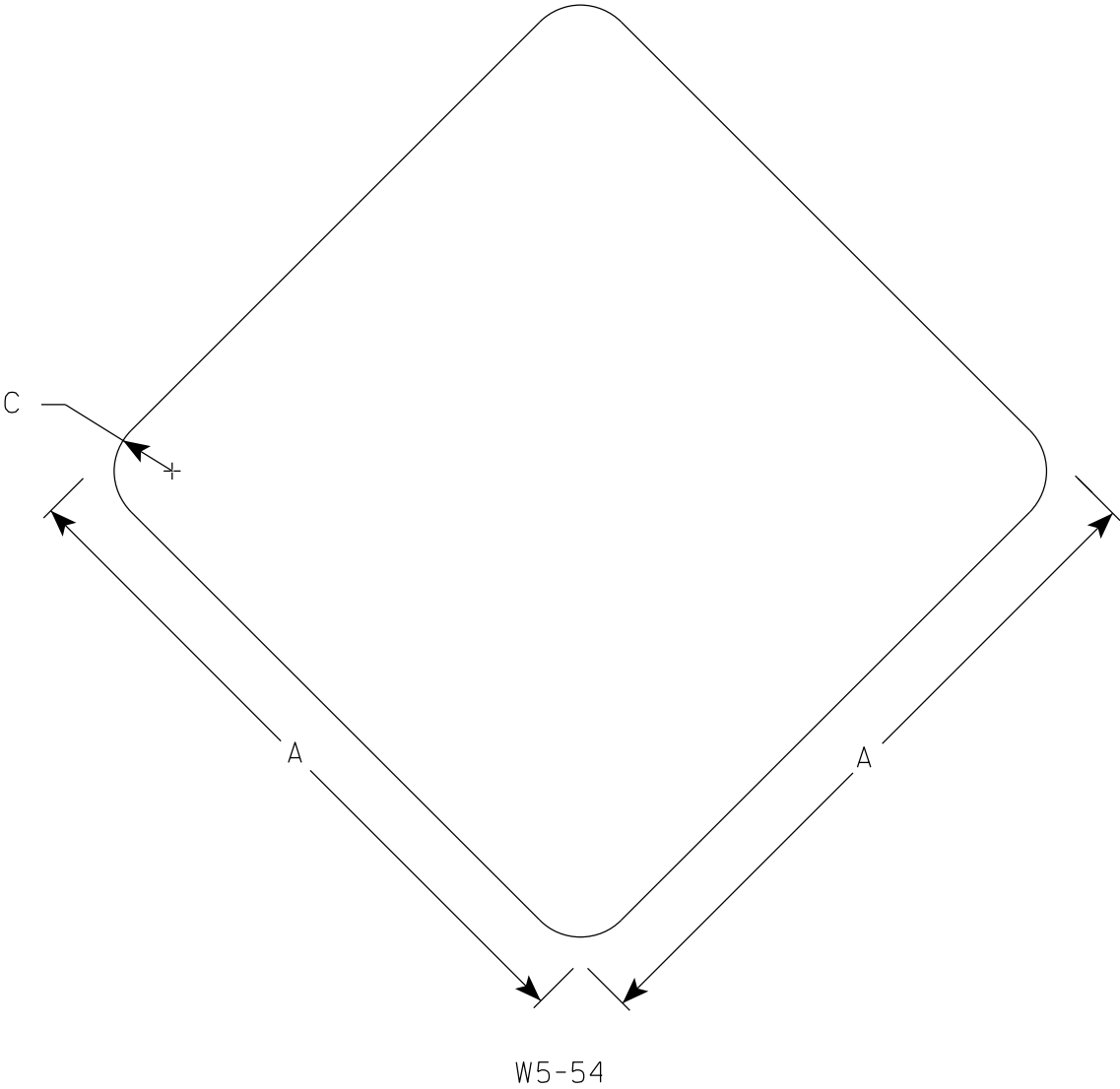
- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Yellow
Message - Black

Arrow Detail



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Area sq. ft.
1																									
2S	30		1 7/8	1/2	5/8		10 3/8	12 1/2	13 1/2	2 3/4	3/8	6	4 3/4	11 1/8											6.25
2M	30		1 7/8	1/2	5/8		10 3/8	12 1/2	13 1/2	2 3/4	3/8	6	4 3/4	11 1/8											6.25
3	36		2 1/4	5/8	3/4		12 1/2	15	16 1/4	3 1/4	1/2	7 3/8	5 3/4	13 3/8											9.00
4	48		3	3/4	1		16 5/8	20	16 1/4	4 3/8	5/8	9 3/4	7 5/8	17 7/8											16.0
5																									

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Yellow

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	12		1 ½																								1.0
2S	18		1 ½																								2.25
2M	18		1 ½																								2.25
3																											
4																											
5																											

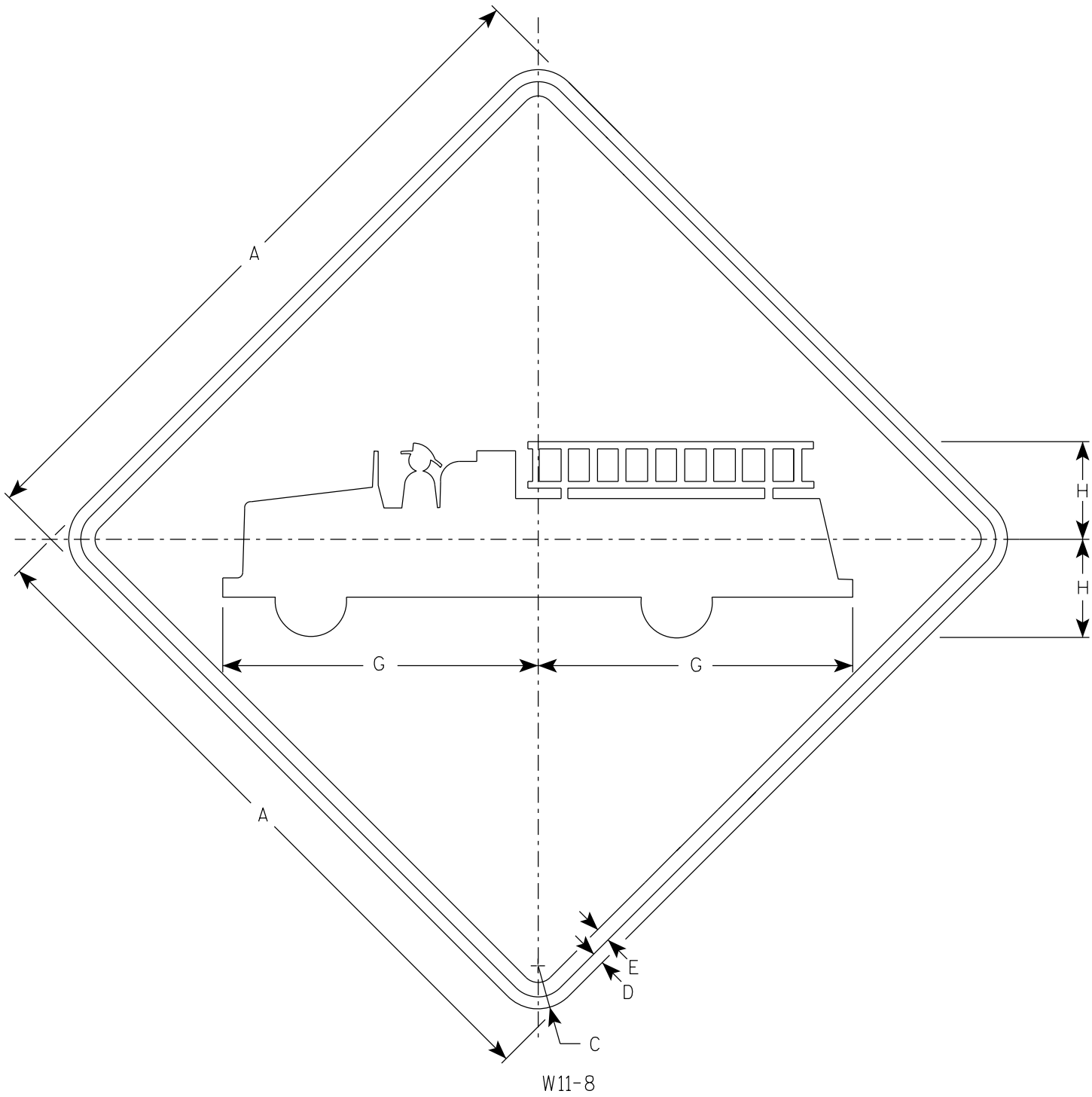
STANDARD SIGN

W5-54

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 3/5/2024 PLATE NO. W5-54.9



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Yellow
Message - Black

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/2	3/8	1/2		11	3 3/8																			4.0
2S	30		1 7/8	1/2	5/8		13 3/4	4 3/8																			6.25
2M	30		1 7/8	1/2	5/8		13 3/4	4 3/8																			6.25
3	36		2 1/4	5/8	3/4		16 1/2	5 1/4																			9.0
4	48		3	3/4	1		22	7																			16.0
5																											

STANDARD SIGN

W11-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

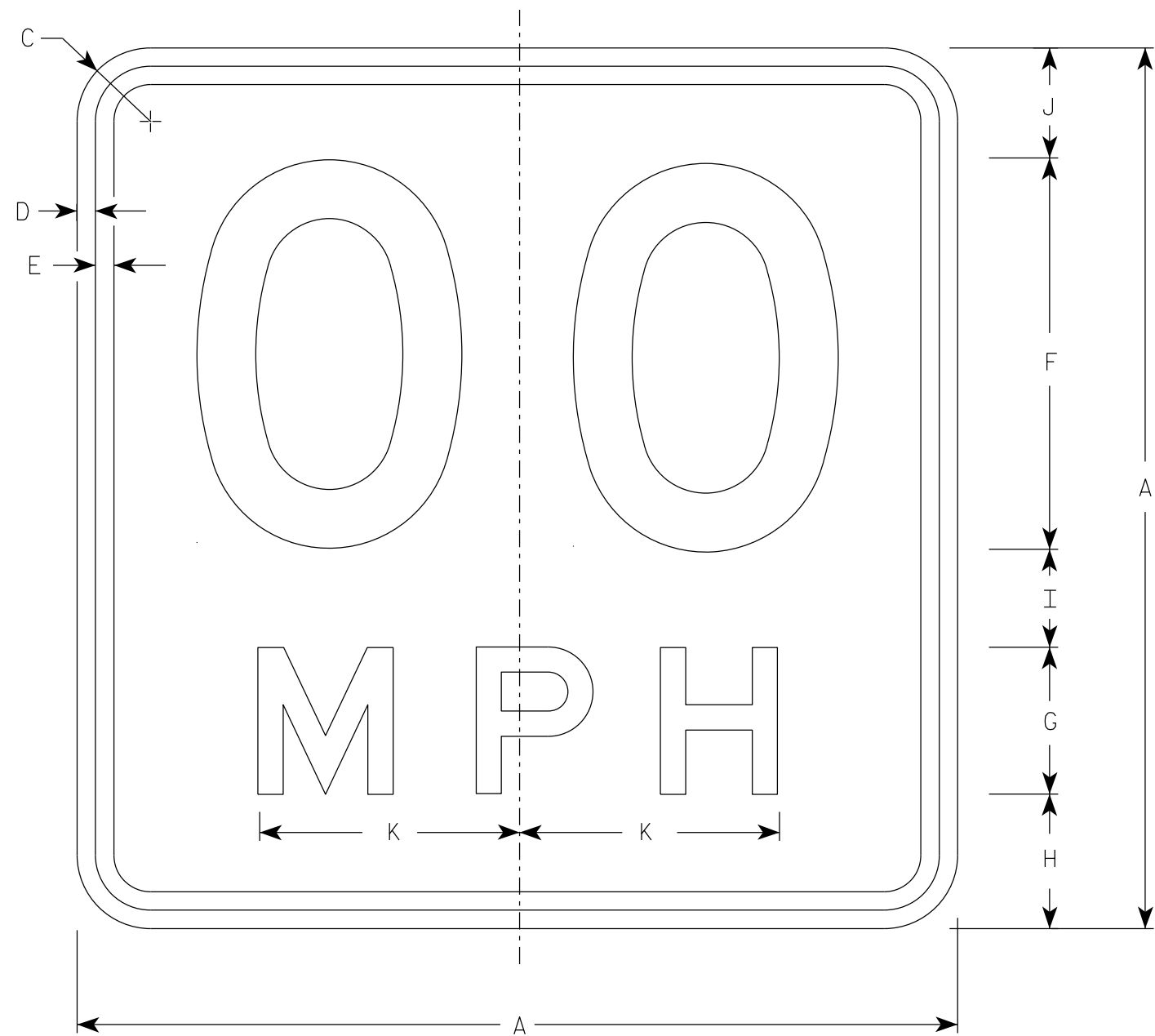
Matthew R. Rauch
for State Traffic Engineer

DATE 11/20/2023 PLATE NO. W11-8.8

PROJECT NO:

SHEET NO: 168

E



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Yellow
Message - Black
3. Message Series - See Note 5
4. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
5. Line 1 is Series D
Line 2 is Series E

W13-1

- * For 30" x 30" Warning Signs, use 18" x 18" W13-1 signs.
For 36" x 36" Warning Signs, use 24" x 24" W13-1 signs.

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.
✱ 2S	1	18		1 1/2	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
	2	18		1 1/2	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
✱ 2M	3	18		1 1/2	3/8	3/8	8	3	2 3/4	2	2 1/4	5 3/8															2.25
	4	24		1 1/2	3/8	1/2	10	4	4	2 3/4	3 1/4	6 5/8															4.00
	5	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8															9.00
	6	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8															9.00

STANDARD SIGN W13-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
For State Traffic Engineer

DATE 1/8/2024 PLATE NO. W13-1.17

PROJECT NO:

HWY:

COUNTY:

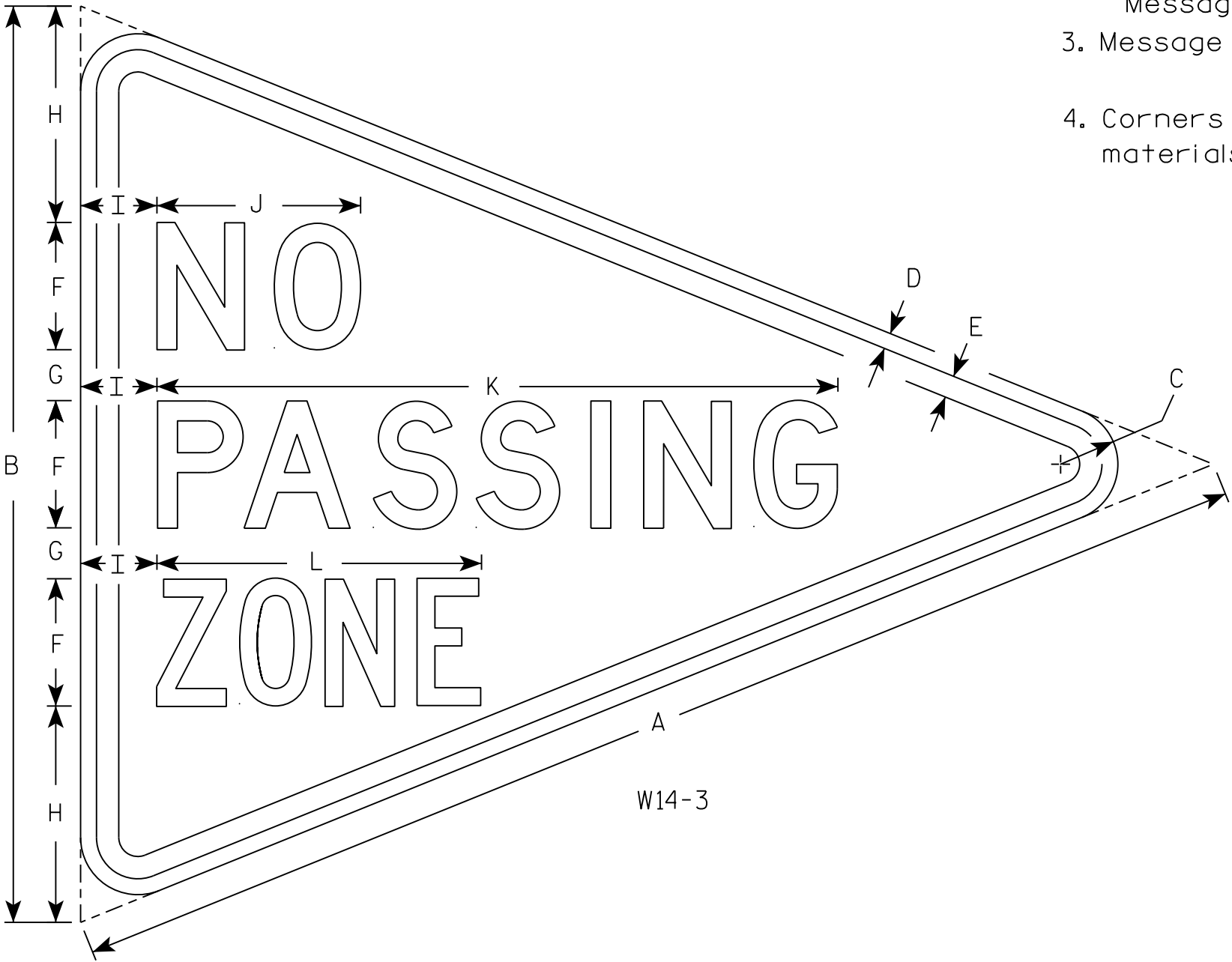
SHEET NO:

169

E

NOTES

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



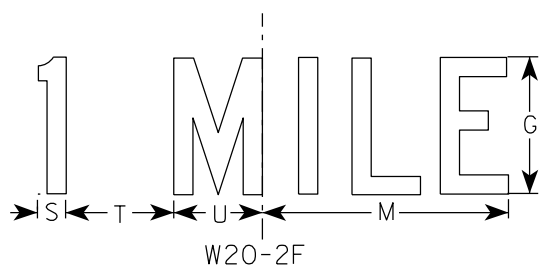
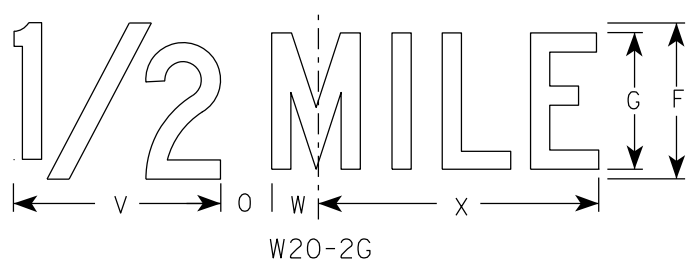
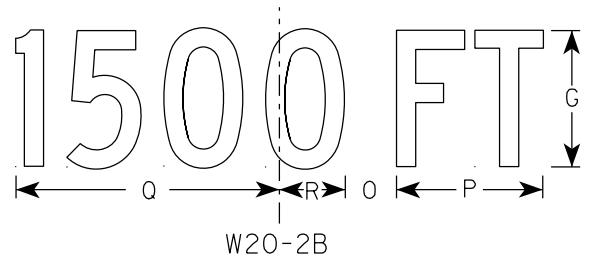
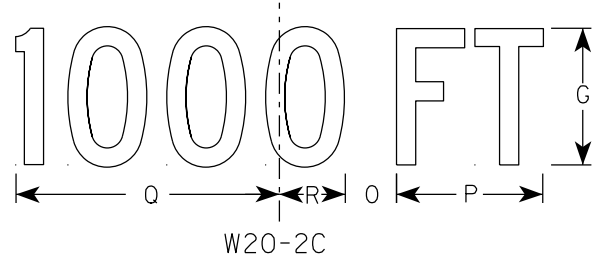
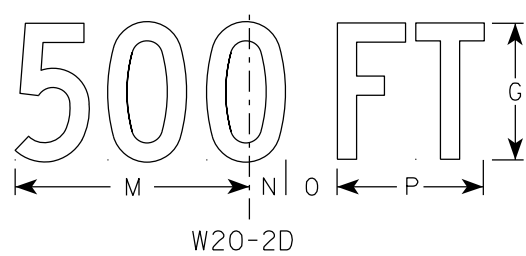
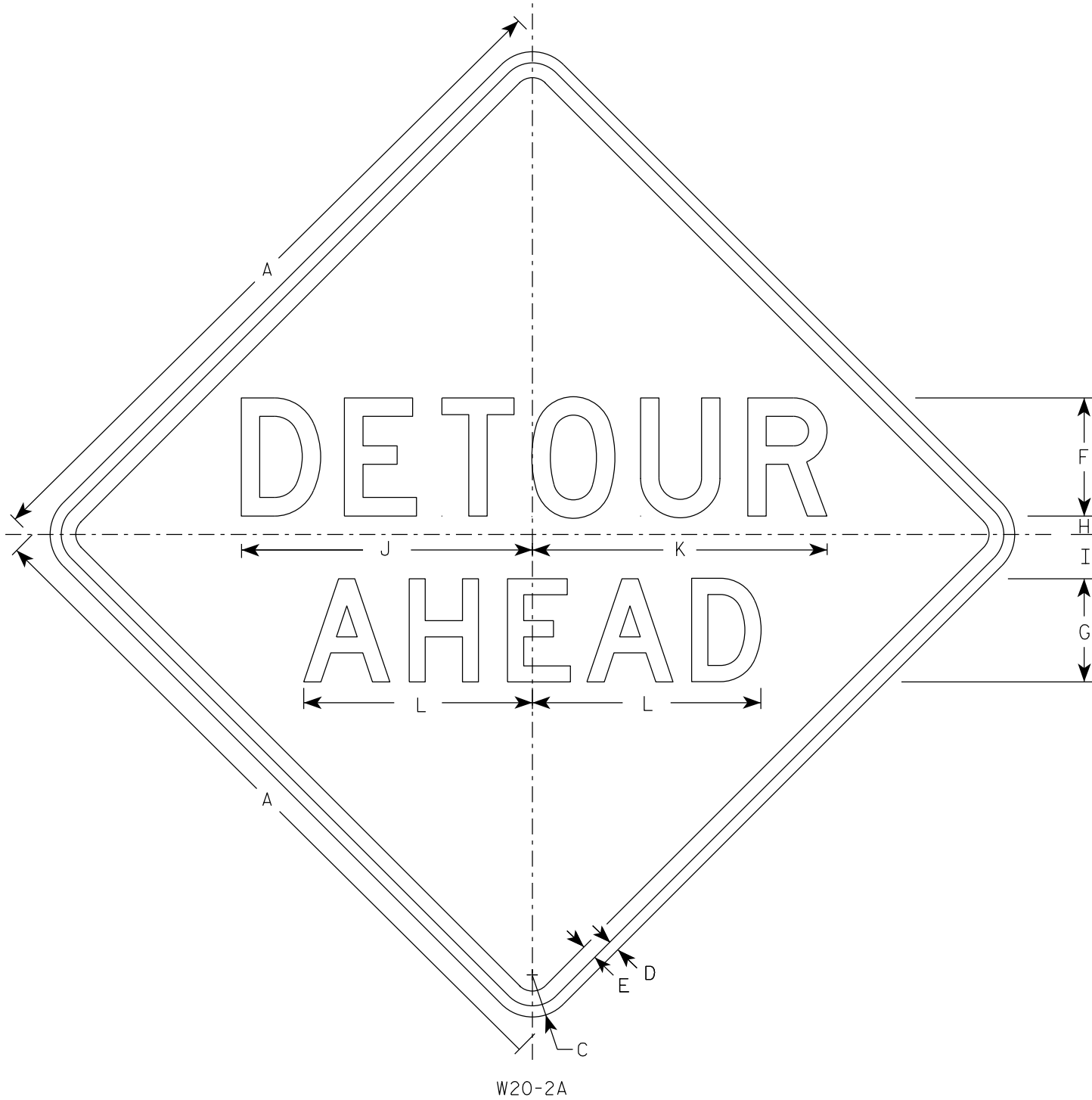
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	36	2 1/4	5/8	7/8	5	2	8 1/2	3	8	26 3/4	12 3/4															5.56
2M																											
3																											
4																											
5																											

STANDARD SIGN
W14-3

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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



NOTES

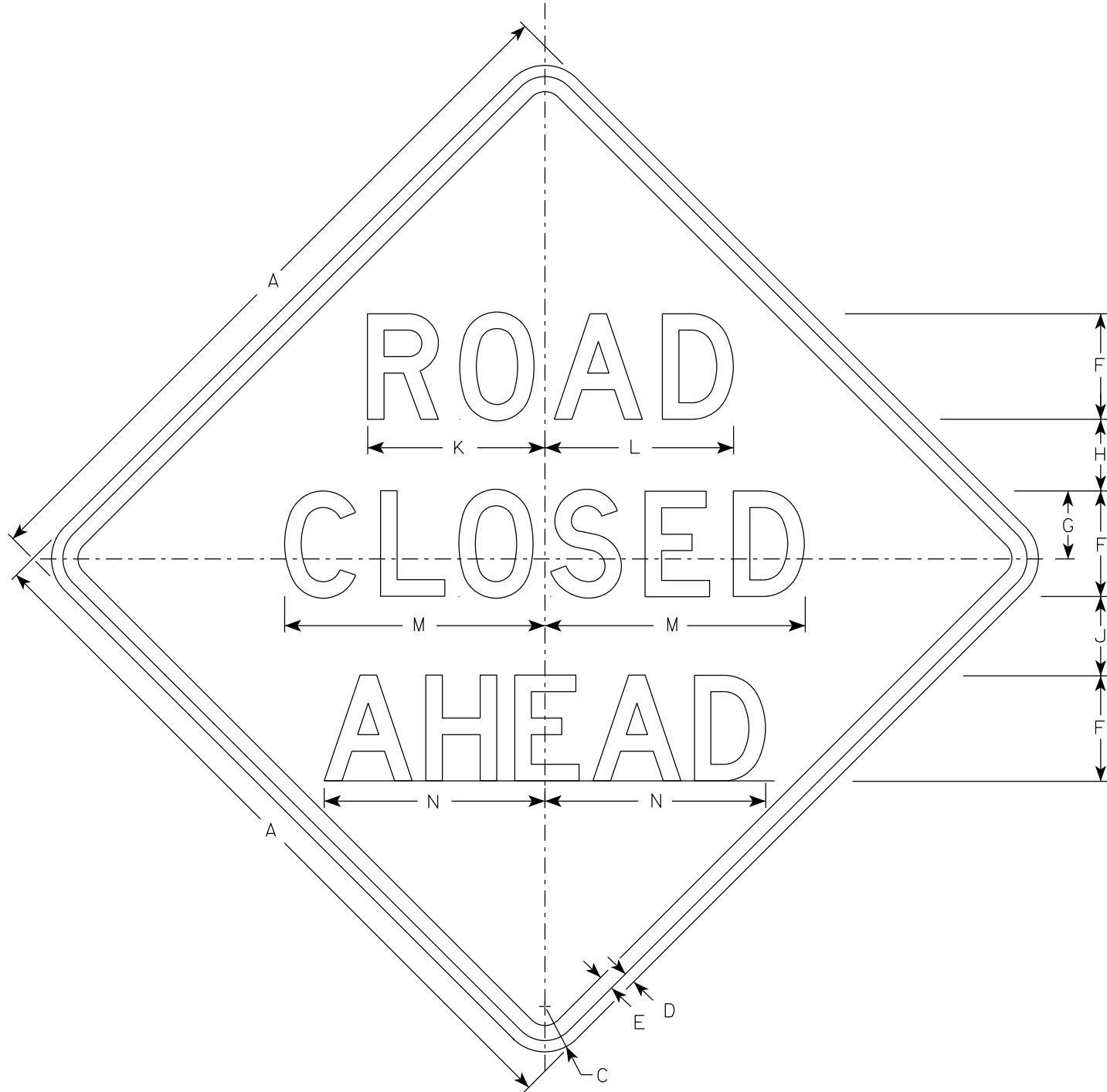
- Sign is Type II - Type F Reflective
- Color:
Background - Orange
Message - Black
- Message Series - See note 5
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- Line 1 is Series 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		2 1/4	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		3	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		3	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		3	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		3	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		3	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

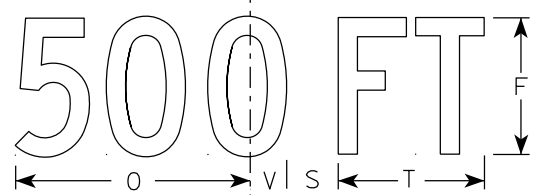
STANDARD SIGN W20-2A,B,C,D,F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 1/10/2024	PLATE NO. W20-2.7

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 171	E
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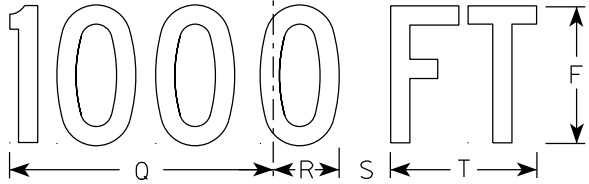
7



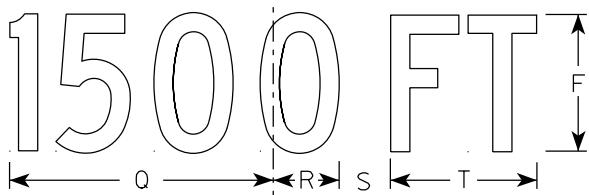
W20-3A



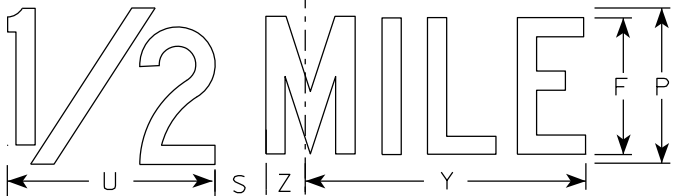
W20-3D



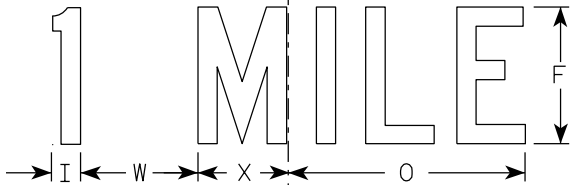
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - see note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Lines 1 and 2 are Series D.
Line 3 is Series D for AHEAD and Series C for all other distances.

7

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

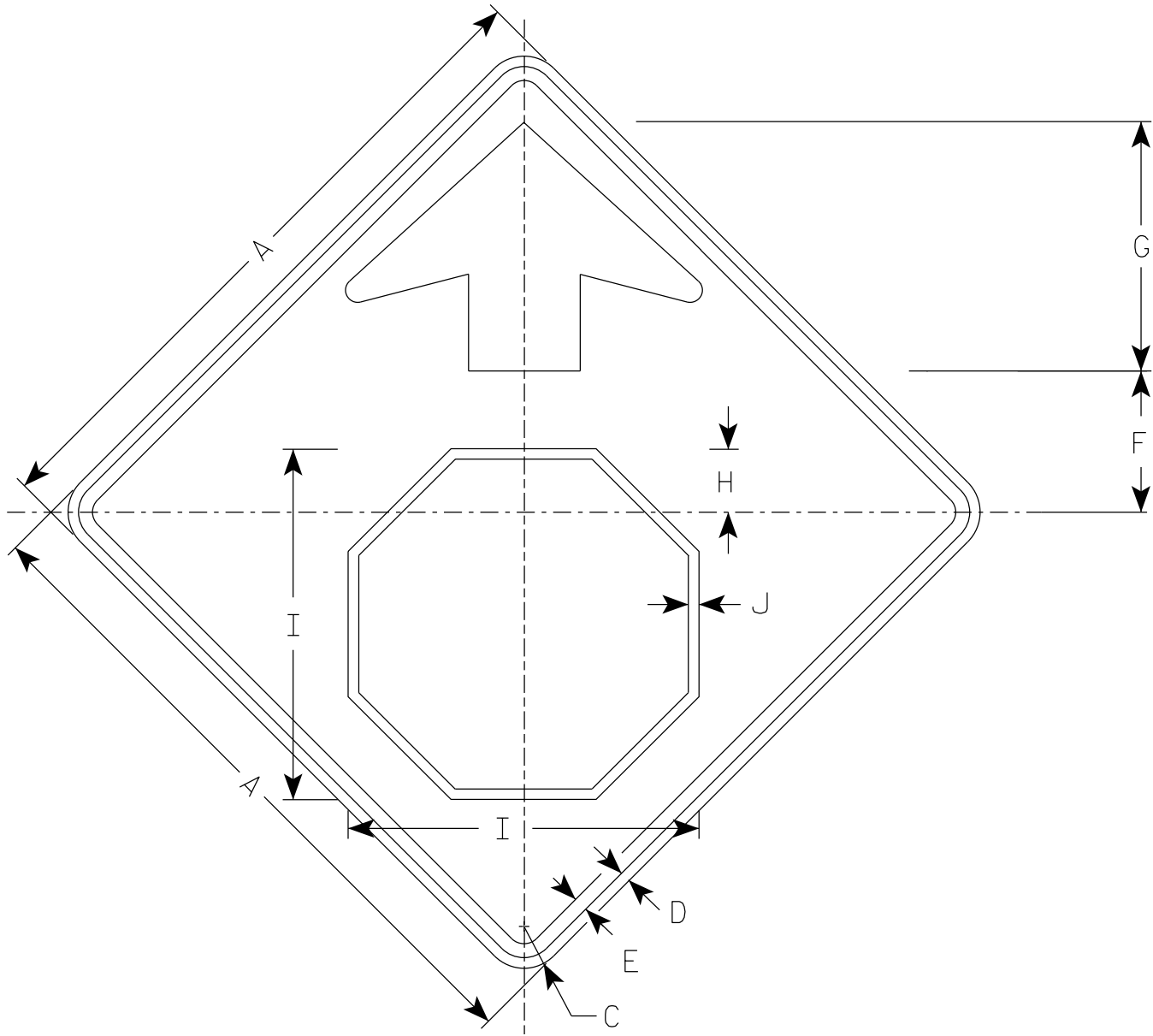
STANDARD SIGN
W20-3A, B, C, D, F & G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-3.8

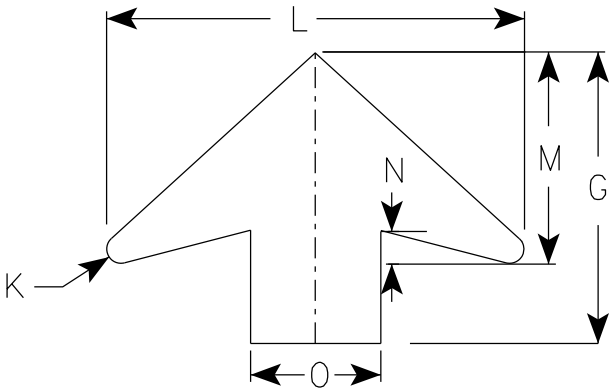
7



W03-1

NOTES

- 1. All Signs Type II - Type F Reflective
- 2. Color:
 - Background - ORANGE
 - Arrow & Border - BLACK
 - Stop Symbol - WHITE BORDER ON RED BACKGROUND



ARROW DETAIL

7

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		2 1/4	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
2S	48		3	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
2M	48		3	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
3	48		3	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
4	48		3	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		3	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

STANDARD SIGN

W03-1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W03-1.2

EARTHWORK - STH 47 NB - SOUTH

STATION	AREA (SF)					INCREMENTAL VOL (CY) (UNADJUSTED)					CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	SELECT BORROW	EBS	CUT 1.00 NOTE 1	EXPANDED FILL 1.33	SELECT BORROW 1.33	MASS ORDINATE NOTE 8
101+93.404	70.12	31.03	3.94	3.94	9.82	0	0	0	0	0	0	0	0	0
102+00	75.65	31.03	3.83	3.83	9.53	18	8	1	1	2	18	1	1	9
102+50	90.07	31.03	1.11	1.11	5.58	153	57	5	5	14	171	8	8	100
103+00	100.67	31.03	0.75	0.75	3.42	177	57	2	2	8	348	11	11	218
103+50	105.17	31.03	5.31	5.31	5.58	191	57	6	6	8	539	19	19	346
104+00	127.35	31.03	9.16	8.55	8.08	215	57	13	13	13	754	36	36	491
104+50	165.63	31.03	11.63	10.85	10.75	271	57	19	18	17	1,025	61	60	686
105+00	163.07	31.03	23.78	18.20	18.05	304	57	33	27	27	1,329	105	96	900
105+50	110.99	31.03	51.93	29.62	28.83	254	57	70	44	43	1,583	198	154	1,027
106+00	137.13	31.03	67.92	35.08	34.98	230	57	111	60	59	1,813	346	234	1,089
106+50	209.43	31.03	0.00	0.00	0.00	321	57	63	32	32	2,134	430	277	1,290
107+00	227.88	31.03	1.77	1.77	1.77	405	57	2	2	2	2,539	432	279	1,636
107+50	227.29	31.03	10.82	7.43	7.43	421	57	12	9	9	2,960	448	291	1,988
108+00	223.36	31.03	24.09	14.33	14.33	417	57	32	20	20	3,377	491	318	2,316
108+50	201.63	31.03	54.73	30.95	30.95	394	57	73	42	42	3,771	588	374	2,580
109+00	194.44	31.03	50.73	33.72	33.72	367	57	98	60	60	4,138	718	454	2,792
109+50	215.50	31.03	27.86	15.31	15.31	380	57	73	45	45	4,518	815	513	3,042
109+75	251.11	31.03	1.92	1.92	1.92	216	29	14	8	8	4,734	834	524	3,215

EARTHWORK - STH 47 NB - NORTH

STATION	AREA (SF)					INCREMENTAL VOL (CY) (UNADJUSTED)					CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	SELECT BORROW	EBS	CUT 1.00 NOTE 1	EXPANDED FILL 1.33	SELECT BORROW 1.33	MASS ORDINATE NOTE 8
112+00	19.18	31.03	199.99	91.94	91.93	0	0	0	0	0	0	0	0	0
112+50	5.36	31.03	217.05	73.81	73.81	23	57	386	153	153	23	513	203	-420
113+00	7.24	31.03	181.91	68.21	68.21	12	57	369	132	132	35	1,004	379	-834
113+50	8.25	31.03	260.82	100.75	100.75	14	57	410	156	156	49	1,549	587	-1,287
114+00	10.34	31.03	187.24	79.21	79.21	17	57	415	167	167	66	2,101	809	-1,742
114+50	2.17	31.03	201.75	81.44	81.44	12	57	360	149	149	78	2,580	1,007	-2,147
115+00	0.95	31.03	134.42	58.86	58.86	3	57	311	130	130	81	2,994	1,180	-2,512
115+50	7.42	43.03	165.43	72.55	72.55	8	69	278	122	122	89	3,364	1,342	-2,851
115+63.003	5.14	43.03	170.74	71.58	73.48	3	21	81	35	35	92	3,471	1,389	-2,950
116+00	29.34	43.03	159.60	69.12	69.12	24	59	226	96	98	116	3,772	1,516	-3,211
116+47.946	29.55	43.03	103.87	55.22	55.09	52	76	234	110	110	168	4,083	1,663	-3,469
116+50	119.86	43.03	98.51	53.95	53.76	6	3	8	4	4	174	4,094	1,668	-3,474
117+00	60.40	43.03	62.91	42.30	41.74	167	80	149	89	88	341	4,292	1,786	-3,536
117+50	44.83	43.03	49.82	35.24	34.76	97	80	104	72	71	438	4,430	1,882	-3,623
118+00	31.84	43.03	43.27	31.52	30.90	71	80	86	62	61	509	4,545	1,964	-3,718
118+50	47.78	43.03	27.12	23.00	22.17	74	80	65	50	49	583	4,631	2,031	-3,789
119+00	45.44	43.03	24.15	19.96	19.31	86	80	47	40	38	669	4,694	2,084	-3,830
119+50	49.28	43.03	16.95	15.54	14.58	88	80	38	33	31	757	4,744	2,128	-3,860
120+00	60.48	43.03	9.52	9.51	8.42	102	80	25	23	21	859	4,777	2,159	-3,863
120+50	80.38	43.03	4.06	4.06	1.03	130	80	13	13	9	989	4,795	2,176	-3,826
120+60.122	81.19	43.03	0.00	0.00	0.00	30	16	1	1	0	1,019	4,796	2,177	-3,813

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL THIS DOES NOT SHOW UP IN CROSS SECTIONS DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME CUT - SALVAGED PAVT - (FILL * FILL FACTOR)
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	
3 - FILL	
8 - MASS ORDINATE	

EARTHWORK - STH 47 SB - SOUTH

STATION	AREA (SF)					INCREMENTAL VOL (CY) (UNADJUSTED)					CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	SELECT BORROW	EBS	CUT 1.00 NOTE 1	EXPANDED FILL 1.33	SELECT BORROW 1.33	MASS ORDINATE NOTE 8
206+00	23.68	0.00	66.02	34.18	34.09	0	0	0	0	0	0	0	0	0
206+50	8.87	0.00	87.15	42.98	42.83	30	0	142	71	71	30	189	94	-112
207+00	14.57	0.00	70.67	44.86	44.05	22	0	146	81	80	52	383	202	-236
207+50	87.50	0.00	34.92	21.06	21.06	95	0	98	61	60	147	513	283	-239
208+00	36.54	0.00	43.77	33.23	33.17	115	0	73	50	50	262	610	350	-197
208+50	44.81	0.00	43.98	34.18	34.08	75	0	81	62	62	337	718	432	-203
209+00	94.66	0.00	18.29	16.59	16.59	129	0	58	47	47	466	795	495	-132
209+50	71.16	0.00	31.91	20.74	20.74	154	0	46	35	35	620	857	541	-24
210+00	36.55	0.00	88.23	54.19	54.19	100	0	111	69	69	720	1,004	633	-35

EARTHWORK - STH 47 SB - NORTH

STATION	AREA (SF)					INCREMENTAL VOL (CY) (UNADJUSTED)					CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	SELECT BORROW	EBS	CUT 1.00 NOTE 1	EXPANDED FILL 1.33	SELECT BORROW 1.33	MASS ORDINATE NOTE 8
212+00	69.40	0.00	0.00	0.00	0.00	0	0	0	0	0	0	0	0	0
212+50	43.28	0.00	69.18	41.49	41.49	104	0	64	38	38	104	85	51	40
213+00	27.90	0.00	111.08	53.10	53.10	66	0	167	88	88	170	307	168	-61
213+50	23.51	0.00	101.91	49.13	46.94	48	0	197	95	93	218	569	294	-210
214+00	37.72	0.00	49.08	31.21	27.76	57	0	140	74	69	275	755	392	-293
214+50	56.24	0.00	227.60	99.17	99.17	87	0	256	121	118	362	1,096	553	-462
215+00	72.25	0.00	8.83	8.34	8.34	119	0	219	100	100	481	1,387	686	-562
215+50	91.72	0.00	0.35	0.35	0.35	152	0	8	8	8	633	1,398	697	-418
216+00	70.58	0.00	0.04	0.04	0.04	150	0	0	0	0	783	1,398	697	-268
216+50	134.64	0.00	0.00	0.00	0.00	190	0	0	0	0	973	1,398	697	-78
216+52.412	164.03	0.00	103.87	55.22	55.09	13	0	5	2	2	986	1,404	700	-70
217+00	91.56	0.00	0.00	0.00	0.00	225	0	92	49	49	1,211	1,527	765	63

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	CUT - SALVAGED PAVT - (FILL * FILL FACTOR)

EARTHWORK - CTH S EB - WEST

STATION	AREA (SF)					INCREMENTAL VOL (CY) (UNADJUSTED)					CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	SELECT BORROW	EBS	CUT 1.00 NOTE 1	EXPANDED FILL 1.33	SELECT BORROW 1.33	MASS ORDINATE NOTE 8
303+30.282	49.38	0.00	1.65	0.93	0.93	0	0	0	0	0	0	0	0	0
303+50	23.44	17.35	34.26	25.01	24.76	27	6	13	9	9	27	17	12	4
303+80.74	70.13	17.35	71.56	35.63	35.69	53	20	60	35	34	80	-11	59	65
304+00	56.53	17.35	72.67	37.48	37.53	45	12	51	26	26	125	-27	93	114
304+50	36.10	17.35	66.69	32.26	32.26	86	32	129	65	65	211	-61	180	202
304+90	53.52	17.35	81.61	37.10	37.10	66	26	110	51	51	277	-78	247	259
305+00	52.00	17.35	84.14	37.65	37.65	20	6	31	14	14	297	-86	266	281
305+50	26.45	17.35	93.85	40.31	40.31	73	32	165	72	72	370	-98	362	334
305+65.452	0.08	17.35	71.65	28.68	28.68	8	10	47	20	20	378	-107	388	341
306+00	41.46	17.35	56.03	24.08	24.08	27	22	82	34	34	405	-114	434	353
306+50	99.55	17.35	35.79	17.60	17.60	131	32	85	39	39	536	-134	485	472
307+00	201.11	17.35	1.81	1.81	0.48	278	32	35	18	17	814	-155	509	739
307+50	208.31	17.35	10.58	5.23	4.98	379	32	11	7	5	1,193	-174	519	1,105
307+75	157.11	17.35	18.09	3.51	3.51	169	16	13	4	4	1,362	-185	524	1,269
308+00	63.27	17.35	16.82	6.82	7.67	102	16	16	5	5	1,464	-196	531	1,366
308+50	46.60	17.35	27.38	11.97	11.97	102	32	41	17	18	1,566	-215	553	1,455

EARTHWORK - CTH S EB - EAST

STATION	AREA (SF)					INCREMENTAL VOL (CY) (UNADJUSTED)					CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT NOTE 1	SALVAGED/UNUSABLE PAVEMENT MATERIAL NOTE 2	FILL NOTE 3	SELECT BORROW	EBS	CUT 1.00 NOTE 1	EXPANDED FILL 1.33	SELECT BORROW 1.33	MASS ORDINATE NOTE 8
310+50	131.51	0.00	14.74	0.00	0.00	0	0	0	0	0	0	0	0	0
310+79.64	54.15	17.35	81.51	0.00	0.00	102	10	53	0	0	102	70	0	22
311+00	64.92	17.35	59.40	0.00	0.00	45	13	53	0	0	147	141	0	-17
311+27.205	89.80	17.35	27.74	60.87	60.87	78	17	44	31	31	225	200	41	-15
311+32.54	96.30	17.35	25.17	57.74	57.74	18	3	5	12	12	243	206	57	-6
311+50	111.30	17.35	22.43	48.60	48.60	67	11	15	34	34	310	226	102	30
312+00	110.95	17.35	3.67	29.11	29.11	206	32	24	72	72	516	258	198	172
312+50	83.59	17.35	2.86	38.81	38.81	180	32	6	63	63	696	266	282	312
313+00	56.47	17.35	2.95	53.22	53.22	130	32	5	85	85	826	273	395	403
313+50	10.59	17.35	0.60	50.43	50.43	62	32	3	96	96	888	277	523	429
314+00	43.37	17.35	0.13	27.81	27.81	50	32	1	72	72	938	278	618	446
314+50	52.96	17.35	0.20	16.91	16.91	89	32	0	41	41	1,027	278	673	503
315+00	62.41	17.35	0.01	5.97	5.97	107	32	0	21	21	1,134	278	701	578
315+50	64.68	17.35	0.94	0.00	0.00	118	32	1	6	6	1,252	279	709	663
315+65.732	62.74	17.35	1.31	0.00	0.00	37	10	1	0	0	1,289	281	709	688

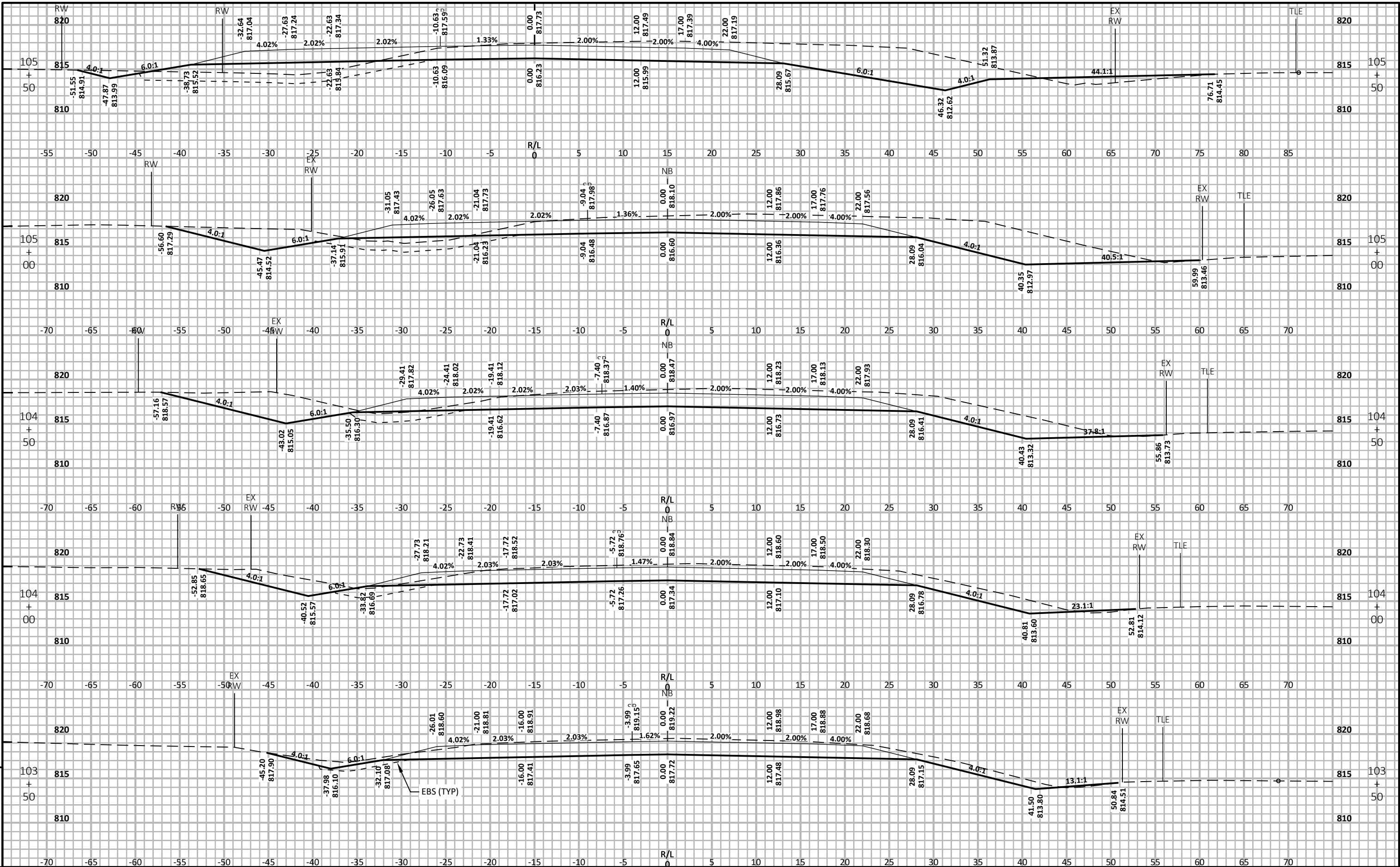
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	CUT - SALVAGED PAVT - (FILL * FILL FACTOR)

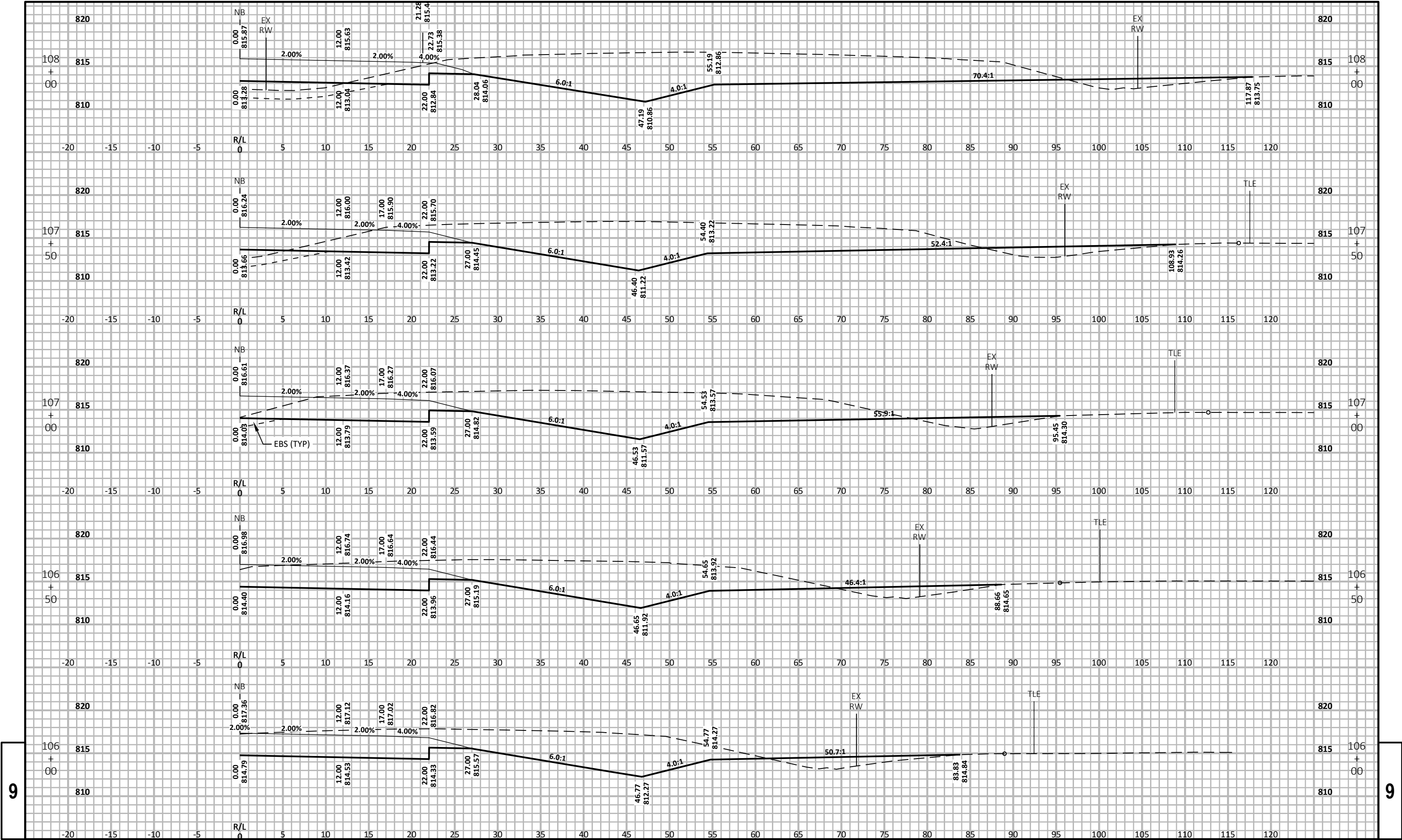
EARTHWORK - CTH S WB - WEST														
STATION	AREA (SF)					INCREMENTAL VOL (CY) (UNADJUSTED)					CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT	EXPANDED FILL	SELECT BORROW	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3			1.00 NOTE 1	1.33	1.33	NOTE 8
407+75	85.39	0.00	9.53	0.00	0.00	0	0	0	0	0	0	0	0	0
408+00	51.88	0.00	10.13	0.00	0.00	64	0	9	0	0	64	12	0	52
408+50	69.09	0.00	22.86	0.00	0.00	112	0	31	0	0	176	53	0	123

EARTHWORK - CTH S WB - EAST														
STATION	AREA (SF)					INCREMENTAL VOL (CY) (UNADJUSTED)					CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT	EXPANDED FILL	SELECT BORROW	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3			1.00 NOTE 1	1.33	1.33	NOTE 8
410+50	83.49	0.00	0.00	72.80	41.10	0	0	0	0	0	0	0	0	0
411+00	63.59	0.00	0.00	71.83	47.27	136	0	0	134	82	136	0	178	136
411+31	77.79	0.00	0.00	58.85	30.42	81	0	30	75	45	217	40	278	177

EARTHWORK - STH 47 & CTH S RAB														
STATION	AREA (SF)					INCREMENTAL VOL (CY) (UNADJUSTED)					CUMULATIVE VOL (CY)			
	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	SELECT BORROW	EBS	CUT	EXPANDED FILL	SELECT BORROW	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3			1.00 NOTE 1	1.33	1.33	NOTE 8
10+00	45.97	0.00	87.97	35.74	35.74	0	0	0	0	0	0	0	0	0
10+28.942	50.82	0.00	94.01	18.69	18.69	52	0	98	29	29	52	130	39	-46
10+73.353	136.36	0.00	55.71	0.00	0.00	154	0	123	15	15	206	294	59	-15
11+19.584	140.99	0.00	69.52	0.00	0.00	237	0	107	0	0	443	436	59	115
11+63.17	118.49	0.00	53.22	18.66	18.66	209	0	99	15	15	652	568	78	225
12+26.535	86.77	0.00	68.22	55.95	55.95	241	0	142	88	88	893	757	196	324
12+71.594	93.02	0.00	57.75	0.00	0.00	150	0	105	47	47	1,043	896	258	369
13+17.576	238.14	0.00	55.70	0.00	0.00	282	0	97	0	0	1,325	1,025	258	554
13+63.709	68.82	0.00	62.66	13.02	13.02	262	0	101	11	11	1,587	1,160	273	715
13+97.04	45.97	0.00	87.96	35.74	35.74	71	0	93	30	30	1,658	1,283	313	693

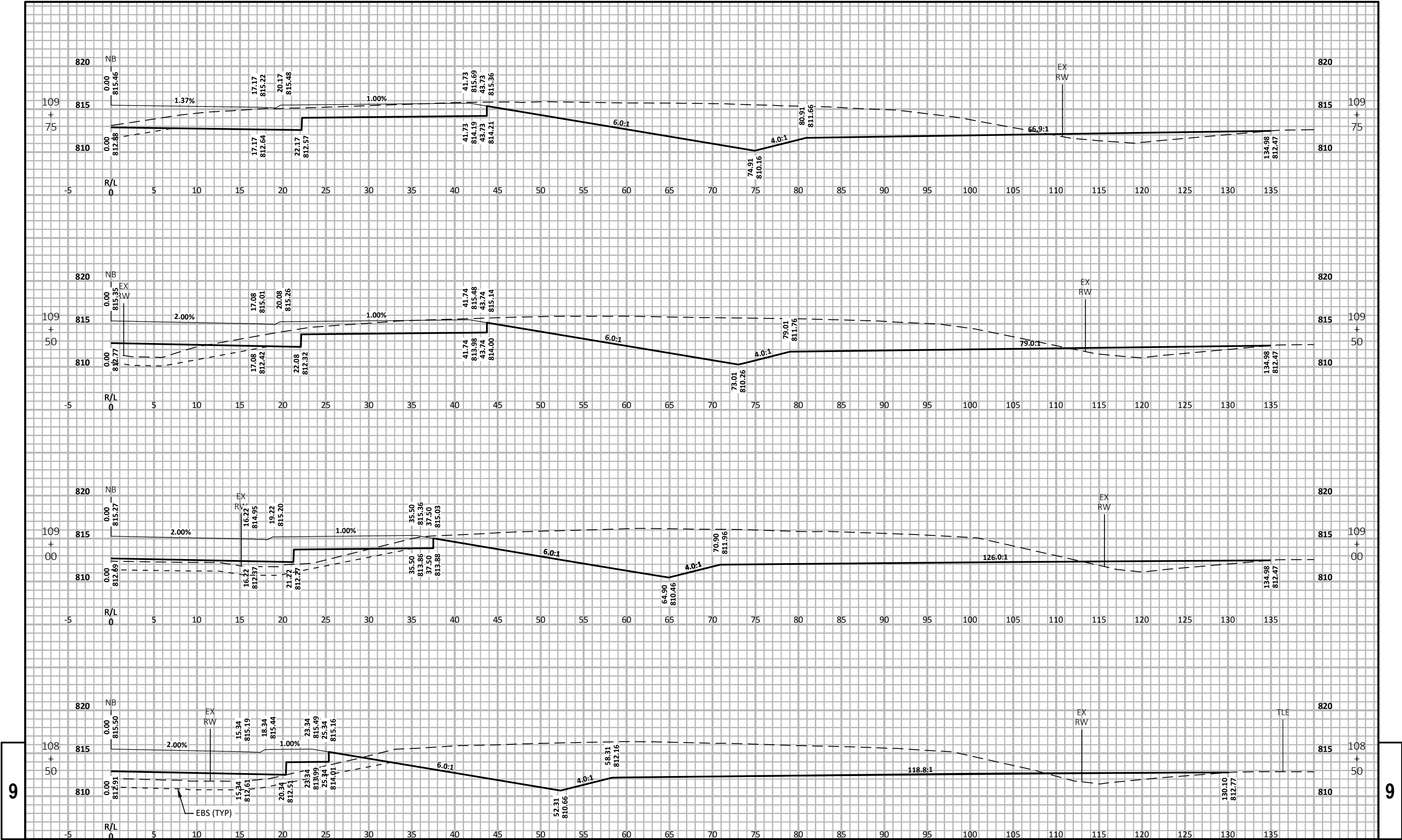
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL THIS DOES NOT SHOW UP IN CROSS SECTIONS DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME CUT - SALVAGED PAVT - (FILL * FILL FACTOR)
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	
3 - FILL	
8 - MASS ORDINATE	





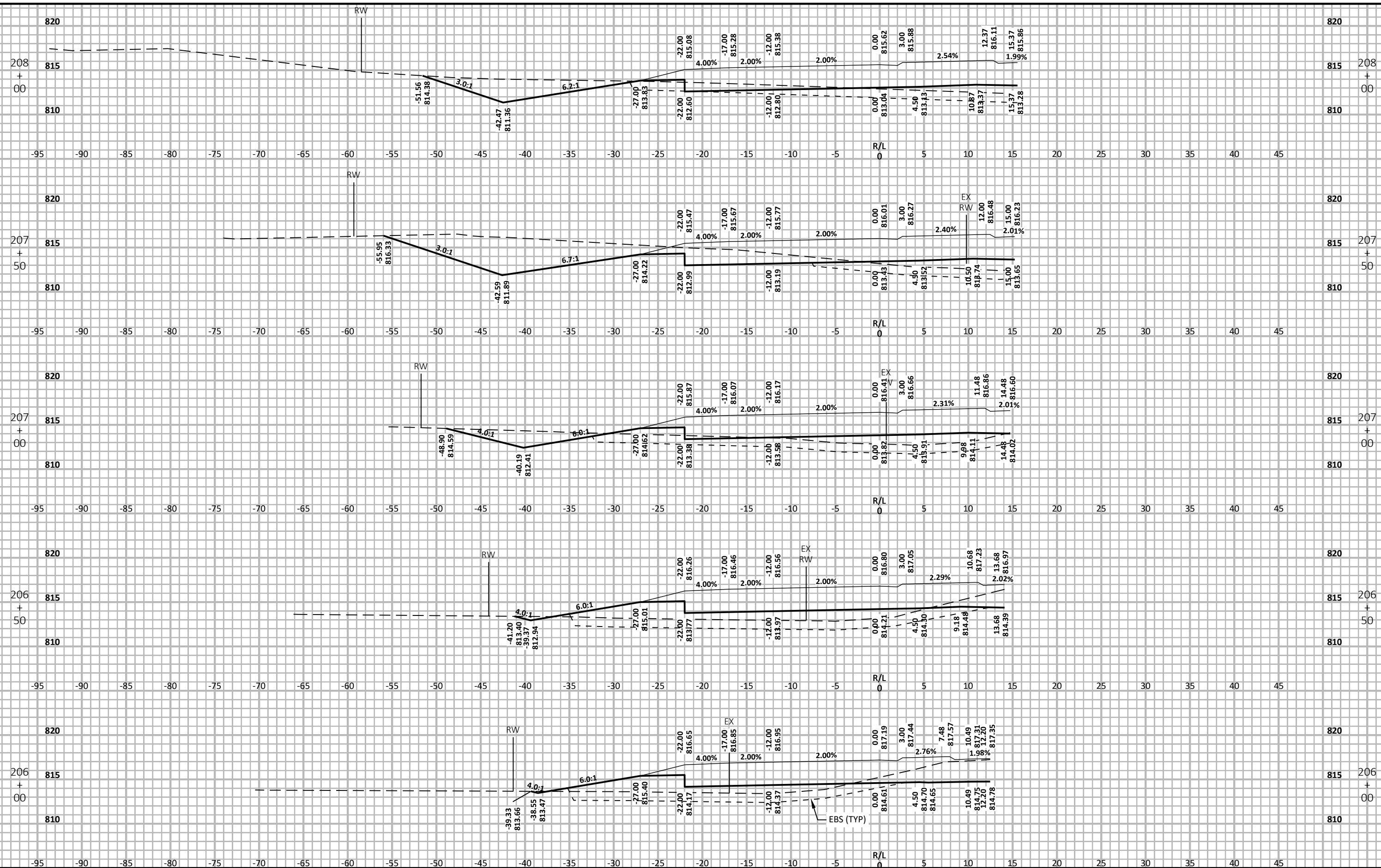
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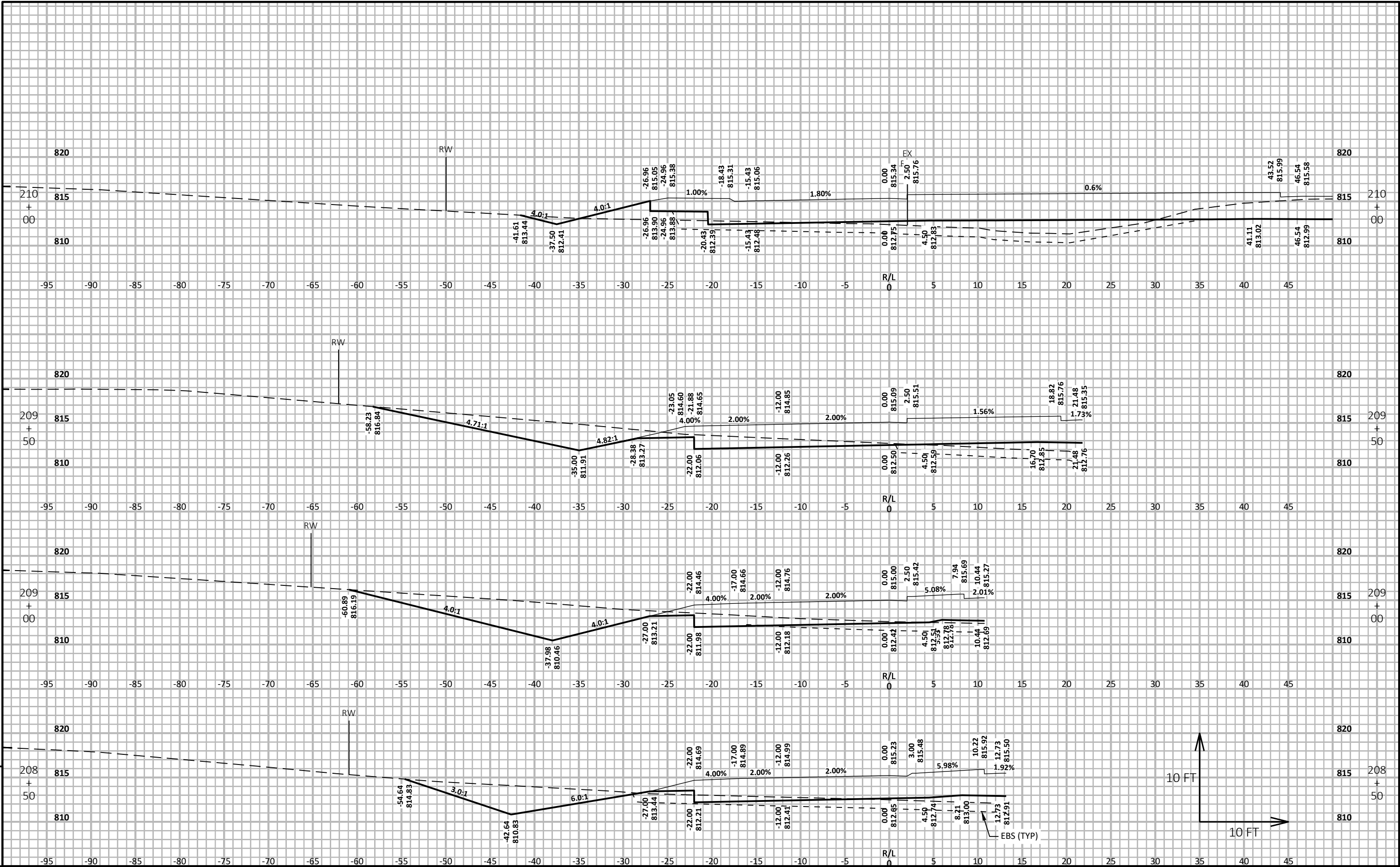
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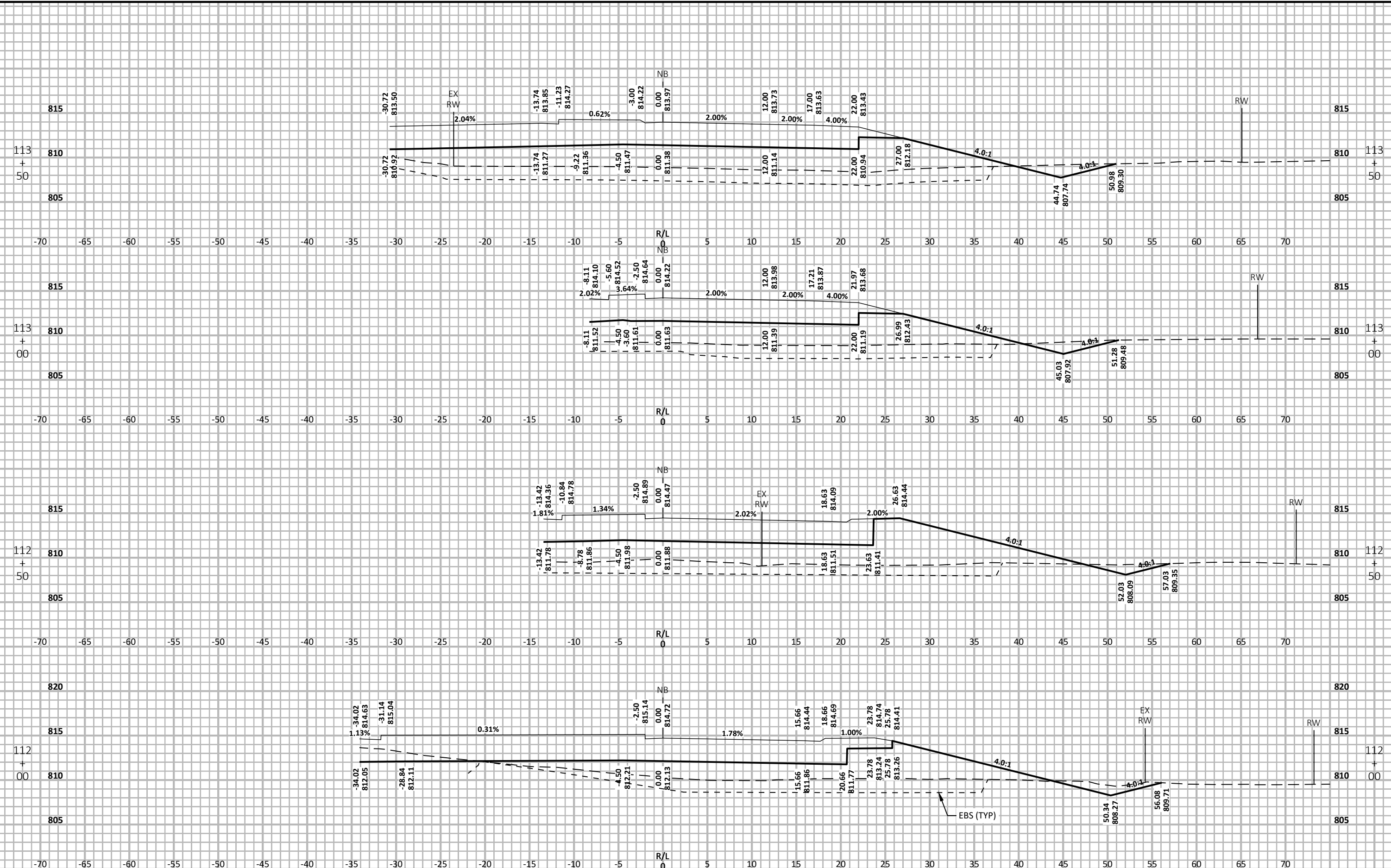


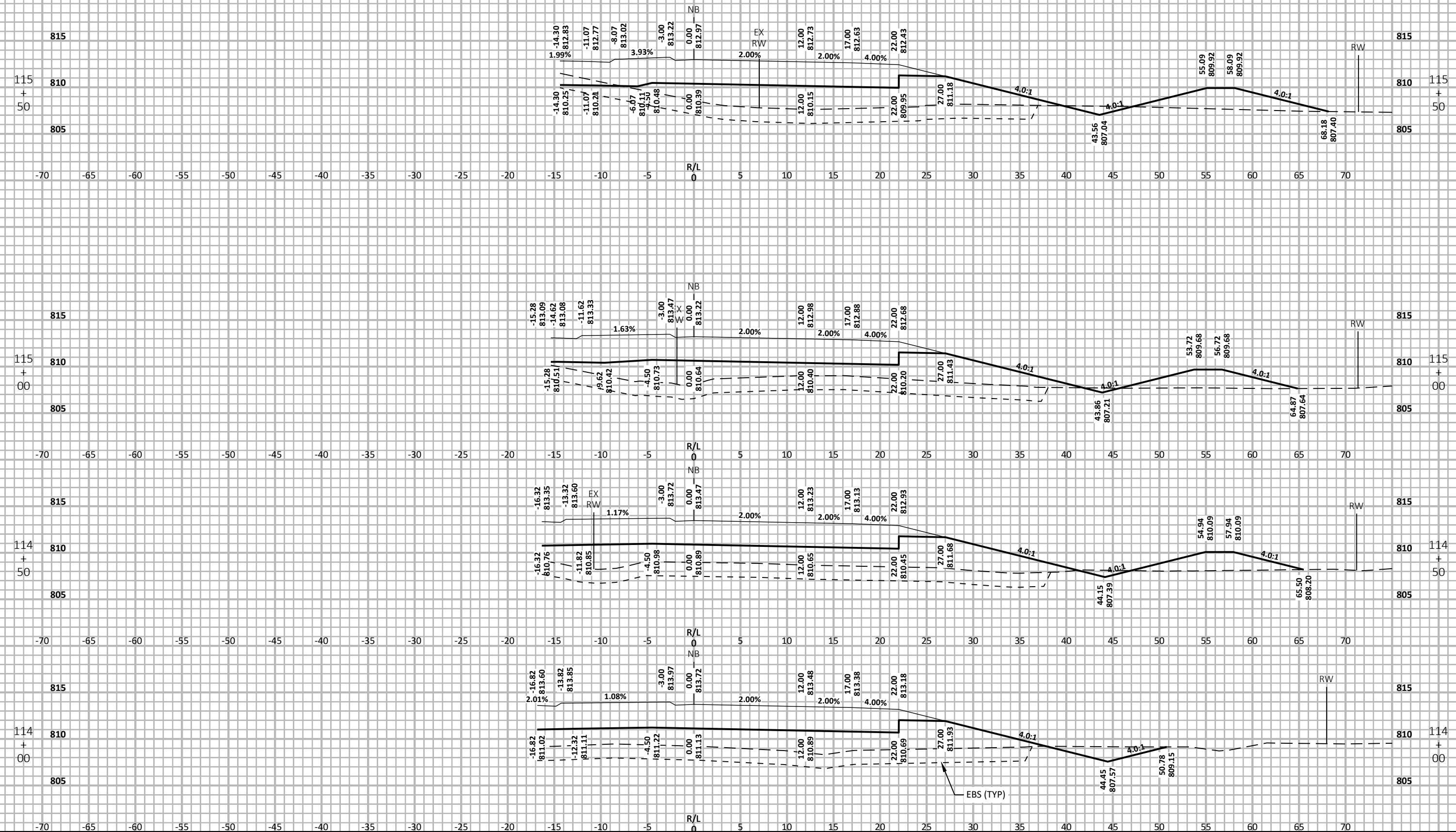
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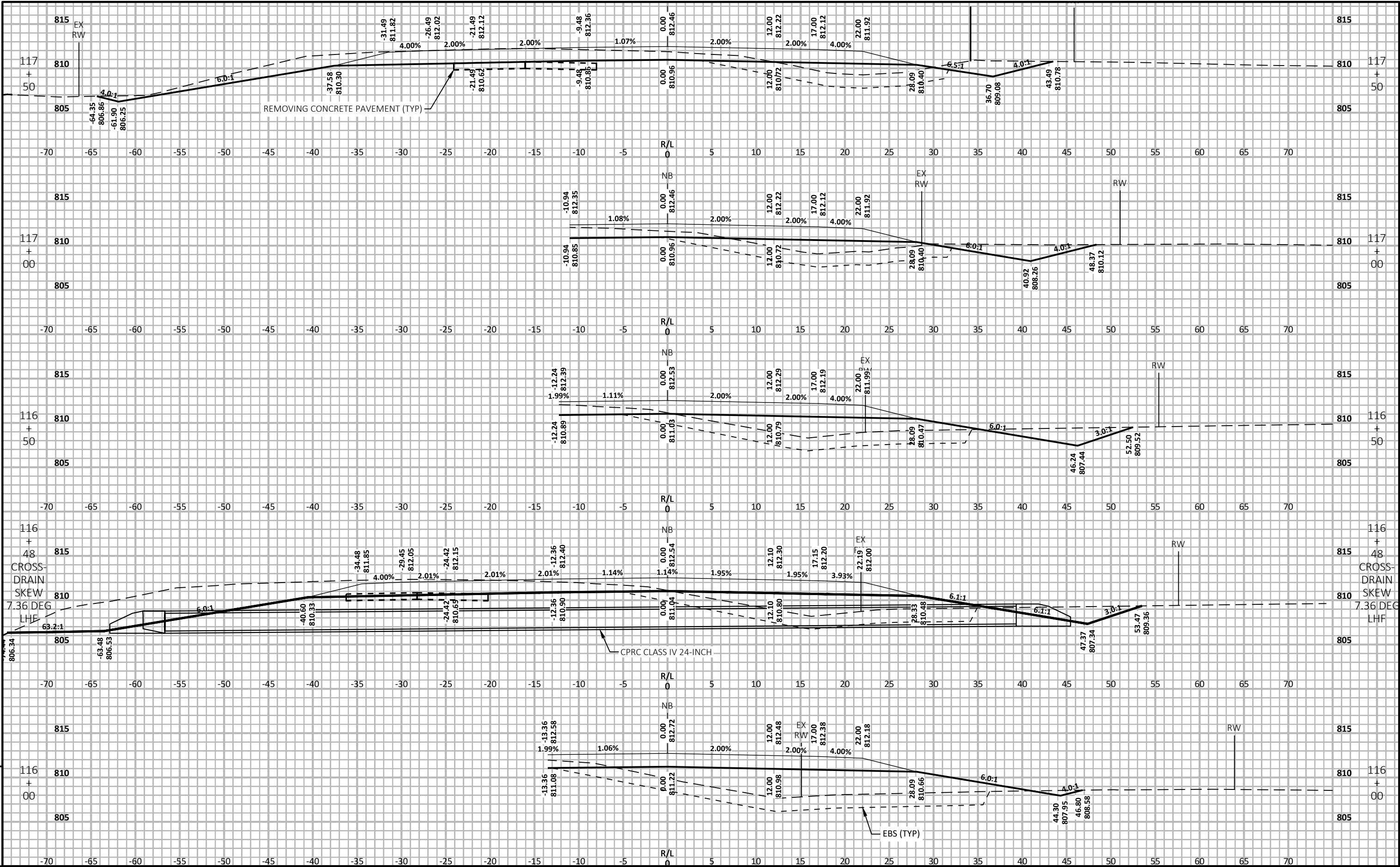
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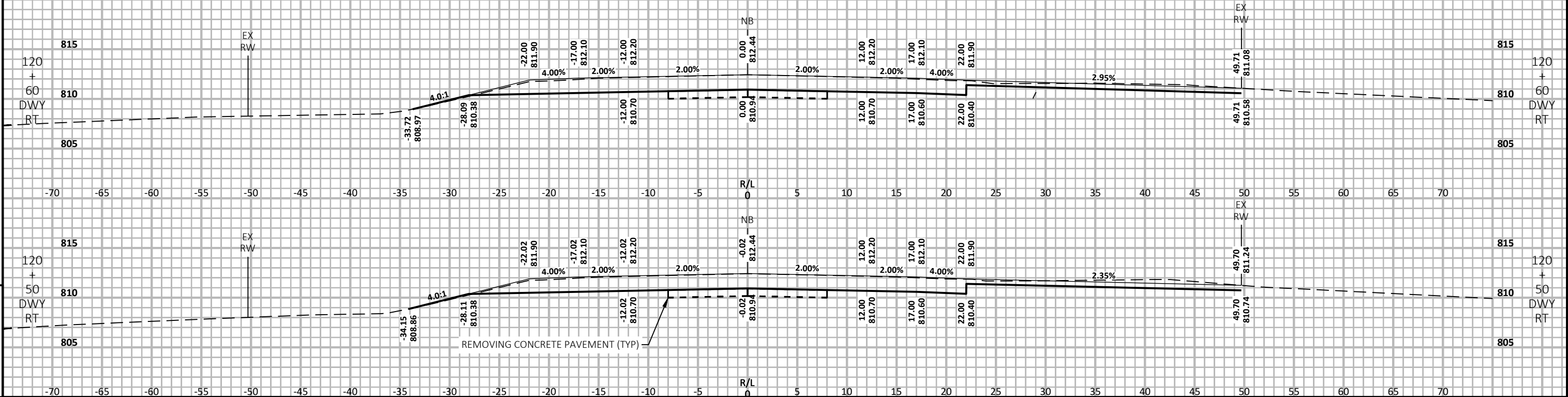




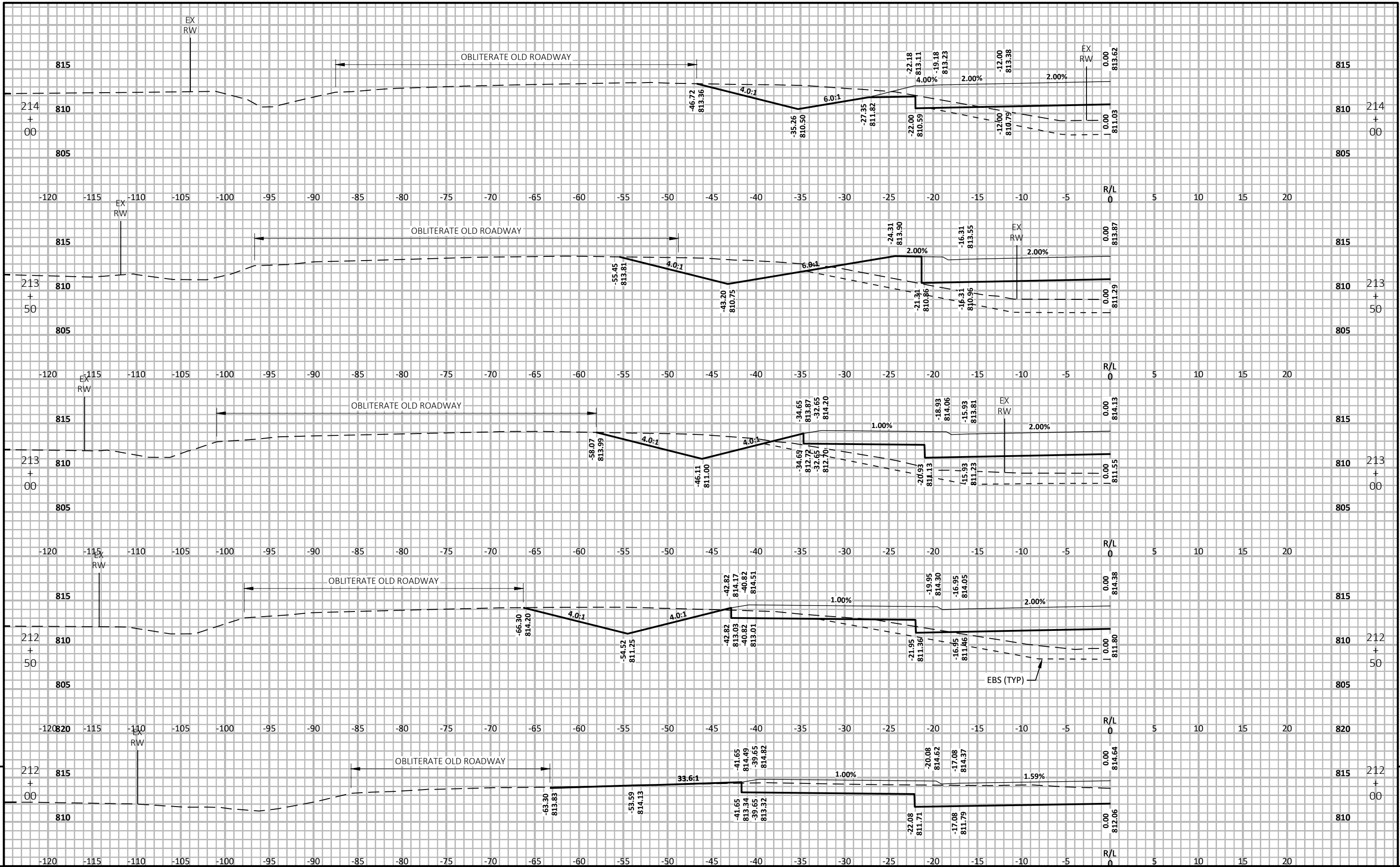


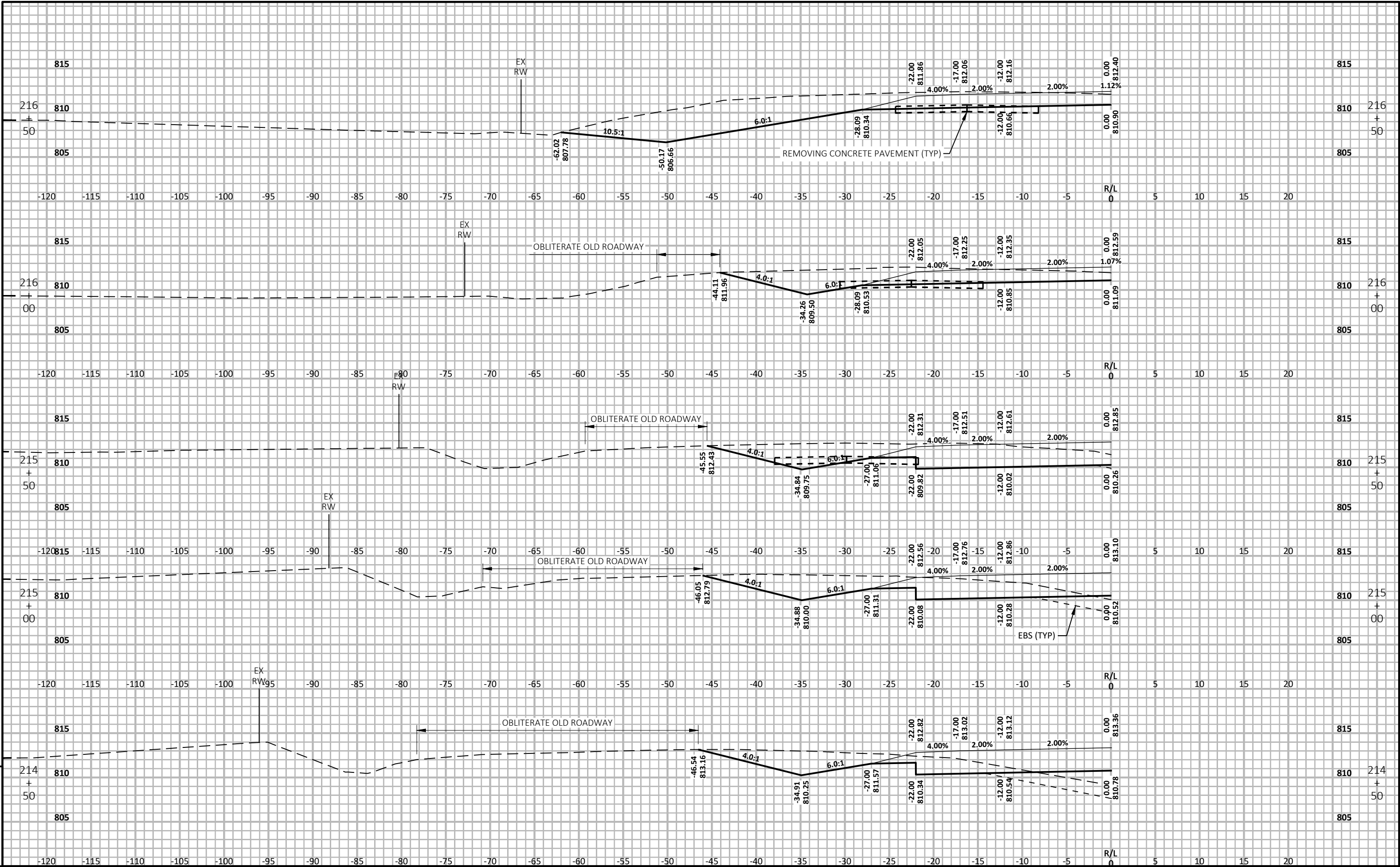


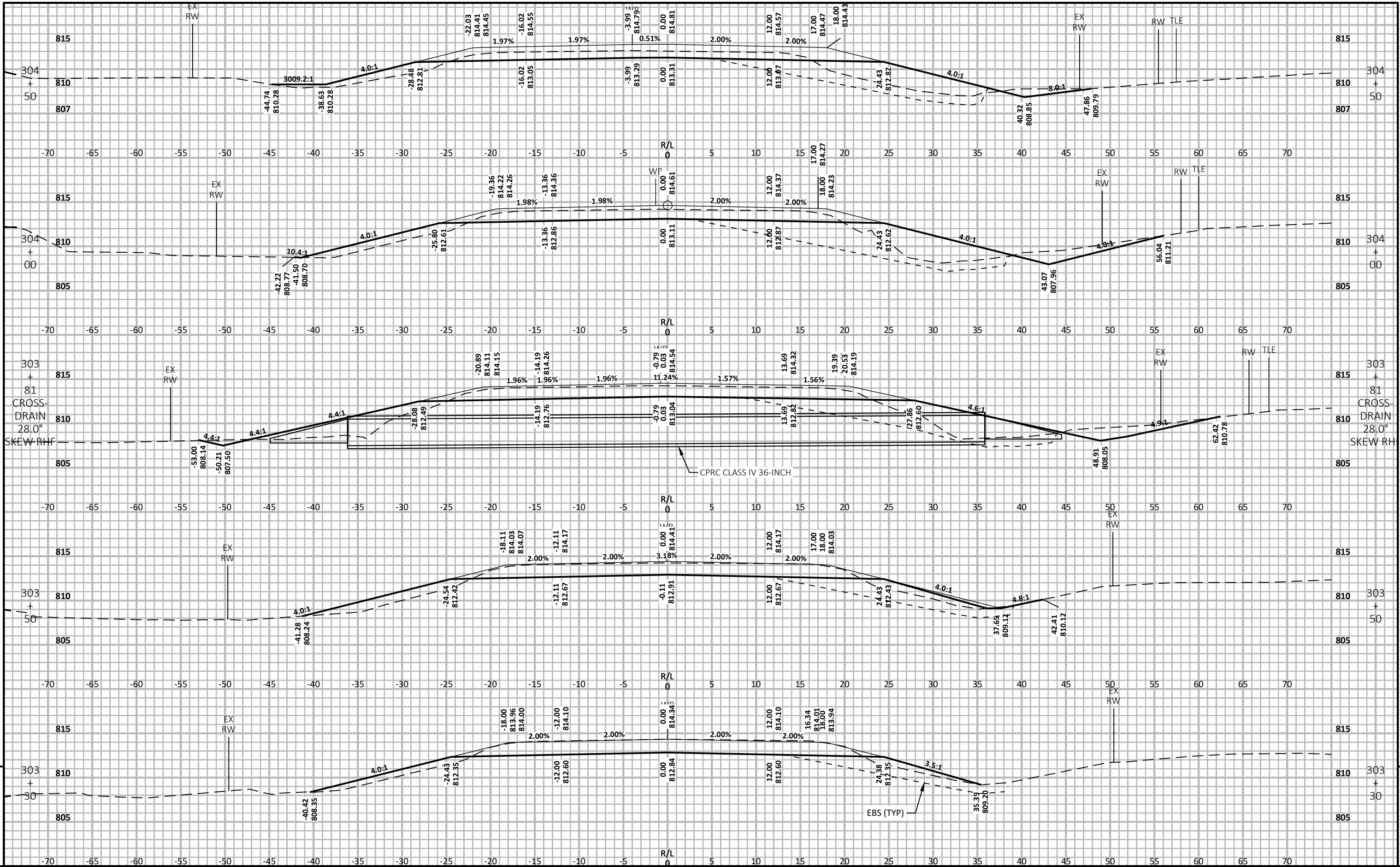
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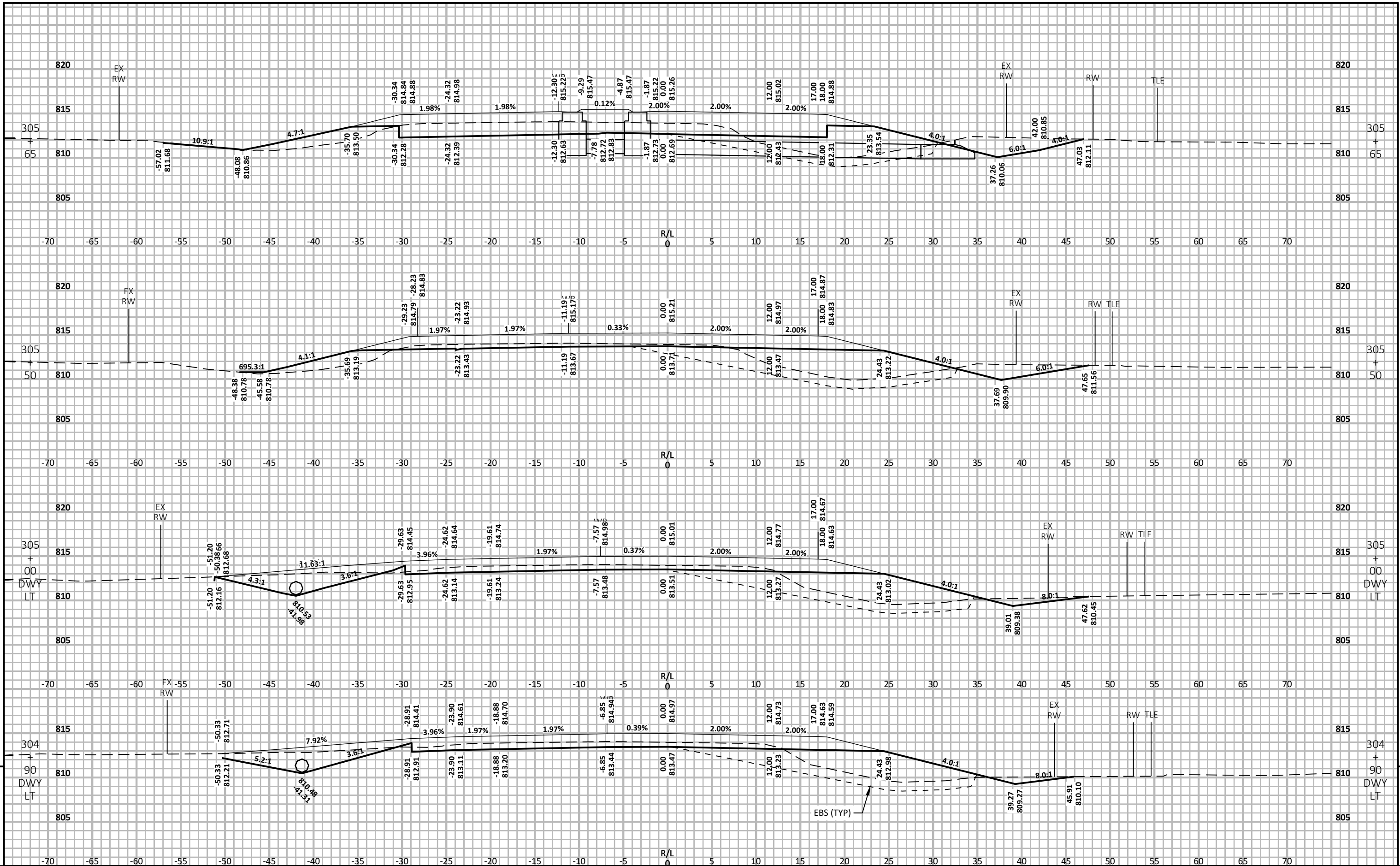


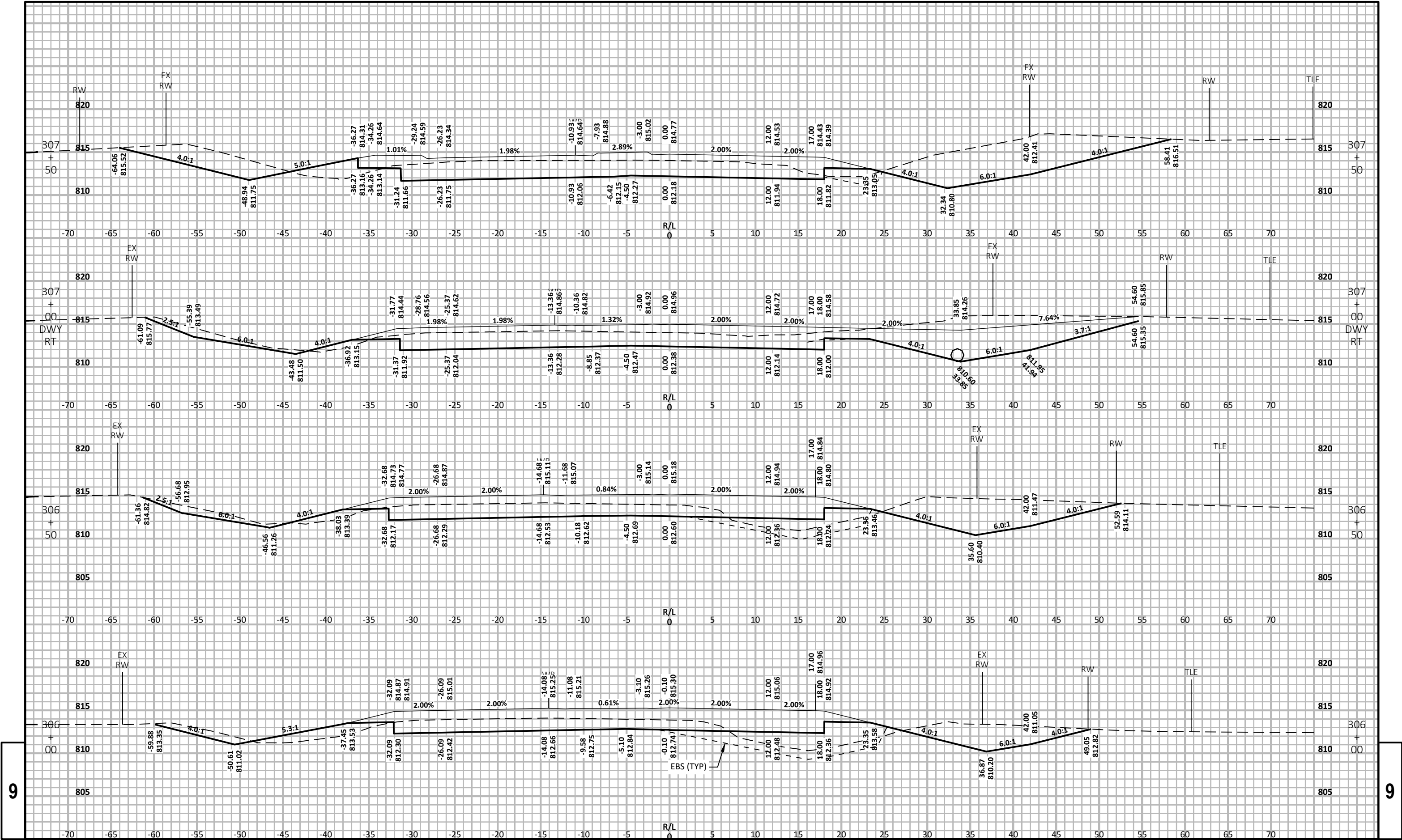
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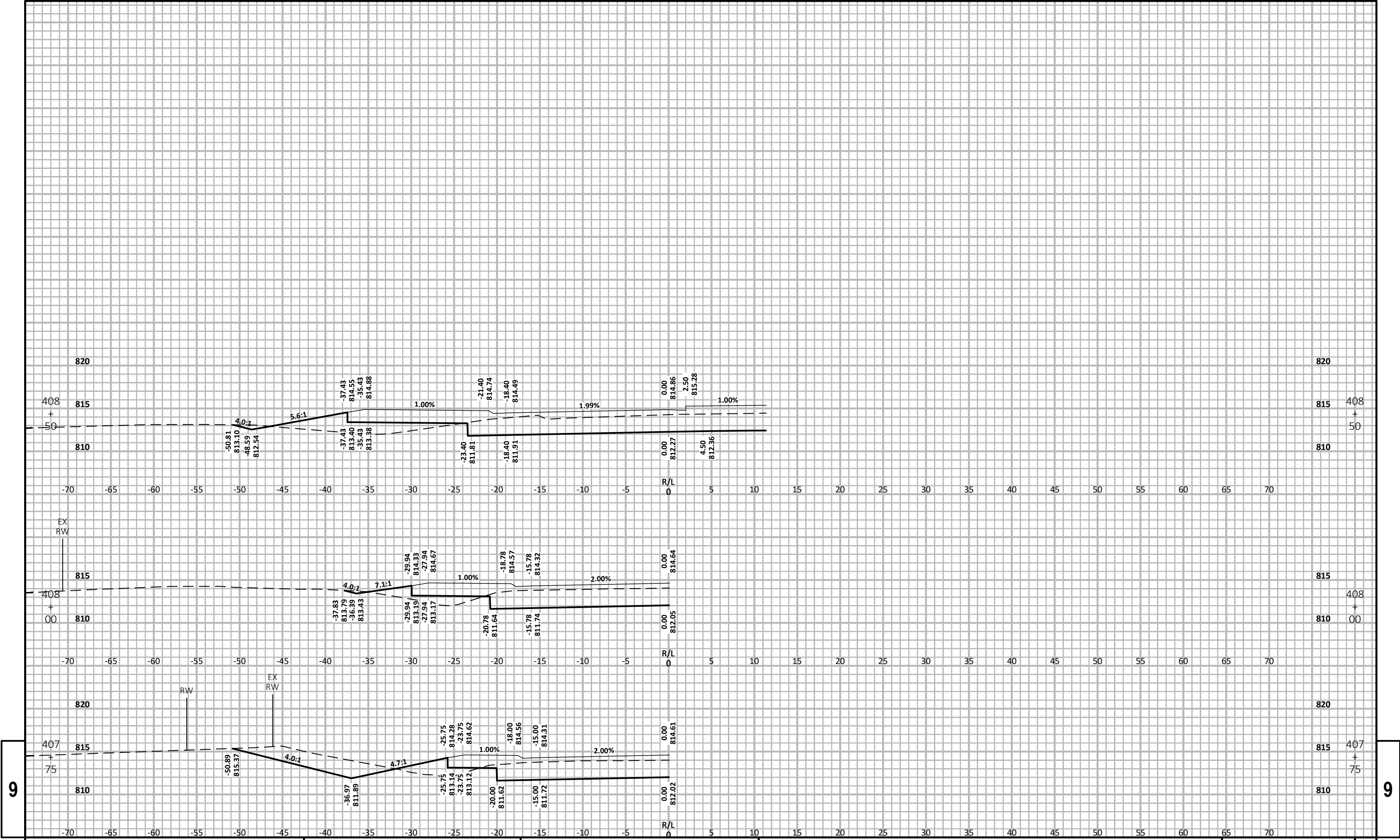








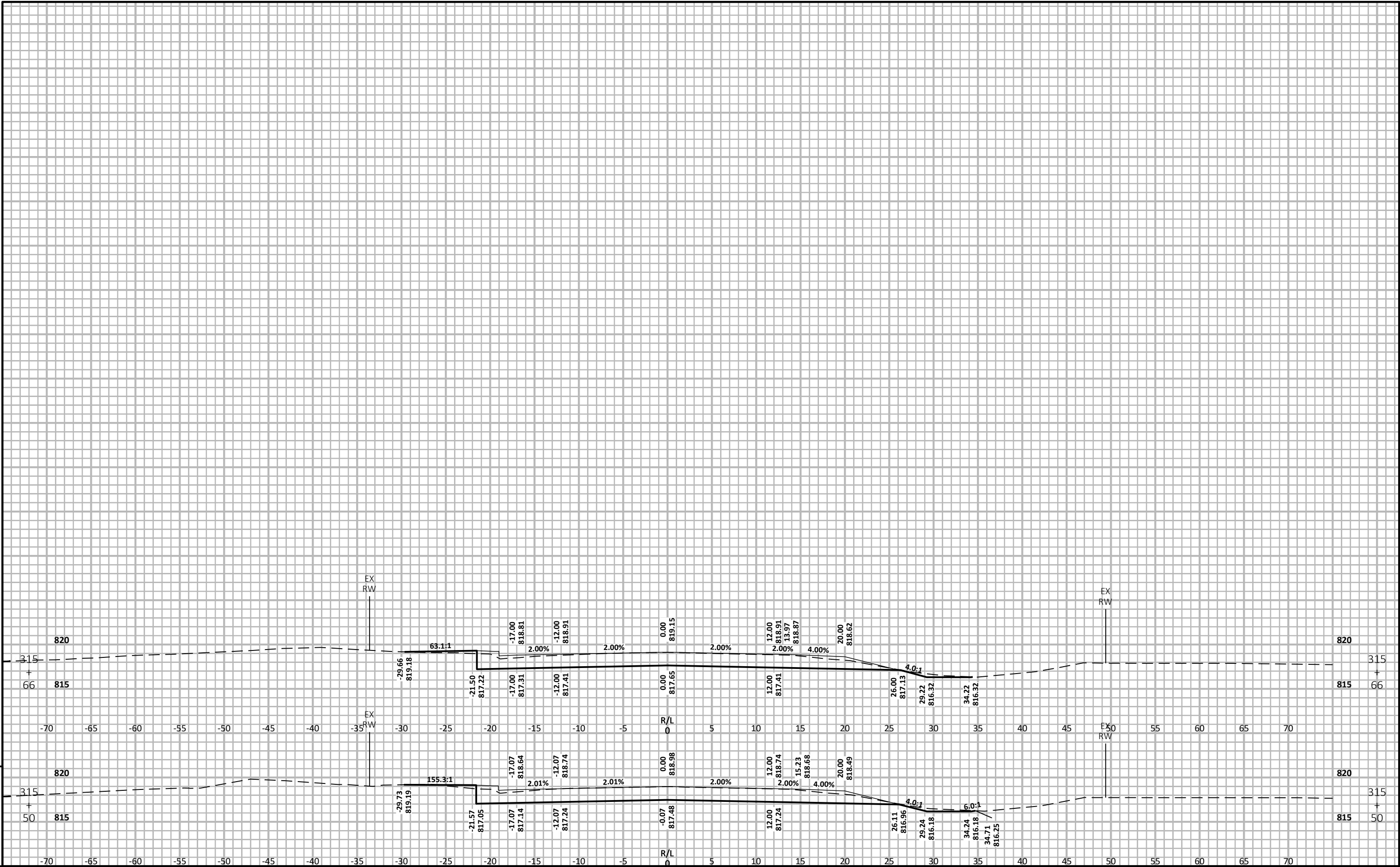




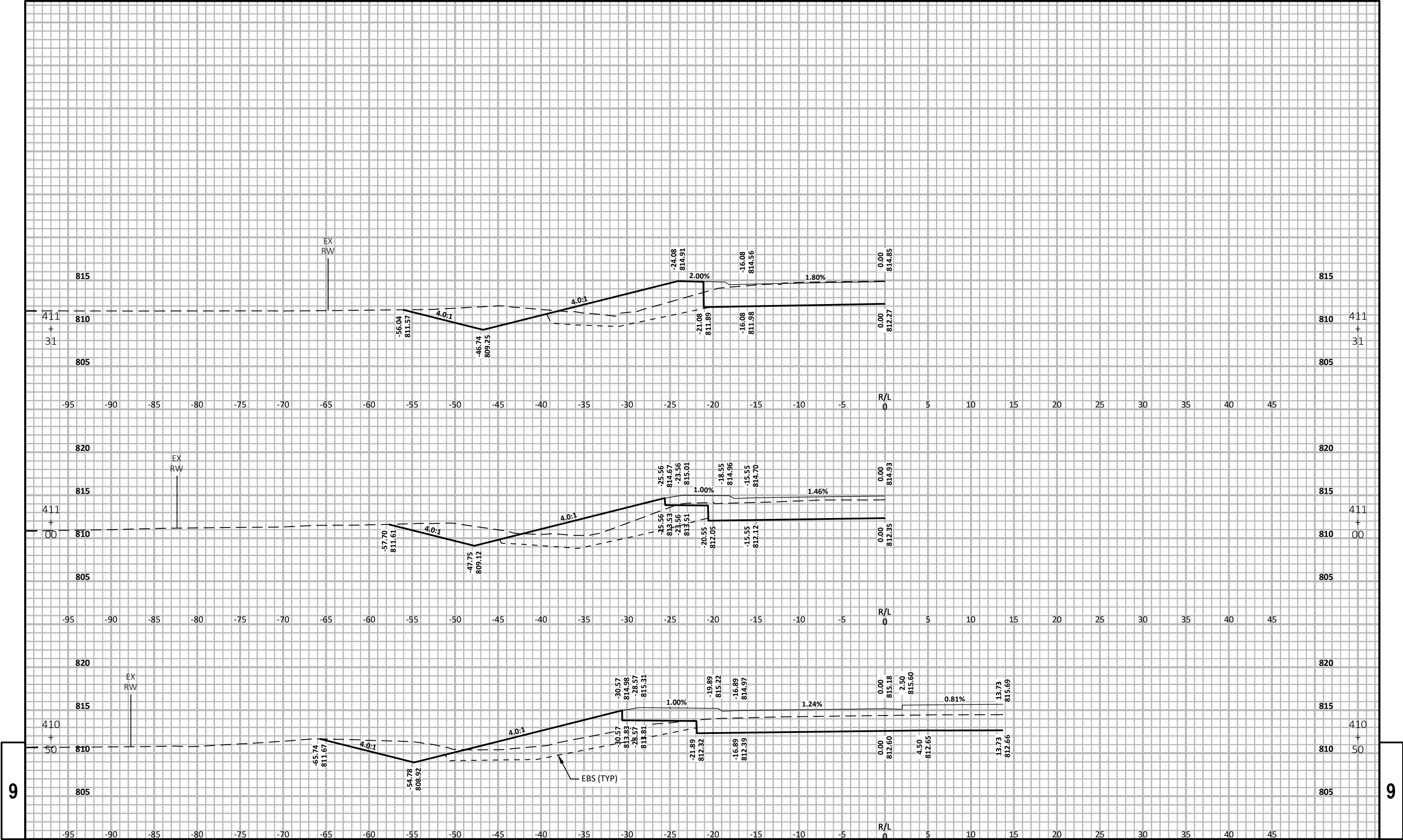
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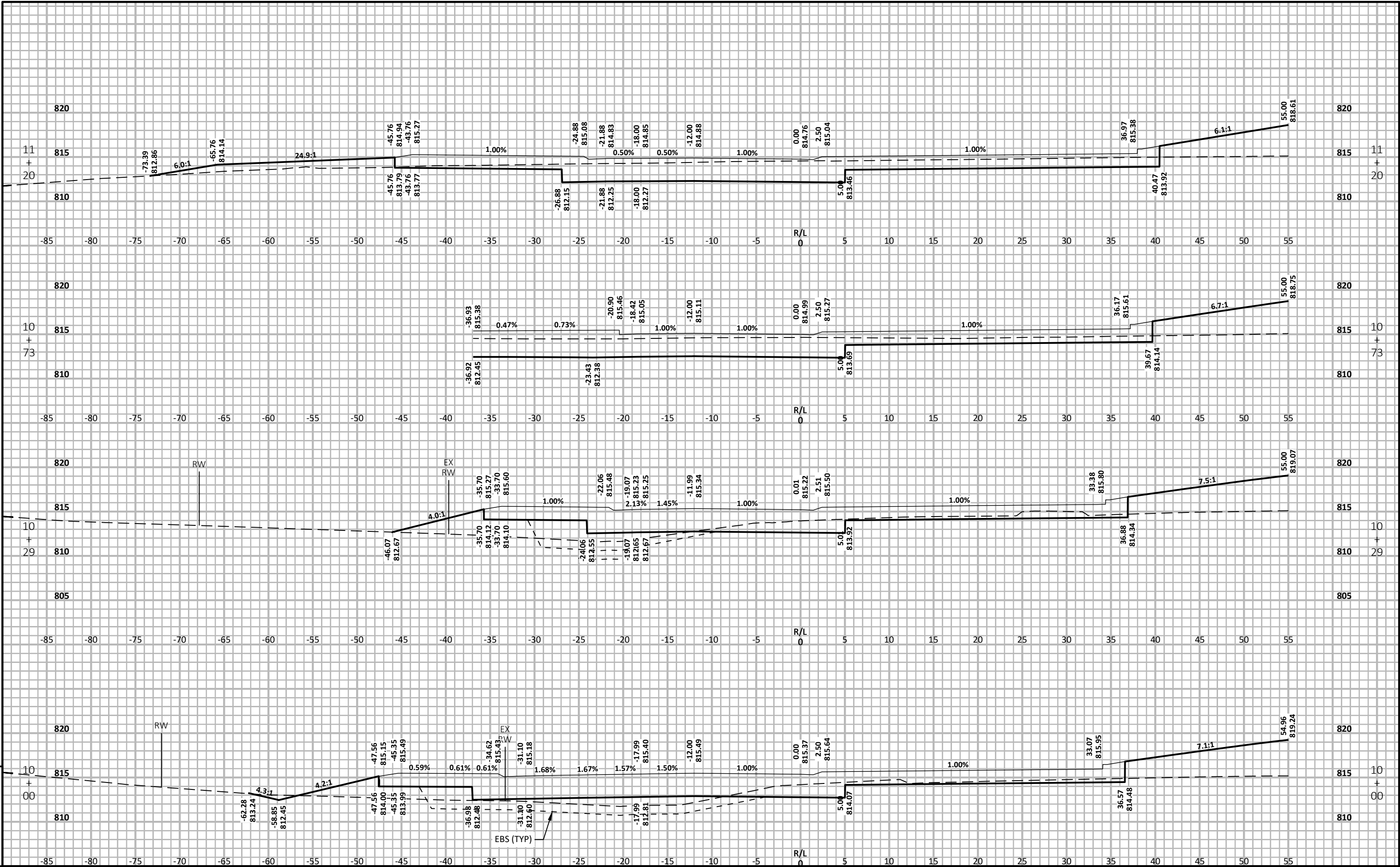
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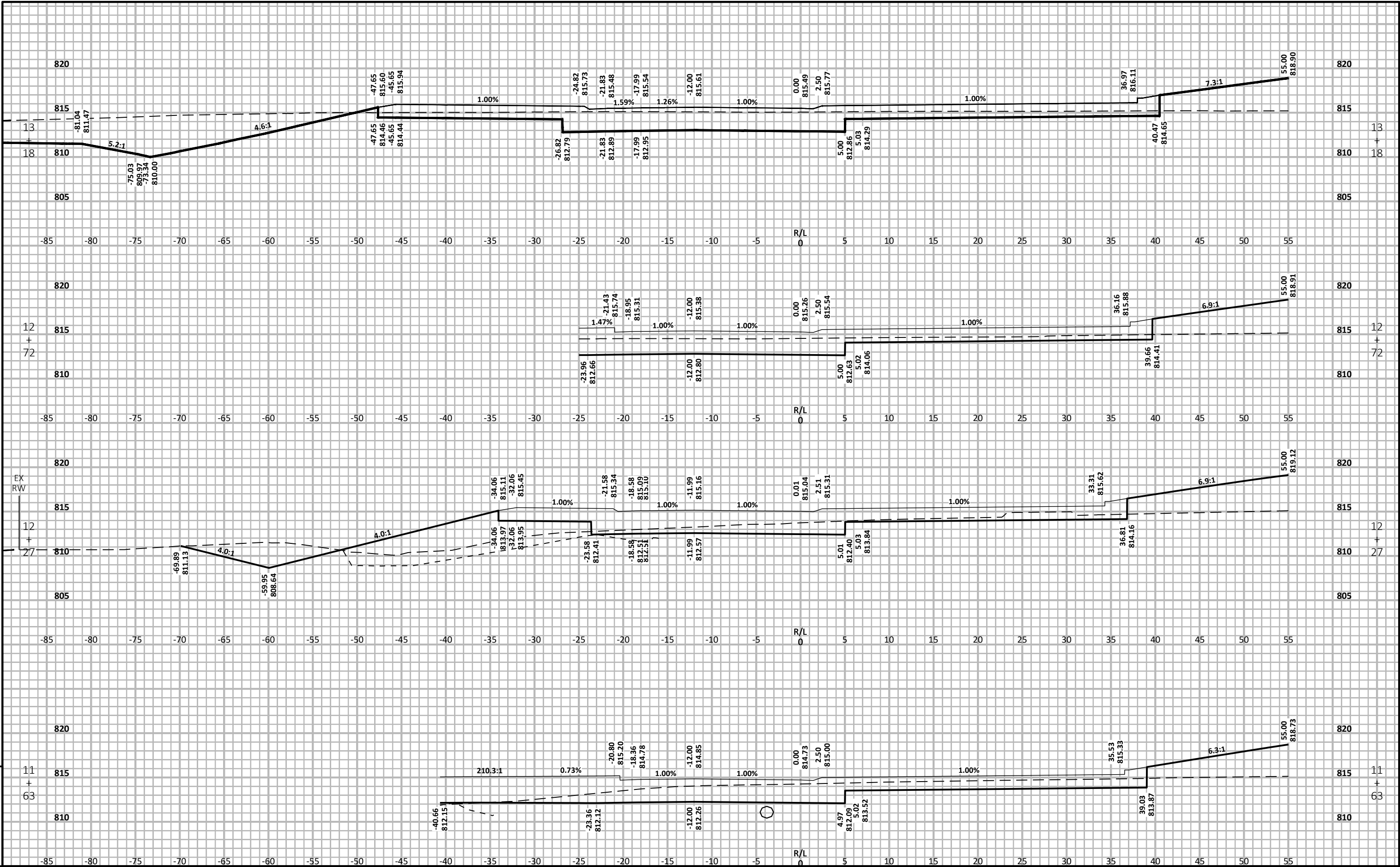
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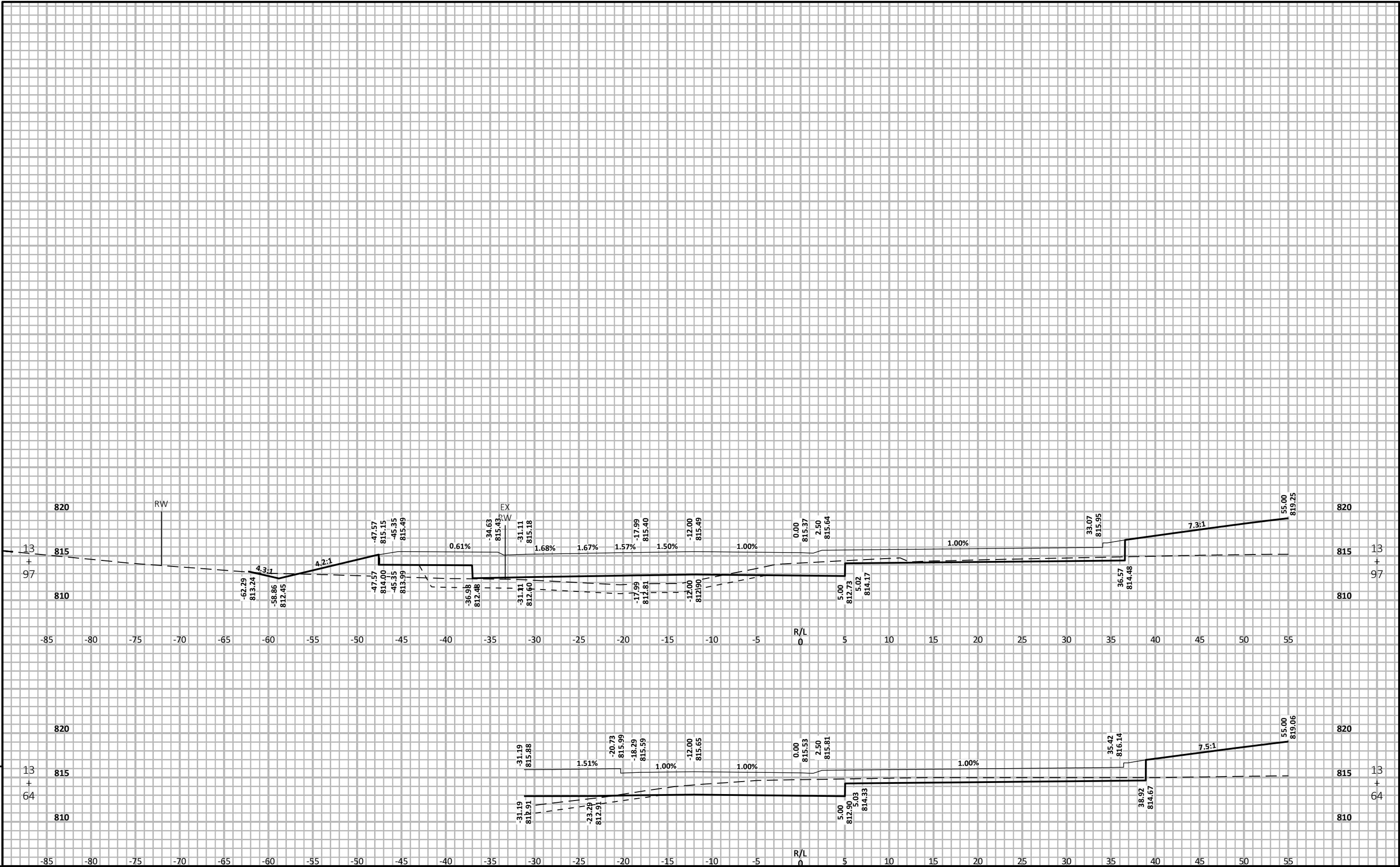


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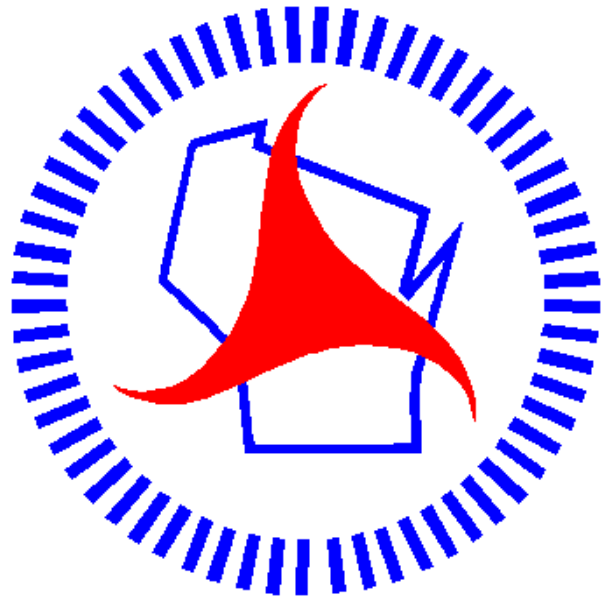








Notes



Wisconsin Department of Transportation

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