

WISCONSIN
WITH:

PROJECT ID:

1520-00-77

COUNTY:

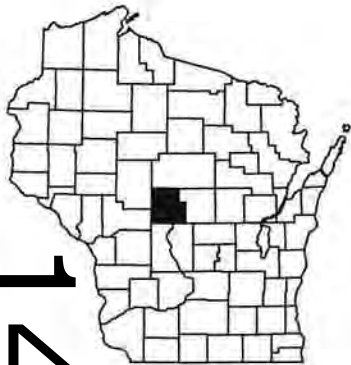
WOOD COUNTY

SEPTEMBER 2024

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 Plan
Section No	5	Plan and Profile
Section No	6	Standard Detail Drawings
Section No	7	Sign Plates
Section No	8	Structure Plans
Section No	9	Computer Earthwork Data
Section No	9	Cross Sections

TOTAL SHEETS = 230



DESIGN DESIGNATION

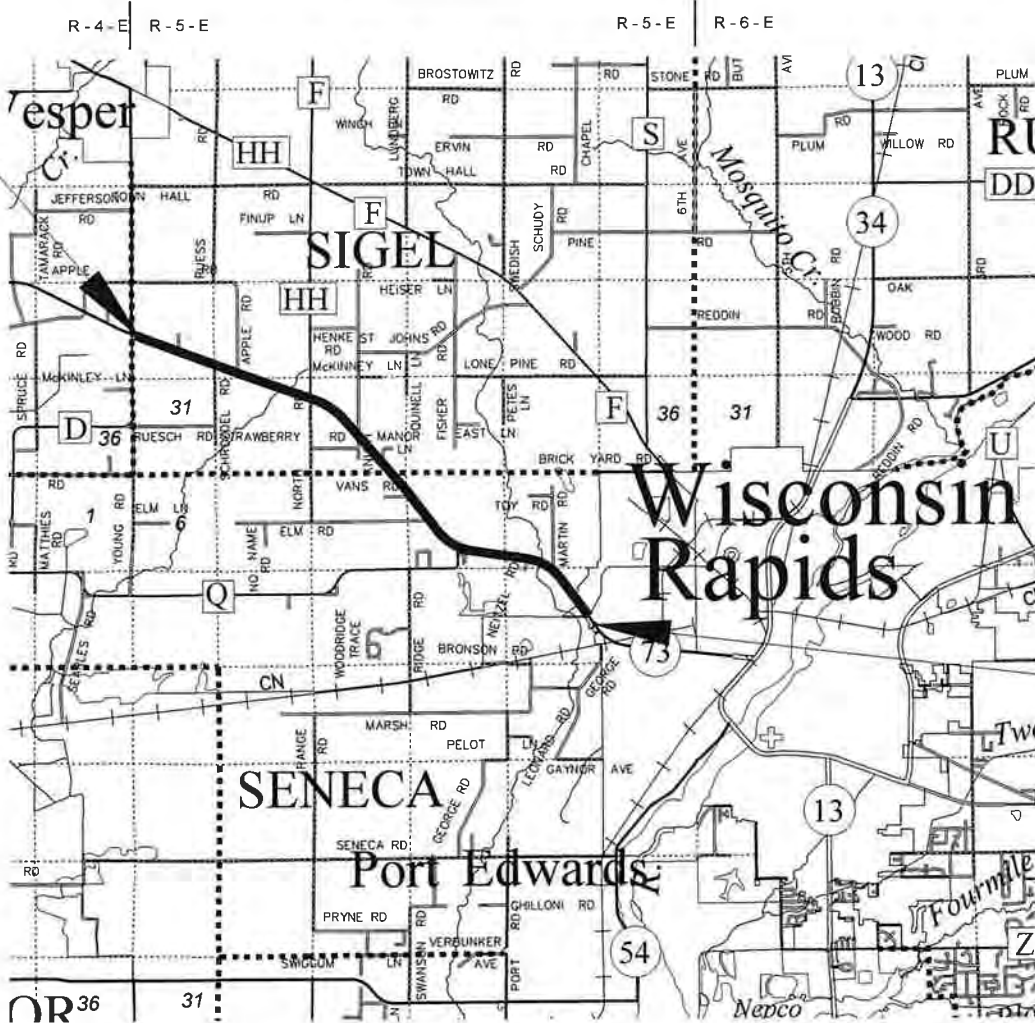
A A D T	2025	=	3570
A A D T	2045	=	3570
D H V		=	17.3
D D		=	60/40
T		=	20.6%
DESIGN SPEED		=	55 MPH
ESALS		=	2,400,000

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	

END PROJECT
STA 311+37
NORTHING = 471,402.125
EASTING = 693,830.701



LAYOUT
SCALE 0 2 MI
TOTAL NET LENGTH OF CENTERLINE = 5.868 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), WOOD 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 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1520-00-77		

ORIGINAL PLANS PREPARED BY
Westwood
MICHAEL A. MALCOLM
E-30025
Appleton, WI
DATE: 1-26-24
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
PREPARED BY
Surveyor NC REGION / WESTWOOD
Designer WESTWOOD
Project Manager ELLE MILLER
Regional Examiner FRED SCHUNKE
Regional Supervisor NICHOLE LYSNE

APPROVED FOR THE DEPARTMENT
DATE: 1/26/24
(Signature)

E

GENERAL NOTES

WHEN THE QUANTITY OF THE ITEMS OF BASE AGGREGATE, SUBBASE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON OR CUBIC YARD, THE DEPTH OR THICKNESS OF THE LAYERS SHOWN ON THE PLAN IS APPROXIMATE AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.

TOPSOIL SHALL BE PLACED 1" BELOW THE TOP OF ADJACENT CONCRETE CURBS OR SIDEWALKS.

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

PRIOR TO ORDERING DRAINAGE PIPES, THE CONTRACTOR SHALL FIELD VERIFY RELATED DRAINAGE INFORMATION IN THE PLAN WITH THE ENGINEER.

SEED, INSTALL EROSION MAT, AND FERTILIZE ALL TOPSOILED AREAS WITHIN 7 WORKING DAYS AFTER GRADING WORK IS COMPLETED.

SEED MIXTURE NO.40 SHALL BE USED IN MAINTAINED AREAS, SEED MIXTURE NO. 30 SHALL BE USED IN ALL OTHER AREAS.

DISTURBED AREAS SHALL BE FERTILIZED, SEEDED and EROSION MATTED AS DIRECTED BY THE ENGINEER. DO NOT PLACE FERTILIZER WITHIN 20' OF WATER OR WETLANDS.

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

TACK COAT HAS BEEN ESTIMATED AT AN APPLICATION OF 0.06 GAL./S.Y. AND SHALL BE PLACED BETWEEN THE LAYERS OF ASPHALTIC PAVEMENT.

HMA PAVEMENT WEIGHT CALCULATIONS ARE ESTIMATED ON A CONVERSION RATIO OF 110 LB/SY/IN.

CURVE DATA IS BASED ON THE RADIUS DEFINITION.

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PAVING DETAIL
- CURB RAMP DETAILS
- EROSION CONTROL DETAILS
- STORM SEWER DETAILS
- PAVEMENT MARKING DETAILS
- TRAFFIC CONTROL DETAILS
- DETOUR PLANS

UTILITIES CONTACTS

ALLIANT ENERGY - COMMUNICATION
ED GILKES
4902 n. BILTMORE LN.
MADISON, WI 53718
(608) 458-6242
EDWARDGILKES@ALLIANTENERGY.COM

ALLIANT ENERGY - ELECTRICITY
TRUDI BAKKEN
WISCONSIN RAPIDS, WI 54495
(715) 460-4121
TRUDIBAKKEN@ALLIANTENERGY.COM

ATC MANAGEMENT, INC - ELECTRICITY-TRANSMISSION
DOUG VOSBERG
2489 RINDEN ROAD
COTTAGE GROVE, WI 53527
(608) 877-7650
dvosberg@atcllc.com

BUG TUSSEL WIRELESS, LLC - COMMUNICATION LINE
DUSTIN TEAFF
1262 CAMBER CT
DE PERE, WI 54115
(920) 254-3539
dustin.teaff@kesexcavating.com

CITY OF WISCONSIN RAPIDS - SEWER
JOE EICHSTEADT - CITY ENGINEER
444 W GRAND AVE
WISCONSIN RAPIDS, WI 54495
(715) 421-8251
jeichsteadt@wirapids.org

SOLARUS - COMMUNICATION LINE
DENNIS PIERCE
440 E. GRAND AVE.
WISCONSIN RAPIDS, WI 54494
(715) 572-0152
PIERCE@SOLARUS.NET

SPECTRUM - COMMUNICATION LINE
PAUL GROVE
5024 HEFFRON ST.
WISCONSIN RAPIDS, WI 54494
(854) 683-0146
PAUL.GROVE@CHARTER.COM

TDS TELECOM - COMMUNICATION LINE
ROD HEINZ
211 W. 3RD ST.
NECEDAH, WI 54646
(608) 225-7090
ROD.HEINZ@TDSTELECOM.COM

WE ENERGIES - GAS/PETROLEUM
LARRY KOCH
1921 8TH ST S
WISCONSIN RAPIDS, WI 54494
PHONE (715) 421-7249
MOBILE (715) 421-9293

DNR LIASON

BRAD BETTHAUSER
NORTH CENTRAL REGION
DNR WISCONSIN RAPIDS SERVICE CENTER
473 GRIFFITH AVE
WISCONSIN RAPIDS, WI 54494
715-213-9064
bradley.betthausen@wisconsin.gov

WISCONSIN RAPIDS WATER WORKS
& LIGHT COMMISSION - ELECTRICITY
JACOB JOHNSON
221 16TH STREET S
P.O. BOX 1508
WISCONSIN RAPIDS, WI 54494
(715) 423-6328
jacob.johnson@wrwwlc.com

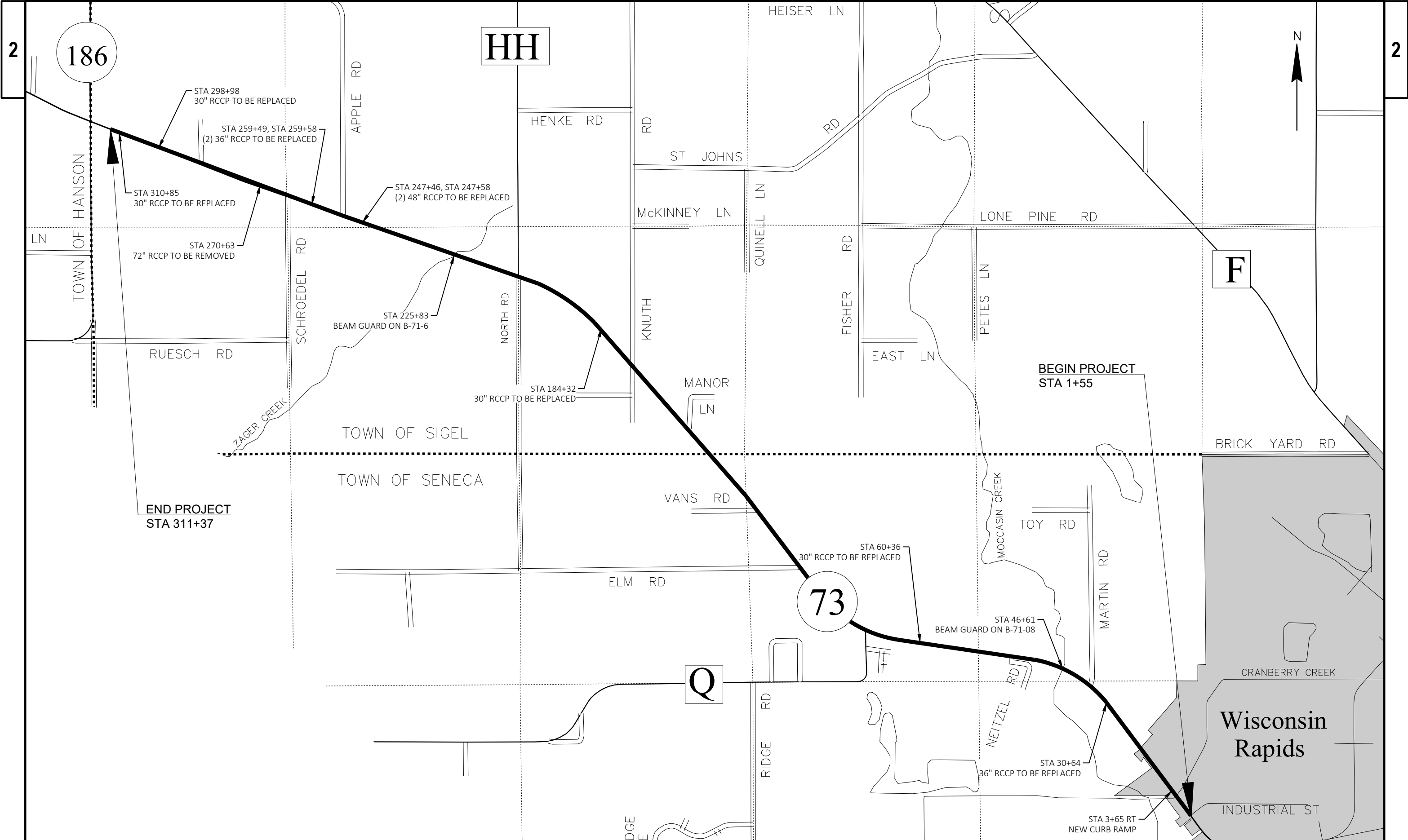
WISCONSIN RAPIDS WATER WORKS
& LIGHT COMMISSION - WATER
ADAM BREUNIG
221 16TH STREET S
P.O. BOX 1508
WISCONSIN RAPIDS, WI 54494
(715) 213-2878
adam.bruenig@wrwwlc.com

Runoff Coefficient Table												
	Hydrologic Soil Group											
	A			B			C			D		
	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	0.08	0.16	0.22	0.12	0.20	0.27	0.15	0.24	0.33	0.19	0.28	0.38
	0.22	0.30	0.38	0.26	0.34	0.44	0.30	0.37	0.50	0.34	0.41	0.56
Median Strip-Turf	0.19	0.20	0.24	0.19	0.22	0.26	0.20	0.23	0.30	0.20	0.25	0.30
	0.24	0.26	0.30	0.25	0.28	0.33	0.26	0.30	0.37	0.27	0.32	0.40
Side Slope Turf			0.25			0.27			0.28			0.30
			0.32			0.34			0.36			0.38
Pavement												
Asphalt	0.70 - 0.95											
Concrete	0.80 - 0.95											
Brick	0.70 - 0.80											
Drives, Sidewalks	0.75 - 0.85											
Roofs	0.75 - 0.95											
Gravel Roads, Shoulders	0.40 - 0.60											
Total Project Area = 8.5 Acres												
Total Area Expected To Be Disturbed By Construction Activities = 4 Acres												



Dial 811 or (800)242-8511

www.DiggersHotline.com



PROJECT NO: 1520-00-77	HWY: STH 73	COUNTY: WOOD	PROJECT OVERVIEW	SHEET 3
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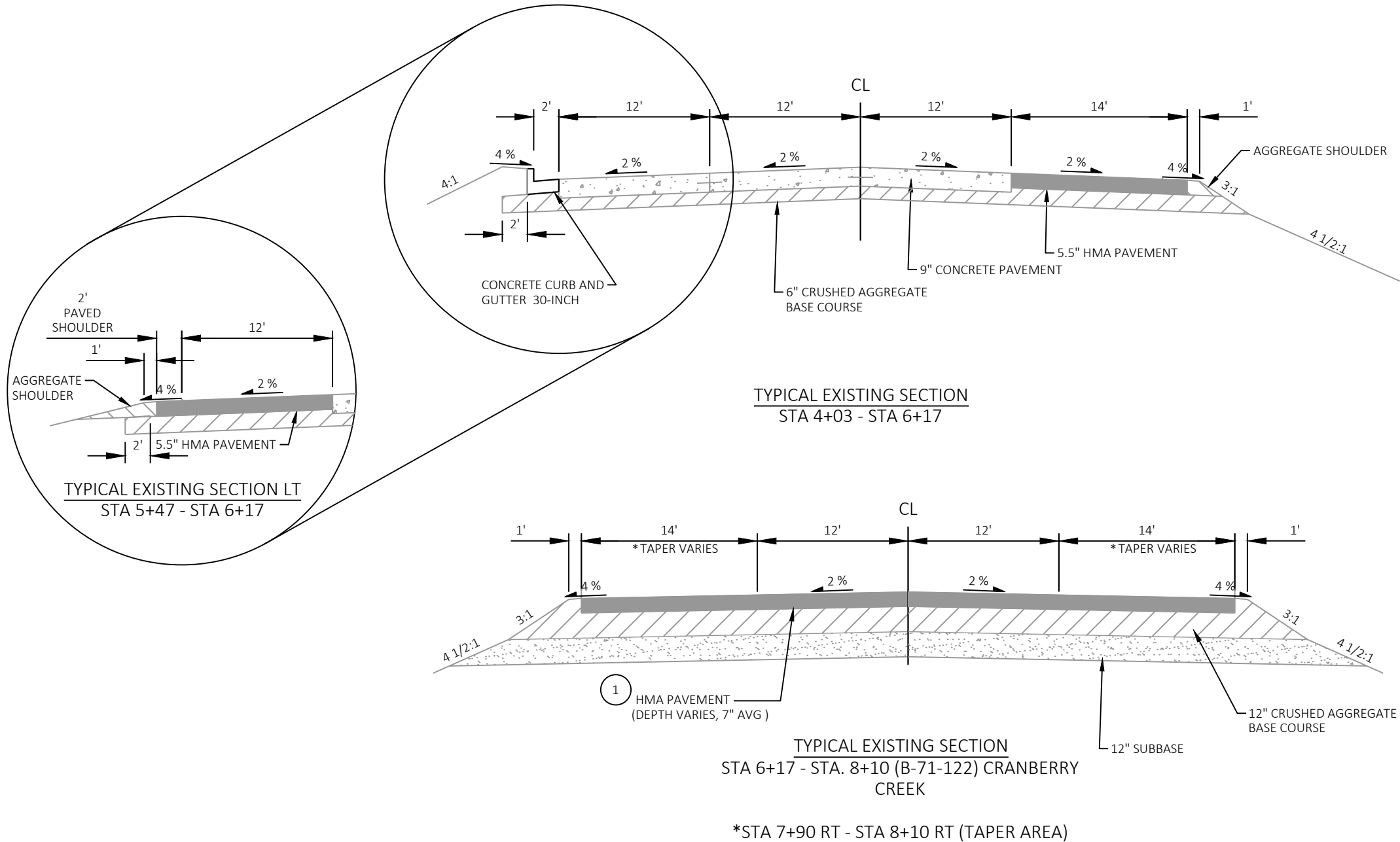
NOTES:

1 SEE PAVEMENT CORE LOG FOR ASPHALT THICKNESS

PAVEMENT CORE LOG

CORE NUMBER	APPROX. STA.	OFFSET	PAVEMENT THICKNESS (IN.)
C-1	298+41	6' L	4
C-2	282+57	6' R	4
C-3	266+73	6' L	3.75
C-4	250+89	6' R	3.75
C-5	235+05	6' L	7.25
C-6	219+21	6' R	3.5
C-7	203+37	6' L	5
C-8	187+53	6' R	4
C-9	171+69	6' L	4
C-10	155+85	6' R	4.5
C-11	140+01	6' L	5.5
C-12	124+17	6' R	4.25
C-13	108+33	6' L	4.75
C-14	87+21	6' R	5.75
C-15	71+37	6' L	5.5
C-16	55+53	6' R	5.5
C-17	39+69	6' L	5
** C-18	23+85	6' R	12.75
C-19	8+01	18'L	7
C-20	6+76	18'R	5.5

** 4.75 IN. ASPHALT, 8" CONCRETE



LEGEND

EXISTING SAND/GRAVEL SUBBASE

EXISTING CRUSHED AGGREGATE BASE COURSE (SHOULDER)

EXISTING HMA PAVEMENT

EXISTING CRUSHED AGGREGATE BASE COURSE

PULVERIZED ASPHALTIC PAVEMENT

RUBBILIZED EXISTING P.C. CONCRETE PAVEMENT

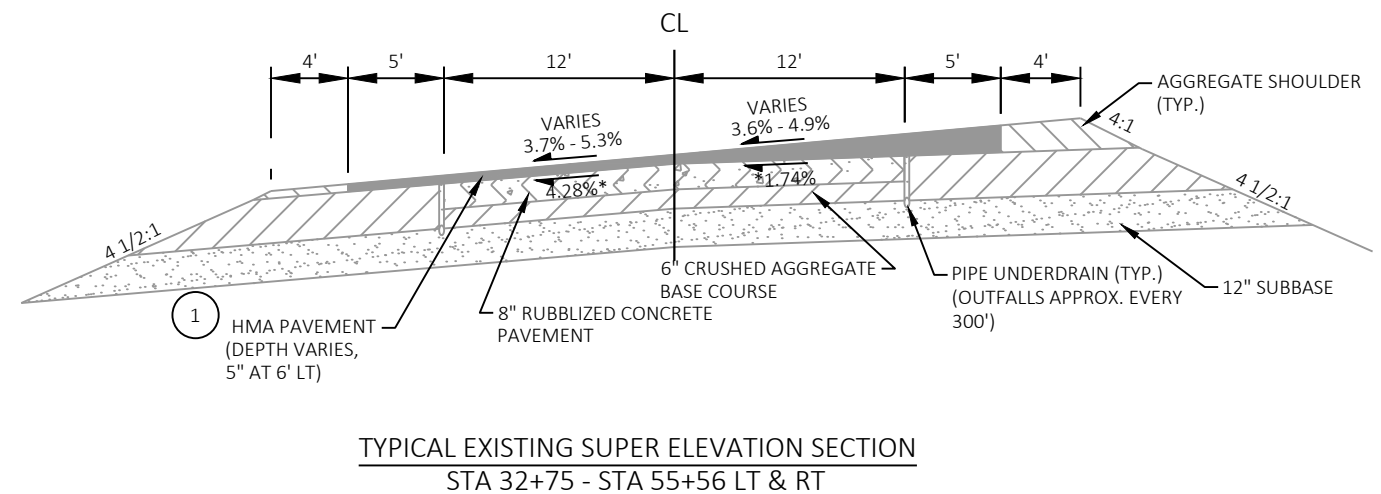
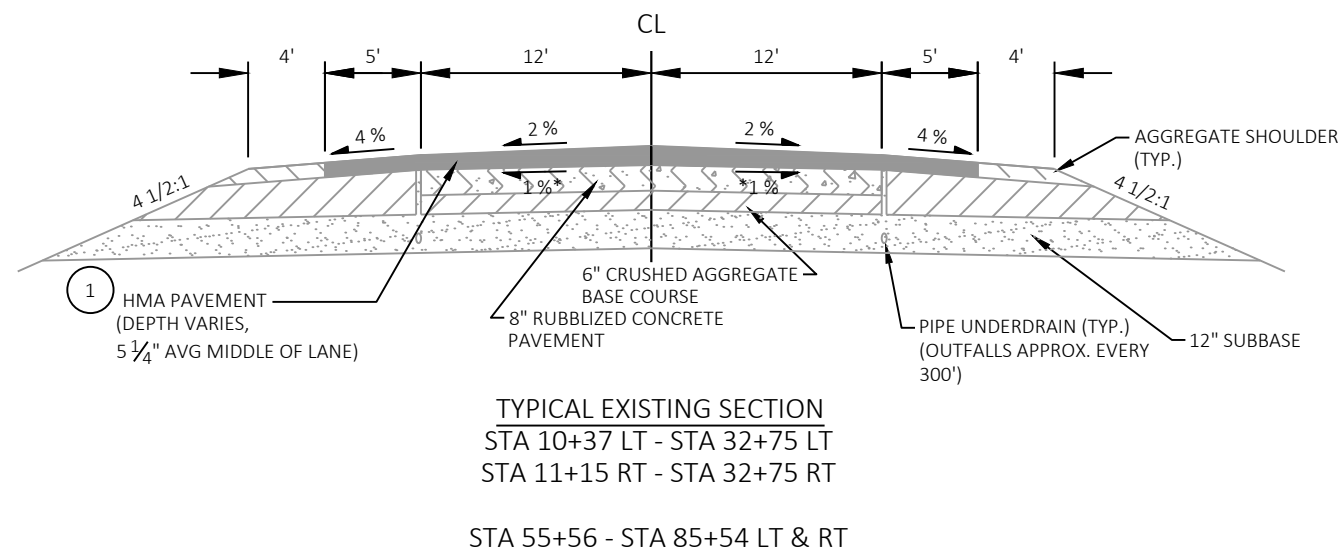
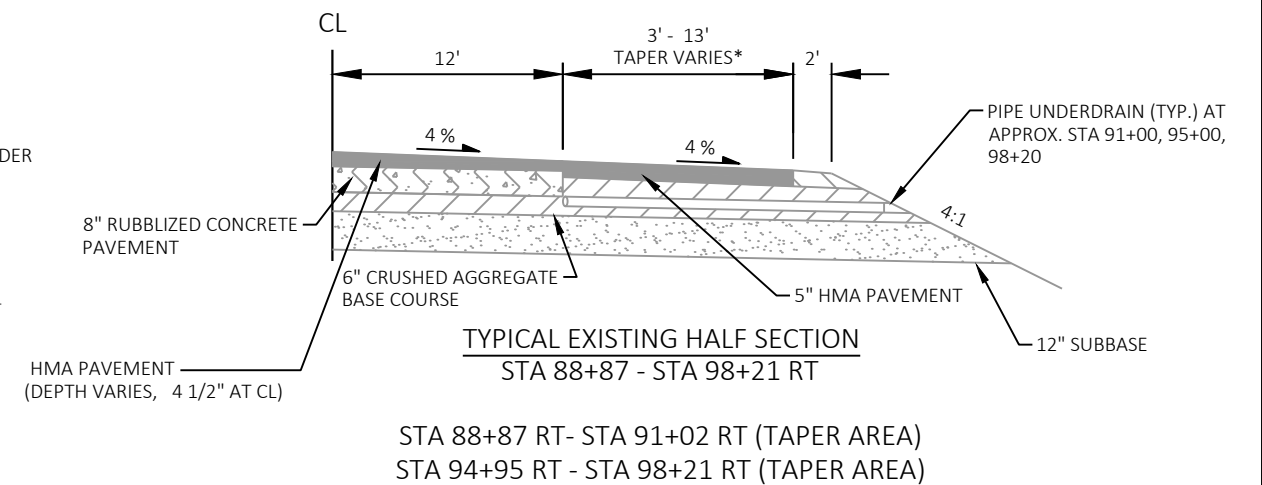
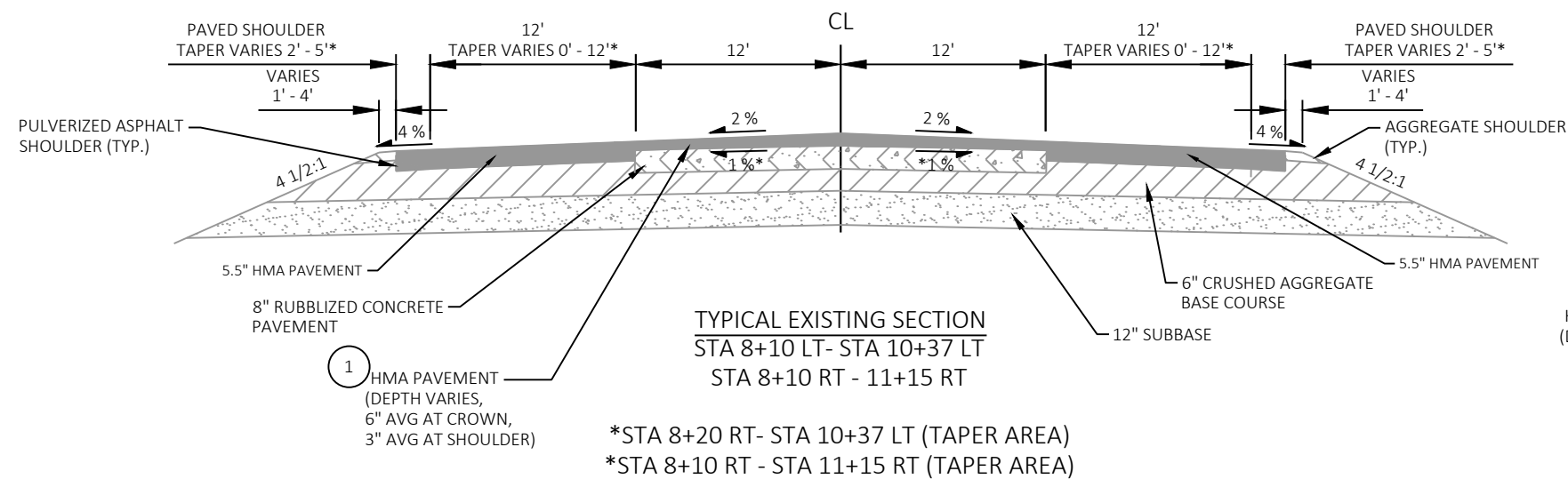
PULVERIZED AND RE-LAID PAVEMENT

BASE AGGREGATE OPEN GRADED

NOTES:

1 SEE PAVEMENT CORE LOG
FOR ASPHALT THICKNESS

* RUBBLIZED CONCRETE
SLOPES MAY VARY



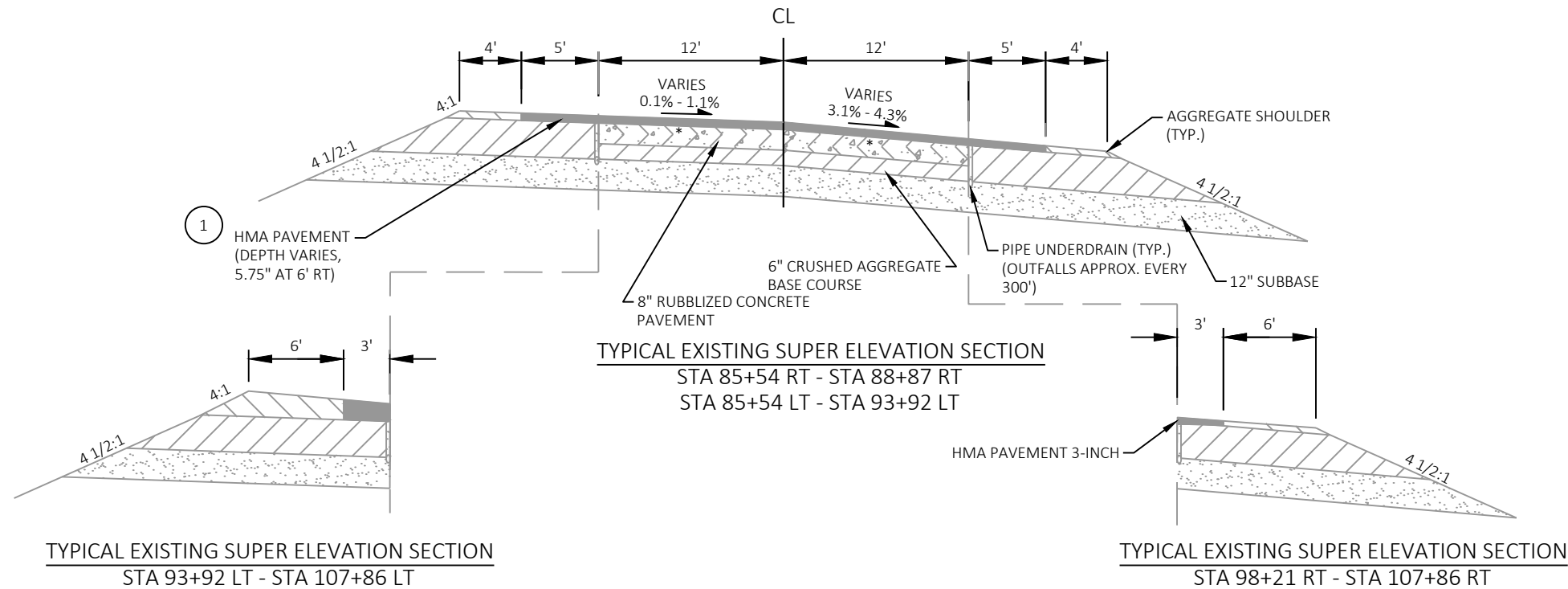
LEGEND

	EXISTING SAND/GRAVEL SUBBASE		PULVERIZED ASPHALTIC PAVEMENT
	EXISTING CRUSHED AGGREGATE BASE COURSE (SHOULDER)		RUBBLIZED EXISTING P.C. CONCRETE PAVEMENT
	EXISTING HMA PAVEMENT		PULVERIZED AND RE-LAID PAVEMENT
	EXISTING CRUSHED AGGREGATE BASE COURSE		BASE AGGREGATE OPEN GRADED

NOTES:

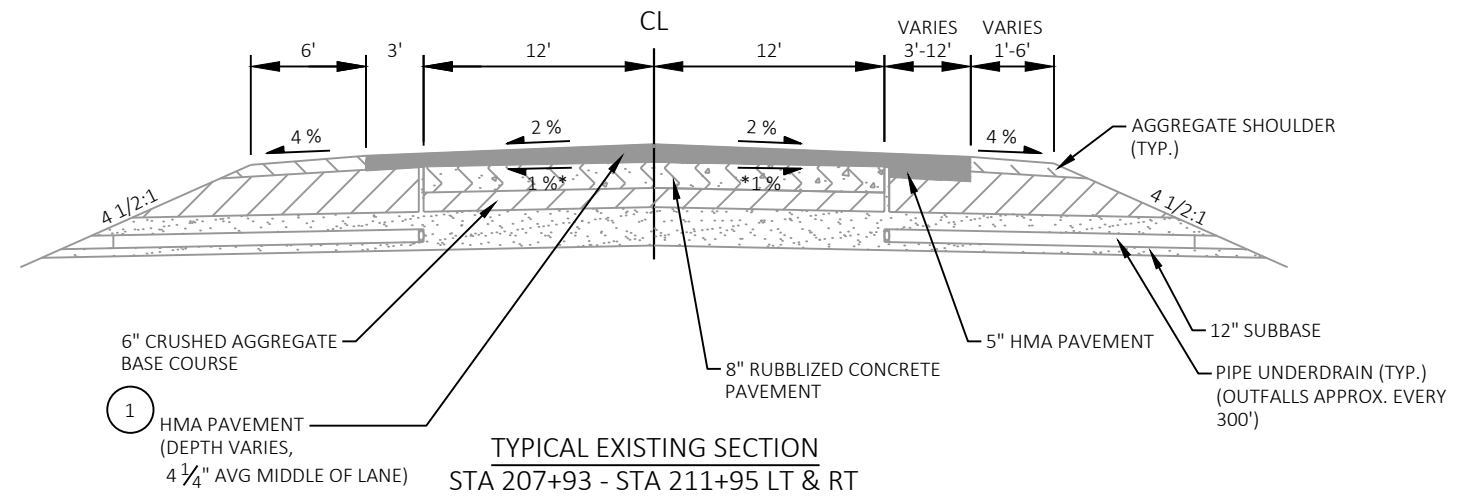
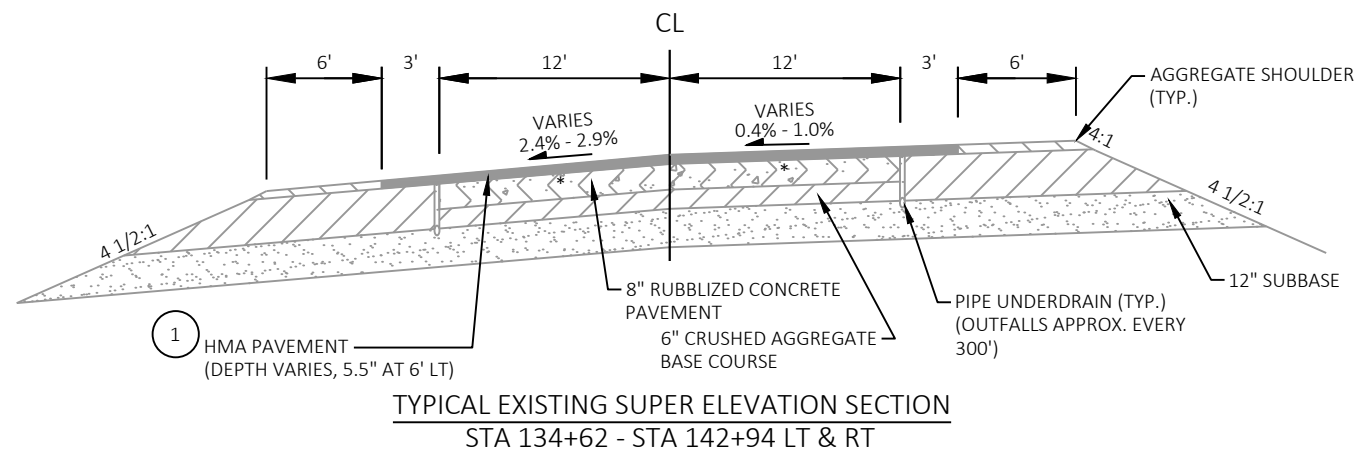
1 SEE PAVEMENT CORE LOG
FOR ASPHALT THICKNESS

* RUBBLIZED CONCRETE
SLOPES MAY VARY



TYPICAL EXISTING SUPER ELEVATION SECTION
STA 93+92 LT - STA 107+86 LT

TYPICAL EXISTING SUPER ELEVATION SECTION
STA 98+21 RT - STA 107+86 RT



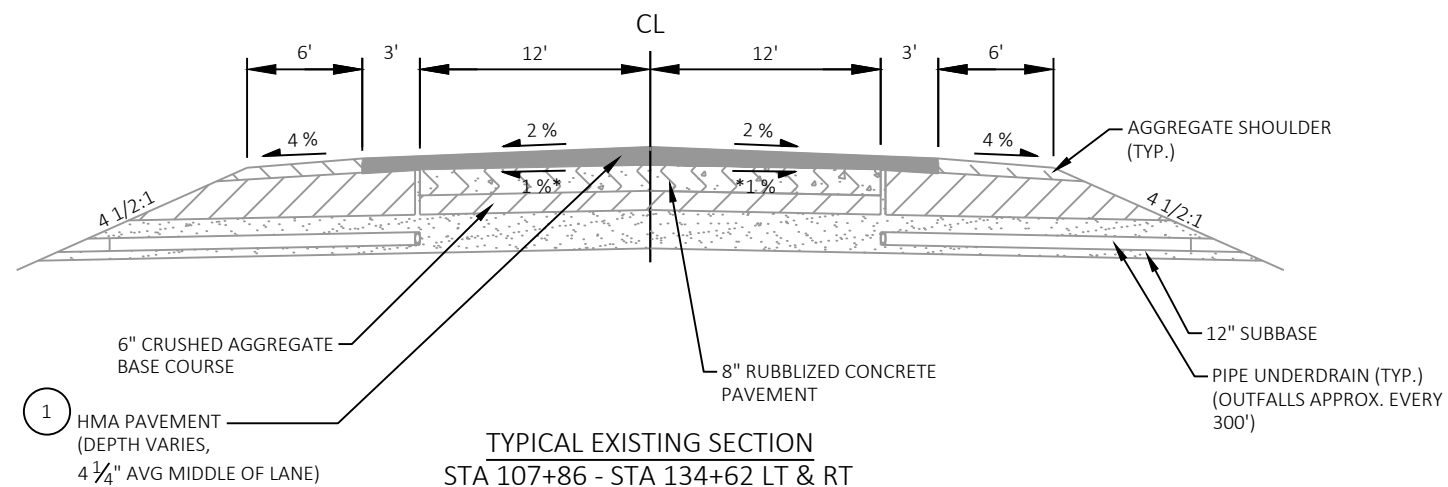
LEGEND

	EXISTING SAND/GRAVEL SUBBASE		RUBBLIZED EXISTING P.C. CONCRETE PAVEMENT
	EXISTING CRUSHED AGGREGATE BASE COURSE (SHOULDER)		PULVERIZED AND RE-LAID PAVEMENT
	EXISTING HMA PAVEMENT		BASE AGGREGATE OPEN GRADED
	EXISTING CRUSHED AGGREGATE BASE COURSE		
			PULVERIZED ASPHALTIC PAVEMENT

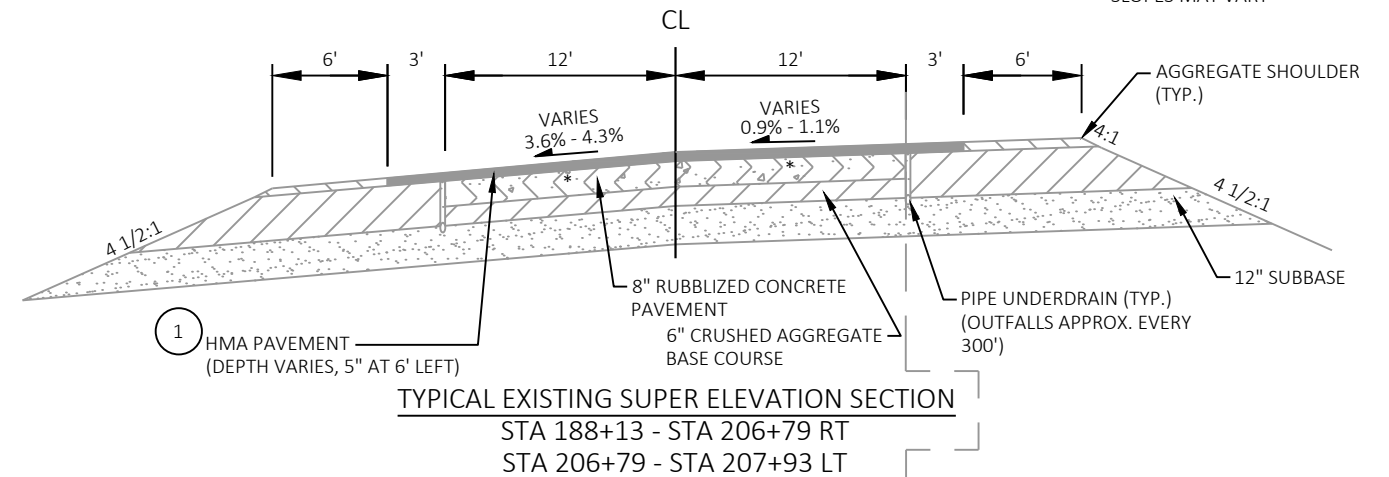
NOTES:

1 SEE PAVEMENT CORE LOG
FOR ASPHALT THICKNESS

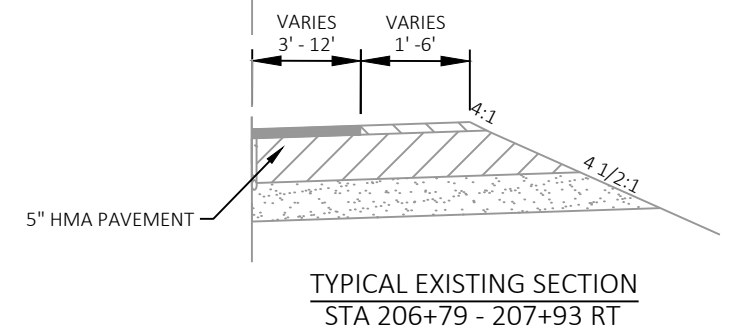
* RUBBLIZED CONCRETE
SLOPES MAY VARY



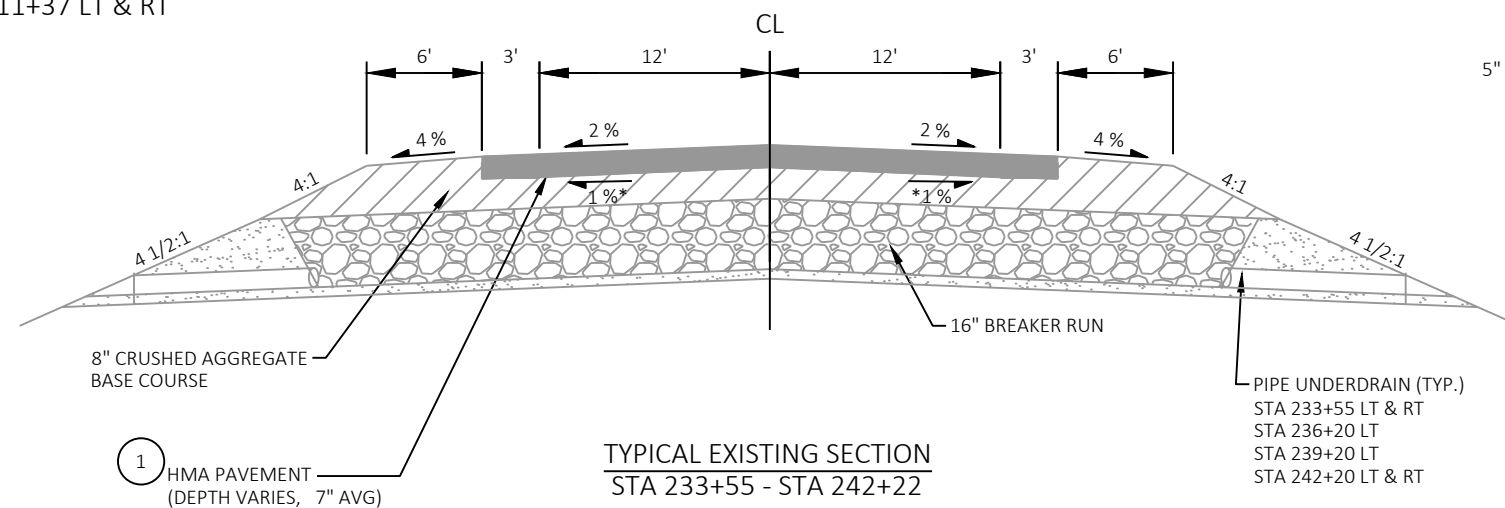
TYPICAL EXISTING SECTION
STA 107+86 - STA 134+62 LT & RT
STA 142+94 - STA 188+13 LT & RT
STA 211+95 - STA 225+36 LT & RT
STA 226+30 - STA 233+55 LT & RT
STA 242+22 - STA 311+37 LT & RT



TYPICAL EXISTING SUPER ELEVATION SECTION
STA 188+13 - STA 206+79 RT
STA 206+79 - STA 207+93 LT



TYPICAL EXISTING SECTION
STA 206+79 - 207+93 RT



TYPICAL EXISTING SECTION
STA 233+55 - STA 242+22

LEGEND

EXISTING SAND/GRAVEL
SUBBASE

EXISTING CRUSHED AGGREGATE BASE
COURSE (SHOULDER)

EXISTING HMA
PAVEMENT

EXISTING CRUSHED
AGGREGATE BASE COURSE

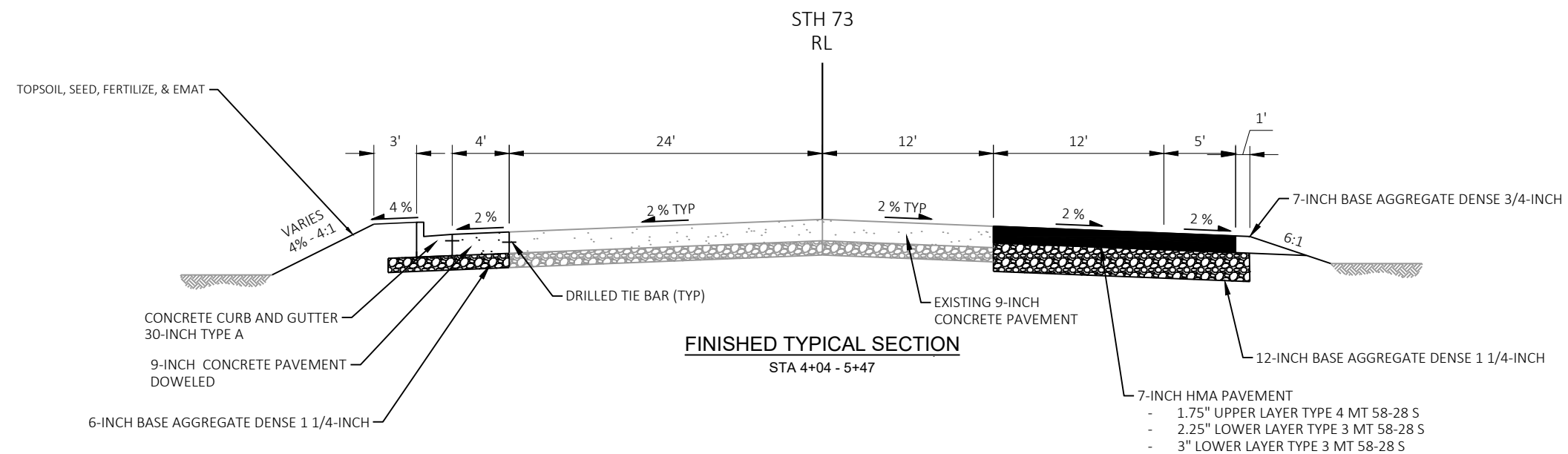
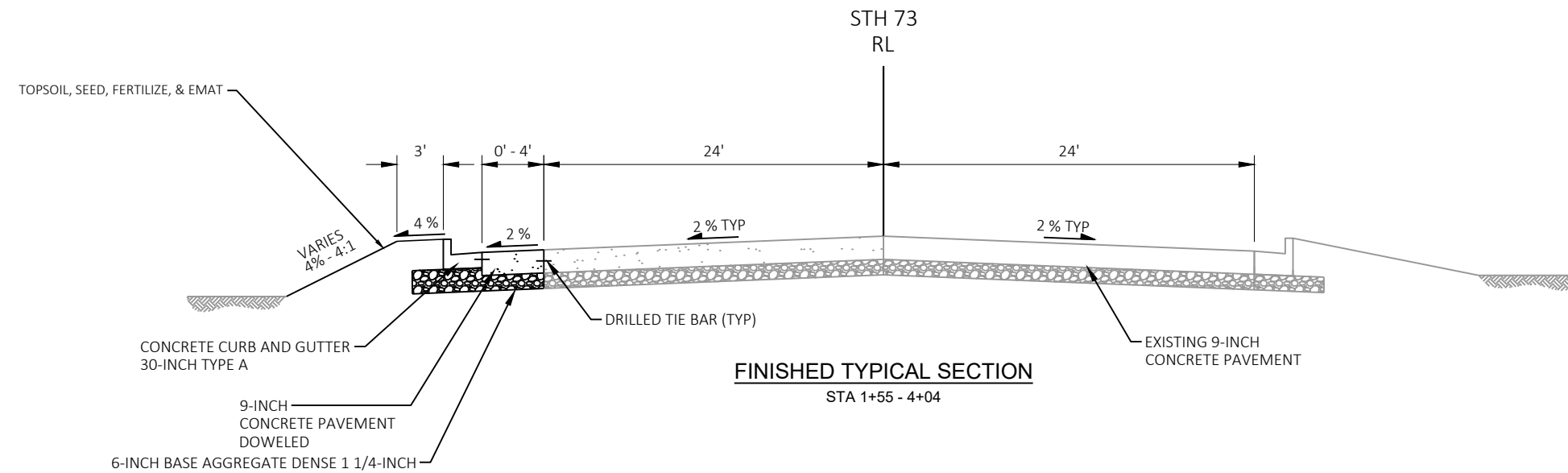
BREAKER RUN

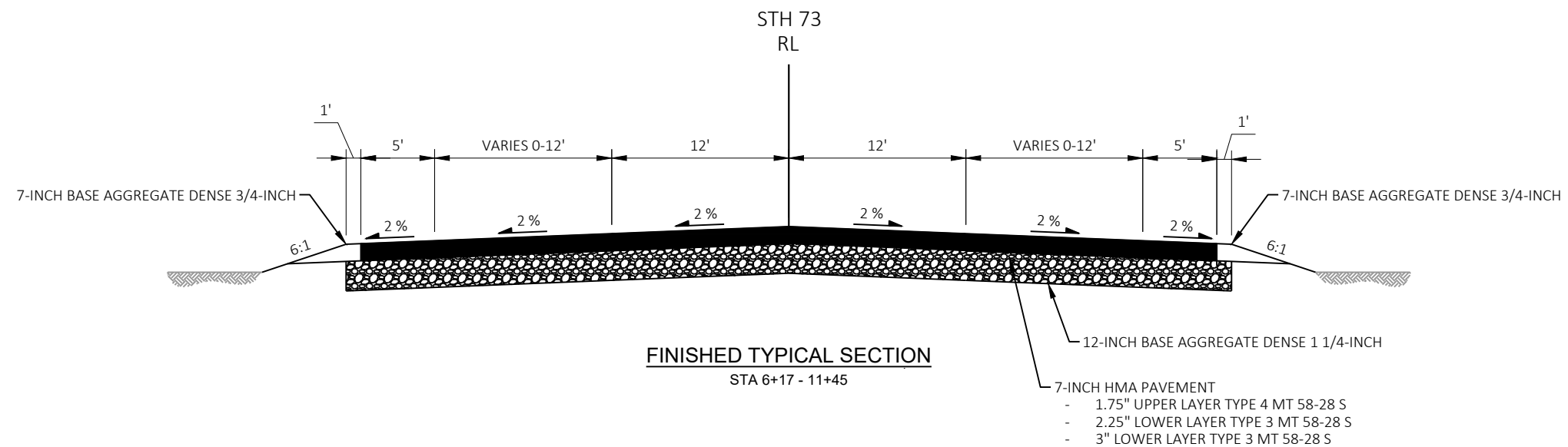
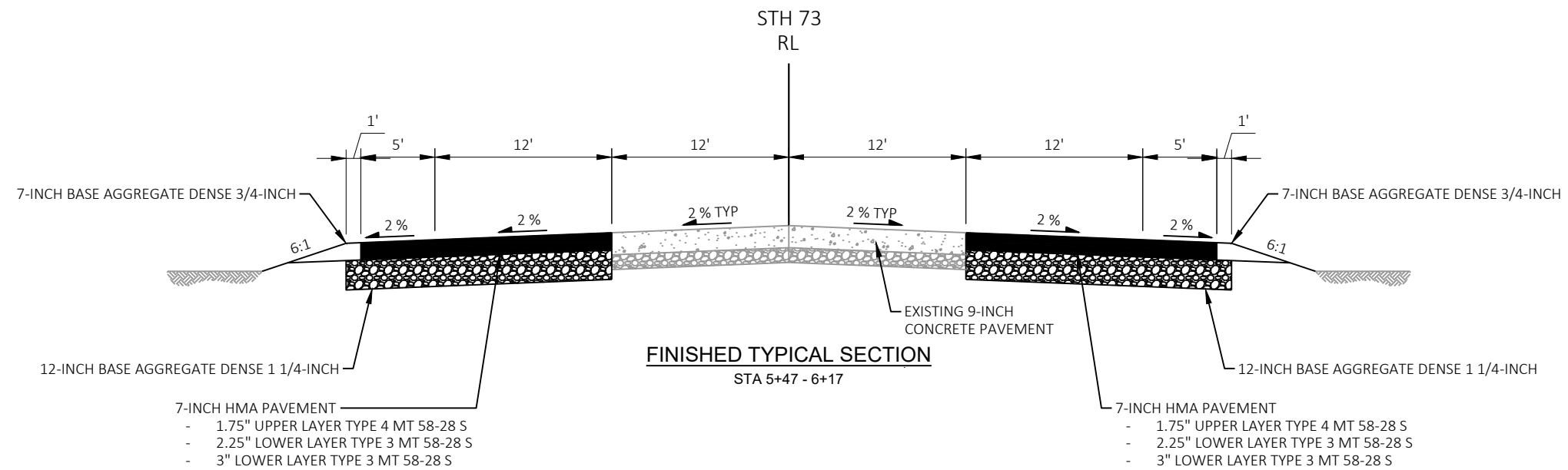
PULVERIZED ASPHALTIC PAVEMENT

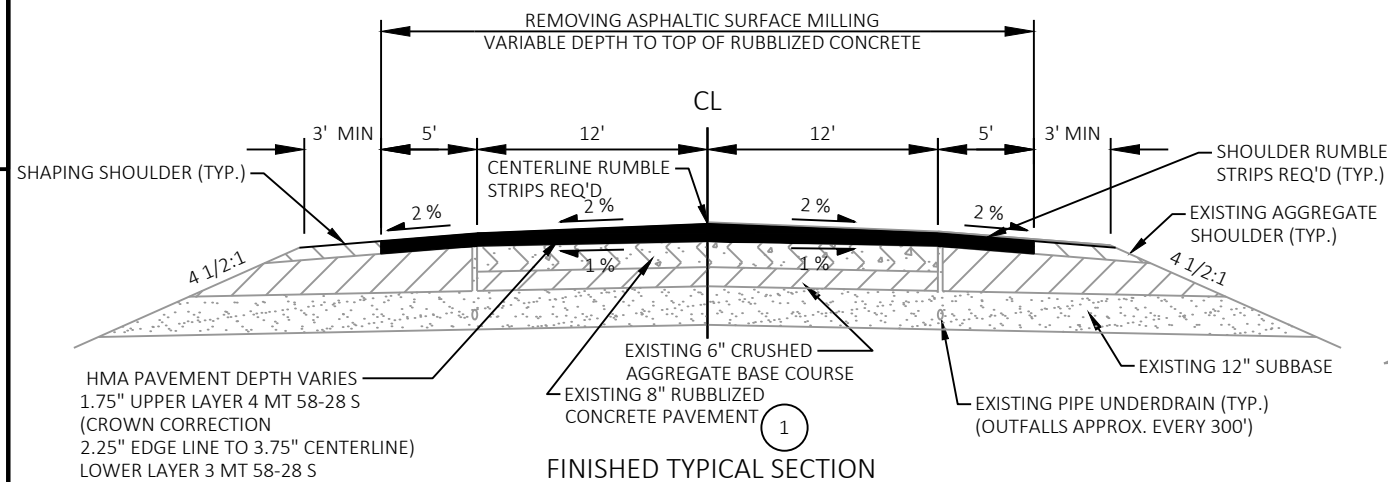
RUBBLIZED EXISTING P.C.
CONCRETE PAVEMENT

PULVERIZED AND RE-LAID PAVEMENT

BASE AGGREGATE OPEN
GRADED

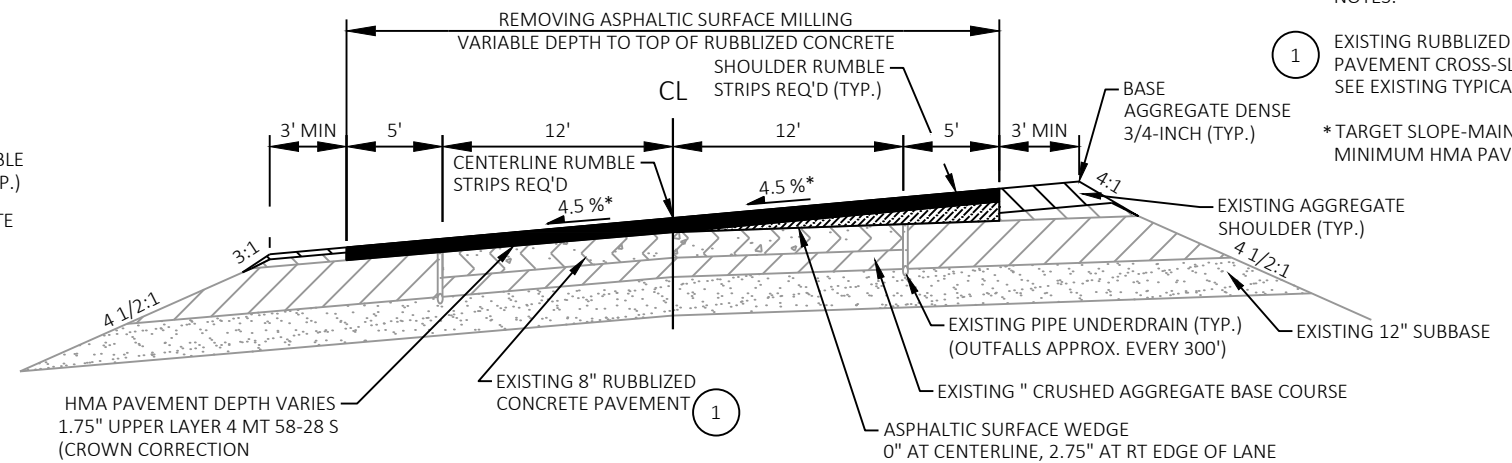






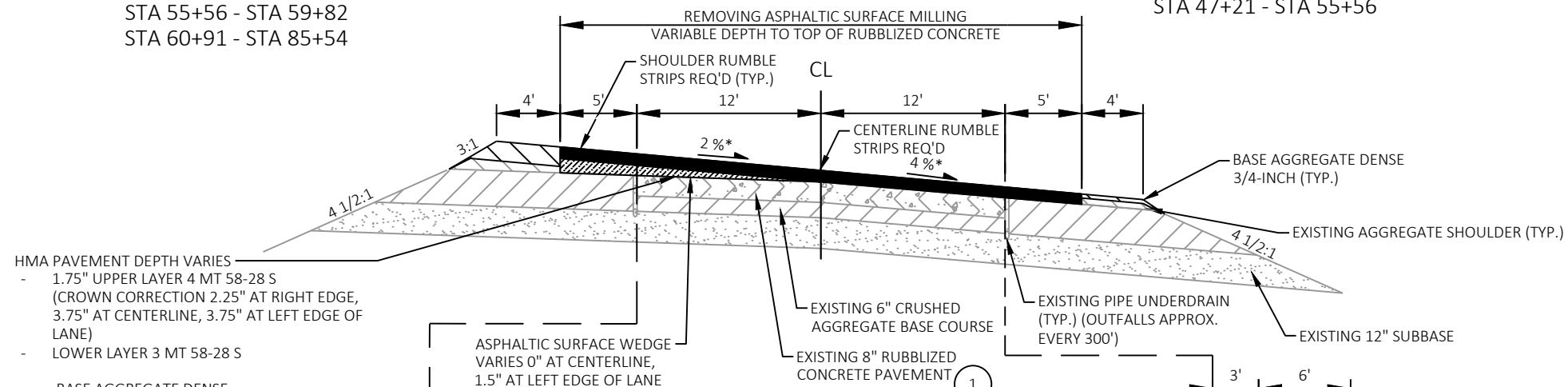
FINISHED TYPICAL SECTION

STA 11+45 - STA 30+09
STA 31+19 - STA 32+75
STA 55+56 - STA 59+82
STA 60+91 - STA 85+54



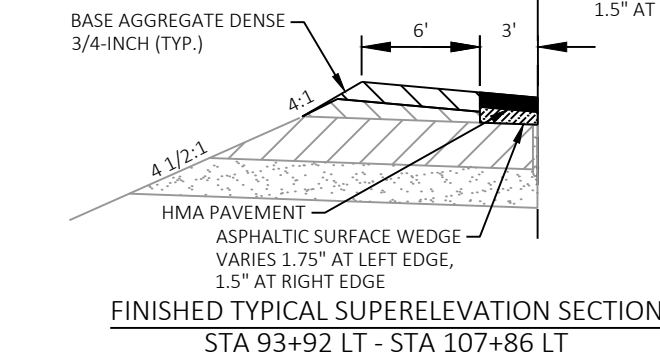
FINISHED TYPICAL SUPERELEVATION SECTION

STA 32+75 - STA 46+02
STA 47+21 - STA 55+56



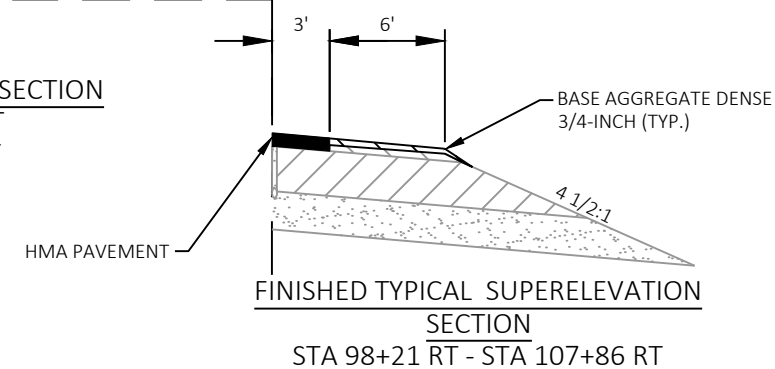
FINISHED TYPICAL SUPERELEVATION SECTION

STA 85+54 RT - STA 88+87 RT
STA 85+54 LT - STA 93+92 LT



FINISHED TYPICAL SUPERELEVATION SECTION

STA 93+92 LT - STA 107+86 LT



FINISHED TYPICAL SUPERELEVATION SECTION

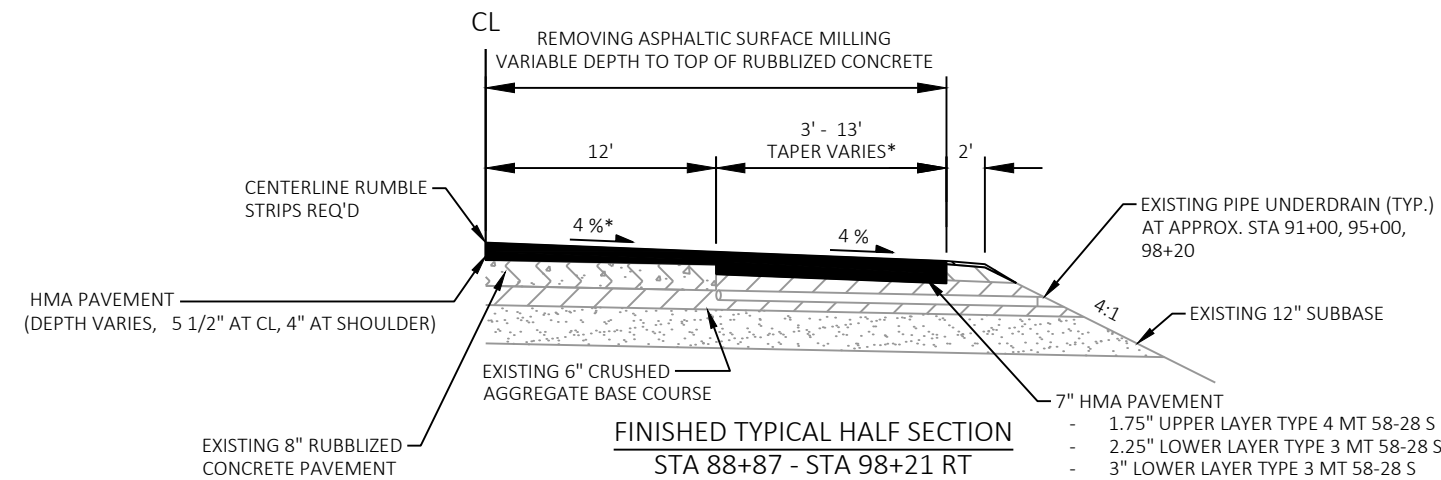
STA 98+21 RT - STA 107+86 RT

NOTES:

- 1 EXISTING RUBBLIZED CONCRETE PAVEMENT CROSS-SLOPE VARIES SEE EXISTING TYPICALS FOR RANGE
- * TARGET SLOPE-MAINTAIN MINIMUM HMA PAVEMENT DEPTH

LEGEND

	BASE AGGREGATE DENSE, 3/4-INCH		HMA PAVEMENT
	EXISTING SAND/GRAVEL SUBBASE		RUBBLIZED EXISTING P.C. CONCRETE PAVEMENT
	EXISTING CRUSHED AGGREGATE BASE COURSE (SHOULDER)		PULVERIZED AND RE-LAID PAVEMENT
	EXISTING HMA PAVEMENT		BASE AGGREGATE OPEN GRADED
	EXISTING CRUSHED AGGREGATE BASE COURSE		

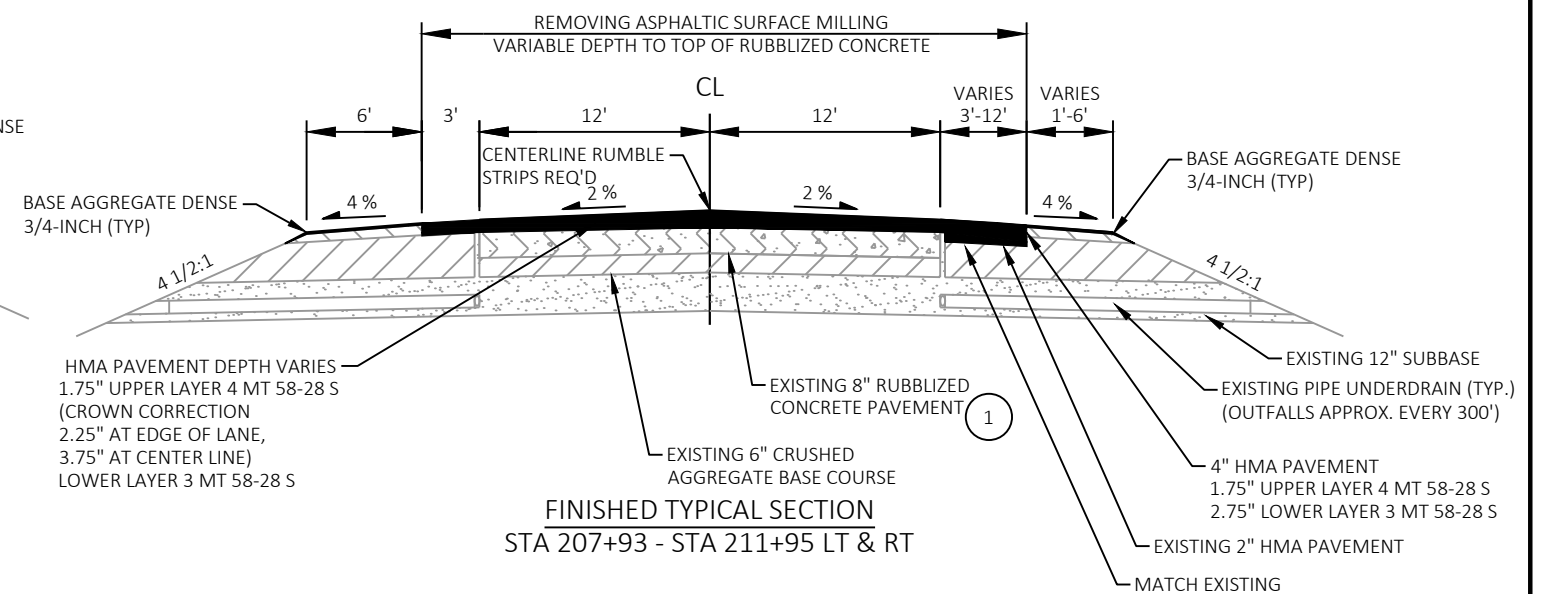
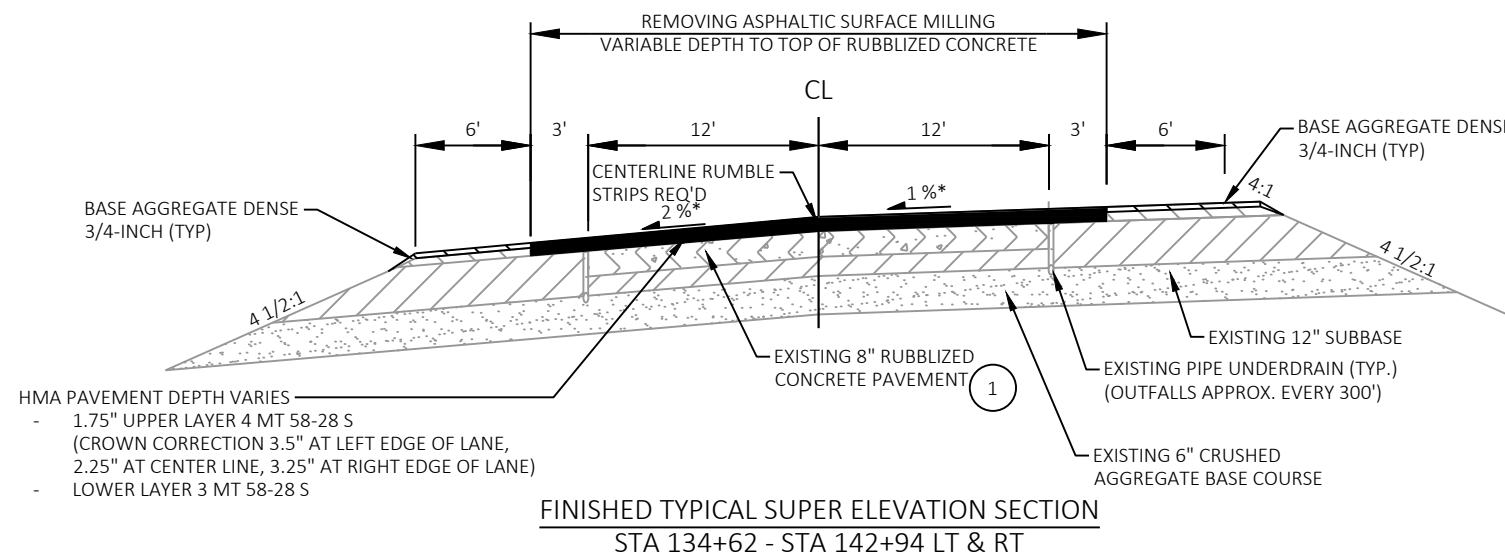


STA 88+87 RT- STA 91+02 RT (TAPER AREA)
STA 94+95 RT - STA 98+21 RT (TAPER AREA)

NOTES:

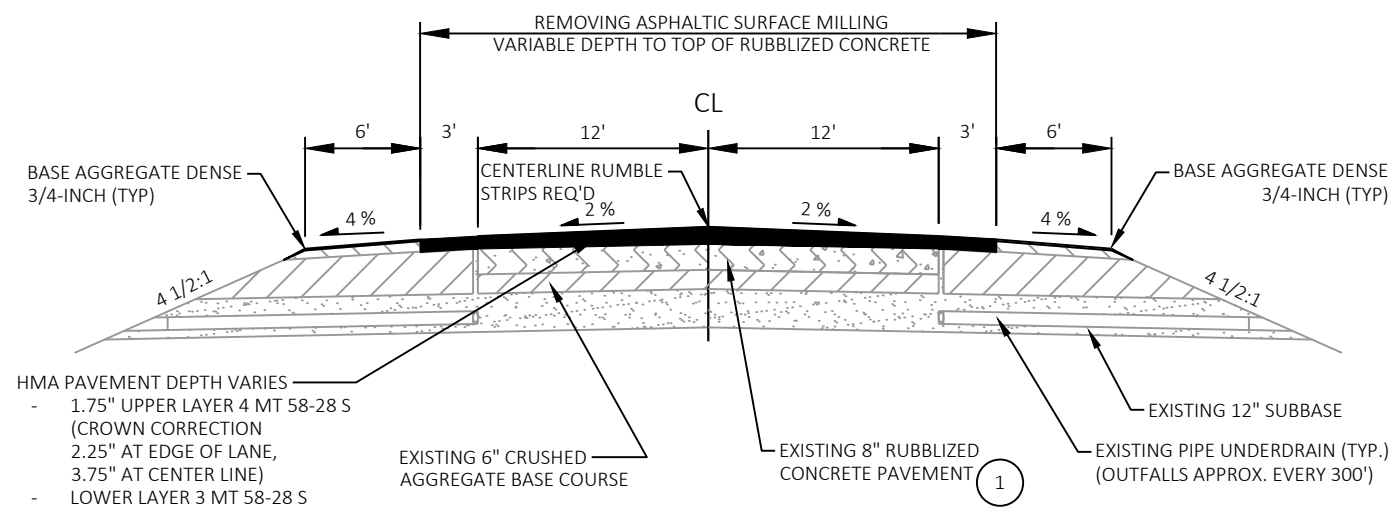
- 1 EXISTING RUBBLIZED CONCRETE
PAVEMENT CROSS-SLOPE VARIES
SEE EXISTING TYPICALS FOR RANGE

* TARGET SLOPE - MAINTAIN
MINIMUM HMA PAVEMENT DEPTH

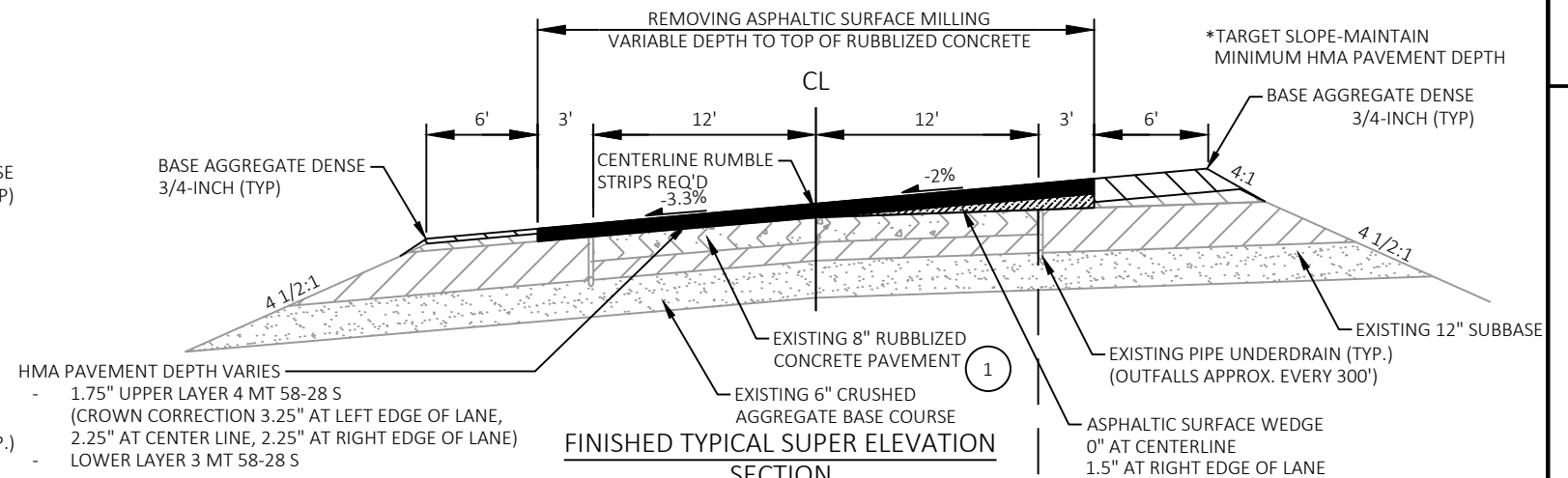


LEGEND

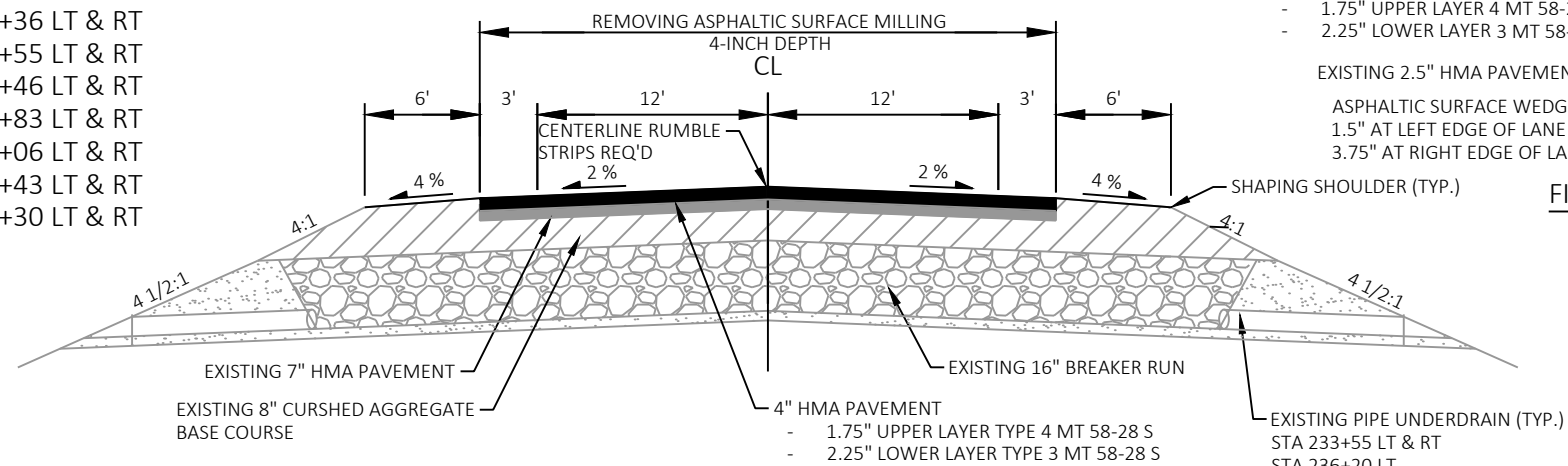
	BASE AGGREGATE DENSE, 3/4-INCH		HMA PAVEMENT
	EXISTING SAND/GRAVEL SUBBASE		RUBBLIZED EXISTING P.C. CONCRETE PAVEMENT
	EXISTING CRUSHED AGGREGATE BASE COURSE (SHOULDER)		PULVERIZED AND RE-LAID PAVEMENT
	EXISTING HMA PAVEMENT		BASE AGGREGATE OPEN GRADED
	EXISTING CRUSHED AGGREGATE BASE COURSE		



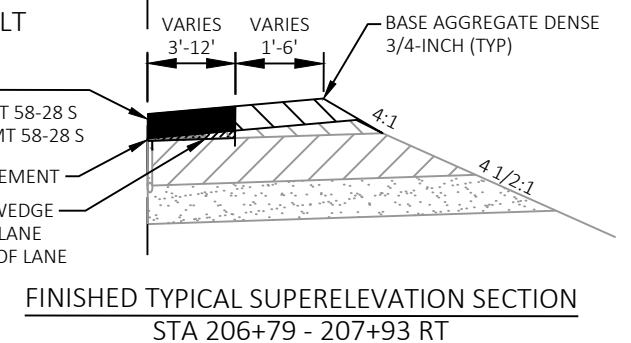
FINISHED TYPICAL SECTION
STA 107+86 - STA 134+62 LT & RT
STA 142+94 - STA 183+40 LT & RT
STA 185+24 - STA 188+13 LT & RT
STA 211+95 - STA 225+36 LT & RT
STA 226+10 - STA 233+55 LT & RT
STA 242+22 - STA 246+46 LT & RT
STA 248+54 - STA 258+83 LT & RT
STA 260+25 - STA 270+06 LT & RT
STA 271+19 - STA 298+43 LT & RT
STA 299+53 - STA 310+30 LT & RT



FINISHED TYPICAL SUPER ELEVATION SECTION
STA 188+13 - STA 206+79 LT & RT
STA 206+79 - 207+93 LT



FINISHED TYPICAL SECTION
STA 233+55 - STA 242+22



FINISHED TYPICAL SUPERELEVATION SECTION
STA 206+79 - 207+93 RT

LEGEND

	HMA PAVEMENT		BASE AGGREGATE DENSE, 3/4-INCH
	EXISTING SAND/GRAVEL SUBBASE		BREAKER RUN
	EXISTING CRUSHED AGGREGATE BASE COURSE (SHOULDER)		PULVERIZED ASPHALTIC PAVEMENT
	EXISTING HMA PAVEMENT		RUBBLIZED EXISTING P.C. CONCRETE PAVEMENT
	EXISTING CRUSHED AGGREGATE BASE COURSE		PULVERIZED AND RE-LAID PAVEMENT
			BASE AGGREGATE OPEN GRADED

NOTES:

1 EXISTING RUBBLIZED CONCRETE PAVEMENT CROSS-SLOPE VARIES SEE EXISTING TYPICALS FOR RANGE

*TARGET SLOPE-MAINTAIN MINIMUM HMA PAVEMENT DEPTH

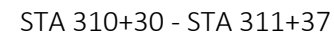
BASE AGGREGATE DENSE 3/4-INCH (TYP)

EXISTING 12" SUBBASE
EXISTING PIPE UNDERDRAIN (TYP.) (OUTFALLS APPROX. EVERY 300')

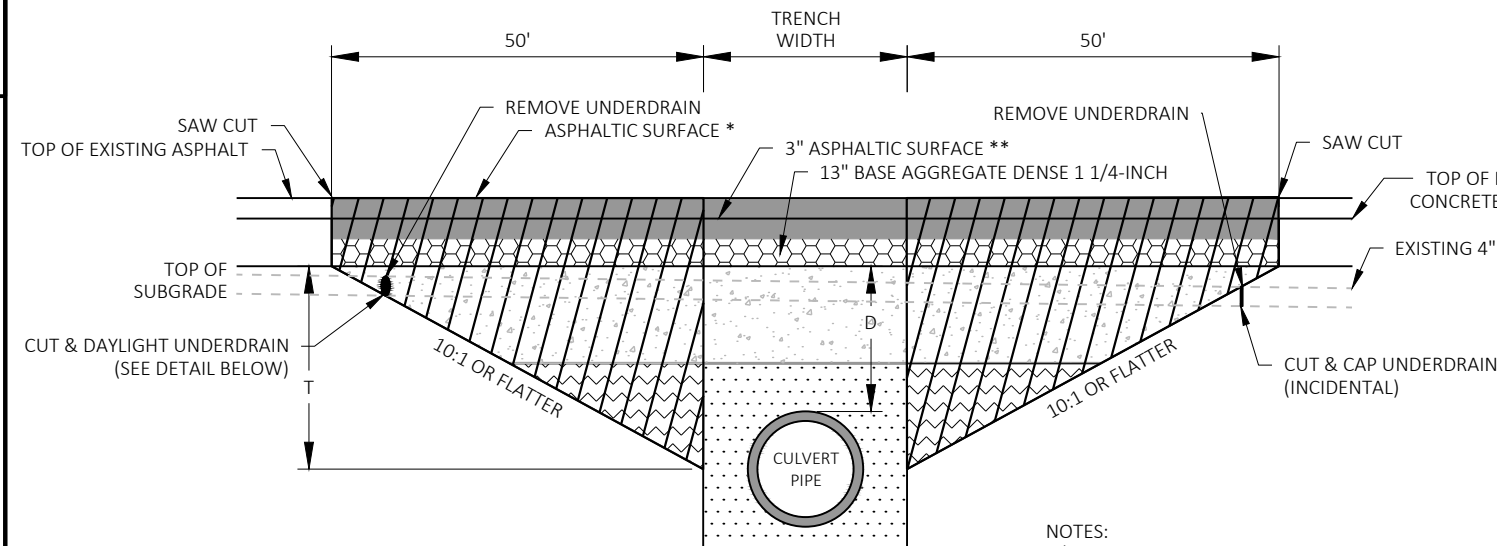
ASPHALTIC SURFACE WEDGE 0" AT CENTERLINE 1.5" AT RIGHT EDGE OF LANE

BASE AGGREGATE DENSE 3/4-INCH (TYP)

2

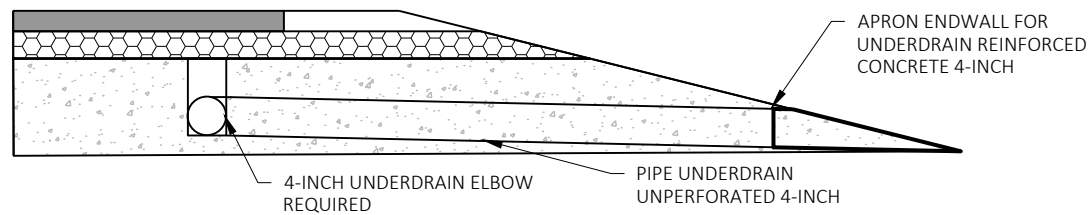


BASE AGGREGATE OPEN
GRADED



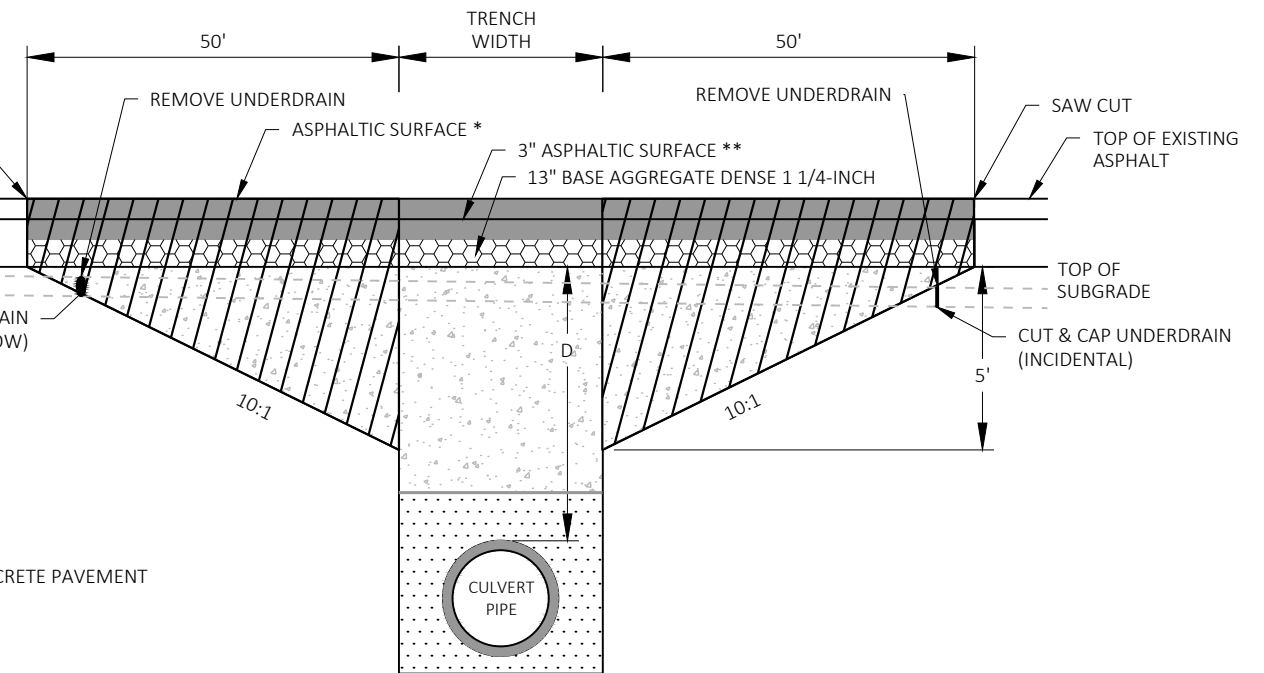
DEPTH D < 6 FT

TRANSITION CUT DEPTH (T) = THE LESSER OF DEPTH TO CENTER OF PIPE OR 5 FT.
DO NOT EXTEND TRANSITION CUT BELOW HORIZONTAL CENTER OF PIPE.

UNDERDRAIN DAYLIGHT DETAIL

KEY

	PROPOSED SURFACE
	PROPOSED BASE
	TRENCH BACKFILL
	TRENCH OR FOUNDATION BACKFILL
	FOUNDATION BACKFILL
	TRANSITION CUT



DEPTH D ≥ 6 FT

NOTES

1. TRANSITION CUT IS PAID AS EXCAVATION COMMON.
2. TRANSITION CUT WIDTH IS FROM EDGE OF SHOULDER TO EDGE OF SHOULDER.
3. BACKFILL THE TRANSITION CUT AREAS WITH FOUNDATION AND TRENCH BACKFILL AS SPECIFIED IN STANDARD SPEC 520.
4. IF EXCAVATED MATERIAL IS DEEMED ACCEPTABLE BY THE ENGINEER, USE AS TRENCH BACKFILL.
5. IF EXCAVATED MATERIAL IS DEEMED UNACCEPTABLE BY THE ENGINEER, USE BACKFILL GRANULAR GRADE AS TRENCH BACKFILL.
6. PERFORM CULVERT PIPE INSTALLATION BEFORE PAVING.

CULVERT PIPE TRANSITION

ROUTE	STA (CL)	DEPTH D (FT)	PIPE DIA (IN)	REMARKS
STH 73	30+64	3.74	36	71073007361
STH 73	60+36	6.50	30	71073007362
STH 73	184+32	3.56	30	71073007368
STH 73	247+51	3.57	60 (2)	71073007370, 71073007371
STH 73	259+53	2.33	36 (2)	71073007372, 71073007459
STH 73	270+63	5.00	72	71073008619 (PIPE REMOVED)
STH 73	298+98	5.85	30	71073008623
STH 73	310+84	2.33	30	71073008624

PROJECT NO: 1520-00-77

HWY: STH 73

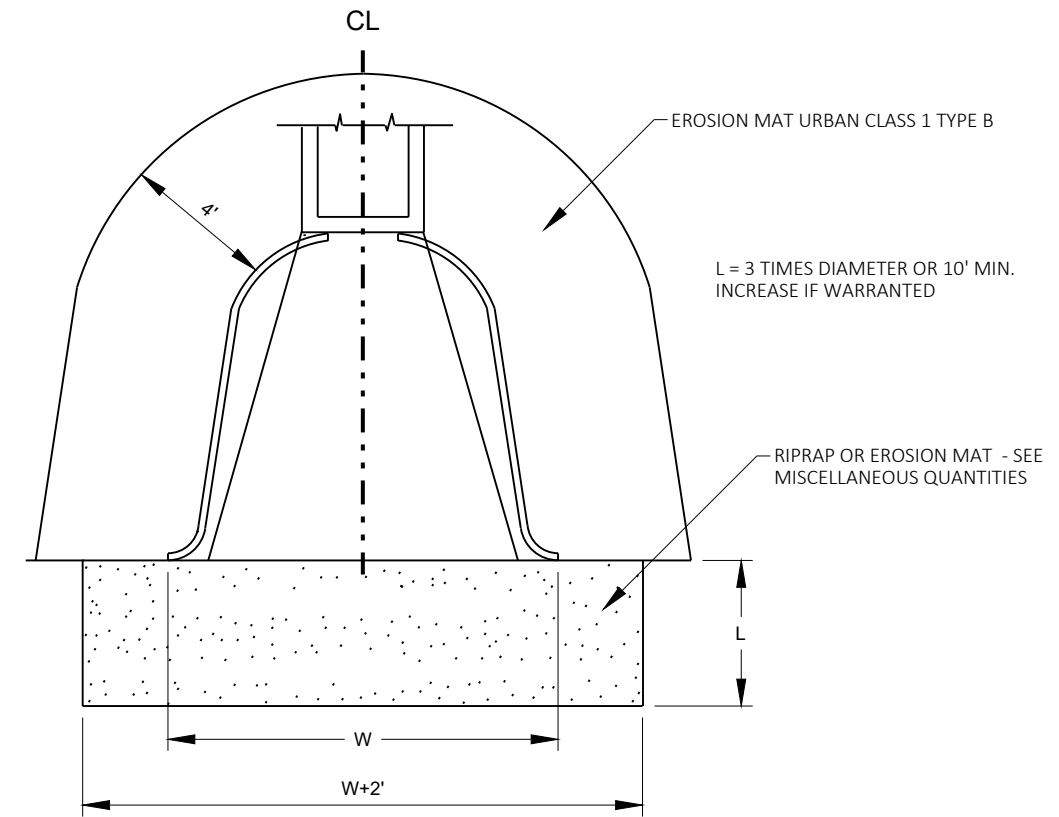
COUNTY: WOOD

CONSTRUCTION DETAILS

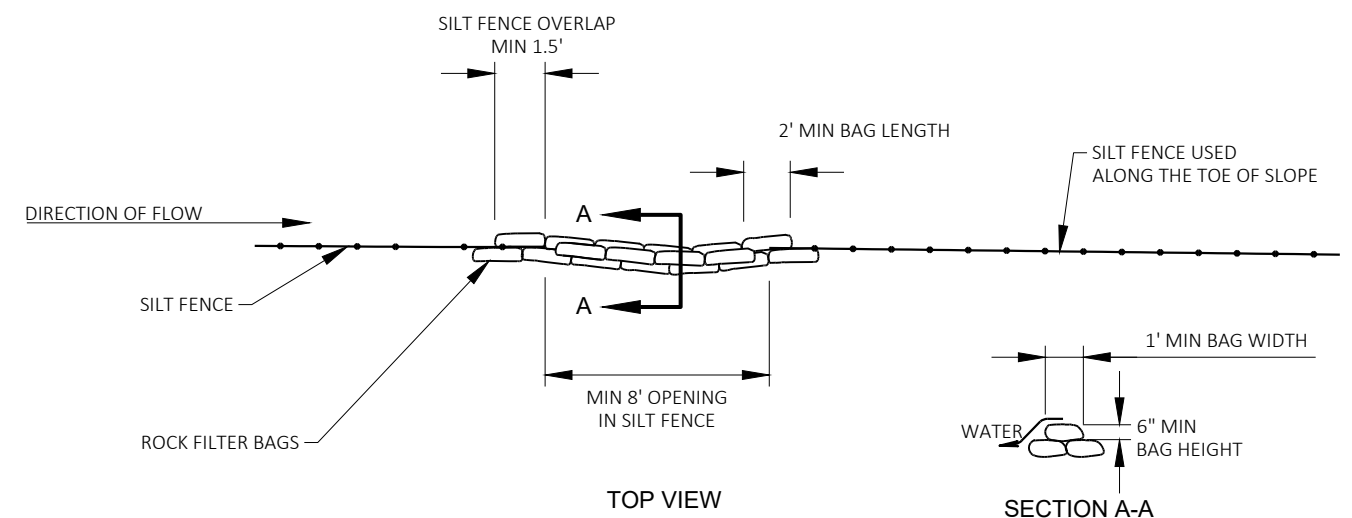
SHEET

14

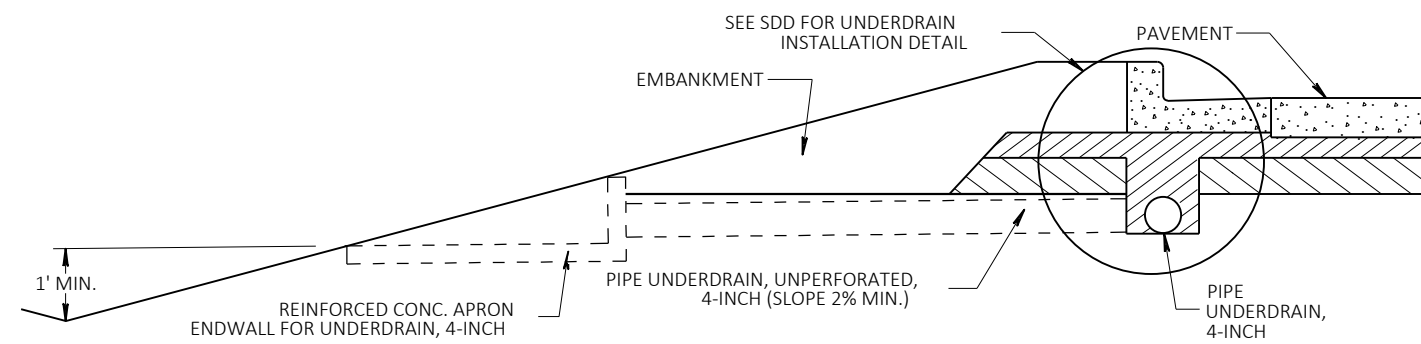
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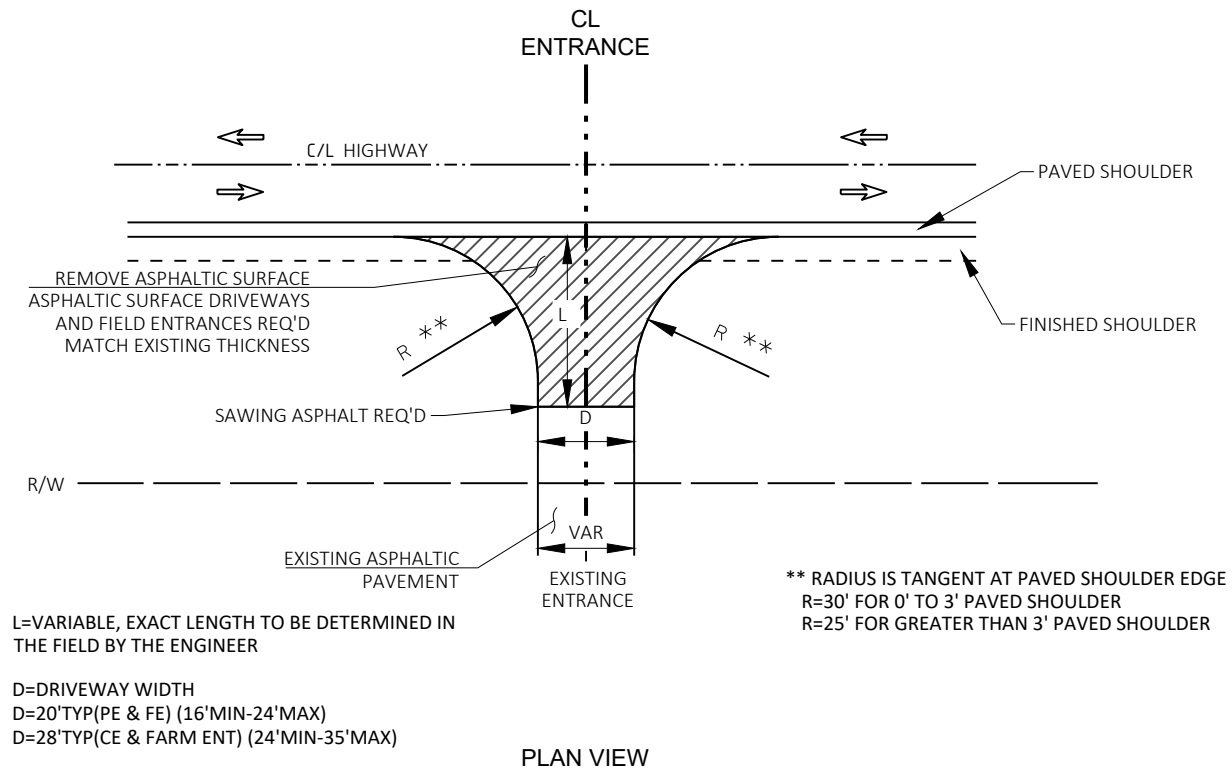
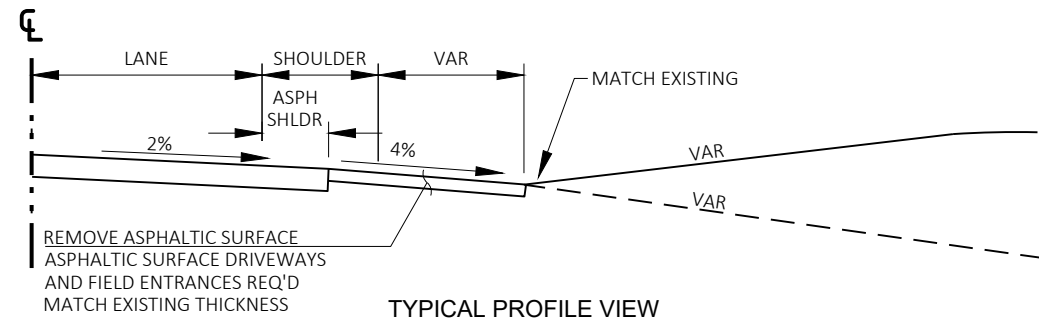
EROSION CONTROL AT PIPE ENDS



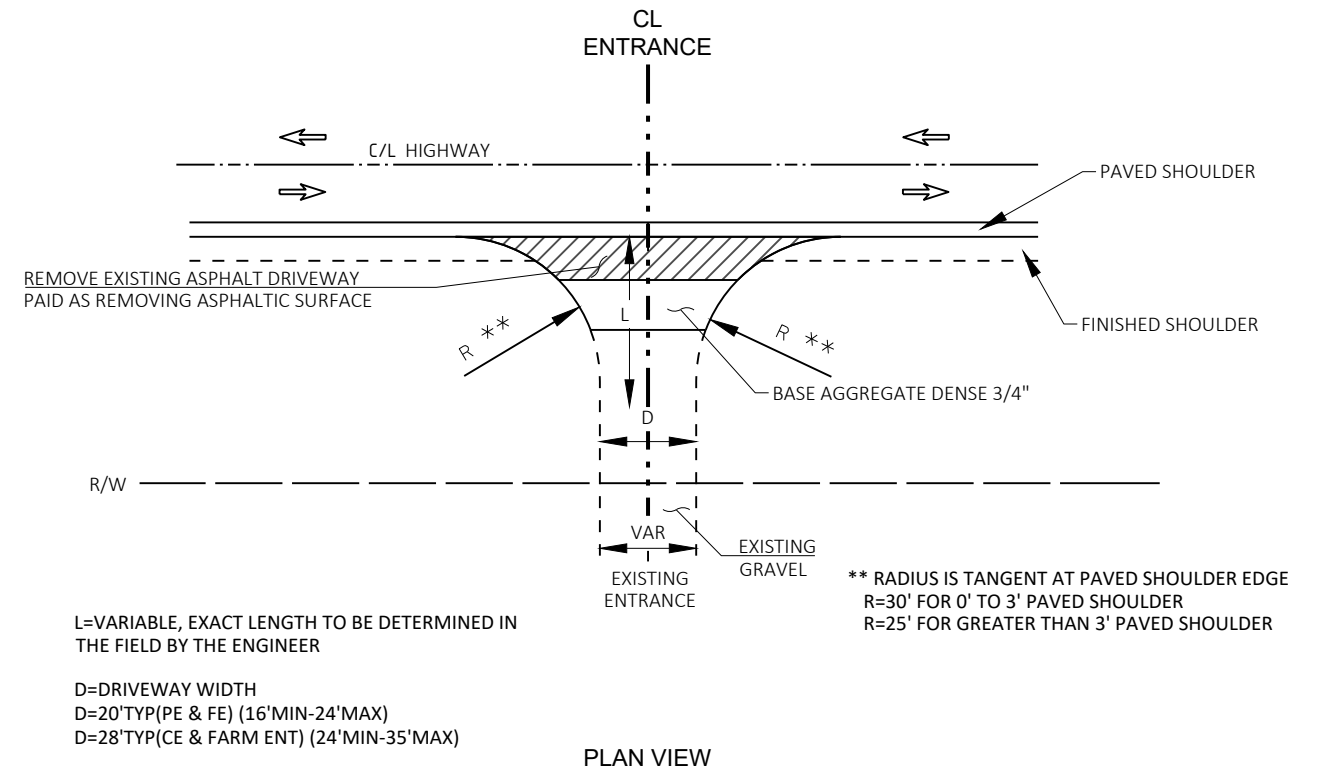
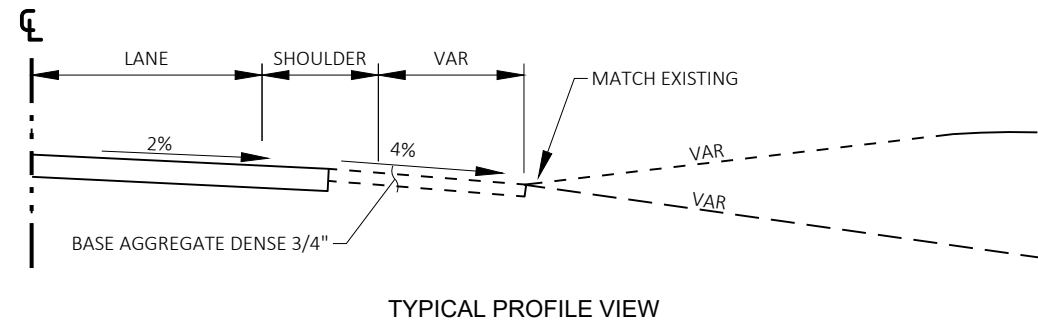
ROCK BAGS USED FOR SILT FENCE RELIEF



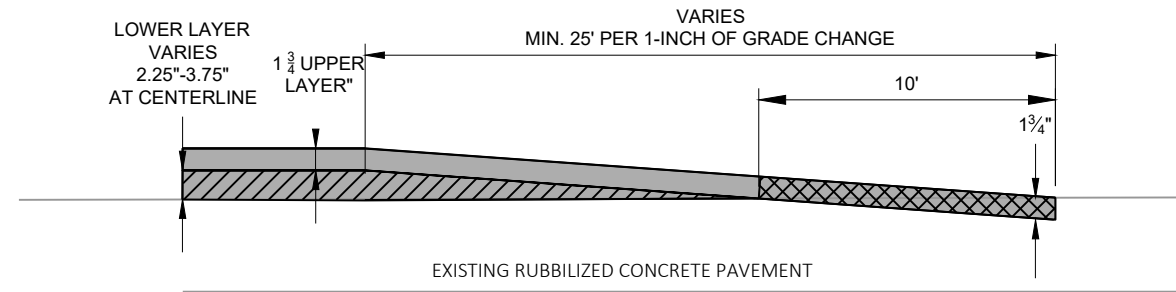
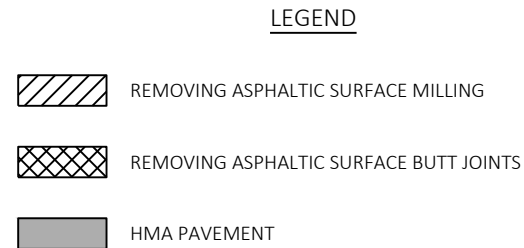
PIPE UNDERDRAIN OUTFALL DETAIL



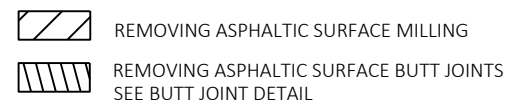
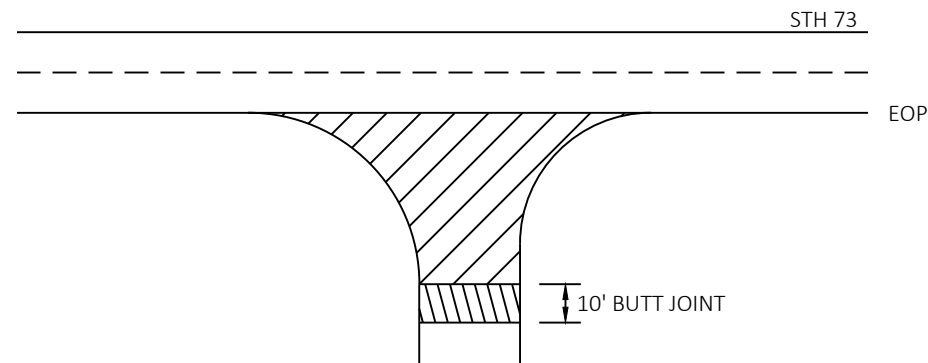
RURAL ASPHALT DRIVEWAY INTERSECTION (PE, FE & CE)
(FOR RESURFACING PROJECTS WITH PROFILE CHANGE)



RURAL GRAVEL DRIVEWAY INTERSECTION (PE, FE & CE)
(FOR RESURFACING PROJECTS WITH PROFILE CHANGE)

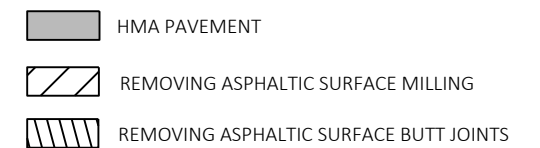
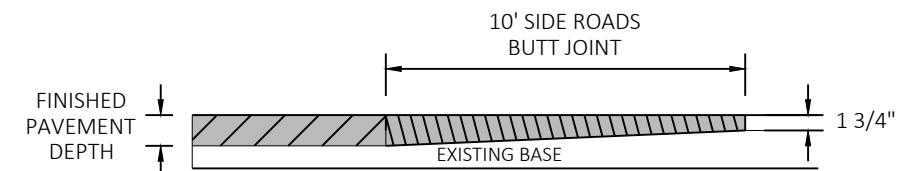


PROFILE TRANSITION
MAINLINE



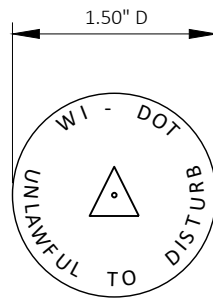
NOTE: WHEN MATCHING TO AN UNPAVED SURFACE
BUTT JOINT IS NOT REQUIRED

ASPHALT SIDE ROADS



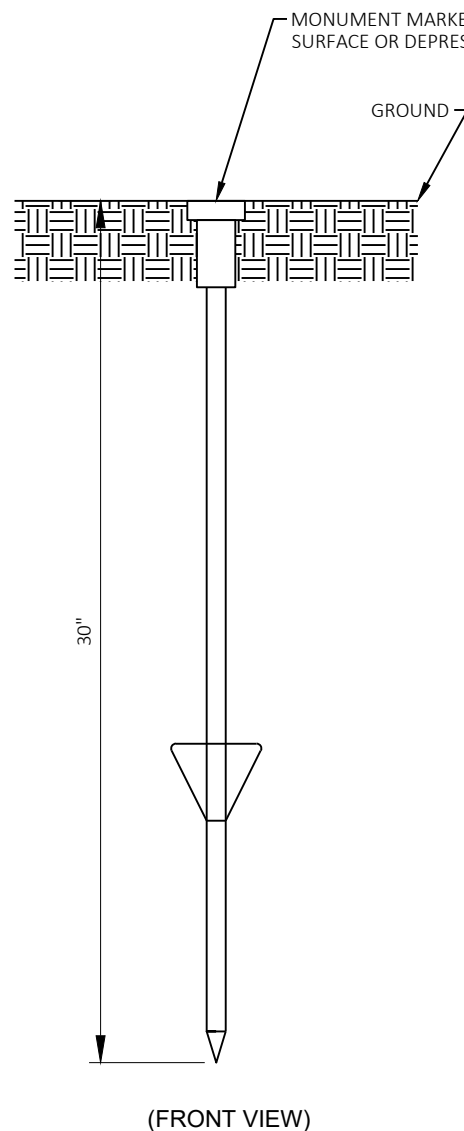
BUTT JOINT

SIDE ROADS

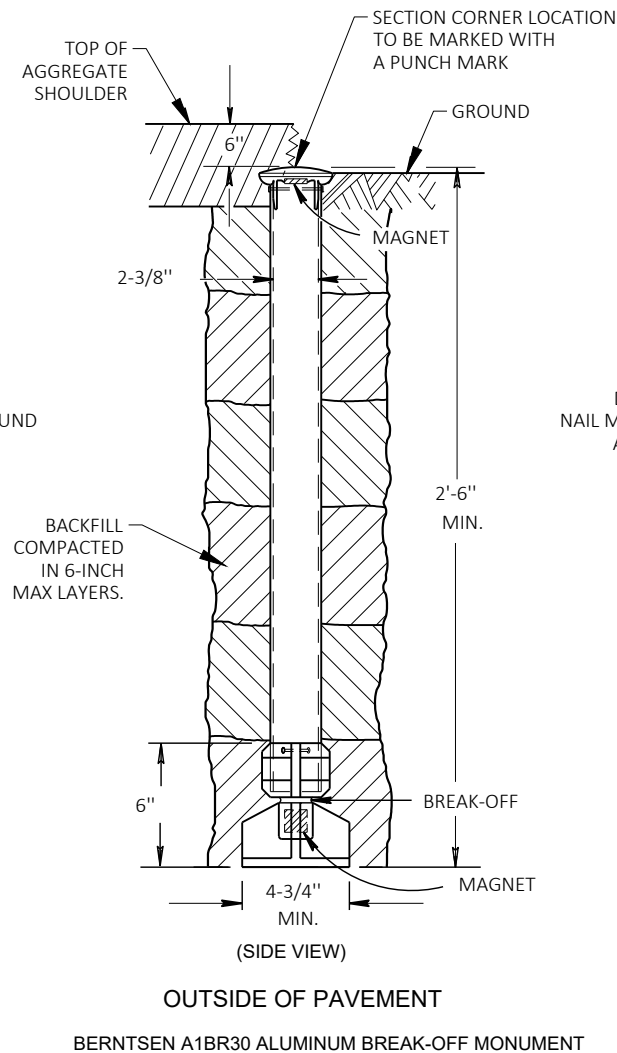


WIS DOT MONUMENT CAP MARKER LOGO (SSDR130)

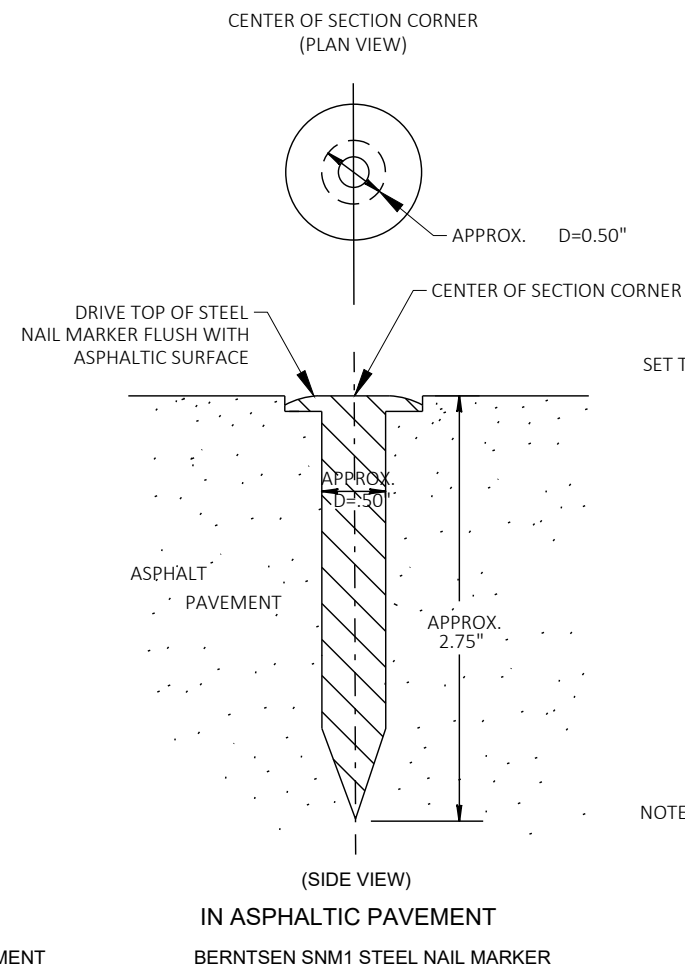
CONTRACTOR TO ORDER LANDMARK REFERENCE MONUMENTS WITH THE ABOVE STAMPING



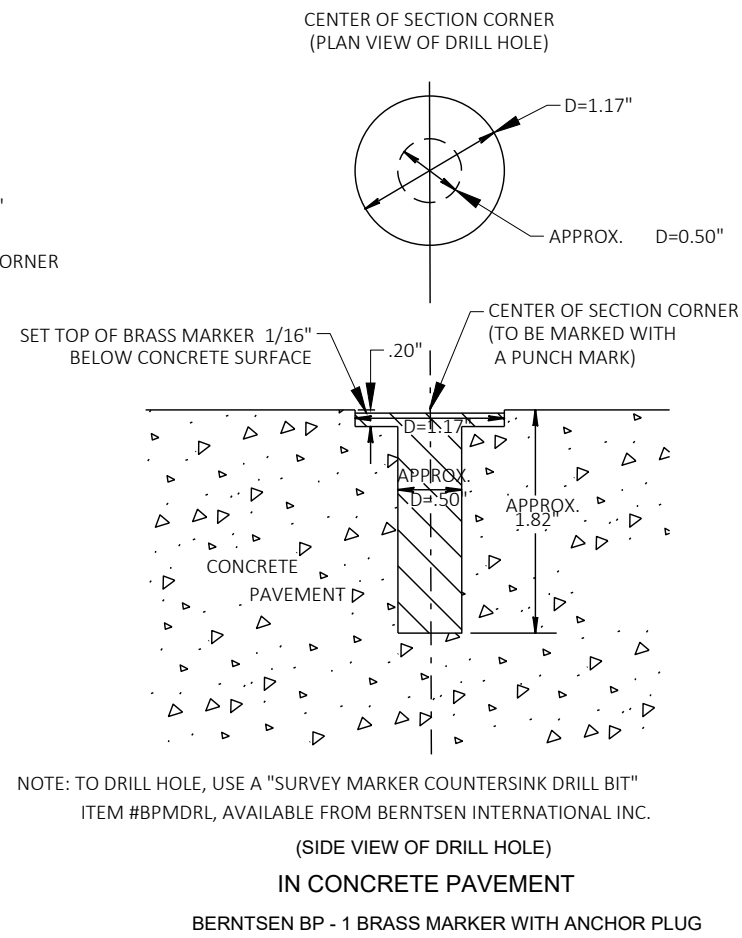
BERNSTEN DRIVABLE MONUMENT SSDR130
LANDMARK REFERENCE MONUMENT (TIES ONLY)



BERNTSEN A1BR30 ALUMINUM BREAK-OFF MONUMENT
(SIDE VIEW)
OUTSIDE OF PAVEMENT



BERNTSEN SNM1 STEEL NAIL MARKER
(SIDE VIEW)
IN ASPHALTIC PAVEMENT



BERNTSEN BP - 1 BRASS MARKER WITH ANCHOR PLUG
(SIDE VIEW OF DRILL HOLE)
IN CONCRETE PAVEMENT

SECTION CORNER MONUMENTS

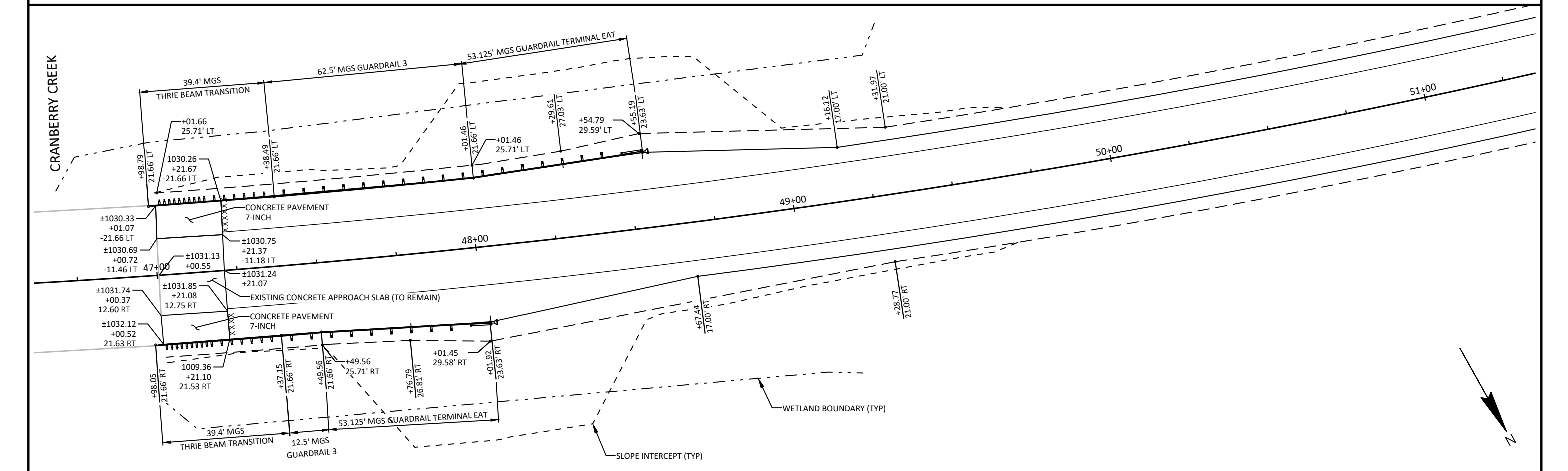
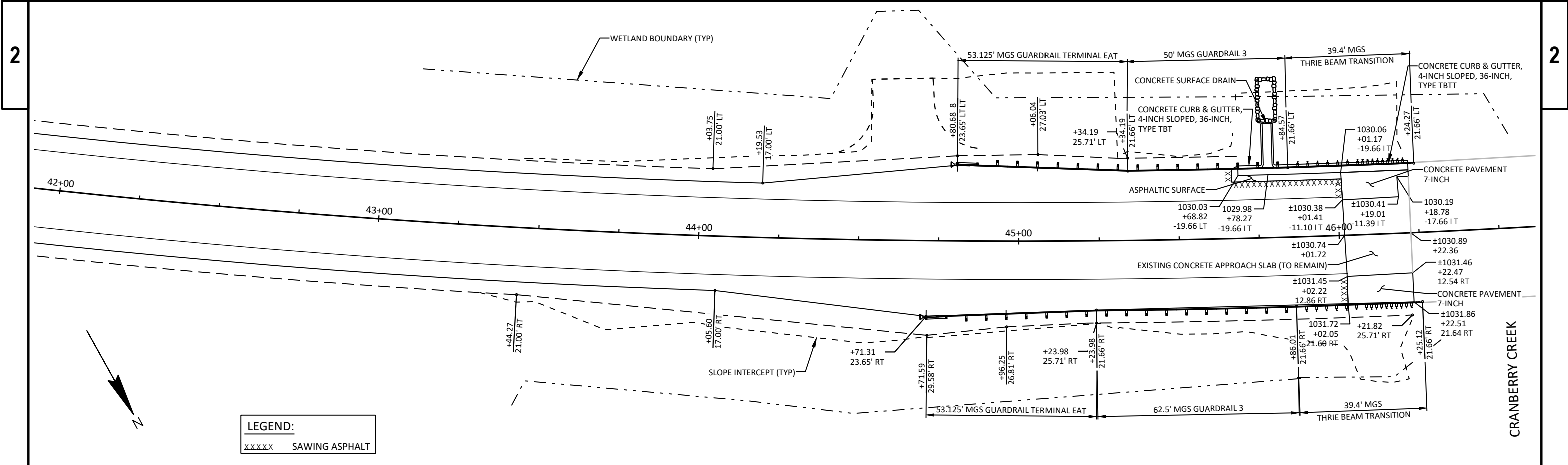
GENERAL NOTES

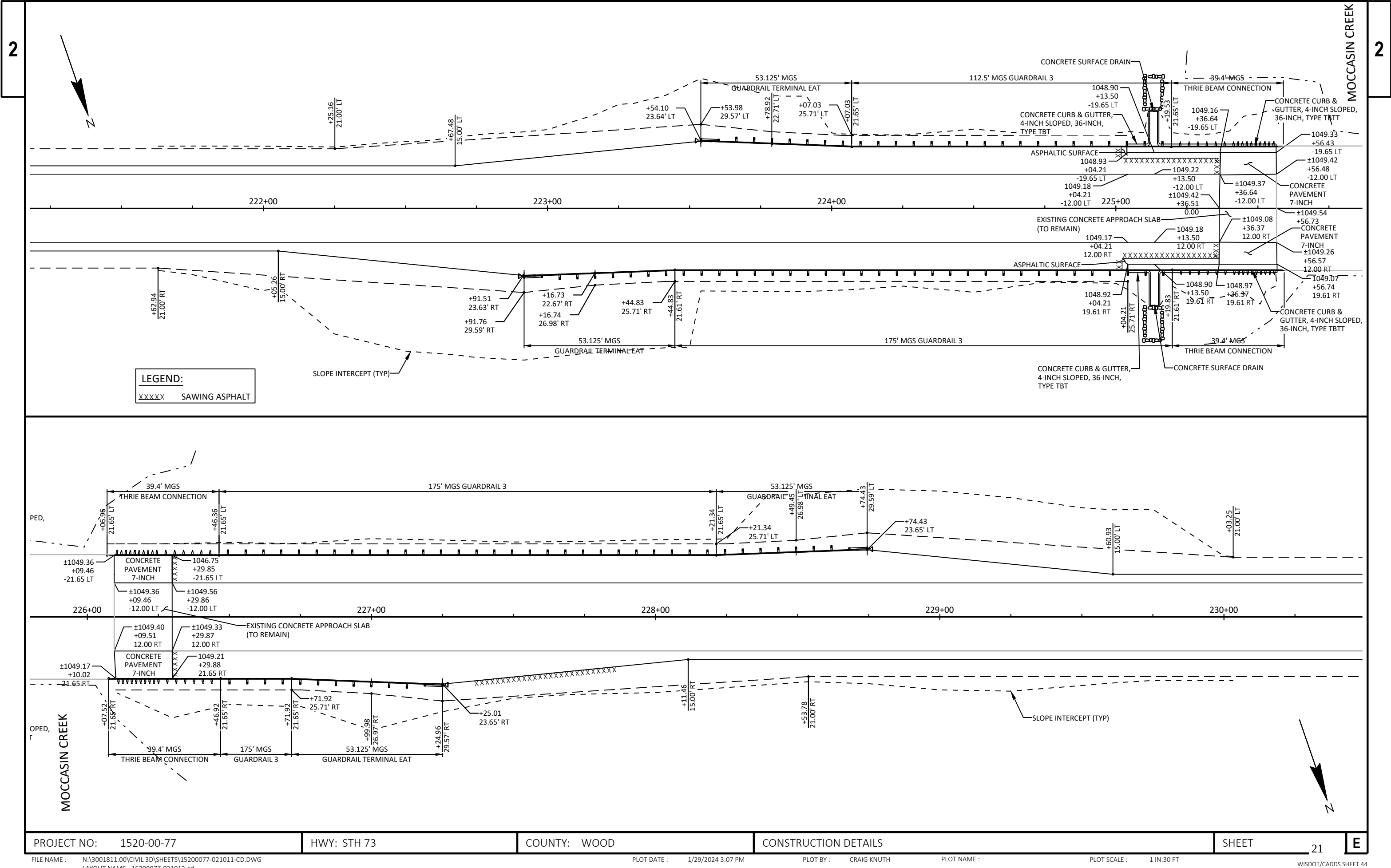
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

LOCATE LANDMARK REFERENCE MONUMENTS OUTSIDE THE CONSTRUCTION LIMITS AND WITHIN WISDOT RIGHT OF WAY. LOCATION TO BE APPROVED BY THE ENGINEER.

CONTRACTOR WILL SUPPLY ALL REQUIRED SURVEY MONUMENTS.

SECTION CORNER MONUMENT AND LANDMARK REFERENCE MONUMENT DETAIL





2



LEGEND:



CURB RAMP TYPE



POINT NUMBER AND ELEVATION

LEGEND:

AS-3 ASPHALTIC SURFACE, 3" OVER 9" BASE AGGREGATE DENSE 3/4-INCH

CG-30A CONCRETE CURB & GUTTER, 30-INCH, TYPE A

CS-6 CONCRETE SIDEWALK, 6-INCH OVER 4" BASE AGGREGATE SENSE 3/4-INCH

LL LEVEL LANDING

WFR-Y DETECTABLE WARNING FIELD, RADIAL, YELLOW

NOTES:

1. CONTRACTOR TO FIELD VERIFY ELEVATION, GRADES, SLOPES, LENGTHS AND MATCH POINTS PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION
2. THE ENGINEER MAY ADJUST ELEVATIONS TO FIT FIELD CONSTRUCTION.
3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS
4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS
5. ALL STATION AND OFFSET INFORMATION REFERENCE STH 73 R/L

DETECTABLE WARNING FIELD DATA

BACK OF CURB RADIUS	LANDING LENGTH	AREA SQ FT	RADIAL LONG CHORD
69.5'	13.14'	20.48'	9.77'

Industrial Street NW					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
01	3+54.16	38.93' RT	1017.25	455639.12	718833.64
02	3+61.71	33.86' RT	1017.37	455642.16	718825.07
03	3+69.58	29.89' RT	1017.49	455646.11	718817.19
04	3+58.48	38.87' RT	1017.22	455642.55	718831.02
05	3+66.93	33.89' RT	1017.36	455646.37	718821.98
06	3+56.04	40.64' RT	1017.61	455641.64	718833.90
07	3+69.66	32.58' RT	1017.90	455647.78	718819.31
08	3+71.63	33.90' RT	1017.40	455650.15	718819.19
09	3+62.10	38.88' RT	1017.26	455645.46	718828.87
10	3+71.62	38.90' RT	1017.35	455653.12	718823.22
11	3+77.63	33.92' RT	1017.82	455654.97	718815.63
12	3+77.62	38.92' RT	1017.77	455657.95	718819.65
13	3+82.62	38.93' RT	1017.82	455661.97	718816.68
14	3+82.63	33.93' RT	1017.87	455659.00	718812.66
15	3+71.23	29.20' RT	1017.52	455647.02	718815.66
16	3+71.97	31.07' RT	1017.50	455648.74	718816.72
17	3+52.63	40.14' RT	1017.30	455638.61	718835.52
18	3+53.90	41.69' RT	1017.35	455640.55	718836.01

EXISTING R/W

PAVED NON-TRAVERSABLE FLARE (TYP)

1017.90
+96.86
38.97 RT

AS-3

13
1017.8212
1017.7710
1017.3509
1017.2618
1017.3517
1017.3001
1017.25

4B1

04
1017.22

CG-30A

1017.88
+39.40
29.00 RT1017.88
+17.48
29.00 RT14
1017.8711
1017.8208
1017.4016
1017.5015
1017.5205
1017.3607
1017.9003
1017.4902
1017.37SEE PAVING DETAIL FOR ADJACENT
PAVEMENT REPLACEMENT

STH 73

4+00
00+43+00
00+3

PROJECT NO: 1520-00-77

HWY: STH 73

COUNTY: WOOD

CURB RAMP DETAIL - INDUSTRIAL - NE

SHEET

23

E

FILE NAME: N:\3001811.00\CIVIL 3D\SHEETS\15200077-021301-CR.DWG
LAYOUT NAME - 15200077-021301-cr

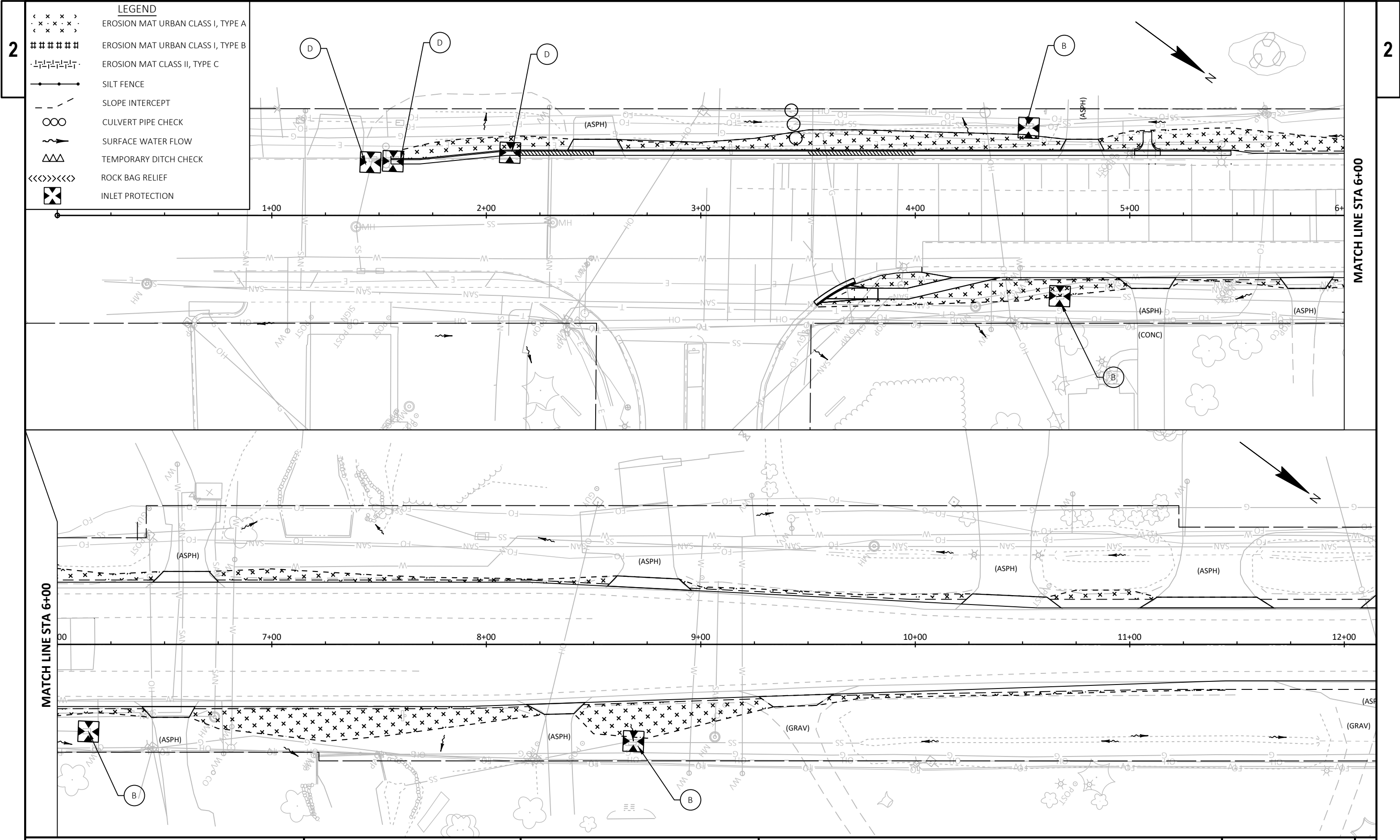
PLOT DATE: 5/21/2024 4:17 PM

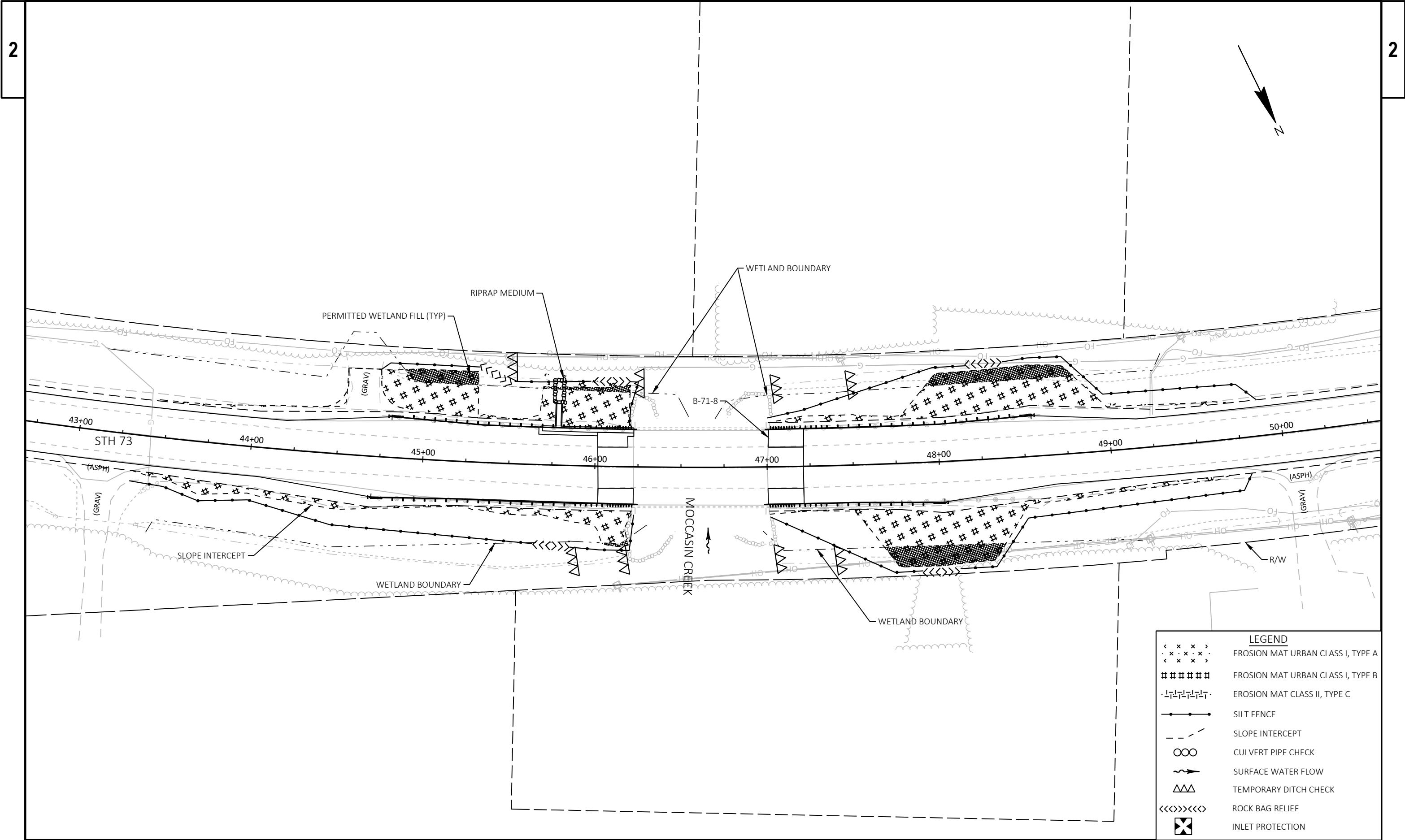
PLOT BY: CRAIG KNUTH

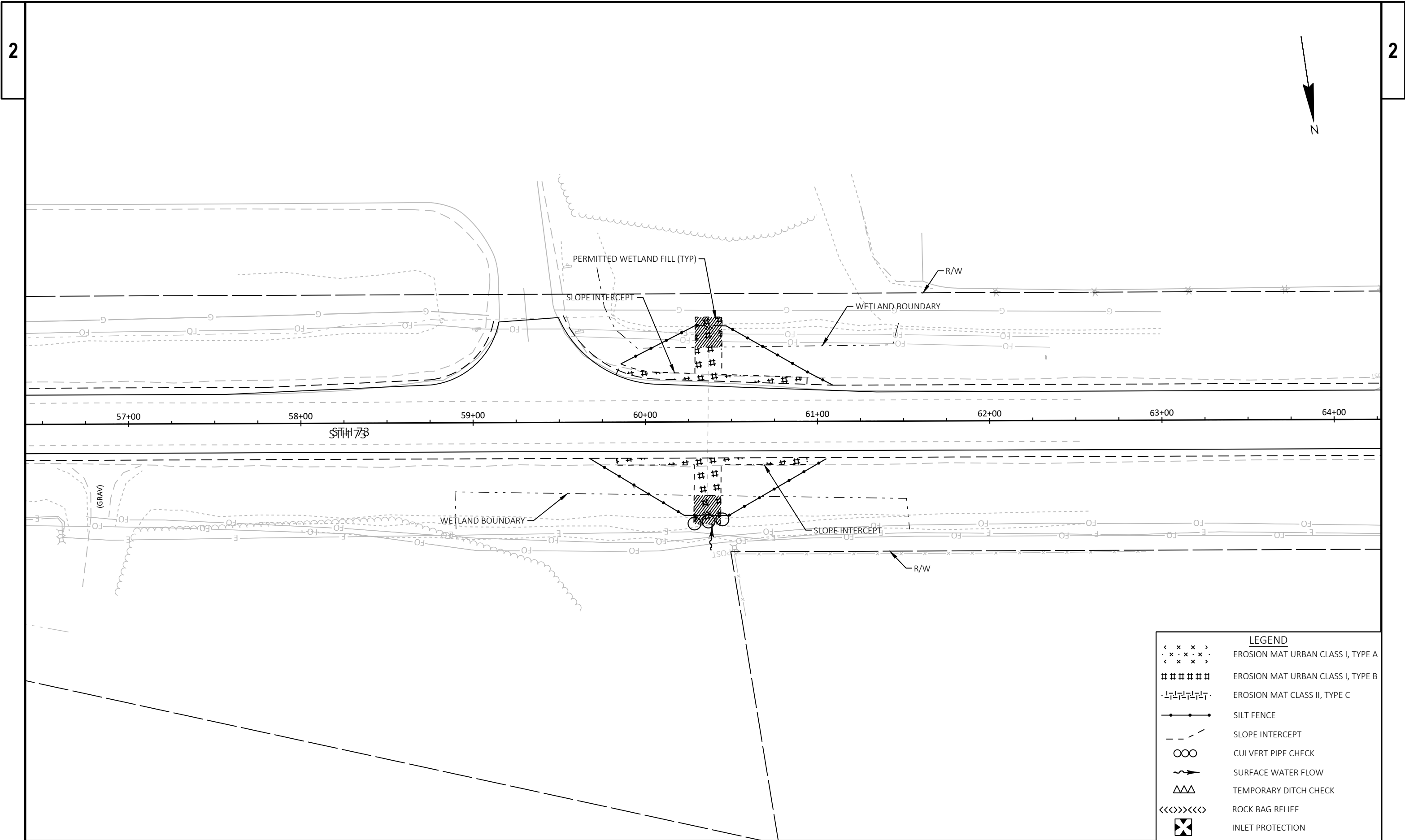
PLOT NAME:

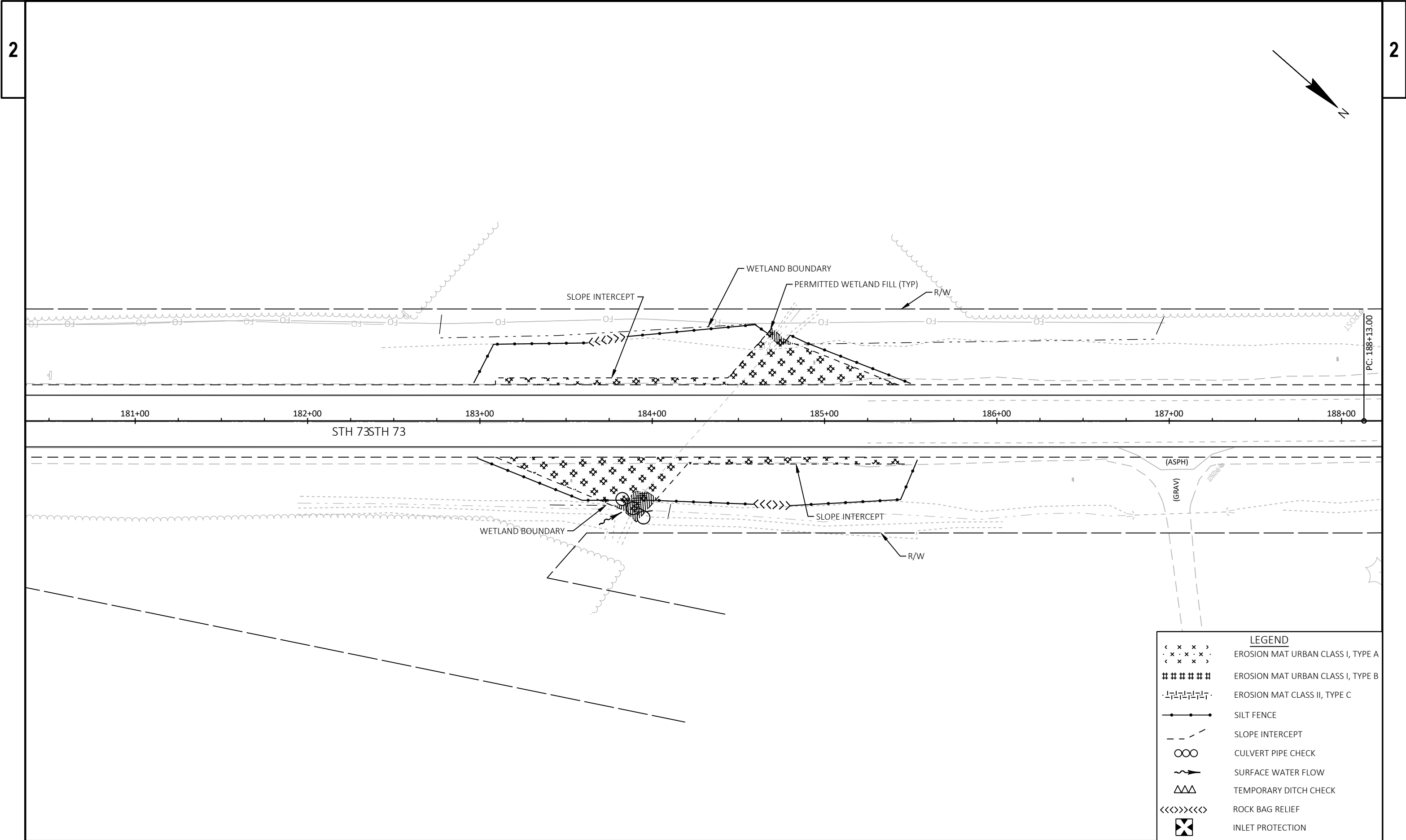
PLOT SCALE: 1 IN:10 FT

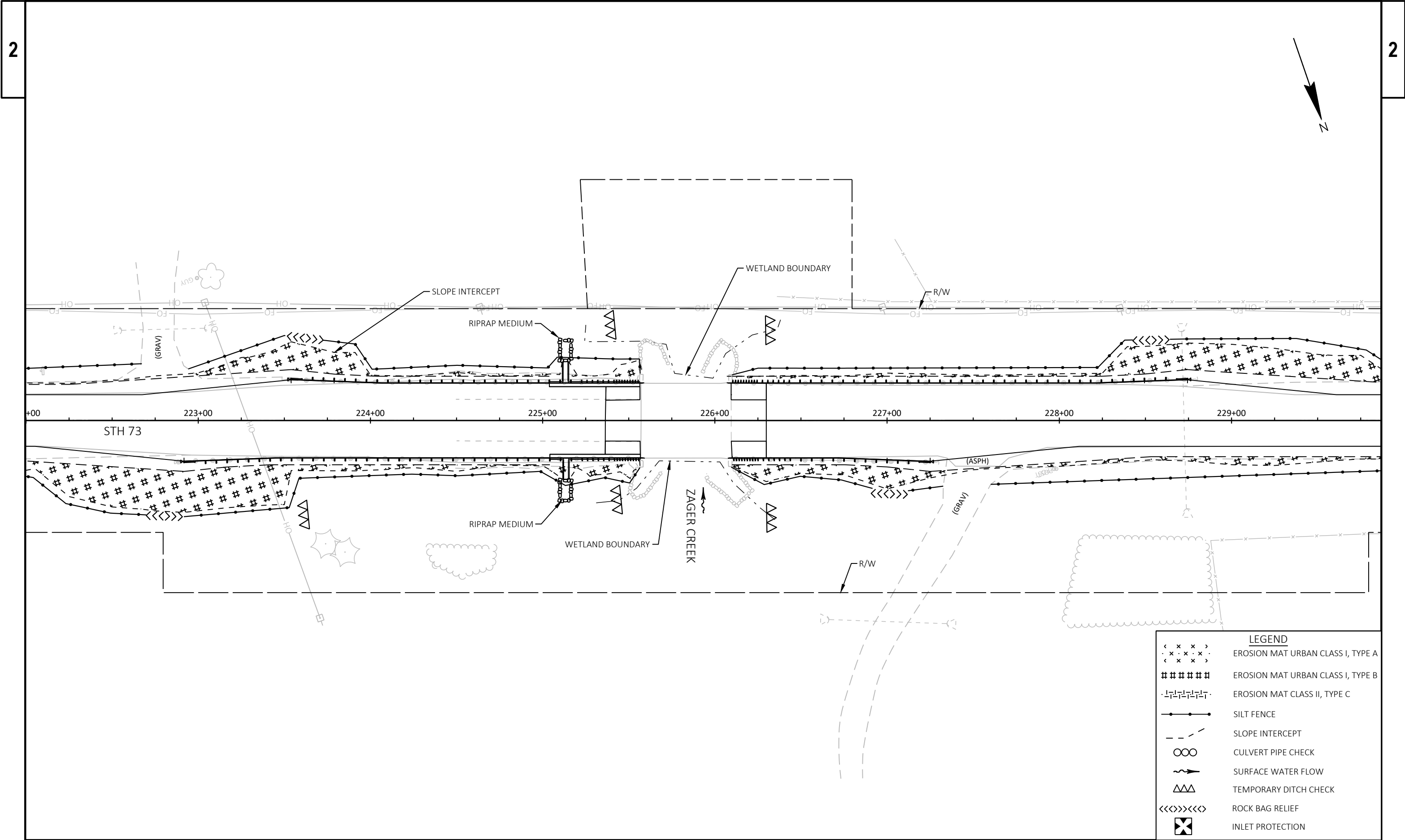
WISDOT/CADDs SHEET 42

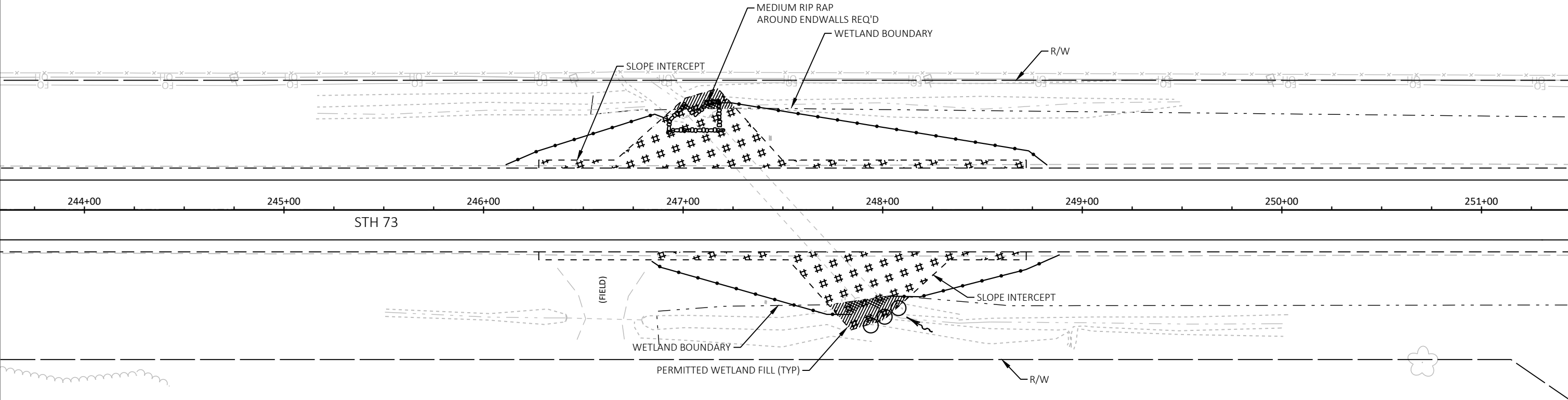




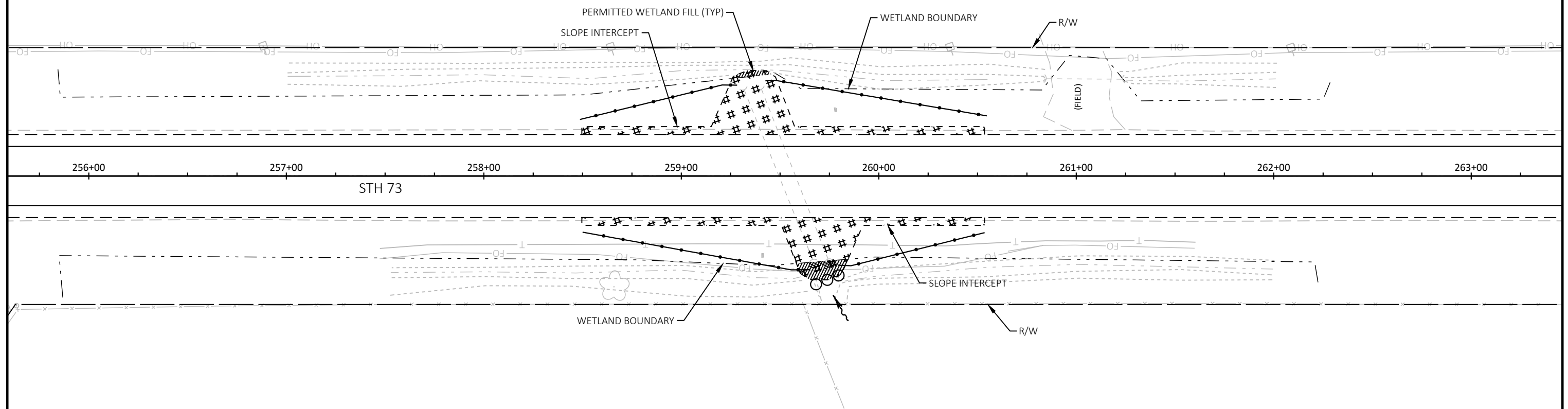




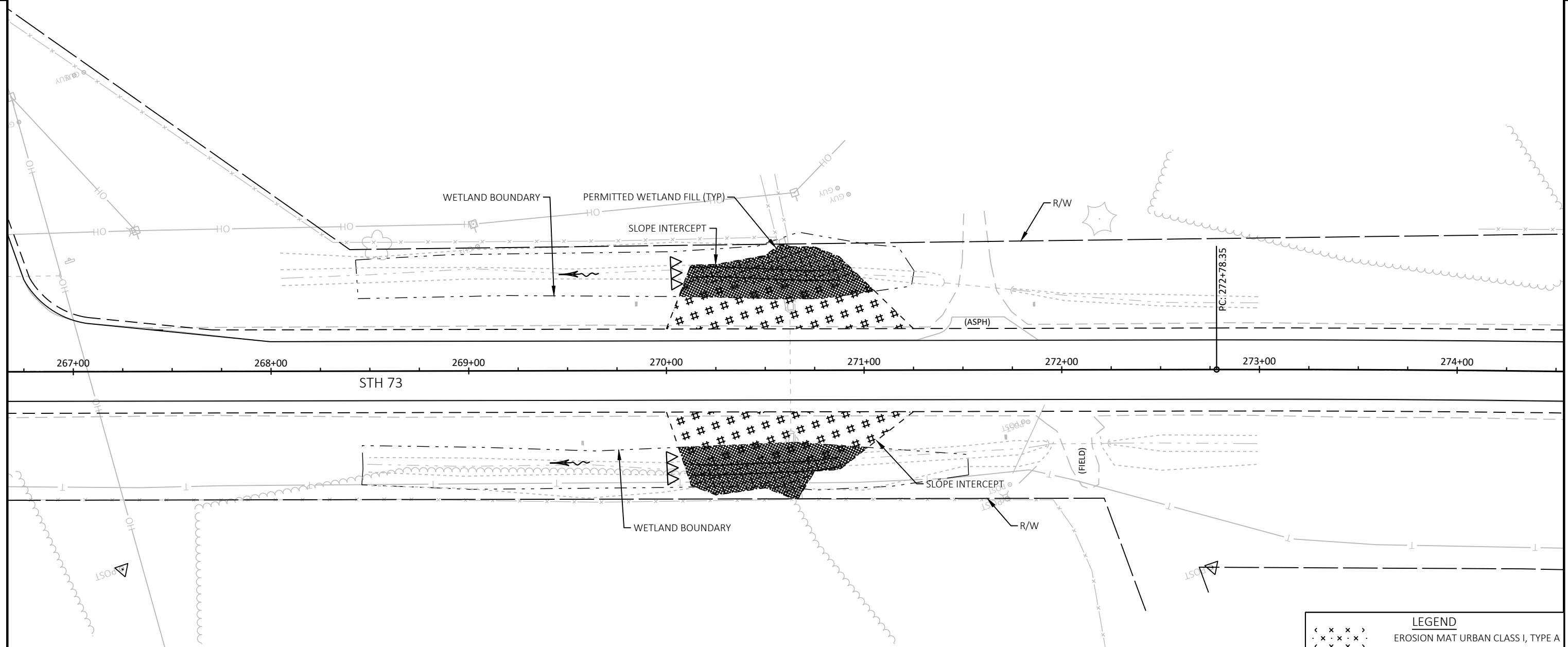




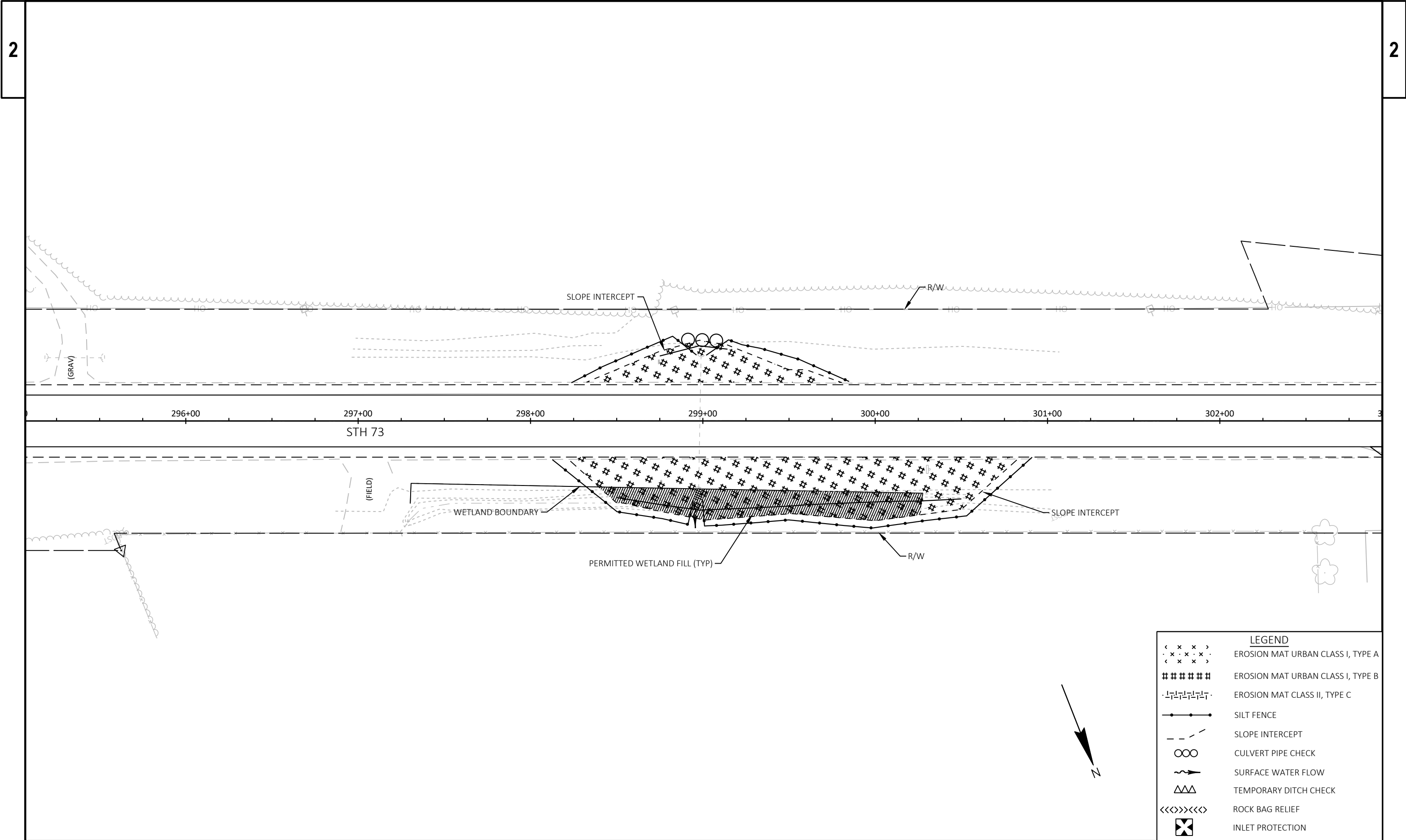
LEGEND	
	EROSION MAT URBAN CLASS I, TYPE A
	EROSION MAT URBAN CLASS I, TYPE B
	EROSION MAT CLASS II, TYPE C
	SILT FENCE
	SLOPE INTERCEPT
	CULVERT PIPE CHECK
	SURFACE WATER FLOW
	TEMPORARY DITCH CHECK
	ROCK BAG RELIEF
	INLET PROTECTION

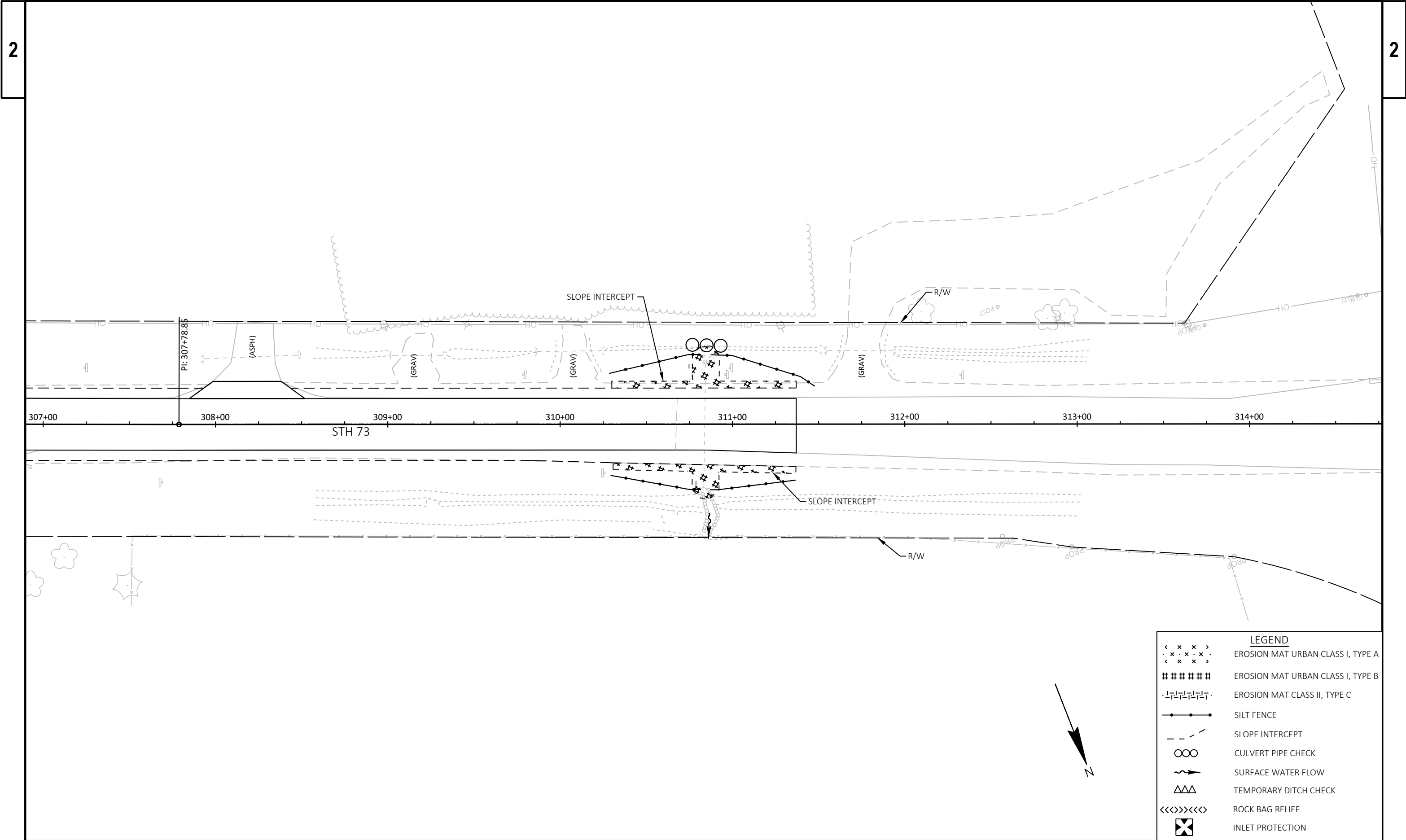


LEGEND	
< x x x >	EROSION MAT URBAN CLASS I, TYPE A
. x . x .	EROSION MAT URBAN CLASS I, TYPE B
#####	EROSION MAT CLASS II, TYPE C
· 1 1 1 1 1 ·	SILT FENCE
- - -	SLOPE INTERCEPT
oo	CULVERT PIPE CHECK
~ ~ ~	SURFACE WATER FLOW
△△△	TEMPORARY DITCH CHECK
<<<>>><<>	ROCK BAG RELIEF
⊗	INLET PROTECTION

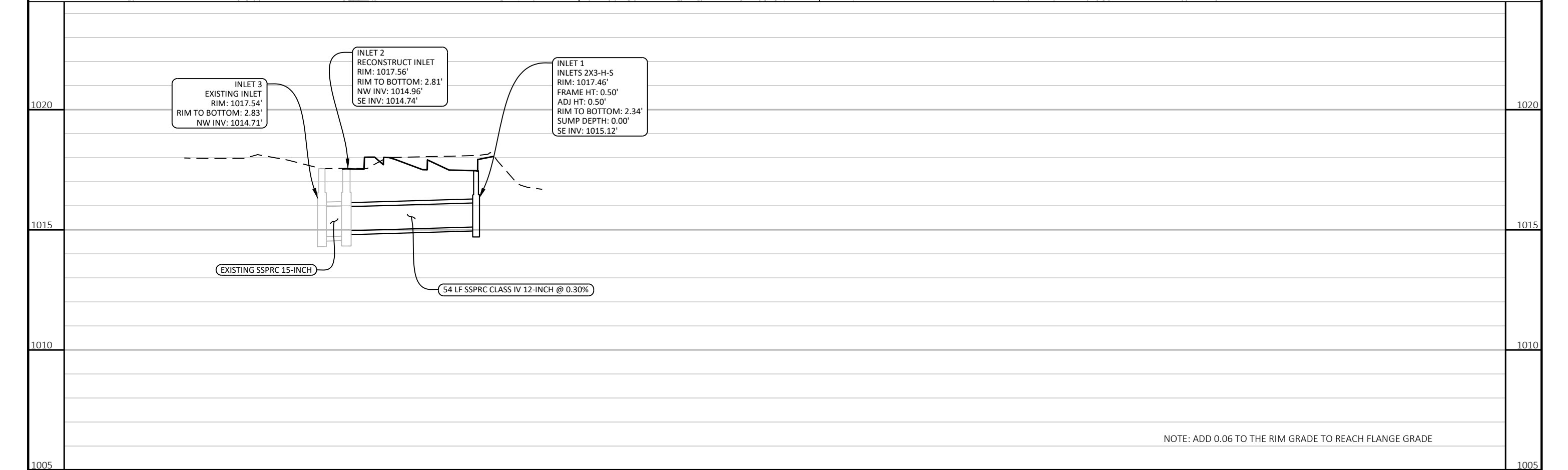
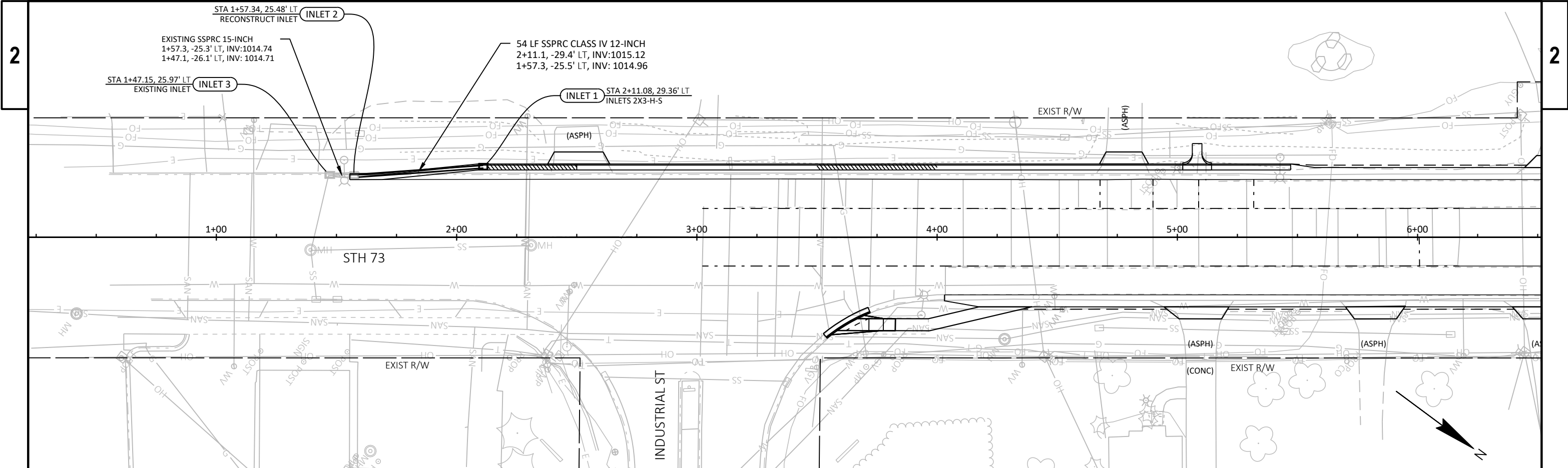


LEGEND	
	EROSION MAT URBAN CLASS I, TYPE A
	EROSION MAT URBAN CLASS I, TYPE B
	EROSION MAT CLASS II, TYPE C
	SILT FENCE
	SLOPE INTERCEPT
	CULVERT PIPE CHECK
	SURFACE WATER FLOW
	TEMPORARY DITCH CHECK
	ROCK BAG RELIEF
	INLET PROTECTION

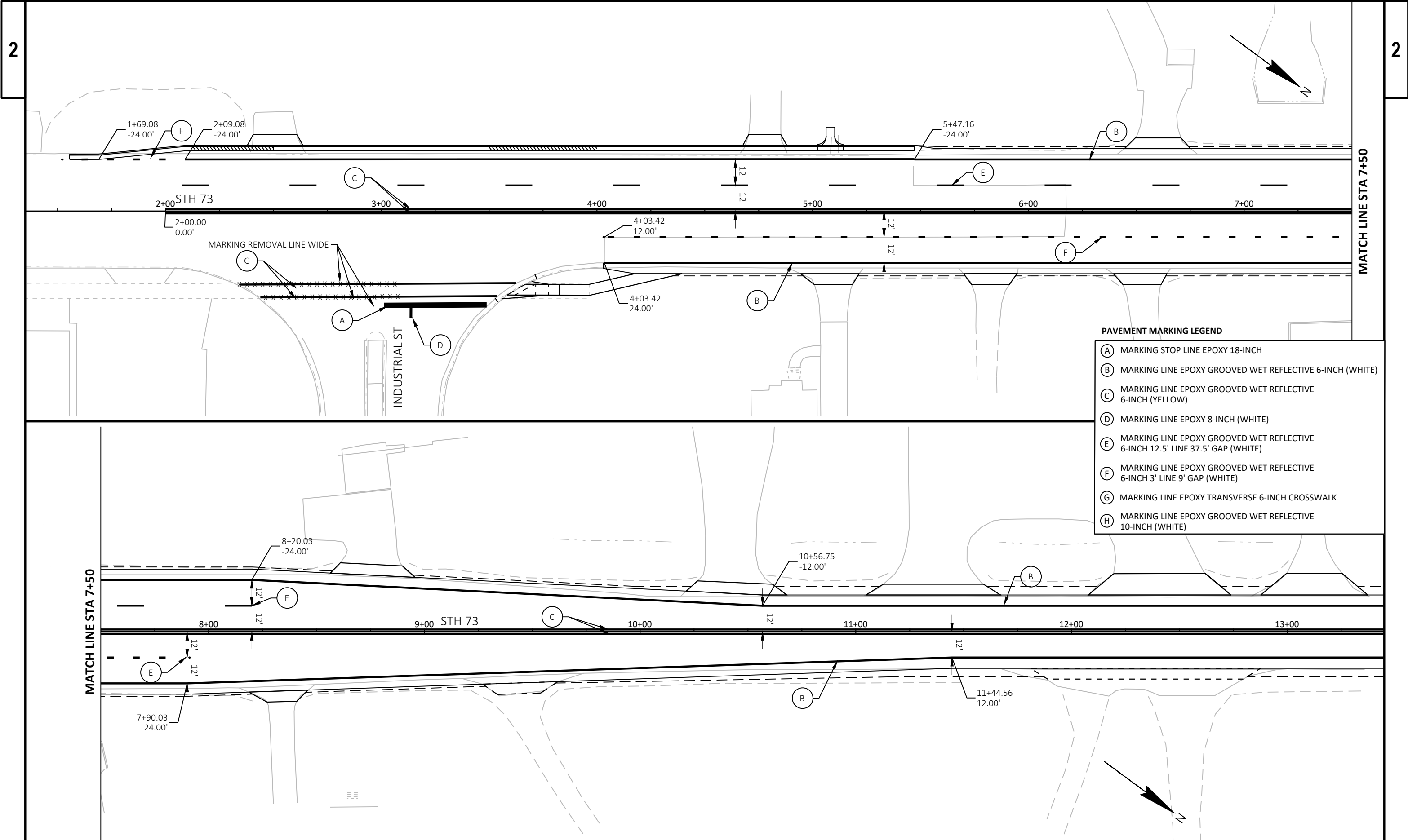




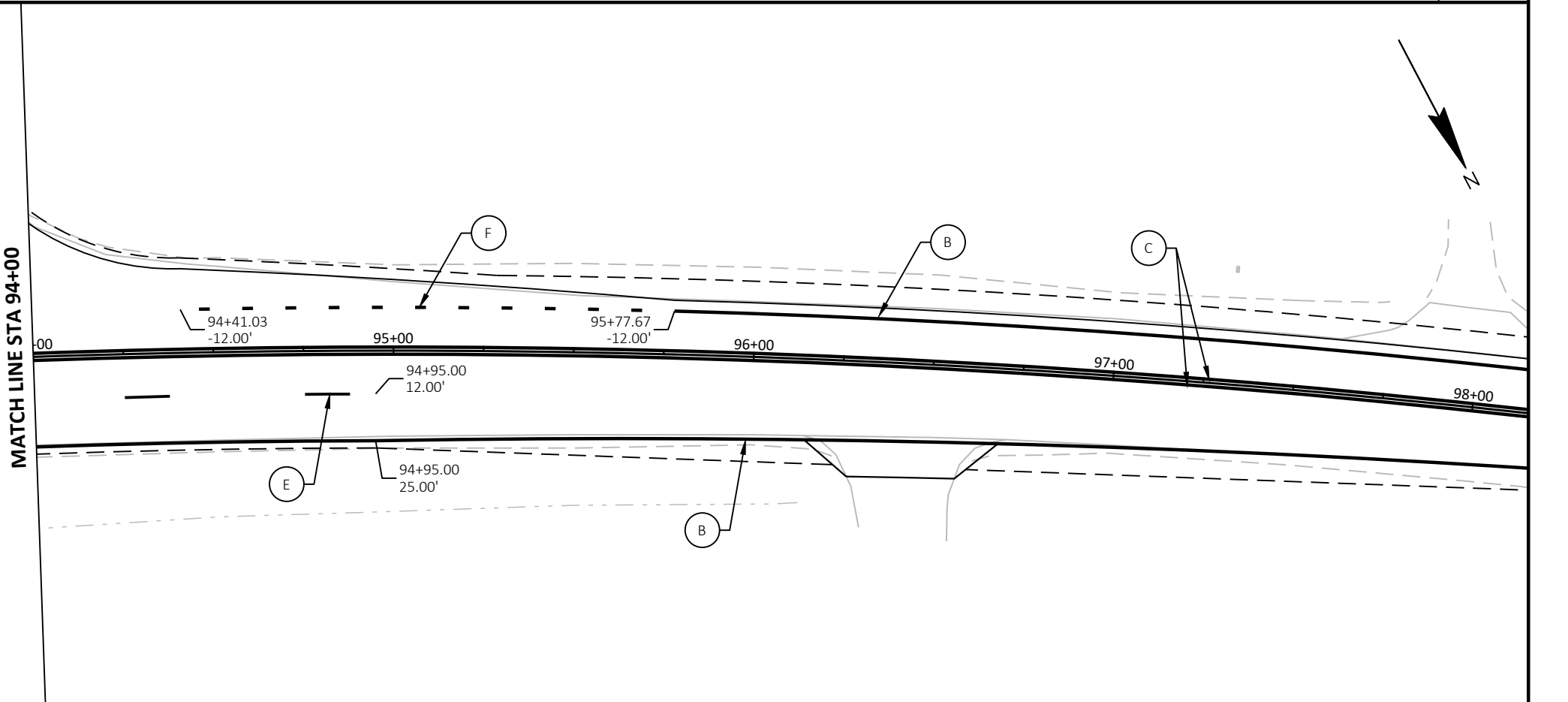
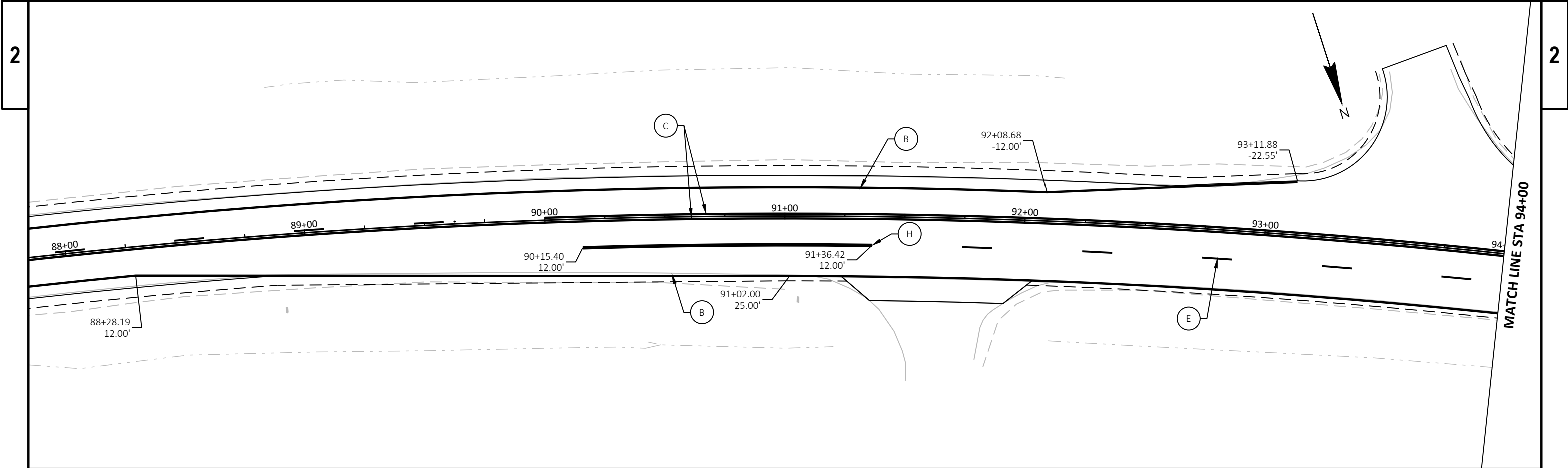
LEGEND	
< x x x >	EROSION MAT URBAN CLASS I, TYPE A
#####	EROSION MAT URBAN CLASS I, TYPE B
· 1 2 3 4 5 ·	EROSION MAT CLASS II, TYPE C
—●—●—	SILT FENCE
- - -	SLOPE INTERCEPT
OO	CULVERT PIPE CHECK
~>	SURFACE WATER FLOW
△△△	TEMPORARY DITCH CHECK
<<<>>><<	ROCK BAG RELIEF
⊠	INLET PROTECTION



NOTE: ADD 0.06 TO THE RIM GRADE TO REACH FLANGE GRADE

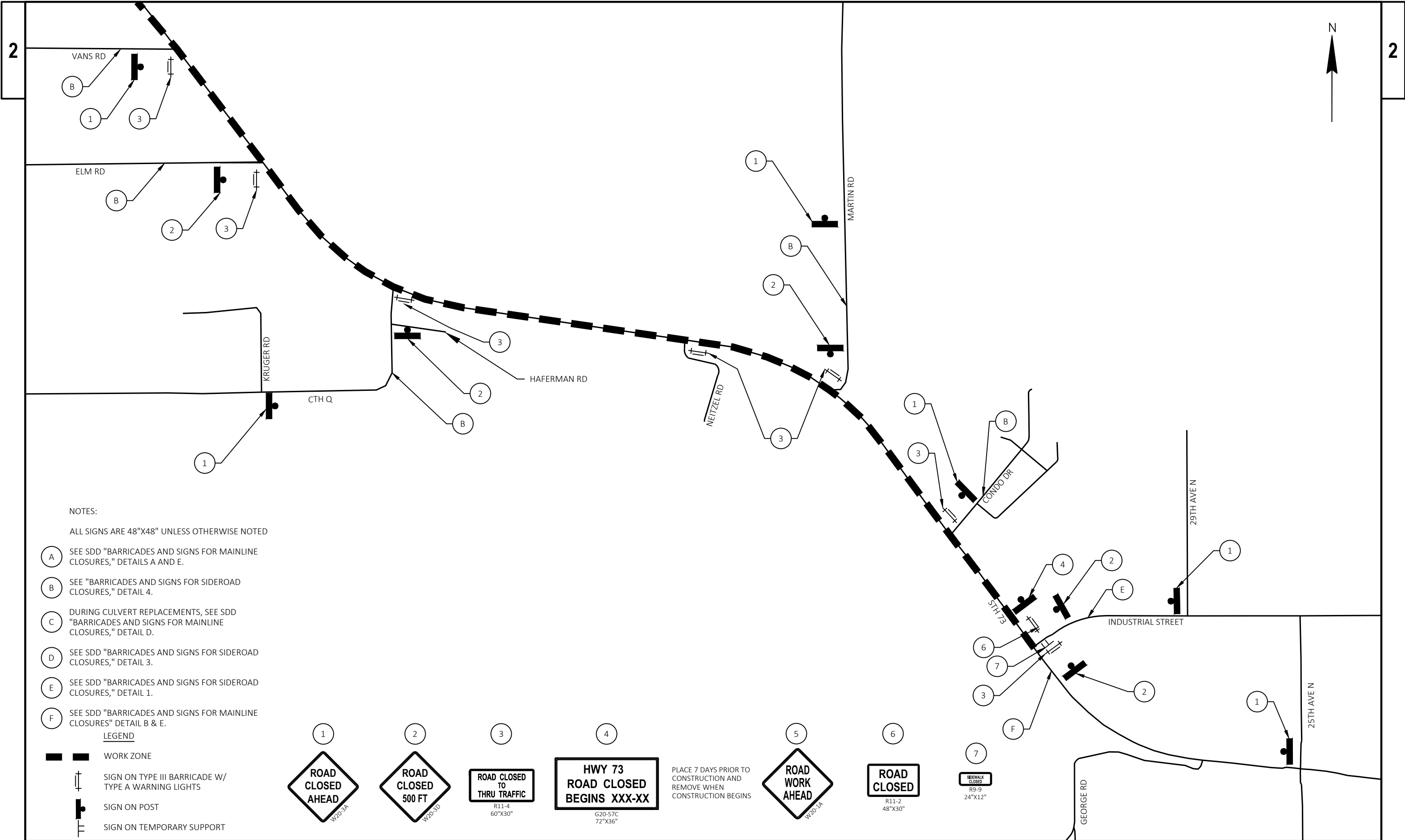


- PAVEMENT MARKING LEGEND**
- (A) MARKING STOP LINE EPOXY 18-INCH
 - (B) MARKING LINE EPOXY GROOVED WET REFLECTIVE 6-INCH (WHITE)
 - (C) MARKING LINE EPOXY GROOVED WET REFLECTIVE 6-INCH (YELLOW)
 - (D) MARKING LINE EPOXY 8-INCH (WHITE)
 - (E) MARKING LINE EPOXY GROOVED WET REFLECTIVE 6-INCH 12.5' LINE 37.5' GAP (WHITE)
 - (F) MARKING LINE EPOXY GROOVED WET REFLECTIVE 6-INCH 3' LINE 9' GAP (WHITE)
 - (G) MARKING LINE EPOXY TRANSVERSE 6-INCH CROSSWALK
 - (H) MARKING LINE EPOXY GROOVED WET REFLECTIVE 10-INCH (WHITE)



PAVEMENT MARKING LEGEND

- (A) MARKING STOP LINE EPOXY 18-INCH
- (B) MARKING LINE EPOXY GROOVED WET REFLECTIVE 6-INCH (WHITE)
- (C) MARKING LINE EPOXY GROOVED WET REFLECTIVE 6-INCH (YELLOW)
- (D) MARKING LINE EPOXY 8-INCH (WHITE)
- (E) MARKING LINE EPOXY GROOVED WET REFLECTIVE 6-INCH 12.5' LINE 37.5' GAP (WHITE)
- (F) MARKING LINE EPOXY GROOVED WET REFLECTIVE 6-INCH 3' LINE 9' GAP (WHITE)
- (G) MARKING LINE EPOXY TRANSVERSE 6-INCH CROSSWALK
- (H) MARKING LINE EPOXY GROOVED WET REFLECTIVE 10-INCH (WHITE)

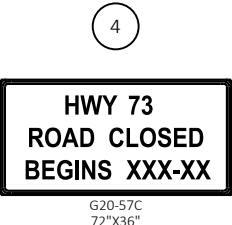


NOTES:
ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED

- (A) SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES," DETAILS A AND E.
- (B) SEE "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES," DETAIL 4.
- (C) DURING CULVERT REPLACEMENTS, SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES," DETAIL D.
- (D) SEE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES," DETAIL 3.
- (E) SEE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES," DETAIL 1.
- (F) SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL B & E.

LEGEND

- WORK ZONE
- SIGN ON TYPE III BARRICADE W/ TYPE A WARNING LIGHTS
- SIGN ON POST
- SIGN ON TEMPORARY SUPPORT



PLACE 7 DAYS PRIOR TO CONSTRUCTION AND REMOVE WHEN CONSTRUCTION BEGINS



PROJECT NO: 1520-00-77

HWY: STH 73

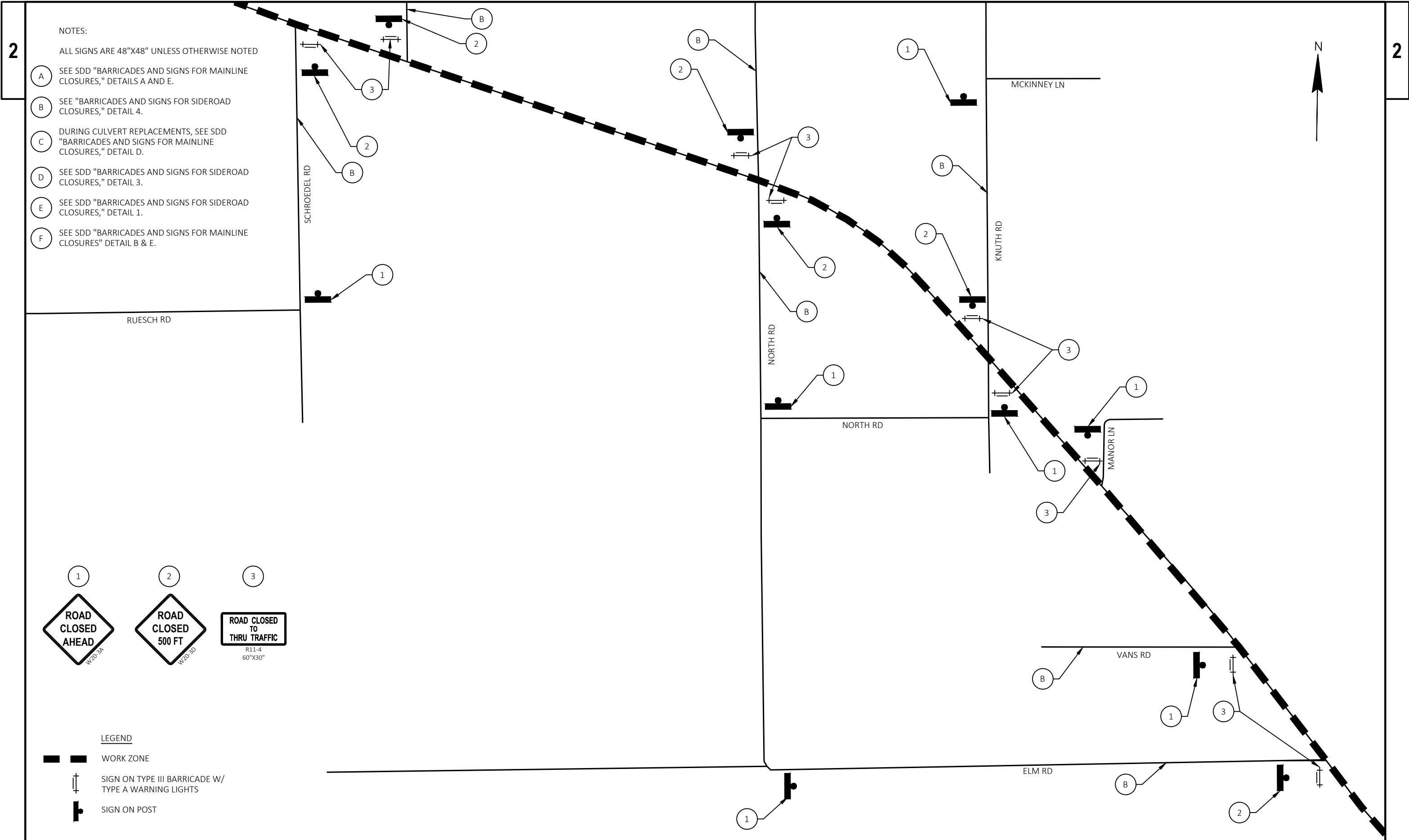
COUNTY: WOOD

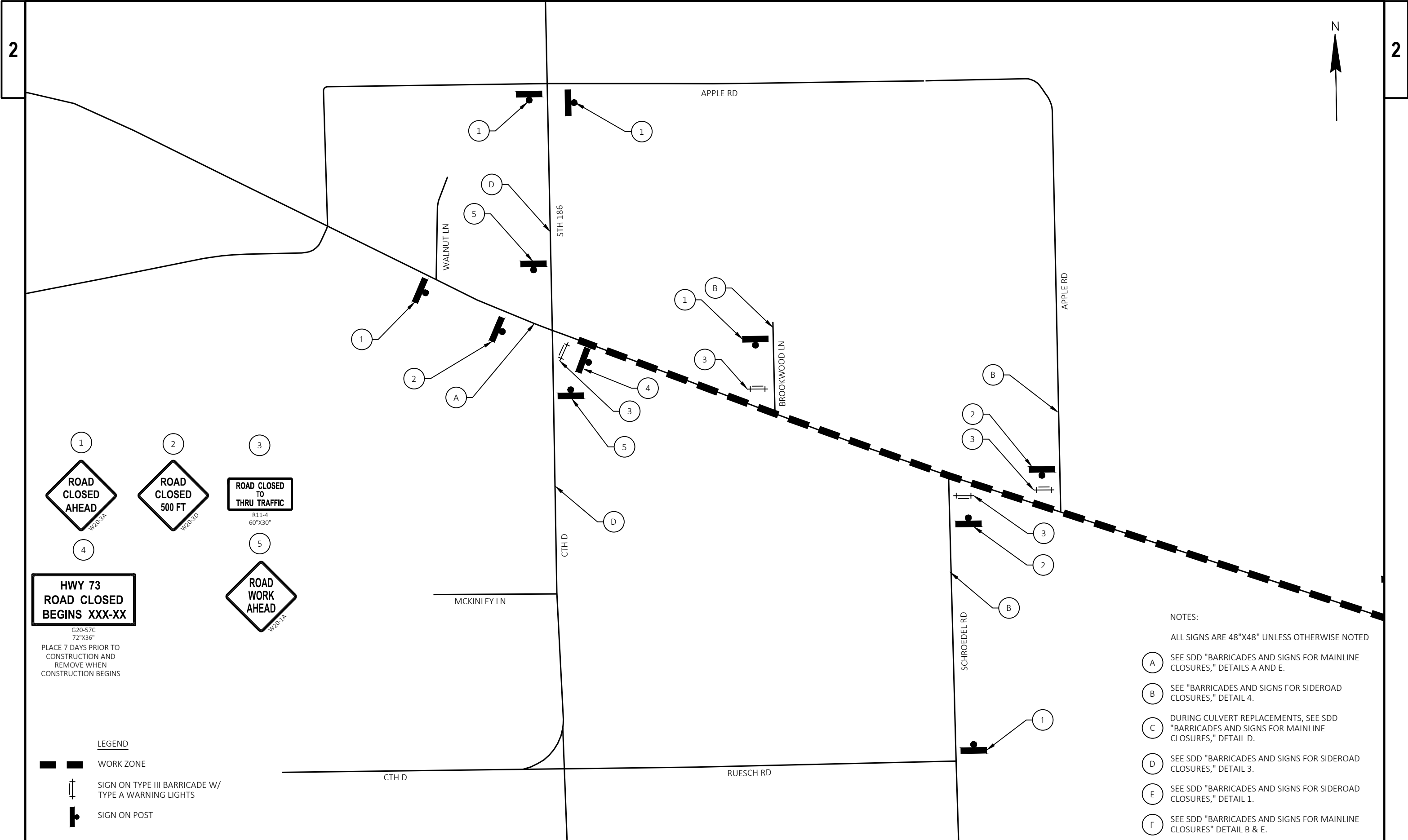
TRAFFIC CONTROL

SHEET

37

E





1

ROAD CLOSED AHEAD
W20-3A

4

2

ROAD CLOSED 500 FT
W20-3D

5

3

ROAD CLOSED TO THRU TRAFFIC
R11-4
60"x30"

5

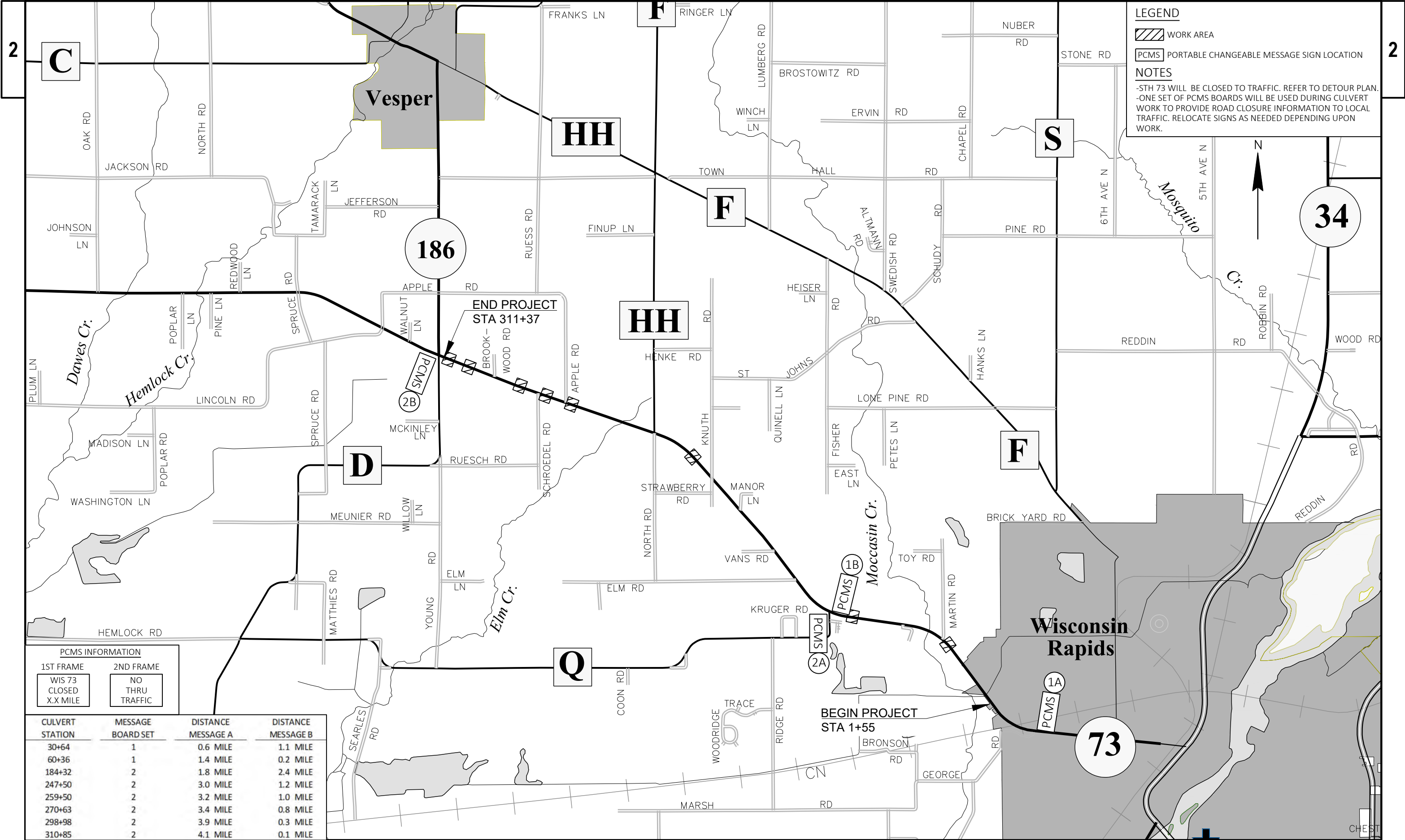
HWY 73
ROAD CLOSED
BEGINS XXX-XX
G20-57C
72"x36"

PLACE 7 DAYS PRIOR TO CONSTRUCTION AND REMOVE WHEN CONSTRUCTION BEGINS

ROAD WORK AHEAD
W20-1A

- LEGEND
- WORK ZONE
 - SIGN ON TYPE III BARRICADE W/ TYPE A WARNING LIGHTS
 - SIGN ON POST

- NOTES:
- ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED
- A SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES," DETAILS A AND E.
 - B SEE "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES," DETAIL 4.
 - C DURING CULVERT REPLACEMENTS, SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES," DETAIL D.
 - D SEE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES," DETAIL 3.
 - E SEE SDD "BARRICADES AND SIGNS FOR SIDEROAD CLOSURES," DETAIL 1.
 - F SEE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" DETAIL B & E.



LEGEND

WORK AREA

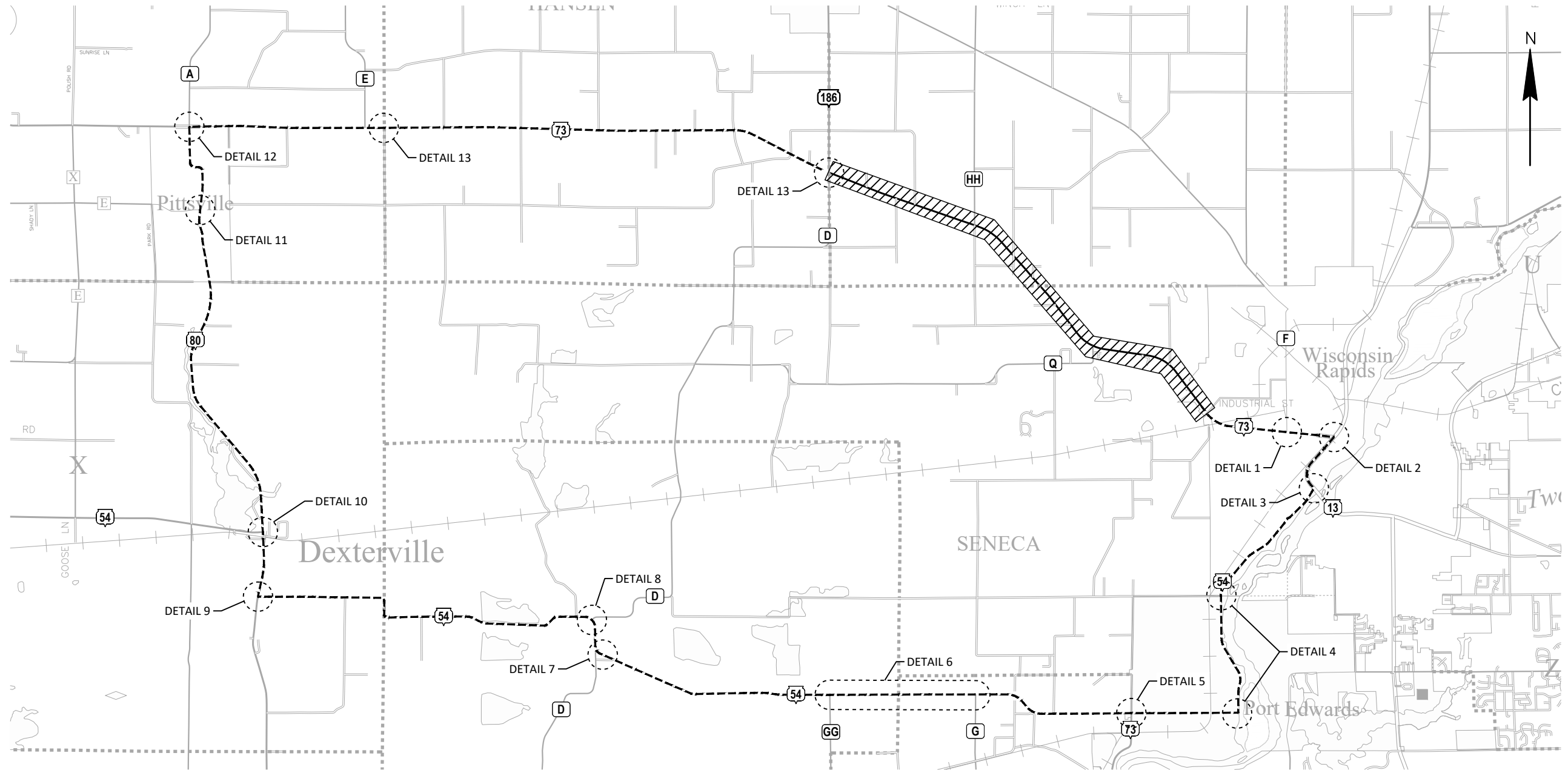
PCMS PORTABLE CHANGEABLE MESSAGE SIGN LOCATION

NOTES

-STH 73 WILL BE CLOSED TO TRAFFIC. REFER TO DETOUR PLAN.

-ONE SET OF PCMS BOARDS WILL BE USED DURING CULVERT WORK TO PROVIDE ROAD CLOSURE INFORMATION TO LOCAL TRAFFIC. RELOCATE SIGNS AS NEEDED DEPENDING UPON WORK.

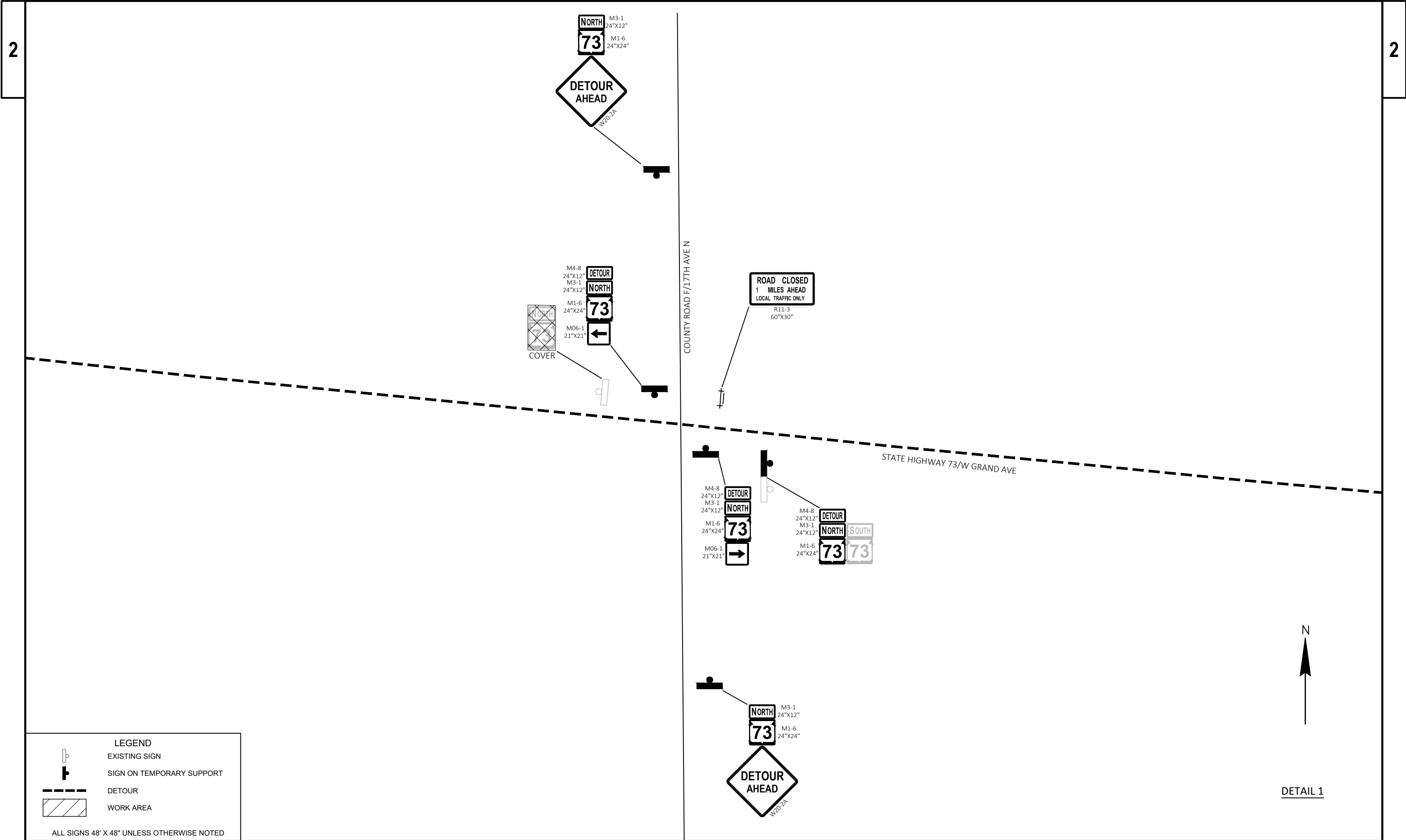
PCMS INFORMATION			
1ST FRAME	2ND FRAME		
WIS 73 CLOSED X.X MILE	NO THRU TRAFFIC		
CULVERT STATION	MESSAGE BOARD SET	DISTANCE MESSAGE A	DISTANCE MESSAGE B
30+64	1	0.6 MILE	1.1 MILE
60+36	1	1.4 MILE	0.2 MILE
184+32	2	1.8 MILE	2.4 MILE
247+50	2	3.0 MILE	1.2 MILE
259+50	2	3.2 MILE	1.0 MILE
270+63	2	3.4 MILE	0.8 MILE
298+98	2	3.9 MILE	0.3 MILE
310+85	2	4.1 MILE	0.1 MILE

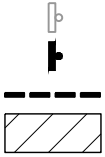


FOR DETAILED DETOUR SIGNING PLAN SEE "DETOUR" SHEETS.

LEGEND

-  WORK ZONE
-  DETOUR





LEGEND

EXISTING SIGN

SIGN ON TEMPORARY SUPPORT

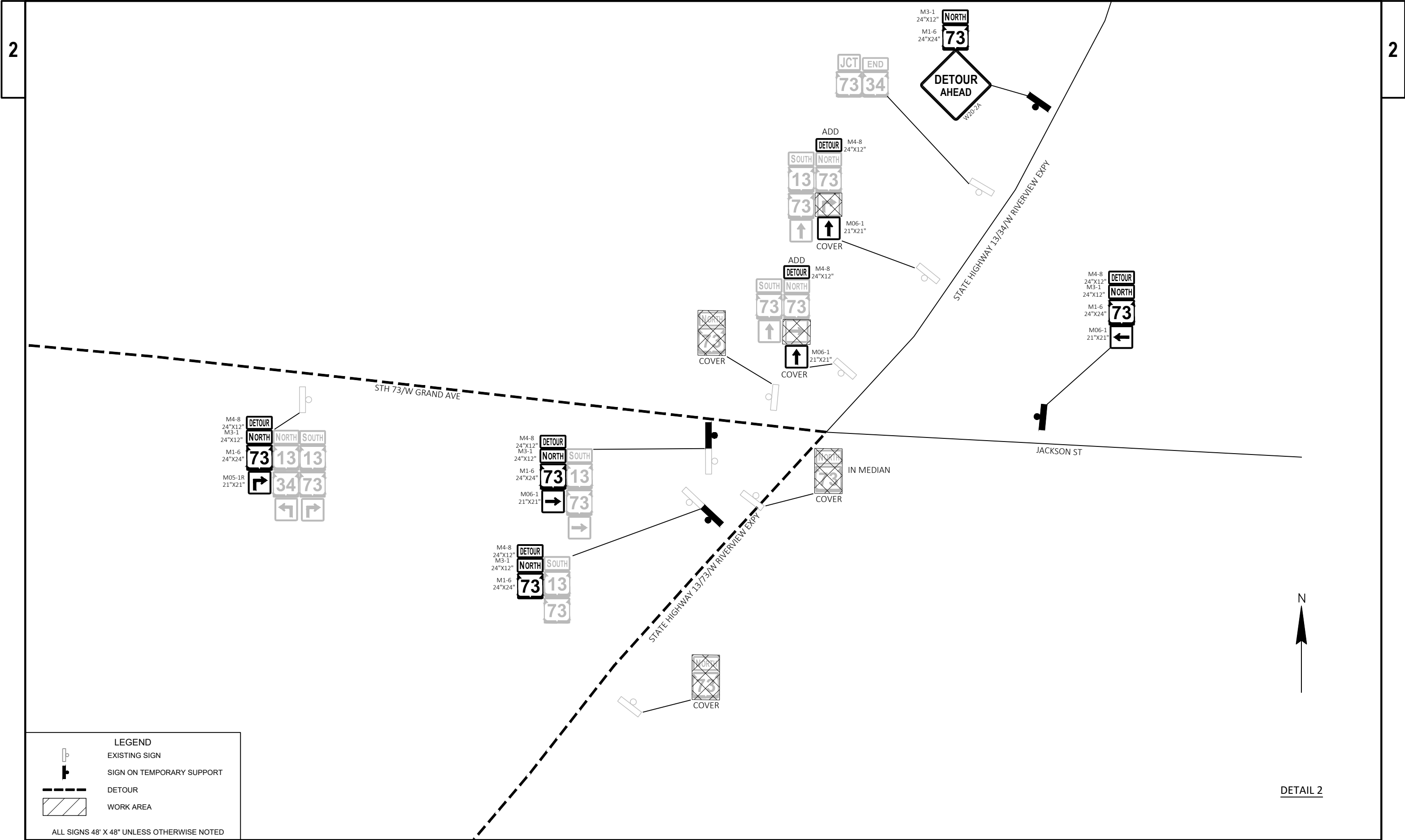
DETOUR

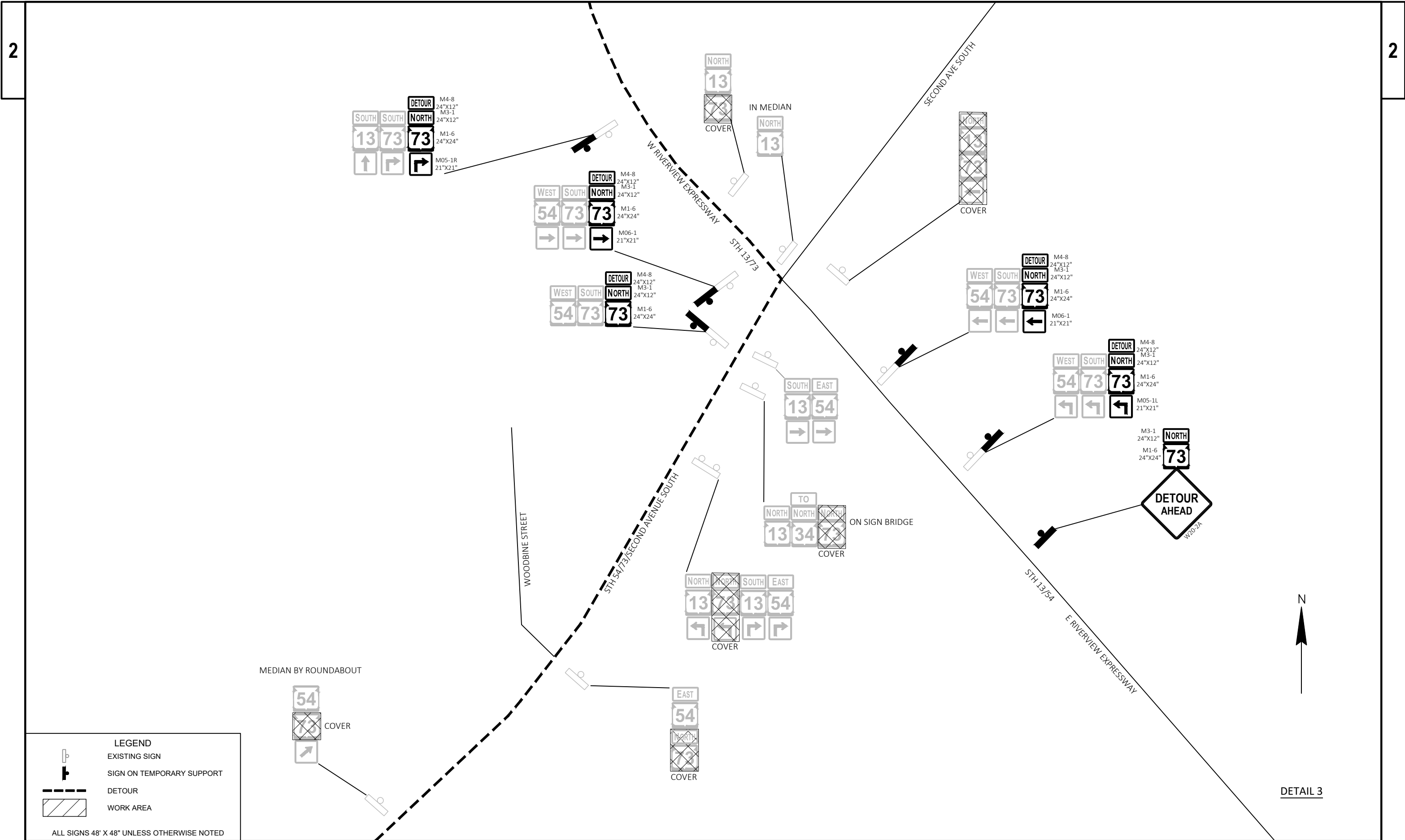
WORK AREA

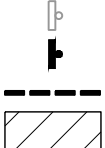
ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED

PROJECT NO: 1520-00-77	HWY: STH 73	COUNTY: WOOD	DETOUR	SHEET 42	E
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FILE NAME : N:\3001811.00\CIVIL 3D\SHEETS\15200077-027002-DT.DWG	PLOT DATE : 1/29/2024 3:57 PM	PLOT BY : CRAIG KNUTH	PLOT NAME :	PLOT SCALE : 1 IN:200 FT	WISDOT/CADDs SHEET 42
LAYOUT NAME - 15200077-027002-dt					







LEGEND

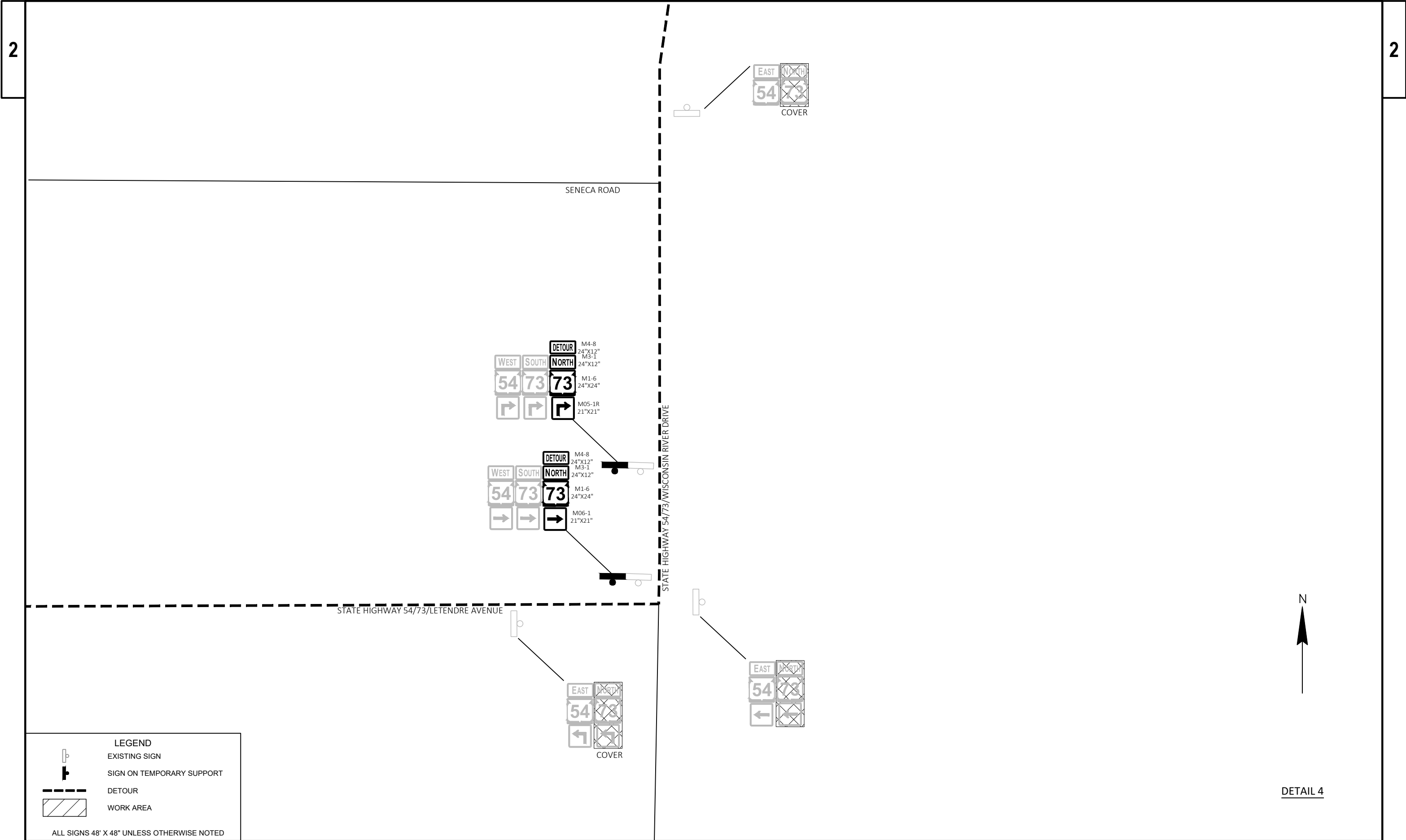
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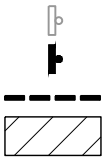
SIGN ON TEMPORARY SUPPORT

DETOUR

WORK AREA

ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED





LEGEND

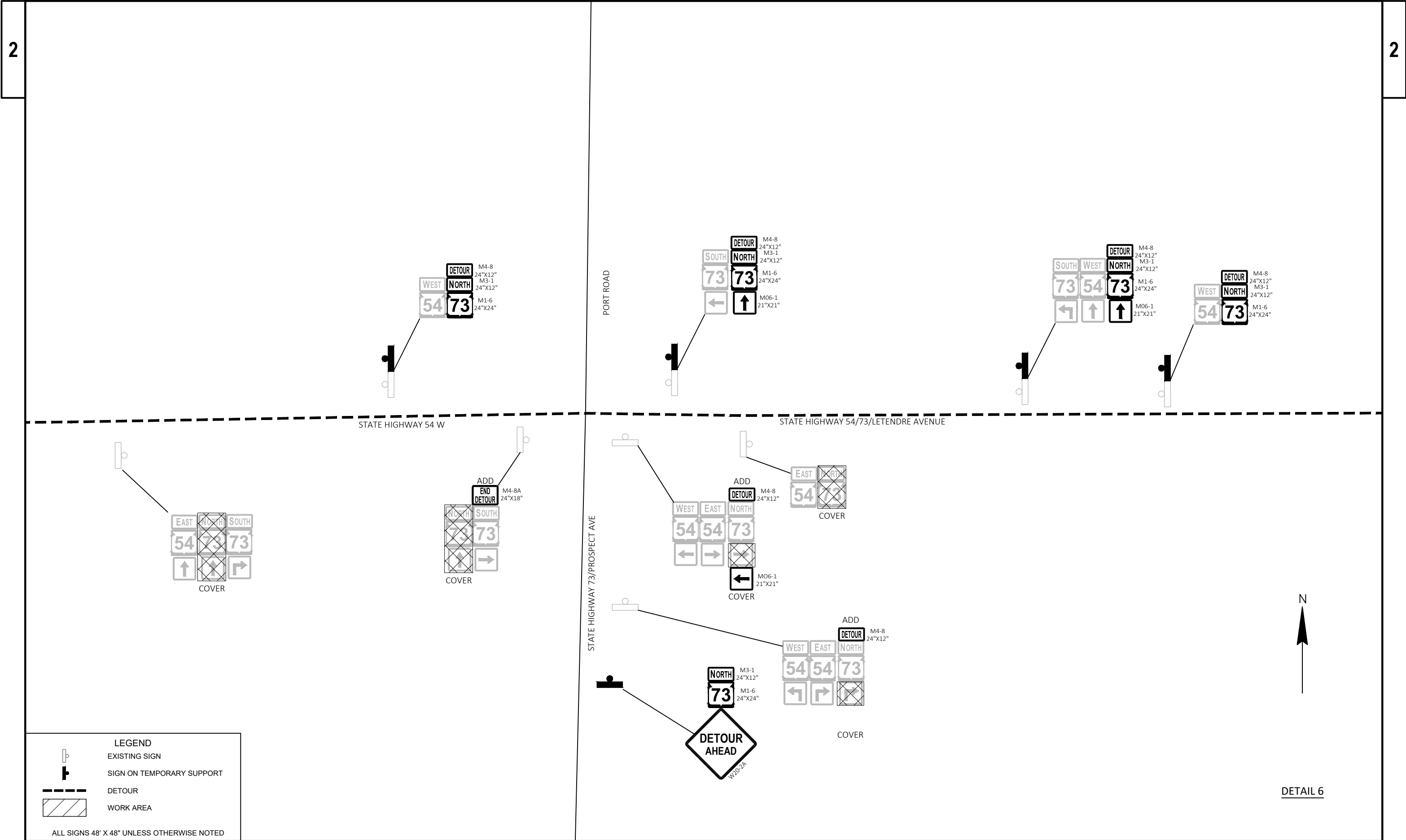
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SIGN ON TEMPORARY SUPPORT

DETOUR

WORK AREA

ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED





LEGEND

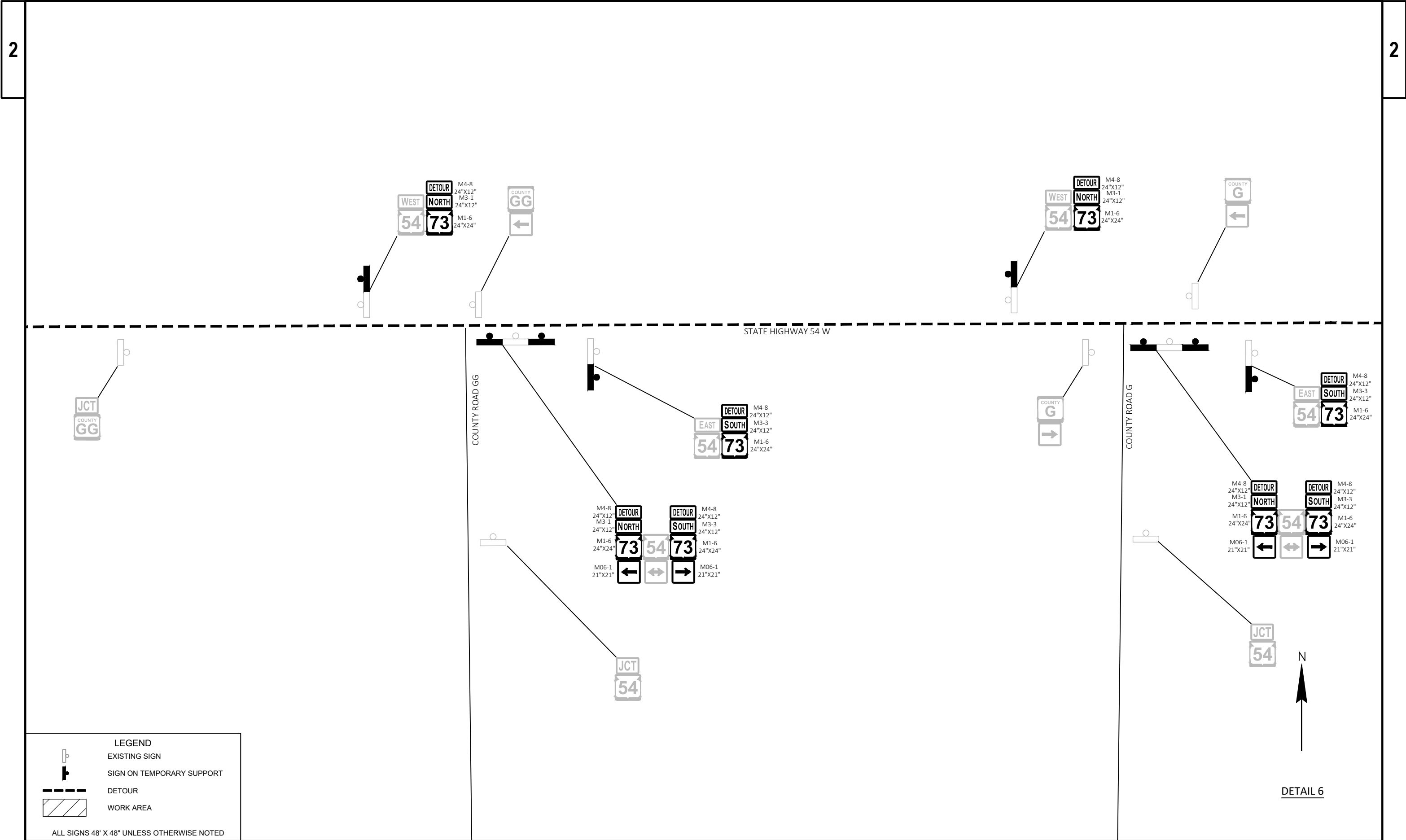
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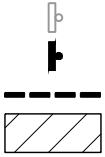
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DETOUR

WORK AREA

ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED





LEGEND

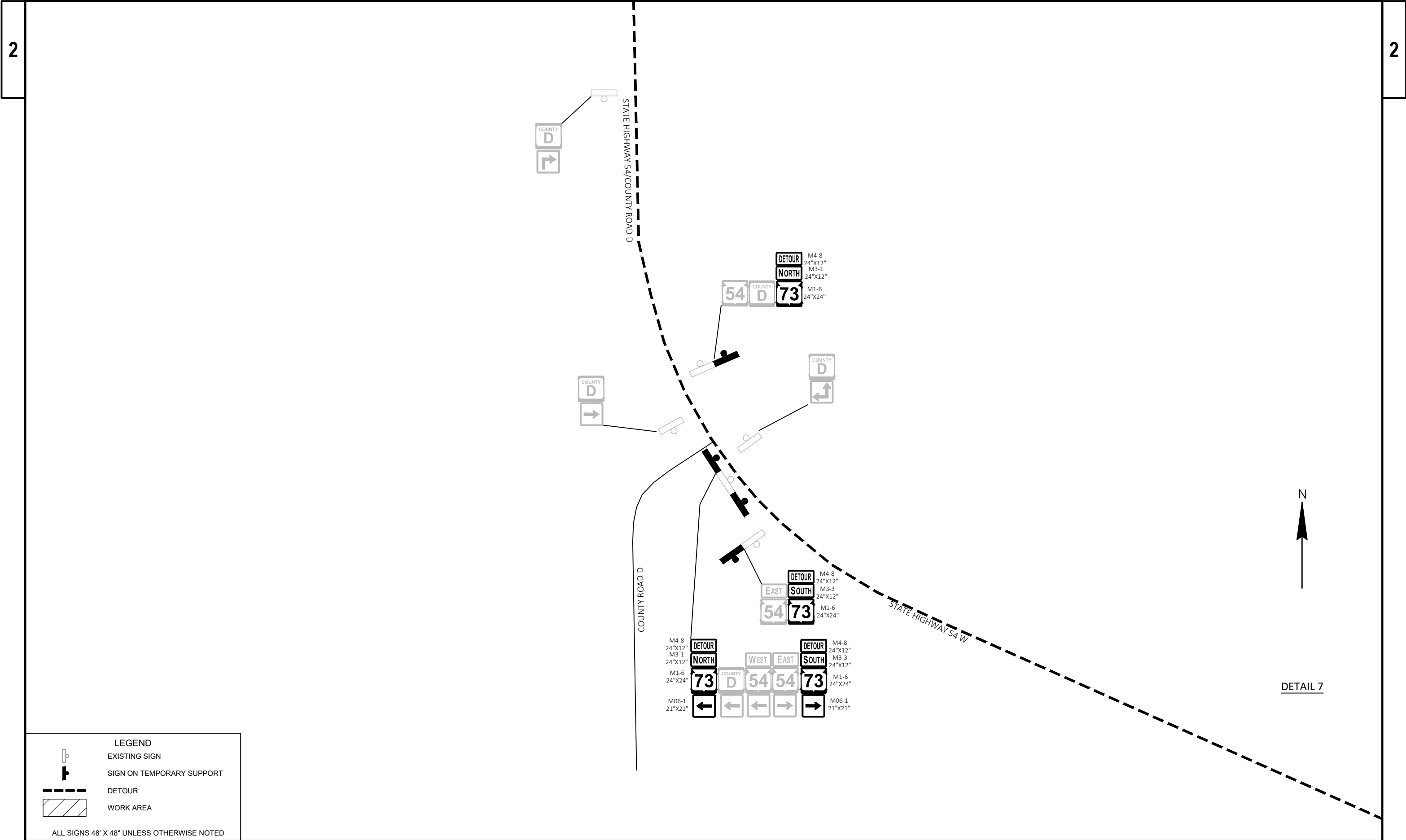
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SIGN ON TEMPORARY SUPPORT

DETOUR

WORK AREA

ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED





LEGEND

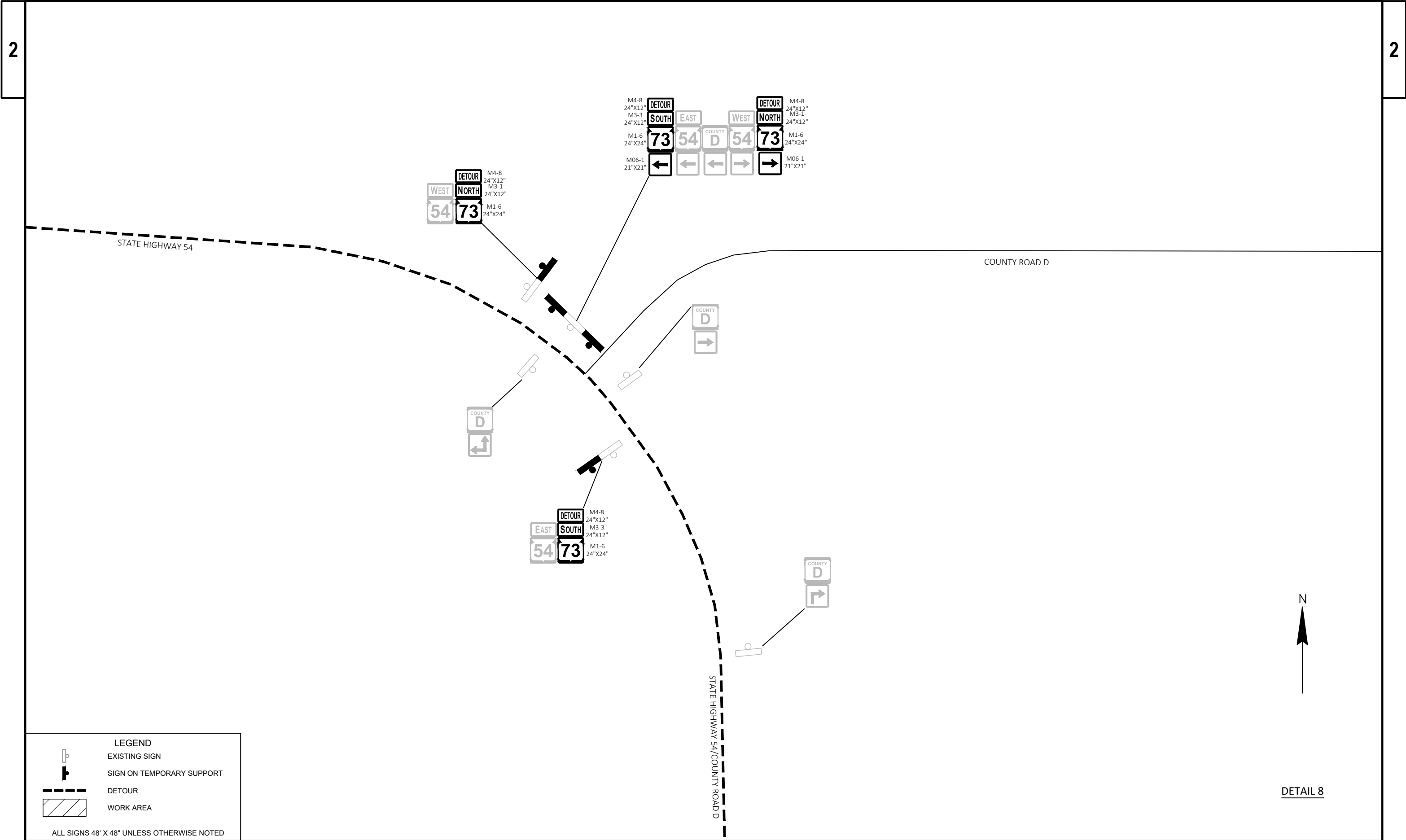
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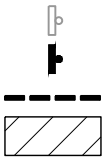
SIGN ON TEMPORARY SUPPORT

DETOUR

WORK AREA

ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED





LEGEND

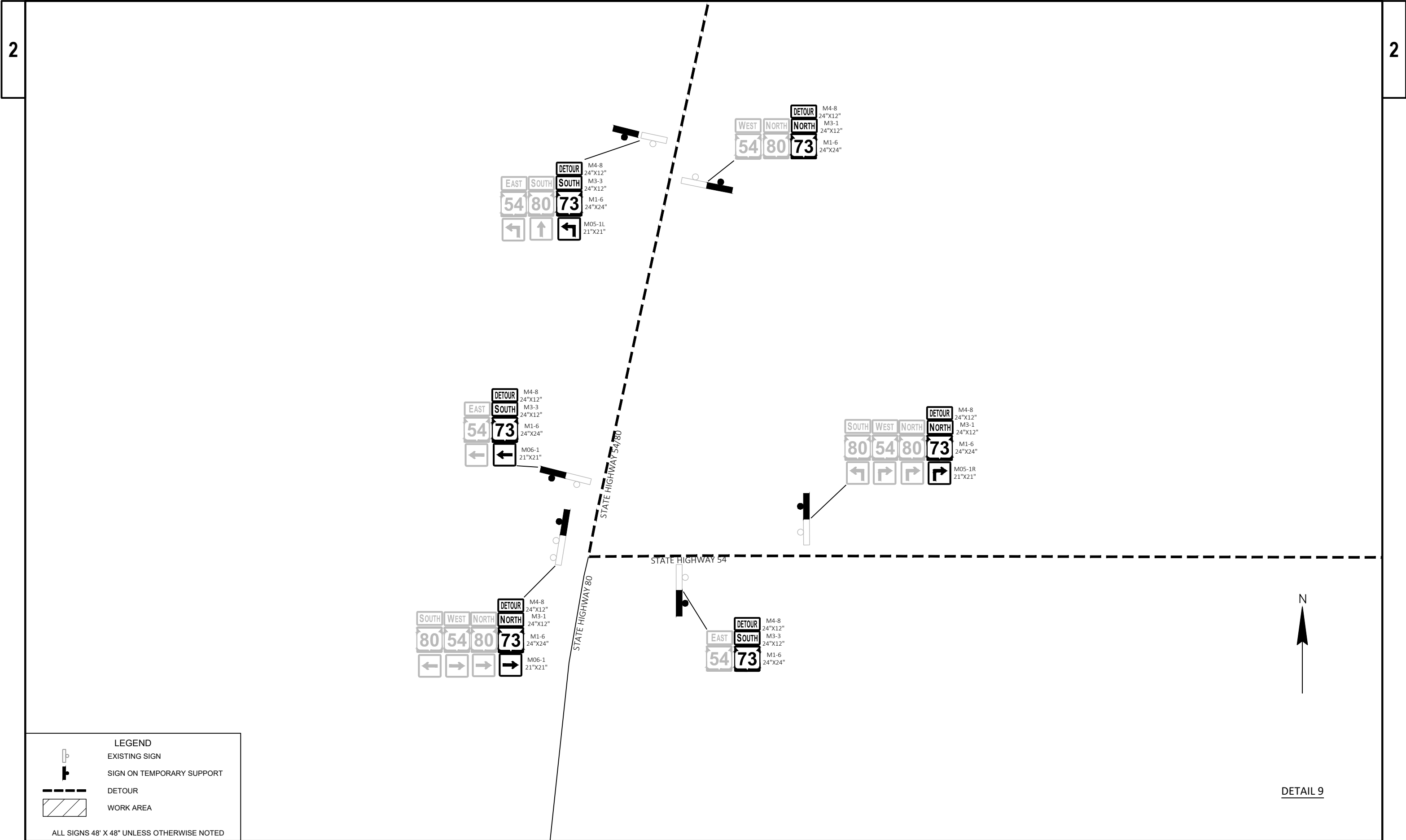
EXISTING SIGN

SIGN ON TEMPORARY SUPPORT

DETOUR

WORK AREA

ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED



LEGEND

EXISTING SIGN

SIGN ON TEMPORARY SUPPORT

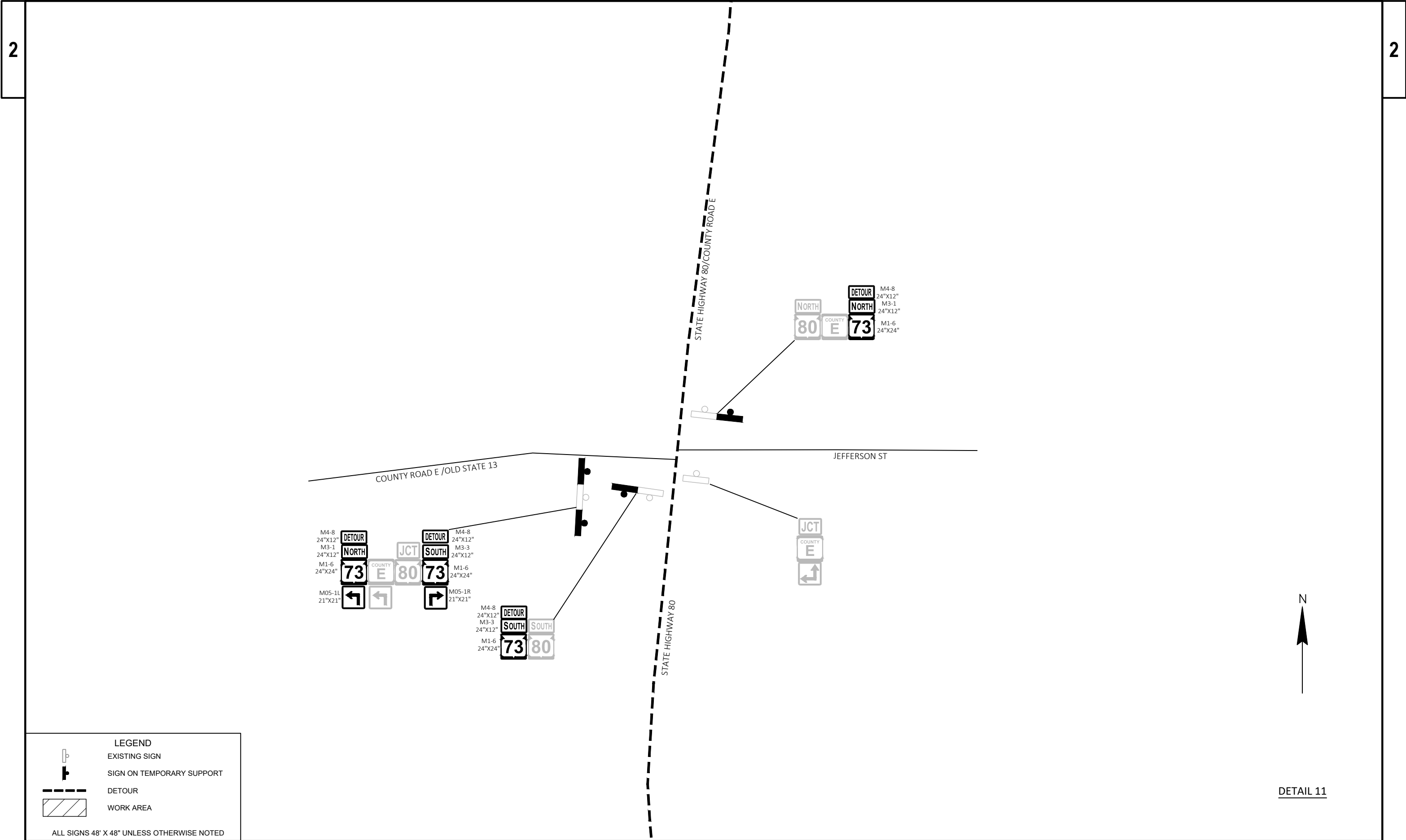
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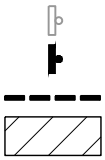
WORK AREA

ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED



E





LEGEND

EXISTING SIGN

SIGN ON TEMPORARY SUPPORT

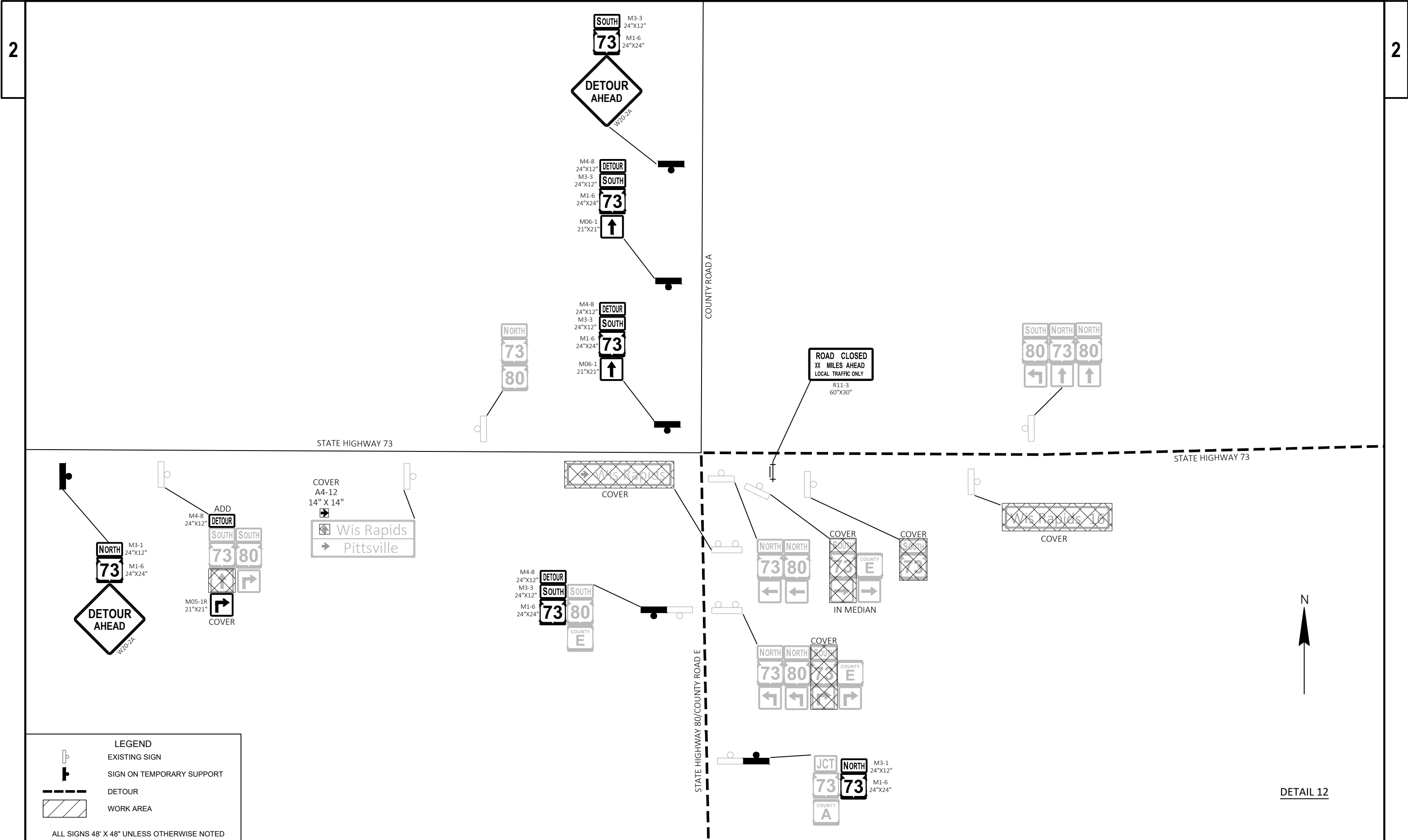
DETOUR

WORK AREA

ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED

PROJECT NO: 1520-00-77	HWY: STH 73	COUNTY: WOOD	DETOUR	SHEET 52	E
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FILE NAME : N:\3001811.00\CIVIL 3D\SHEETS\15200077-027002-DT.DWG LAYOUT NAME - 15200077-027012-dt	PLOT DATE : 1/29/2024 3:57 PM	PLOT BY : CRAIG KNUTH	PLOT NAME :	PLOT SCALE : 1 IN:200 FT	WISDOT/CADDs SHEET 42
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LEGEND

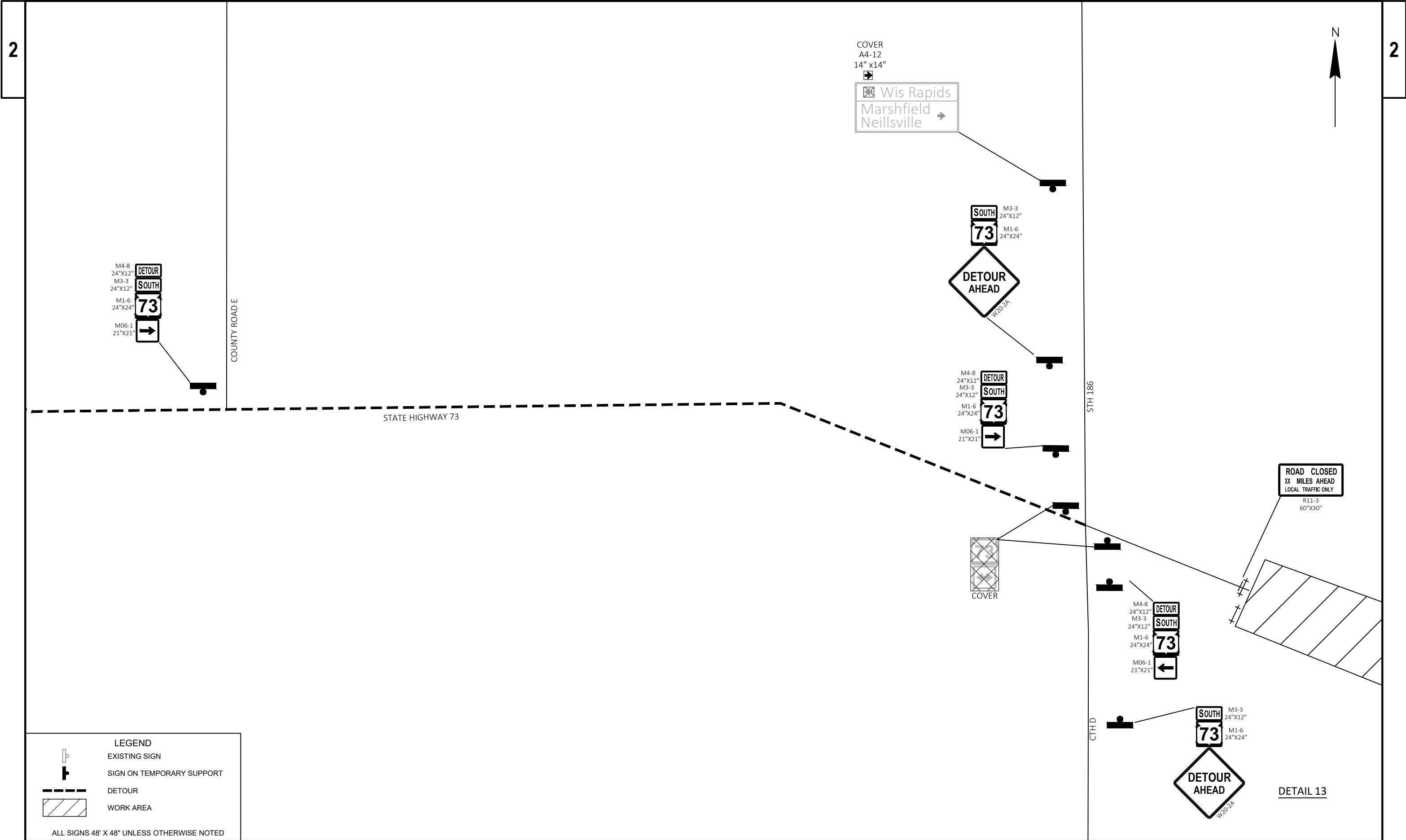
EXISTING SIGN

SIGN ON TEMPORARY SUPPORT

DETOUR

WORK AREA

ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED



LEGEND

EXISTING SIGN

SIGN ON TEMPORARY SUPPORT

DETOUR

WORK AREA

ALL SIGNS 48" X 48" UNLESS OTHERWISE NOTED

Estimate Of Quantities

1520-00-77

Line	Item	Item Description	Unit	Total	Qty
0002	203.0100	Removing Small Pipe Culverts	EACH	9.000	9.000
0004	203.0220	Removing Structure (structure) 01. 72-Inch CPRC Cattle Pass	EACH	1.000	1.000
0006	204.0100	Removing Concrete Pavement	SY	3,707.000	3,707.000
0008	204.0110	Removing Asphaltic Surface	SY	3,370.000	3,370.000
0010	204.0115	Removing Asphaltic Surface Butt Joints	SY	1,218.000	1,218.000
0012	204.0120	Removing Asphaltic Surface Milling	SY	113,430.000	113,430.000
0014	204.0150	Removing Curb & Gutter	LF	391.000	391.000
0016	204.0155	Removing Concrete Sidewalk	SY	55.000	55.000
0018	204.0165	Removing Guardrail	LF	1,521.000	1,521.000
0020	204.0170	Removing Fence	LF	134.000	134.000
0022	204.0180	Removing Delineators and Markers	EACH	16.000	16.000
0024	204.0246	Removing Ancillary Structure (structure) 01. S-71-30	EACH	1.000	1.000
0026	204.9060.S	Removing (item description) 01. Removing Apron Endwalls for Underdrain Reinforced Concrete	EACH	12.000	12.000
0028	205.0100	Excavation Common	CY	13,196.000	13,196.000
0030	208.0100	Borrow	CY	2,566.000	2,566.000
0032	209.2500	Backfill Granular Grade 2	TON	5,580.000	5,580.000
0034	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 1520-00-77	EACH	1.000	1.000
0036	213.0100	Finishing Roadway (project) 01. 1520-00-77	EACH	1.000	1.000
0038	305.0110	Base Aggregate Dense 3/4-Inch	TON	3,946.000	3,946.000
0040	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	7,001.000	7,001.000
0042	305.0500	Shaping Shoulders	STA	116.000	116.000
0044	415.0070	Concrete Pavement 7-Inch	SY	160.000	160.000
0046	415.0090	Concrete Pavement 9-Inch	SY	156.000	156.000
0048	416.0610	Drilled Tie Bars	EACH	294.000	294.000
0050	416.0620	Drilled Dowel Bars	EACH	366.000	366.000
0052	416.1710	Concrete Pavement Repair	SY	174.000	174.000
0054	416.1720	Concrete Pavement Replacement	SY	362.000	362.000
0056	450.4000	HMA Cold Weather Paving	TON	29,990.000	29,990.000
0058	455.0605	Tack Coat	GAL	6,780.000	6,780.000
0060	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	2.000	2.000
0062	460.6223	HMA Pavement 3 MT 58-28 S	TON	17,960.000	17,960.000
0064	460.6224	HMA Pavement 4 MT 58-28 S	TON	11,130.000	11,130.000
0066	465.0105	Asphaltic Surface	TON	1,742.000	1,742.000
0068	465.0110	Asphaltic Surface Patching	TON	900.000	900.000
0070	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	310.000	310.000
0072	465.0520	Asphaltic Rumble Strips, Shoulder	LF	10,400.000	10,400.000
0074	465.0560	Asphaltic Rumble Strips, Centerline	LF	23,240.000	23,240.000
0076	520.1030	Apron Endwalls for Culvert Pipe 30-Inch	EACH	6.000	6.000
0078	520.1036	Apron Endwalls for Culvert Pipe 36-Inch	EACH	4.000	4.000
0080	520.3430	Culvert Pipe Class III-A Non-metal 30-Inch	LF	238.000	238.000
0082	520.3436	Culvert Pipe Class III-A Non-metal 36-Inch	LF	182.000	182.000
0084	522.0160	Culvert Pipe Reinforced Concrete Class III 60-Inch	LF	232.000	232.000
0086	522.0436	Culvert Pipe Reinforced Concrete Class IV 36-Inch	LF	168.000	168.000
0088	522.1036	Apron Endwalls for Culvert Pipe Reinforced Concrete 36-Inch	EACH	4.000	4.000
0090	522.1060	Apron Endwalls for Culvert Pipe Reinforced Concrete 60-Inch	EACH	4.000	4.000
0092	601.0409	Concrete Curb & Gutter 30-Inch Type A	LF	413.000	413.000
0094	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	98.000	98.000
0096	601.0590	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT	LF	61.000	61.000

Estimate Of Quantities

1520-00-77

Line	Item	Item Description	Unit	Total	Qty
0098	602.0415	Concrete Sidewalk 6-Inch	SF	125.000	125.000
0100	602.0605	Curb Ramp Detectable Warning Field Radial Yellow	SF	20.000	20.000
0102	602.3010	Concrete Surface Drains	CY	4.000	4.000
0104	606.0200	Riprap Medium	CY	25.000	25.000
0106	608.0412	Storm Sewer Pipe Reinforced Concrete Class IV 12-Inch	LF	54.000	54.000
0108	611.0430	Reconstructing Inlets	EACH	1.000	1.000
0110	611.0639	Inlet Covers Type H-S	EACH	1.000	1.000
0112	611.3230	Inlets 2x3-FT	EACH	1.000	1.000
0114	612.0204	Pipe Underdrain Unperforated 4-Inch	LF	560.000	560.000
0116	612.0804	Apron Endwalls for Underdrain Reinforced Concrete 4-Inch	EACH	16.000	16.000
0118	614.2300	MGS Guardrail 3	LF	675.000	675.000
0120	614.2500	MGS Thrie Beam Transition	LF	315.000	315.000
0122	614.2610	MGS Guardrail Terminal EAT	EACH	8.000	8.000
0124	618.0100	Maintenance and Repair of Haul Roads (project) 01. 1520-00-77	EACH	1.000	1.000
0126	619.1000	Mobilization	EACH	1.000	1.000
0128	624.0100	Water	MGAL	63.370	63.370
0130	625.0100	Topsoil	SY	8,620.000	8,620.000
0132	628.1504	Silt Fence	LF	6,200.000	6,200.000
0134	628.1520	Silt Fence Maintenance	LF	6,200.000	6,200.000
0136	628.1905	Mobilizations Erosion Control	EACH	8.000	8.000
0138	628.1910	Mobilizations Emergency Erosion Control	EACH	4.000	4.000
0140	628.2006	Erosion Mat Urban Class I Type A	SY	1,150.000	1,150.000
0142	628.2008	Erosion Mat Urban Class I Type B	SY	7,143.000	7,143.000
0144	628.2027	Erosion Mat Class II Type C	SY	327.000	327.000
0146	628.7010	Inlet Protection Type B	EACH	4.000	4.000
0148	628.7020	Inlet Protection Type D	EACH	3.000	3.000
0150	628.7504	Temporary Ditch Checks	LF	280.000	280.000
0152	628.7555	Culvert Pipe Checks	EACH	75.000	75.000
0154	628.7570	Rock Bags	EACH	225.000	225.000
0156	629.0210	Fertilizer Type B	CWT	2.000	2.000
0158	630.0130	Seeding Mixture No. 30	LB	339.000	339.000
0160	630.0140	Seeding Mixture No. 40	LB	53.000	53.000
0162	630.0500	Seed Water	MGAL	200.000	200.000
0164	633.5200	Markers Culvert End	EACH	14.000	14.000
0166	642.5001	Field Office Type B	EACH	1.000	1.000
0168	643.0300	Traffic Control Drums	DAY	250.000	250.000
0170	643.0420	Traffic Control Barricades Type III	DAY	4,221.000	4,221.000
0172	643.0705	Traffic Control Warning Lights Type A	DAY	8,250.000	8,250.000
0174	643.0900	Traffic Control Signs	DAY	34,326.000	34,326.000
0176	643.0920	Traffic Control Covering Signs Type II	EACH	23.000	23.000
0178	643.1000	Traffic Control Signs Fixed Message	SF	36.000	36.000
0180	643.1050	Traffic Control Signs PCMS	DAY	48.000	48.000
0182	643.5000	Traffic Control	EACH	1.000	1.000
0184	645.0120	Geotextile Type HR	SY	50.000	50.000
0186	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	89,550.000	89,550.000
0188	646.3020	Marking Line Epoxy 8-Inch	LF	6.000	6.000
0190	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	324.000	324.000
0192	646.5520	Marking Outfall Epoxy	EACH	100.000	100.000
0194	646.6120	Marking Stop Line Epoxy 18-Inch	LF	48.000	48.000

Estimate Of Quantities

1520-00-77

Line	Item	Item Description	Unit	Total	Qty
0196	646.7420	Marking Crosswalk Epoxy Transverse Line 6-Inch	LF	240.000	240.000
0198	646.9200	Marking Removal Line Wide	LF	150.000	150.000
0200	648.0100	Locating No-Passing Zones	MI	5.840	5.840
0202	650.4000	Construction Staking Storm Sewer	EACH	1.000	1.000
0204	650.4500	Construction Staking Subgrade	LF	2,057.000	2,057.000
0206	650.5000	Construction Staking Base	LF	2,057.000	2,057.000
0208	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	159.000	159.000
0210	650.6000	Construction Staking Pipe Culverts	EACH	9.000	9.000
0212	650.7000	Construction Staking Concrete Pavement	LF	392.000	392.000
0214	650.8000	Construction Staking Resurfacing Reference	LF	28,671.000	28,671.000
0216	650.9000	Construction Staking Curb Ramps	EACH	1.000	1.000
0218	650.9500	Construction Staking Sidewalk (project) 01. 1520-00-77	EACH	1.000	1.000
0220	650.9911	Construction Staking Supplemental Control (project) 01. 1520-00-77	EACH	1.000	1.000
0222	650.9920	Construction Staking Slope Stakes	LF	2,241.000	2,241.000
0224	690.0150	Sawing Asphalt	LF	1,519.000	1,519.000
0226	690.0250	Sawing Concrete	LF	1,712.000	1,712.000
0228	715.0720	Incentive Compressive Strength Concrete Pavement	DOL	500.000	500.000
0230	740.0440	Incentive IRI Ride	DOL	11,560.000	11,560.000
0232	SPV.0055	Special 01. Incentive Density PWL HMA Pavement	DOL	11,171.000	11,171.000
0234	SPV.0055	Special 02. Incentive Air Voids, HMA Pavement	DOL	7,170.000	7,170.000
0236	SPV.0055	Special 03. Incentive Density HMA Pavement Longitudinal Joints	DOL	6,060.000	6,060.000
0238	SPV.0060	Special 01. Temporary Bypass Pumping STA 30+64	EACH	1.000	1.000
0240	SPV.0060	Special 02. Temporary Bypass Pumping STA 184+32	EACH	1.000	1.000
0242	SPV.0060	Special 03. Temporary Water Diversion Twin Culvert Construction STA 247+51	EACH	1.000	1.000
0244	SPV.0060	Special 04. Temporary Water Diversion Twin Culvert Construction STA 259+53	EACH	1.000	1.000

3

REMOVING SMALL PIPE CULVERTS

203.0100			
STATION	LOCATION	EACH	REMARKS
30+64	STH 73	1	36-INCH CPRC
60+36	STH 73	1	30-INCH CPRC
184+32	STH 73	1	30-INCH CPRC
247+51	STH 73	2	2 - 48-INCH CPRC
259+53	STH 73	2	2 - 36-INCH CPRC
298+98	STH 73	1	30-INCH CPRC
310+84	STH 73	1	30-INCH CPRC
TOTAL		9	

REMOVING STRUCTURE

203.0220.01			
STATION	LOCATION	EACH	REMARKS
270+63	STH 73	1	72-INCH CPRC CATTLE PASS
TOTAL		1	

REMOVING CONCRETE PAVEMENT

204.0155					
STATION	TO	STATION	LOCATION	SY	REMARKS
8+10	-	11+15	RT	813	CONCRETE REPLACEMENT
30+10	-	31+20	RT/LT	293	CULVERT REPLACEMENT
59+81	-	60+91	RT/LT	293	CULVERT REPLACEMENT
183+40	-	185+25	RT/LT	493	CULVERT REPLACEMENT
246+46	-	248+54	RT/LT	555	CULVERT REPLACEMENT
258+82	-	260+25	RT/LT	381	CULVERT REPLACEMENT
270+06	-	271+19	RT/LT	301	CULVERT REPLACEMENT
298+43	-	299+53	RT/LT	293	CULVERT REPLACEMENT
310+30	-	311+37	RT/LT	285	CULVERT REPLACEMENT
TOTAL				3,707	

REMOVING CONCRETE SIDEWALK

204.0155			
STATION	LOCATION	SY	REMARKS
3+75	RT	25	INDUSTRIAL STREET CURB RAMP NE
270+62	RT	15	CATTLE PASS STEPS
270+62	LT	15	CATTLE PASS STEPS
TOTAL		55	

REMOVING CURB & GUTTER

204.0150			
STATION - STATION	LOCATION	LF	REMARKS
1+55 - 5+25	LT	370	REMOVE FOR WIDENING
3+52 - 3+71	RT	21	INDUSTRIAL STREET CURB RAMP NW
TOTAL		391	

REMOVING ASPHALTIC SURFACE BUTT JOINTS

204.0115			
STATION - STATION	LOCATION	SY	REMARKS
75+58	CONDO DR	41	SIDEROAD
70+62	MARTIN RD	35	SIDEROAD
45+62 - 46+02	STH 73	182	B-71-8
47+22 - 47+62	STH 73	192	B-71-8
65+60	NEITZEL RD	43	SIDEROAD
60+86	CTH Q	32	SIDEROAD
55+78	ELM RD	28	SIDEROAD
50+66	VANS RD	25	SIDEROAD
39+07	KNUTH RD	25	SIDEROAD
41+02	KNUTH RD	30	SIDEROAD
34+27	NORTH RD	33	SIDEROAD
35+74	CTH HH	34	SIDEROAD
225+02 - 225+37	STH 73	135	B-71-6
226+30 - 226+70	STH 73	192	B-71-6
30+82	APPLERD	30	SIDEROAD
25+78	SCHROEDEL RD	23	SIDEROAD
310+97 - 311+37	STH 73	138	END OF PROJECT
TOTAL		1218	

REMOVING DELINEATORS AND MARKERS

204.0180			
STATION	LOCATION	EACH	REMARKS
30+64	STH 73	2	CULVERT
60+36	STH 73	2	CULVERT
184+32	STH 73	2	CULVERT
247+51	STH 73	2	CULVERT
259+53	STH 73	2	CULVERT
270+63	STH 73	2	CULVERT
298+98	STH 73	2	CULVERT
310+84	STH 73	2	CULVERT
TOTAL		16	

REMOVING ANCILLARY STRUCTURE

204.0246.01			
STATION	LOCATION	EACH	REMARKS
5+00	STH 73	1	S-71-30
TOTAL		1	

REMOVING FENCE

204.0170			
STATION	LOCATION	LF	REMARKS
270+64	STH 73	134	FENCE ALONG CATTLE PASS
TOTAL		134	

PREPARE FOUNDATION FOR ASPHALTIC PAVING

211.0101				
STATION	TO	STATION	LOCATION	EACH
11+15	-	311+37	STH 73	1
TOTAL				1

3

BASE COURSE ITEMS									
					*	*			
					305.0110	305.0120	305.0500	624.0100	
					BASE AGGREGATE	BASE AGGREGATE	SHAPING		
					DENSE 3/4-INCH	DENSE 1 1/4-INCH	SHOULDERS	WATER	
CATEGORY	STATION	TO	STATION	LOCATION	TON	TON	STA	MGAL	REMARKS
0010	1+55	-	4+04	LT	0	69	0	0.42	WIDENING
0010	4+04	-	5+47	LT&RT	6	230	0	1.41	WIDENING
0010	5+47	-	6+17	LT&RT	3	184	0	1.12	WIDENING
0010	6+17	-	11+45	LT&RT	22	1,945	0	11.80	REPLACEMENT
0010	11+45	-	30+09	LT&RT	0	0	37	0.00	
0010	30+09	-	31+19	LT&RT	25	445	0	2.82	CULVERT REPLACEMENT
0010	31+19	-	32+75	LT&RT	0	0	3	0.00	
0010	32+75	-	46+02	LT&RT	191	0	0	1.15	
0010	47+21	-	55+56	LT&RT	120	0	0	0.72	
0010	55+56	-	59+82	LT&RT	0	0	9	0.00	
0010	59+82	-	60+91	LT&RT	25	441	0	2.79	CULVERT REPLACEMENT
0010	60+91	-	85+54	LT&RT	0	0	49	0.00	
0010	85+54	-	88+87	RT	8	0	0	0.05	
0010	85+54	-	93+92	LT	137	0	0	0.82	
0010	88+87	-	98+21	RT	11	0	0	0.07	
0010	93+92	-	107+86	LT	341	0	0	2.05	
0010	98+21	-	107+86	RT	34	0	0	0.20	
0010	107+86	-	134+62	LT&RT	188	0	0	1.13	
0010	134+62	-	142+94	LT&RT	59	0	0	0.35	
0010	142+94	-	183+40	LT&RT	285	0	0	1.71	
0010	183+40	-	185+24	LT&RT	59	744	0	4.81	CULVERT REPLACEMENT
0010	185+24	-	188+13	LT&RT	20	0	0	0.12	
0010	188+13	-	206+79	LT&RT	594	0	0	3.56	
0010	206+79	-	207+93	LT	4	0	0	0.02	
0010	206+79	-	207+93	RT	1	0	0	0.00	
0010	207+93	-	211+95	LT&RT	21	0	0	0.13	
0010	211+95	-	225+36	LT&RT	94	0	0	0.57	
0010	226+10	-	233+55	LT&RT	52	0	0	0.31	
0010	233+55	-	242+22	LT&RT	0	0	17	0.00	
0010	242+22	-	246+46	LT&RT	30	0	0	0.18	
0010	246+46	-	248+54	LT&RT	66	841	0	5.44	CULVERT REPLACEMENT
0010	248+54	-	258+83	LT&RT	72	0	0	0.43	
0010	258+83	-	260+25	LT&RT	45	574	0	3.72	CULVERT REPLACEMENT
0010	260+25	-	270+06	LT&RT	69	0	0	0.41	
0010	270+06	-	271+19	LT&RT	36	457	0	2.96	CULVERT REPLACEMENT
0010	271+19	-	298+43	LT&RT	192	0	0	1.15	
0010	298+43	-	299+53	LT&RT	35	445	0	2.88	CULVERT REPLACEMENT
0010	299+53	-	310+30	LT&RT	76	0	0	0.45	
0010	310+30	-	311+37	LT&RT	34	433	0	2.80	CULVERT REPLACEMENT
0010	UNDISTRIBUTIVE				800	---	0	4.80	
TOTAL 0010					3,755	6,806	116	63.37	

* ITEM IS INCLUDED IN DRIVEWAYS TABLE

CONCRETE SURFACE DRAINS			
602.3010			
STATION	LOCATION	CY	REMARKS
5+05	LT	1	
45+78	LT	1	
225+14	LT	1	
225+14	RT	1	
TOTAL		4	

EARTHWORK								
					205.0100	208.0100	209.25	
					EXCAVATION		BACKFILL	
					COMMON	BORROW	GRANULAR	
CATEGORY	STATION	TO	STATION	LOCATION	CY	CY	GRADE 2	REMARKS
DIVISION 1								
0010	1+55	-	11+45	STH 73	1,886	-	-	
DIVISION 1 TOTAL					1,886	0	0	
DIVISION 2 CULVERT PIPE TRANSITION GRADING								
0010	30+09	-	31+19	CULVERT	1,150	0	575	
0010	59+82	-	60+91	CULVERT	1,140	0	570	
0010	183+40	-	185+24	CULVERT	2,010	0	1,005	
0010	246+46	-	248+54	CULVERT	2,260	0	1,130	
0010	258+83	-	260+25	CULVERT	1,340	0	670	
0010	270+06	-	271+19	CULVERT	1,180	2,073	590	INCLUDES DITCH GRADING
0010	298+43	-	299+53	CULVERT	1,150	92	575	INCLUDES DITCH GRADING
0010	310+30	-	311+37	CULVERT	930	0	465	
UNDISTRIBUTED TRENCH BACKFILL					0	0	0	
DIVISION 2 TOTAL					11,160	2,165	5,580	
DIVISION 3 B-71-8 BEAM GUARD GRADING								
0010	43+44	-	49+60	STH 73	112	256	-	
DIVISION 3 TOTAL					112	256	0	
DIVISION 4 B-71-6 BEAM GUARD GRADING								
0010	222+05	-	230+03	STH 73	38	145	-	
DIVISION 4 TOTAL					38	145	0	
PROJECT TOTAL					13,196	2,566	5,580	

		619.1000	642.5001	213.0100.01	618.0100.01
				FINISHING	MAINTENANCE
				ROADWAY	AND REPAIR OF
				(PROJECT) (01.	HAUL ROADS
				1520-00-77	(PROJECT) (01.
					1520-00-77)
LOCATION	MOBILIZATION	TYPE B			
	EACH	EACH	EACH	EACH	
PROJECT	1	1	1	1	
TOTAL 0010	1	1	1	1	

CONCRETE PAVEMENT					
* DRILLED TIE BARS					
		7-inch	9-INCH	416.0610	
		415.0070	415.0090		
STATION - STATION	LOCATION	SY	SY	EACH	REMARKS
1+55 - 5+47	LT	---	156	---	
46+02 - 46+22	LT	17	---	11	
46+02 - 46+22	RT	21	---	9	
47+00 - 47+21	LT	24	---	9	
47+00 - 47+21	RT	21	---	9	
225+37 - 225+57	LT	17	---	17	
225+37 - 225+57	RT	17	---	17	
226+09 - 226+30	LT	22	---	22	
226+09 - 226+30	RT	21	---	21	
TOTAL		160	156	116	

* ITEM IS INCLUDED IN CONCRETE REPAIR/REPLACEMENT TABLE.

DRIVEWAYS						
		204.0110	* 305.0110	* 305.0120	465.0120	
		REMOVING ASPHALTIC SURFACE	BASE AGGREGATE DENSE 3/4-INCH	BASE AGGREGATE DENSE 1 1/4- INCH	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	
STATION	LOCATION	SY	TON	TON	TON	REMARKS
2+52	LT	13	-	1	2	PE ASPHALT
4+75	LT	10	-	1	2	PE ASPHALT
5+10	RT	12	-	1	2	PE ASPHALT
5+98	RT	12	-	1	2	PE ASPHALT
6+54	RT	12	-	1	2	PE ASPHALT
6+73	LT	14	-	2	2	PE ASPHALT
8+37	RT	11	-	1	2	PE ASPHALT
8+75	LT	19	-	2	3	PE ASPHALT
9+37	RT	15	-	2	3	PE ASPHALT
10+37	LT	23	-	2	4	PE ASPHALT
11+34	LT	30	-	3	5	CE ASPHALT
12+03	RT	27	3	-	-	PE GRAVEL
12+37	LT	60	-	6	10	CE ASPHALT
12+45	RT	28	3	-	-	PE GRAVEL
13+14	LT	42	-	5	7	PE ASPHALT
14+59	LT	65	-	7	11	CE ASPHALT
15+92	RT	56	-	6	9	PE ASPHALT
16+53	RT	50	-	5	8	PE ASPHALT
17+20	LT	62	-	7	10	CE ASPHALT
19+10	LT	70	-	7	12	CE ASPHALT
20+50	LT	69	-	7	12	CE ASPHALT
23+50	LT	29	3	-	-	PE GRAVEL
24+00	LT	27	3	-	-	PE GRAVEL
26+70	LT	44	-	5	7	PE ASPHALT
28+16	LT	29	3	-	-	PE GRAVEL
28+71	RT	95	-	10	16	CE ASPHALT
31+07	LT	54	-	6	9	CE ASPHALT
33+00	LT	37	4	-	-	PE GRAVEL
36+50	RT	41	4	-	-	PE GRAVEL
40+10	LT	-	3	-	-	FE GRAVEL
43+20	RT	40	4	-	-	PE GRAVEL
50+07	RT	31	3	-	-	PE GRAVEL
51+92	RT	57	-	6	10	PE ASPHALT
53+56	RT	67	-	7	11	PE ASPHALT
56+82	RT	-	2	-	-	FE GRAVEL
64+70	LT	69	-	7	12	CE ASPHALT
68+06	LT	43	-	5	7	PE ASPHALT
70+67	LT	-	2	-	-	PE GRAVEL
72+80	LT	37	4	-	-	PE GRAVEL
75+45	RT	70	7	-	-	PE GRAVEL
75+75	LT	41	4	-	-	PE GRAVEL
80+61	RT	44	5	-	-	PE GRAVEL
82+64	RT	39	-	4	7	PE ASPHALT
85+09	LT	-	3	-	-	FE GRAVEL
85+28	RT	45	-	5	8	CE ASPHALT
87+53	RT	32	-	3	5	PE ASPHALT
91+62	RT	75	-	8	13	CE ASPHALT
96+42	RT	47	-	5	8	PE ASPHALT
97+67	LT	46	5	-	-	PE GRAVEL
101+72	RT	34	-	4	6	PE ASPHALT
SUBTOTALS		1873	65	142	227	

DRIVEWAYS CONT.						
		204.0110	305.0110	305.0120	465.0120	
		REMOVING ASPHALTIC SURFACE	BASE AGGREGATE DENSE 3/4-INCH	BASE AGGREGATE DENSE 1 1/4- INCH	ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES	
STATION	LOCATION	SY	TON	TON	TON	REMARKS
108+07	RT	37	4	-	-	PE GRAVEL
108+72	LT	54	6	-	-	PE GRAVEL
116+00	RT	42	-	5	7	PE ASPHALT
118+66	RT	36	4	-	-	PE GRAVEL
119+05	LT	-	2	-	-	PE GRAVEL
122+53	RT	-	2	-	-	PE GRAVEL
128+64	RT	50	-	5	8	PE ASPHALT
130+65	RT	64	-	7	11	PE ASPHALT
132+34	RT	-	2	-	-	PE GRAVEL
133+20	RT	37	4	-	-	PE GRAVEL
135+26	RT	58	-	6	10	PE ASPHALT
136+20	RT	40	-	4	7	PE ASPHALT
140+21	LT	54	6	-	-	PE GRAVEL
140+21	RT	-	1	-	-	FE GRAVEL
145+08	RT	39	4	-	-	PE GRAVEL
148+74	RT	40	4	-	-	PE GRAVEL
150+60	RT	32	3	-	-	PE GRAVEL
150+87	LT	54	6	-	-	PE GRAVEL
151+35	RT	29	3	-	-	PE GRAVEL
159+41	RT	37	4	-	-	PE GRAVEL
173+03	LT	40	4	-	-	PE GRAVEL
173+38	RT	43	5	-	-	PE GRAVEL
187+00	RT	53	6	-	-	PE GRAVEL
198+80	LT	-	1	-	-	FE GRAVEL
199+00	RT	47	-	5	8	PE ASPHALT
201+11	RT	37	4	-	-	PE GRAVEL
205+59	RT	41	4	-	-	PE GRAVEL
222+88	LT	68	7	-	-	FE GRAVEL
227+57	RT	51	5	-	-	PE GRAVEL
233+90	RT	-	1	-	-	FE GRAVEL
235+15	RT	-	1	-	-	FE GRAVEL
236+50	RT	41	-	4	7	PE ASPHALT
237+55	LT	36	-	4	6	PE ASPHALT
238+90	RT	42	4	-	-	PE GRAVEL
239+75	LT	36	-	4	6	PE ASPHALT
246+60	RT	-	1	-	-	FE GRAVEL
261+11	LT	-	1	-	-	FE GRAVEL
265+21	RT	-	1	-	-	FE GRAVEL
271+65	LT	28	3	-	-	PE GRAVEL
272+08	RT	-	2	-	-	FE GRAVEL
292+91	RT	39	4	-	-	PE GRAVEL
294+22	RT	33	3	-	-	PE GRAVEL
295+50	LT	-	2	-	-	FE GRAVEL
297+00	RT	-	1	-	-	FE GRAVEL
303+12	RT	43	-	5	7	PE ASPHALT
303+62	LT	25	3	-	-	PE GRAVEL
305+48	RT	33	3	-	-	PE GRAVEL
306+65	RT	25	3	-	-	PE GRAVEL
308+17	LT	33	-	4	6	PE ASPHALT
309+16	LT	-	1	-	-	PE GRAVEL
310+10	LT	-	1	-	-	PE GRAVEL
SUBTOTAL		1,497	126	53	83	
TOTAL		3,370	191	195	310	
* ITEM IS INCLUDED IN BASE COURSE ITEMS TABLE.						

CONCRETE REPAIR/REPLACEMENT									
416.0610 416.0620 416.1710 416.1720									
CATEGORY	STATION	TO	STATION	LOCATION	* DRILLED TIE BARS EACH	DRILLED DOWEL BARS EACH	CONCRETE PAVEMENT REPAIR SY	CONCRETE PAVEMENT REPLACEMENT SY	REMARKS
0010	3+09	-	4+03	RT	75	22	-	164	IN INTERSECTION
0010		-	3+37	LT	3	16	11	-	1 LANE - SB OUTSIDE LANE
0010		-	3+43	LT	3	16	9	-	1 LANE - SB INSIDE LANE
0010		-	3+48	RT	14	16	-	22	1 LANE - NB INSIDE LANE
0010		-	3+51	RT	-	12	11	-	1 LANE - NB OUTSIDE LANE
0010		-	3+62	LT	3	16	8	-	1 LANE - SB OUTSIDE LANE
0010		-	3+92	LT	3	16	8	-	1 LANE -SB OUTSIDE LANE
0010		-	4+00	RT	6	12	7	-	1 LANE -NB OUTSIDE LANE
0010		-	4+11	LT	3	16	8	-	1 LANE -SB OUTSIDE LANE
0010		-	4+31	LT & RT	-	48	25	-	3 LANES - SB INSIDE, BOTH NB
0010	4+48	-	5+47	LT	40	8	-	130	1 LANE - SB OUTSIDE LANE
0010		-	4+51	LT	3	16	9	-	1 LANE - SB INSIDE LANE
0010		-	4+71	LT & RT	-	32	17	-	2 LANES - NB & SB INSIDE LANE
0010		-	5+09	RT	3	16	9	-	1 LANE - NB INSIDE LANE
0010		-	5+29	LT & RT	-	32	17	-	2 LANES - NB & SB INSIDE LANE
0010		-	5+47	RT	3	16	9	-	1 LANE - NB INSIDE LANE
0010		-	5+58	LT	3	16	8	-	1 LANE - SB INSIDE LANE
0010		-	5+67	RT	3	16	9	-	1 LANE - NB INSIDE LANE
0010	5+84	-	6+18	RT	13	8	-	46	1 LANE - NB INSIDE LANE
0010		-	5+87	LT	-	16	9	-	1 LANE - SB INSIDE LANE
TOTAL 0010					178	366	174	362	
* ITEMS IS INCLUDED IN CONCRETE PAVEMENT TABLE.									

ASPHALTIC ITEMS

STATION	TO	STATION	LOCATION	204.0120	450.4000 HMA Cold Weather Paving Ton	455.0605 TACK COAT GAL	HMA PAVEMENT 3 MT 58-28 S	HMA PAVEMENT 4 MT 58-28 S	465.0105 *	465.0110
				REMOVING ASPHALTIC SURFACE MILLING SY					ASPHALTIC SURFACE	ASPHALTIC SURFACE PATCHING
							460.6223 TON	460.6224 TON	TON	TON
CATEGORY 0010										
4+04	-	5+47	RT LANE	190	---	10	55	20	---	---
			RT SHOULDER	80	---	5	25	10	---	---
5+47	-	6+17	LT SHOULDER	40	---	0	10	5	---	---
			LT LANE	90	---	5	25	10	---	---
			RT LANE	90	---	5	25	10	---	---
			RT SHOULDER	40	---	0	10	5	---	---
6+17	-	11+45	LT SHOULDER & TAPER	720	---	45	210	70	---	---
			LT LANE	700	---	40	205	70	---	---
			RT LANE	700	---	40	205	70	---	---
			RT SHOULDER & TAPER	760	---	45	225	75	---	---
11+45	-	30+10	LT SHOULDER	1,040	---	60	130	100	---	---
			LT LANE	2,490	---	150	420	245	---	---
			RT LANE	2,490	---	150	420	245	---	---
			RT SHOULDER	1,040	---	60	130	100	---	---
			INTERSECTIONS	260	---	15	35	25	---	---
30+09	-	31+19	LT SHOULDER	60	---	5	10	5	---	---
			LT LANE	150	---	10	20	15	25	---
			RT LANE	150	---	10	20	15	25	---
			RT SHOULDER	60	---	5	10	5	---	---
31+19	-	46+02	LT SHOULDER	900	---	55	115	90	3	---
			LT LANE	1,980	---	120	275	195	---	---
			RT LANE	1,980	---	120	305	195	150	---
			RT SHOULDER	920	---	55	140	90	145	---
			INTERSECTIONS	330	---	20	40	30	---	---
47+21		55+56	LT SHOULDER	560	---	35	70	55	---	---
			LT LANE	1,110	---	65	155	110	---	---
			RT LANE	1,110	---	65	140	110	85	---
			RT SHOULDER	530	---	30	65	50	85	---
			INTERSECTIONS	390	---	25	50	40	---	---
55+56	-	59+82	LT SHOULDER	240	---	15	30	25	---	---
			LT LANE	570	---	35	95	55	0	---
			RT LANE	570	---	35	95	55	0	---
			RT SHOULDER	240	---	15	30	25	---	---
			INTERSECTIONS	390	---	25	50	40	---	---
PAGE TOTALS				22,970	0	1,375	3,845	2,265	518	0

* ITEM INCLUDED IN CONCRETE SIDEWALK & CURB RAMP DETECTABLE WARNING FIELD

ASPHALTIC ITEMS CONT.											
				204.0120			HMA PAVEMENT 3 MT 58-28 S	HMA PAVEMENT 4 MT 58-28 S	465.0105 *	465.0110	
				REMOVING ASPHALTIC SURFACE MILLING	450.4000 HMA Cold	455.0605			ASPHALTIC SURFACE	ASPHALTIC SURFACE PATCHING	
					Weather Paving Ton	TACK COAT GAL	460.6223 TON	460.6224 TON	TON	TON	
STATION	TO	STATION	LOCATION	SY			TON	TON	TON	TON	REMARKS
CATEGORY 0010											
59+82	-	60+91	LT SHOULDER	60	---	5	10	5	---	---	CULVERT REPLACEMENT
			LT LANE	150	---	10	20	15	25	---	
			RT LANE	150	---	10	20	15	25	---	
			RT SHOULDER	60	---	5	10	5	---	---	
60+91	-	85+54	LT SHOULDER	1,370	---	80	170	135	---	---	
			LT LANE	3,280	---	195	550	320	---	---	
			RT LANE	3,280	---	195	550	320	---	---	
			RT SHOULDER	1,370	---	80	170	135	---	---	
85+54	-	88+87	RT LANE	440	---	25	75	45	---	---	
			RT SHOULDER	110	---	5	15	10	---	---	
85+54	-	93+92	LT SHOULDER	280	---	15	60	25	10	---	
			LT LANE	1,120	---	65	235	110	100	---	
88+87	-	107+86	RT LANE	2,530	---	150	425	250	---	---	
			RT SHOULDER	630	---	40	80	60	---	---	
			INTERSECTIONS	650	---	40	80	65	---	---	
93+92	-	107+86	LT LANE	1,860	---	110	390	180	80	---	
			LT SHOULDER	460	---	30	100	45	40	---	
			INTERSECTIONS	450	---	25	100	45	---	---	
107+86	-	183+40	LT SHOULDER	2,520	---	150	315	245	---	---	
			LT LANE	10,070	---	605	1,690	985	---	---	
			RT LANE	10,070	---	605	1,690	985	---	---	
			RT SHOULDER	2,520	---	150	315	245	---	---	
			INTERSECTIONS	1,600	---	95	200	155	---	---	
183+40	-	185+24	LT SHOULDER	60	---	5	10	5	---	---	CULVERT REPLACEMENT
			LT LANE	250	---	15	30	25	40	---	
			RT LANE	250	---	15	30	25	40	---	
			RT SHOULDER	60	---	5	10	5	---	---	
185+24		188+13	LT SHOULDER	100	---	5	10	10	---	---	
			LT LANE	390	---	25	65	40	---	---	
			RT LANE	390	---	25	65	40	---	---	
			RT SHOULDER	100	---	5	10	10	---	---	
PAGE TOTALS				46,630	0	2,790	7,500	4,560	360	0	

* ITEM INCLUDED IN CONCRETE SIDEWALK & CURB RAMP DETECTABLE WARNING FIELD

ASPHALTIC ITEMS CONT.											
STATION	TO	STATION	LOCATION	204.0120	450.4000	455.0605	HMA PAVEMENT 3 MT 58-28 S	HMA PAVEMENT 4 MT 58-28 S	465.0105 *	465.0110	REMARKS
				REMOVING ASPHALTIC SURFACE MILLING	Weather Paving Ton	TACK COAT GAL	460.6223 TON	460.6224 TON	ASPHALTIC SURFACE TON	ASPHALTIC SURFACE PATCHING TON	
CATEGORY 0010											
188+13	-	207+93	LT SHOULDER	660	---	40	85	65	---	---	
			LT LANE	2,640	---	160	405	260	---	---	
			RT LANE	2,640	---	160	335	260	110	---	
			RT SHOULDER	660	---	40	85	65	95	---	
207+93	-	211+95	LT SHOULDER	130	---	10	15	15	---	---	
			LT LANE	540	---	30	90	55	---	---	
			RT LANE	540	---	30	90	55	---	---	
			RT SHOULDER	130	---	10	20	15	---	---	
			INTERSECTIONS	1,090	---	65	170	105	---	---	
211+95	-	225+36	LT SHOULDER	620	---	35	80	60	3	---	
			LT LANE	1,790	---	105	300	175	---	---	
			RT LANE	1,790	---	105	300	175	---	---	
			RT SHOULDER	670	---	40	85	65	3	---	
226+10	-	233+55	LT SHOULDER	480	---	30	60	45	---	---	
			LT LANE	990	---	60	165	95	---	---	
			RT LANE	990	---	60	165	95	---	---	
			RT SHOULDER	370	---	20	45	35	---	---	
233+55	-	242+22	LT SHOULDER	290	---	15	35	30	---	---	
			LT LANE	1,160	---	70	145	115	---	---	
			RT LANE	1,160	---	70	145	115	---	---	
			RT SHOULDER	290	---	15	35	30	---	---	
242+22	-	246+46	LT SHOULDER	140	---	10	20	15	---	---	
			LT LANE	570	---	35	95	55	---	---	
			RT LANE	570	---	35	95	55	---	---	
			RT SHOULDER	140	---	10	20	15	---	---	
246+46		248+54	LT SHOULDER	70	---	5	10	5	---	---	CULVERT REPLACEMENT
			LT LANE	280	---	15	35	25	45	---	
			RT LANE	280	---	15	35	25	45	---	
			RT SHOULDER	70	---	5	10	5	---	---	
PAGE TOTALS				21,750	0	1,300	3,175	2,130	301	0	

* ITEM INCLUDED IN CONCRETE SIDEWALK & CURB RAMP DETECTABLE WARNING FIELD

ASPHALTIC ITEMS CONT.											
				204.0120			HMA PAVEMENT 3 MT 58-28 S	HMA PAVEMENT 4 MT 58-28 S	465.0105 *	465.0110	
				REMOVING ASPHALTIC SURFACE MILLING	450.4000 HMA Cold	455.0605			ASPHALTIC SURFACE	ASPHALTIC SURFACE PATCHING	
					Weather Paving Ton	TACK COAT GAL	460.6223	460.6224			
STATION	TO	STATION	LOCATION	SY			TON	TON	TON	TON	REMARKS
CATEGORY 0010											
248+54	-	258+83	LT SHOULDER	340	---	20	45	35	---	---	
			LT LANE	1,370	---	80	230	135	---	---	
			RT LANE	1,370	---	80	230	135	---	---	
			RT SHOULDER	340	---	20	45	35	---	---	
			INTERSECTIONS	420	---	25	55	40	---	---	
258+83	-	260+25	LT SHOULDER	50	---	5	5	5	---	---	CULVERT REPLACEMENT
			LT LANE	190	---	10	25	20	30	---	
			RT LANE	190	---	10	25	20	30	---	
			RT SHOULDER	50	---	5	5	5	---	---	
260+25	-	270+06	LT SHOULDER	330	---	20	40	30	---	---	
			LT LANE	1,310	---	80	220	130	---	---	
			RT LANE	1,310	---	80	220	130	---	---	
			RT SHOULDER	330	---	20	40	30	---	---	
			INTERSECTIONS	360	---	20	45	35	---	---	
270+06	-	271+19	LT SHOULDER	40	---	0	5	5	---	---	CULVERT REPLACEMENT
			LT LANE	150	---	10	20	15	25	---	
			RT LANE	150	---	10	20	15	25	---	
			RT SHOULDER	40	---	0	5	5	---	---	
271+19	-	298+43	LT SHOULDER	910	---	55	115	90	---	---	
			LT LANE	3,630	---	220	610	355	---	---	
			RT LANE	3,630	---	220	610	355	---	---	
			RT SHOULDER	910	---	55	115	90	---	---	
			INTERSECTIONS	320	---	20	40	30	---	---	
PAGE TOTALS				17,740	0	1,065	2,770	1,745	110	0	

* ITEM INCLUDED IN CONCRETE SIDEWALK & CURB RAMP DETECTABLE WARNING FIELD

ASPHALTIC ITEMS CONT.										
STATION	TO	STATION	LOCATION	204.0120	450.4000	455.0605	HMA PAVEMENT 3 MT 58-28 S	HMA PAVEMENT 4 MT 58-28 S	465.0105 *	465.0110
				REMOVING ASPHALTIC SURFACE MILLING	HMA Cold	Weather Paving	TACK COAT			ASPHALTIC SURFACE
				SY	Ton	GAL	460.6223 TON	460.6224 TON	TON	TON
CATEGORY 0010										
298+43	-	299+53	LT SHOULDER	40	---	0	5	5	---	---
			LT LANE	150	---	10	20	15	25	---
			RT LANE	150	---	10	20	15	25	---
			RT SHOULDER	40	---	0	5	5	---	---
299+53	-	310+30	LT SHOULDER	360	---	20	45	35	---	---
			LT LANE	1,440	---	85	240	140	---	---
			RT LANE	1,440	---	85	240	140	---	---
			RT SHOULDER	360	---	20	45	35	---	---
310+30	-	311+37	LT SHOULDER	40	---	0	5	5	---	---
			LT LANE	140	---	10	20	15	25	---
			RT LANE	140	---	10	20	15	25	---
			RT SHOULDER	40	---	0	5	5	---	---
UNDISTRIBUTED				---	29,990	---	---	---	347	900
PAGE TOTALS				4,340	29,990	250	670	430	447	900
PROJECT TOTAL				113,430	29,990	6,780	17,960	11,130	1,736	900

* ITEM INCLUDED IN CONCRETE SIDEWALK & CURB RAMP DETECTABLE WARNING FIELD

ASPHALTIC RUMBLE STRIPS						
				465.0520	465.0560	
				ASPHALTIC RUMBLE STRIPS, SHOULDER	ASPHALTIC RUMBLE STRIPS, CENTERLINE	
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF
0010	22+00	-	38+50	RT	1,380	-
0010	40+65	-	45+77	RT	400	-
0010	47+46	-	88+15	RT	3,500	-
0010	22+00	-	40+65	LT	2,021	-
0010	45+52	-	91+63	LT	3,099	-
0010	22+00	-	45+77	CL	-	1,580
0010	47+46	-	225+11	CL	-	14,570
0010	226+55	-	311+37	CL	-	7,090
TOTAL 0010					10,400	23,240

PWL MIXTURE USE

STATION	TO	STATION	LOCATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS (INCHES)	QUALITY MANAGEMENT PROGRAM TO BU USED FOR:	
									MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
CATEGORY 0010										
4+04	-	5+47	RT LANE	LOWER LAYER	BASE AGGREGATE	3 MT 58-28 S	55	5.25	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
			RT SHOULDER				25	5.25	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
4+04	-	5+47	RT LANE	UPPER LAYER	3 MT 58-28 S	4 MT 58-28 S	20	1.75	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
			RT SHOULDER				10	1.75	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
5+47	-	11+45	SHOULDER	LOWER LAYER	BASE AGGREGATE	3 MT 58-28 S	455	5.25	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
			12' LANES				460	5.25	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
5+47	-	11+45	SHOULDER	UPPER LAYER	3 MT 58-28 S	4 MT 58-28 S	155	1.75	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
			12' LANES				160	1.75	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
11+45	-	311+37	SHOULDER	LOWER LAYER	BASE AGGREGATE	3 MT 58-28 S	3,150	2.25	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
			12' LANES		RUBBILIZED PAVEMENT		12,950	2.25	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
11+45	-	311+37	SHOULDER	UPPER LAYER	3 MT 58-28 S	3 MT 58-28 S	2,370	1.75	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
			12' LANES				7,805	1.75	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
VARIES - INTERSECTIONS			INTERSECTIONS	LOWER LAYER	BASE AGGREGATE	3 MT 58-28 S	865	1.75	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
VARIES - INTERSECTIONS			INTERSECTIONS	UPPER LAYER	3 MT 58-28 S	4 MT 58-28 S	610	1.75	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
VARIES - CULVERT REPLACEMENTS			SHOULDER	LOWER LAYER	BASE AGGREGATE	3 MT 58-28 S	0	5.25	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01
			12' LANES				0	5.25	PWL Incentive Air Voids, HMA Pavement SPV.0055.02	Incentive Density PWL HMA Pavement SPV.0055.01

CULVERT PIPES														
STATION	LOCATION	520.1030	520.1036	520.3430	520.3436	522.0160	522.0436	522.1036	522.1060	INLET ELEVATION	DISCHARGE ELEVATION	SLOPE FT/FT	REMARKS	
		APRON ENDWALL	APRON ENDWALL	CLASS III-A	CLASS III-A	REINFORCE	REINFORCE	APRON ENDWALL	APRON ENDWALL					
		FOR CULVERT PIPE	FOR CULVERT PIPE	NON-METAL	NON-METAL	CONCRETE	CONCRETE	FOR CULVERT PIPE	FOR CULVERT PIPE					
		30-INCH	36-INCH	30-INCH	36-INCH	60-INCH	36-INCH	36-INCH	60-INCH					
		EACH	EACH	LF	LF	LF	LF	EACH	EACH					
30+64	STH 73	-	2	-	72	-	-	-	-	1017.76	1017.55	0.0029		
60+36	STH 73	2	-	98	-	-	-	-	-	1024.55	1023.97	0.0059		
184+32	STH 73	-	2	-	110	-	-	-	-	1050.30	1049.90	0.0036		
247+42	STH 73	-	-	-	-	116	-	-	2	1039.46	1038.43	0.0089		
247+58	STH 73	-	-	-	-	116	-	-	2	1039.46	1038.43	0.0089		
259+50	STH 73	-	-	-	-	-	84	2	-	1042.88	1042.87	0.0001		
259+58	STH 73	-	-	-	-	-	84	2	-	1042.88	1042.87	0.0001		
298+98	STH 73	2	-	72	-	-	-	-	-	1072.18	1070.13	0.0285		
310+84	STH 73	2	-	68	-	-	-	-	-	1079.37	1079.13	0.0035		
						-								
TOTALS		6	4	238	182	232	168	4	4					

CONCRETE CURB & GUTTER

STATION - STATION	LOCATION	601.0409	601.0590	601.0588		
		CONCRETE CURB & GUTTER 30-INCH TYPE A	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBTT	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT		
		LF	LF	LF		
1+55 - 5+47	LT	392	-	-		
3+52 - 3+71	RT	21	-	-		
45+69 - 46+22	LT	-	21	32		
225+04 - 225+56	RT	-	20	33		
225+04 - 225+56	LT	-	20	33		
TOTAL		413	61	98		

SIDEWALK & CURB RAMP DETECTABLE WARNING FIELD

STATION - STATION	LOCATION	465.0105 *	602.0415	602.0605	REMARKS	
		ASPHALTIC SURFACE	CONCRETE SIDEWALK 6-INCH	WARNING FIELD RADIAL YELLOW		
		TONS	SF	SF		
3+75	CURB RAMP INDUSTRIAL ST NE	6	125	20		
TOTALS		6	125	20		

* ITEM INCLUDED IN ASPHALTIC ITEMS TABLE

RIPRAP & GEOTEXTILE FABRIC

STATION	DIR	LOCATION	606.0200	645.0120
			RIPRAP MEDIUM CY	GEOTEXTILE FABRIC TYPE HR SY
45+80	LT	STH 73	4	8
225+13	LT	STH 73	4	8
225+13	RT	STH 73	4	8
247+51	LT	STH 73	13	26
TOTALS			25	50

STORM SEWER AND PIPE UNDERDRAIN

CATEGORY	STATION -	STATION	LOCATION	608.0412	611.3230	611.0430	611.0639	612.0204	612.0804	204.9060.S.01	REMARKS
				STORM SEWER REINFORCED CONCRETE CLASS IV 12-INCH	INLET 2X3	RECONSTRUCT INLET	INLET COVERS TYPE H-S	PIPE UNDERDRAIN UNPERFORATED 4-INCH	APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE 4-INCH	REMOVING APRON ENDWALLS FOR UNDERDRAIN REINFORCED CONCRETE	
				EACH	EACH	EACH	EACH	LF	EACH	EACH	
0010	1+55 -	2+11	LT	54	1	1	1	-	-	-	
0010	30+10 -	31+20	LT&RT	-	-	-	-	70	2	1	
0010	59+84 -	60+89	LT&RT	-	-	-	-	70	2	1	
0010	183+53 -	185+08	LT&RT	-	-	-	-	70	2	2	
0010	246+52 -	248+52	LT&RT	-	-	-	-	70	2	2	
0010	258+84 -	260+25	LT&RT	-	-	-	-	70	2	2	
0010	270+08 -	271+18	LT&RT	-	-	-	-	70	2	-	
0010	298+45 -	299+51	LT&RT	-	-	-	-	70	2	2	
0010	310+31 -	311+37	LT&RT	-	-	-	-	70	2	2	
TOTAL 0010				54	1	1	1	560	16	12	

GUARDRAIL ITEMS								
CATEGORY	STATION	TO	STATION	LOCATION	204.0165	614.2300	614.2500	614.2610
					REMOVING	MGS	MGS THRIE	MGS GUARDRAIL
					GUARDRAIL	GUARDRAIL 3	BEAM	TERMINAL EAT
					LF	LF	LF	EACH
0010	44+65	-	47+98	RT	320	75.0	78.8	2
0010	44+74	-	48+61	LT	312	112.5	78.8	2
0010	222+86	-	227+30	RT	400	200.0	78.8	2
0010	223+48	-	228+80	LT	489	287.5	78.8	2
TOTAL 0010					1,521	675	315	8

EROSION CONTROL MOBILIZATIONS			
CATEGORY	LOCATION	628.1905	628.1910
		MOBILIZATIONS	MOBILIZATIONS
		EROSION	EMERGENCY
		CONTROL	EROSION CONTROL
		EACH	EACH
0010	PROJECT WIDE	8	4
TOTAL 0010		8	4

					RESTORATION ITEMS							
					625.0100	628.2006	628.2008	628.2027	629.021	630.0130	630.0140	630.0500
						EROSION MAT	EROSION MAT			SEEDING	SEEDING	
						URBAN CLASS I	URBAN CLASS I	EROSION MAT	FERTLIZER	MIXTURE	MIXTURE	
					TOPSOIL	TYPE A	TYPE B	CLASS II TYPE C	TYPE B	NO. 30	NO. 40	SEED WATER
CATEGORY	STATION	TO	STATION	LOCATION	SY	SY	SY	SY	CWT	LB	LB	MGAL
0010	1+55	-	11+47	LT&RT	920	920	-	-	0.58	-	42	21
0010	30+10	-	31+20	LT&RT	190	-	190	-	0.11	9	-	5
0010	44+65	-	48+61	LT&RT	1,030	-	1,030	-	-	47	-	24
0010	59+84	-	60+89	LT&RT	220	-	220	-	-	10	-	5
0010	183+53	-	185+08	LT&RT	510	-	510	-	-	23	-	12
0010	222+86	-	228+80	LT&RT	1,050	-	1,050	-	0.66	48	-	24
0010	246+52	-	248+52	LT&RT	560	-	560	-	-	25	-	13
0010	258+84	-	260+25	LT&RT	370	-	370	-	-	17	-	9
0010	270+08	-	271+18	LT&RT	820	-	563	257	-	37	-	19
0010	298+45	-	299+51	LT&RT	1,060	-	1,060	-	0.13	48	-	24
0010	310+31	-	311+37	LT&RT	160	-	160	-	0.10	7	-	4
0010	UNDISTRIBUTED				1,730	230	1,430	70	0.42	68	11	40
TOTAL 0010					8,620	1,150	7,143	327	2.00	339	53	200

MARKERS CULVERT END			
STATION	LOCATION	633.5200	REMARKS
		EACH	
30+64	STH 73	2	CULVERT
60+36	STH 73	2	CULVERT
184+32	STH 73	2	CULVERT
247+51	STH 73	2	CULVERT
259+53	STH 73	2	CULVERT
298+98	STH 73	2	CULVERT
310+84	STH 73	2	CULVERT
TOTAL		14	

RESTORATION ITEMS												
					628.1504	628.1520	628.7010	628.7020	628.7504	628.7555	628.7570	
						SILT FENCE	INLET	INLET	TEMPORARY	CULVERT PIPE		
					SILT FENCE	MAINTENANCE	PROTECTION	PROTECTION	DITCH	CHECKS	ROCK BAGS	
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	TYPE B	TYPE D	CHECKS	EACH	EACH	
0010	1+55	-	11+47	LT&RT	-	-	4	3	-	6	-	
0010	30+10	-	31+20	LT&RT	220	220	-	-	-	6	-	
0010	44+65	-	48+61	LT&RT	930	930	-	-	120	-	72	
0010	59+84	-	60+89	LT&RT	290	290	-	-	-	6	-	
0010	183+53	-	185+08	LT&RT	470	470	-	-	-	6	36	
0010	222+86	-	228+80	LT&RT	1,470	1,470	-	-	60	-	72	
0010	246+52	-	248+52	LT&RT	460	460	-	-	-	12	-	
0010	258+84	-	260+25	LT&RT	390	390	-	-	-	12	-	
0010	270+08	-	271+18	LT&RT	-	-	-	-	40	-	-	
0010	298+45	-	299+51	LT&RT	500	500	-	-	-	6	-	
0010	310+31	-	311+37	LT&RT	230	230	-	-	-	6	-	
0010	UNDISTRIBUTED				1,240	1,240	-	-	60	15	45	
TOTAL 0010					6,200	6,200	4	3	280	75	225	

PAVEMENT MARKING ITEMS

				646.2040	646.3020	646.4040	646.5520	646.6120	646.7420	646.9200			
				MARKING LINE GROOVED WET REF EPOXY 6-INCH	MARKING LINE EPOXY 8-INCH	MARKING LINE GROOVED WET REF EPOXY 10- INCH	MARKING OUTFALL EPOXY	MARKING STOP LINE EPOXY 18- INCH	MARKING CROSSWALK EPOXY TRANSVERSE LINE 6-INCH	MARKING LINE REMOVAL WIDE			
				YELLOW	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE			
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	LF	EACH	LF	LF	LF	REMARKS
0010			PROJECT	LT&RT	29,050	60,500	6	324	100	48	240	150	
TOTAL 0010					89,550		6	324	100	48	240	150	

CONSTRUCTION STAKING ITEMS

					650.4000	650.4500	650.5000	650.5500	650.6000	650.7000	650.8000	650.9000	650.9500.01	650.9911.01	650.9920
					CONSTRUCTION STAKING STORM SEWER	CONSTRUCTION STAKING SUBGRADE	CONSTRUCTION STAKING BASE	CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER	CONSTRUCTION STAKING PIPE CULVERTS	CONSTRUCTION STAKING CONCRETE PAVEMENT	CONSTRUCTION STAKING RESURFACING REFERENCE	CONSTRUCTION STAKING CURB RAMPS	CONSTRUCTION STAKING SIDEWALK (PROJECT) 01. 1520-00-77	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (PROJECT) (01. 1520-00-77)	CONSTRUCTION STAKING SLOPE STAKES
CATEGORY	STATION	TO	STATION	LOCATION	EACH	LF	LF	LF	EACH	LF	LF	EACH	EACH	EACH	LF
0010	1+55	-	11+45	LT&RT	1	990	990	-	-	392	-	1	1	-	990
0010	30+10	-	31+20	LT&RT	-	110	110	-	1	-	-	-	-	-	-
0010	44+65	-	46+22	LT&RT	-	-	-	53	-	-	-	-	-	-	157
0010	47+01		48+61	LT&RT	-	-	-	-	-	-	-	-	-	-	160
0010	59+84	-	60+89	LT&RT	-	105	105	-	1	-	-	-	-	-	-
0010	183+53	-	185+08	LT&RT	-	155	155	-	1	-	-	-	-	-	-
0010	222+50	-	225+57	LT&RT	-	-	-	106	-	-	-	-	-	-	307
0010	226+09		228+80	LT&RT	-	-	-	-	-	-	-	-	-	-	271
0010	246+52	-	248+52	LT&RT	-	200	200	-	2	-	-	-	-	-	-
0010	258+84	-	260+25	LT&RT	-	141	141	-	2	-	-	-	-	-	-
0010	270+25	-	270+75	LT&RT	-	50	50	-	-	-	-	-	-	-	50
0010	298+50	-	300+50	LT&RT	-	200	200	-	1	-	-	-	-	-	200
0010	310+31	-	311+37	LT&RT	-	106	106	-	1	-	-	-	-	-	106
0010			PROJECT WIDE		-	-	-	-	-	-	28,671	-	-	1	-
TOTAL 0010					1	2,057	2,057	159	9	392	28,671	1	1	1	2,241

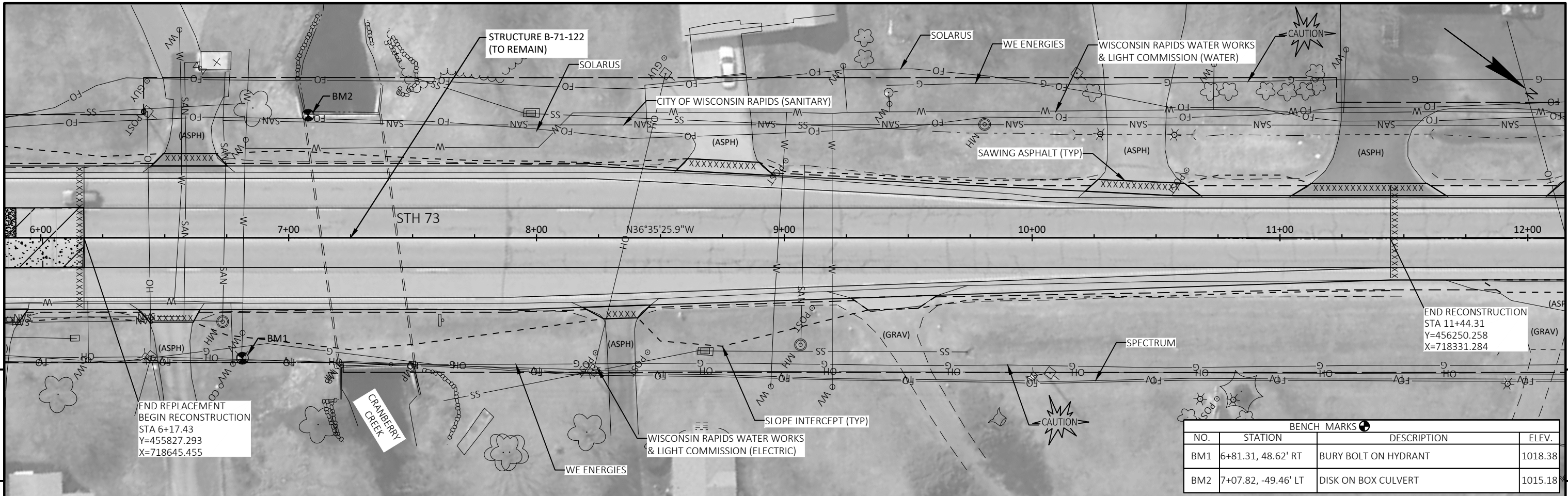
SAWING ITEMS

CATEGORY	STATION	LOCATION	690.0150	690.0250	REMARKS
			SAWING ASPHALT LF	SAWING CONCRETE LF	
0010	1+55 - 6+17	LT&RT	-	1,320	CONCRETE PAVEMENT REPAIRS
0010	11+45	LT&RT	34	-	RECONSTRUCT LIMITS
0010	45+62	LT&RT	55	-	B-71-8
0010	47+62	LT&RT	20	-	B-71-8
0010	224+95	LT&RT	89	-	B-71-6
0010	226+70	LT&RT	20	-	B-71-6
0011	270+62	LT&RT	-	8	CATTLE PASS STEPS
0010	PROJECT WIDE		1,184	-	DRIVEWAYS
0010	PROJECT WIDE		117	384	CULVERT REPLACEMENTS
TOTAL 0010			1,519	1,712	

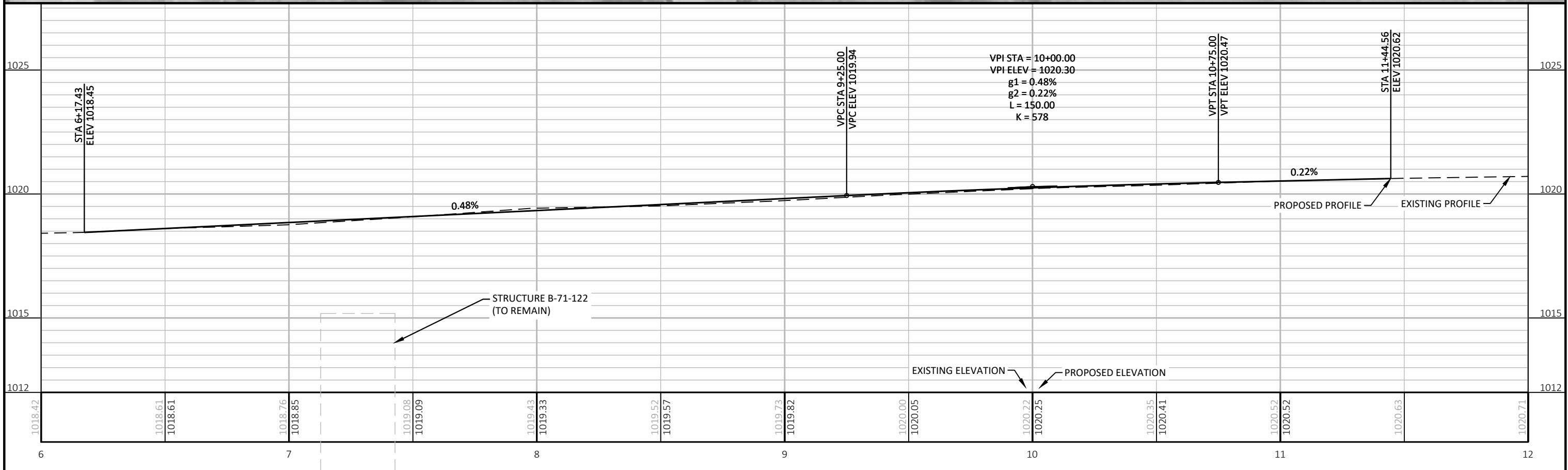
SPECIAL PROVISION ITEMS

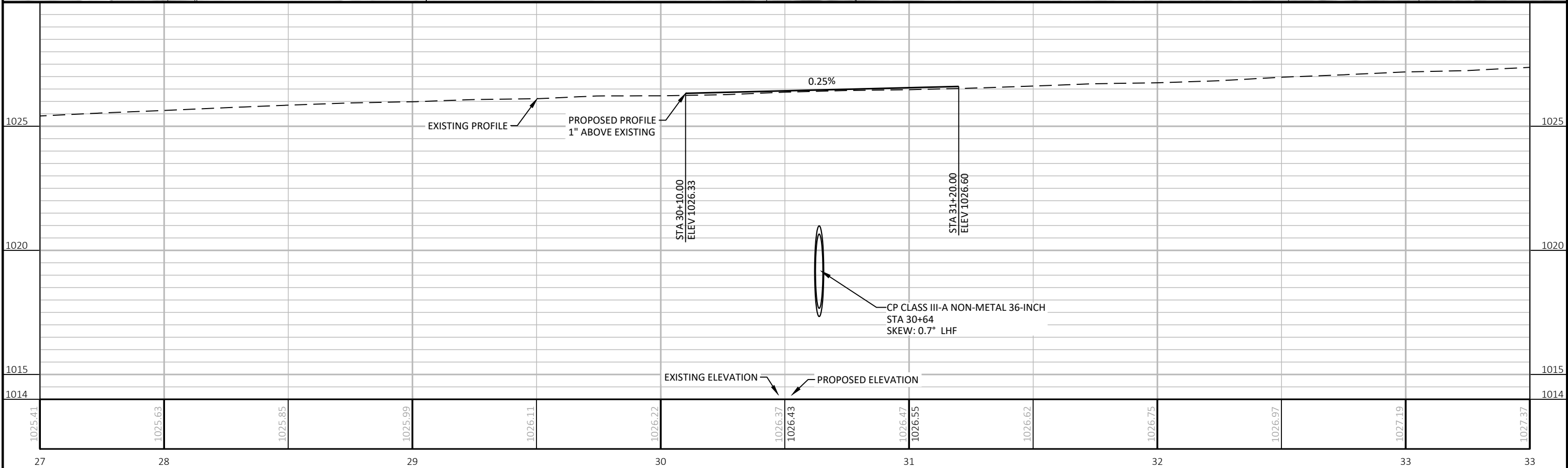
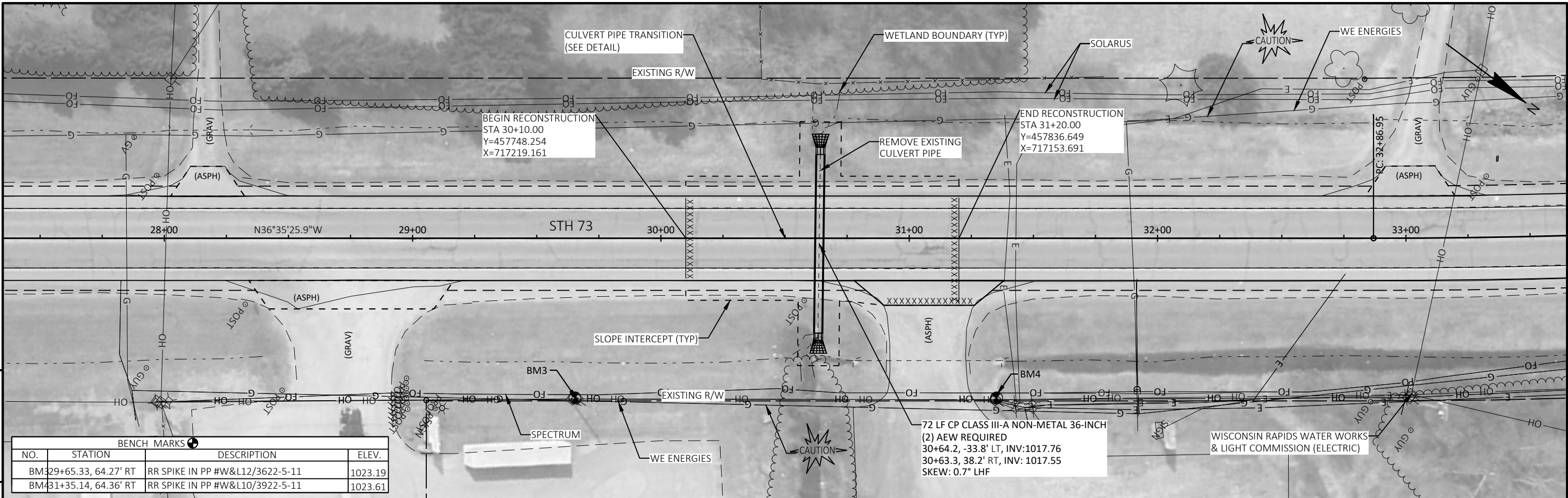
LOCATING NO-PASSING ZONES						SPV.0060.01						SPV.0060.02						SPV.0060.03						SPV.0060.04					
						TEMPORARY BYPASS PUMPING STA 30+64						TEMPORARY BYPASS PUMPING STA 184+32						TEMPORARY WATER DIVERSION TWIN CULVERT CONSTRUCTION STA 247+51						TEMPORARY WATER DIVERSION TWIN CULVERT CONSTRUCTION STA 259+53					
CATEGORY	STATION	TO	STATION	LOCATION	648.0100 LOCATING NO-PASSING ZONES MI	STATION	LOCATION	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH						
0010	2+97	-	311+37	PROJECT	5.84	30+64	STH 73	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
				TOTAL 0010	5.84	184+32	STH 73	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
						247+51	STH 73	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-						
						259+53	STH 73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
TOTAL								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							

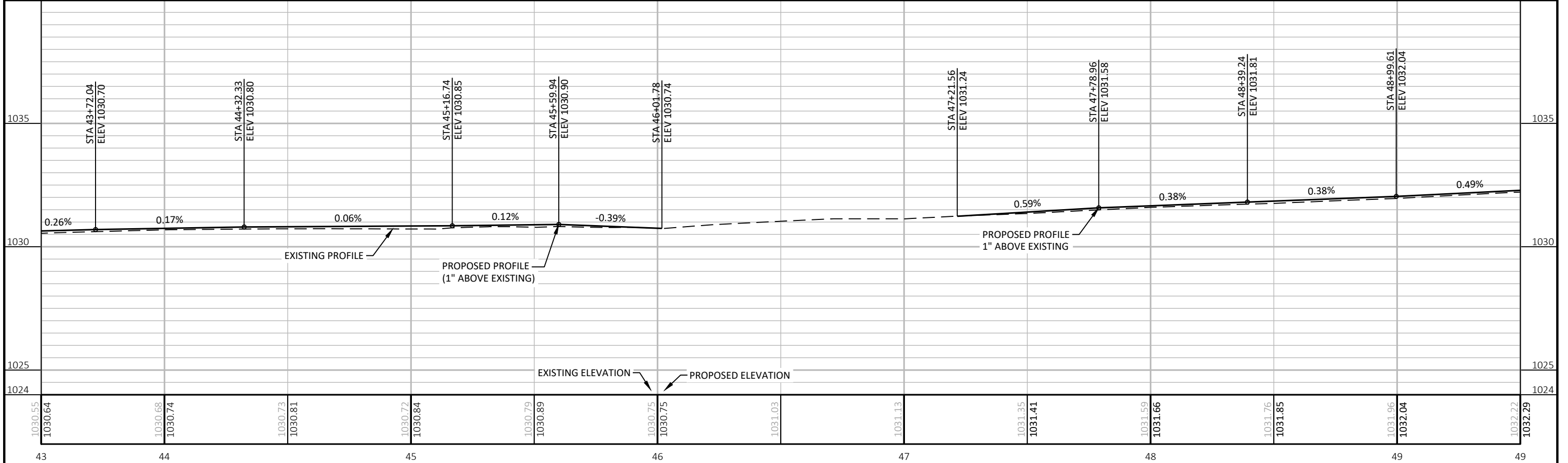
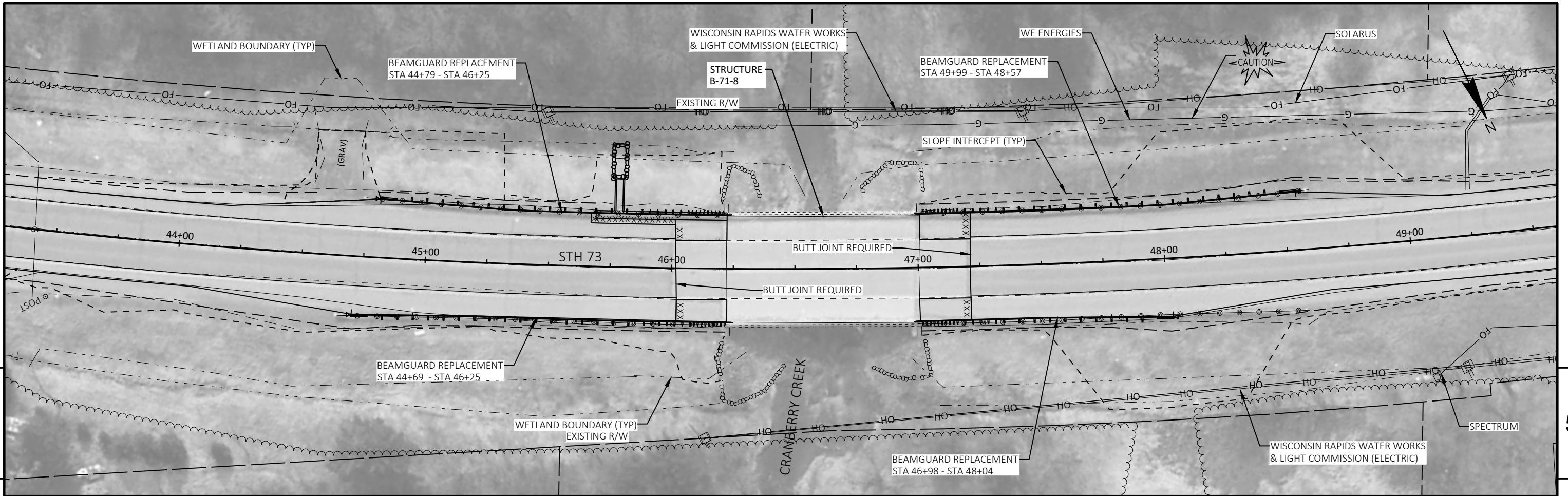
TRAFFIC CONTROL ITEMS																
			DURATION	643.0300		643.0420		643.0705		643.0900		643.0920	643.1000	643.1050		
				TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL COVERING SIGNS TYPE II (ONE CYCLE)	TRAFFIC CONTROL SIGNS FIXED MESSAGE	TRAFFIC CONTROL SIGNS PCMS		
CATEGORY	STAGE	LOCATION	(DAYS)	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	SF	EACH	DAY	
0010	PROJECT	STH 73 AT INDUSTRIAL STREET	105	-	-	7	735	14	1,470	7	735	-	-	-	-	
0010		SIDEROADS	105	-	-	28	2,940	56	5,880	42	4,410	-	-	-	-	
0010		STH 73 AT STH 186/CTH D	105	-	-	2	210	4	420	6	630	-	-	-	-	
0010		STH 73	105	-	-	-	-	-	-	-	-	-	-	-	-	-
0010		UNDISTRIBUTED	-	-	250	-	-	-	-	-	-	-	-	-	-	-
0010	CULVERT REPLACEMENTS	STH 73	24	-	-	14	336	20	480	4	96	-	-	2	48	
0010	DETOUR	STH 73 AT CTH F/17TH AVE	105	-	-	1	-	-	-	18	1,890	1	-	-	-	
0010		STH 13/73/W RIVERVIEW EXPY	105	-	-	-	-	-	-	22	2,310	3	-	-	-	
0010		STH 13/54/73/2ND AVE SOUTH	105	-	-	-	-	-	-	22	2,310	6	-	-	-	
0010		STH 54/73/WISCONSIN RIVER DRIVE	105	-	-	-	-	-	-	8	840	3	-	-	-	
0010		STH 73 AT STH 54	105	-	-	-	-	-	-	21	2,205	4	-	-	-	
0010		STH 54 AT CTH GG	105	-	-	-	-	-	-	14	1,470	-	-	-	-	
0010		STH 54 AT CTH G	105	-	-	-	-	-	-	14	1,470	-	-	-	-	
0010		STH 54 AT CTH D SOUTH	105	-	-	-	-	-	-	14	1,470	-	-	-	-	
0010		STH 54 AT CTH D NORTH	105	-	-	-	-	-	-	14	1,470	-	-	-	-	
0010		STH 54 AT STH 80 SOUTH	105	-	-	-	-	-	-	22	2,310	-	-	-	-	
0010		STH 54 AT STH 80 NORTH	105	-	-	-	-	-	-	41	4,305	-	-	-	-	
0010		STH 80 AT CTH E	105	-	-	-	-	-	-	14	1,470	-	-	-	-	
0010		STH 80/CTH E AT STH 73	105	-	-	1	-	-	-	23	2,415	5	-	-	-	
0010		CTH E AT STH 73	105	-	-	-	-	-	-	8	840	-	-	-	-	
0010		STH 186/CTH D AT STH 73	105	-	-	-	-	-	-	16	1,680	1	-	-	-	
0010	PROJECT PRE-WARNING	STH 73 AT INDUSTRIAL STREET	7	-	-	-	-	-	-	-	-	-	18.00	-		
0010		STH 73 AT STH 186/CTH D	7	-	-	-	-	-	-	-	-	-	18.00	-		
				TOTAL 0010		250		4,221		8,250		34,326		23		
												36.00		48		



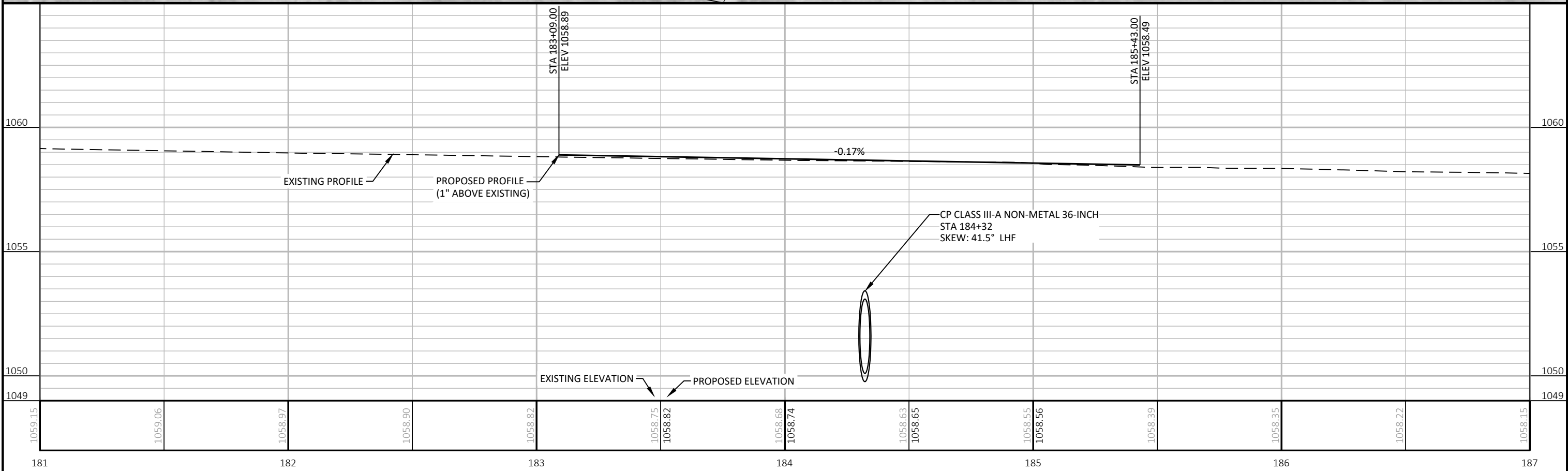
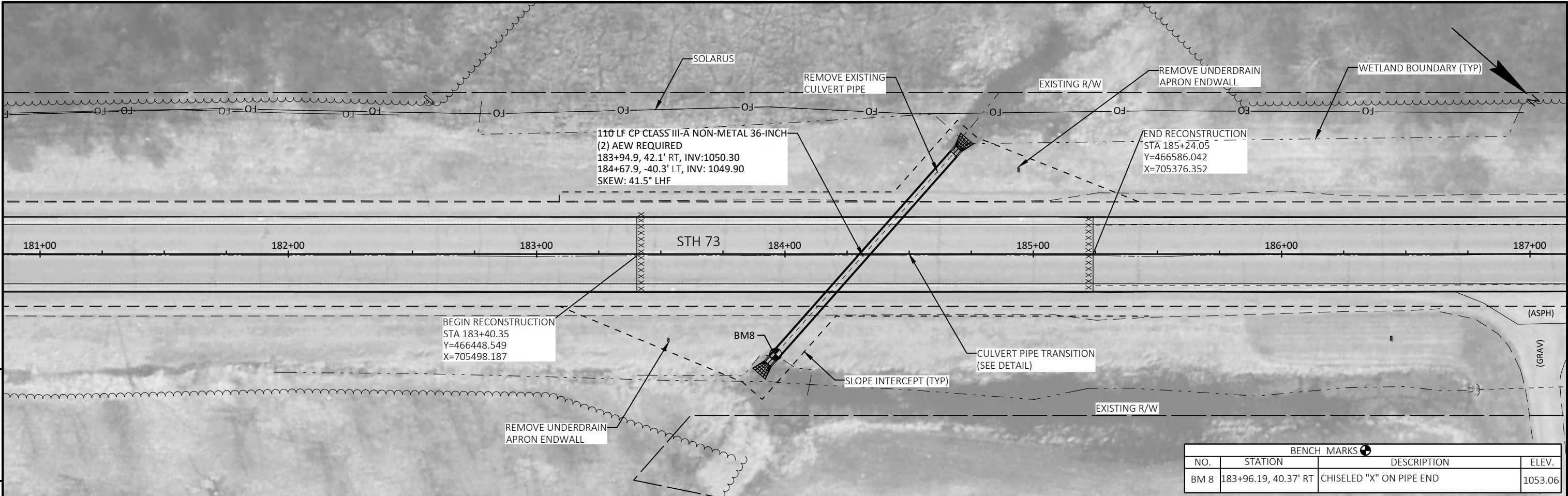
BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM1	6+81.31, 48.62' RT	BURY BOLT ON HYDRANT	1018.38
BM2	7+07.82, -49.46' LT	DISK ON BOX CULVERT	1015.18

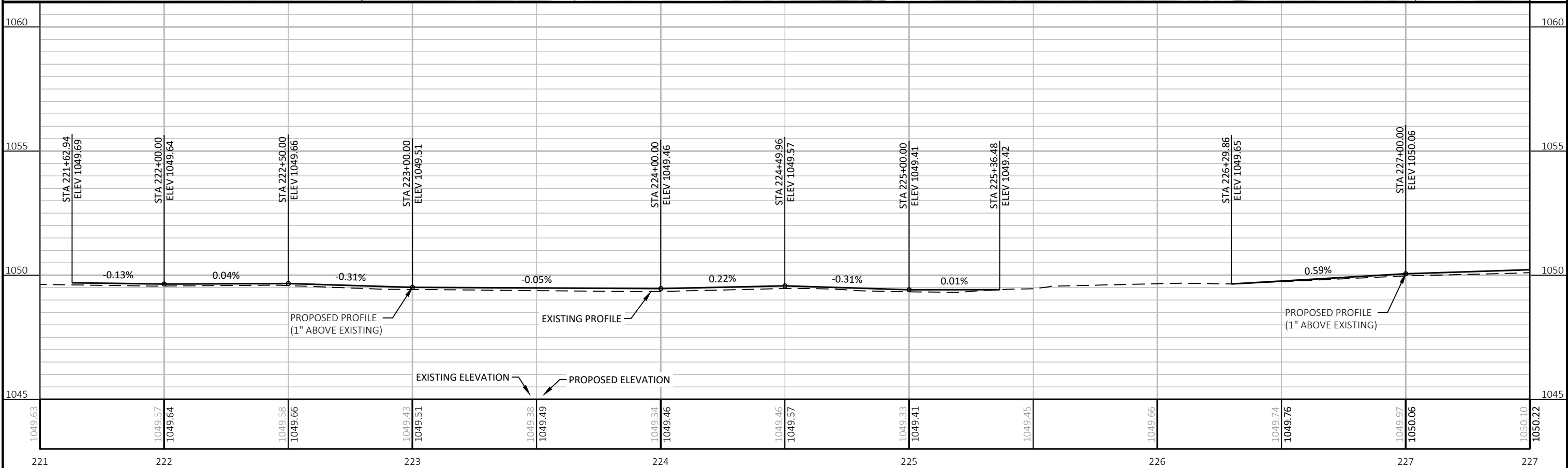
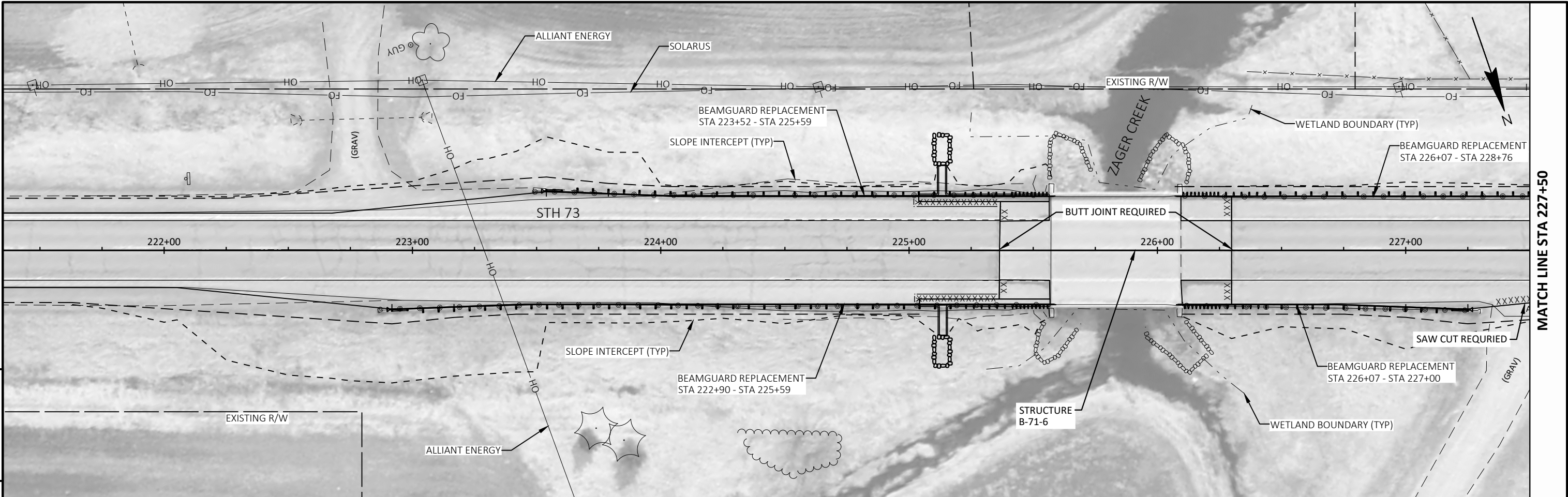


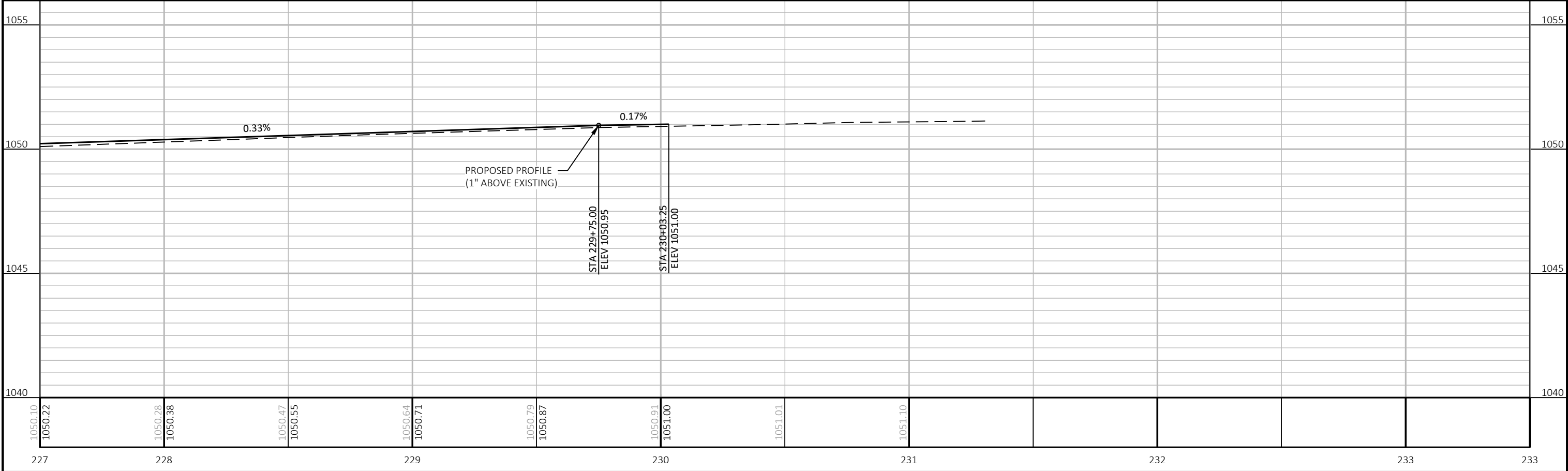
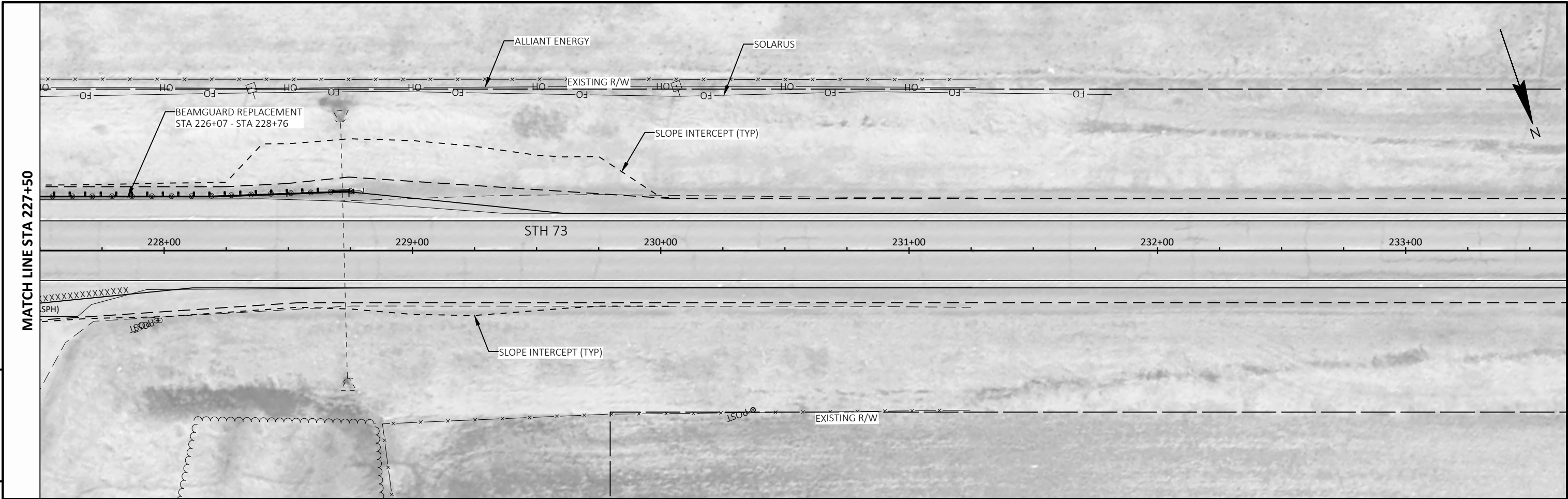




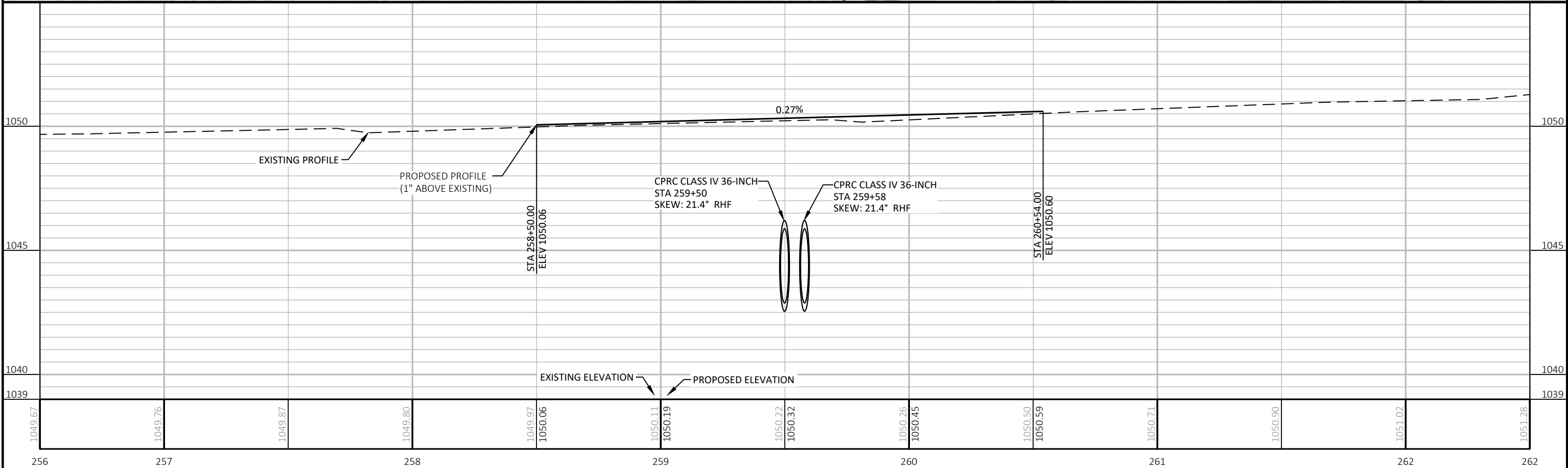
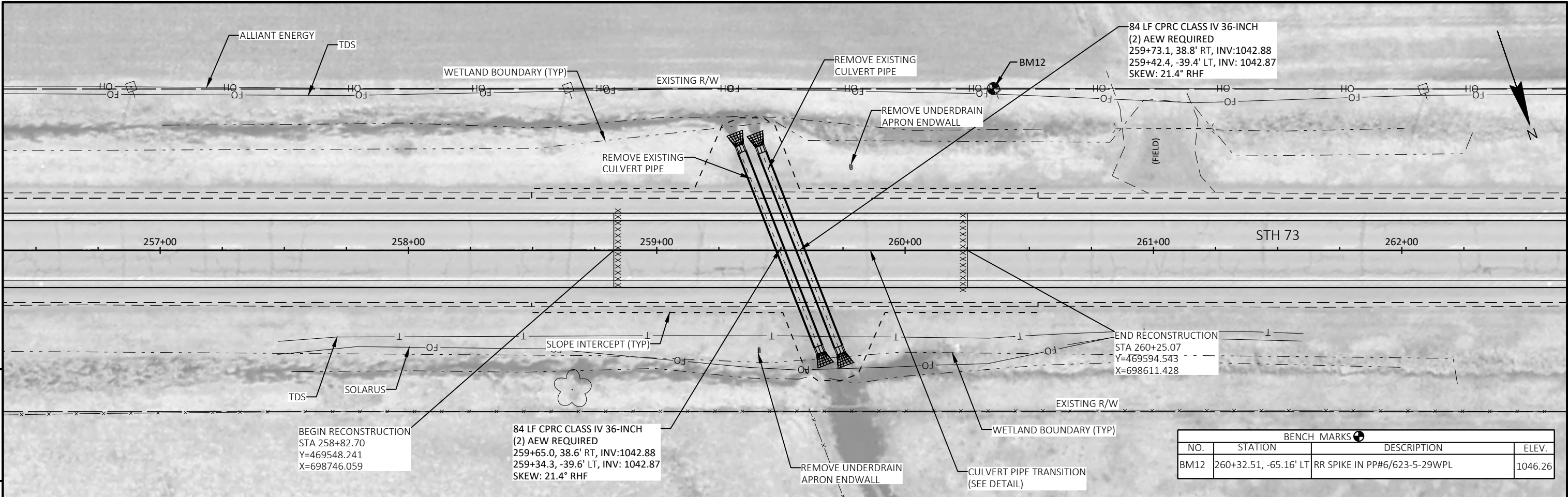
PROJECT NO:	1520-00-77	HWY:	STH 73	COUNTY:	WOOD	PLAN AND PROFILE:	STRUCTURE	SHEET	75	E
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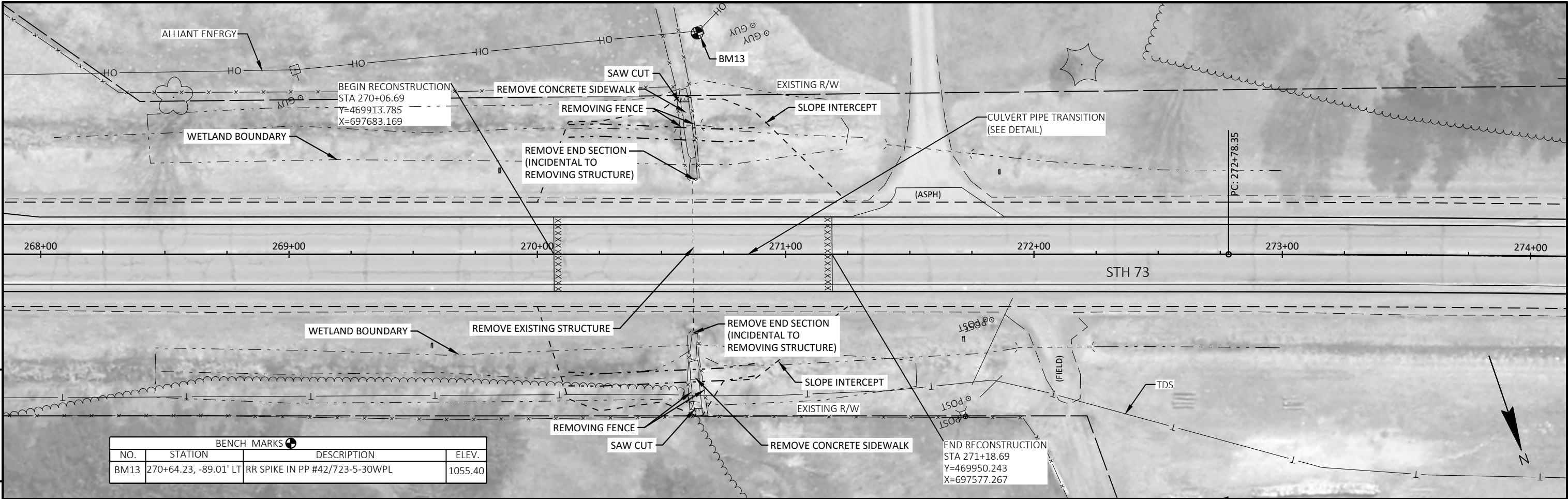




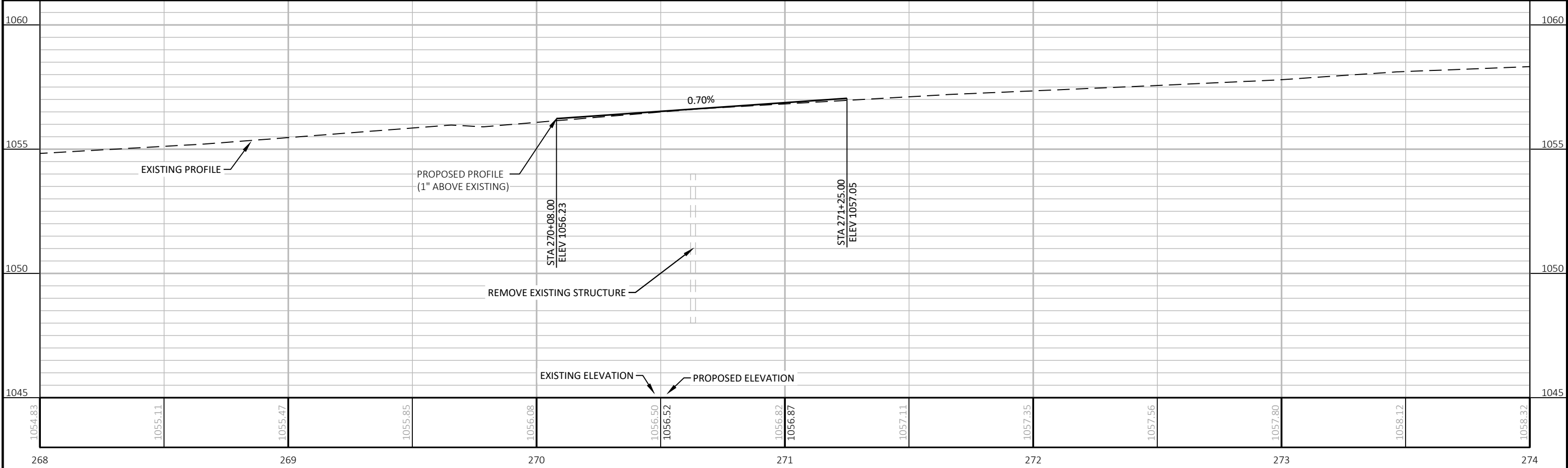


PROJECT NO:	1520-00-77	HWY: STH 73	COUNTY: WOOD	PLAN AND PROFILE:	STRUCTURE	SHEET	79	E
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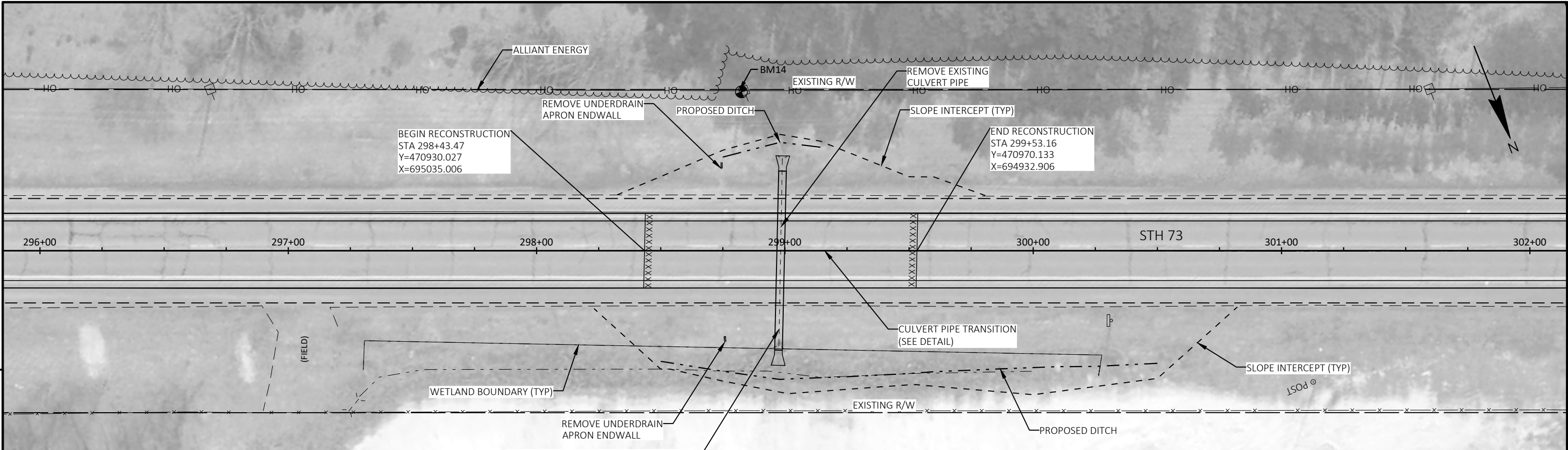




BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM13	270+64.23, -89.01' LT	RR SPIKE IN PP #42/723-5-30WPL	1055.40

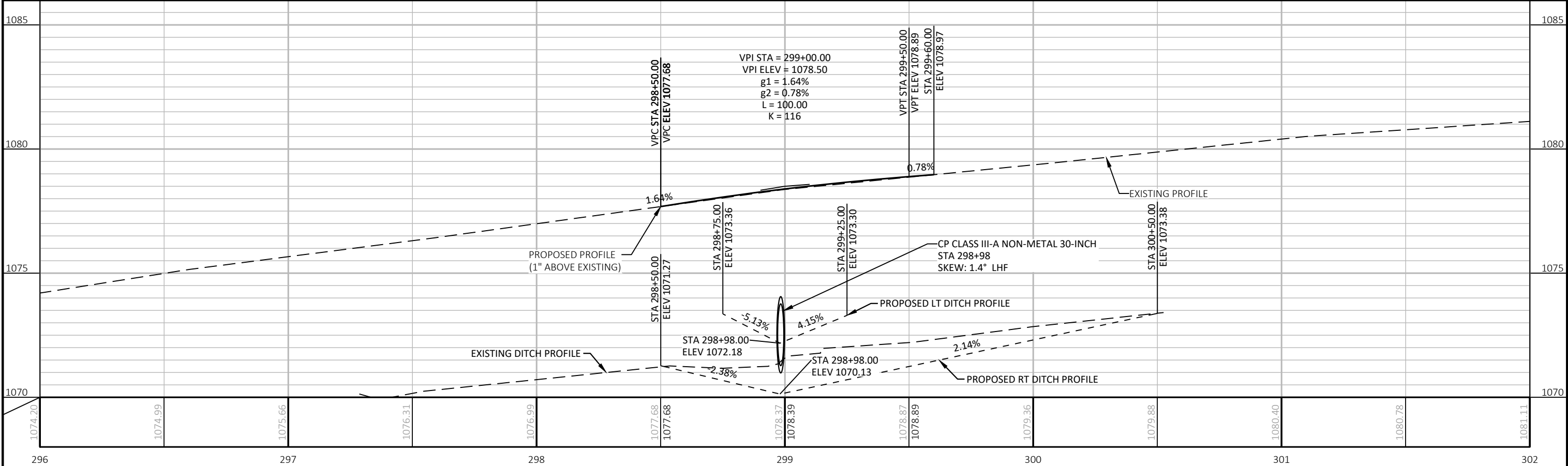


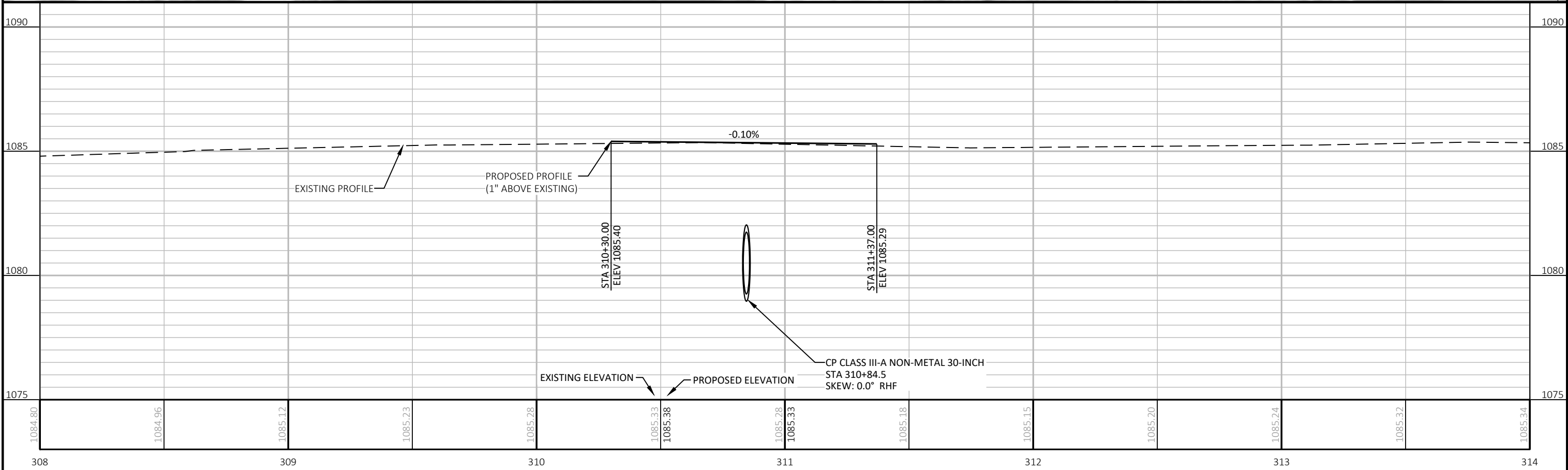
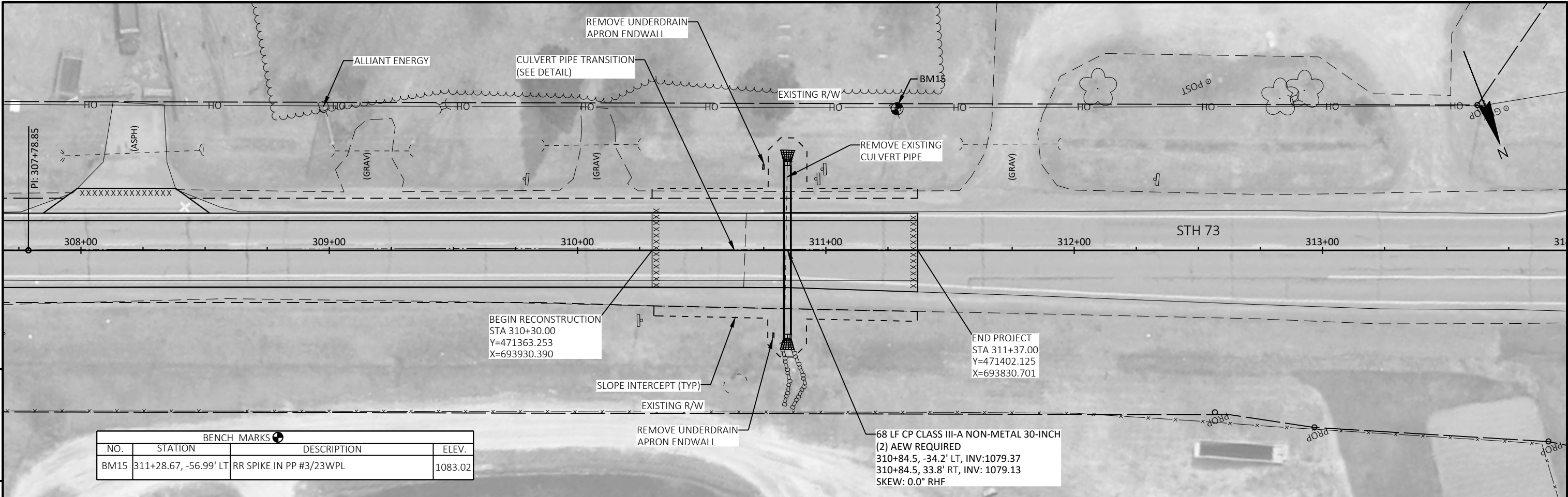
PROJECT NO: 1520-00-77	HWY: STH 73	COUNTY: WOOD	PLAN AND PROFILE: CATTLE PASS REMOVAL	SHEET 82	E
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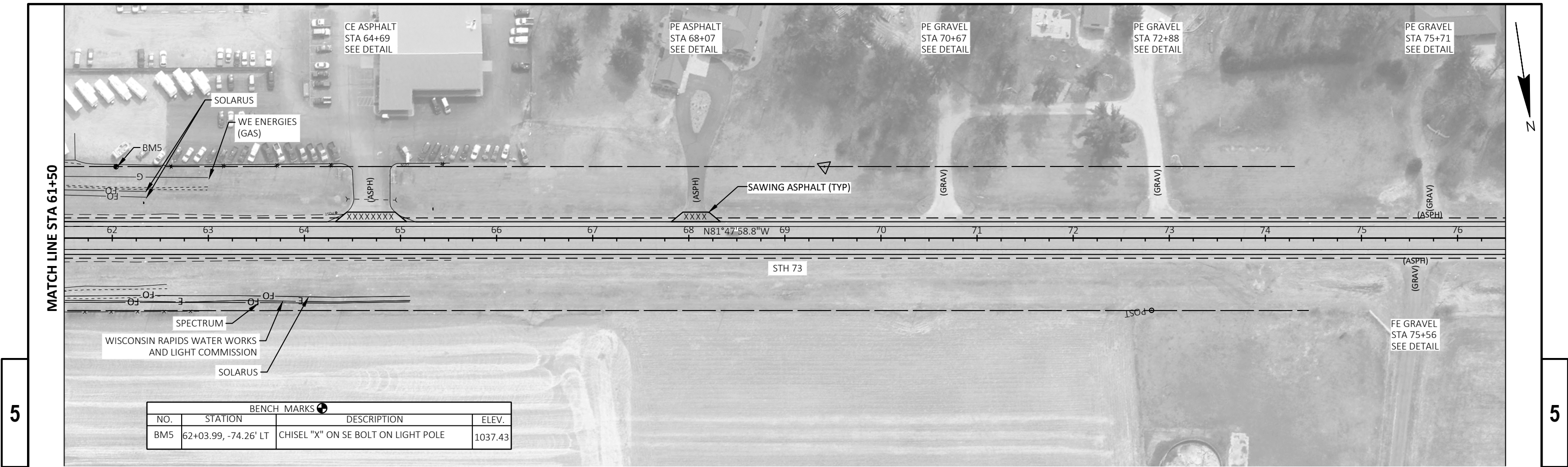


72 LF CP CLASS III-A NON-METAL 30-INCH
(2) AEW REQUIRED
298+99.0, -32.0' LT, INV:1072.18
298+97.4, 40.0' RT, INV: 1070.13

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM14	298+82.48, -63.89' LT	RR SPIKE IN PP #15/1823-5-30WPL	1074.74







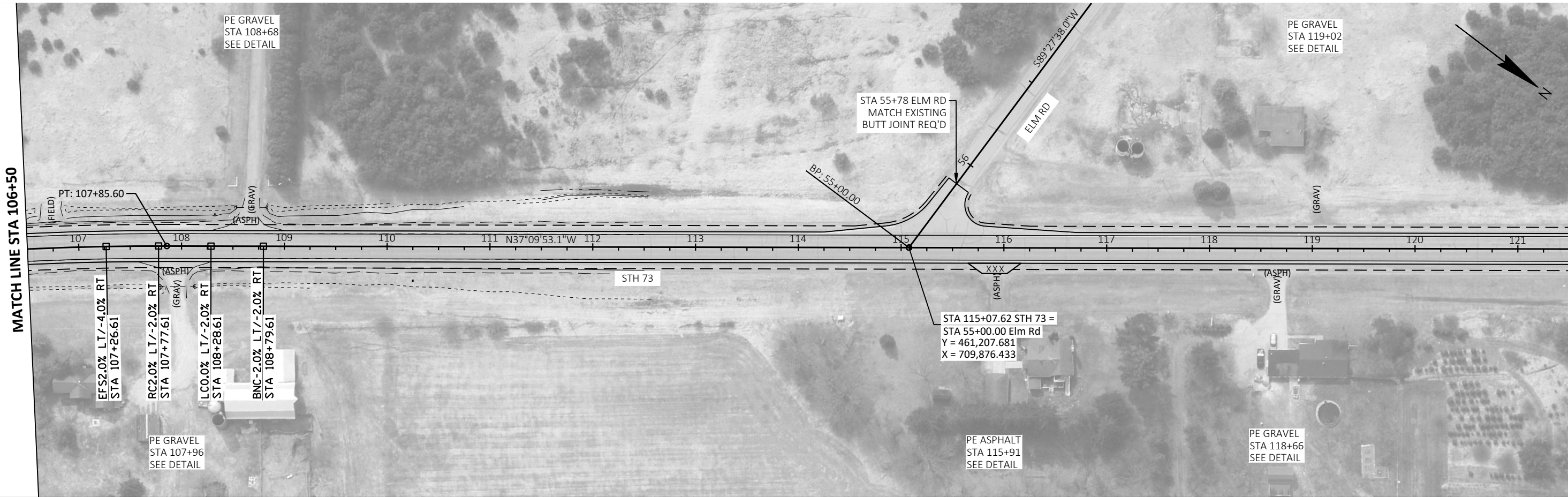


BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM6	93+18.62, -90.80' LT	RR SPIKE IN PP	1044.72

PI STA = 97+29.74
Y = 459695.118
X = 711023.065
DELTA = 044°38'05.7"
D = 001°59'59.5"
T = 1176.04'
L = 2231.91'
R = 2865.00'
PC STA = 85+53.69
Y = 459527.373
X = 712187.082
PT STA = 107+85.60
Y = 460632.308
X = 710312.608
BK = N81° 47' 58.8"W
AH = N37° 09' 53.1"W

PE ASPHALT
STA 96+42
SEE DETAIL

PE ASPHALT
STA 101+54
SEE DETAIL



PT: 107+85.60
EFS2.0% LT/-4.0% RT
STA 107+26.61
RC2.0% LT/-2.0% RT
STA 107+77.61
LC0.0% LT/-2.0% RT
STA 108+28.61
BNC-2.0% LT/-2.0% RT
STA 108+79.61

STA 55+78 ELM RD
MATCH EXISTING
BUTT JOINT REQ'D

STA 115+07.62 STH 73 =
STA 55+00.00 Elm Rd
Y = 461,207.681
X = 709,876.433

PE ASPHALT
STA 115+91
SEE DETAIL

PE GRAVEL
STA 118+66
SEE DETAIL

PROJECT NO: 1520-00-77

HWY: STH 73

COUNTY: WOOD

PLAN

SHEET

88

E

FILE NAME : N:\3001811.00\CIVIL 3D\SHEETS\15200077-050201-PN.DWG
LAYOUT NAME - 15200077-050204-PN

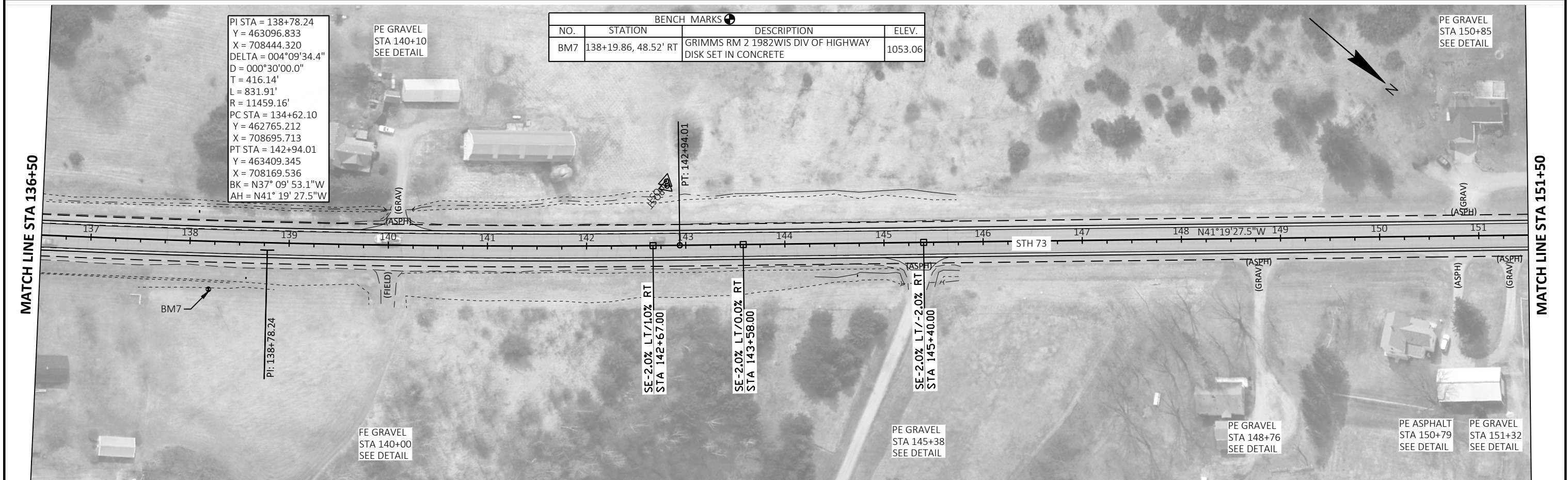
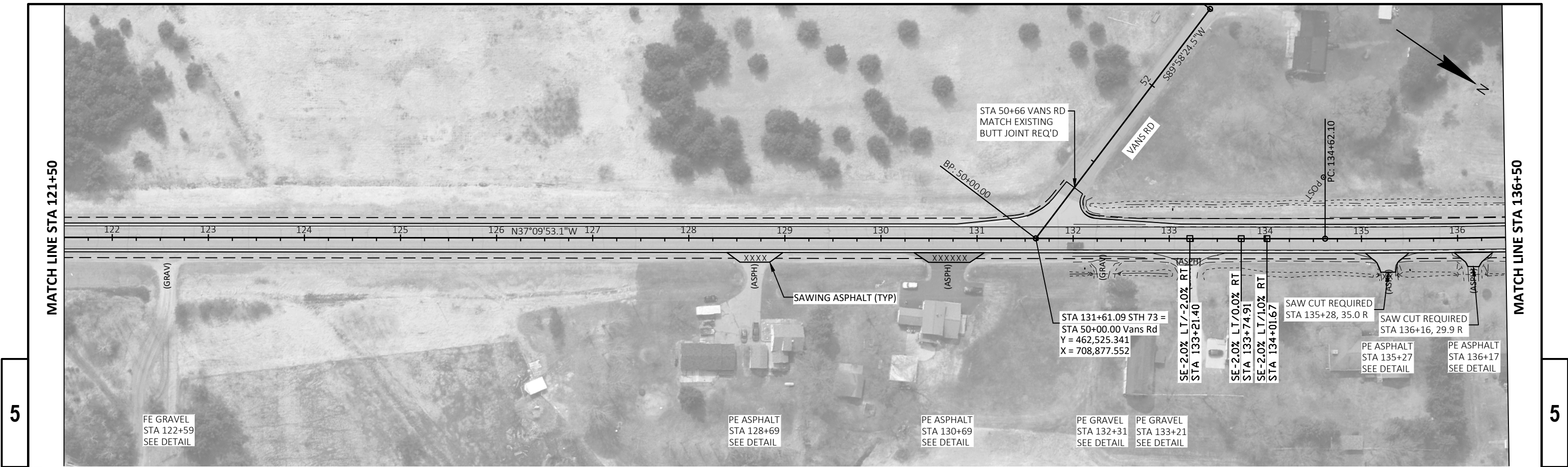
PLOT DATE : 7/19/2024 2:14 PM

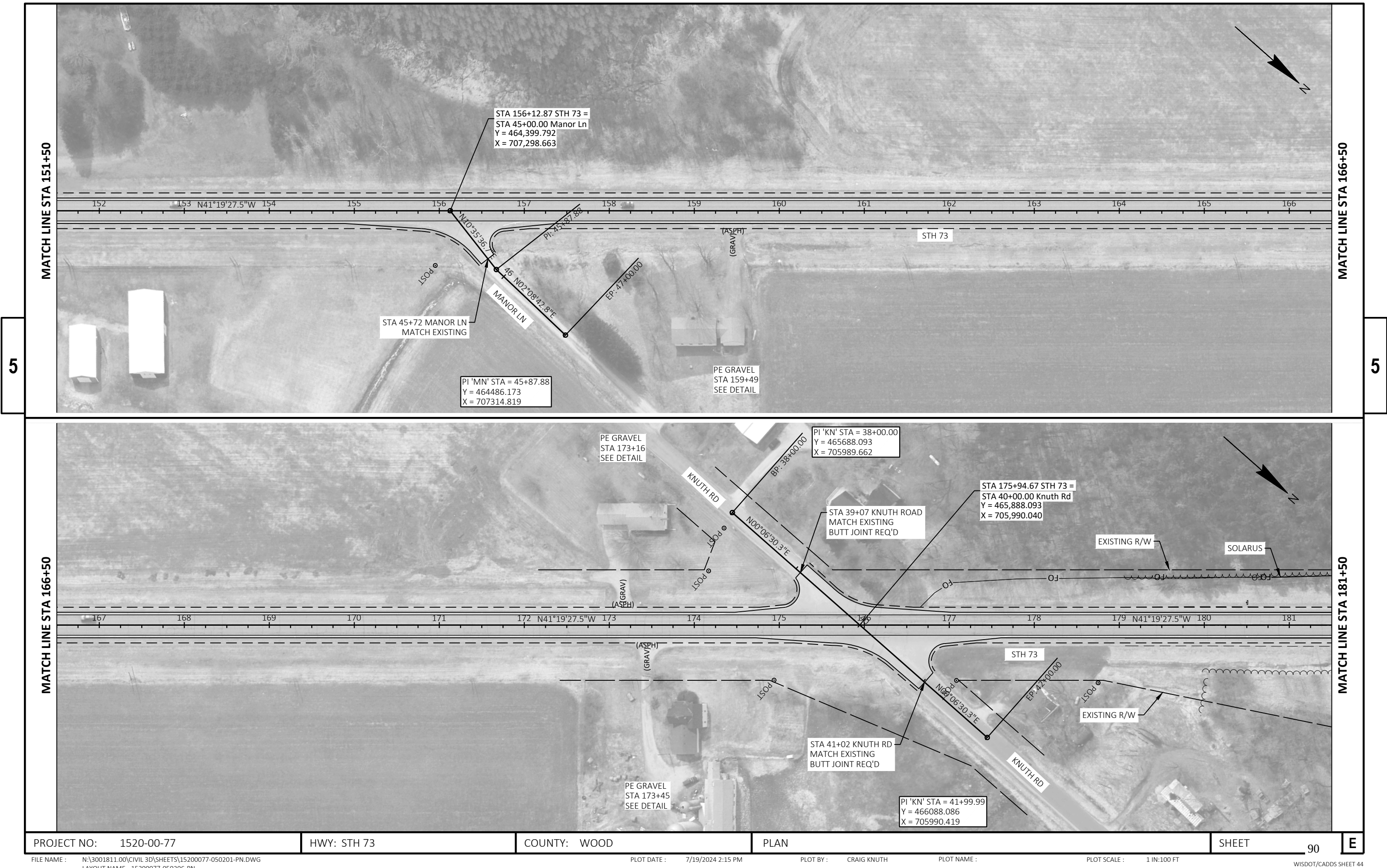
PLOT BY : CRAIG KNUTH

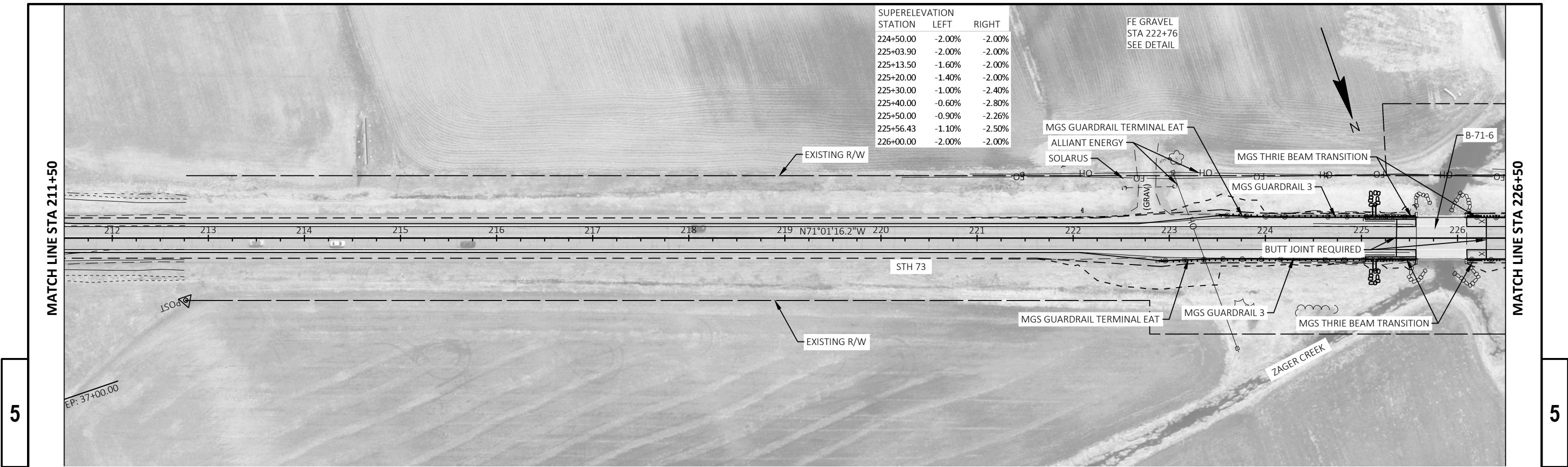
PLOT NAME :

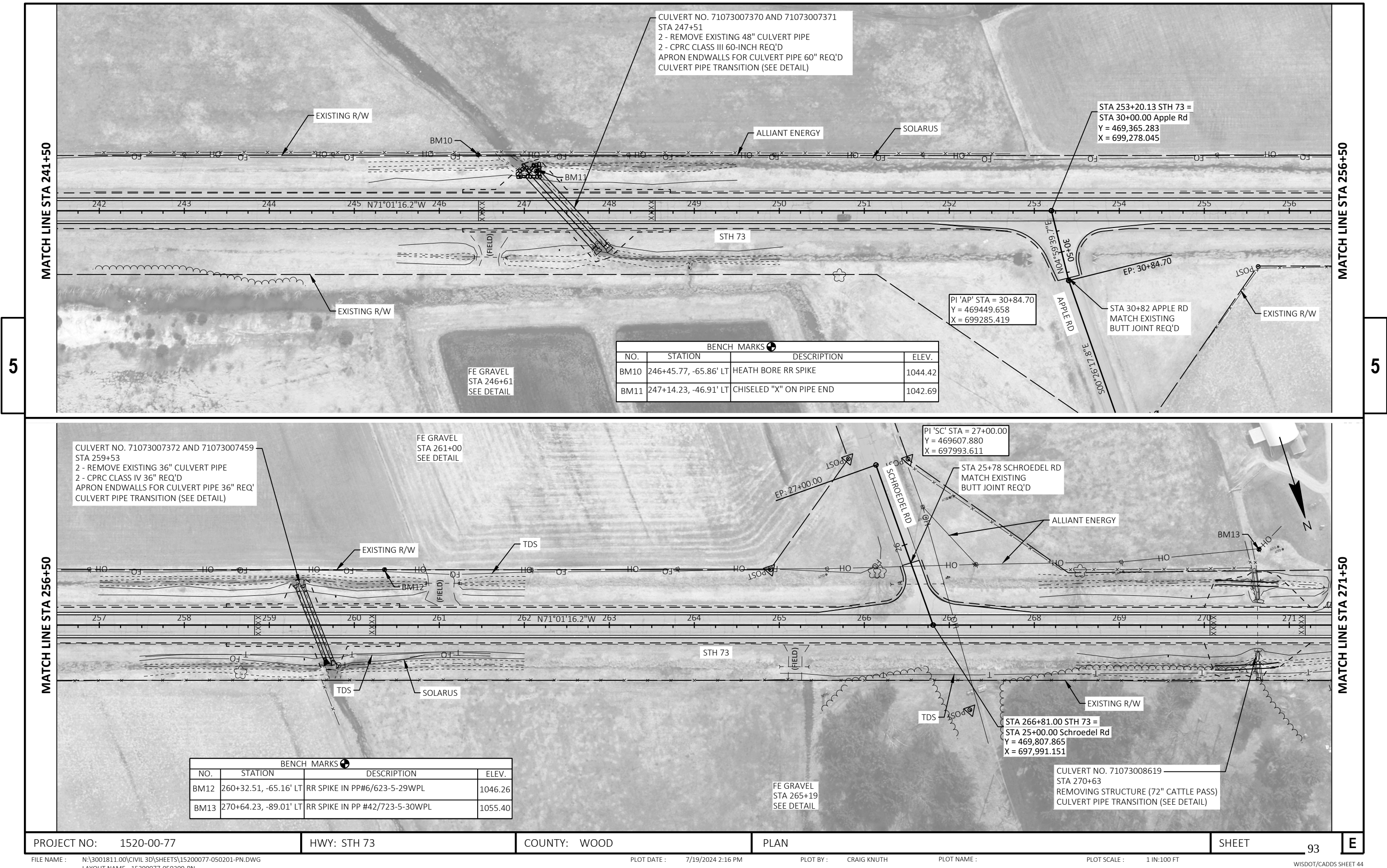
PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 44









CULVERT NO. 71073007370 AND 71073007371
STA 247+51
2 - REMOVE EXISTING 48" CULVERT PIPE
2 - CPVC CLASS III 60-INCH REQ'D
APRON ENDWALLS FOR CULVERT PIPE 60" REQ'D
CULVERT PIPE TRANSITION (SEE DETAIL)

STA 253+20.13 STH 73 =
STA 30+00.00 Apple Rd
Y = 469,365.283
X = 699,278.045

PI 'AP' STA = 30+84.70
Y = 469449.658
X = 699285.419

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM10	246+45.77, -65.86' LT	HEATH BORE RR SPIKE	1044.42
BM11	247+14.23, -46.91' LT	CHISELED "X" ON PIPE END	1042.69

FE GRAVEL
STA 246+61
SEE DETAIL

CULVERT NO. 71073007372 AND 71073007459
STA 259+53
2 - REMOVE EXISTING 36" CULVERT PIPE
2 - CPVC CLASS IV 36" REQ'D
APRON ENDWALLS FOR CULVERT PIPE 36" REQ'
CULVERT PIPE TRANSITION (SEE DETAIL)

FE GRAVEL
STA 261+00
SEE DETAIL

PI 'SC' STA = 27+00.00
Y = 469607.880
X = 697993.611

STA 25+78 SCHROEDEL RD
MATCH EXISTING
BUTT JOINT REQ'D

STA 266+81.00 STH 73 =
STA 25+00.00 Schroedel Rd
Y = 469,807.865
X = 697,991.151

CULVERT NO. 71073008619
STA 270+63
REMOVING STRUCTURE (72" CATTLE PASS)
CULVERT PIPE TRANSITION (SEE DETAIL)

BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM12	260+32.51, -65.16' LT	RR SPIKE IN PP#6/623-5-29WPL	1046.26
BM13	270+64.23, -89.01' LT	RR SPIKE IN PP #42/723-5-30WPL	1055.40

PROJECT NO: 1520-00-77

HWY: STH 73

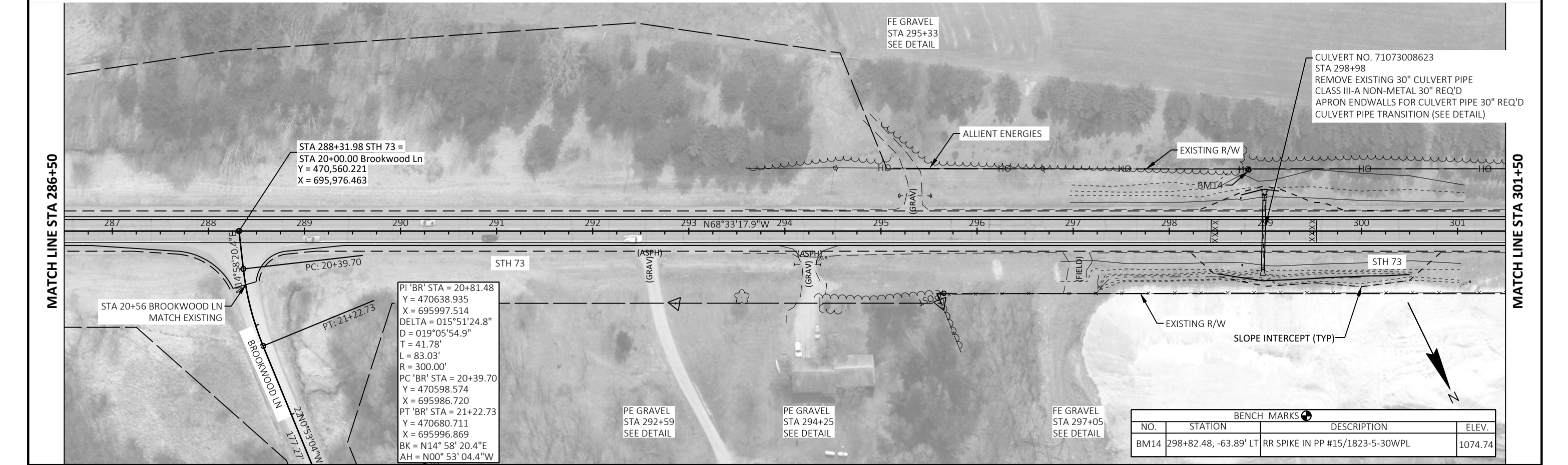
COUNTY: WOOD

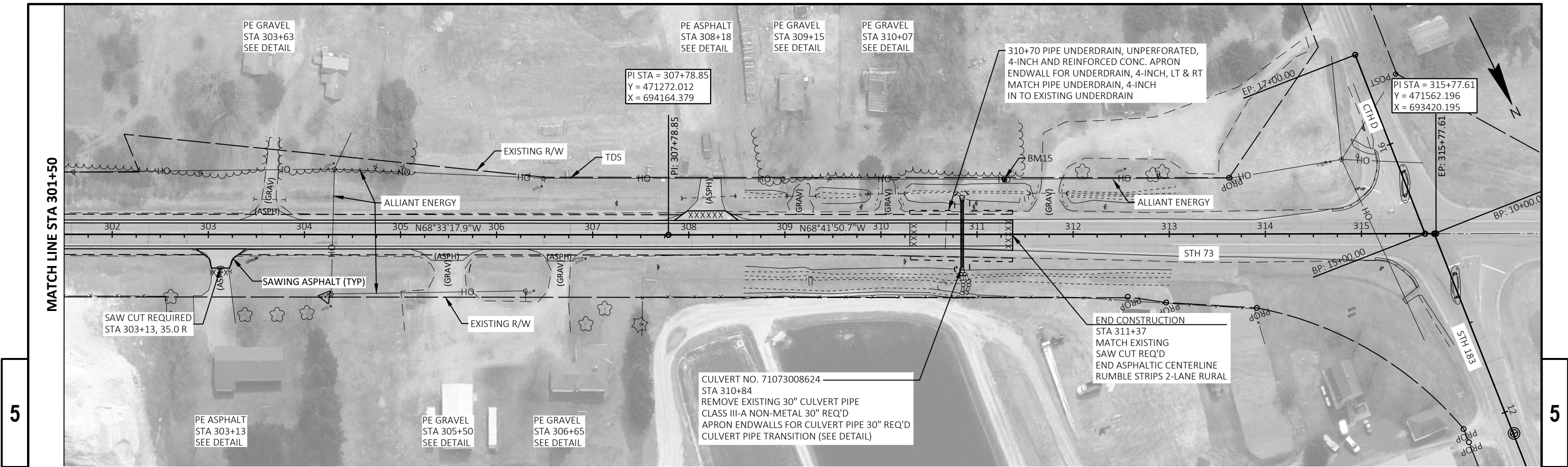
PLAN

SHEET

93

E





BENCH MARKS			
NO.	STATION	DESCRIPTION	ELEV.
BM15	311+28.67, -56.99' LT	RR SPIKE IN PP #3/23WPL	1083.02

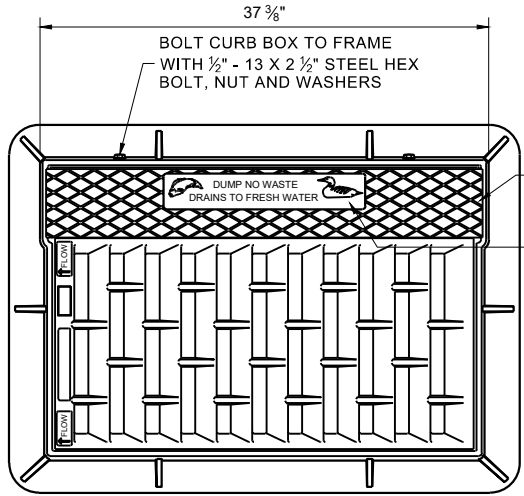
LEGEND	
.XXXXXXXXX.	SAW CUT
	CONCRETE PAVEMENT REPLACEMENT
	CONCRETE PAVEMENT REPAIR

Standard Detail Drawing List

08A05-21A	INLET COVERS TYPE A, H, A-S, H-S & Z
08C07-03	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT, 2.5X3-FT & 2X3.5-FT
08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D05-21A	CURB RAMPS TYPES 1 AND 1-A
08D05-21B	CURB RAMPS TYPES 2 AND 3
08D05-21C	CURB RAMPS TYPES 4A AND 4A1
08D05-21D	CURB RAMPS TYPE 4B AND 4B1
08D05-21E	CURB RAMPS TYPES 5, 6, 7A, 7B & 8
08D05-21F	CURB RAMPS RADIAL DETECTABLE WARNING FIELD APPLICATIONS
08D05-21G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08D15-05A	EDGEDRAIN OUTLET AND OUTFALL MARKERS
08D15-05B	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08D15-05C	EDGEDRAIN AND BASE AGGREGATE OPEN GRADED
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08E15-01	CULVERT PIPE CHECK
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
08F06-04	REINFORCED CONCRETE APRON ENDWALL FOR PIPE UNDERDRAIN
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
13A11-04A	CENTERLINE RUMBLE STRIPS - ASPHALT
13A11-04D	CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C09-17A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-17B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-17C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C13-11	URBAN DOWELED CONCRETE PAVEMENT
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
13C18-08F	CONCRETE PAVEMENT INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B45-05A	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05B	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05C	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05D	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05E	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05F	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05G	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05H	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05I	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05J	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05K	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
14B45-05L	MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-09H	MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23D	PAVEMENT MARKING (TURN LANES)
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS

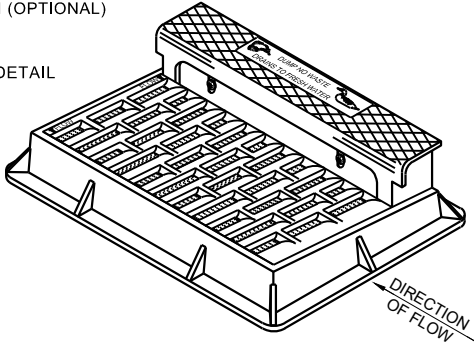
Standard Detail Drawing List

15C33-04	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D30-09A	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09B	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09C	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D30-09F	TRAFFIC CONTROL, PEDESTRIAN ACCOMMODATION
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

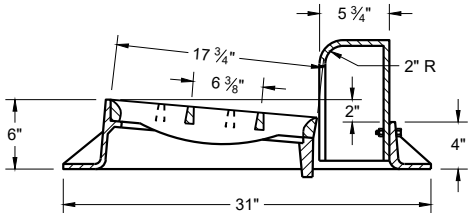
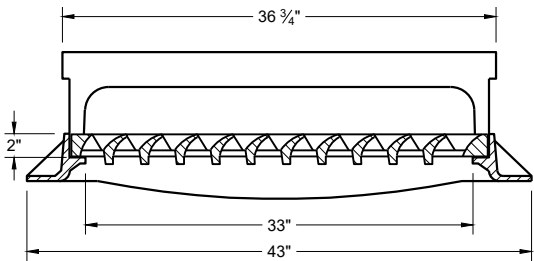
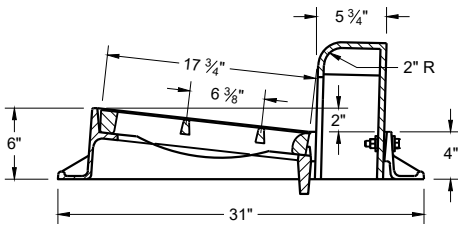
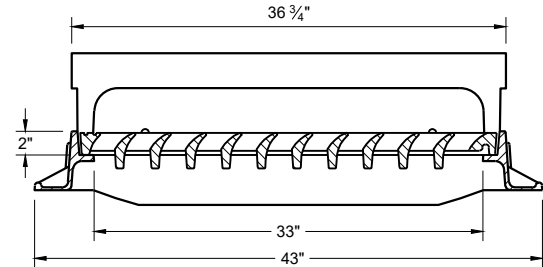
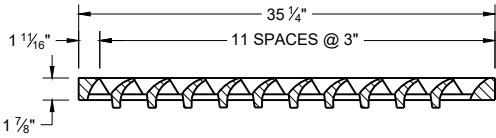


NOTE: EITHER CASTING IS ACCEPTABLE

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

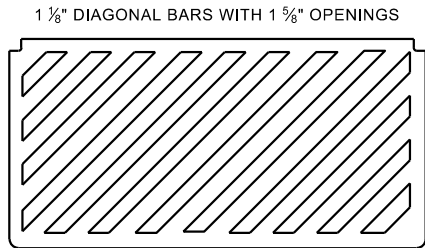


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

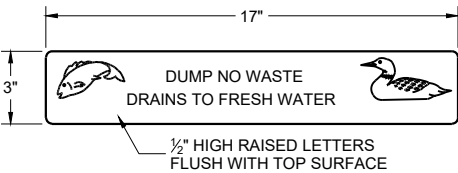


TYPE "H"

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)



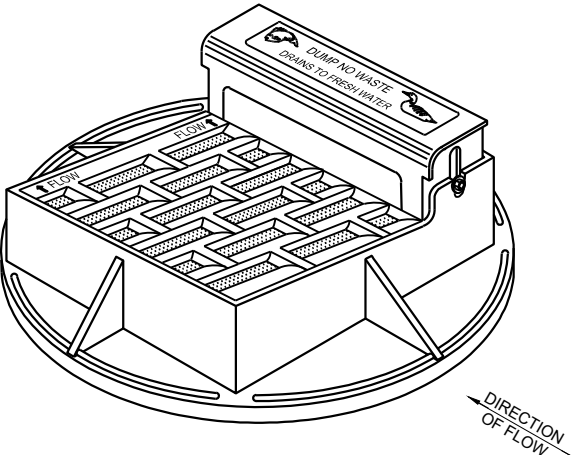
LOGO DETAIL

GENERAL NOTES

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

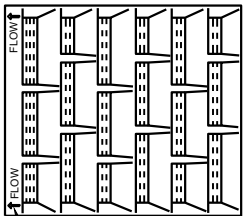
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

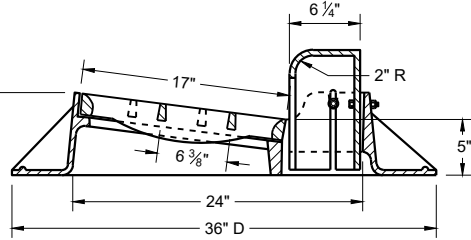
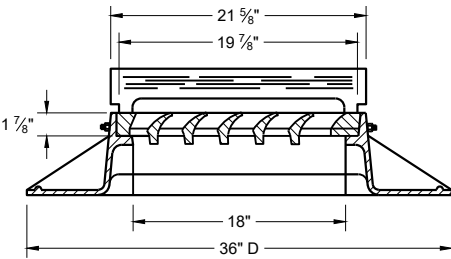
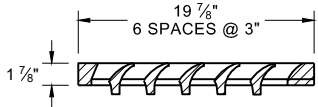


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

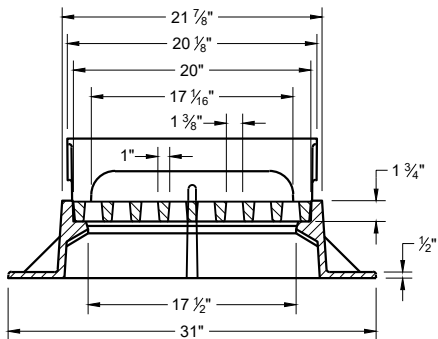
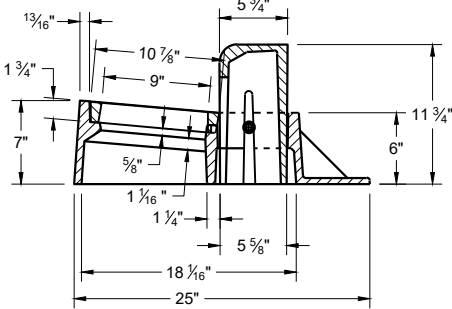
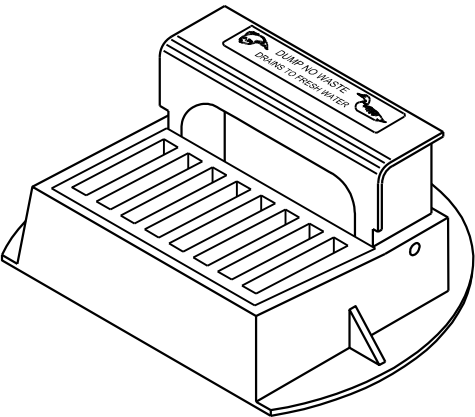
NOTE: EITHER CASTING IS ACCEPTABLE



DIRECTION OF FLOW ARROWS



TYPE "A"

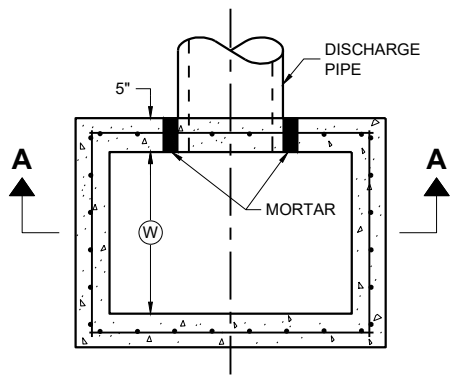


TYPE "Z"

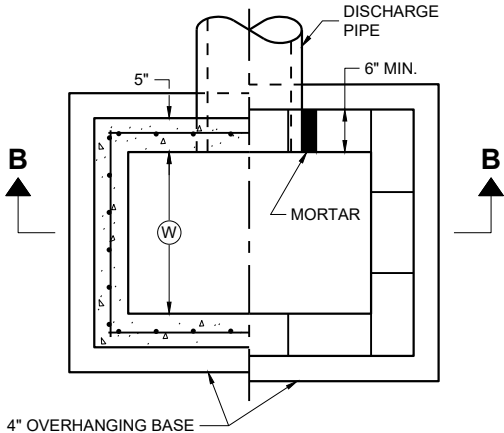
INLET COVERS
TYPES A, H, A-S, H-S AND Z

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

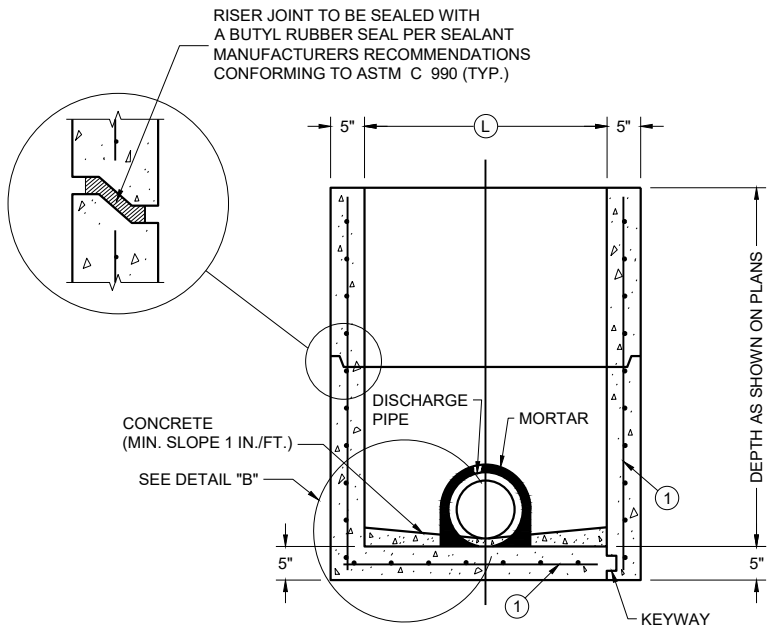
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



PLAN VIEW



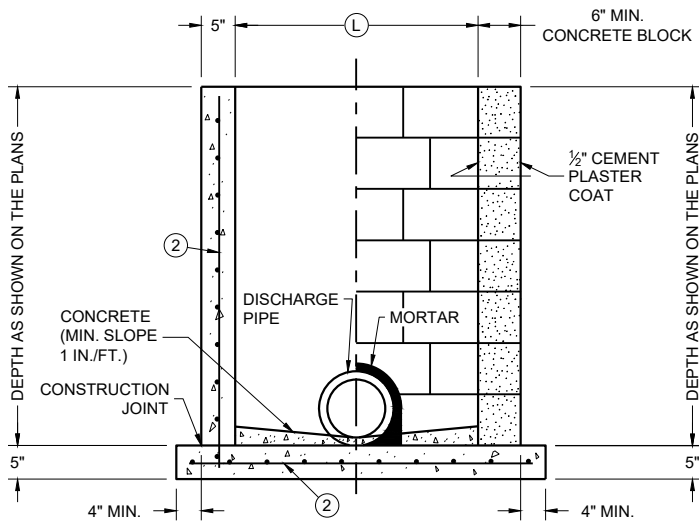
PLAN VIEW



PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

PRECAST REINFORCED
CONCRETE WITH
INTEGRAL BASE

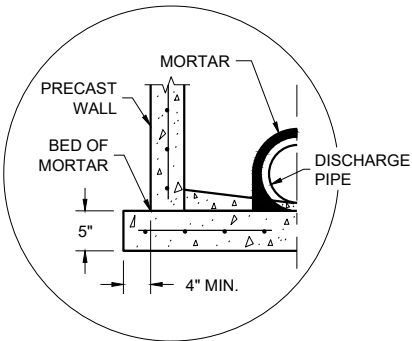
SECTION A - A



CAST IN PLACE
REINFORCED
CONCRETE

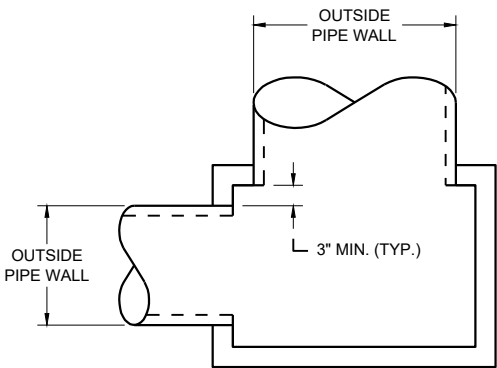
CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE ①

SECTION B - B



SEPARATE PRECAST REINFORCED
CONCRETE BASE OPTION

DETAIL "B"



DETAIL "A"

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

MAXIMUM INSIDE PIPE DIAMETER DETERMINED BY 3" 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

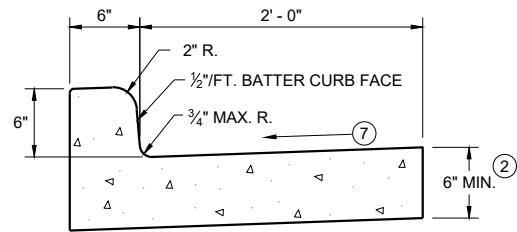
PIPE MATRIX

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

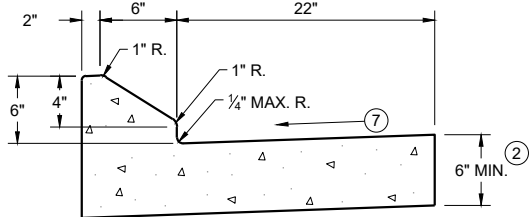
INLETS 2 X 2-FT, 2 X 2.5-FT,
2 X 3-FT, 2.5 X 3-FT
AND 2 X 3.5-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

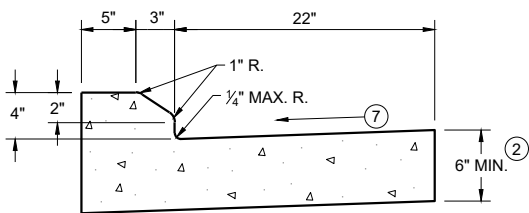
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



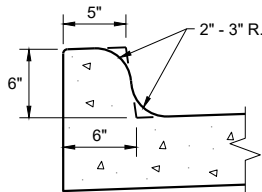
TYPES A^① & D



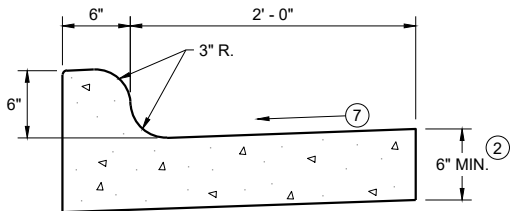
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

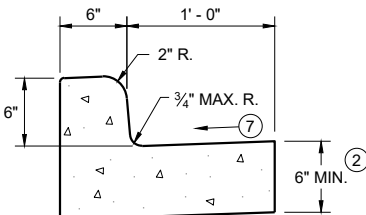


TYPES K^① & L
(OPTIONAL CURB SHAPE)



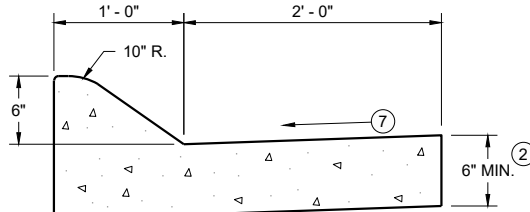
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

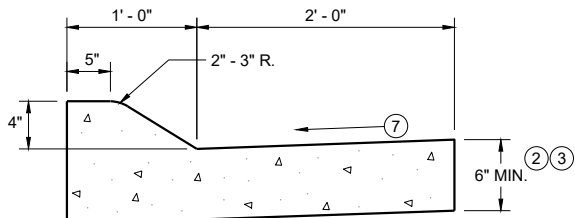


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

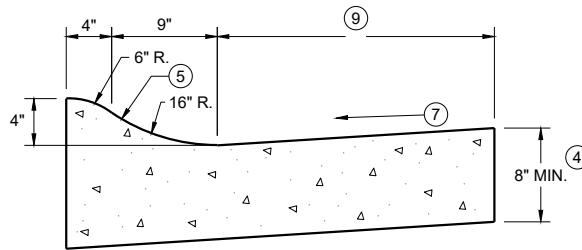


6" SLOPED CURB TYPES A^① & D



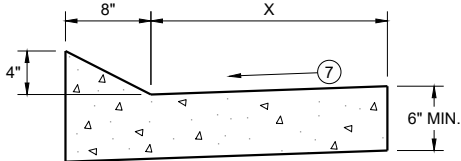
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R^① & T

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

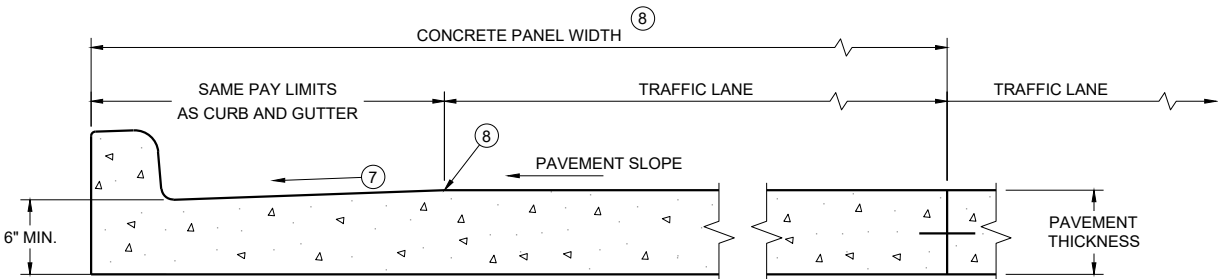


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

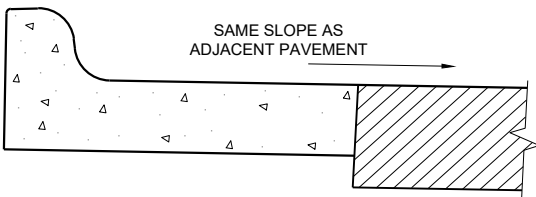
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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)

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.

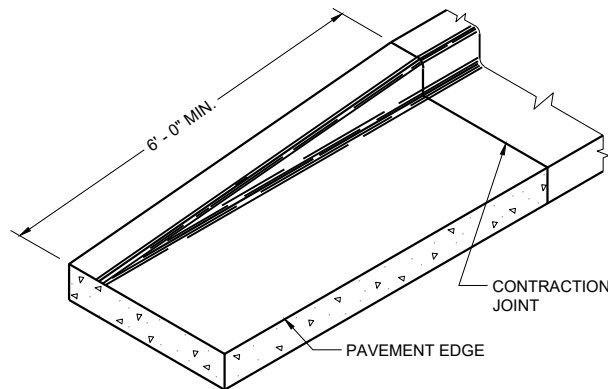
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

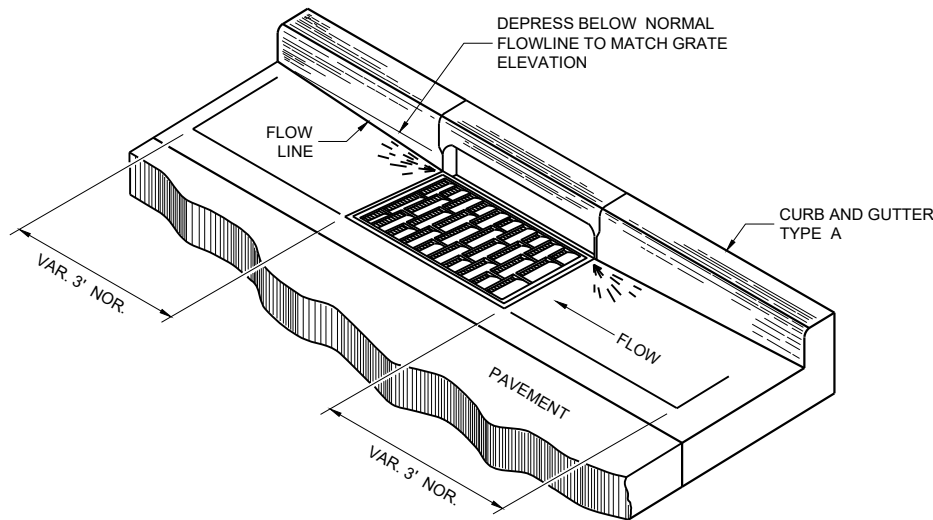
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH 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 CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

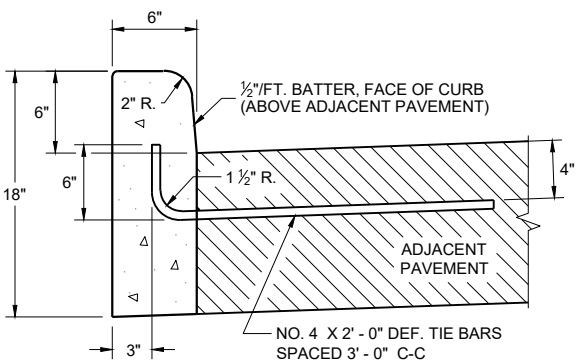


END SECTION CURB AND GUTTER

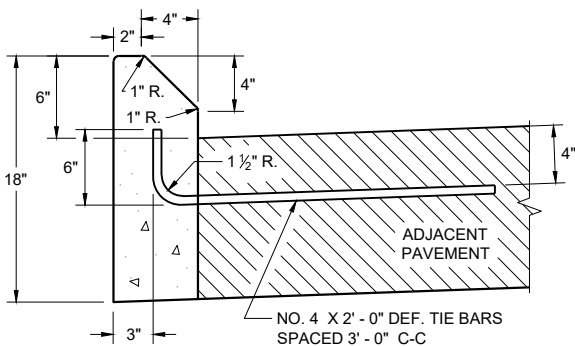


DETAIL OF CURB AND GUTTER AT INLETS

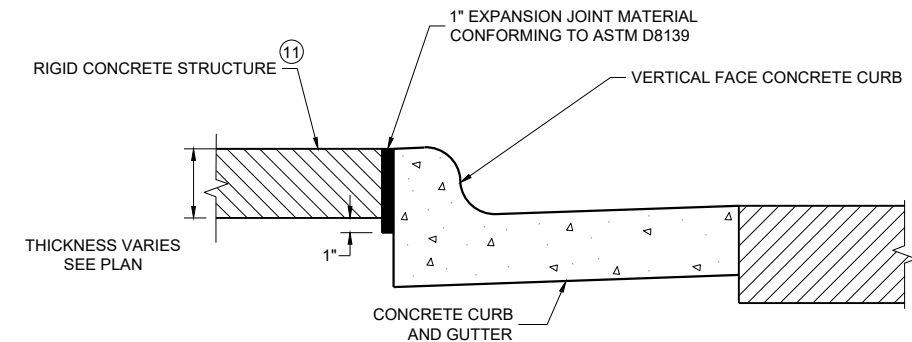
(TYPICAL H INLET COVER SHOWN)



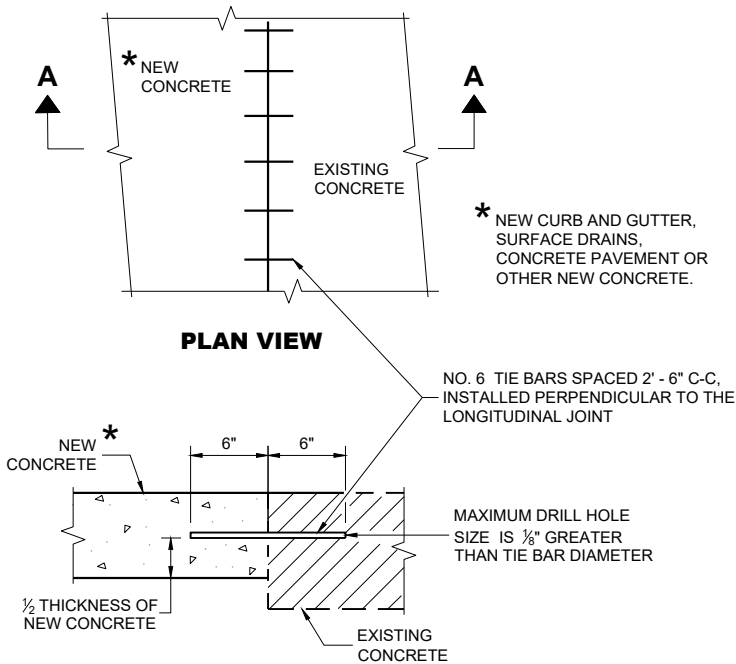
TYPES A^① & D



TYPES G^① & J
CONCRETE CURB



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



SECTION A - A
TIE BARS DRILLED INTO EXISTING PAVEMENT

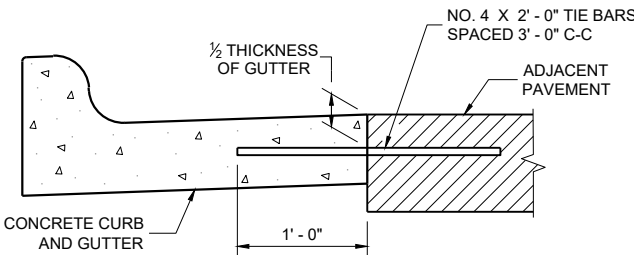
GENERAL NOTES

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

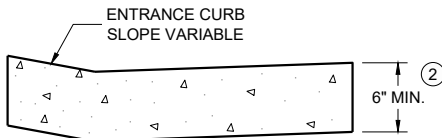
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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.



TYPICAL TIE BAR LOCATION^①



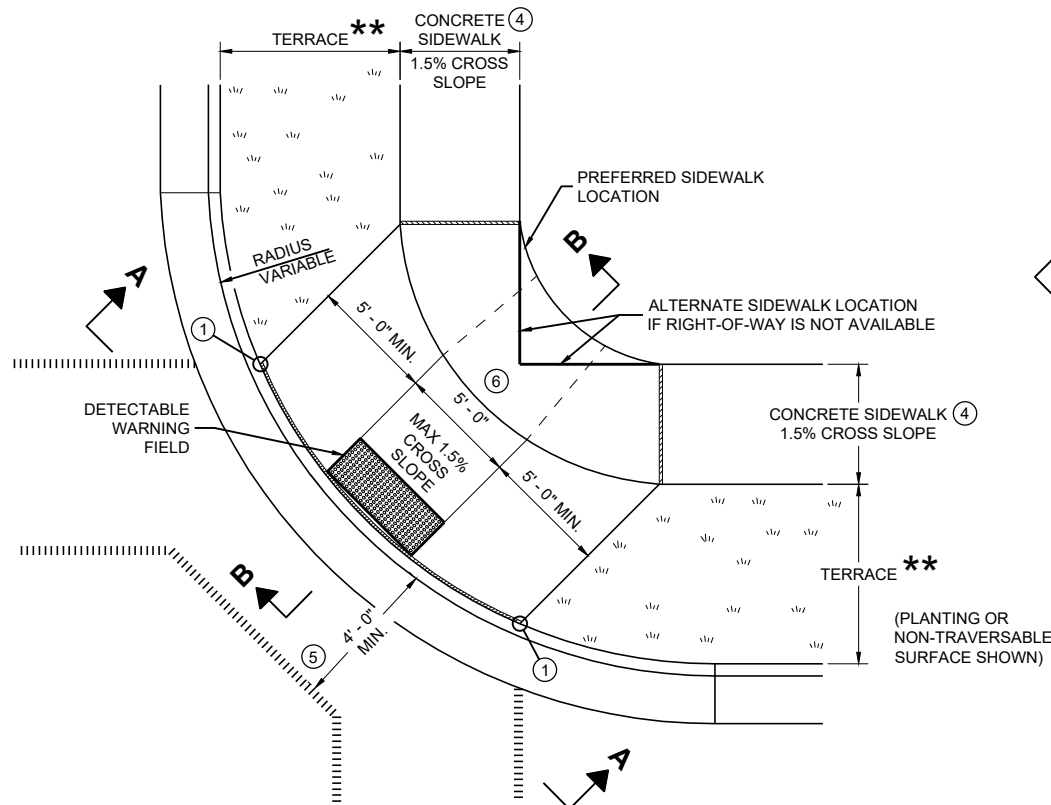
DRIVEWAY ENTRANCE CURB^⑩
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES
AND CURB AND GUTTER
APPLICATIONS

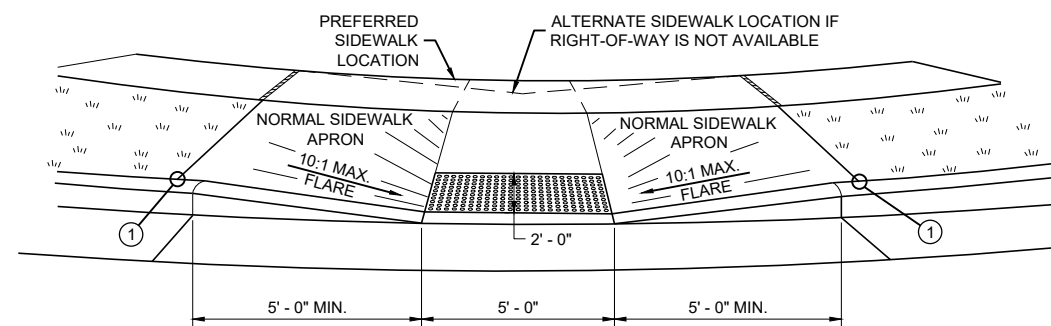
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA 101

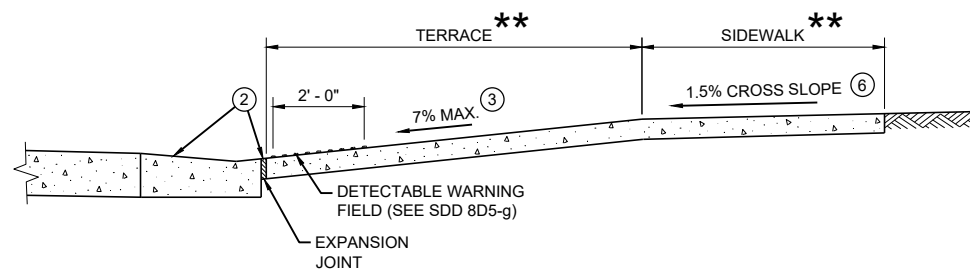


PLAN VIEW
CURB RAMP TYPE 1
(CENTER OF CORNER RADIUS)

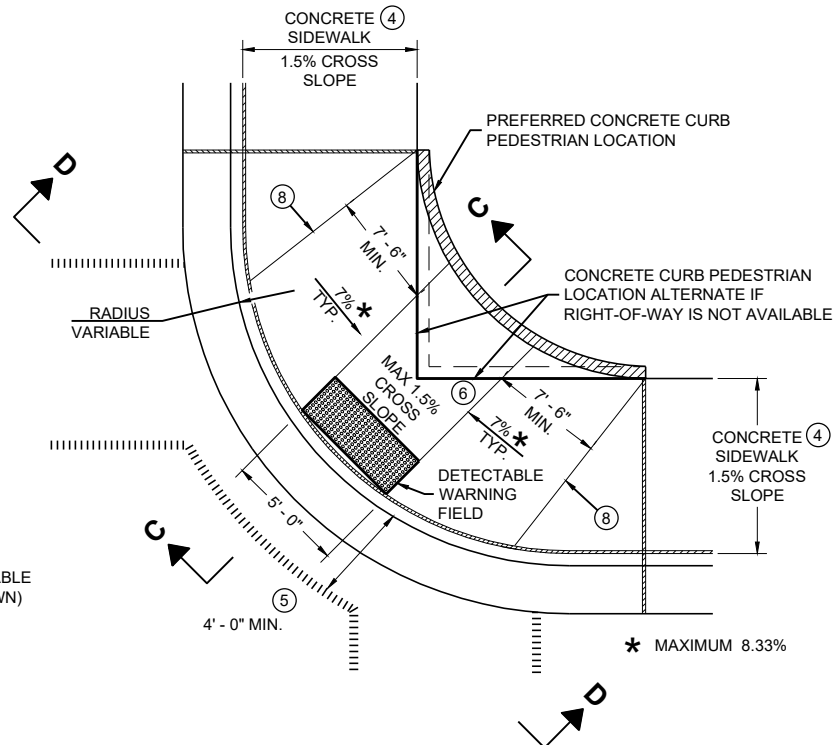


VIEW A - A FOR TYPE 1

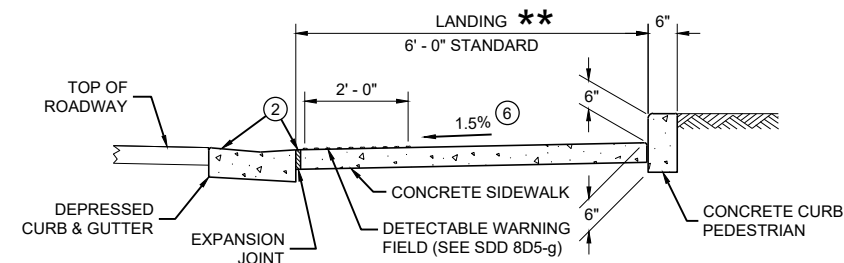
** WIDTH SHOWN ELSEWHERE
IN THE PLANS



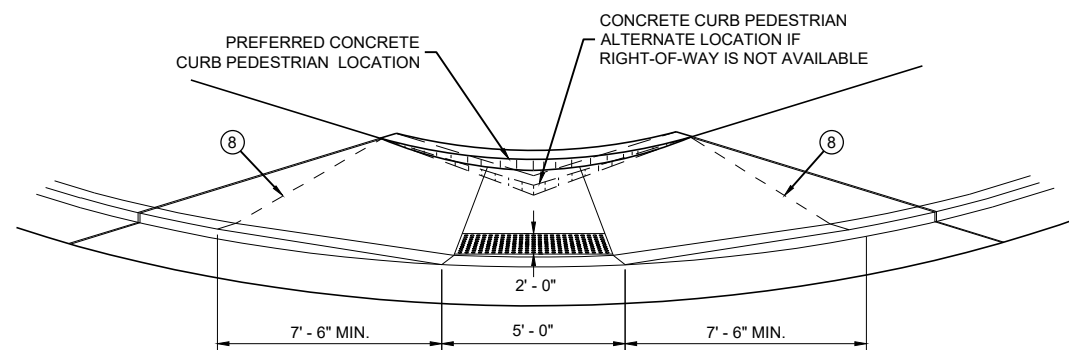
SECTION B - B FOR TYPE 1



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



SECTION C - C FOR TYPE 1 - A



VIEW D - D FOR TYPE 1 - A

GENERAL NOTES

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

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

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

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

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

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

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

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

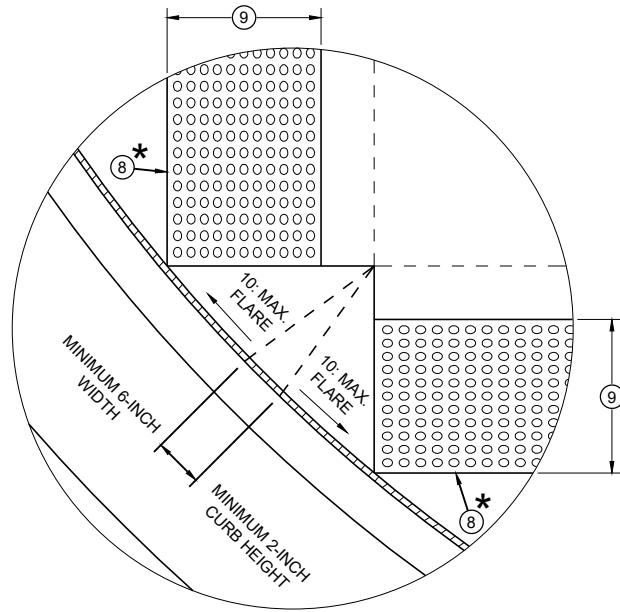
- ① THIS POINT IS AN EXTENSION OF OUTSIDE EDGE OF APPROACHING SIDEWALK WHERE IT MEETS THE BACK OF CONCRETE CURB. POINT LOCATION MAY BE ADJUSTED TO ALIGN WITH BEGINNING OF FULL-HEIGHT CURB IF THIS DISTANCE IS SHORT.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ MAXIMUM 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑤ PROVIDE A LEVEL LANDING IN THE STREET AND GUTTER AREA (2% MAXIMUM SLOPE IN ANY DIRECTION). WHEN THE GUTTER SLOPE EXCEEDS 2%, CONSTRUCT THE LEVEL LANDING IN THE STREET AREA. 4 FOOT WIDTH IS MEASURED FROM THE FLANGE LINE
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.

LEGEND

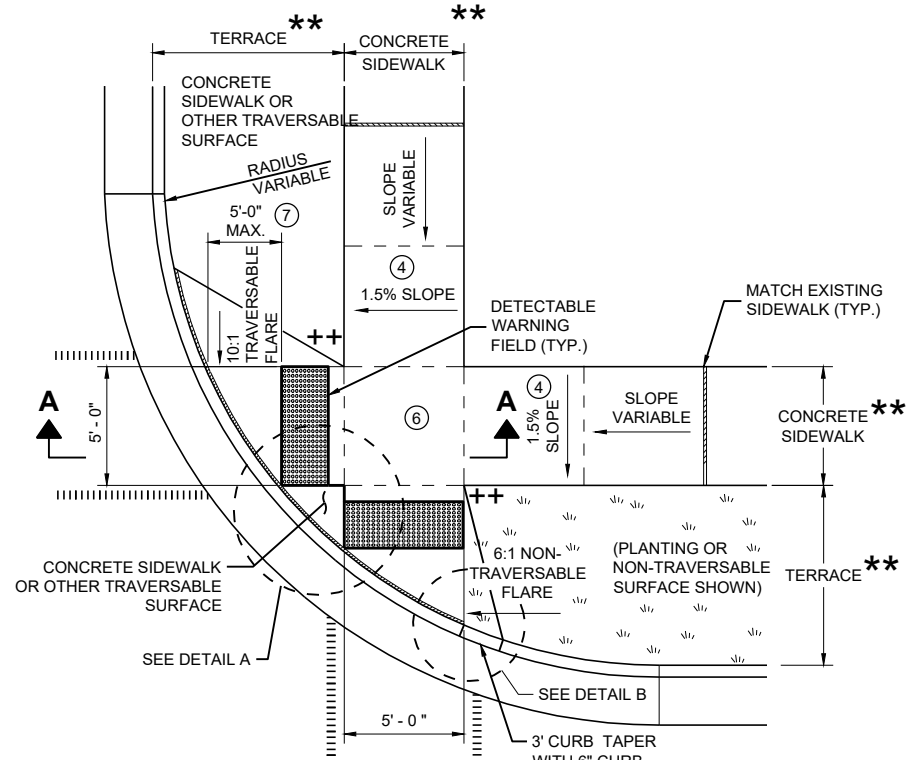
- ===== 1/2" EXPANSION JOINT SIDEWALK
- - - - - CONTRACTION JOINT FIELD LOCATED
- ||||||| PAVEMENT MARKING CROSSWALK (WHITE)

CURB RAMPS TYPE 1 AND 1-A

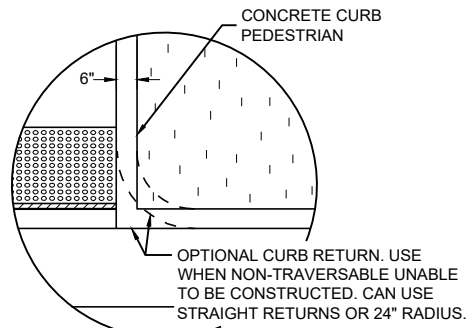
STATE OF WISCONSIN
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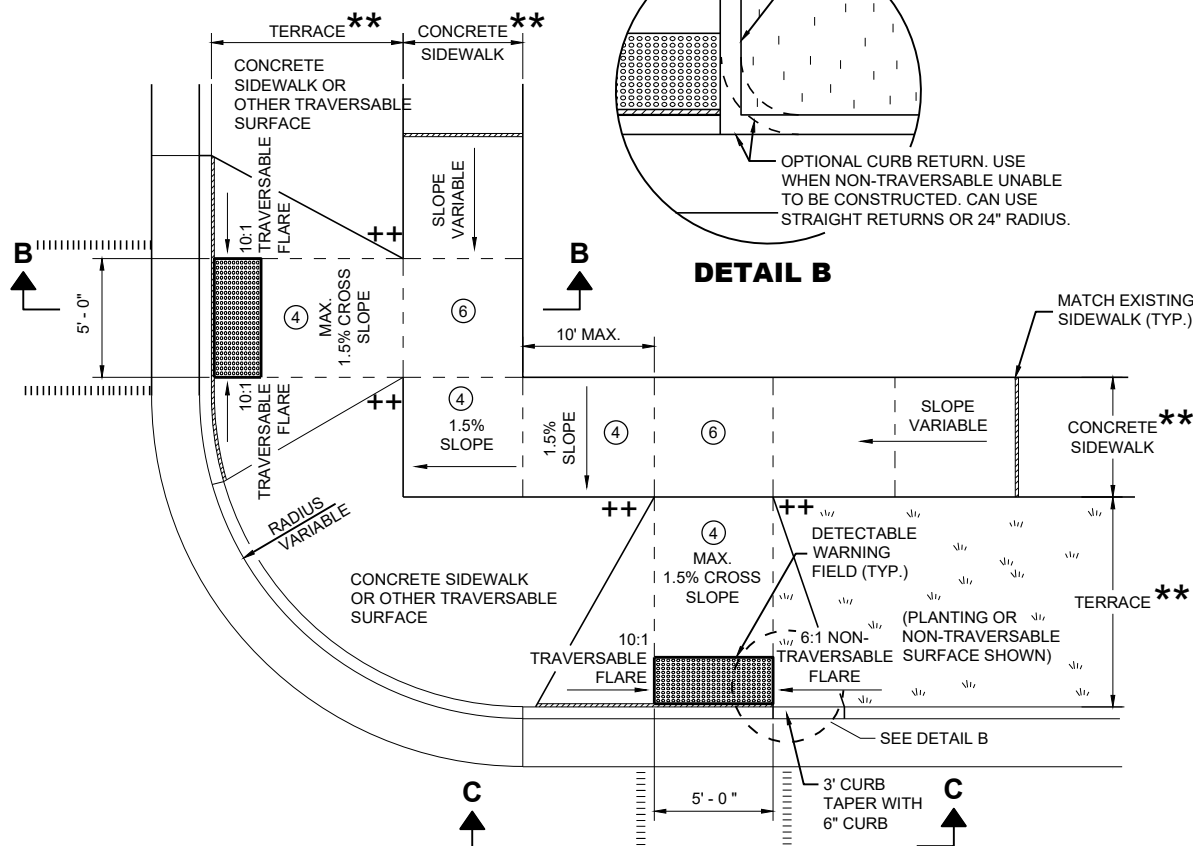
DETAIL A



PLAN VIEW
CURB RAMP TYPE 2
(CENTER OF CORNER RADIUS)



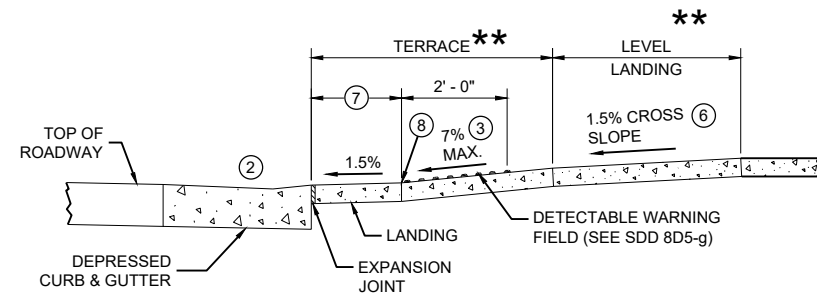
DETAIL B



PLAN VIEW
CURB RAMP TYPE 3
(OUTSIDE OF CROSSWALK AREA)

GENERAL NOTES

- AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREAS.
- DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE SHALL BE FROM THE SAME MANUFACTURER.
- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
 - ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE (2.67% OR LESS) AND NOT TO EXCEED 11% GRADE CHANGE.
 - ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
 - ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET X 5 FEET.
 - ⑦ WHEN GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
 - ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
 - ⑨ WHEN DISTANCE IS LESS THAN 6' - 0", IT MAY BE DIFFICULT TO ACHIEVE A 7% SLOPE OR FLATTER ALONG THE RAMP. REDUCE CURB HEIGHT IN TRIANGLE AREA TO ACHIEVE 7% SLOPE OR FLATTER ON RAMP. CONSTRUCT 2-INCH MINIMUM CURB HEIGHT BETWEEN 10:1 FLARES.

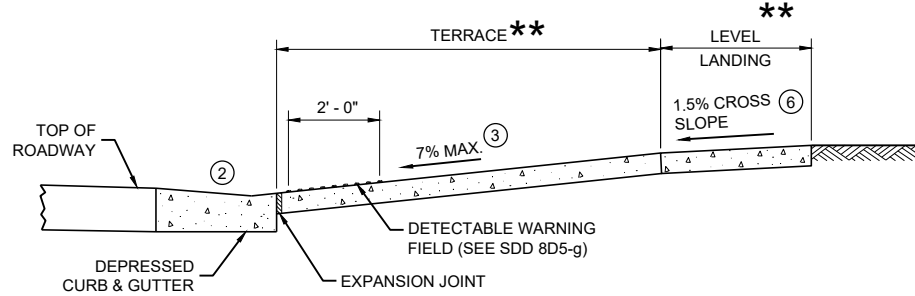


SECTION A - A FOR TYPE 2

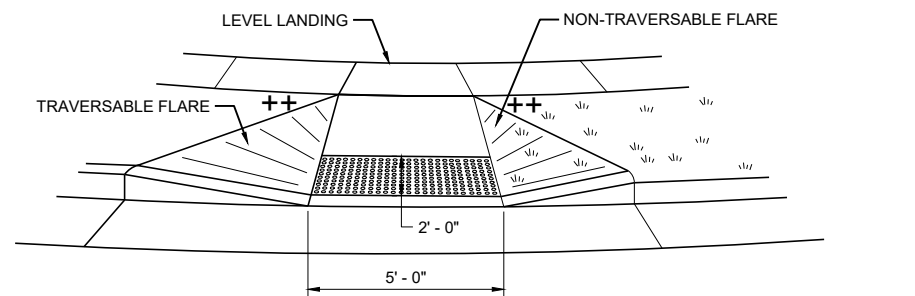
- * MAXIMUM 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK
- ** WIDTH SHOWN ELSEWHERE IN THE PLANS
- ++ CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE

LEGEND

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



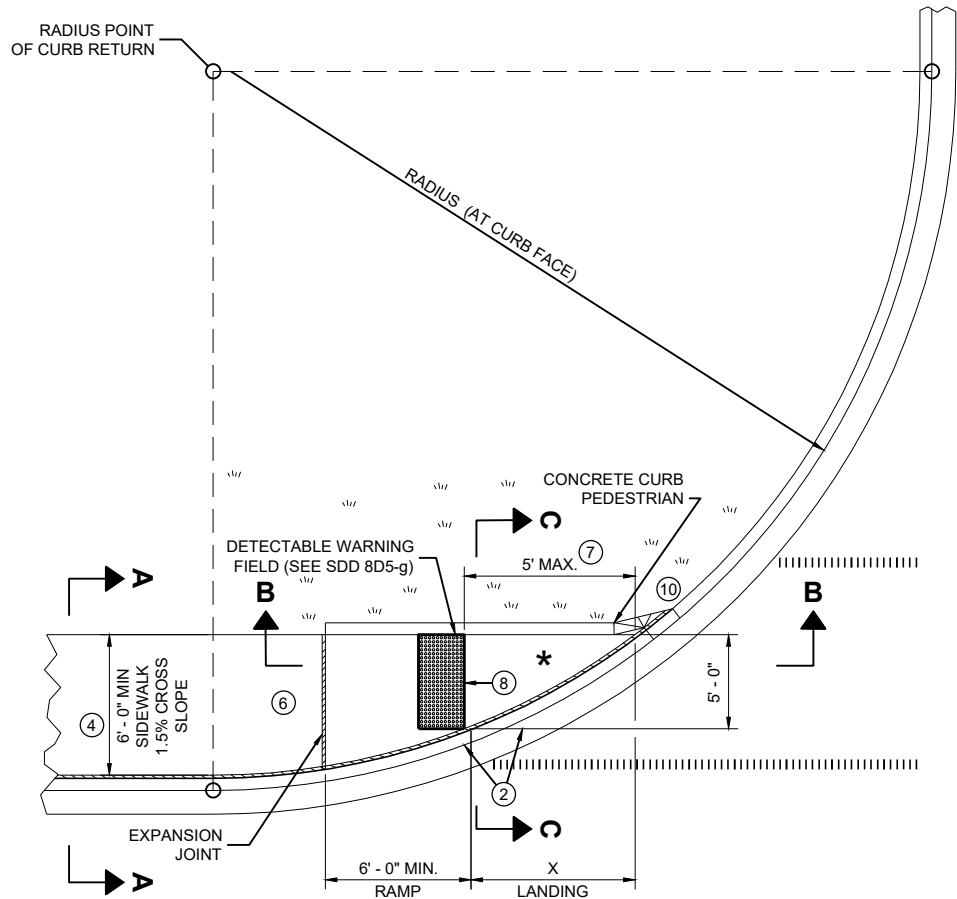
SECTION B - B FOR TYPE 3



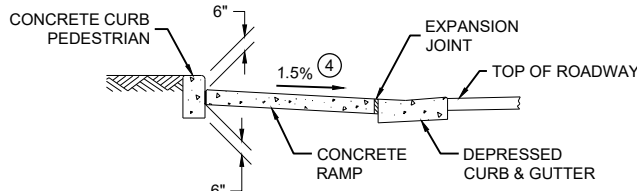
VIEW C - C FOR TYPE 3

CURB RAMPS
TYPE 2 AND 3

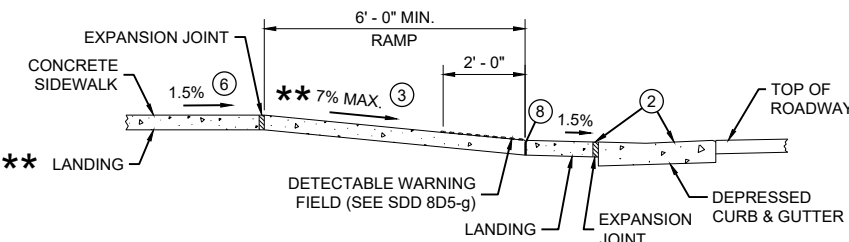
STATE OF WISCONSIN
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PLAN VIEW
CURB RAMP TYPE 4A



SECTION C - C FOR TYPE 4A

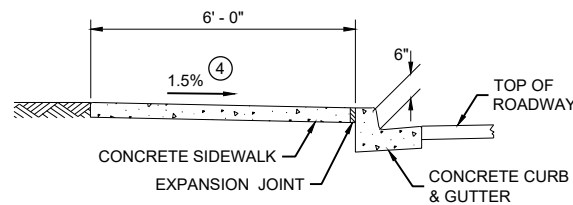


SECTION B - B FOR
TYPE 4A AND TYPE 4A1

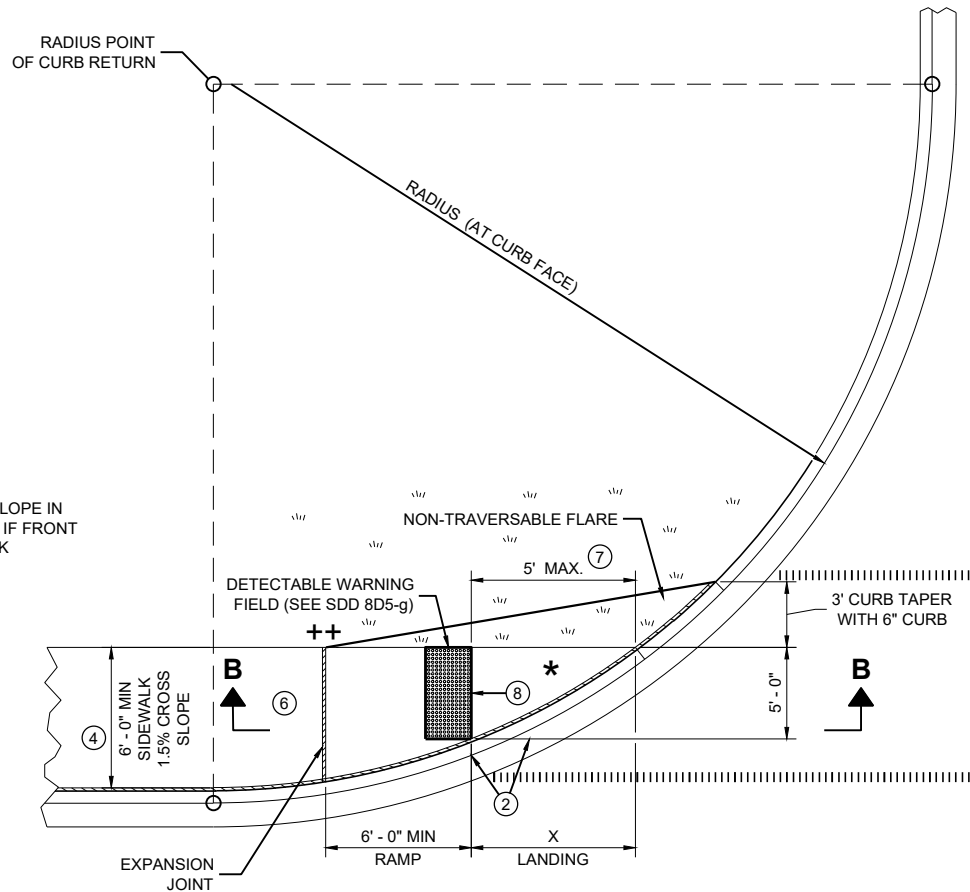
** IF RAMP SLOPE IS LESS THAN 5.0%, THEN NO ADJACENT UPHILL LANDING IS REQUIRED

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

INTERMEDIATE RADII CAN BE INTERPOLATED



SECTION A - A FOR TYPE 4A



PLAN VIEW
CURB RAMP TYPE 4A1

GENERAL NOTES

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

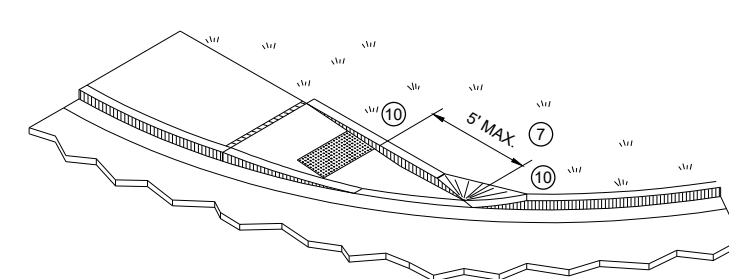
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

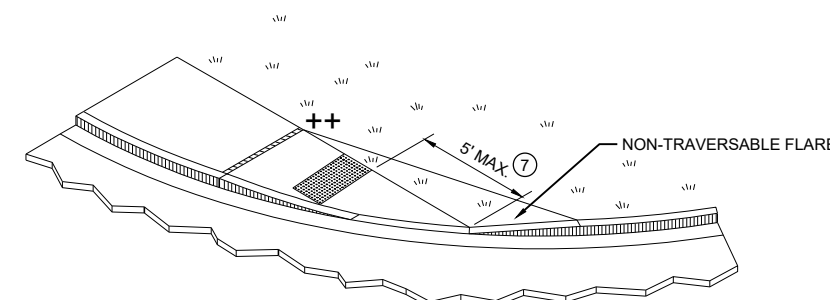
- GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/4 - INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.

LEGEND

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



ISOMETRIC VIEW FOR TYPE 4A

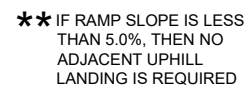


ISOMETRIC VIEW FOR TYPE 4A1

++ CONSTRUCT 6" WEDGE TO AVOID CONCRETE BREAKAGE

CURB RAMPS TYPE 4A AND 4A1

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SECTION B - B FOR TYPE 4B AND TYPE 4B1

RADIUS (AT CURB FACE)	W = 3' - 0"		W = 4' - 0"		W = 5' - 0"		W = 6' - 0"		W = 7' - 0"		W = 8' - 0"		W = 9' - 0"		W = 10' - 0"	
	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y
10 FEET	2' - 10 ¼"	0' - 5"	2' - 1"	1' - 4 ½"	1' - 5"	2' - 1"	0' - 10"	2' - 7 ½"	0' - 3 ¼"	3' - 0 ¼"						
15 FEET	4' - 6 ¾"	2' - 1 ¾"	3' - 9"	3' - 5 ¾"	3' - 1 ¼"	4' - 6"	2' - 6 ¾"	5' - 4 ½"	2' - 1"	6' - 1"	1' - 8"	6' - 8 ½"	1' - 3 ¾"	7' - 2 ½"	0' - 10 ¾"	7' - 7 ½"
20 FEET			4' - 11 ½"	5' - 1 ¾"	4' - 3 ¾"	6' - 5 ½"	3' - 8 ¾"	7' - 7"	3' - 3"	8' - 6 ½"	2' - 10"	9' - 4 ½"	2' - 5 ½"	10' - 1 ¼"	2' - 1 ½"	10' - 9"
30 FEET									4' - 10 ¾"	12' - 5 ¾"	4' - 5 ½"	13' - 7 ¾"	4' - 0 ¾"	14' - 8 ½"	3' - 8 ½"	15' - 8 ½"
40 FEET															4' - 10 ¾"	19' - 8 ½"

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



++ CONSTRUCT 6" WEDGE TO
AVOID CONCRETE BREAKAGE

GENERAL NOTES

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

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

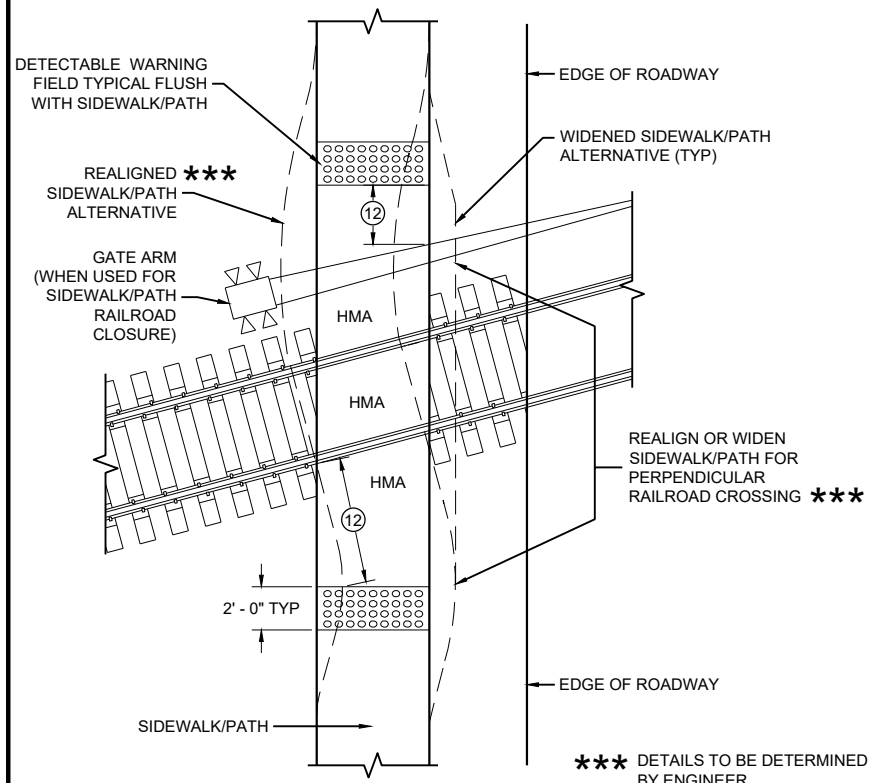
DETECTABLE WARNING FIELDS THAT ARE INSTALLED AS A GROUP OR SIDE BY SIDE, SHALL BE FROM THE SAME MANUFACTURER.

- ② GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/8" INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- ③ AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- ④ ±0.5% CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- ⑥ PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- ⑦ WHEN THIS GRADE BREAK DISTANCE EXCEEDS 5 FEET, USE RADIAL DETECTABLE WARNING FIELD PER SDD 8D5-f.
- ⑧ PROVIDE GRADE BREAK PERPENDICULAR TO DIRECTION OF WHEELCHAIR TRAVEL.
- ⑩ INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.



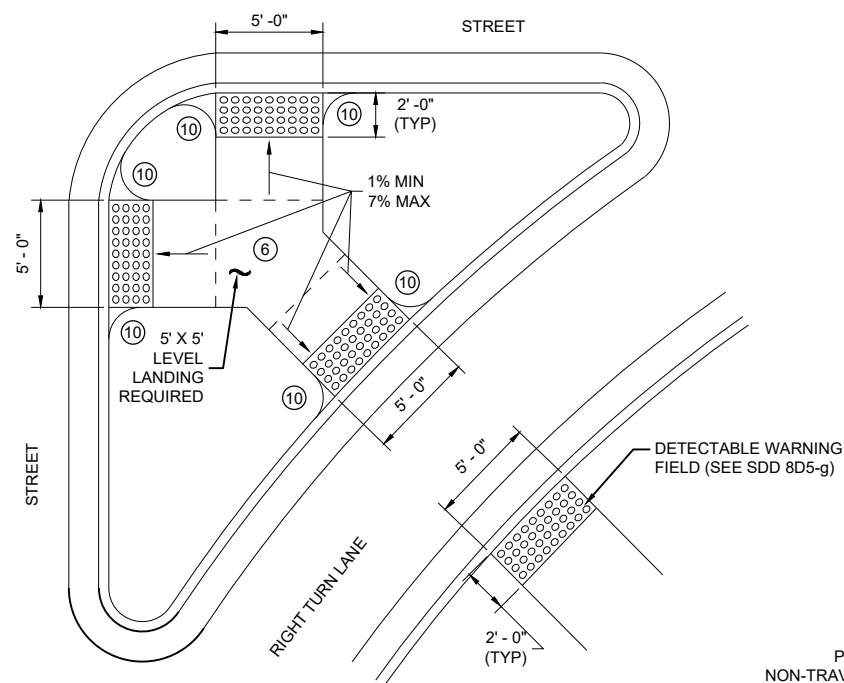
CURB RAMPS TYPE 4B AND 4B1

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CURB RAMP TYPE 8

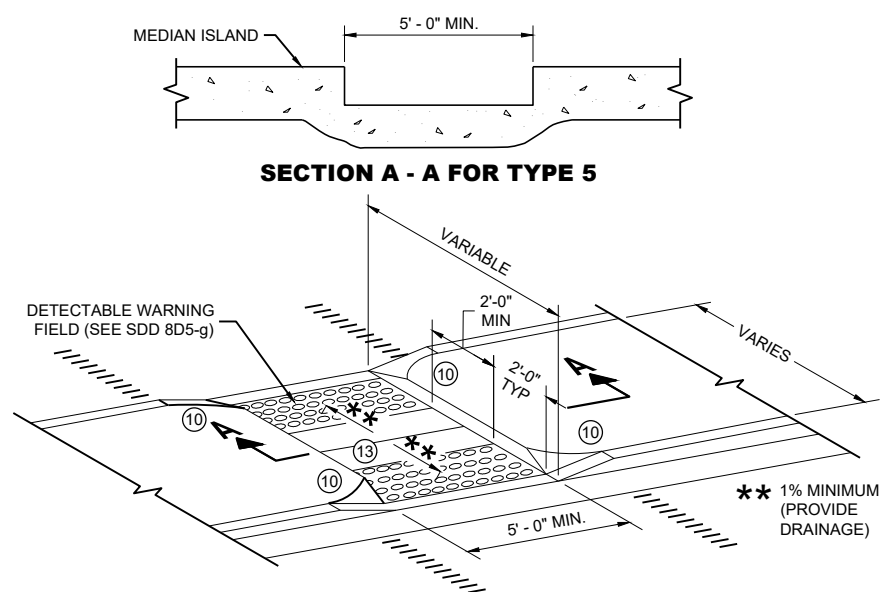
DETECTABLE WARNINGS FOR SIDEWALKS OR SHARED USE PATHS AT RAILROAD CROSSINGS



CURB RAMP TYPE 6

DETECTABLE WARNING AT ISLANDS

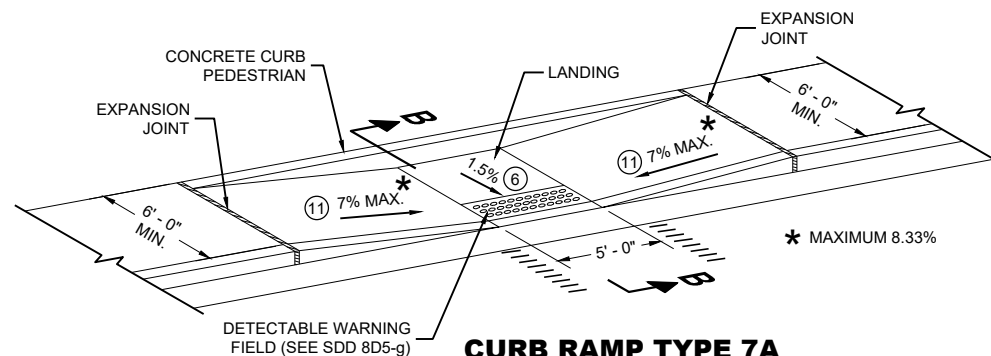
REFER TO GENERAL NOTES (2) AND (3)
FOR ALL ISLAND CURB RAMPS



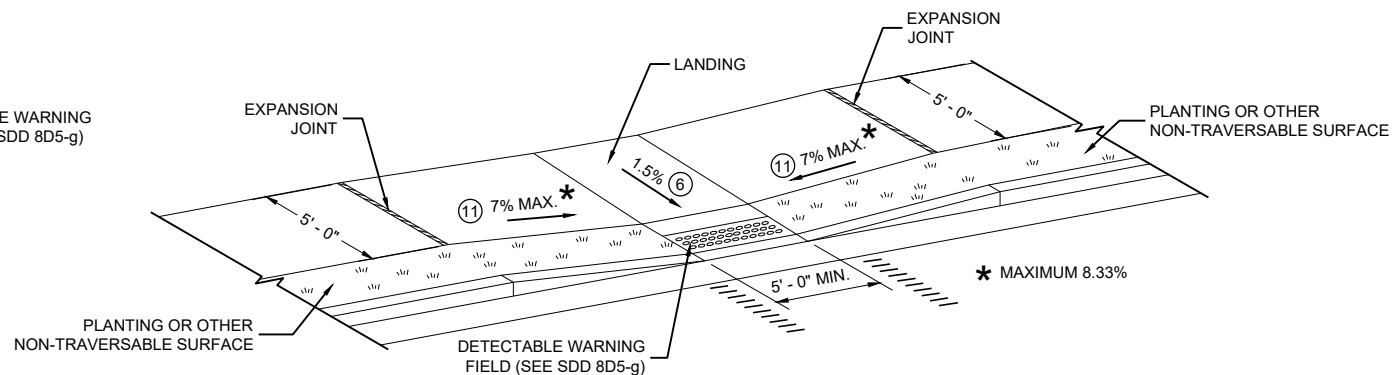
SECTION A - A FOR TYPE 5

CURB RAMP TYPE 5

MEDIAN ISLAND NON-ELEVATED PEDESTRIAN CROSSING



CURB RAMP TYPE 7A FOR INTERSECTIONS AND MID BLOCK CROSSINGS



CURB RAMP TYPE 7B FOR INTERSECTIONS AND MID BLOCK CROSSINGS

GENERAL NOTES

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

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

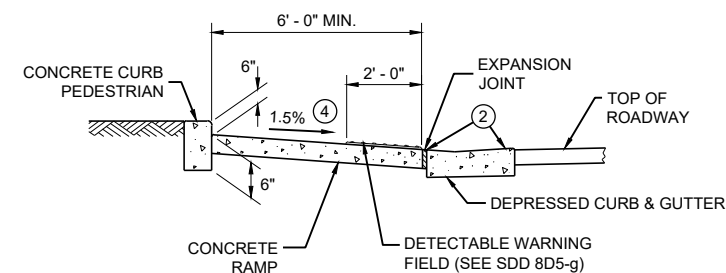
SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

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

- (2) GRADE CHANGE BETWEEN GUTTER FLAG SLOPE AND THE CURB RAMP SLOPE SHALL NOT EXCEED 11%. MAXIMUM GUTTER FLAG SLOPE IS 4%. PROVIDE LONGITUDINAL DRAINAGE AROUND CURB AND AWAY FROM CURB RAMP. NO VERTICAL LIPS OR DISCONTINUITIES GREATER THAN 1/8 INCH ARE ALLOWED. SLOPE OF CURB HEAD OPENING SHALL MATCH THE RAMP SLOPE, MINIMALLY 1.5% AND NOT TO EXCEED 7%. WHEN ADJACENT TO 1.5% LANDING, CONSTRUCT CURB HEAD OPENING AT 1.5% IN THE DIRECTION OF PEDESTRIAN TRAVEL.
- (3) AN 8.33% CURB RAMP SLOPE IS ALLOWABLE WITH FLATTENED GUTTER FLAG SLOPE AND NOT TO EXCEED 11% GRADE CHANGE.
- (4) $\pm 0.5\%$ CONSTRUCTION TOLERANCE IN SIDEWALK CROSS SLOPE. THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2% WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- (6) PROVIDE A LEVEL LANDING (MAXIMUM 2% SLOPE) IN ANY DIRECTION OF PEDESTRIAN TRAVEL. STANDARD LEVEL LANDING SIZE IS 5 FEET BY 5 FEET.
- (10) INSTALL TRANSITION NOSE (INCIDENTAL TO OTHER PAY ITEMS). DO NOT MARK TRANSITION NOSE.
- (11) SLOPE SIDEWALK TOWARD LANDING AS SHOWN WHERE THERE IS NO TERRACE OR WHERE THE TERRACE WIDTH IS LESS THAN 6 FEET WIDE.
- (12) THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO A RAILROAD CROSSING SHALL BE 1.5 FEET $\pm 0.1'$ FROM THE FACE OF THE GATE ARM IF THE GATE ARM EXTENDS ACROSS THE SIDEWALK/PATH. WHERE THERE IS NO PEDESTRIAN GATE, THE EDGE OF THE DETECTABLE WARNING FIELD NEAREST TO THE RAILROAD TRACK IS 15 FEET MAXIMUM AND 12 FEET MINIMUM, 15 FEET TYPICAL FROM THE NEAREST RAIL.
- (13) DO NOT INSTALL DETECTABLE WARNING FIELDS AT THE EDGES OF STREET-LEVEL PEDESTRIAN REFUGE ISLANDS IF A MINIMUM 2 FOOT CONCRETE SURFACE WITHOUT DETECTABLE WARNINGS (MEASURED IN THE DIRECTION OF PEDESTRIAN TRAVEL) CANNOT BE ACHIEVED.

LEGEND

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

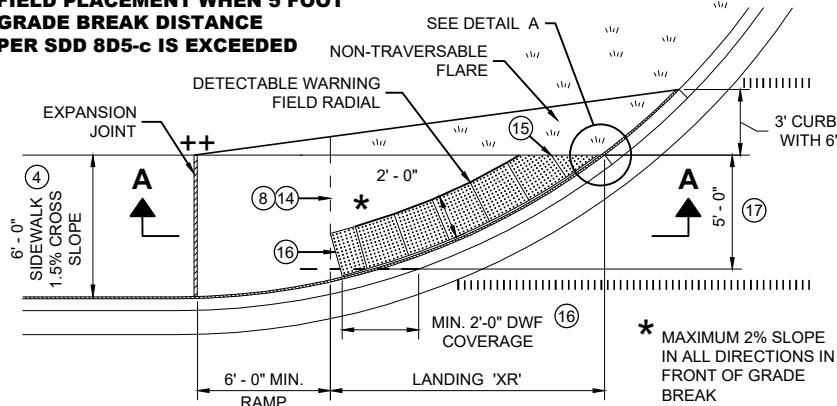


SECTION B - B FOR TYPE 7A

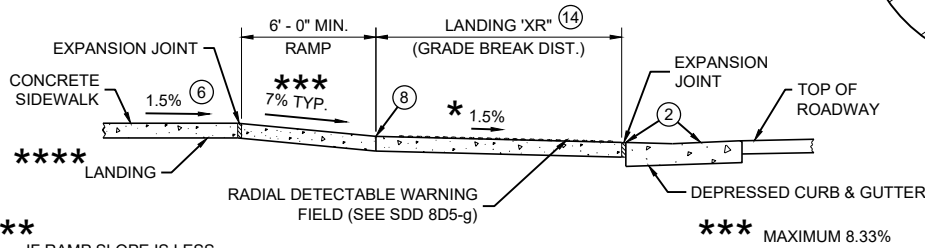
CURB RAMPS TYPE 5, 6, 7A, 7B & 8

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

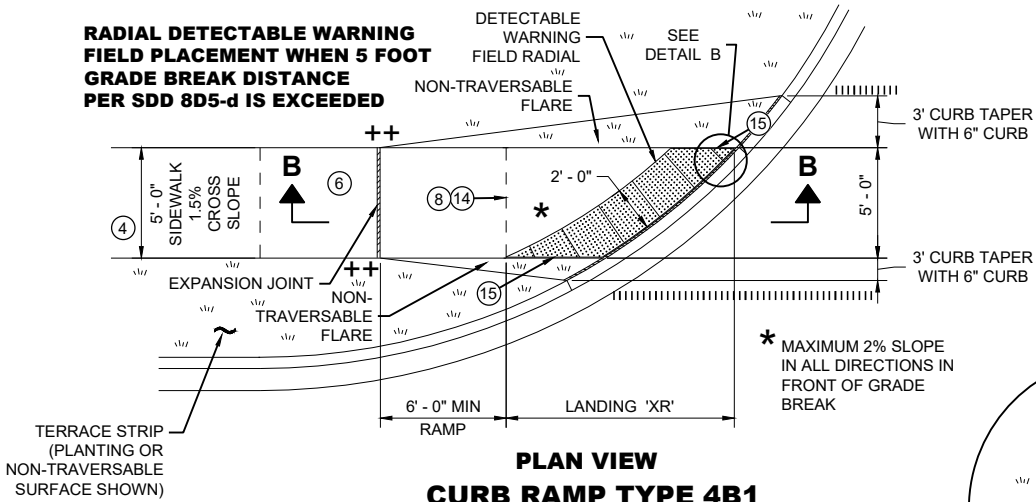


**PLAN VIEW
CURB RAMP TYPE 4A1
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**

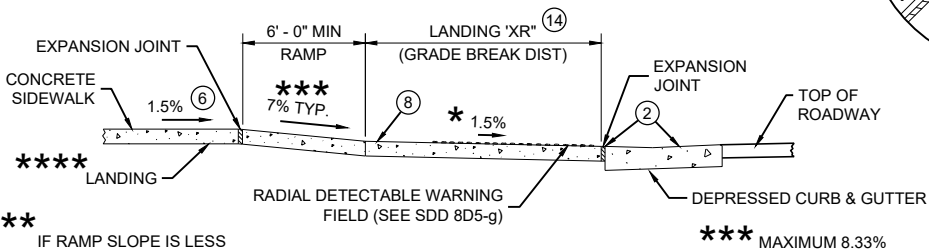


SECTION A - A FOR TYPE 4A1

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



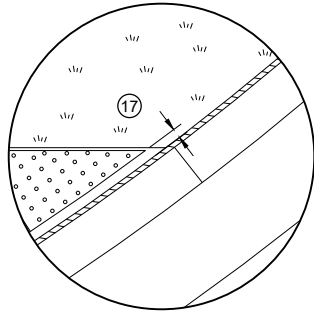
**PLAN VIEW
CURB RAMP TYPE 4B1
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)**



SECTION B - B FOR TYPE 4B1

LEGEND

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



DETAIL A

GENERAL NOTES

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

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

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

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

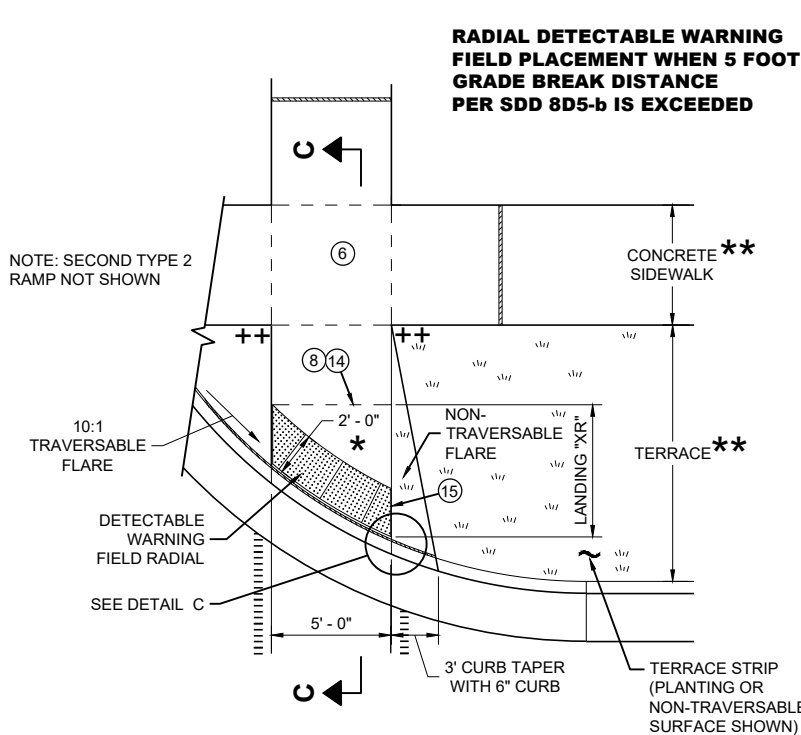
REFER TO SDD 8D5-g FOR ADDITIONAL RADIAL PLATE REQUIREMENTS.

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

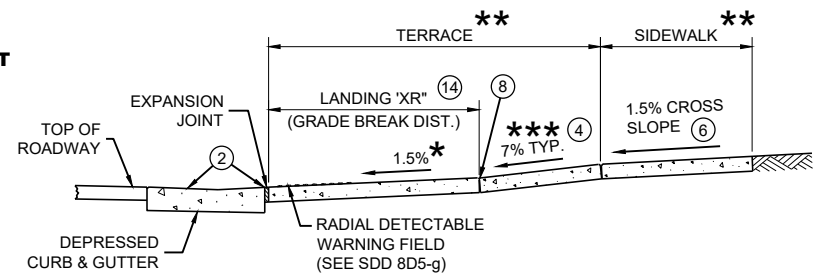
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

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

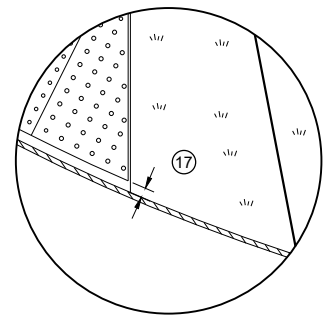
**RADIAL DETECTABLE WARNING
FIELD PLACEMENT WHEN 5 FOOT
GRADE BREAK DISTANCE
PER SDD 8D5-b IS EXCEEDED**



**PLAN VIEW
CURB RAMP TYPE 2
(GRADE BREAK DISTANCE GREATER THAN 5 FEET)
(ON LINE WITH SIDEWALK)**



SECTION C - C FOR TYPE 2



DETAIL C

*** MAXIMUM 2% SLOPE
IN ALL DIRECTIONS IN
FRONT OF GRADE
BREAK

** WIDTH SHOWN ELSEWHERE
IN THE PLANS

*** MAXIMUM 8.33%

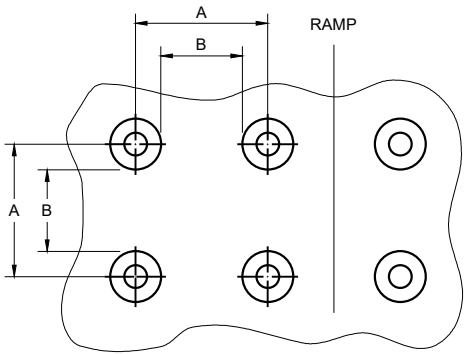
++ CONSTRUCT 6" WEDGE TO
AVOID CONCRETE BREAKAGE

**CURB RAMPS
RADIAL DETECTABLE WARNING**

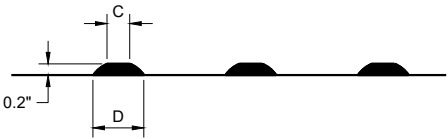
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

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

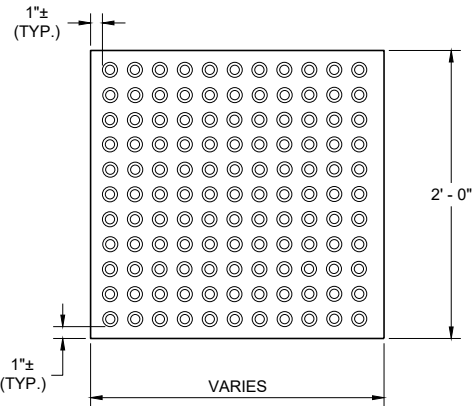


PLAN VIEW

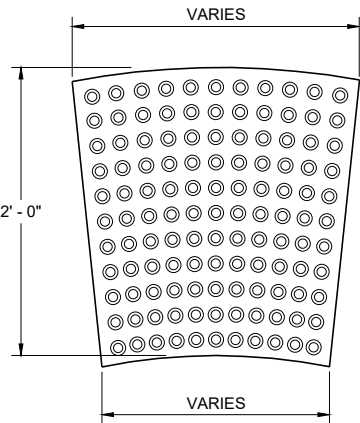


ELEVATION VIEW

TRUNCATED DOMES
DETECTABLE WARNING PATTERN DETAIL

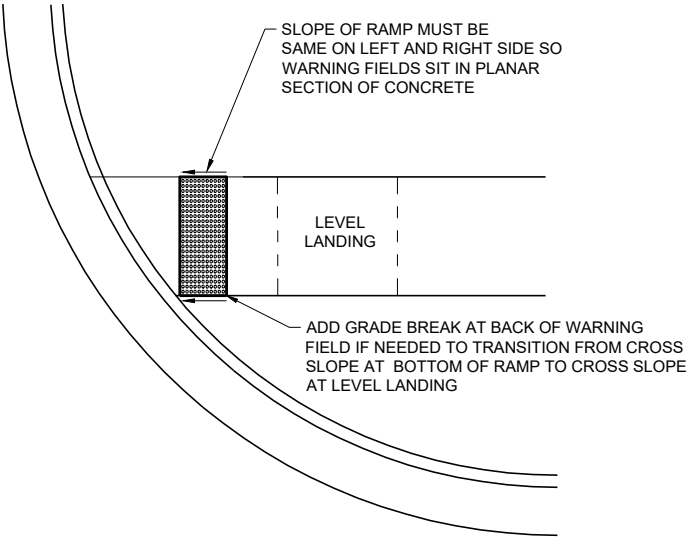


RECTANGULAR
PLATES

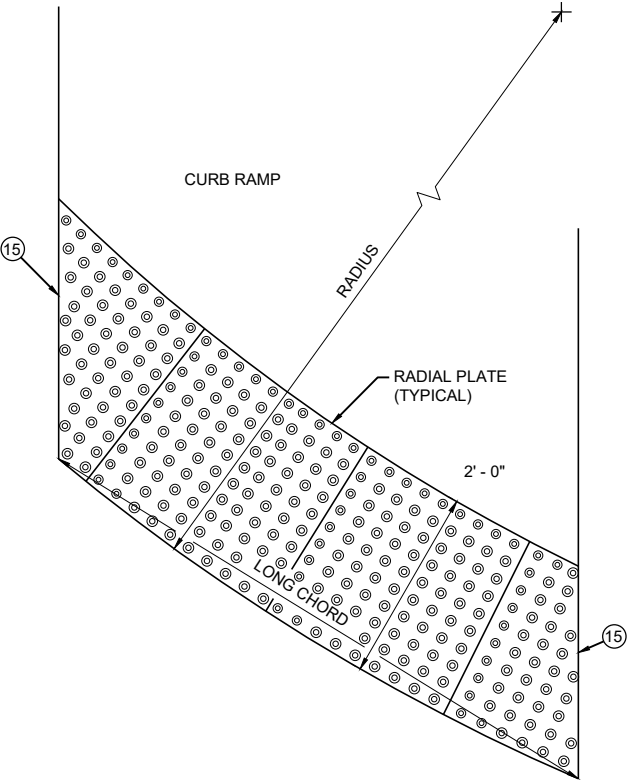


RADIAL
PLATES

PLAN VIEW
DETECTABLE WARNING FIELDS (TYPICAL)



DETECTABLE WARNING FIELD
PLANAR INSTALLATION



PLAN VIEW
RADIAL DETECTABLE
WARNING FIELD ATTRIBUTES

GENERAL NOTES

DETECTABLE WARNING FIELDS THAT ARE INSTALLED AT A CURB RAMP SHALL BE FROM THE SAME MANUFACTURER.

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

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

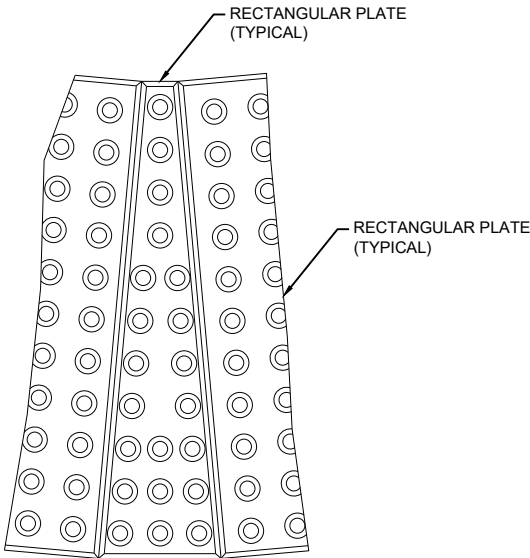
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

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

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

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

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



PLAN VIEW
RADIAL WEDGE PLATE
CONNECTION DETAIL

CURB RAMPS
RECTANGULAR AND RADIAL
DETECTABLE WARNING PLATES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

ROADWAY WITH SHOULDERS OR CURBS (EDGEDRAIN CONNECTS TO ROADSIDE) ⁽²⁾

ROADWAY WITH CURBS (EDGEDRAIN CONNECTS INTO INLET STRUCTURE)

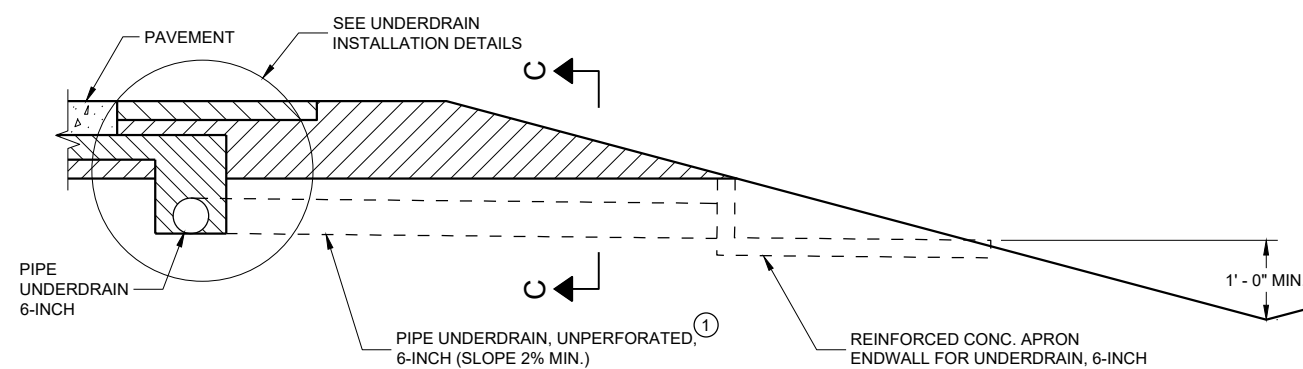
GENERAL NOTES

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

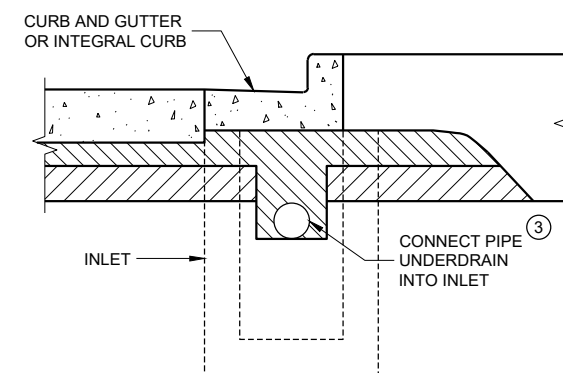
- ① UNPERFORATED PIPE UNDERDRAIN AND FITTINGS FURNISHED FOR OUTFALL PIPE SHALL MEET THE REQUIREMENTS OF ONE OF THE FOLLOWING SPECIFICATIONS:

POLYVINYL CHLORIDE (PVC) PLASTIC DRAIN, WASTE, AND VENT PIPE AND FITTINGS, ASTM D 2665, SCHEDULE 40 PVC.

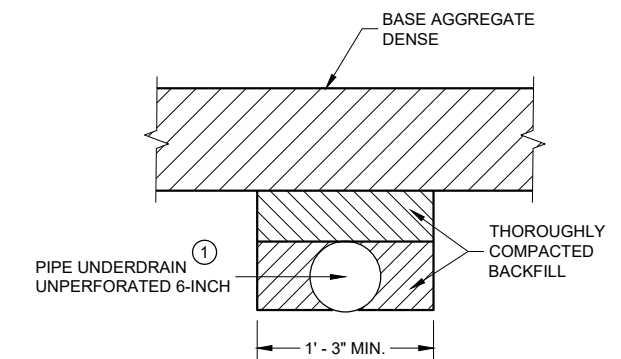
TYPE PSM POLYVINYL CHLORIDE (PVC) SEWER PIPE AND FITTINGS, ASTM D 3034, SDR 23.5 PVC SEWER PIPE.
- ② MAXIMUM SPACING OF EDGEDRAIN OUTLETS SHALL BE 250 FEET UNLESS OTHERWISE SPECIFIED IN THE CONTRACT OR DIRECTED BY THE ENGINEER.
- ③ EDGEDRAIN SHALL BE CONNECTED TO INLETS REGARDLESS OF FLOW DIRECTION FOR DRAINAGE AND MAINTENANCE ACCESS.
- ④ EDGEDRAIN SHALL BE LAID PARALLEL TO THE GRADE OF ROADWAY.



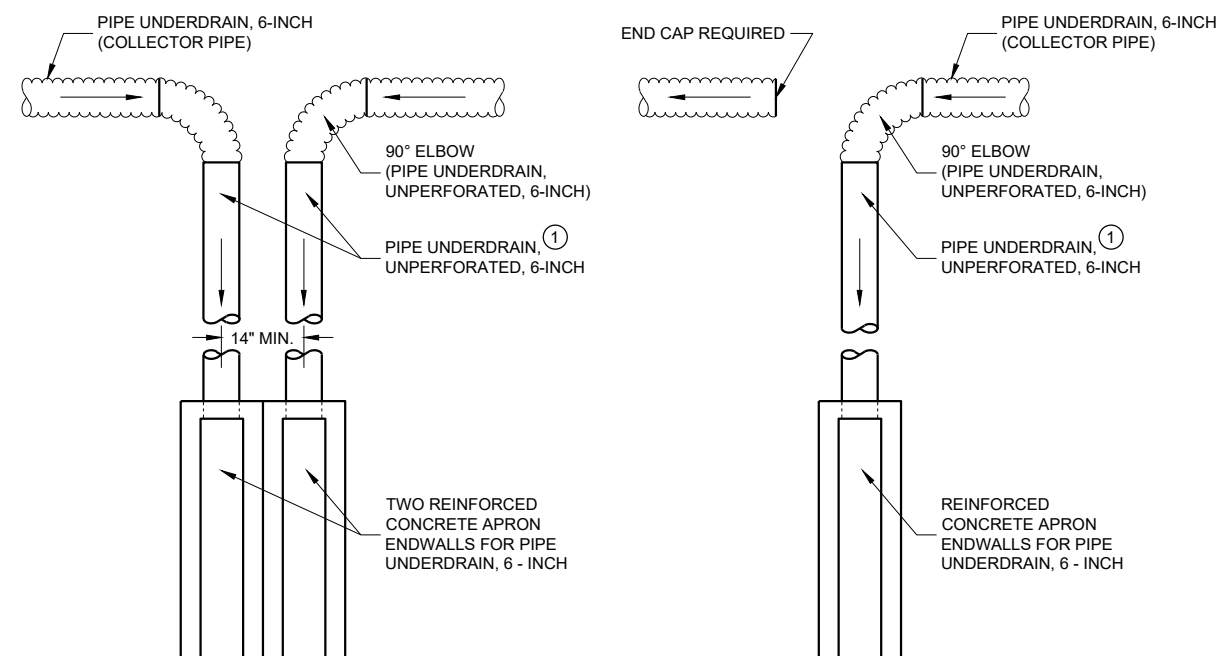
SECTION A - A
RURAL CROSS SECTION



SECTION B - B
URBAN CROSS SECTION



SECTION C - C
TRENCH FOR OUTFALL PIPE



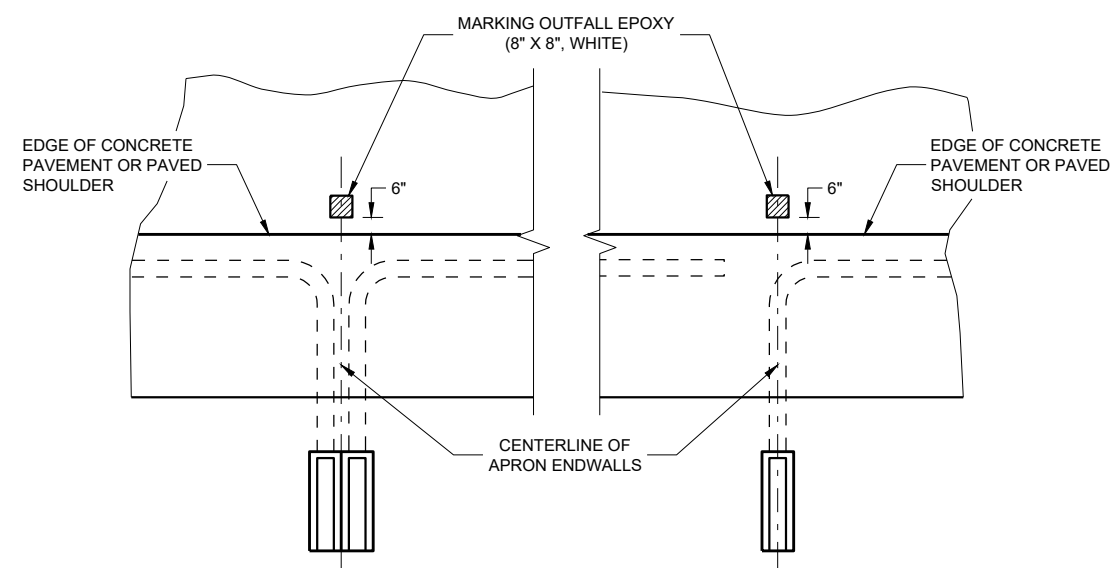
DETAIL "A"

TO BE USED AT LOW POINT LOCATIONS

DETAIL "B"

TO BE USED AT INTERMEDIATE LOCATIONS

TYPICAL DRAIN OUT DETAILS



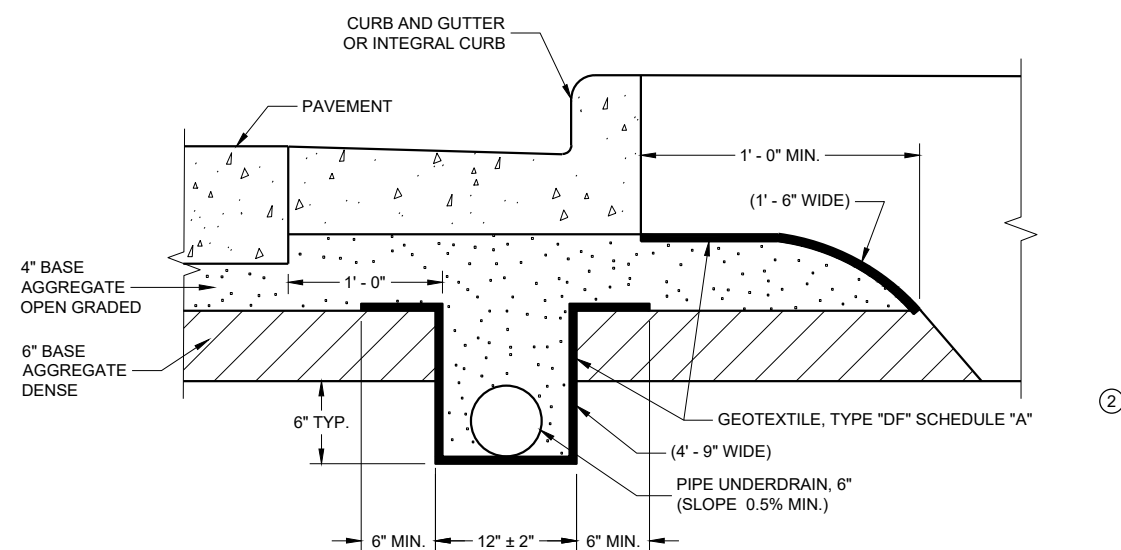
LOW POINT LOCATIONS

INTERMEDIATE LOCATIONS

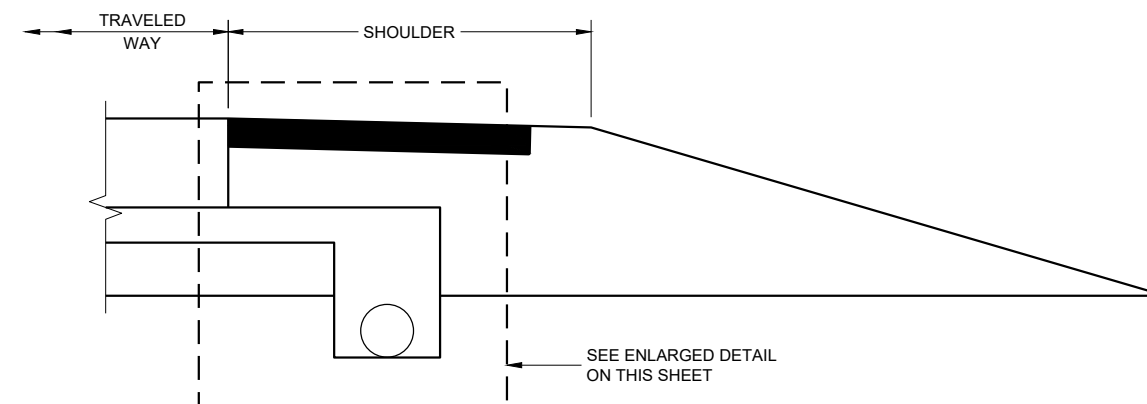
PAVEMENT MARKINGS FOR OUTFALL MARKERS

EDGEDRAIN OUTLET AND OUTFALL MARKERS

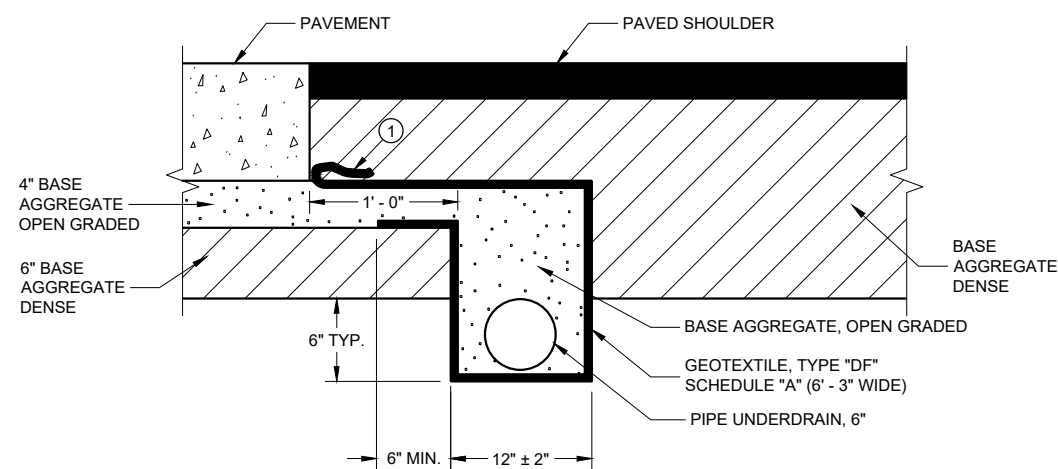
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 109



EDGEDRAIN IN URBAN ROADWAY

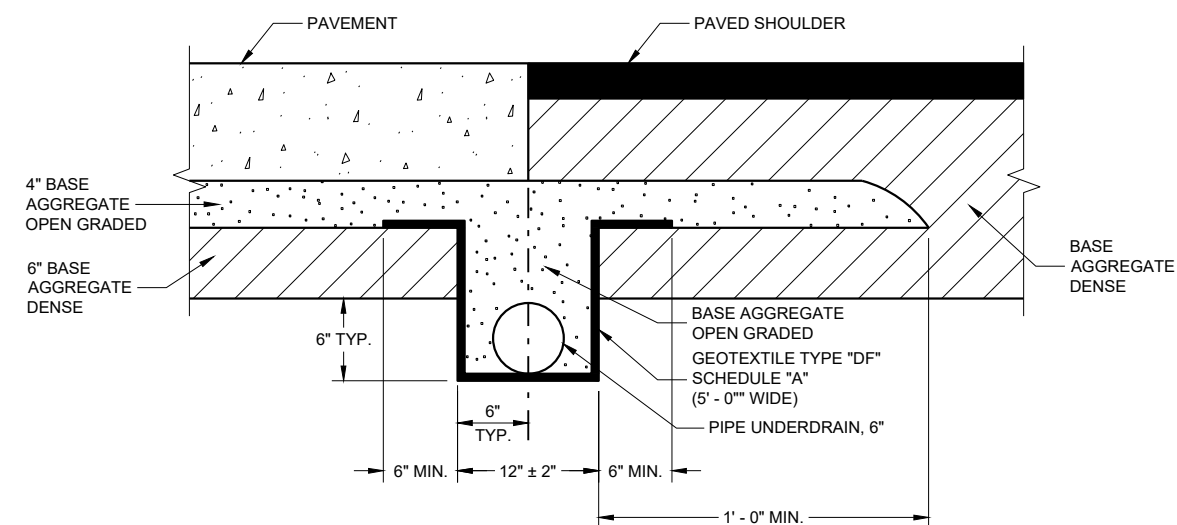


RURAL CROSS SECTION



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)

EDGEDRAIN IN RURAL ROADWAY



PRE-PAVING INSTALLATION ALTERNATIVE

EGEDRAIN AND BASE AGGREGATE OPEN GRADED

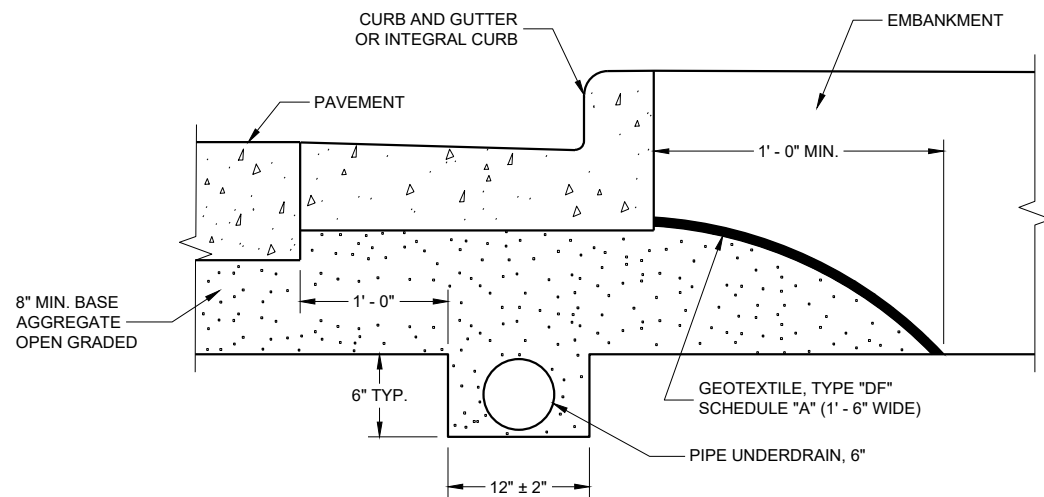
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 110

GENERAL NOTES

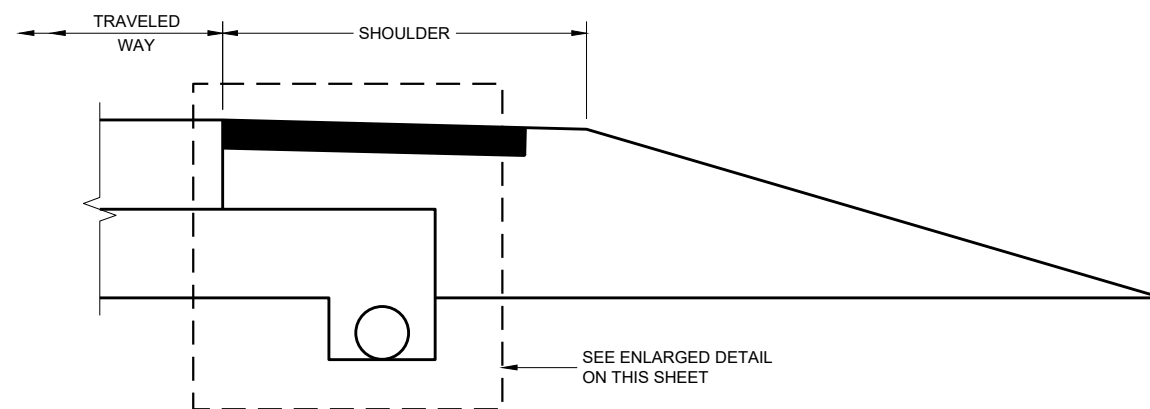
THE DIMENSIONS SHOWN ON THE TYPICAL CROSS SECTIONS WILL GOVERN IN THE
EVENT THERE IS A CONFLICT WITH THE DETAILS SHOWN ON THIS DRAWING.

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

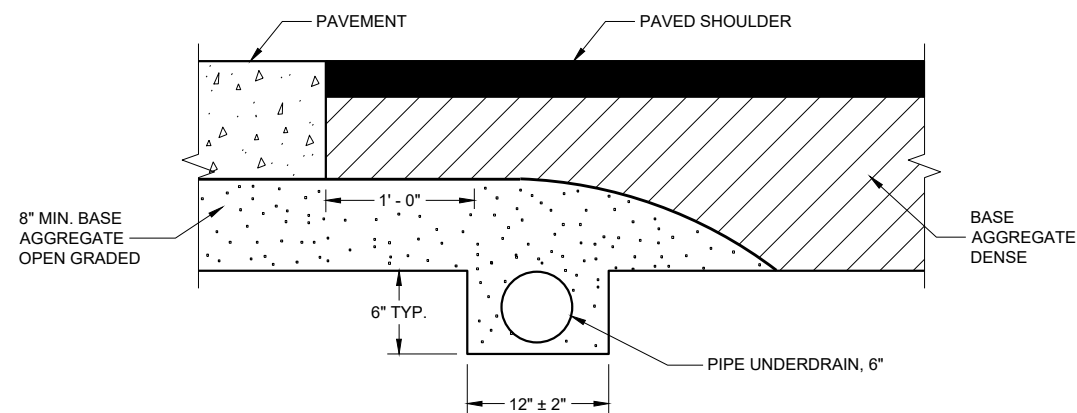
- ① FOLD OVER EXCESS GEOTEXTILE AT THIS LOCATION.
- ② TOTAL GEOTEXTILE WIDTH IS 6'-3" FOR PAYMENT.



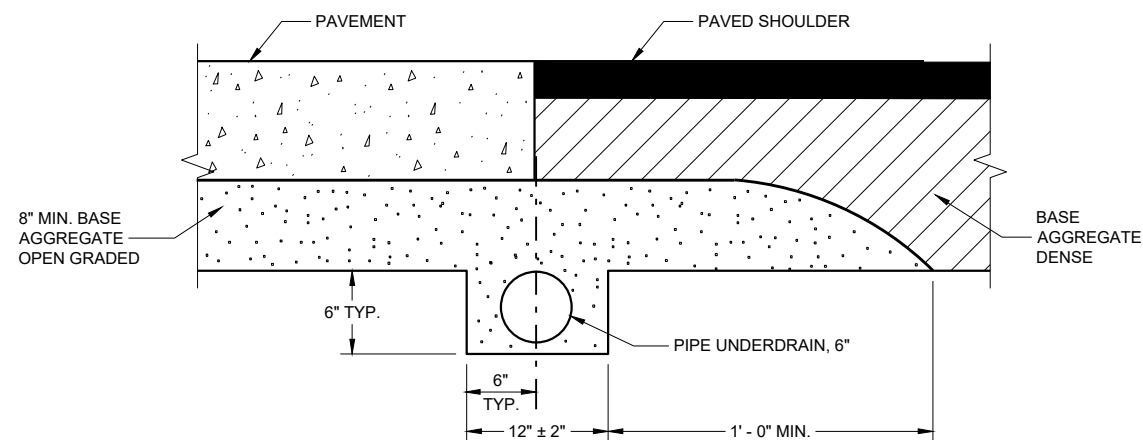
EDGEDRAIN IN URBAN ROADWAY



RURAL CROSS SECTION



POST PAVING INSTALLATION
(QUANTITIES ARE BASED ON THIS DETAIL)



PRE-PAVING INSTALLATION ALTERNATIVE

EDGEDRAIN IN RURAL ROADWAY

GENERAL NOTES

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

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

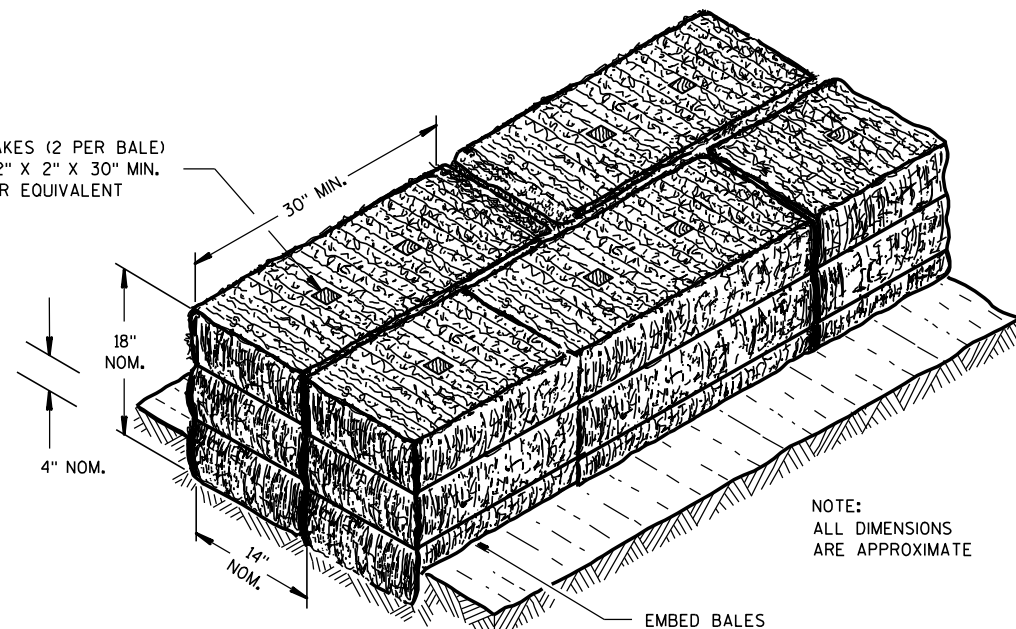
**EDGEDRAIN AND BASE
AGGREGATE OPEN GRADED**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
September 2015 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR 111

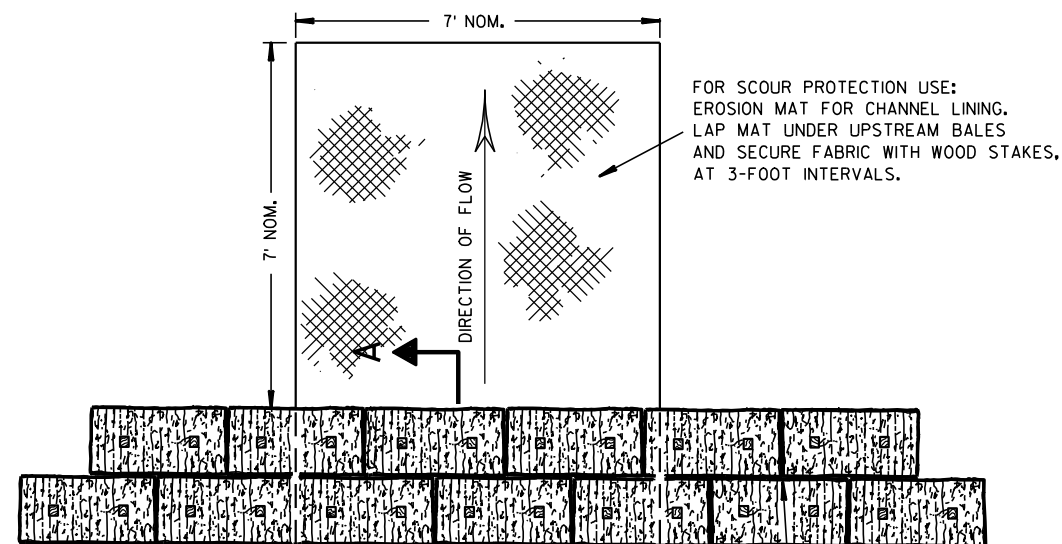
FHWA

WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT

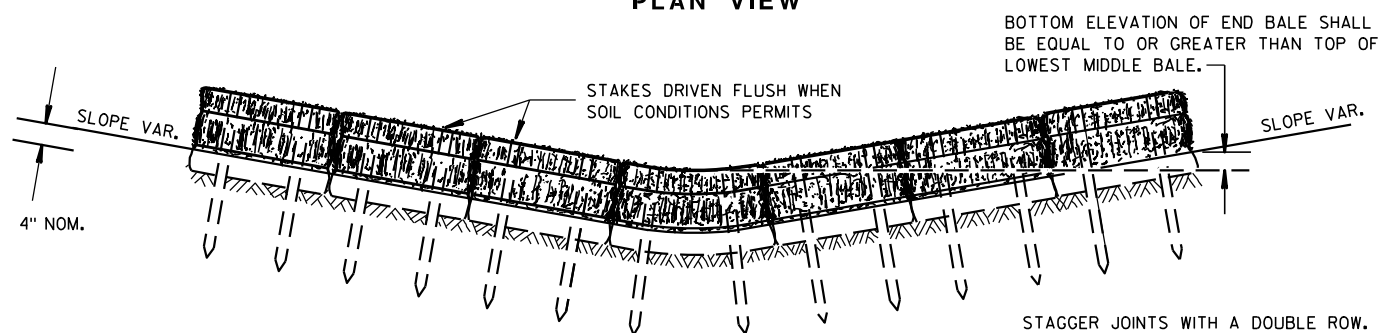


NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

SECTION A-A



PLAN VIEW



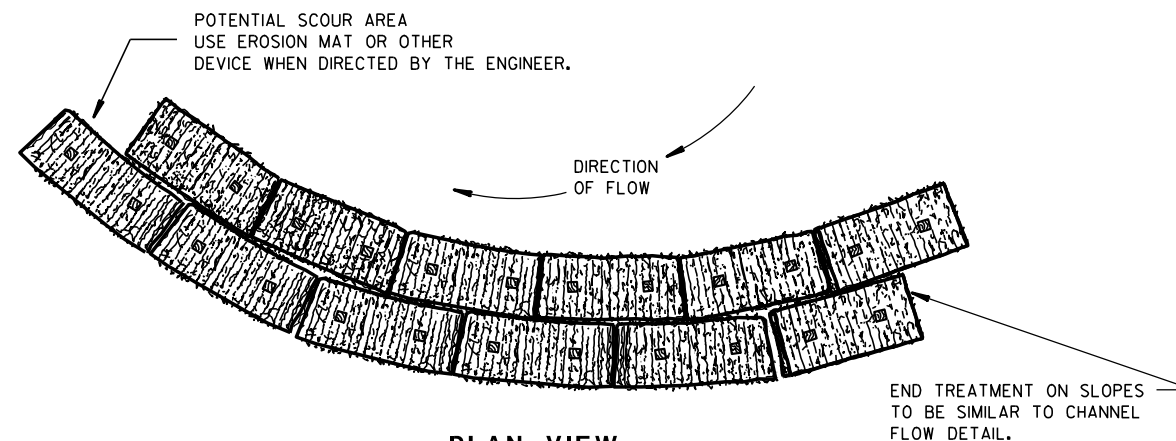
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

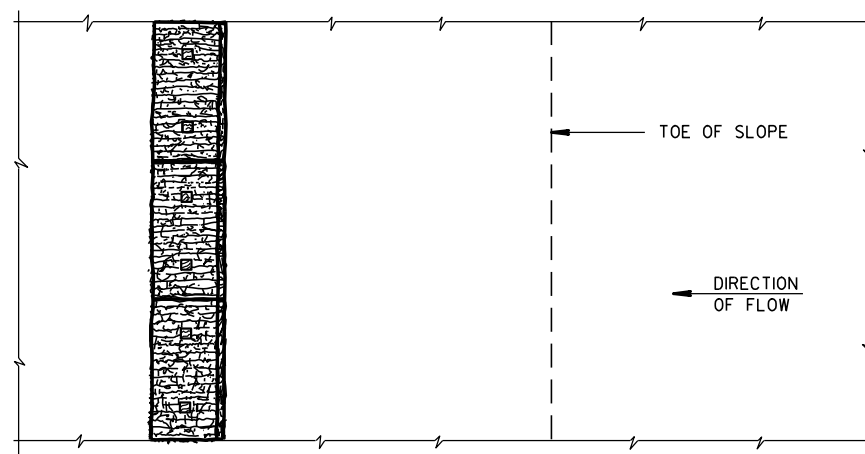
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

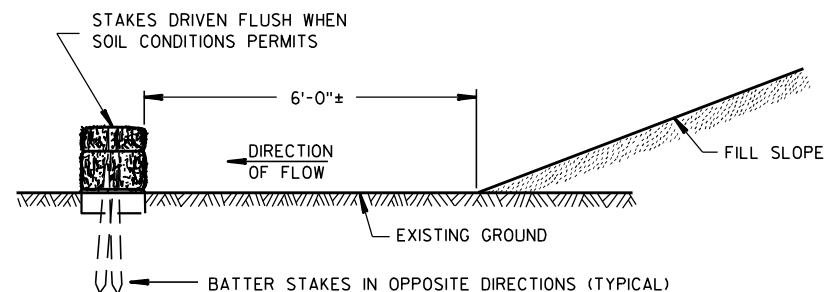


PLAN VIEW

WHEN ALTERING THE DIRECTION OF FLOW



PLAN VIEW



FRONT ELEVATION

WHEN EXISTING GROUND SLOPES AWAY FROM FILL SLOPE

EROSION BALES FOR SHEET FLOW

TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

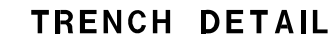
6/04/02
DATE

/S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT 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

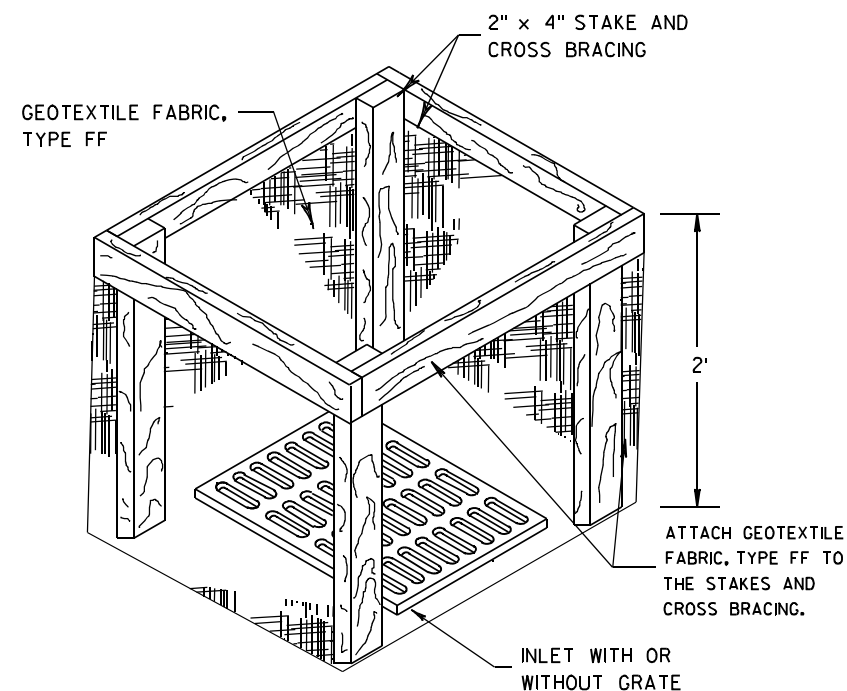
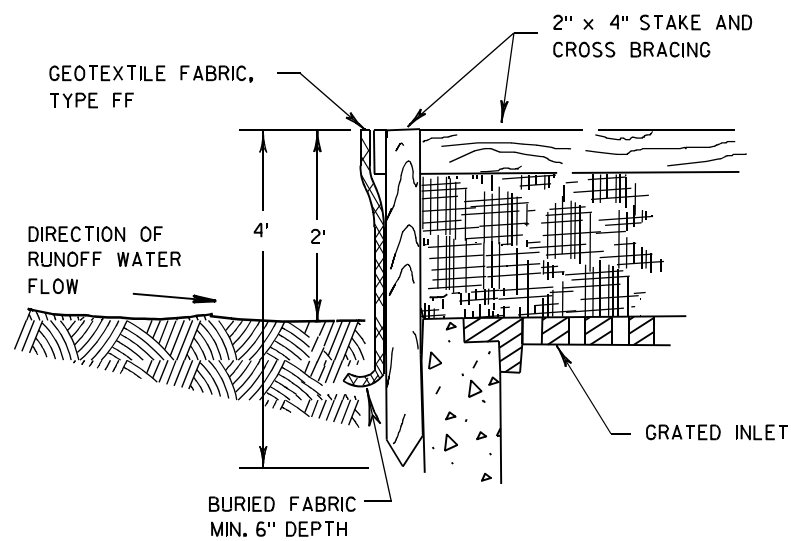
APPROVED
4-29-05
DATE

/S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT DIVISION

113

INCHES

FHWA



INLET PROTECTION, TYPE A

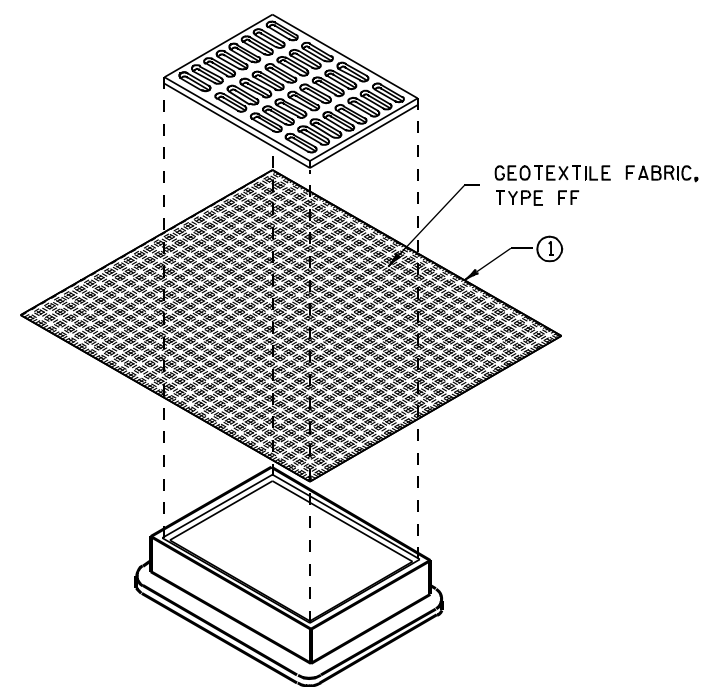
GENERAL NOTES

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.

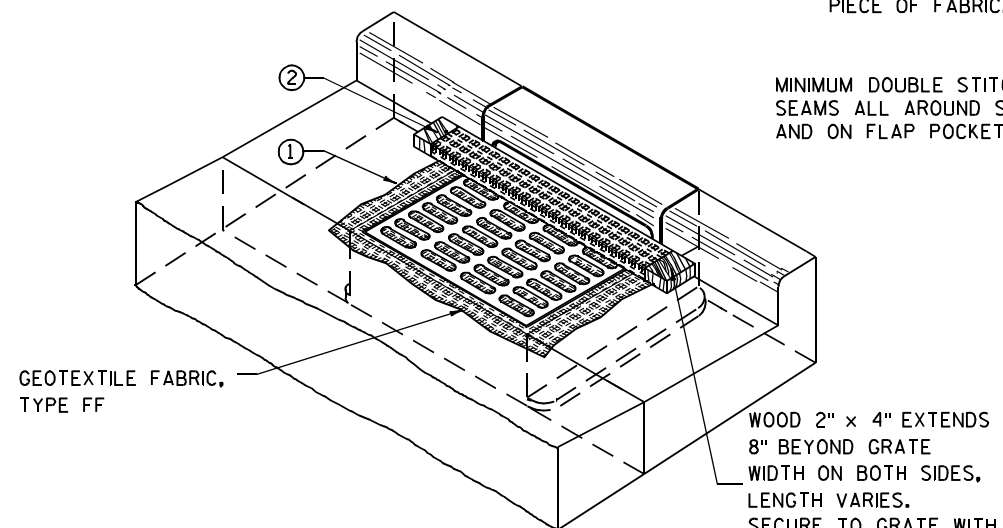
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

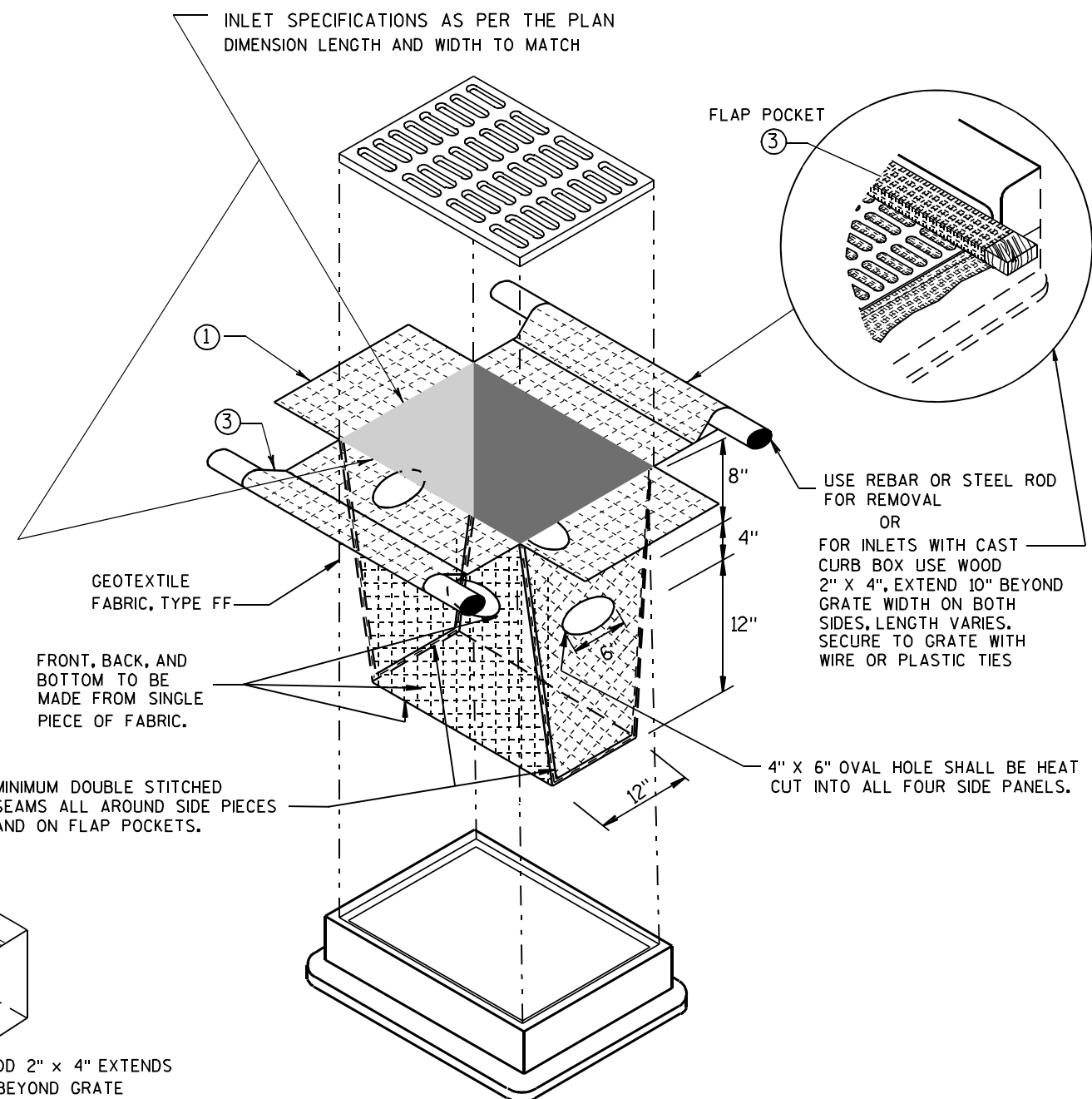
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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.



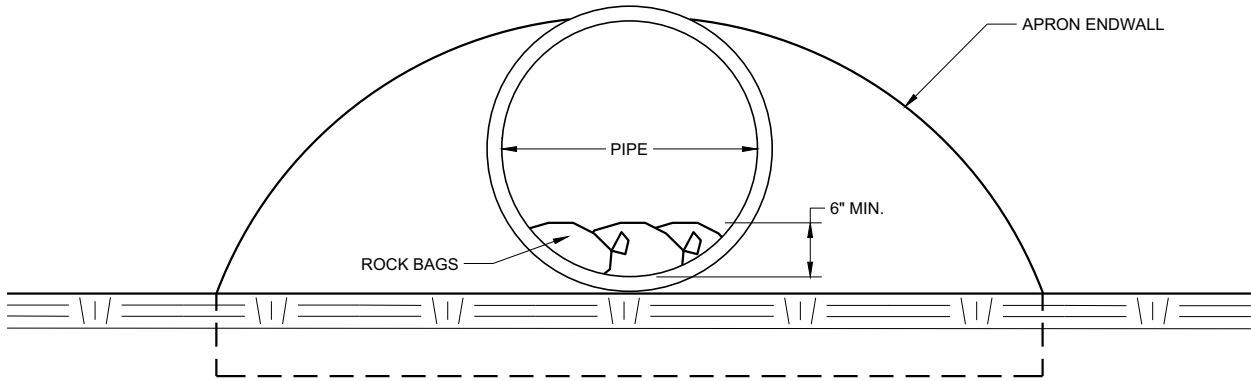
INLET PROTECTION, TYPE D

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

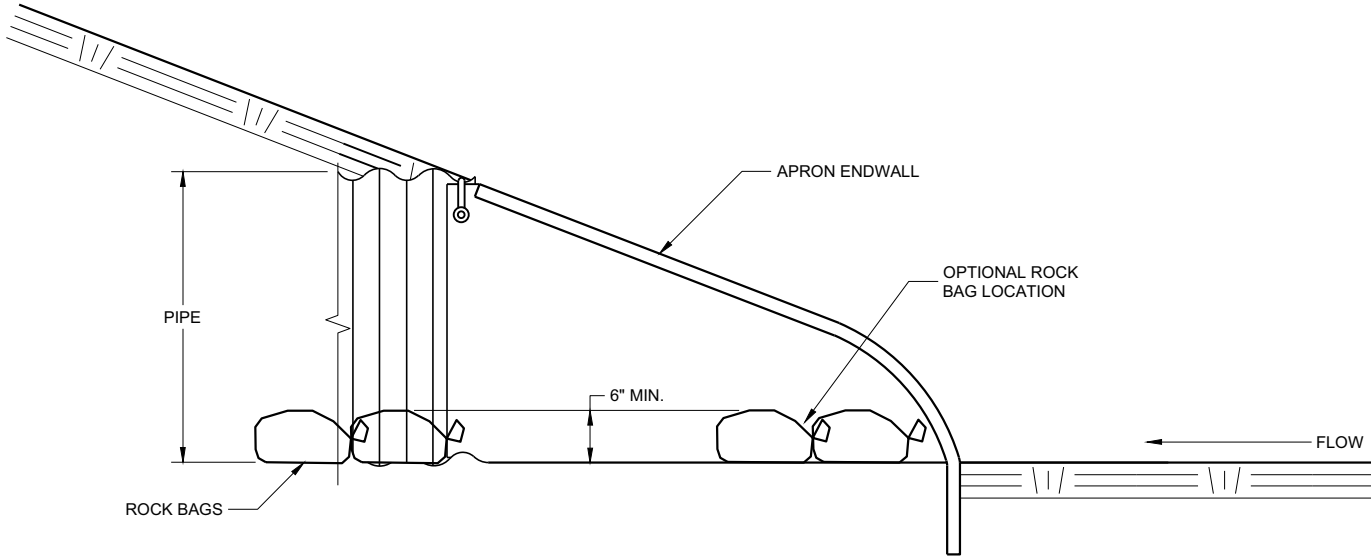
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 114
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER



END VIEW



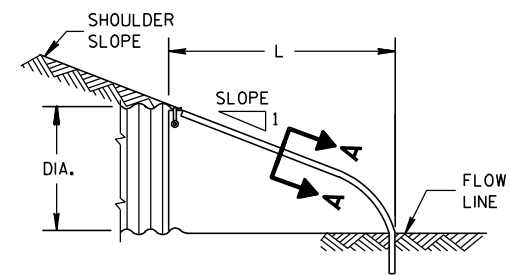
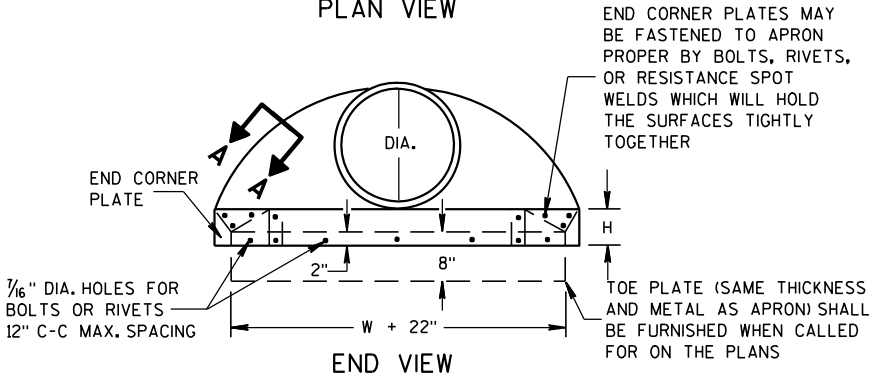
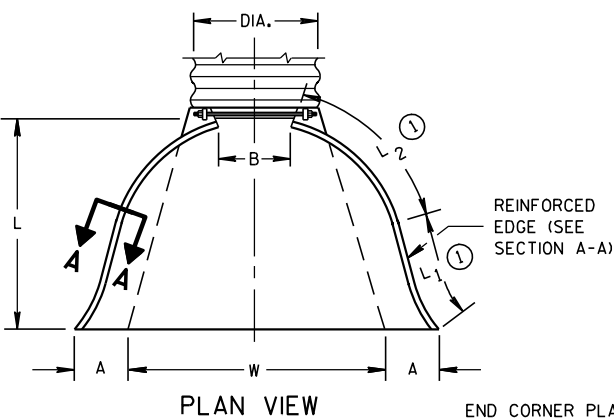
SIDE VIEW

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 ENGI 115
FHWA	

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

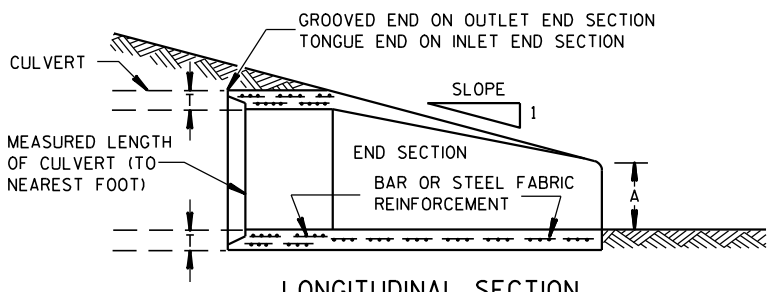
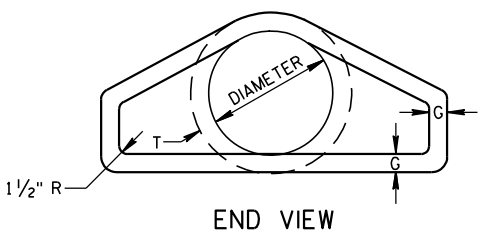
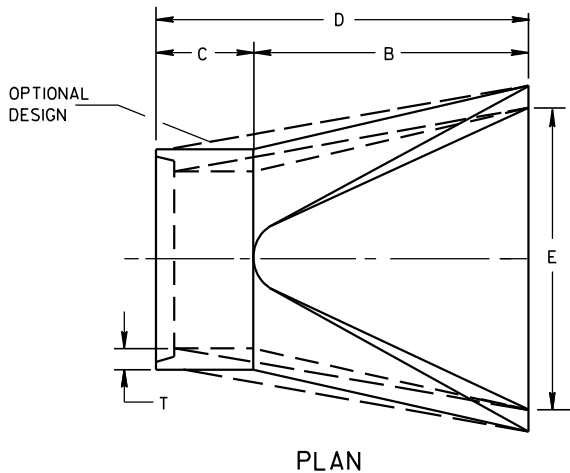
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

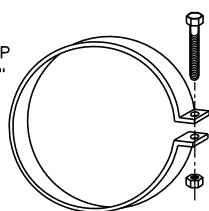
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9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

* MINIMUM
** MAXIMUM

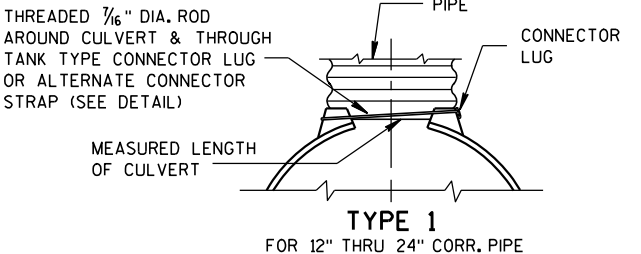


LONGITUDINAL SECTION
CONCRETE ENDWALLS

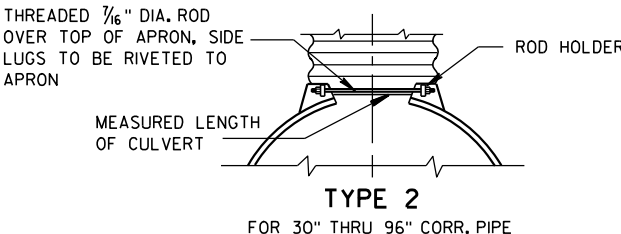
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



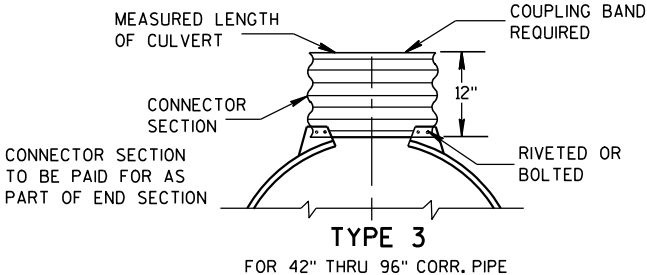
ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



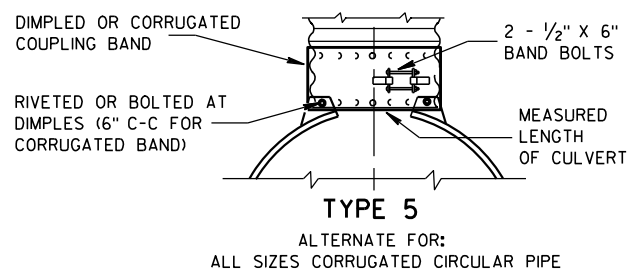
TYPE 1
FOR 12" THRU 24" CORR. PIPE



TYPE 2
FOR 30" THRU 96" CORR. PIPE



TYPE 3
FOR 42" THRU 96" CORR. PIPE



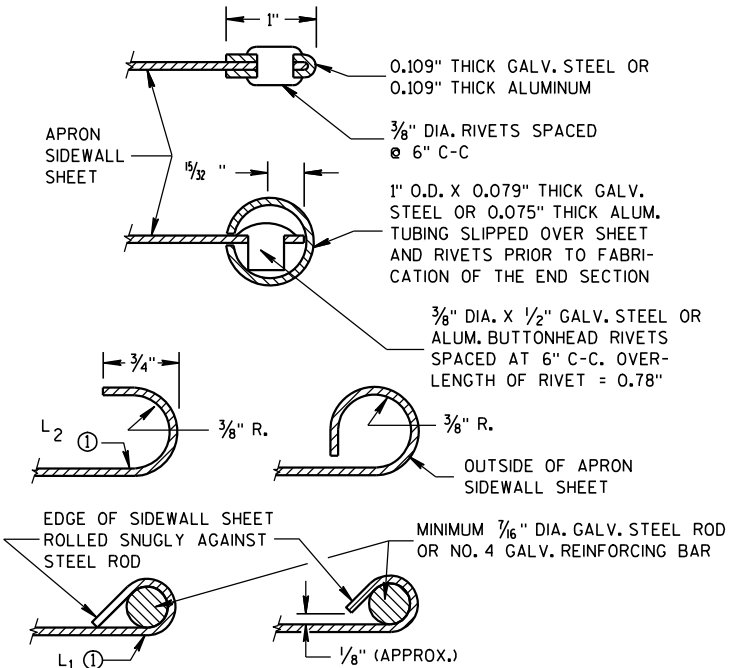
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

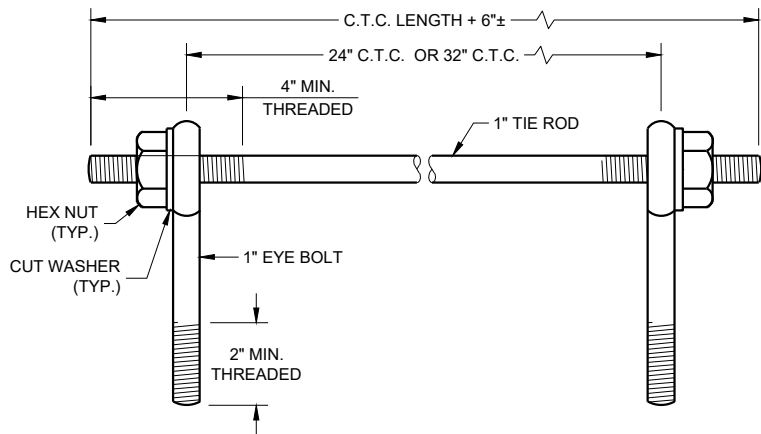
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR
CULVERT PIPE

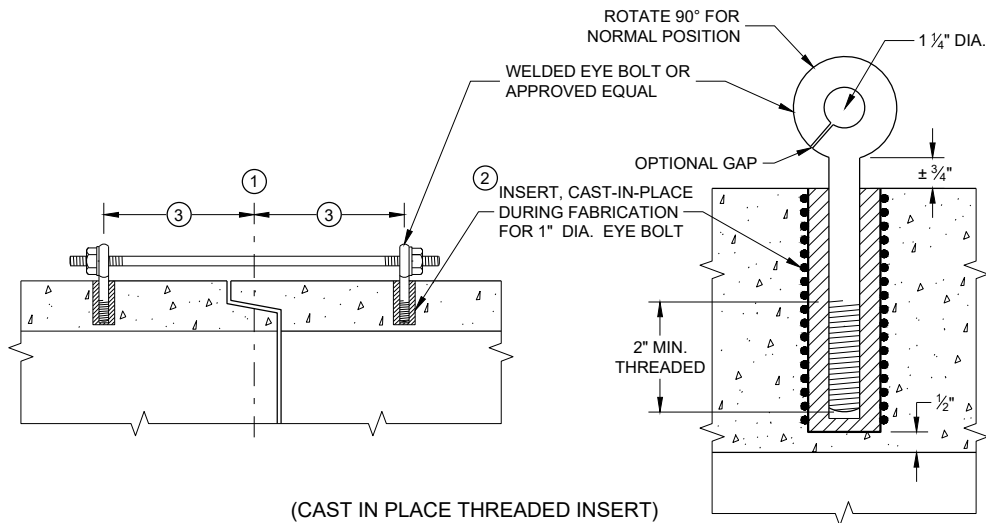
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/30/94
DATE
/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOP 116
NEER
FHWA



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

GENERAL NOTES

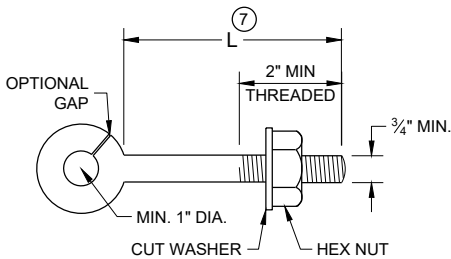
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.

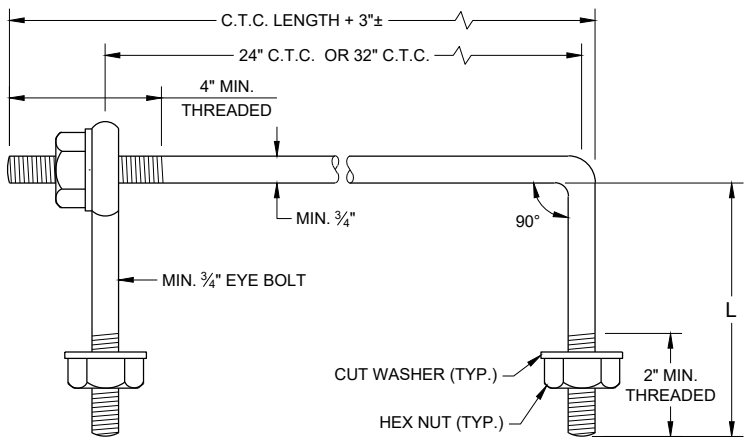
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

- 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.

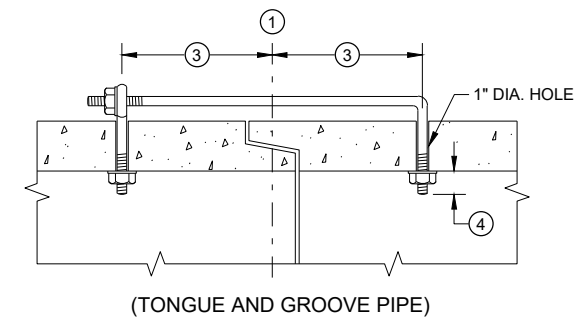


EYE BOLT 7

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

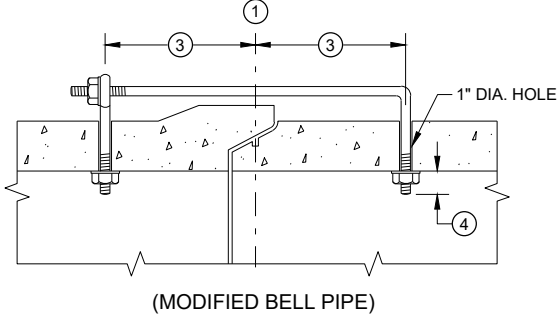


(TONGUE AND GROOVE PIPE)

LONGITUDINAL SECTION

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

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

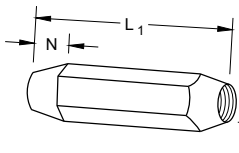


(MODIFIED BELL PIPE)

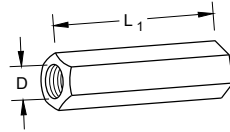
ADJUSTABLE TIE ROD TABLE

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

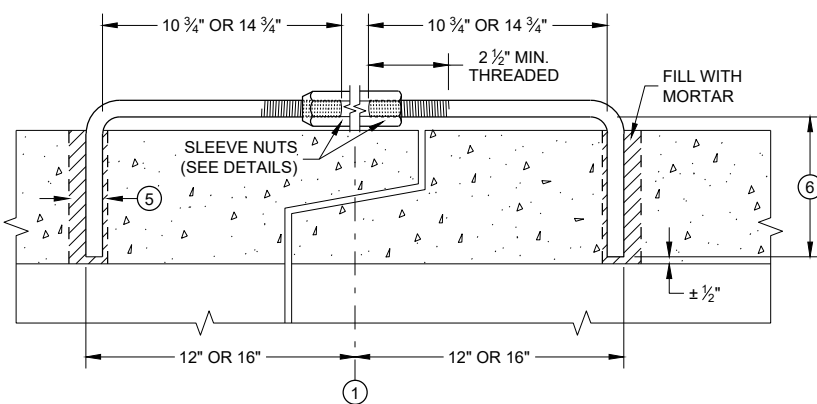


TAPERED



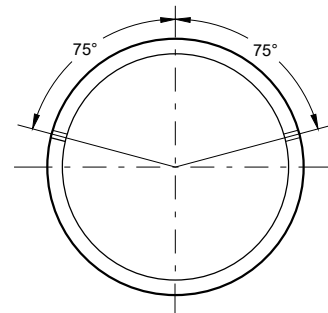
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



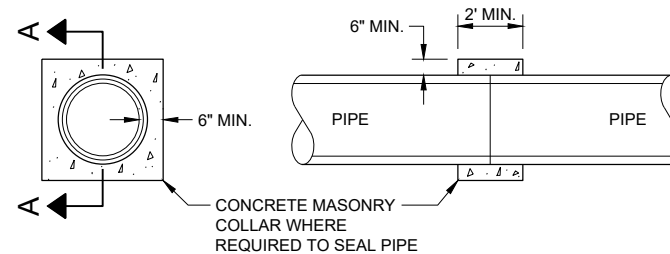
LONGITUDINAL SECTION

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

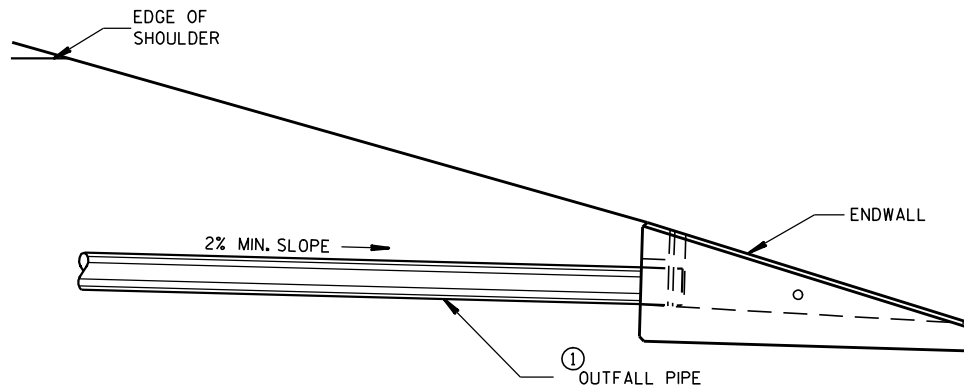
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

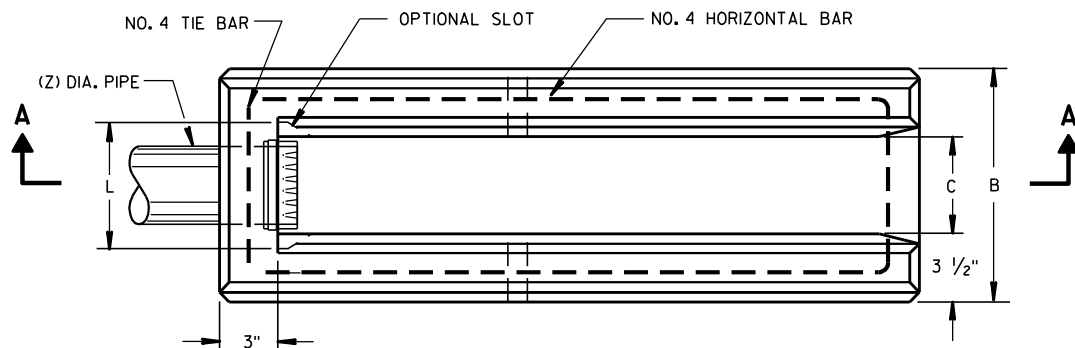
APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

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

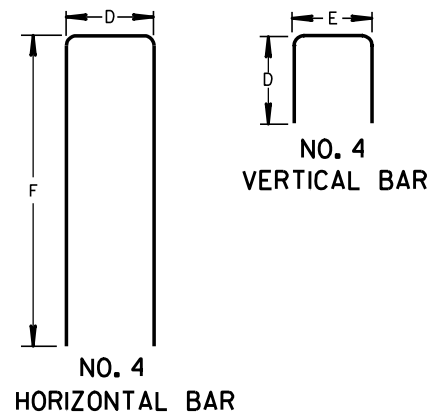
** APRON ENDWALL FOR 6 INCH DIAMETER PIPE MAY BE SUBSTITUTED FOR THIS SIZE PROVIDED THE HOLE IN THE HEADWALL IS SIZED AND LOCATED TO CONFORM TO THE 4 INCH DIAMETER PIPE DIMENSIONS (C & J)



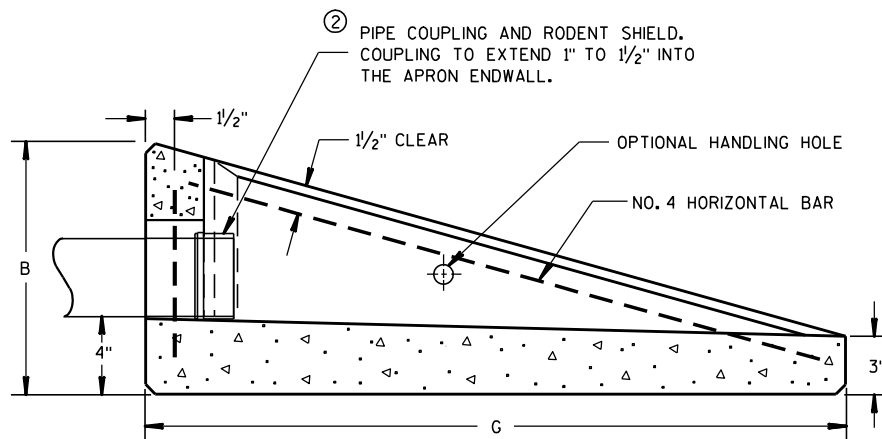
INSTALLATION DETAIL



PLAN VIEW

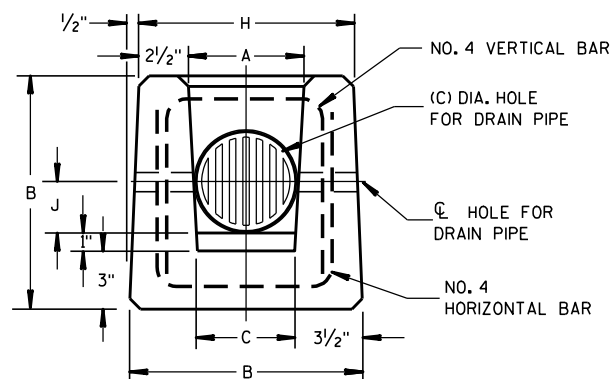


BAR STEEL REINFORCEMENT DETAILS



SECTION A-A

CONCRETE APRON ENDWALL FOR UNDERDRAIN



END VIEW

GENERAL NOTES

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

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

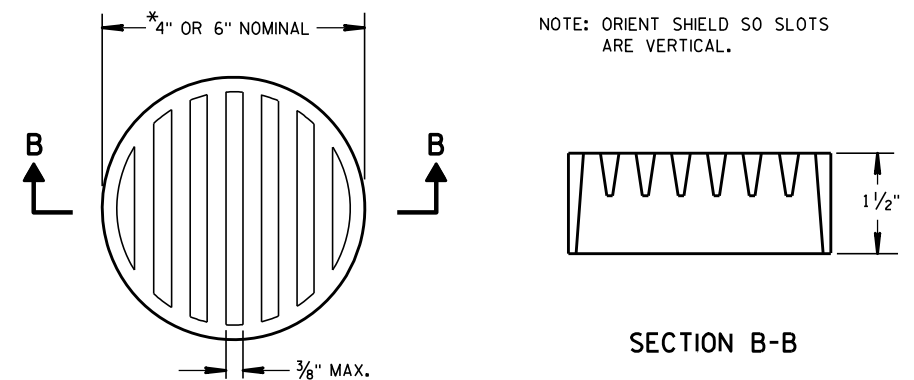
THE UNDERDRAIN PIPE SHALL BE FULLY INSERTED AND SEALED INTO THE ENDWALL WITH CEMENT MORTAR PRIOR TO BACKFILLING AROUND THE STRUCTURE.

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

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

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

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



② RODENT SHIELD

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

REINFORCED
CONCRETE APRON ENDWALL
FOR PIPE UNDERDRAIN

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

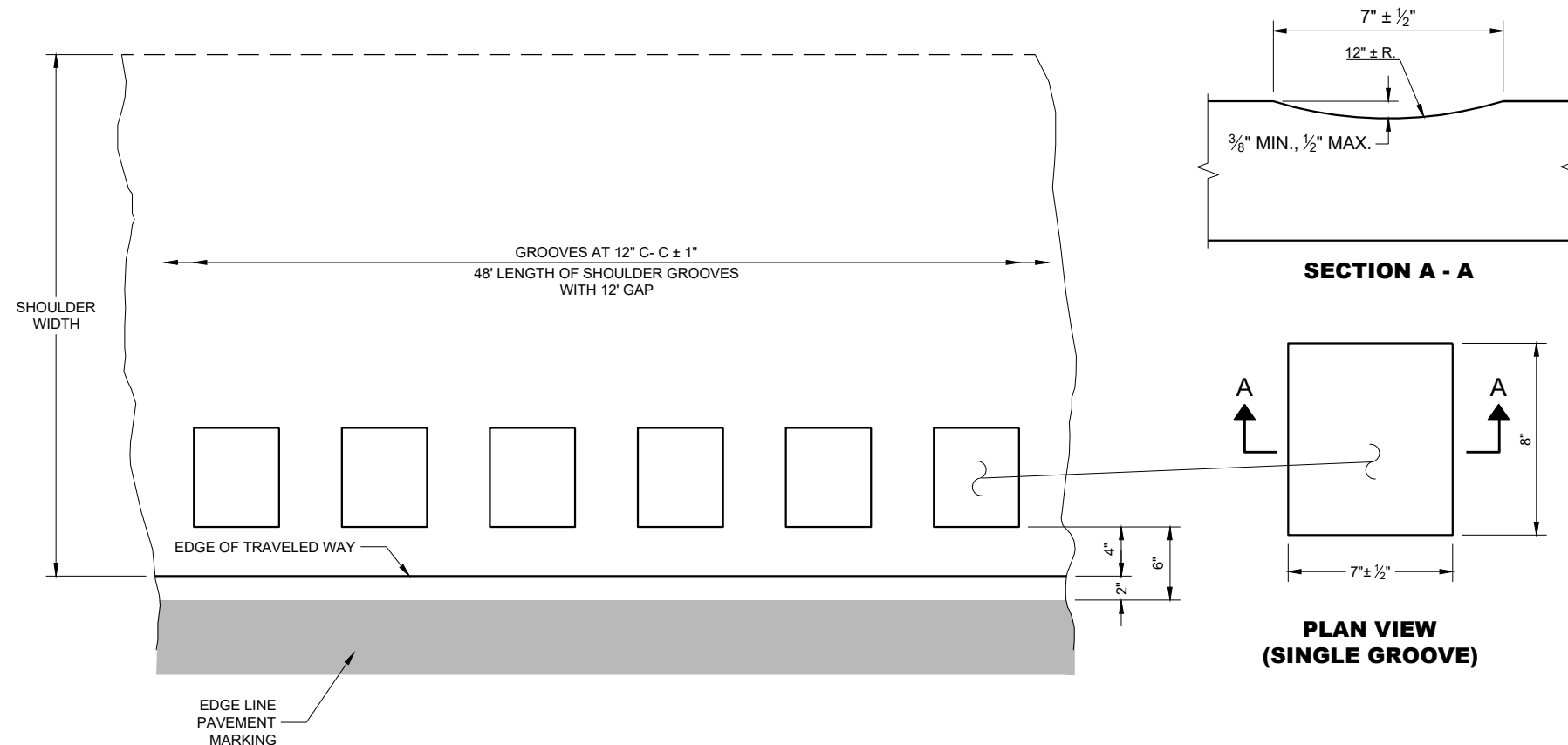
3/10/98

DATE

FHWA

/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPER

118 INEER

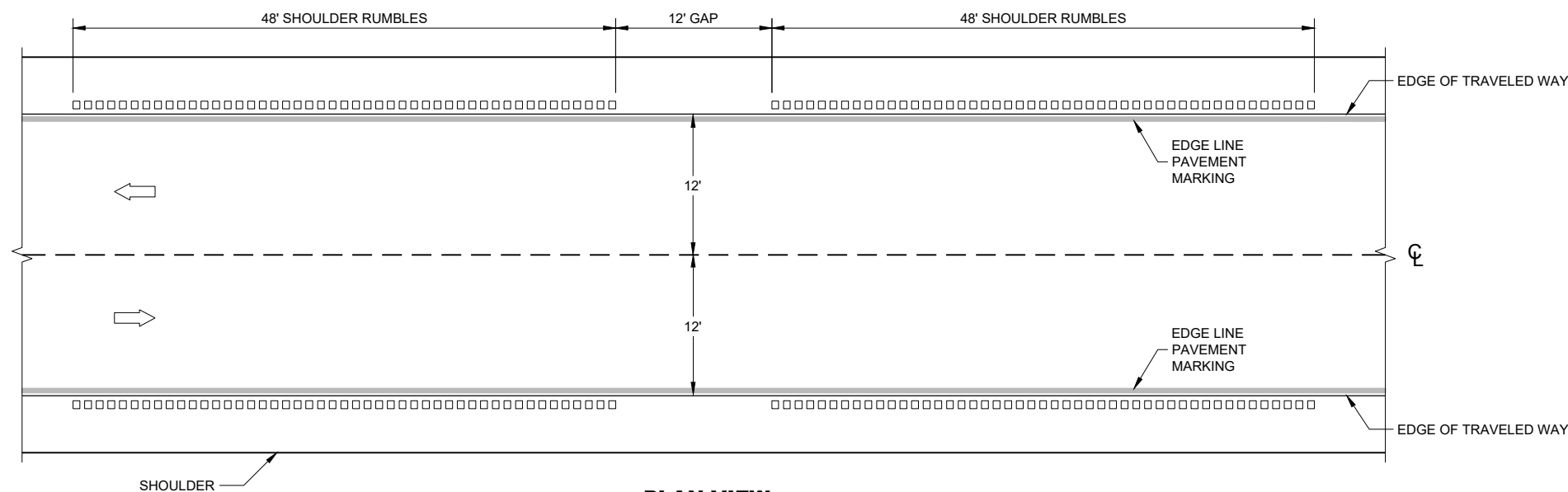
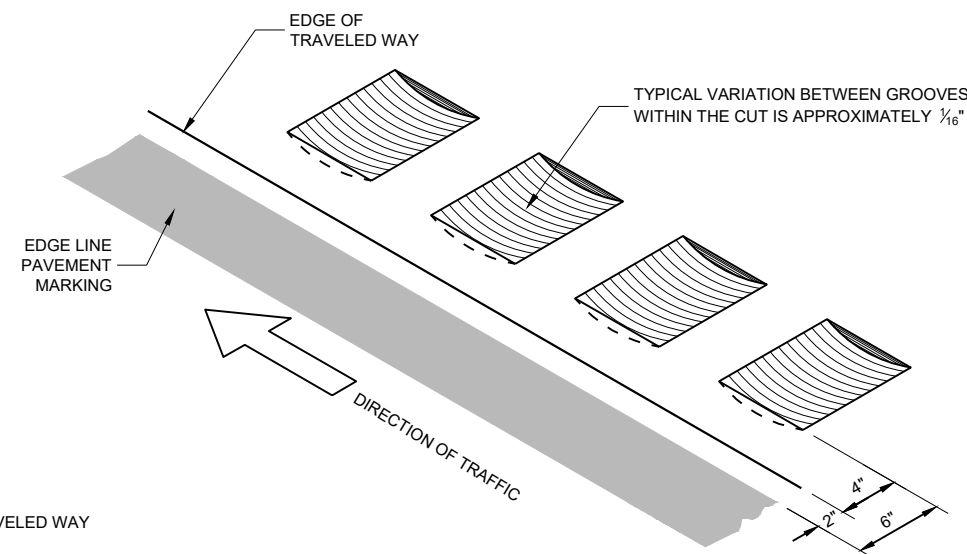


PLAN DETAIL VIEW
SHOULDER WITH GROOVES

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.

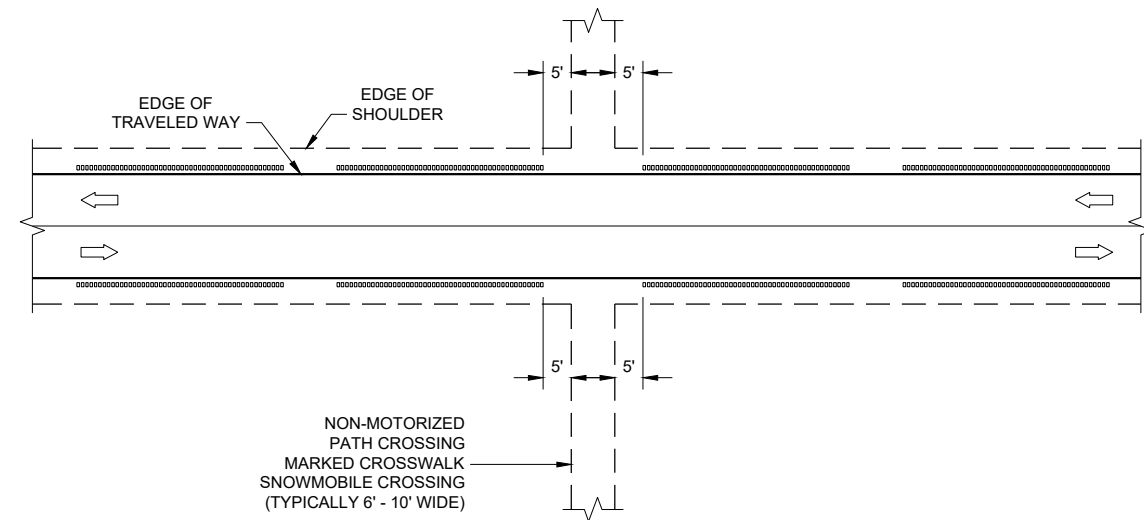


PLAN VIEW

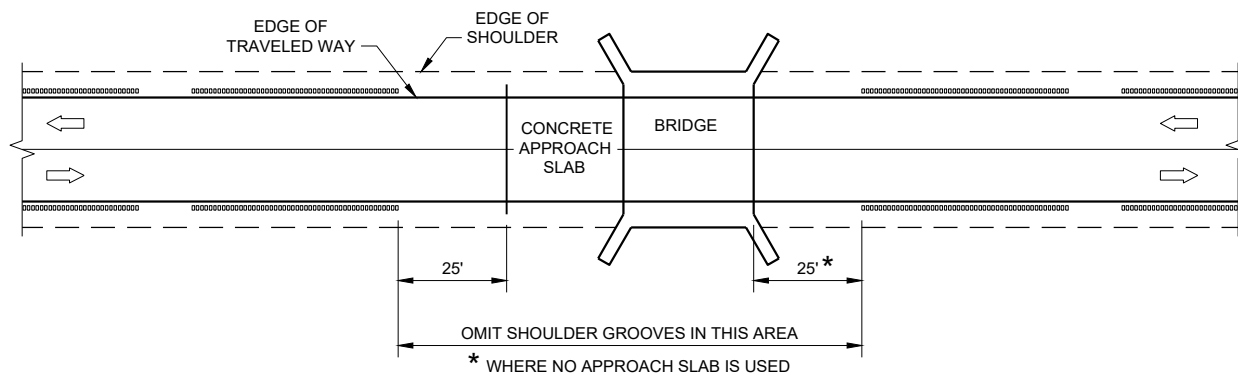
SHOULDER RUMBLE STRIPS - ASPHALT

**SHOULDER RUMBLE
STRIPS ASPHALT**

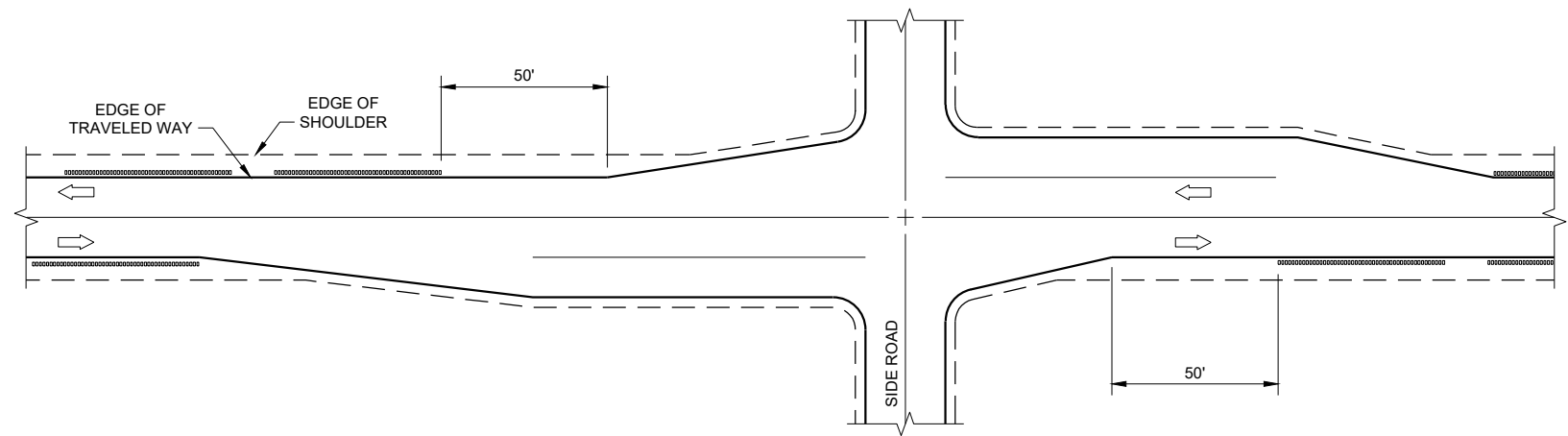
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 119



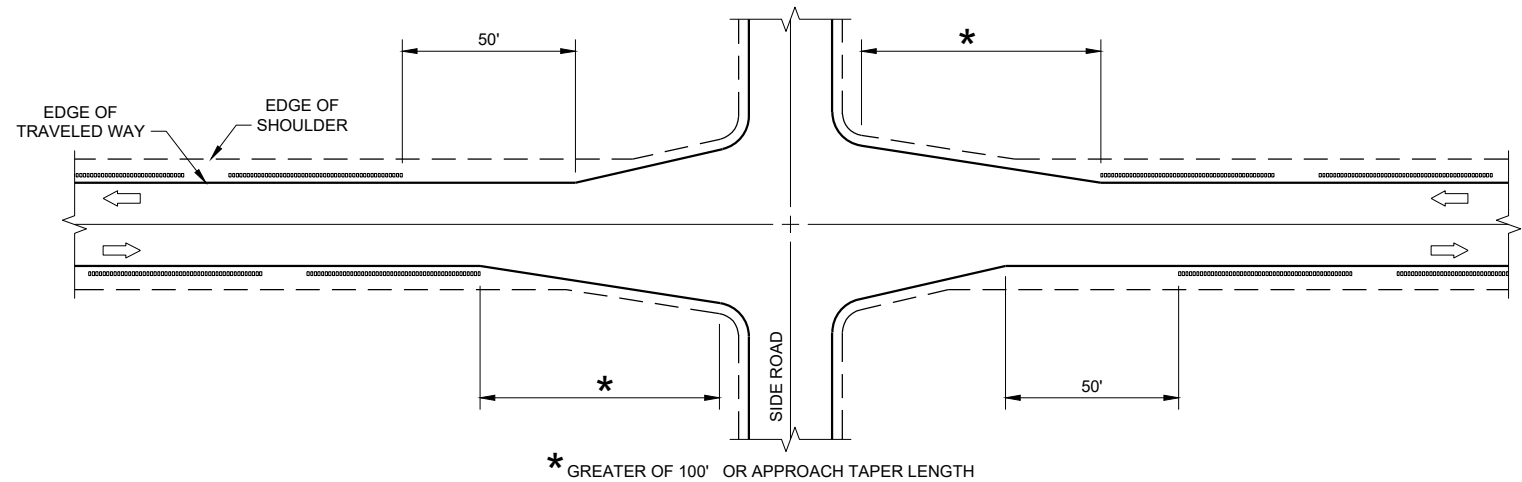
GROOVES AT MISCELLANEOUS CROSSINGS



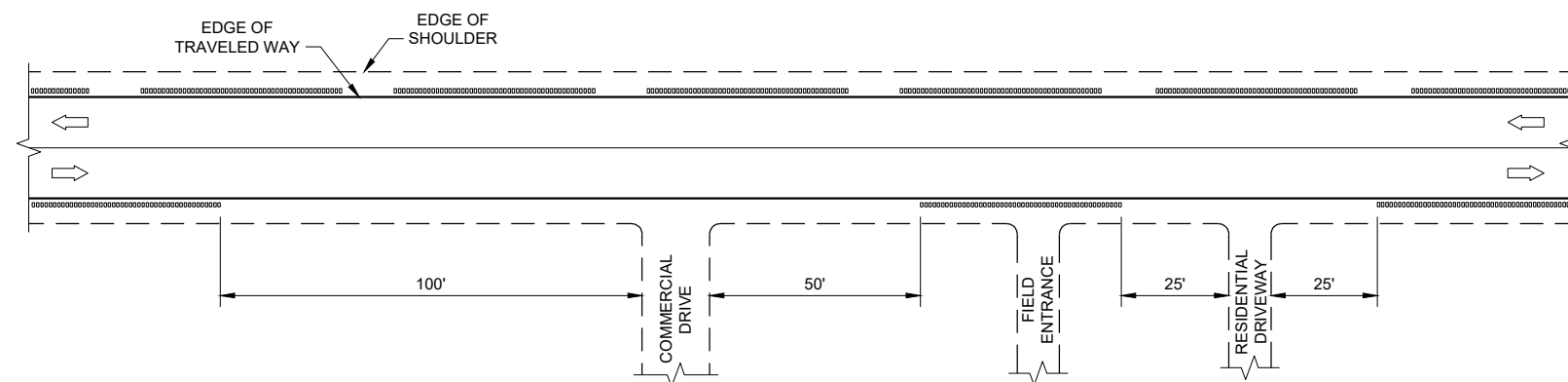
GROOVES AT BRIDGES



GROOVES AT RIGHT TURN LANE



GROOVES AT INTERSECTIONS WITH APPROACH TAPER



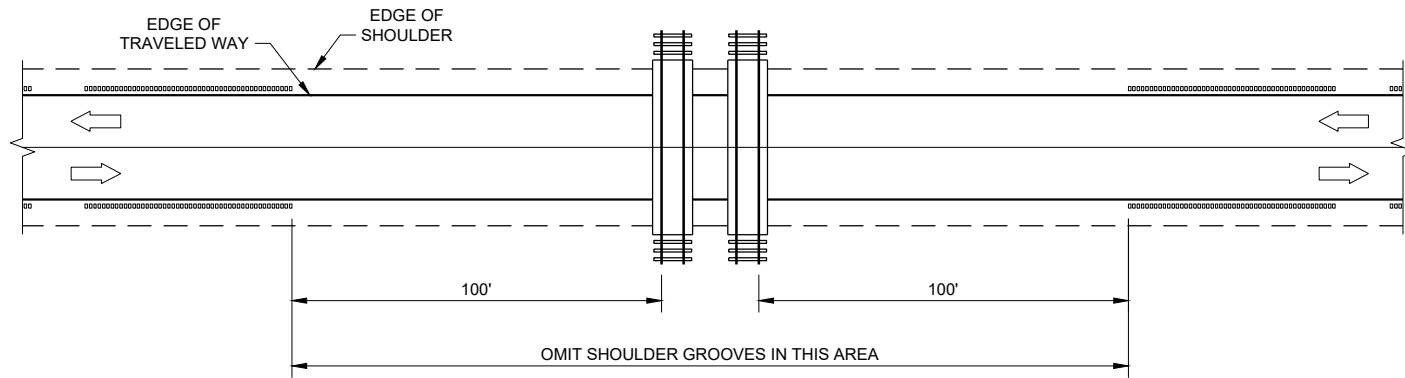
GROOVES AT DRIVEWAYS

GENERAL NOTES

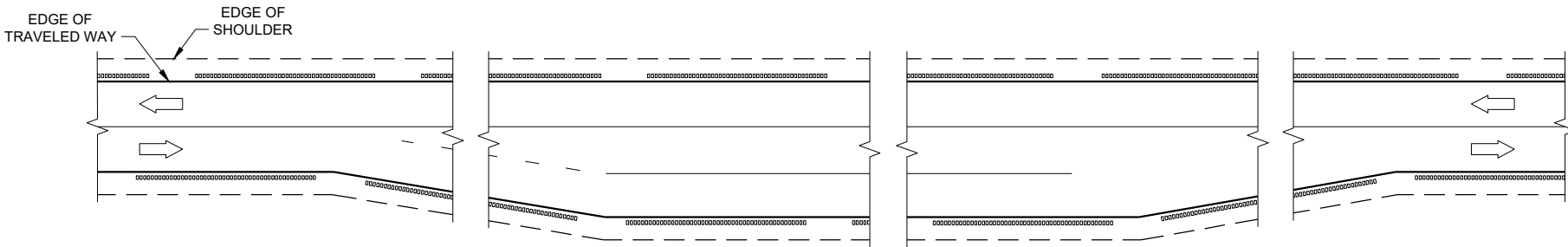
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

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

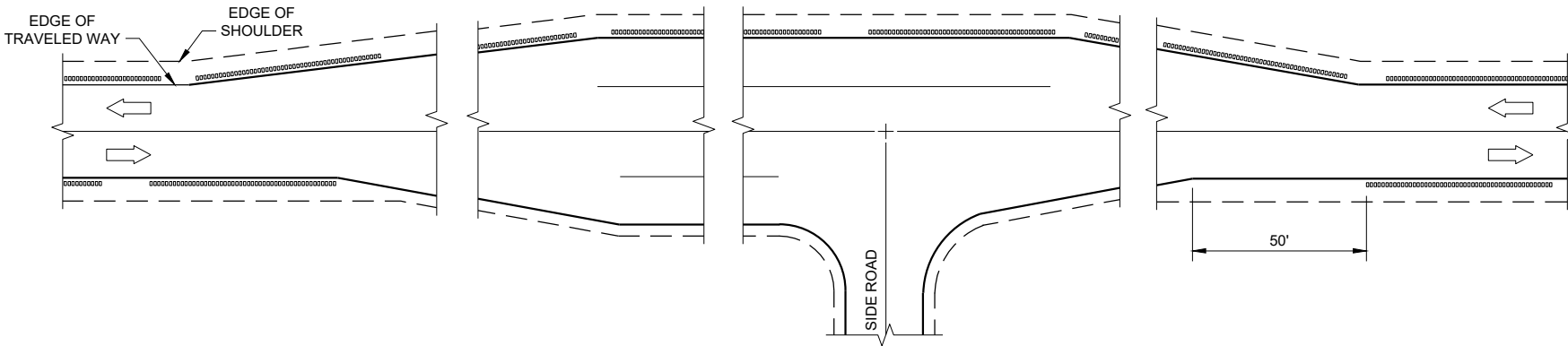
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 120



GROOVES AT RAILROADS



GROOVES AT PASSING AND CLIMBING LANES



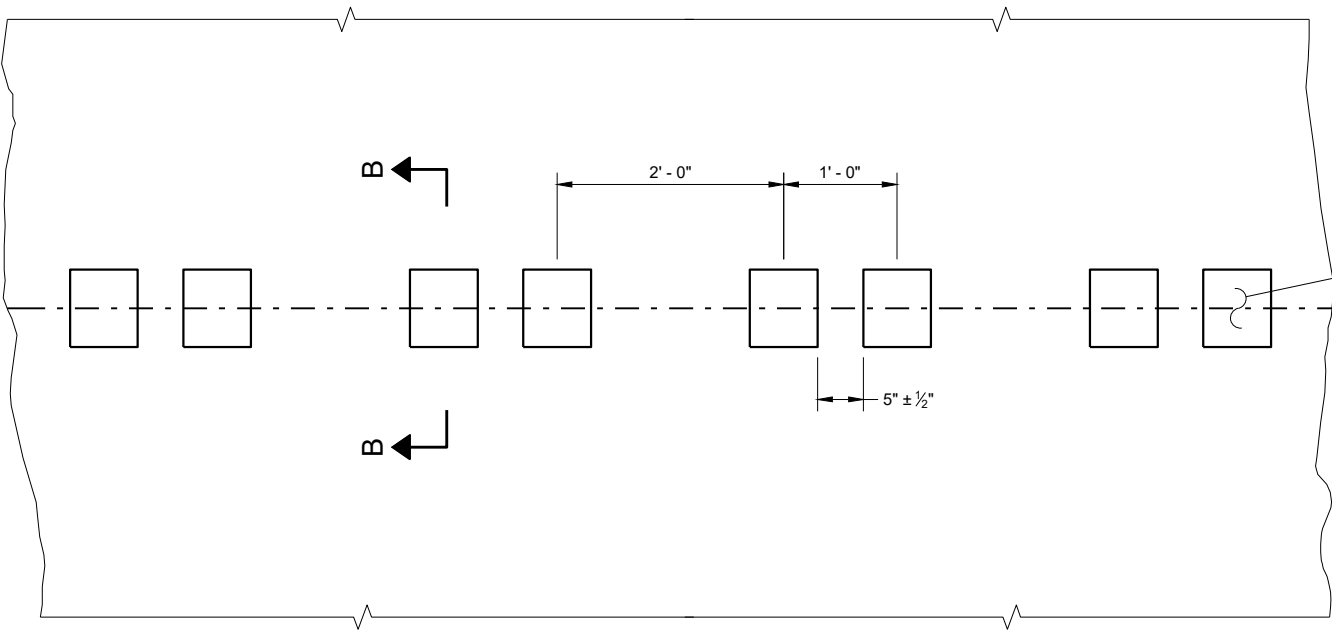
GROOVES AT BYPASS LANES

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

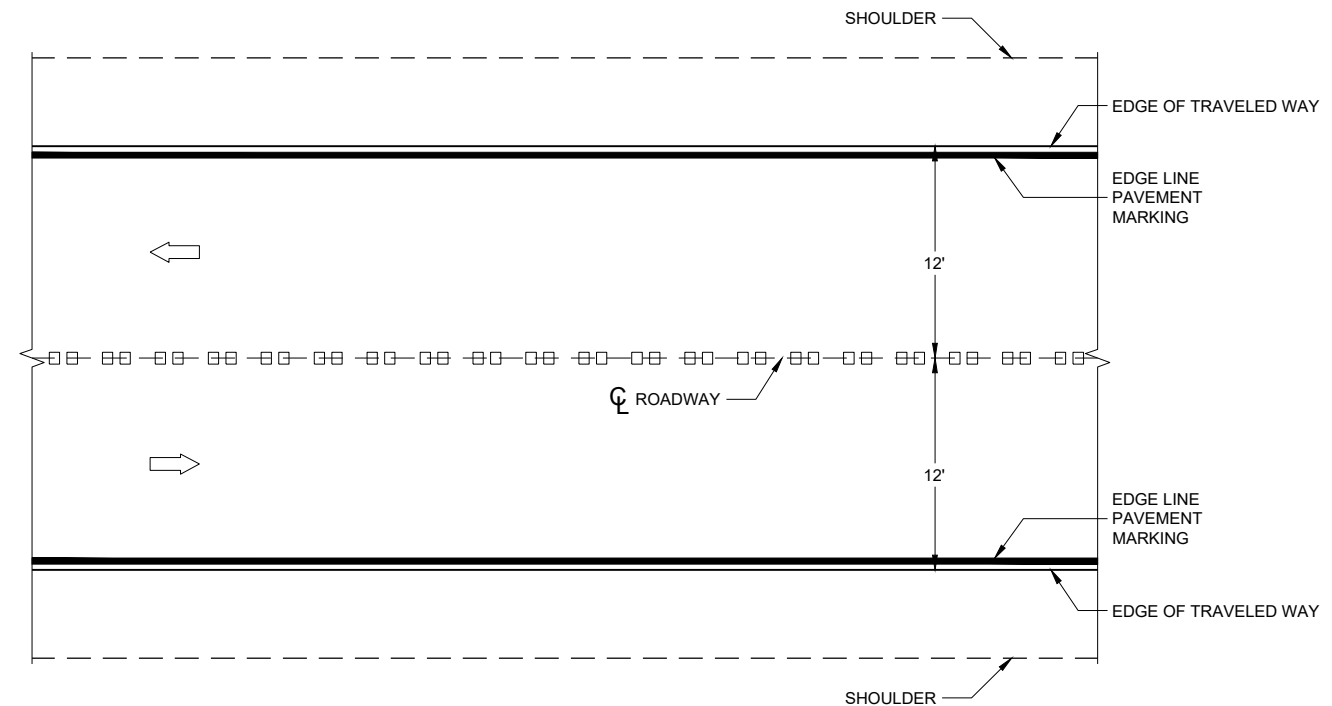
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ John Jenkins
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 121

FHWA

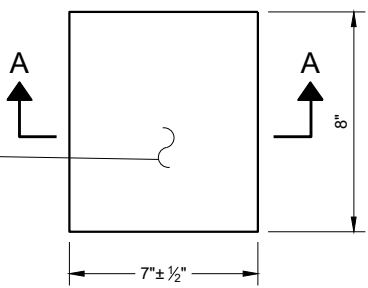


PLAN DETAIL VIEW

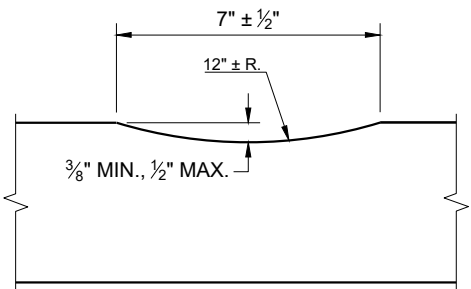


PLAN VIEW

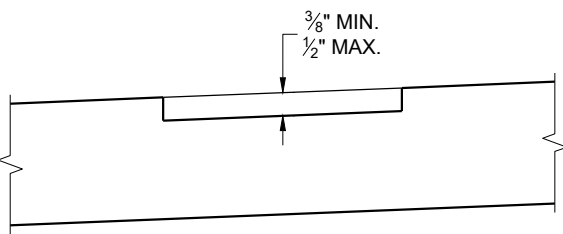
CENTERLINE RUMBLE STRIPS - ASPHALT



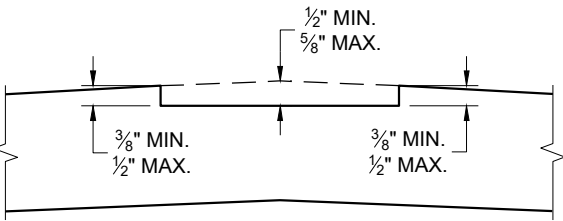
PLAN VIEW
(SINGLE GROOVE)



SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY

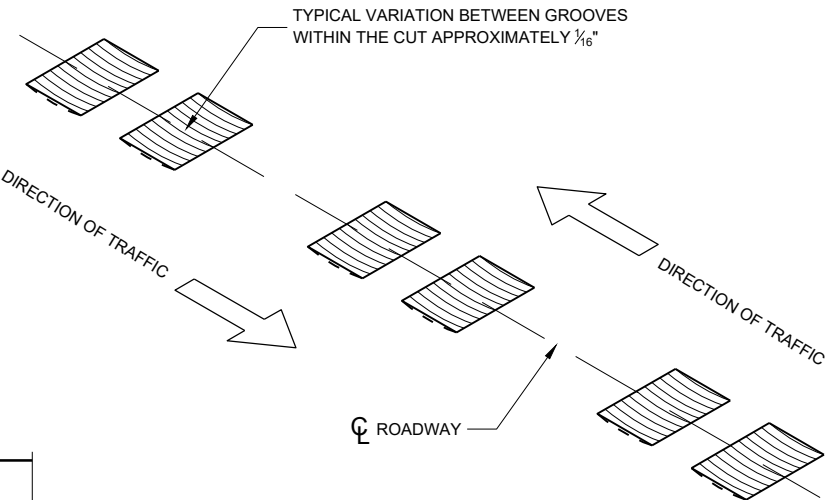


SECTION B - B
CROWNED ROADWAY

GENERAL NOTES

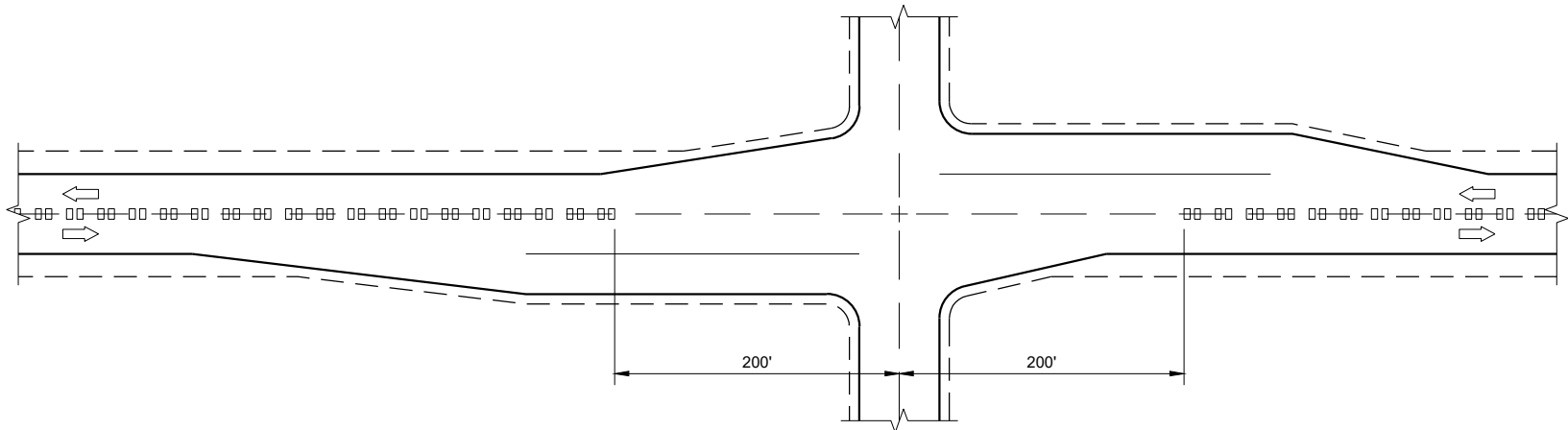
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

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

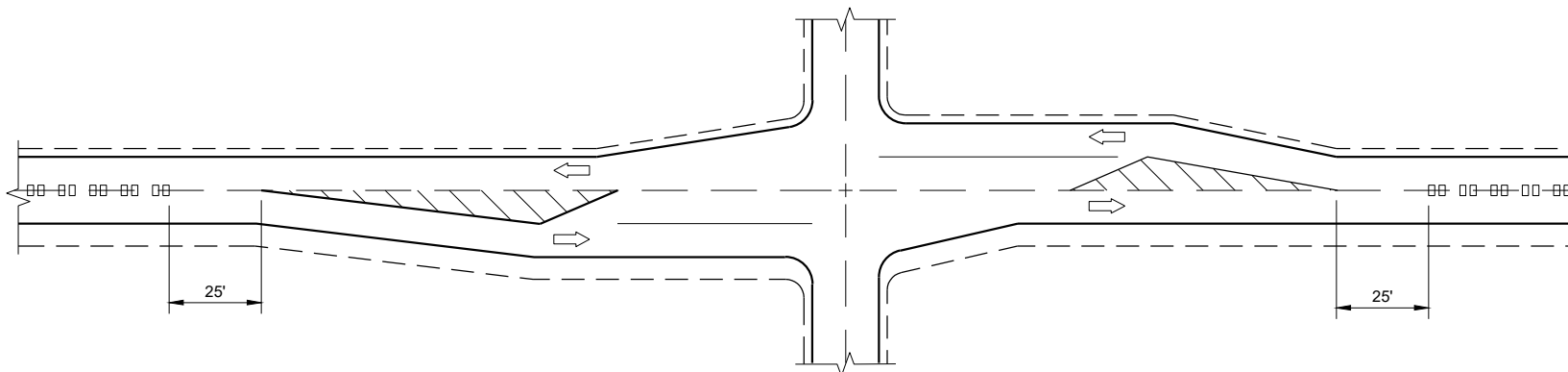


CENTERLINE RUMBLE
STRIPS - ASPHALT

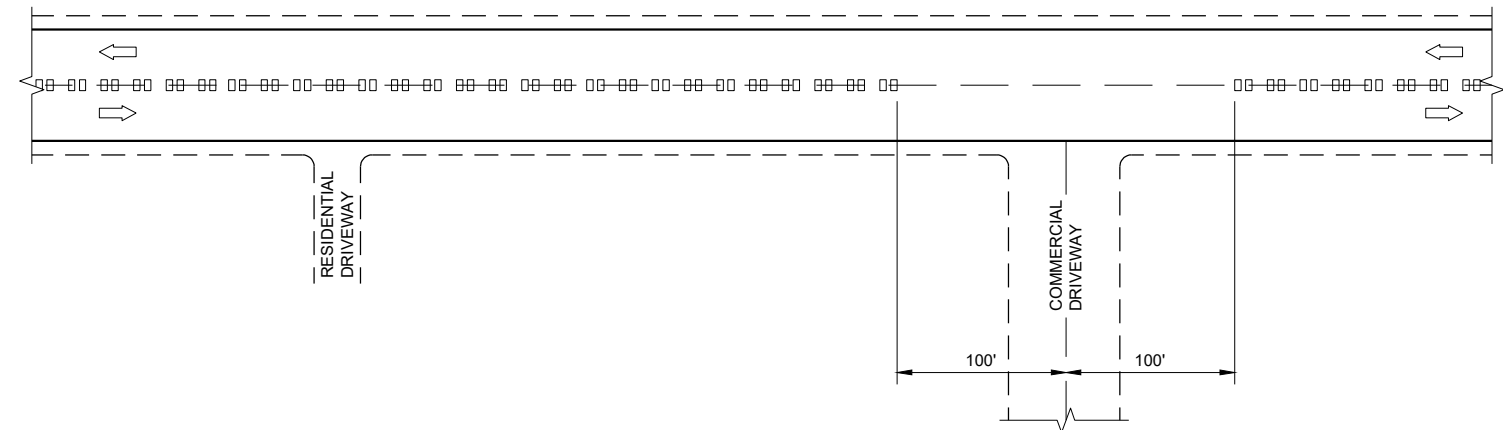
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 122



CENTERLINE GROOVES AT INTERSECTIONS



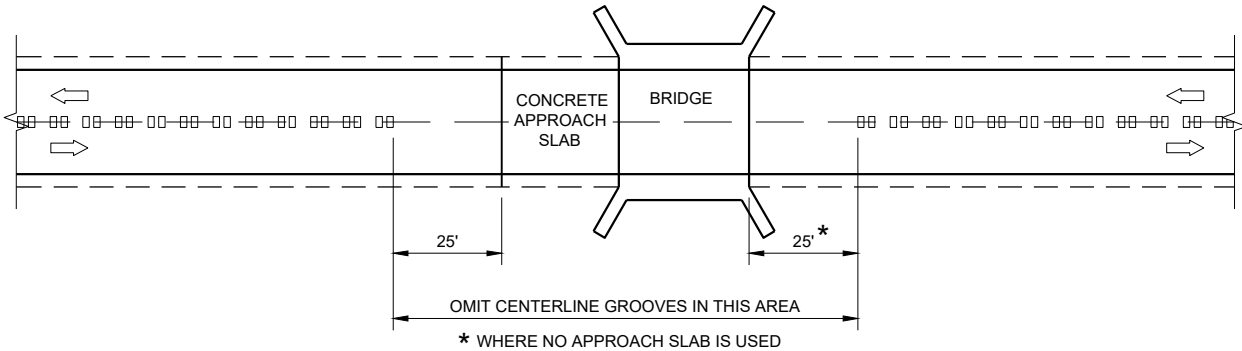
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



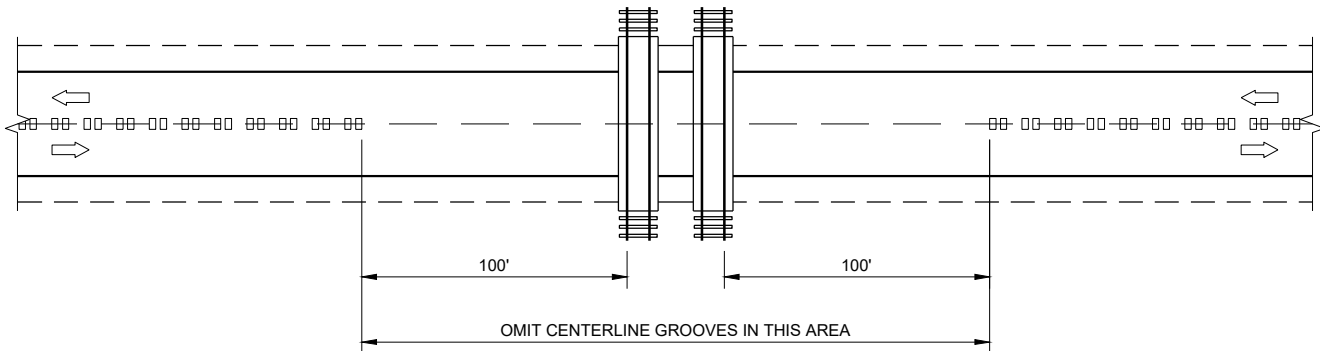
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES

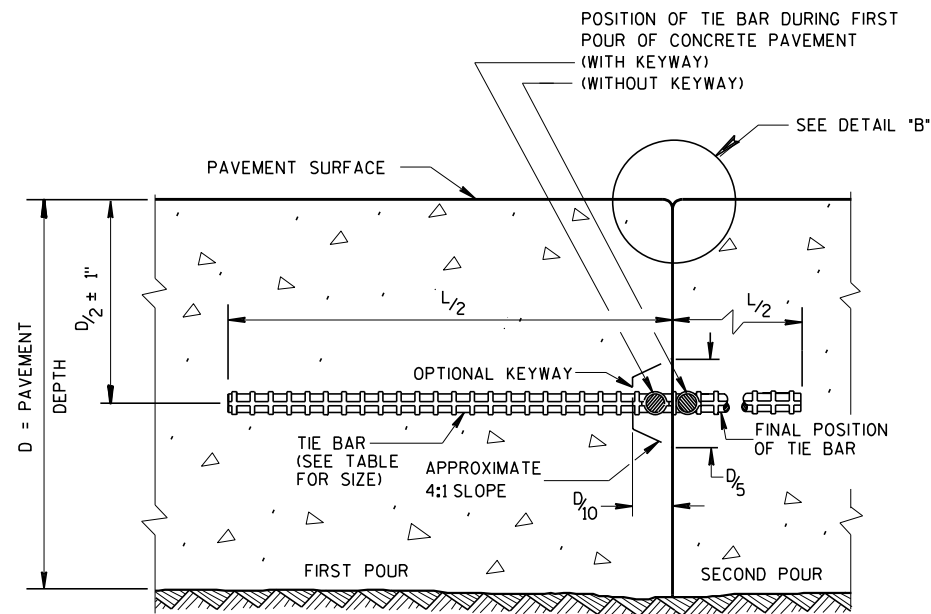


CENTERLINE GROOVES AT RAILROADS

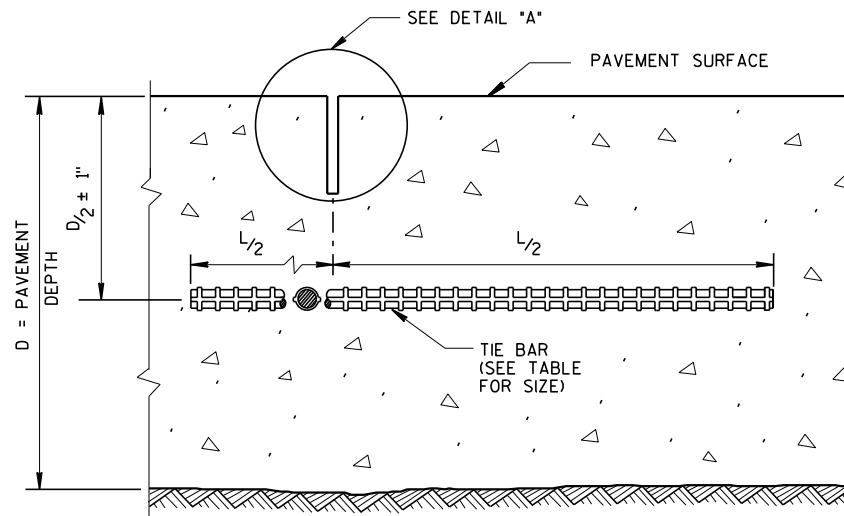
CENTER LINE
RUMBLE STRIPS -
INTERSECTIONS, DRIVEWAYS,
BRIDGES, RAIL ROADS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ John Jenkins
ROADWAY STANDARDS DEVELOPMENT ENGINEER
123
FHWA



CONSTRUCTION JOINT



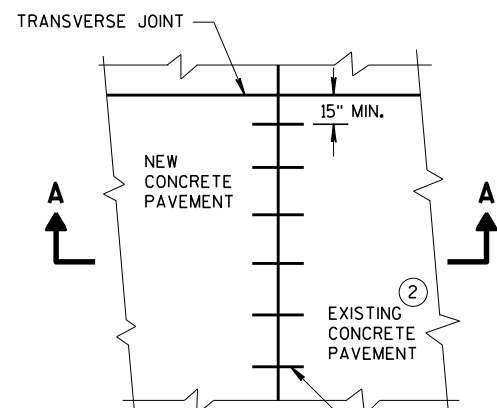
SAWED JOINT

GENERAL NOTES

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

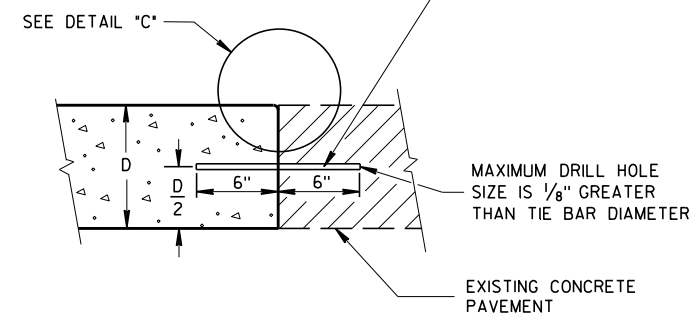
CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

- ① ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.
- ② PAVEMENT THAT WAS IN PLACE PRIOR TO THE CONTRACT.

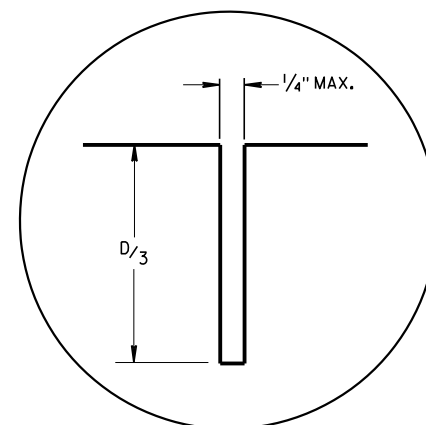


PLAN VIEW

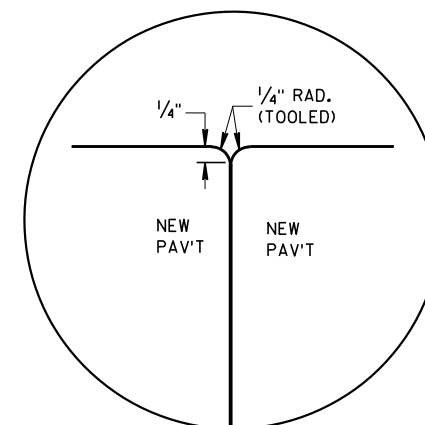
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



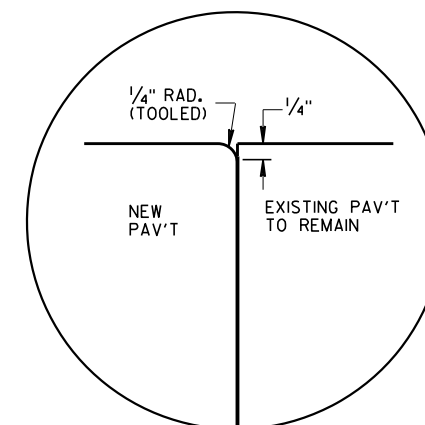
SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



DETAIL "A"



DETAIL "B"



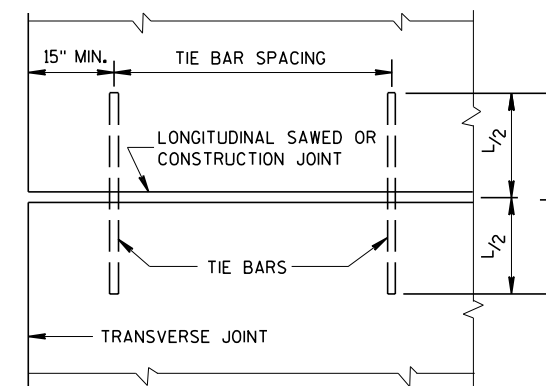
DETAIL "C"

TIE BAR TABLE

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

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

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

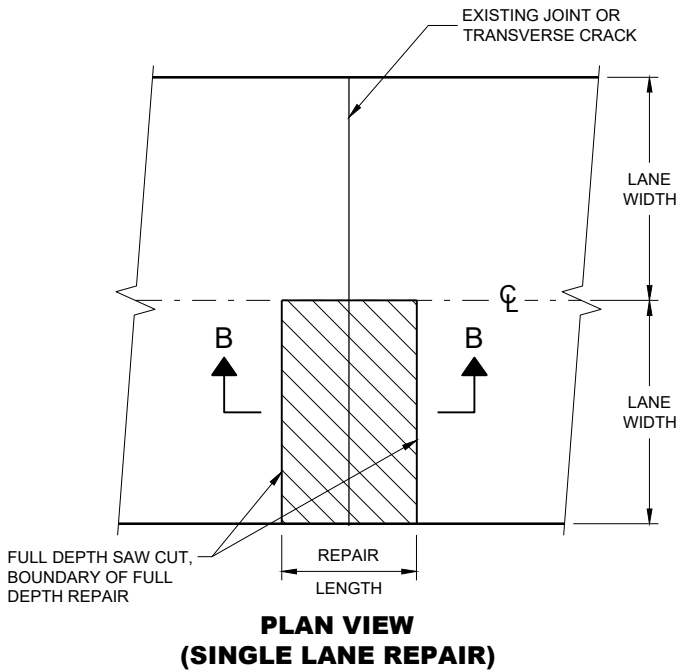
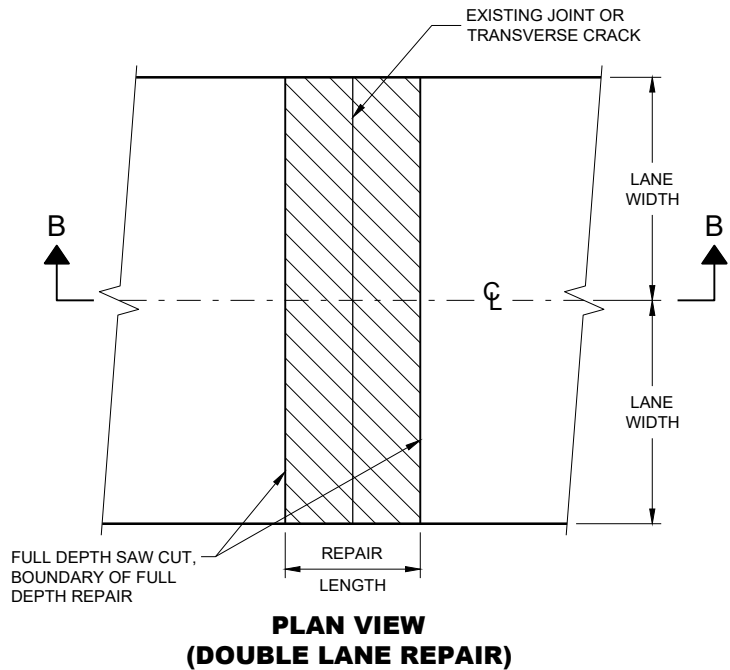


PLAN VIEW
SHOWING LOCATION OF TIE BARS

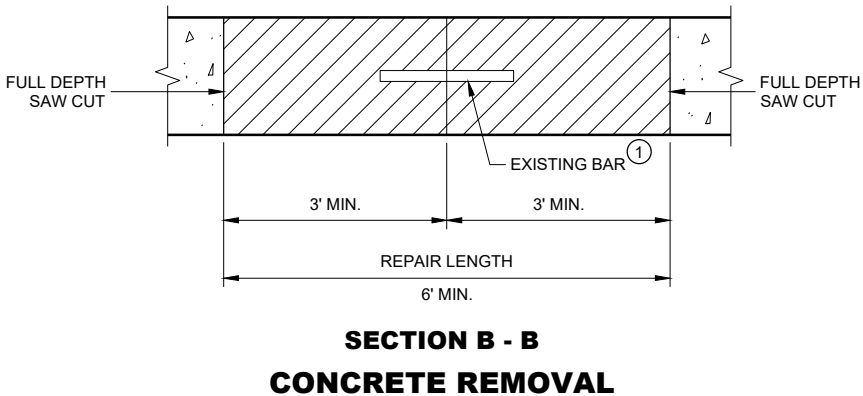
CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Peter Kern
DATE PAVEMENT SUPE 124
FHWA



FULL DEPTH CONCRETE PAVEMENT REMOVAL



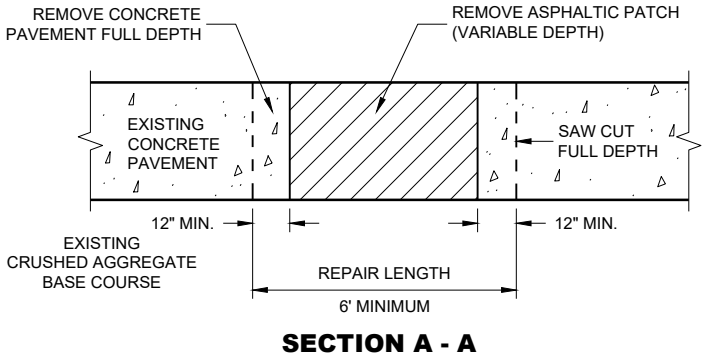
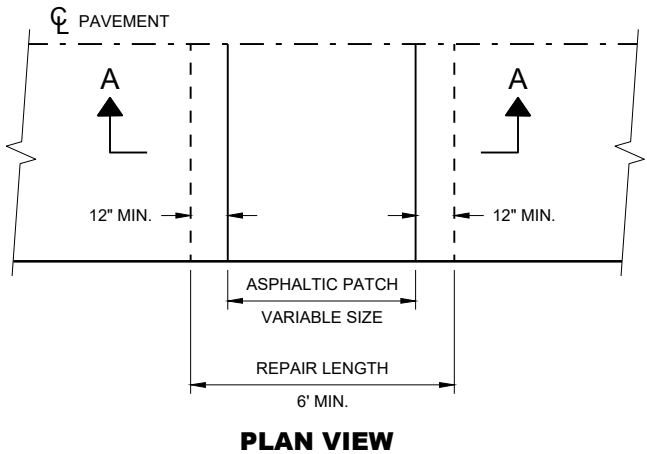
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES.

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

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

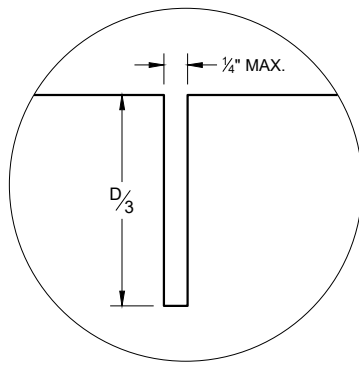
① DOWEL BARS MAY NOT BE PRESENT.



HMA PATCH REMOVAL

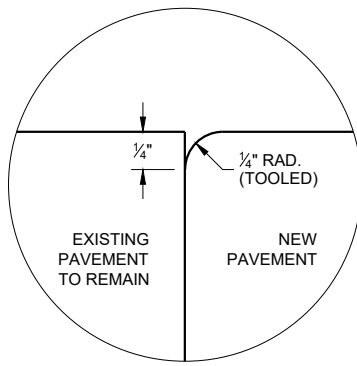
**CONCRETE PAVEMENT
REPAIR AND REPLACEMENT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

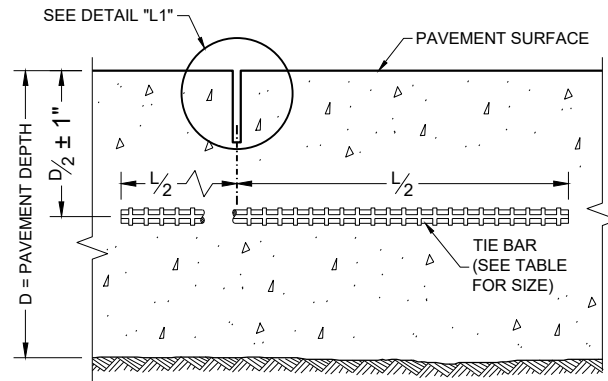


C1

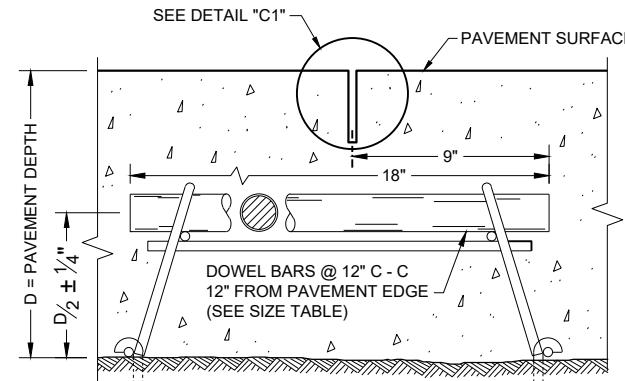
TRANSVERSE JOINTS



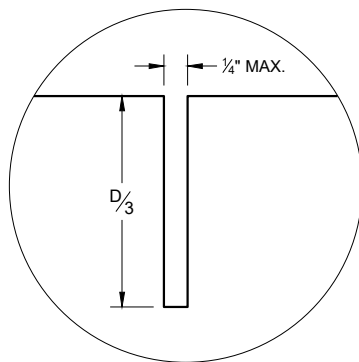
C2



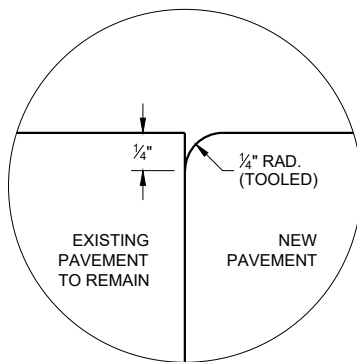
SECTION C - C SAWED LONGITUDINAL JOINT



SECTION F - F DOWELED CONTRACTION JOINT

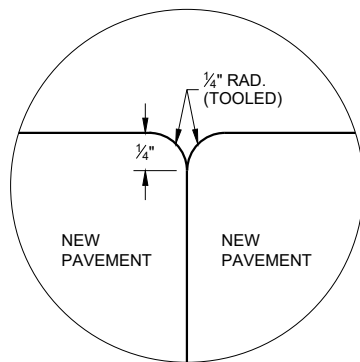


L1

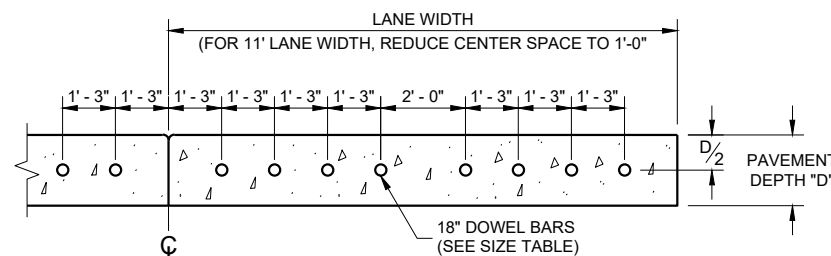


L2

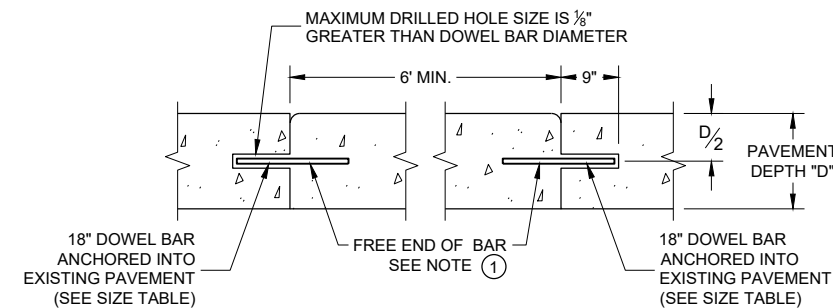
LONGITUDINAL JOINTS



L3



SECTION E - E DRILLED DOWEL BAR CONSTRUCTION JOINT



SECTION D - D

TIE BAR TABLE

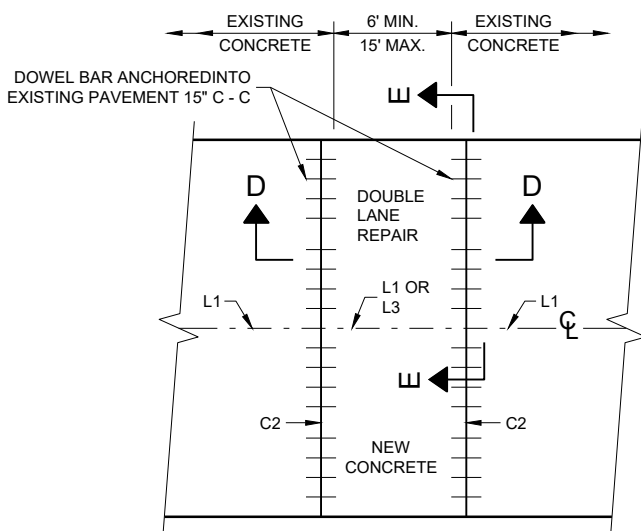
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* 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.

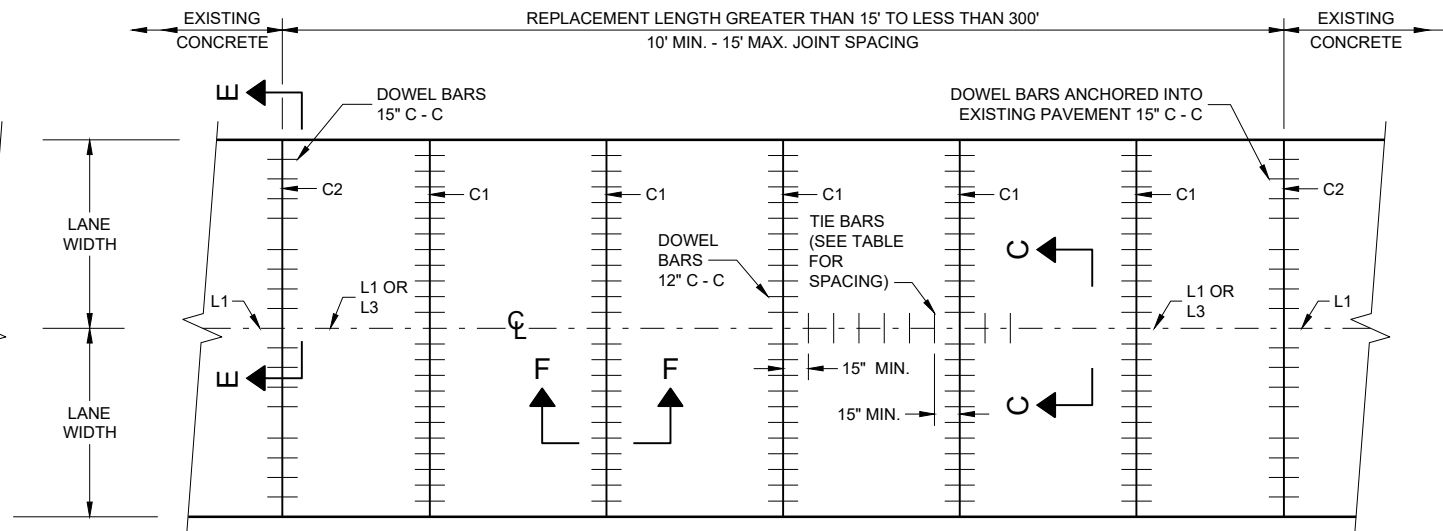
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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



PLAN VIEW

MULTILANE CONCRETE PAVEMENT REPAIR

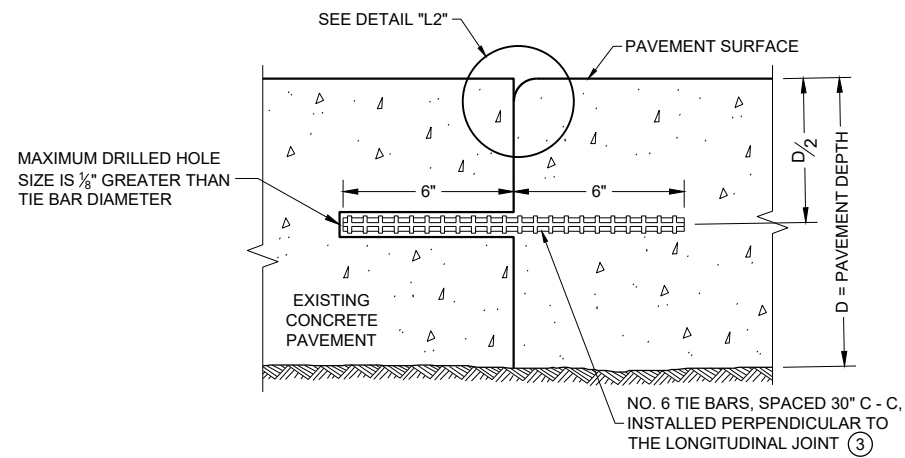


PLAN VIEW

MULTILANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

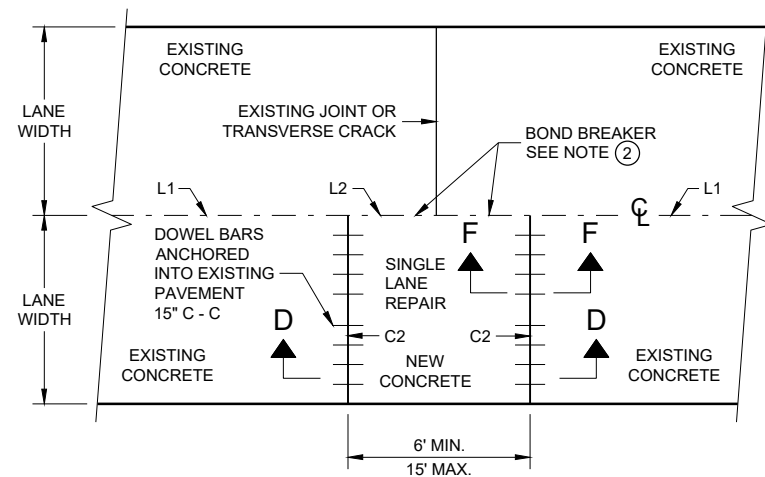
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 126



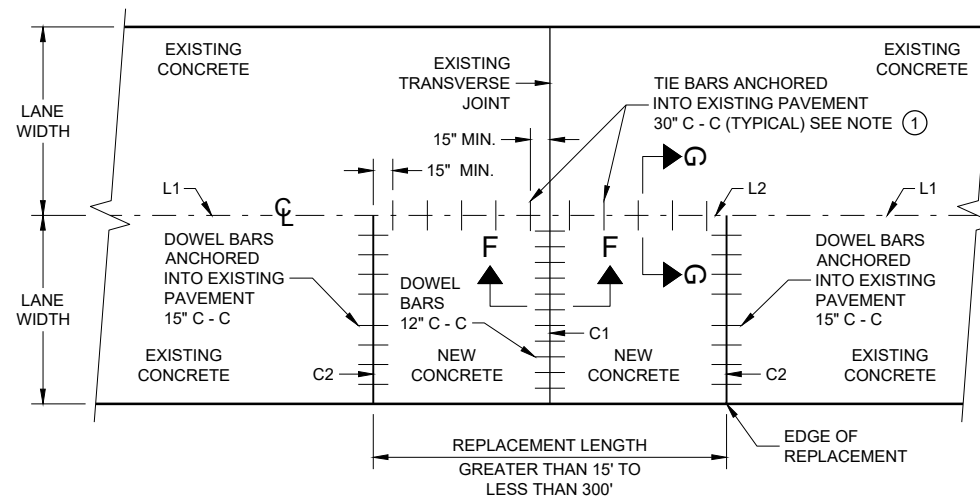
SECTION G - G
TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

- ① WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES IN A HOLE OF SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- ② USE AN ENGINEER APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.
- ③ ANCHOR TIE BARS INTO DRILLED HOLES WITH AN EPOXY.



PLAN VIEW
SINGLE LANE CONCRETE PAVEMENT REPAIR

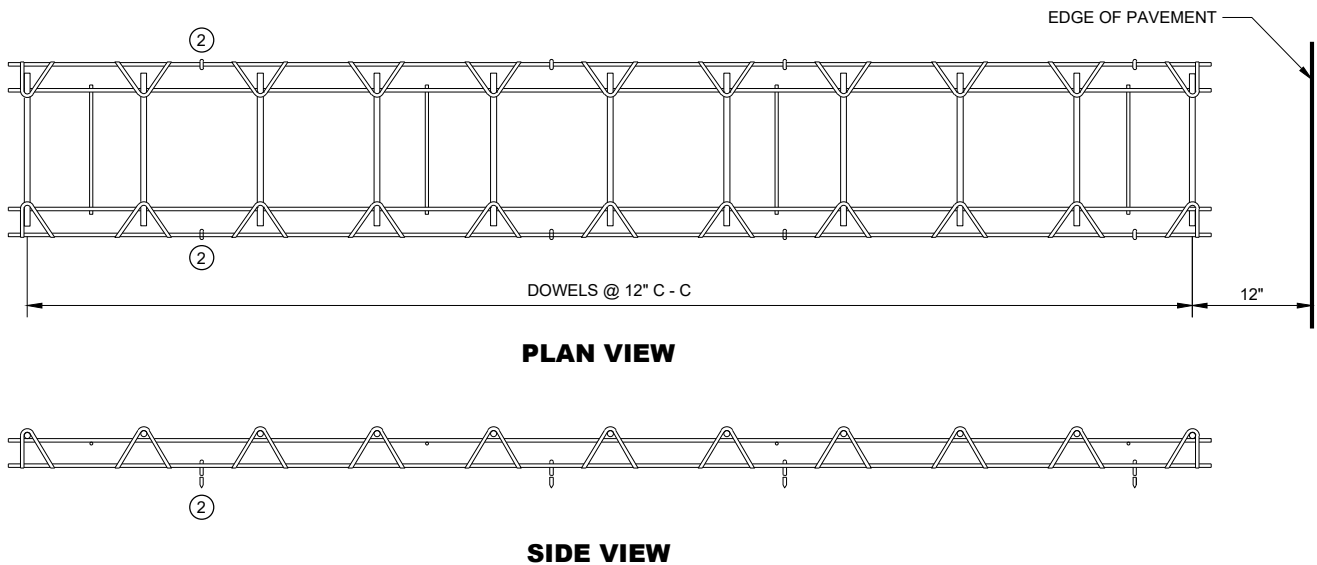


PLAN VIEW
SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

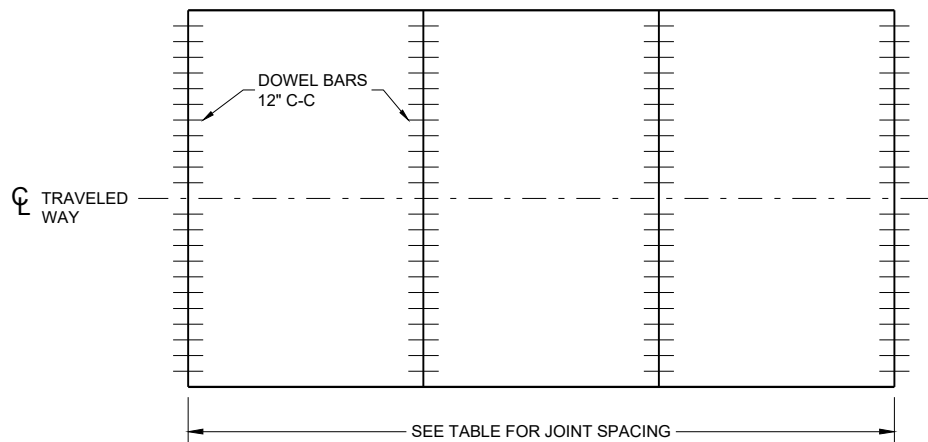
CONCRETE REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

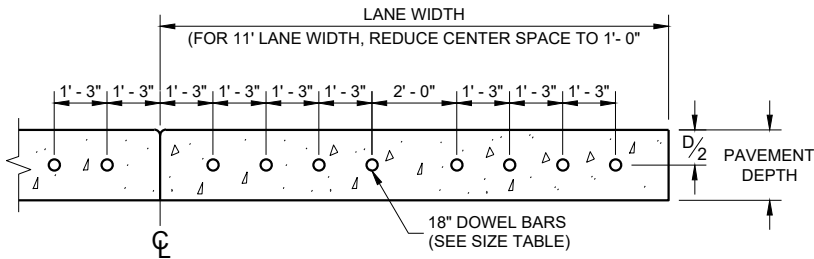
APPROVED
November 2022 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 127
FHWA



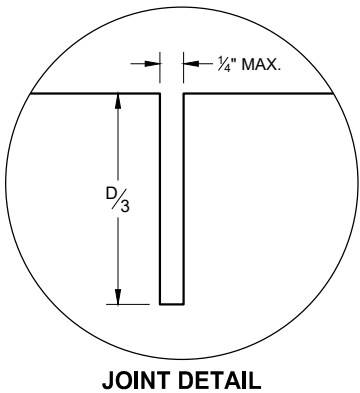
CONTRACTION JOINT DOWEL ASSEMBLY ①



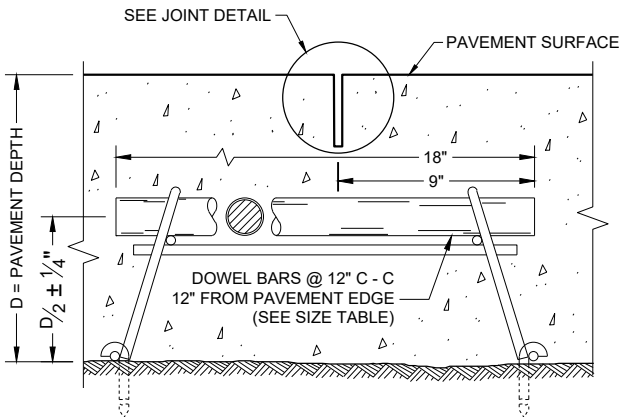
CONTRACTION JOINT LOCATIONS



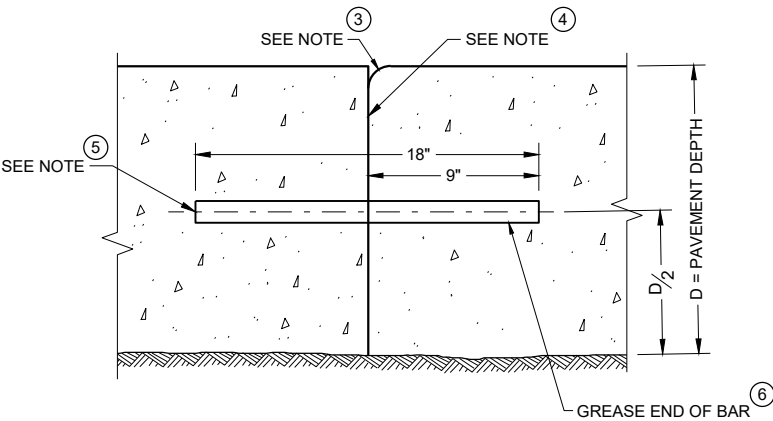
DRILLED DOWEL BAR CONSTRUCTION JOINT ⑦



JOINT DETAIL



DOWELED CONTRACTION JOINT



TRANSVERSE CONSTRUCTION JOINT

GENERAL NOTES

CONTRACTION JOINTS

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

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

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

CONSTRUCTION JOINTS

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

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

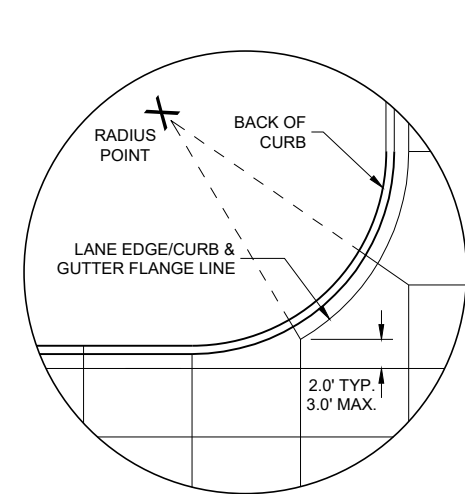
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

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

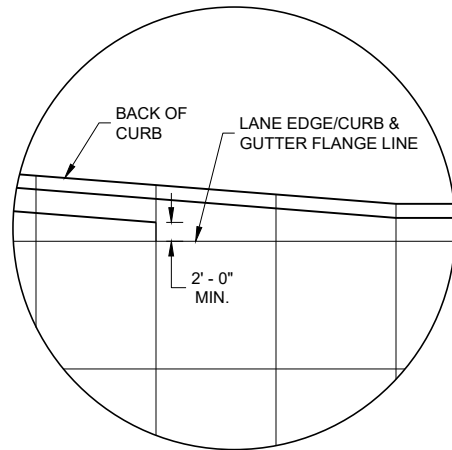
URBAN DOWELED
CONCRETE PAVEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

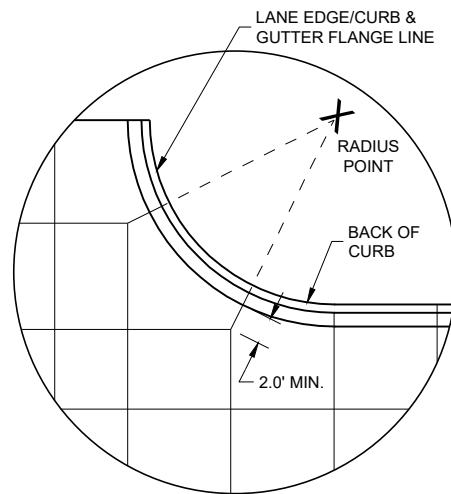
APPROVED
November 2022 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 128
FHWA



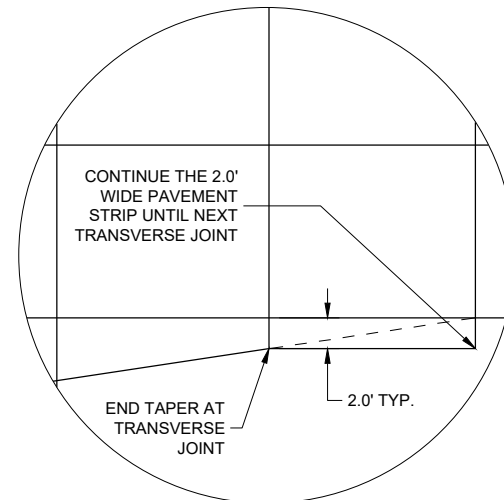
DETAIL "A"



DETAIL "B"



DETAIL "C"



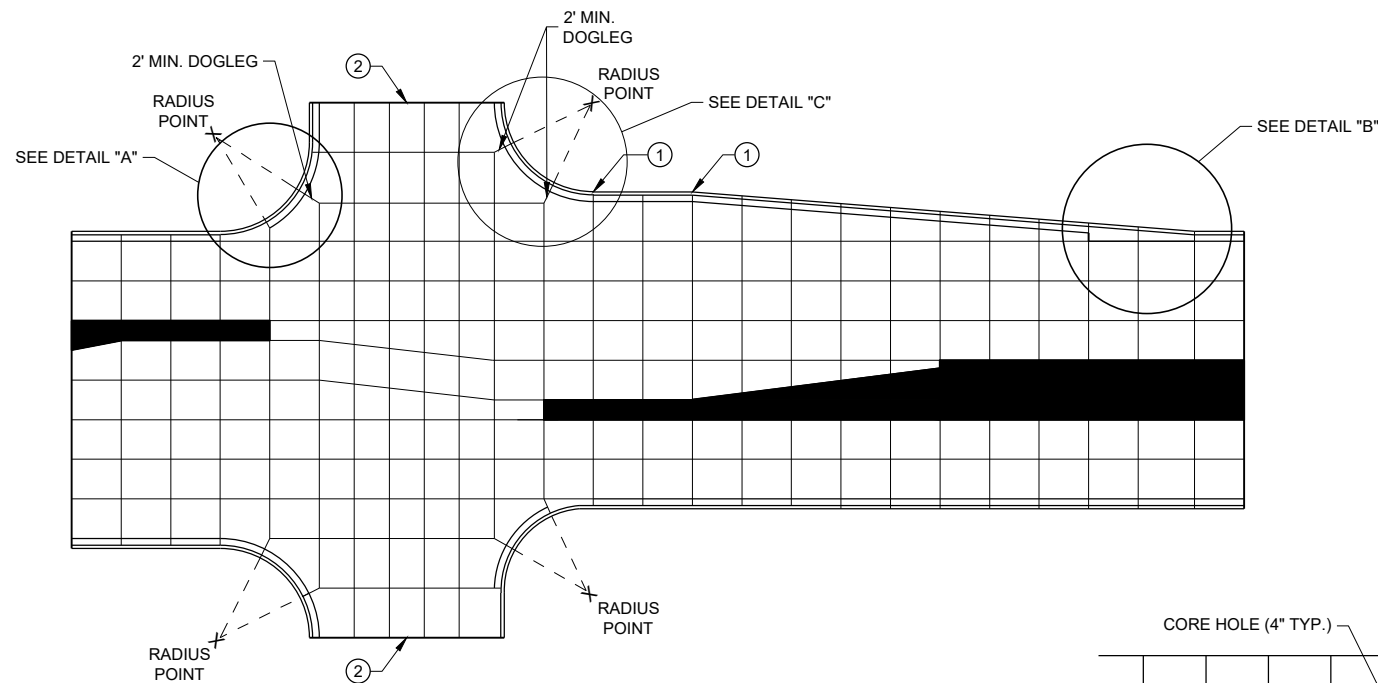
DETAIL "D"

GENERAL NOTES

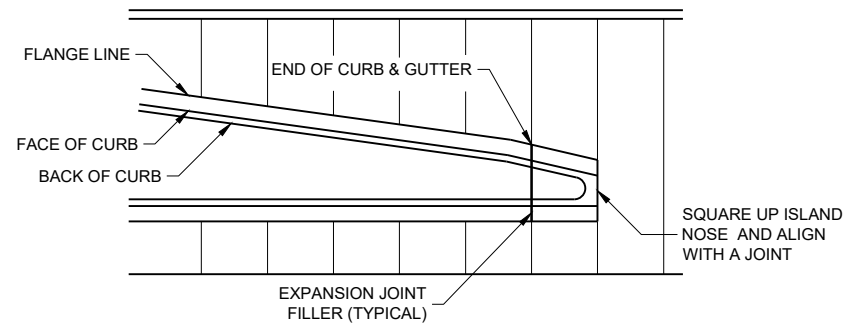
- THE PRIMARY ROADWAY CONTROLS THE TRANSVERSE JOINT PATTERN.
- ALIGN NEW JOINTS WITH EXISTING JOINTS OR CRACKS.
- CONSTRUCT TRANSVERSE JOINTS PERPENDICULAR TO THE ROADWAY.
- ADJUST TRANSVERSE JOINTS TO ALIGN WITH UTILITY FIXTURES (E.G MANHOLES AND INLETS) IN THE PAVEMENT STRUCTURE WHEN POSSIBLE. WATER VALVES DO NOT REQUIRE JOINT ADJUSTMENT.
- AVOID SLABS LESS THAN 2 FEET WIDE OR GREATER THAN 15 FEET WIDE.
- SEE TABLE FOR TRANSVERSE JOINT SPACING. JOINT SPACING SPECIFIED IS MAXIMUM AND ACTUAL SPACING CAN BE ADJUSTED TO ACCOMMODATE INTERSECTIONS.
- AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.
- CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.
- 1 PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
 - 2 CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
 - 3 THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM THESE JOINTING DETAILS.

PAVEMENT DEPTH AND JOINT SPACING TABLE

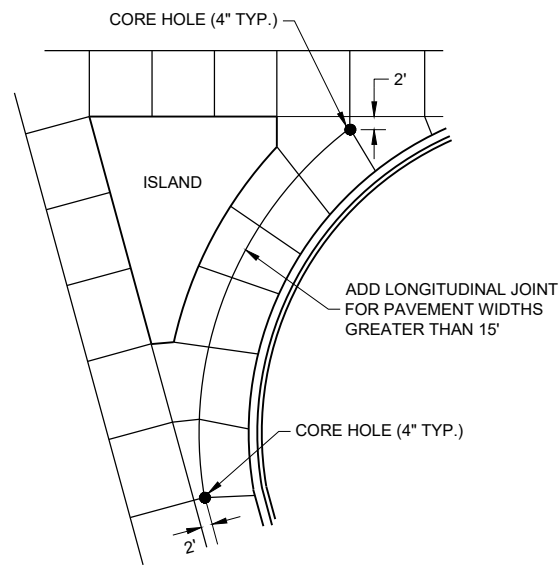
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 1/2"	12'
7", 7 1/2"	14'
8" & ABOVE	15'



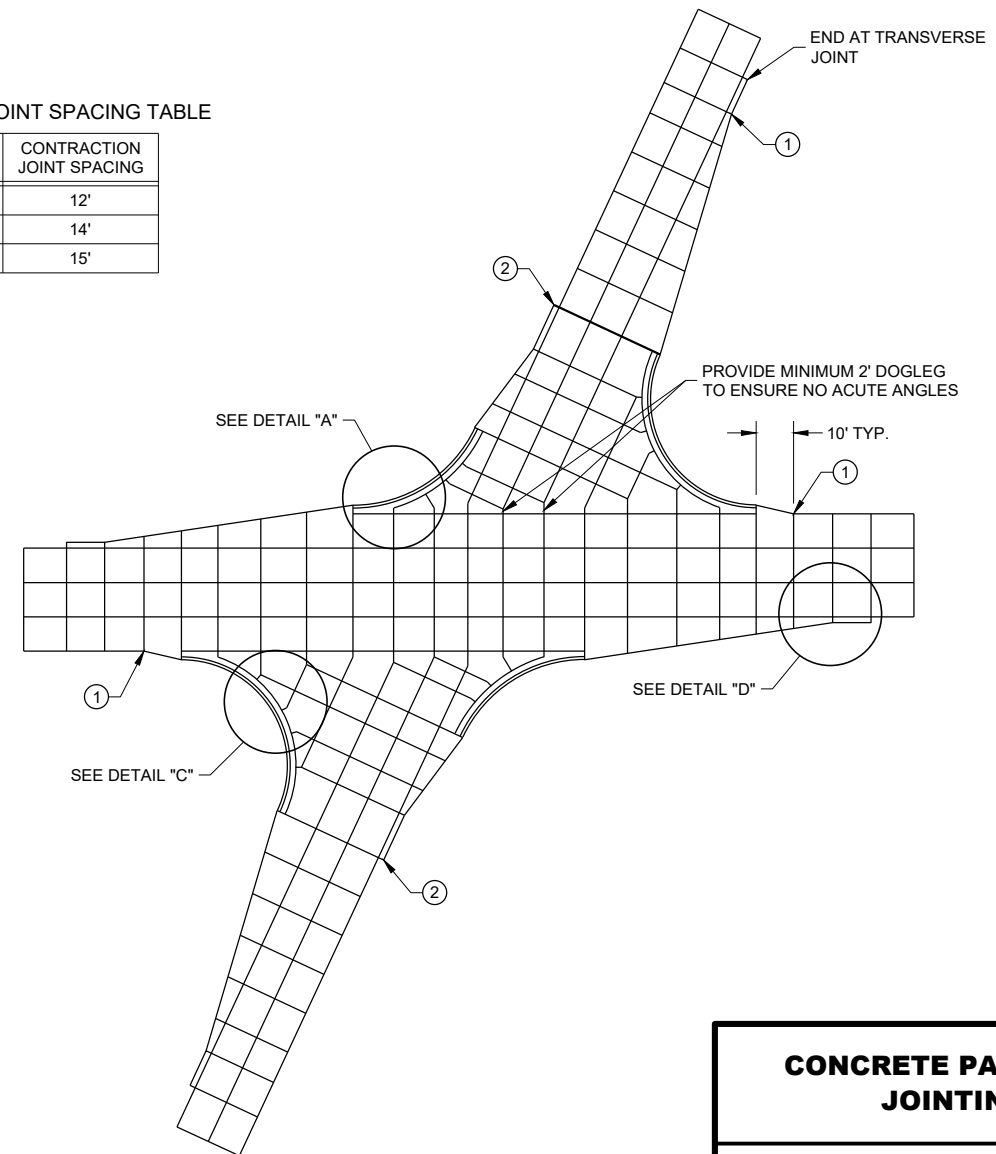
STANDARD INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN



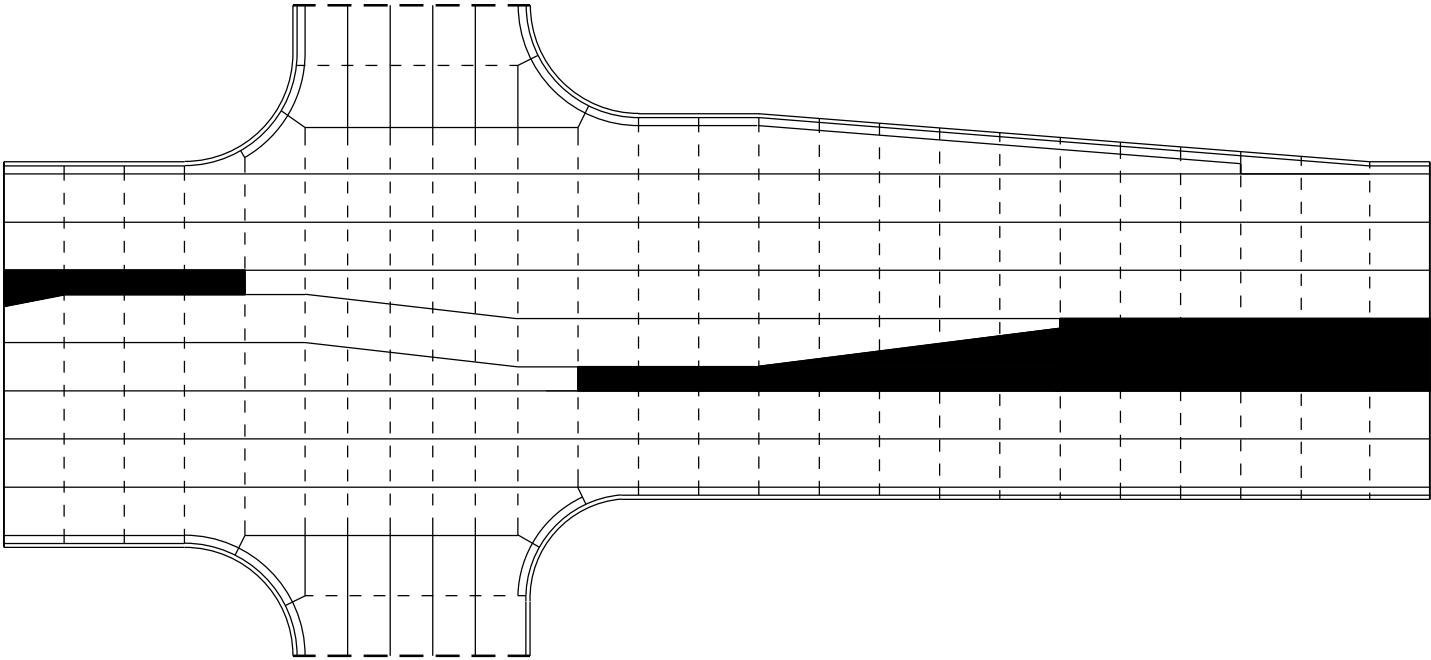
SKewed INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

LEGEND

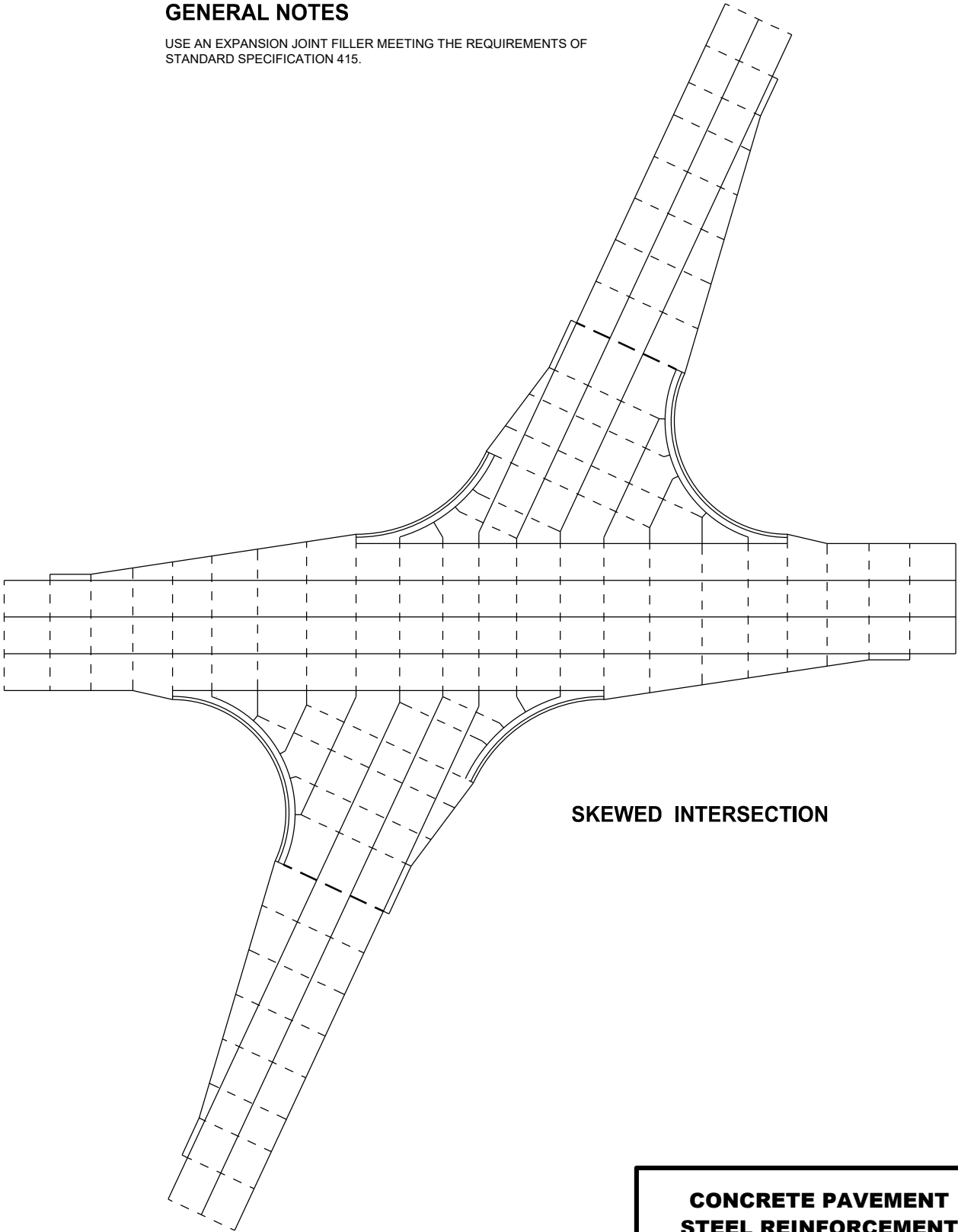
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

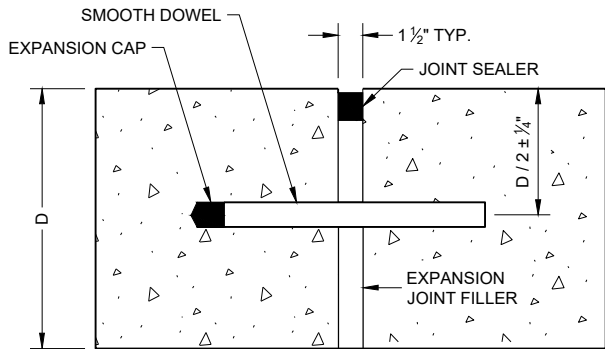
USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



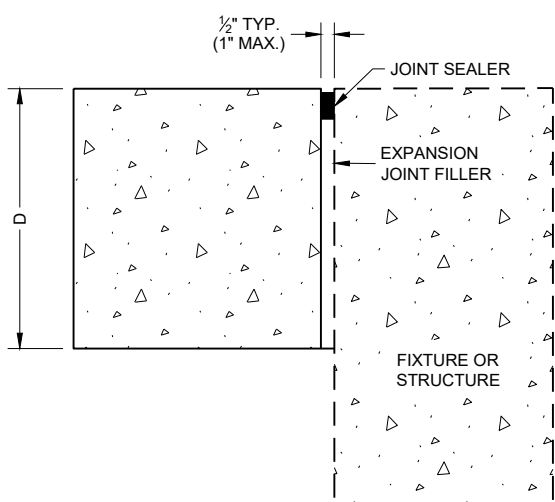
SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 130

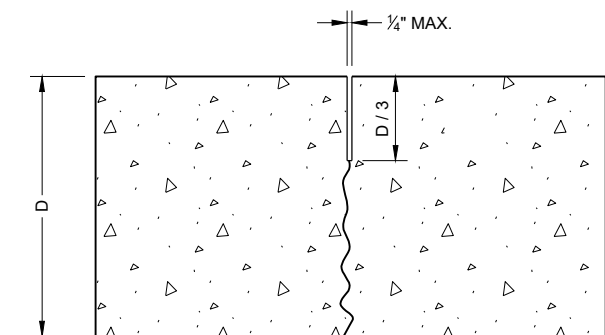


DOWELED TRANSVERSE ①

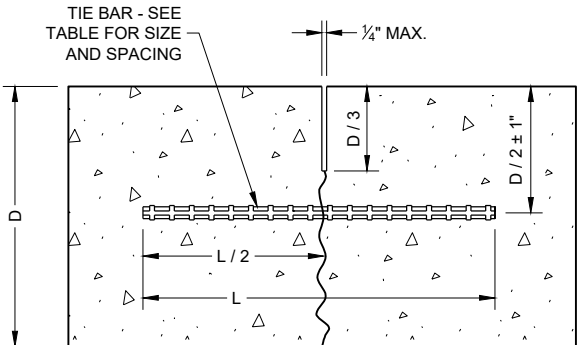


UNTIED - LONGITUDINAL

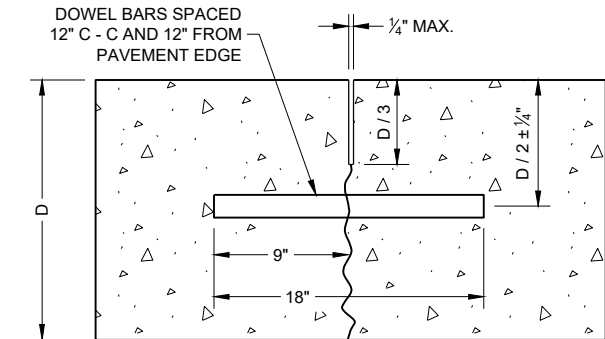
EXPANSION JOINTS



UNDOWELED TRANSVERSE



TIED LONGITUDINAL



DOWELED TRANSVERSE

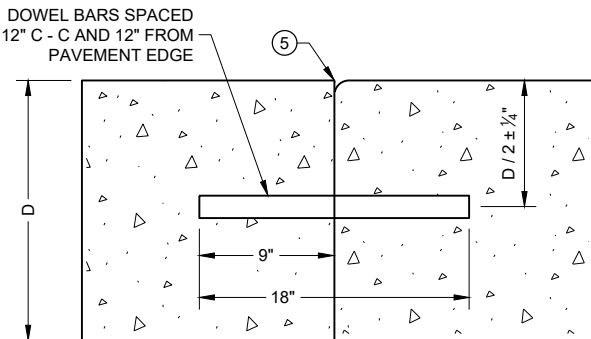
CONTRACTION JOINTS ②

TIE BAR TABLE

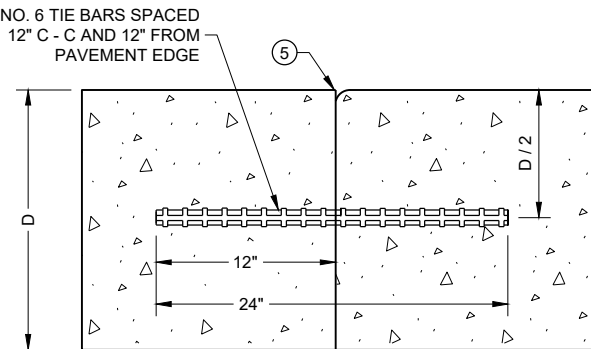
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* 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.

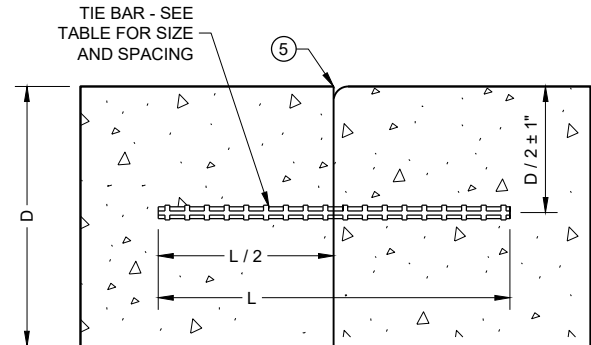


DOWELED TRANSVERSE ③

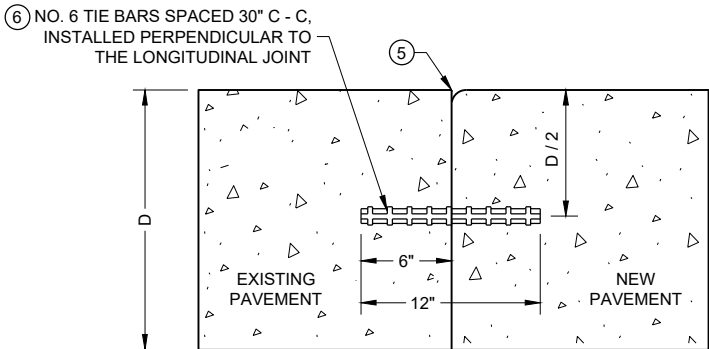


TIED TRANSVERSE ③
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)

CONSTRUCTION JOINTS ④



TIED LONGITUDINAL



TIED LONGITUDINAL TO EXISTING

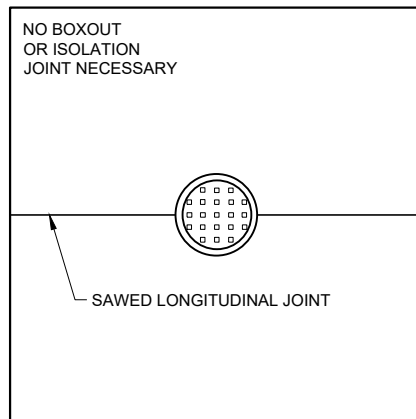
CONSTRUCTION JOINTS ④

GENERAL NOTES

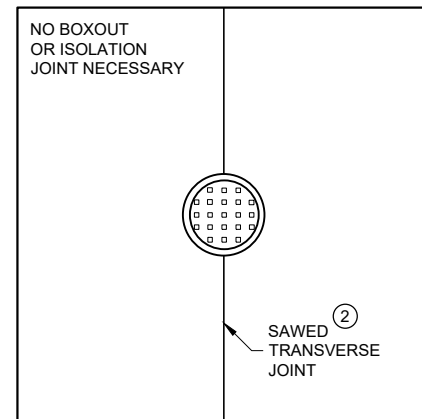
- ① USE DOWELED EXPANSION JOINTS ON SIDE ROADS AT INTERSECTIONS (TO ISOLATE THE SIDE ROAD FROM THE THROUGH STREET) IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH.
- ② SPACE CONTRACTION JOINTS IN ACCORDANCE WITH SDD 13C4, 13C11 OR 13C13.
- ③ LOCATE CONSTRUCTION JOINTS A MINIMUM 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.

CONCRETE PAVEMENT
JOINT TYPES

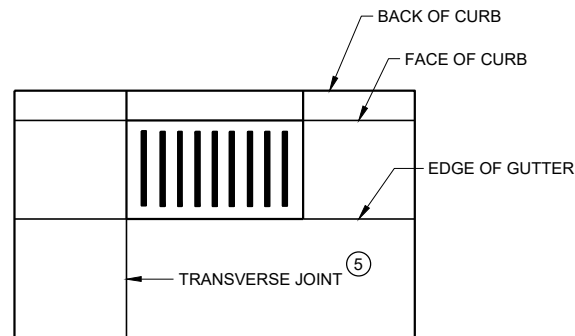
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 131



**MANHOLE WITH
LONGITUDINAL JOINT**



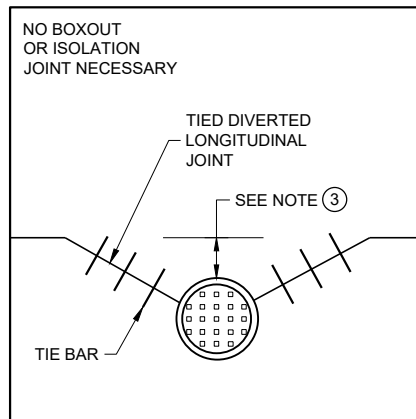
**MANHOLE WITH
TRANSVERSE JOINT**



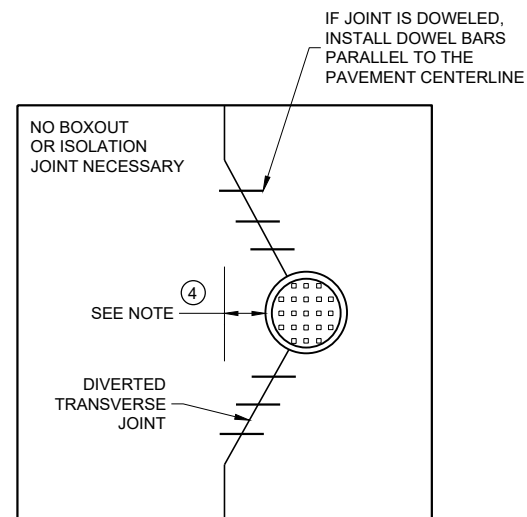
**INLET WITH
TRANSVERSE JOINT**

GENERAL NOTES

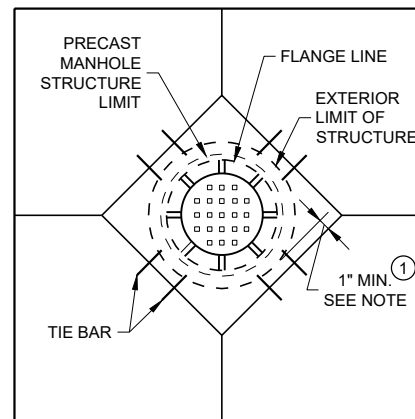
- ① USE BOXOUTS WHEN UTILITY STRUCTURE IS IN THE PATH OF CONSTRUCTION JOINTS. PROVIDE A 1 FOOT MINIMUM CLEARANCE BETWEEN THE EXTERIOR LIMIT OF THE STRUCTURE TO THE DIAMOND BOXOUT.
- ② ADJUST TRANSVERSE JOINT TO INTERSECT MANHOLE IF POSSIBLE.
- ③ IF DISTANCE BETWEEN THE LONGITUDINAL JOINT AND THE EDGE 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

DATE

FHWA

/S/ Peter Kemp P.E.

PAVEMENT SUPERVISOR

132

LEGEND

DOWELED JOINT

————

TIED JOINT

=====

EXPANSION JOINT

— — — — —

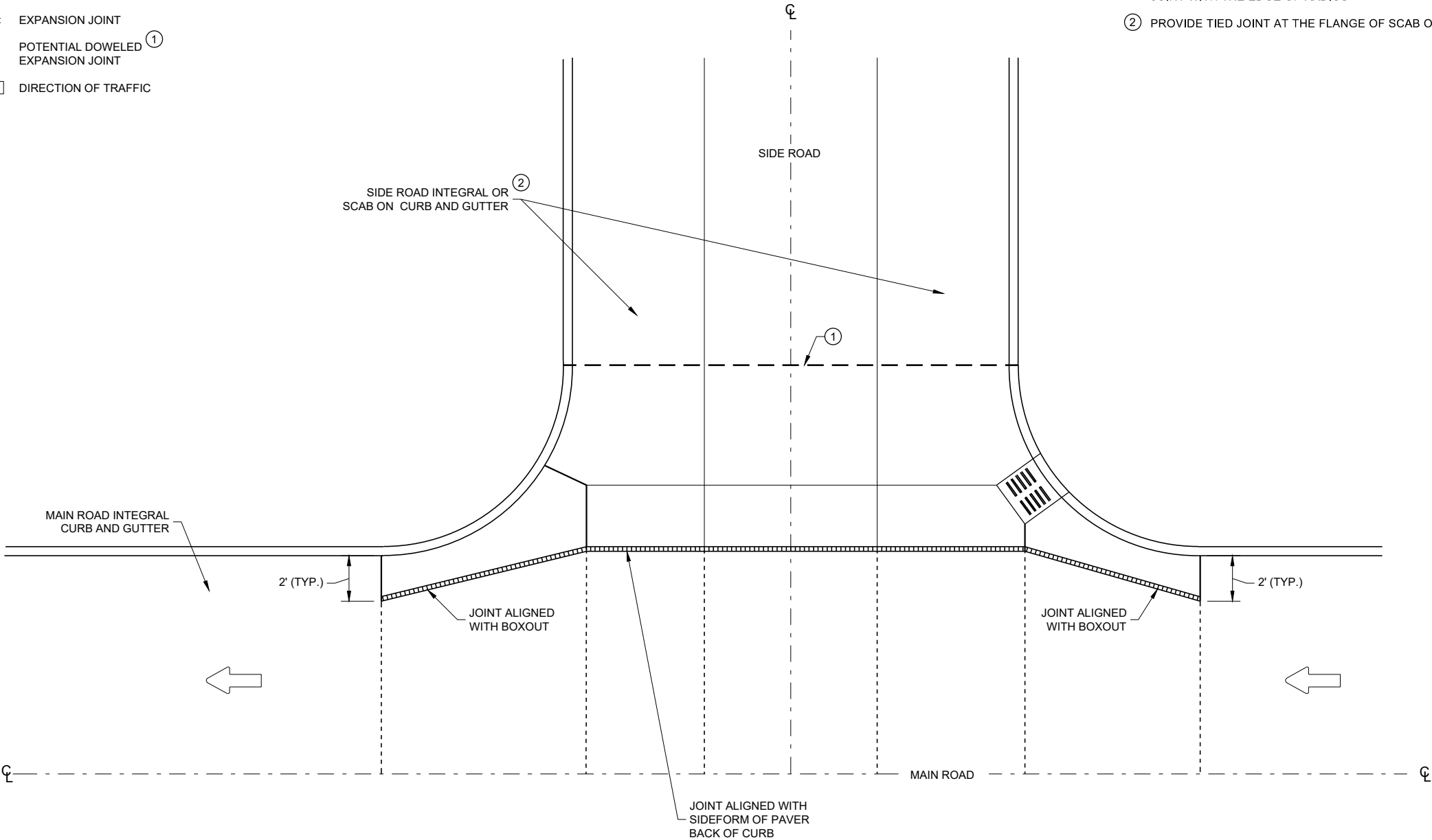
POTENTIAL DOWELED
EXPANSION JOINT ①

←

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.

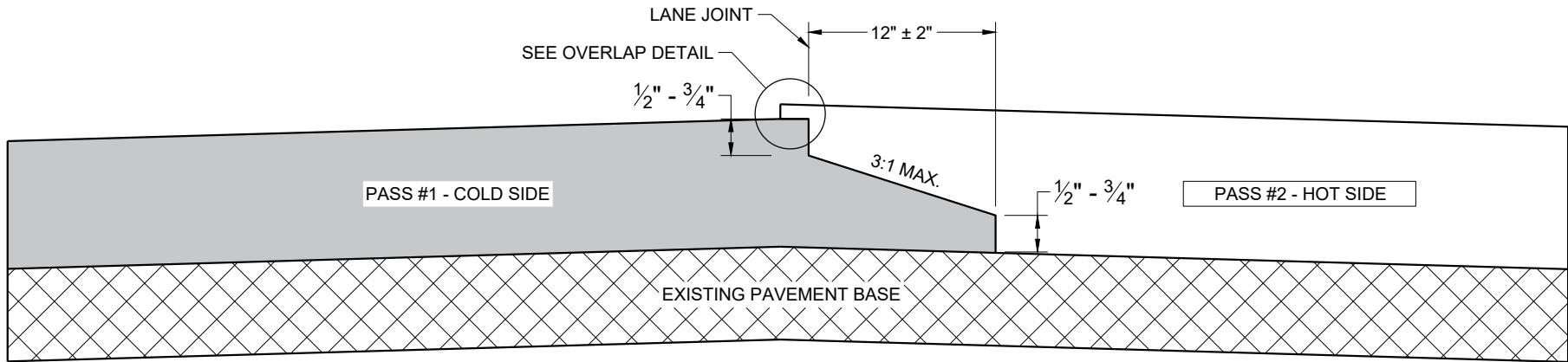


INTERSECTION BOXOUT FOR INTEGRAL CURB AND GUTTER

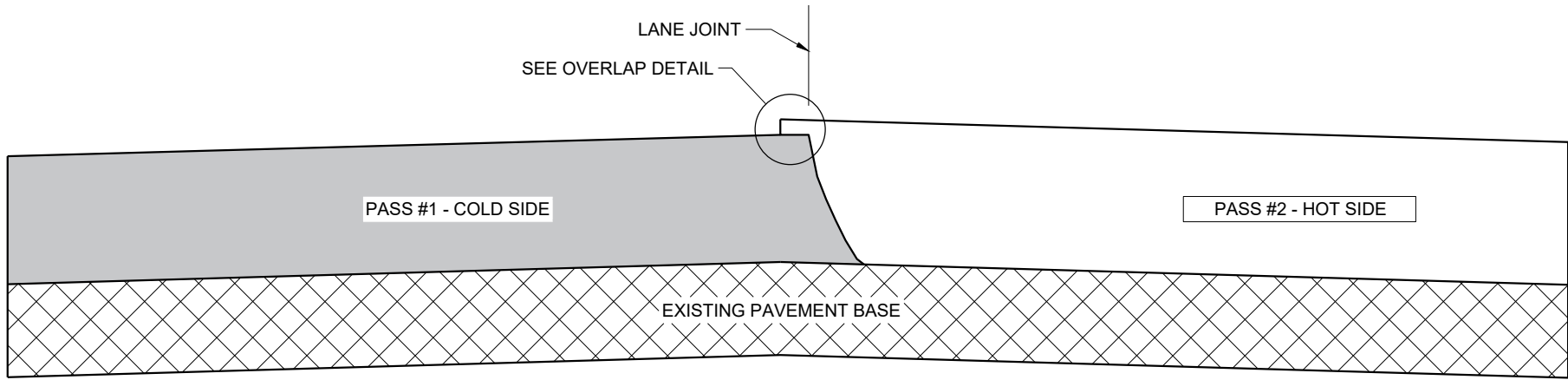
CONCRETE PAVEMENT
INTERSECTION BOXOUT FOR
INTEGRAL CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

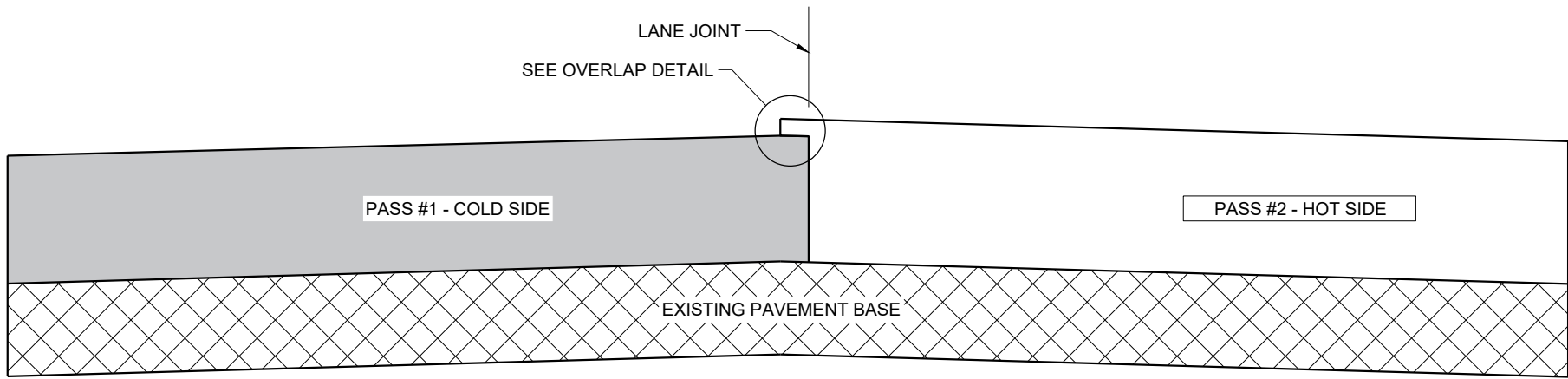
APPROVED
May 2023 /S/ Peter Kemp P.E.
DATE PAVEMENT SUPERVISOR 133
FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

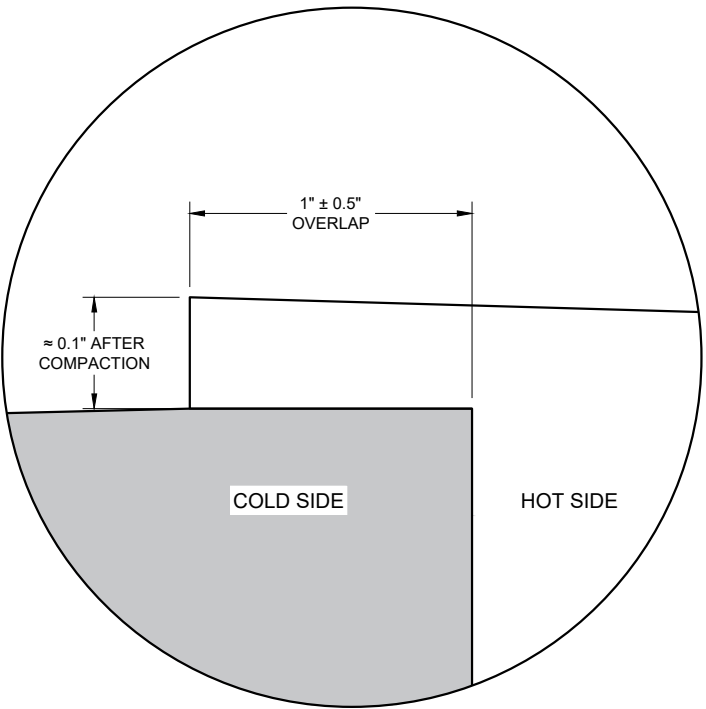
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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.



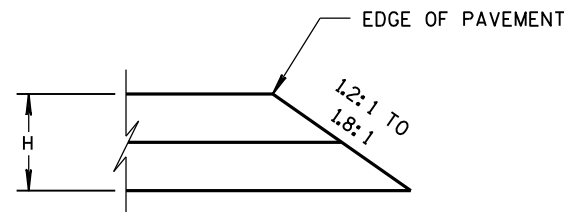
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

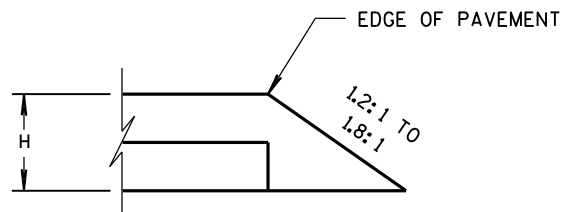
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 134

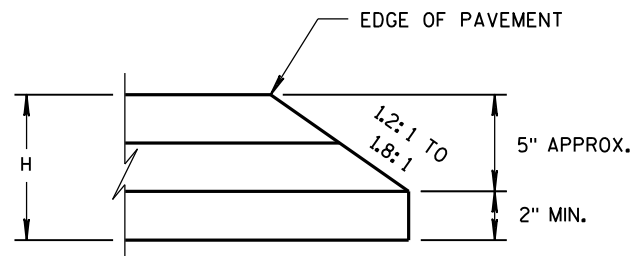
FHWA



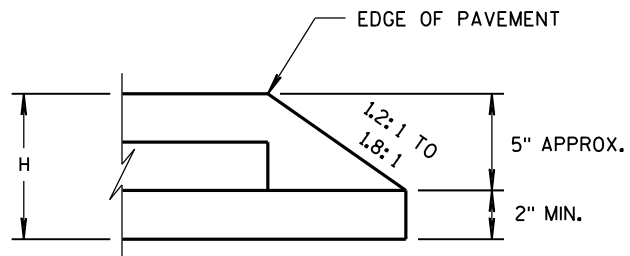
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

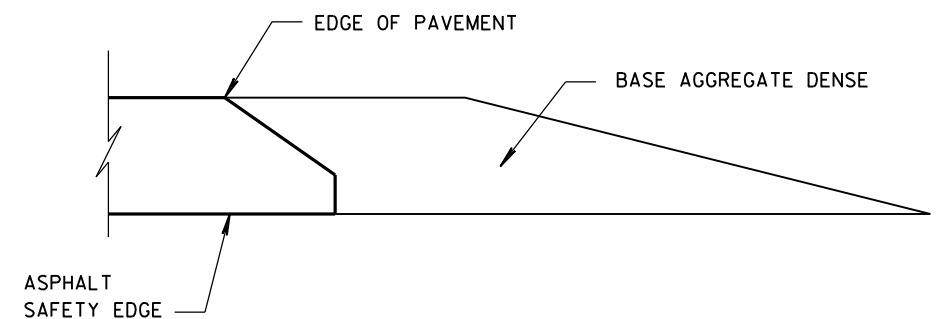


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

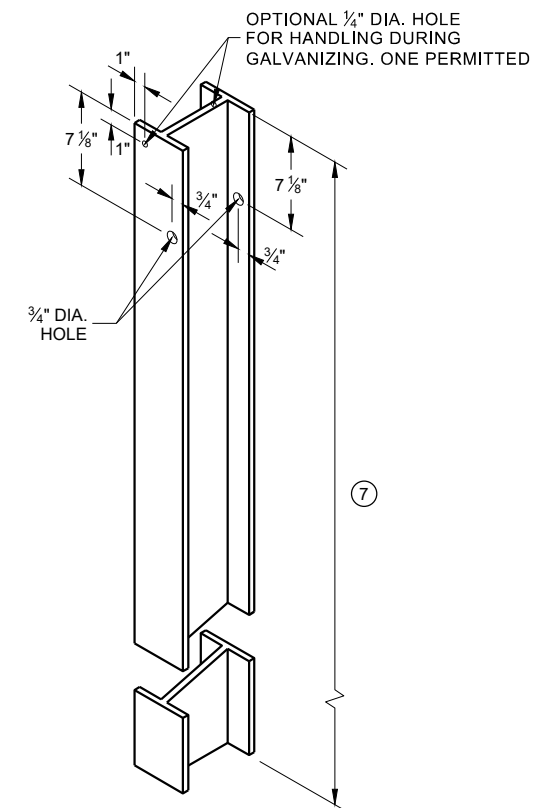
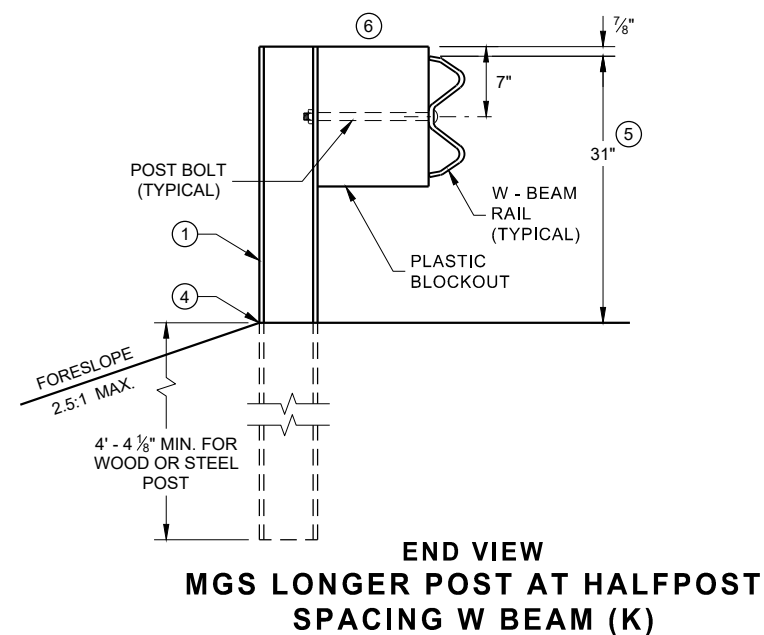
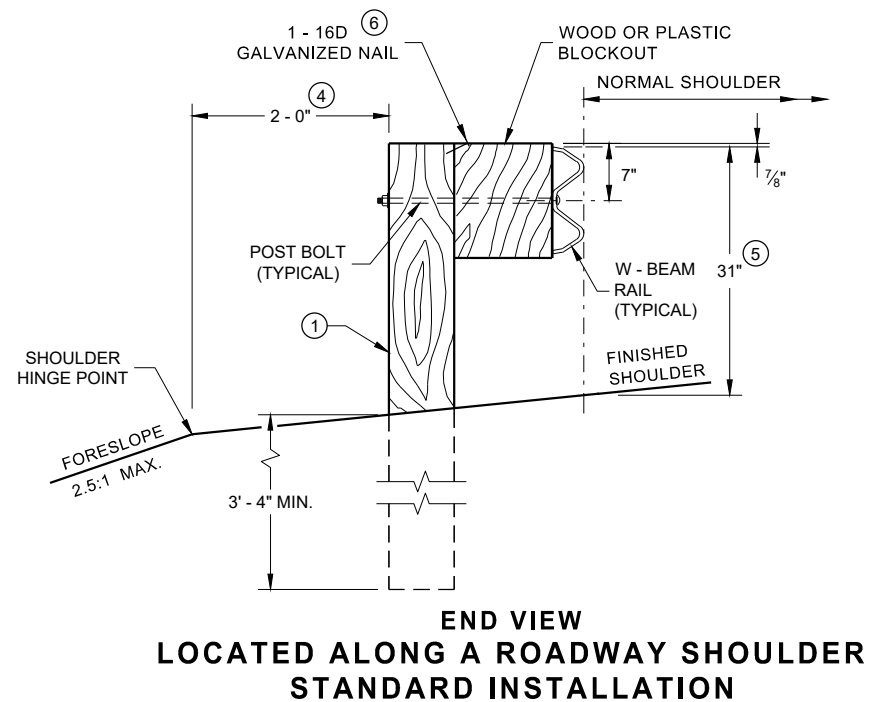
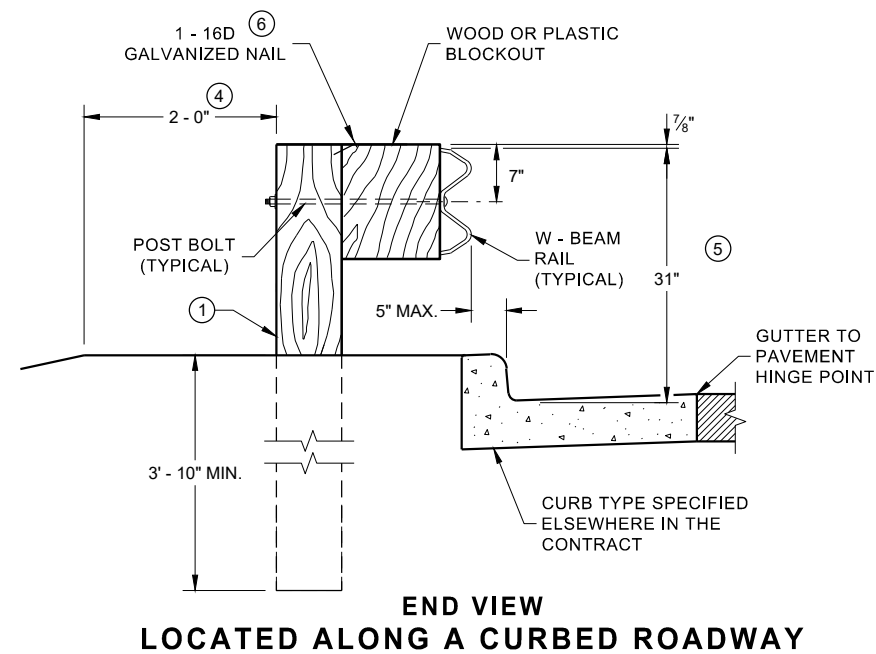
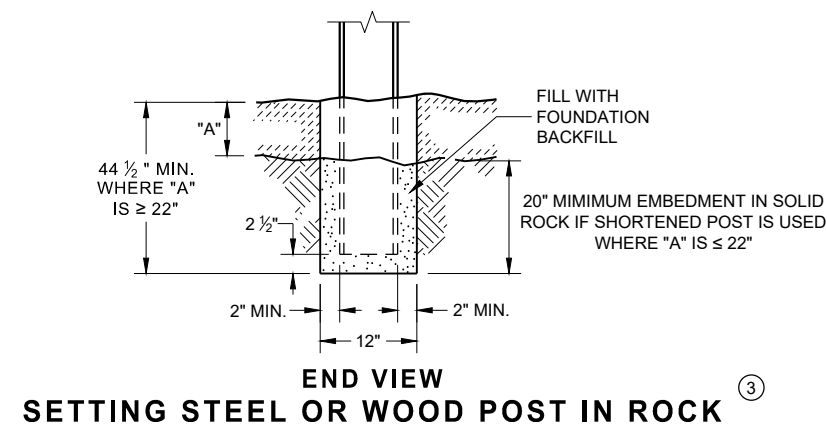
HMA PAVEMENT AND HMA OVERLAYS



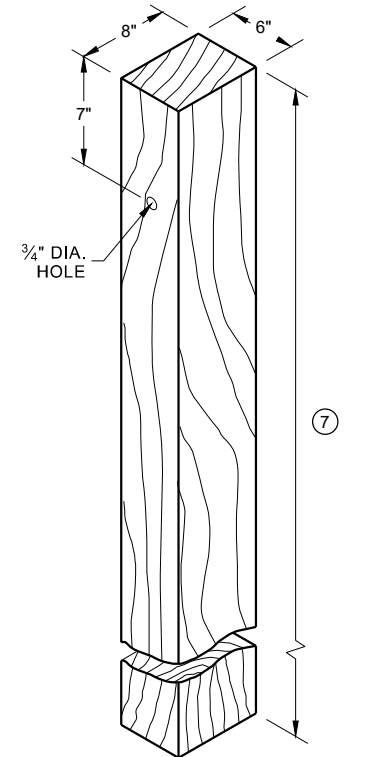
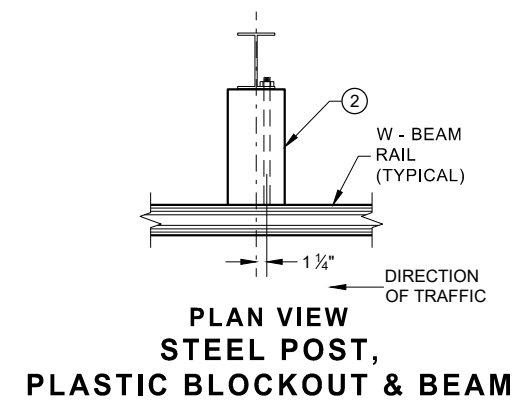
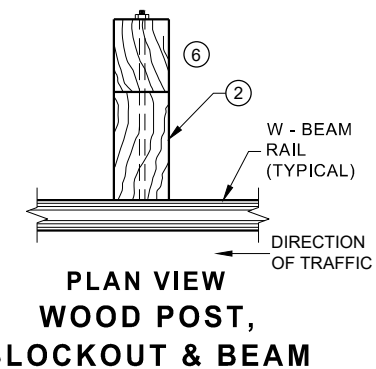
FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE _{SM}		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED DATE 11/30/2012	/S/ Jerry H. Zoaga ROADWAY STANDARDS ENGINEER	135 INT
FHWA		

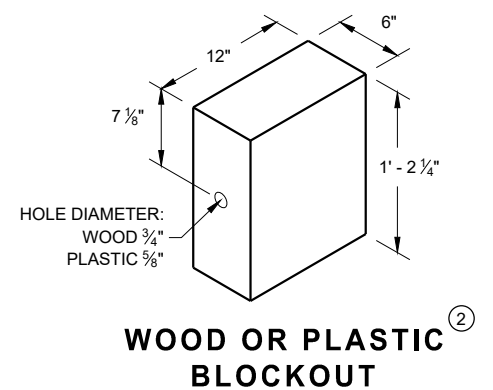
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS $\pm 1"$. FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0".
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".

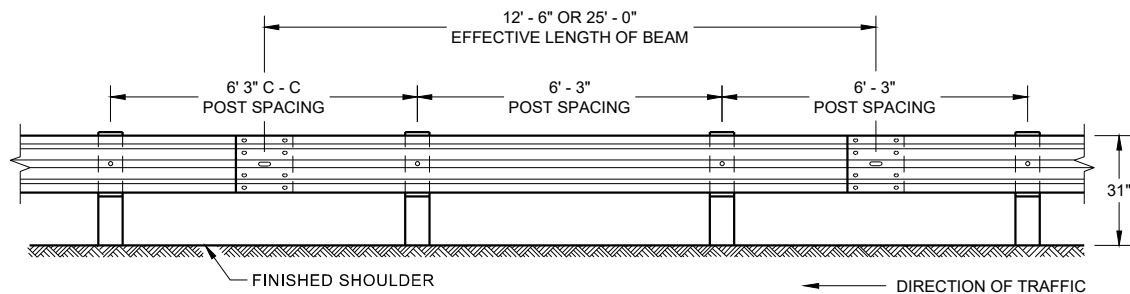


**STEEL POST & HOLE
PUNCHING DETAIL
(W 6 X 9) ①**

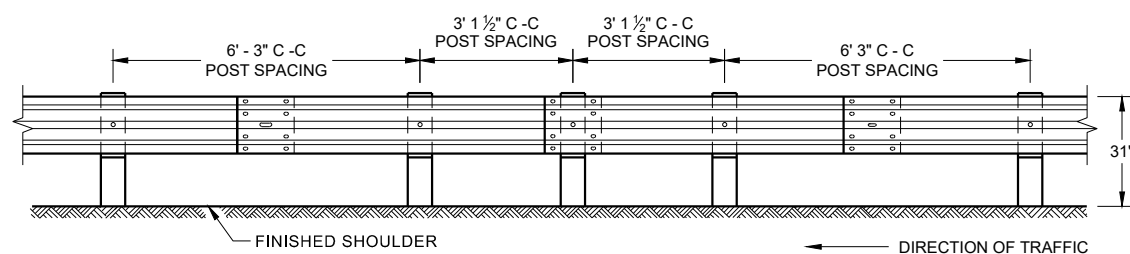


WOOD POST (6" X 8") NOMINAL ⁽¹⁾

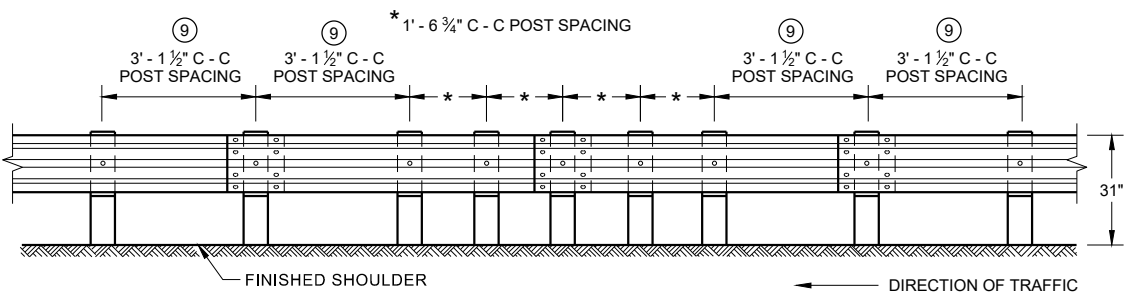




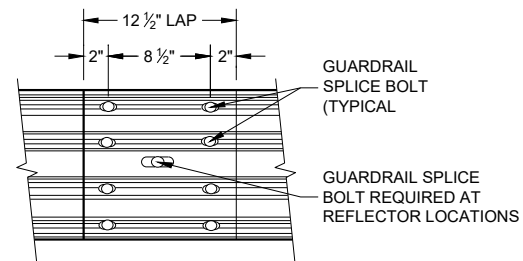
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



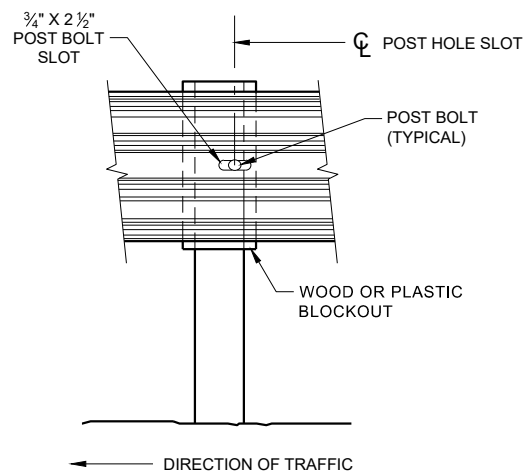
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



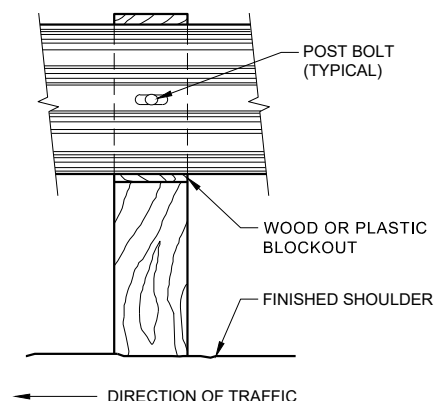
**FRONT VIEW
QUARTER POST SPACING (QS)**



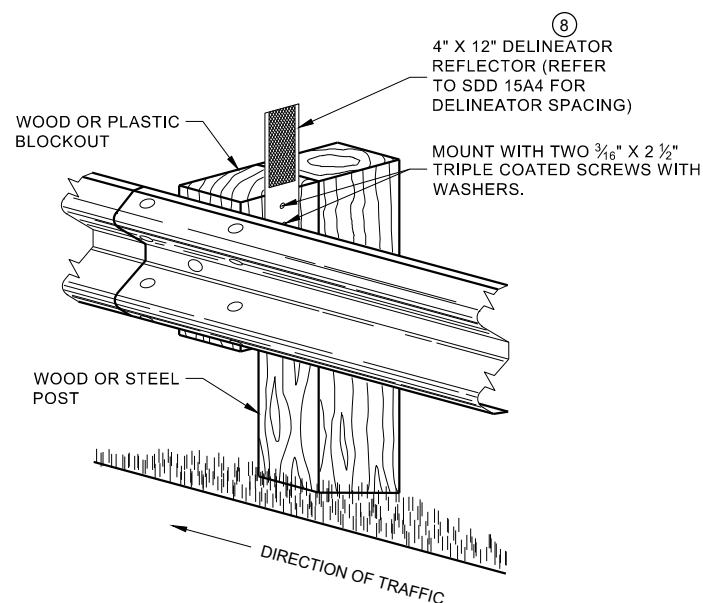
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



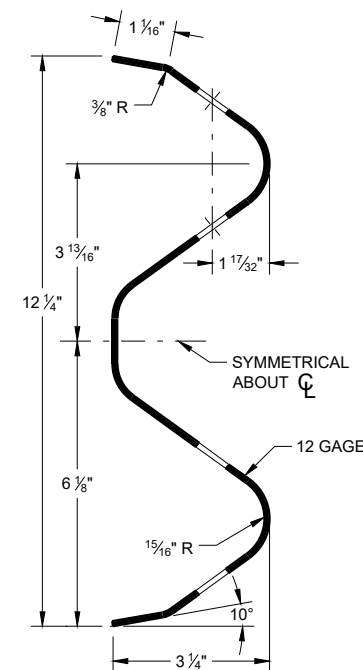
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

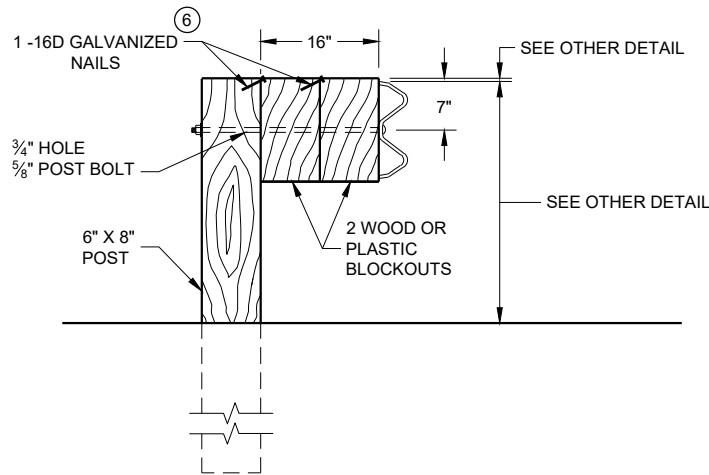
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

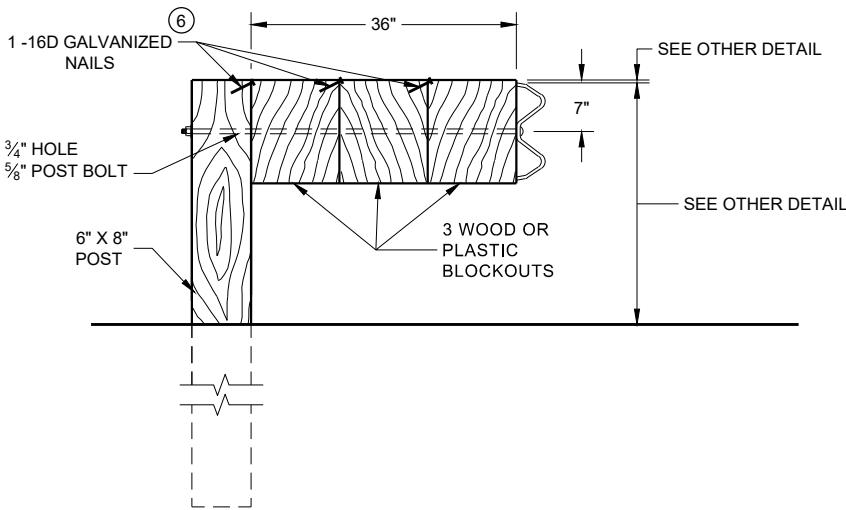
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 137



DETAIL FOR 16" BLOCKOUT DEPTH

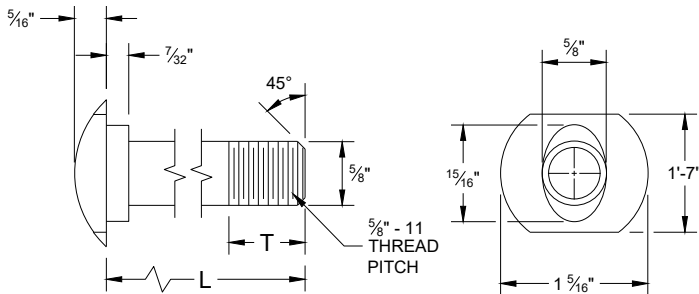
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

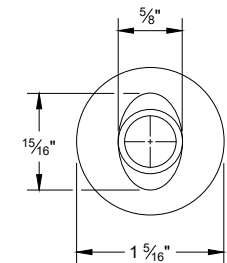
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

- NOTE:
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
 - 2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

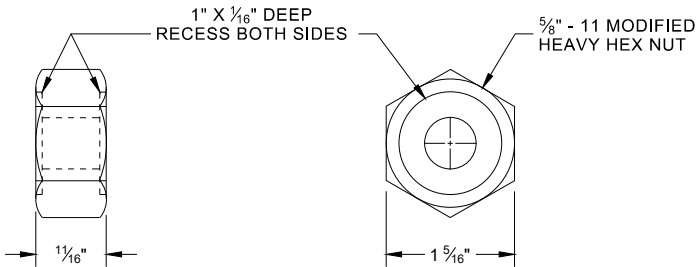


POST BOLT TABLE

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

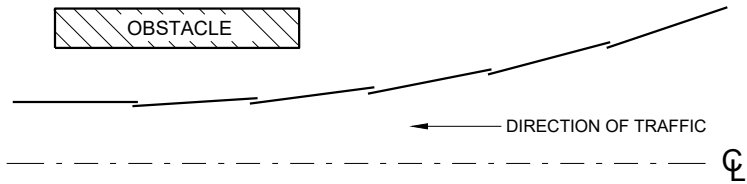


ALTERNATE BOLT HEAD

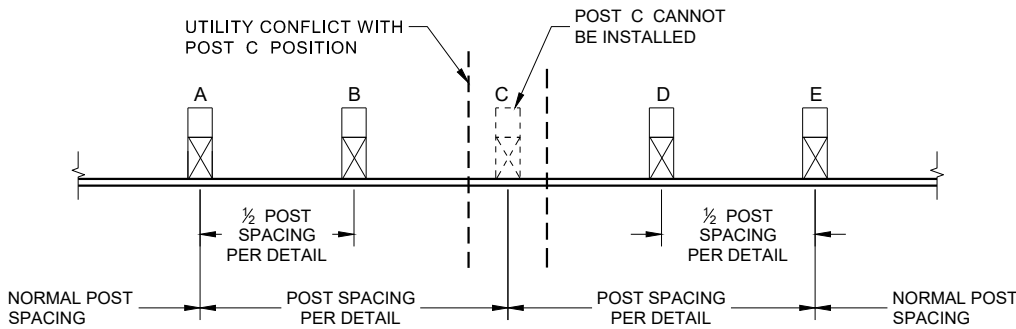


POST BOLT, SPLICE BOLT AND RECESS NUT

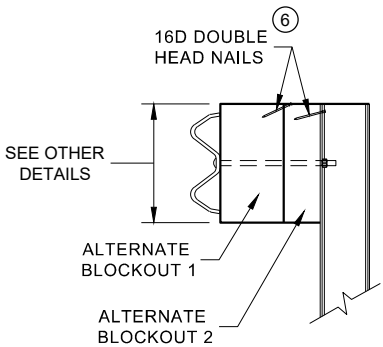
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



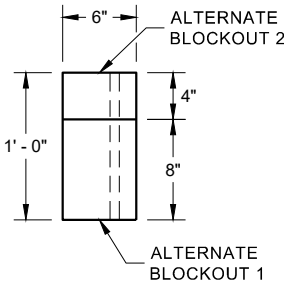
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

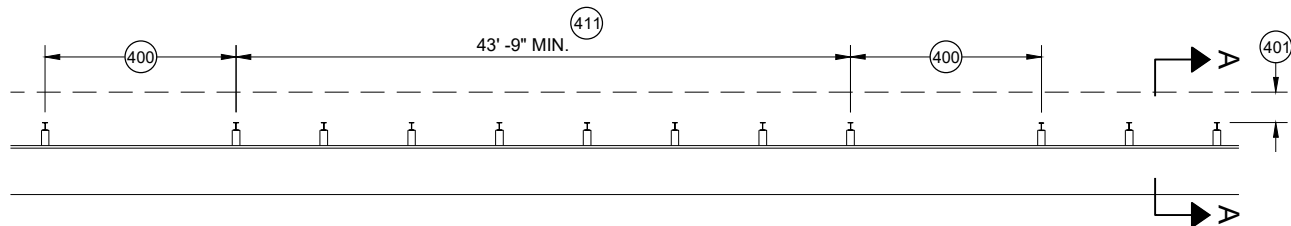


PLAN VIEW

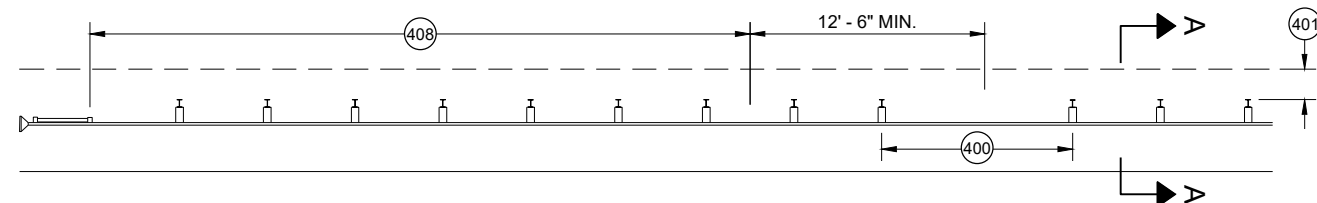
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

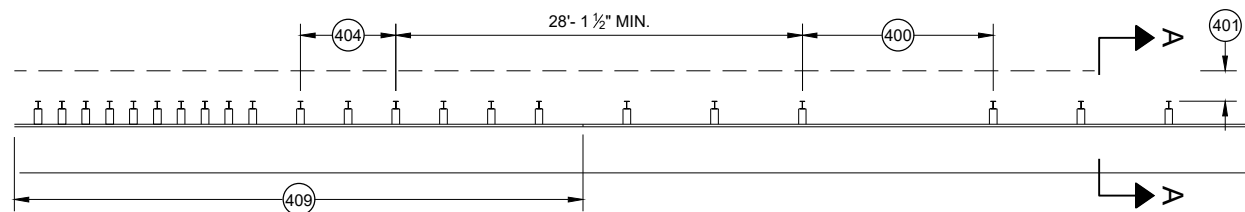
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 138



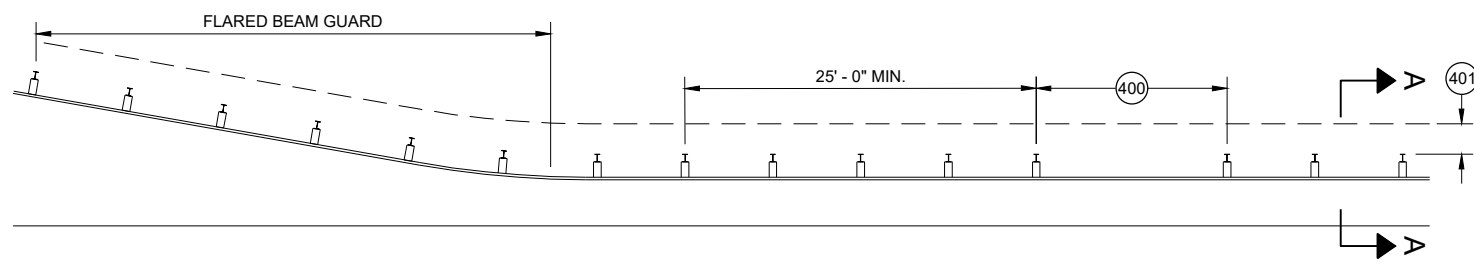
MISSING POST IN MGS GUARDRAIL



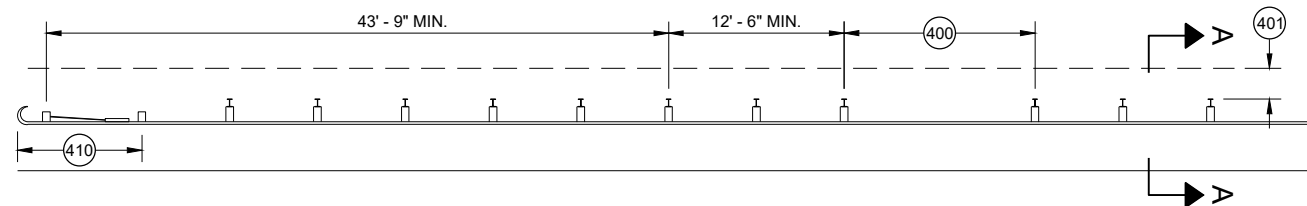
MISSING POST IN MGS GUARDRAIL NEAR EAT



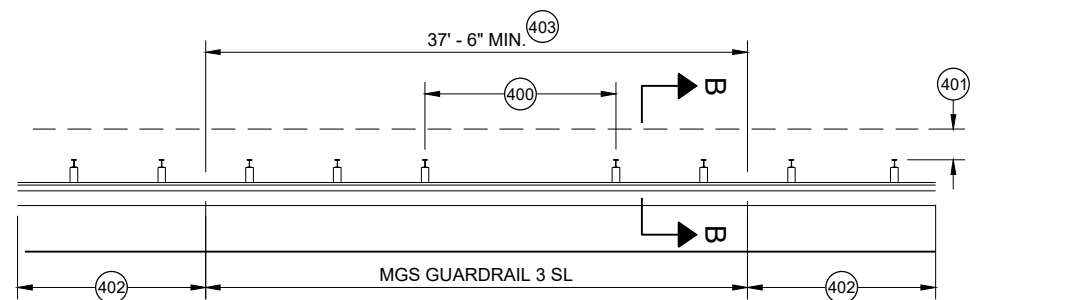
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

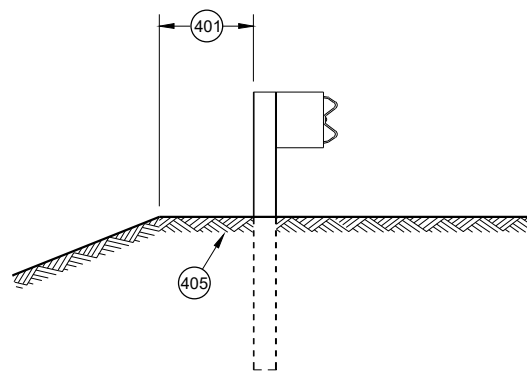


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

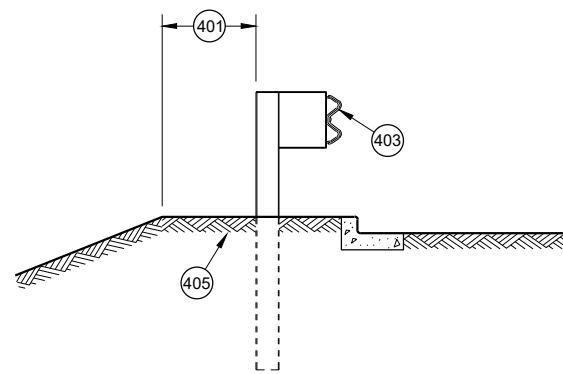


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (400) MAX SPAN 12' - 6"
- (401) 2' MIN.
- (402) MGS GUARDRAIL 3
- (403) NESTING BEAM GUARD
- (404) ASYMMETRIC TRANSITION
- (405) SOIL WELL DRAINED AND COMPACTED
- (406) SEE OTHER DRAWINGS IN THIS SDD
- (407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- (408) SEE SDD 14B44
- (409) SEE SDD 14B45
- (410) SEE SDD 14B47
- (411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



SECTION A - A



SECTION B - B

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2021
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

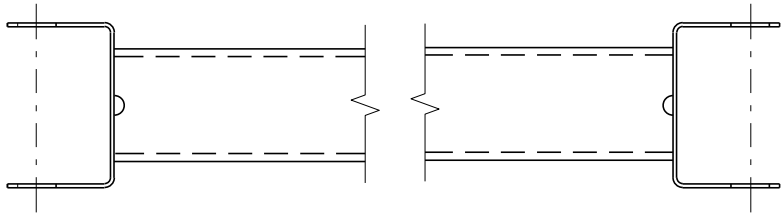
FHWA

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

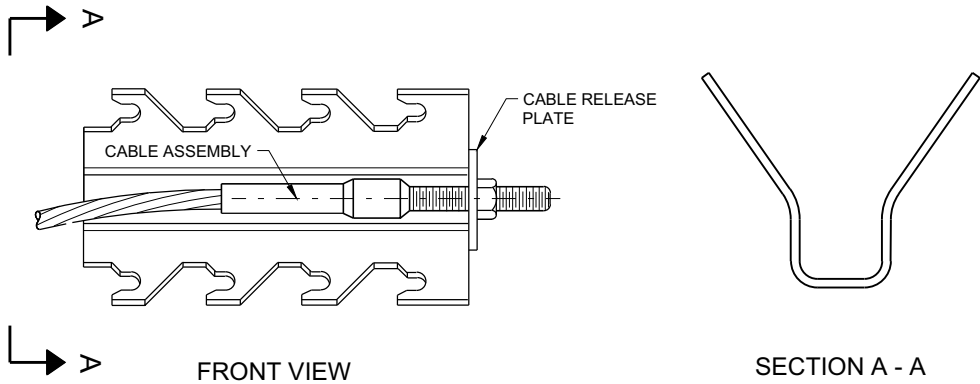
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

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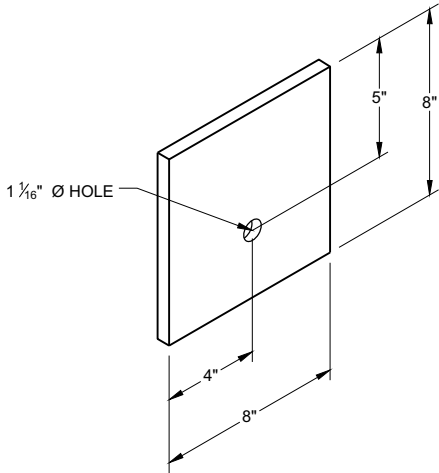


GENERIC GROUND STRUT ⁹ ^E

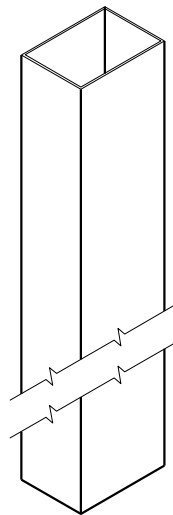
BILL OF MATERIALS	
PART NO.	DESCRIPTION MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED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



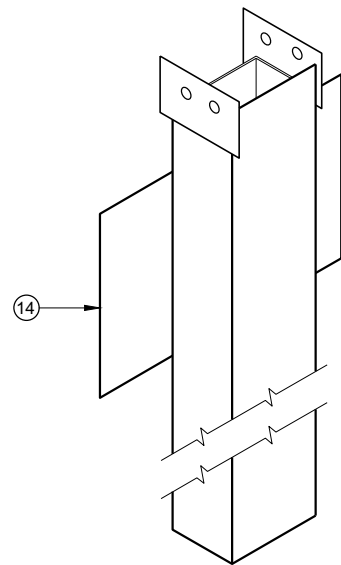
GENERIC ANCHOR CABLE BOX ⁹ ^E



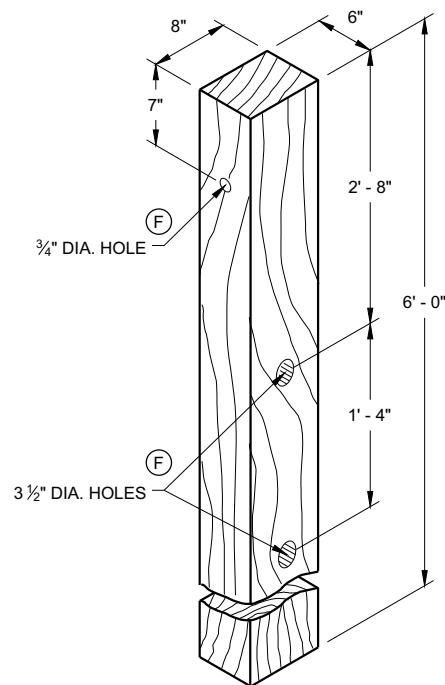
BEARING PLATE ⁶ ^E



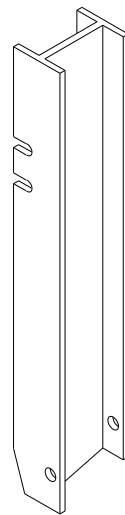
UPPER POST NO. 1 ⁽¹⁾ (E)



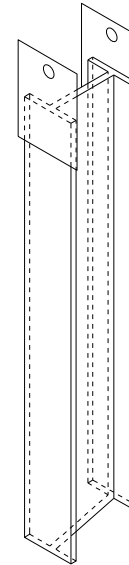
LOWER POST NO. 1 ⁽²⁾ (E)



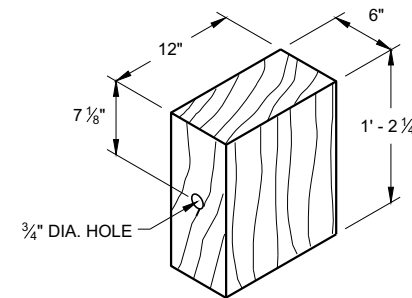
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



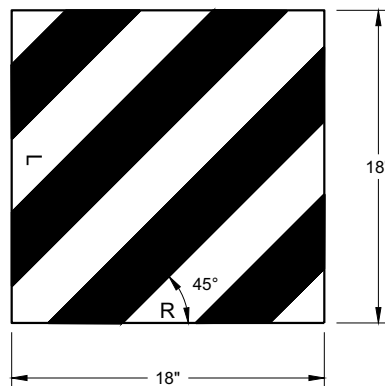
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



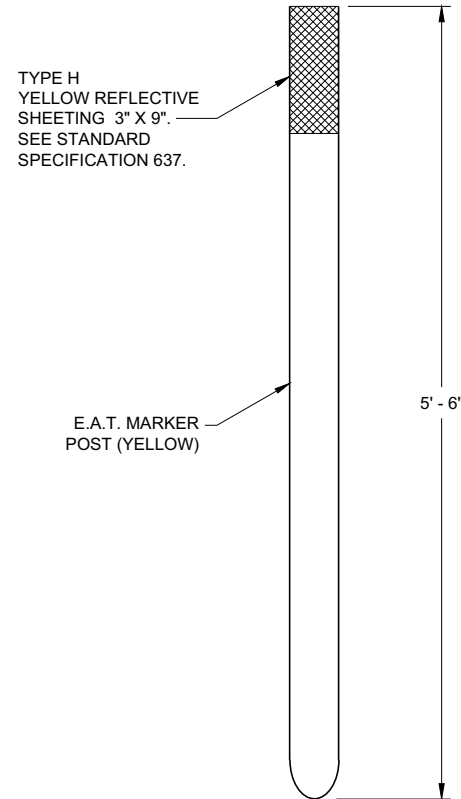
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



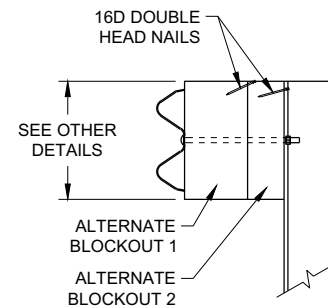
REFLECTIVE SHEETING DETAIL ^(E)



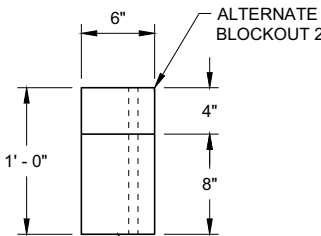
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



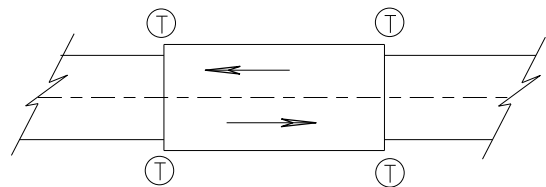
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

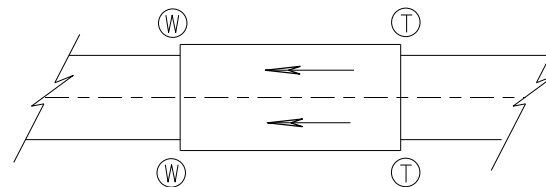
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR
142
FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

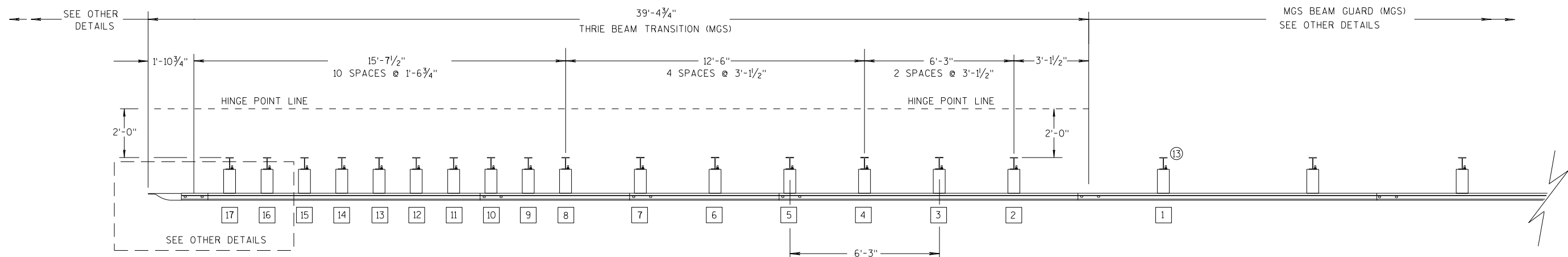
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

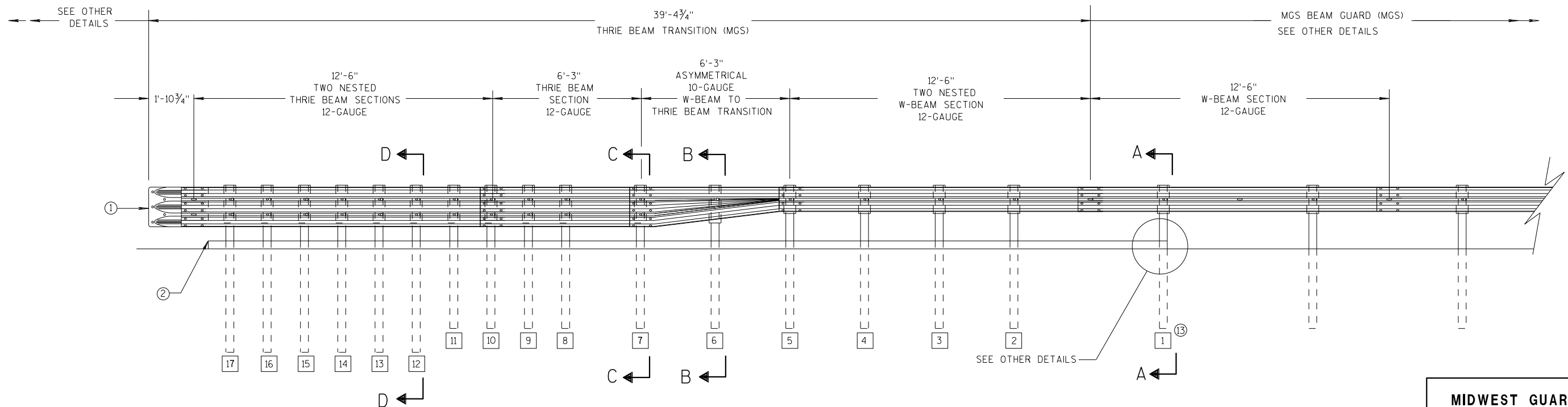
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



PLAN VIEW



ELEVATION VIEW

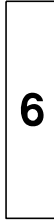
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

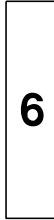
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 143

6

- S.D.D. 14 B 45-5b**

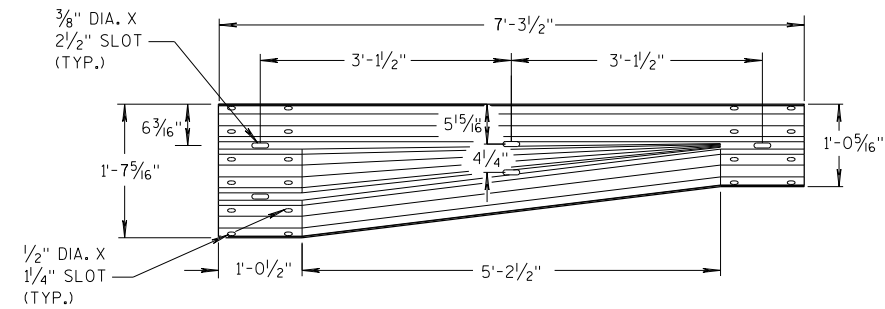


S.D.D. 14 B 45-5b

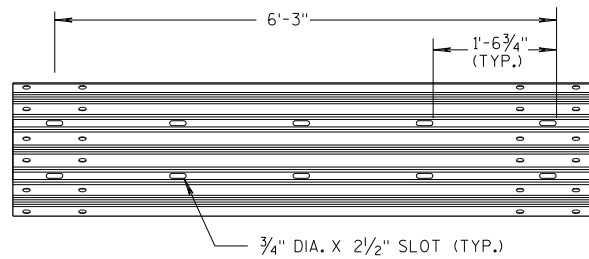


S.D.D. 14 B 45-5b

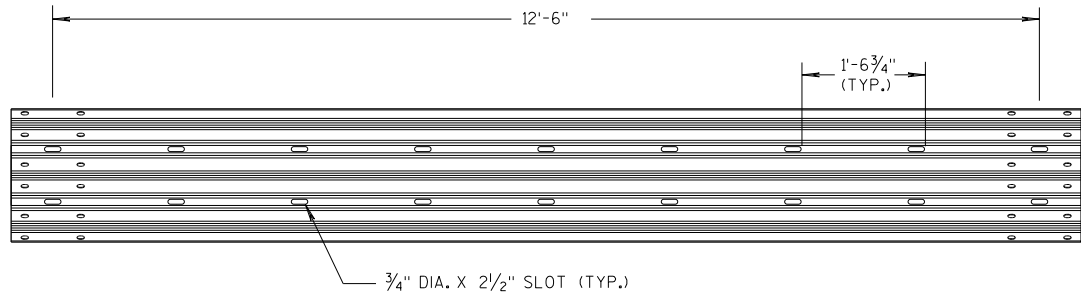




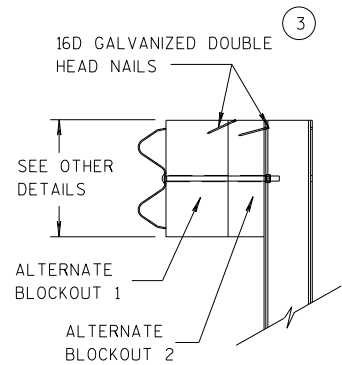
W-BEAM TO THRIE BEAM TRANSITION SECTION



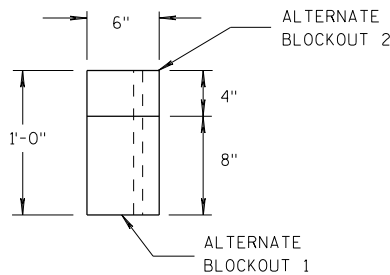
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

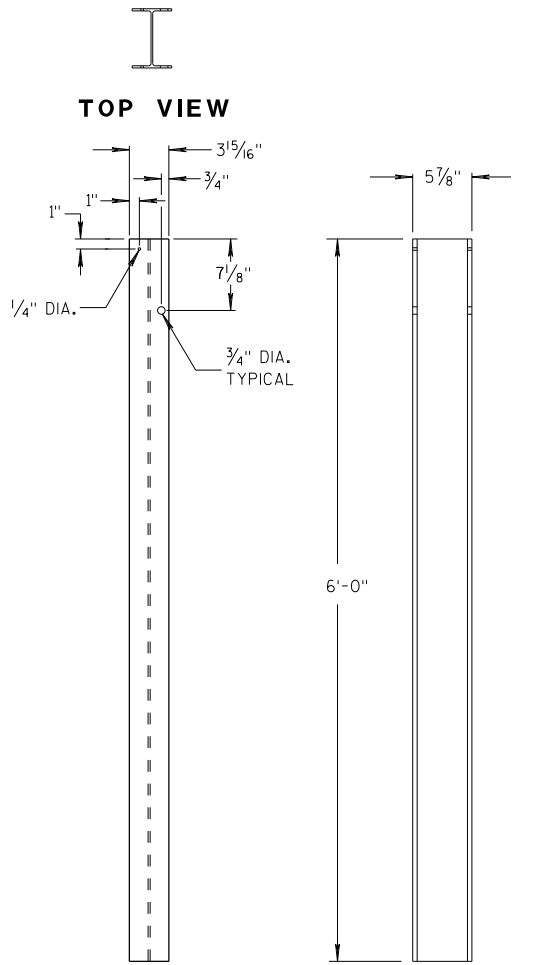


SIDE VIEW



TOP VIEW

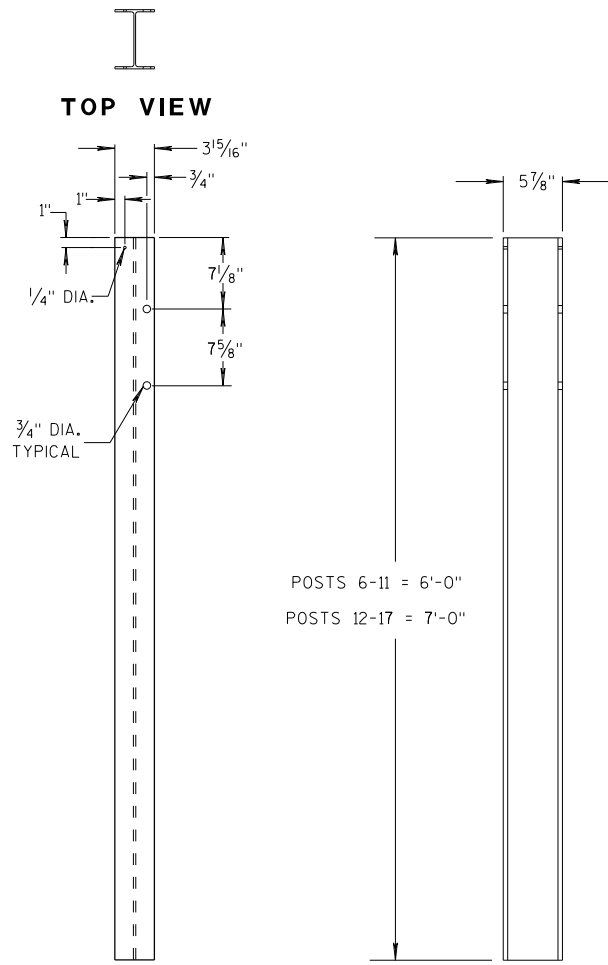
ALTERNATE WOOD BLOCKOUT DETAIL



FRONT VIEW

SIDE VIEW

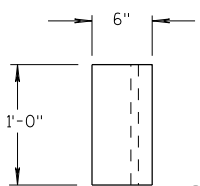
STEEL POSTS 1-5



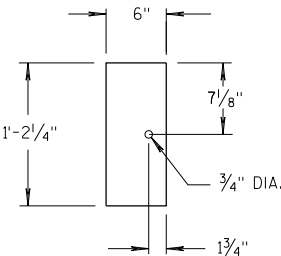
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17

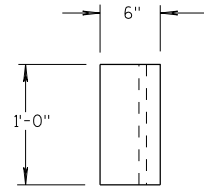


TOP VIEW

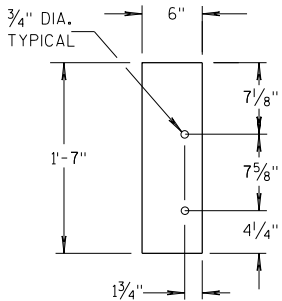


FRONT VIEW

BLOCKOUT POSTS 1-5



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

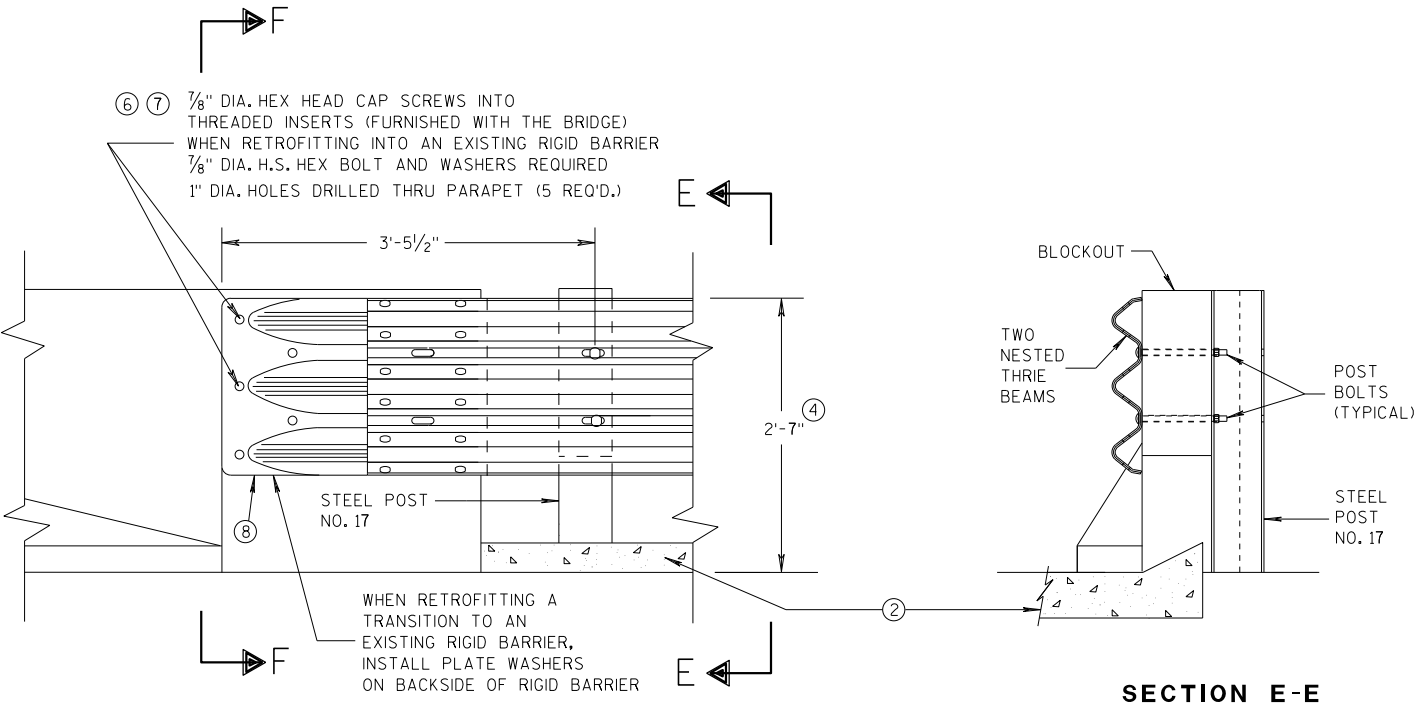
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD 14B42.

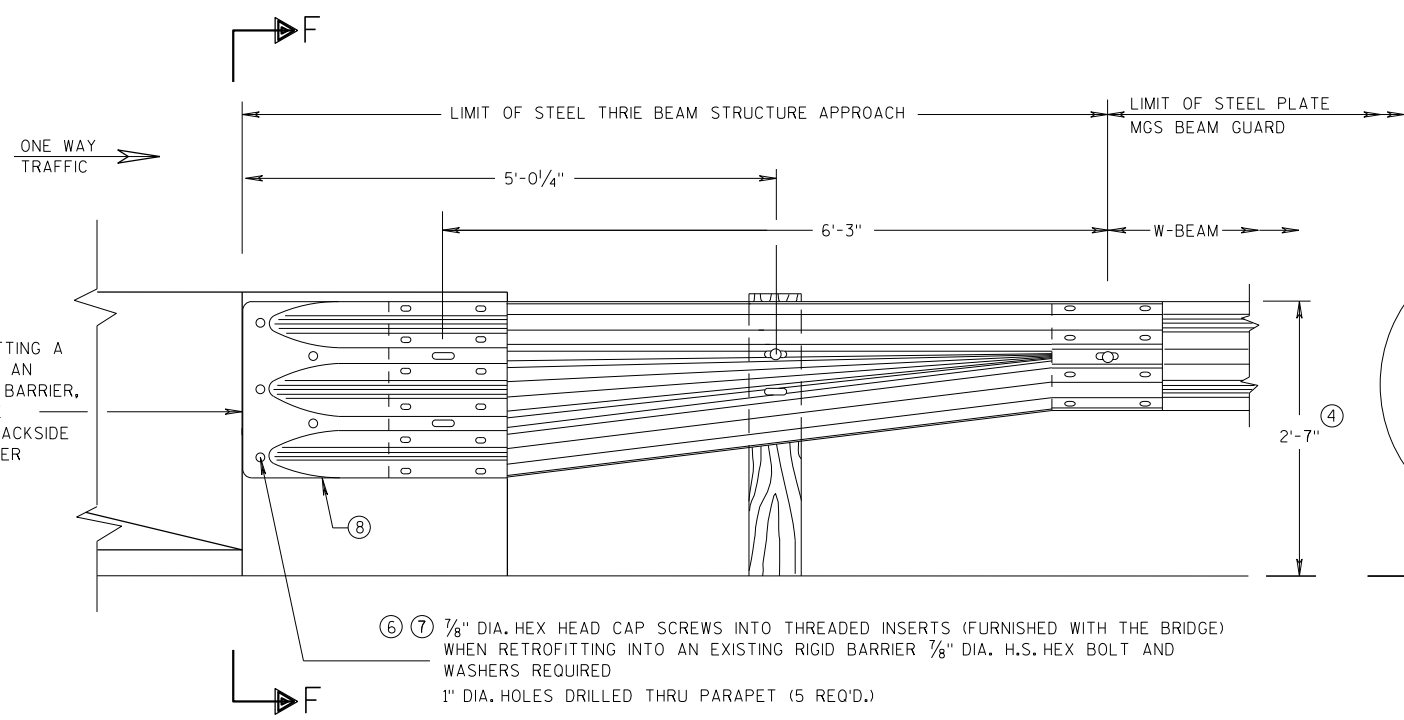
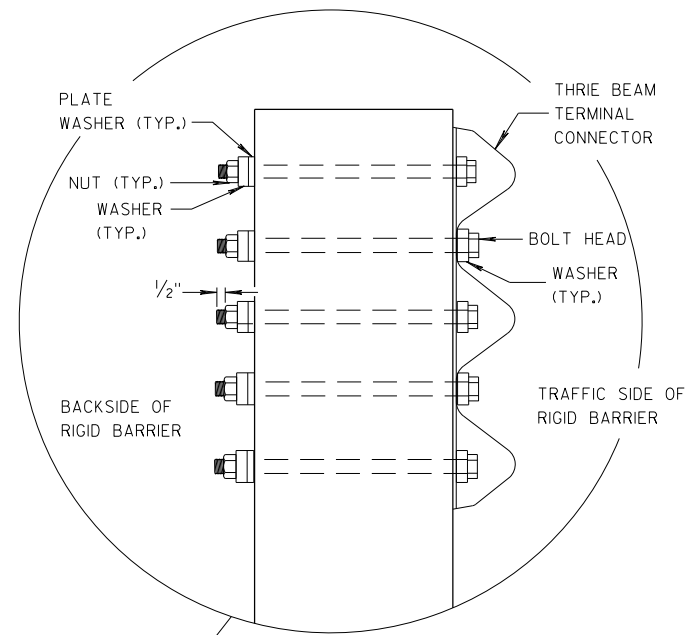
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

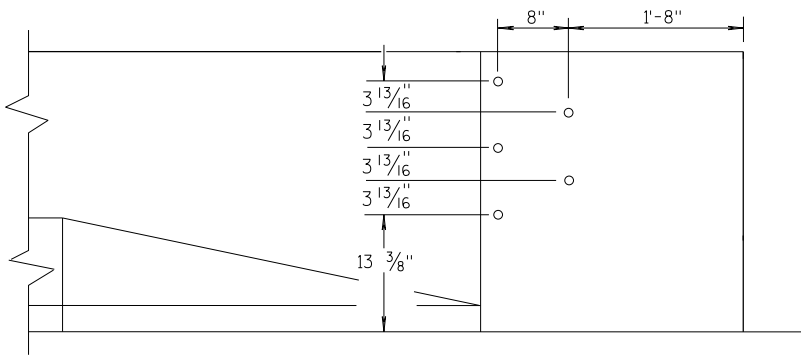


GENERAL NOTES

- THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧ THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 1/2".



SECTION F-F



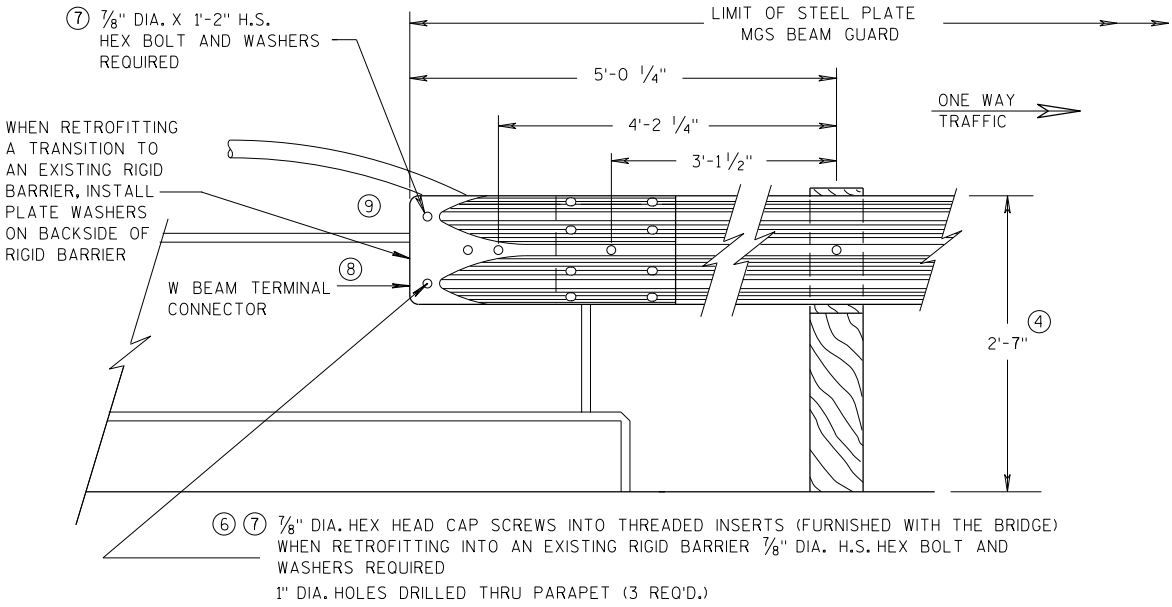
DRILL HOLE LOCATION

MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA	146	NT	

GENERAL NOTES

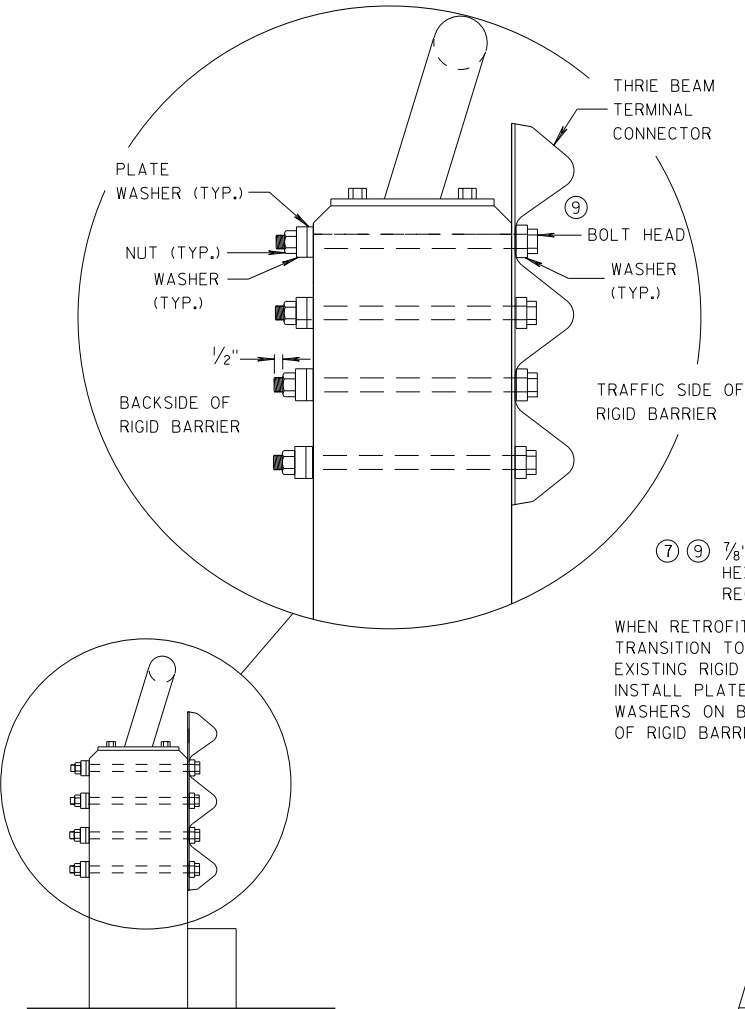
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- ②
- OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④
- TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥
- DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦
- BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X $\frac{5}{32}"$ THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.
- ⑧
- THE RECESS FOR A W-BEAM CONNECTION, WHICH EXISTS ON SOME PARAPETS OF THIS TYPE, SHALL BE FILLED WITH A TREATED TIMBER BLOCKOUT. BLOCKOUT SIZE IS 1'-6" X 2'-0" X 3 $\frac{1}{2}"$.
- ⑨
- BOLT, NUT AND WASHERS NOT REQUIRED FOR THIS LOCATION WHEN RETROFITTING AN EXISTING PAPAPET AND THE HOLE IS EITHER ABOVE PARAPET OR WITHIN 4 INCHES OF THE EDGE OF PARAPET.

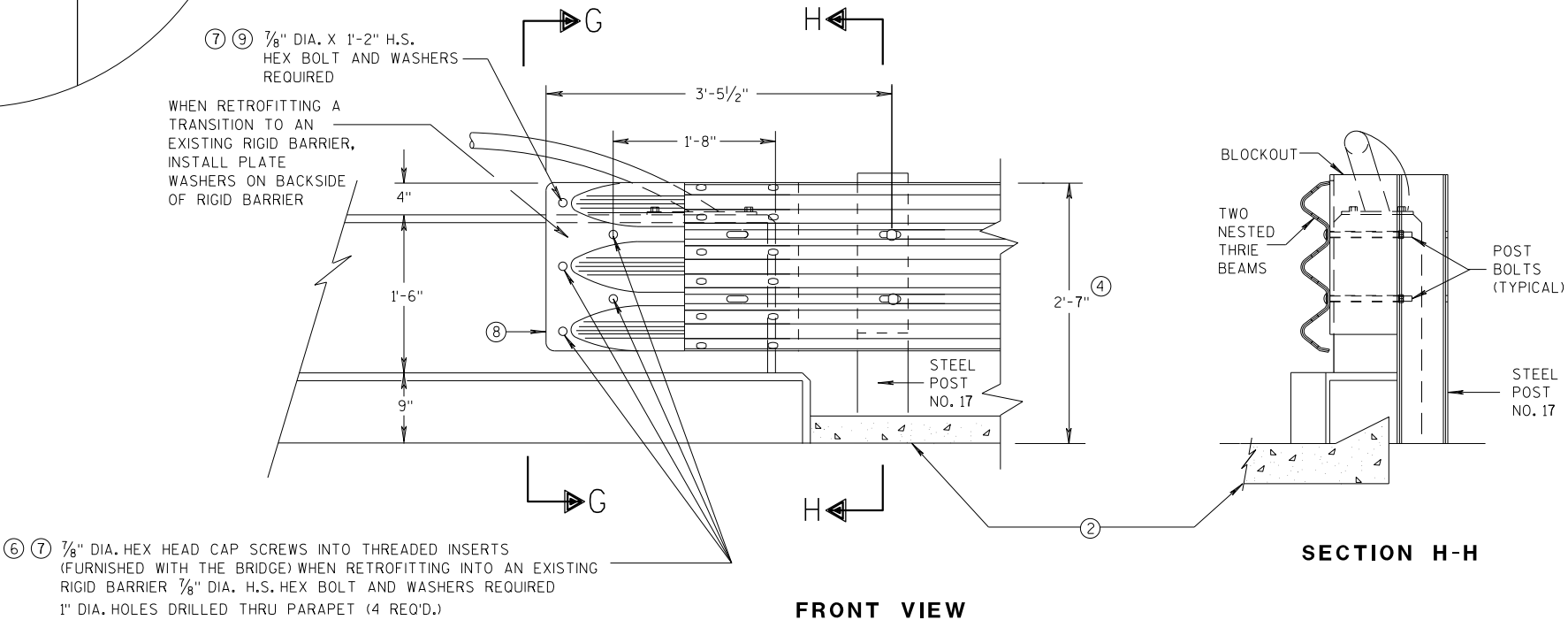


FRONT VIEW

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



SECTION G-G



FRONT VIEW

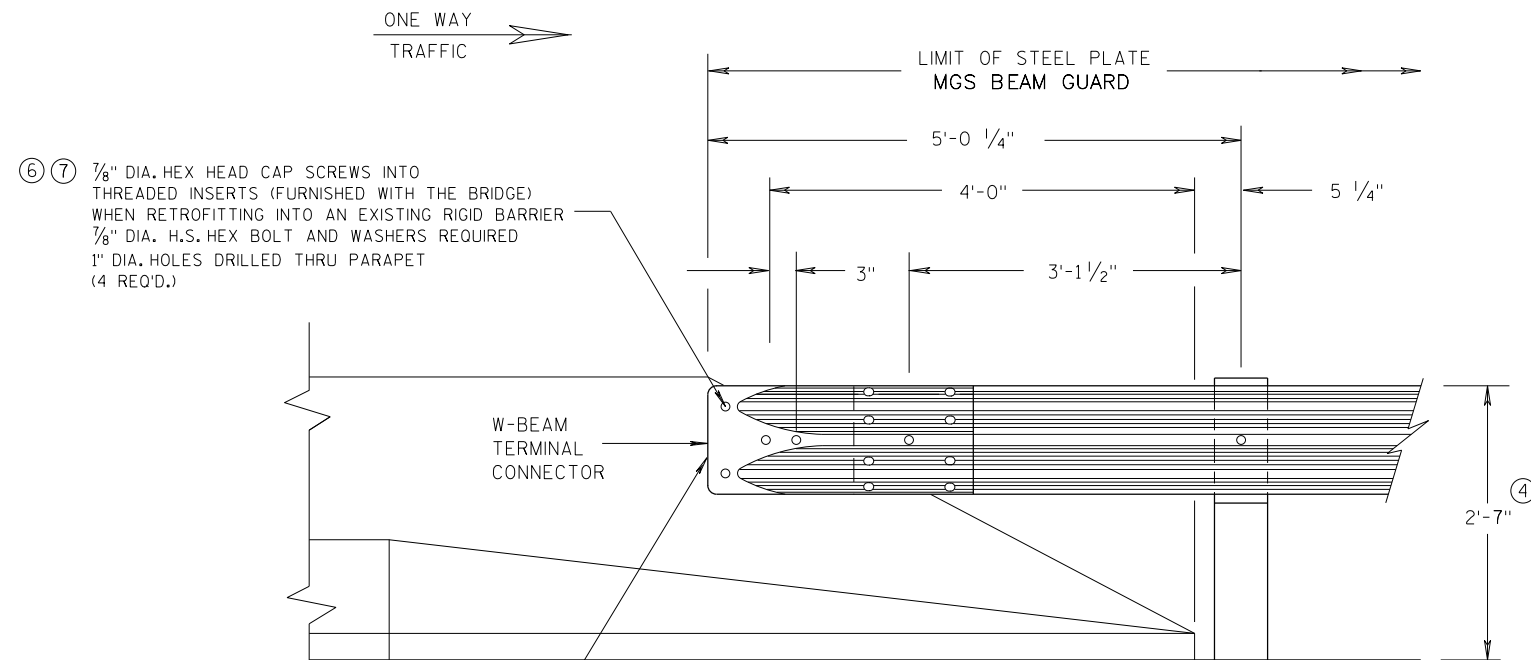
THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS

SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

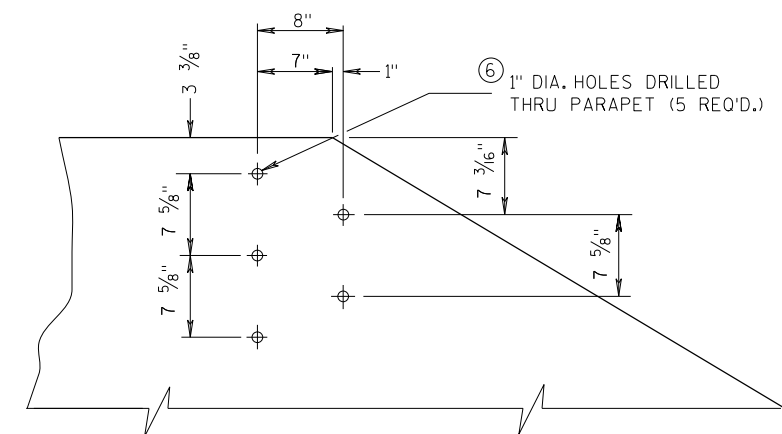
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
07/2018
DATE
FHWA
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
147
NT

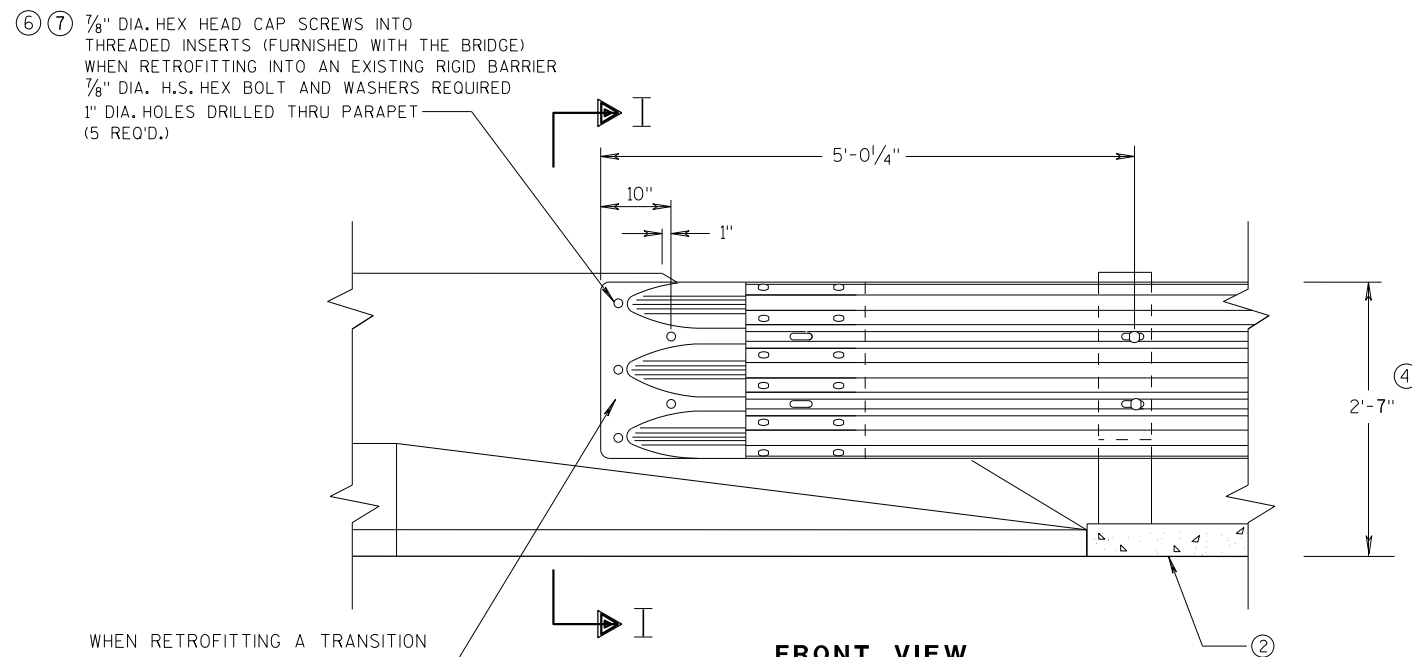


FRONT VIEW

**W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)**

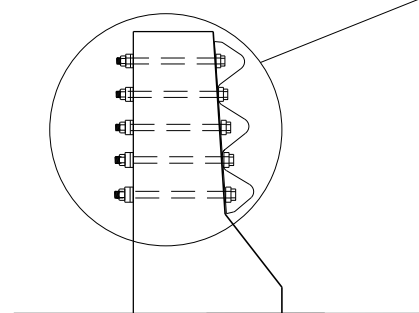


**DRILL HOLE LOCATION AND PATTERN
FOR THRIE BEAM CONNECTION**

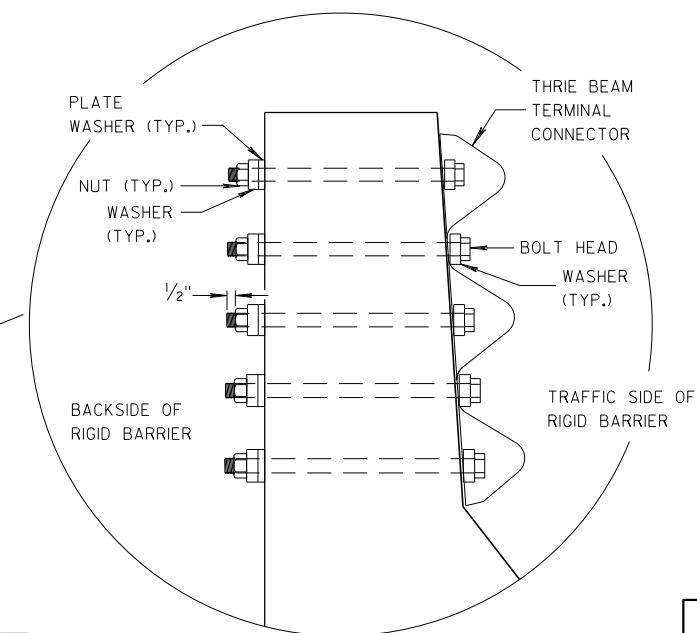


FRONT VIEW

**THRIE BEAM CONNECTION TO BRIDGE
PARAPETS WITH SLOPED ENDS**



SECTION I-I

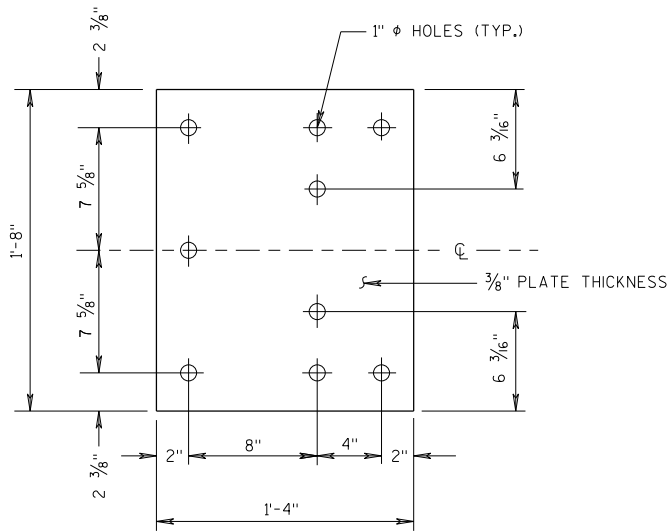
**GENERAL NOTES**

- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.

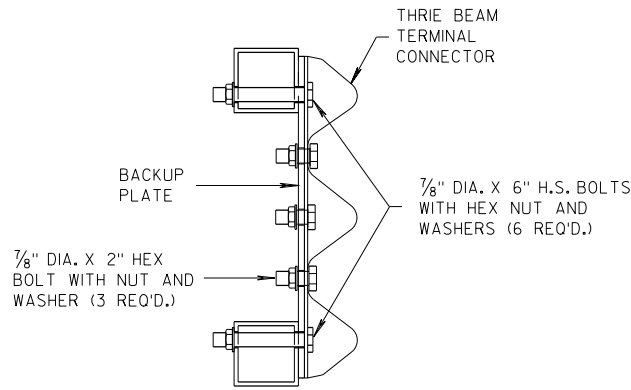
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

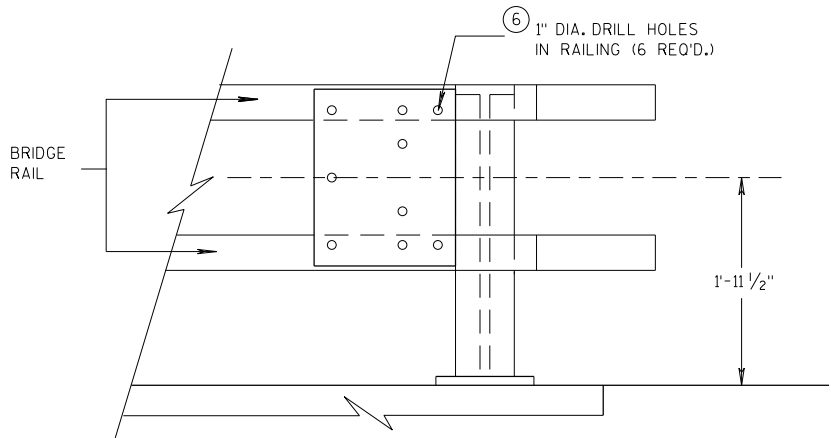
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DATE 07/2018 /S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR 148
FHWA



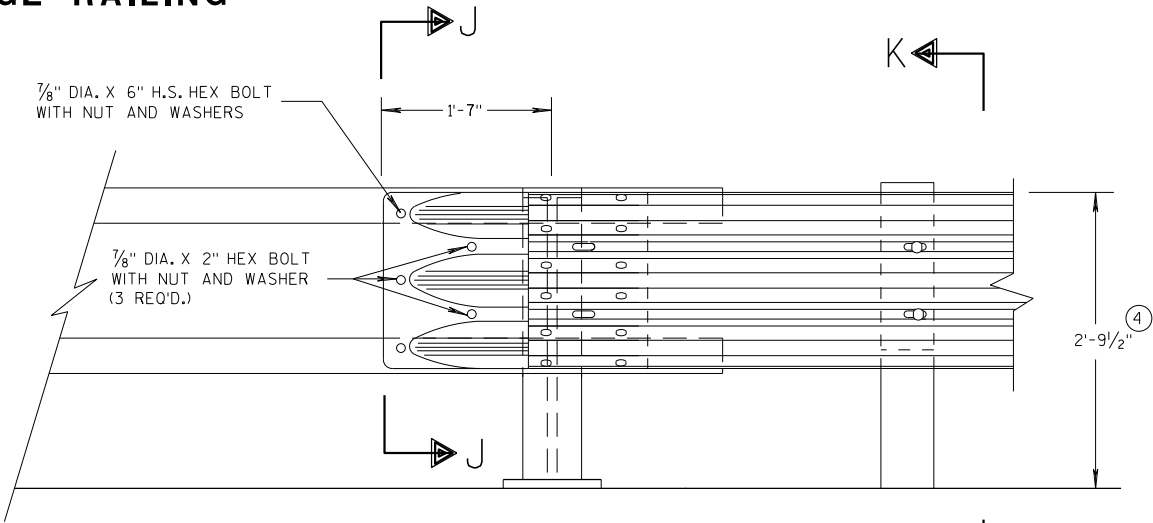
BACK-UP PLATE DETAIL



SECTION J-J

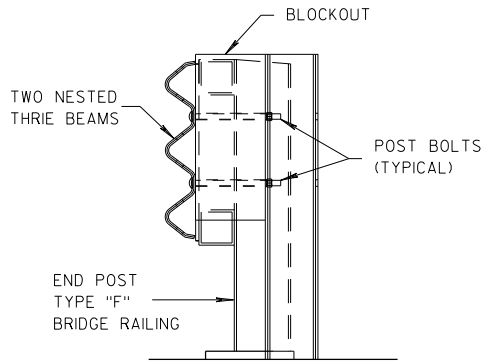


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

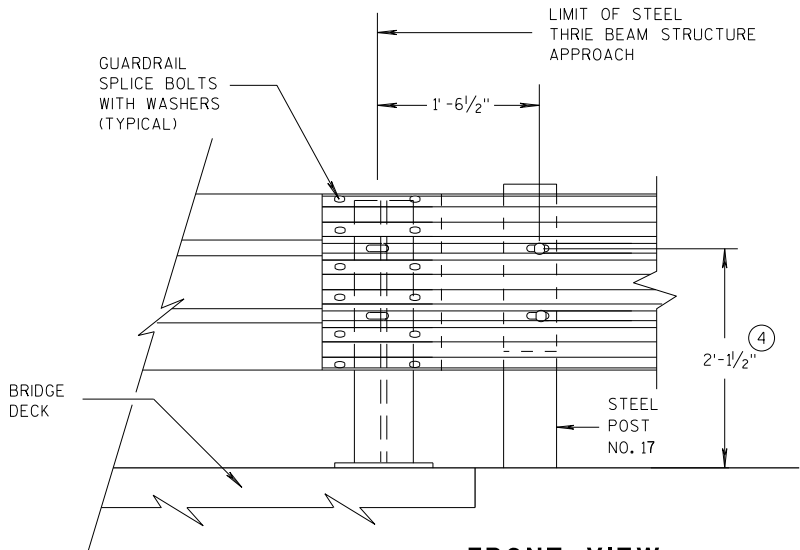
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



SECTION K-K

GENERAL NOTES

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



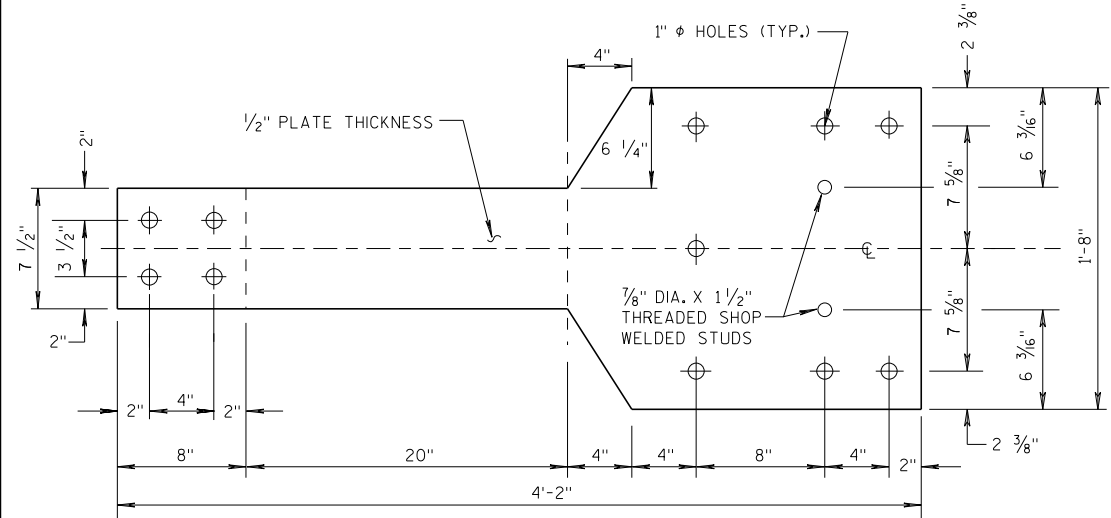
FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

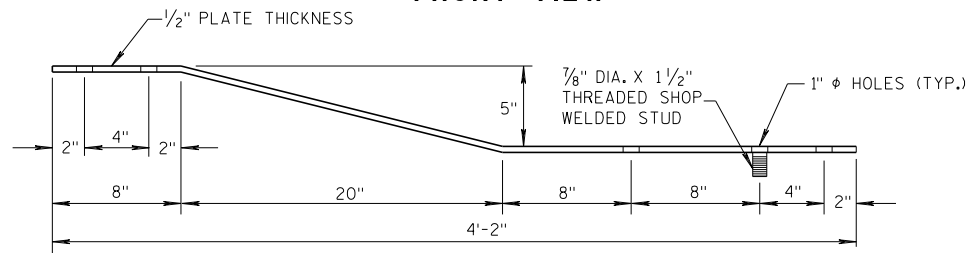
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 07/2018	/S/ Rodney Taylor	149
DATE	ROADWAY STANDARDS DEVELOPMENT	UNIT SUPERVISOR
FHWA		

GENERAL NOTES

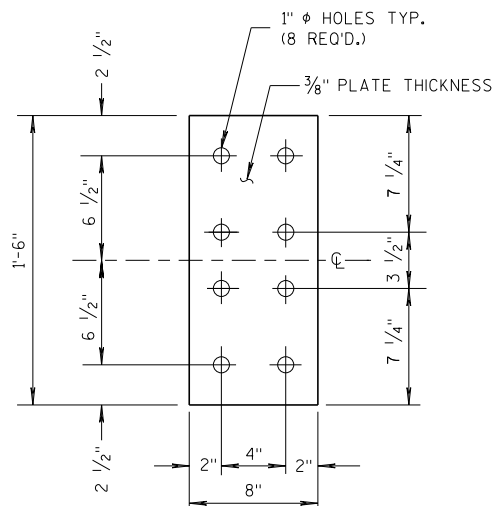
④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



FRONT VIEW

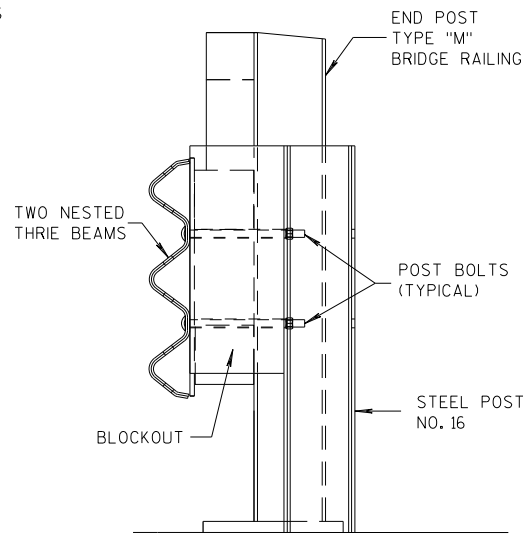


**PLAN VIEW
BACK-UP PLATE DETAIL, TYPE "M"**

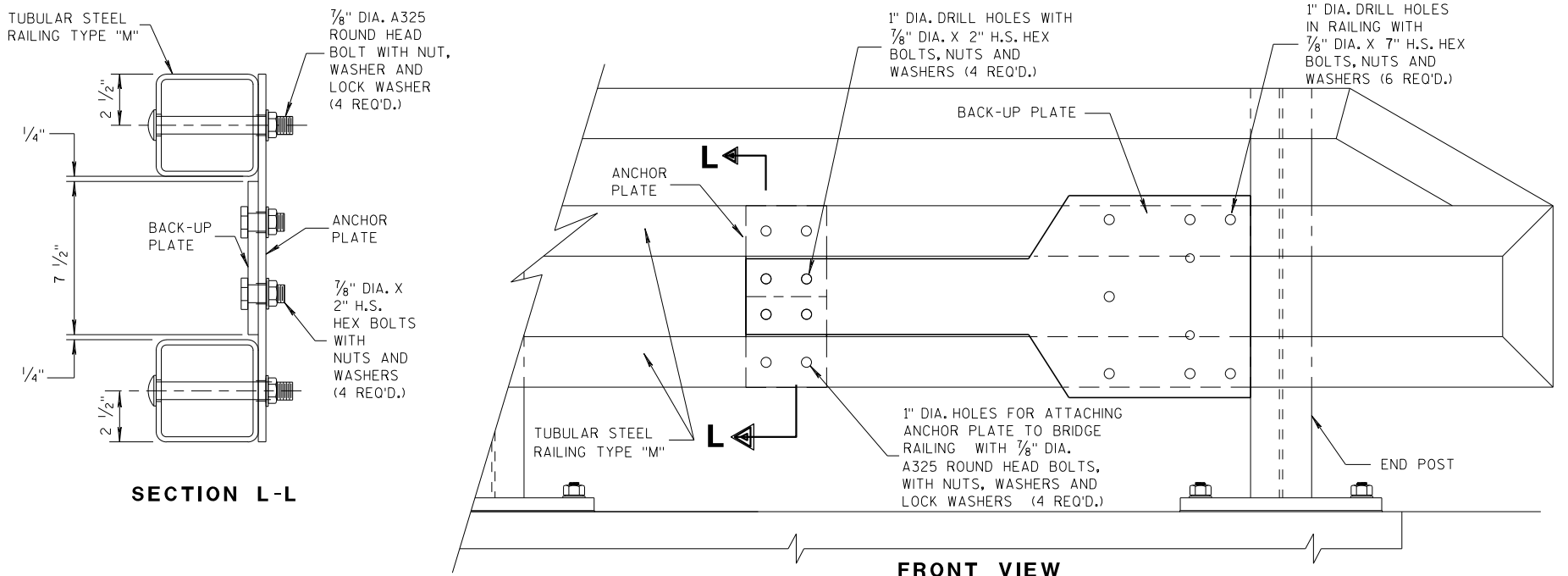


FRONT VIEW

**ANCHOR
PLATE DETAIL,
TYPE "M"**



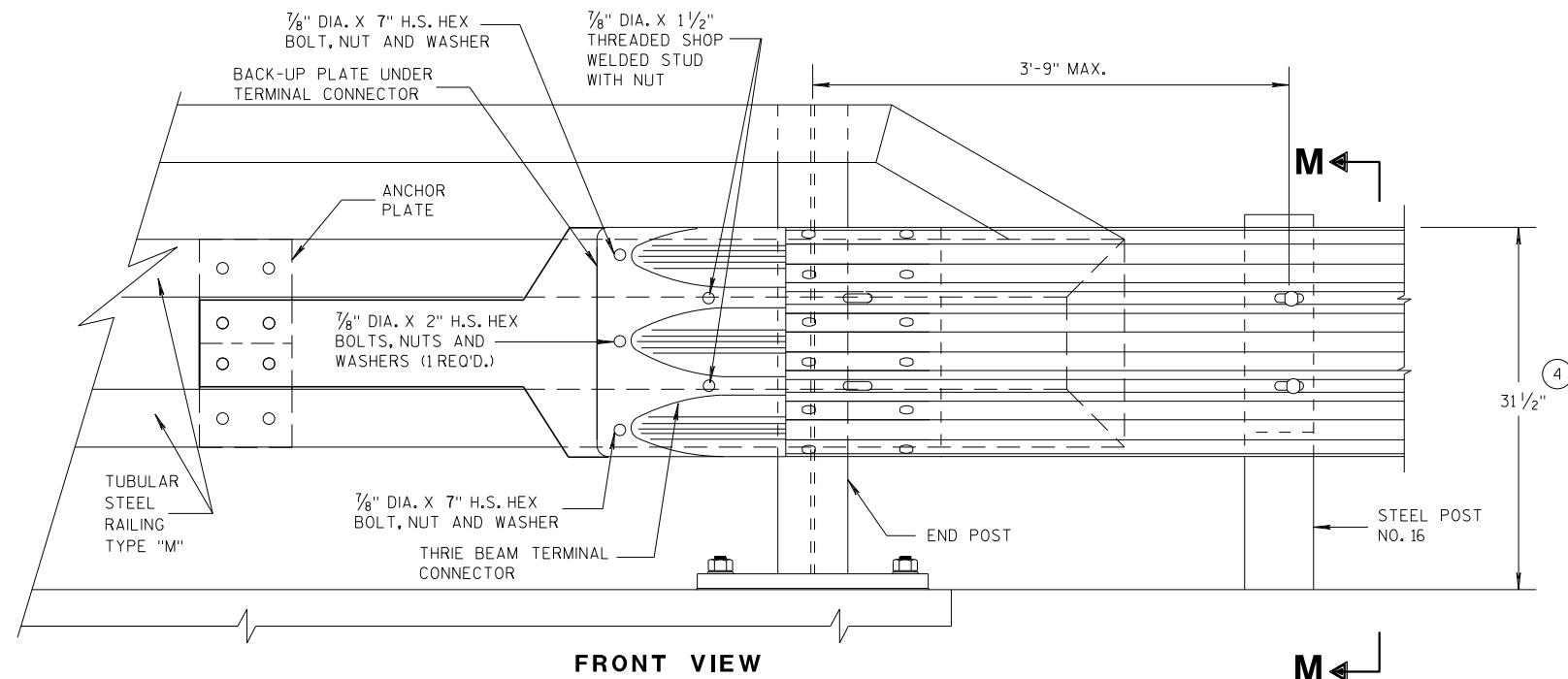
SECTION M-M



SECTION L-L

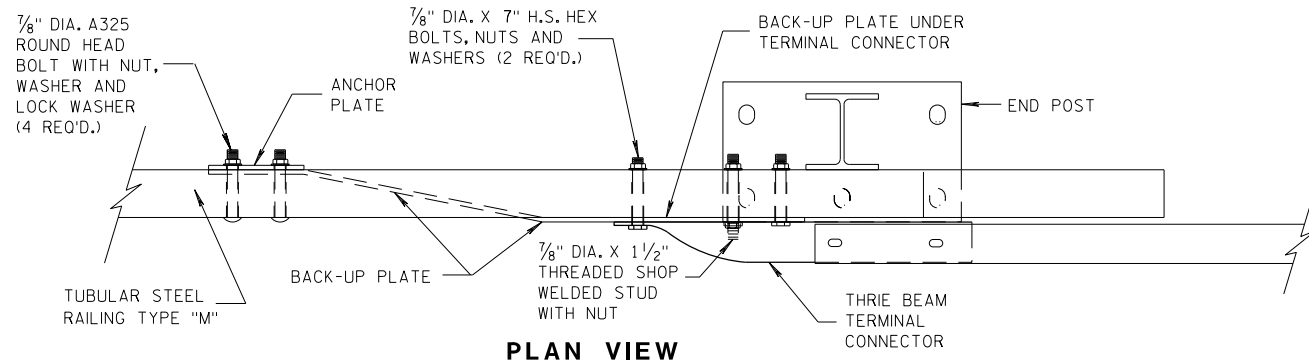
FRONT VIEW

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



FRONT VIEW

M



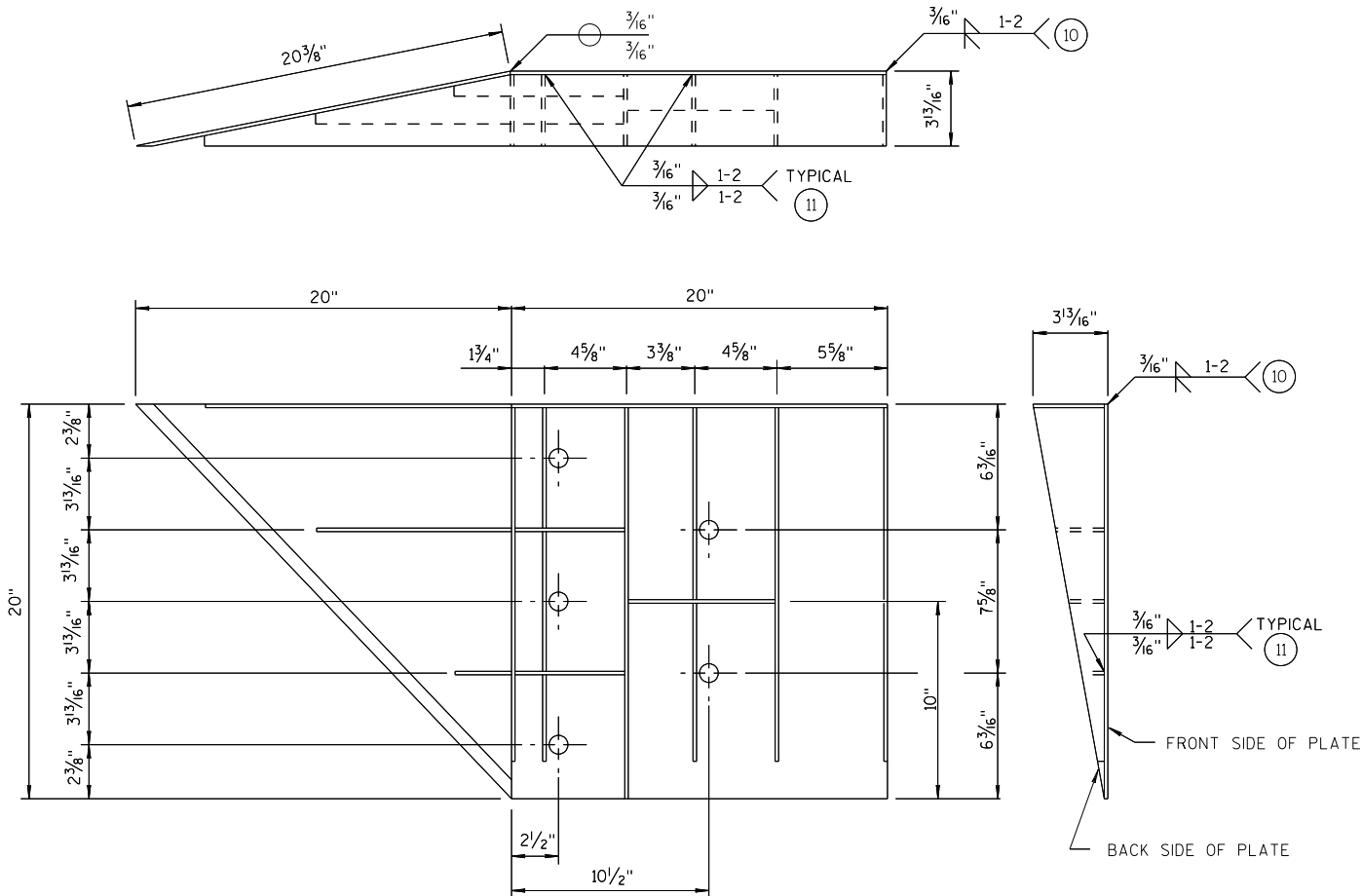
PLAN VIEW

THRIE BEAM CONNECTION TO TUBULAR RAILING, TYPE "M"

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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FHWA 150 ENT

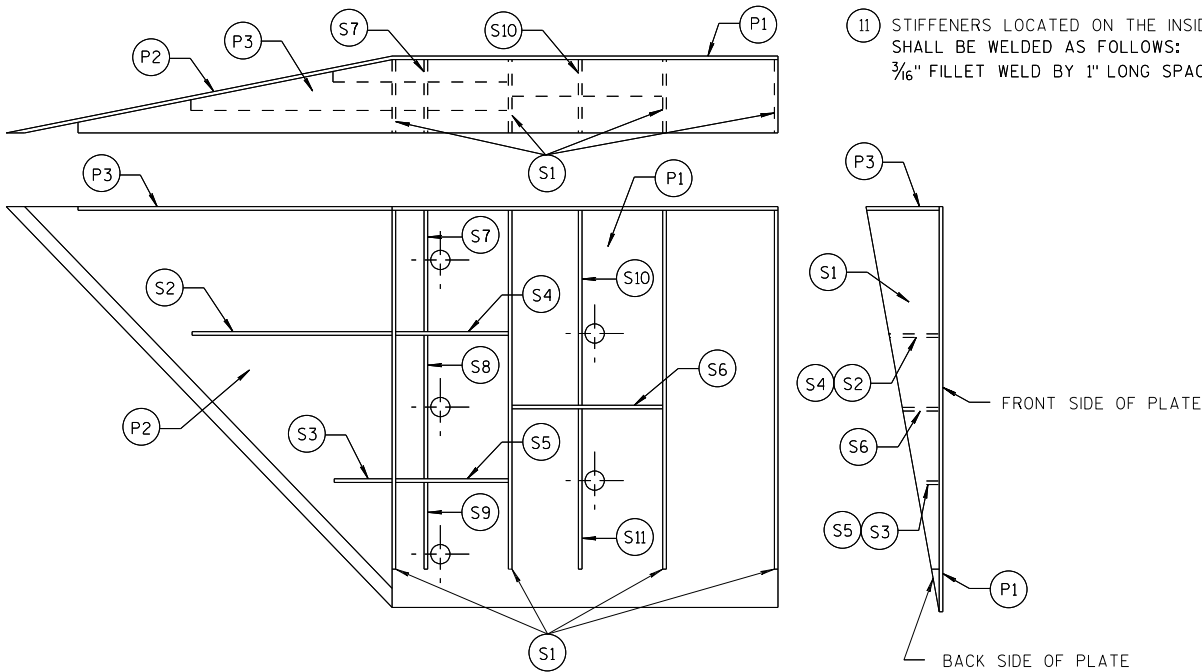


WELDING INSTRUCTION
(VIEWED FROM BACK SIDE OF PLATE)

SINGLE SLOPE CONNECTION PLATE

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

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



GENERAL NOTES

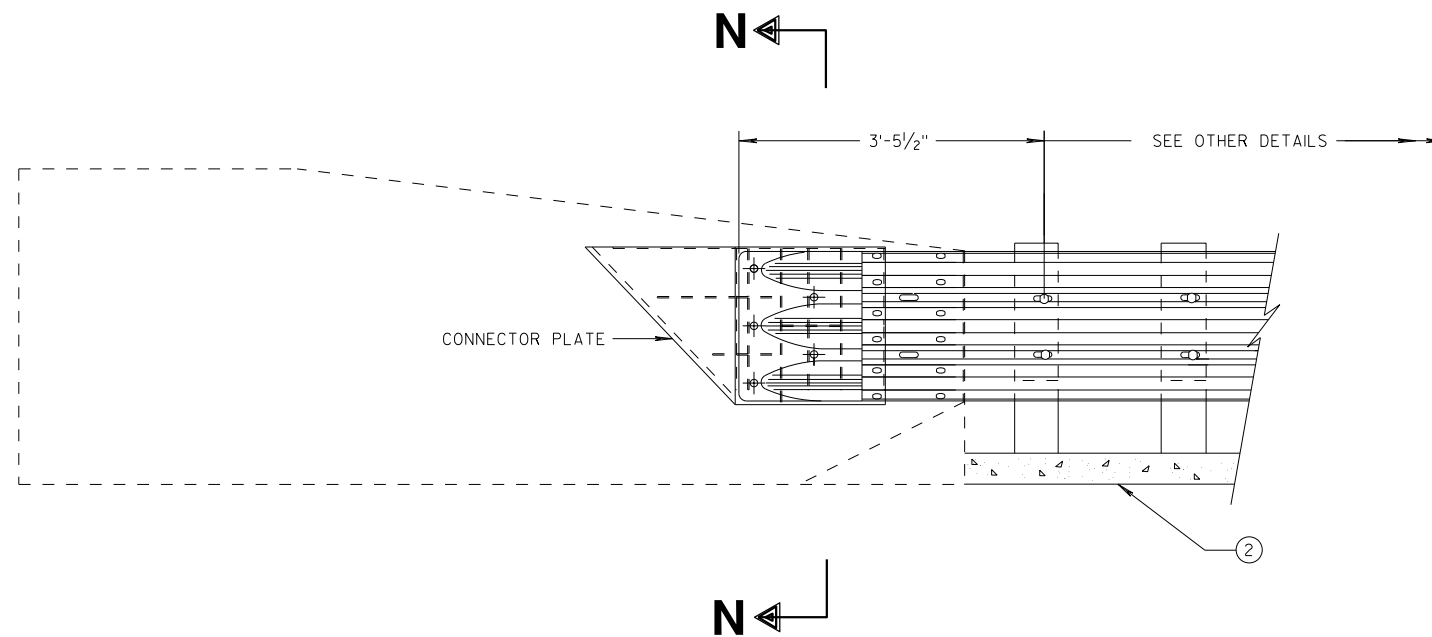
- COVER PLATE PANELS ARE 3/16" THICK.
- ALL STIFFENERS ARE 1/4" THICK.
- CONNECTOR PLATE SHALL BE FABRICATED FROM ASTM GRADE A36 STEEL AND GALVANIZED.
- FOR GALVANIZED REQUIREMENTS, SEE SECTION 614 OF THE STANDARD SPECIFICATIONS.
- ALL HOLE DIAMETERS SHALL BE 1".
- FOR OPPOSITE SIDE INSTALLATION MIRROR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

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

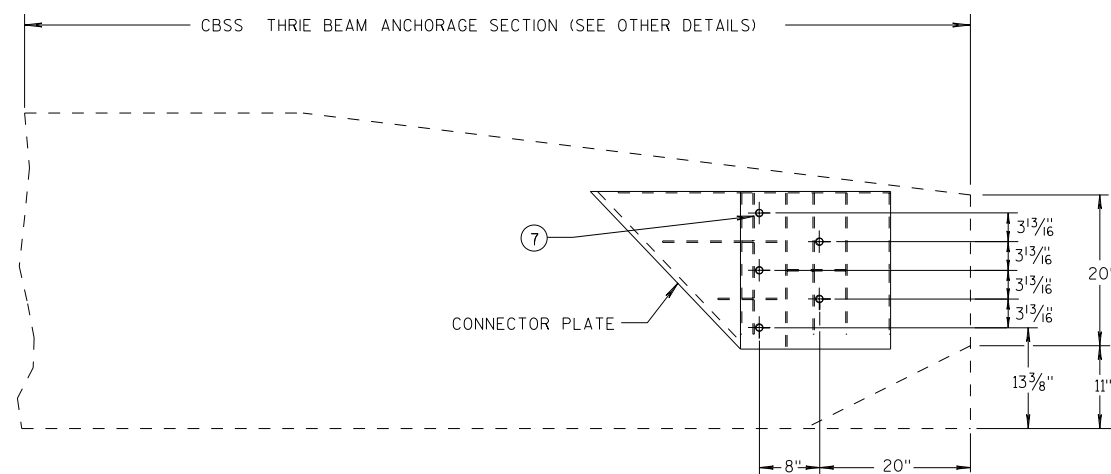
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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FHWA 151 ENT



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



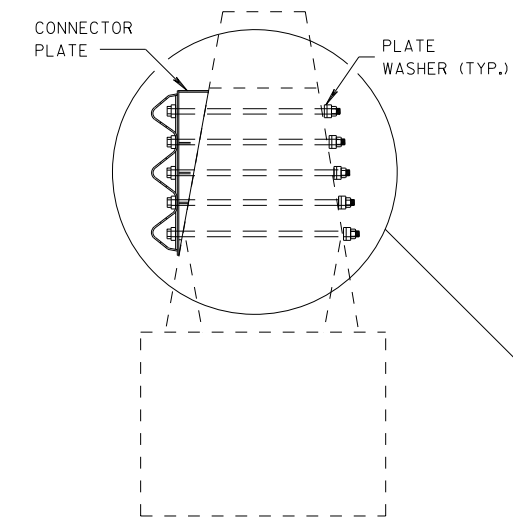
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

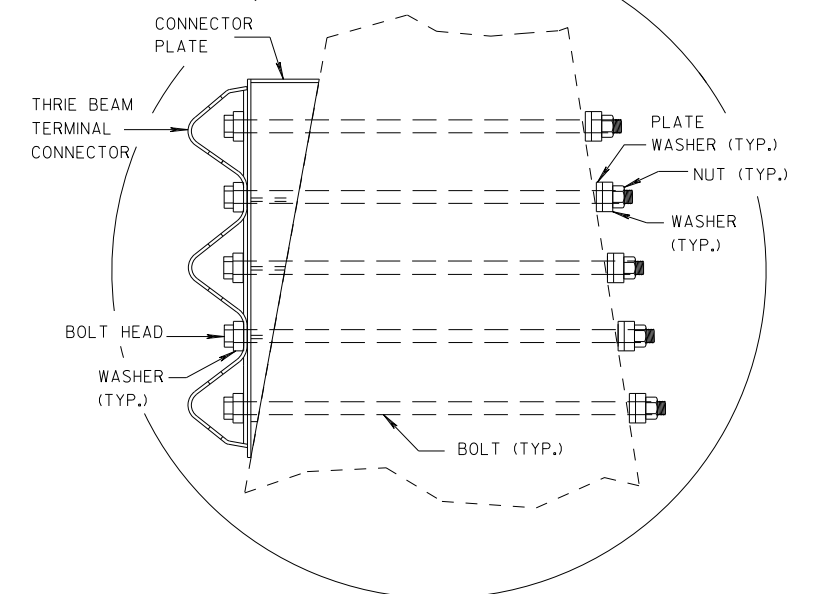
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

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

(7) BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. BOLTS THAT EXTEND THROUGH THE PARAPET AND OUT THE BACK FACE REQUIRE A HARDENED ROUND STEEL WASHER THAT IS 2" O.D. X 5/32" THICK AND ONE PLATE WASHER. REPAIR ANY DAMAGED CONCRETE FROM BOLT INSTALLATION.



SECTION N-N



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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

7/2018

DATE

FHWA

/S/ Rodney Taylor

ROADWAY STANDARDS DISTRICT

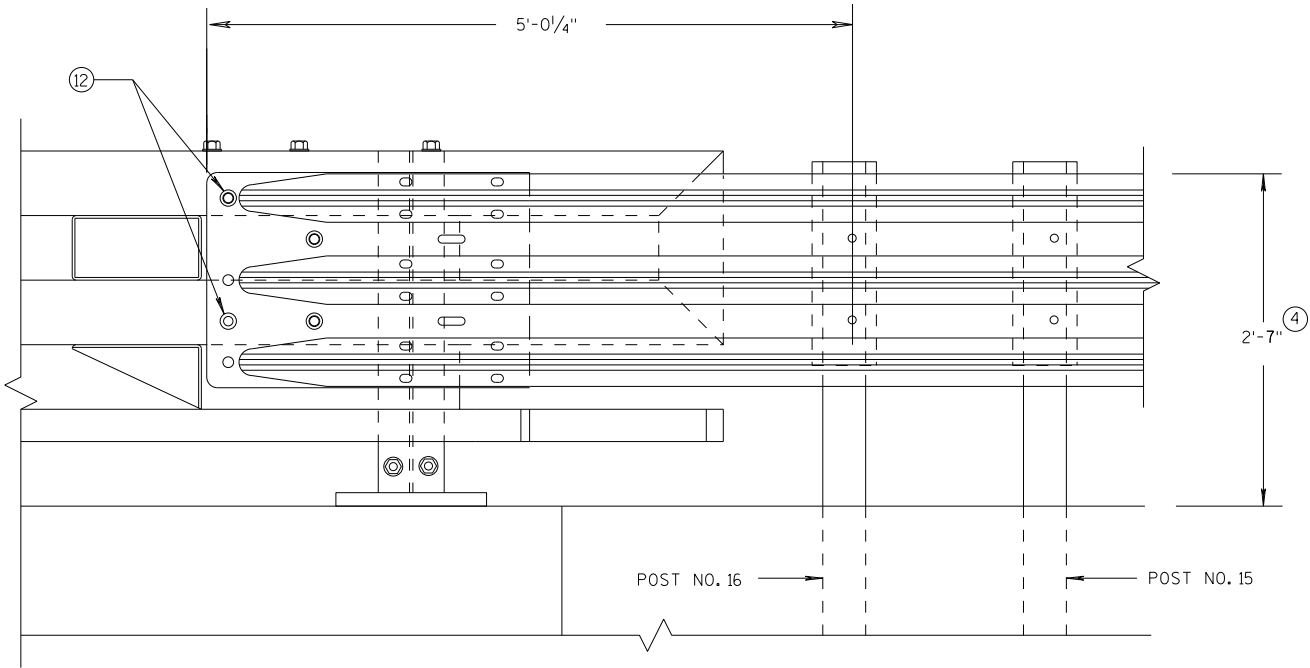
UNIT SUPERVISOR

152

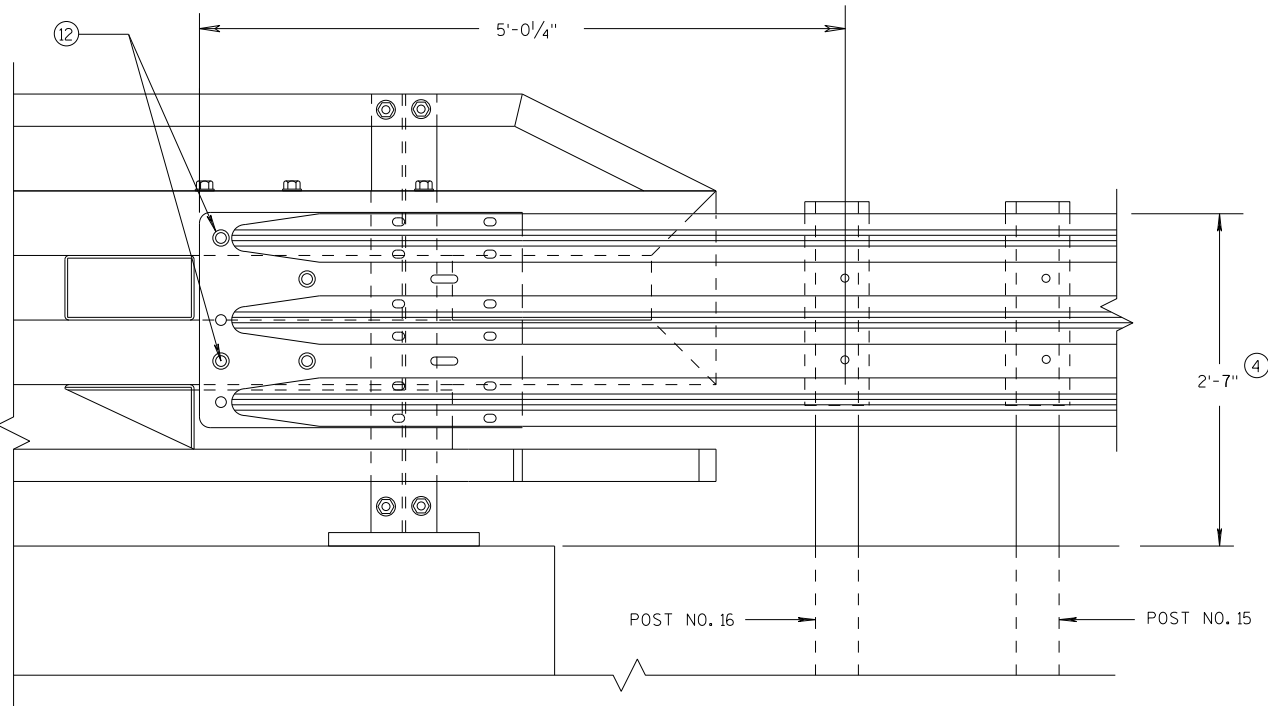
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GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



ELEVATION OF DETAIL AT NY3 END POST
THRIE BEAM RAIL ATTACHMENT

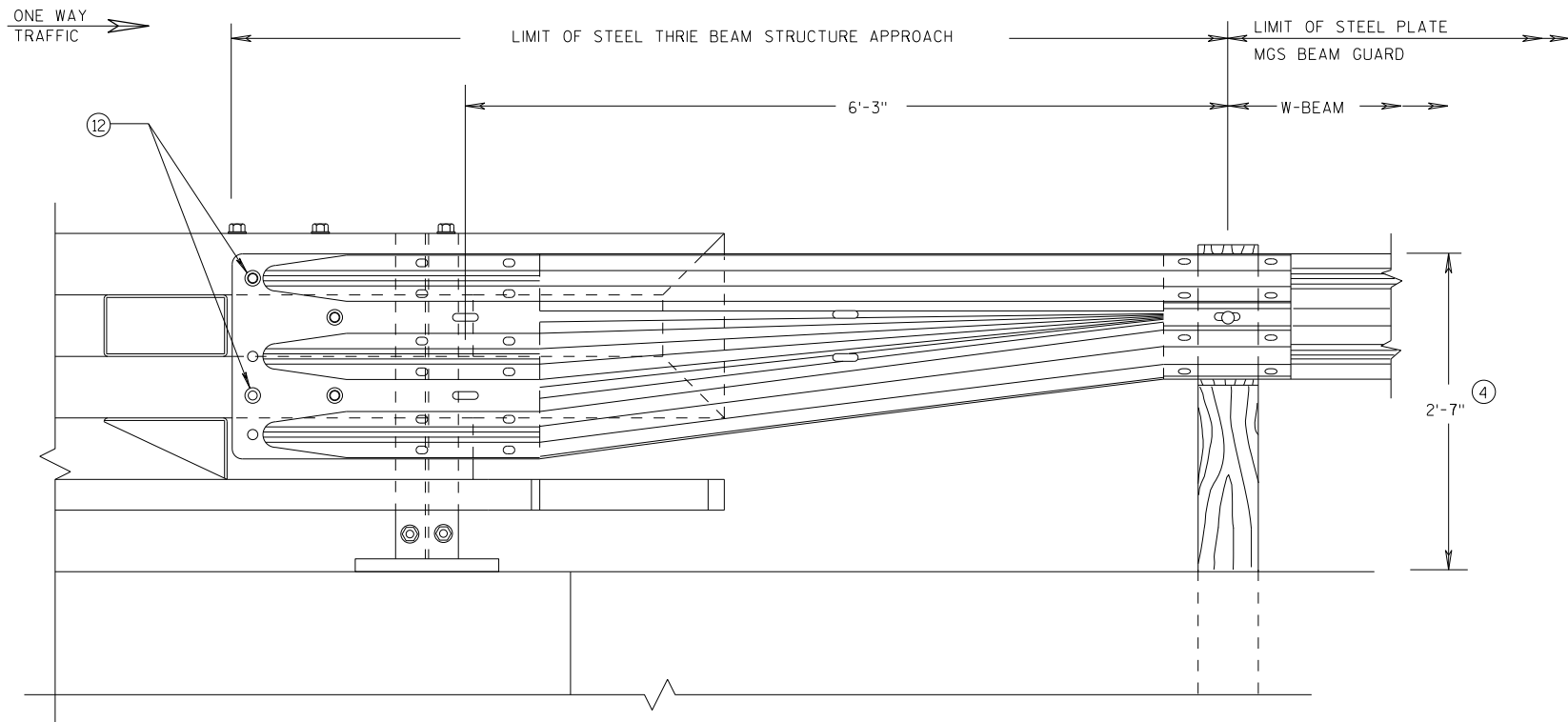


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED	/S/ Rodney Taylor
DATE	7/2018
FHWA	ROADWAY STANDARDS UNIT SUPERVISOR 153 NT

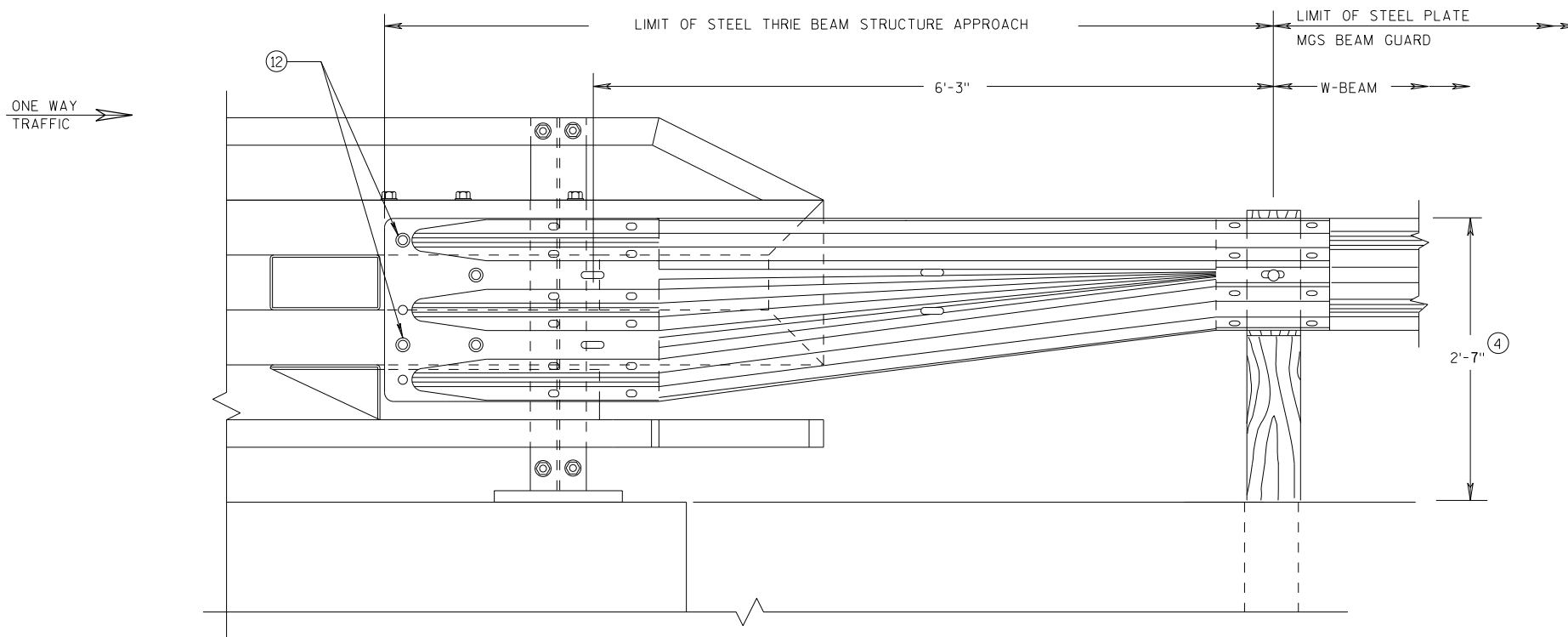


FRONT VIEW

**W BEAM TRANSITION AND
CONNECTION TO BRIDGE RAILING TYPE "NY3"**
(USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)

GENERAL NOTES

- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑫ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH AND THREADING LENGTH ARE TO ALLOW FOR A TIGHT CONNECTION BETWEEN RIGID BARRIER AND THRIE BEAM CONNECTION PLATE. CONTRACTOR IS TO FIELD VERIFY BOLT LENGTH AND THREAD LENGTH. ONE ROUND WASHER REQUIRED BETWEEN BOLT HEAD AND THRIE BEAM CONNECTOR PLATE. ON BACKSIDE OF PARAPET ONE ROUND WASHER, AND NUT REQUIRED. BOLT THREAD IS TO EXTEND $\frac{1}{2}$ -INCH BEYOND NUT.



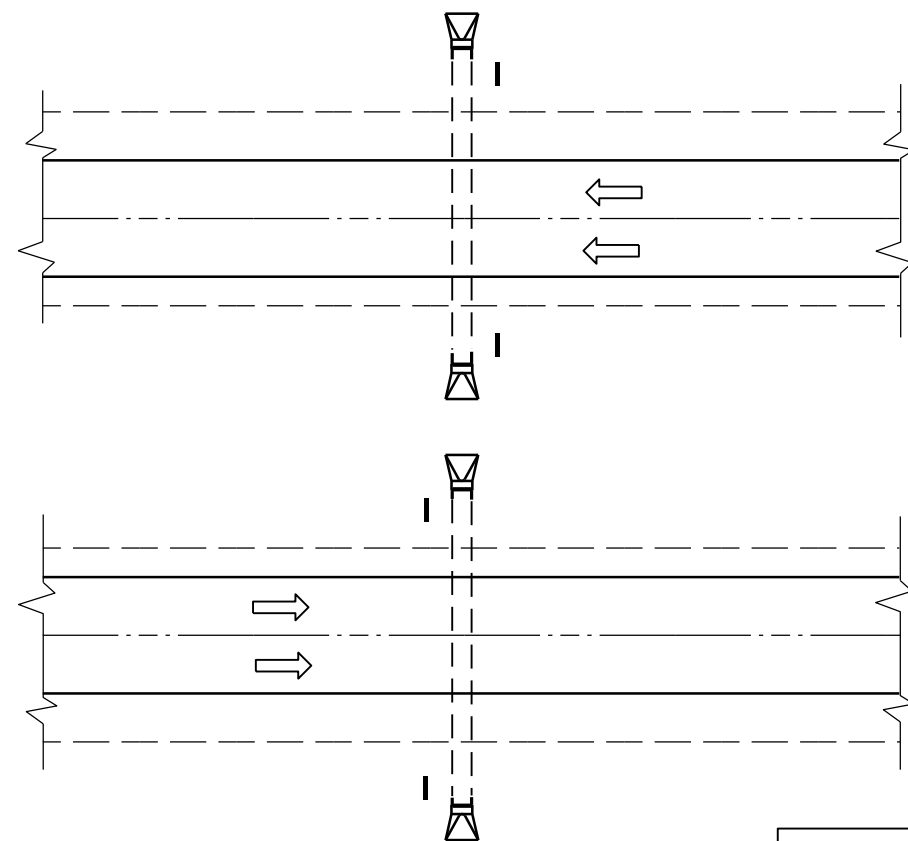
FRONT VIEW

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

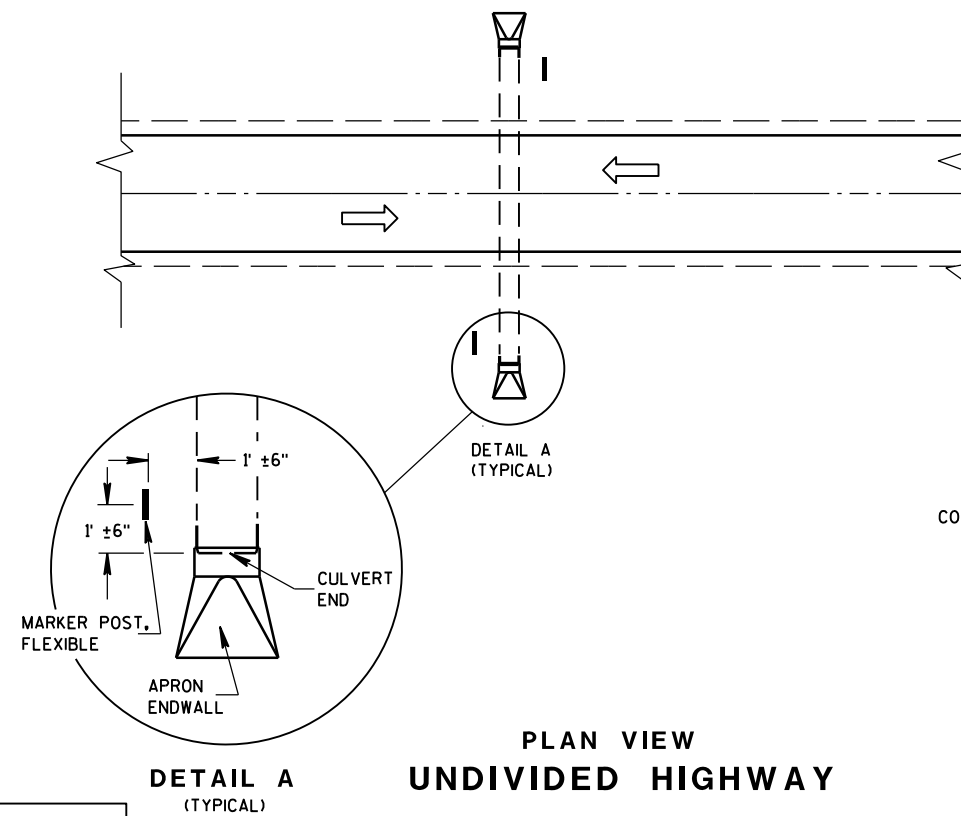
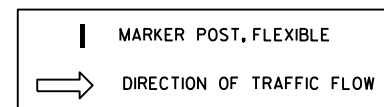
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS C 154 UNIT SUPERVISOR	NT
FHWA		



PLAN VIEW
DIVIDED HIGHWAY

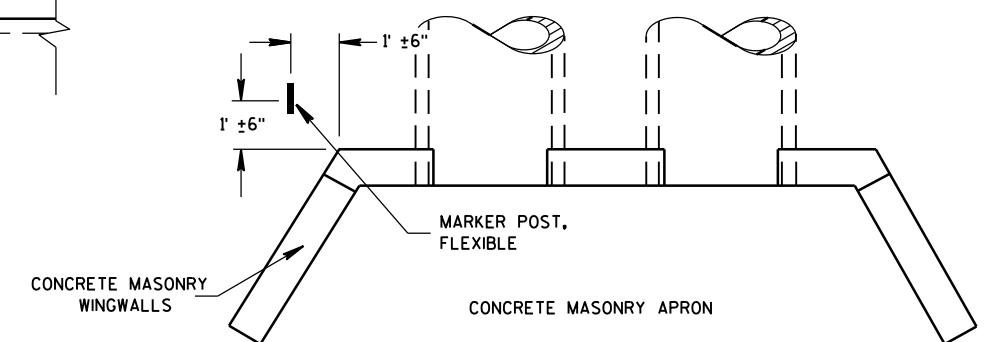


PLAN VIEW
UNDIVIDED HIGHWAY

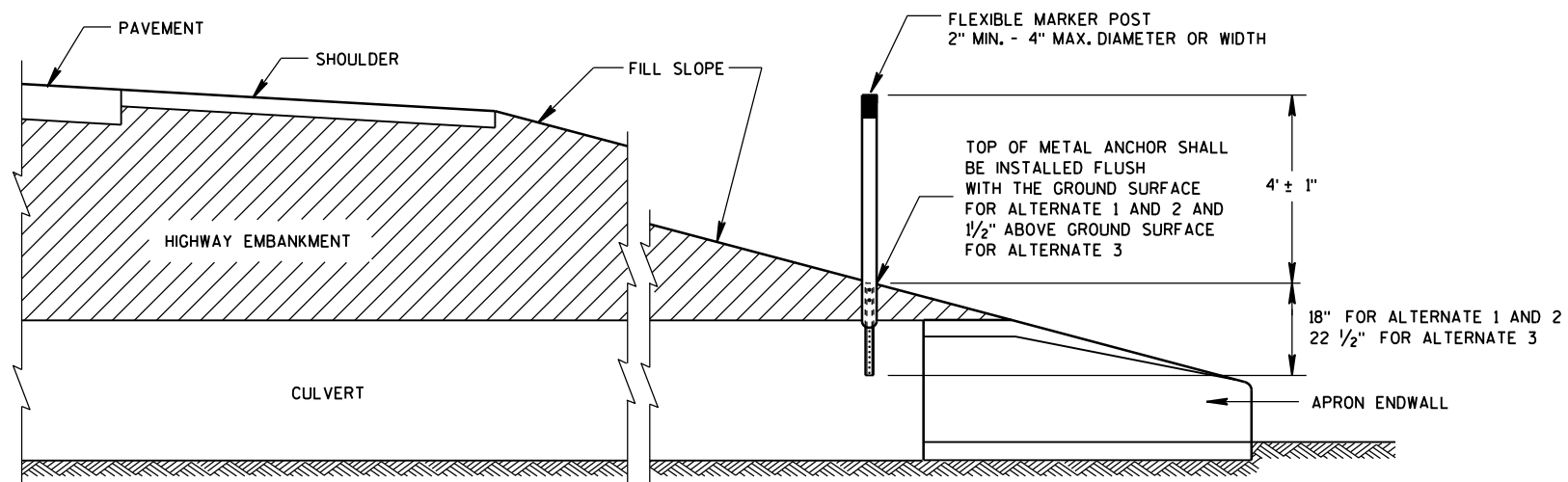
FLEXIBLE MARKER POST LOCATION

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.



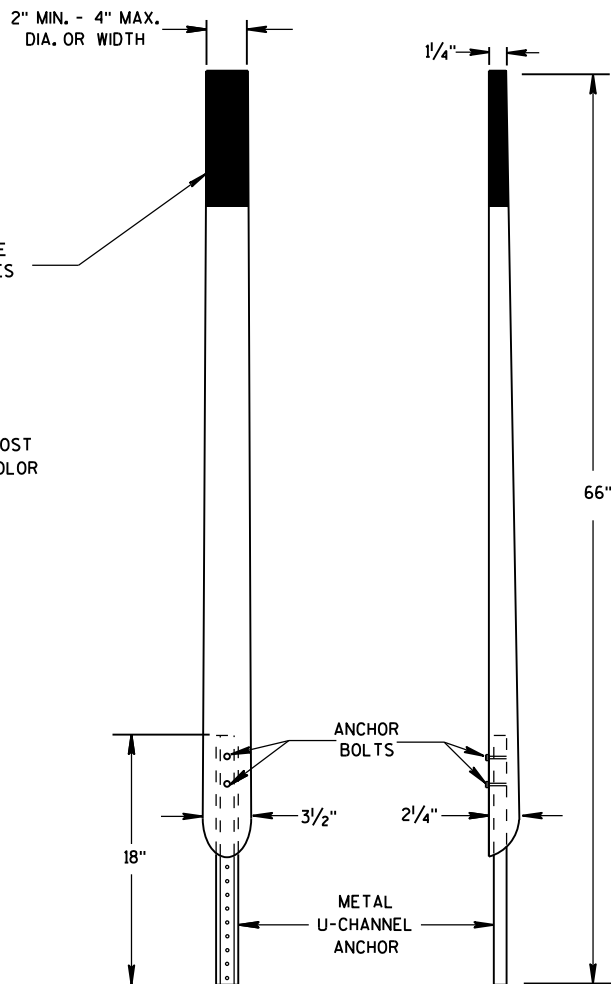
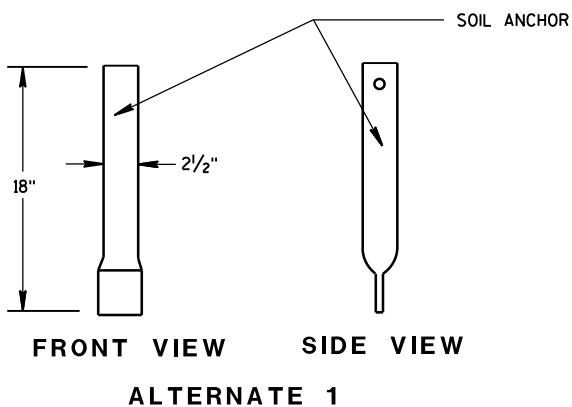
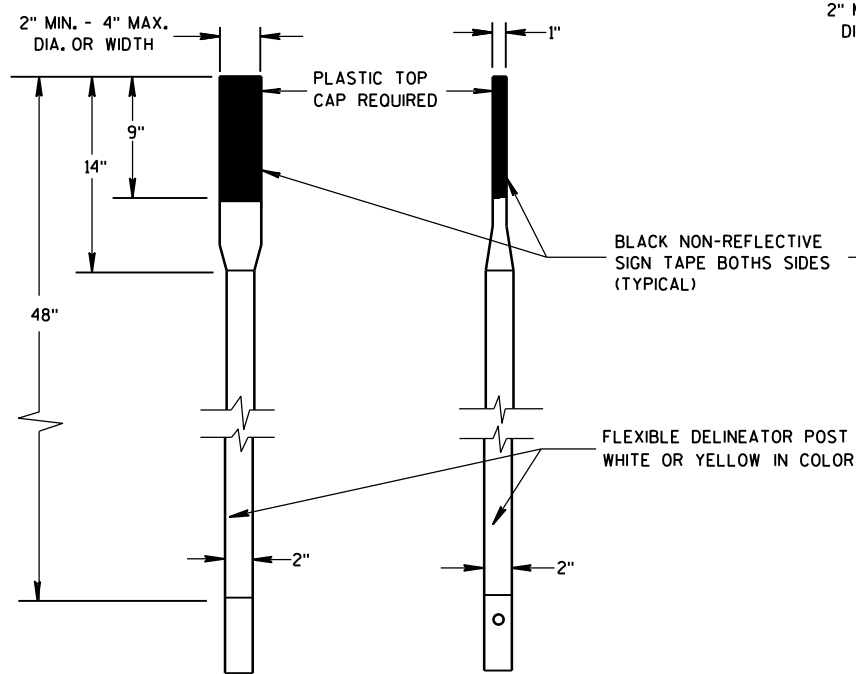
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

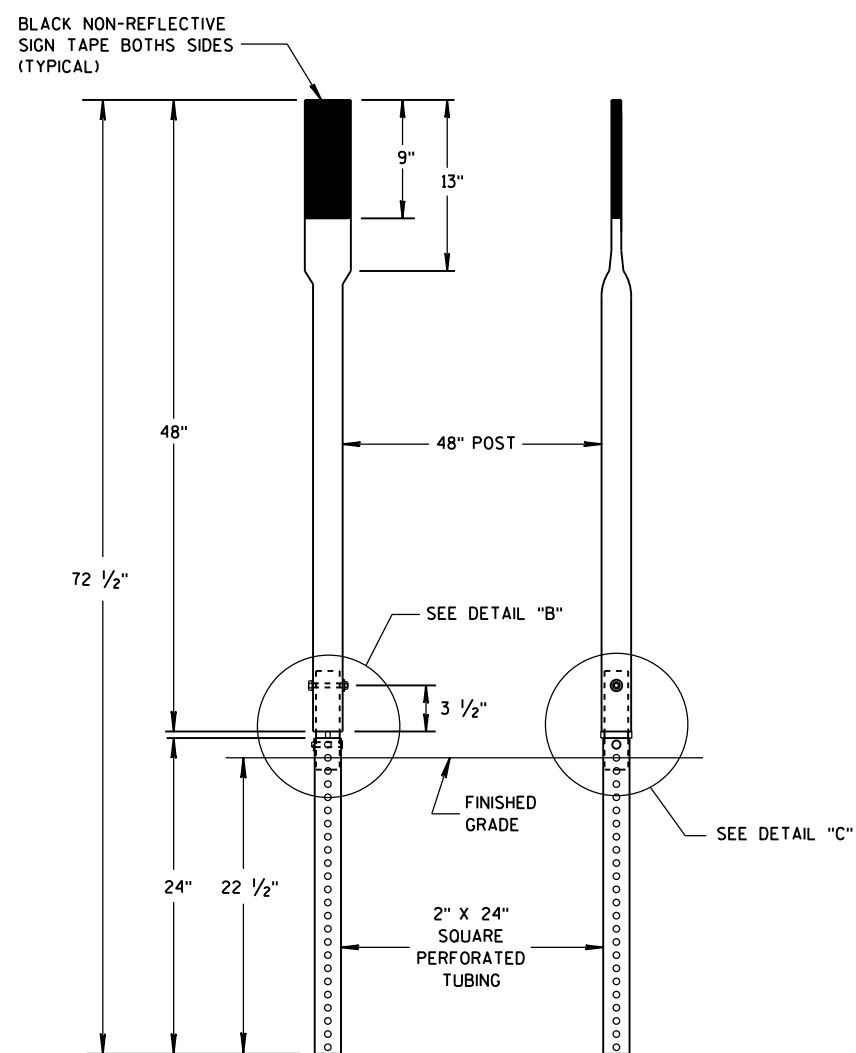
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 155

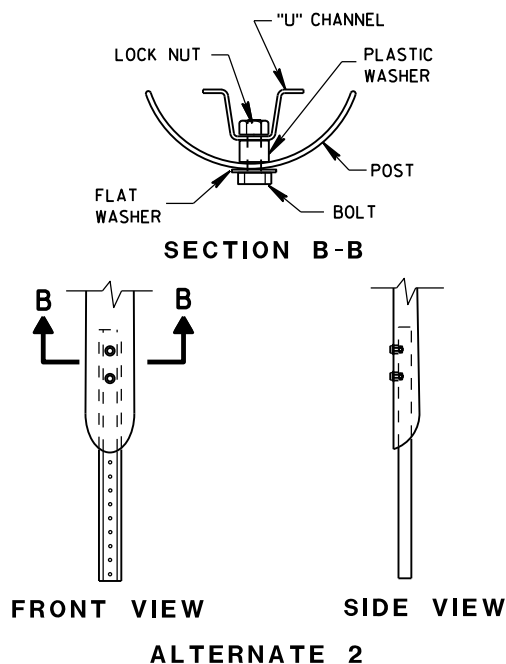
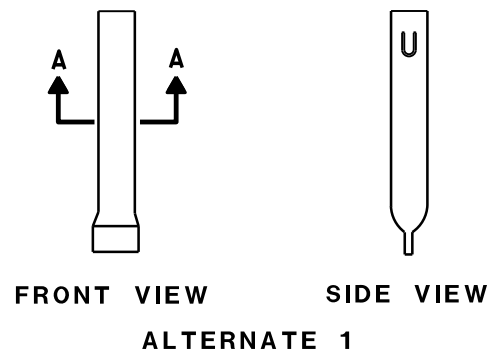
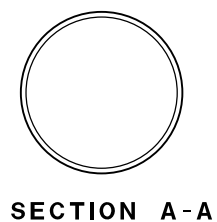
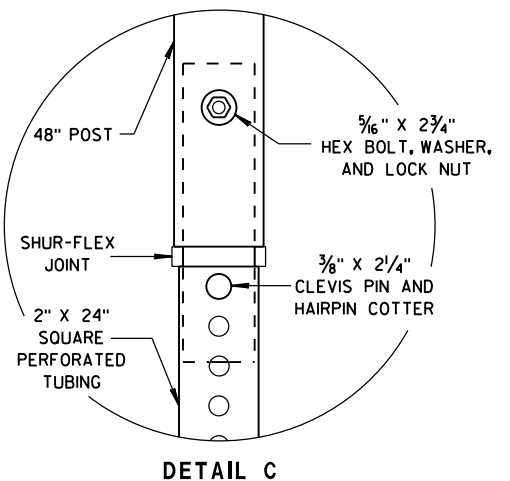
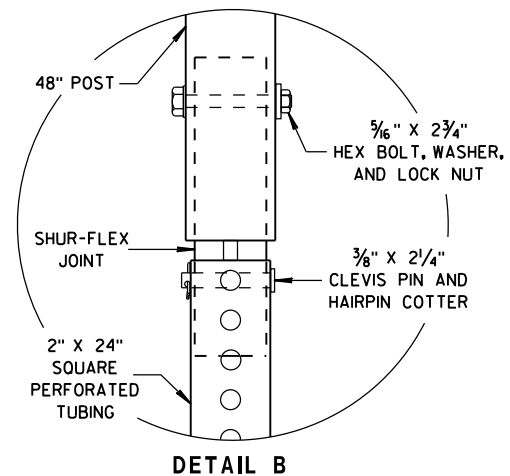
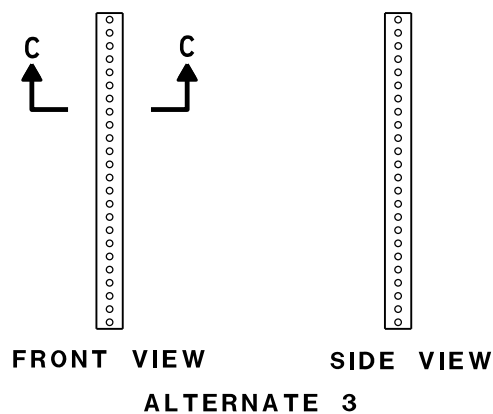
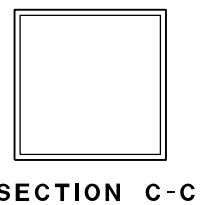


FRONT VIEW SIDE VIEW
ALTERNATE 2

FLEXIBLE MARKER POSTS

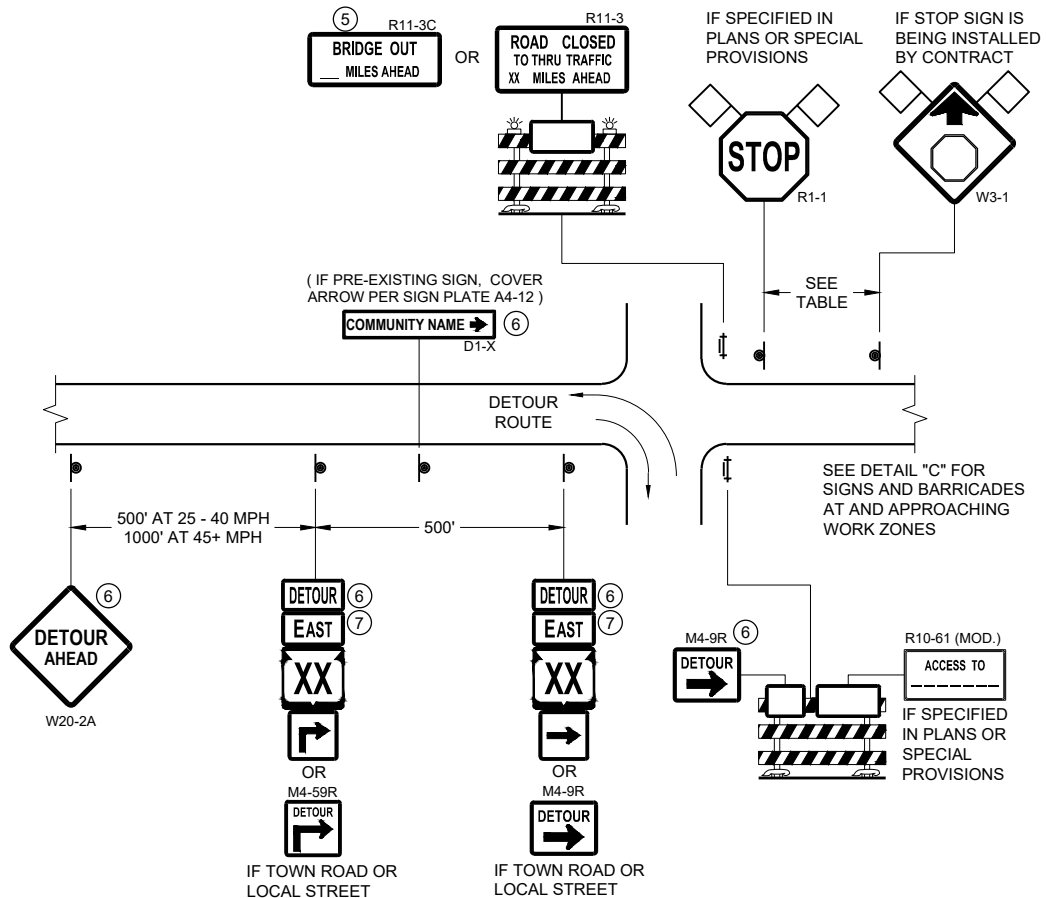


FRONT VIEW SIDE VIEW
ALTERNATE 3

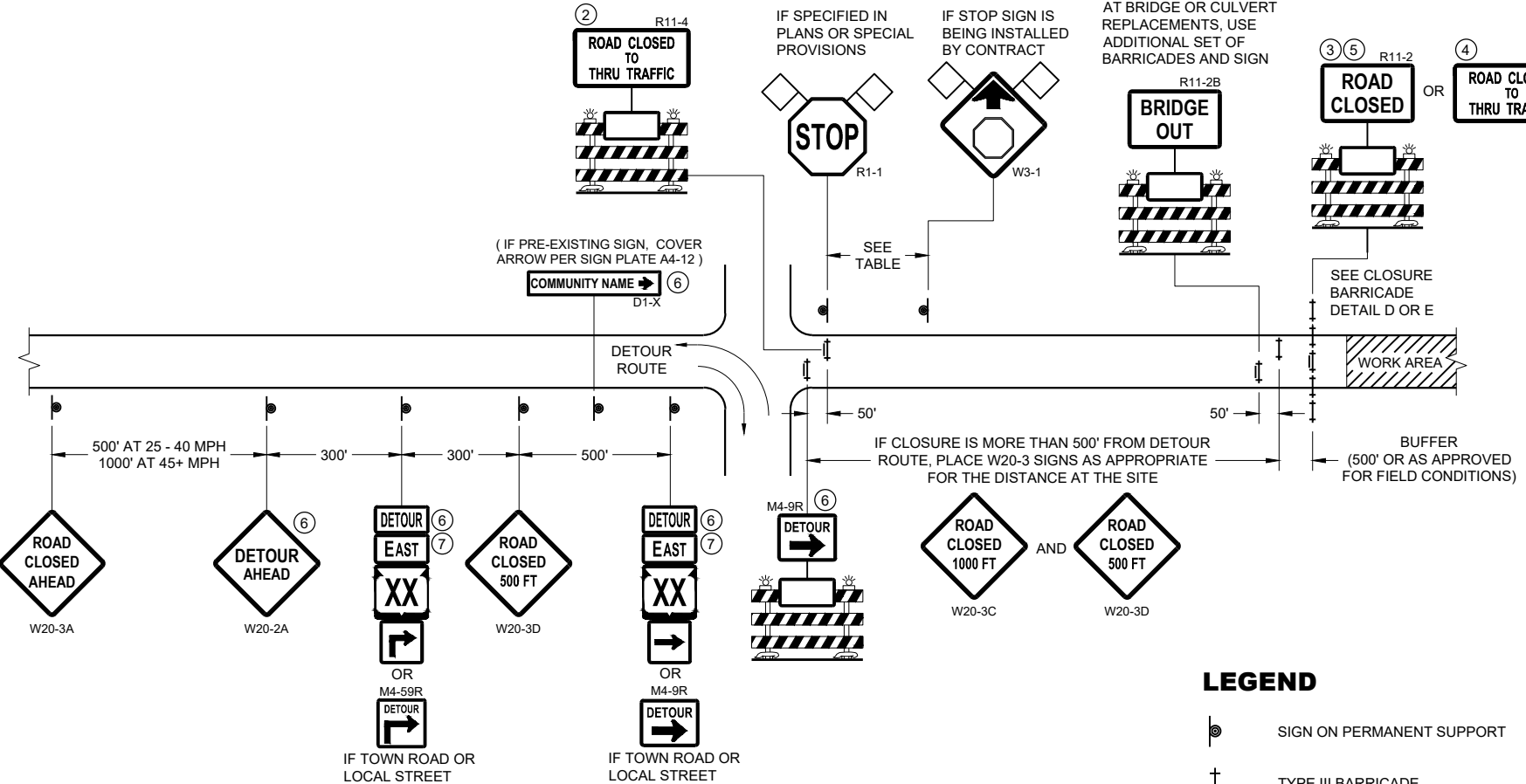


FLEXIBLE MARKER POST ANCHORS

FLEXIBLE MARKER POST FOR CULVERT END	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 10/1/2012 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER 156 IGN
FHWA	



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



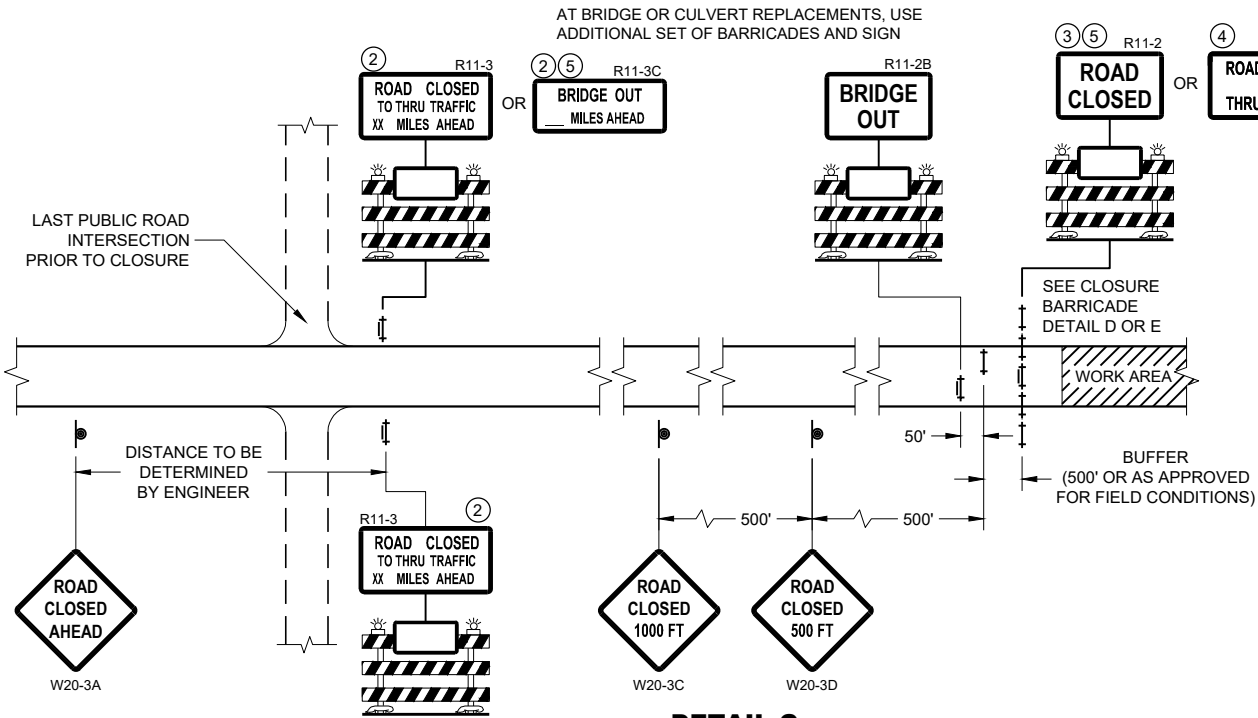
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

- 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
- OR M05 - 1 OR M06 - 1

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



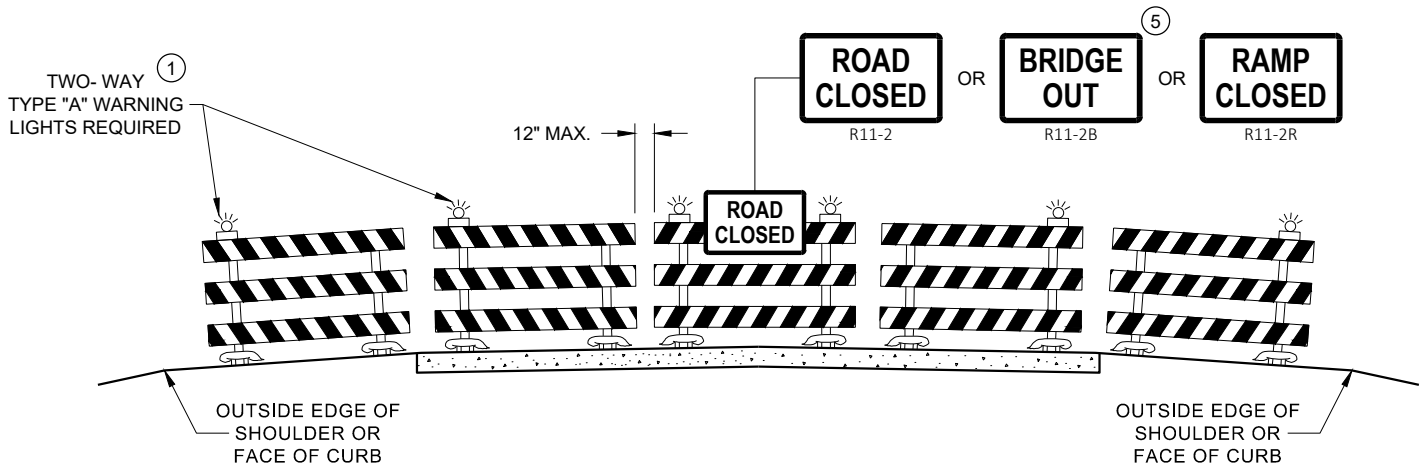
DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

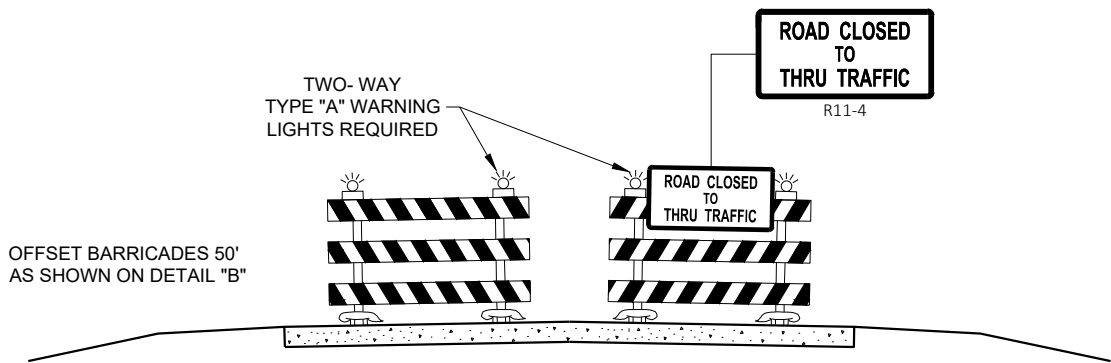
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 157

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.

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

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

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

- R11 - 2 SHALL BE 48" X 30"
- R11 - 3 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"

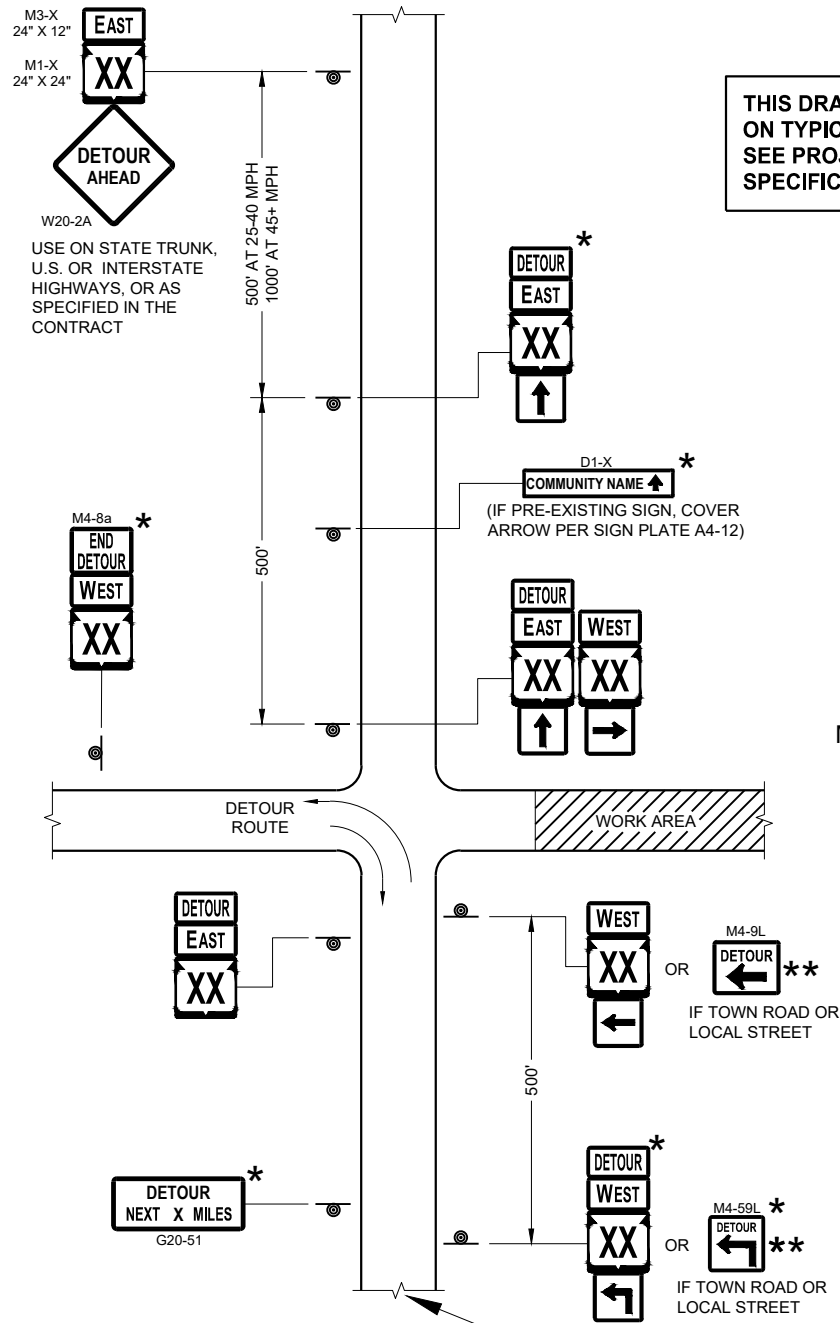
- 1 TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- 2 THESE SIGNS 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
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 158

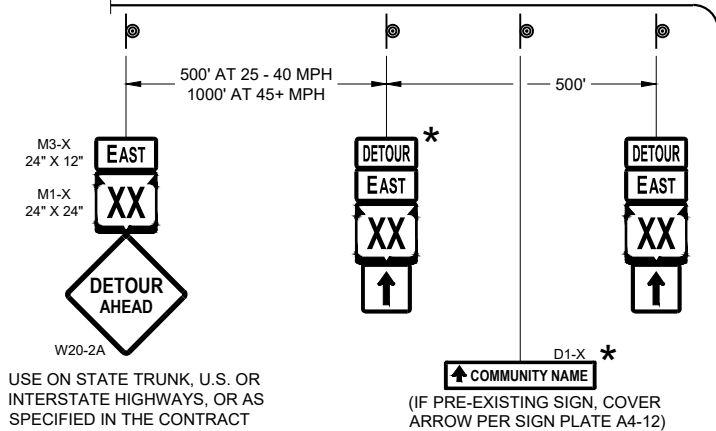
FHWA



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

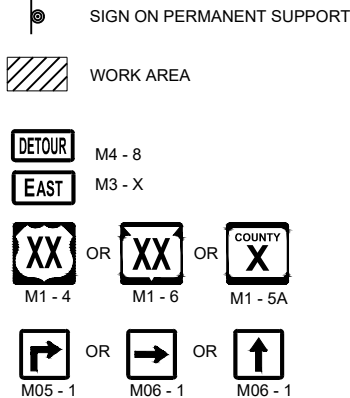
THIS DRAWING PROVIDES GENERAL GUIDANCE
ON TYPICAL DETOUR SIGN LAYOUT AND SPACING.
SEE PROJECT DETOUR SIGNING SHEETS FOR
SPECIFIC DETAILS FOR EACH PROJECT.

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.

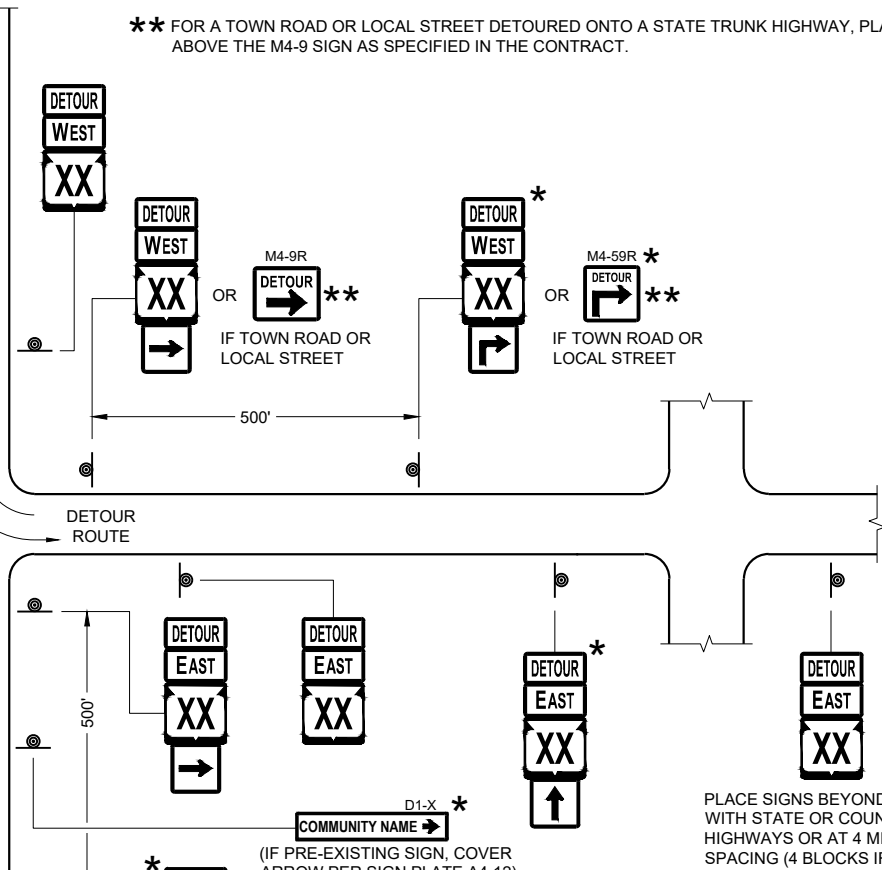
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

"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.



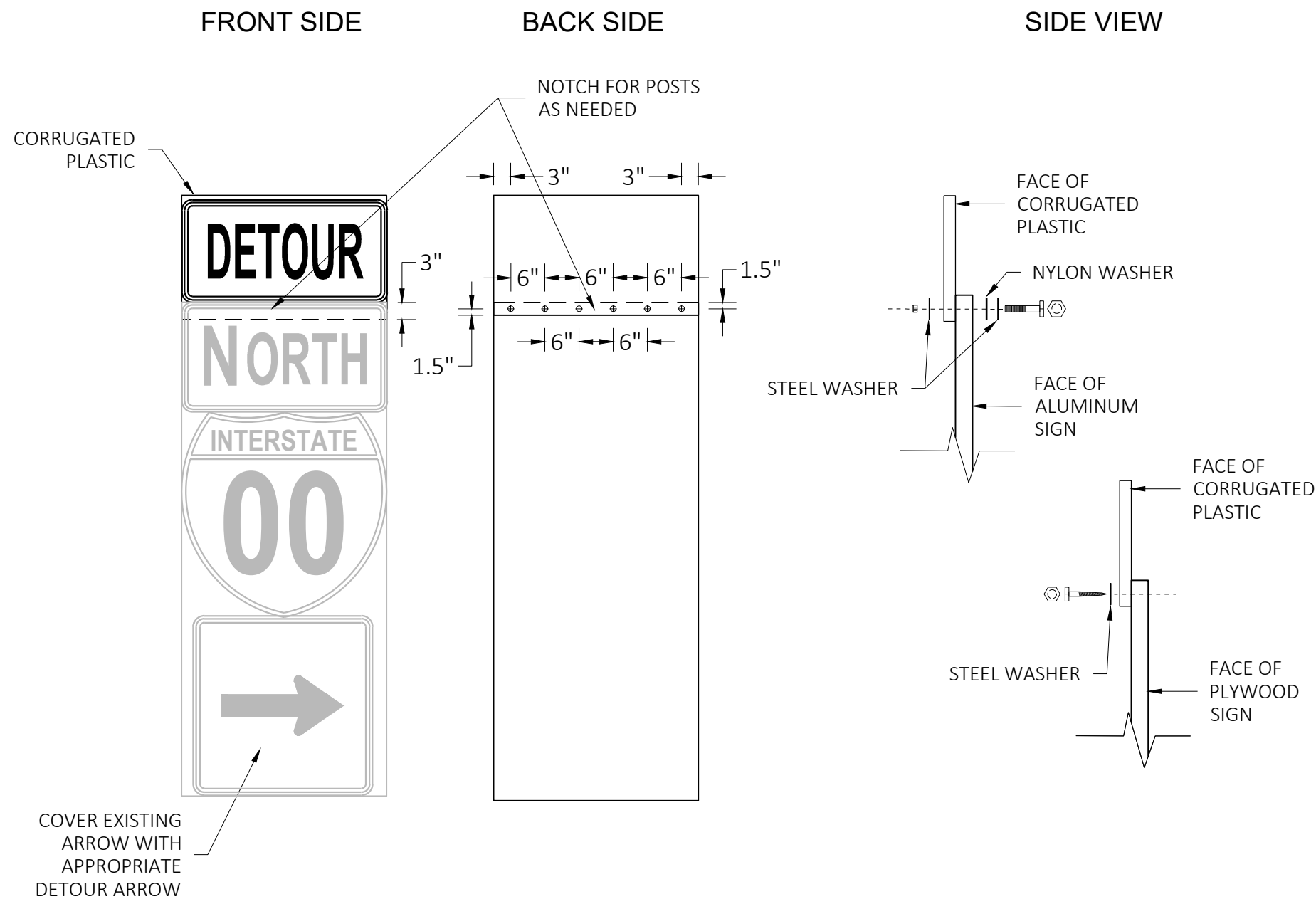
PLACE SIGNS BEYOND INTERSECTIONS
WITH STATE OR COUNTY TRUNK
HIGHWAYS OR AT 4 MILE MAXIMUM
SPACING (4 BLOCKS IF URBAN AREA)

DETOUR SIGNING
FOR MAINLINE CLOSURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 159

FHWA



GENERAL NOTES

CELLS OF CORRUGATED PLASTIC SHALL BE VERTICALLY ORIENTED.

PROVIDE A 0.4-INCH THICK BASE CORRUGATED PLASTIC WITH A 0.035-INCH WALL THICKNESS AND 0.4-INCH CELL SIZE.

FOR 36" WIDE SIGNS: USE 6 FASTENERS AS SHOWN.

FOR 24" WIDE SIGNS: USE 4 FASTENERS WITH EDGE SPACING AS SHOWN AND 6" SPACING BETWEEN FASTENERS.

METAL WASHERS, NUTS, BOLTS AND LAGS SHALL HAVE HEXAGONAL HEADS AND SHALL BE EITHER:

- HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: A 153, CLASS D, OR SC 3.
- ELECTRO-GALVANIZED IN ACCORDANCE WITH ASTM DESIGNATION: B 633, TYPE III, SC3

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.

PLYWOOD SIGNS:

LAG SCREWS - 5/16" x 1"

ALUMINUM SIGNS:

MACHINE BOLTS - 5/16" x 1-1/4" LENGTH W/NUTS

WASHERS:

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

MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING

MODIFIED ROUTE ASSEMBLY FOR DETOUR SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

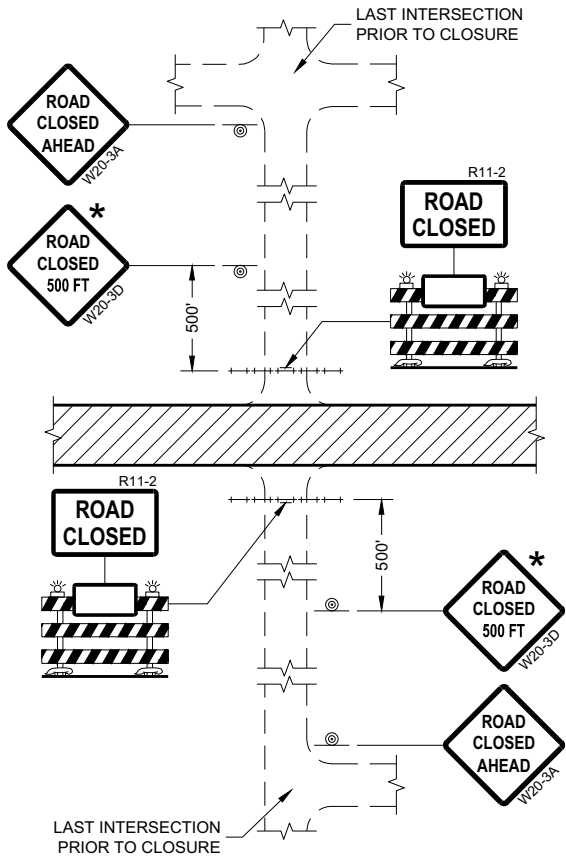
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DATE

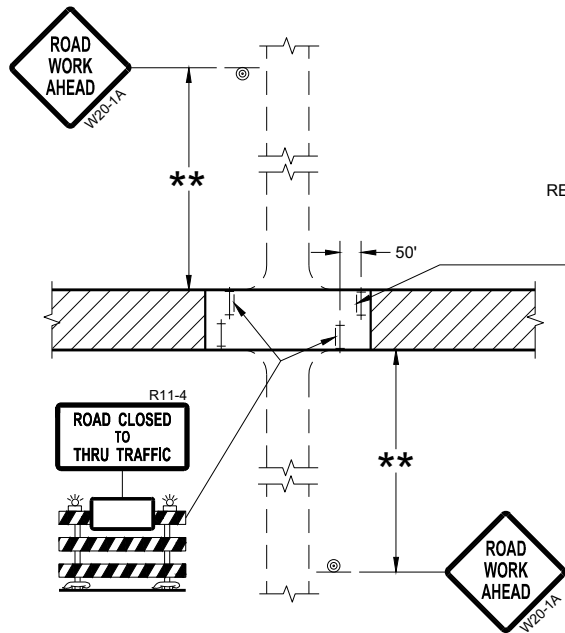
FHWA

/S/ Andrew Heidtke
ROADWAY STANDARDS DEVELOPMENT
ENGINEER

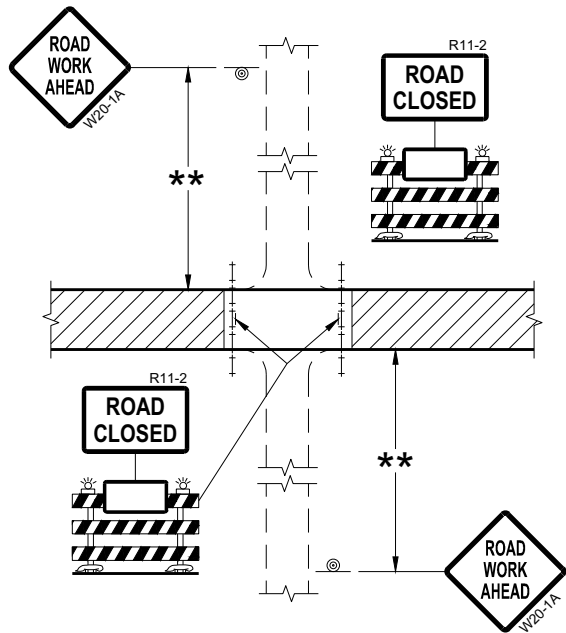
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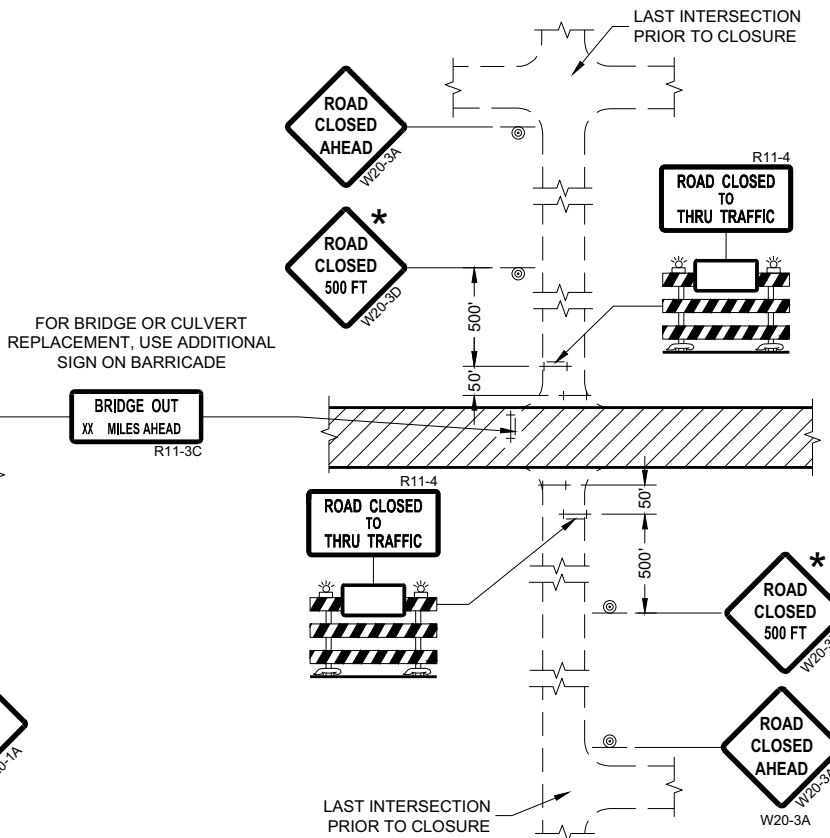
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

ALL SIGNS SHALL BE 48" X 48" UNLESS OTHERWISE NOTED BELOW:
R11-2 SHALL BE 48" X 30".
R11-4 AND R11-3 SHALL BE 60" X 30".

- * OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FEET OR LESS FROM THE WORK ZONE.
- ** 500' MAX. OR AT LAST INTERSECTION, WHICHEVER IS CLOSEST.

LEGEND

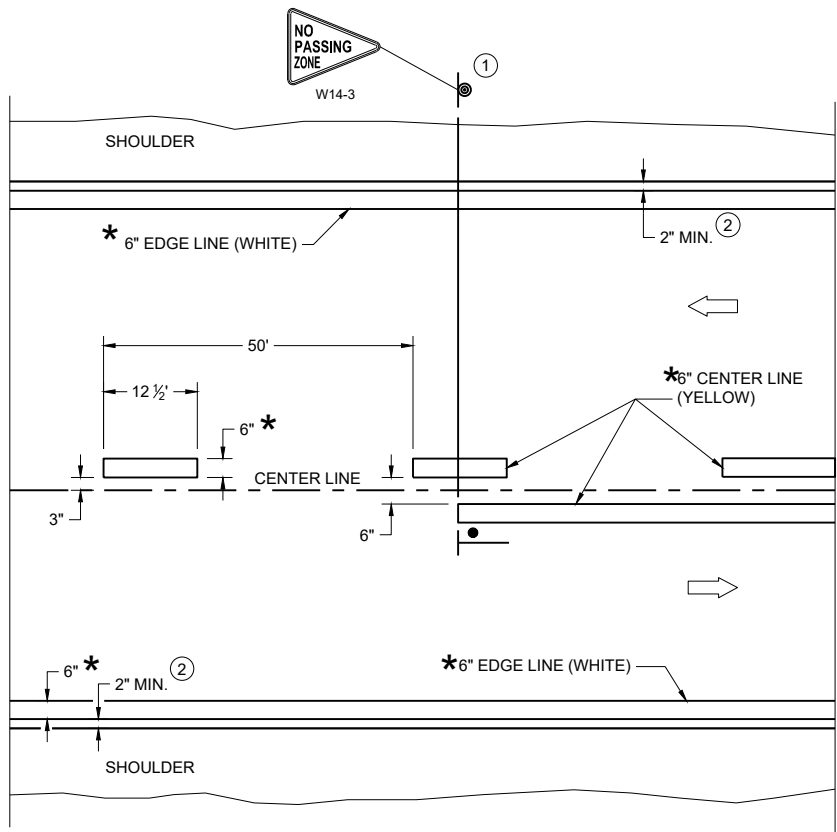
- SIGN ON PERMANENT SUPPORT
- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- WORK AREA

BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

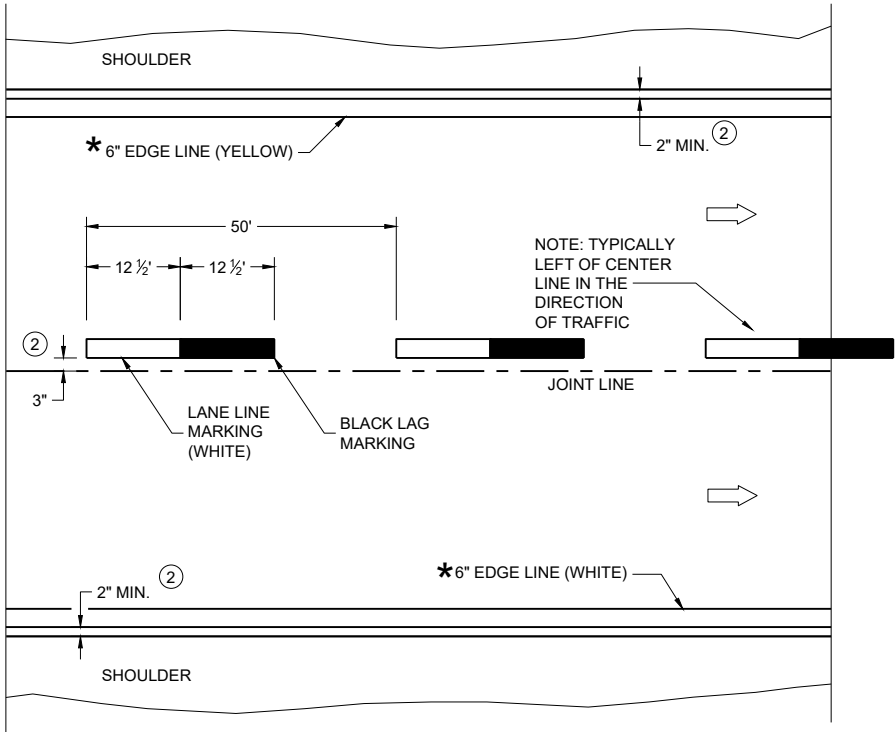
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 161

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

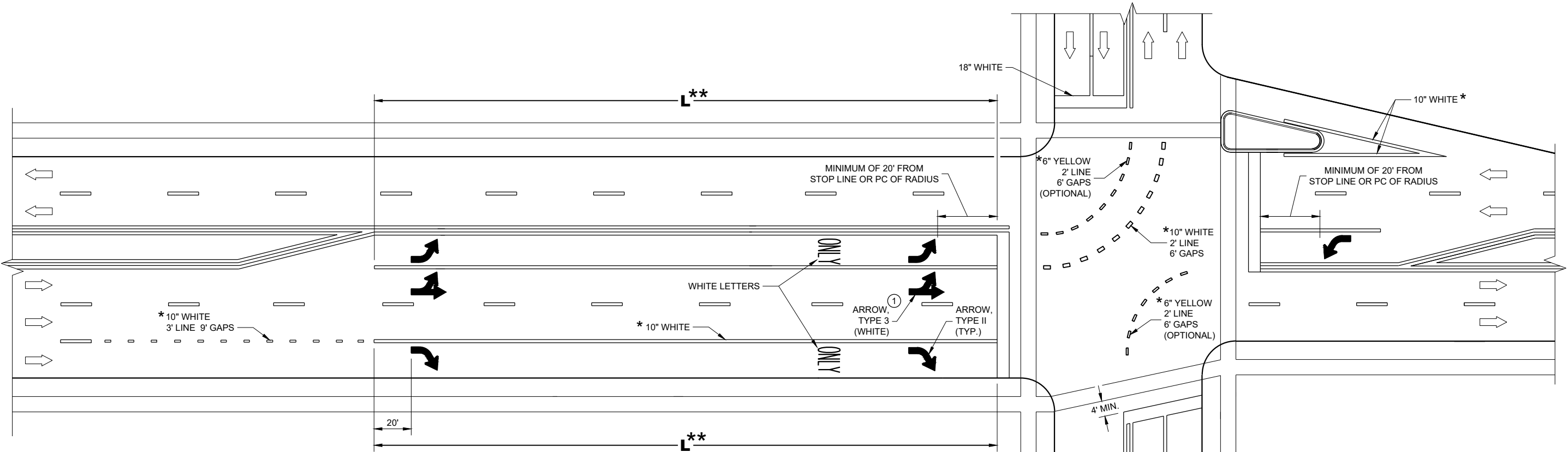
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

- 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

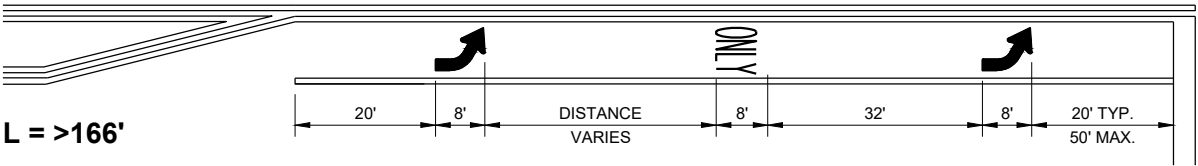
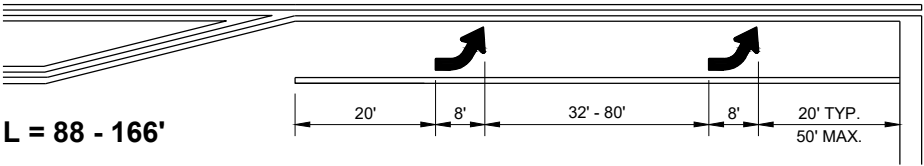
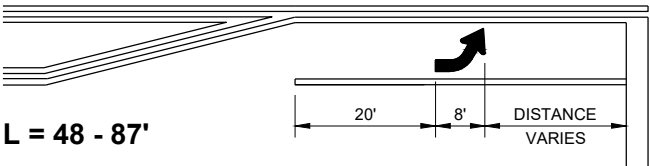
PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	162



** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

LENGTH OF TURN BAY (L) OF 0 - 47' DOES NOT REQUIRE PAVEMENT MARKING ARROWS OR WORDS



GENERAL NOTES

① QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

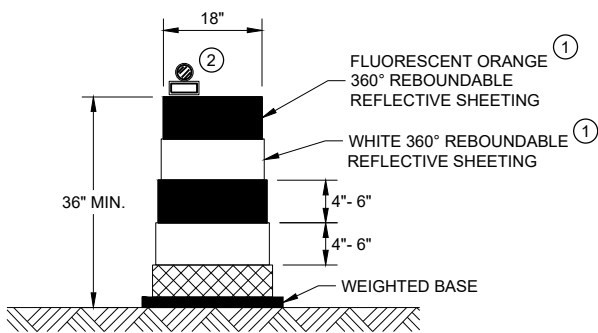
→ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

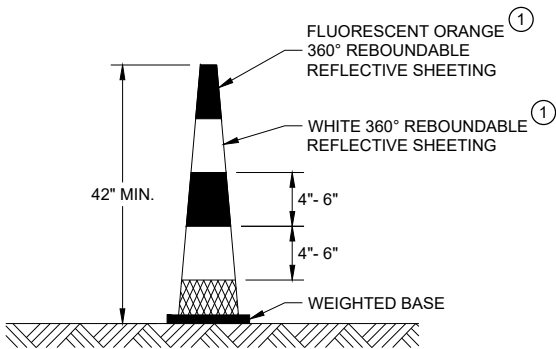
PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 163



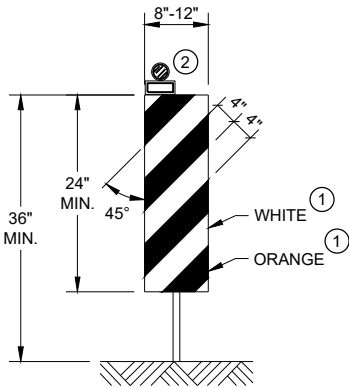
DRUM

BALLAST WIDTHS
RANGE FROM 24"-36"



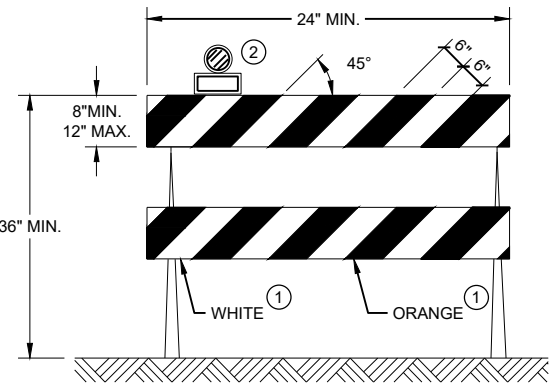
42" CONE

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



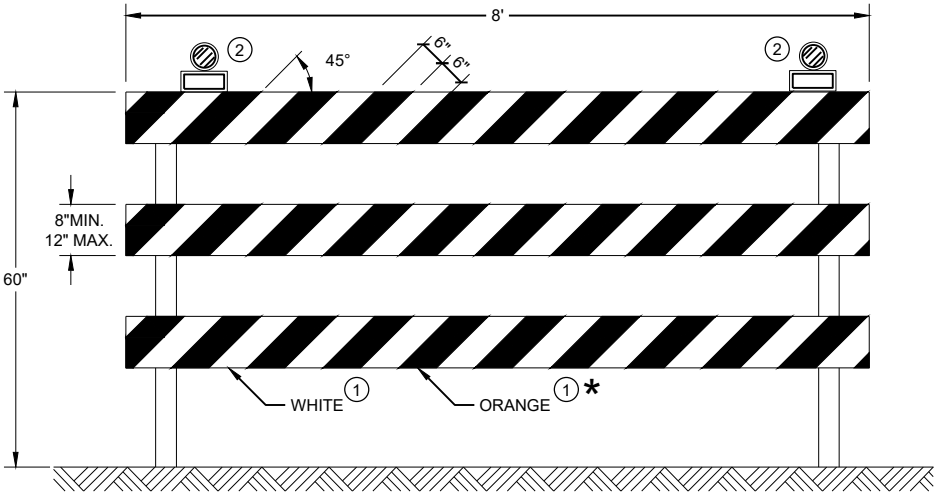
VERTICAL PANEL

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



TYPE II BARRICADE

FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES
MAY BE USED. ALL 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

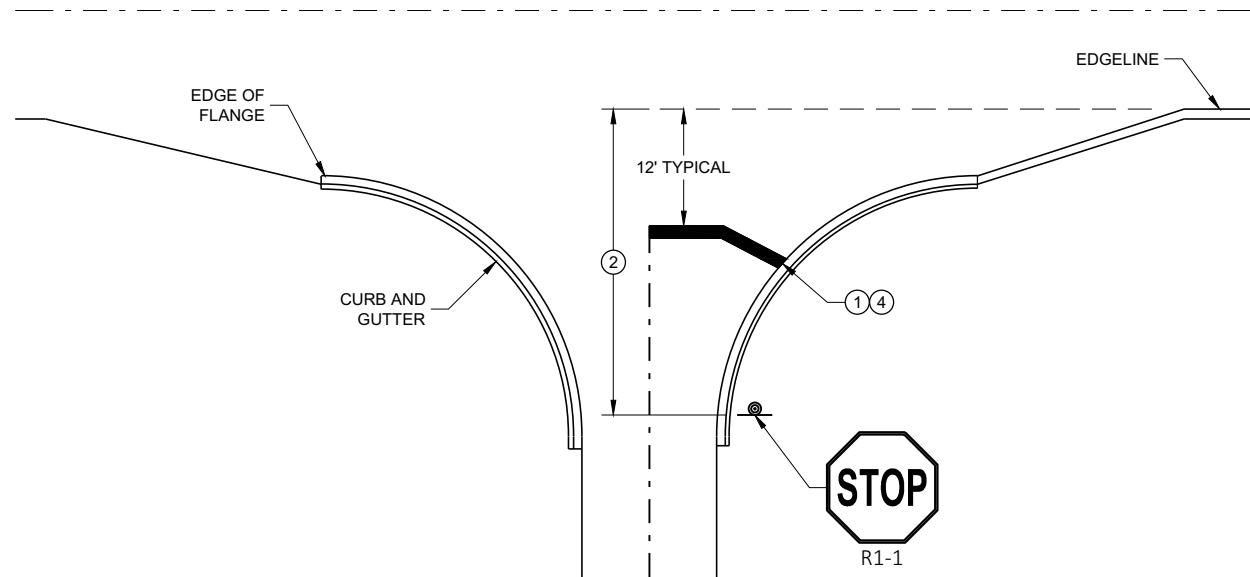
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.
- ② LOCATION OF WARNING LIGHTS WHEN SHOWN ON THE PLAN.

**CHANNELIZING DEVICES
DRUMS, CONES, BARRICADES
AND VERTICAL PANELS**

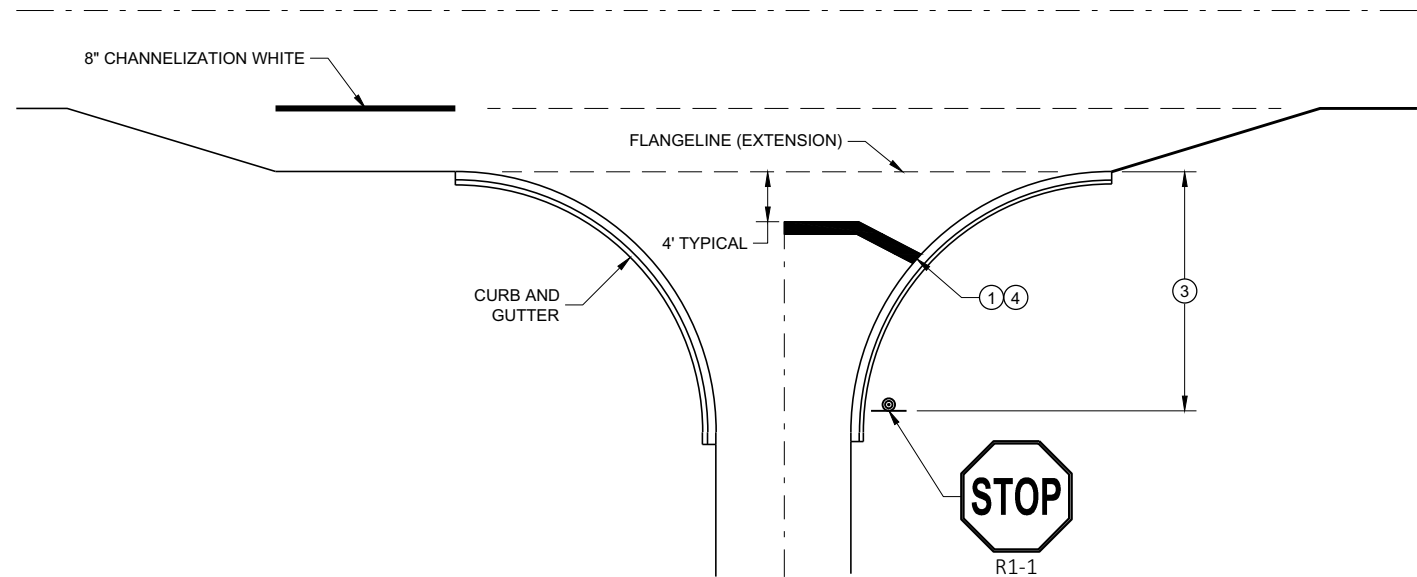
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 164

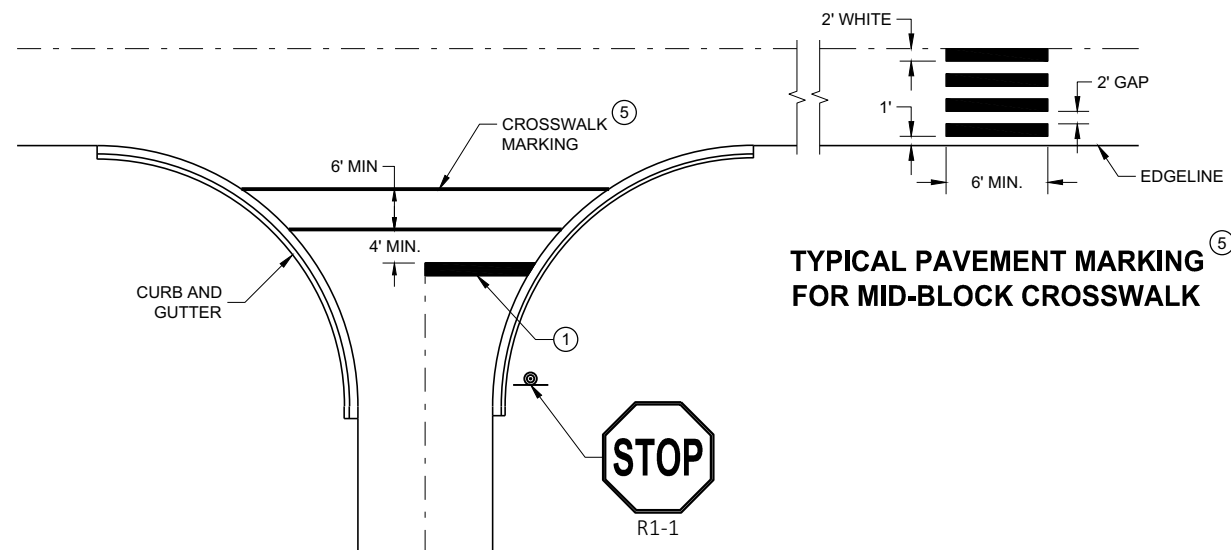
FHWA



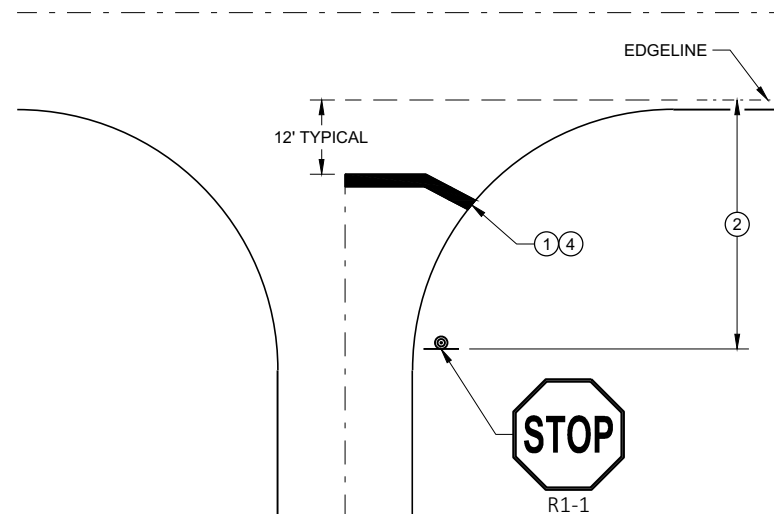
TYPICAL STOP LINE PAVEMENT MARKING
WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING
FOR SIDEROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR
SIDEROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING
WITHOUT CURB AND GUTTER

GENERAL NOTES

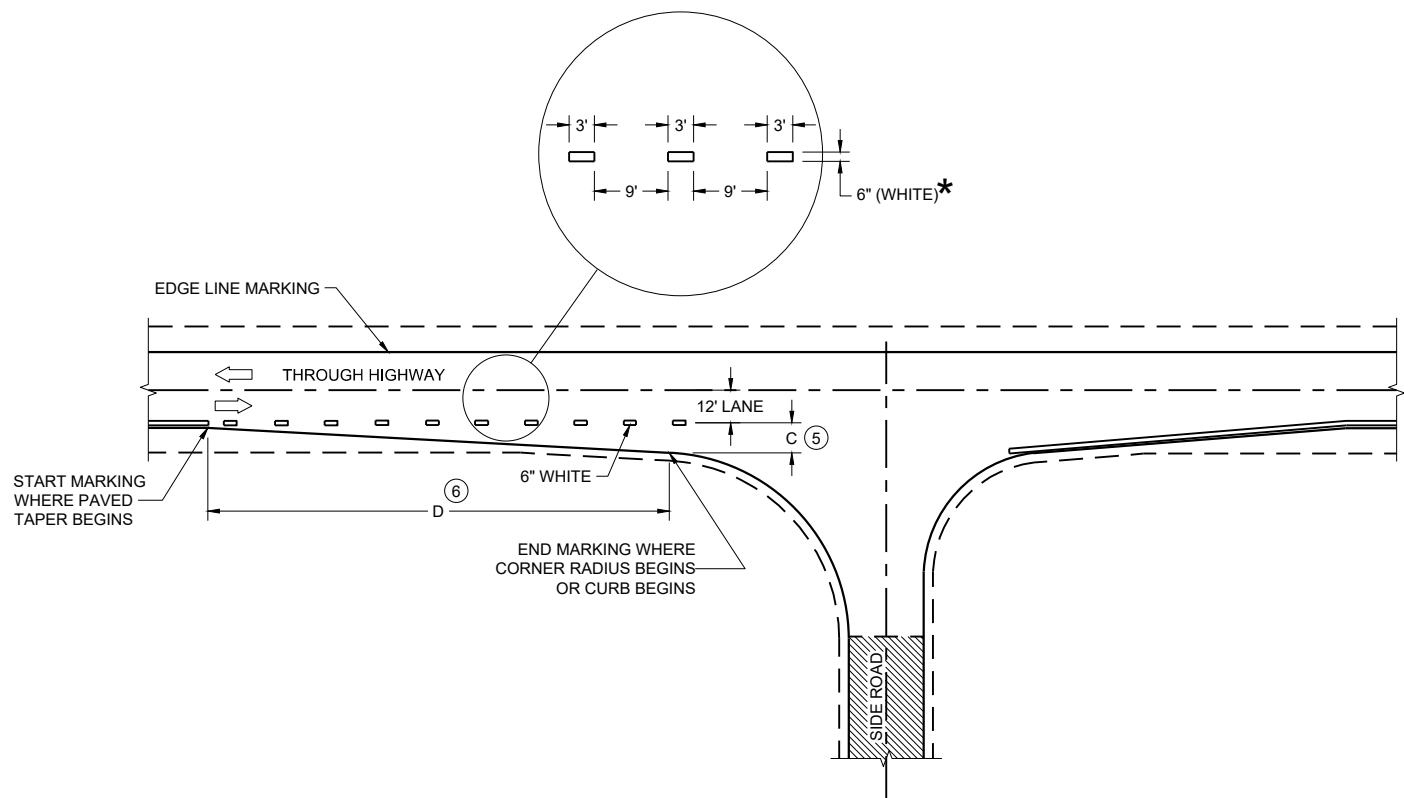
STOP SIGN SHALL BE PLACED A MINIMUM OF 6 FEET TO A MAXIMUM OF 50 FEET FROM THE EDGE LINE LOCATION.

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGE LINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGELINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES INSTEAD.

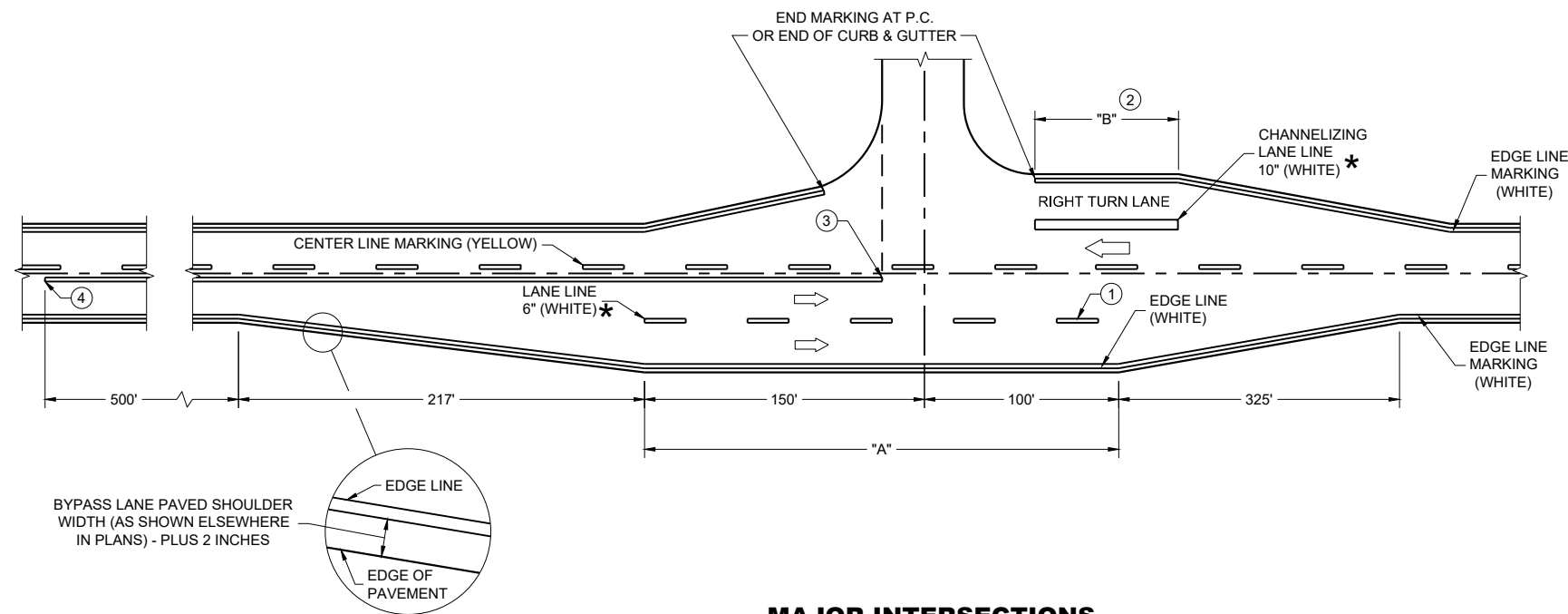
STOP LINE AND CROSSWALK
PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2019 /S/ Matthew Rauch
DATE STATE SIGNING AND MAP ENGINEER 165
FHWA



MINOR INTERSECTION



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

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

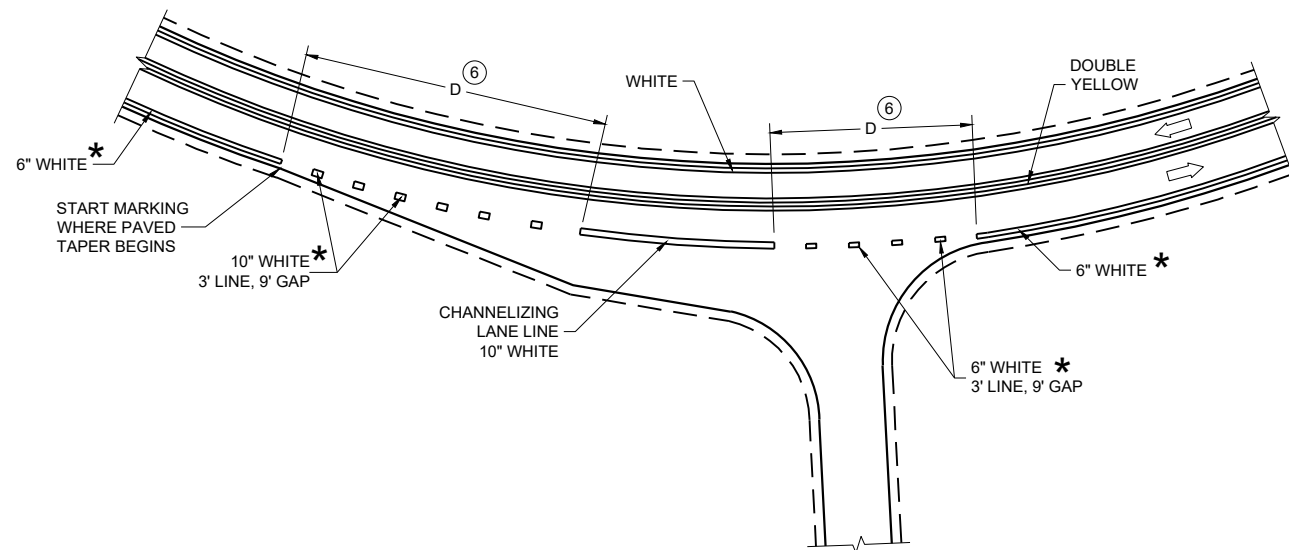
GENERAL NOTES

OMIT EDGE LINES THROUGH INTERSECTIONS. CONTINUE EDGE LINES THROUGH DRIVEWAYS.

- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
- ⑤ WHEN DISTANCE "C" IS LESS THAN 4 FEET, OMIT DOTTED EXTENSION.
- ⑥ WHEN DISTANCE "D" IS LESS THAN 50 FEET, OMIT DOTTED EXTENSION.

LEGEND

➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

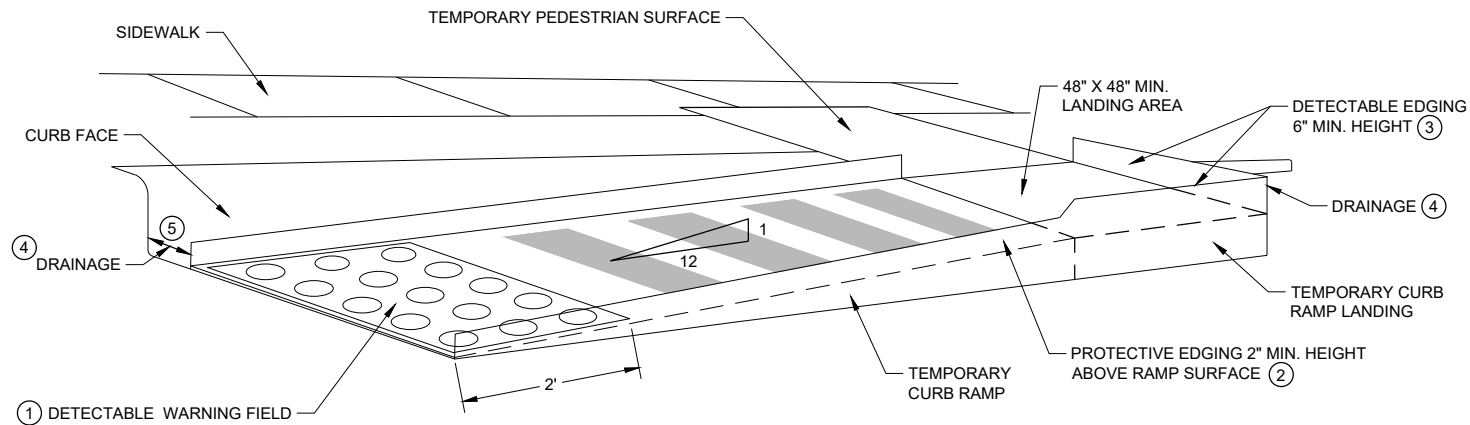
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



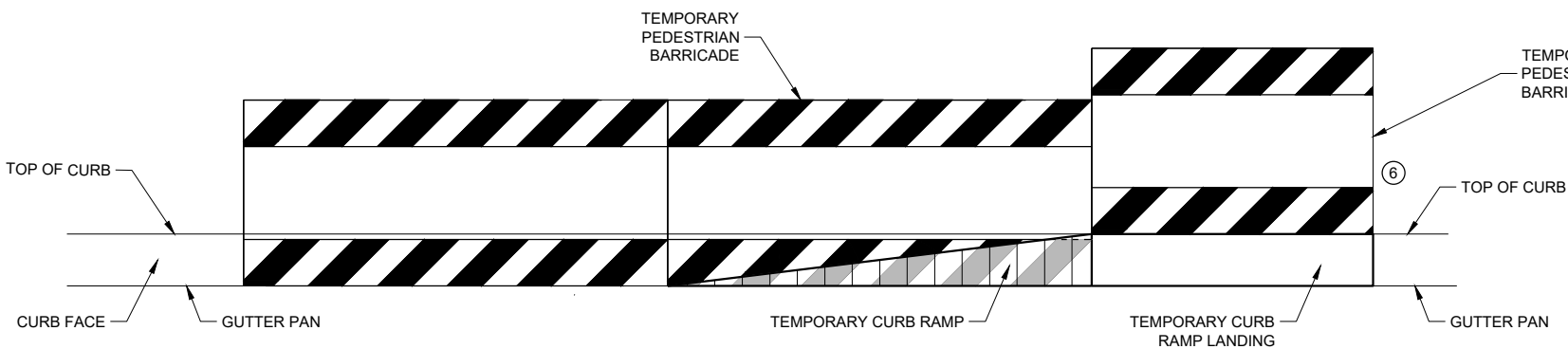
BARRICADE DEVICE SELECTED FROM APPROVED PRODUCT LIST

- * USE THIS DETAIL FOR SHEETING PLACEMENT REFERENCE.

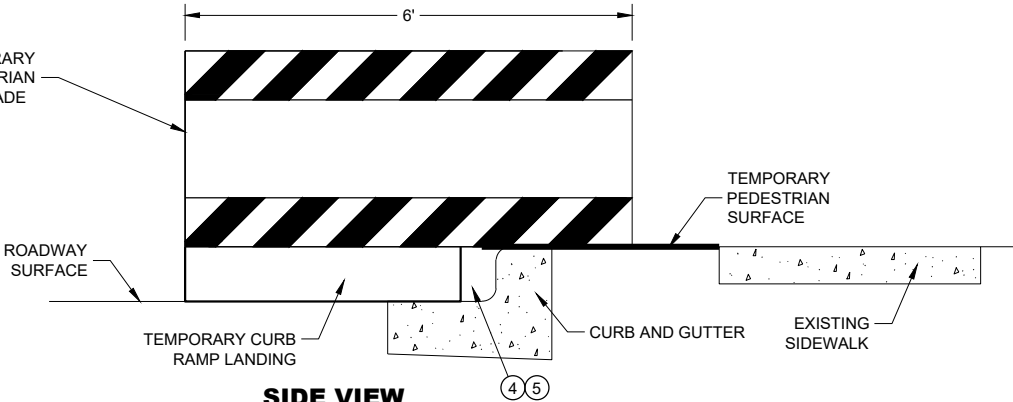




PERSPECTIVE VIEW



FRONT VIEW



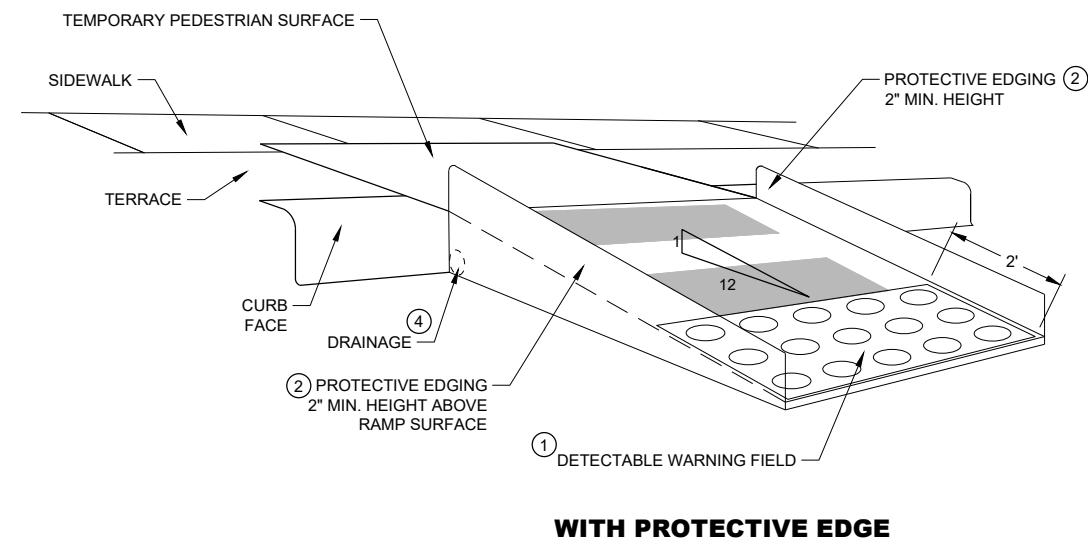
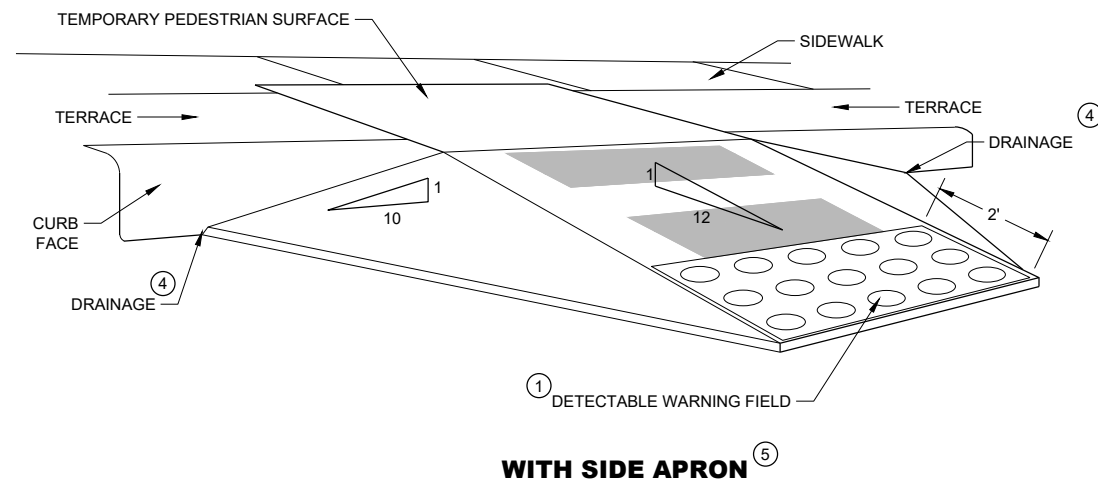
SIDE VIEW

TEMPORARY CURB RAMP PARALLEL TO CURB

GENERAL NOTES

- CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.
- CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.
- CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.
- CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES MAY BE VERTICAL UP TO 1/4" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN 1/4" AND 1/2".

- ① INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS.
- ② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ⑤ ENSURE CURB RAMP IS OUT OF THE GUTTER PAN.
- ⑥ IF ONLY PART OF THE END PANEL OF TEMPORARY PEDESTRIAN BARRICADE PANEL IS NEEDED, EXTEND EXCESS PORTION OF TEMPORARY PEDESTRIAN BARRICADE PANEL HERE.



TEMPORARY CURB RAMP PERPENDICULAR TO CURB

GENERAL NOTES

CURB RAMPS SHALL BE 48" MINIMUM WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

ALTERNATE SIDEWALK WORK BETWEEN LEFT AND RIGHT SIDE OF ROADWAY TO MAINTAIN PEDESTRIAN ACCESS.

CURB RAMPS AND LANDINGS SHALL HAVE A 1:50 (2%) MAX. CROSS-SLOPE.

CLEAR SPACE OF 48" X 48" SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN ½" WIDTH.

CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED ½". LATERAL EDGES MAY BE VERTICAL UP TO ¼" HIGH AND SHALL BE BEVELED AT 1:2 BETWEEN ¼" AND ½".

- ① INSTALL CONTRASTING TEMPORARY DETECTABLE WARNING FIELD AT PEDESTRIAN STREET CROSSINGS, AS SHOWN IN THE PLANS
- ② PROTECTIVE EDGING WITH A 2" MIN. HEIGHT SHALL BE INSTALLED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
- ③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
- ④ DO NOT RESTRICT WATER FLOW IN THE GUTTER SYSTEM.
- ⑤ CAN ONLY BE USED FOR RAMPS WITH 6" OR LESS OF VERTICAL CHANGE.

**TRAFFIC CONTROL,
PEDESTRIAN ACCOMMODATION**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 169

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- UNDER PEDESTRIAN TRAFFIC
- WORK AREA
- TEMPORARY PEDESTRIAN BARRICADE
- DIRECTION OF TRAFFIC

GENERAL NOTES

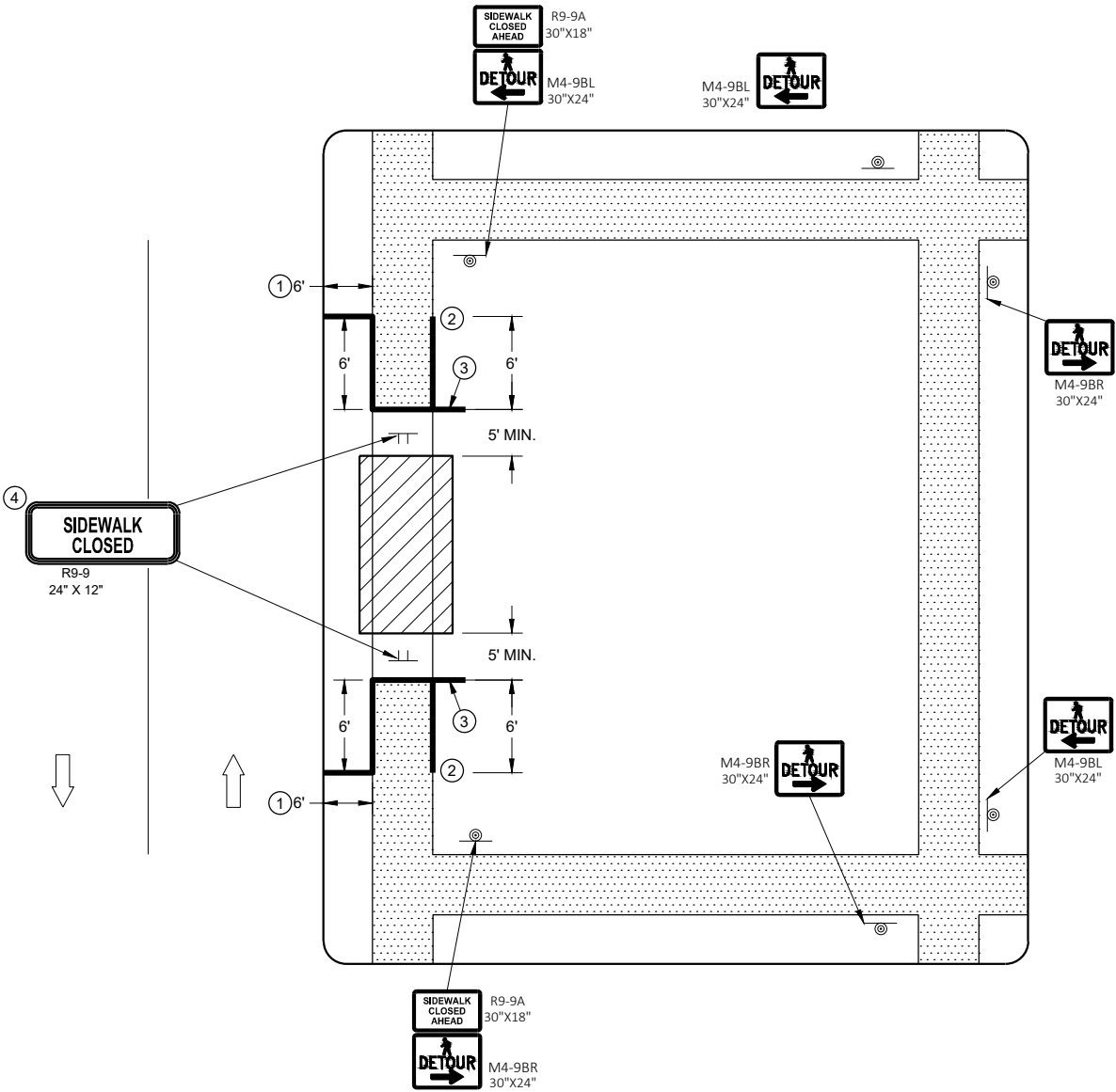
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISCONSIN STANDARD SIGN PLATES.

WHERE TEMPORARY BARRICADE RUNS PARALLEL ALONG SIDEWALK, PLACE THE FACE OF THE BARRICADE AT THE EDGE OF THE SIDEWALK.

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

PLACE TEMPORARY PEDESTRIAN BARRICADE TO FIT FIELD CONDITIONS, AVOIDING CONFLICTS WITH DRIVEWAYS AND OTHER EXISTING FEATURES.

- 1 IF TERRACE IS LESS THAN 6 FEET WIDE, OMIT TEMPORARY PEDESTRIAN BARRICADE FROM THE SIDEWALK TO THE CURB.
- 2 PLACE BARRICADE CLOSURE SO THAT THE TEMPORARY PEDESTRIAN BARRICADE END IS AT THE LAST OPEN SIDEWALK ACCESS TO RESIDENCES OR BUSINESSES BEFORE THE SIDEWALK CLOSURE.
- 3 IF TEMPORARY PEDESTRIAN BARRICADE PANEL IS WIDER THAN THE SIDEWALK WIDTH, THE PORTION OF EXCESS PANEL SHOULD EXTEND INTO THE TERRACE.
- 4 MOUNTING HEIGHT OF 5 FEET FROM THE SURFACE TO THE BOTTOM OF SIGN.



SIDEWALK DETOUR, SIDEWALK ONLY ON ONE SIDE

LEGEND

- V1

WORK VEHICLE
- V2

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

FLASHING ARROW PANEL (CAUTION)
- 

WORK AREA
- 

DIRECTION OF TRAFFIC

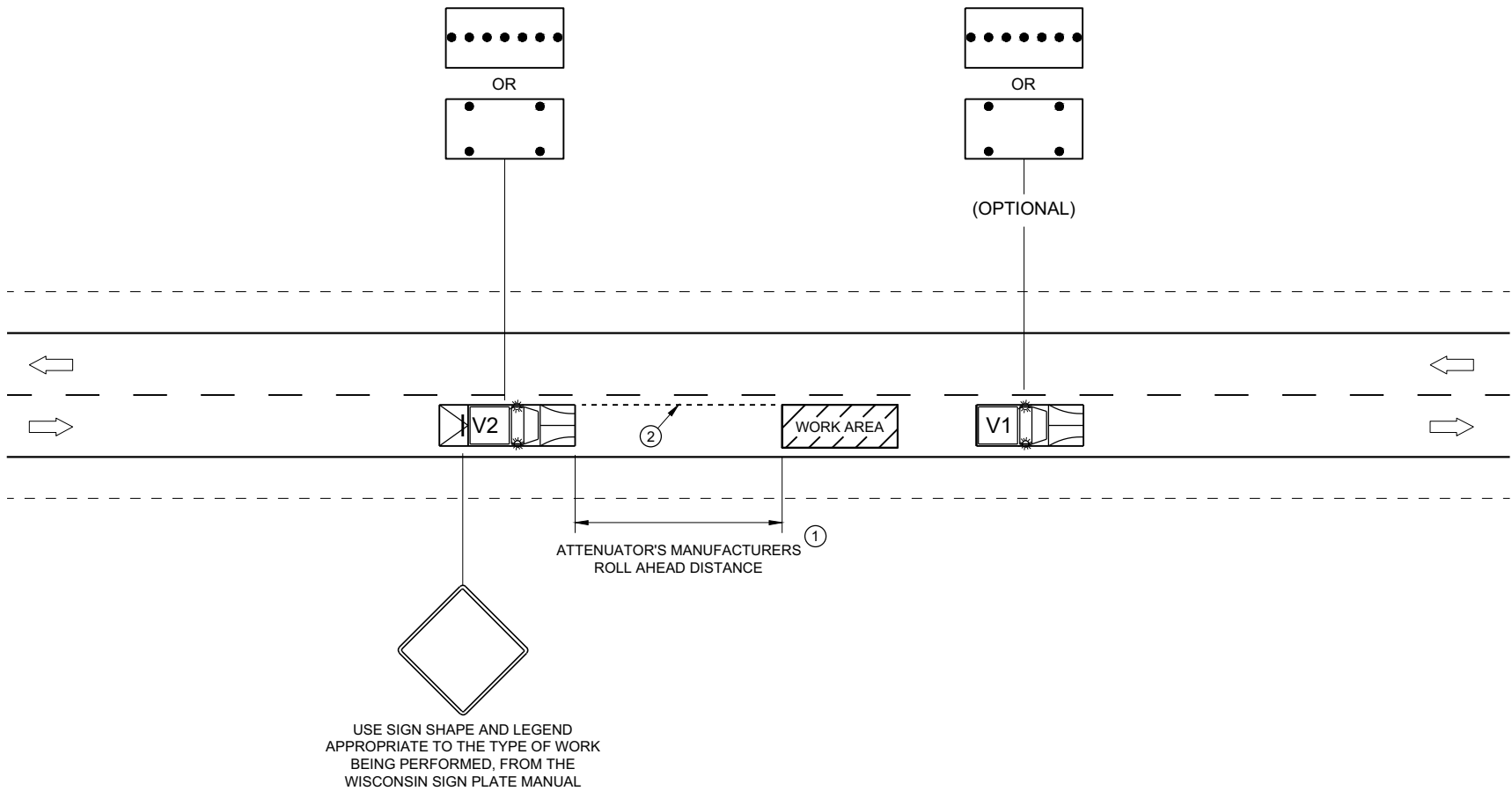
POSTED SPEED PRIOR TO WORK STARTING (MPH)	DECISION SIGHT DISTANCE (D)
0 - 25	550'
30	550'
35	700'
40	700'
45	900'
50	900'
55	1200'

GENERAL NOTES

- ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.
- MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.
- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL ARROW PANELS SHALL BE REAR FACING, TYPE "B" OR "C", AND DISPLAYING THE FLASHING CAUTION MODE. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.
- ①

DISTANCE BETWEEN VEHICLES MAY INCREASE FROM THE ATTENUATOR'S ROLL AHEAD BASED ON TERRAIN, SIGHT DISTANCE, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- ②

ALIGN LEFT SIDE OF SHADOW VEHICLE WITH EDGE OF WORK AREA.



TRAFFIC CONTROL,
MOBILE OPERATIONS ON
AN UNDIVIDED ROADWAY

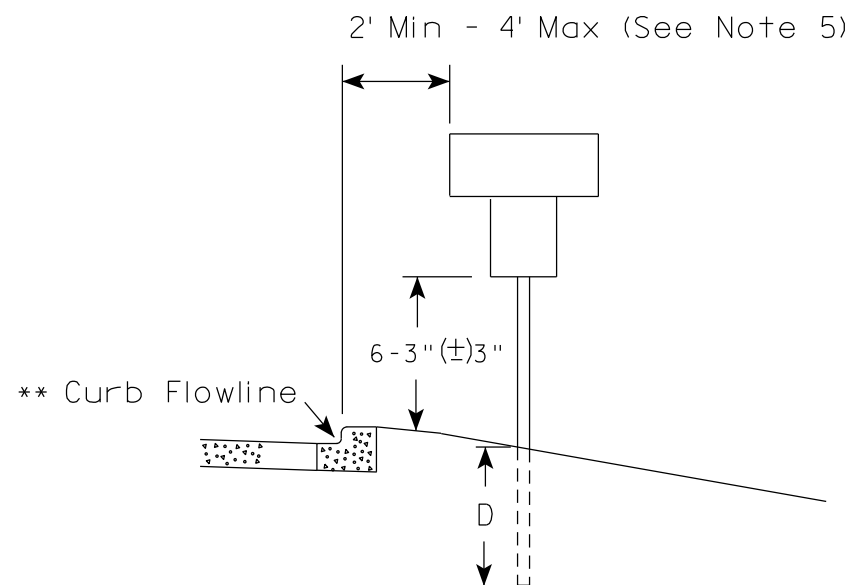
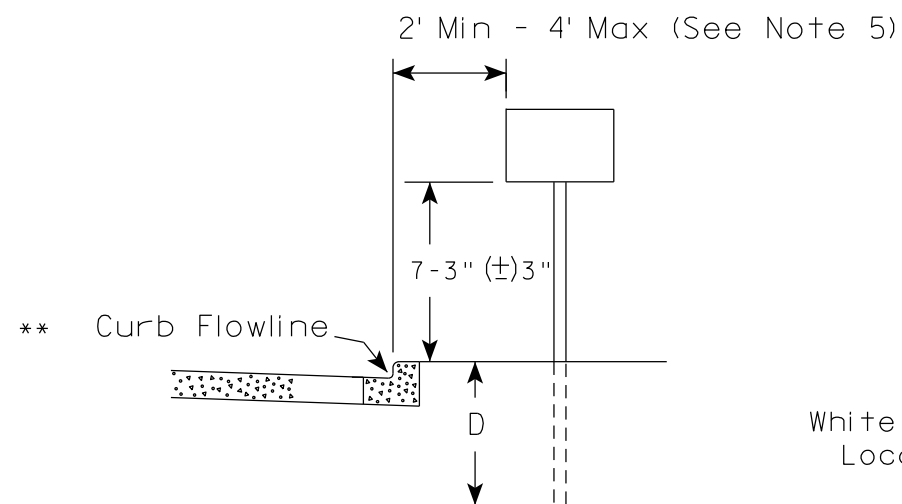
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2021
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE T
SAFETY ENGINEER 171

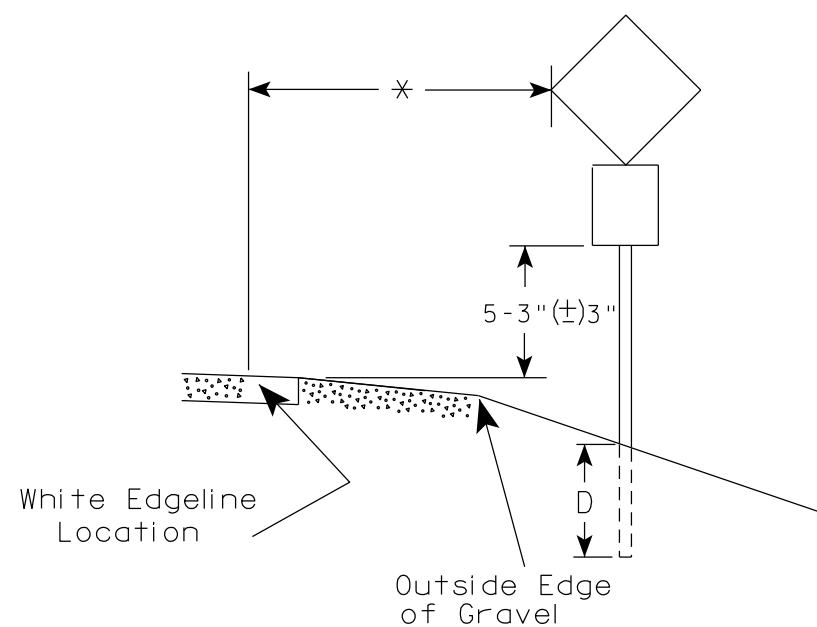
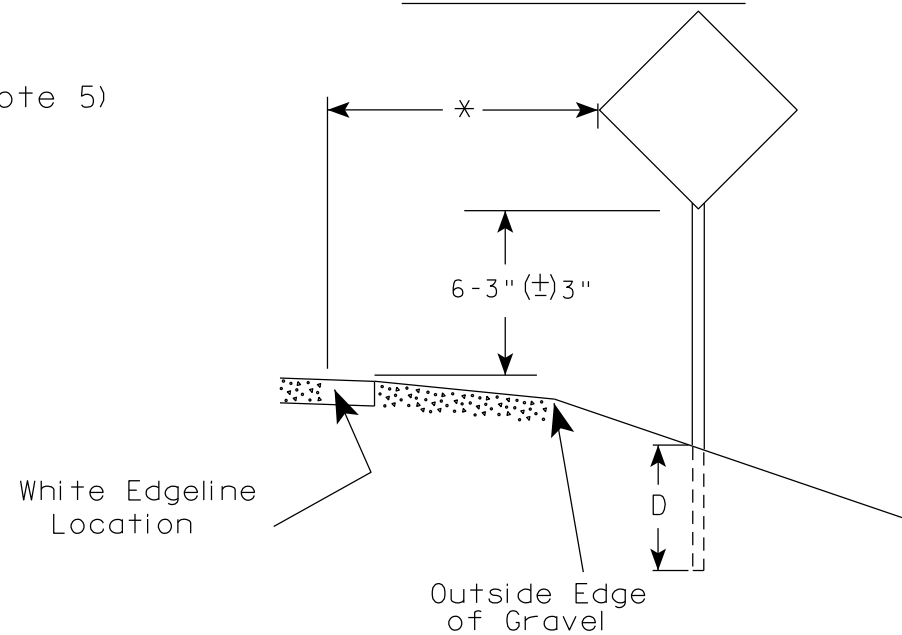
FHWA

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.

GENERAL NOTES

1. Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
2. If signs are mounted on 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".
3. For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
4. Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
5. Offset distance shall be consistent with existing signs or consistent throughout length of project.
6. Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

POST EMBEDMENT DEPTH

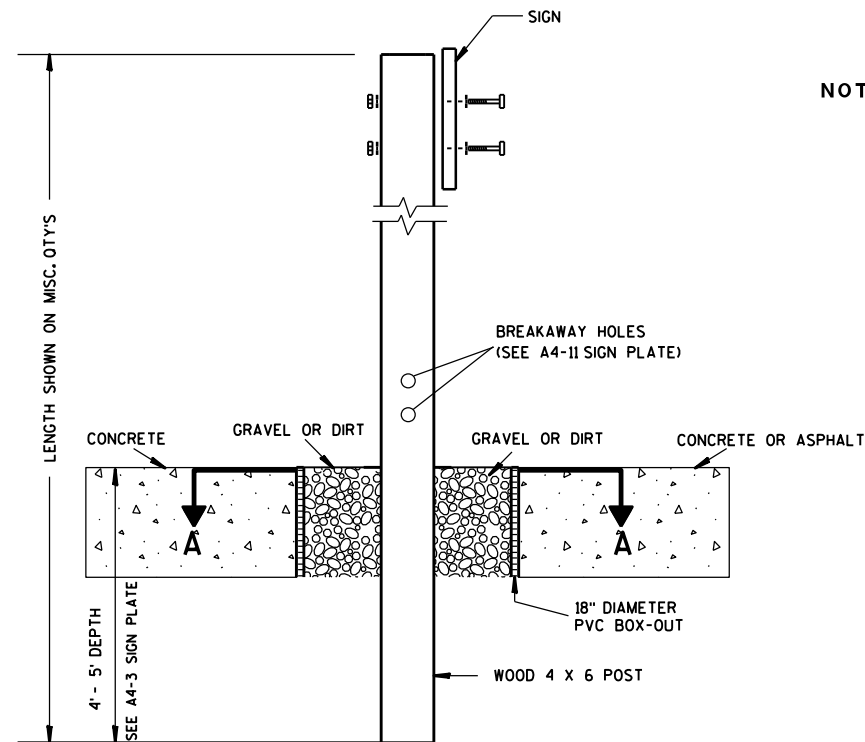
Area of Sign Installation (Sq. Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

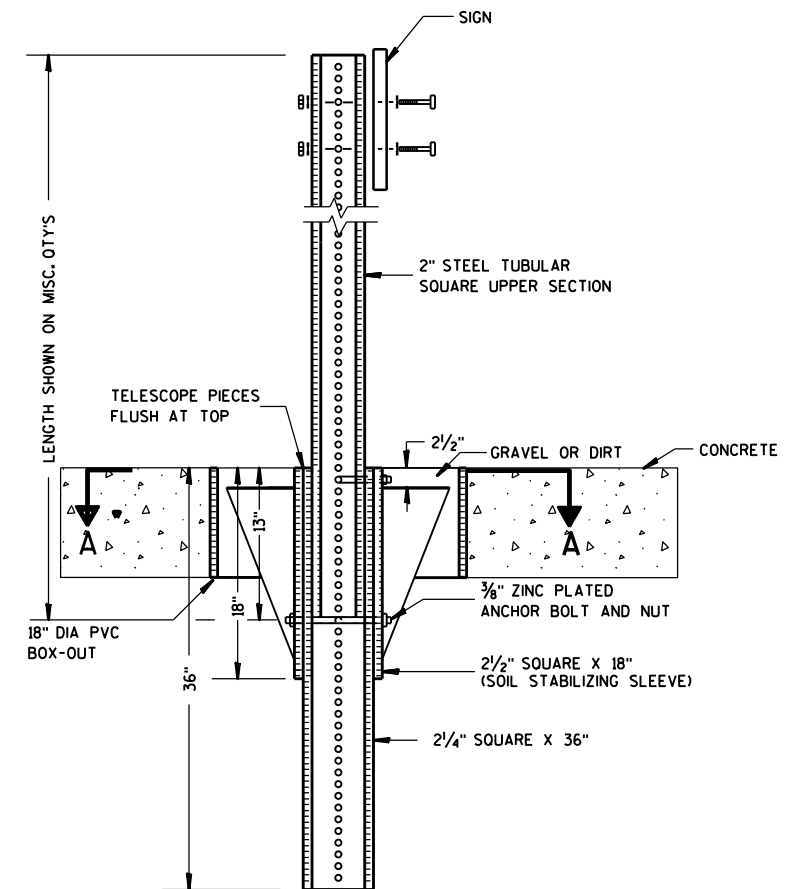
DATE 12/6/23 PLATE NO. A4-3.23



ELEVATION VIEW

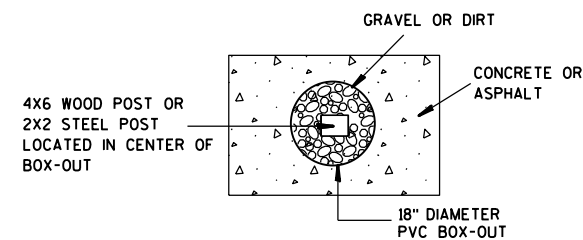
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 173 A4-3B.1

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

GENERAL NOTES

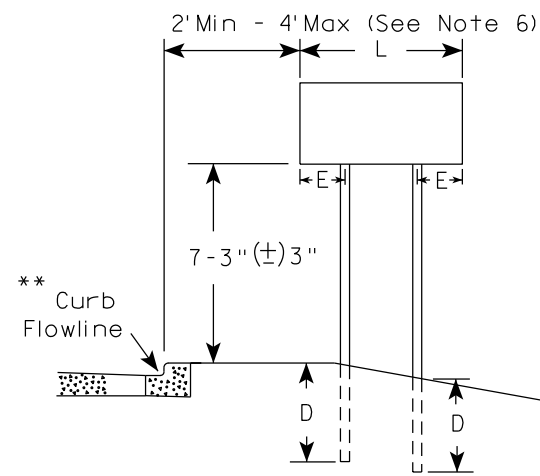
- For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
- See tables below for required number of posts.
- For expressways and freeways, mounting height is 7'-3" (±) 3" or 6'-3" (±) 3" depending upon existence of sub-sign.
- The (±) tolerance for mounting height is 3 inches.
- J-Assemblies are considered to be one sign for mounting height.
- 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.
- 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.

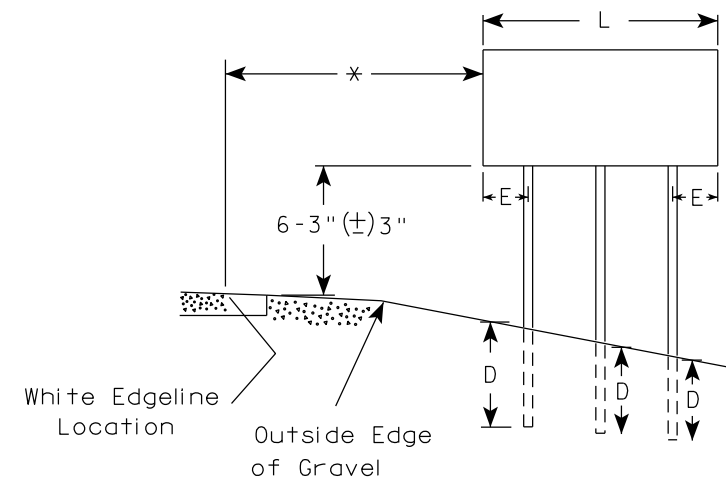
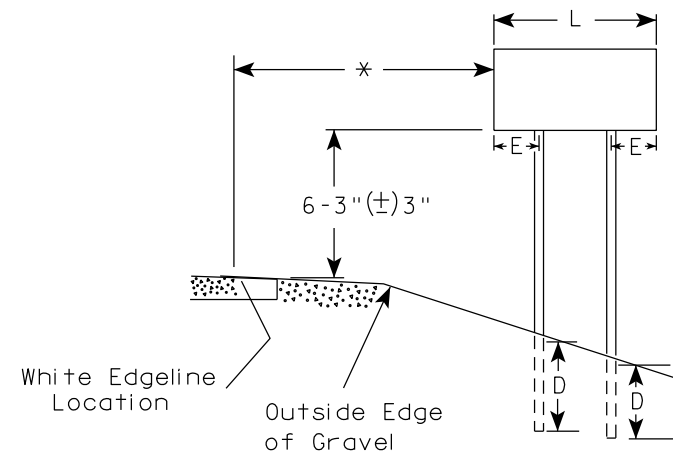
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs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

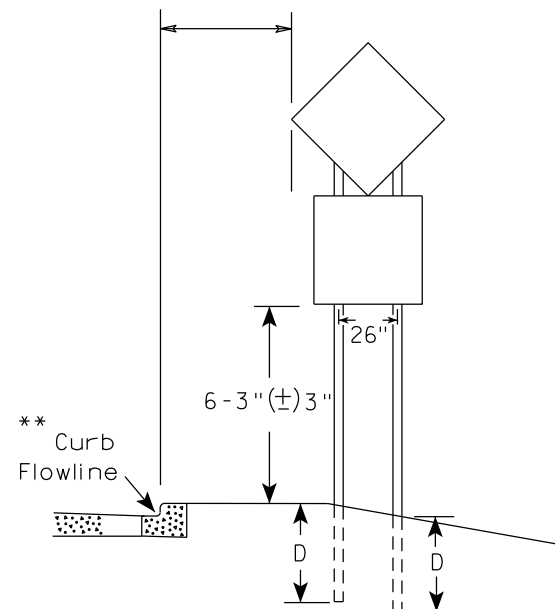
URBAN AREA



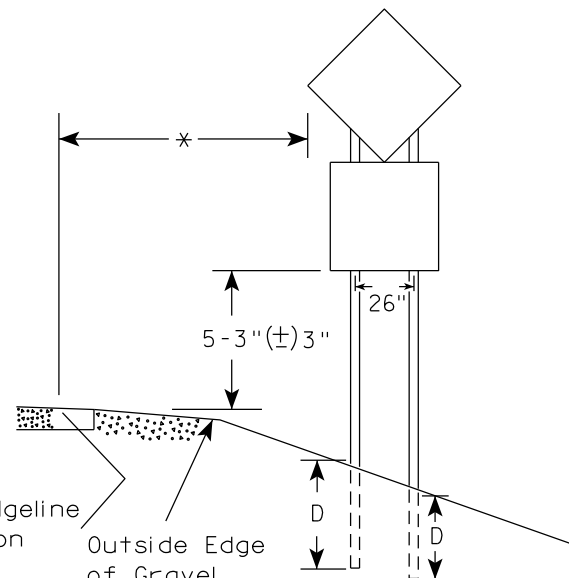
RURAL AREA (See Note 3)



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

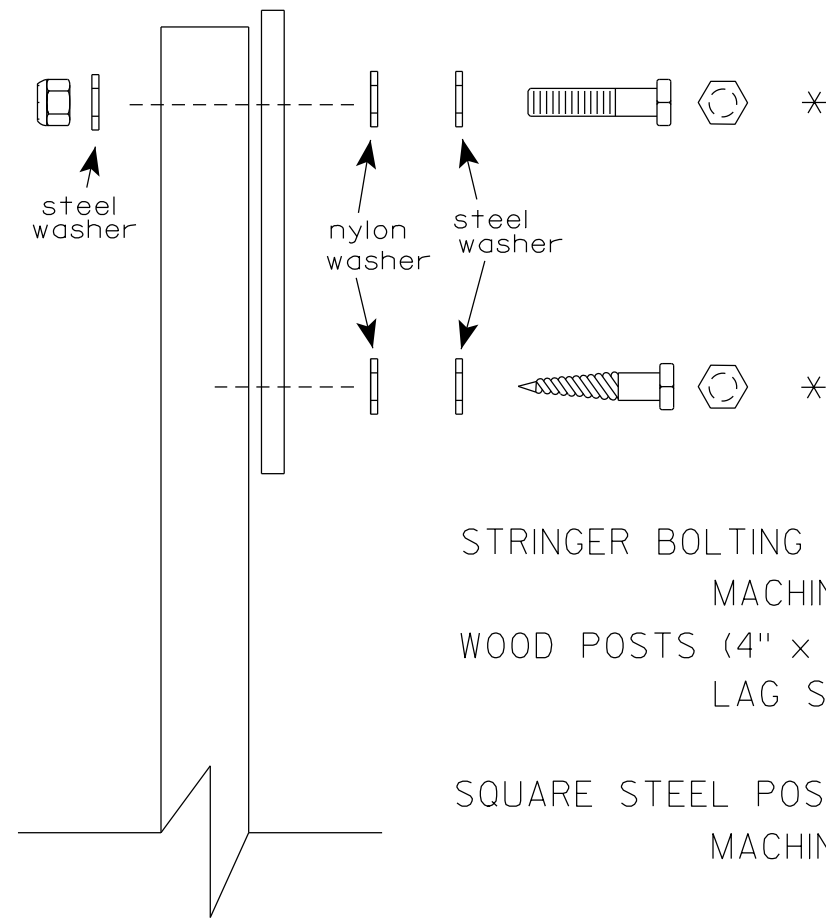
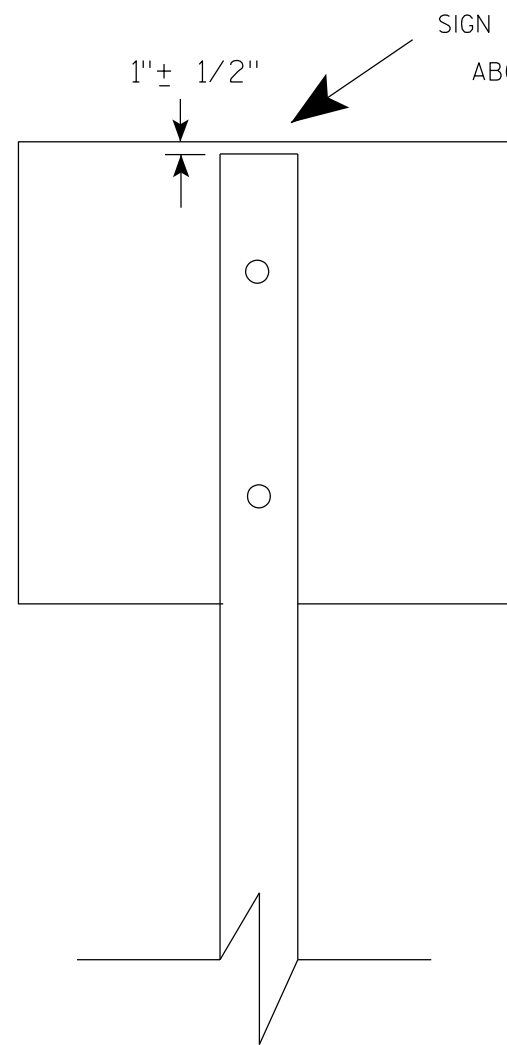
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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



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.

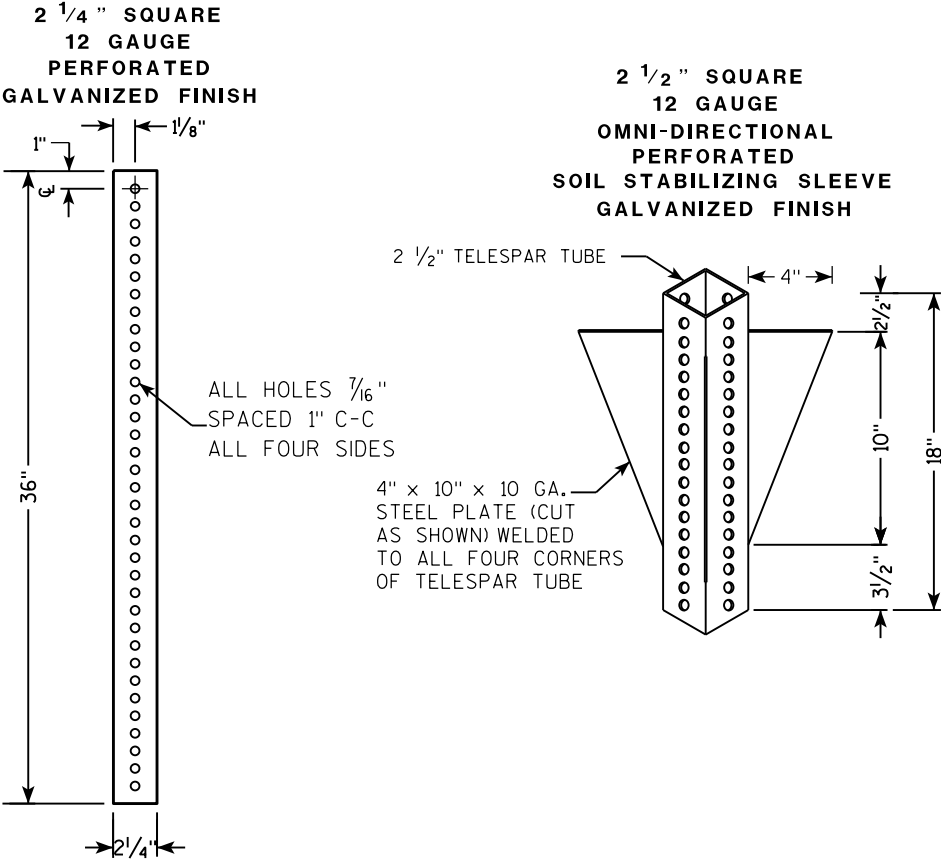
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

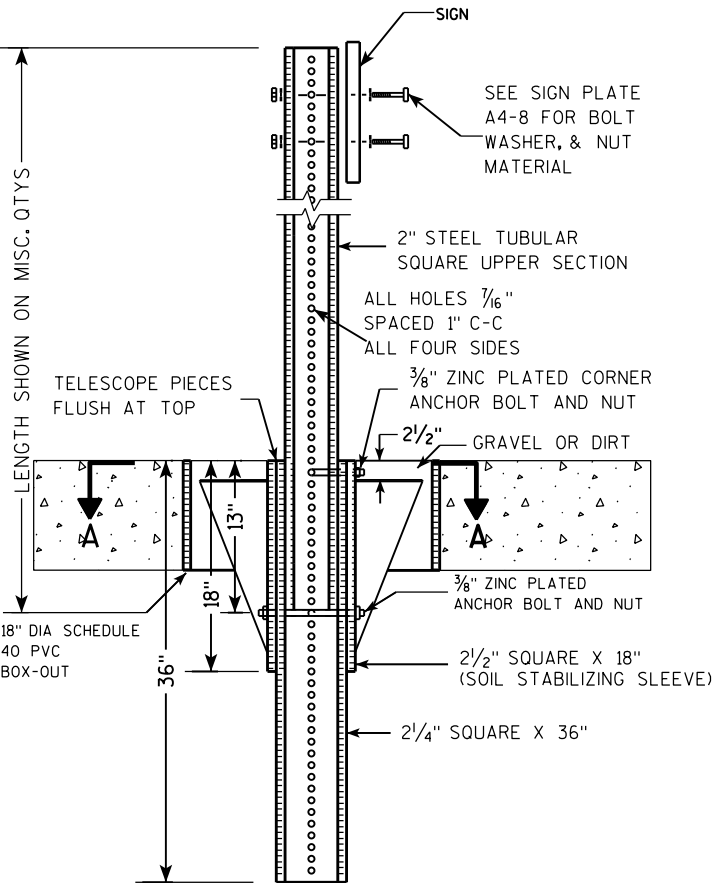
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

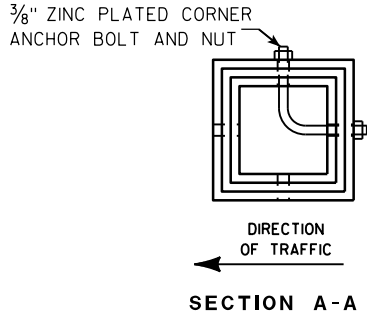
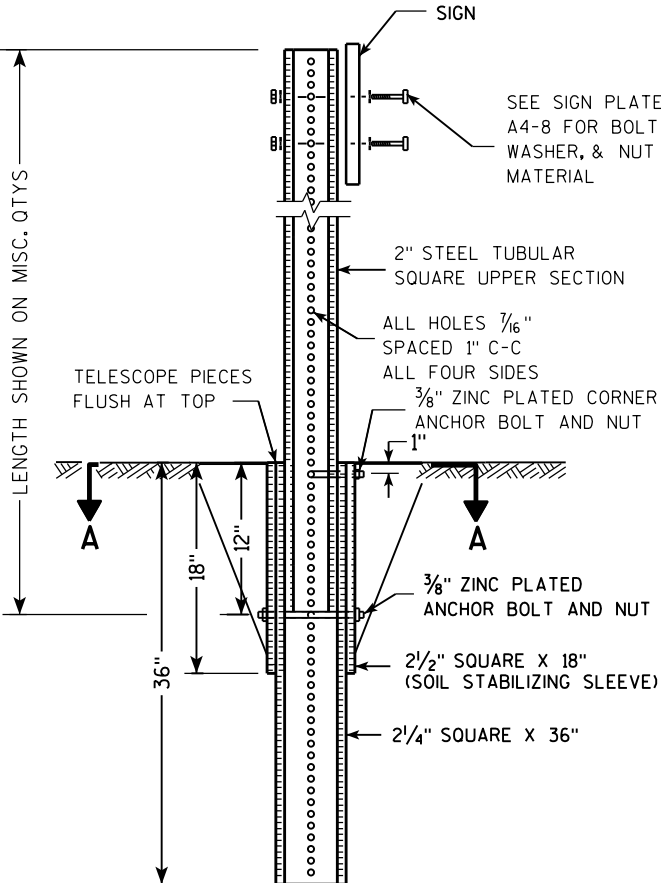
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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

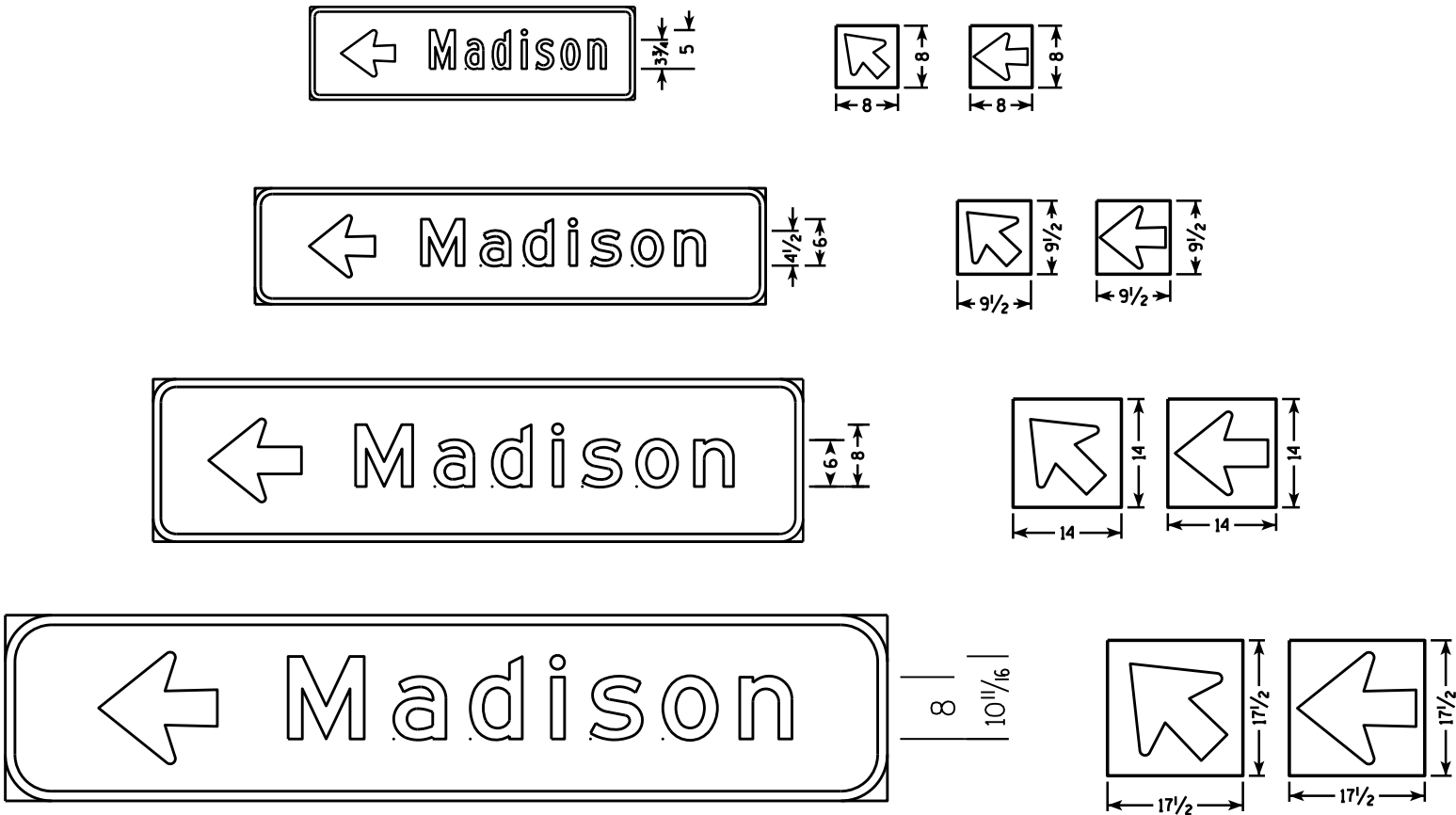
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 176 14-9.9

SIGN LAYOUT WITH VARIOUS SIZED MESSAGES

GENERAL NOTES

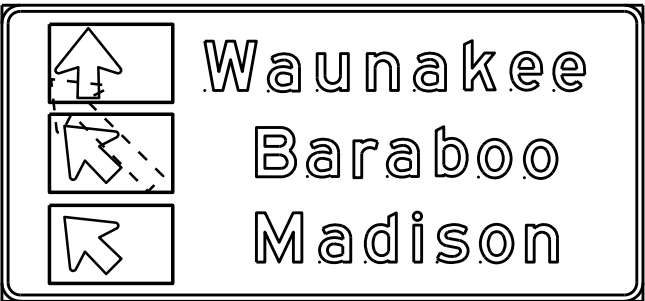
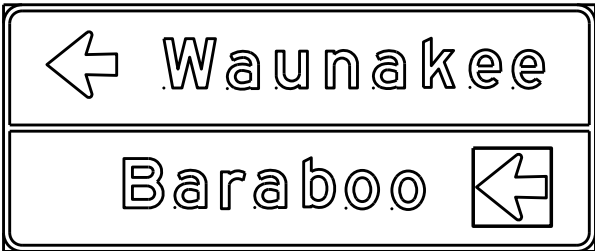
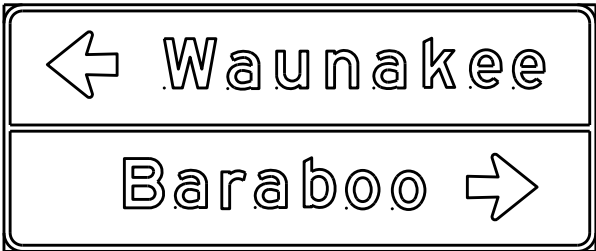
- 1. Materials shall conform to Standard Specification Section 637.
Base - Sheet Aluminum 0.040" Thickness
Sheeting - Orange Type F Reflective
Arrow - Black Non-Reflective
- 2. Arrow signs shall be fastened to permanent sign by either aluminum rivets or aluminum self-tapping sheet metal screws.
There shall be a minmum of 2 fasteners used per arrow sign.
- 3. There shall be a spacer consisting of a 0.08" nylon washer between the back of the arrow sign and the face of the permanent sign.
- 4. Arrows are per standard plate A1-2
- 5. Use separate arrow sign for each destination
- 6. Tilt arrow is always at 45 degrees
- 7. Arrow is centered on arrow sign



Lower Case Copy Size	Standard Width (Single Arrow)	2 Line Tilt Arrow Cover Width	3 Line Tilt Arrow Cover Width	Height
3 3/4" Series C	8	9 1/2	14 1/2	8
4 1/2" Series D & E	9 1/2	10	15	9 1/2
6" Series D & E	14	16	20 1/2	14
8" Series E	17 1/2	20 1/2	25	17 1/2

BEFORE

AFTER



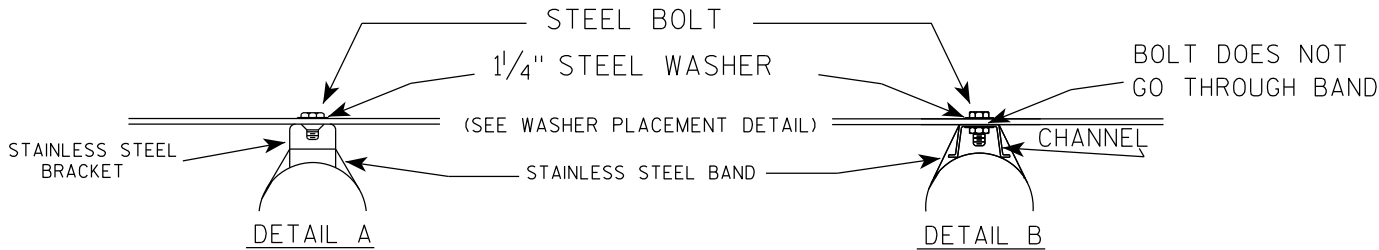
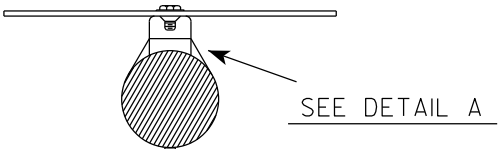
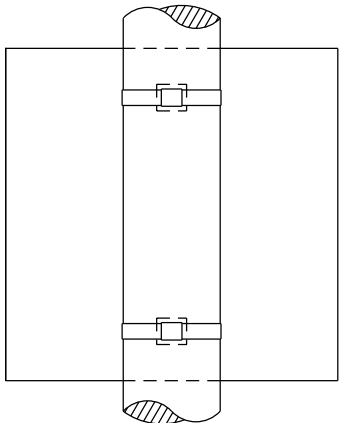
DESTINATION DIRECTIONAL ARROW FOR DETOUR SIGNS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer
DATE 10/08/14 177 . A4-12.2

BANDING

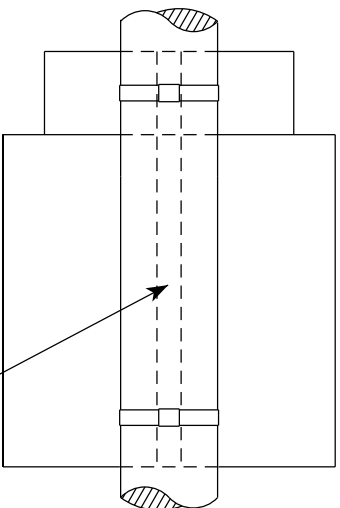
SINGLE SIGN



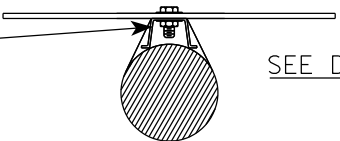
GENERAL NOTES

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

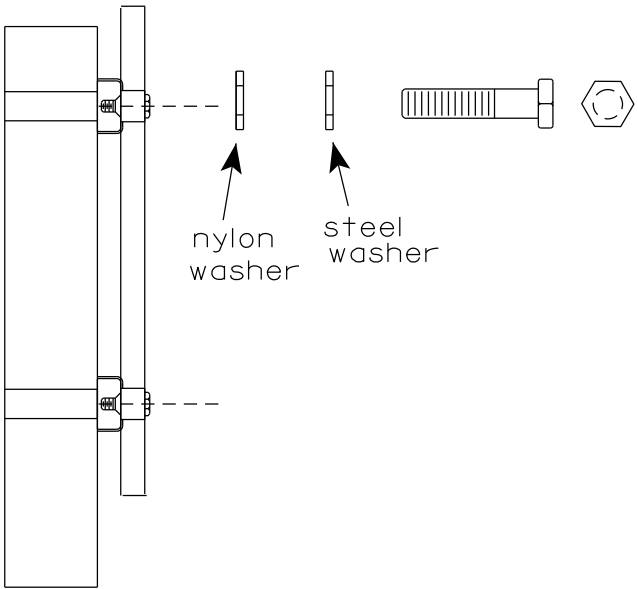
"J" ASSEMBLY



CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



WASHER PLACEMENT



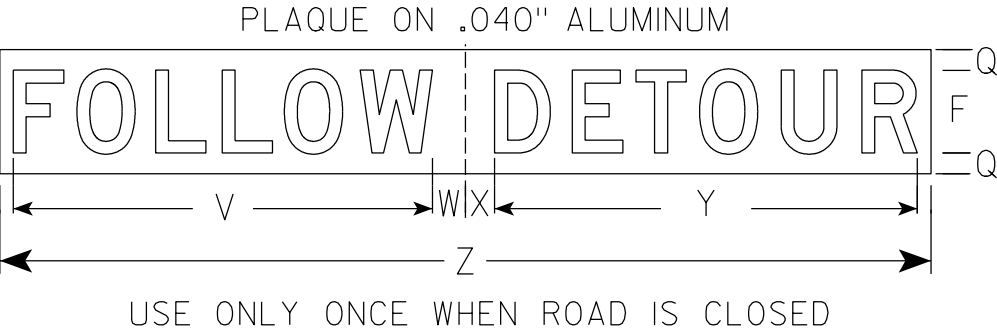
WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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

7



NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - D
- 4. Substitute appropriate numeral and adjust spacing to achieve proper balance.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3	72	36	1 1/8	1/2	5/8	6	5	4	15 5/8	1 5/8	5	9 1/4	21 1/8	5	2 7/8	29	2	30	1 3/4	3 1/4	28 3/8	40 1/2	2	2	29 3/4	66	18.0
4	96	48	2 1/4	3/4	1	8	6 1/2	5 1/2	20 5/8	2 1/4	6	12 1/4	28 1/4	6	4 1/8	38 3/8	2	39 7/8	2	4	37 7/8	29 3/4	3 1/8	2 7/8	40 7/8	90	32.0
5																											

STANDARD SIGN
G20-57C

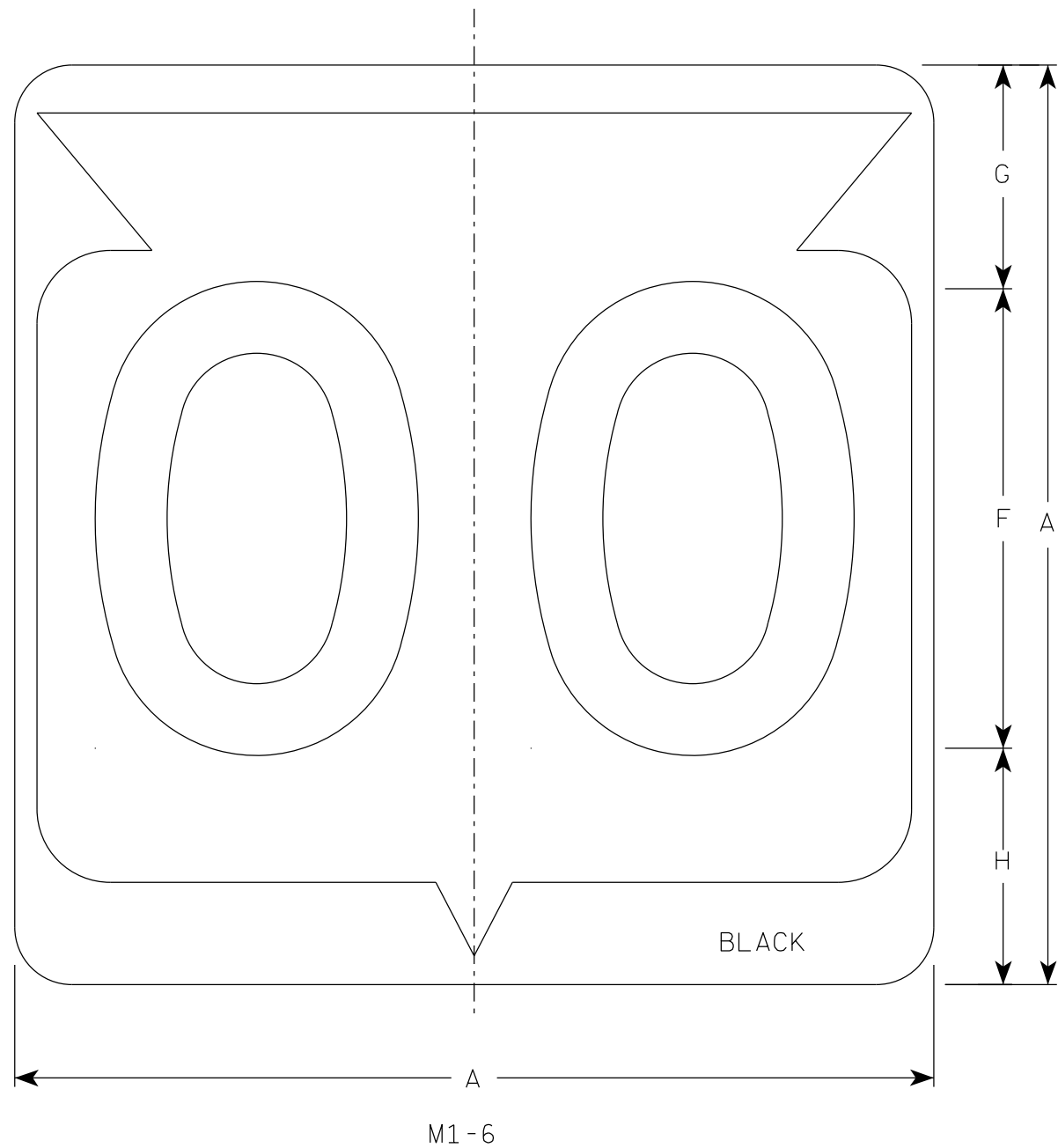
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 9/25/19 PLATE NO. G20-57C.1

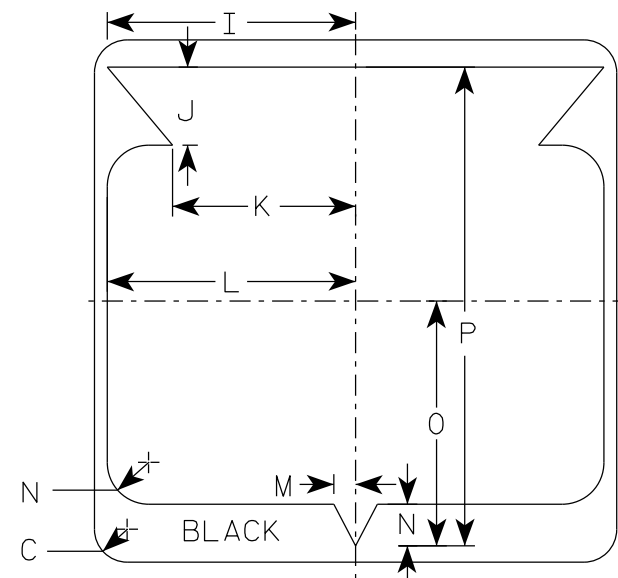
7

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

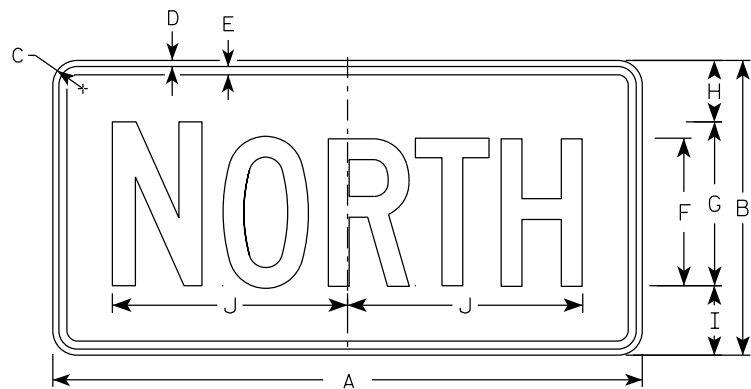
STATE ROUTE MARKER
M1-6 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

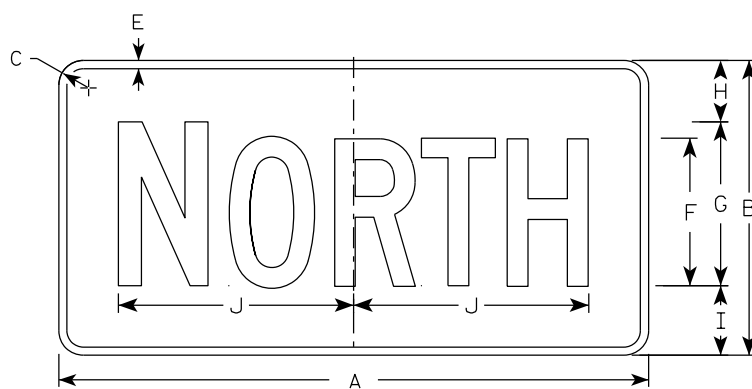
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

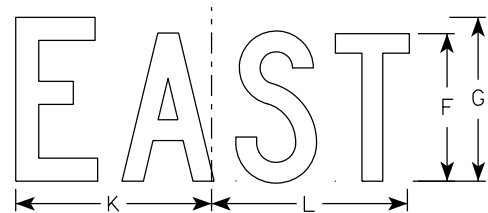
7



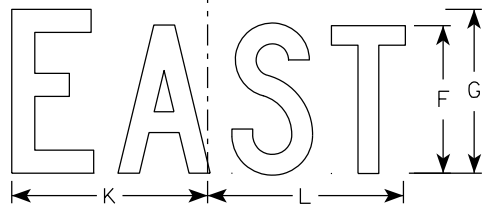
M3-1
MM3-1
MP3-1



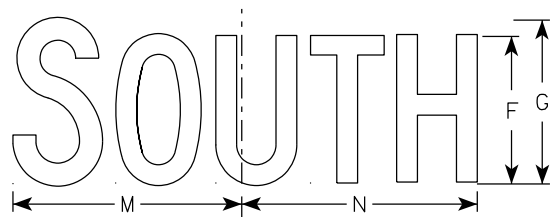
MB3-1
MK3-1
MN3-1



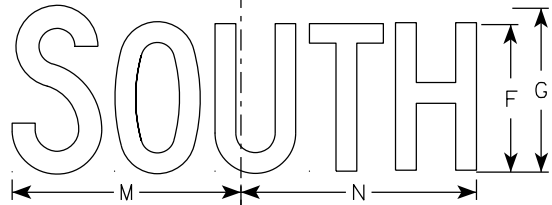
M3-2
MM3-2
MP3-2



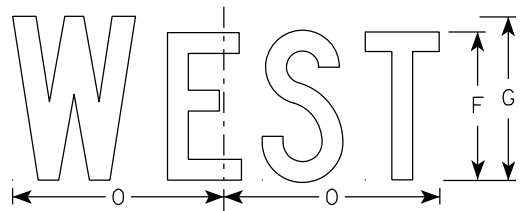
MB3-2
MK3-2
MN3-2



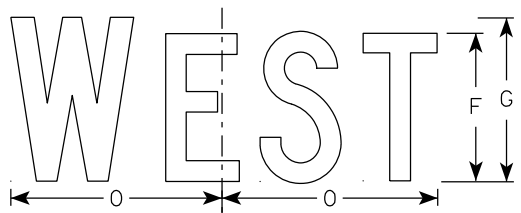
M3-3
MM3-3
MP3-3



MB3-3
MK3-3
MN3-3



M3-4
MM3-4
MP3-4



MB3-4
MK3-4
MN3-4

NOTES

- All Signs Type II - Type H Reflective
- Color:
 - Background - See note 5
 - Message - See note 5
- Message Series - C
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 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
- Note the first letter of each direction is larger than the remainder of the message.

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	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

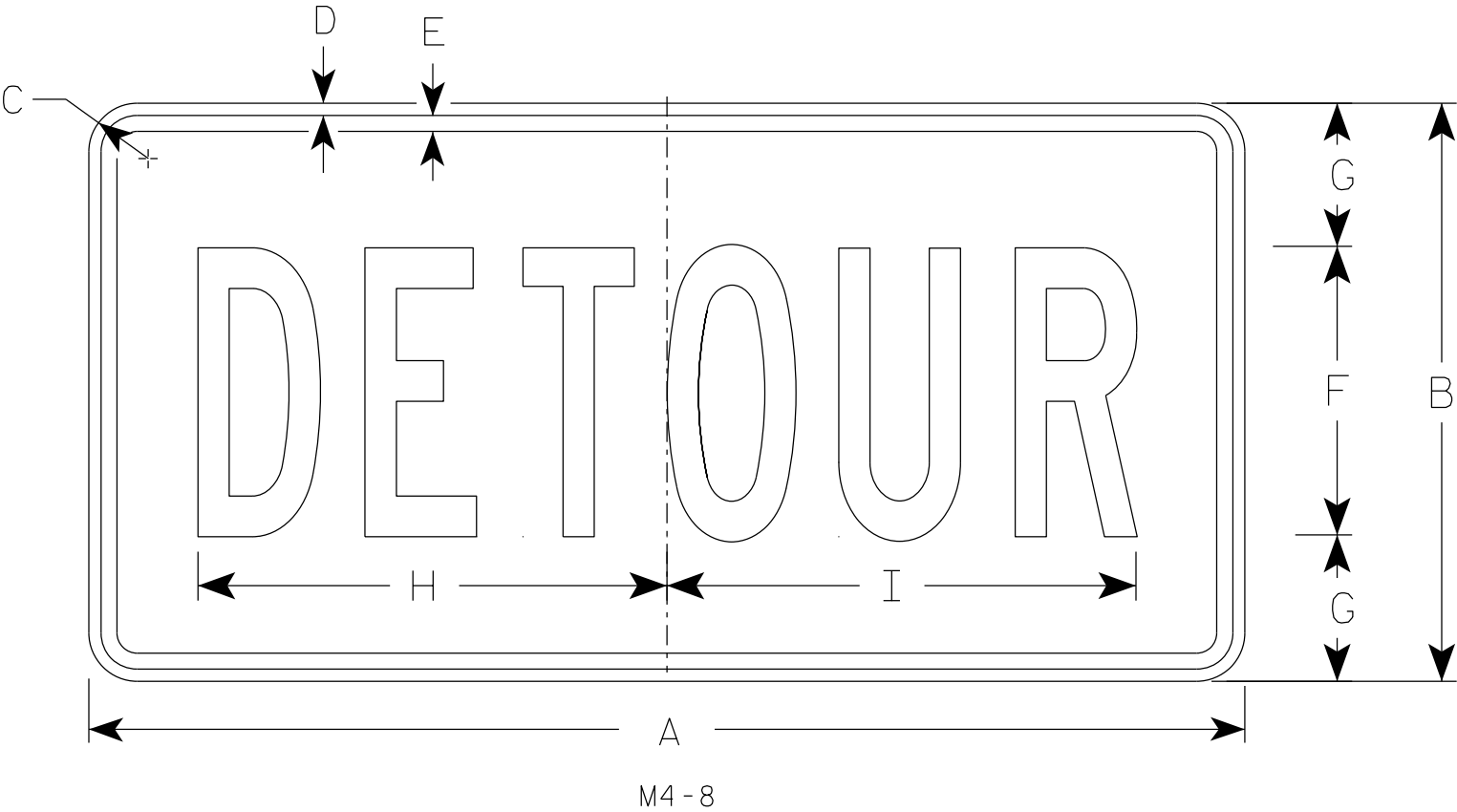
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 182	E
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7

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

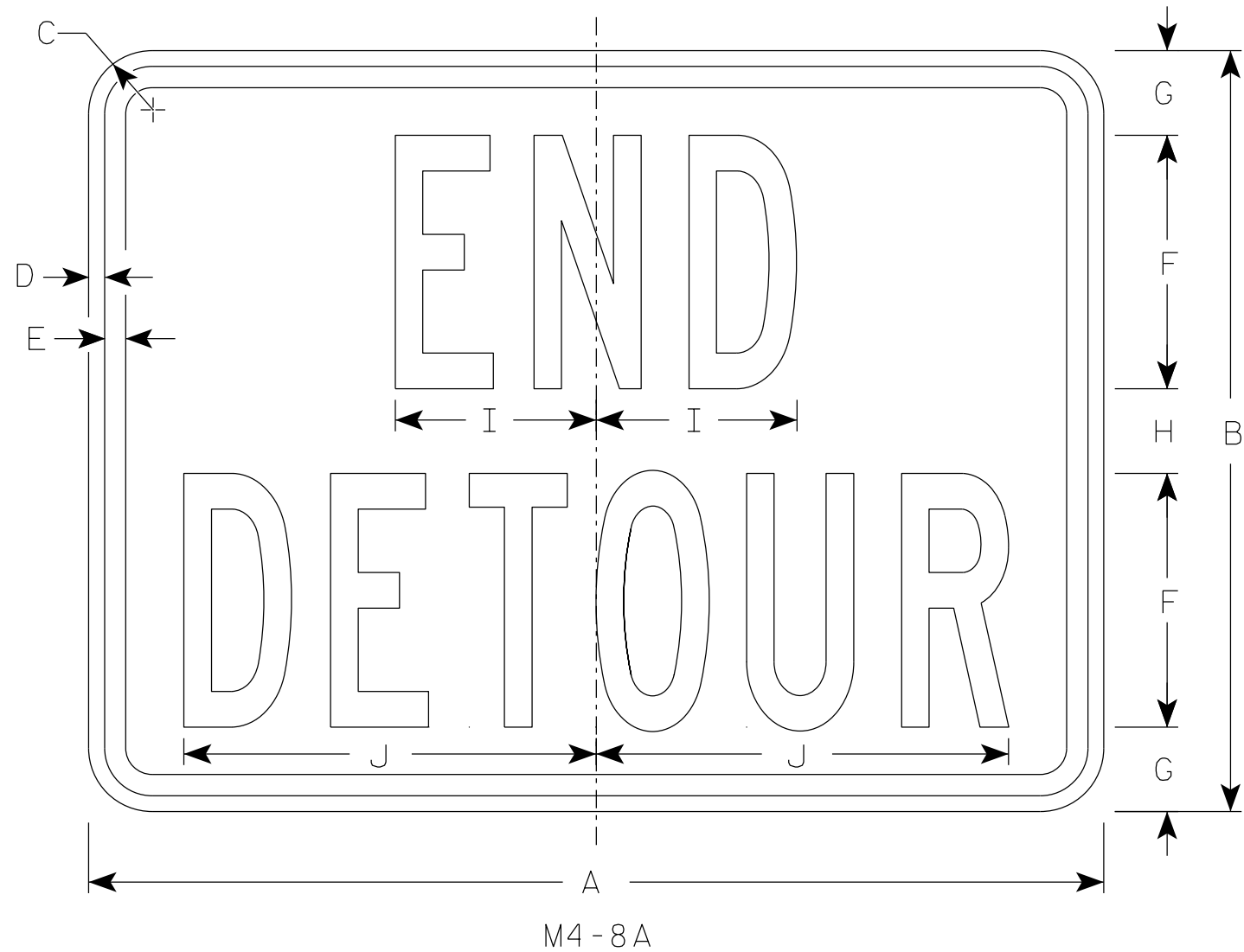
M4-8

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

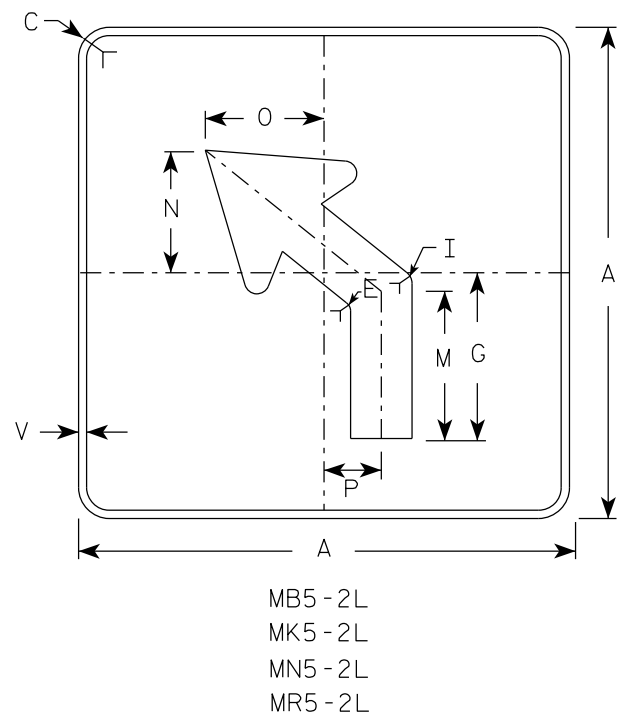
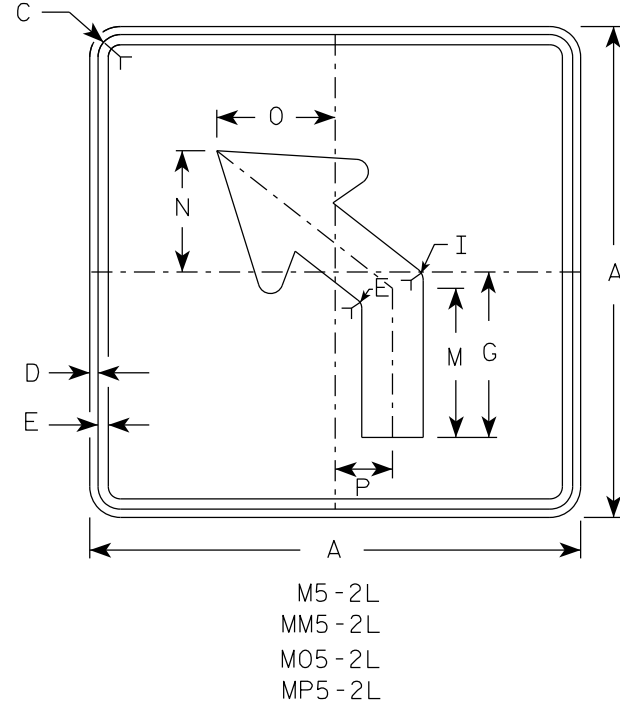
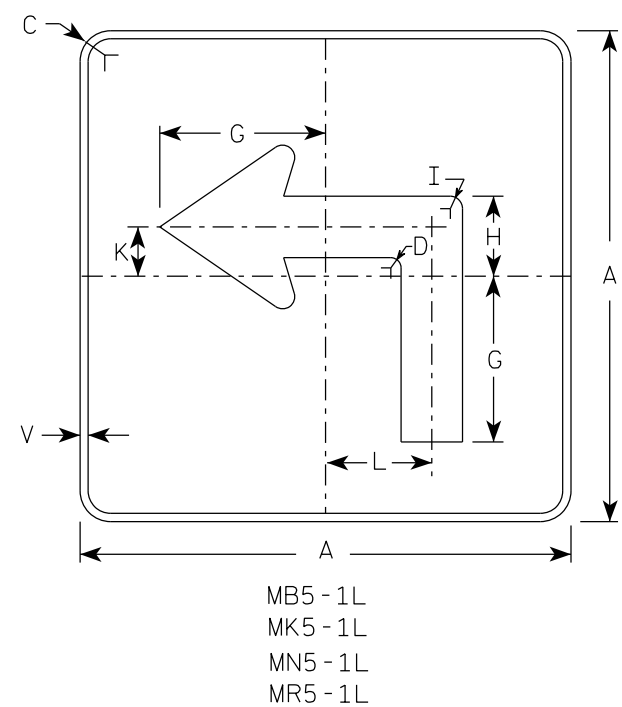
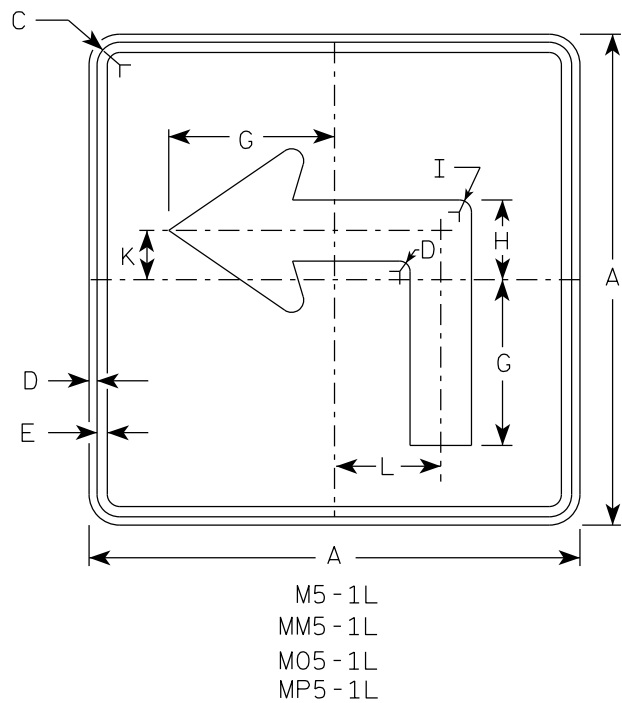
STANDARD SIGN

M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

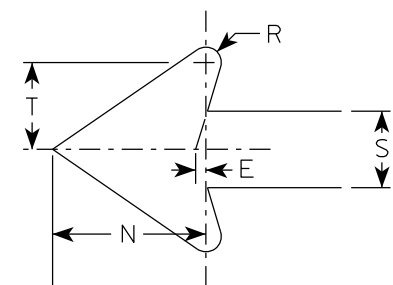
DATE 2/9/2023 PLATE NO. M4-8A.4



NOTES

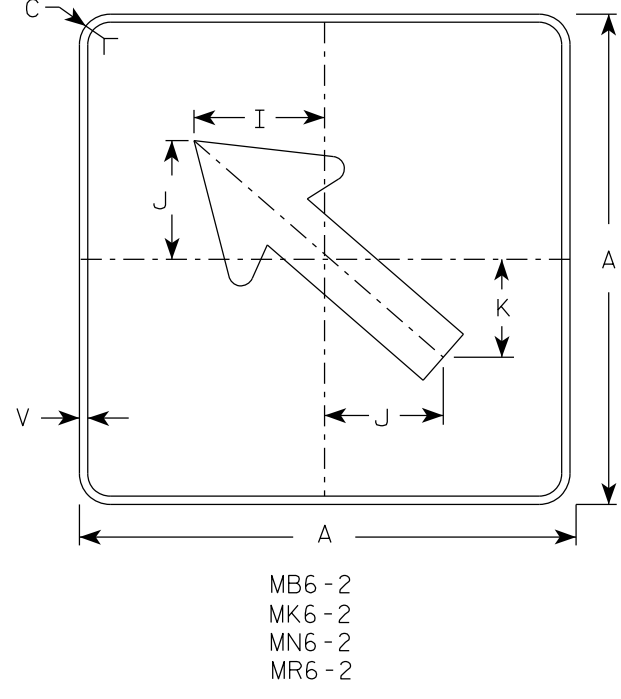
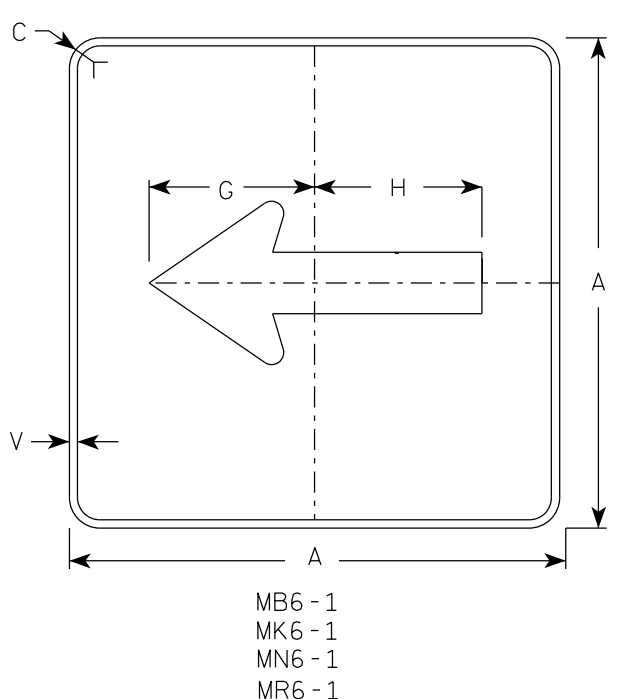
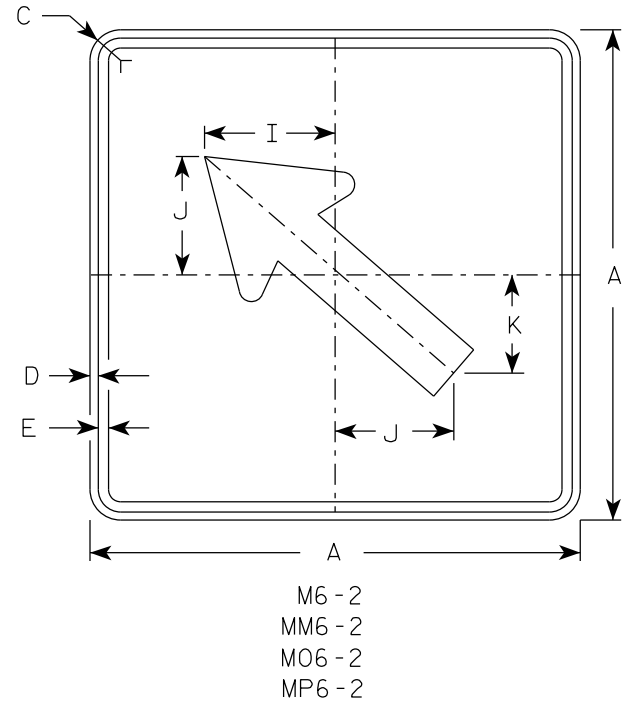
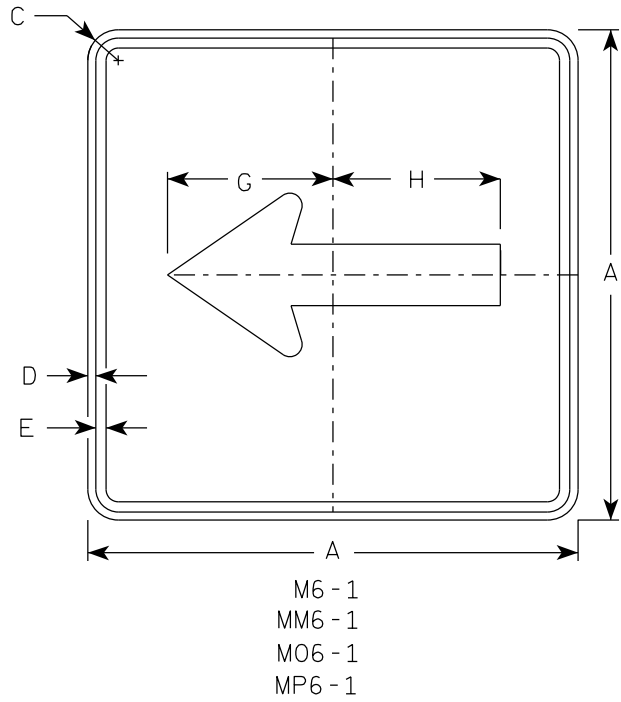
- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | | |
|-----------|-------|---|
| 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



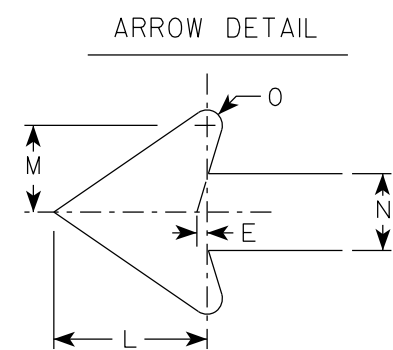
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2	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: 185	E
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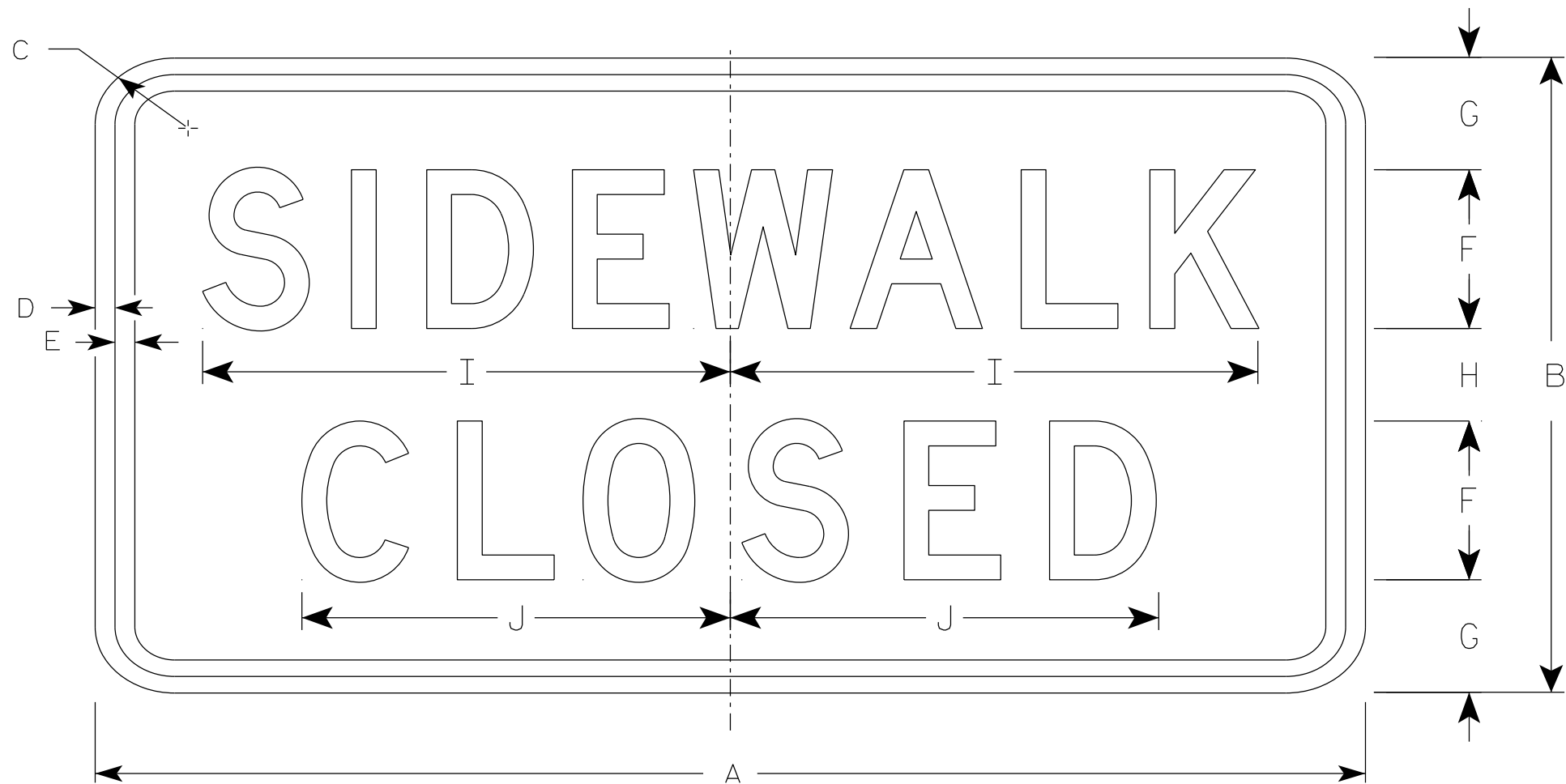
NOTES

- 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



R9-9

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
 - Background - White
 - Message - Black
- 3. Message Series - C
- 4. Use Size 2 for Sidewalks. Use Size 3 for Paths and Trails.

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	24	12	1 1/2	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
2M	24	12	1 1/2	1/2	1/2	3	2 1/8	1 3/4	10	8 1/8																	2.0
3	30	18	1 1/2	1/2	1/2	4	3 1/2	3	12 1/2	10 1/4																	3.75
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 187

E

STANDARD SIGN

R9-9

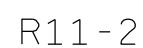
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*

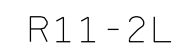
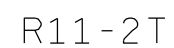
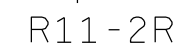
For State Traffic Engineer

DATE 1/24/24

PLATE NO. R9-9.7

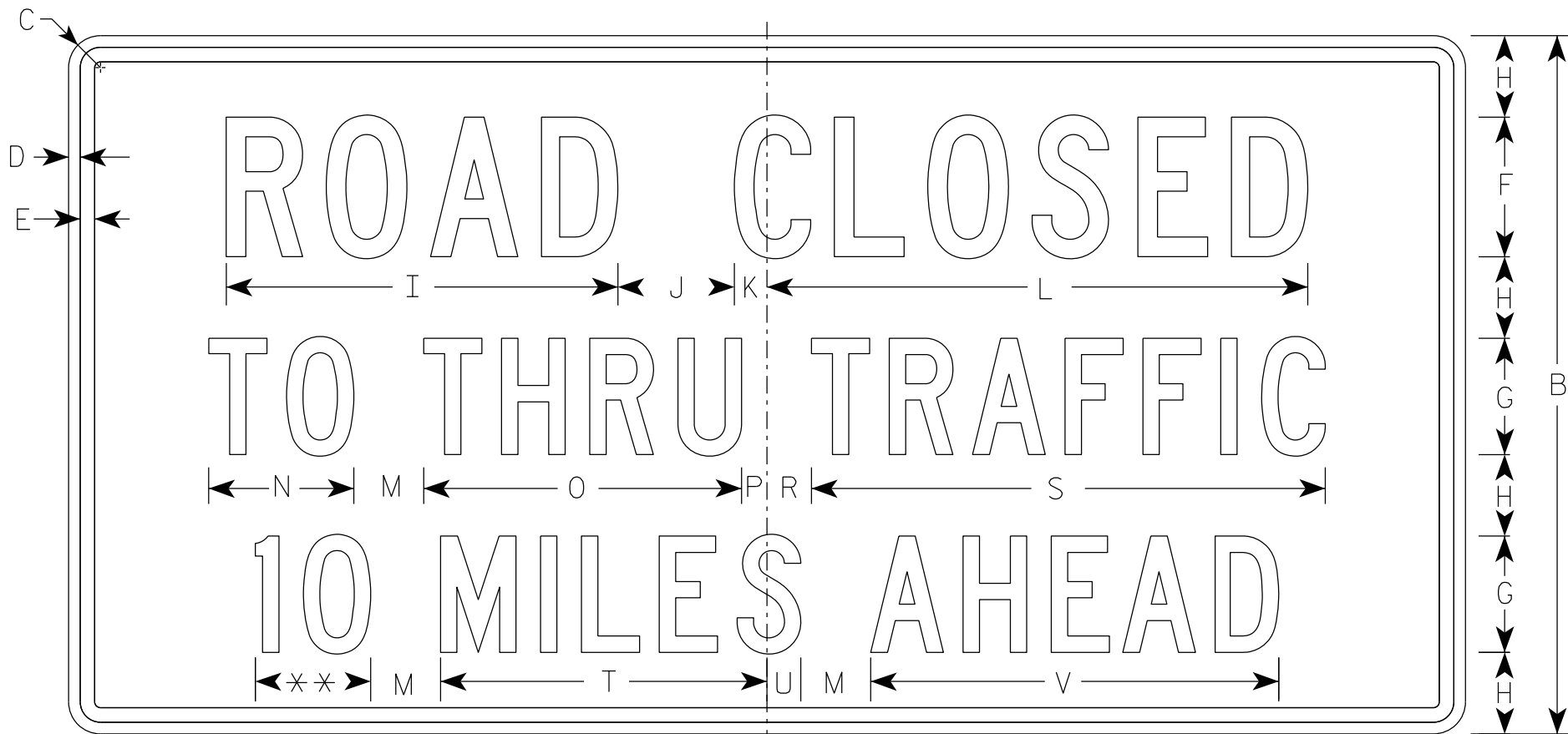


1. Sign is Type II - Type H Reflective
2. Color:
 - Background - White
 - Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Modify the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



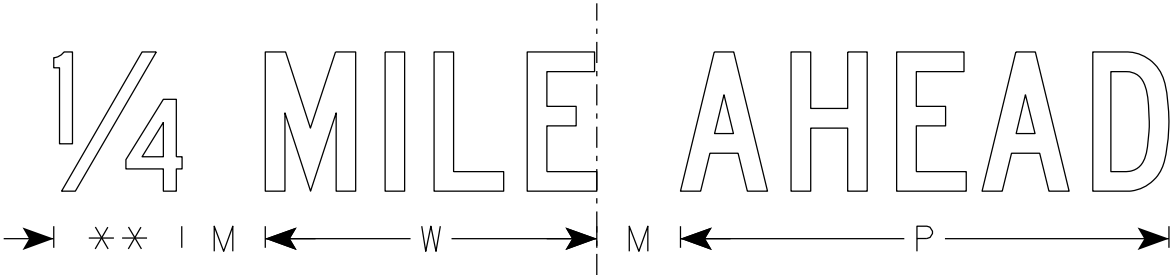
STANDARD SIGN	
R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<u>Matthew R Rauch</u> for State Traffic Engineer
DATE <u>2/5/24</u>	PLATE NO. <u>R11-2.12</u>

7



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																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 189

E

NOTES

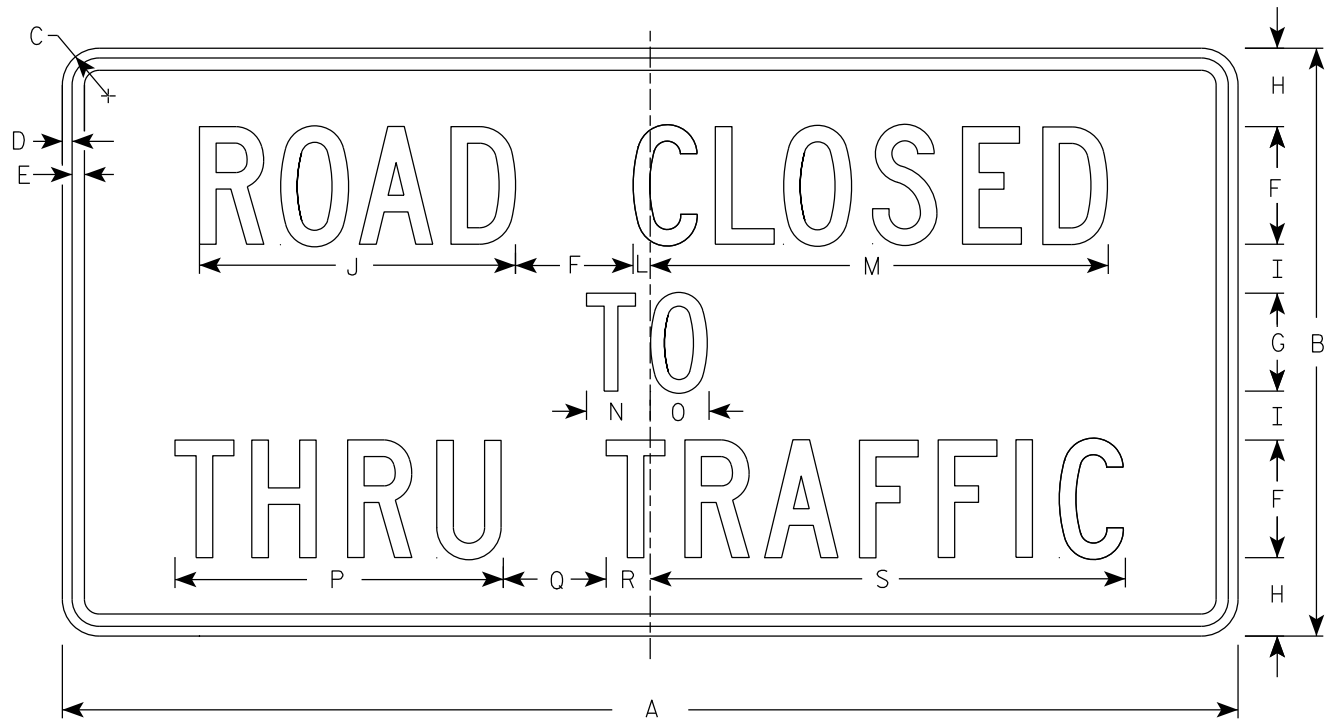
1. Sign is Type II - Type H Reflective
2. Color:

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.

7

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: 190

E

STANDARD SIGN

R11 - 4

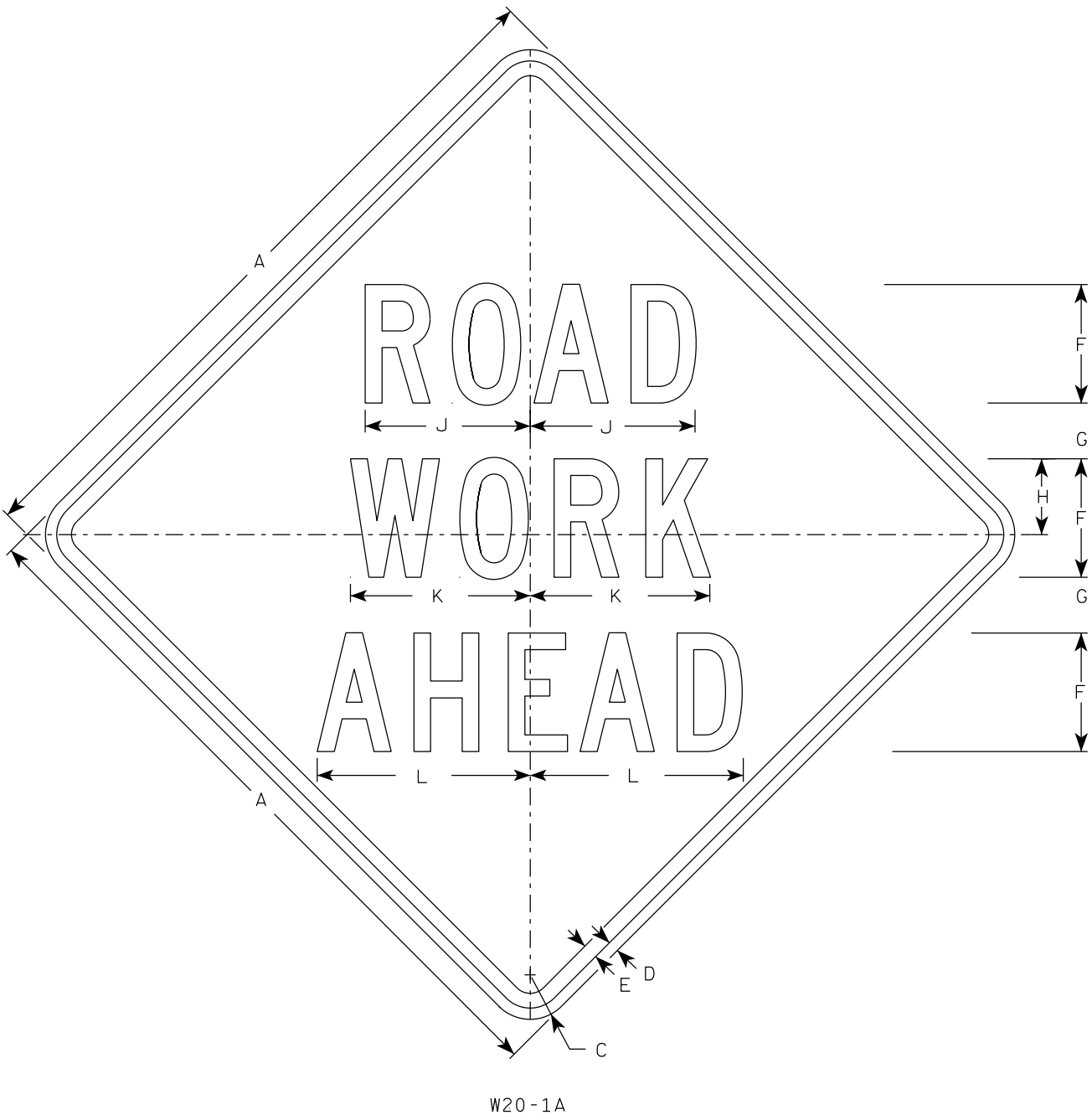
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

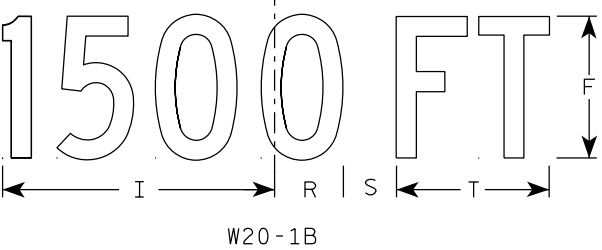
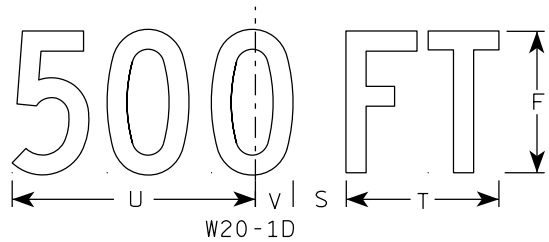
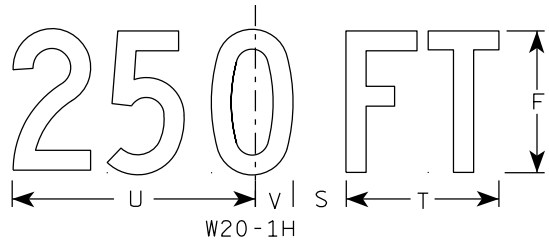
Matthew R. Rauch
for State Traffic Engineer

DATE 2/5/24

PLATE NO. R11-4.4

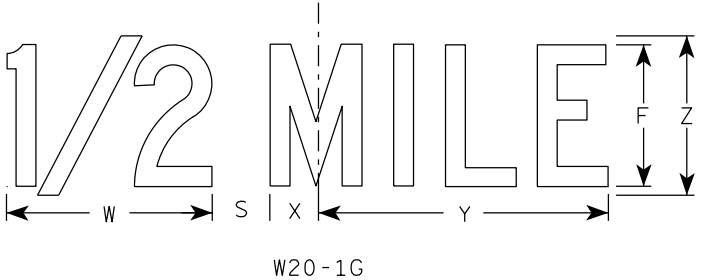


W20-1A

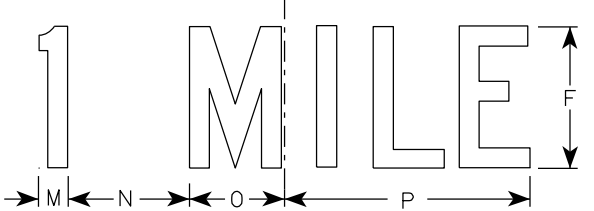


W20-1B

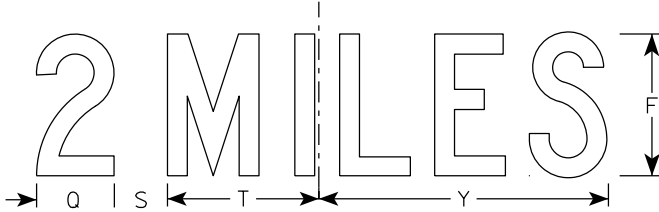
- NOTES
1. Sign is Type II - Type F Reflective
 2. Color:
Background - Orange
Message - Black
 3. Message Series - C
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



W20-1F



W20-1E

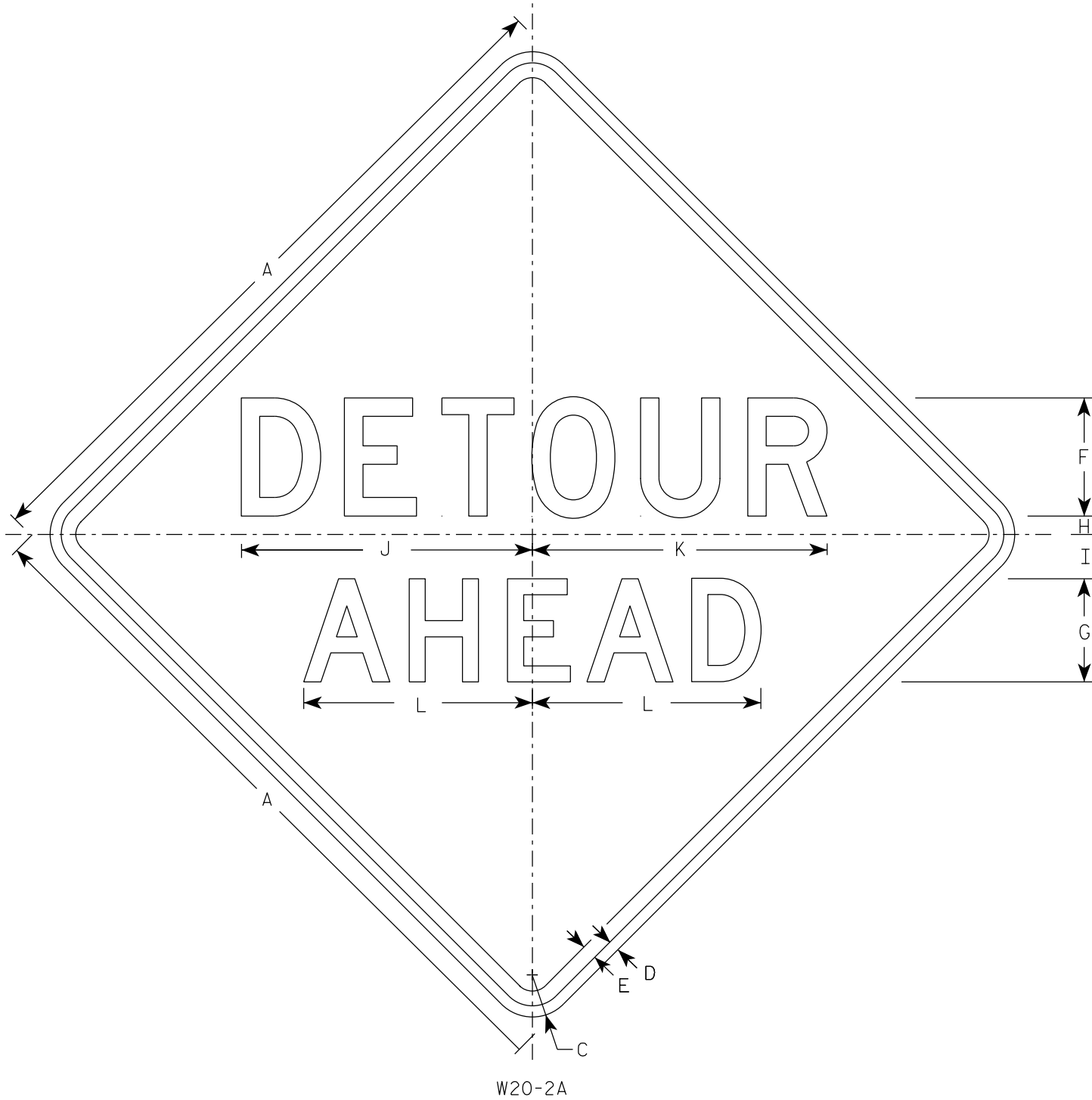
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	2 5/8	3 1/4	10 1/8	7	7 5/8	8 7/8	1 1/8	4 1/2	3 1/2	9	3 1/4	2 1/2	2 1/4	5 5/8	9	1 3/8	8	1 3/4	10 3/4	6	9.0
2S	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
2M	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
3	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
4	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0
5	48		3	3/4	1	8	3 3/4	5 1/8	15 3/8	11 1/8	12 1/8	14 3/8	1 5/8	6 7/8	5 3/8	13 7/8	4 3/8	3 7/8	3	8 5/8	13 3/4	2 1/8	11 7/8	2 3/4	16 3/8	9	16.0

STANDARD SIGN
W20-1A, B, C, D, E, F, G & H

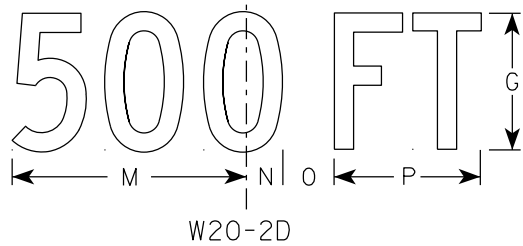
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

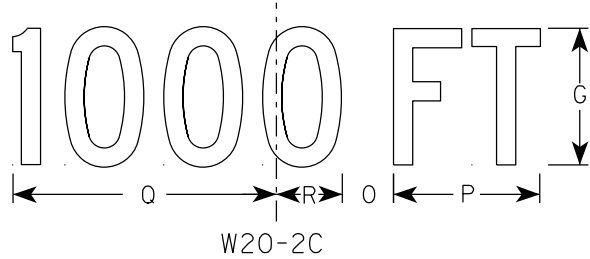
DATE 1/10/2024 PLATE NO. W20-1.12



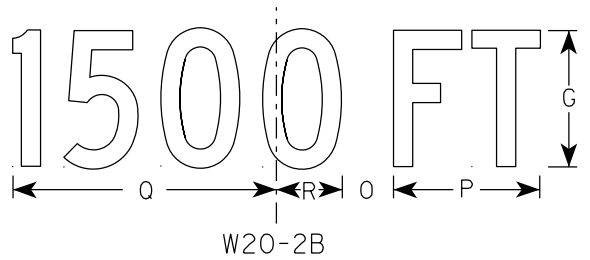
W20-2A



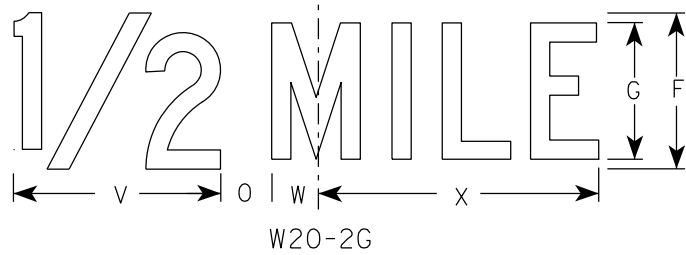
W20-2D



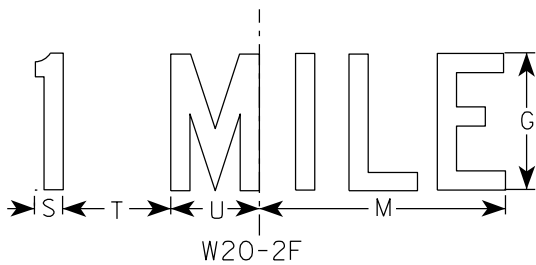
W20-2C



W20-2B



W20-2G



W20-2F

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. 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

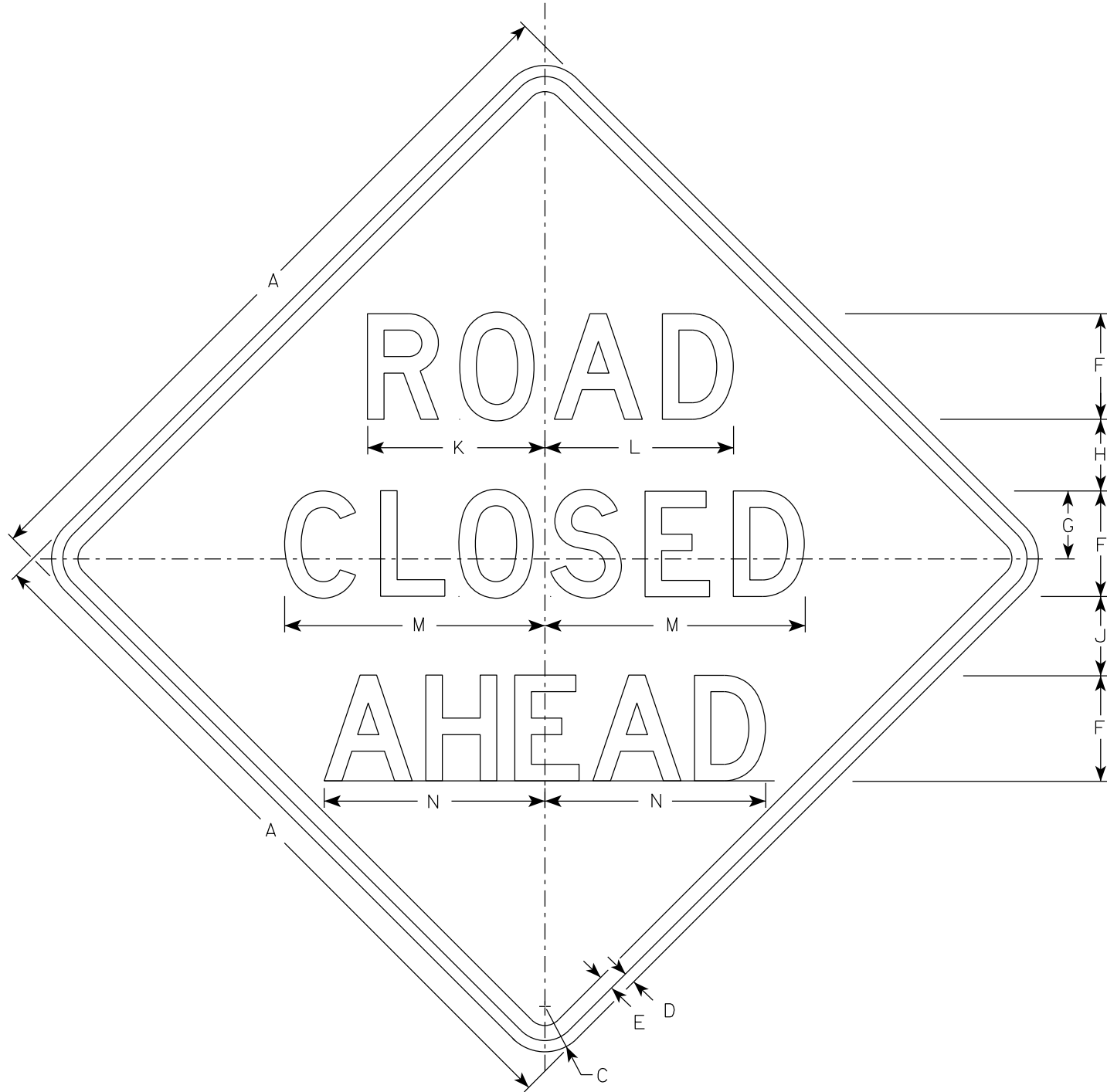
STANDARD SIGN
W20-2A,B,C,D,F & G

WISCONSIN DEPT OF TRANSPORTATION

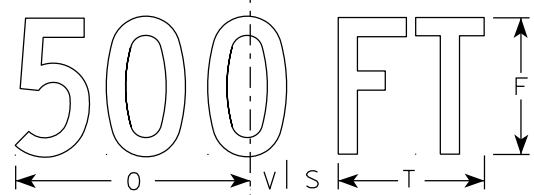
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-2.7

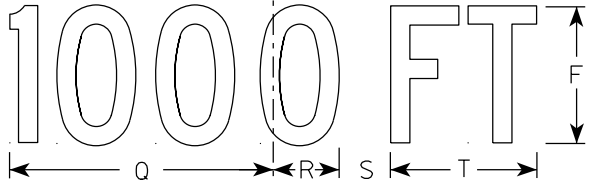
7



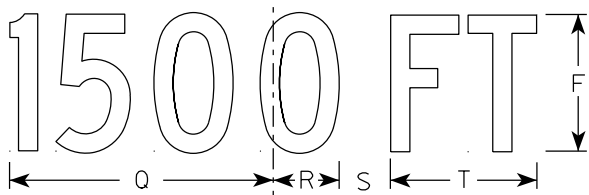
W20-3A



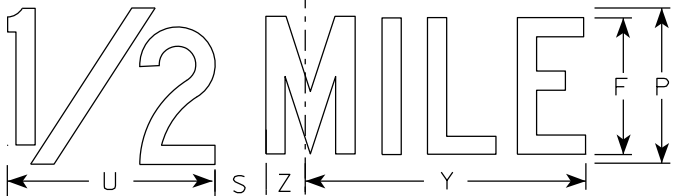
W20-3D



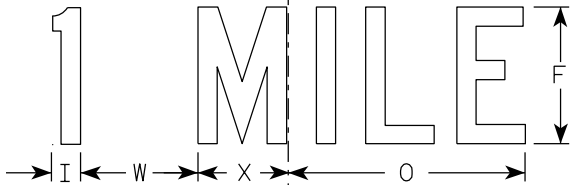
W20-3C



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

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
									1.00	1.25	NOTE 8
1+55.55	155.55	0.00	6.45	0.00	0.25	0	0	0	0	0	0
1+56.00	156.00	0.45	6.45	0.00	0.25	0	0	0	0	0	0
2+00.00	200.00	44.00	13.28	0.00	0.00	22	0	0	22	0	22
2+25.00	225.00	25.00	14.88	0.00	0.00	14	0	0	36	0	36
2+50.00	250.00	25.00	15.28	0.00	0.00	14	0	0	50	0	50
2+75.00	275.00	25.00	13.78	0.00	0.15	13	0	0	63	0	63
3+00.00	300.00	25.00	14.44	0.00	0.00	13	0	0	76	0	76
3+25.00	325.00	25.00	14.46	0.00	0.00	13	0	0	89	0	89
3+50.00	350.00	25.00	13.57	0.00	2.54	13	0	1	102	1	101
3+75.00	375.00	25.00	12.69	0.00	2.16	12	0	2	114	4	110
4+00.00	400.00	25.00	12.79	0.00	2.11	12	0	2	126	6	120
4+25.00	425.00	25.00	31.86	0.00	0.65	21	0	1	147	8	140
4+50.00	450.00	25.00	32.14	0.00	2.32	30	0	1	177	9	168
4+75.00	475.00	25.00	32.50	0.00	0.57	30	0	1	207	10	197
5+00.00	500.00	25.00	33.03	0.00	1.31	30	0	1	237	11	226
5+25.00	525.00	0.00	32.59	0.00	2.70	0	0	0	237	11	226
5+50.00	550.00	25.00	39.00	0.00	0.17	33	0	1	270	13	258
6+00.00	600.00	50.00	38.49	0.00	0.35	72	0	0	342	13	330
6+50.00	650.00	50.00	93.06	0.00	0.22	122	0	1	464	14	450
6+60.00	660.00	10.00	91.86	0.00	0.00	34	0	0	498	14	484
7+00.00	700.00	40.00	87.97	0.00	2.72	133	0	2	631	16	615
7+50.00	750.00	50.00	92.48	0.00	3.22	167	0	6	798	24	774
8+00.00	800.00	50.00	97.64	0.00	0.31	176	0	3	974	28	947
8+34.00	834.00	34.00	90.80	0.00	0.00	119	0	0	1,093	28	1,066
8+50.00	850.00	16.00	87.07	0.00	1.89	54	0	0	1,028	28	1,001
8+75.00	875.00	25.00	82.22	0.00	2.51	80	0	1	1,173	29	1,144
9+00.00	900.00	25.00	77.12	0.00	0.34	74	0	1	1,247	30	1,217
9+50.00	950.00	50.00	73.76	0.00	0.08	140	0	0	1,387	30	1,357
10+00.00	1000.00	50.00	67.00	0.00	0.29	130	0	0	1,517	30	1,487
10+50.00	1050.00	50.00	65.97	0.00	0.34	123	0	1	1,640	31	1,609
11+00.00	1100.00	50.00	71.83	0.00	0.09	128	0	0	1,768	31	1,737
11+37.00	1137.00	37.00	71.80	0.00	0.15	98	0	0	1,866	31	1,835
11+44.56	1144.56	7.56	71.31	0.00	0.37	20	0	0	1,886	31	1,855

NOTE 8 THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
									1.00	1.25	NOTE 8
43+44.27	4344.27	0.00	0.00	0.00	0.00	0	0	0	0	0	0
43+50	4350.00	5.73	0.00	0.00	0.00	0	0	0	0	0	0
44+00	4400.00	50.00	0.00	0.00	0.00	0	0	0	0	0	0
44+50	4450.00	50.00	0.00	0.00	0.00	0	0	0	0	0	0
44+71.00	4471.00	21.00	0.00	0.00	0.00	0	0	0	0	0	0
44+81.00	4481.00	10.00	0.00	0.00	18.84	0	0	3	0	4	-4
44+96.00	4496.00	15.00	0.00	0.00	41.26	0	0	17	0	25	-25
45+00.00	4500.00	4.00	0.00	0.00	45.40	0	0	6	0	33	-33
45+06.00	4506.00	6.00	0.00	0.00	51.09	0	0	11	0	46	-46
45+21.00	4521.00	15.00	0.00	0.00	49.29	0	0	28	0	81	-81
45+31.00	4531.00	10.00	0.00	0.00	0.00	0	0	9	0	93	-93
45+50.00	4550.00	19.00	0.00	0.00	0.00	0	0	0	0	93	-93
46+00.00	4600.00	50.00	41.59	0.00	12.65	39	0	12	39	108	-69
46+20.00	4620.00	20.00	32.32	0.00	47.10	27	0	22	66	135	-69
BRIDGE B-71-8											
47+05.00	4705.00	0.00	35.71	0.00	2.32	0	0	22	66	135	-69
47+22.00	4722.00	17.00	39.70	0.00	0.00	25	0	0	91	135	-44
47+50.00	4750.00	28.00	0.00	0.00	0.00	21	0	0	112	135	-23
47+53.00	4753.00	3.00	0.00	0.00	0.00	0	0	0	112	135	-23
47+77.00	4777.00	24.00	0.00	0.00	41.70	0	0	19	112	159	-47
48+00.00	4800.00	23.00	0.00	0.00	86.64	0	0	55	112	228	-116
48+02.00	4802.00	2.00	0.00	0.00	86.52	0	0	6	112	235	-123
48+05.00	4805.00	3.00	0.00	0.00	84.13	0	0	9	112	246	-134
48+30.00	4830.00	25.00	0.00	0.00	59.80	0	0	67	112	330	-218
48+50.00	4850.00	20.00	0.00	0.00	27.24	0	0	42	112	299	-187
48+55.00	4855.00	5.00	0.00	0.00	28.14	0	0	7	112	339	-227
49+00.00	4900.00	45.00	0.00	0.00	0.00	0	0	23	112	368	-256
49+50.00	4950.00	50.00	0.00	0.00	0.00	0	0	0	112	368	-256
49+59.68	4959.68	9.68	0.00	0.00	0.00	0	0	0	112	368	-256

NOTE 8 THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
									1.00	1.25	
											NOTE 8
222+05.26	22205.26	0.00	0.00	0.00	0.00	0	0	0	0	0	0
222+50.00	22250.00	44.74	0.00	0.00	13.64	0	0	11	0	14	-14
222+92.00	22292.00	42.00	0.00	0.00	31.13	0	0	35	0	58	-58
223+00.00	22300.00	8.00	0.00	0.00	27.03	0	0	9	0	69	-69
223+17.00	22317.00	17.00	0.00	0.00	20.11	0	0	15	0	88	-88
223+42.00	22342.00	25.00	0.00	0.00	19.57	0	0	18	0	110	-110
223+50.00	22350.00	8.00	0.00	0.00	21.94	0	0	6	0	118	-118
223+54.00	22354.00	4.00	0.00	0.00	6.17	0	0	2	0	120	-120
223+79.00	22379.00	25.00	0.00	0.00	3.69	0	0	5	0	126	-126
224+00.00	22400.00	21.00	0.00	0.00	0.00	0	0	1	0	128	-128
224+04.00	22404.00	4.00	0.00	0.00	0.00	0	0	0	0	128	-128
224+50.00	22450.00	46.00	0.00	0.00	0.00	0	0	0	0	128	-128
225+00.00	22500.00	50.00	0.00	0.00	0.00	0	0	0	0	128	-128
225+36.00	22536.00	36.00	35.53	0.00	2.47	24	0	2	24	130	-106
225+57.34	22557.34	21.34	0.00	0.00	2.47	14	0	2	38	133	-95
226+09.48	22609.48	52.14	0.00	0.00	2.02	0	0	4	38	138	-100
226+30.00	22630.00	20.52	0.00	0.00	2.02	0	0	2	38	140	-102
226+50.00	22650.00	20.00	0.00	0.00	1.22	0	0	1	38	141	-103
226+75.00	22675.00	25.00	0.00	0.00	1.03	0	0	1	38	143	-105
227+00.00	22700.00	25.00	0.00	0.00	2.66	0	0	2	38	145	-107
227+25.00	22725.00	25.00	0.00	0.00	0.00	0	0	1	38	146	-108
227+50.00	22750.00	25.00	0.00	0.00	0.00	0	0	0	38	146	-108
228+00.00	22800.00	50.00	0.00	0.00	0.00	0	0	0	38	146	-108
228+24.00	22824.00	24.00	0.00	0.00	0.00	0	0	0	38	146	-108
228+49.00	22849.00	25.00	0.00	0.00	5.79	0	0	3	38	150	-112
228+74.00	22874.00	25.00	0.00	0.00	10.83	0	0	8	38	160	-122
229+00.00	22900.00	26.00	0.00	0.00	7.11	0	0	9	38	171	-133
229+50.00	22950.00	50.00	0.00	0.00	1.34	0	0	8	38	181	-143
230+00.00	23000.00	50.00	0.00	0.00	0.00	0	0	1	38	183	-145
230+03.25	23003.25	3.25	0.00	0.00	0.00	0	0	0	38	183	-145

NOTE 8 THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
									1.00	1.25	
270+00.00	27000.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0
270+25.00	27025.00	25.00	4.47	0.00	29.55	2	0	14	2	18	-16
270+50.00	27050.00	25.00	2.21	0.00	57.87	2	0	54	4	85	-81
270+63.00	27063.00	13.00	18.67	0.00	2234.61	9	0	1,076	13	1,430	-1,417
270+75.00	27075.00	12.00	0.00	0.00	45.25	4	0	507	17	2,064	-2,047
271+00.00	27100.00	25.00	0.00	0.00	0.00	0	0	21	17	2,090	-2,073

NOTE 8 THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
									1.00	1.25	
298+00.00	29800.00	0.00	0.00	0.00	0.00	0	0	0	0	0	0
298+50.00	29850.00	50.00	1.38	0.00	0.00	1	0	0	1	0	1
298+75.00	29875.00	25.00	6.76	0.00	0.00	6	0	0	7	0	7
298+99.00	29900.00	25.00	9.61	0.00	0.00	9	0	0	16	0	16
299+25.00	29925.00	25.00	7.60	0.00	0.00	8	0	0	24	0	24
299+50.00	29950.00	25.00	5.01	0.00	18.84	6	0	9	30	11	19
299+75.00	29975.00	25.00	4.64	0.00	41.26	4	0	28	34	46	-12
300+00.00	30000.00	25.00	3.99	0.00	45.40	4	0	40	38	96	-58
300+25.00	30025.00	25.00	1.14	0.00	4.16	2	0	23	40	125	-85
300+50.00	30050.00	25.00	0.27	0.00	4.68	1	0	4	41	130	-89
300+75.00	30075.00	25.00	0.00	0.00	0.00	0	0	2	41	133	-92

NOTE 8 THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.



PROJECT NO: 1520-00-77

HWY: STH 73

COUNTY: WOOD

CROSS SECTIONS: STH 73

SHEET

198

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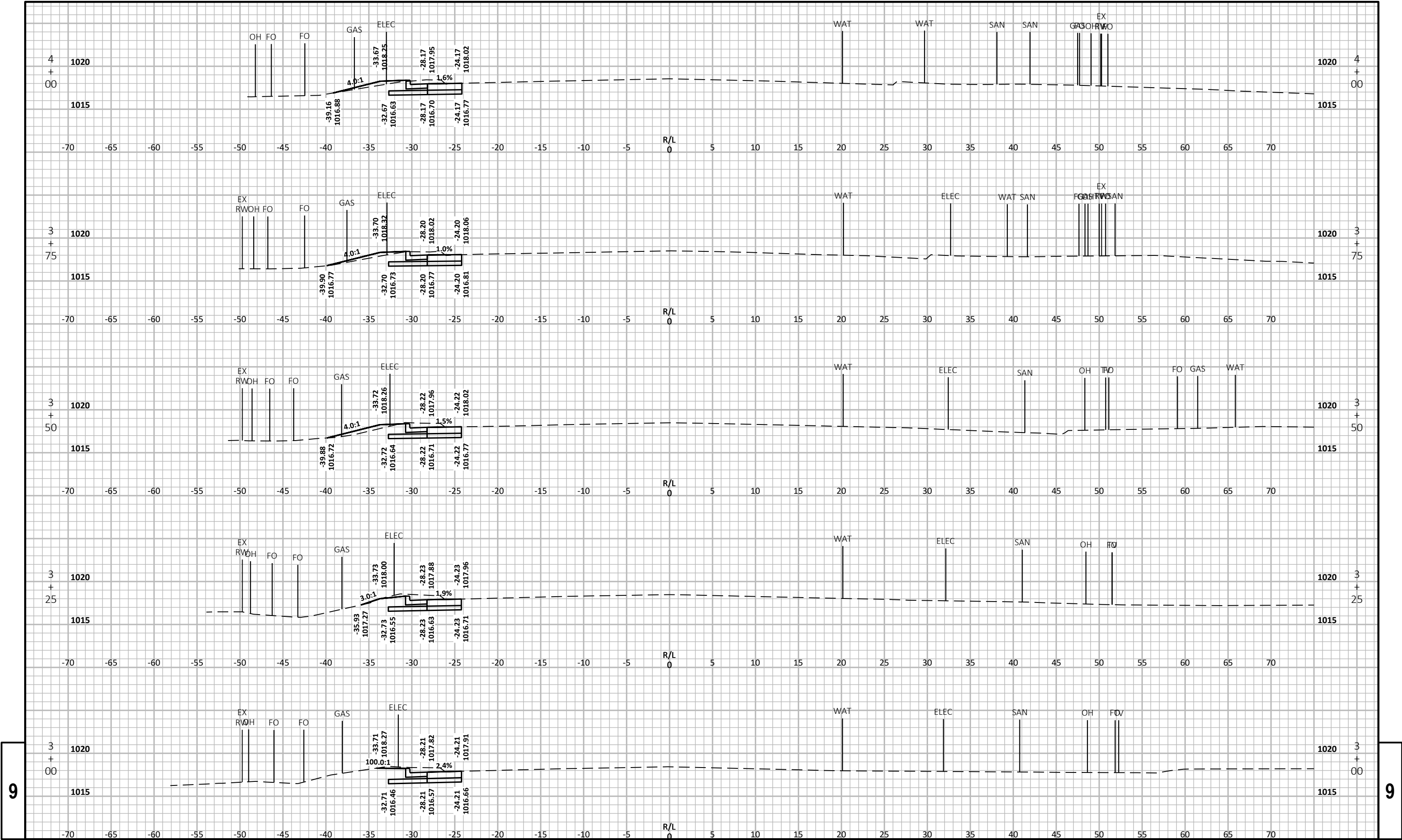
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PLOT BY : CRAIG KNUTH

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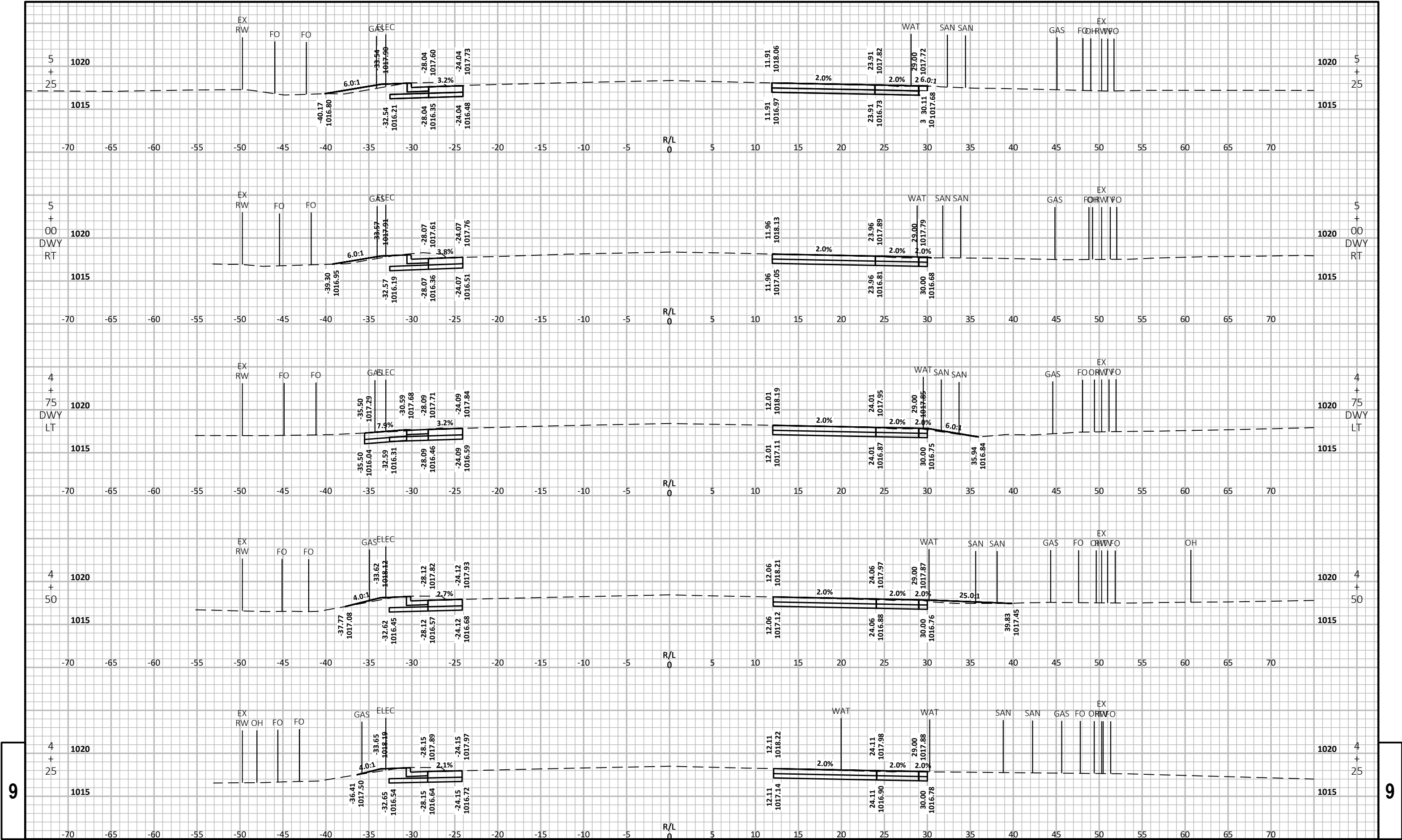
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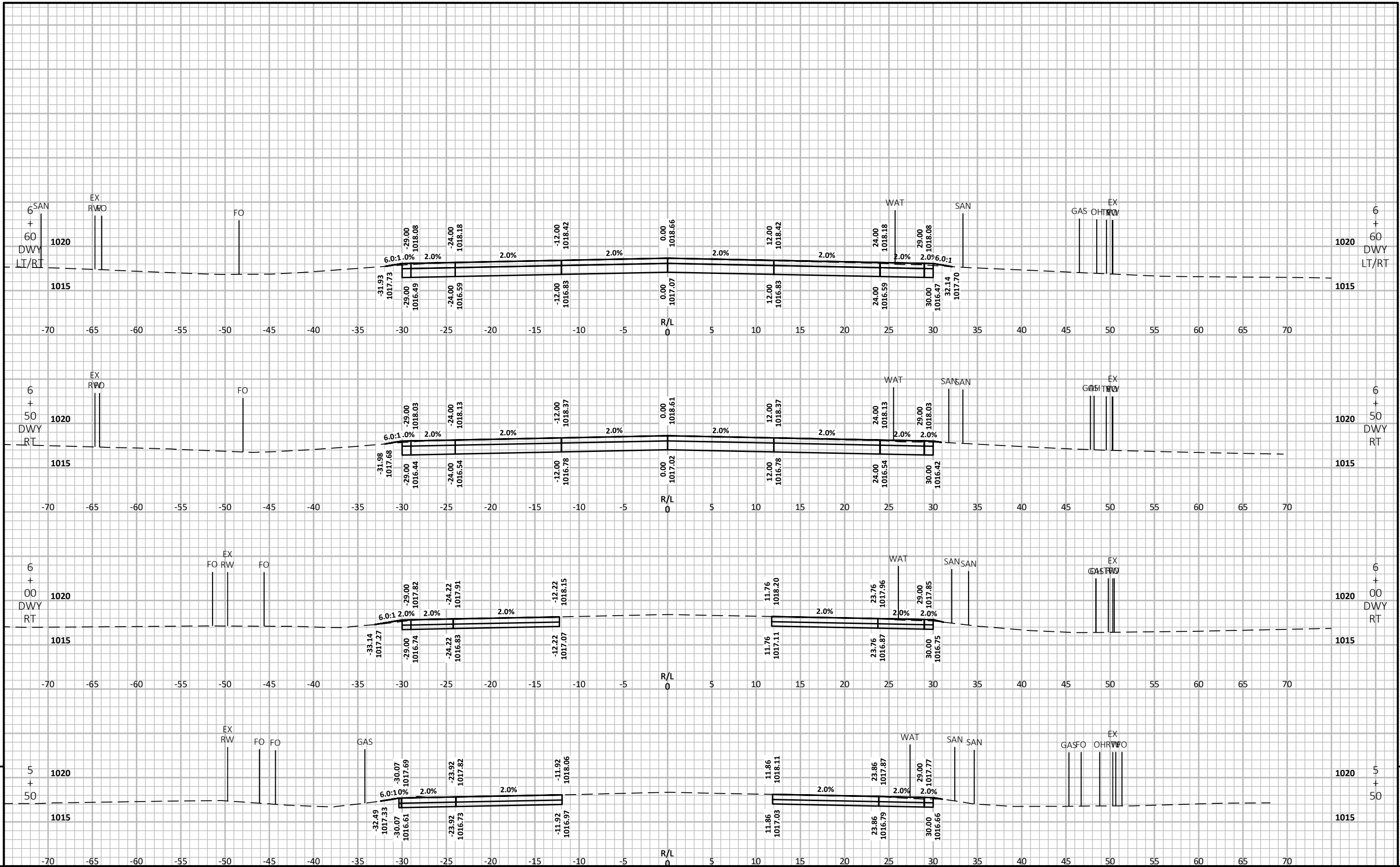
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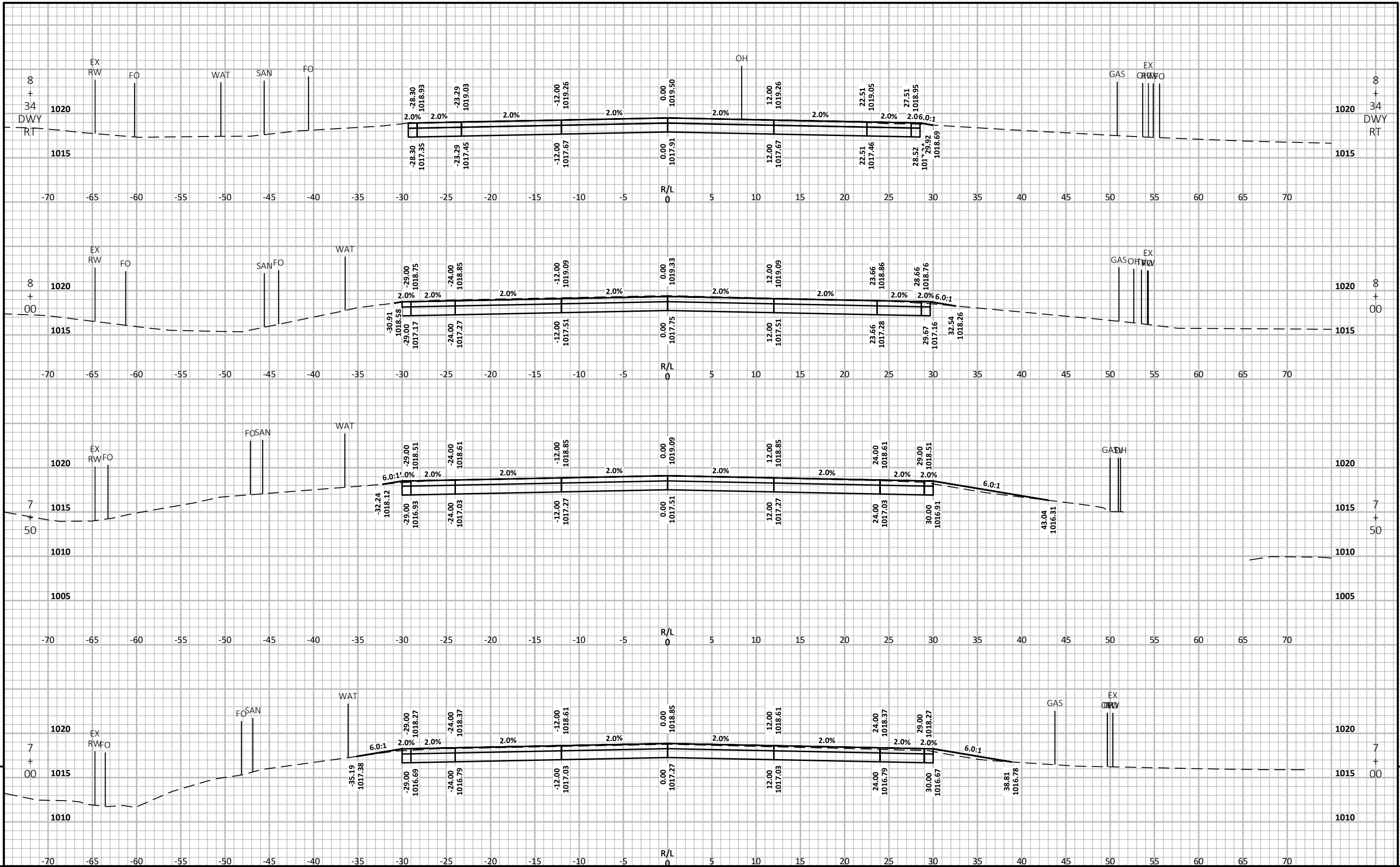


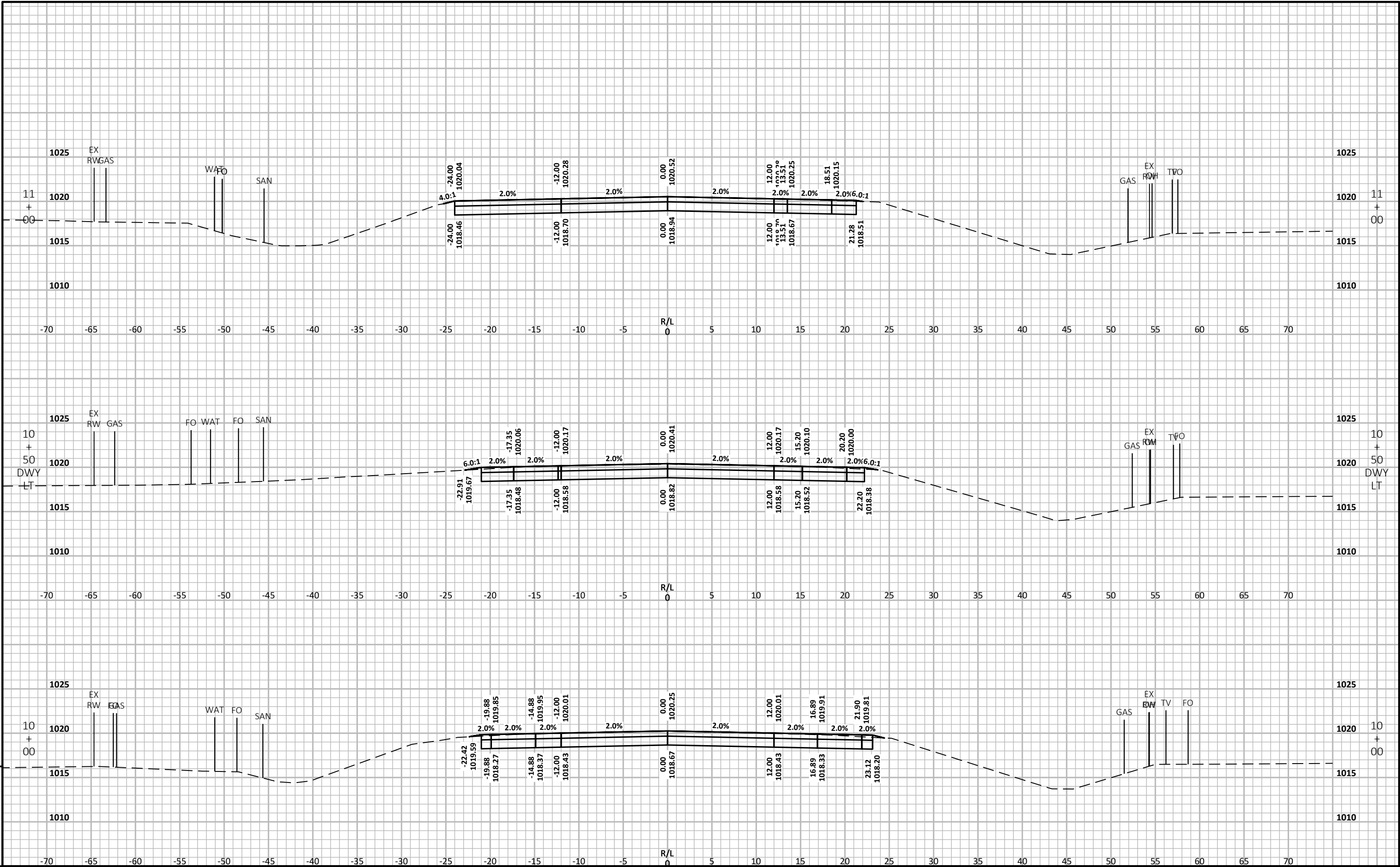
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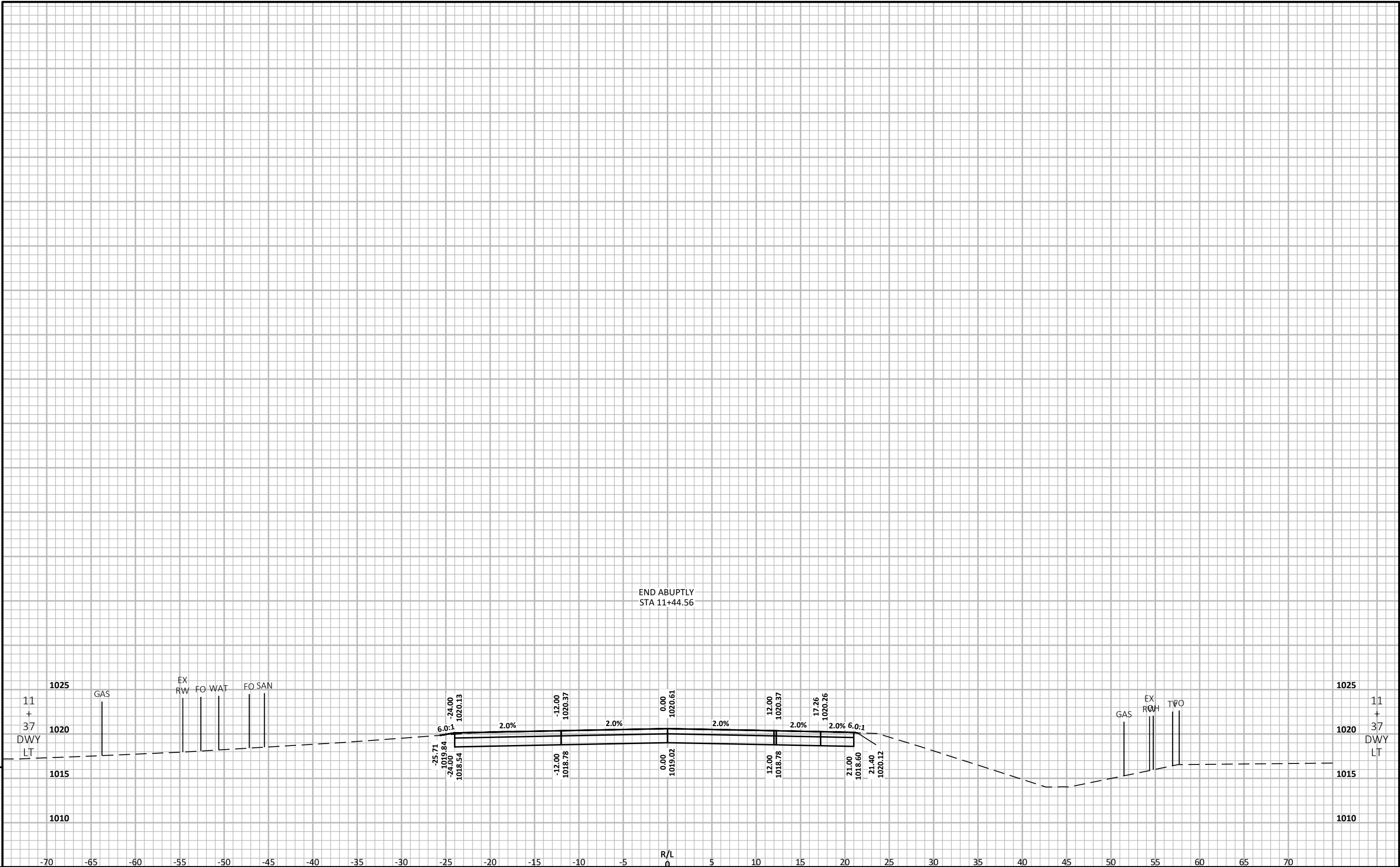




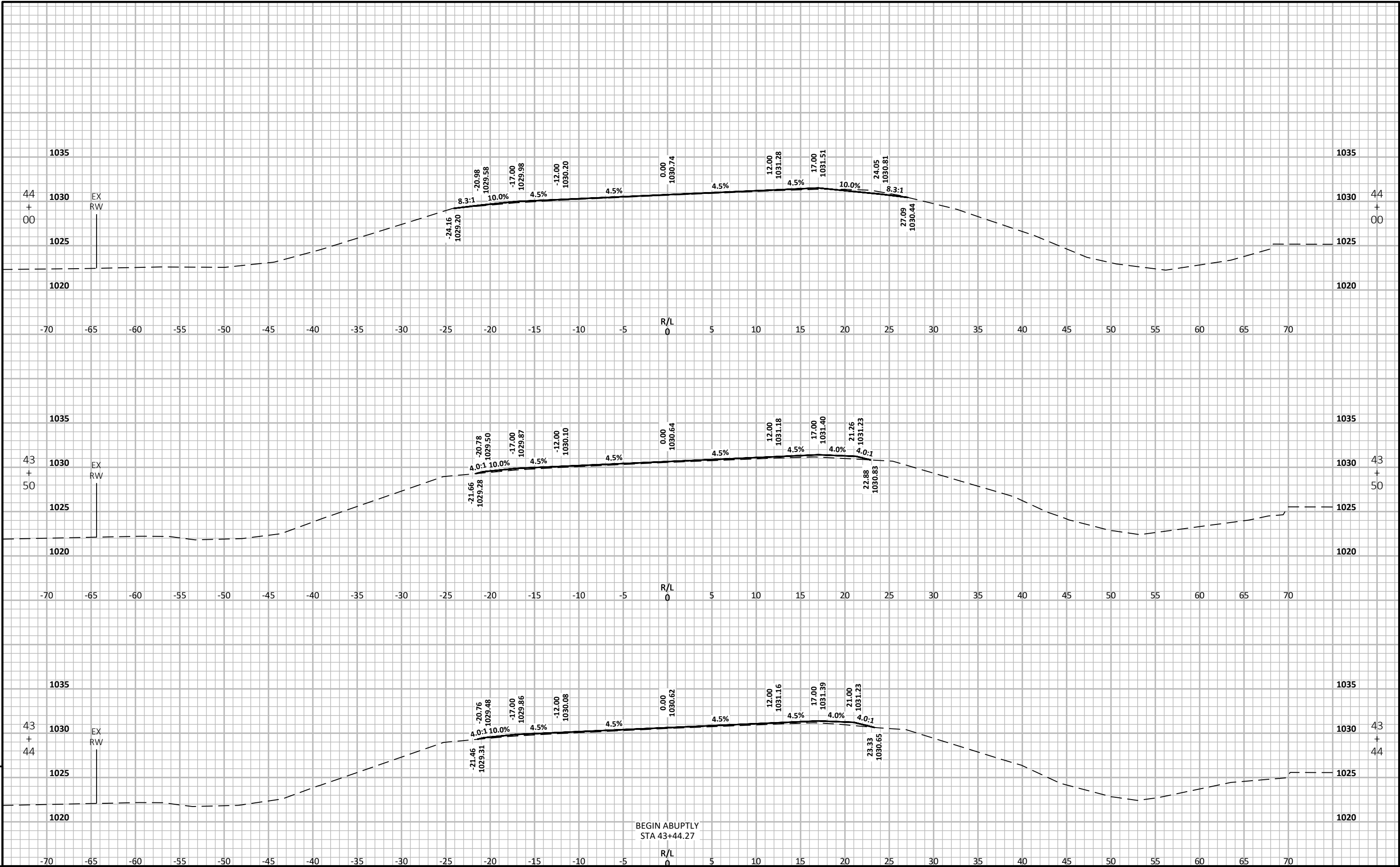


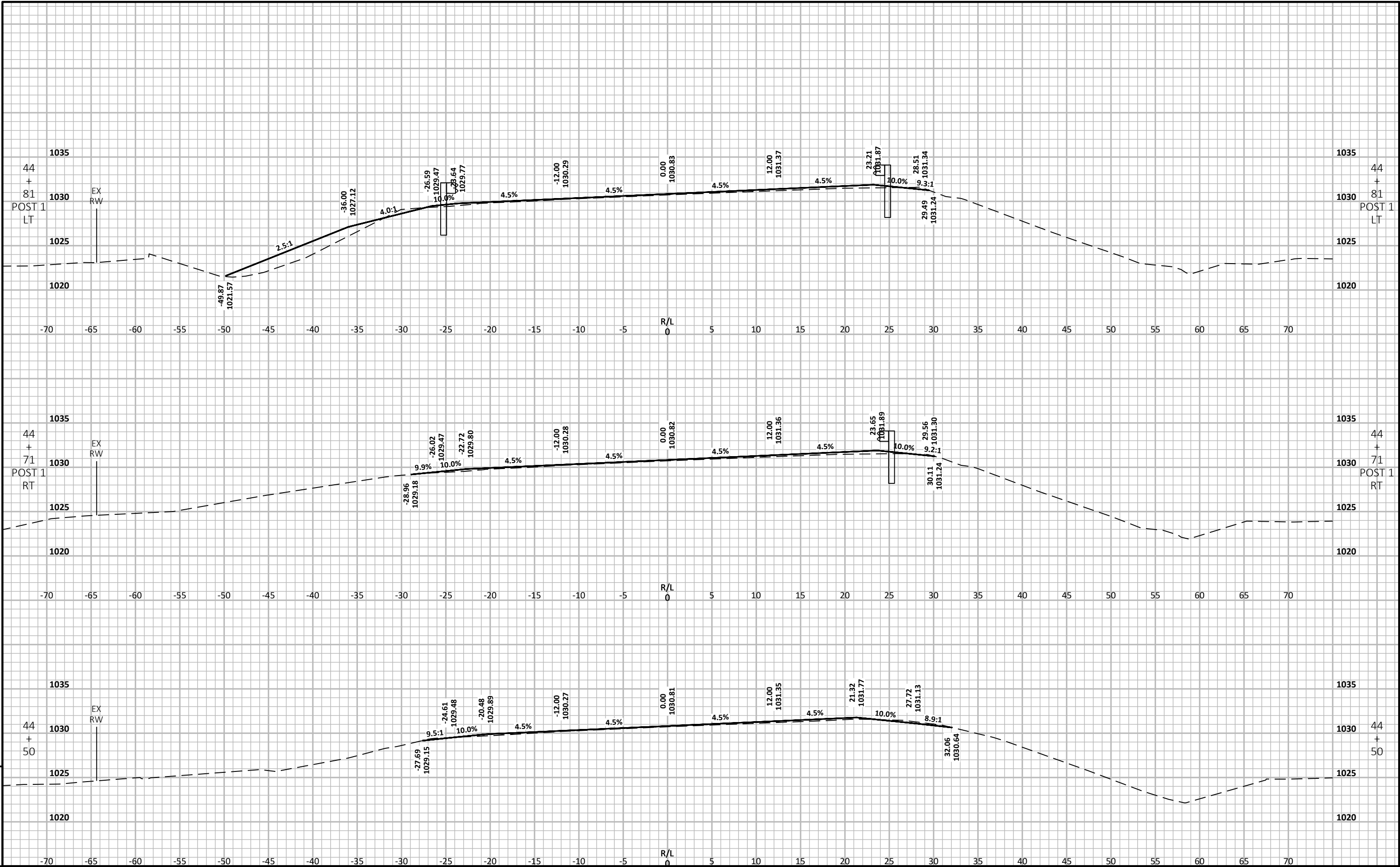


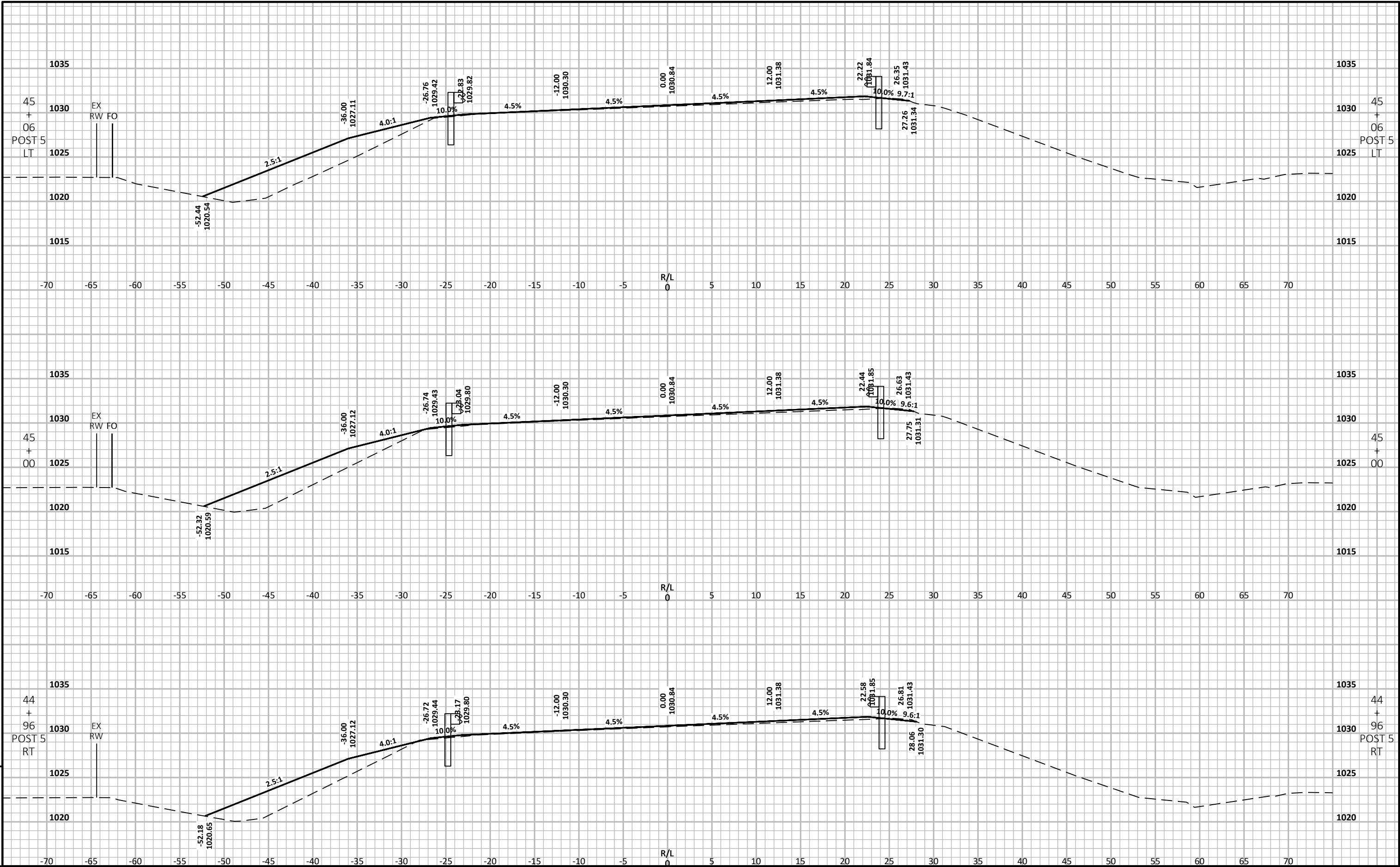
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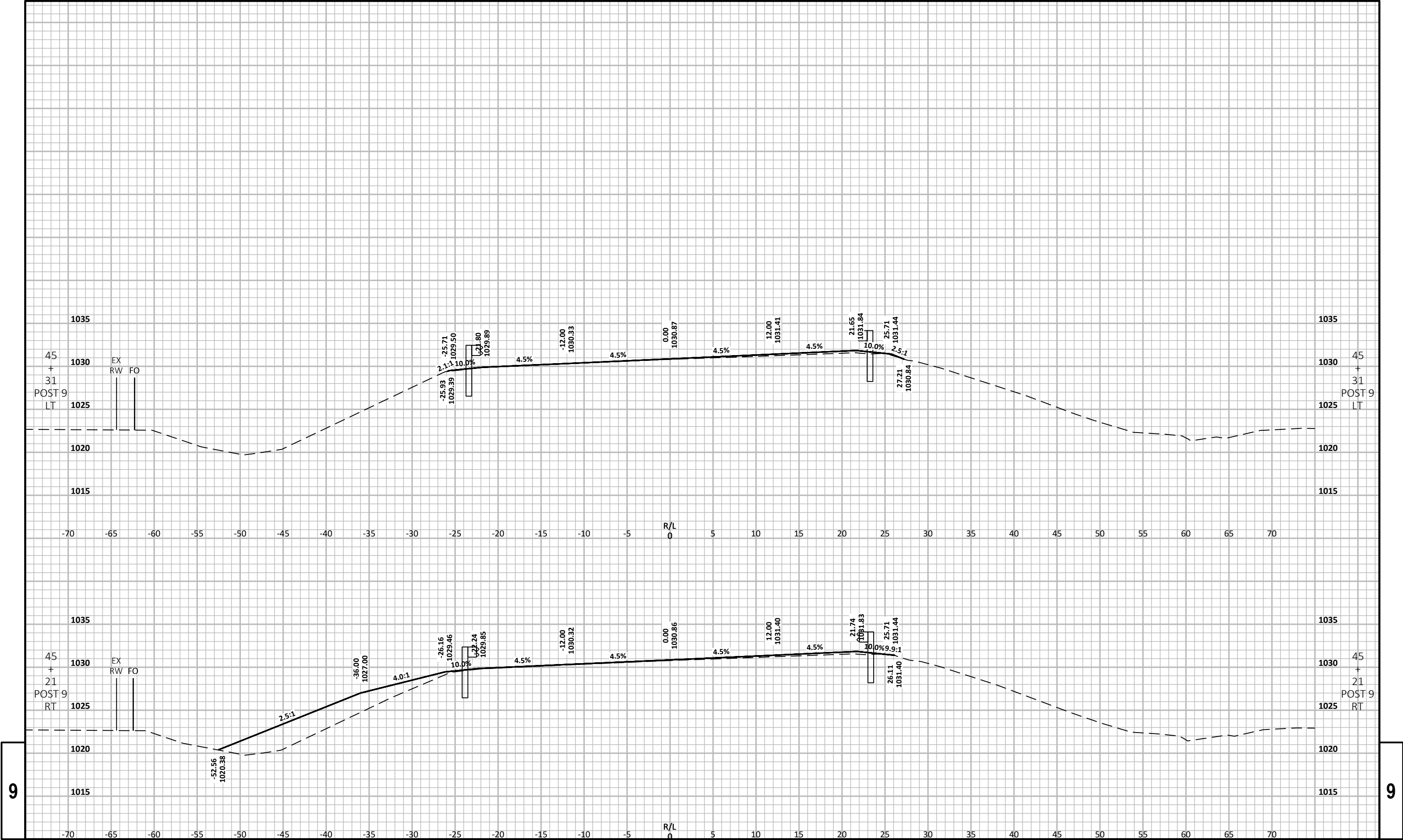


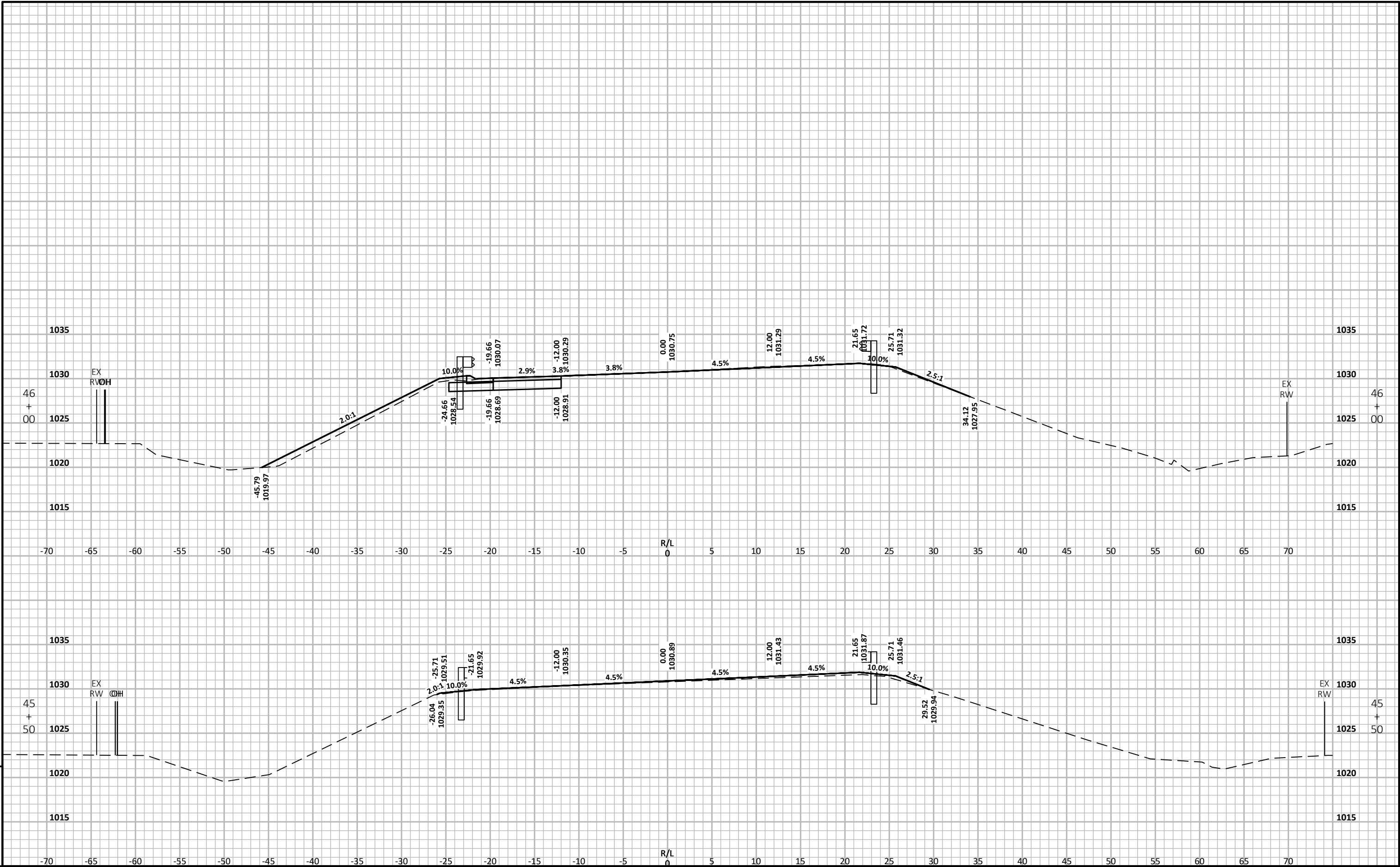
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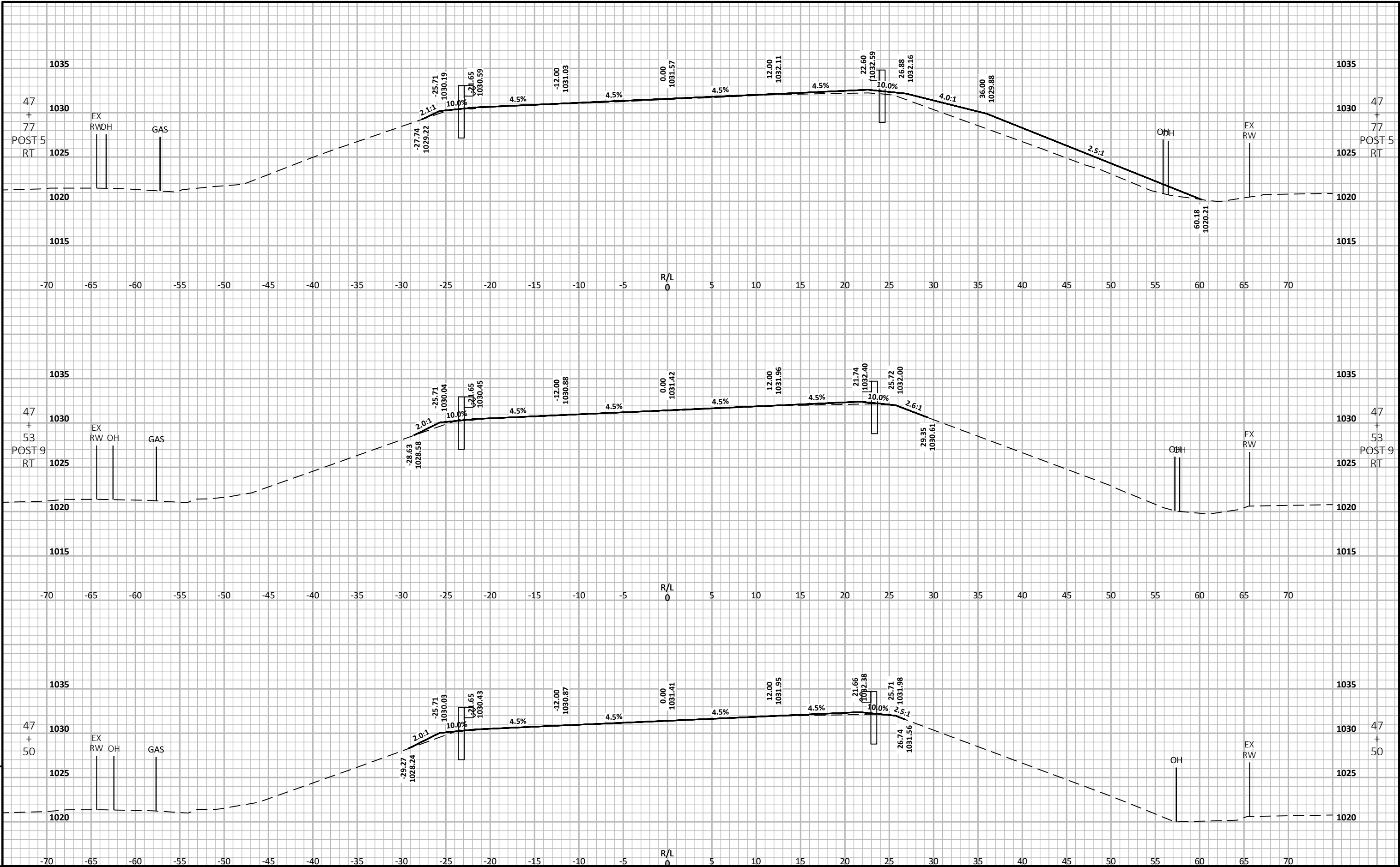


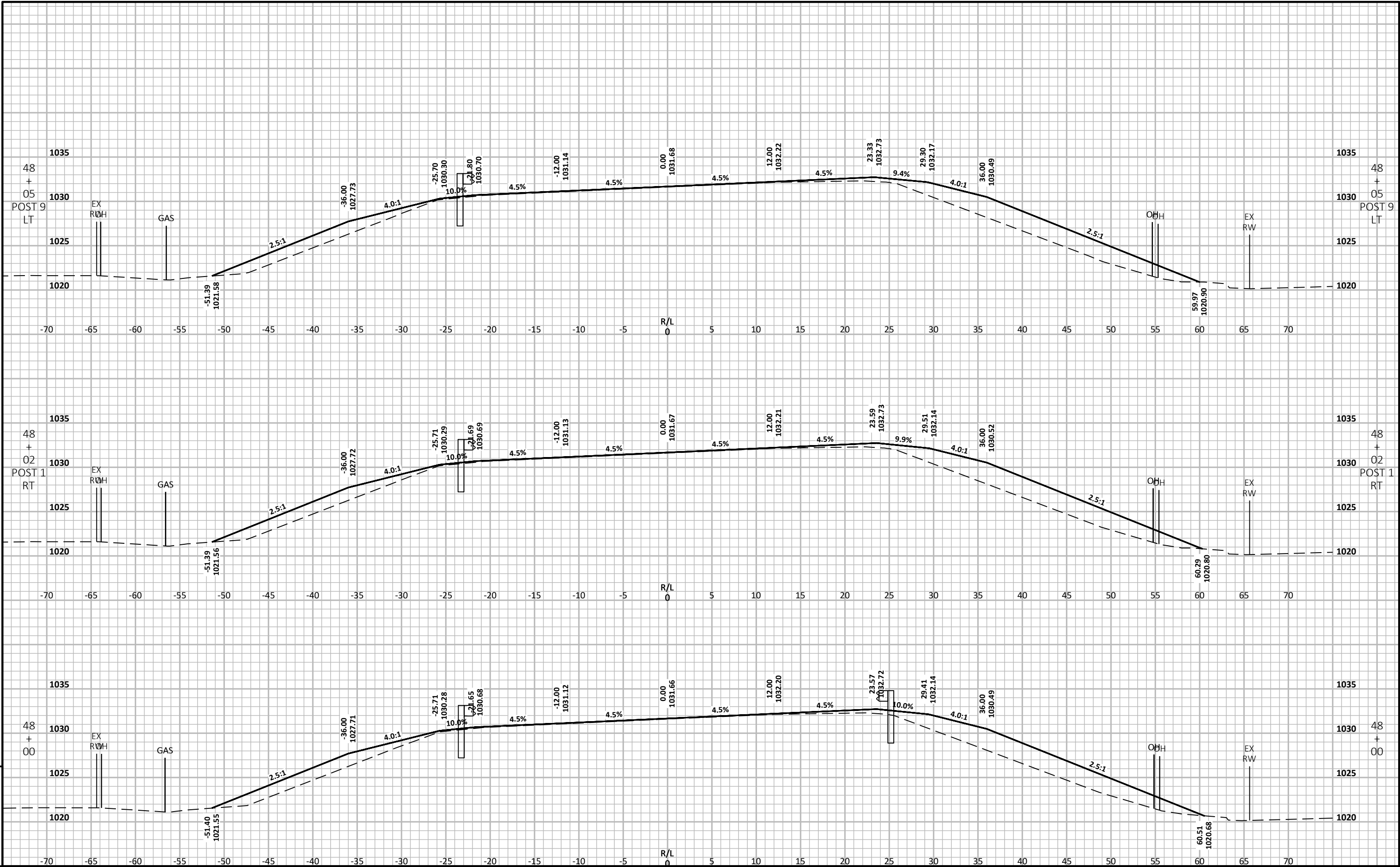


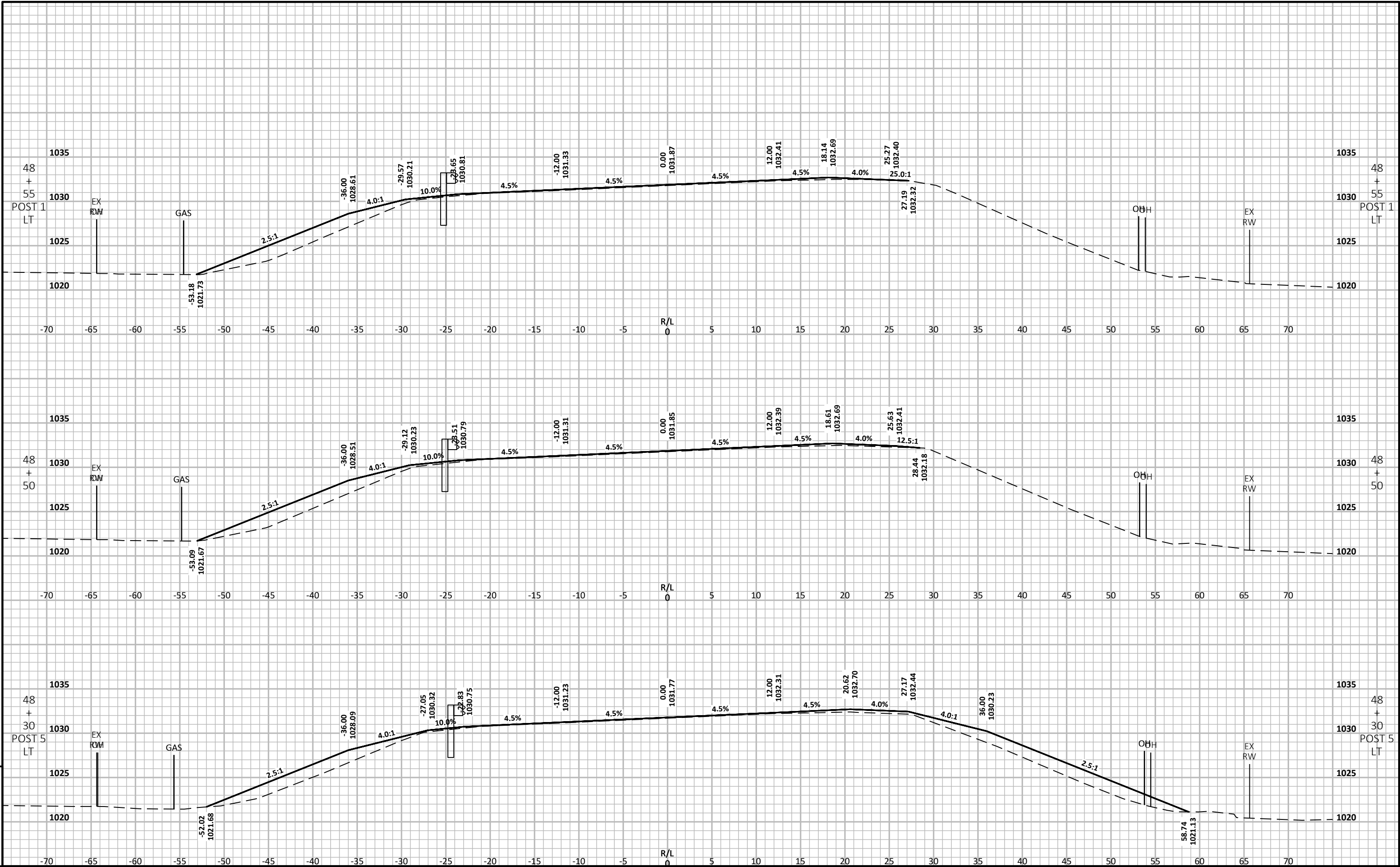


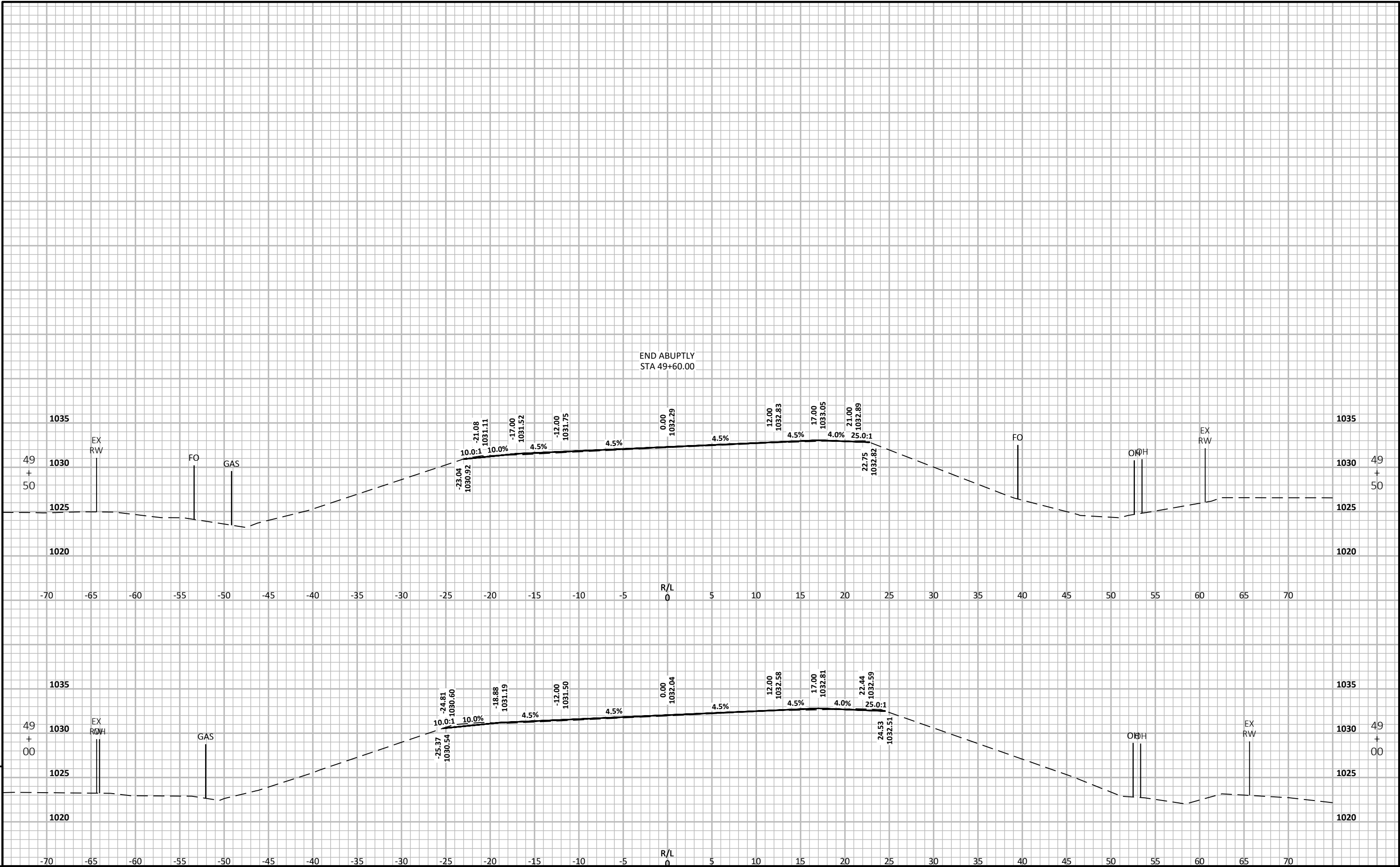


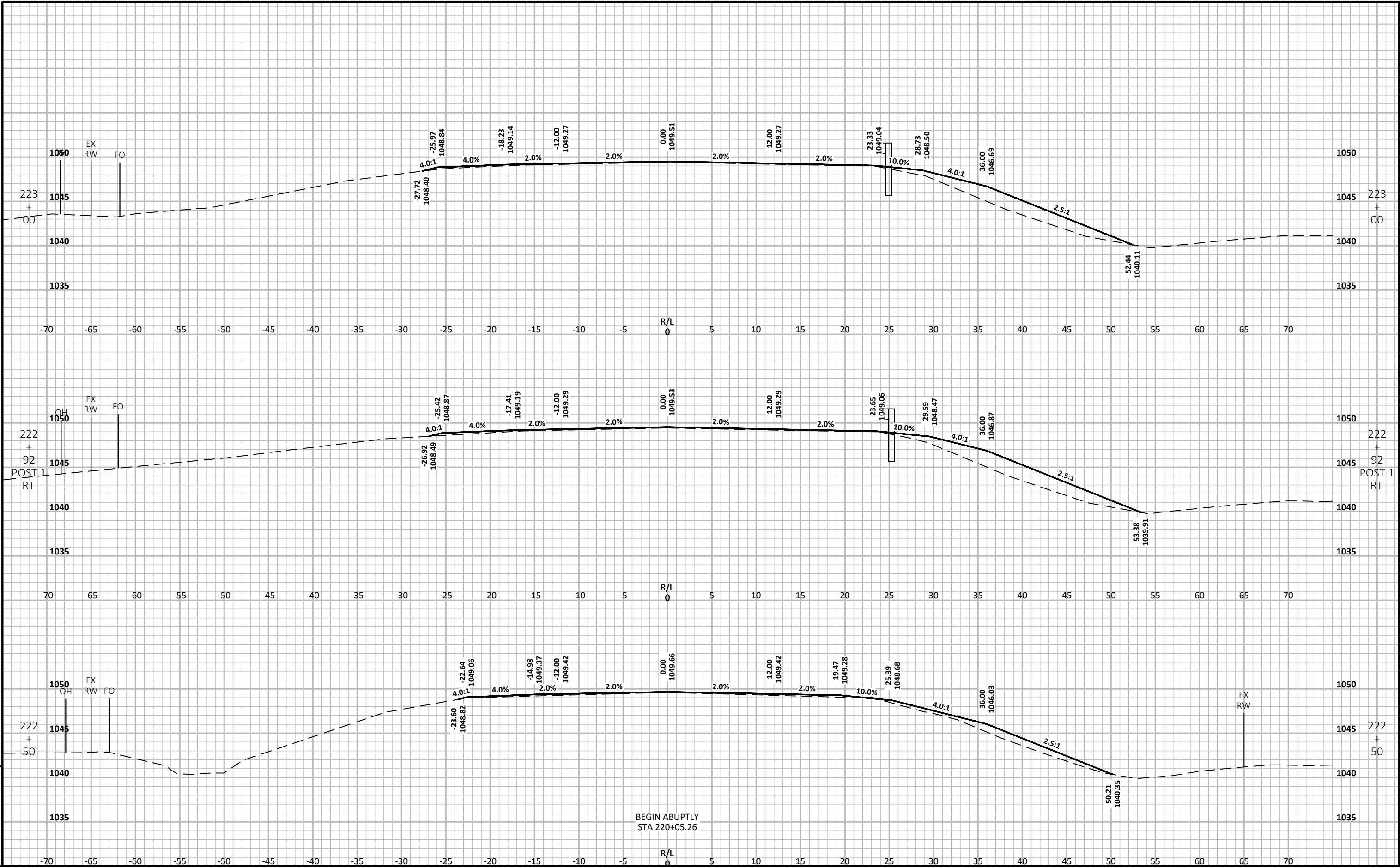






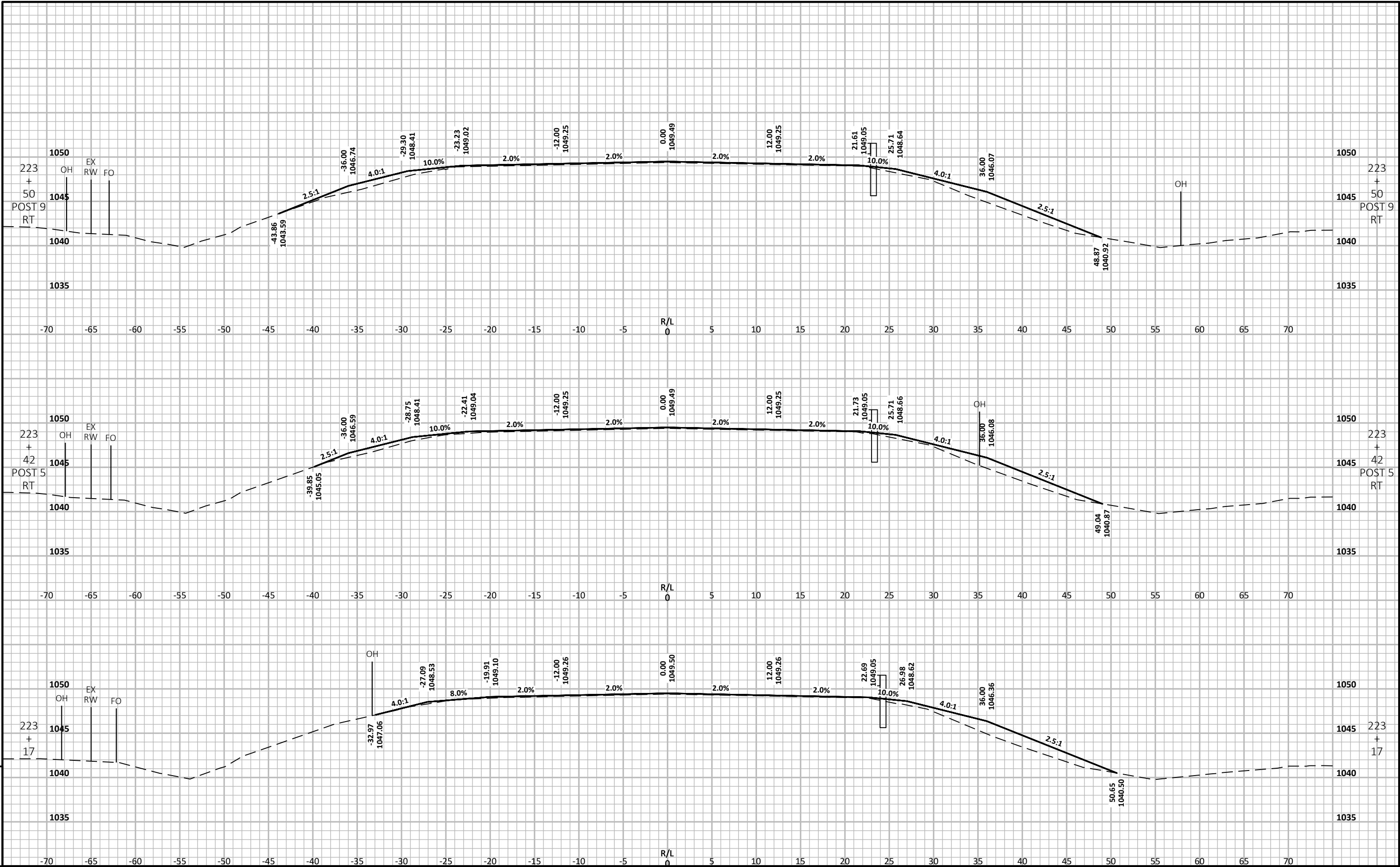


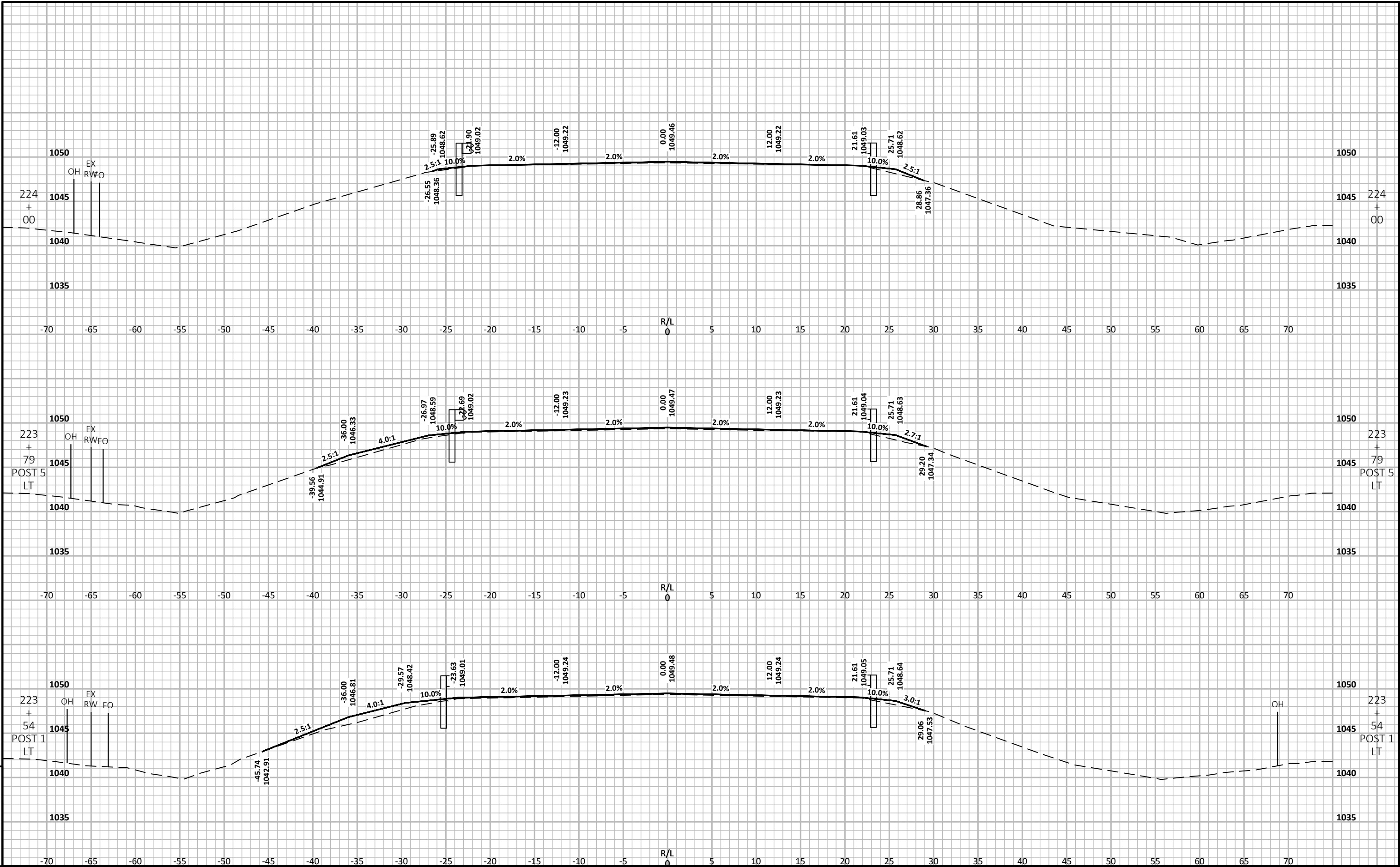




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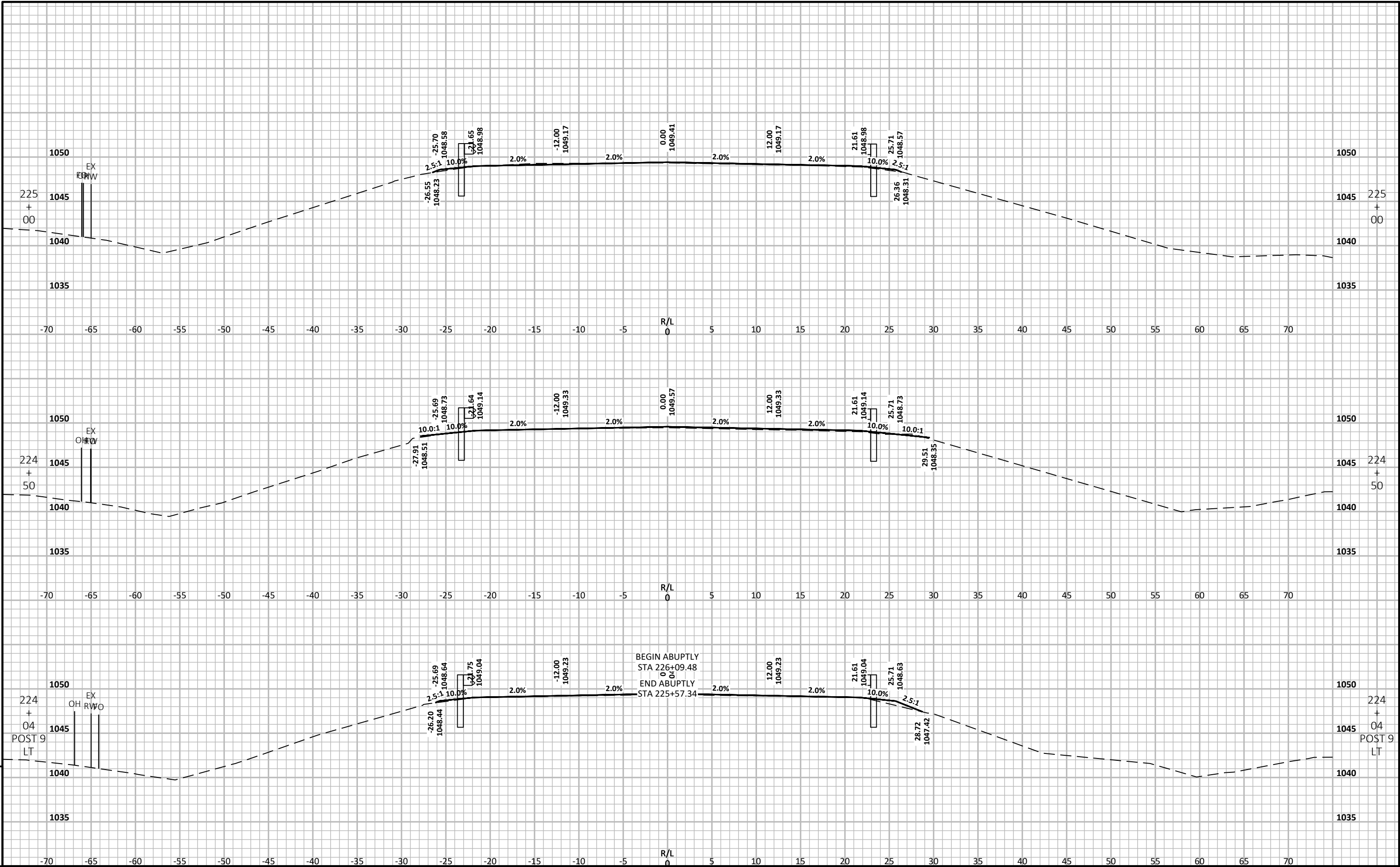
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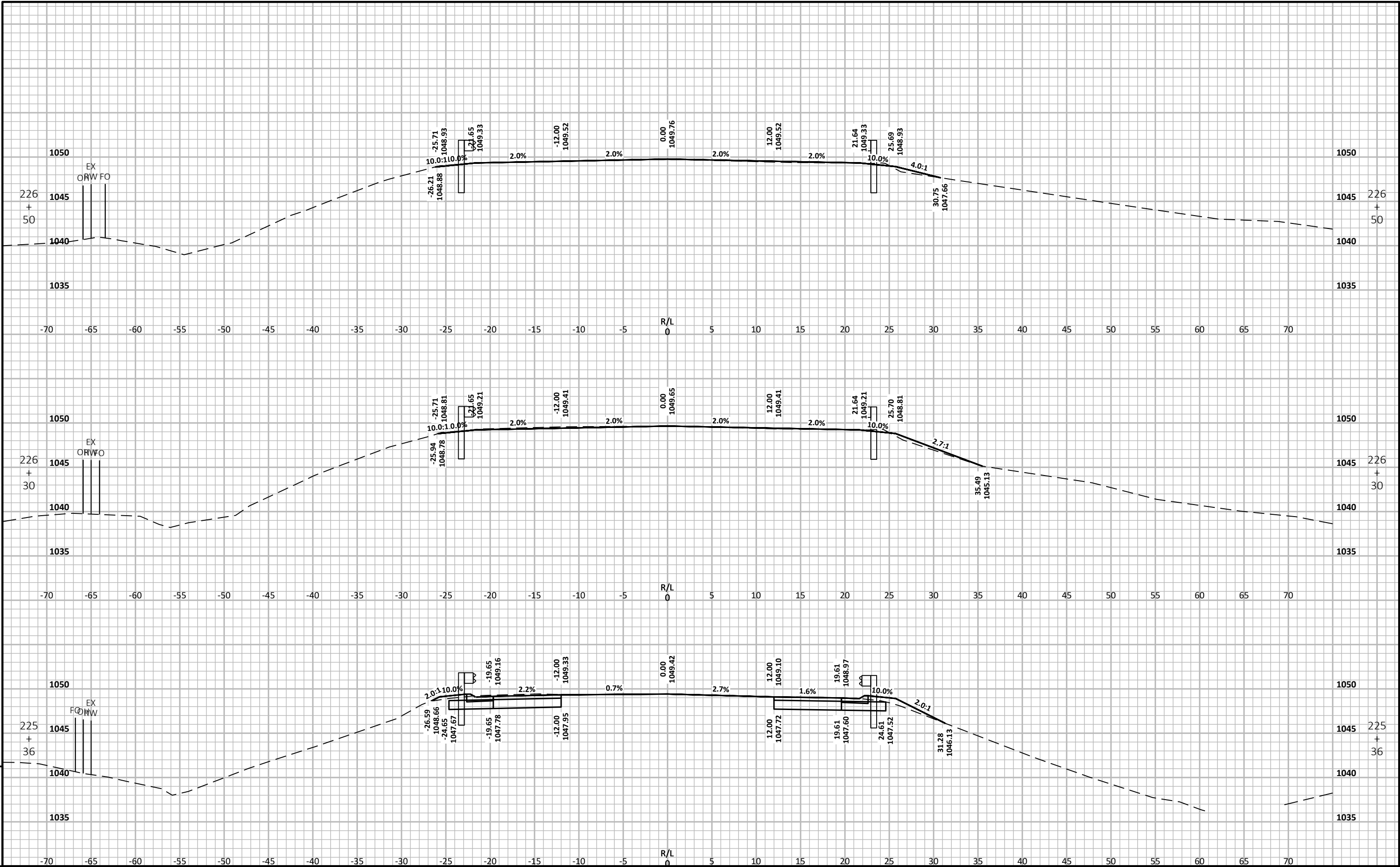




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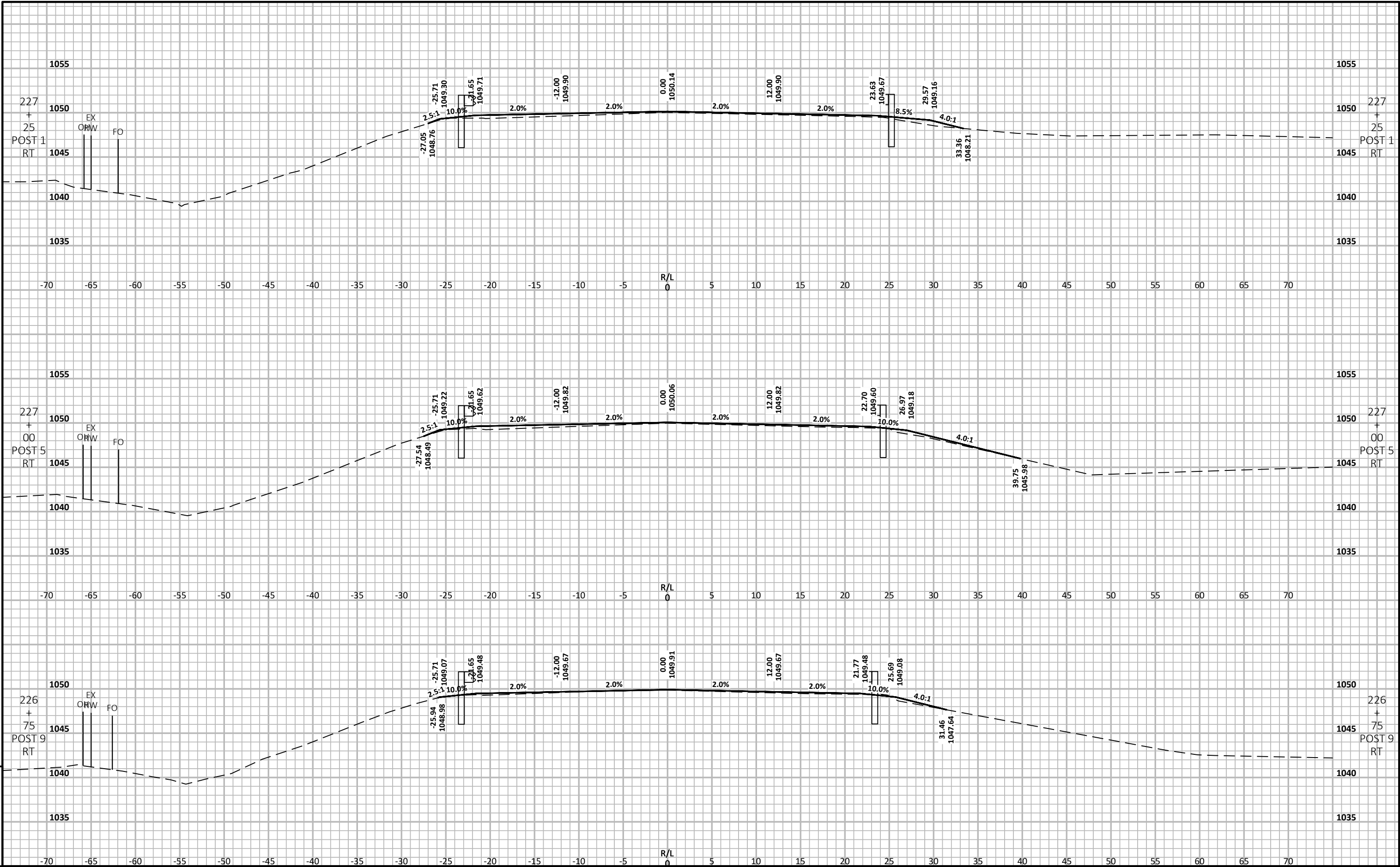
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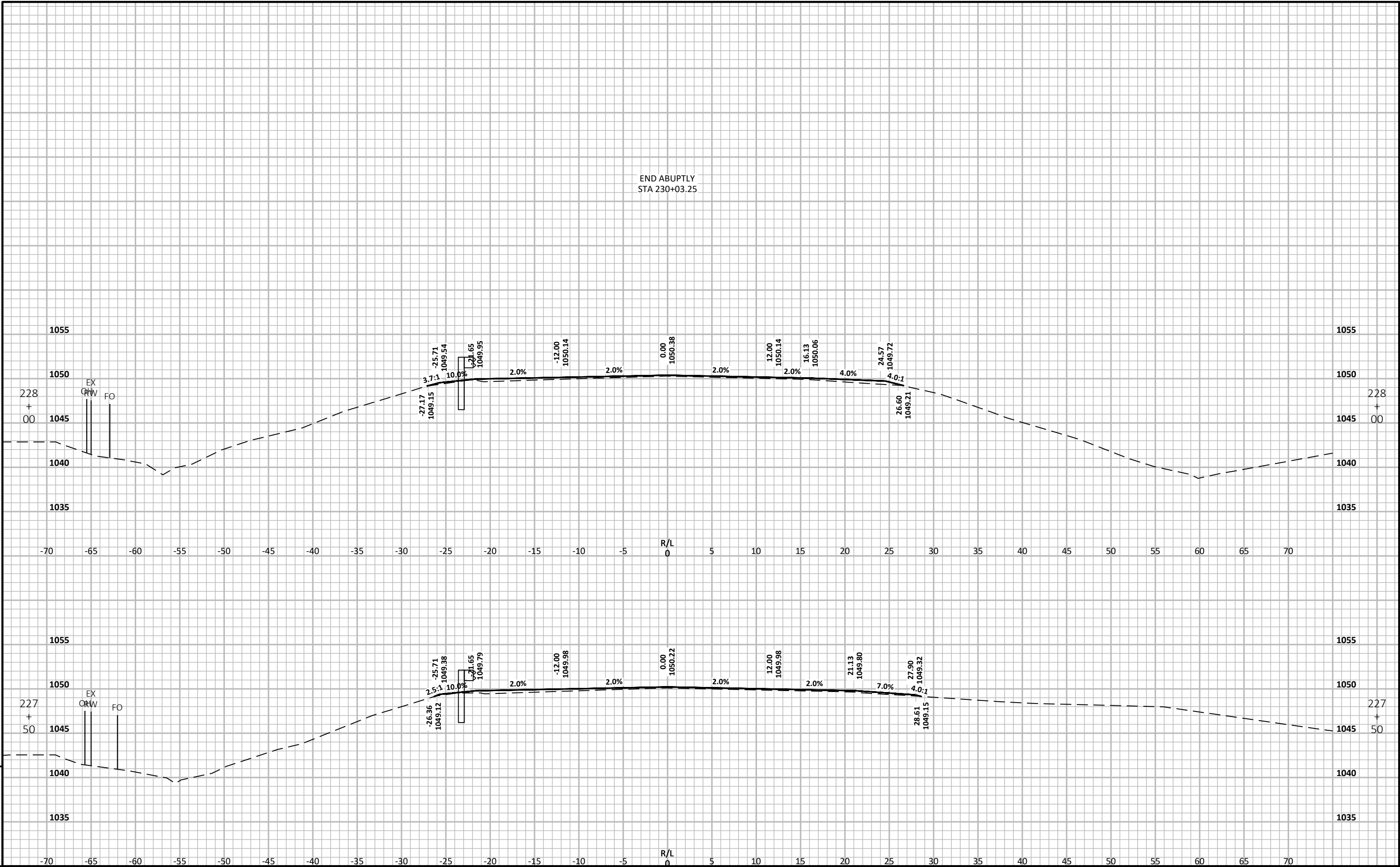




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PROJECT NO: 1520-00-77

HWY: STH 73

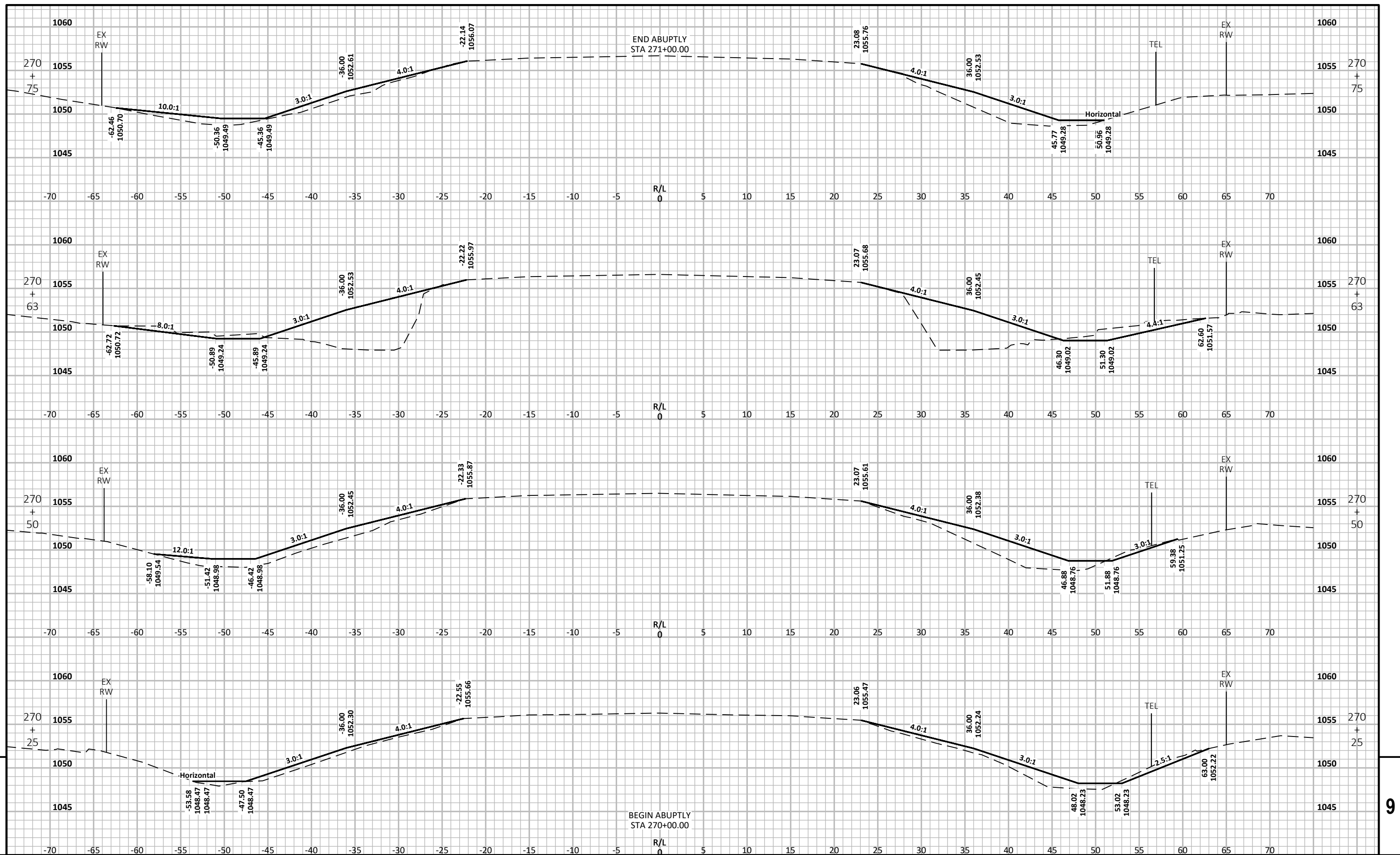
COUNTY: WOOD

CROSS SECTIONS: B-71-6 GUARDRAIL

SHEET

222

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PROJECT NO:	1520-00-77
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HWY: STH 73

COUNTY: WOOD

CROSS SECTIONS:	CATTLE PASS
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SHEET	223
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LAYOUT NAME - 15200077-090251-xs

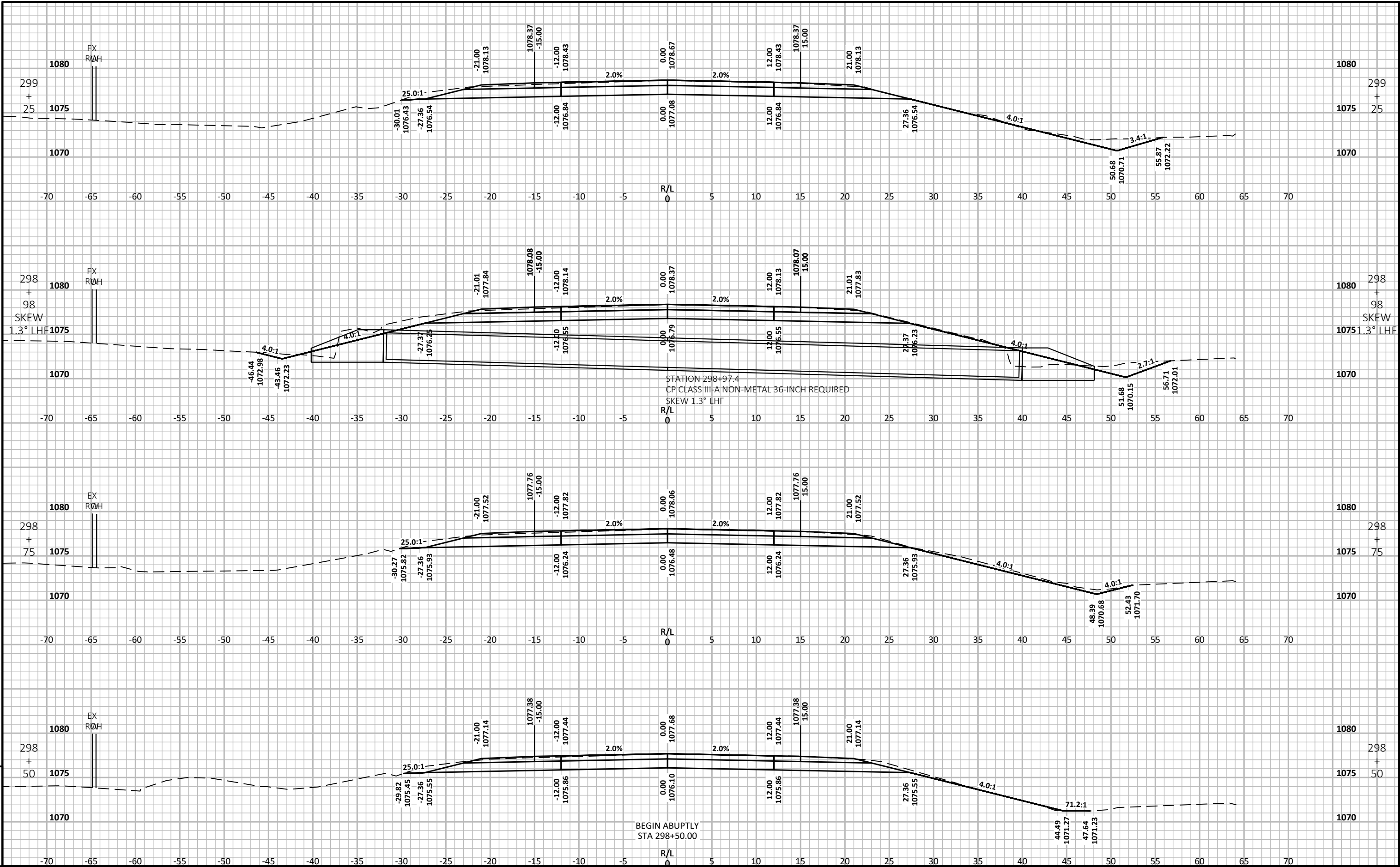
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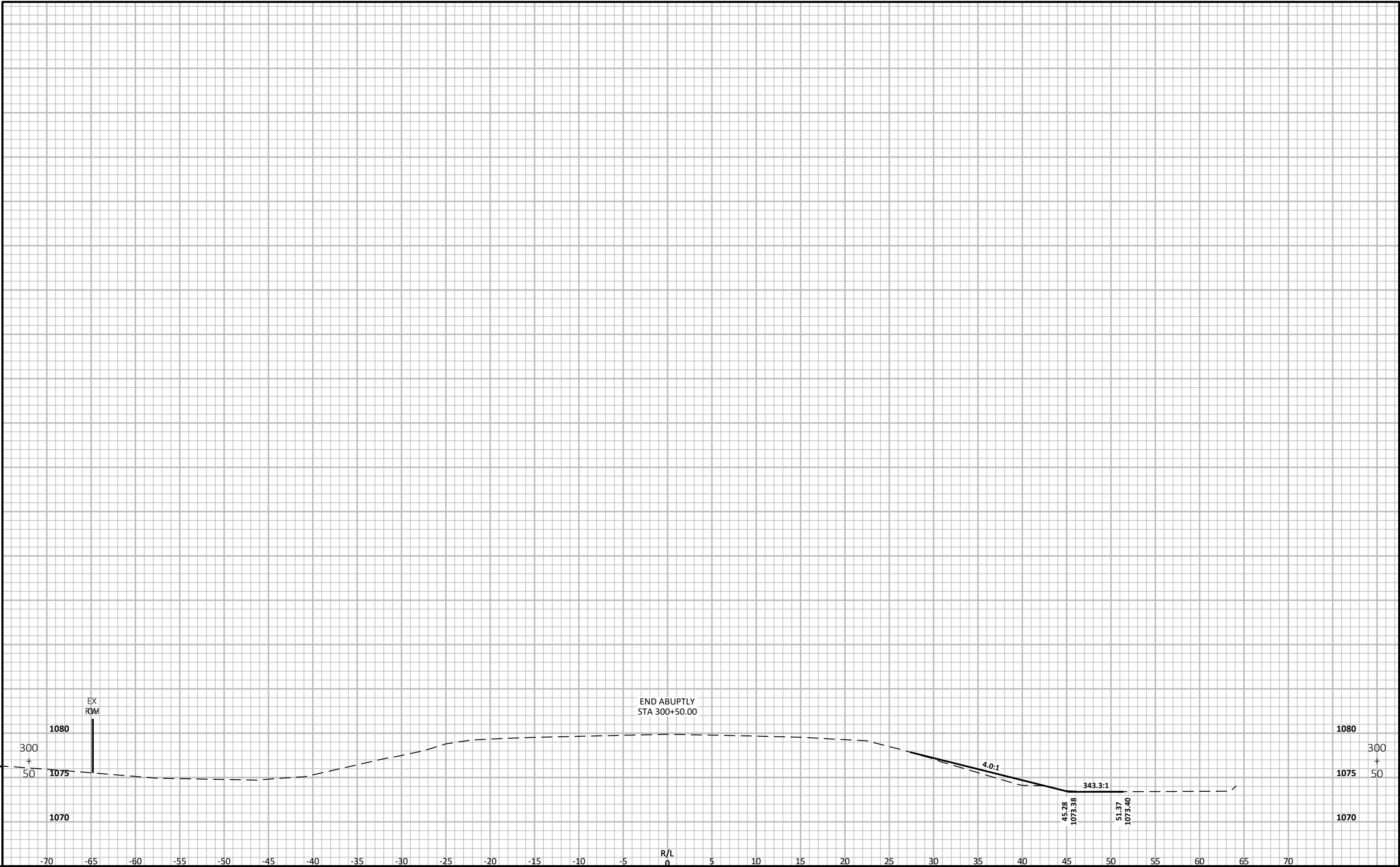
PLOT BY : CRAIG KNUTH

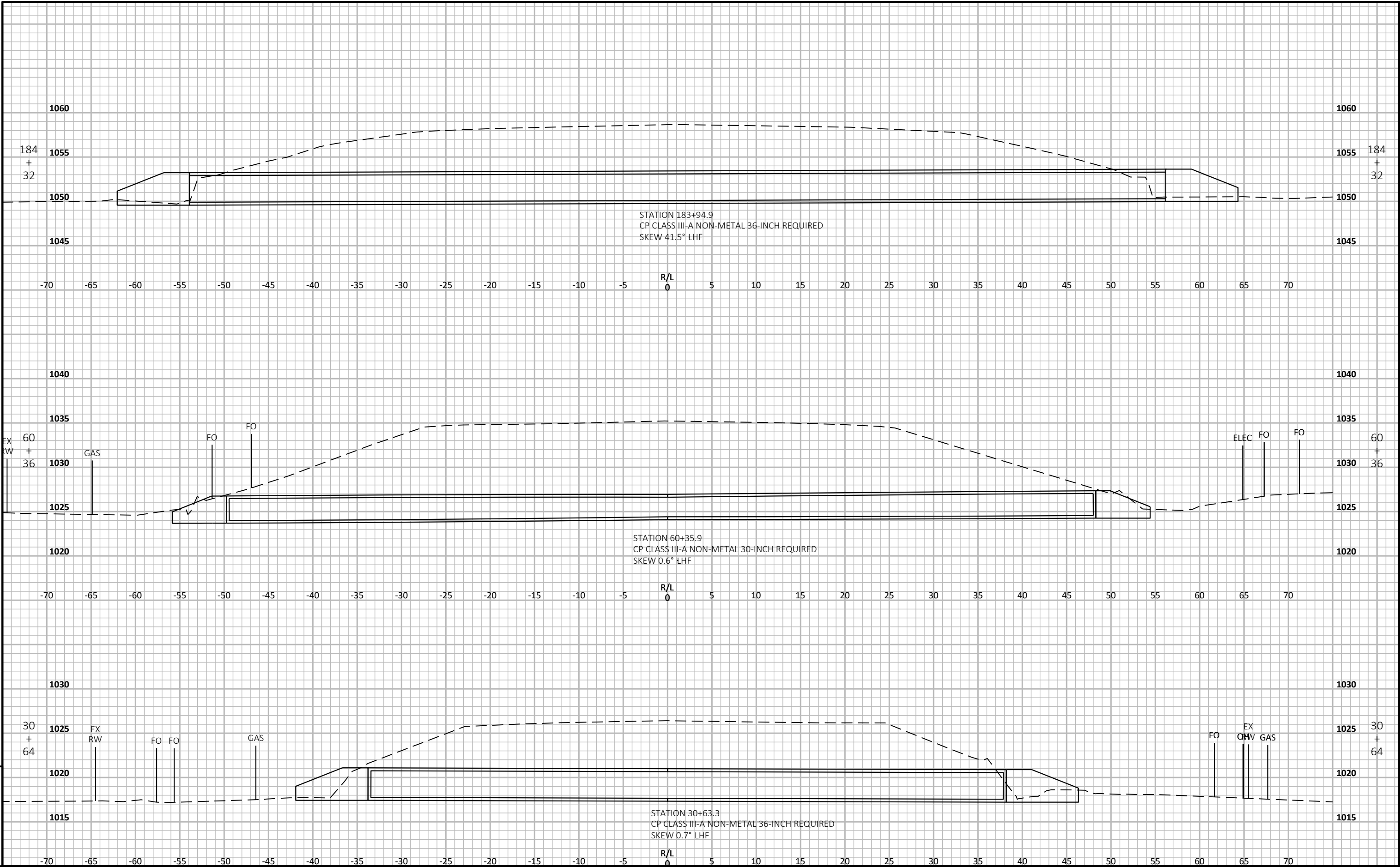
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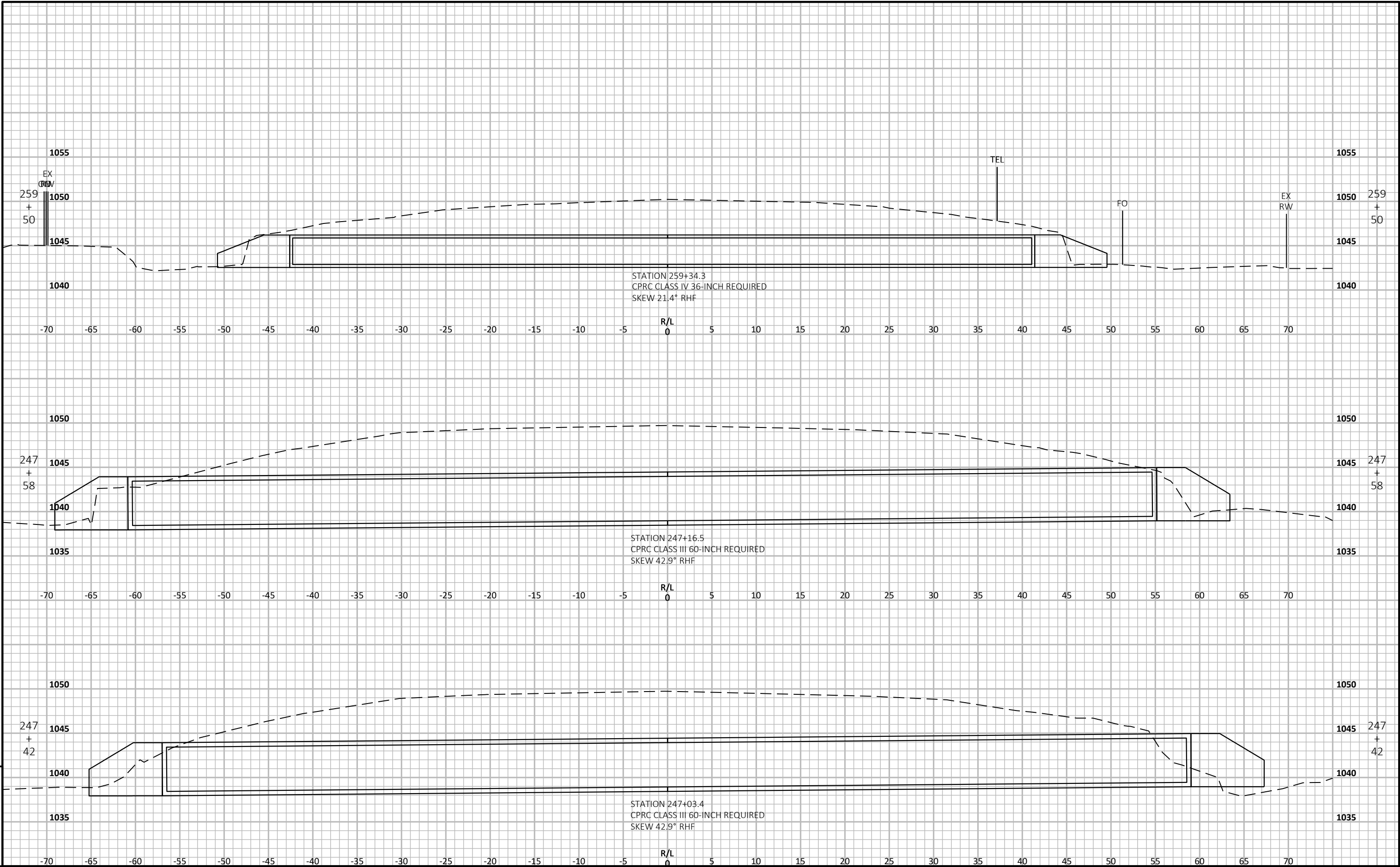
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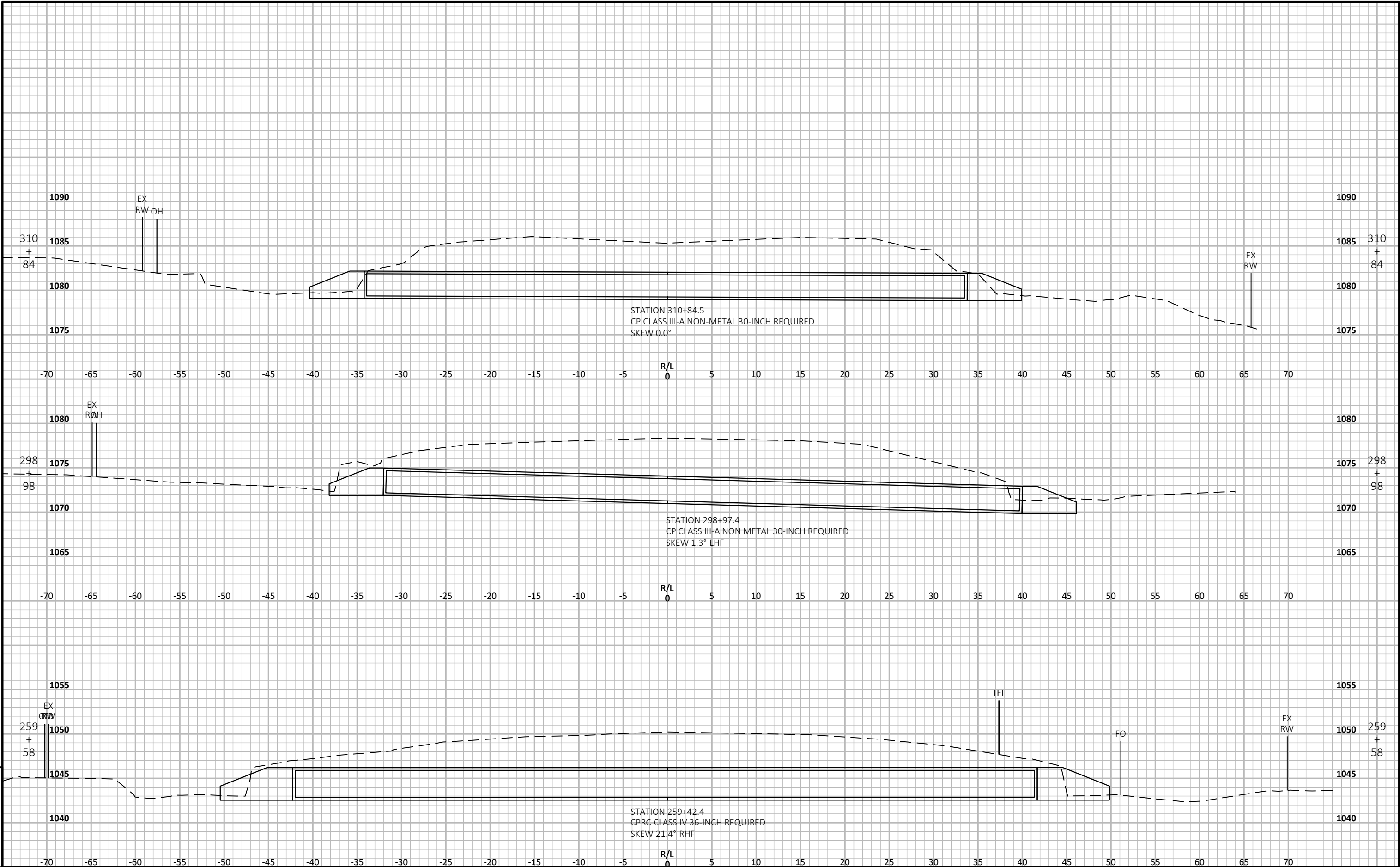
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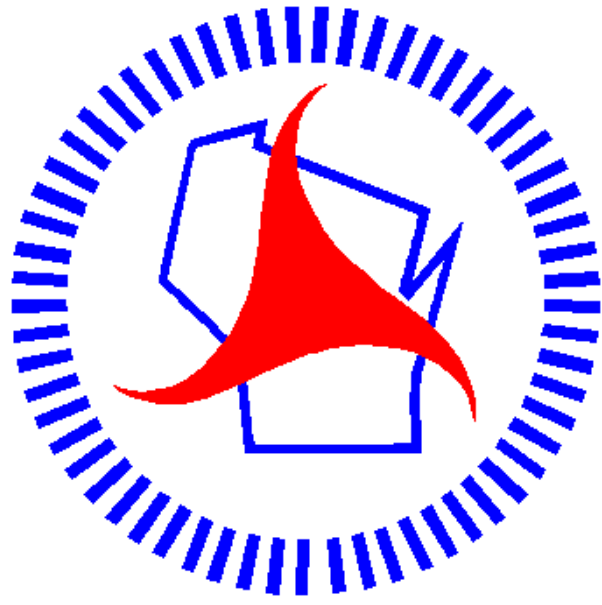






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