

WIS

PROJECT ID:

1166-05-66

COUNTY:

PORTAGE & MARATHON

SEPTEMBER 2026
ORDER OF SHEETS

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

TOTAL SHEETS = 298



DESIGN DESIGNATION

A.A.D.T.	2027	=	24120
A.A.D.T.	2047	=	27320
D.H.V.		=	12.3
D.D.		=	58/42
T.		=	20.5%
DESIGN SPEED		=	70 MPH
ESALS		=	13,880,000

CONVENTIONAL SYMBOLS

PLAN	PROFILE
CORPORATE LIMITS	GRADE LINE
PROPERTY LINE	ORIGINAL GROUND
LOT LINE	MARSH OR ROCK PROFILE (To be noted as such)
LIMITED HIGHWAY EASEMENT	SPECIAL DITCH
EXISTING RIGHT OF WAY	GRADE ELEVATION
PROPOSED OR NEW R/W LINE	CULVERT (Profile View)
SLOPE INTERCEPT	UTILITIES
REFERENCE LINE	ELECTRIC
EXISTING CULVERT	FIBER OPTIC
PROPOSED CULVERT (Box or Pipe)	GAS
COMBUSTIBLE FLUIDS	SANITARY SEWER
	STORM SEWER
	TELEPHONE
	WATER
MARSH AREA	UTILITY PEDESTAL
	POWER POLE
WOODED OR SHRUB AREA	TELEPHONE POLE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STEVENS POINT - WAUSAU

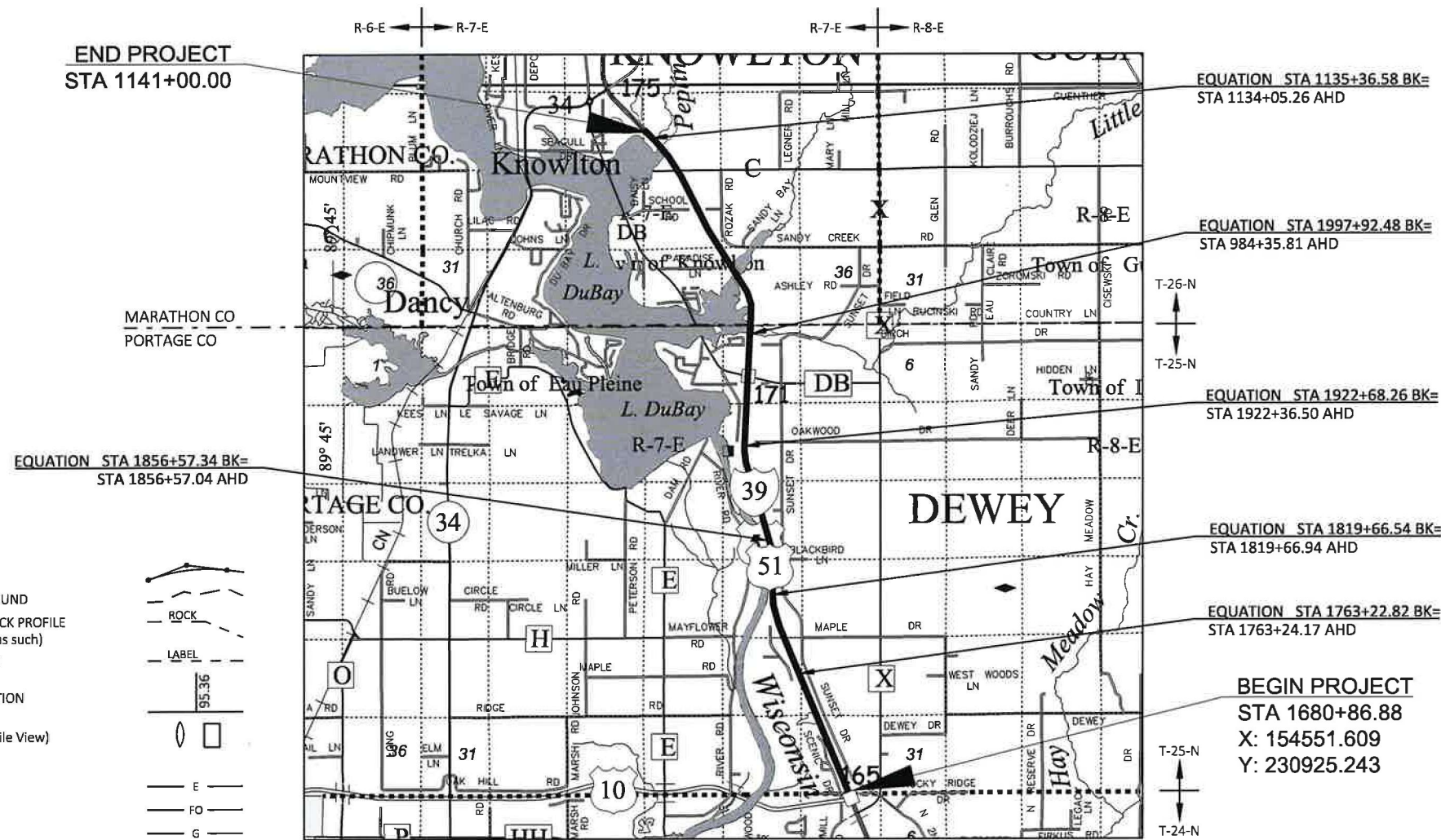
USH 10 TO STH 34, SB

IH 39

PORTAGE & MARATHON COUNTY

STATE PROJECT NUMBER

1166-05-66



LAYOUT
SCALE 0 2.0 mile
TOTAL NET LENGTH OF CENTERLINE = 8.999 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN
COORDINATE REFERENCE SYSTEM (WISCRS), PORTAGE 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

1166-05-66

FEDERAL PROJECT

PROJECT

WISC 2026422

CONTRACT

1

ORIGINAL PLANS PREPARED BY



Alfred Benesch & Company
247 FRESHWATER WAY, SUITE 650
Milwaukee, Wisconsin 53204
414-308-1310 Job No. 20341.00



DATE: 4-8-2026
(Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	THE SIGMA GROUP
Designer	BENESCH
Project Manager	MICHAEL JELINEK
Regional Examiner	FRED SCHUNK, PE
Regional Supervisor	KEVIN KUJAWA, PE

APPROVED FOR THE DEPARTMENT

DATE: 4/9/26

Digitally signed by Corey
Boehm
Date: 2026.04.09
09:05:15 -05'00'
(Signature)

GENERAL NOTES

- 1. 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.
- 2. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
- 3. THE COST OF GRADING, CONSTRUCTING, MAINTAINING, AND REMOVING TEMPORARY ACCESS IS INCIDENTAL TO THE CONTRACT.
- 4. EXISTING RIGHT OF WAY SHOWN IN THE PLANS IS AN APPROXIMATION BASED ON AVAILABLE GIS INFORMATION.

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 48.10 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 1.25 ACRES

UTILITIES CONTACTS

ANR PIPELINE CO
GAS/PETROLEUM
DEVON SHUMAKER
N4956 OAKCREST DR
BONDUEL, WI 54107
PHONE: (269) 286-3502
EMAIL: DEVON_SHUMAKER@TCENERGY.COM

TDS TELECOM - CENTRAL STATE TELEPHONE COMPANY
COMMUNICATIONS
BRETT CONNORS
525 JUNCTION RD
MADISON, WI 53717
PHONE: (608) 664-0132
EMAIL: TDSTELECOMOSP@TDSTELECOM.COM

WPS
GAS/PETROLEUM
TYLER DAHLSTROM
1700 SHERMAN ST
WAUSAU, WI 54402
PHONE: (715 848-7387 OR (715) 432-9212 MOBILE
EMAIL: TYLER.DAHLSTROM@WISCONSINPUBLICSERVICE.COM

AT&T WISCONSIN
COMMUNICATION
CHUCK BARTELT
70 E DIVISION ST
FOND DU LAC, WI 54935
PHONE: (920) 410-5104
EMAIL: CB1461@ATT.COM

TDS TELECOM - MOSINEE TELEPHONE COMPANY
COMMUNICATIONS
BRETT CONNORS
525 JUNCTION RD
MADISON, WI 53717
PHONE: (608) 664-0132
EMAIL: TDSTELECOMOSP@TDSTELECOM.COM

WINDSTREAM KDL
COMMUNICATIONS
LORI KETTER
969 WAUBE LN
GREEN BAY, WI 54304
PHONE: (920) 410-6902
EMAIL: LORI.KETTER@WINDSTREAM.COM

SPECTRUM
COMMUNICATION
JASON O'KEEFE
5024 HEFFRON ST
STEVENS POINT, WI 54481
PHONE: (715) 382-3559
EMAIL: JASON.OKEEFE@CHARTER.COM

WPS
ELECTRICITY
JESSE PATTEN
1700 SHERMAN ST
WAUSAU, WI 54402-1166
PHONE: (715) 848-7405 OR (715) 573-0349 MOBILE
EMAIL: JESSE.PATTEN@WISCONSINPUBLICSERVICE.COM

OTHER AGENCIES

WISCONSIN DNR LIAISON

JEREMIAH SCHIEFELBEIN
WISCONSIN DEPARTMENT OF NATURAL RESOURCES
2984 SHAWANO AVE
GREEN BAY, WI 54313
PHONE: 920-360-3784
EMAIL: JEREMIAH.SCHIEFELBEIN@WISCONSIN.GOV

ORDER OF SECTION 2 DETAIL SHEETS

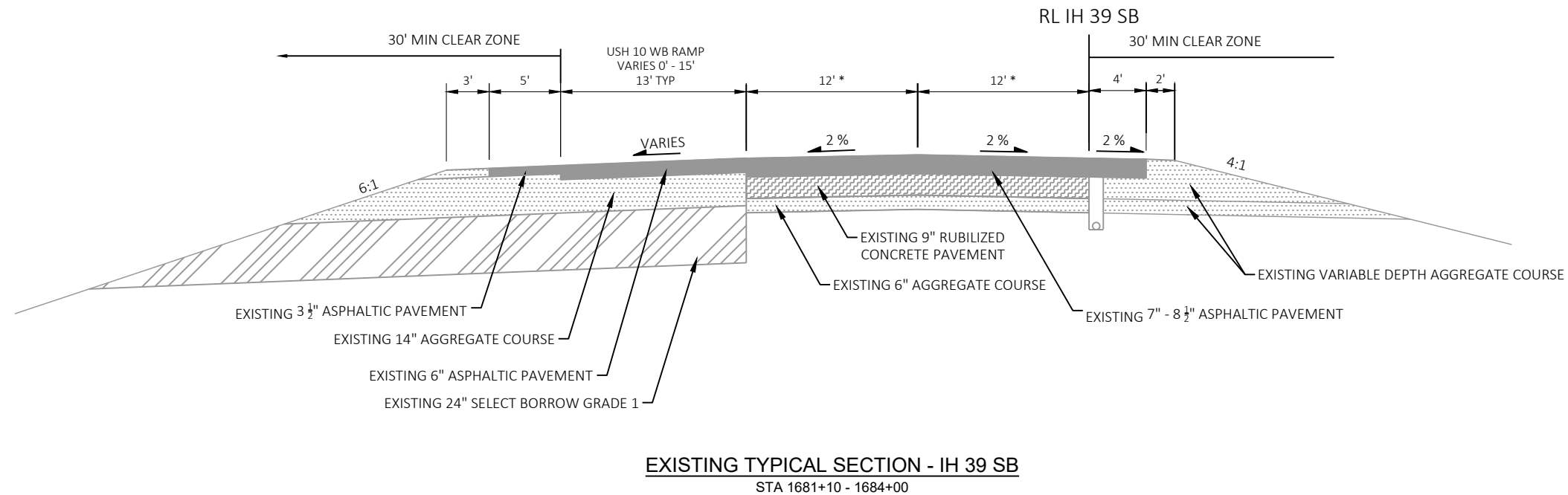
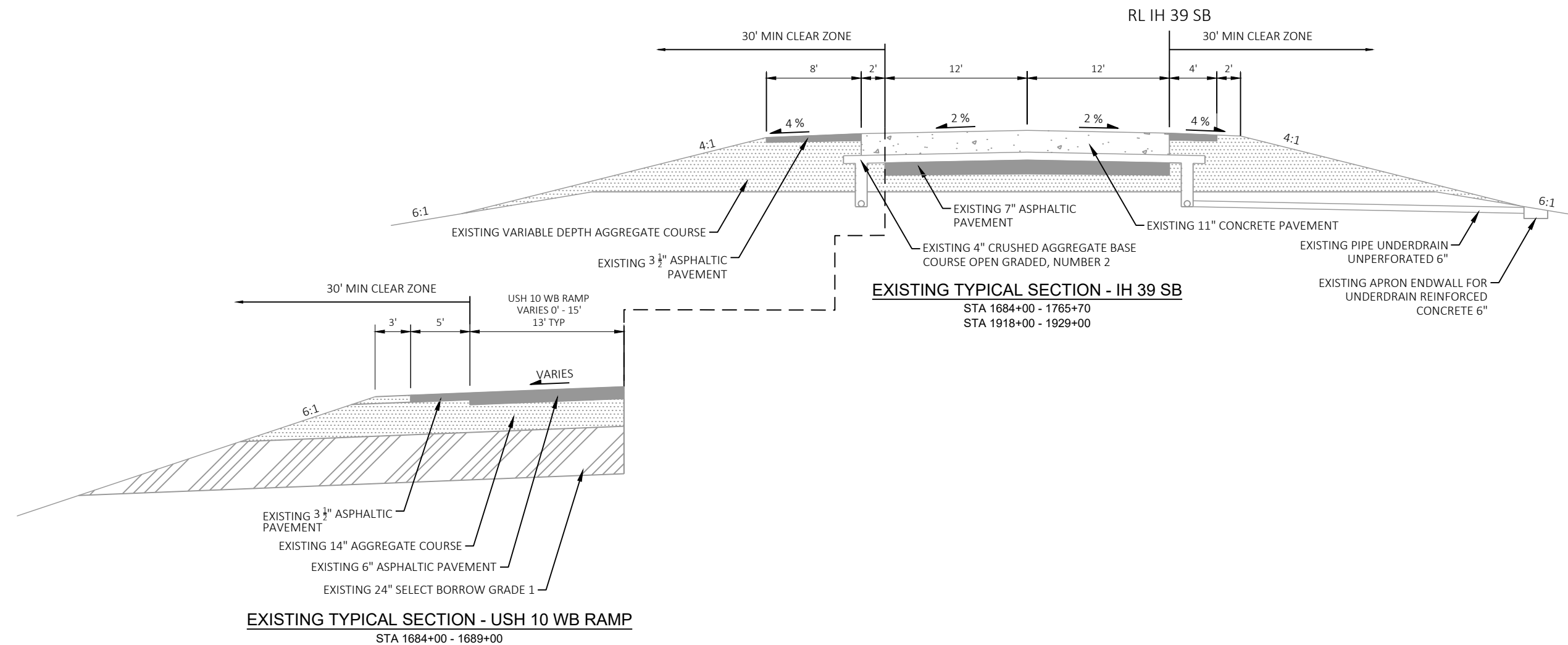
- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- INTERSECTION DETAILS
- TEMPORARY WIDENING DETAILS
- IH 39 & USH 10 WB RAMP DETAILS
- CULVERT DETAILS
- MGS DETAILS
- FENCING DETAILS
- EROSION CONTROL DETAILS
- PAVEMENT MARKING DETAILS
- TRAFFIC CONTROL
- ALIGNMENT DETAILS

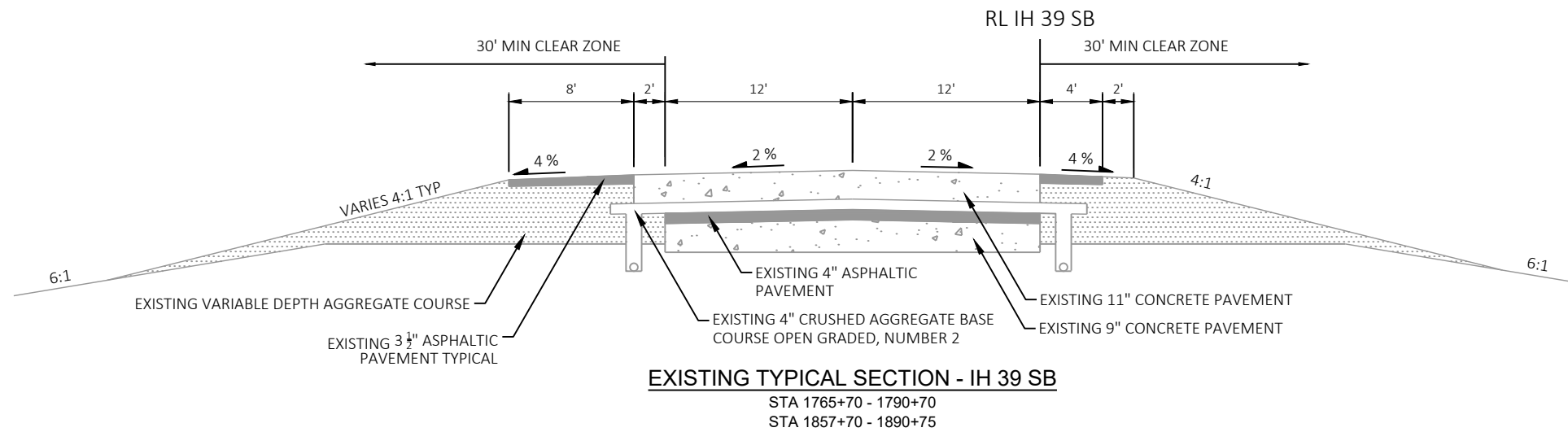
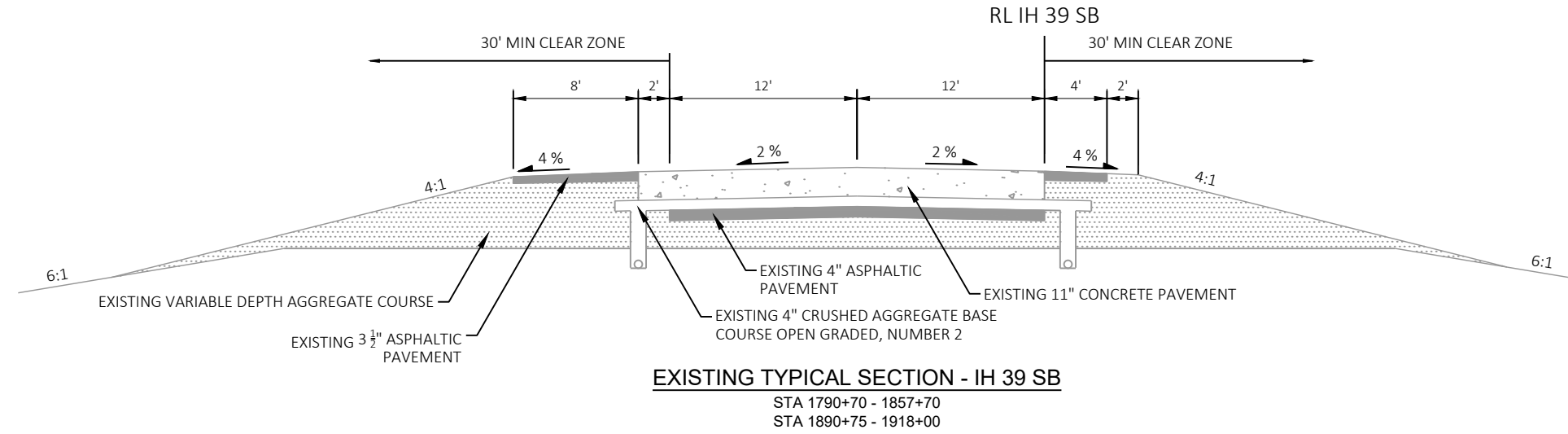


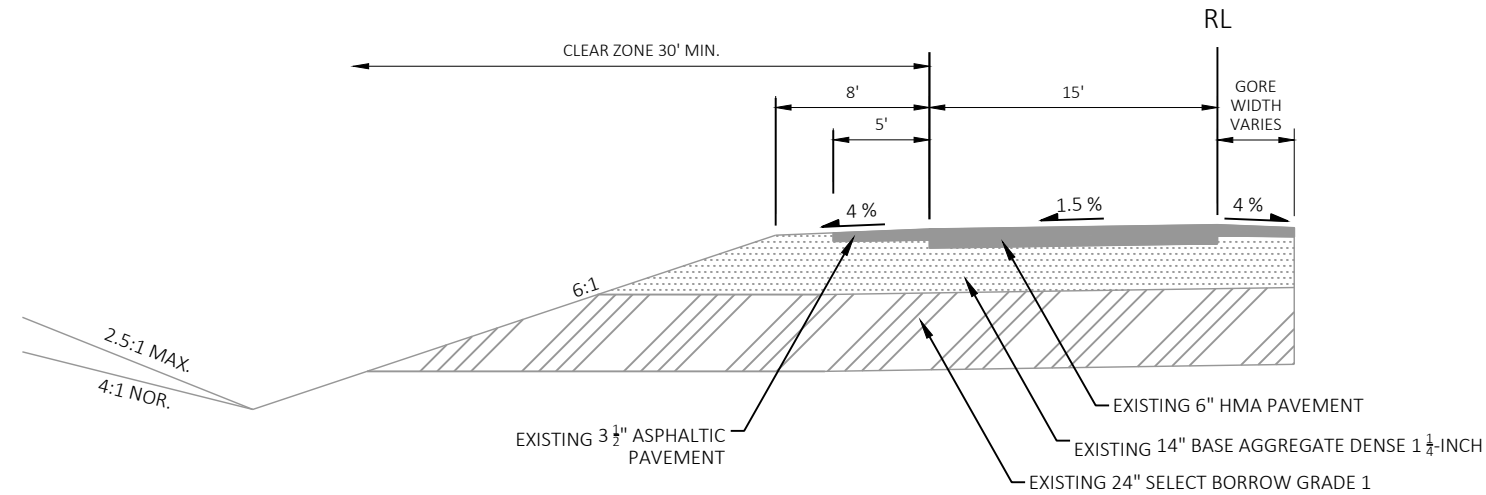
Dial 811 or (800)242-8511
www.DiggersHotline.com



NOTE:
LIMITS OF ADDITIONAL PAVEMENT MARKING WORK
IS NOT SHOWN ON THIS PROJECT OVERVIEW SHEET.
SEE PAVEMENT MARKING (2ND TO CTH X) -PROJECT
OVERVIEW SHEET FOR LIMITS.

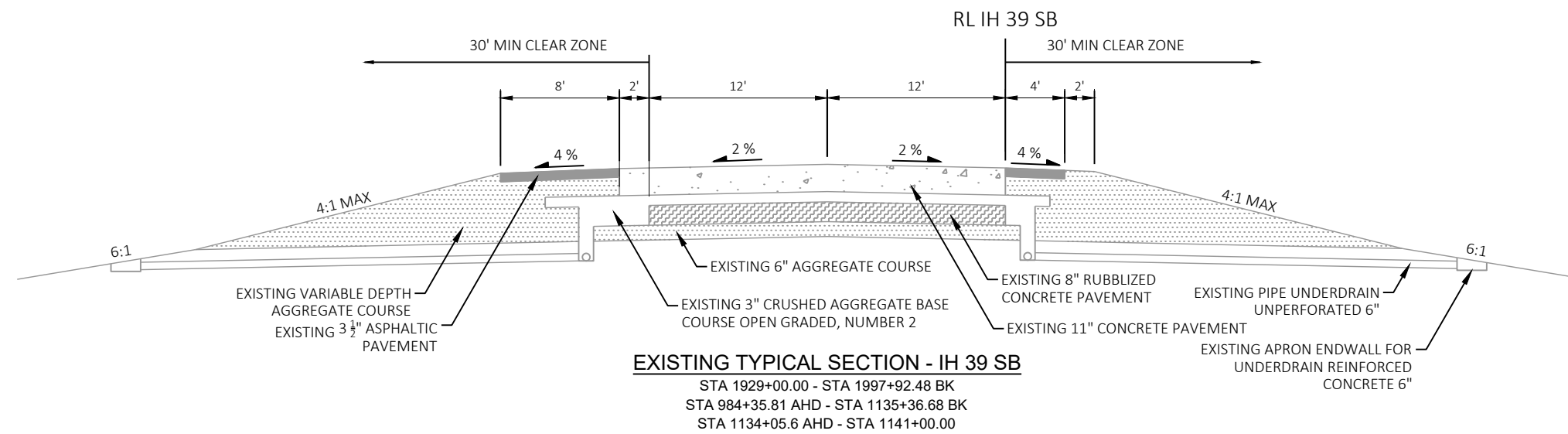






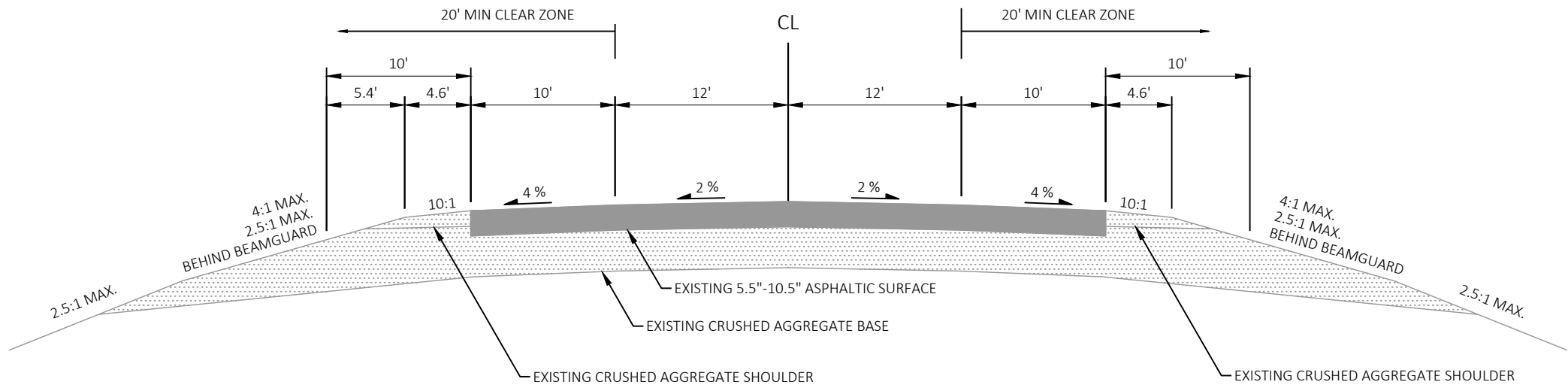
EXISTING TYPICAL RAMP SECTION - OFF RAMP USH 10

USH 10 WB OFF RAMP: STA 101+00 - 102+32

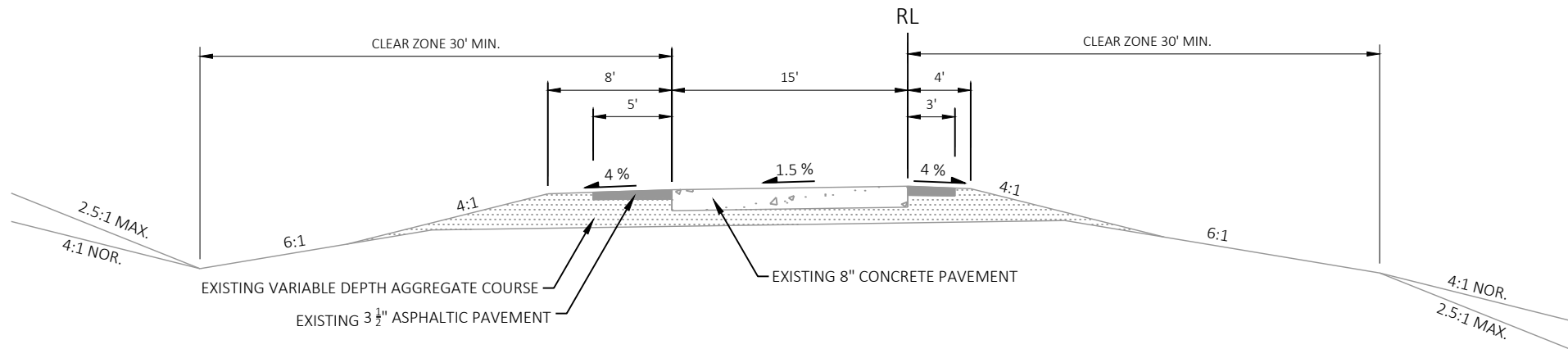


EXISTING TYPICAL SECTION - IH 39 SB

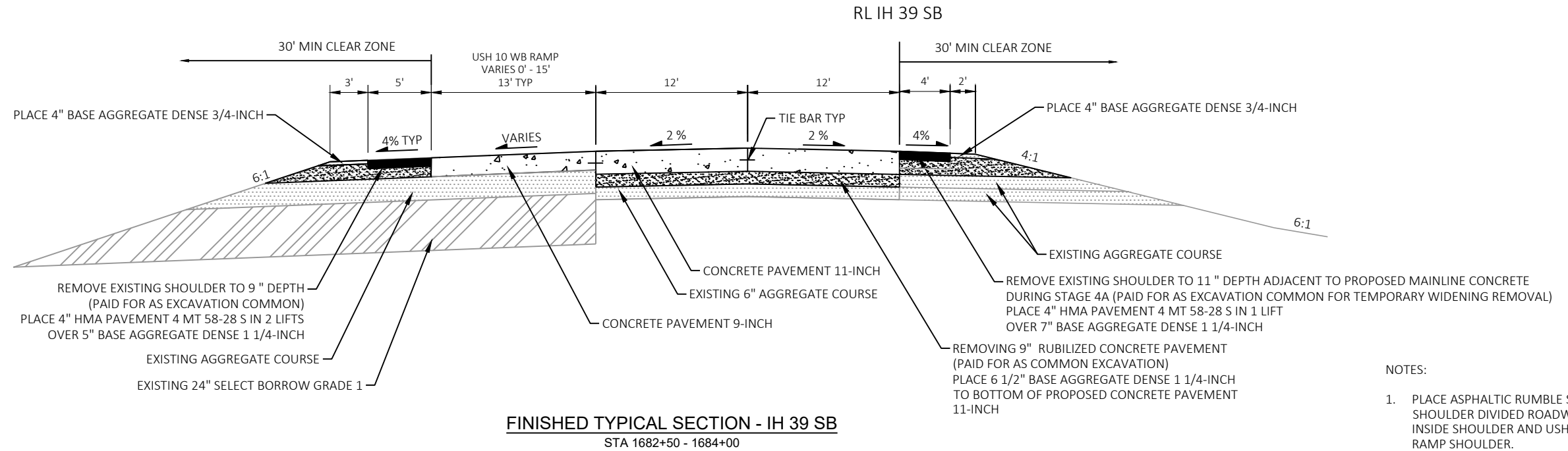
STA 1929+00.00 - STA 1997+92.48 BK
STA 984+35.81 AHD - STA 1135+36.68 BK
STA 1134+05.6 AHD - STA 1141+00.00



EXISTING TYPICAL SECTION - CTH DB
STA 38+20.65 - STA 41+63.94
STA 44+57.01 - STA 47+92.52

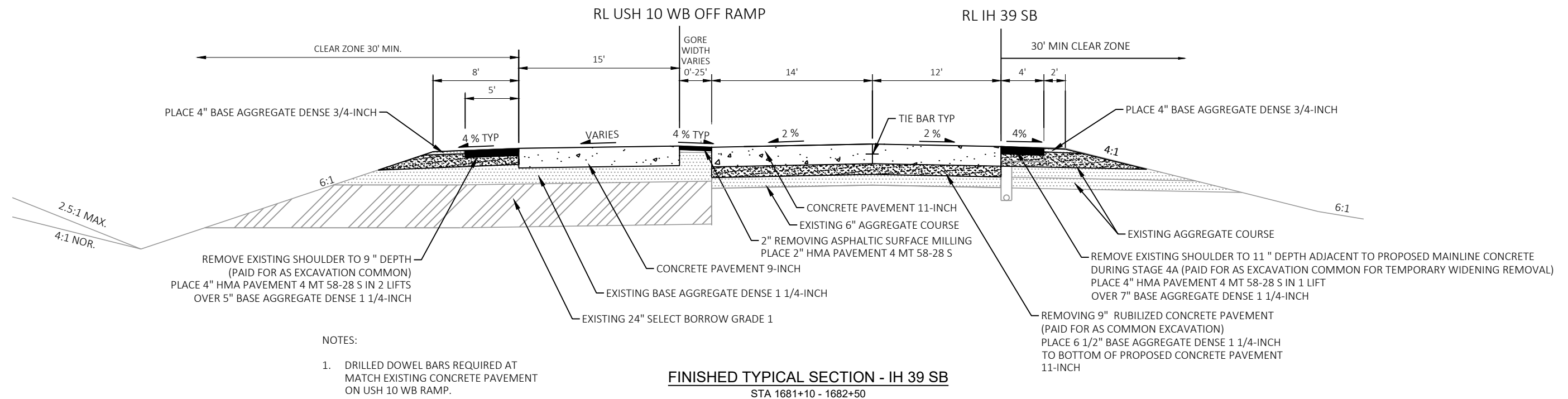


EXISTING TYPICAL RAMP SECTION - ON AND OFF RAMP CTH DB
STA 10+26.26 - STA 25+39.38 SB ON RAMP
STA 17+29.68 - STA 28+84.83 SB OFF RAMP



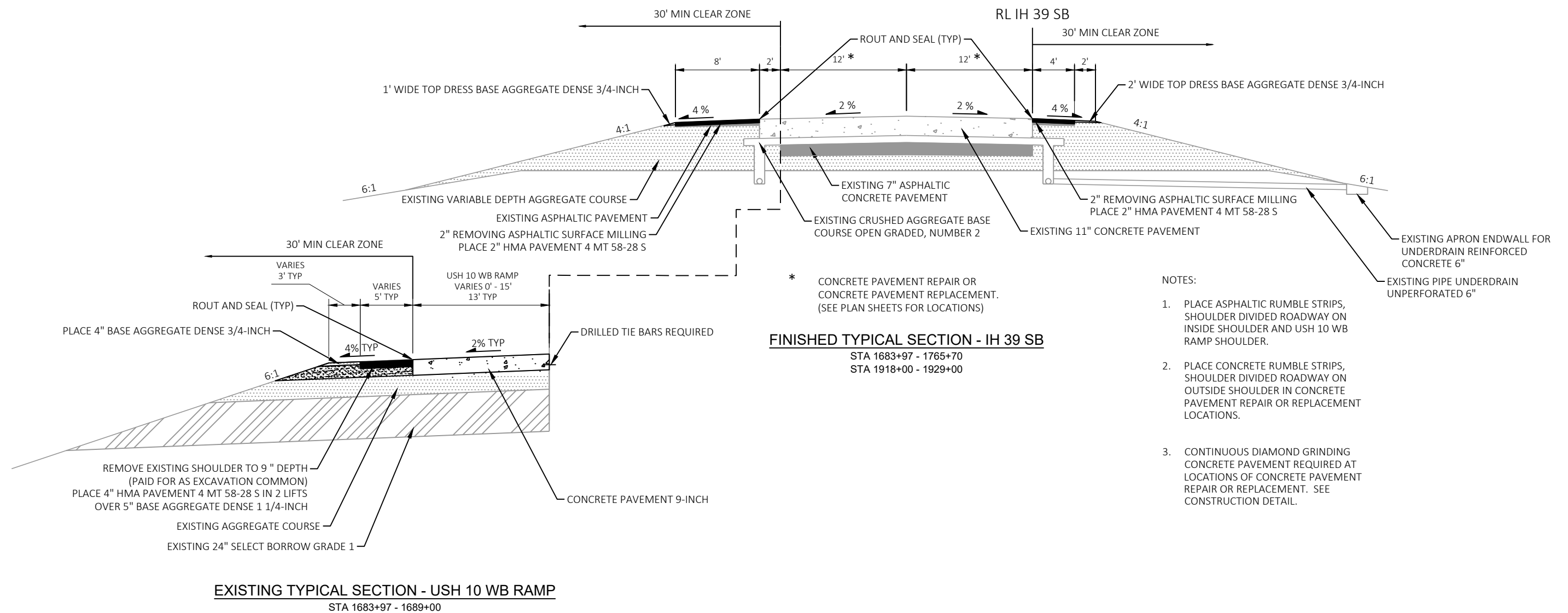
NOTES:

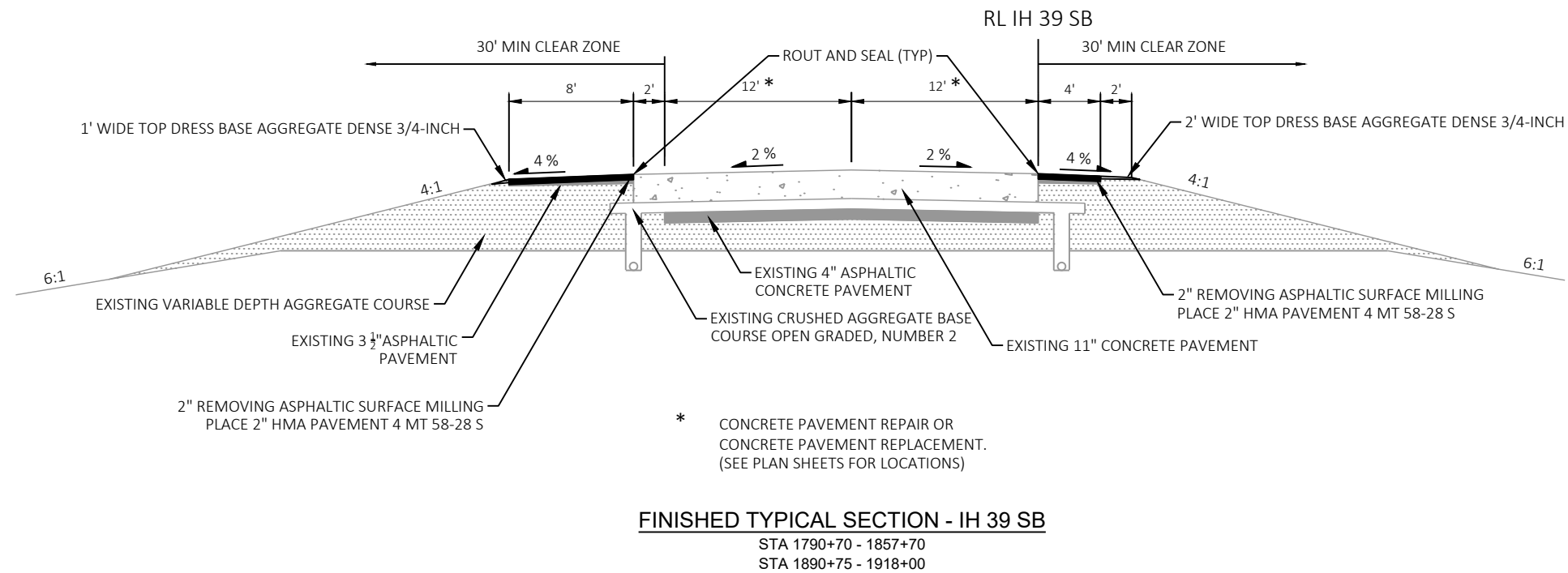
1. PLACE ASPHALTIC RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY ON INSIDE SHOULDER AND USH 10 WB RAMP SHOULDER.
2. CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT REQUIRED AT LOCATIONS OF CONCRETE PAVEMENT REPAIR OR REPLACEMENT. SEE CONSTRUCTION DETAIL.
3. DRILLED DOWEL BARS REQUIRED AT STA 1684+00 ON IH 39 SB LANE 1 & LANE 2..



NOTES:

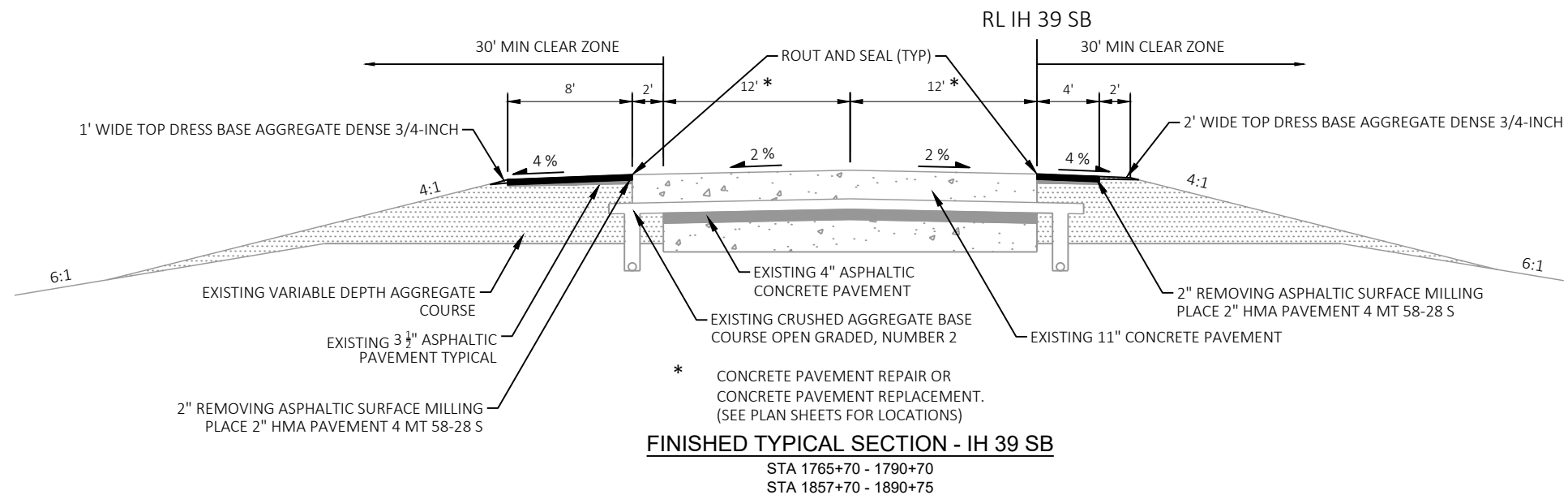
1. DRILLED DOWEL BARS REQUIRED AT MATCH EXISTING CONCRETE PAVEMENT ON USH 10 WB RAMP.





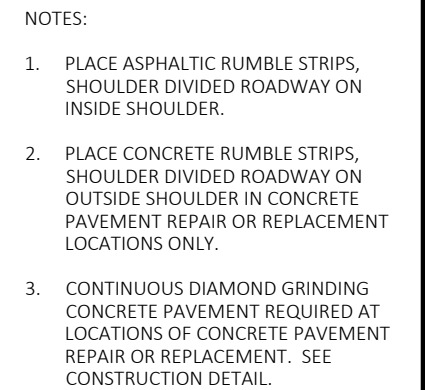
NOTES:

1. PLACE ASPHALTIC RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY ON INSIDE SHOULDER.
2. PLACE CONCRETE RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY ON OUTSIDE SHOULDER IN CONCRETE PAVEMENT REPAIR OR REPLACEMENT LOCATIONS ONLY.
3. CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT REQUIRED AT LOCATIONS OF CONCRETE PAVEMENT REPAIR OR REPLACEMENT. SEE CONSTRUCTION DETAIL.



NOTES:

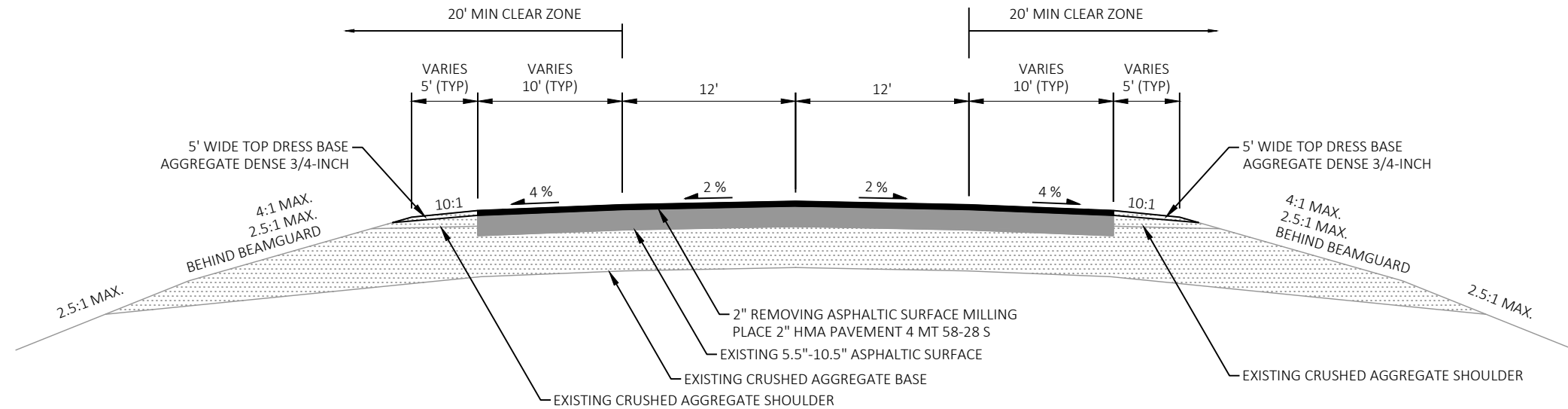
1. PLACE ASPHALTIC RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY ON INSIDE SHOULDER.
2. PLACE CONCRETE RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY ON OUTSIDE SHOULDER IN CONCRETE PAVEMENT REPAIR OR REPLACEMENT LOCATIONS ONLY.
3. CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT REQUIRED AT LOCATIONS OF CONCRETE PAVEMENT REPAIR OR REPLACEMENT. SEE CONSTRUCTION DETAIL.



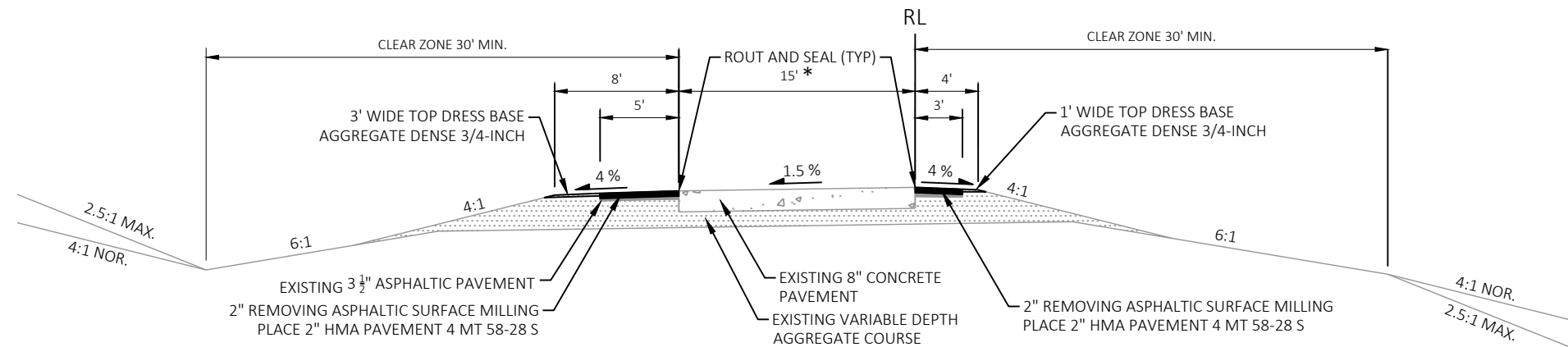
* CONCRETE PAVEMENT REPAIR OR
CONCRETE PAVEMENT REPLACEMENT.
(SEE PLAN SHEETS FOR LOCATIONS)

FINISHED TYPICAL SECTION - IH 39 SB

STA 1929+00 - STA 1997+92.48 BK
STA 984+35.81 AHD - STA 1135+37 BK
STA 1134+05 AHD - STA 1141+00

**FINISHED TYPICAL SECTION - CTH DB**

STA 38+20.65 - STA 41+63.94
STA 44+57.01 - STA 47+92.52



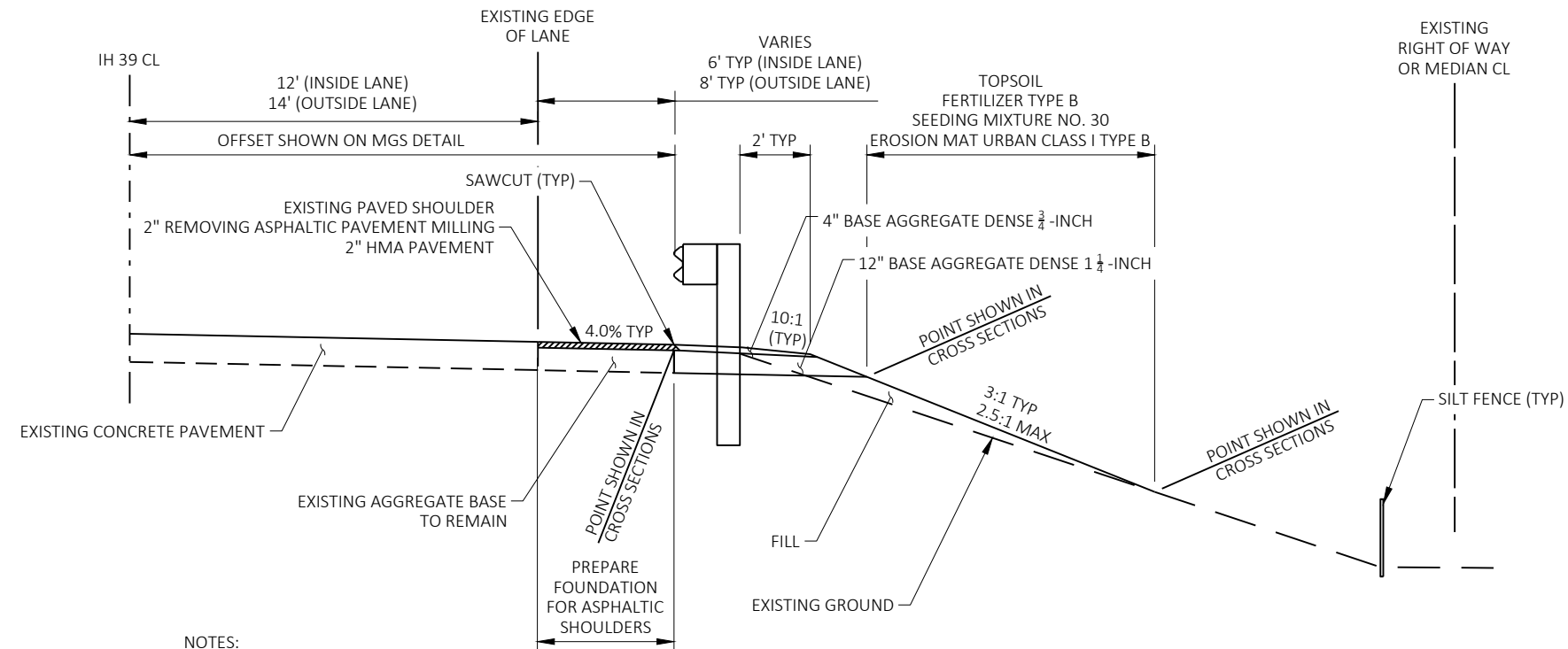
* CONCRETE PAVEMENT REPAIR OR
CONCRETE PAVEMENT REPLACEMENT.
(SEE PLAN SHEETS FOR LOCATIONS)

FINISHED TYPICAL RAMP SECTION - ON AND OFF RAMP CTH DB

STA 10+26.26 - STA 25+39.38 SB ON RAMP
STA 17+29.68 - STA 28+84.83 SB OFF RAMP

NOTES:

1. CONTINUOUS DIAMOND GRINDING
CONCRETE PAVEMENT REQUIRED AT
LOCATIONS OF CONCRETE PAVEMENT
REPAIR OR REPLACEMENT. SEE
CONSTRUCTION DETAIL.



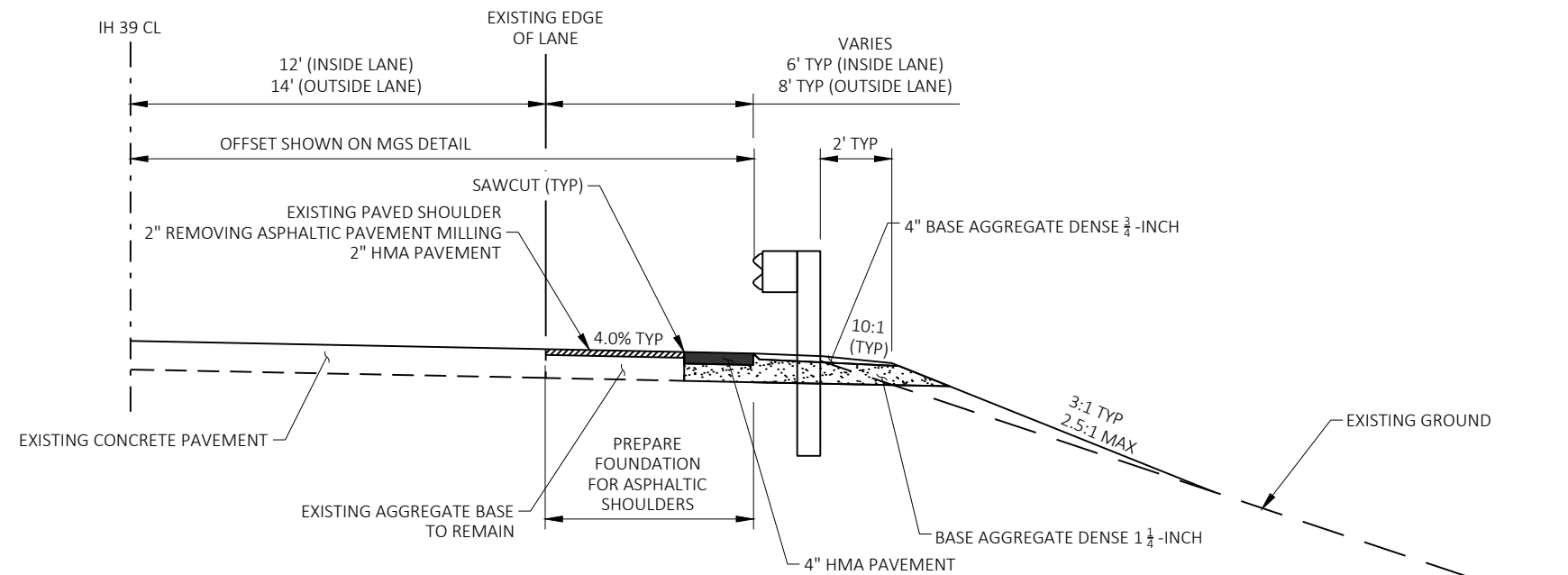
NOTES:

EXCAVATION COMMON , FILL, BORROW, SALVAGED TOPSOIL, FERTILIZER AND SEEDING ARE INCIDENTAL TO BARRIER SYSTEM GRADING SHAPING FINISHING.

BARRIER SYSTEM GRADING SHAPING FINISHING WILL BE MEASURED BY THE ENTIRE BARRIER SYSTEM INCLUDING GRADING REQUIRED FOR BOTH TERMINALS AND BEHIND THE GUARDRAIL IN BETWEEN.

SEE STANDARD DETAIL DRAWINGS MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL FOR MORE INFORMATION.

MGS GUARDRAIL GRADING, SHAPING, AND FINISHING

**NOTES:**

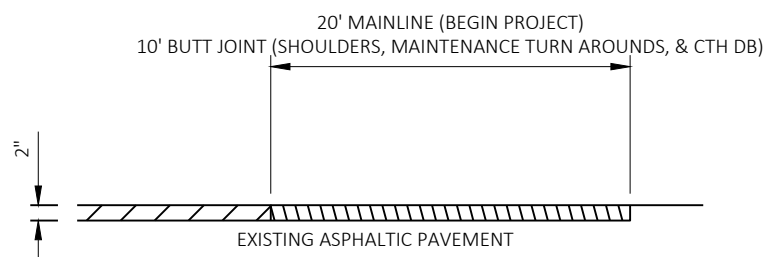
LOCATIONS WHERE EXISTING HMA SHOULDER DOES NOT EXTEND FLUSH WITH THE FACE OF PROPOSED MGS GUARDRAIL 3, WIDENING OF PROPOSED ASPHALT SHOULDER IS REQUIRED.

SEE MGS DETAIL SHEETS FOR THESE LOCATIONS

USE 4" HMA PAVEMENT 4 MT 58-28 S OVER MINIMUM 12" BASE AGGREGATE DENSE 1 1/4-INCH, OUTSIDE SHOULDER TO BE PLACED IN 2 LIFTS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

EXISTING BASE AGGREGATE MAY BE USED AS THE ENGINEER DIRECTS

EXCAVATION REQUIRED FOR PLACEMENT OF BASE AGGREGATE AND HMA PAVEMENT PAID FOR UNDER BARRIER SYSTEM GRADING SHAPING AND FINISHING BID ITEM

MGS GUARDRAIL SHOULDER WIDENING

-  EXISTING HMA PAVEMENT
-  REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING ASPHALTIC SURFACE BUTT JOINTS

BUTT JOINT - 2" MILL / 2" OVERLAY TO EXISTING

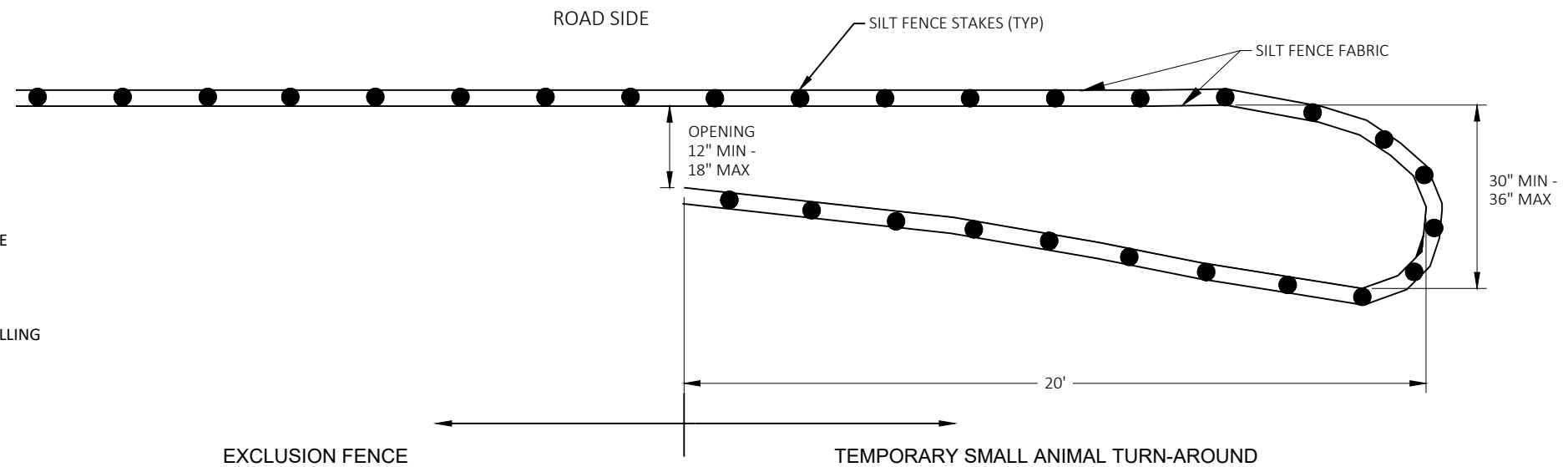
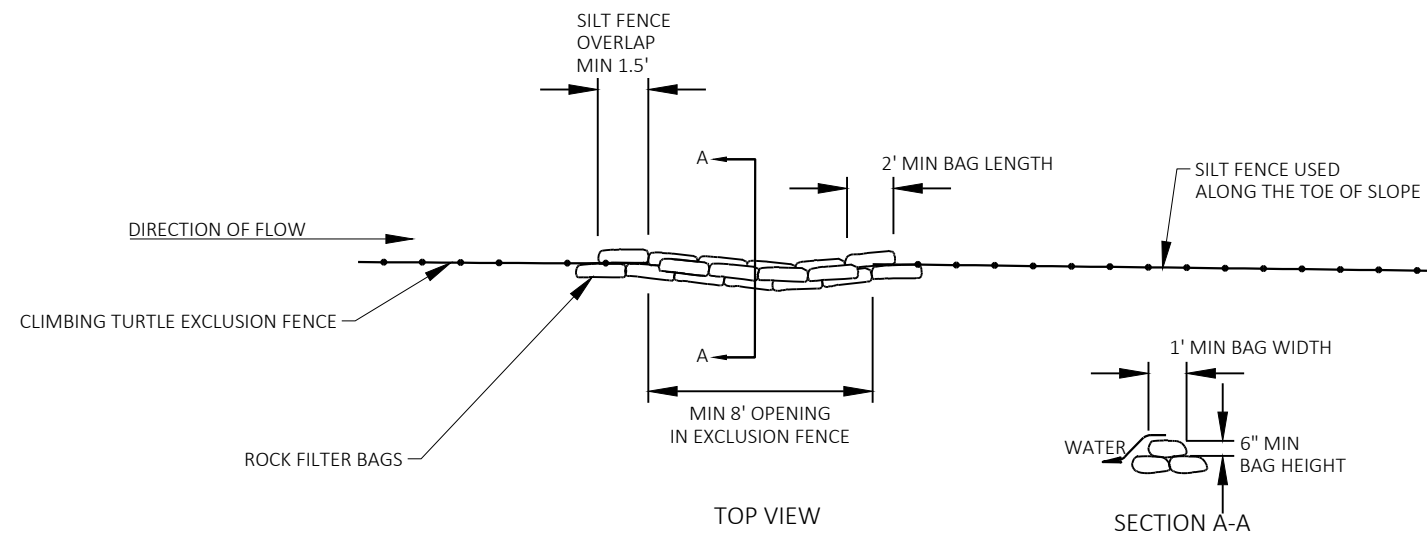
GENERAL NOTES:

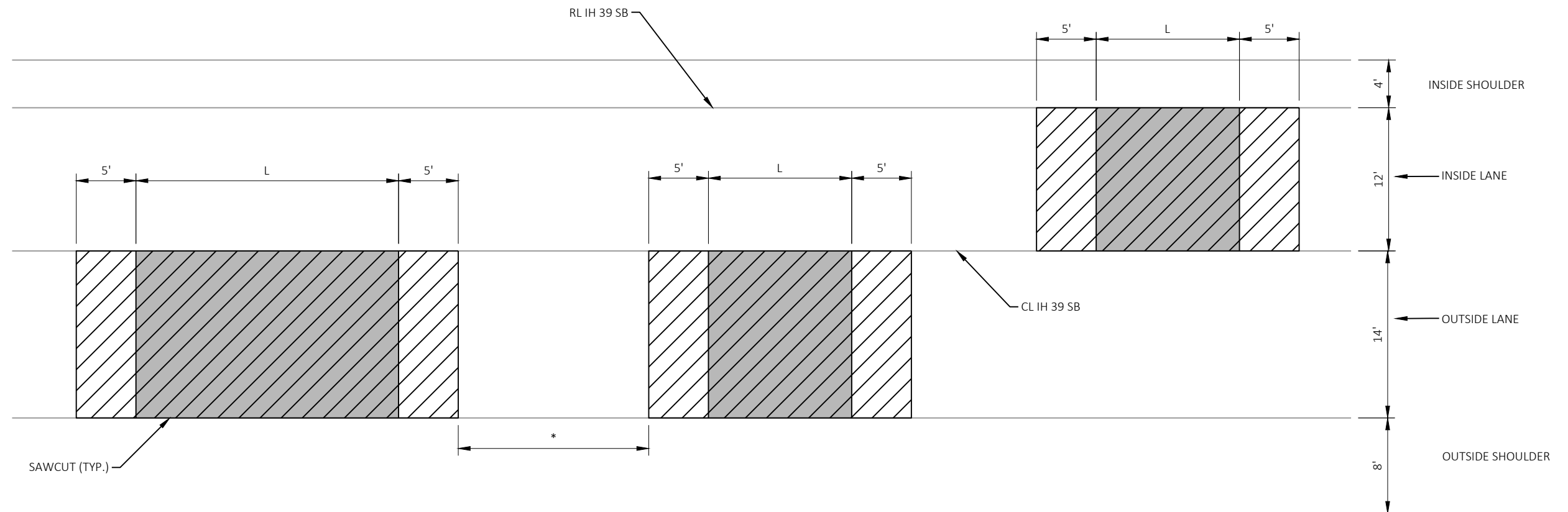
INSTALL EXCLUSION FENCE FOR BOTH SEDIMENT AND EXCLUSION PURPOSES.
STAPLE AND ENTRENCH A SECOND LAYER OF SILT FENCE FABRIC FOR
EXCLUSION FENCING ON THE BACKSIDE OF THE SEDIMENT CONTROL SILT FENCE
TO COVER THE STAKES AND CREATE A SMOOTH SURFACE.

SEE CULVERT DETAIL SHEETS AND EROSION CONTROL SHEETS FOR LOCATIONS

TEMPORARY SMALL ANIMAL TURN-AROUND PAID FOR UNDER BID ITEM INSTALLING
AND MAINTAINING CLIMBING TURTLE EXCLUSION FENCE

EXCLUSION FENCE PAID FOR UNDER BID ITEM INSTALLING AND MAINTAINING
CLIMBING TURTLE EXCLUSION FENCE.

CLIMBING TURTLE EXCLUSION FENCEEXCLUSION FENCE RELIEF



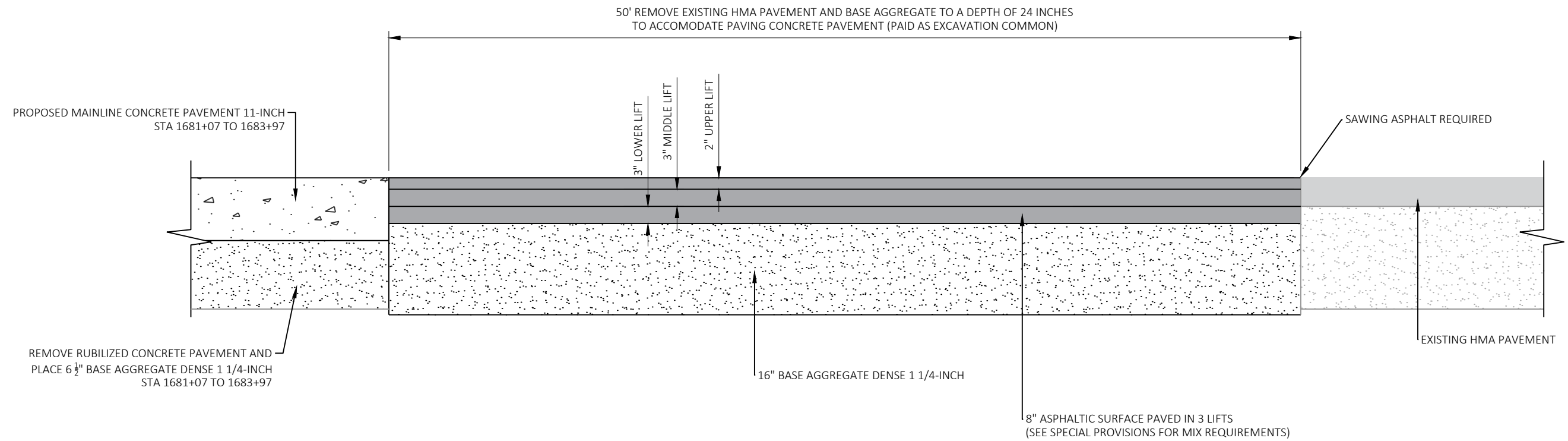
* NOTE: CONNECT DIAMOND GRINDING OPERATIONS AT LOCATIONS WHERE CONSECUTIVE JOINTS ARE BEING REPAIRED AND THE GAP DISTANCE IS LESS THAN OR EQUAL TO 10 FEET

CONCRETE PAVEMENT REPAIR OR REPLACEMENT AREA
(MEASURED BY THE SQUARE YARD)

CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT
(MEASURED BY THE SQUARE YARD)

L= LENGTH OF REPAIR OR REPLACEMENT SHOWN ELSEWHERE IN PLANS

DETAIL FOR LIMITS OF DIAMOND GRINDING



HMA PAVEMENT TO CONCRETE PAVEMENT TRANSITION

STA 1680+57 TO 1681+07

CTH DB NW CURB & GUTTER					
POINT	STATION (CTH DB)	OFF	ELEV	NORTHING	EASTING
NW RAD1	38+23.07	79.0' LT	0.00	258775.63	147619.29
NW01	38+20.85	22.2' LT	1168.07	258720.81	147604.11
NW02	38+32.87	24.8' LT	1168.03	258720.66	147616.43
NW03	38+53.45	33.1' LT	1167.96	258724.04	147638.36
NW04	38+74.76	60.2' LT	1167.65	258745.50	147665.30
NW05	38+78.68	71.0' LT	1167.54	258755.08	147671.58

SI
RESTORE BEHIND BACK OF CURB WITH
TOPSOIL, EROSION MAT URBAN CLASS I
TYPE A, FERTILIZER TYPE B, AND SEEDING
MIXTURE NO.30

CTH DB MEDIAN CURB & GUTTER					
POINT	STATION (CTH DB)	OFF	ELEV	NORTHING	EASTING
MED RAD1	40+51.50	45.8' LT	0.00	258690.95	147834.04
MED01	38+71.77	21.8' LT	1168.58	258708.85	147653.60
MED02	38+87.58	54.4' LT	1168.08	258736.91	147676.45
MED03	38+93.29	53.4' LT	1168.14	258734.65	147681.78
MED04	38+94.96	21.6' LT	1168.86	258703.26	147676.12

BUTT JOINT REQUIRED

CTH DB NE CURB & GUTTER					
POINT	STATION (CTH DB)	OFF	ELEV	NORTHING	EASTING
NE RAD1	39+31.94	42.44' LT	0.00	258715.11	147716.89
NE RAD2	39+57.75	57.92' LT	0.00	258724.27	147745.56
NE01	39+31.86	22.04' LT	1169.08	258695.27	147712.14
NE02	39+27.90	22.85' LT	1169.02	258696.97	147708.48
NE03	39+14.03	33.54' LT	1168.76	258710.55	147697.42
NE04	39+12.97	35.67' LT	1168.72	258712.87	147696.88
NE05	39+07.93	62.15' LT	1168.32	258739.80	147698.03
NE06	39+08.46	68.44' LT	1168.22	258745.79	147699.99

SI
RESTORE BEHIND BACK OF CURB WITH
TOPSOIL, EROSION MAT URBAN CLASS I
TYPE A, FERTILIZER TYPE B, AND SEEDING
MIXTURE NO.30

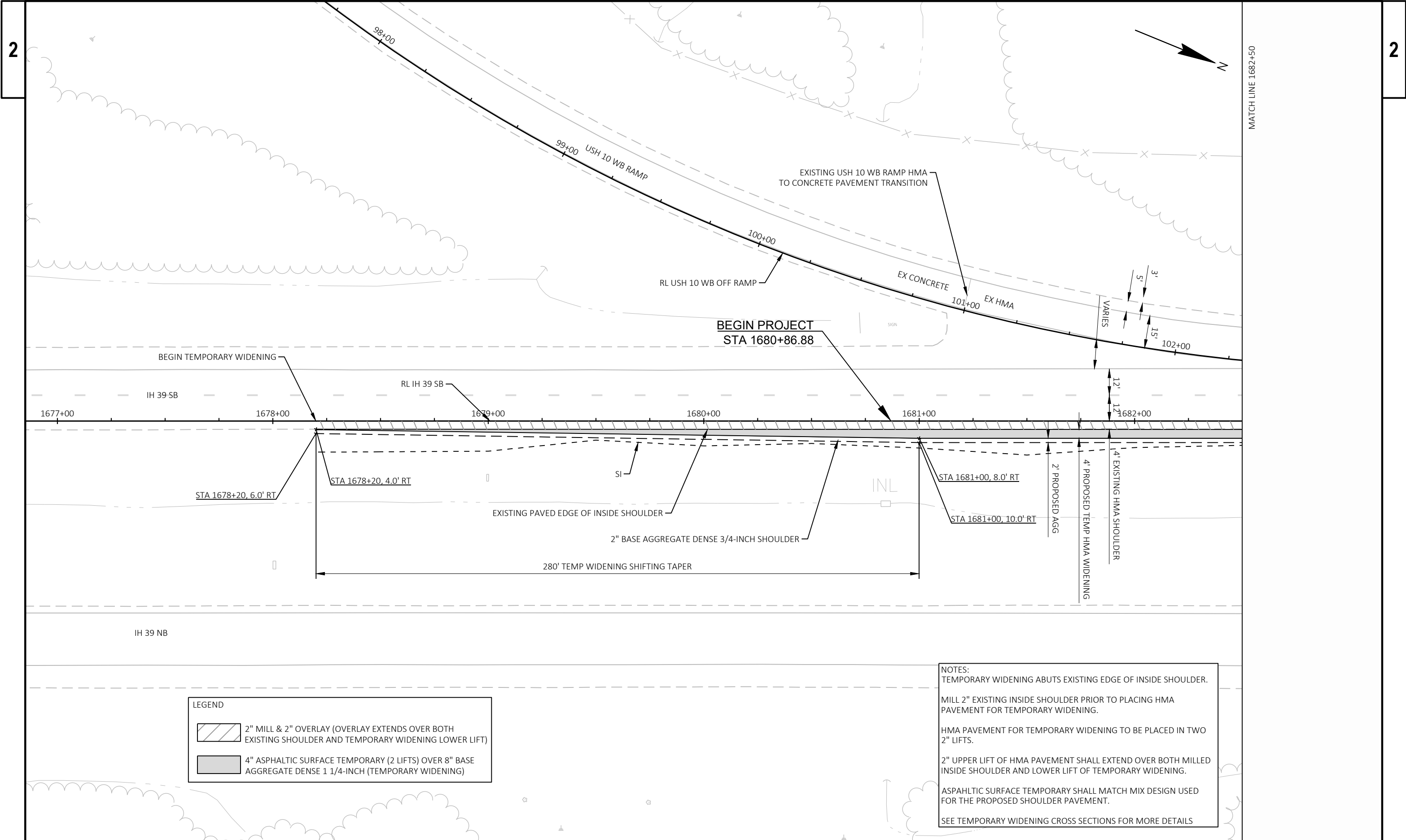
CTH DB SW CURB & GUTTER					
POINT	STATION (CTH DB)	OFF	ELEV	NORTHING	EASTING
SW RAD1	38+39.76	94.10' RT	0.00	258603.31	147595.89
SW01	39+04.51	66.38' RT	1167.75	258615.46	147665.27
SW02	39+00.64	59.56' RT	1167.82	258622.99	147663.07
SW03	38+92.55	48.14' RT	1167.94	258635.96	147657.80
SW04	38+43.46	24.20' RT	1168.16	258670.50	147615.50
SW05	38+40.11	24.02' RT	1168.17	258671.44	147612.28

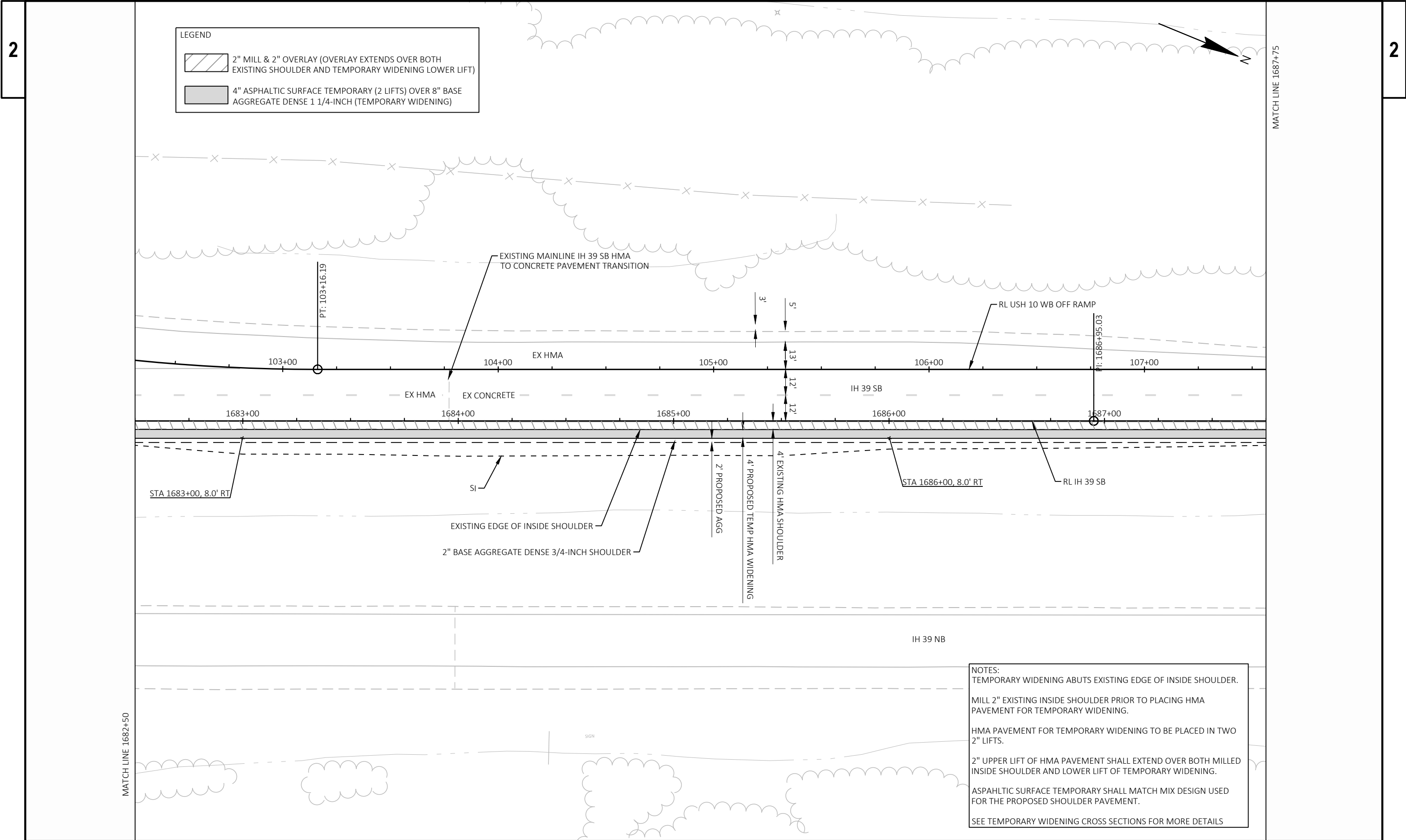
SI
RESTORE BEHIND BACK OF CURB WITH
TOPSOIL, EROSION MAT URBAN CLASS I
TYPE A, FERTILIZER TYPE B, AND SEEDING
MIXTURE NO.30

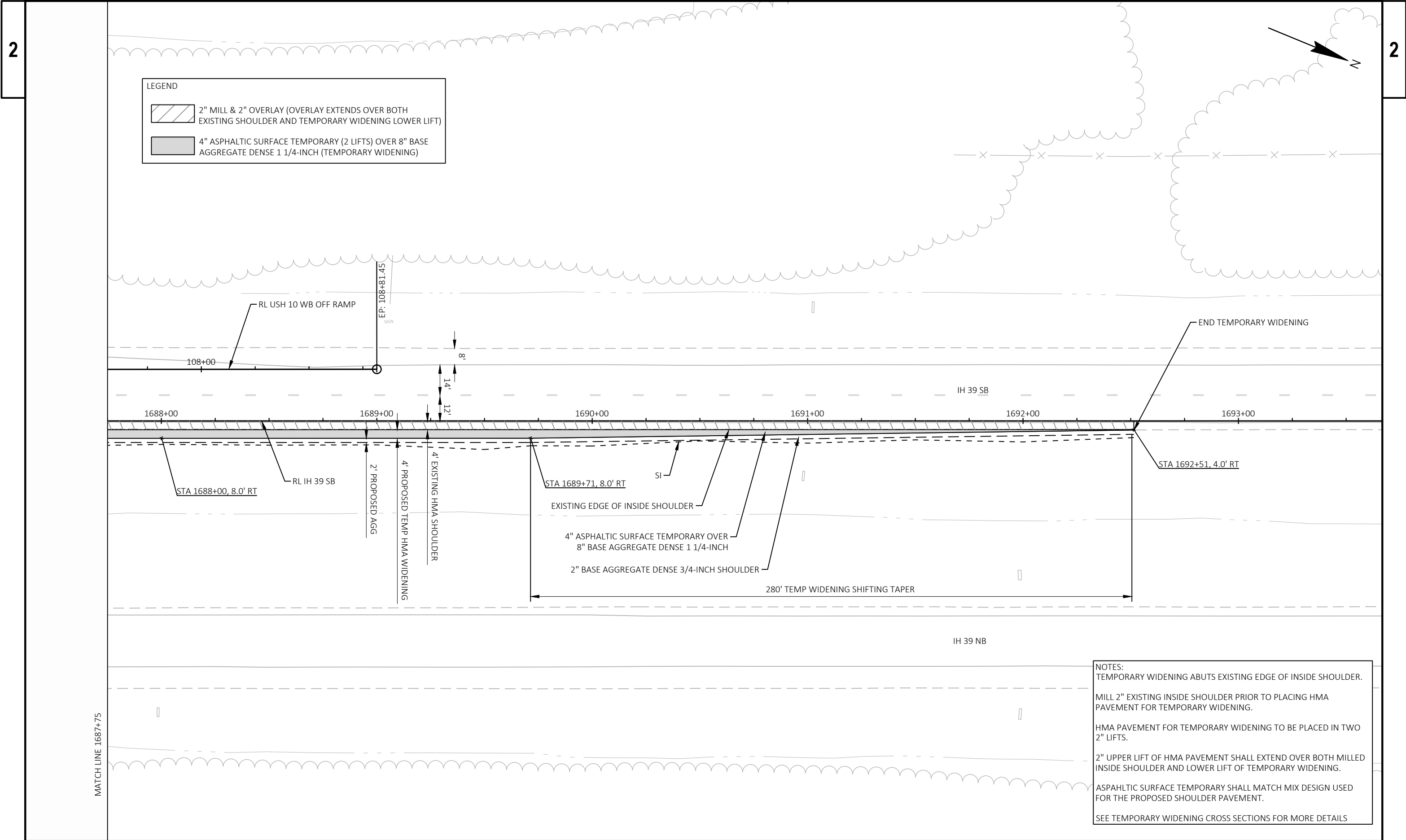
NOTE (APPLIES TO ALL CURB AND GUTTER REPLACEMENT):
SPOT CHECK EXISTING CURB AND GUTTER ELEVATIONS PRIOR TO REMOVAL. VERIFY ALL GIVEN ELEVATIONS SHOWN AND ADJUST CURB AND GUTTER FLANGE ELEVATIONS IF NEEDED OR AS DIRECTED BY THE ENGINEER.

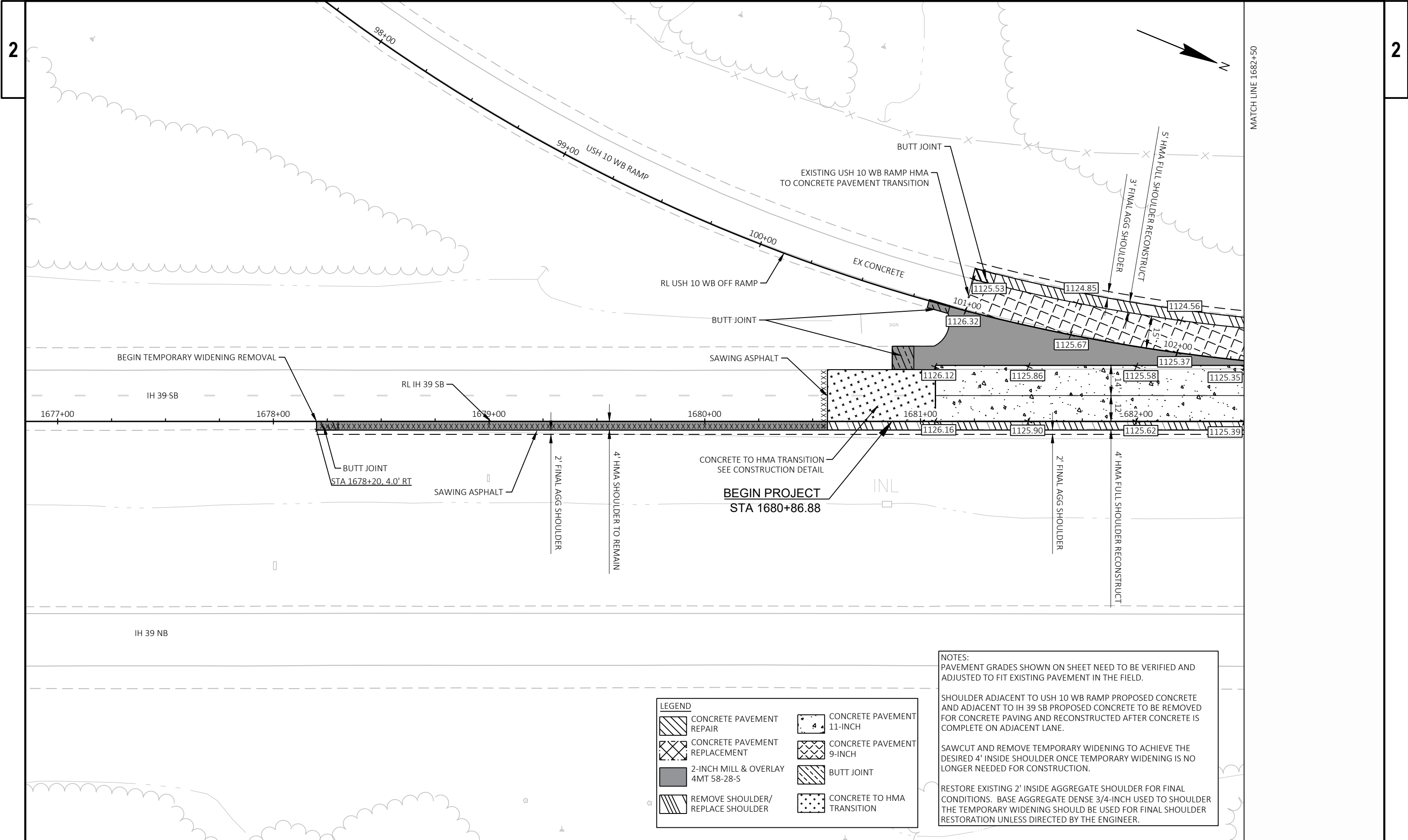
LEGEND
C&G REMOVE EXISTING CURB & GUTTER, REPLACE WITH CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE G

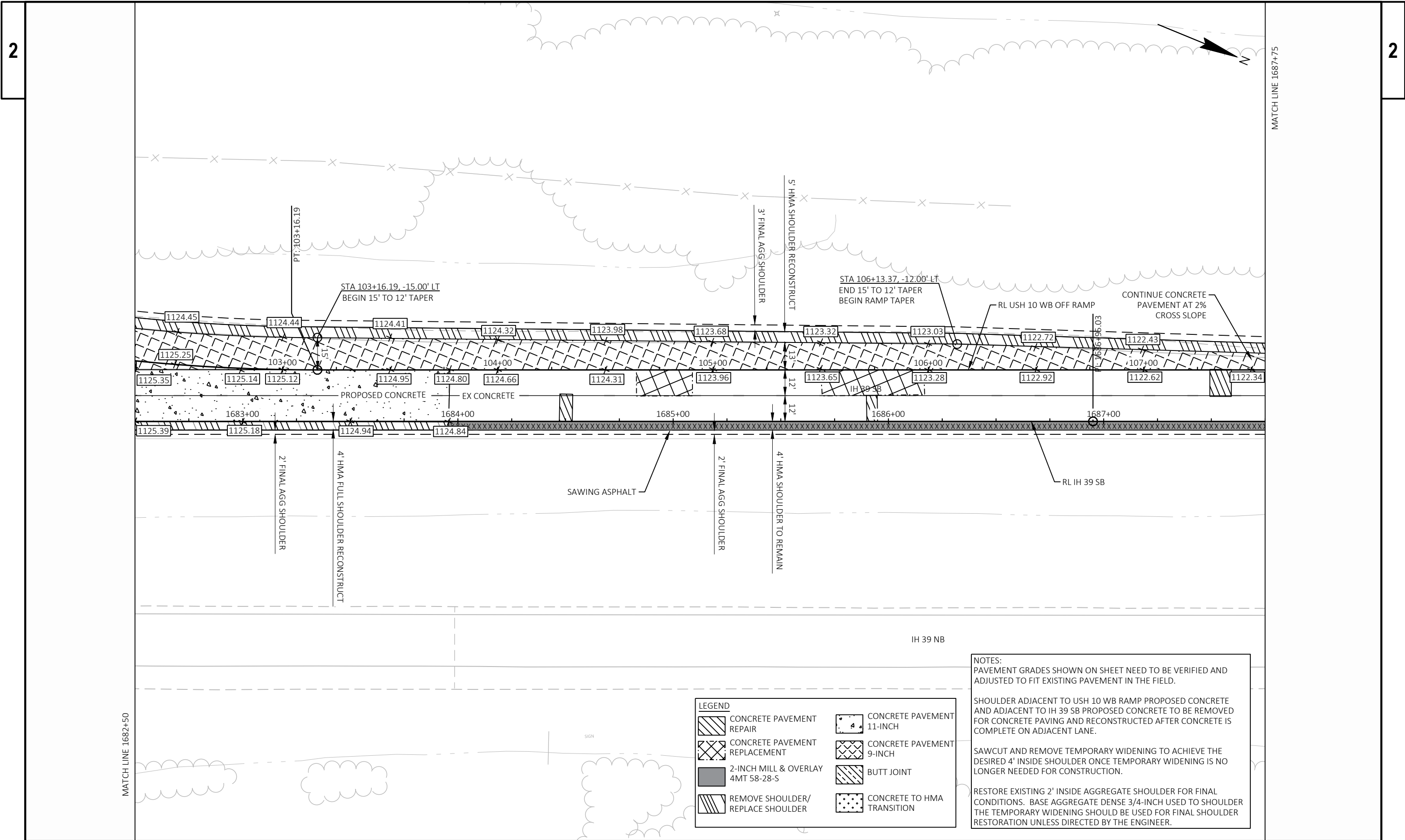
CTH DB SE CURB & GUTTER					
POINT	STATION (CTH DB)	OFF	ELEV	NORTHING	EASTING
SE RAD1	39+60.97	42.1' RT	0.00	258626.16	147725.78
SE RAD2	39+89.97	65.1' RT	0.00	258597.15	147748.75
SE01	39+40.64	90.8' RT	1167.76	258583.38	147694.83
SE02	39+37.91	82.8' RT	1167.90	258591.79	147694.01
SE03	39+46.83	31.0' RT	1168.79	258640.24	147714.57
SE04	39+58.74	24.3' RT	1169.02	258644.05	147727.70
SE05	39+60.60	24.0' RT	1169.05	258643.85	147729.57











LEGEND

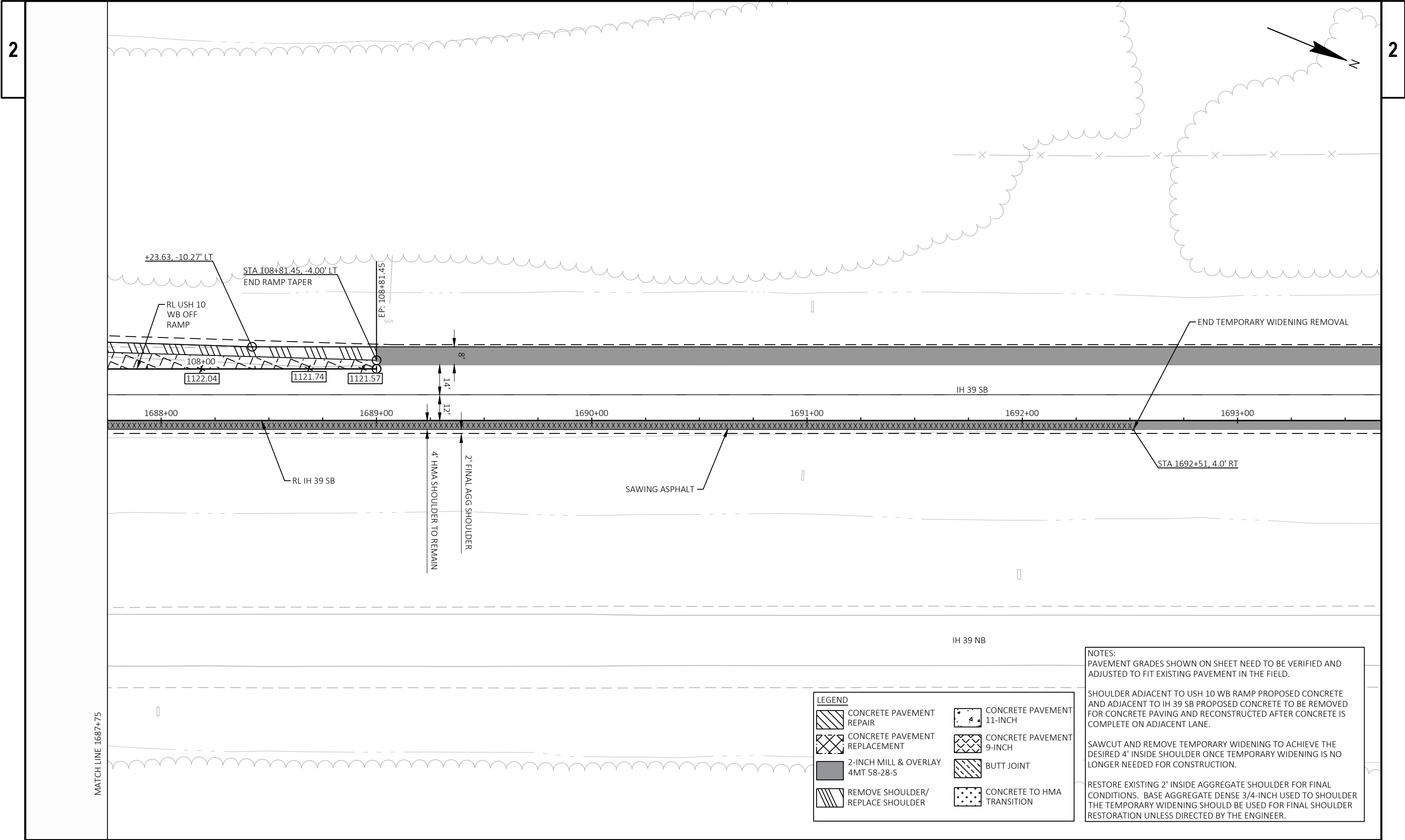
	CONCRETE PAVEMENT REPAIR		CONCRETE PAVEMENT 11-INCH
	CONCRETE PAVEMENT REPLACEMENT		CONCRETE PAVEMENT 9-INCH
	2-INCH MILL & OVERLAY 4MT 58-28-5		BUTT JOINT
	REMOVE SHOULDER/REPLACE SHOULDER		CONCRETE TO HMA TRANSITION

NOTES:
PAVEMENT GRADES SHOWN ON SHEET NEED TO BE VERIFIED AND ADJUSTED TO FIT EXISTING PAVEMENT IN THE FIELD.

SHOULDER ADJACENT TO USH 10 WB RAMP PROPOSED CONCRETE AND ADJACENT TO IH 39 SB PROPOSED CONCRETE TO BE REMOVED FOR CONCRETE PAVING AND RECONSTRUCTED AFTER CONCRETE IS COMPLETE ON ADJACENT LANE.

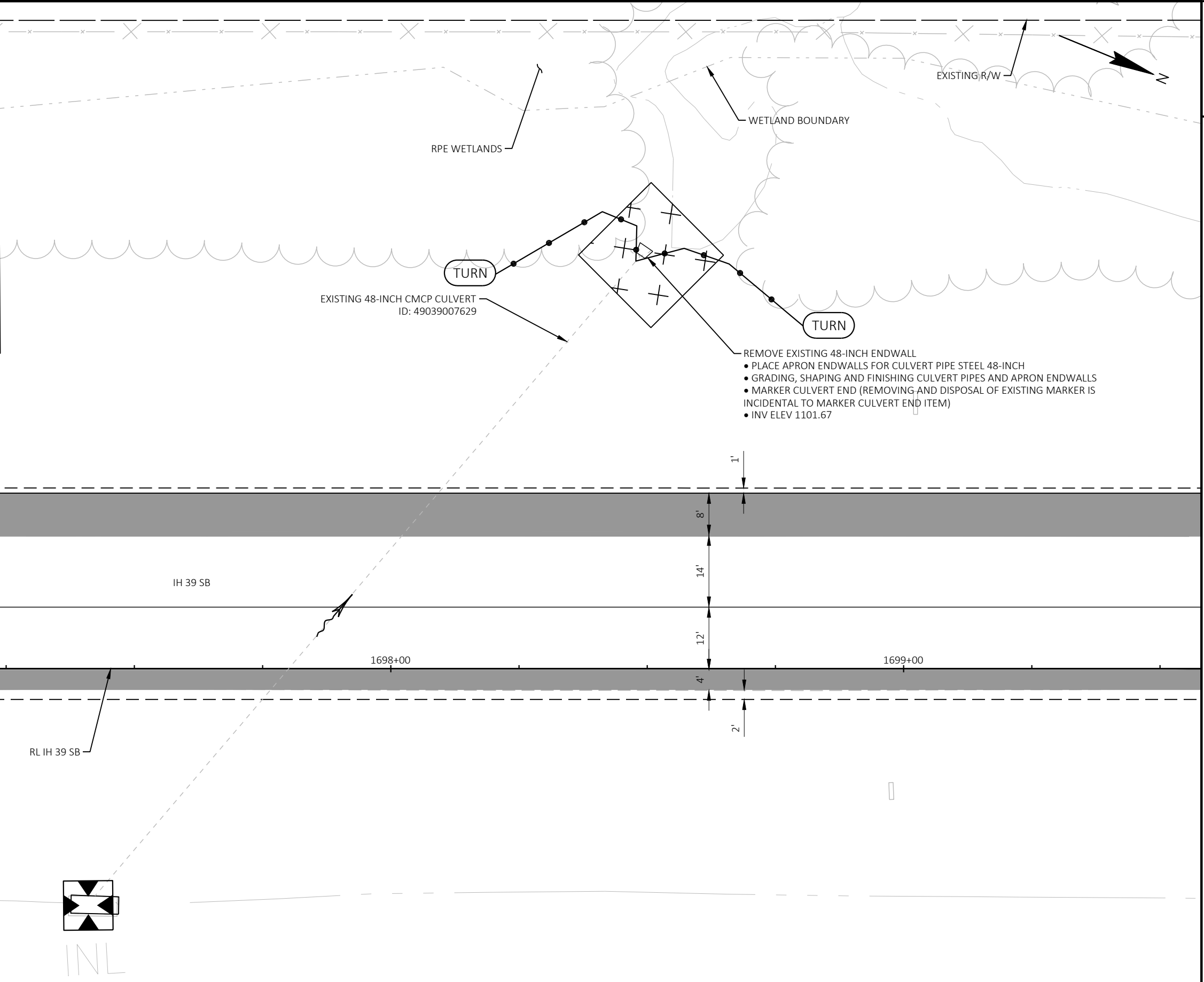
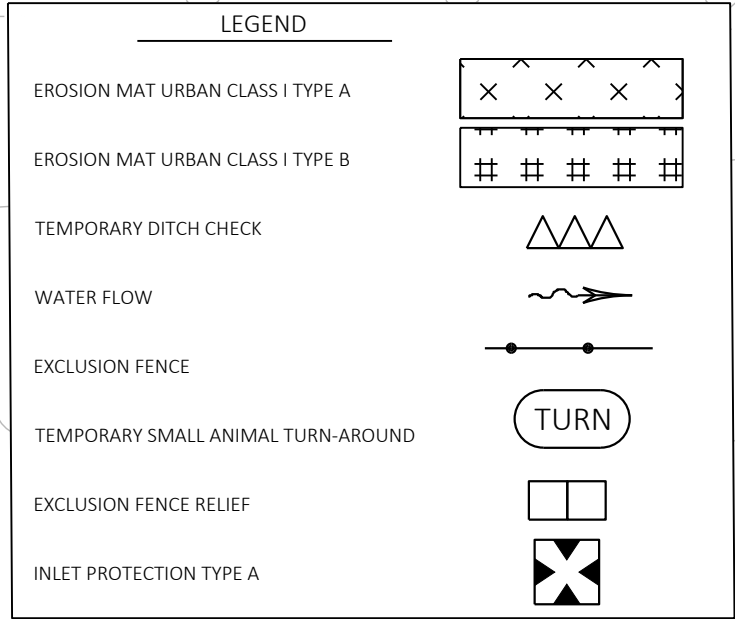
SAWCUT AND REMOVE TEMPORARY WIDENING TO ACHIEVE THE DESIRED 4' INSIDE SHOULDER ONCE TEMPORARY WIDENING IS NO LONGER NEEDED FOR CONSTRUCTION.

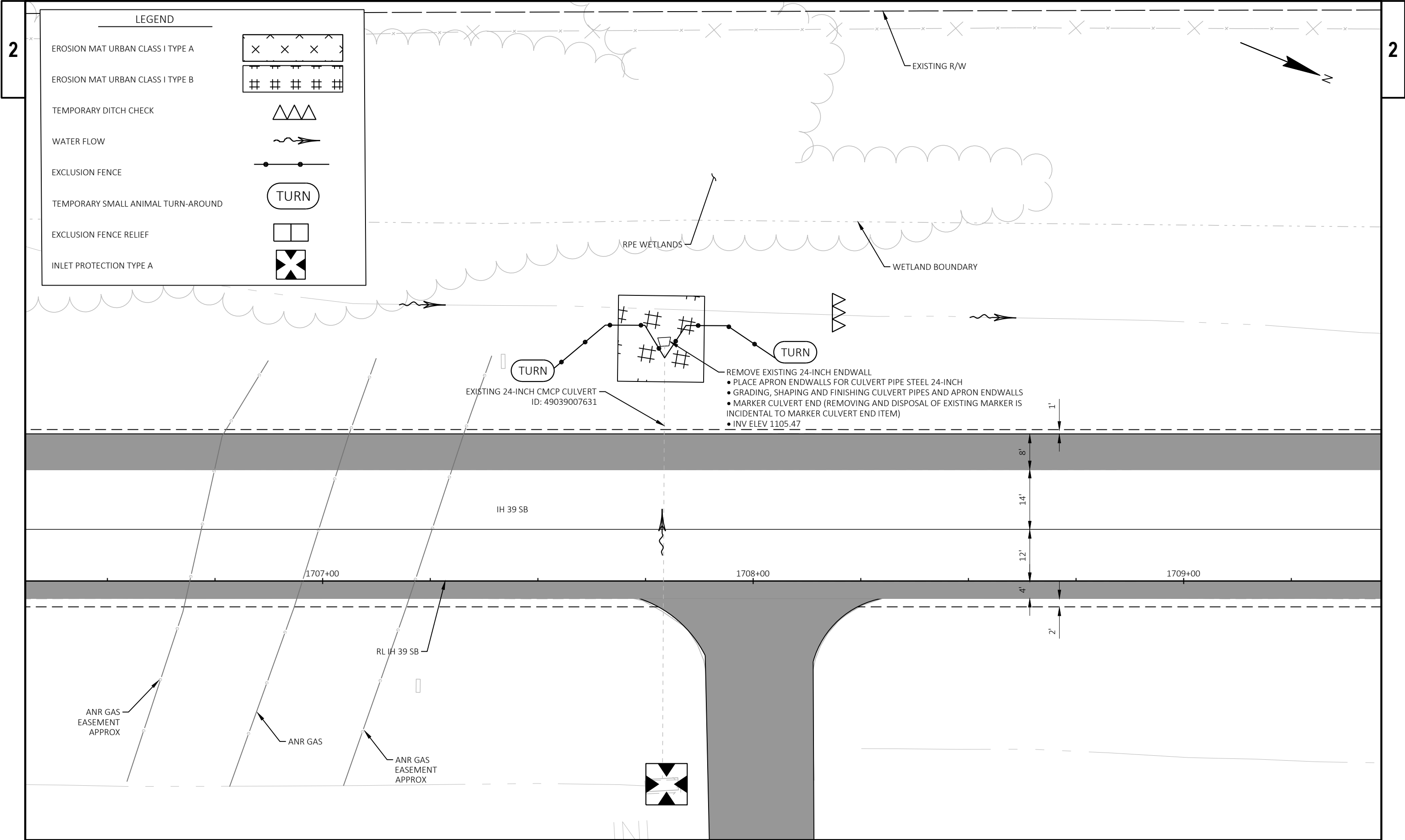
RESTORE EXISTING 2' INSIDE AGGREGATE SHOULDER FOR FINAL CONDITIONS. BASE AGGREGATE DENSE 3/4-INCH USED TO SHOULDER THE TEMPORARY WIDENING SHOULD BE USED FOR FINAL SHOULDER RESTORATION UNLESS DIRECTED BY THE ENGINEER.

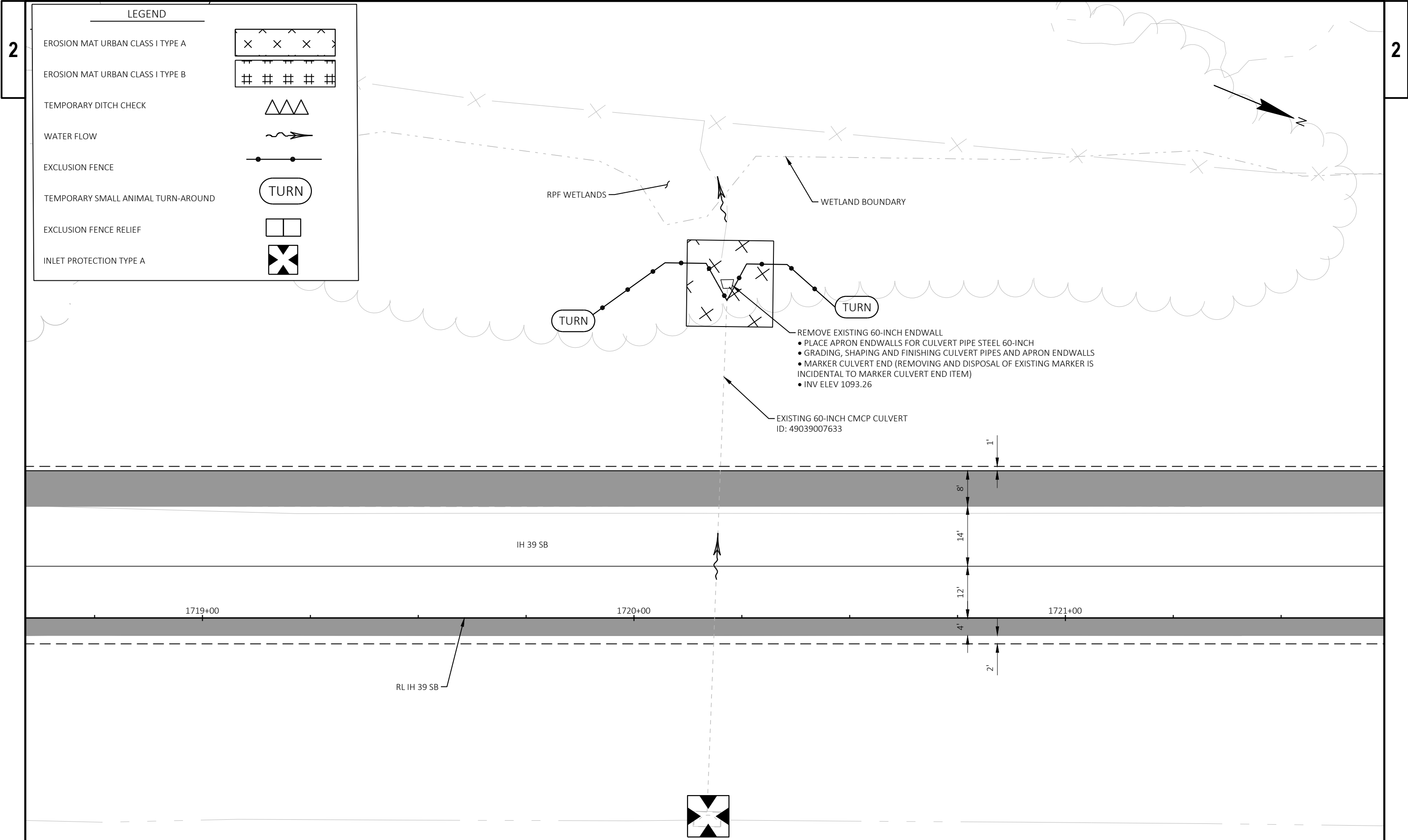


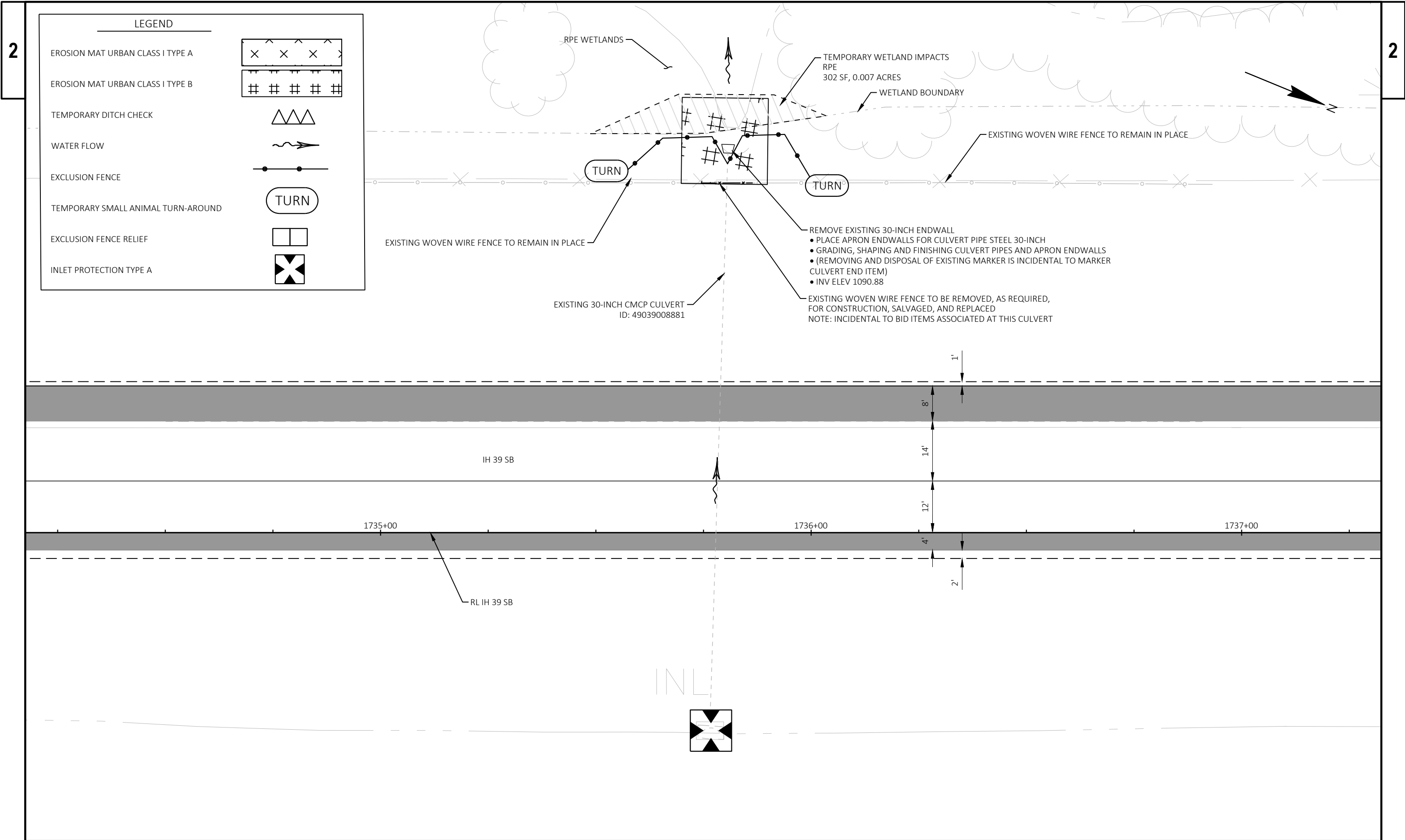
2

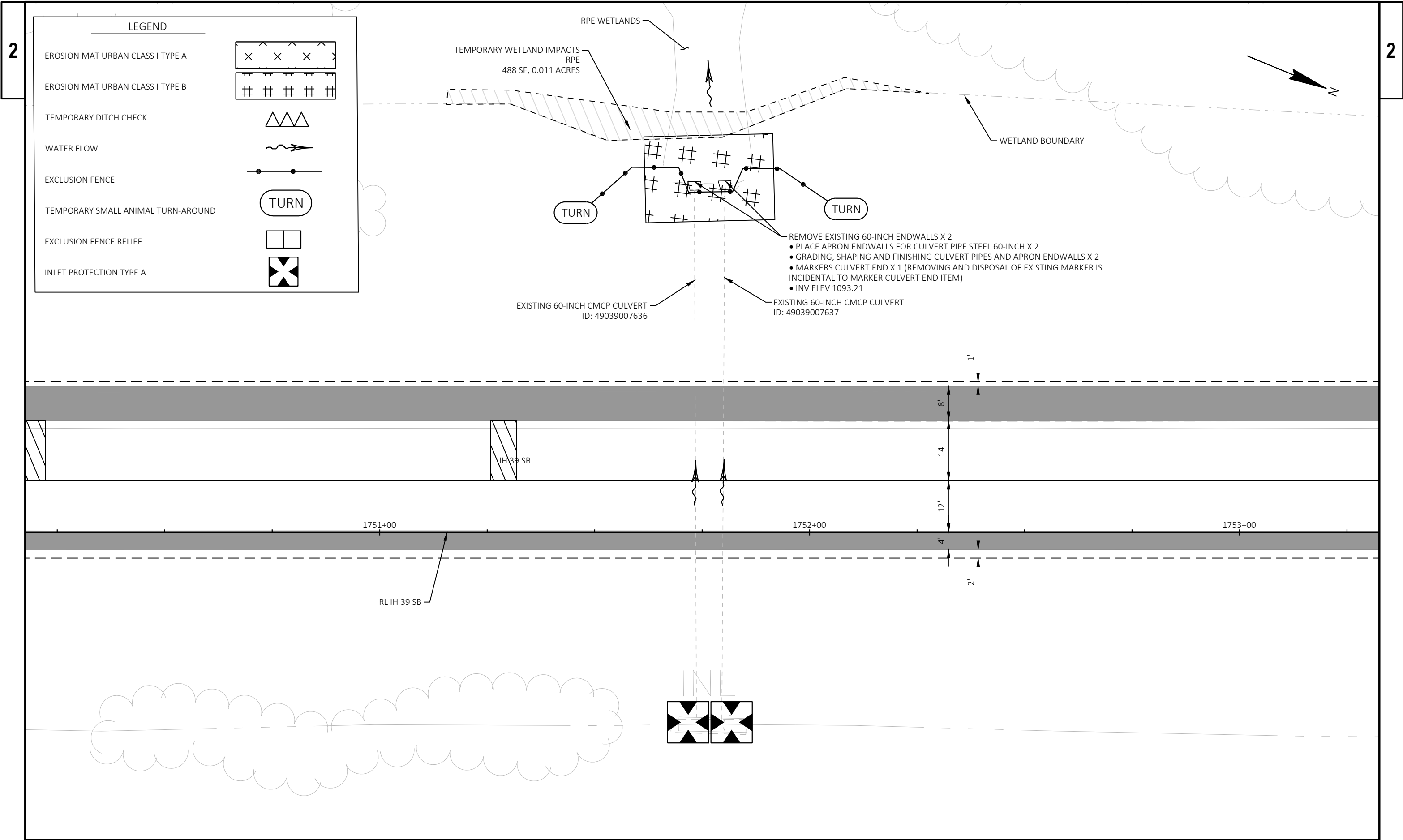
2

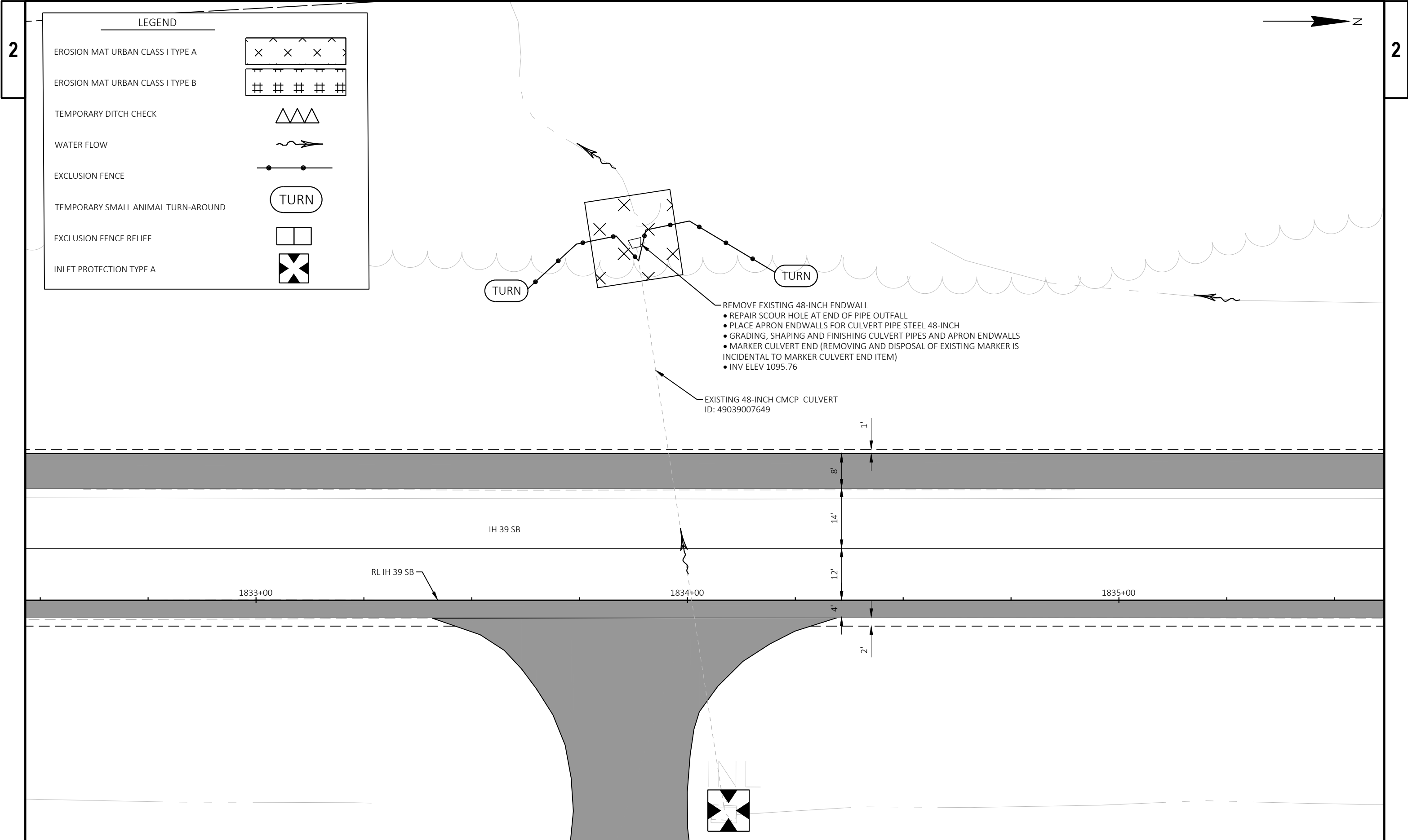






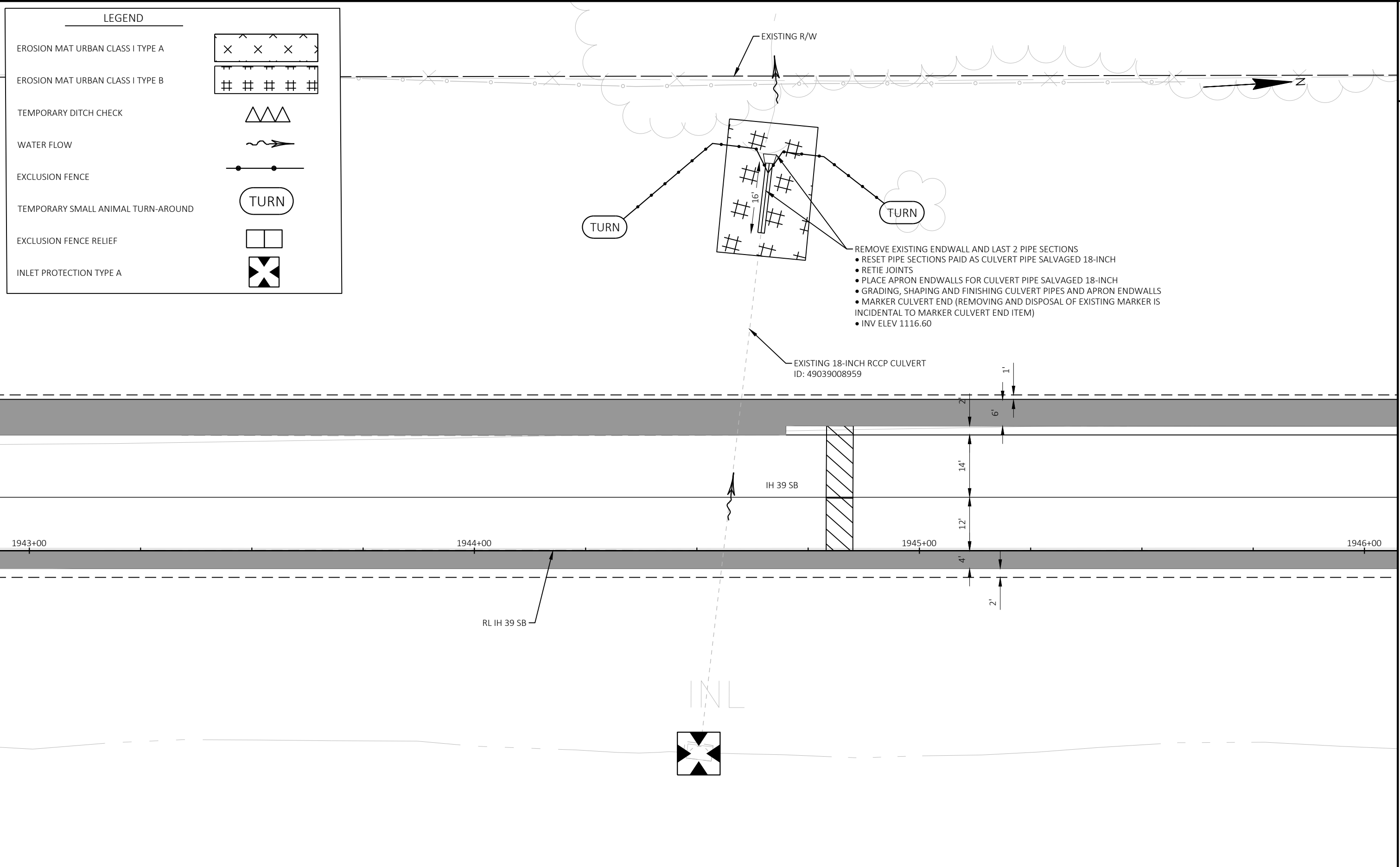


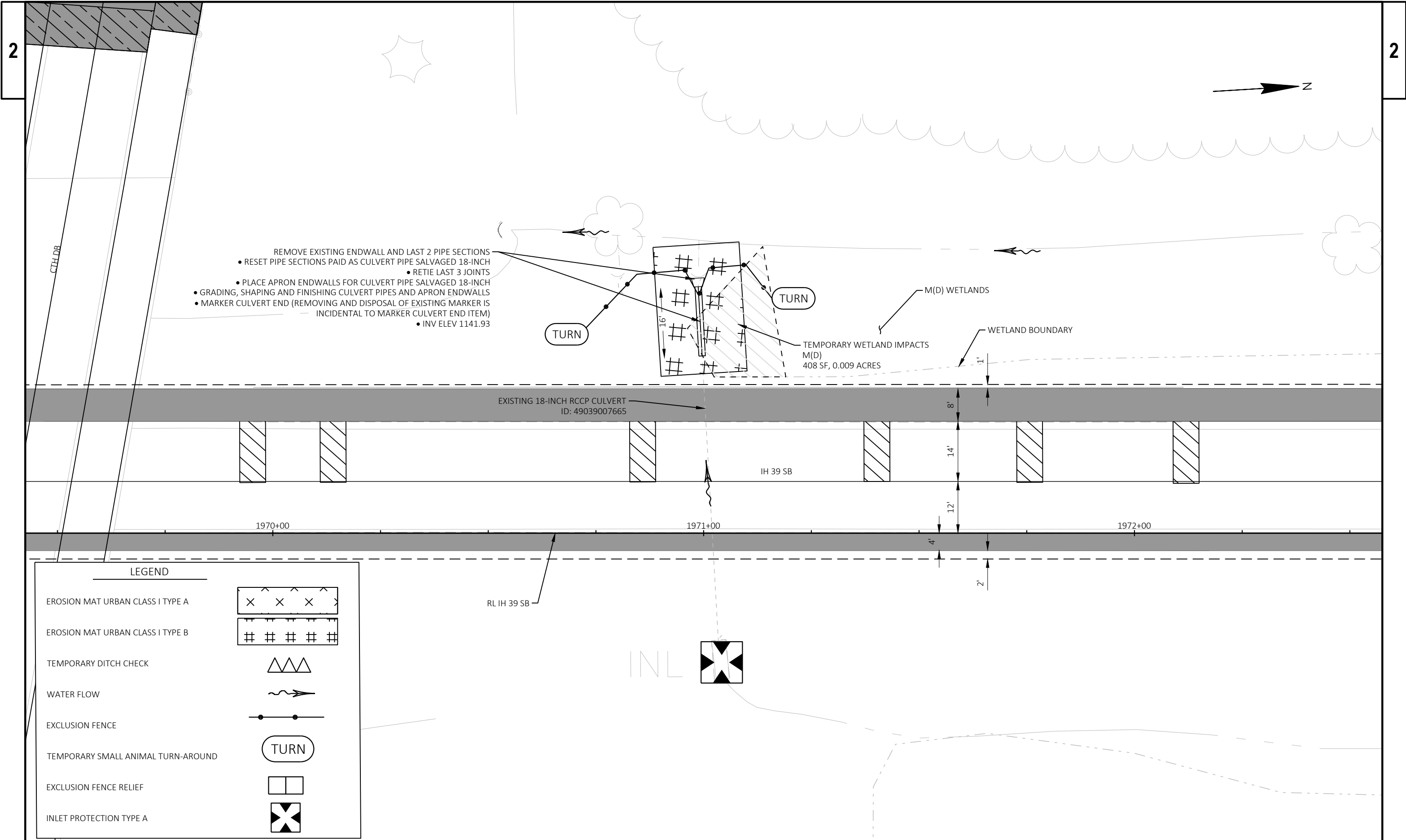




2

2





B-49-58 C&G FLANGE POINTS					
POINT NUMBER	STATION	OFFSET	ELEVATION	Y	X
10	986+40.36	31.50' LT	1131.90	261650.85	148185.93
11	986+43.33	31.50' LT	1131.90	261653.82	148186.11
12	986+63.12	31.50' LT	1131.86	261673.58	148187.28
13	986+73.12	31.50' LT	1131.80	261683.56	148187.88
14	986+83.12	31.50' LT	1131.74	261693.54	148188.48
15	986+93.12	31.50' LT	1131.57	261703.52	148189.08
16	986+93.70	31.50' LT	1131.56	261704.10	148189.11

STRUCTURE B-49-58

LITTLE EAU CLAIRE RIVER

REMOVE AND REPLACE EXISTING
CONCRETE PAVEMENT
APPROACH SLAB, SEE SDD
CONCRETE PAVEMENT
APPROACH SLABREMOVE AND REPLACE EXISTING
CONCRETE SHOULDER WITH
CONCRETE PAVEMENT 9-INCH

REMOVE EXISTING SURFACE DRAIN

B-49-58 C&G FLANGE POINTS					
POINT NUMBER	STATION	OFFSET	ELEVATION	Y	X
01	986+40.33	3.50' RT	1131.91	261648.74	148220.86
02	986+43.33	3.50' RT	1131.92	261651.73	148221.04
03	986+59.12	3.50' RT	1131.93	261667.49	148221.98
04	986+69.12	3.50' RT	1131.87	261677.47	148222.58
05	986+79.12	3.50' RT	1131.80	261687.46	148223.18
06	986+89.12	3.50' RT	1131.70	261697.44	148223.77
07	986+93.70	3.50' RT	1131.63	261702.02	148224.05

PROJECT NO: 1166-05-66

HWY: IH 39

COUNTY: PORTAGE & MARATHON

PLAN DETAILS MGS - B-49-58

SHEET

33

E

FILE NAME : Y:\MILWAUKEE\203005\0020341.00\ENG_DOCS\11660566\SHEETSP\PLAN\021201-PD-MGS.DWG
LAYOUT NAME - 01

PLOT DATE : 4/28/2025 2:31 PM

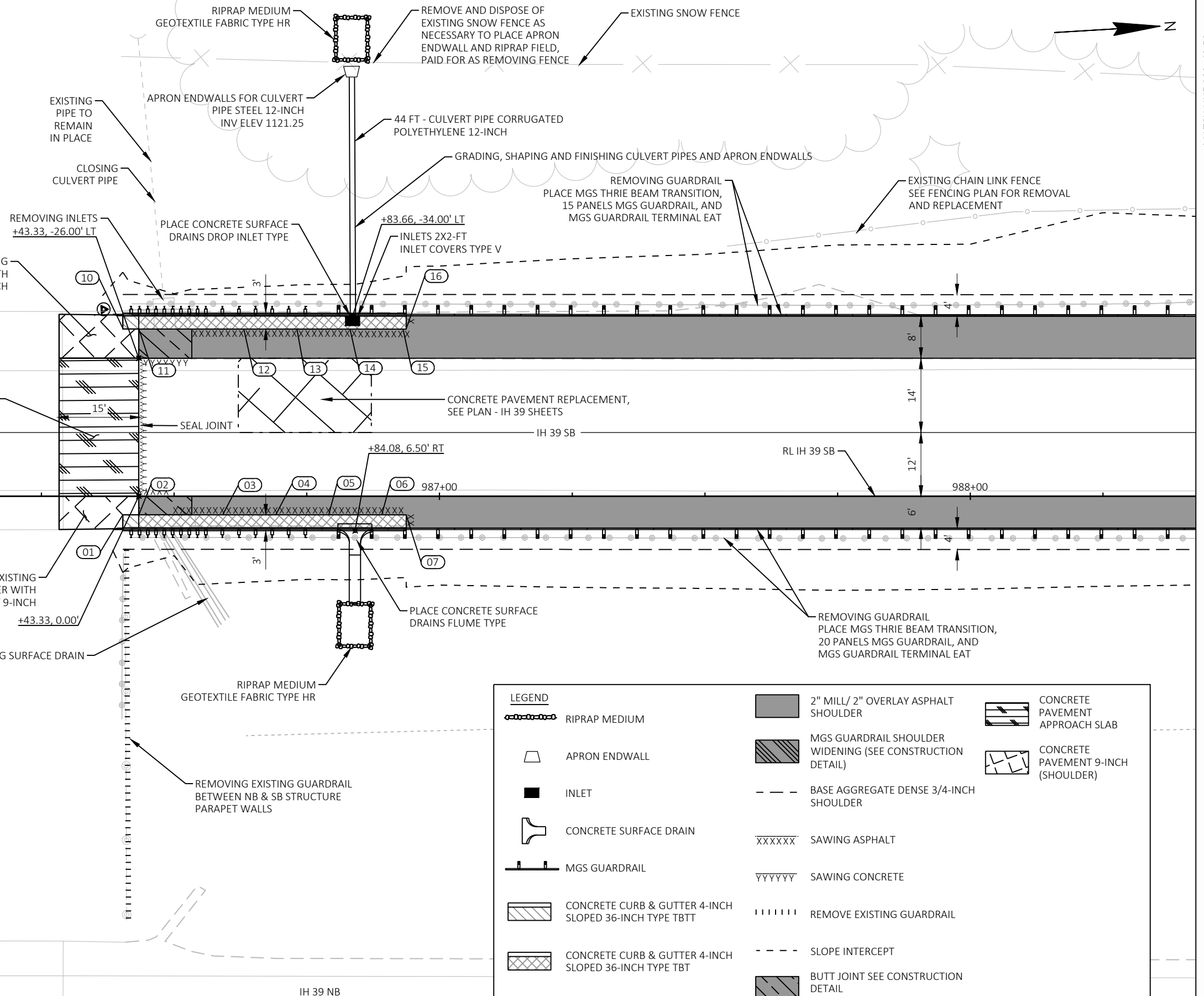
PLOT BY : WATT, TIMOTHY

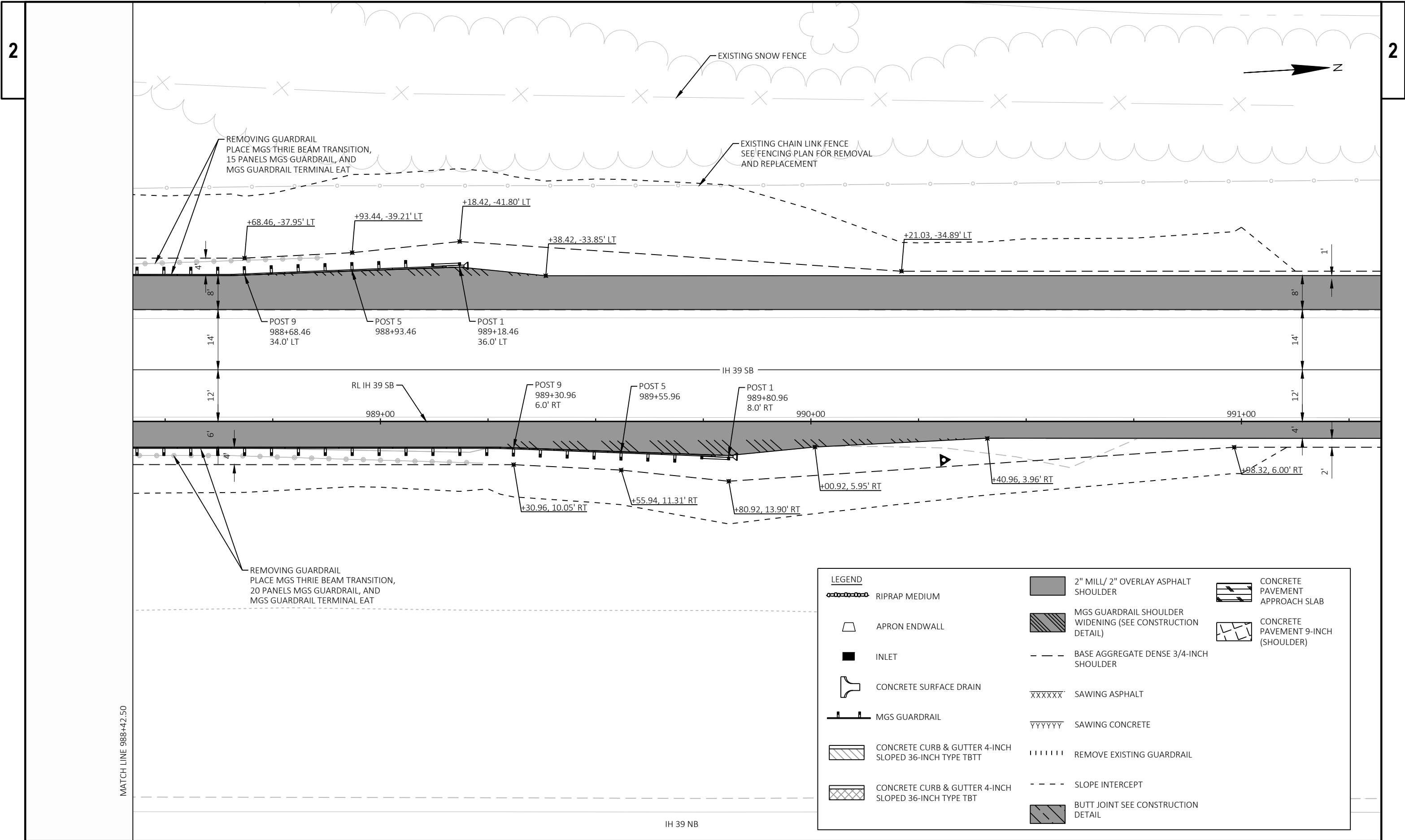
PLOT NAME :

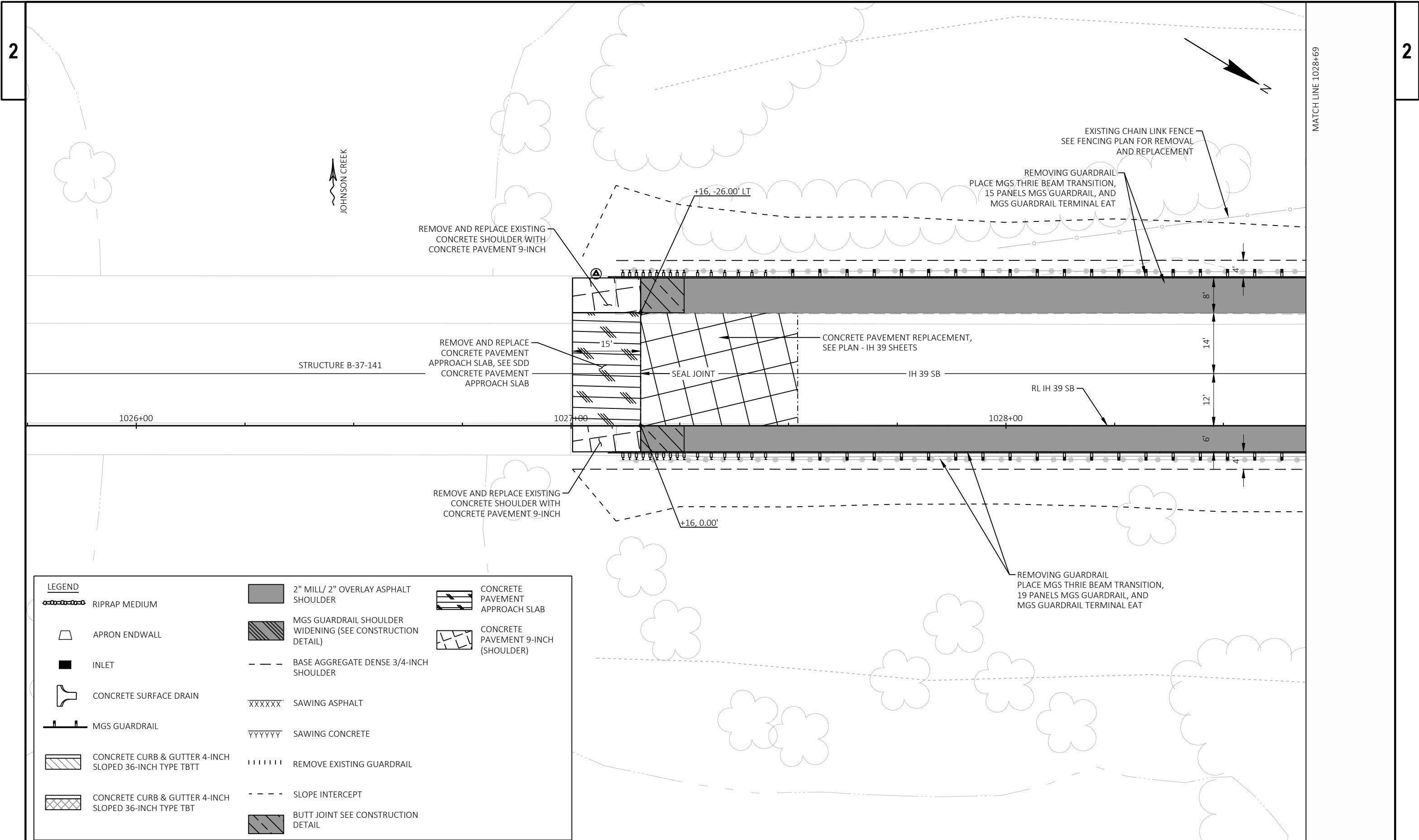
PLOT SCALE : 1 IN=20 FT

WISDOT/CADD5 SHEET 42

MATCH LINE 988+42.50







LEGEND

RIPRAP MEDIUM

APRON ENDWALL

INLET

CONCRETE SURFACE DRAIN

MGS GUARDRAIL

CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBTT

CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT

2" MILL/ 2" OVERLAY ASPHALT SHOULDER

MGS GUARDRAIL SHOULDER WIDENING (SEE CONSTRUCTION DETAIL)

BASE AGGREGATE DENSE 3/4-INCH SHOULDER

SAWING ASPHALT

SAWING CONCRETE

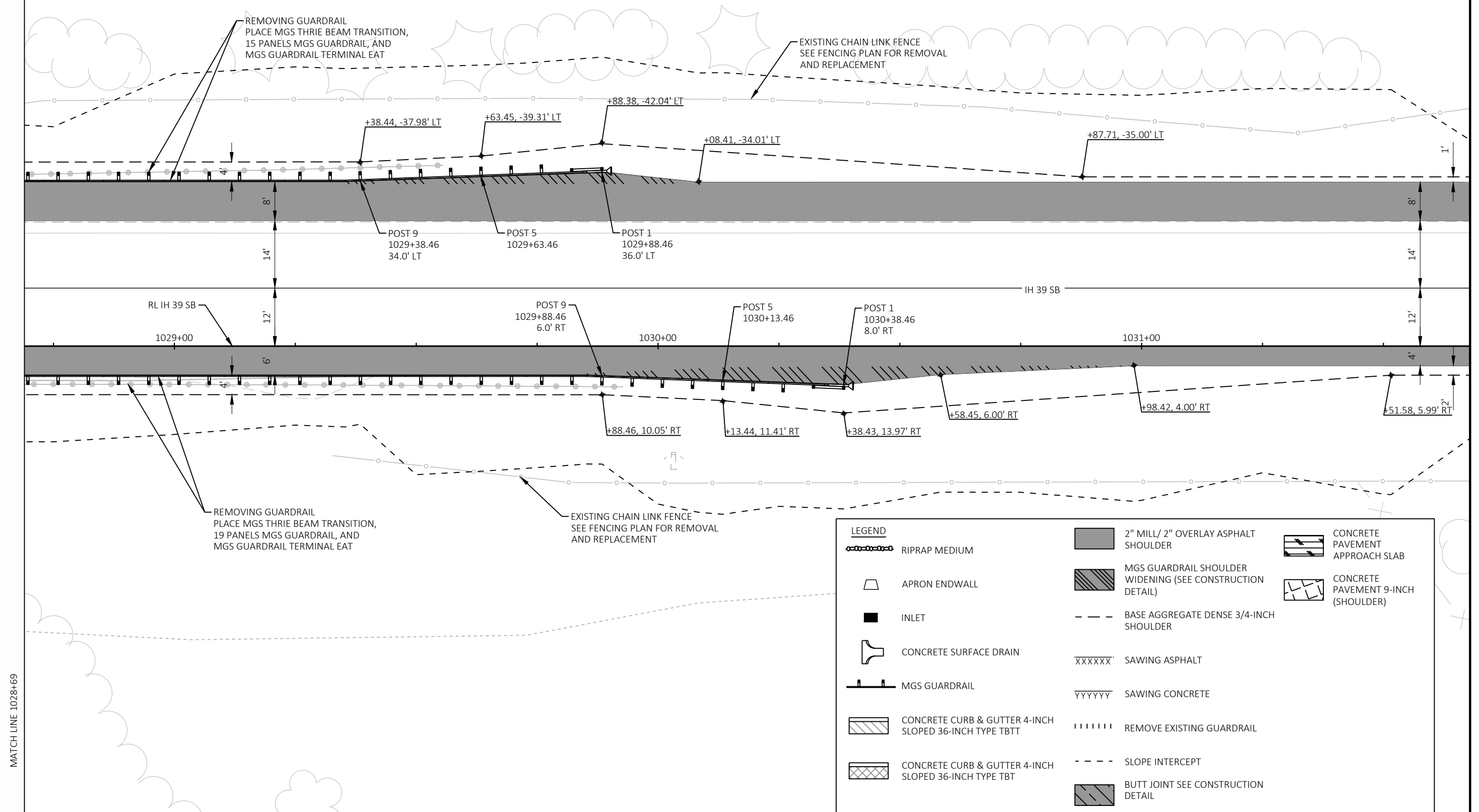
REMOVE EXISTING GUARDRAIL

SLOPE INTERCEPT

BUTT JOINT SEE CONSTRUCTION DETAIL

CONCRETE PAVEMENT APPROACH SLAB

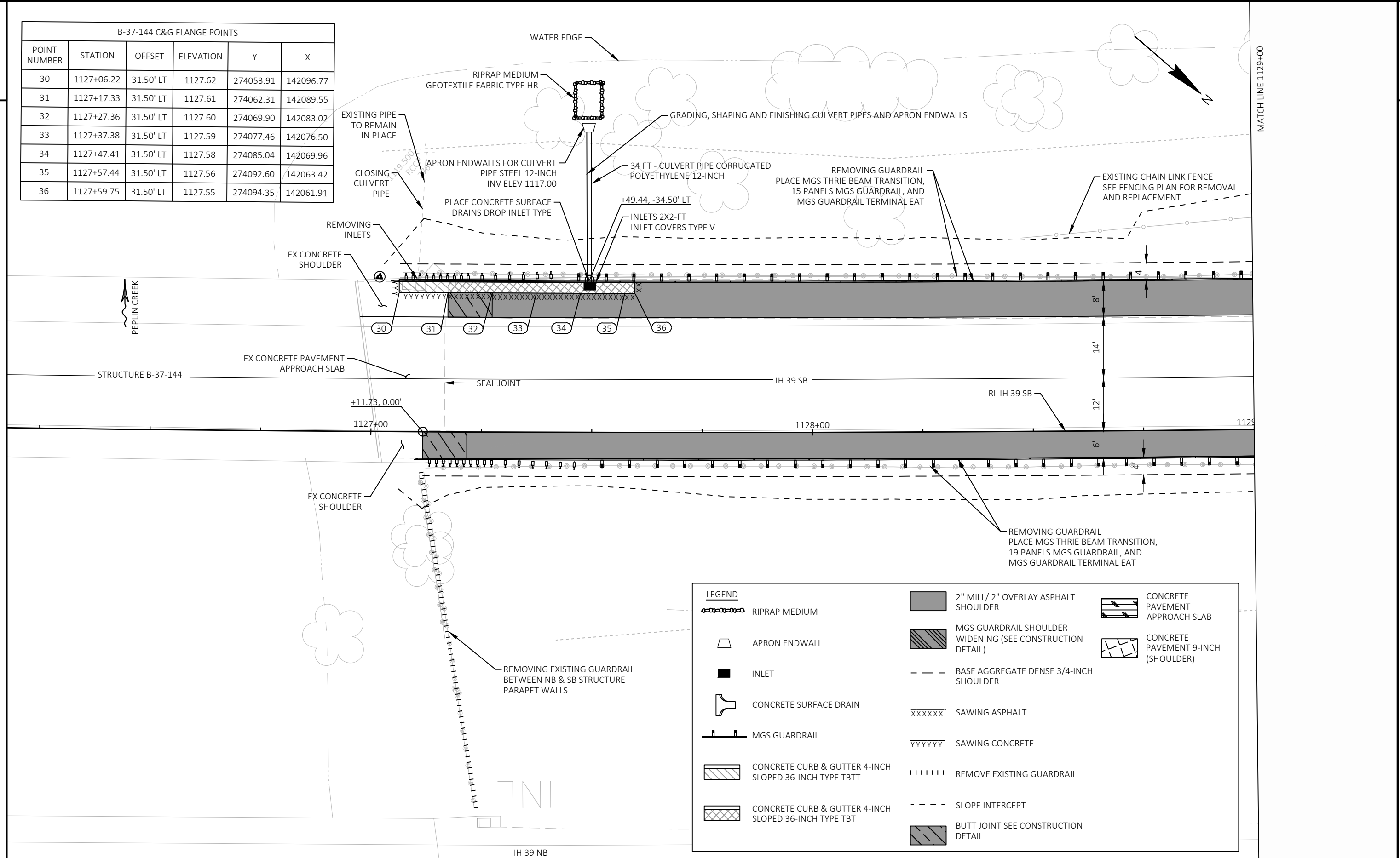
CONCRETE PAVEMENT 9-INCH (SHOULDER)

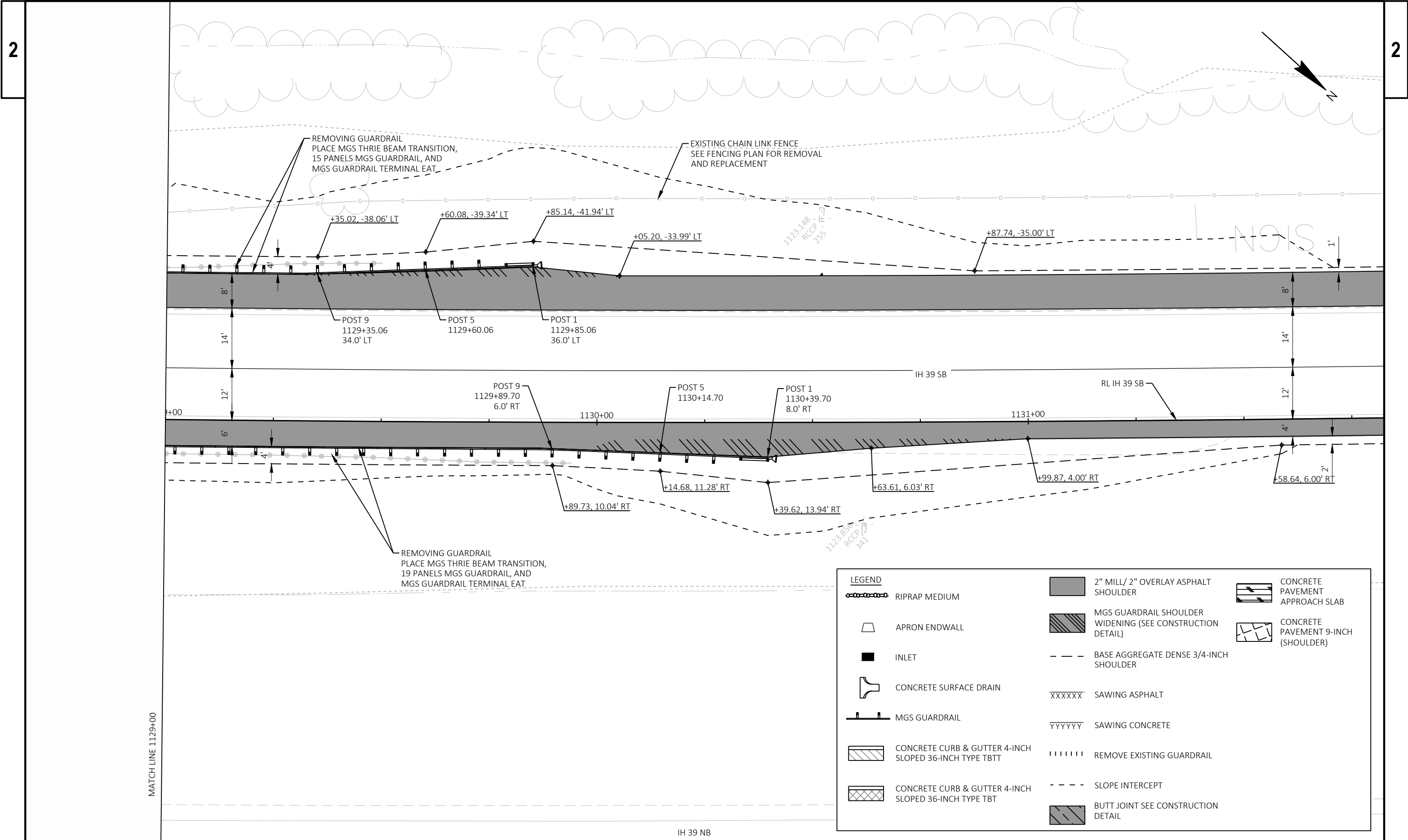


2

B-37-144 C&G FLANGE POINTS					
POINT NUMBER	STATION	OFFSET	ELEVATION	Y	X
30	1127+06.22	31.50' LT	1127.62	274053.91	142096.77
31	1127+17.33	31.50' LT	1127.61	274062.31	142089.55
32	1127+27.36	31.50' LT	1127.60	274069.90	142083.02
33	1127+37.38	31.50' LT	1127.59	274077.46	142076.50
34	1127+47.41	31.50' LT	1127.58	274085.04	142069.96
35	1127+57.44	31.50' LT	1127.56	274092.60	142063.42
36	1127+59.75	31.50' LT	1127.55	274094.35	142061.91

2





LEGEND

RIPRAP MEDIUM

APRON ENDWALL

INLET

CONCRETE SURFACE DRAIN

MGS GUARDRAIL

CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBTT

CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT

MGS GUARDRAIL SHOULDER WIDENING (SEE CONSTRUCTION DETAIL)

BASE AGGREGATE DENSE 3/4-INCH SHOULDER

SAWING ASPHALT

SAWING CONCRETE

REMOVE EXISTING GUARDRAIL

SLOPE INTERCEPT

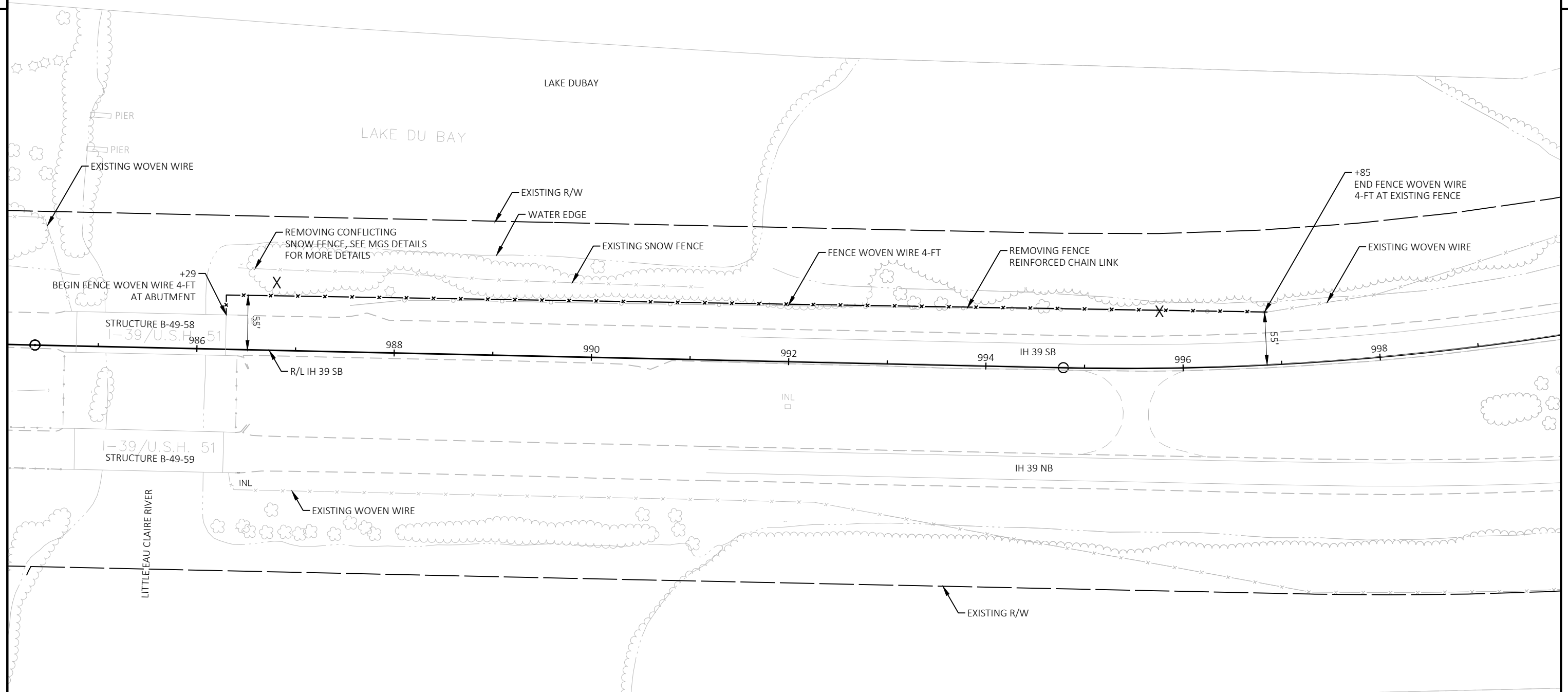
BUTT JOINT SEE CONSTRUCTION DETAIL

CONCRETE PAVEMENT APPROACH SLAB

CONCRETE PAVEMENT 9-INCH (SHOULDER)

NOTES:

X INDICATES TREE CLEARING TO BE COMPLETED BY OTHERS
PRIOR TO PROJECT



PROJECT NO: 1166-05-66

HWY: IH 39

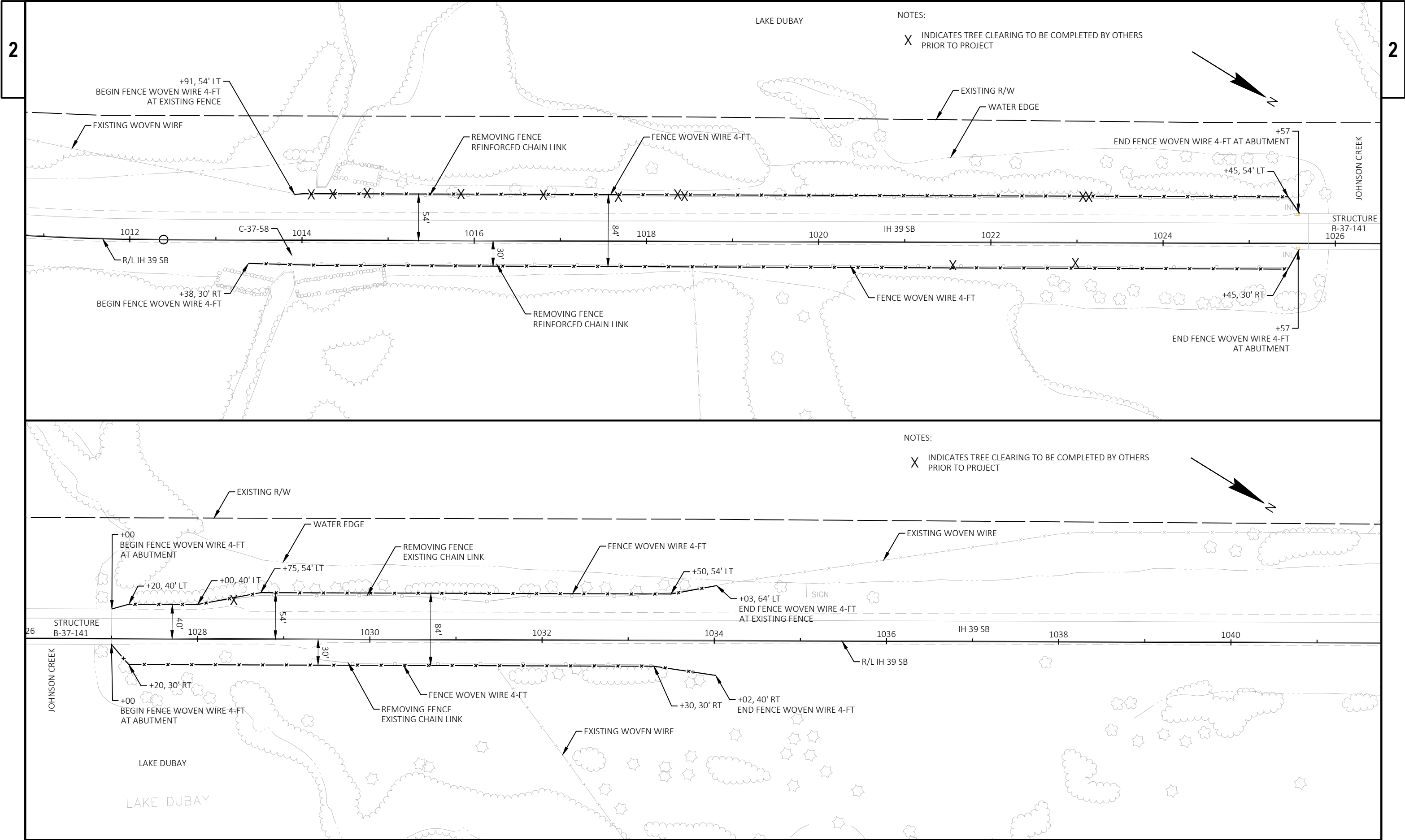
COUNTY: PORTAGE & MARATHON

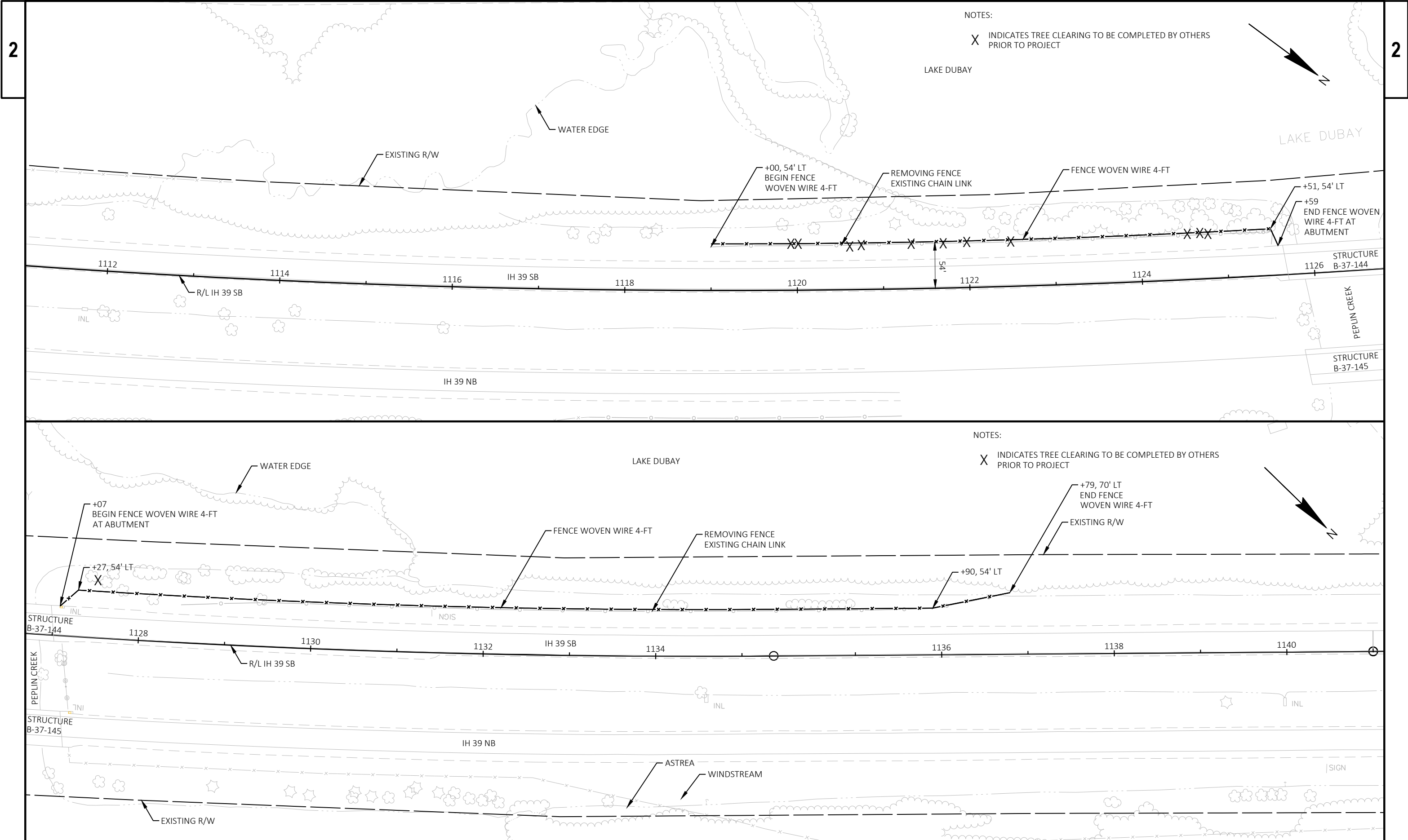
PLAN DETAILS - FENCING B-49-58

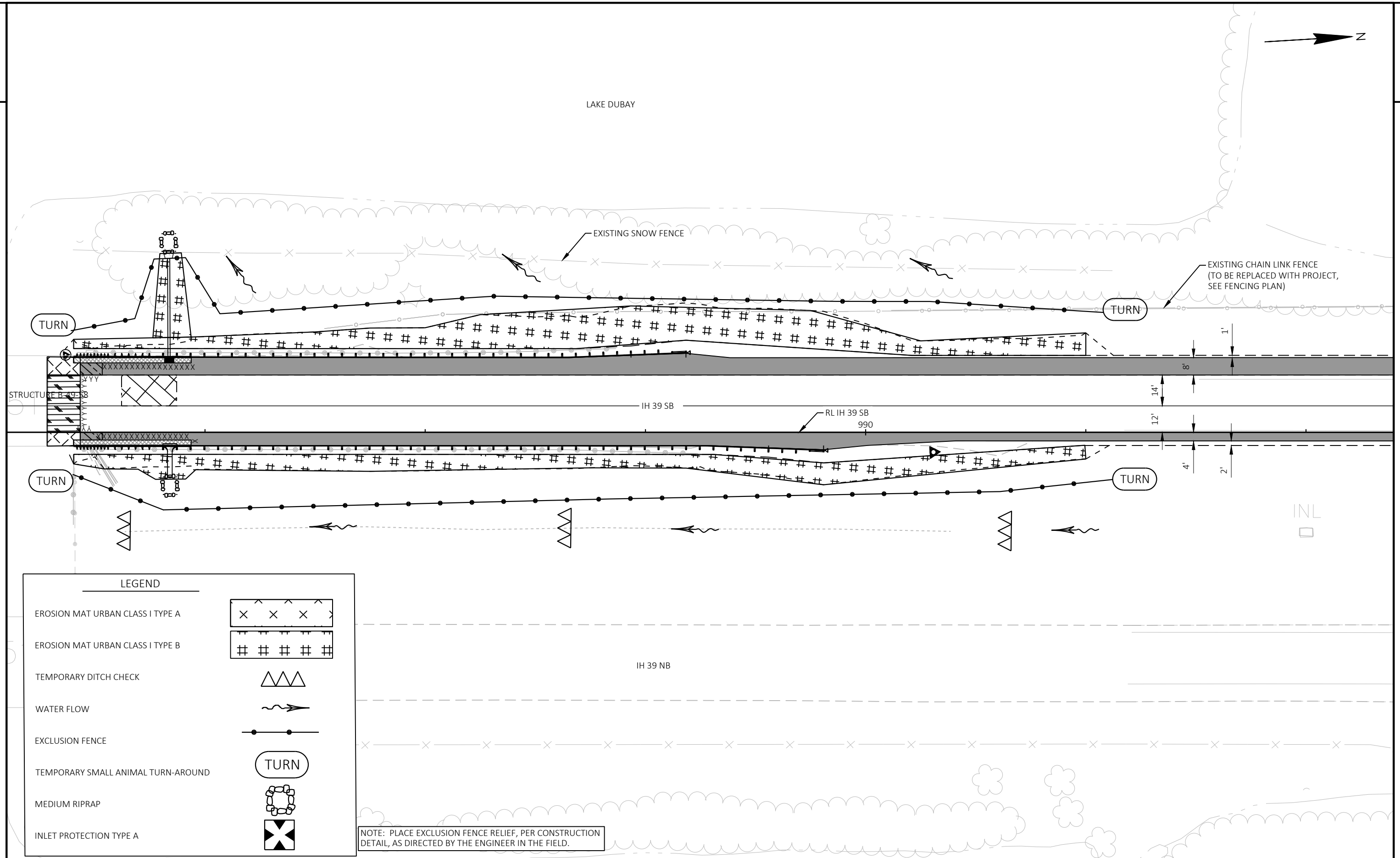
SHEET

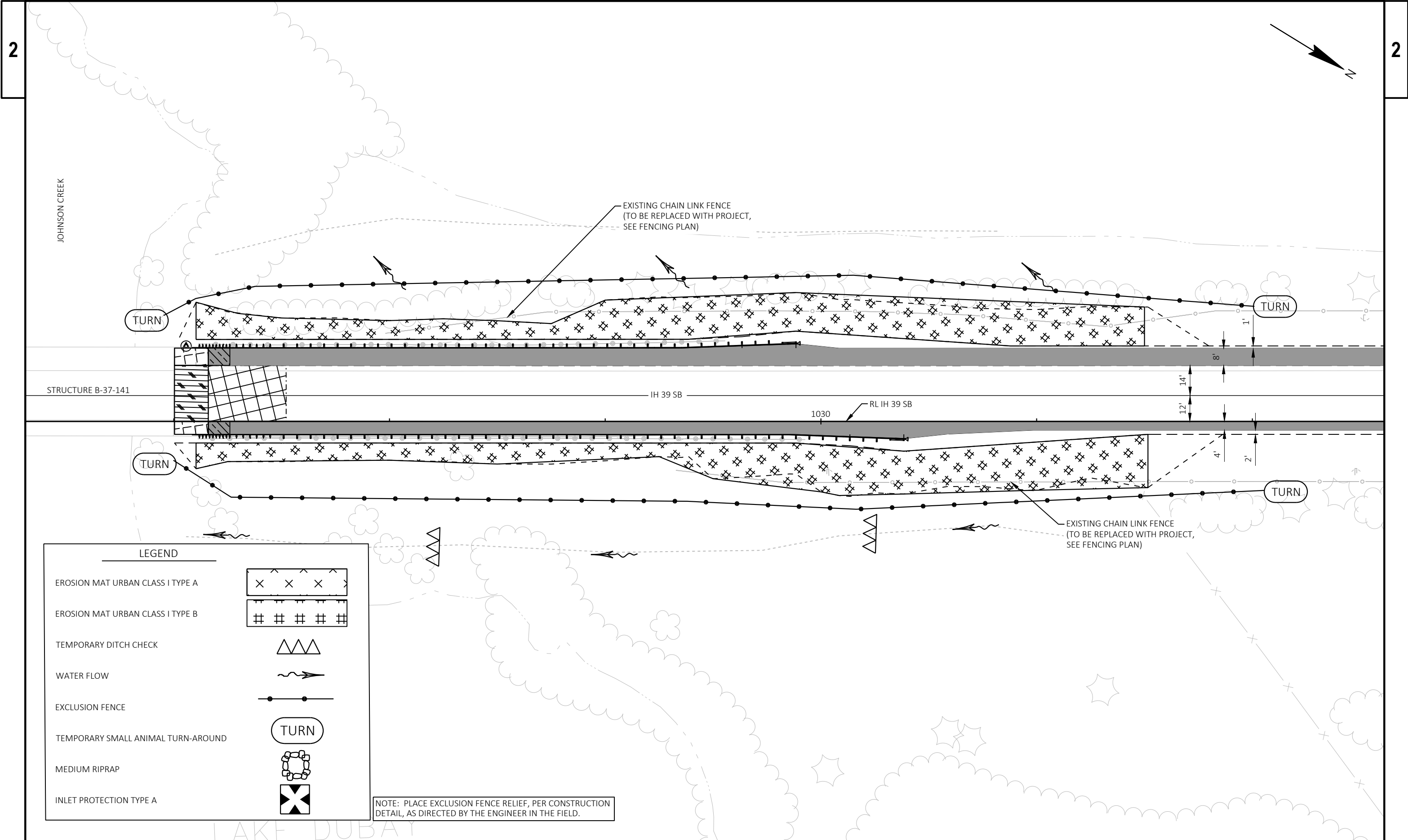
39

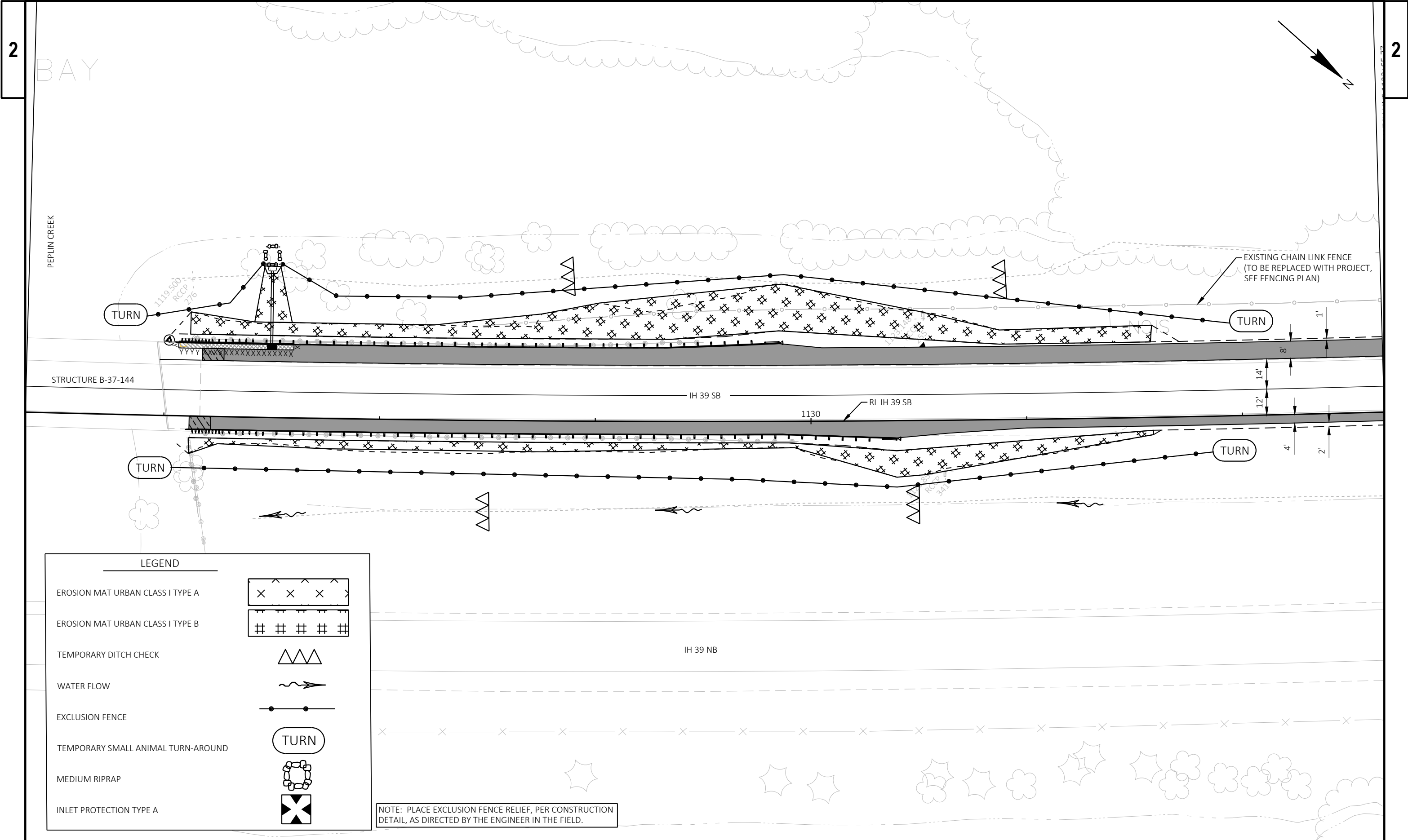
E

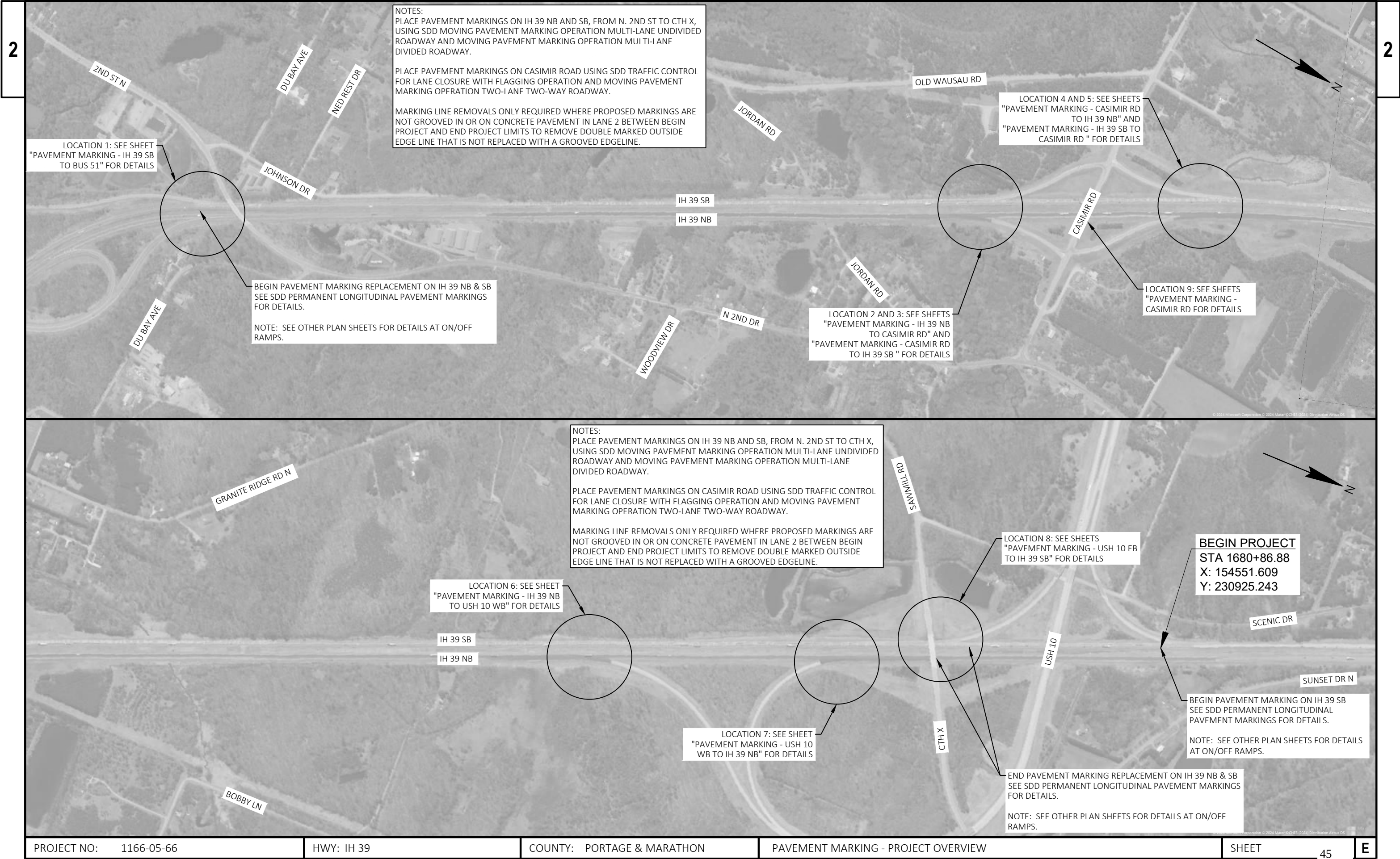






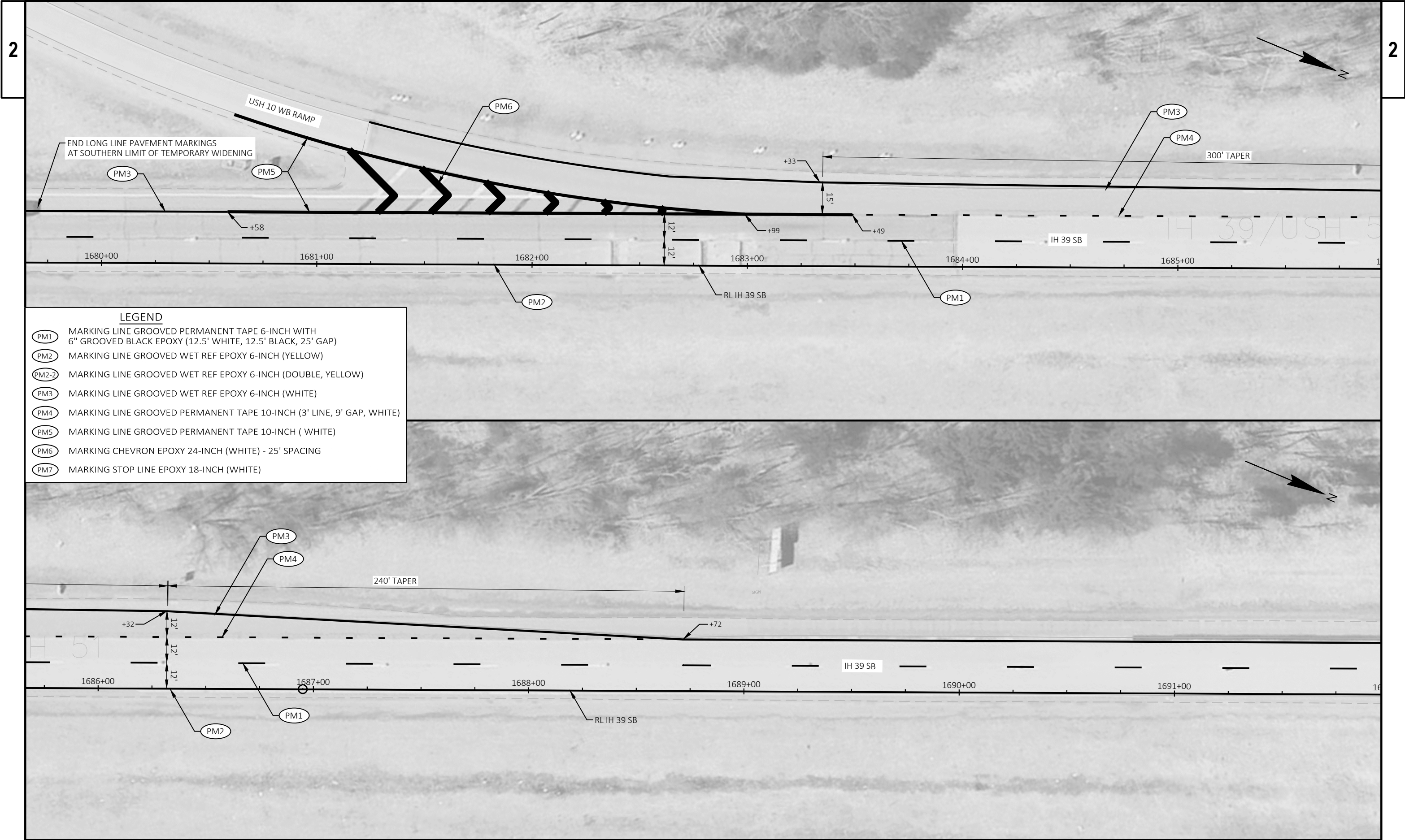


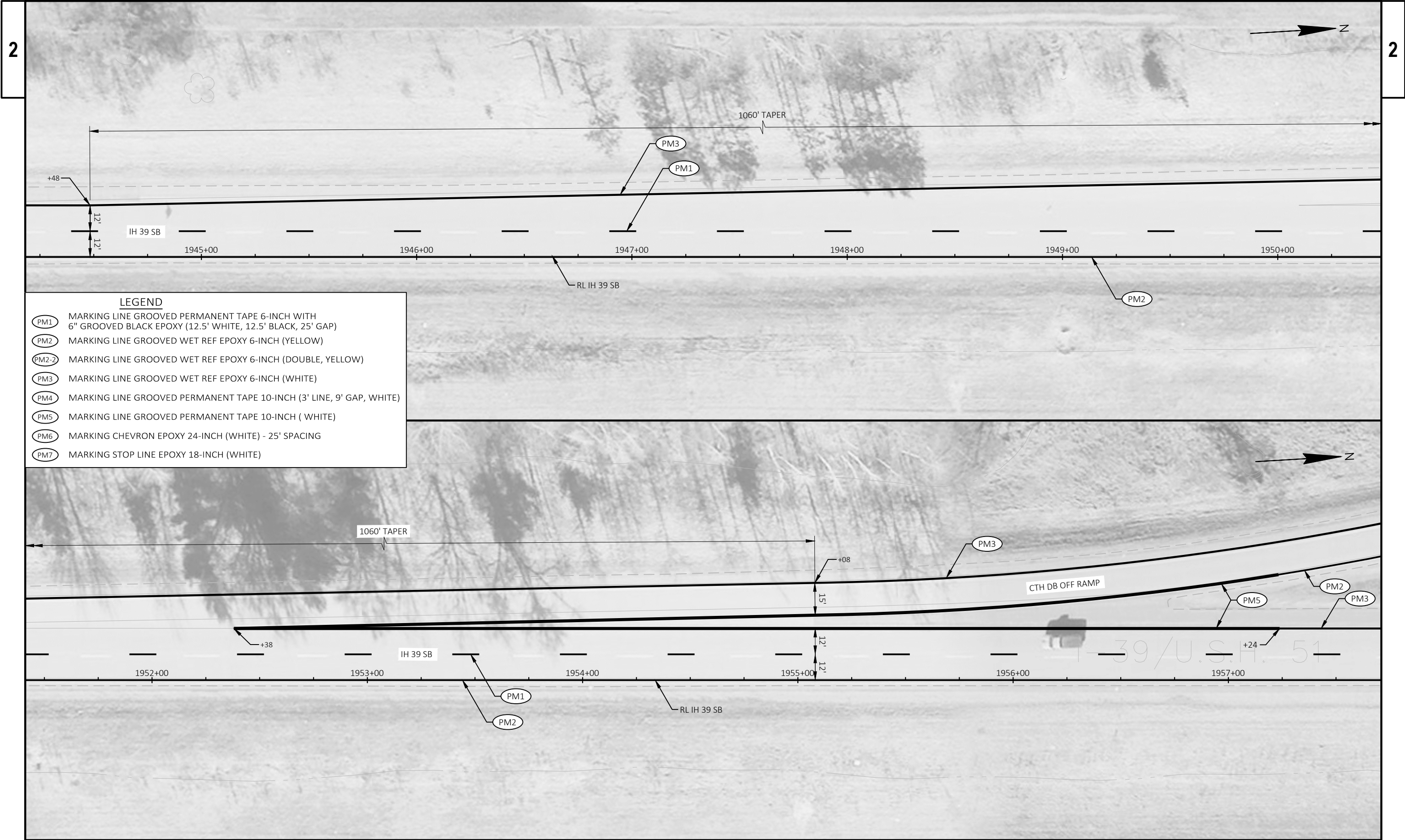




2

2





- LEGEND**
- PM1 MARKING LINE GROOVED PERMANENT TAPE 6-INCH WITH 6" GROOVED BLACK EPOXY (12.5' WHITE, 12.5' BLACK, 25' GAP)
 - PM2 MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
 - PM2-2 MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE, YELLOW)
 - PM3 MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
 - PM4 MARKING LINE GROOVED PERMANENT TAPE 10-INCH (3' LINE, 9' GAP, WHITE)
 - PM5 MARKING LINE GROOVED PERMANENT TAPE 10-INCH (WHITE)
 - PM6 MARKING CHEVRON EPOXY 24-INCH (WHITE) - 25' SPACING
 - PM7 MARKING STOP LINE EPOXY 18-INCH (WHITE)





LEGEND

PM1

MARKING LINE GROOVED PERMANENT TAPE 6-INCH WITH 6" GROOVED BLACK EPOXY (12.5' WHITE, 12.5' BLACK, 25' GAP)

PM2

MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)

PM2-2

MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE, YELLOW)

PM3

MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)

PM4

MARKING LINE GROOVED PERMANENT TAPE 10-INCH (3' LINE, 9' GAP, WHITE)

PM5

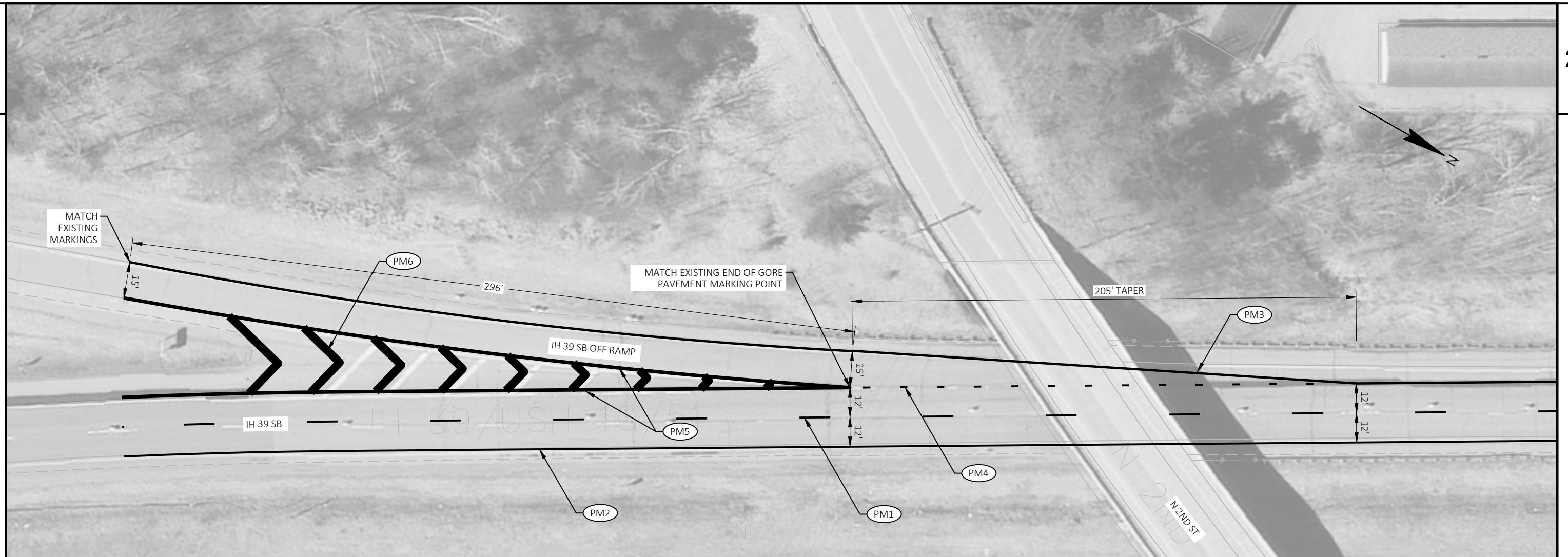
MARKING LINE GROOVED PERMANENT TAPE 10-INCH (WHITE)

PM6

MARKING CHEVRON EPOXY 24-INCH (WHITE) - 25' SPACING

PM7

MARKING STOP LINE EPOXY 18-INCH (WHITE)

**LEGEND**

- PM1 MARKING LINE GROOVED PERMANENT TAPE 6-INCH WITH 6" GROOVED BLACK EPOXY (12.5' WHITE, 12.5' BLACK, 25' GAP)
- PM2 MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
- PM2-2 MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE, YELLOW)
- PM3 MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
- PM4 MARKING LINE GROOVED PERMANENT TAPE 10-INCH (3' LINE, 9' GAP, WHITE)
- PM5 MARKING LINE GROOVED PERMANENT TAPE 10-INCH (WHITE)
- PM6 MARKING CHEVRON EPOXY 24-INCH (WHITE) - 25' SPACING
- PM7 MARKING STOP LINE EPOXY 18-INCH (WHITE)

PROJECT NO: 1166-05-66

HWY: IH 39

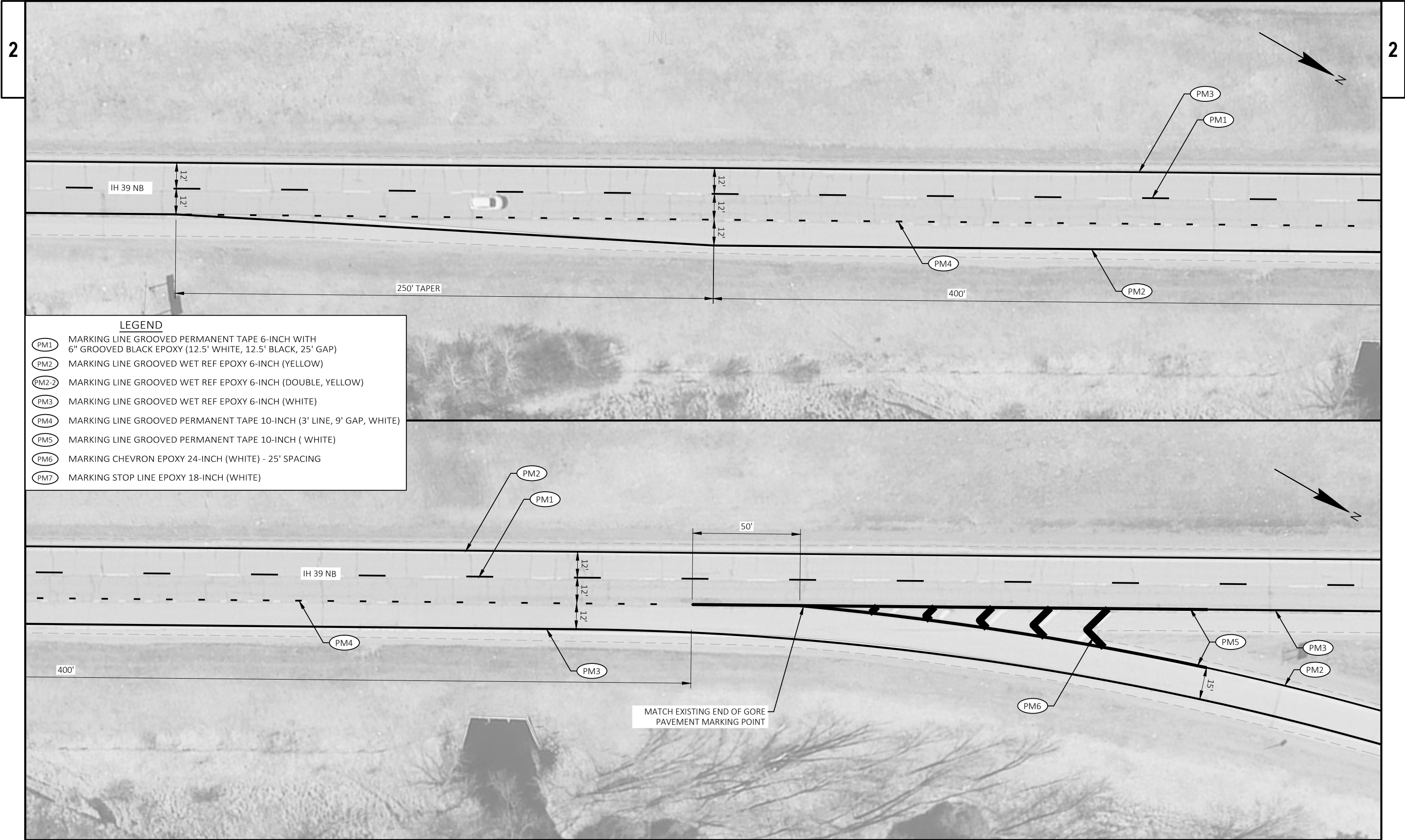
COUNTY: PORTAGE & MARATHON

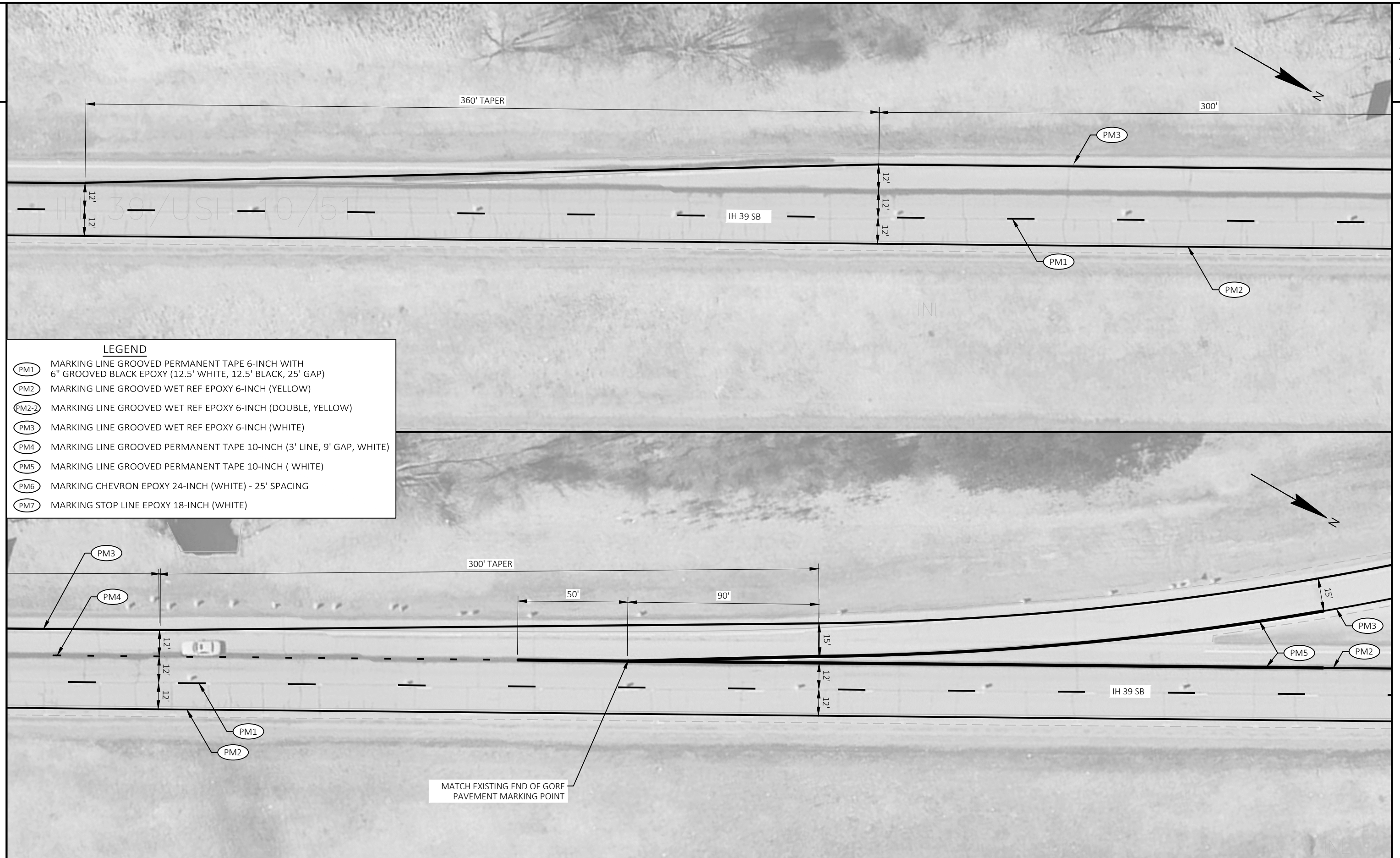
PAVEMENT MARKING (2ND TO CTH X)- IH 39 SB TO BUS 51

SHEET

50

E





PROJECT NO: 1166-05-66

HWY: IH 39

COUNTY: PORTAGE & MARATHON

PAVEMENT MARKING (2ND TO CTH X)- CASIMIR RD TO IH 39 SB

SHEET

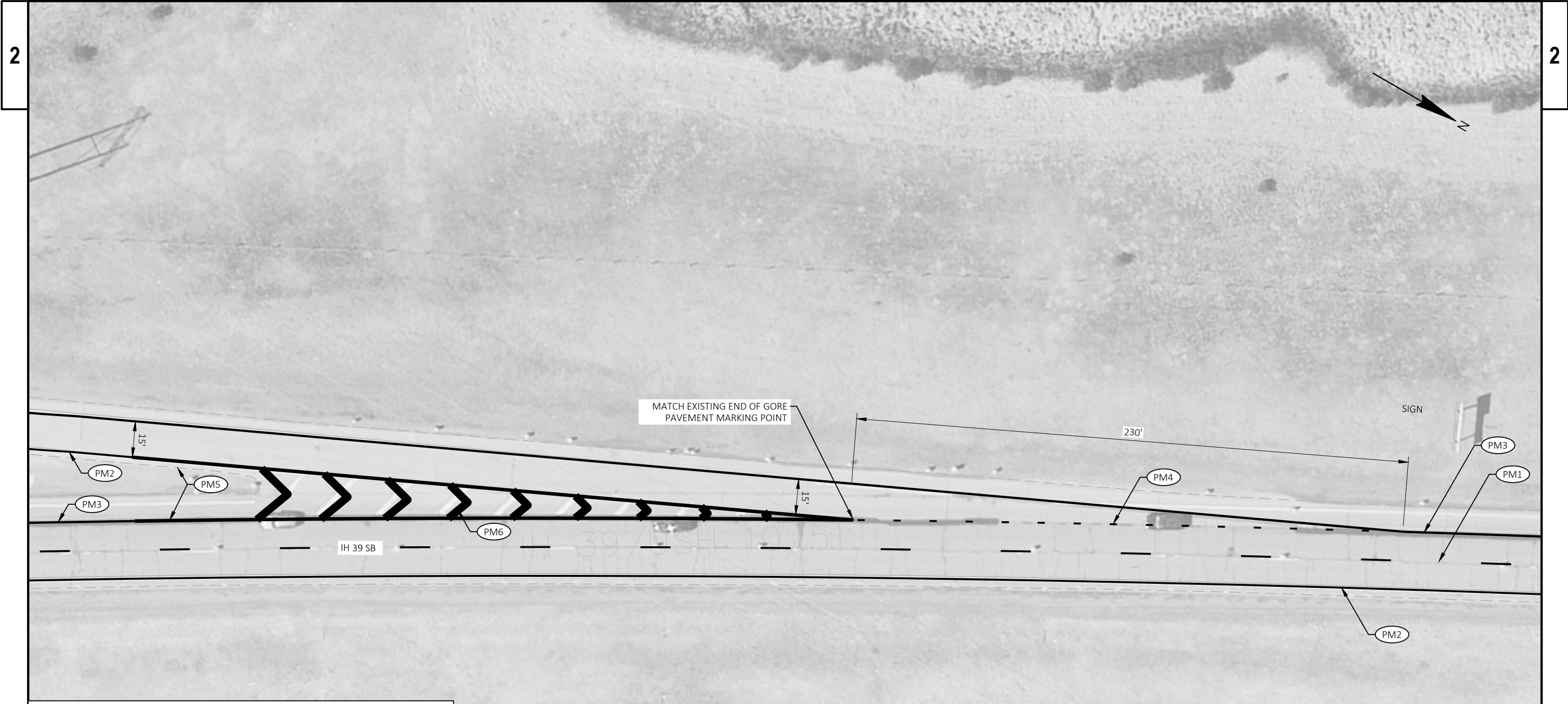
52

E



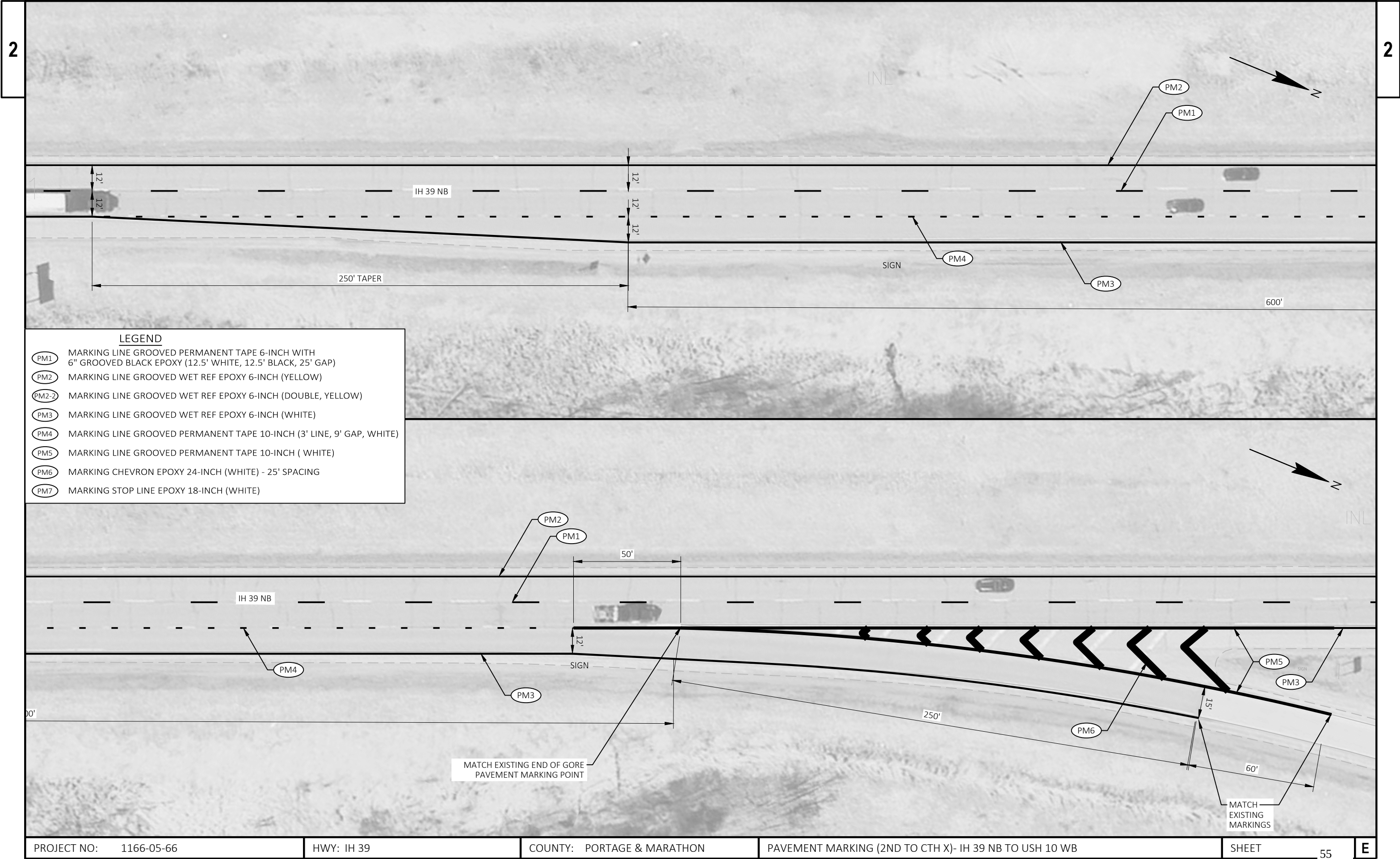
LEGEND

- PM1 MARKING LINE GROOVED PERMANENT TAPE 6-INCH WITH 6" GROOVED BLACK EPOXY (12.5' WHITE, 12.5' BLACK, 25' GAP)
- PM2 MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
- PM2-2 MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE, YELLOW)
- PM3 MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
- PM4 MARKING LINE GROOVED PERMANENT TAPE 10-INCH (3' LINE, 9' GAP, WHITE)
- PM5 MARKING LINE GROOVED PERMANENT TAPE 10-INCH (WHITE)
- PM6 MARKING CHEVRON EPOXY 24-INCH (WHITE) - 25' SPACING
- PM7 MARKING STOP LINE EPOXY 18-INCH (WHITE)



LEGEND

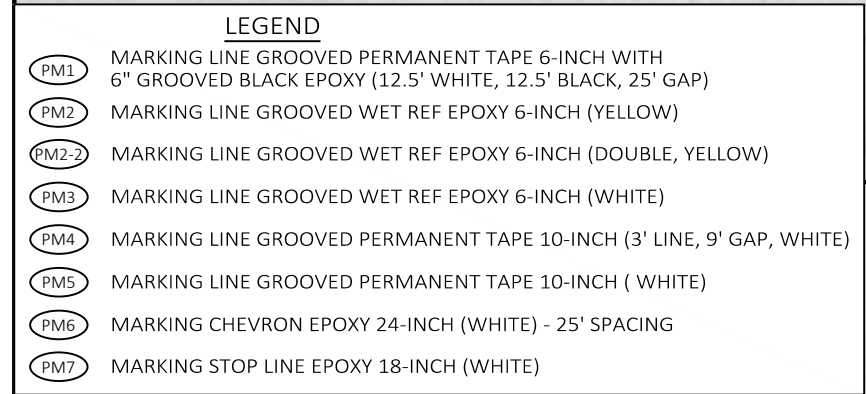
- PM1 MARKING LINE GROOVED PERMANENT TAPE 6-INCH WITH 6" GROOVED BLACK EPOXY (12.5' WHITE, 12.5' BLACK, 25' GAP)
- PM2 MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
- PM2-2 MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE, YELLOW)
- PM3 MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
- PM4 MARKING LINE GROOVED PERMANENT TAPE 10-INCH (3' LINE, 9' GAP, WHITE)
- PM5 MARKING LINE GROOVED PERMANENT TAPE 10-INCH (WHITE)
- PM6 MARKING CHEVRON EPOXY 24-INCH (WHITE) - 25' SPACING
- PM7 MARKING STOP LINE EPOXY 18-INCH (WHITE)

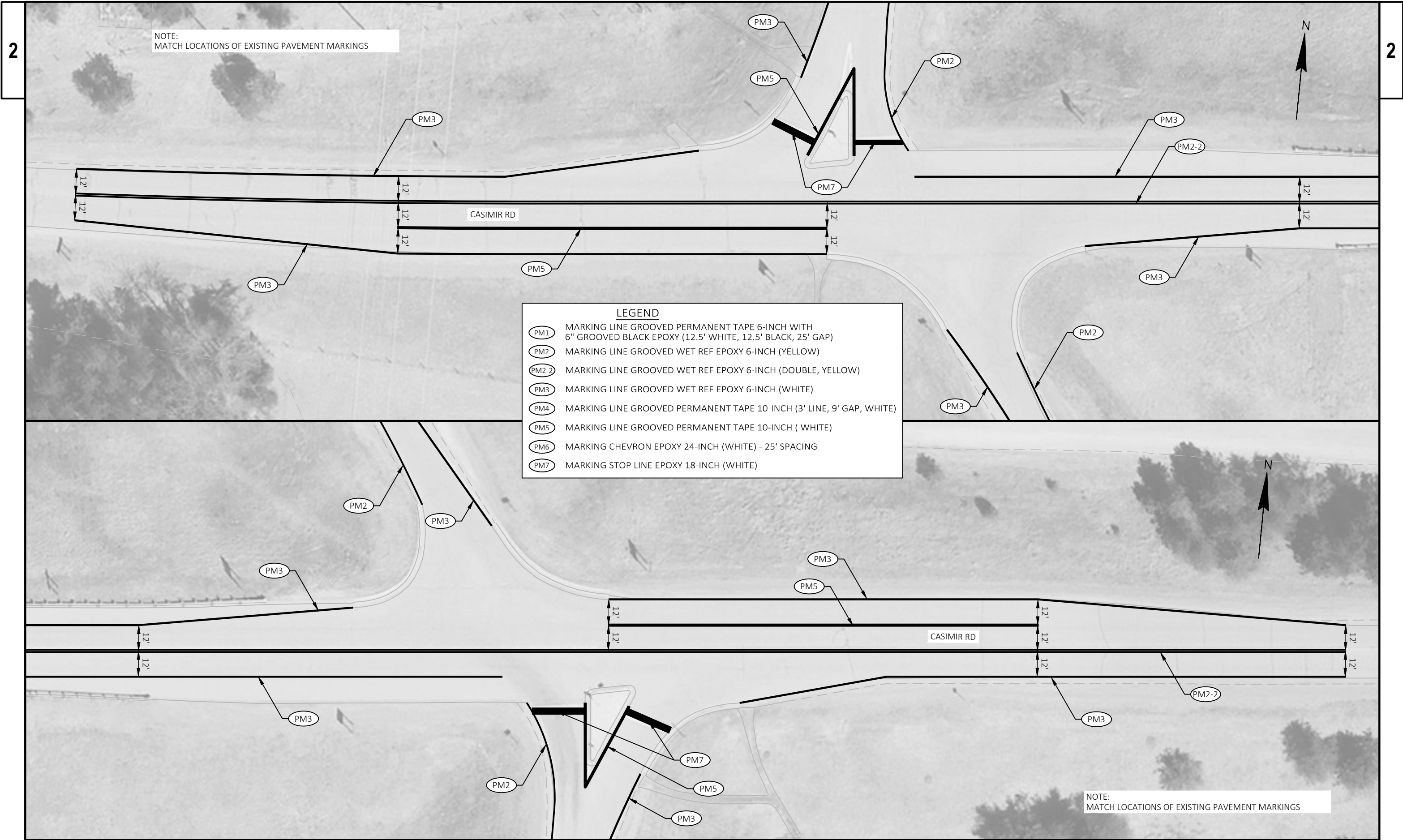


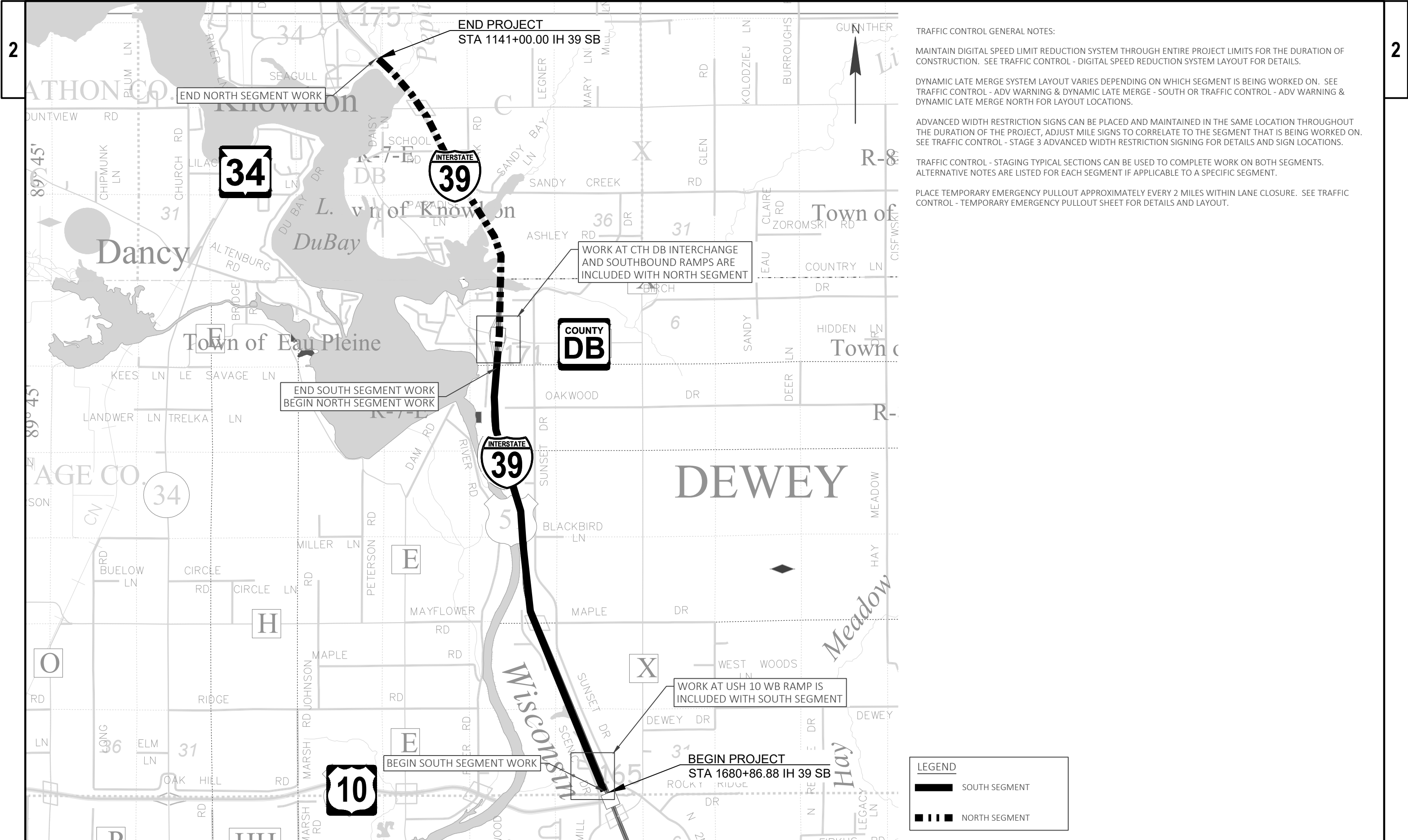
LEGEND

- PM1 MARKING LINE GROOVED PERMANENT TAPE 6-INCH WITH 6" GROOVED BLACK EPOXY (12.5' WHITE, 12.5' BLACK, 25' GAP)
- PM2 MARKING LINE GROOVED WET REF EPOXY 6-INCH (YELLOW)
- PM2-2 MARKING LINE GROOVED WET REF EPOXY 6-INCH (DOUBLE, YELLOW)
- PM3 MARKING LINE GROOVED WET REF EPOXY 6-INCH (WHITE)
- PM4 MARKING LINE GROOVED PERMANENT TAPE 10-INCH (3' LINE, 9' GAP, WHITE)
- PM5 MARKING LINE GROOVED PERMANENT TAPE 10-INCH (WHITE)
- PM6 MARKING CHEVRON EPOXY 24-INCH (WHITE) - 25' SPACING
- PM7 MARKING STOP LINE EPOXY 18-INCH (WHITE)









TRAFFIC CONTROL GENERAL NOTES:

MAINTAIN DIGITAL SPEED LIMIT REDUCTION SYSTEM THROUGH ENTIRE PROJECT LIMITS FOR THE DURATION OF CONSTRUCTION. SEE TRAFFIC CONTROL - DIGITAL SPEED REDUCTION SYSTEM LAYOUT FOR DETAILS.

DYNAMIC LATE MERGE SYSTEM LAYOUT VARIES DEPENDING ON WHICH SEGMENT IS BEING WORKED ON. SEE TRAFFIC CONTROL - ADV WARNING & DYNAMIC LATE MERGE - SOUTH OR TRAFFIC CONTROL - ADV WARNING & DYNAMIC LATE MERGE NORTH FOR LAYOUT LOCATIONS.

ADVANCED WIDTH RESTRICTION SIGNS CAN BE PLACED AND MAINTAINED IN THE SAME LOCATION THROUGHOUT THE DURATION OF THE PROJECT, ADJUST MILE SIGNS TO CORRELATE TO THE SEGMENT THAT IS BEING WORKED ON. SEE TRAFFIC CONTROL - STAGE 3 ADVANCED WIDTH RESTRICTION SIGNING FOR DETAILS AND SIGN LOCATIONS.

TRAFFIC CONTROL - STAGING TYPICAL SECTIONS CAN BE USED TO COMPLETE WORK ON BOTH SEGMENTS. ALTERNATIVE NOTES ARE LISTED FOR EACH SEGMENT IF APPLICABLE TO A SPECIFIC SEGMENT.

PLACE TEMPORARY EMERGENCY PULLOUT APPROXIMATELY EVERY 2 MILES WITHIN LANE CLOSURE. SEE TRAFFIC CONTROL - TEMPORARY EMERGENCY PULLOUT SHEET FOR DETAILS AND LAYOUT.

NOTES:
DETAILS OF CONSTRUCTION MATERIAL AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, APPLICABLE SPECIAL PROVISIONS, AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

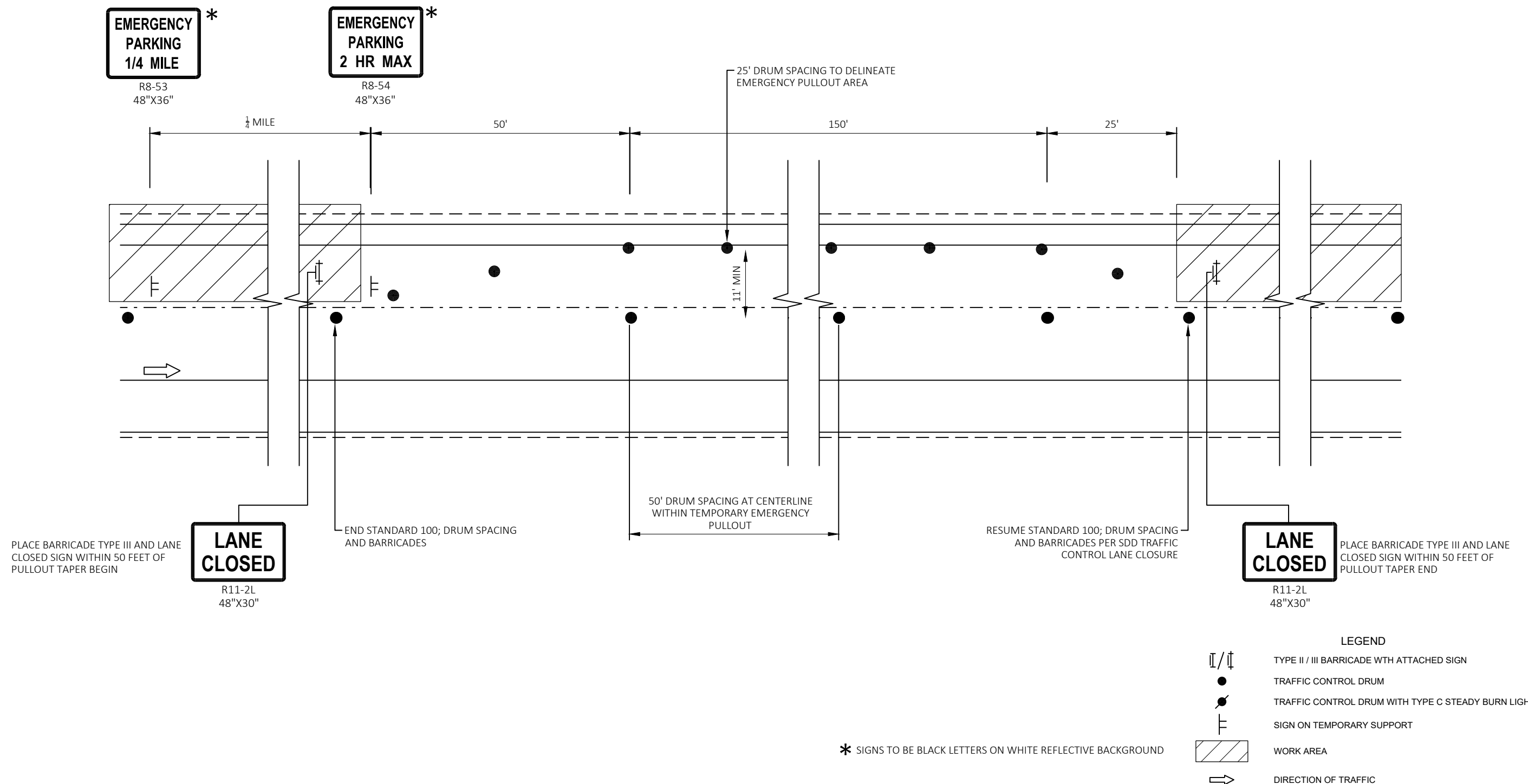
TEMPORARY EMERGENCY PULLOUTS AND SIGNS SHALL BE REMOVED AND THE ROADWAY RESTORED TO ITS ORIGINAL CROSS SECTION AND CONDITION PRIOR TO REOPENING THE FULL ROADWAY TO TRAFFIC.

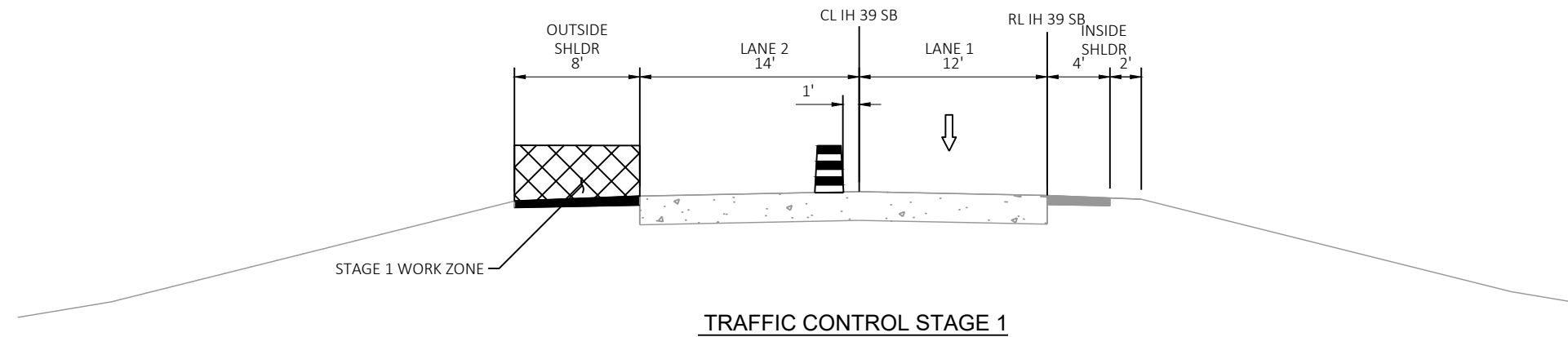
SIGNS, DRUMS, AND BARRICADES SHOWN SHALL BE PAID FOR UNDER THEIR RESPECTIVE BID ITEMS.

PROVIDE AND MAINTAIN TEMPORARY EMERGENCY PULLOUTS EVERY 2 MILES WITHIN SINGLE LANE CLOSURE. UTILIZE LOCATION NOT REQUIRING CONCRETE PAVEMENT REPAIRS OR REPLACEMENT.

EXACT PLACEMENT OF SIGNS, DRUMS, AND BARRICADES TO BE PLACED AS DIRECTED BY THE ENGINEER.

INSIDE LANE CLOSURE SHOWN. OUTSIDE LANE CLOSURE IS MIRROR IMAGE.





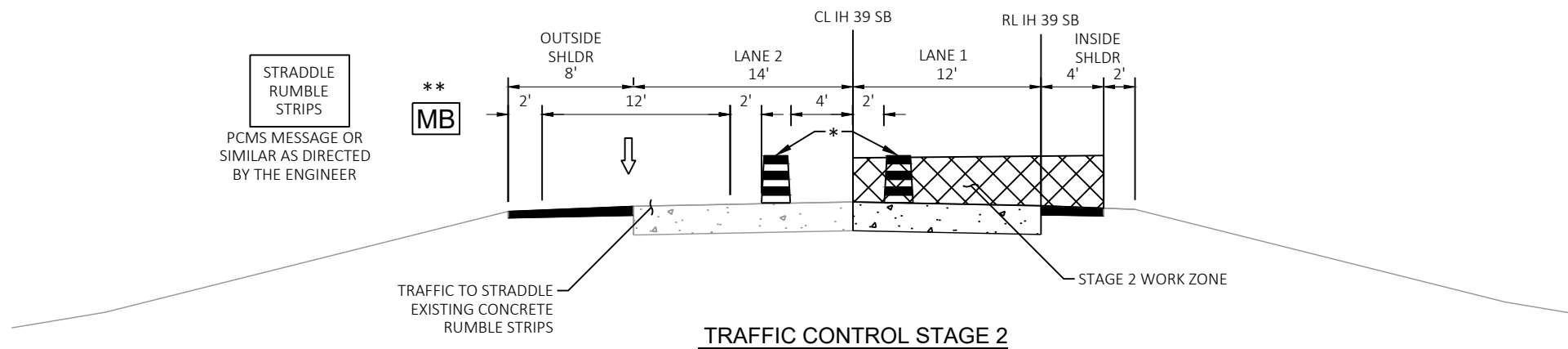
NOTES STAGE 1:

MILL AND OVERLAY EXISTING OUTSIDE HMA SHOULDER.

DO NOT INSTALL ASPHALTIC RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY UNTIL SHOULDER IS NO LONGER NEEDED FOR TEMPORARY TRAFFIC CONDITIONS.

UTILIZE SDD TRAFFIC CONTROL LANE CLOSURE, TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH, AND TRAFFIC CONTROL, LANE SHIFT, MULTI-LANE DIVIDED OR ONE-WAY ROAD TO COMPLETE WORK.

NORTH AND SOUTH SEGMENT: MAINTAIN RAMP ACCESS UNLESS RAMP IS CLOSED TO TRAFFIC. USE SDD TRAFFIC CONTROL, RAMP WITHIN LANE CLOSURE AT CTH DB AND USH 10 WB



NOTES STAGE 2:

MILL AND OVERLAY EXISTING INSIDE HMA SHOULDER & MEDIAN MAINTENANCE CROSSOVERS. UTILIZE SDD TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH ON IH 39 NB IN VICINITY OF MAINTENANCE CROSSOVER TO COMPLETE MILL AND OVERLAY OPERATIONS ON MAINTENANCE CROSSOVERS.

COMPLETE CONCRETE PAVEMENT REPAIR, CONCRETE PAVEMENT REPLACEMENT, AND CONCRETE PAVEMENT CONTINUOUS DIAMOND GRINDING TO IH 39 SB LANE 1.

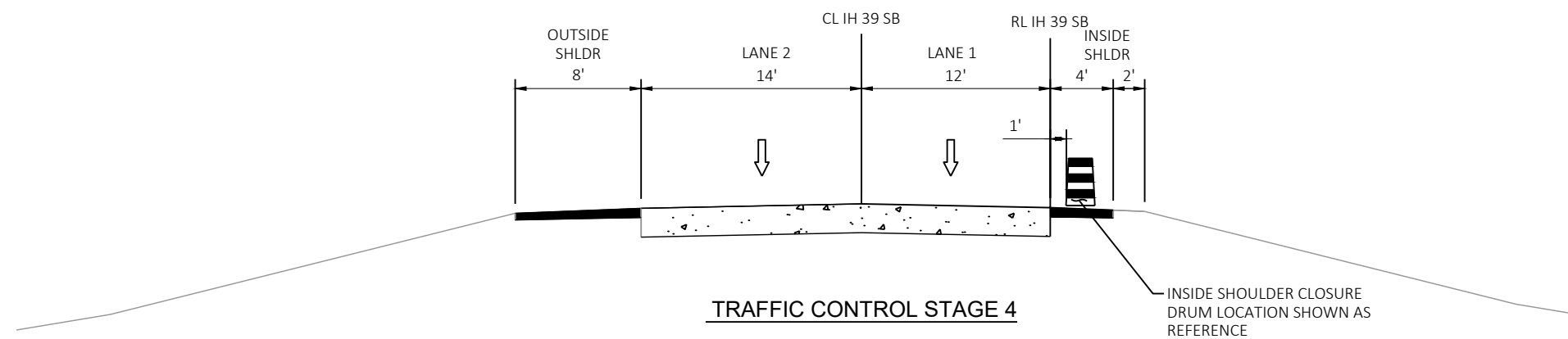
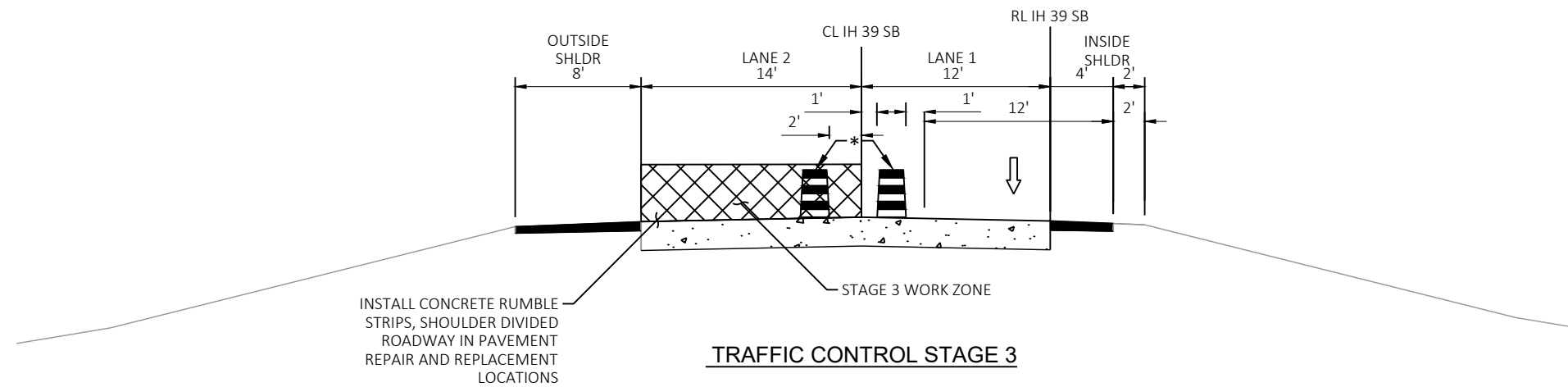
DO NOT INSTALL ASPHALTIC RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY ON INSIDE SHOULDER UNTIL AFTER SHOULDER IS NO LONGER REQUIRED FOR TRAFFIC.

UTILIZE SDD TRAFFIC CONTROL LANE CLOSURE, TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH, AND TRAFFIC CONTROL, LANE SHIFT, MULTI-LANE DIVIDED OR ONE-WAY ROAD TO COMPLETE WORK.

* TRAFFIC CONTROL DEVICES TO BE MOVED TO THE OTHER SIDE OF THE IH 39 SB CENTERLINE WHEN ACTIVE CONSTRUCTION IS NOT TAKING PLACE TO ALLOW TRAFFIC TO UTILIZE THE ENTIRE OUTSIDE LANE.

** PLACE PCMS SIGN AT LANE CLOSURE TAPER AND AGAIN HALF WAY THRU WORK ZONE NOTIFYING TRAFFIC TO STRADDLE RUMBLE STRIPS WHEN TRAFFIC IS ON OUTSIDE SHOULDER.

SOUTH SEGMENT: COMPLETE STAGE 2A CONSTRUCT TEMPORARY MEDIAN WIDENING AT USH 10 WB RAMP.



NOTES STAGE 3:

COMPLETE CONCRETE PAVEMENT REPAIR, CONCRETE PAVEMENT REPLACEMENT, AND CONCRETE PAVEMENT CONTINUOUS DIAMOND GRINDING TO IH 39 SB LANE 2.

INSTALL CONCRETE RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY AT CONCRETE PAVEMENT REPAIR OR REPLACEMENT LOCATIONS.

UTILIZE SDD TRAFFIC CONTROL LANE CLOSURE, TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH, AND TRAFFIC CONTROL, LANE SHIFT, MULTI-LANE DIVIDED OR ONE-WAY ROAD TO COMPLETE WORK.

PLACE MAX WIDTH WARNING SIGNS PER TRAFFIC CONTROL - STAGE 3 ADVANCED WIDTH RESTRICTION SIGNING DETAIL.

* TRAFFIC CONTROL DEVICES TO BE MOVED TO THE OTHER SIDE OF THE IH 39 SB CENTERLINE WHEN ACTIVE CONSTRUCTION IS NOT TAKING PLACE TO ALLOW TRAFFIC TO UTILIZE THE ENTIRE INSIDE LANE.

NORTH AND SOUTH SEGMENT: MAINTAIN RAMP ACCESS UNLESS RAMP IS CLOSED TO TRAFFIC. USE SDD TRAFFIC CONTROL, RAMP WITHIN LANE CLOSURE AT CTH DB AND USH 10 WB

SOUTH SEGMENT: COMPLETE STAGE 3A CONCRETE PAVING ON IH 39 SB LANE 2 AND USH 10 WB RAMP NEAR USH 10 WB RAMP.

NORTH SEGMENT: COMPLETE CONCRETE PAVEMENT REPAIR, CONCRETE PAVEMENT REPLACEMENT AND MILL AND OVERLAY CTH DB SB RAMP AND BETWEEN SB AND NB RAMP TERMINALS.

NOTES STAGE 4:

INSTALL ASPHALTIC RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY ON INSIDE SHOULDER. INSTALL PERMANENT PAVEMENT MARKINGS.

COMPLETE MISCELLANEOUS RESTORATION ITEMS OUTSIDE LANES OF TRAFFIC UTILIZING SDD TRAFFIC CONTROL SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH THROUGHOUT PROJECT LIMITS ON SHOULDER. DO NOT CLOSE BOTH INSIDE AND OUTSIDE SHOULDERS AT THE SAME TIME.

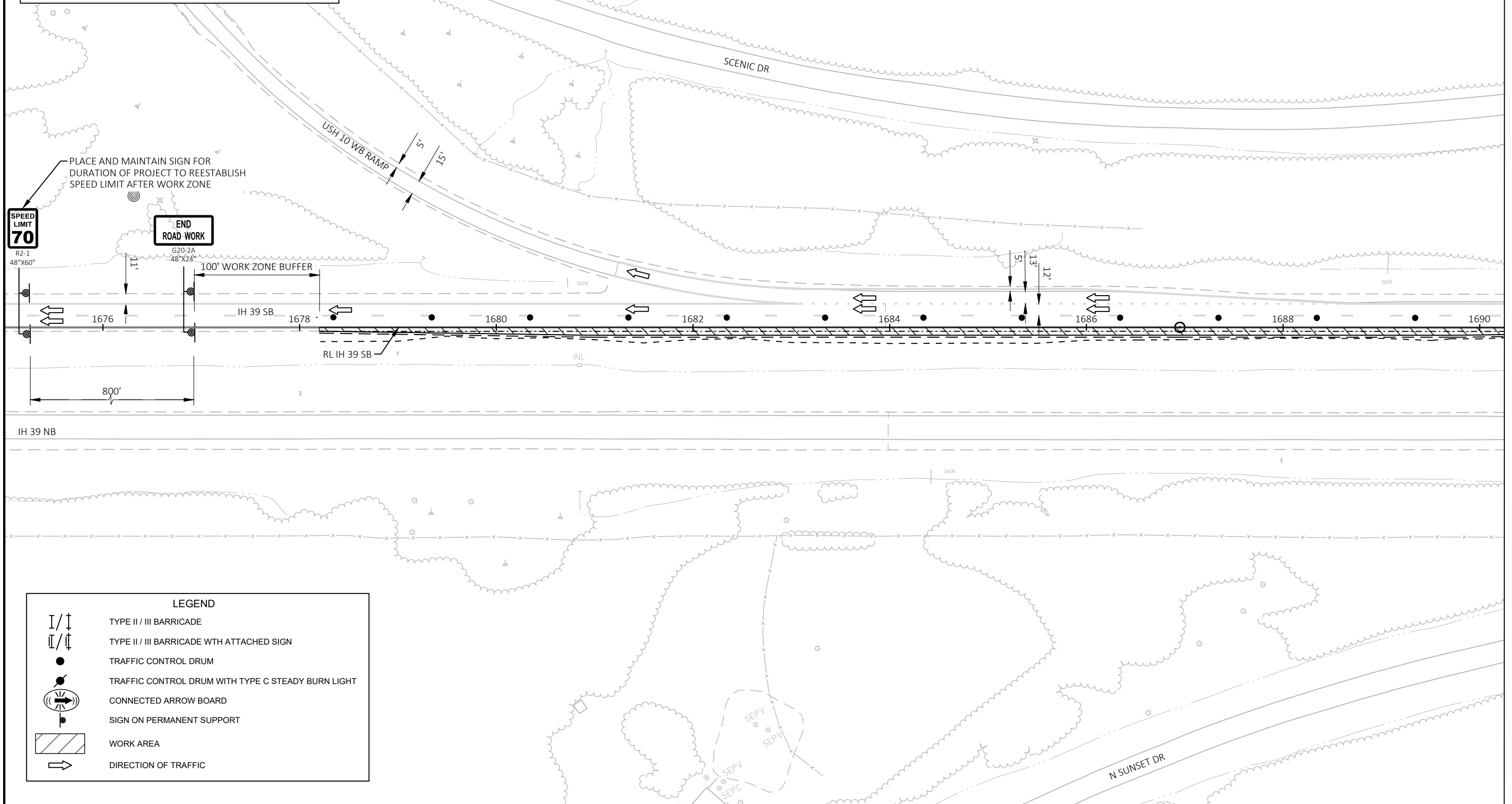
UTILIZE SDD TRAFFIC CONTROL LANE CLOSURE AND TRAFFIC CONTROL, LANE SHIFT, MULTI-LANE DIVIDED OR ONE-WAY ROAD ONLY IN THE DIRECT VICINITY OF WORK BEING COMPLETED.

SOUTH SEGMENT: COMPLETE STAGE 4A CONCRETE PAVING ON IH 39 SB LANE 1 NEAR USH 10 WB RAMP. REMOVE TEMPORARY MEDIAN WIDENING AND COMPLETE RESTORATION OF INSIDE SHOULDER AND GRADING DISTURBED FOR TEMPORARY WIDENING.

STAGE 2A:
COMPLETE WORK USING STAGE 2 TRAFFIC CONTROL - TYPICAL
SECTION AND SOUTH SEGMENT DYNAMIC LATE MERGE SYSTEM
LAYOUT.

CONSTRUCT TEMPORARY WIDENING TO INSIDE MEDIAN NEAR USH 10
WB OFF RAMP. SEE PLAN DETAILS - TEMPORARY MEDIAN WIDENING
FOR MORE INFORMATION.

USE SDD TRAFFIC CONTROL, LANE CLOSURE AND TRAFFIC CONTROL,
LANE SHIFT, MULTILANE DIVIDED OR ONE WAY ROAD TO COMPLETE
WORK.



PROJECT NO: 1166-05-66

HWY: IH 39

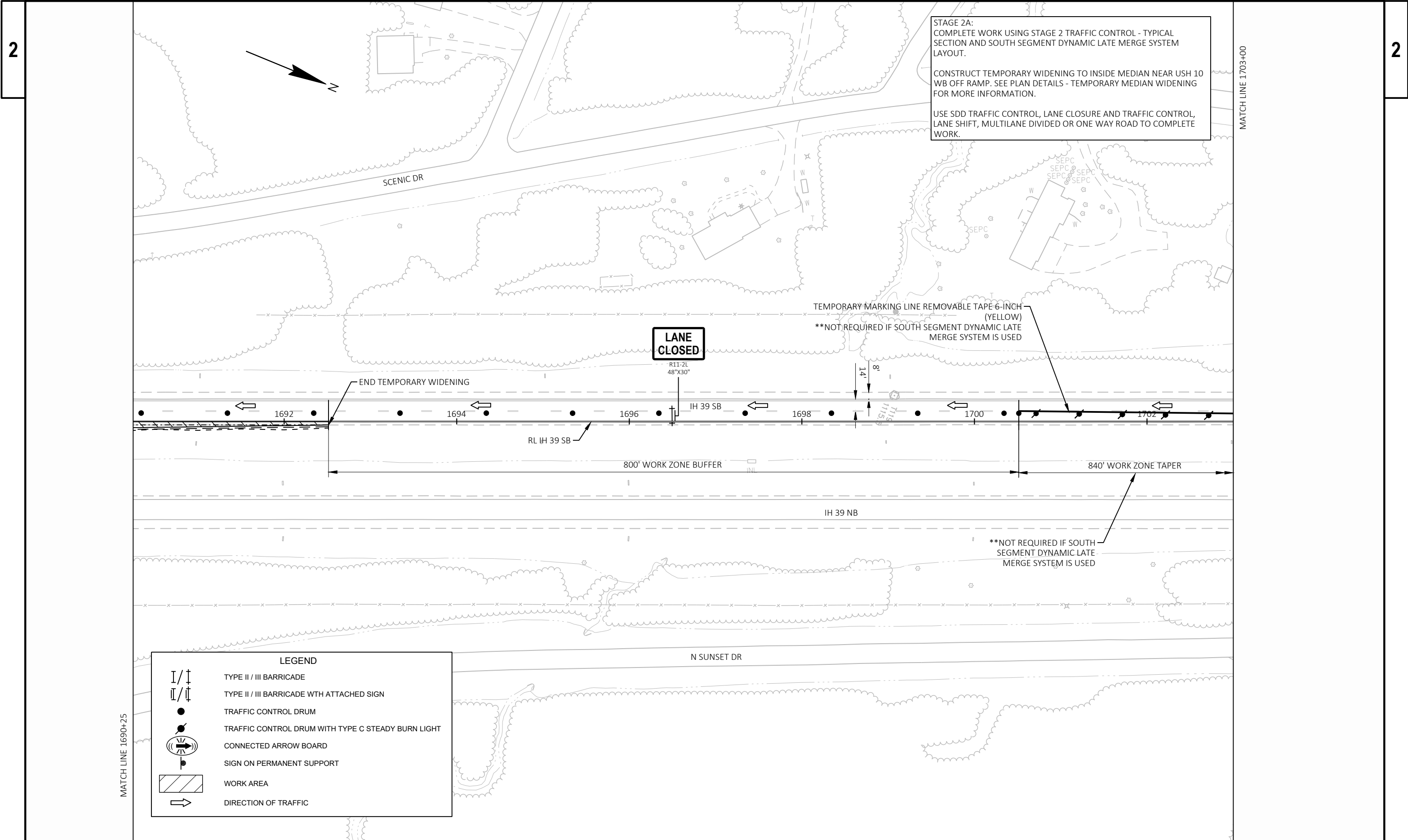
COUNTY: PORTAGE & MARATHON

TRAFFIC CONTROL AT USH 10 - STAGE 2A

SHEET

63

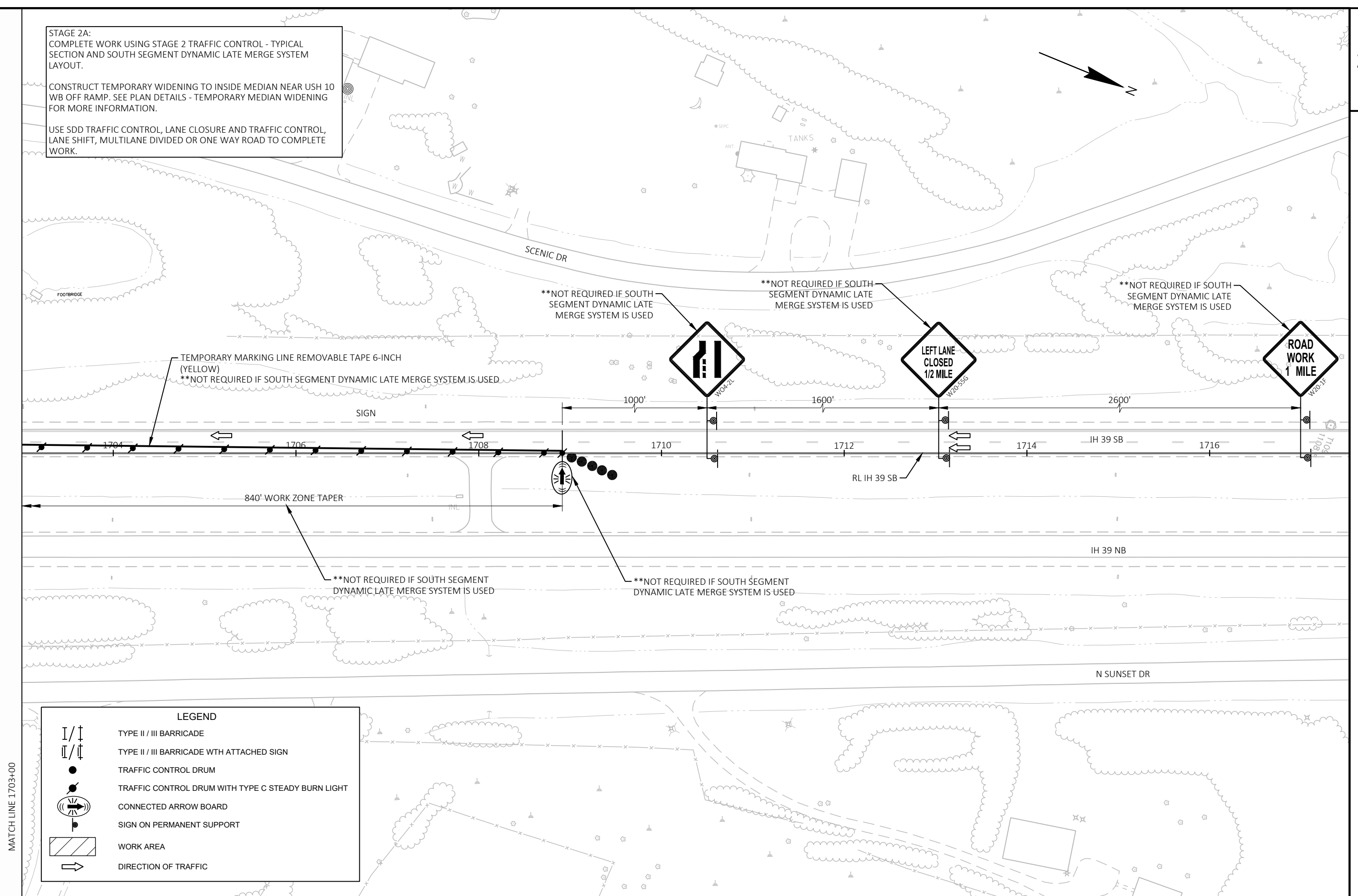
E



STAGE 2A:
COMPLETE WORK USING STAGE 2 TRAFFIC CONTROL - TYPICAL
SECTION AND SOUTH SEGMENT DYNAMIC LATE MERGE SYSTEM
LAYOUT.

CONSTRUCT TEMPORARY WIDENING TO INSIDE MEDIAN NEAR USH 10
WB OFF RAMP. SEE PLAN DETAILS - TEMPORARY MEDIAN WIDENING
FOR MORE INFORMATION.

USE SDD TRAFFIC CONTROL, LANE CLOSURE AND TRAFFIC CONTROL,
LANE SHIFT, MULTILANE DIVIDED OR ONE WAY ROAD TO COMPLETE
WORK.



PROJECT NO: 1166-05-66

HWY: IH 39

COUNTY: PORTAGE & MARATHON

TRAFFIC CONTROL AT USH 10 - STAGE 2A

SHEET

65

E

2

STAGE 3A:
COMPLETE WORK USING STAGE 3A TRAFFIC CONTROL - TYPICAL SECTION
AND SOUTH SEGMENT DYNAMIC LATE MERGE SYSTEM LAYOUT.

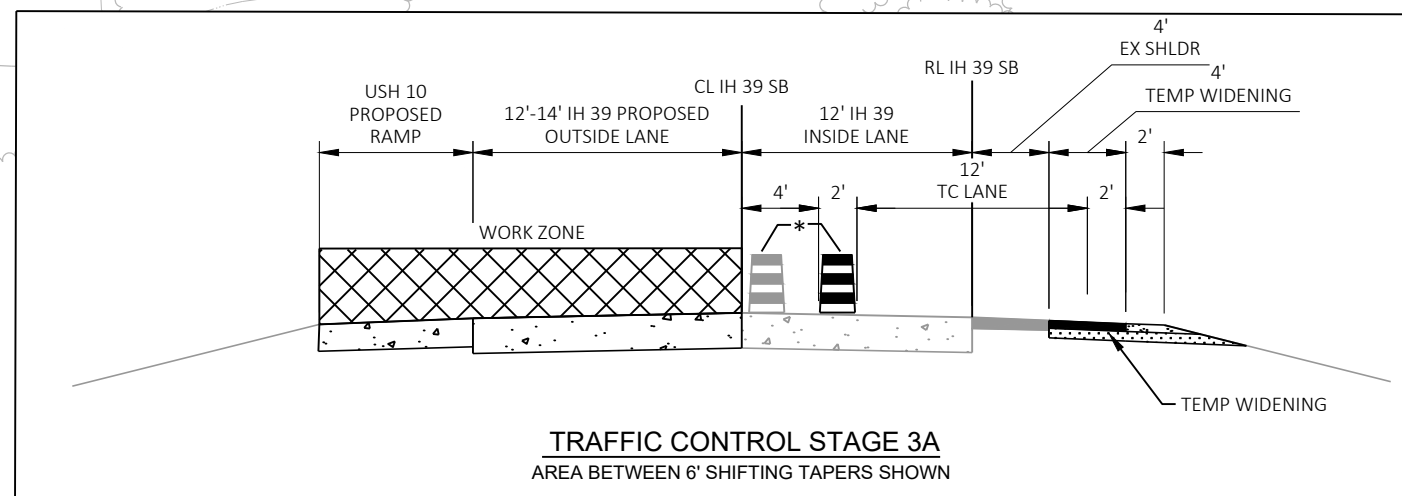
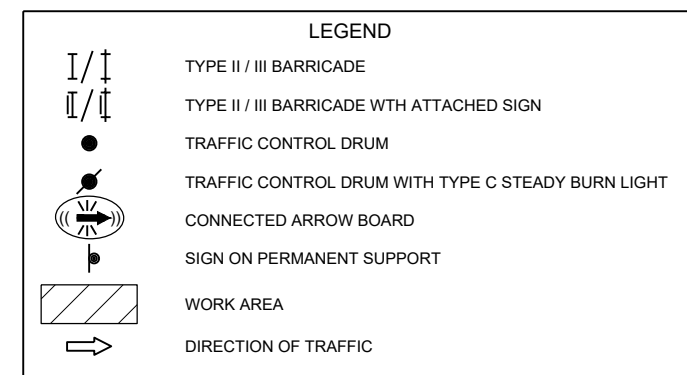
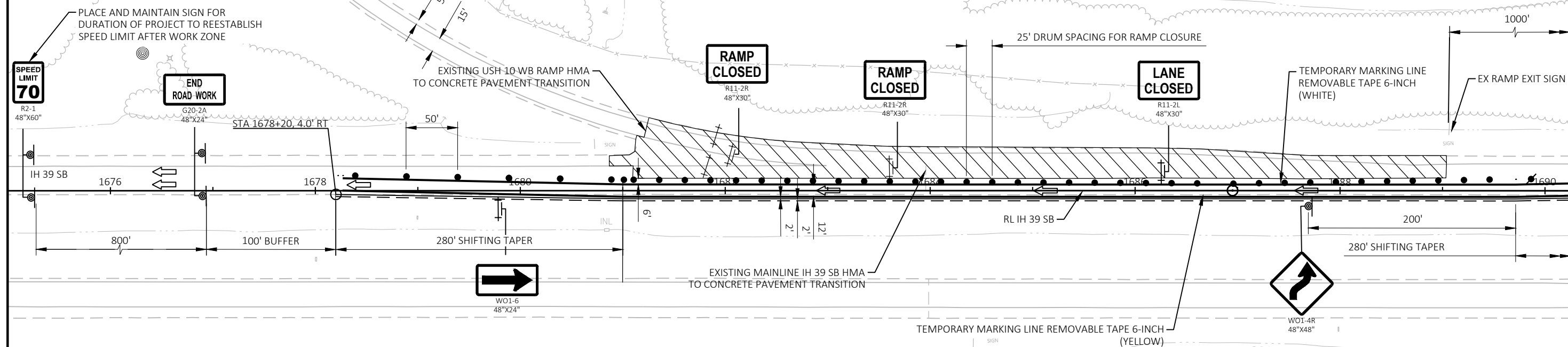
* TRAFFIC CONTROL DEVICES TO BE MOVED CLOSER TO THE IH 39 SB
CENTERLINE WHEN ACTIVE CONSTRUCTION IS NOT TAKING PLACE AS
DIRECTED BY THE ENGINEER.

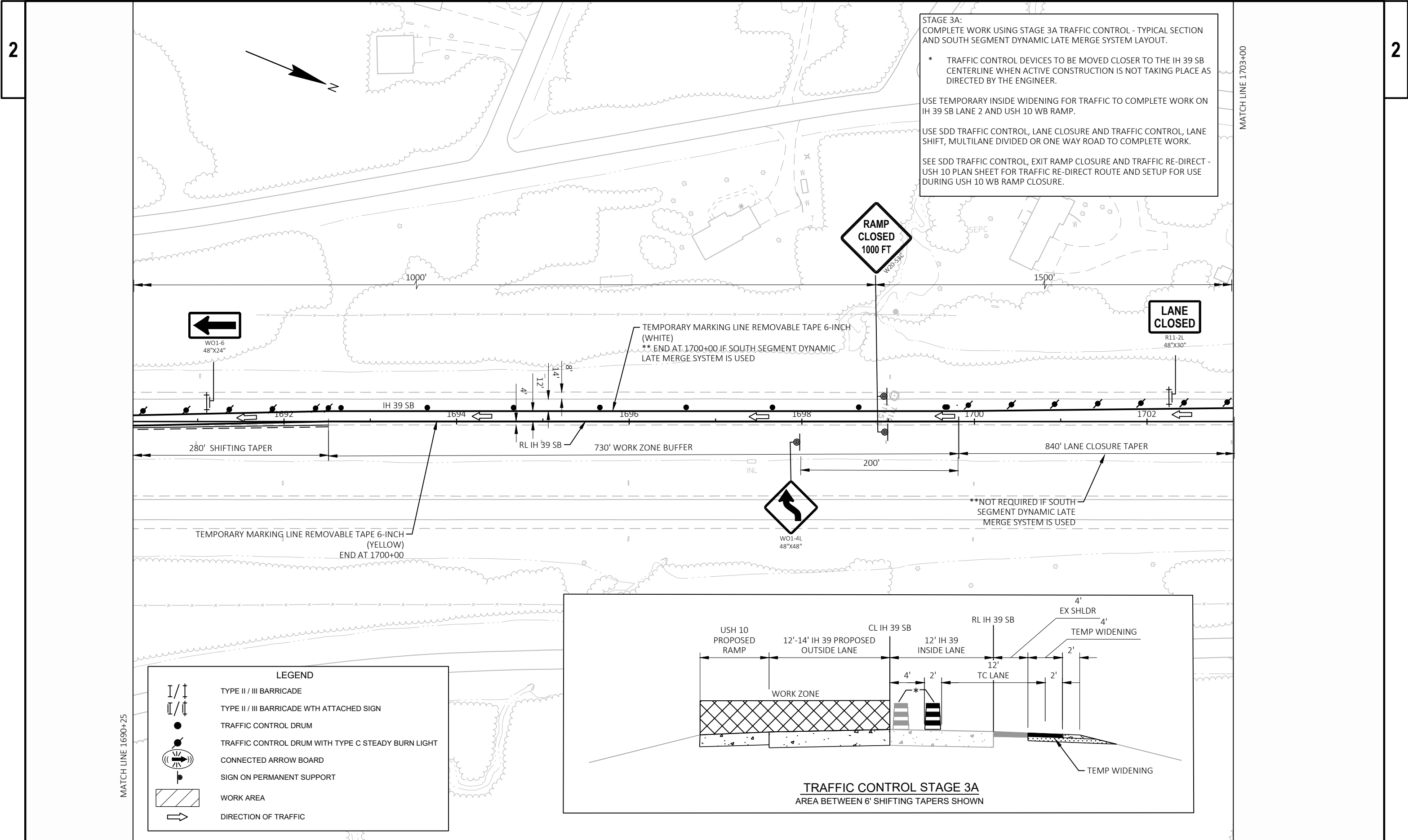
USE TEMPORARY INSIDE WIDENING FOR TRAFFIC TO COMPLETE WORK ON
IH 39 SB LANE 2 AND USH 10 WB RAMP.

USE SDD TRAFFIC CONTROL, LANE CLOSURE AND TRAFFIC CONTROL, LANE
SHIFT, MULTILANE DIVIDED OR ONE WAY ROAD TO COMPLETE WORK.

SEE SDD TRAFFIC CONTROL, EXIT RAMP CLOSURE AND TRAFFIC RE-DIRECT -
USH 10 PLAN SHEET FOR TRAFFIC RE-DIRECT ROUTE AND SETUP FOR USE
DURING USH 10 WB RAMP CLOSURE.

LINE 1690+25





STAGE 3A:
COMPLETE WORK USING STAGE 3A TRAFFIC CONTROL - TYPICAL SECTION
AND SOUTH SEGMENT DYNAMIC LATE MERGE SYSTEM LAYOUT.

* TRAFFIC CONTROL DEVICES TO BE MOVED CLOSER TO THE IH 39 SB
CENTERLINE WHEN ACTIVE CONSTRUCTION IS NOT TAKING PLACE AS
DIRECTED BY THE ENGINEER.

USE TEMPORARY INSIDE WIDENING FOR TRAFFIC TO COMPLETE WORK ON
IH 39 SB LANE 2 AND USH 10 WB RAMP.

USE SDD TRAFFIC CONTROL, LANE CLOSURE AND TRAFFIC CONTROL, LANE
SHIFT, MULTILANE DIVIDED OR ONE WAY ROAD TO COMPLETE WORK.

SEE SDD TRAFFIC CONTROL, EXIT RAMP CLOSURE AND TRAFFIC RE-DIRECT -
USH 10 PLAN SHEET FOR TRAFFIC RE-DIRECT ROUTE AND SETUP FOR USE
DURING USH 10 WB RAMP CLOSURE.

LEGEND

I / I

II / II

●

●

→

→

TYPE II / III BARRICADE

TYPE II / III BARRICADE WITH ATTACHED SIGN

TRAFFIC CONTROL DRUM

TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT

CONNECTED ARROW BOARD

SIGN ON PERMANENT SUPPORT

WORK AREA

DIRECTION OF TRAFFIC

PROJECT NO: 1166-05-66

HWY: IH 39

COUNTY: PORTAGE & MARATHON

TRAFFIC CONTROL AT USH 10 - STAGE 3A

SHEET 67

E

FILE NAME : Y:\MILWAUKEE\203005\0020341.00\ENG_DOCS\11660566\SHEETS\PLAN\025101-TC-TEMPWIDENING STAGE 8.DWG

LAYOUT NAME - 02

PLOT DATE : 4/29/2026 10:23 AM

PLOT BY : WATT, TIMOTHY

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADD SHEET 42

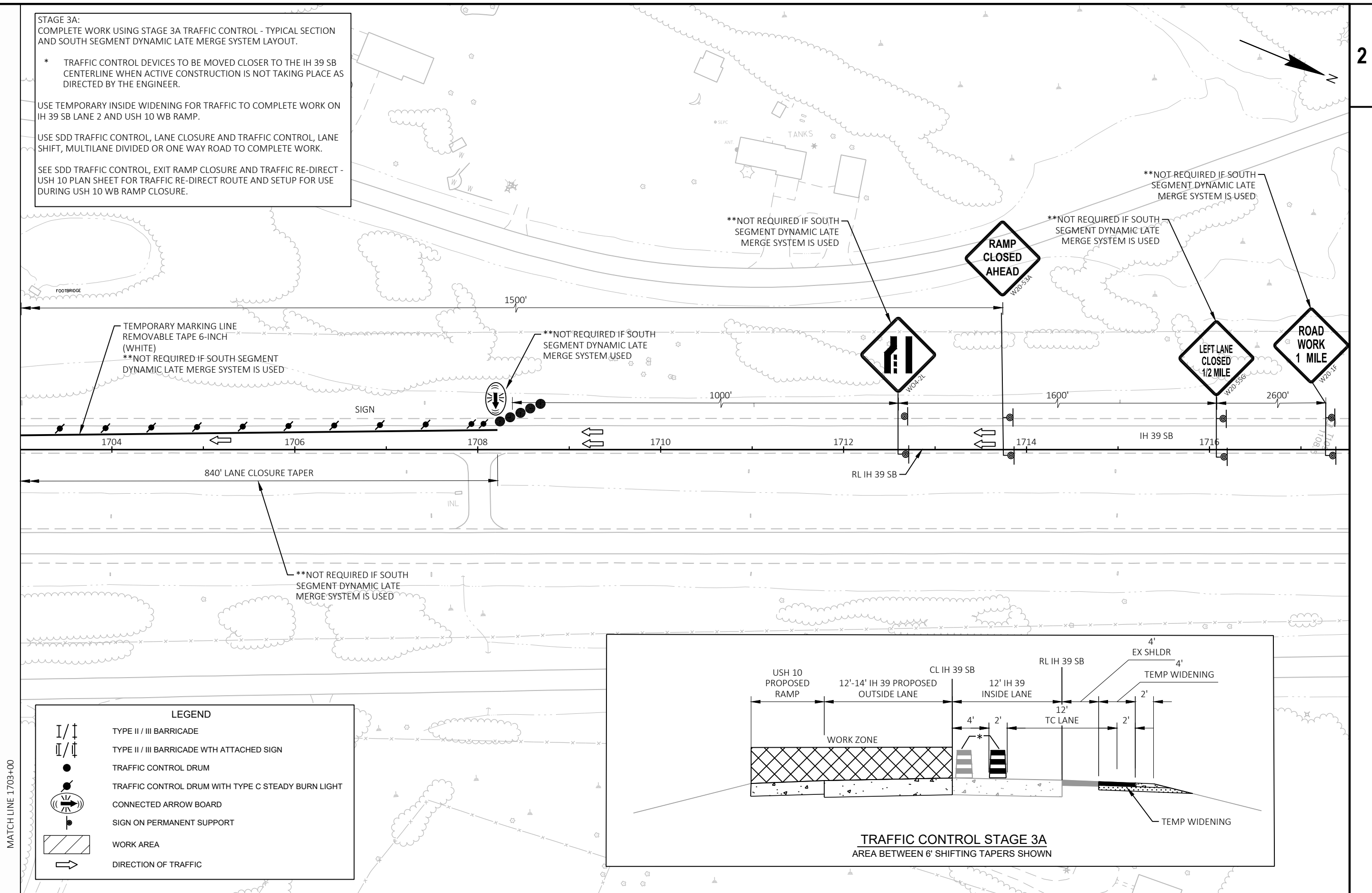
STAGE 3A:
COMPLETE WORK USING STAGE 3A TRAFFIC CONTROL - TYPICAL SECTION
AND SOUTH SEGMENT DYNAMIC LATE MERGE SYSTEM LAYOUT.

* TRAFFIC CONTROL DEVICES TO BE MOVED CLOSER TO THE IH 39 SB
CENTERLINE WHEN ACTIVE CONSTRUCTION IS NOT TAKING PLACE AS
DIRECTED BY THE ENGINEER.

USE TEMPORARY INSIDE WIDENING FOR TRAFFIC TO COMPLETE WORK ON
IH 39 SB LANE 2 AND USH 10 WB RAMP.

USE SDD TRAFFIC CONTROL, LANE CLOSURE AND TRAFFIC CONTROL, LANE
SHIFT, MULTILANE DIVIDED OR ONE WAY ROAD TO COMPLETE WORK.

SEE SDD TRAFFIC CONTROL, EXIT RAMP CLOSURE AND TRAFFIC RE-DIRECT -
USH 10 PLAN SHEET FOR TRAFFIC RE-DIRECT ROUTE AND SETUP FOR USE
DURING USH 10 WB RAMP CLOSURE.



2

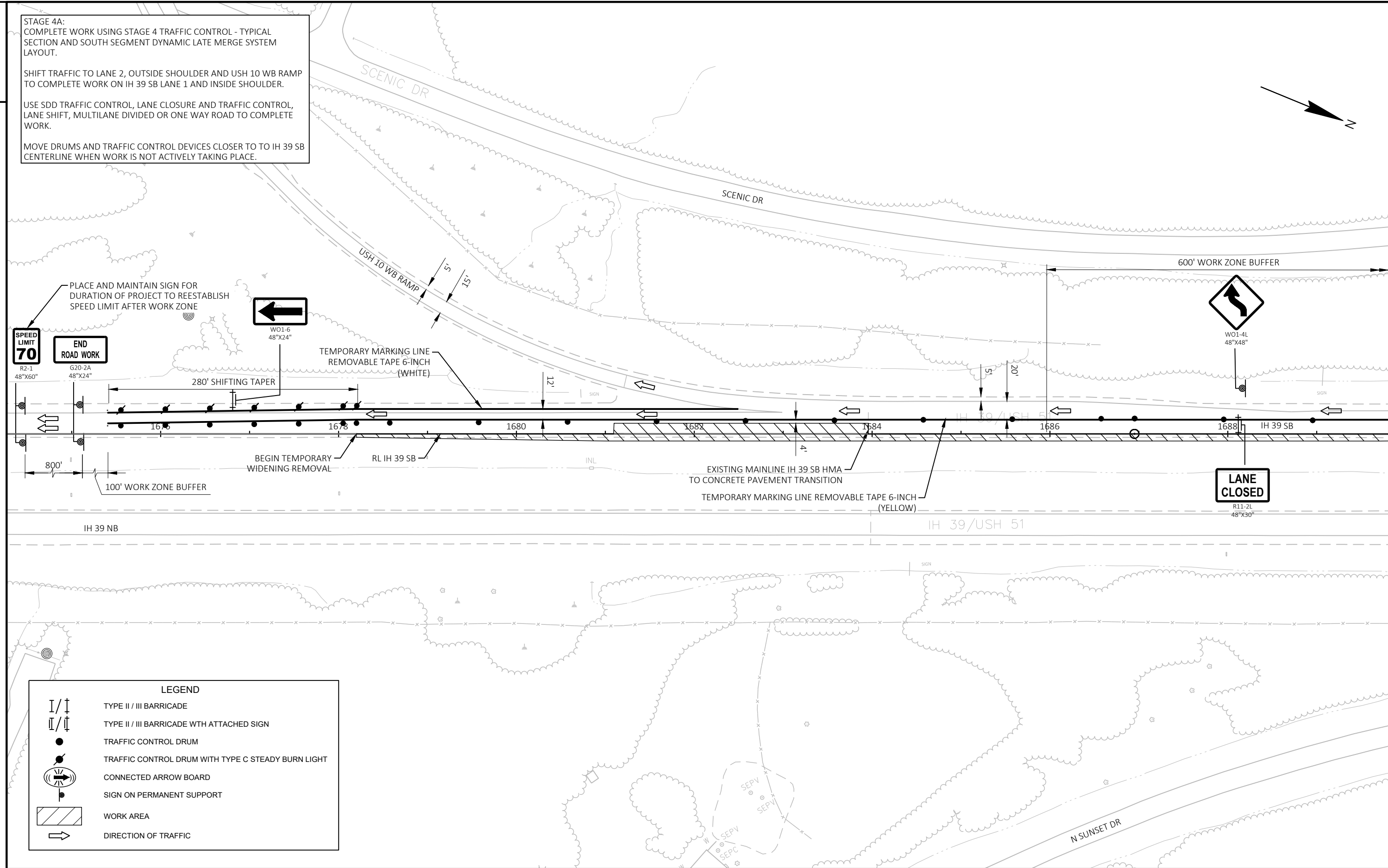
STAGE 4A:
COMPLETE WORK USING STAGE 4 TRAFFIC CONTROL - TYPICAL
SECTION AND SOUTH SEGMENT DYNAMIC LATE MERGE SYSTEM
LAYOUT.

SHIFT TRAFFIC TO LANE 2, OUTSIDE SHOULDER AND USH 10 WB RAMP
TO COMPLETE WORK ON IH 39 SB LANE 1 AND INSIDE SHOULDER.

USE SDD TRAFFIC CONTROL, LANE CLOSURE AND TRAFFIC CONTROL,
LANE SHIFT, MULTILANE DIVIDED OR ONE WAY ROAD TO COMPLETE
WORK.

MOVE DRUMS AND TRAFFIC CONTROL DEVICES CLOSER TO TO IH 39 SB
CENTERLINE WHEN WORK IS NOT ACTIVELY TAKING PLACE.

E 1689+80.80



PROJECT NO:	1166-05-66	HWY: IH 39	COUNTY: PORTAGE & MARATHON	TRAFFIC CONTROL AT USH 10 - STAGE 4A	SHEET	69	E
-------------	------------	------------	----------------------------	--------------------------------------	-------	----	----------

FILE NAME : Y:\MILWAUKEE\20300S\0020341.00\ENG_DOCS\11660566\SHEETSPLAN\025101-TC-TEMPWIDENING STAGE C.DWG
LAYOUT NAME - 01

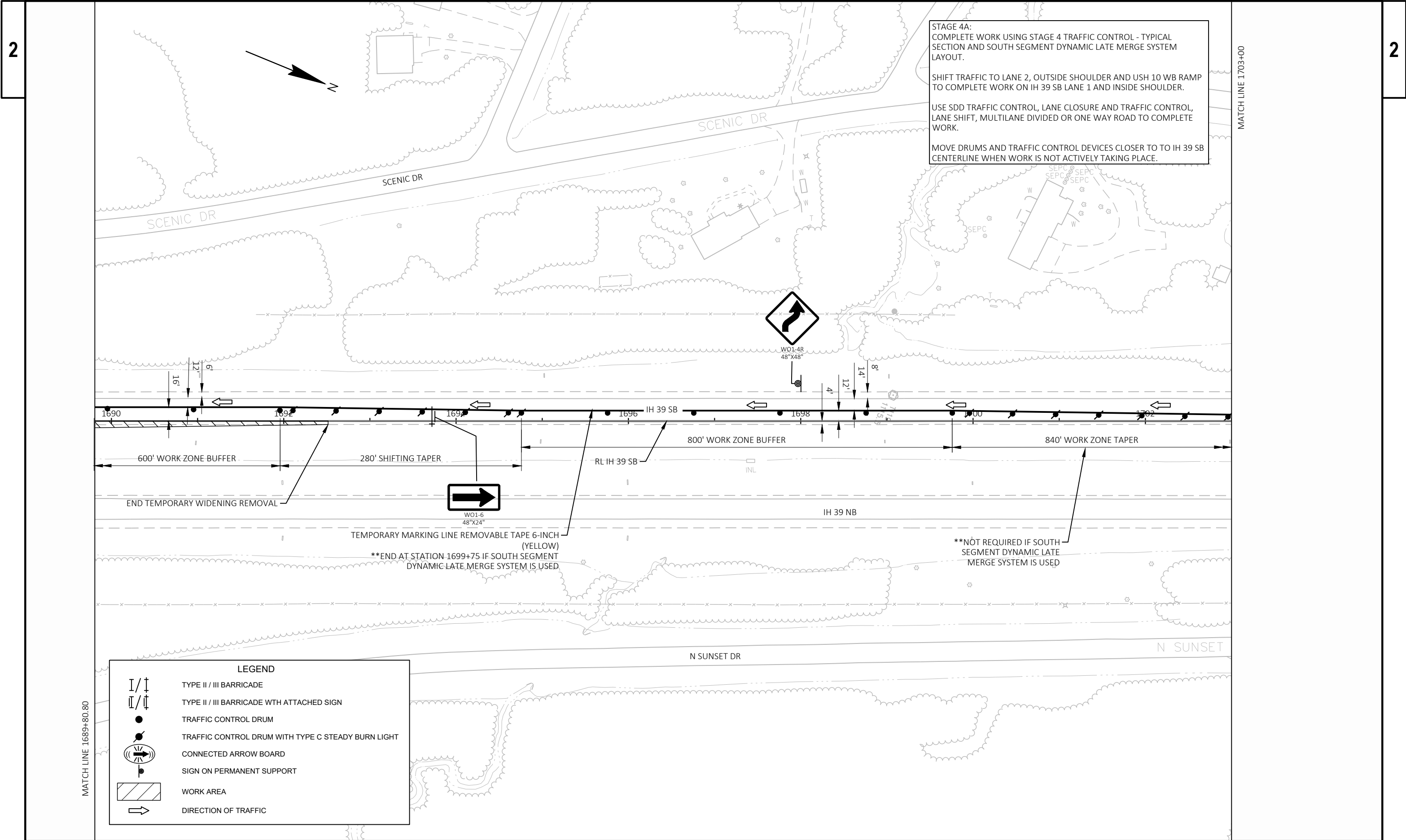
PLOT DATE : 4/30/2025 12:10 PM

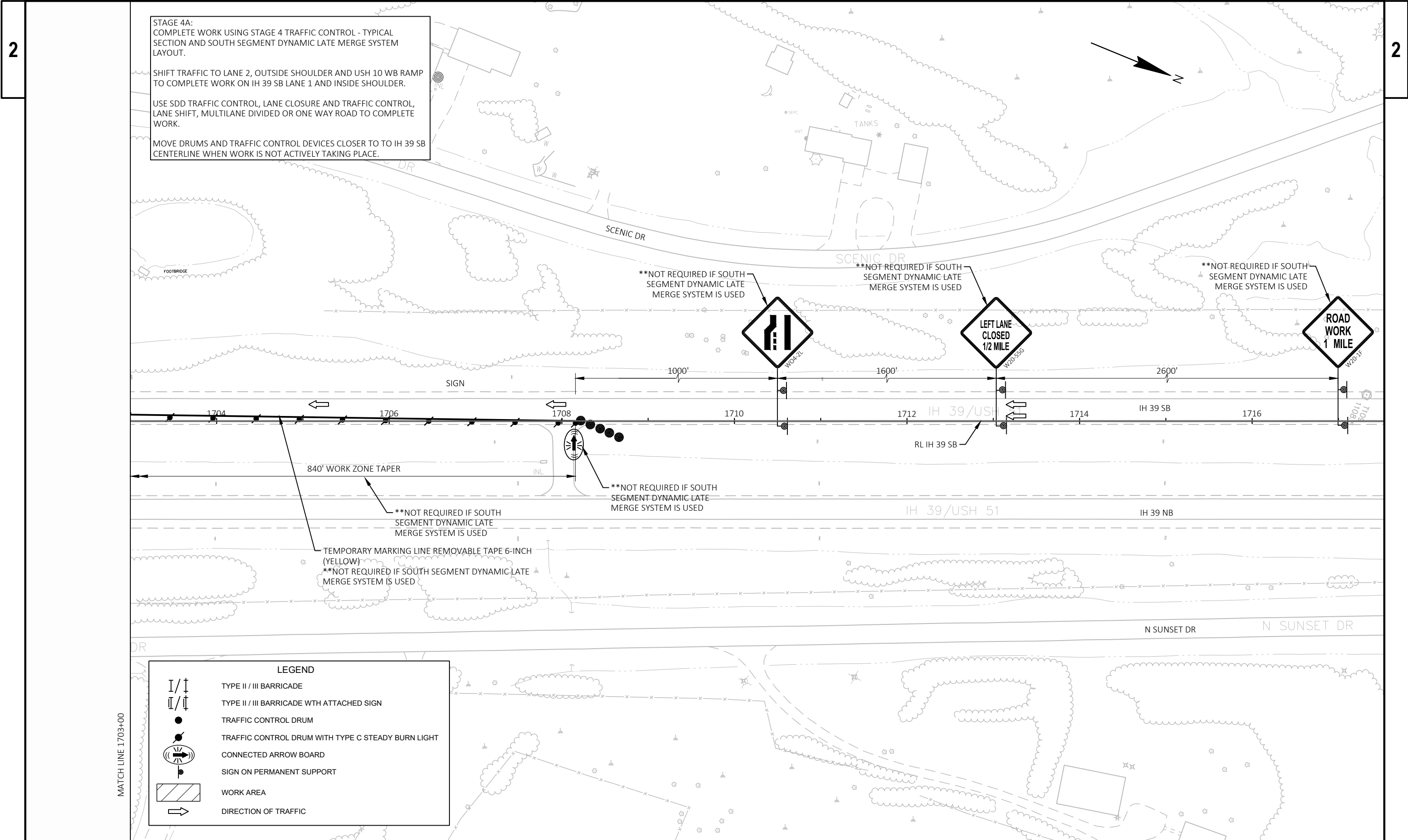
PLOT BY : WATT, TIMOTHY

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42





STAGE 4A:
COMPLETE WORK USING STAGE 4 TRAFFIC CONTROL - TYPICAL
SECTION AND SOUTH SEGMENT DYNAMIC LATE MERGE SYSTEM
LAYOUT.

SHIFT TRAFFIC TO LANE 2, OUTSIDE SHOULDER AND USH 10 WB RAMP
TO COMPLETE WORK ON IH 39 SB LANE 1 AND INSIDE SHOULDER.

USE SDD TRAFFIC CONTROL, LANE CLOSURE AND TRAFFIC CONTROL,
LANE SHIFT, MULTILANE DIVIDED OR ONE WAY ROAD TO COMPLETE
WORK.

MOVE DRUMS AND TRAFFIC CONTROL DEVICES CLOSER TO TO IH 39 SB
CENTERLINE WHEN WORK IS NOT ACTIVELY TAKING PLACE.

LEGEND

TYPE II / III BARRICADE

TYPE II / III BARRICADE WITH ATTACHED SIGN

TRAFFIC CONTROL DRUM

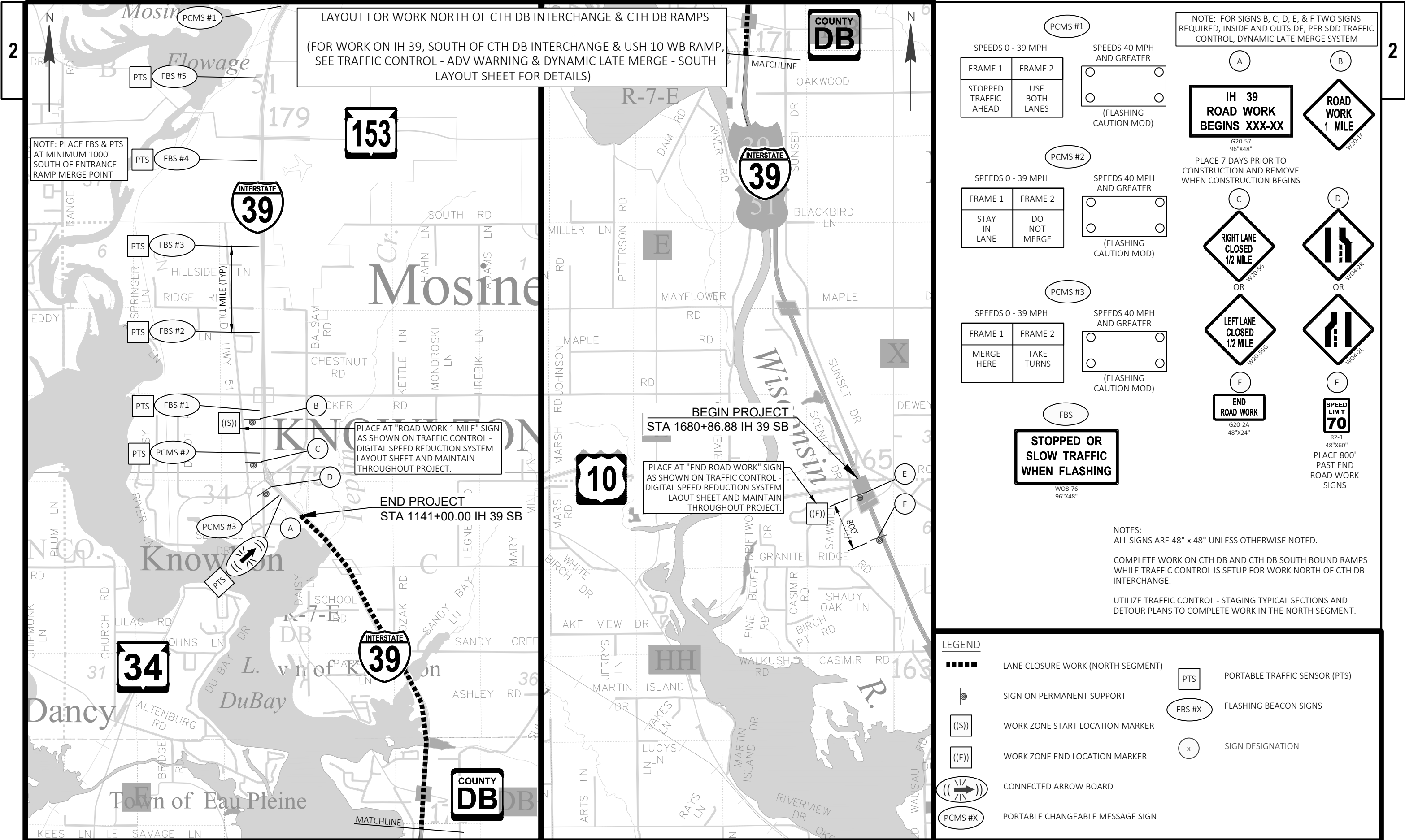
TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT

CONNECTED ARROW BOARD

SIGN ON PERMANENT SUPPORT

WORK AREA

DIRECTION OF TRAFFIC



LAYOUT FOR WORK NORTH OF CTH DB INTERCHANGE & CTH DB RAMPS
(FOR WORK ON IH 39, SOUTH OF CTH DB INTERCHANGE & USH 10 WB RAMP, SEE TRAFFIC CONTROL - ADV WARNING & DYNAMIC LATE MERGE - SOUTH LAYOUT SHEET FOR DETAILS)

NOTE: PLACE FBS & PTS AT MINIMUM 1000' SOUTH OF ENTRANCE RAMP MERGE POINT

PLACE AT "ROAD WORK 1 MILE" SIGN AS SHOWN ON TRAFFIC CONTROL - DIGITAL SPEED REDUCTION SYSTEM LAYOUT SHEET AND MAINTAIN THROUGHOUT PROJECT.

PLACE AT "END ROAD WORK" SIGN AS SHOWN ON TRAFFIC CONTROL - DIGITAL SPEED REDUCTION SYSTEM LAYOUT SHEET AND MAINTAIN THROUGHOUT PROJECT.

NOTE: FOR SIGNS B, C, D, E, & F TWO SIGNS REQUIRED, INSIDE AND OUTSIDE, PER SDD TRAFFIC CONTROL, DYNAMIC LATE MERGE SYSTEM

PCMS #1

SPEEDS 0 - 39 MPH	
FRAME 1	FRAME 2
STOPPED TRAFFIC AHEAD	USE BOTH LANES

SPEEDS 40 MPH AND GREATER

(FLASHING CAUTION MOD)

PCMS #2

SPEEDS 0 - 39 MPH	
FRAME 1	FRAME 2
STAY IN LANE	DO NOT MERGE

SPEEDS 40 MPH AND GREATER

(FLASHING CAUTION MOD)

PCMS #3

SPEEDS 0 - 39 MPH	
FRAME 1	FRAME 2
MERGE HERE	TAKE TURNS

SPEEDS 40 MPH AND GREATER

(FLASHING CAUTION MOD)

FBS

STOPPED OR SLOW TRAFFIC WHEN FLASHING

W08-76
96"x48"

NOTE: FOR SIGNS B, C, D, E, & F TWO SIGNS REQUIRED, INSIDE AND OUTSIDE, PER SDD TRAFFIC CONTROL, DYNAMIC LATE MERGE SYSTEM

A

IH 39 ROAD WORK BEGINS XXX-XX

G20-57
96"x48"

PLACE 7 DAYS PRIOR TO CONSTRUCTION AND REMOVE WHEN CONSTRUCTION BEGINS

B

ROAD WORK 1 MILE

W20-1F

C

RIGHT LANE CLOSED 1/2 MILE

W20-55G

OR

D

LEFT LANE CLOSED 1/2 MILE

W20-55G

E

END ROAD WORK

G20-2A
48"x24"

F

SPEED LIMIT 70

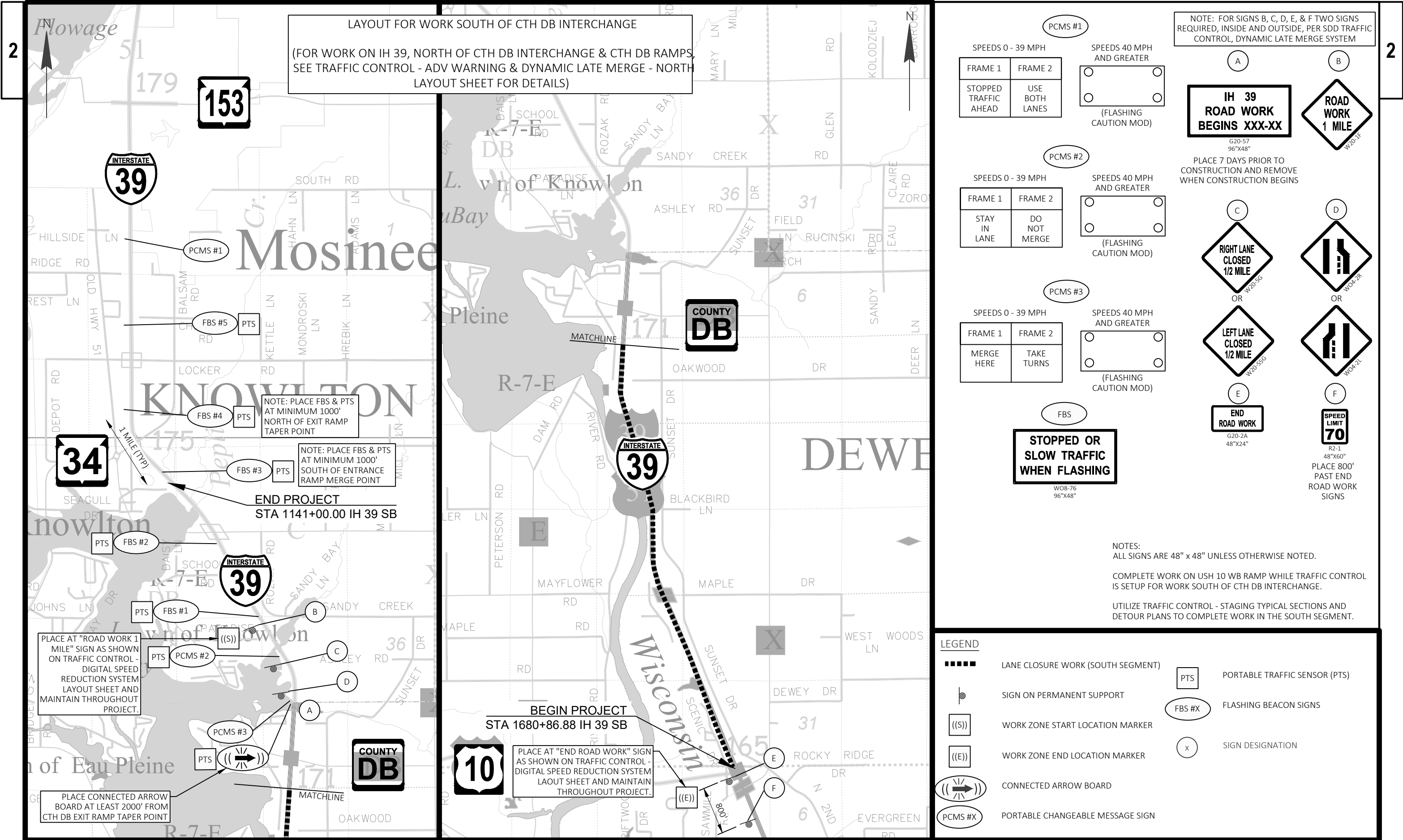
R2-1
48"x60"

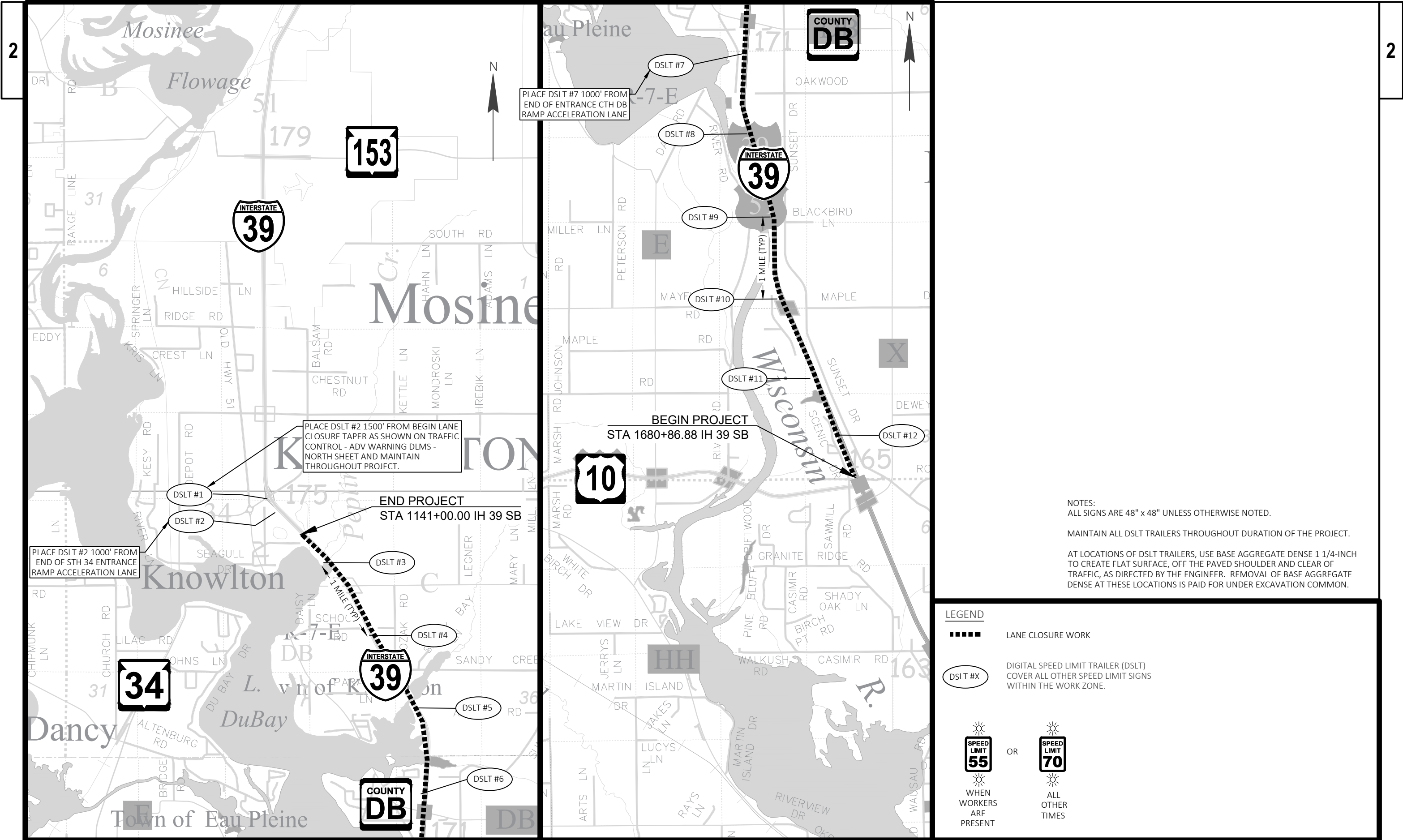
PLACE 800' PAST END ROAD WORK SIGNS

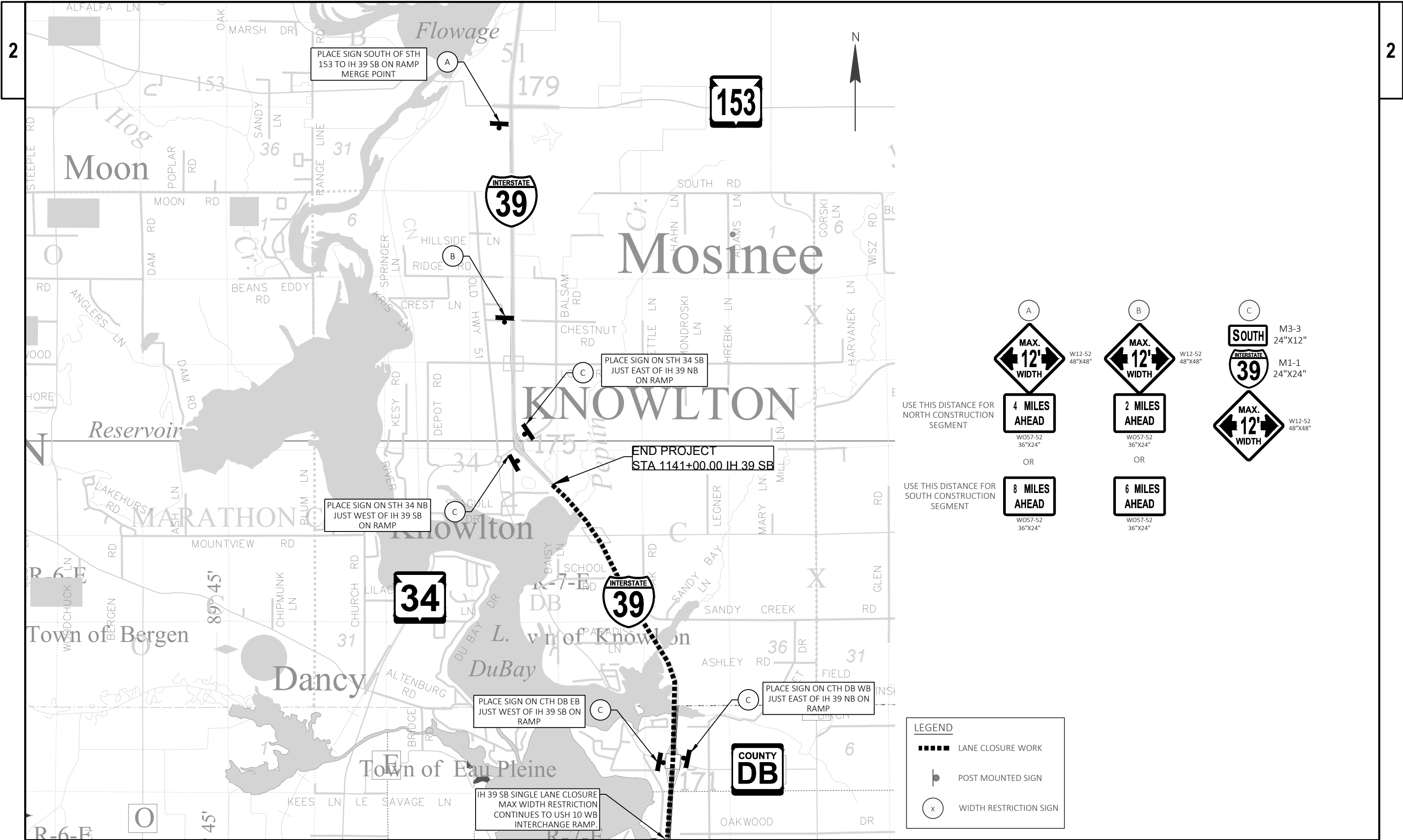
NOTES:
ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.
COMPLETE WORK ON CTH DB AND CTH DB SOUTH BOUND RAMPS WHILE TRAFFIC CONTROL IS SETUP FOR WORK NORTH OF CTH DB INTERCHANGE.
UTILIZE TRAFFIC CONTROL - STAGING TYPICAL SECTIONS AND DETOUR PLANS TO COMPLETE WORK IN THE NORTH SEGMENT.

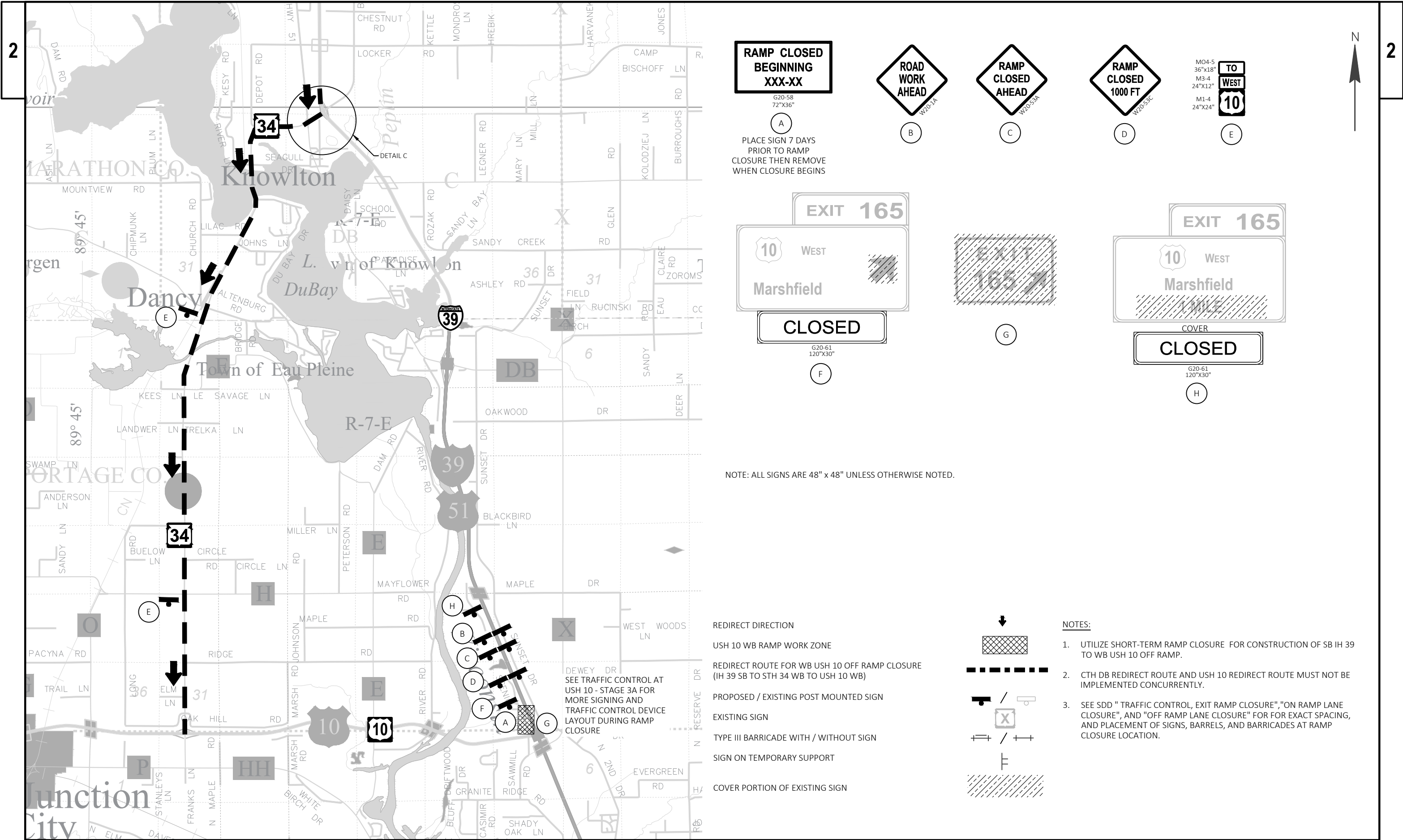
LEGEND

- LANE CLOSURE WORK (NORTH SEGMENT)
- SIGN ON PERMANENT SUPPORT
- ((S)) WORK ZONE START LOCATION MARKER
- ((E)) WORK ZONE END LOCATION MARKER
- ((→)) CONNECTED ARROW BOARD
- PCMS #X PORTABLE CHANGEABLE MESSAGE SIGN
- PTS PORTABLE TRAFFIC SENSOR (PTS)
- FBS #X FLASHING BEACON SIGNS
- x SIGN DESIGNATION









**RAMP CLOSED
BEGINNING
XXX-XX**

G20-58
72"x36"

(A)

PLACE SIGN 7 DAYS
PRIOR TO RAMP
CLOSURE THEN REMOVE
WHEN CLOSURE BEGINS



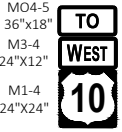
(B)



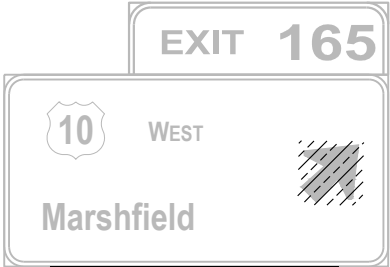
(C)



(D)



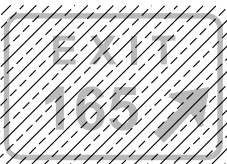
(E)



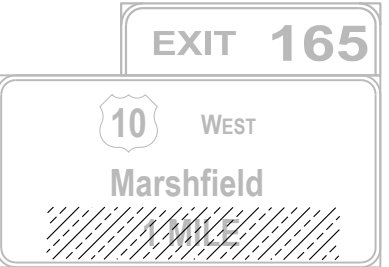
CLOSED

G20-61
120"x30"

(F)



(G)



CLOSED

G20-61
120"x30"

(H)

NOTE: ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

REDIRECT DIRECTION

USH 10 WB RAMP WORK ZONE

REDIRECT ROUTE FOR WB USH 10 OFF RAMP CLOSURE
(IH 39 SB TO STH 34 WB TO USH 10 WB)

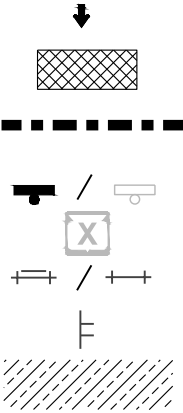
PROPOSED / EXISTING POST MOUNTED SIGN

EXISTING SIGN

TYPE III BARRICADE WITH / WITHOUT SIGN

SIGN ON TEMPORARY SUPPORT

COVER PORTION OF EXISTING SIGN



NOTES:

1. UTILIZE SHORT-TERM RAMP CLOSURE FOR CONSTRUCTION OF SB IH 39 TO WB USH 10 OFF RAMP.
2. CTH DB REDIRECT ROUTE AND USH 10 REDIRECT ROUTE MUST NOT BE IMPLEMENTED CONCURRENTLY.
3. SEE SDD " TRAFFIC CONTROL, EXIT RAMP CLOSURE", "ON RAMP LANE CLOSURE", AND "OFF RAMP LANE CLOSURE" FOR FOR EXACT SPACING, AND PLACEMENT OF SIGNS, BARRELS, AND BARRICADES AT RAMP CLOSURE LOCATION.

PROJECT NO: 1166-05-66

HWY: IH 39

COUNTY: PORTAGE & MARATHON

TRAFFIC REDIRECT ROUTE - USH 10

SHEET

76

FILE NAME : Y:\MILWAUKEE\203005\0020341.00\ENG_DOCS\11660566\027001-DT.DWG
LAYOUT NAME - USH 10 DETOUR

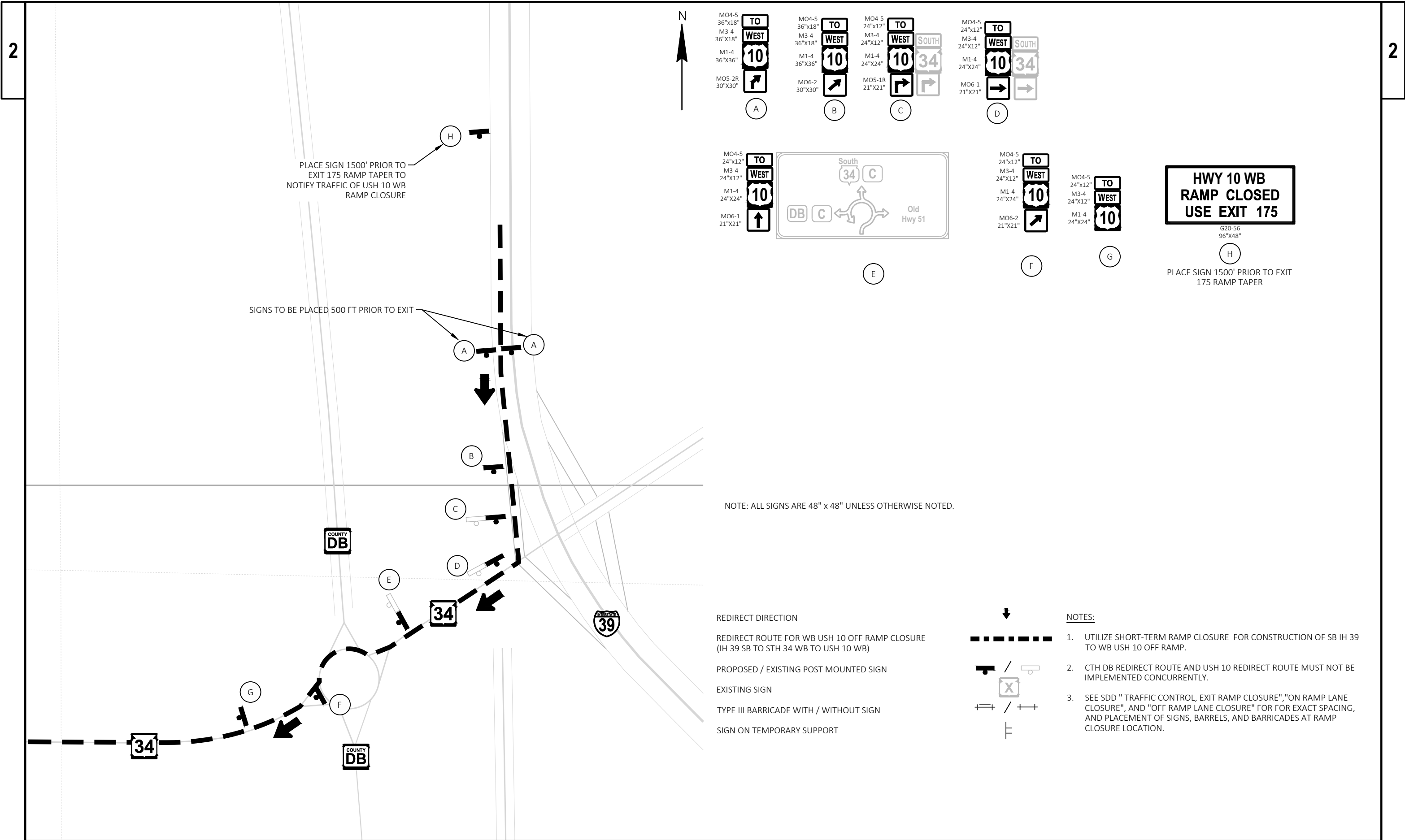
PLOT DATE : 4/30/2025 12:28 PM

PLOT BY : WATT, TIMOTHY

PLOT NAME :

PLOT SCALE : 1 IN: 1.25 MI

WISDOT/CADDs SHEET 42



PLACE SIGN 1500' PRIOR TO
EXIT 175 RAMP TAPER TO
NOTIFY TRAFFIC OF USH 10 WB
RAMP CLOSURE

SIGNS TO BE PLACED 500 FT PRIOR TO EXIT

MO4-5
36"x18"
M3-4
36"x18"
M1-4
36"x36"
MO5-2R
30"x30"

TO
WEST
10
↑

A

MO4-5
36"x18"
M3-4
36"x18"
M1-4
36"x36"
MO6-2
30"x30"

TO
WEST
10
↗

B

MO4-5
24"x12"
M3-4
24"x12"
M1-4
24"x24"
MO5-1R
21"x21"

TO
WEST
10
↘

C

MO4-5
24"x12"
M3-4
24"x12"
M1-4
24"x24"
MO6-1
21"x21"

TO
WEST
10
→ SOUTH
34
→

D

MO4-5
24"x12"
M3-4
24"x12"
M1-4
24"x24"
MO6-1
21"x21"

TO
WEST
10
↑

E

MO4-5
24"x12"
M3-4
24"x12"
M1-4
24"x24"
MO6-2
21"x21"

TO
WEST
10
↗

F

MO4-5
24"x12"
M3-4
24"x12"
M1-4
24"x24"

TO
WEST
10
→

G

MO4-5
24"x12"
M3-4
24"x12"
M1-4
24"x24"

TO
WEST
10
→

H

HWY 10 WB
RAMP CLOSED
USE EXIT 175

G20-56
96"x48"

PLACE SIGN 1500' PRIOR TO EXIT
175 RAMP TAPER

NOTE: ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

REDIRECT DIRECTION

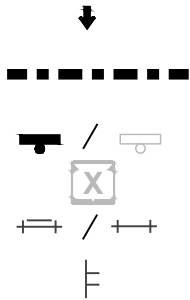
REDIRECT ROUTE FOR WB USH 10 OFF RAMP CLOSURE
(IH 39 SB TO STH 34 WB TO USH 10 WB)

PROPOSED / EXISTING POST MOUNTED SIGN

EXISTING SIGN

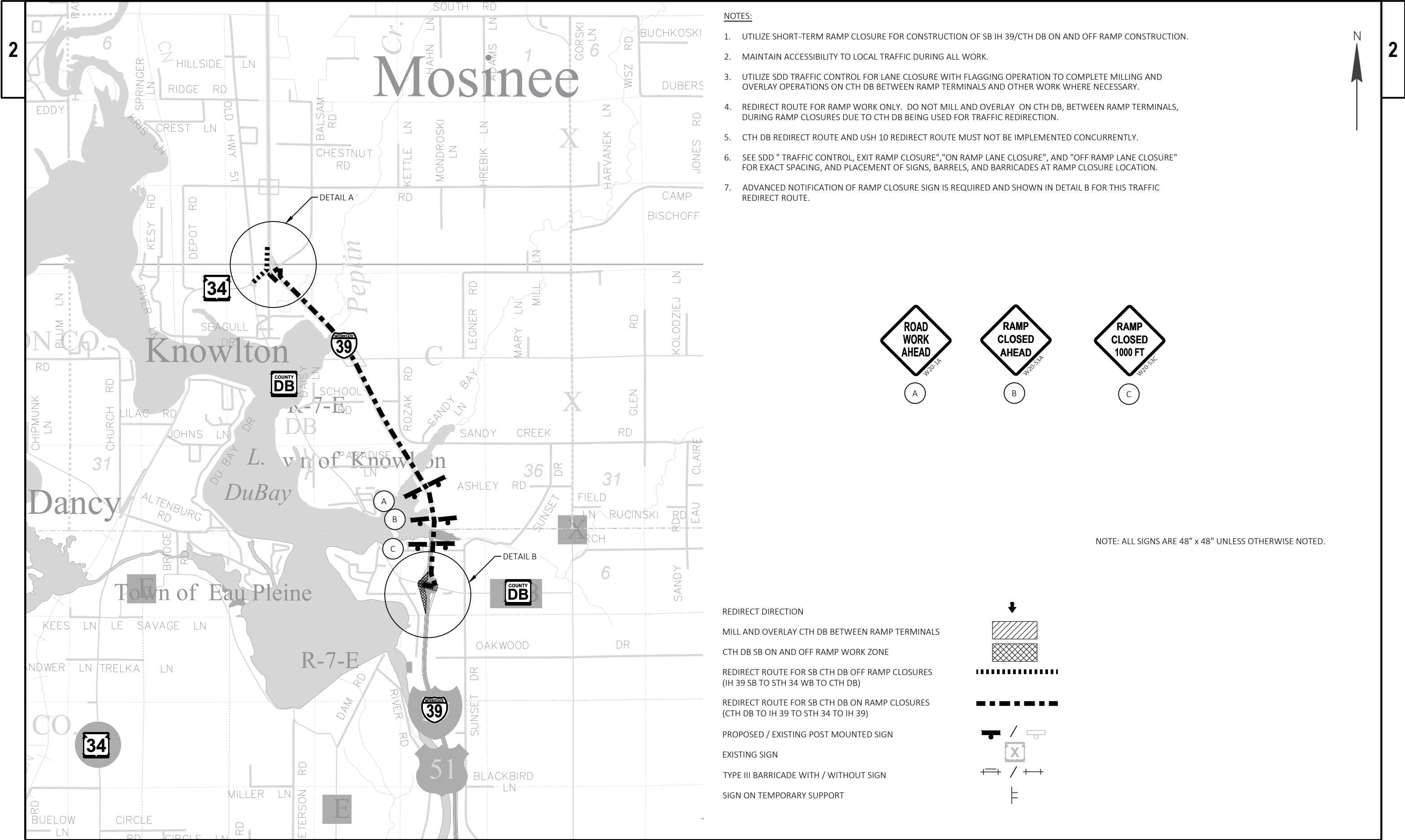
TYPE III BARRICADE WITH / WITHOUT SIGN

SIGN ON TEMPORARY SUPPORT

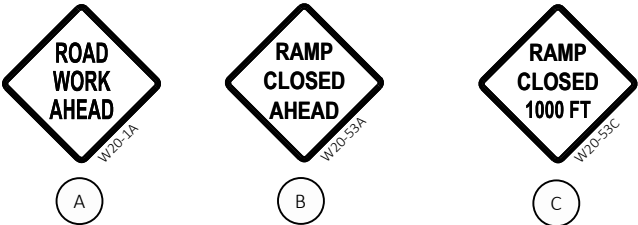


NOTES:

1. UTILIZE SHORT-TERM RAMP CLOSURE FOR CONSTRUCTION OF SB IH 39 TO WB USH 10 OFF RAMP.
2. CTH DB REDIRECT ROUTE AND USH 10 REDIRECT ROUTE MUST NOT BE IMPLEMENTED CONCURRENTLY.
3. SEE SDD " TRAFFIC CONTROL, EXIT RAMP CLOSURE", "ON RAMP LANE CLOSURE", AND "OFF RAMP LANE CLOSURE" FOR FOR EXACT SPACING, AND PLACEMENT OF SIGNS, BARRELS, AND BARRICADES AT RAMP CLOSURE LOCATION.

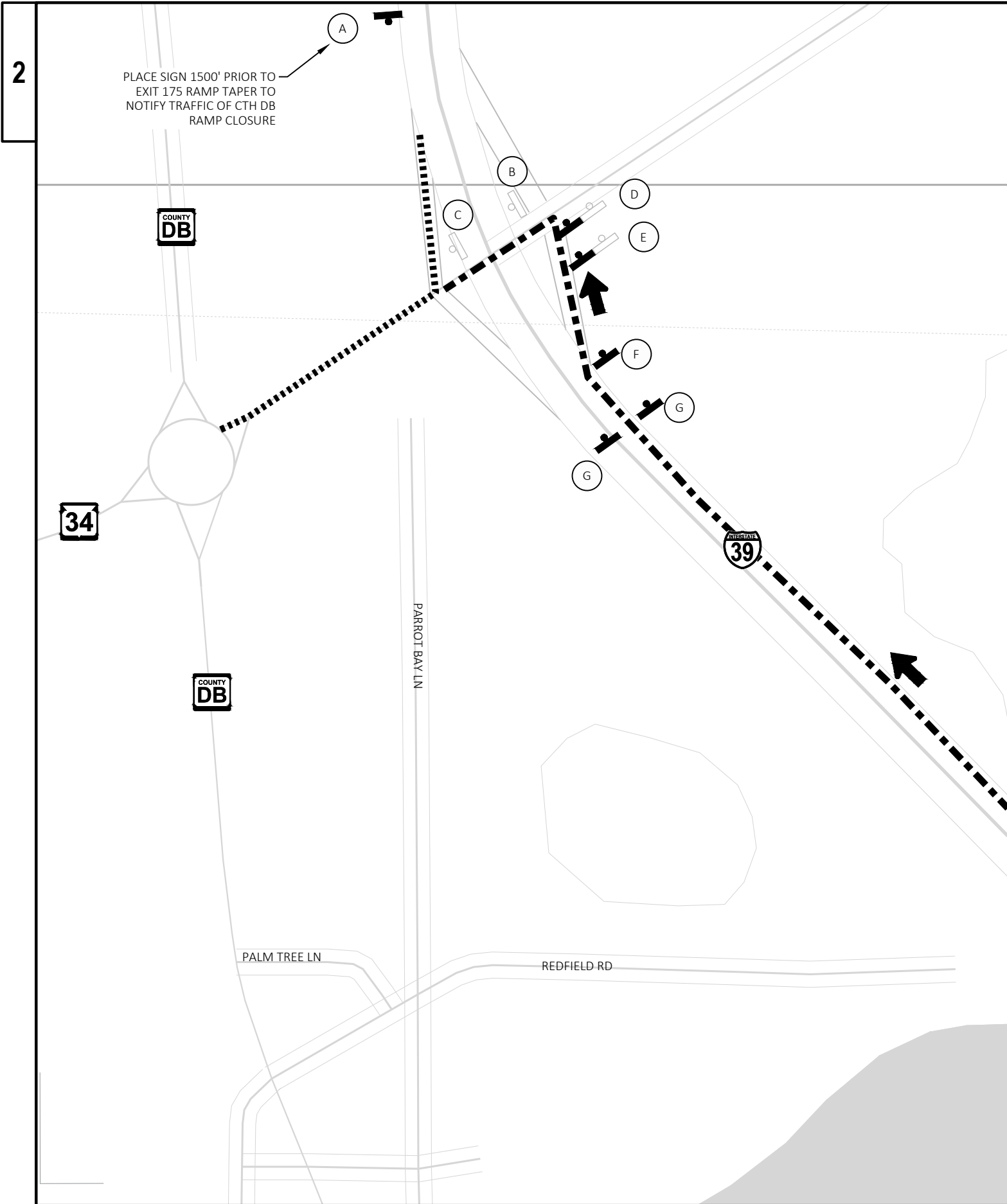


- NOTES:**
1. UTILIZE SHORT-TERM RAMP CLOSURE FOR CONSTRUCTION OF SB IH 39/CTH DB ON AND OFF RAMP CONSTRUCTION.
 2. MAINTAIN ACCESSIBILITY TO LOCAL TRAFFIC DURING ALL WORK.
 3. UTILIZE SDD TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION TO COMPLETE MILLING AND OVERLAY OPERATIONS ON CTH DB BETWEEN RAMP TERMINALS AND OTHER WORK WHERE NECESSARY.
 4. REDIRECT ROUTE FOR RAMP WORK ONLY. DO NOT MILL AND OVERLAY ON CTH DB, BETWEEN RAMP TERMINALS, DURING RAMP CLOSURES DUE TO CTH DB BEING USED FOR TRAFFIC REDIRECTION.
 5. CTH DB REDIRECT ROUTE AND USH 10 REDIRECT ROUTE MUST NOT BE IMPLEMENTED CONCURRENTLY.
 6. SEE SDD " TRAFFIC CONTROL, EXIT RAMP CLOSURE", "ON RAMP LANE CLOSURE", AND "OFF RAMP LANE CLOSURE" FOR EXACT SPACING, AND PLACEMENT OF SIGNS, BARRELS, AND BARRICADES AT RAMP CLOSURE LOCATION.
 7. ADVANCED NOTIFICATION OF RAMP CLOSURE SIGN IS REQUIRED AND SHOWN IN DETAIL B FOR THIS TRAFFIC REDIRECT ROUTE.



NOTE: ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

- REDIRECT DIRECTION
- MILL AND OVERLAY CTH DB BETWEEN RAMP TERMINALS
- CTH DB SB ON AND OFF RAMP WORK ZONE
- REDIRECT ROUTE FOR SB CTH DB OFF RAMP CLOSURES
(IH 39 SB TO STH 34 WB TO CTH DB)
- REDIRECT ROUTE FOR SB CTH DB ON RAMP CLOSURES
(CTH DB TO IH 39 TO STH 34 TO IH 39)
- PROPOSED / EXISTING POST MOUNTED SIGN
- EXISTING SIGN
- TYPE III BARRICADE WITH / WITHOUT SIGN
- SIGN ON TEMPORARY SUPPORT



NOTES:

1. UTILIZE SHORT-TERM RAMP CLOSURE FOR CONSTRUCTION OF SB IH 39/CTH DB ON AND OFF RAMP CONSTRUCTION.
2. MAINTAIN ACCESSIBILITY TO LOCAL TRAFFIC DURING ALL WORK.
3. UTILIZE SDD TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION TO COMPLETE MILLING AND OVERLAY OPERATIONS ON CTH DB BETWEEN RAMP TERMINALS AND OTHER WORK WHERE NECESSARY.
4. REDIRECT ROUTE FOR RAMP WORK ONLY. DO NOT MILL AND OVERLAY ON CTH DB, BETWEEN RAMP TERMINALS, DURING RAMP CLOSURES DUE TO CTH DB BEING USED FOR TRAFFIC REDIRECTION.
5. CTH DB REDIRECT ROUTE AND USH 10 REDIRECT ROUTE MUST NOT BE IMPLEMENTED CONCURRENTLY.
6. SEE SDD " TRAFFIC CONTROL, EXIT RAMP CLOSURE", "ON RAMP LANE CLOSURE", AND "OFF RAMP LANE CLOSURE" FOR EXACT SPACING, AND PLACEMENT OF SIGNS, BARRELS, AND BARRICADES AT RAMP CLOSURE LOCATION.
7. ADVANCED NOTIFICATION OF RAMP CLOSURE SIGN IS REQUIRED AND SHOWN IN DETAIL B FOR THIS TRAFFIC REDIRECT ROUTE.

CTH DB
RAMP CLOSED
USE EXIT 175

G20-56
96"x48"

A

PLACE SIGN 1500' PRIOR TO EXIT
175 RAMP TAPER

MO4-5
24"x18"

TO

SOUTH

INTERSTATE

39

←

B

MO4-5
24"x18"

TO

SOUTH

INTERSTATE

39

←

C

MO4-5
24"x18"

TO

SOUTH

INTERSTATE

39

←

D

M3-3
24"x12"

SOUTH

INTERSTATE

34

←

M1-1
24"x24"

←

MO6-1
21"x21"

←

E

MO4-5
24"x18"

TO

SOUTH

INTERSTATE

39

←

F

M3-3
24"x12"

SOUTH

INTERSTATE

34

←

M1-1
24"x24"

←

MO5-1L
21"x21"

←

G

MO4-5
36"x18"

TO

SOUTH

INTERSTATE

39

↗

M3-3
36"x18"

SOUTH

INTERSTATE

39

↗

M1-1
36"x36"

↗

MO6-2
30"x30"

↗

F

MO4-5
36"x18"

TO

SOUTH

INTERSTATE

39

↗

M3-3
36"x18"

SOUTH

INTERSTATE

39

↗

M1-1
36"x36"

↗

MO5-2R
30"x30"

↗

G

NOTE: ALL SIGNS ARE 48" x 48" UNLESS OTHERWISE NOTED.

REDIRECT DIRECTION

REDIRECT ROUTE FOR SB CTH DB OFF RAMP CLOSURES
(IH 39 SB TO STH 34 WB TO CTH DB)

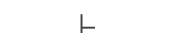
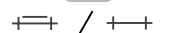
REDIRECT ROUTE FOR SB CTH DB ON RAMP CLOSURES
(CTH DB TO IH 39 TO STH 34 TO IH 39)

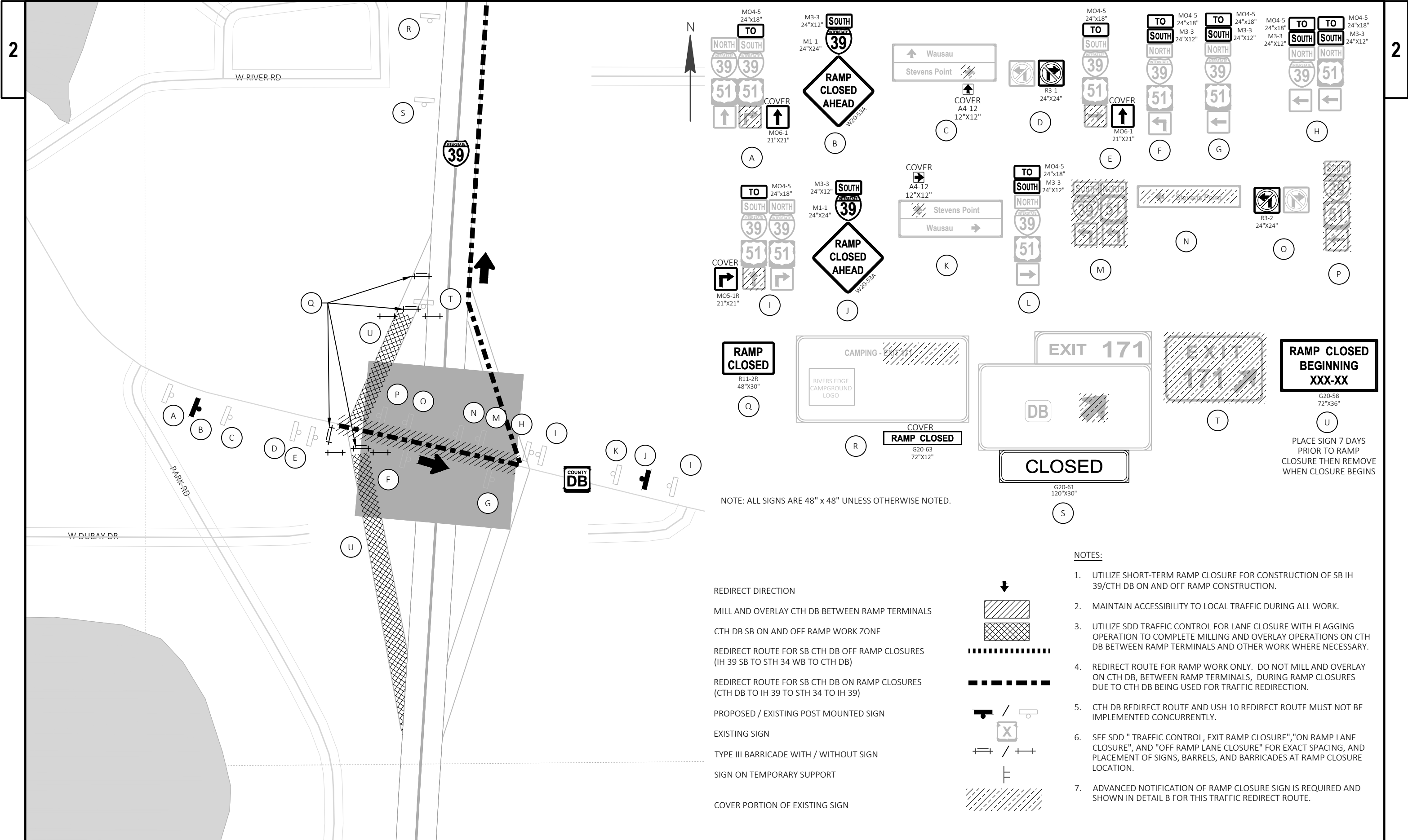
PROPOSED / EXISTING POST MOUNTED SIGN

EXISTING SIGN

TYPE III BARRICADE WITH / WITHOUT SIGN

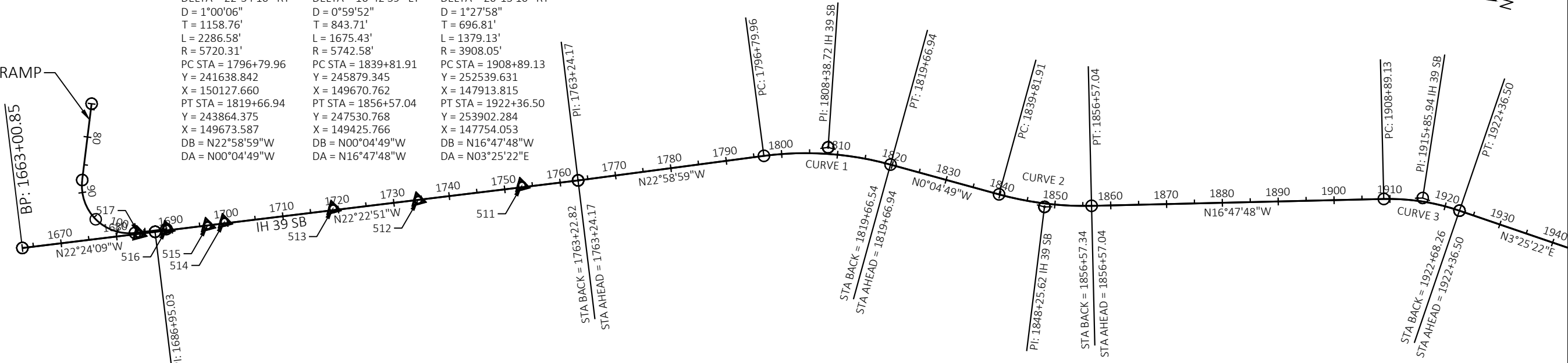
SIGN ON TEMPORARY SUPPORT





R/L USH 10 WB OFF RAMP

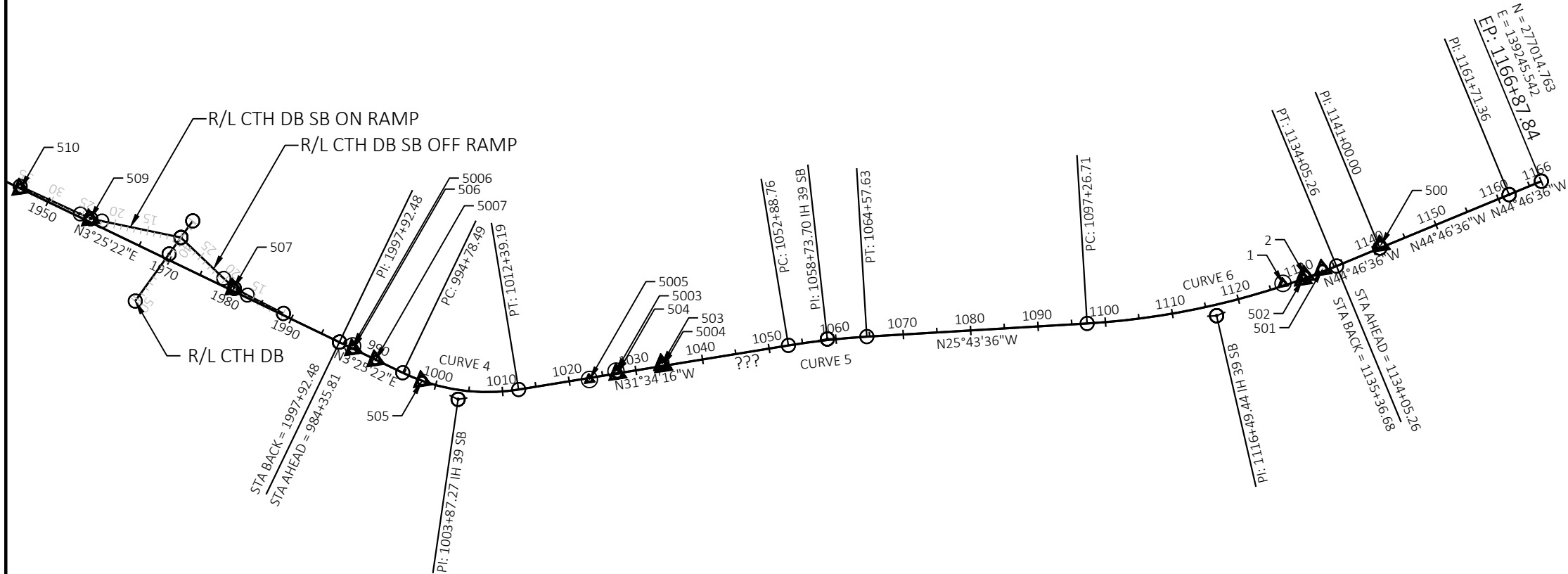
CURVE 1	CURVE 2	CURVE 3
PI STA = 1808+38.72	PI STA = 1848+25.62	PI STA = 1915+85.94
Y = 242705.618	Y = 246723.054	Y = 253206.715
X = 149675.211	X = 149669.579	X = 147712.452
DELTA = 22°54'10" RT	DELTA = 16°42'59" LT	DELTA = 20°13'10" RT
D = 1°00'06"	D = 0°59'52"	D = 1°27'58"
T = 1158.76'	T = 843.71'	T = 696.81'
L = 2286.58'	L = 1675.43'	L = 1379.13'
R = 5720.31'	R = 5742.58'	R = 3908.05'
PC STA = 1796+79.96	PC STA = 1839+81.91	PC STA = 1908+89.13
Y = 241638.842	Y = 245879.345	Y = 252539.631
X = 150127.660	X = 149670.762	X = 147913.815
PT STA = 1819+66.94	PT STA = 1856+57.04	PT STA = 1922+36.50
Y = 243864.375	Y = 247530.768	Y = 253902.284
X = 149673.587	X = 149425.766	X = 147754.053
DB = N22°58'59"W	DB = N00°04'49"W	DB = N16°47'48"W
DA = N00°04'49"W	DA = N16°47'48"W	DA = N03°25'22"E



R/L CTH DB SB ON RAMP

R/L CTH DB SB OFF RAMP

R/L CTH DB



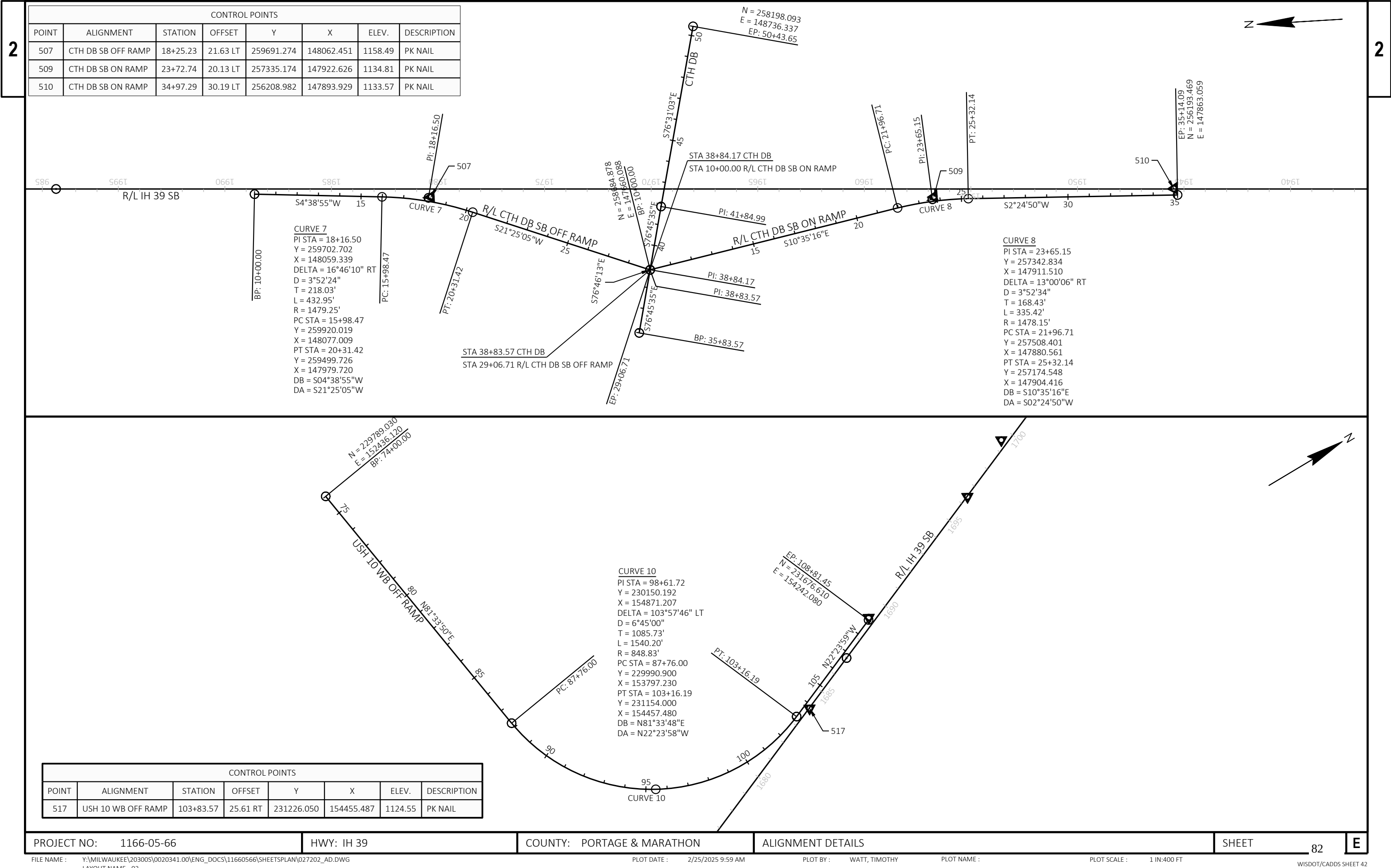
CURVE 4	CURVE 5	CURVE 6
PI STA = 1003+87.27	PI STA = 1058+73.70	PI STA = 1116+49.44
Y = 263392.766	Y = 268115.601	Y = 273319.727
X = 148321.662	X = 145419.439	X = 142911.874
DELTA = 34°59'38" LT	DELTA = 5°50'40" RT	DELTA = 19°03'00" LT
D = 1°59'15"	D = 0°30'00"	D = 0°30'00"
T = 908.77'	T = 584.95'	T = 1922.73'
L = 1760.70'	L = 1168.88'	L = 3809.97'
R = 2882.81'	R = 11459.15'	R = 11459.15'
PC STA = 994+78.49	PC STA = 1052+88.76	PC STA = 1097+26.71
Y = 262485.613	Y = 267617.233	Y = 271587.587
X = 148267.407	X = 145725.690	X = 143746.491
PT STA = 1012+39.19	PT STA = 1064+57.63	PT STA = 1134+05.26
Y = 264167.034	Y = 268642.563	Y = 274684.595
X = 147845.868	X = 145165.526	X = 141557.609
DB = N03°25'22"E	DB = N31°34'16"W	DB = N25°43'36"W
DA = N31°34'16"W	DA = N25°43'36"W	DA = N44°46'36"W

CONTROL POINTS						
POINT	STATION	OFFSET	Y	X	ELEV.	DESCRIPTION
1	1127+01.82	35.08 LT	274048.250	142096.906	1130.33	MON1
2	1130+52.03	33.10 LT	274311.151	141867.133	1126.48	CP2
500	1141+28.13	32.36 LT	275174.940	141025.488	1127.41	PK NAIL
501	1133+22.21	30.85 LT	274509.630	141684.936	1125.69	PK NAIL
502	1129+97.93	4.32 RT	274296.279	141931.150	1127.28	PK NAIL
503	1033+97.40	30.06 LT	265990.080	146690.314	1134.36	PK NAIL

CONTROL POINTS						
POINT	STATION	OFFSET	Y	X	ELEV.	DESCRIPTION
504	1027+19.67	4.87 RT	265430.939	147074.898	1131.40	PK NAIL
505	997+86.93	1.98 RT	262793.986	148271.308	1129.50	PK NAIL
506	986+61.50	3.64 RT	261669.865	148222.264	1131.90	PK NAIL
507	1980+33.58	37.76 LT	259691.274	148062.451	1158.49	PK NAIL
509	1956+73.33	36.68 LT	257335.174	147922.626	1134.81	PK NAIL
510	1945+47.43	1.91 RT	256208.982	147893.929	1133.57	PK NAIL

CONTROL POINTS						
POINT	STATION	OFFSET	Y	X	ELEV.	DESCRIPTION
511	1753+12.70	29.99 LT	237603.989	151794.842	1105.64	PK NAIL
512	1734+38.07	1.97 RT	235882.728	152538.177	1103.25	PK NAIL
513	1719+07.87	31.41 LT	234455.082	153089.954	1107.48	PK NAIL
514	1699+48.89	29.49 LT	232644.394	153837.626	1115.10	PK NAIL
515	1696+41.01	1.99 RT	232371.692	153983.957	1116.50	PK NAIL
516	1689+09.37	30.03 LT	231682.974	154232.932	1121.20	PK NAIL

CONTROL POINTS						
POINT	STATION	OFFSET	Y	X	ELEV.	DESCRIPTION
517	1684+02.12	1.67 RT	231226.050	154455.487	1124.55	PK NAIL
5003	1027+05.79	34.97 LT	265398.261	147048.223	1134.05	MON3
5004	1034+07.89	3.28 RT	266016.471	146713.225	1134.59	CP4
5005	1022+98.71	23.11 RT	265081.836	147310.843	1126.65	MON5 DOT
5006	986+36.71	35.23 LT	261647.436	148181.984	1134.70	MON6
5007	990+30.89	8.87 RT	262038.276	148249.542	1128.98	CP7



CONTROL POINTS							
POINT	ALIGNMENT	STATION	OFFSET	Y	X	ELEV.	DESCRIPTION
507	CTH DB SB OFF RAMP	18+25.23	21.63 LT	259691.274	148062.451	1158.49	PK NAIL
509	CTH DB SB ON RAMP	23+72.74	20.13 LT	257335.174	147922.626	1134.81	PK NAIL
510	CTH DB SB ON RAMP	34+97.29	30.19 LT	256208.982	147893.929	1133.57	PK NAIL

CURVE 7
PI STA = 18+16.50
Y = 259702.702
X = 148059.339
DELTA = 16°46'10" RT
D = 3°52'24"
T = 218.03'
L = 432.95'
R = 1479.25'
PC STA = 15+98.47
Y = 259920.019
X = 148077.009
PT STA = 20+31.42
Y = 259499.726
X = 147979.720
DB = S04°38'55"W
DA = S21°25'05"W

CURVE 8
PI STA = 23+65.15
Y = 257342.834
X = 147911.510
DELTA = 13°00'06" RT
D = 3°52'34"
T = 168.43'
L = 335.42'
R = 1478.15'
PC STA = 21+96.71
Y = 257508.401
X = 147880.561
PT STA = 25+32.14
Y = 257174.548
X = 147904.416
DB = S10°35'16"E
DA = S02°24'50"W

CURVE 10
PI STA = 98+61.72
Y = 230150.192
X = 154871.207
DELTA = 103°57'46" LT
D = 6°45'00"
T = 1085.73'
L = 1540.20'
R = 848.83'
PC STA = 87+76.00
Y = 229990.900
X = 153797.230
PT STA = 103+16.19
Y = 231154.000
X = 154457.480
DB = N81°33'48"E
DA = N22°23'58"W

CONTROL POINTS							
POINT	ALIGNMENT	STATION	OFFSET	Y	X	ELEV.	DESCRIPTION
517	USH 10 WB OFF RAMP	103+83.57	25.61 RT	231226.050	154455.487	1124.55	PK NAIL

Estimate Of Quantities

1166-05-66

Line	Item	Item Description	Unit	Total	Qty
0002	204.0100	Removing Concrete Pavement	SY	281.000	281.000
0004	204.0115	Removing Asphaltic Surface Butt Joints	SY	770.000	770.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	70,468.000	70,468.000
0008	204.0150	Removing Curb & Gutter	LF	556.000	556.000
0010	204.0165	Removing Guardrail	LF	1,878.000	1,878.000
0012	204.0170	Removing Fence	LF	15.000	15.000
0014	204.0180	Removing Delineators and Markers	EACH	138.000	138.000
0016	204.0190	Removing Surface Drains	EACH	1.000	1.000
0018	204.0220	Removing Inlets	EACH	2.000	2.000
0020	204.0275	Closing Culvert Pipes	EACH	2.000	2.000
0022	204.9060.S	Removing (item description) 01. Removing Apron Endwalls Reinforced Concrete 12-Inch	EACH	2.000	2.000
0024	204.9060.S	Removing (item description) 02. Removing Apron Endwalls Steel 24-Inch	EACH	1.000	1.000
0026	204.9060.S	Removing (item description) 03. Removing Apron Endwalls Steel 30-Inch	EACH	1.000	1.000
0028	204.9060.S	Removing (item description) 04. Removing Apron Endwalls Steel 48-Inch	EACH	2.000	2.000
0030	204.9060.S	Removing (item description) 05. Removing Apron Endwalls Steel 60-Inch	EACH	3.000	3.000
0032	204.9090.S	Removing (item description) 01. Removing Fence Reinforced Chain Link	LF	6,039.000	6,039.000
0034	205.0100	Excavation Common	CY	2,149.000	2,149.000
0036	208.0100	Borrow	CY	130.000	130.000
0038	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	19.000	19.000
0040	213.0100	Finishing Roadway (project) 01. 1166-05-66	EACH	1.000	1.000
0042	305.0110	Base Aggregate Dense 3/4-Inch	TON	5,792.000	5,792.000
0044	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,513.000	1,513.000
0046	415.0090	Concrete Pavement 9-Inch	SY	1,143.000	1,143.000
0048	415.0110	Concrete Pavement 11-Inch	SY	806.000	806.000
0050	415.0410	Concrete Pavement Approach Slab	SY	183.000	183.000
0052	415.6000.S	Rout and Seal	LF	47,868.000	47,868.000
0054	416.0610	Drilled Tie Bars	EACH	1,224.000	1,224.000
0056	416.0620	Drilled Dowel Bars	EACH	5,015.000	5,015.000
0058	416.1710	Concrete Pavement Repair	SY	1,480.000	1,480.000
0060	416.1720	Concrete Pavement Replacement	SY	1,972.000	1,972.000
0062	420.1000	Continuous Diamond Grinding Concrete Pavement	SY	6,603.000	6,603.000
0064	450.4000	HMA Cold Weather Paving	TON	1,500.000	1,500.000
0066	455.0605	Tack Coat	GAL	4,996.000	4,996.000
0068	460.2000	Incentive Density HMA Pavement	DOL	5,460.000	5,460.000
0070	460.6224	HMA Pavement 4 MT 58-28 S	TON	8,265.000	8,265.000
0072	465.0105	Asphaltic Surface	TON	70.000	70.000
0074	465.0125	Asphaltic Surface Temporary	TON	260.000	260.000
0076	465.0315	Asphaltic Flumes	SY	36.000	36.000
0078	465.0510	Asphaltic Rumble Strips, Shoulder Divided Roadway	LF	47,200.000	47,200.000
0080	520.1012	Apron Endwalls for Culvert Pipe 12-Inch	EACH	2.000	2.000
0082	521.1012	Apron Endwalls for Culvert Pipe Steel 12-Inch	EACH	2.000	2.000
0084	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	1.000	1.000
0086	521.1030	Apron Endwalls for Culvert Pipe Steel 30-Inch	EACH	1.000	1.000
0088	521.1048	Apron Endwalls for Culvert Pipe Steel 48-Inch	EACH	2.000	2.000
0090	521.1060	Apron Endwalls for Culvert Pipe Steel 60-Inch	EACH	3.000	3.000
0092	521.5112	Culvert Pipe Corrugated Steel Polymer Coated 12-Inch	LF	78.000	78.000
0094	524.0118	Culvert Pipe Salvaged 18-Inch	LF	32.000	32.000
0096	524.0618	Apron Endwalls for Culvert Pipe Salvaged 18-Inch	EACH	2.000	2.000

Estimate Of Quantities

1166-05-66

Line	Item	Item Description	Unit	Total	Qty
0098	601.0413	Concrete Curb & Gutter 6-Inch Sloped 30-Inch Type G	LF	513.000	513.000
0100	601.0588	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBT	LF	142.000	142.000
0102	601.0590	Concrete Curb & Gutter 4-Inch Sloped 36-Inch Type TBTT	LF	20.000	20.000
0104	602.3010	Concrete Surface Drains	CY	2.000	2.000
0106	602.3210	Concrete Rumble Strips, Shoulder Divided Roadway	LF	1,300.000	1,300.000
0108	606.0200	Riprap Medium	CY	0.900	0.900
0110	611.0654	Inlet Covers Type V	EACH	2.000	2.000
0112	611.3220	Inlets 2x2-FT	EACH	2.000	2.000
0114	614.0010	Barrier System Grading Shaping Finishing	EACH	6.000	6.000
0116	614.2300	MGS Guardrail 3	LF	1,287.500	1,287.500
0118	614.2500	MGS Thrie Beam Transition	LF	236.400	236.400
0120	614.2610	MGS Guardrail Terminal EAT	EACH	6.000	6.000
0122	616.0100	Fence Woven Wire (height) 01. 4-FT	LF	6,586.000	6,586.000
0124	619.1000	Mobilization	EACH	1.000	1.000
0126	620.0300	Concrete Median Sloped Nose	SF	8.000	8.000
0128	625.0100	Topsoil	SY	1,167.000	1,167.000
0130	628.1905	Mobilizations Erosion Control	EACH	6.000	6.000
0132	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0134	628.2006	Erosion Mat Urban Class I Type A	SY	1,688.000	1,688.000
0136	628.2008	Erosion Mat Urban Class I Type B	SY	3,270.000	3,270.000
0138	628.7005	Inlet Protection Type A	EACH	9.000	9.000
0140	628.7504	Temporary Ditch Checks	LF	90.000	90.000
0142	628.7570	Rock Bags	EACH	340.000	340.000
0144	629.0210	Fertilizer Type B	CWT	0.900	0.900
0146	630.0130	Seeding Mixture No. 30	LB	52.600	52.600
0148	630.0500	Seed Water	MGAL	26.200	26.200
0150	633.0100	Delineator Posts Steel	EACH	138.000	138.000
0152	633.0500	Delineator Reflectors	EACH	138.000	138.000
0154	633.5200	Markers Culvert End	EACH	8.000	8.000
0156	642.5001	Field Office Type B	EACH	1.000	1.000
0158	643.0300	Traffic Control Drums	DAY	63,897.000	63,897.000
0160	643.0370.S	Digital Speed Reduction System (DSRS)	DAY	130.000	130.000
0162	643.0420	Traffic Control Barricades Type III	DAY	3,349.000	3,349.000
0164	643.0705	Traffic Control Warning Lights Type A	DAY	6,586.000	6,586.000
0166	643.0715	Traffic Control Warning Lights Type C	DAY	1,760.000	1,760.000
0168	643.0810	Traffic Control Connected Arrow Boards	DAY	130.000	130.000
0170	643.0900	Traffic Control Signs	DAY	5,114.000	5,114.000
0172	643.0920	Traffic Control Covering Signs Type II	EACH	26.000	26.000
0174	643.1050	Traffic Control Signs PCMS	DAY	72.000	72.000
0176	643.1100.S	Dynamic Late Merge System	DAY	130.000	130.000
0178	643.1220	Traffic Control Connected Work Zone Start and End Location Markers	DAY	130.000	130.000
0180	643.3180	Temporary Marking Line Removable Tape 6-Inch	LF	9,600.000	9,600.000
0182	643.5000	Traffic Control	EACH	1.000	1.000
0184	645.0120	Geotextile Type HR	SY	12.000	12.000
0186	646.2025	Marking Line Grooved Black Epoxy 6-Inch	LF	21,344.000	21,344.000
0188	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	191,386.000	191,386.000
0190	646.2050	Marking Line Grooved Permanent Tape 6-Inch	LF	21,344.000	21,344.000
0192	646.4050	Marking Line Grooved Permanent Tape 10-Inch	LF	9,005.000	9,005.000
0194	646.6120	Marking Stop Line Epoxy 18-Inch	LF	131.000	131.000

Estimate Of Quantities

1166-05-66

Line	Item	Item Description	Unit	Total	Qty
0196	646.6466	Cold Weather Marking Epoxy 6-Inch	LF	71,621.000	71,621.000
0198	646.6470	Cold Weather Marking Epoxy 10-Inch	LF	3,265.000	3,265.000
0200	646.7220	Marking Chevron Epoxy 24-Inch	LF	811.000	811.000
0202	646.9010	Marking Removal Line Water Blasting 4-Inch	LF	53,543.000	53,543.000
0204	646.9110	Marking Removal Line Water Blasting 8-Inch	LF	569.000	569.000
0206	646.9210	Marking Removal Line Water Blasting Wide	LF	681.000	681.000
0208	650.5000	Construction Staking Base	LF	2,560.000	2,560.000
0210	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	675.000	675.000
0212	650.6000	Construction Staking Pipe Culverts	EACH	11.000	11.000
0214	650.7000	Construction Staking Concrete Pavement	LF	1,125.000	1,125.000
0216	650.8000	Construction Staking Resurfacing Reference	LF	48,320.000	48,320.000
0218	650.9911	Construction Staking Supplemental Control (project) 01. 1166-05-66	EACH	1.000	1.000
0220	650.9920	Construction Staking Slope Stakes	LF	4,435.000	4,435.000
0222	690.0150	Sawing Asphalt	LF	2,605.000	2,605.000
0224	690.0250	Sawing Concrete	LF	7,249.000	7,249.000
0226	999.2100.S	Installing and Maintaining Climbing Turtle Exclusion Fence	LF	3,579.000	3,579.000
0228	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
0230	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,260.000	1,260.000
0232	SPV.0060	Special 01. Grading, Shaping, and Finishing Culvert Pipes and Apron Endwalls	EACH	11.000	11.000
0234	SPV.0060	Special 02. Removing Raised Pavement Markers and Filling Voids	EACH	474.000	474.000

3

3

DRAINAGE REMOVAL ITEMS									
		204.0190	204.0220	204.0275	204.9060.S.01	204.9060.S.02	204.9060.S.03	204.9060.S.04	204.9060.S.05
REMOVING APRON ENDWALLS									
REMOVING REINFORCED CONCRETE 12-INCH									
REMOVING APRON ENDWALLS STEEL 24-INCH									
REMOVING APRON ENDWALLS STEEL 30-INCH									
REMOVING APRON ENDWALLS STEEL 48-INCH									
REMOVING APRON ENDWALLS STEEL 60-INCH									
TYPE	LOCATION	REMOVING SURFACE DRAINS EACH	REMOVING INLETS EACH	CLOSING CULVERT PIPES EACH	REINFORCED CONCRETE 12-INCH EACH	APRON ENDWALLS STEEL 24-INCH EACH	APRON ENDWALLS STEEL 30-INCH EACH	APRON ENDWALLS STEEL 48-INCH EACH	APRON ENDWALLS STEEL 60-INCH EACH
STRUCTURE	B-49-58	1	1	1	1	-	-	-	-
STRUCTURE	B-37-141	-	-	-	-	-	-	-	-
STRUCTURE	B-37-144	-	1	1	1	-	-	-	-
CULVERT	STA 1698+00	-	-	-	-	-	-	1	-
CULVERT	STA 1707+80	-	-	-	-	1	-	-	-
CULVERT	STA 1720+20	-	-	-	-	-	-	-	1
CULVERT	STA 1735+80	-	-	-	-	-	1	-	-
CULVERT	STA 1751+70	-	-	-	-	-	-	-	1
CULVERT	STA 1751+82	-	-	-	-	-	-	-	1
CULVERT	STA 1834+00	-	-	-	-	-	-	1	-
TOTAL 0010		1	2	2	2	1	1	2	3

EARTHWORK			
	205.0100 EXCAVATION COMMON CY	208.0100 BORROW CY	
LOCATION			REMARKS
IH 39 MAINLINE & USH 10 WB RAMP PAVEMENT REMOVAL	1,210	-	ADJACENT SHOULDERS AND RUBILIZED CONCRETE PAVEMENT INCLUDED IN EXCAVATION COMMON QUANTITY
TEMPORARY WIDENING PREPARATION (SEE TEMPORARY WIDENING CROSSS SECTIONS AND EARTHWORK TABLES)	354	-	REMOVE EXISTING AGGREGATE SHOULDER AND EXCAVATE TO DEPTH REQUIRED FOR TEMPORARY WIDENING PAVEMENT STRUCTURE OF 5" ASPHALT OVER 8" BAD 1 1/4-INCH
TEMPORARY WIDENING REMOVAL	450	-	SAW ASPHALT TO PROPOSED SHOULDER WIDTH (4-FT), REMOVE EXCESS ASPHALT AND BAD MATERIAL PLACED FOR TEMPORARY WIDENING
TEMPORARY WIDENING RESTORATION FINAL	-	130	REUSE AGGREGATE SHOULDER MATERIAL TO SHAPE FINAL SHOULDERS AFTER REMOVING. PLACE BORROW FROM AGGREGATE SHOULDER TO MATCH EXISTING MEDIAN AT 6:1 OR FLATTER SLOPE
DSLT TRAILER BASE REMOVAL	135	-	REMOVE AS DIRECTED BY THE ENGINEER AND FOR STABILIZING TRAFFIC CONTROL TRAILERS WHERE DIRECTED
TOTAL 0010	2,149	130	

BASE AGGREGATE ITEMS					
305.0110 BASE AGGREGATE DENSE 3/4-INCH					
305.0120 BASE AGGREGATE DENSE 1 1/4-INCH					
STA	TO	STA	LOCATION	TON	TON
BEGIN PROJECT	-	END PROJECT	IH 39 SB SHOULDERS	4,693	-
1678+20	-	1692+51	TEMPORARY WIDENING	80	600
1680+57	-	1681+07	HMA TO CONCRETE TRANSITION	-	120
1680+57	-	1683+97	IH 39 SB INSIDE SHOULDER REPLACEMENT	20	60
1681+10	-	1684+00	IH 39 SB LANE 1 AND 2	-	294
101+00	-	108+82	USH 10 RAMP SHOULDER	60	40
	B-49-58		SHOULDER WIDENING FOR GUARDRAIL	-	23
	B-37-141		SHOULDER WIDENING FOR GUARDRAIL	-	23
	B-37-144		SHOULDER WIDENING FOR GUARDRAIL	-	24
BEGIN PROJECT	-	END PROJECT	UNDISTRIBUTED / DSLT TRAILER BASE	939	329
TOTAL 0010				5,792	1,513

ALL QUANTITIES SHOWN ON THIS PAGE ARE CATEGORY 0010

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW	COMMENT
			CUT (2)	EBS EXCAVATION (3)				FACTOR				
								1.20				
DIVISION 1												
EWK_TEMPWIDENING_IH39	1678+20.00/1692+51.43		354	0	57	297	0	0	297			
DIVISION 1 SUBTOTAL			354	0	57	297	0	0	297	297	0	
GRAND TOTAL			354	0	57	297	0	0	297	297	0	
TOTAL COMMON EXC			354									

NOTES:

(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100

(2) SALVAGED/UNSUALE PAVEMENT MATERIAL IS INCLUDED IN CUT.

(3) EBS EXCAVATION TO BE BACKFILLED WITH SELECT BORROW MATERIAL. NOTE: THIS IS DESIGNERS CHOICE, CAN BE BACKFILLED WITH BORROW, OR CUT AS WELL.

(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL

(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUALE PAVEMENT MATERIAL

(13) EXPANDED FILL FACTOR = 1.20

EXPANDED FILL = (UNEXPANDED FILL) * FILL FACTOR

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

(15) FACTORS USED TO COMPUTE ANTICIPATED WASTE AND THE COMPUTED WASTE VOLUME IDENTIFIED ARE FOR GENERAL INFORMATION ONLY.

ALL QUANTITIES SHOWN ON THIS PAGE ARE CATEGORY 0010

CONCRETE ITEMS										
	204.0100	415.0090	415.0110	415.0410	416.0610	416.0620	416.1710	416.1720	420.1000	602.3210
	REMOVING CONCRETE PAVEMENT	CONCRETE PAVEMENT 9-INCH	CONCRETE PAVEMENT 11-INCH	CONCRETE PAVEMENT APPROACH SLAB	DRILLED TIE BARS	DRILLED DOWEL BARS	CONCRETE PAVEMENT REPAIR	CONCRETE PAVEMENT REPLACEMENT	CONTINUOUS DIAMOND GRINDING CONCRETE PAVEMENT	RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY
LOCATION	SY	SY	SY	SY	EACH	EACH	SY	SY	SY	LF
IH 39 SB	-	-	806	-	1,074	4,261	1,230	1,186	5052	1,000
USH 10 WB RAMP	-	1,045	-	-	-	-	-	-	-	-
CTH DB OFF RAMP	-	-	-	-	-	32	-	786	921	-
B-49-58	134	47	-	87	-	48	-	-	-	-
B-37-141	70	24	-	46	-	-	-	-	-	-
B-37-144	77	27	-	50	-	24	-	-	-	-
OUTSIDE SHOULDER STA 1690+00 TO 1693+00	-	-	-	-	-	-	-	-	-	300
PROJECT WIDE UNDISTRIBUTED	-	-	-	-	150	650	250	-	630	-
TOTAL 0010	281	1,143	806	183	1,224	5,015	1,480	1,972	6,603	1,300

ASPHALT ITEMS														
				204.0115	204.0120	211.0400	415.6000.S	450.4000	455.0605	460.6224	465.0105	465.0125	465.0510	690.0150
				REMOVING ASPHALTIC SURFACE BUTT JOINTS	REMOVING ASPHALTIC SURFACE MILLING	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS	ROUT AND SEAL	HMA COLD WEATHER PAVING	TACK COAT	HMA PAVEMENT 4 MT 58-28 S	ASPHALTIC SURFACE	ASPHALTIC SURFACE TEMPORARY	ASPHALTIC RUMBLE STRIPS, SHOULDER DIVIDED ROADWAY	SAWING ASPHALT
STATION	TO	STATION	LOCATION	SY	SY	STA	LF	TON	GAL	TON	TON	TON	LF	LF
BEGIN PROJECT	-	END PROJECT	IH 39 SB - SHOULDERS	190	64,922	-	47,118	1,500	4,545	7,467	-	-	47,200	-
38+26.53	-	47+92.52	CTH DB	200	3,408	-	-	-	239	392	-	-	-	535
BEGIN PROJECT	-	END PROJECT	MAINTENANCE TURN-AROUNDS	370	1,904	-	-	-	134	219	-	-	-	-
1680+57	-	1681+07	HMA TO CONCRETE TRANSITION	-	-	-	-	-	10	-	70	-	-	60
1680+57	-	1683+97	IH 39 SB INSIDE SHOULDER REPLACEMENT	-	-	5	-	-	11	34	-	-	-	-
1678+20	-	1692+51	TEMPORARY WIDENING	-	-	-	-	-	-	-	-	260	-	1,435
101+00	-	108+82	USH 10 RAMP SHOULDER	5	-	8	750	-	31	101	-	-	-	-
1681+00	-	1682+50	USH 10 / IH 39 SB GORE	5	234	-	-	-	17	27	-	-	-	-
	B-49-58		SHOULDER WIDENING FOR GUARDRAIL	-	-	2	-	-	3	8	-	-	-	200
	B-37-141		SHOULDER WIDENING FOR GUARDRAIL	-	-	2	-	-	3	8	-	-	-	175
	B-37-144		SHOULDER WIDENING FOR GUARDRAIL	-	-	2	-	-	3	9	-	-	-	200
TOTAL 0010				770	70,468	19	47,868	1,500	4,996	8,265	70	260	47,200	2,605

ALL QUANTITIES SHOWN ON THIS PAGE ARE CATEGORY 0010

CURB & GUTTER ITEMS						
	204.0150	465.0315	601.0413	601.0588	601.0590	620.0300
	REMOVING CURB & GUTTER	ASPHALTIC FLUMES	CONCRETE CURB & GUTTER 6-INCH SLOPED 30-INCH TYPE G	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBT	CONCRETE CURB & GUTTER 4-INCH SLOPED 36-INCH TYPE TBTT	CONCRETE MEDIAN SLOPED NOSE
LOCATION	LF	SY	LF	LF	LF	SF
B-49-58	20	-	-	100	8	-
B-37-141	-	-	-	-	-	-
B-37-144	10	-	-	42	12	-
CTH DB	526	36	513	-	-	8
TOTAL 0010	556	36	513	142	20	8

STRUCTURE DRAINAGE ITEMS								
	520.1012	521.1012	521.5112	602.3010	606.0200	611.0654	611.3220	645.0120
	APRON ENDWALLS FOR CULVERT PIPE 12-INCH	APRON ENDWALLS FOR CULVERT PIPE STEEL 12-INCH	CULVERT PIPE CORRUGATED STEEL POLYMER COATED 12-INCH	CONCRETE SURFACE DRAINS	RIPRAP MEDIUM	INLET COVERS TYPE V	INLETS 2X2-FT	GEOTEXTILE TYPE HR
LOCATION	EACH	EACH	LF	CY	CY	EACH	EACH	SY
B-49-58	1	1	44	2	0.6	1	1	6
B-37-141	-	-	-	-	-	-	-	-
B-37-144	1	1	34	-	0.3	1	1	6
TOTAL 0010	2	2	78	2	0.9	2	2	12

CULVERT REPAIR ITEMS								
		521.1024	521.1030	521.1048	521.1060	524.0118	524.0618	633.5200
		APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH	APRON ENDWALLS FOR CULVERT PIPE STEEL 30-INCH	APRON ENDWALLS FOR CULVERT PIPE STEEL 48-INCH	APRON ENDWALLS FOR CULVERT PIPE STEEL 60-INCH	CULVERT PIPE SALVAGED 18-INCH	APRON ENDWALLS FOR CULVERT PIPE SALVAGED 18-INCH	MARKERS CULVERT END
TYPE	LOCATION	EACH	EACH	EACH	EACH	LF	EACH	EACH
CULVERT	STA 1698+00	-	-	1	-	-	-	1
CULVERT	STA 1707+80	1	-	-	-	-	-	1
CULVERT	STA 1720+20	-	-	-	1	-	-	1
CULVERT	STA 1735+80	-	1	-	-	-	-	1
CULVERT	STA 1751+70	-	-	-	1	-	-	1
CULVERT	STA 1751+82	-	-	-	1	-	-	-
CULVERT	STA 1834+00	-	-	1	-	-	-	1
CULVERT	STA 1944+55	-	-	-	-	16	1	1
CULVERT	STA 1971+02	-	-	-	-	16	1	1
TOTAL 0010		1	1	2	3	32	2	8

ALL QUANTITIES SHOWN ON THIS PAGE ARE CATEGORY 0010

CULVERT MISC ITEMS		
		* SPV.0060.01
		GRADING, SHAPING, AND FINISHING CULVERT PIPES AND APRON ENDWALLS
STATION	CULV ID OR LOCATION	EACH
-	B-49-58	1
-	B-37-144	1
STA 1698+00	49039007629.00	1
STA 1707+80	49039007631.00	1
STA 1720+20	49039007633.00	1
STA 1735+80	49039008881.00	1
STA 1751+70	49039007636.00	1
STA 1751+82	49039007637.00	1
STA 1834+00	49039007649.00	1
STA 1944+55	49039008959.00	1
STA 1971+02	49039007665.00	1
TOTAL 0010		11

* SEE GRADING, SHAPING AND FINISHING CULVERT PIPE AND ENDWALLS TABLE

GRADING, SHAPING AND FINISHING CULVERT PIPES AND APRON ENDWALLS									
	*	*	*	*		*	*	*	*
	625.0100		628.0100	625.0100	628.2006	629.0210	630.0120	630.0160	630.0500
	EXCAVATION		BORROW	TOPSOIL	EROSION MAT		SEEDING	SEEDING	
	COMMON				URBAN	FERTILIZER	MIXTURE	MIXTURE	SEED
	**	FILL	**	**	CLASS I	TYPE B	NO. 20	NO. 60	WATER
	(CY)	(CY)	(CY)	(SY)	TYPE A	**			**
LOCATION	(CY)	(CY)	(CY)	(SY)	(SY)	(CWT)	(LB)	(LB)	(MGAL)
B-49-58 DROP INLET ENDWALL & PIPE	14	-	-	58	58	0.1	2.6	-	1.3
B-37-144 DROP INLET ENDWALL & PIPE	11	-	-	36	36	0.1	1.7	-	0.8
STA 1698+00	-	-	-	45	45	0.1	2.0	-	1.0
STA 1707+80 (WETLAND)	-	-	-	45	45	-	-	0.6	1.0
STA 1720+20	-	-	-	45	45	0.1	2.0	-	1.0
STA 1735+80 (WETLAND)	-	-	-	45	45	-	-	0.6	1.0
STA 1751+70 (WETLAND)	-	-	-	34	34	-	-	0.5	0.8
STA 1751+82 (WETLAND)	-	-	-	34	34	-	-	0.5	0.8
STA 1834+00	-	5	5	45	45	0.1	2.0	-	1.0
STA 1944+55 (WETLAND)	10	-	-	67	67	-	-	0.9	1.5
STA 1971+02 (WETLAND)	10	-	-	67	67	-	-	-	1.5
TOTALS	45	5	5	521	521	0.5	10.3	3.1	11.7

* NON-BID ITEM, ITEMS AND QUANTITIES LISTED FOR BID INFORMATION ONLY, ITEMS INCIDENTAL TO GRADING, SHAPING AND FINISHING CULVERT PIPES AND APRON ENDWALLS.

** ADDITIONAL QUANTITY SHOWN ELSEWHERE

MGS GUARDRAIL ITEMS					
	204.0165	614.0010	614.2300	614.2500	614.2610
		BARRIER SYSTEM			
	REMOVING	GRADING	MGS GUARDRAIL	MGS THRIE BEAM	MGS GUARDRAIL
	GUARDRAIL	FINISHING	3	TRANSITION	TERMINAL EAT
	LF	EACH	LF	LF	EACH
B-49-58	607	2	437.5	78.80	2
B-37-141	530	2	425.0	78.80	2
B-37-144	741	2	425.0	78.80	2
TOTAL 0010	1,878	6	1,287.5	236.4	6

BARRIER SYSTEM GRADING SHAPING FINISHING								
	*	*	*	*		*	*	*
	625.0100		628.0100	625.0100	628.2008	629.0210	630.0130	630.0500
	EXCAVATION		BORROW	TOPSOIL	EROSION MAT		SEEDING	
	COMMON				URBAN	FERTILIZER	MIXTURE	SEED
	**	FILL	**	**	CLASS I	TYPE B	NO. 30	WATER
	(CY)	(CY)	(CY)	(SY)	TYPE B	**	**	**
LOCATION	(CY)	(CY)	(CY)	(SY)	(SY)	(CWT)	(LB)	(MGAL)
B-49-58	15	110	100	960	960	0.7	43.2	21.6
B-37-141	15	220	205	1470	1470	1.0	66.2	33.0
B-37-144	10	145	135	840	840	0.6	37.8	18.9
TOTALS	40	475	440	3,270	3,270	2.3	147.2	73.5

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

** ADDITIONAL QUANTITY SHOWN ELSEWHERE

ALL QUANTITIES SHOWN ON THIS PAGE ARE CATEGORY 0010

FENCING ITEMS

	204.0170	204.9090.S.01	616.0100.01	
	REMOVING FENCE	REINFORCED CHAIN LINK	FENCE WOVEN WIRE (4-FT)	
LOCATION	LF	LF	LF	REMARKS
B-49-58	-	927	1,075	SNOW FENCE REMOVAL NEAR DROP INLET ENDWALL
B-49-58	15	-	-	
B-37-141	-	3,484	3,731	
B-37-144	-	1,628	1,780	
TOTAL 0010	15	6,039	6,586	

RESTORATION ITEMS

	625.0100	628.2006	628.2008	629.0210	630.0130	630.0500	
	TOPSOIL	EROSION MAT	EROSION MAT	FERTILIZER TYPE B	SEEDING MIXTURE	SEED WATER	
	SY	URBAN CLASS I	URBAN CLASS I	CWT	NO. 30	MGAL	
LOCATION	SY	TYPE A	TYPE B		LB		REMARKS
MGS REPLACEMENT		-	3,270	-	-	-	SEE TABLE BARRIER GRADING, SHAPING & FINISHING TABLE FOR INCIDENTALS AND ITEM BREAKDOWN
CULVERT REPAIRS		521	-	-	-	-	SEE TABLE GRADING, SHAPING AND FINISHING CULVERT PIPES AND APRON ENDWALLS FOR INCIDENTALS AND ITEM BREAKDOWN
TEMPORARY MEDIAN WIDENING RESTORATION	967	967	-	0.7	43.6	21.7	
CTH DB C&G RESTORATION	200	200	-	0.2	9.0	4.5	
TOTAL 0010	1,167	1,688	3,270	0.9	52.6	26.2	

EROSION CONTROL ITEMS

		628.1905	628.1910	628.7005	628.7504	628.7570	999.2100.S	
		MOBILIZATIONS	MOBILIZATIONS	INLET	TEMPORARY	ROCK BAGS	INSTALLING AND	
		EROSION	EROSION	PROTECTION TYPE	DITCH CHECKS	EACH	CLIMBING TURTLE	
STATION	CULV ID OR LOCATION	CONTROL	CONTROL	A	LF		EXCLUSION FENCE	REMARKS
		EACH	EACH	EACH			LF	
STA 1698+00	49039007629.00	-	-	1	-	17	76	-
STA 1707+80	49039007631.00	-	-	1	-	-	66	WETLANDS PRESENT
STA 1720+20	49039007633.00	-	-	1	-	17	74	-
STA 1735+80	49039008881.00	-	-	1	-	17	58	WETLANDS PRESENT
STA 1751+70 & STA 1751+82	49039007636 & 49039007637	-	-	2	-	34	68	WETLANDS PRESENT
STA 1834+00	49039007649.00	-	-	1	-	17	73	-
STA 1944+55	49039008959.00	-	-	1	-	17	74	WETLANDS PRESENT
STA 1971+02	49039007665.00	-	-	1	-	17	60	WETLANDS PRESENT
-	B-49-58	-	-	-	30	68	985	-
-	B-37-141	-	-	-	20	68	1,030	-
-	B-37-144	-	-	-	40	68	1,015	-
-	PROJECT WIDE	6	3	-	-	-	-	-
TOTAL 0010		6	3	9	90	340	3,579	

ALL QUANTITIES SHOWN ON THIS PAGE ARE CATEGORY 0010

3

ALL QUANTITIES SHOWN ON THIS PAGE ARE CATEGORY 0010

TRAFFIC CONTROL ITEMS

STAGE	DAYS	643.0300	643.0420	643.0705	643.0715	643.0900			643.0920	643.1050	643.5000	REMARKS
		TRAFFIC CONTROL DRUMS DAY	TRAFFIC CONTROL BARRICADES TYPE III DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE A DAY	TRAFFIC CONTROL WARNING LIGHTS TYPE C DAY	TRAFFIC CONTROL SIGNS DAY	# SIGNS	# CYCLES	TRAFFIC CONTROL COVERING SIGNS TYPE II EACH	TRAFFIC CONTROL SIGNS PCMS DAY	TRAFFIC CONTROL EACH	
SOUTH SEGMENT 1	16	8,448	423	846	192	384	8	1	8	-	0.125	SPEED LIMIT SIGNS REMAIN COVERED DURING USE OF DSRS
SOUTH SEGMENT 2	21	11,088	555	1,110	252	504	-	-	-	42	0.125	SPEED LIMIT SIGNS REMAIN COVERED DURING USE OF DSRS
SOUTH SEGMENT 3	21	11,088	555	1,110	252	504	-	-	-	-	0.125	SPEED LIMIT SIGNS REMAIN COVERED DURING USE OF DSRS
SOUTH SEGMENT 4	16	8,448	423	846	192	384	-	-	-	-	0.125	SPEED LIMIT SIGNS REMAIN COVERED DURING USE OF DSRS
NORTH SEGMENT 1	12	5,069	254	508	144	288	6	1	6	-	0.125	SPEED LIMIT SIGNS REMAIN COVERED DURING USE OF DSRS
NORTH SEGMENT 2	15	6,336	317	634	180	360	-	-	-	30	0.125	SPEED LIMIT SIGNS REMAIN COVERED DURING USE OF DSRS
NORTH SEGMENT 3	17	7,181	360	720	204	408	-	-	-	-	0.125	SPEED LIMIT SIGNS REMAIN COVERED DURING USE OF DSRS
NORTH SEGMENT 4	12	5,069	254	508	144	288	-	-	-	-	0.125	SPEED LIMIT SIGNS REMAIN COVERED DURING USE OF DSRS
CTH DB RAMP REDIRECTION ROUTE	14	490	112	140	-	1,022	8	1	8	-	-	
USH 10 WB RAMP REDIRECTION ROUTE	14	280	56	84	-	672	2	1	2	-	-	
TEMP WIDENING CONSTRUCTION/RESTORATION	20	400	40	80	200	300	2	1	2	-	-	
TOTAL 0010		63,897	3,349	6,586	1,760	5,114			26	72	1	

DIGITAL SPEED REDUCTION SYSTEM

LOCATION	STAGE	DIGITAL SPEED LIMIT TRAILERS (DSDLT)	643.0370.S DIGITAL SPEED REDUCTION SYSTEM DAY
SOUTH SEGMENT 1	1	12	16
SOUTH SEGMENT 2	2	12	21
SOUTH SEGMENT 3	3	12	21
SOUTH SEGMENT 4	4	12	16
NORTH SEGMENT 1	1	12	12
NORTH SEGMENT 2	2	12	15
NORTH SEGMENT 3	3	12	17
NORTH SEGMENT 4	4	12	12
TOTAL 0010			130

CONNECTED TRAFFIC CONTROL DEVICES

LOCATION	STAGE	* 643.0810 CONNECTED ARROW BOARD DAY	* 643.1220 CONNECTED WORK ZONE START AND END LOCATION MARKERS DAY
SOUTH SEGMENT 1	1	16	16
SOUTH SEGMENT 2	2	21	21
SOUTH SEGMENT 3	3	21	21
SOUTH SEGMENT 4	4	16	16
NORTH SEGMENT 1	1	12	12
NORTH SEGMENT 2	2	15	15
NORTH SEGMENT 3	3	17	17
NORTH SEGMENT 4	4	12	12
TOTAL 0010		130	130

* SEE TRAFFIC CONTROL PLANS FOR SETUP LOCATIONS. SOUTHERN SEGMENT TRAFFIC CONTROL REQUIRES ADDITIONAL CONNECTED ARROW BOARDS FOR TEMPORARY MEDIAN WIDENING CONSTRUCTION

DYNAMIC LATE MERGE SYSTEM

LOCATION	STAGE	FLASHING BEACON SIGNS (FBS)	PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)	PORTABLE TRAFFIC SENSORS (PTS)	643.1100.S DYNAMIC LATE MERGE SYSTEM DAY
SOUTH SEGMENT 1	1	5	3	7	16
SOUTH SEGMENT 2	2	5	3	7	21
SOUTH SEGMENT 3	3	5	3	7	21
SOUTH SEGMENT 4	4	5	3	7	16
NORTH SEGMENT 1	1	5	3	7	12
NORTH SEGMENT 2	2	5	3	7	15
NORTH SEGMENT 3	3	5	3	7	17
NORTH SEGMENT 4	4	5	3	7	12
TOTAL 0010					130

TEMPORARY PAVEMENT MARKING

CATEGORY	LOCATION	STAGE	643.3180 TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH LF	
			WHITE	YELLOW
0010	TEMPORARY WIDENING AT USH 10 WB RAMP	2A	-	840
0010	TEMPORARY WIDENING AT USH 10 WB RAMP	3A	2,800	1,950
0010	TEMPORARY WIDENING AT USH 10 WB RAMP	4A	710	3,300
TOTAL 0010			9,600	

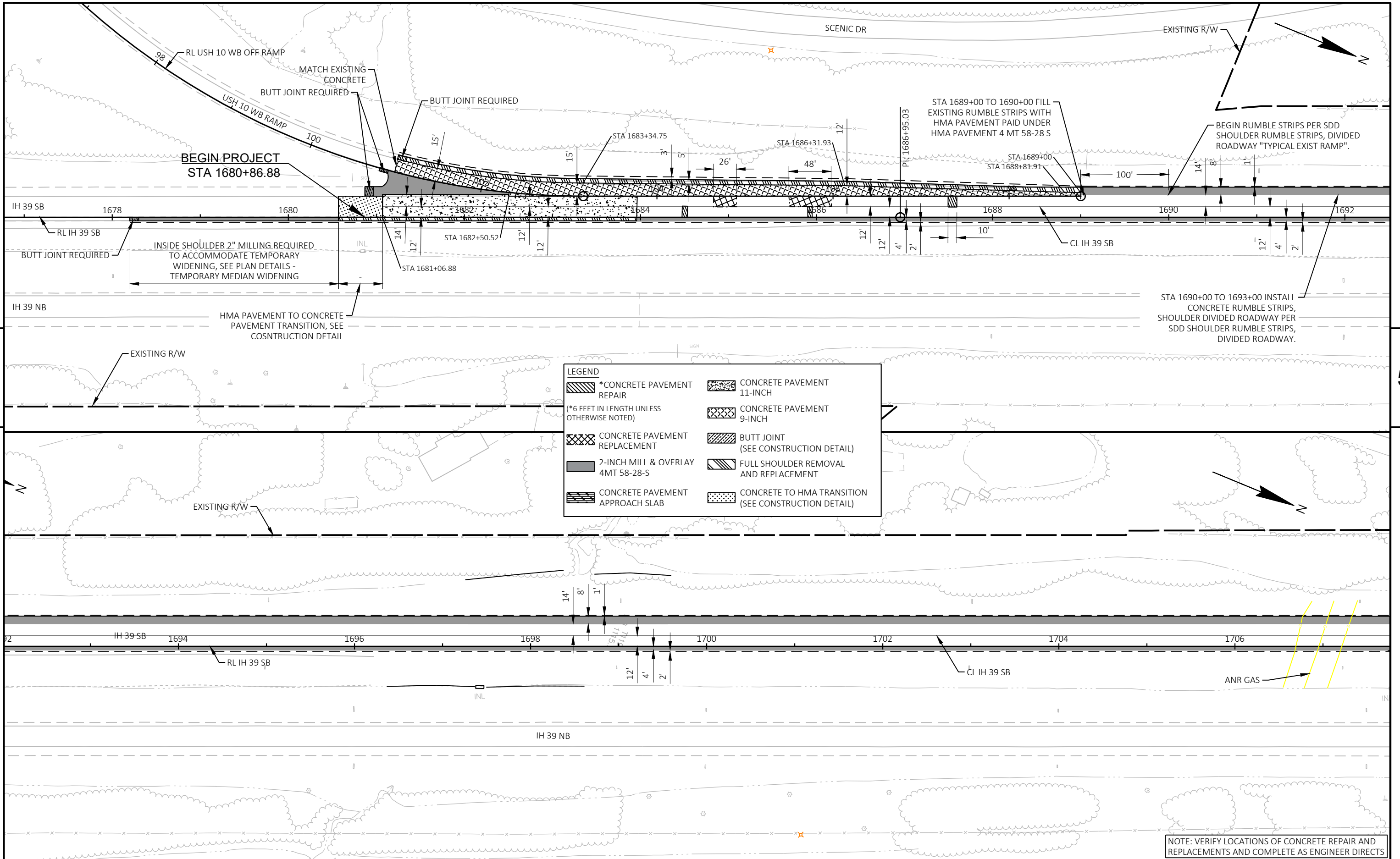
PERMANENT PAVEMENT MARKINGS														
		**			*	*	*	*	*	*	*	*	*	SPV.0060.02
		204.0180	633.0100	633.0500	646.2025	646.2040	646.2050	646.4050	646.6120	646.6466	646.6470	646.7220	646.9010	
		REMOVING DELINEATORS AND MARKERS	DELINEATOR POSTS STEEL	DELINEATOR REFLECTORS	MARKING LINE GROOVED BLACK EPOXY 6-INCH	MARKING LINE GROOVED WET REF EPOXY 6-INCH	MARKING LINE GROOVED PERMANENT TAPE 6-INCH	MARKING LINE GROOVED PERMANENT TAPE 10-INCH	MARKING STOP LINE EPOXY 18- INCH	COLD WEATHER MARKING EPOXY 6- INCH	COLD WEATHER MARKING EPOXY 10-INCH	MARKING CHEVRON EPOXY 24-INCH	MARKING REMOVAL LINE WATER BLASTING 4-INCH	REMOVING RAISED PAVEMENT MARKERS AND FILLING VOIDS
CATEGORY	LOCATION	EACH	EACH	EACH	LF	LF	LF	LF	LF	LF	LF	LF	LF	EACH
0010	IH 39 SB	118	118	118	11,900	99,500	11,900	2,200	-	61,650	2,200	-	47,520	474
0010	CTH DB Off Ramp	7	7	7	-	-	-	-	-	-	-	110	-	-
0010	CTH DB On Ramp	7	7	7	-	-	-	-	-	-	-	-	-	-
0010	USH 10 Off Ramp	6	6	6	-	-	-	-	-	-	-	117	-	-
0010	CTH DB	-	-	-	-	5,048	-	490	34	-	490	-	-	-
TOTAL 0010		138	138	138	11,900	104,548	11,900	2,690	34	61,650	2,690	227	47,520	474

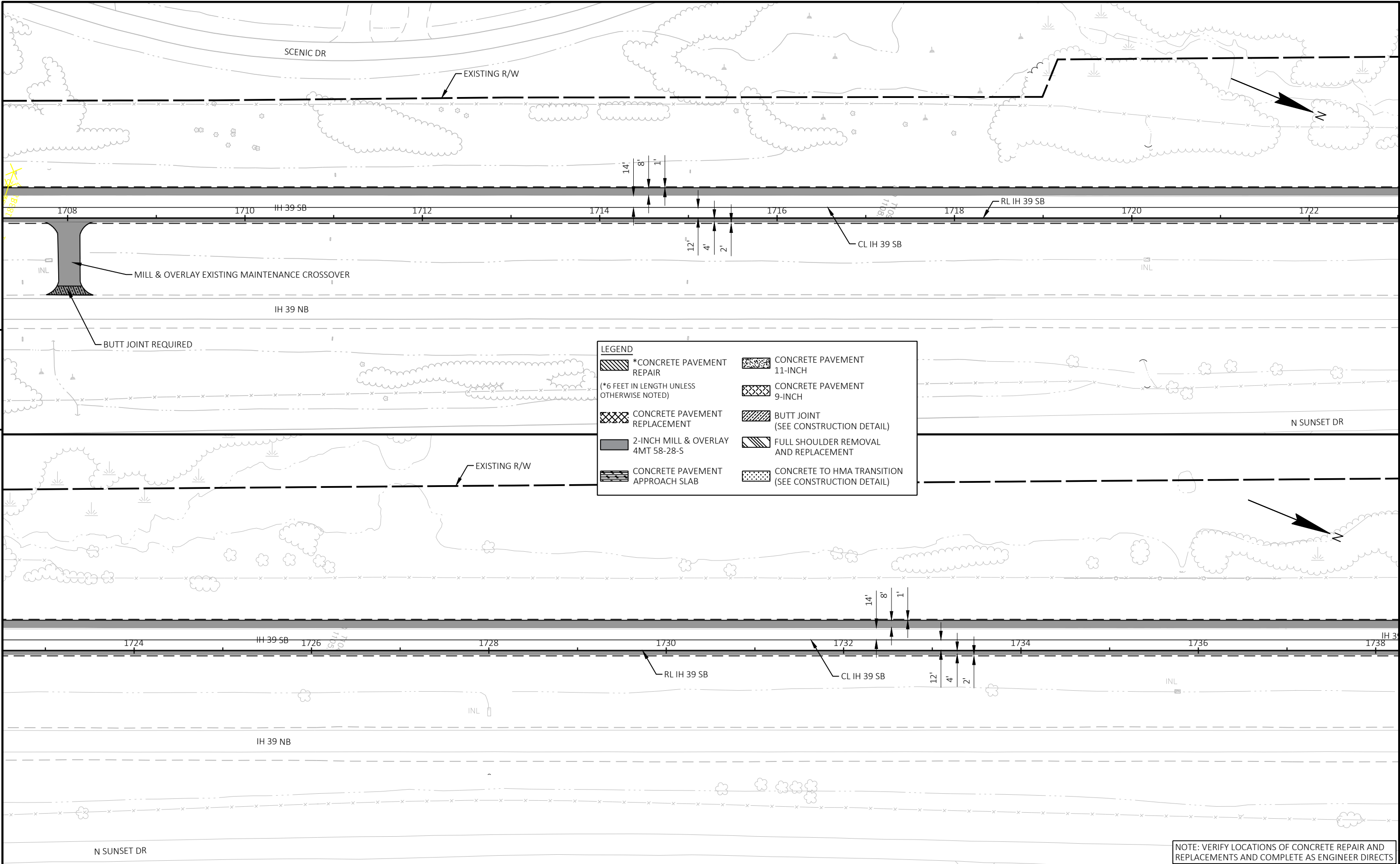
* ADDITIONAL ITEMS IN CATEGORY 0020
** LOCATED ALONG IH 39 MAINLINE CURVES AND AT RAMPS
*** MARKING REMOVALS ARE LOCATED ON CONCRETE IN LANE 2 WHERE EXISTING EDGELINE IS DOUBLE STRIPED. REMOVE ONLY CONFLICTING MARKING OUTSIDE LOCATION OF PROPOSED GROVED MARKINGS

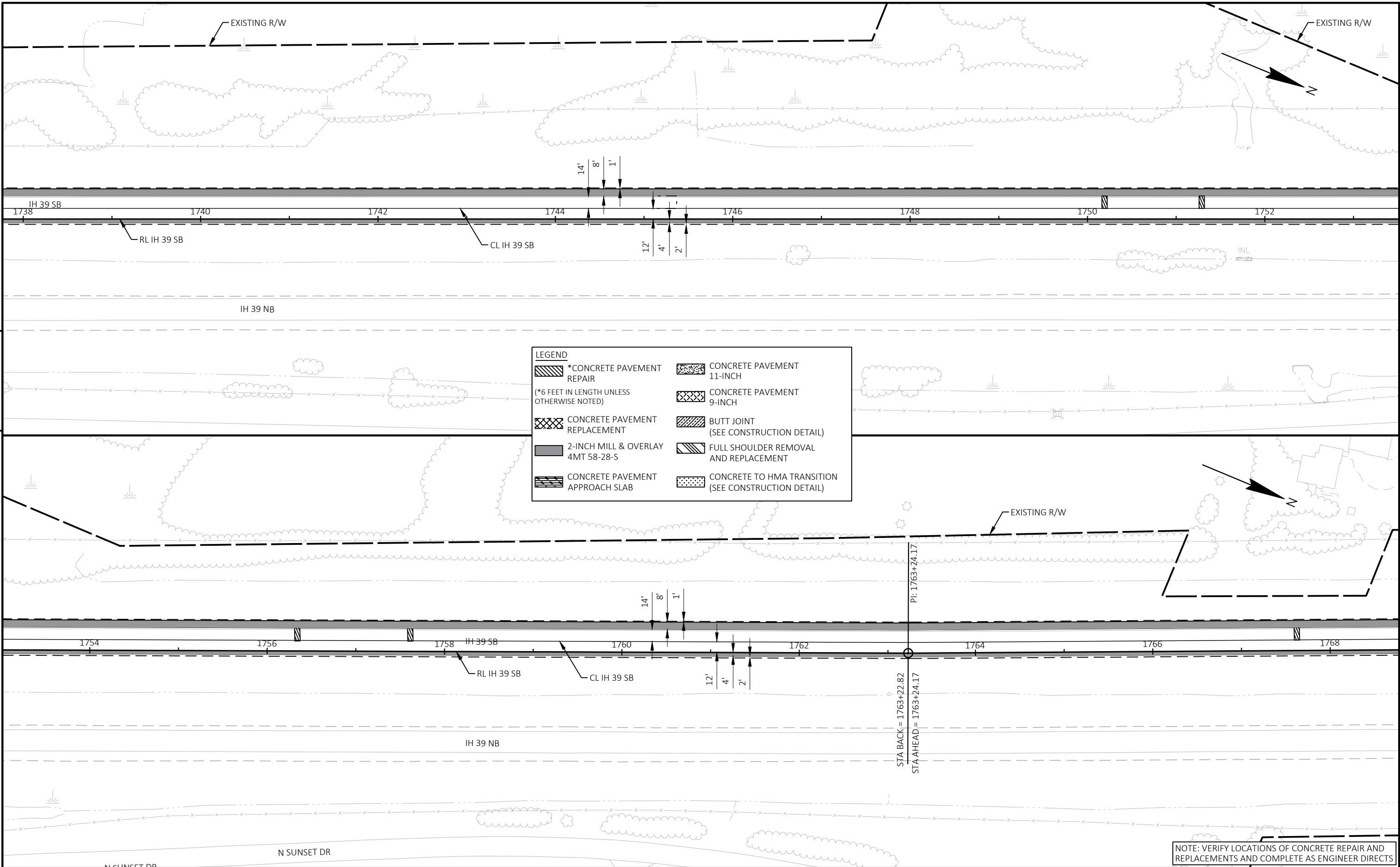
CAT 0020 - PAVEMENT MARKINGS															
					*	*	*	*	*	*	*	*	*	*	*
					646.2025	646.2040	646.2050	646.4050	646.6120	646.6466	646.6470	646.7220	646.9010	646.9110	646.9210
					MARKING LINE GROOVED BLACK EPOXY 6-INCH	MARKING LINE GROOVED WET REF EPOXY 6-INCH	MARKING LINE GROOVED PERMANENT TAPE 6-INCH	MARKING LINE GROOVED PERMANENT TAPE 10-INCH	MARKING STOP LINE EPOXY 18- INCH	COLD WEATHER MARKING EPOXY 6- INCH	COLD WEATHER MARKING EPOXY 10-INCH	MARKING CHEVRON EPOXY 24-INCH	MARKING REMOVAL LINE WATER BLASTING 4-INCH	MARKING REMOVAL LINE WATER BLASTING 8-INCH	MARKING REMOVAL LINE WATER BLASTING WIDE
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF
0020	N 2ND STREET	-	CTH X	NB	4,494	37,845	4,494	2,918	-	4,684	292	231	-	-	231
0020	N 2ND STREET	-	CTH X	SB	4,950	42,970	4,950	2,828	-	5,287	283	353	-	-	353
0020		-		CASMIR RD	-	6,023	-	569	97	-	-	-	6023	569	97
		-													
TOTAL 0020					9,444	86,838	9,444	6,315	97	9,971	575	584	6,023	569	681

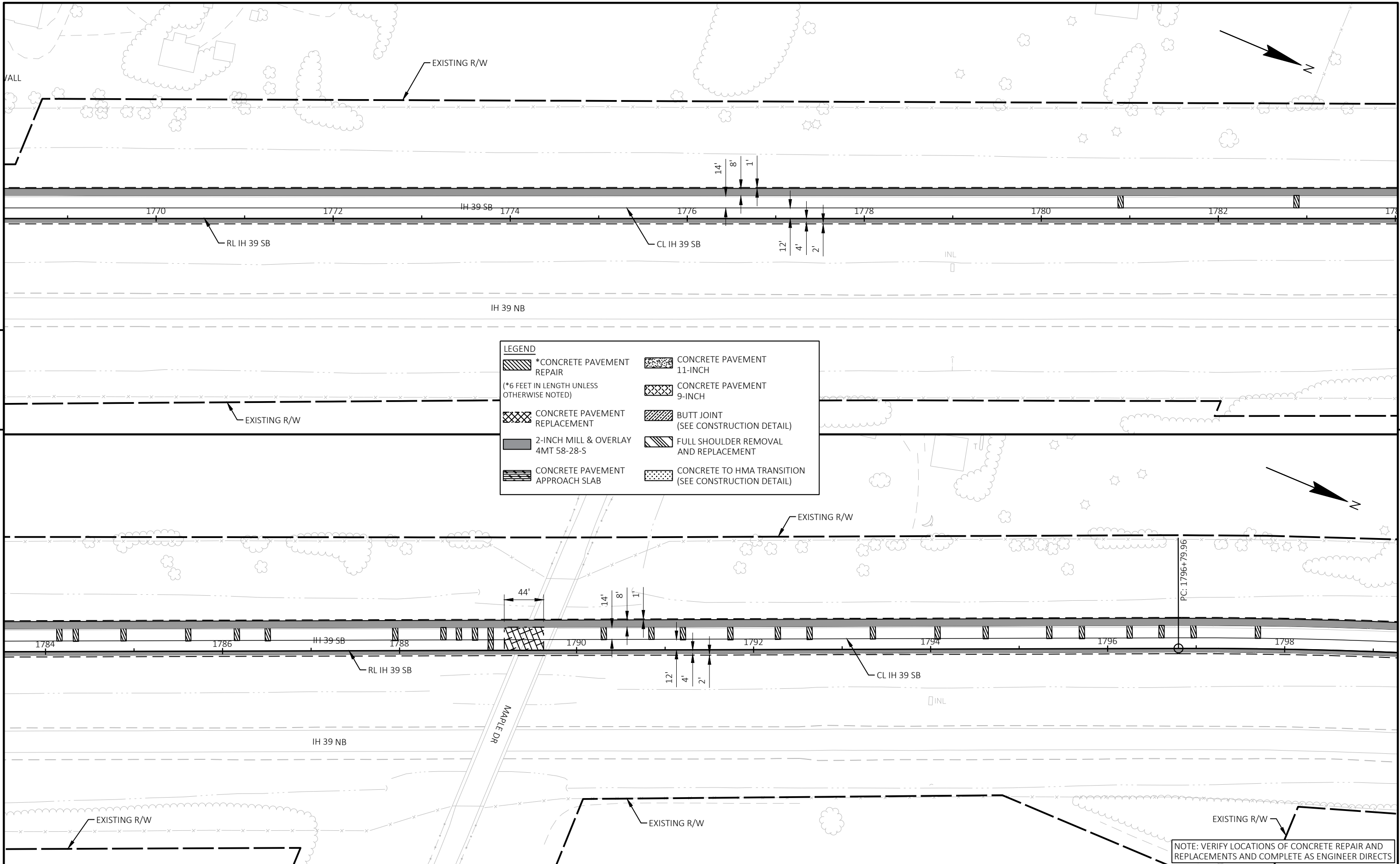
* ADDITIONAL ITEMS IN CATEGORY 0010
*** MARKING ROMOVAL REQUIRED ONLY IN LOCAITONS WHERE PROPOSED PAVEMENT MARKINGS ARE NOT GROOVED

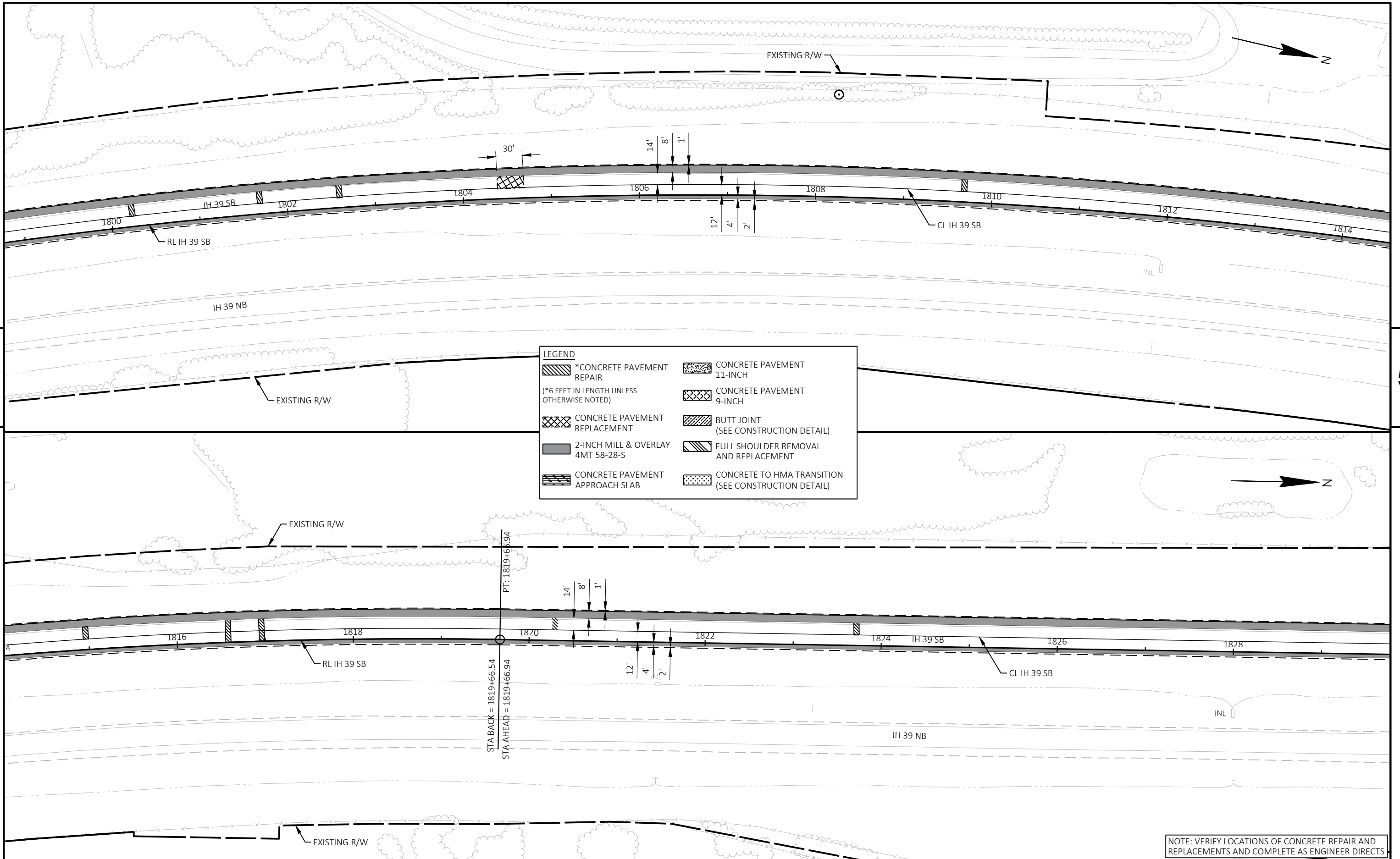
CONSTRUCTION STAKING ITEMS								
		650.5000	650.5500	650.6000	650.7000	650.8000	650.9911.01	650.9920
			CONSTRUCTION STAKING CURB GUTTER AND	CONSTRUCTION STAKING PIPE CULVERTS	CONSTRUCTION STAKING CONCRETE	CONSTRUCTION STAKING RESURFACING	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL (1166- 05-66)	CONSTRUCTION STAKING SLOPE STAKES
CATEGORY	LOCATION	LF	LF	EACH	LF	LF	EACH	LF
0010	PROJECT LIMITS	-	675	9	-	47,520	1	-
0010	BEGIN PROJECT IH 39 PAVEMENT	325	-	-	325	-	-	-
0010	USH 10 WB RAMP PAVEMENT	800	-	-	800	800	-	-
0010	B-49-58	-	-	1	-	-	-	1,000
0010	B-37-141	-	-	-	-	-	-	1,000
0010	B-37-144	-	-	1	-	-	-	1,000
0010	TEMP WIDENING	1,435	-	-	-	-	-	1,435
TOTAL 0010		2,560	675	11	1,125	48,320	1	4,435

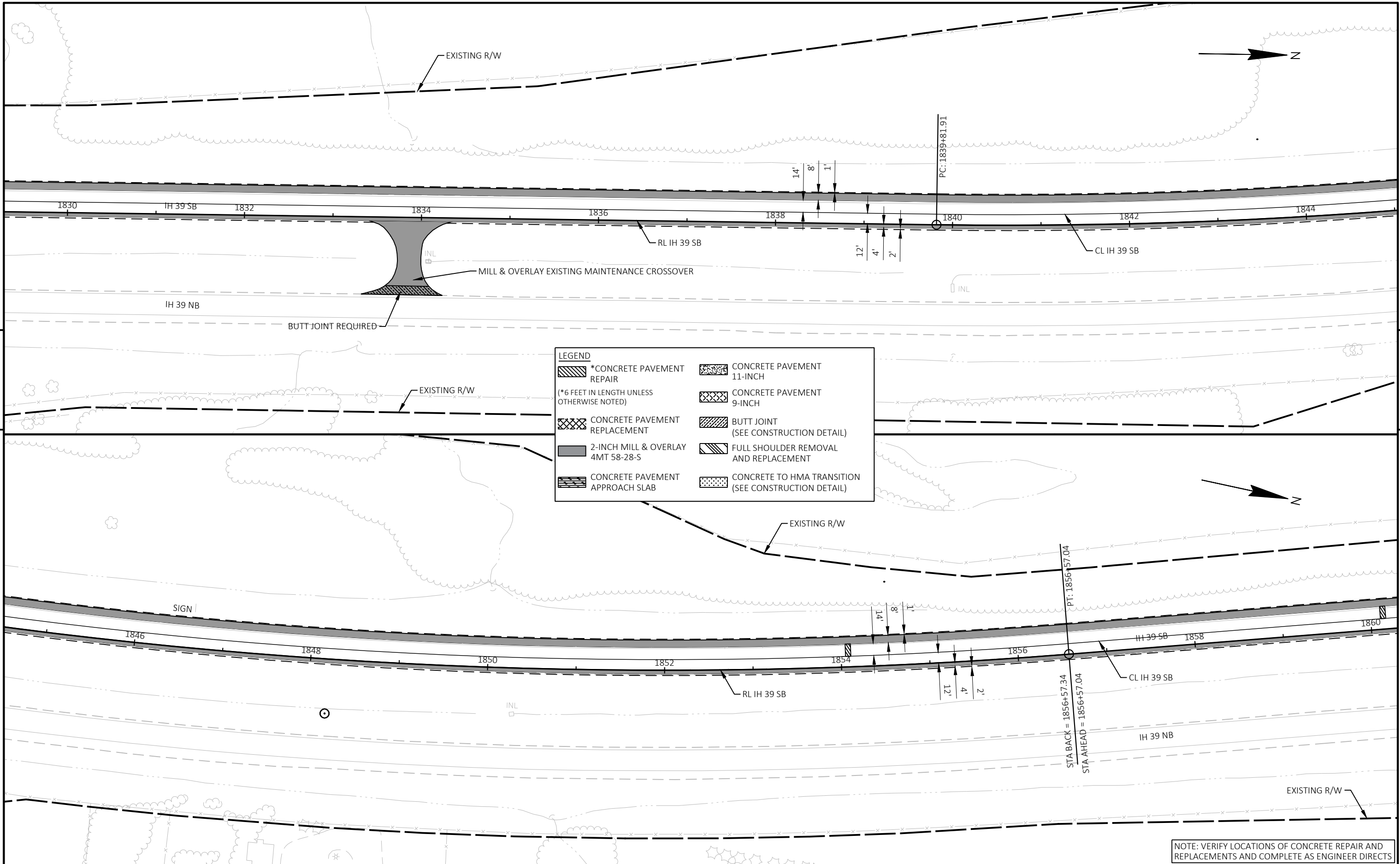


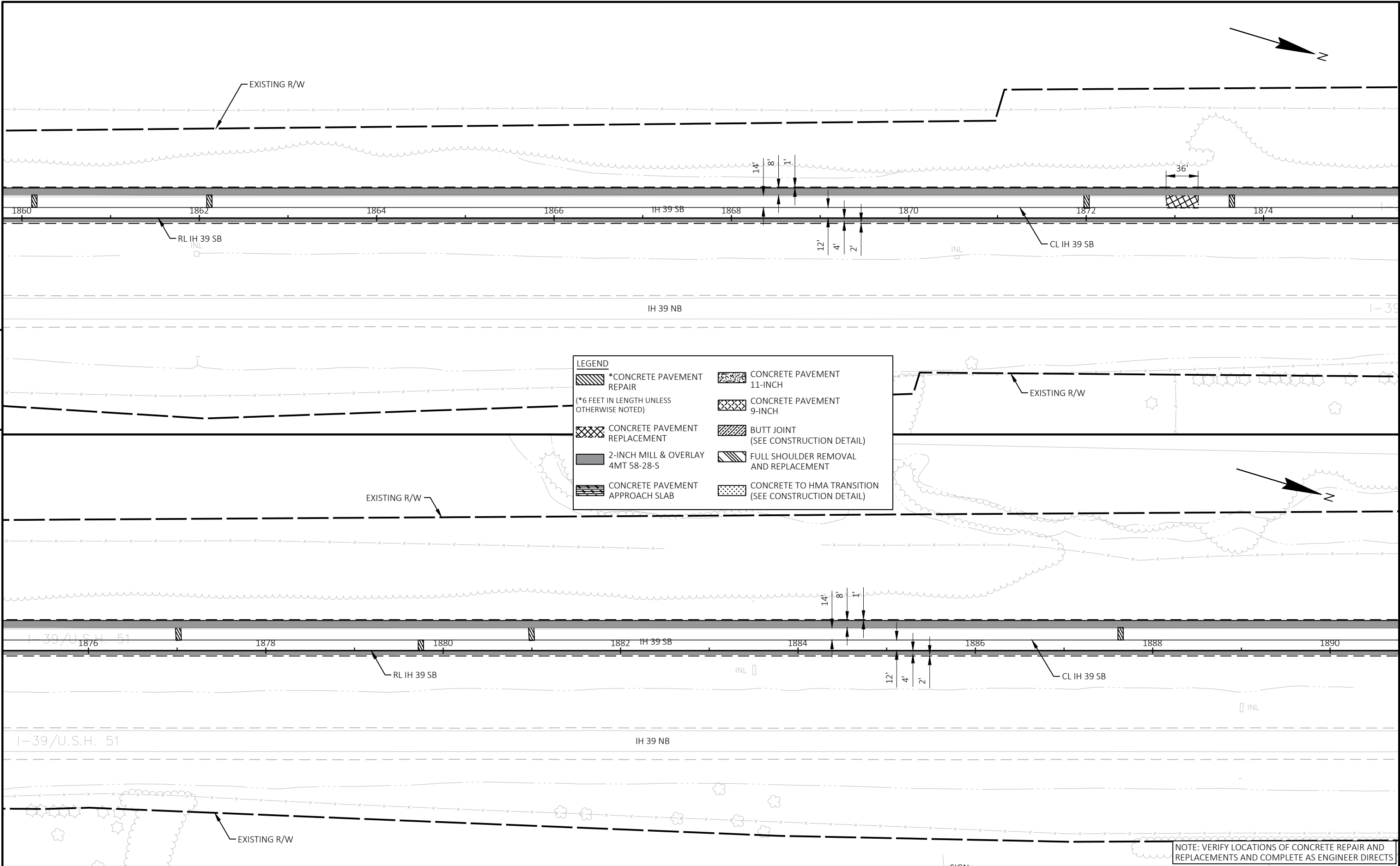


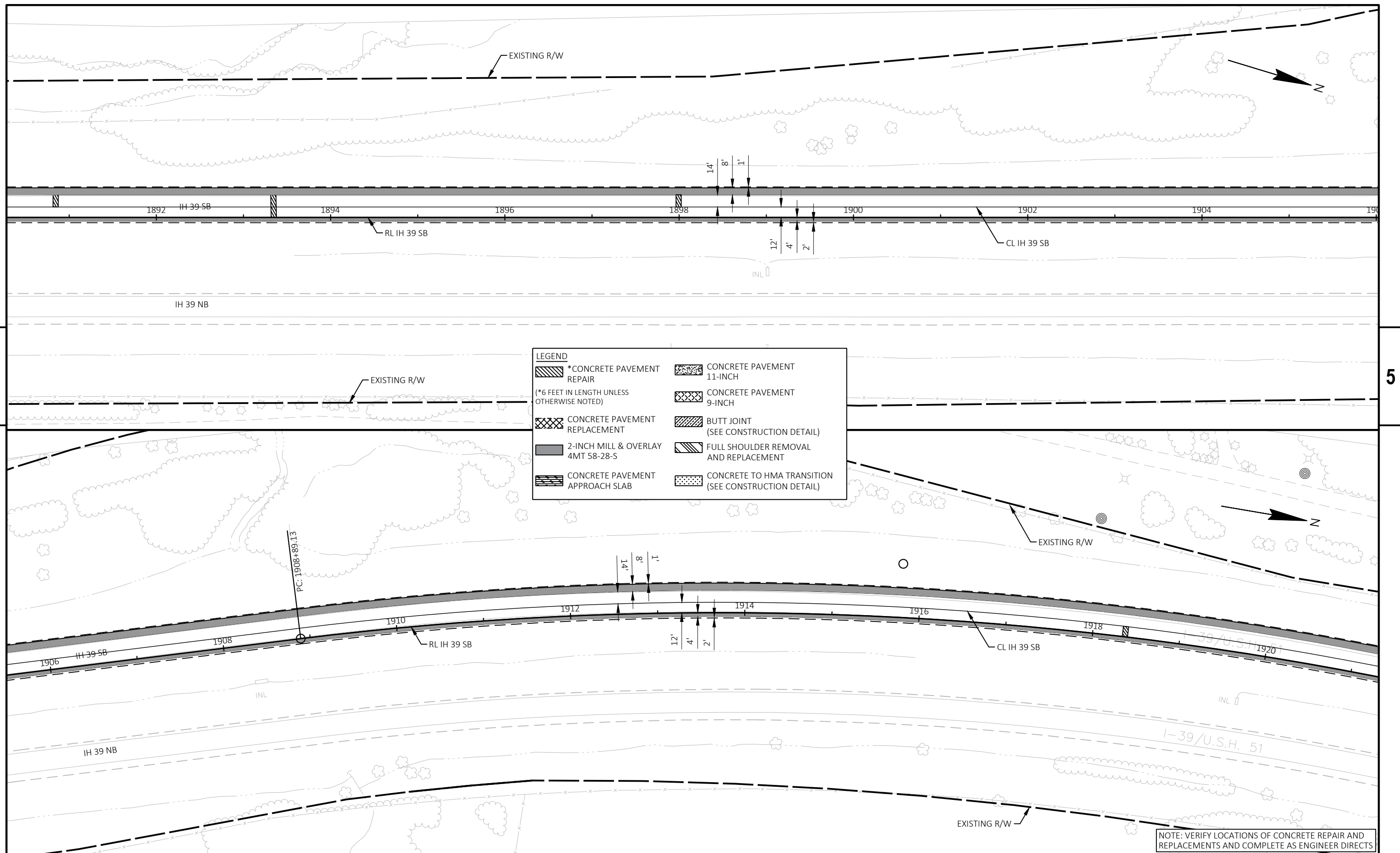


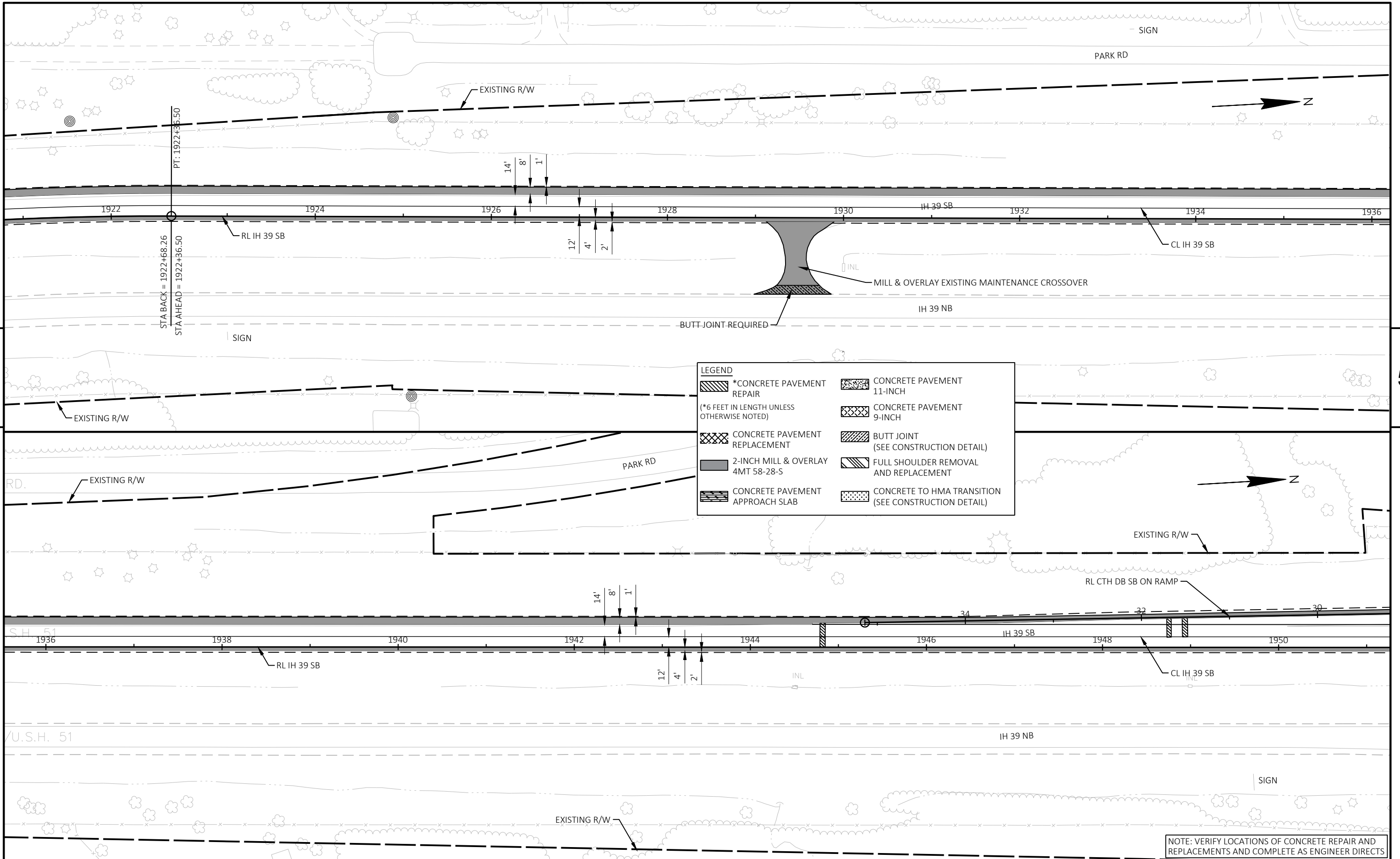


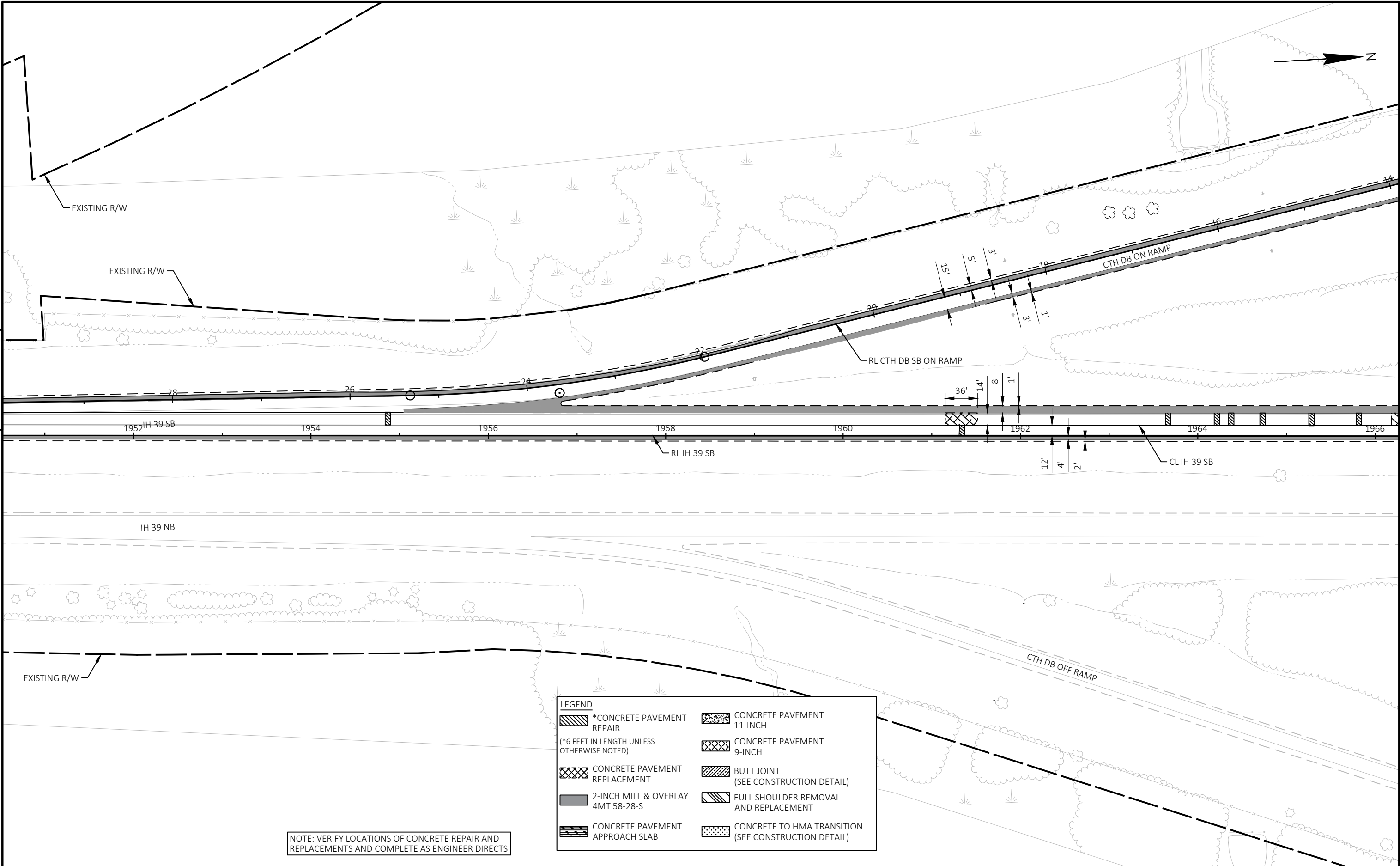


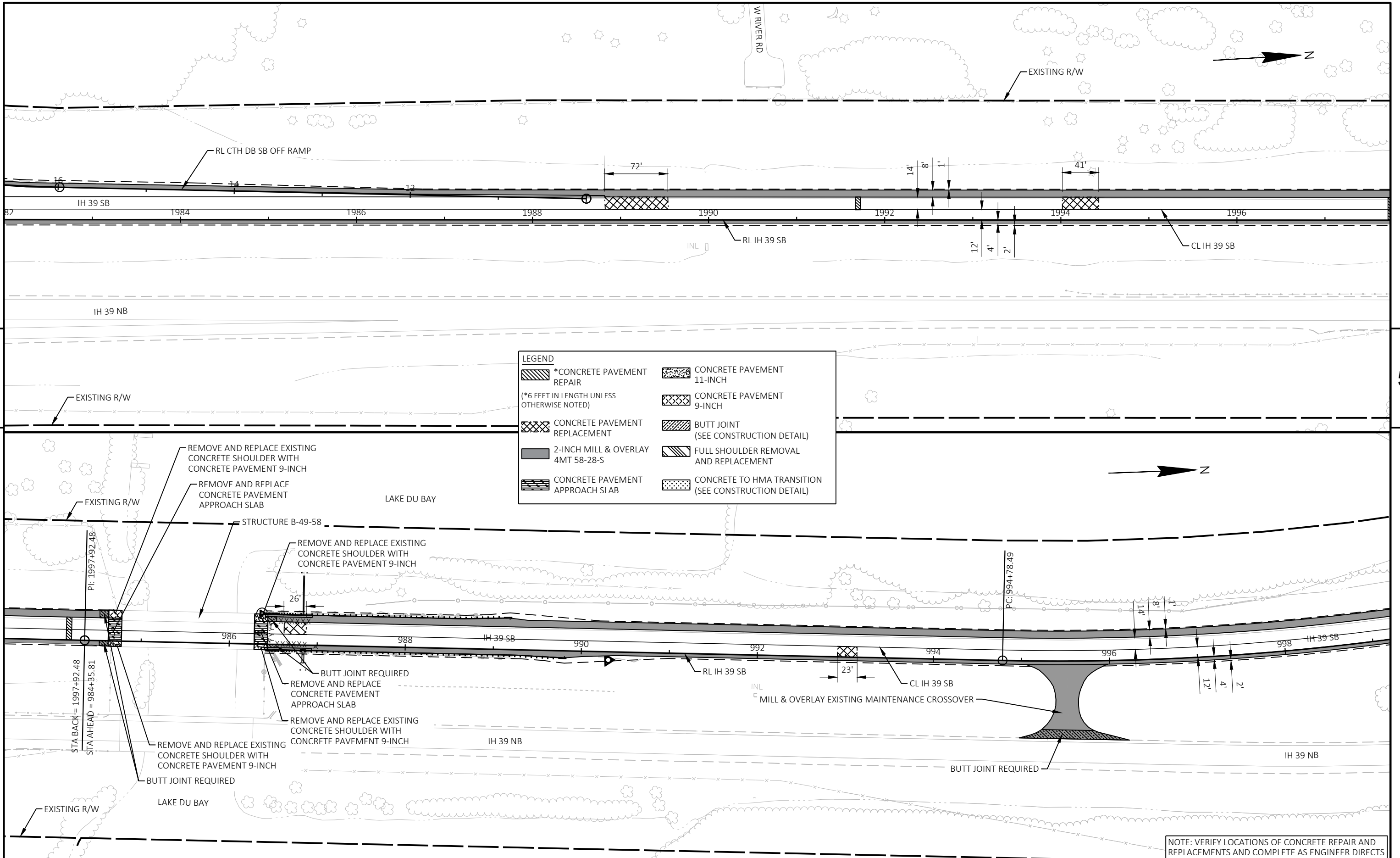


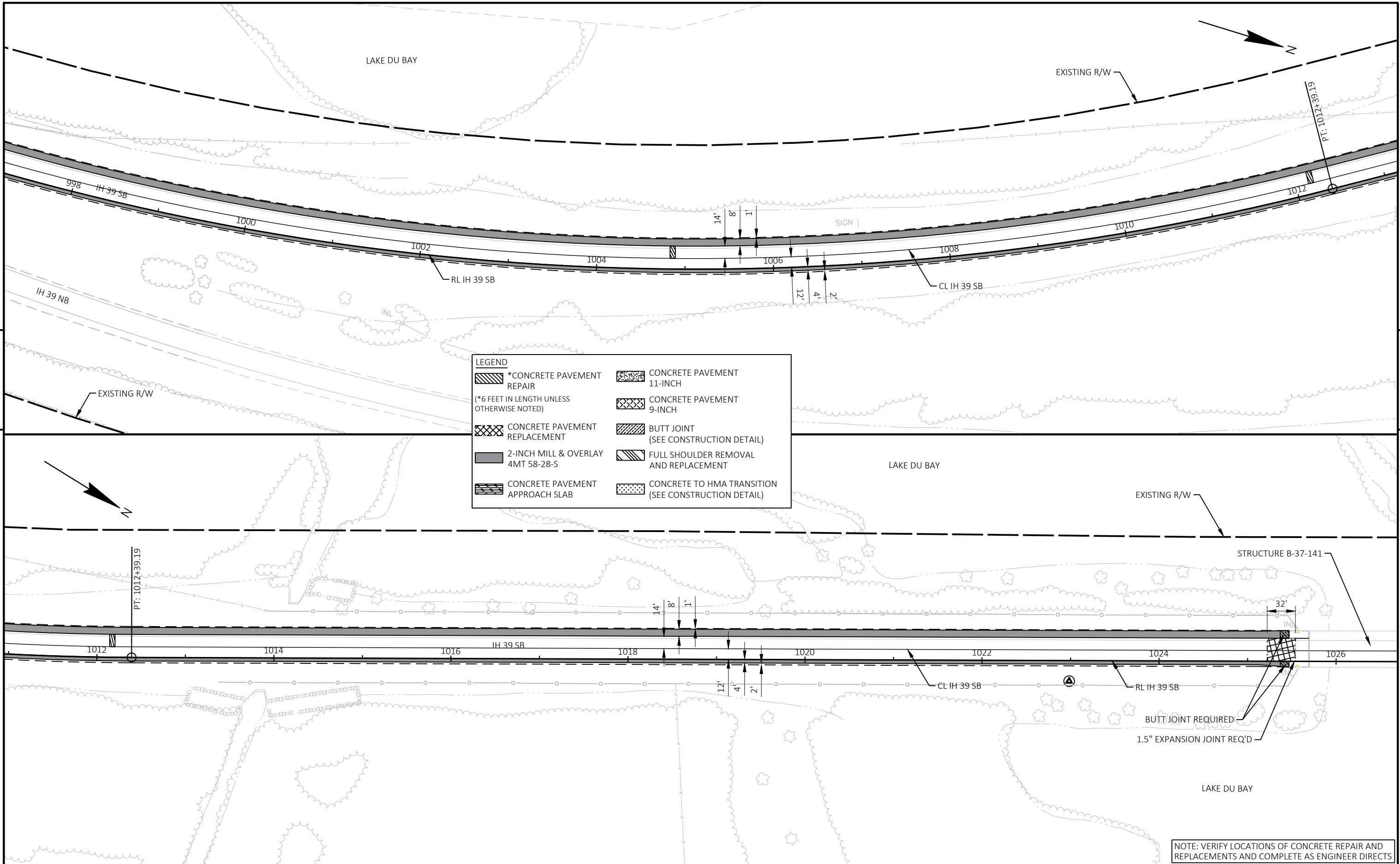


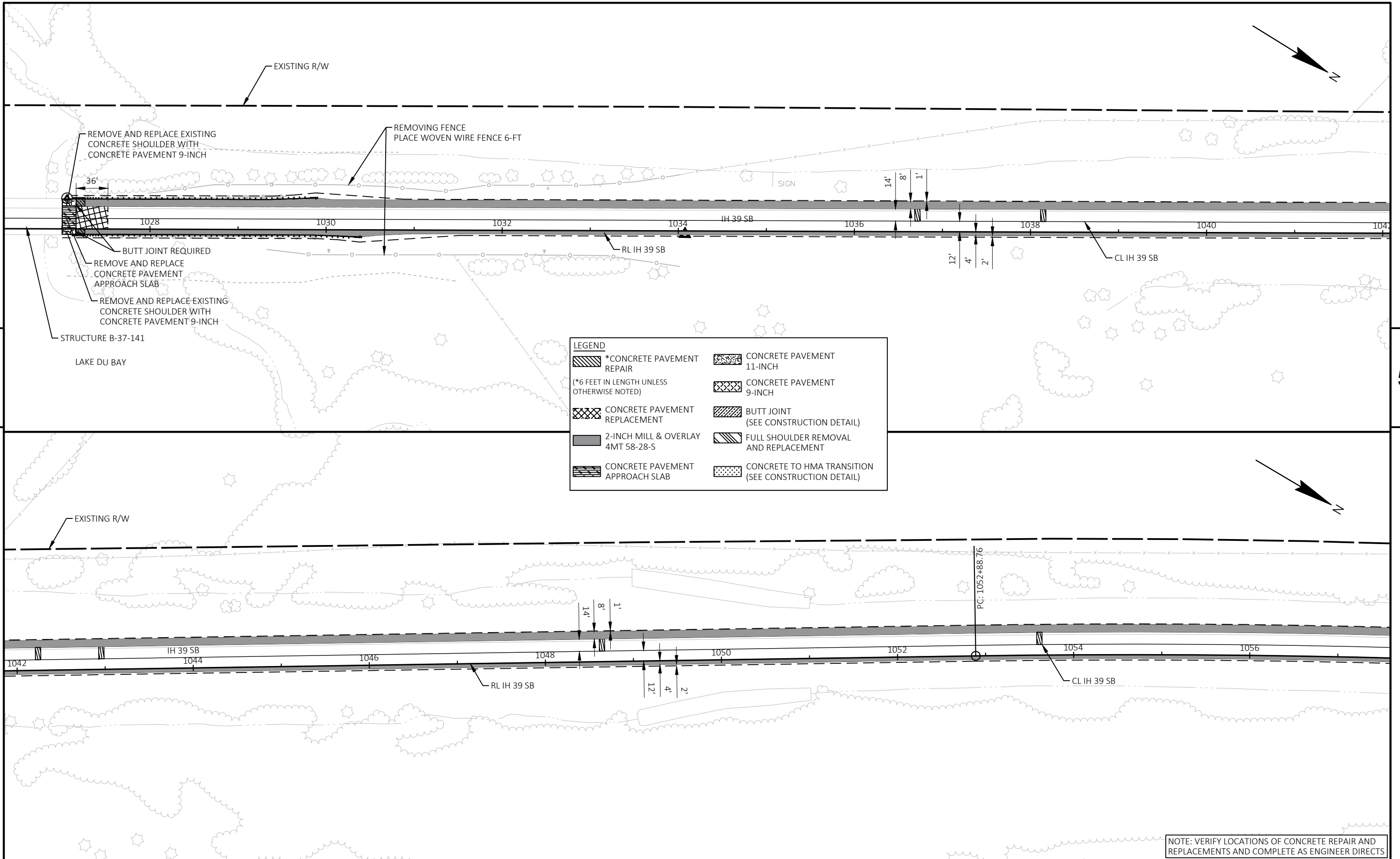








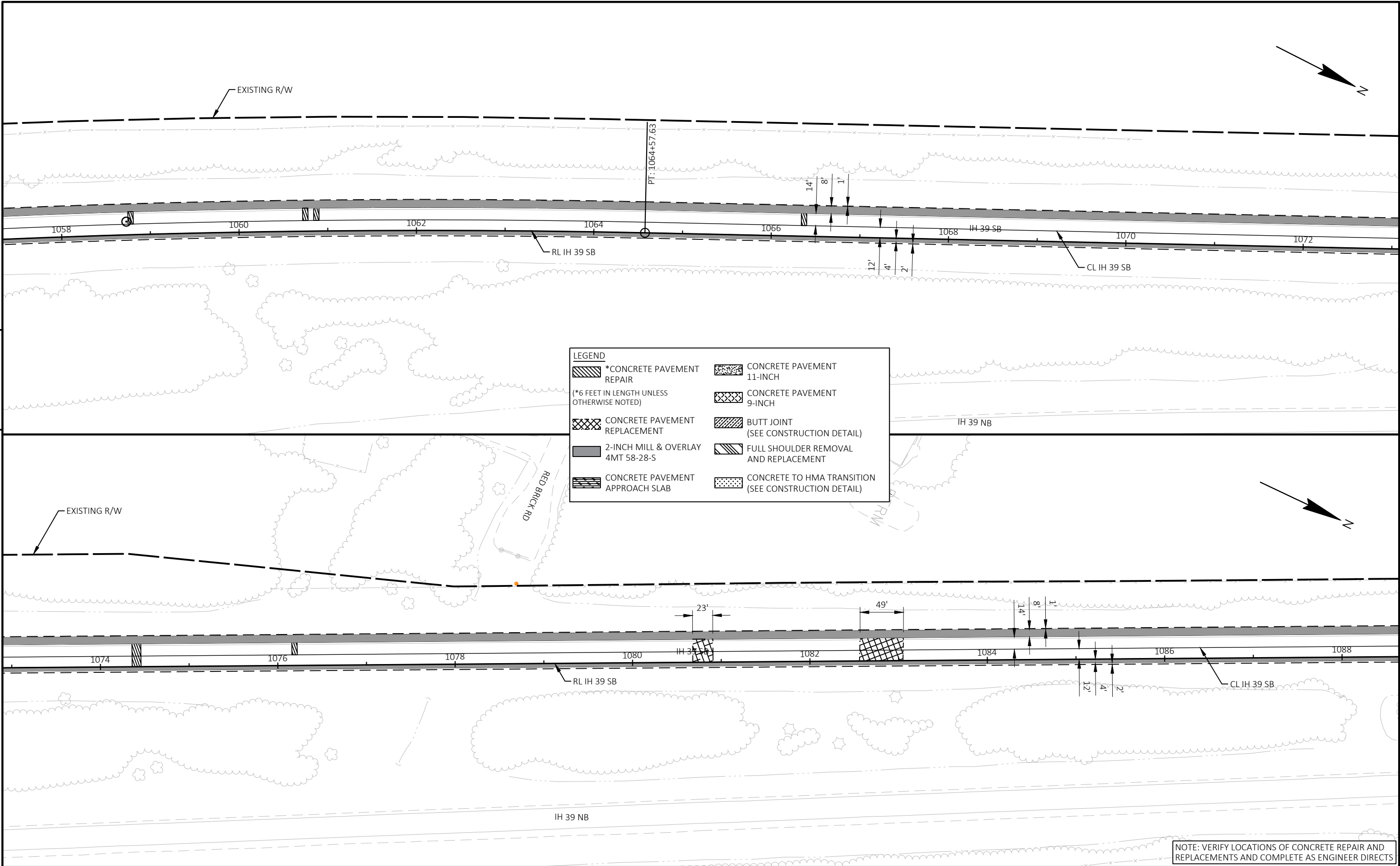


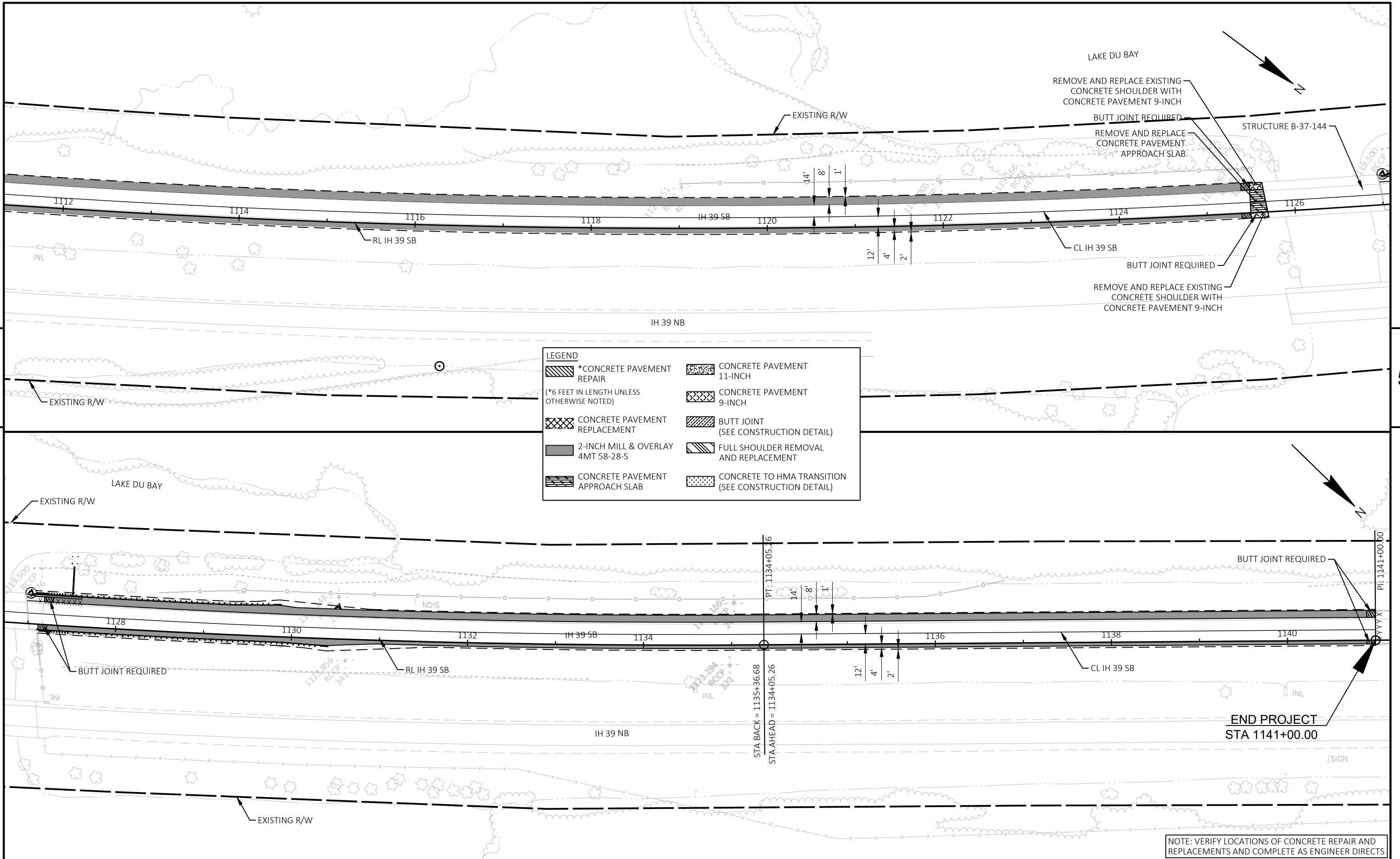


LEGEND

	*CONCRETE PAVEMENT REPAIR (*6 FEET IN LENGTH UNLESS OTHERWISE NOTED)		CONCRETE PAVEMENT 11-INCH
	CONCRETE PAVEMENT REPLACEMENT		CONCRETE PAVEMENT 9-INCH
	2-INCH MILL & OVERLAY 4MT 58-28-S		BUTT JOINT (SEE CONSTRUCTION DETAIL)
	CONCRETE PAVEMENT APPROACH SLAB		FULL SHOULDER REMOVAL AND REPLACEMENT
			CONCRETE TO HMA TRANSITION (SEE CONSTRUCTION DETAIL)

NOTE: VERIFY LOCATIONS OF CONCRETE REPAIR AND REPLACEMENTS AND COMPLETE AS ENGINEER DIRECTS





Standard Detail Drawing List

08A05-22D	INLET COVERS TYPE V, V-B, & VV-B
08C07-03	INLETS 2X2-FT, 2X2.5-FT, 2X3-FT, 2.5X3-FT & 2X3.5-FT
08D01-24A	CONCRETE CURB & GUTTER
08D01-24B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D02-08A	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08B	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D02-08C	CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES
08D03-09A	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D03-09B	CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES
08D04-07	CONCRETE SURFACE DRAINS & ASPHALTIC FLUMES
08E08-03	TYPICAL INSTALLATIONS OF EROSION BALES / TEMPORARY DITCH CHECKS
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
11A01-06	MAINTENANCE CROSSOVER FOR FREEWAYS
11B02-02	CONCRETE MEDIAN NOSE
13A05-06A	SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY
13A05-06B	SHOULDER RUMBLE STRIPS, DIVIDED ROADWAY
13A10-03A	SHOULDER RUMBLE STRIPS - ASPHALT
13A10-03B	SHOULDER RUMBLE STRIPS - CONCRETE
13A10-03G	SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13B02-09A	CONCRETE PAVEMENT APPROACH SLAB
13C01-19	CONCRETE PAVEMENT LONGITUDINAL JOINTS AND TIES
13C09-18A	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-18B	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-18C	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C09-18D	CONCRETE PAVEMENT REPAIR AND REPLACEMENT
13C18-08A	CONCRETE PAVEMENT JOINTING
13C18-08B	CONCRETE PAVEMENT STEEL REINFORCEMENT
13C18-08C	CONCRETE PAVEMENT JOINT TYPES
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
15A04-08A	FLEXIBLE DELINEATOR POST
15A04-08C	DELINEATOR POST WITH REFLECTIVE SHEETING
15A04-08E	DELINEATOR POST WITH REFLECTIVE SHEETING
15B01-08A	FENCE WOVEN WIRE
15B01-08B	FENCE WOVEN WIRE
15C02-10C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C02-10D	ON RAMP LANE CLOSURE
15C02-10E	OFF RAMP LANE CLOSURE
15C02-10F	ADVANCED WIDTH RESTRICTION SIGNING
15C02-10G	TRAFFIC CONTROL FOR ENTRANCE RAMP CLOSURE
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-24B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C12-09B	TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE

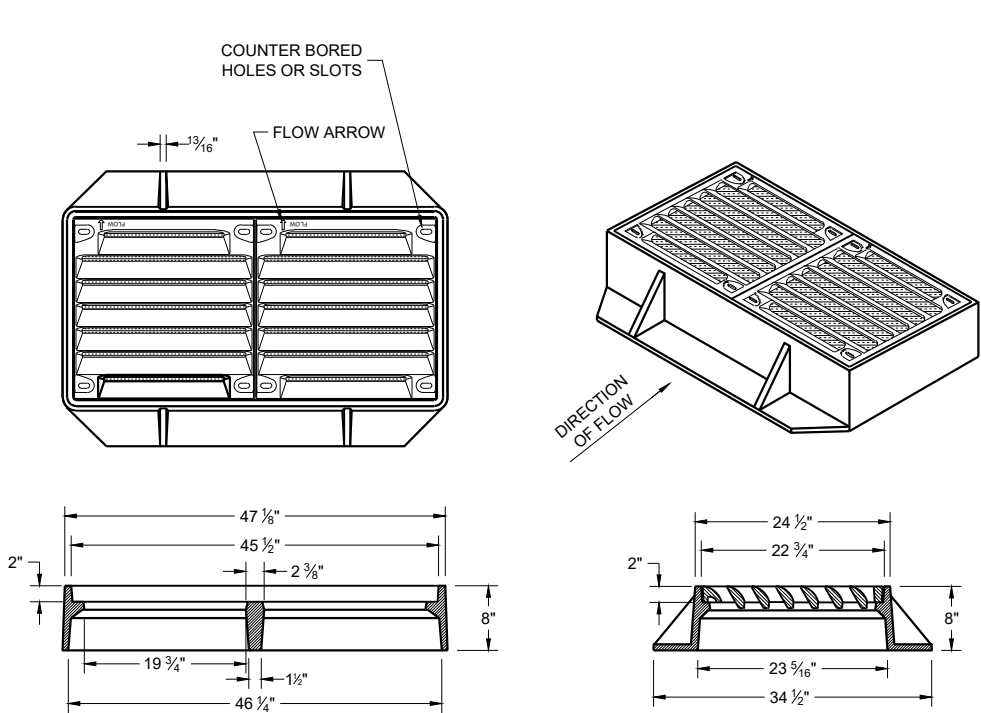
Standard Detail Drawing List

15C18-09A	MEDIAN ISLAND PAVEMENT MARKINGS
15C18-09B	PAVEMENT MARKINGS, MEDIAN ISLAND NOSE
15C18-09C	MEDIAN PAVEMENT MARKINGS DOUBLE ARROW WARNING SIGN PLACEMENT
15C19-11A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C19-11B	MOVING PAVEMENT MARKING OPERATION MULTI-LANE UNDIVIDED ROADWAY
15C19-11C	MOVING PAVEMENT MARKING OPERATION MULTI-LANE DIVIDED ROADWAY
15C31-08A	PAVEMENT MARKING EXIT RAMP AND PARALLEL EXIT RAMP
15C31-08C	PAVEMENT MARKING ENTRANCE RAMP AND PARALLEL ENTRANCE RAMP
15C33-05	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D12-16A	TRAFFIC CONTROL, LANE CLOSURE
15D12-16C	TRAFFIC CONTROL, DYNAMIC LATE MERGE SYSTEM
15D12-16G	TRAFFIC CONTROL, LANE CLOSURE , DIGITAL SPEED REDUCTION SYSTEM
15D13-02	TEMPORARY EMERGENCY PULLOUTS
15D15-08A	TRAFFIC CONTROL, PARALLEL ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-08B	TRAFFIC CONTROL, ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-08C	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-08D	TRAFFIC CONTROL, TAPERED ENTRANCE RAMP WITHIN LANE CLOSURE
15D15-08E	TRAFFIC CONTROL, PARALLEL EXIT RAMP WITHIN LANE CLOSURE
15D16-07	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D20-11A	TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY
15D20-11B	TRAFFIC CONTROL, SINGLE RIGHT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY
15D20-11C	TRAFFIC CONTROL, SINGLE LEFT LANE CLOSURE, UNDIVIDED NON-FREEWAY/EXPRESSWAY
15D27-05	TRAFFIC CONTROL, SHOULDER CLOSURE ON DIVIDED ROADWAY, SPEEDS GREATER THAN 40 MPH
15D39-03	TRAFFIC CONTROL, DROP-OFF SIGNING
15D40-07D	TRAFFIC CONTROL, PARTIAL LANE SHIFT MULTILANE DIVIDED 50 MPH AND GREATER
15D43-03	TRAFFIC CONTROL, SHORT DURATION MOBILE OPERATIONS
15D51-02	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

GENERAL NOTES

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

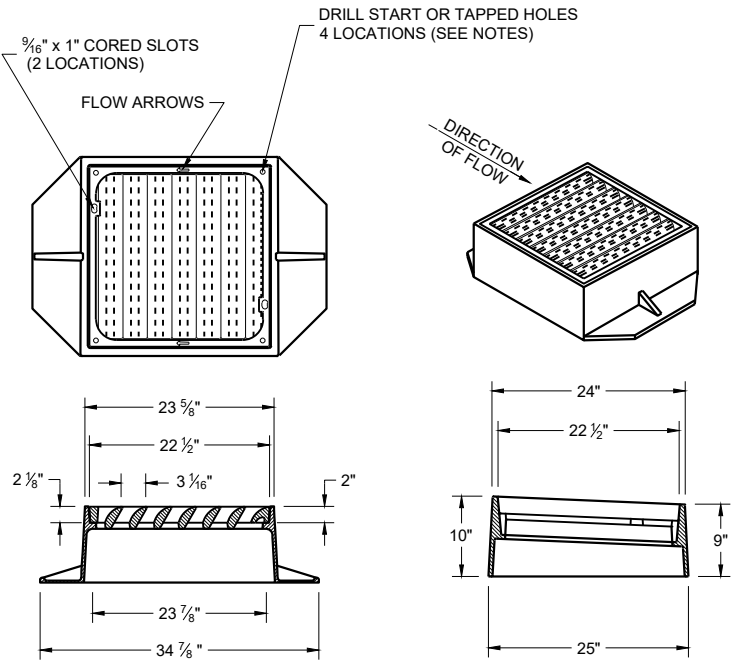
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.



TYPE "VV-B"

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER
ALL DRILLING AND TAPPING GRATES AND FRAMES BY CASTING MANUFACTURER

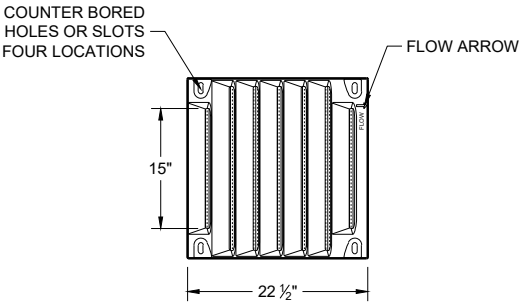
TYPE V
FRAME - CAST GRAY IRON ASTM A48 CLASS 35B
3/8" DIA. X 1/16" DRILL START IN 8 LOCATIONS
GRATE - CAST GRAY IRON ASTM A-48, CLASS 35B



TYPE "V"

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER ALL DRILLING AND TAPPING GRATES AND FRAMES BY CASTING MANUFACTURER

TYPE V
FRAME - CAST GRAY IRON ASTM A48 CLASS 40A
3/8" DIA. X 1/16" DRILL START IN 4 LOCATIONS
GRATE - CAST GRAY IRON ASTM A-48, CLASS 35B



BOLT DOWN GRATE FOR
TYPE "V" AND "VV-B" COVER

NOTES: ALL HARDWARE TO BE SUPPLIED BY CASTING MANUFACTURER
NOTED AS TYPE "V-B" OR "VV-B" (FOR DOUBLE GRATE) ON DRAINAGE TABLE

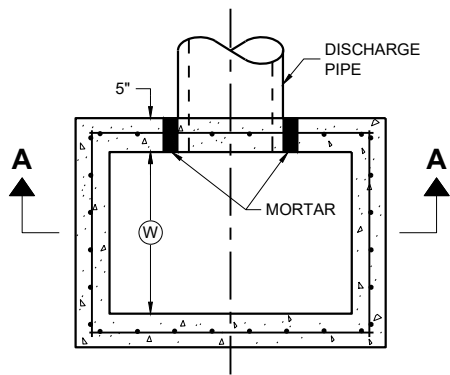
TAP 1/2" -13 HOLES IN FOUR LOCATIONS PER GRATE IN FRAME TO BOLT GRATE(S).
FRAME - CAST GRAY IRON ASTM A48 CLASS 40A

GRATE - CAST DUCTILE IRON ASTM A536, 55+KSI YIELD
BOLTS - 1/2" -13 STAINLESS STEEL BOLTS WITH WASHERS
TORQUE BOLTS TO MANUFACTURER SPECIFICATION DO NOT OVERTIGHTEN.

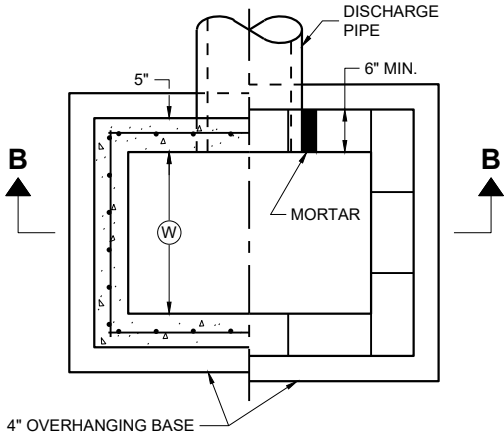
INLET COVERS
TYPES V, V-B, AND VV-B

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

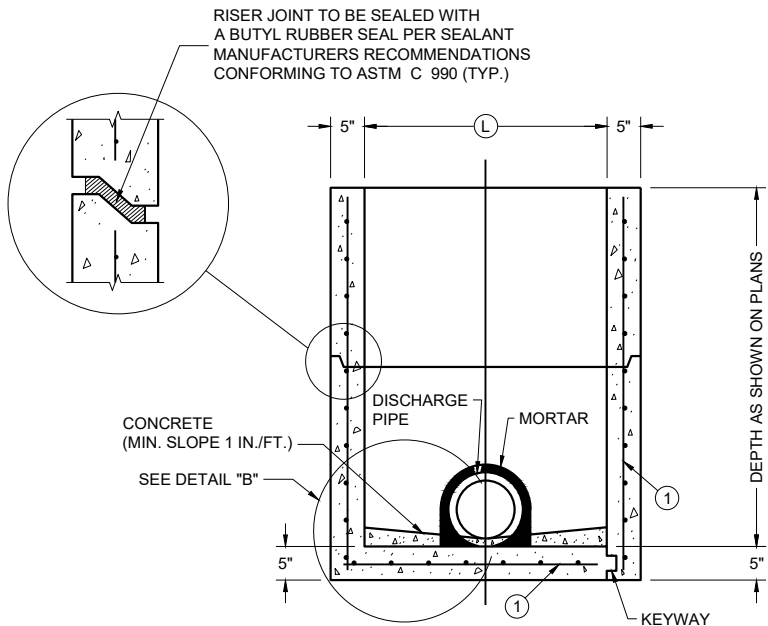
APPROVED
February 2025 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



PLAN VIEW



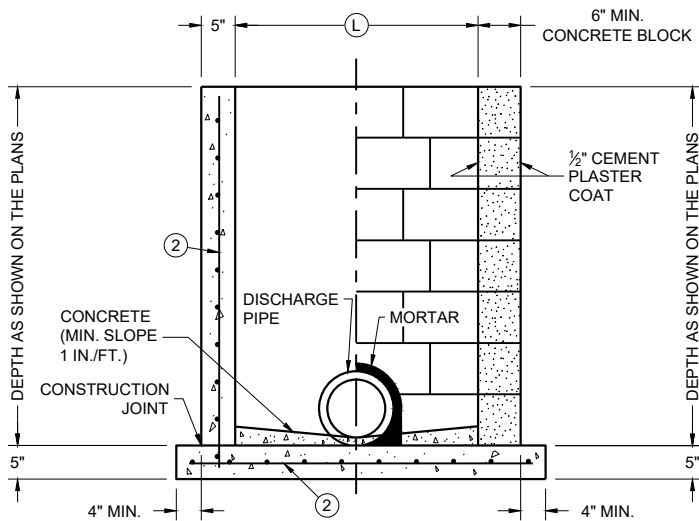
PLAN VIEW



PRECAST REINFORCED
CONCRETE WITH
MONOLITHIC BASE

PRECAST REINFORCED
CONCRETE WITH
INTEGRAL BASE

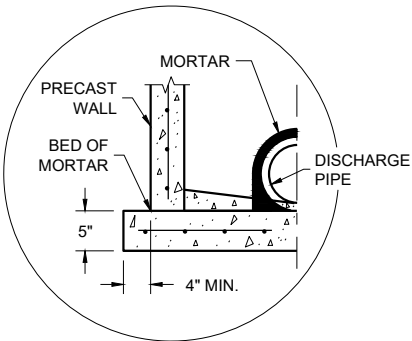
SECTION A - A



CAST IN PLACE
REINFORCED
CONCRETE

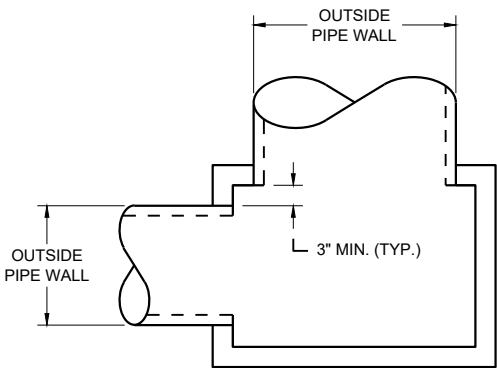
CONCRETE BLOCK WITH
CAST IN PLACE OR
PRECAST REINFORCED
CONCRETE BASE ①

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

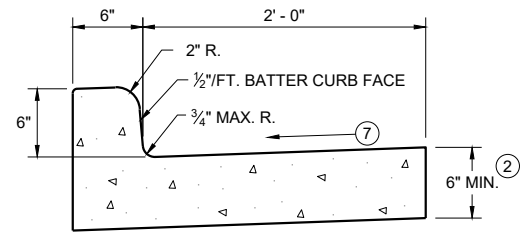
PIPE MATRIX

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

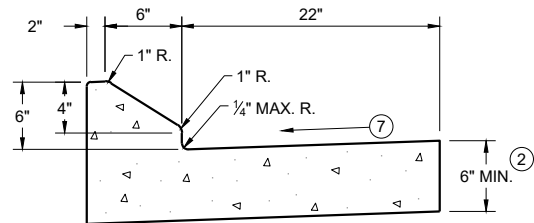
INLETS 2 X 2-FT, 2 X 2.5-FT,
2 X 3-FT, 2.5 X 3-FT
AND 2 X 3.5-FT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

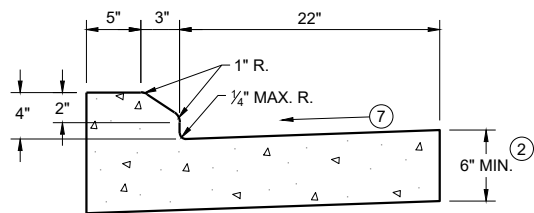
APPROVED
December 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT
FHWA UNIT SUPERVISOR



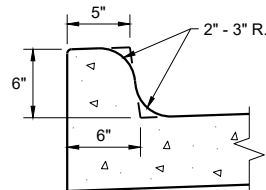
TYPES A^① & D



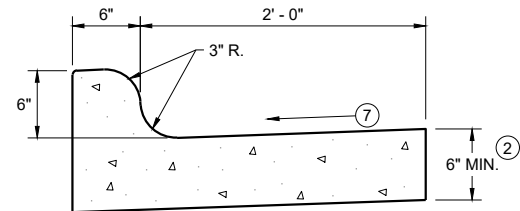
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

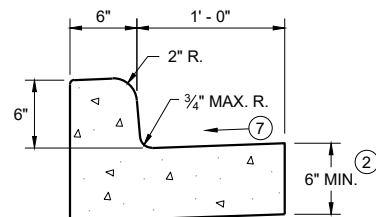


TYPES K^① & L
(OPTIONAL CURB SHAPE)



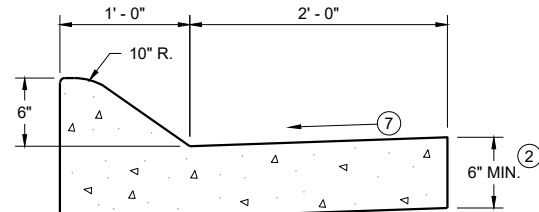
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

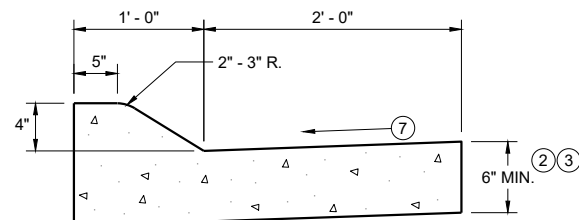


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

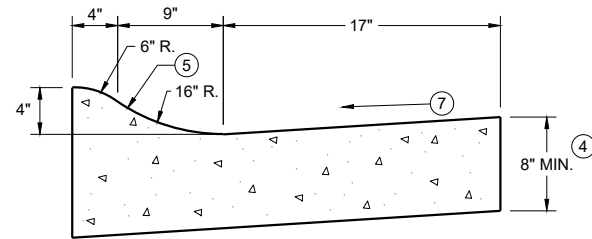


6" SLOPED CURB TYPES A^① & D



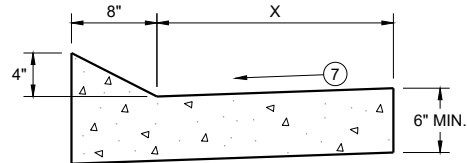
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



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

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

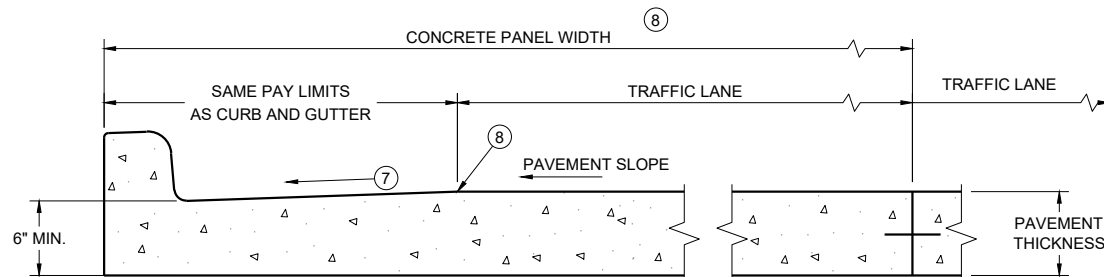


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

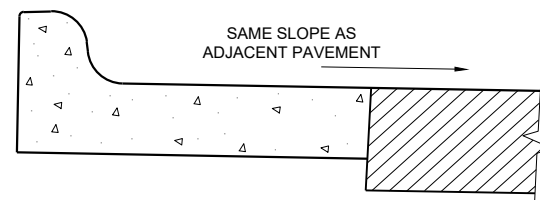
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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

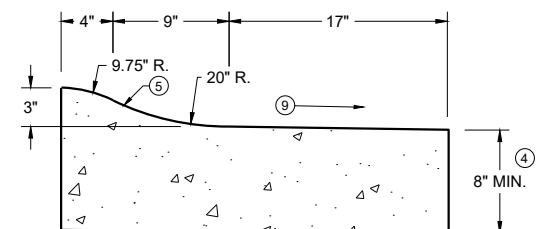


PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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



3" SLOPED CURB TYPES R^① & T

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

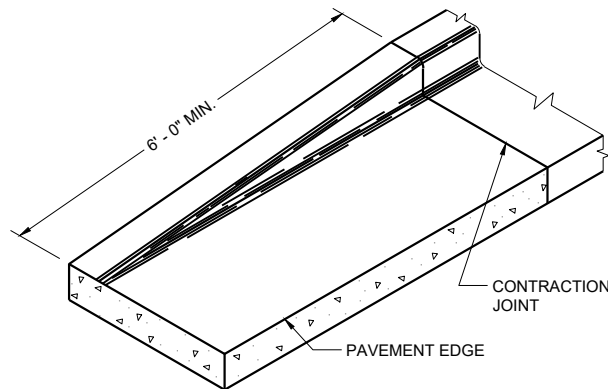
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

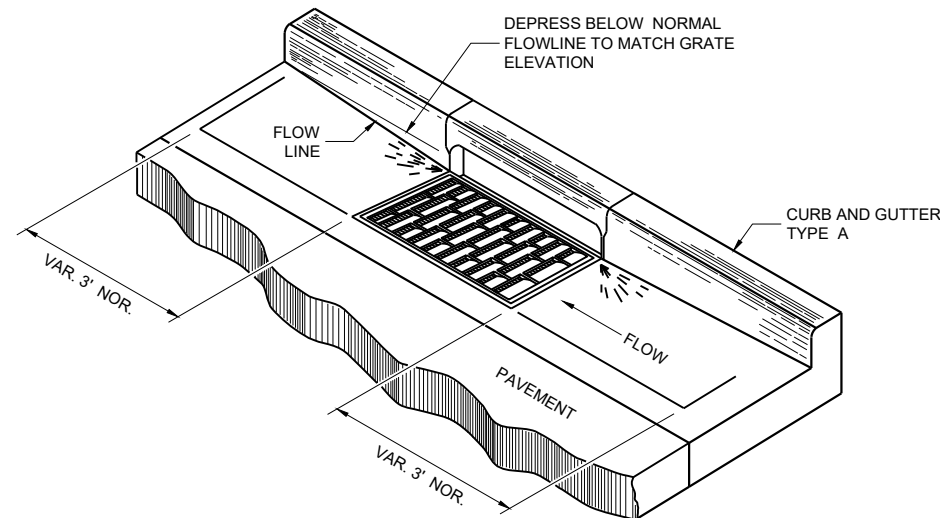
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ SLOPE TO BE REVERSE SLOPE MATCHING THE SLOPE OF THE PAVEMENT AND THE CIRCULATORY ROADWAY

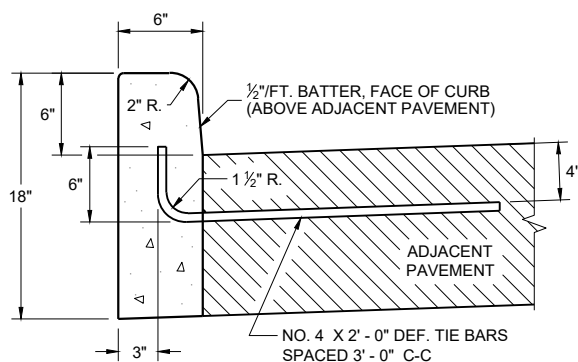


END SECTION CURB AND GUTTER

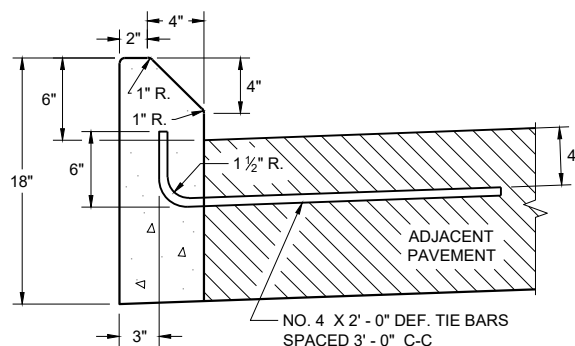


DETAIL OF CURB AND GUTTER AT INLETS

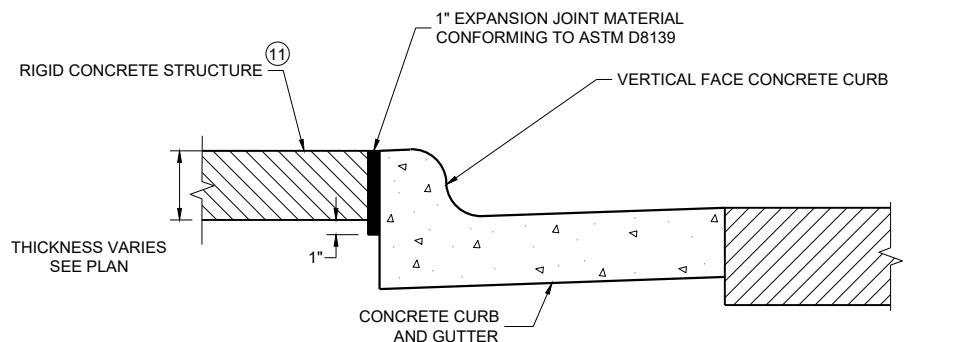
(TYPICAL H INLET COVER SHOWN)



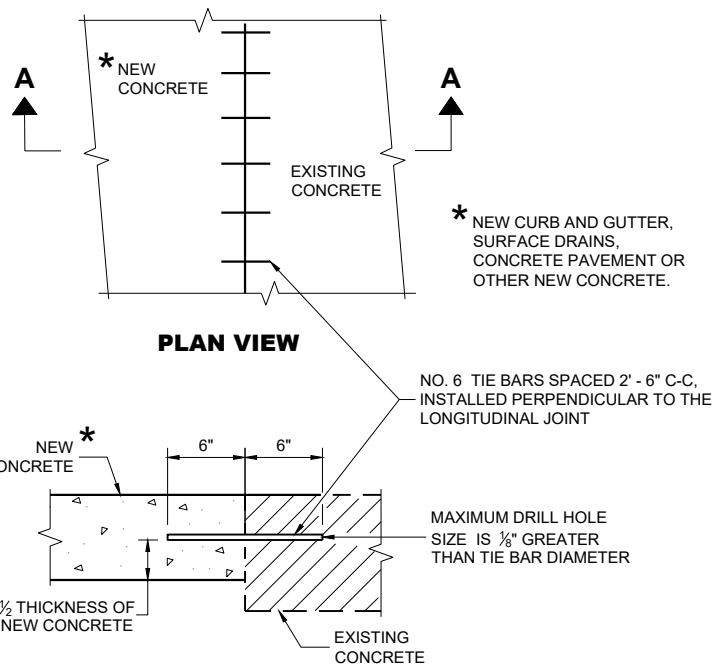
TYPES A^① & D



**TYPES G^① & J
CONCRETE CURB**



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



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

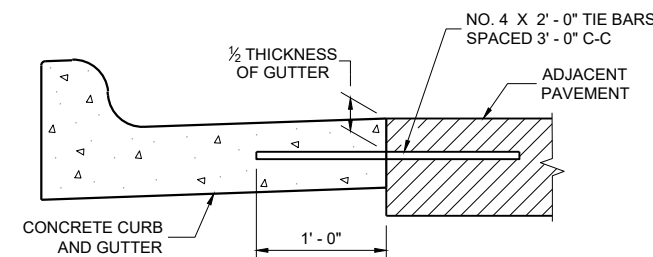
GENERAL NOTES

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

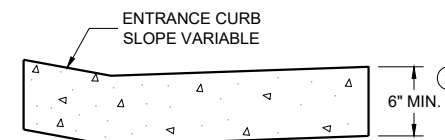
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

FHWA

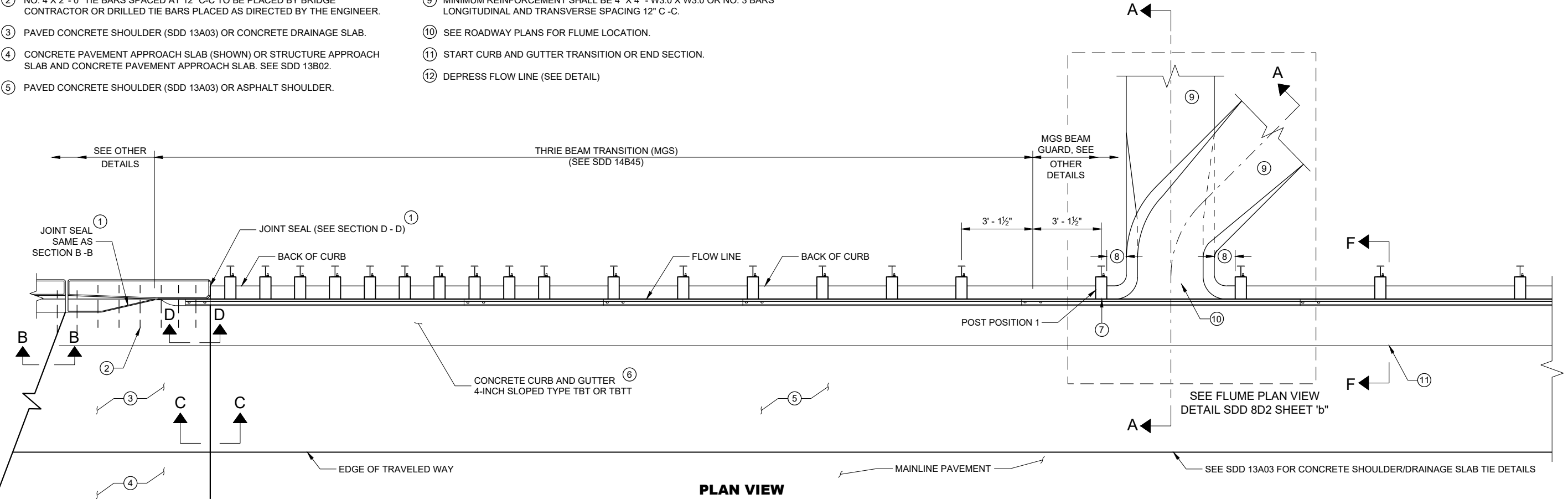
GENERAL NOTES

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

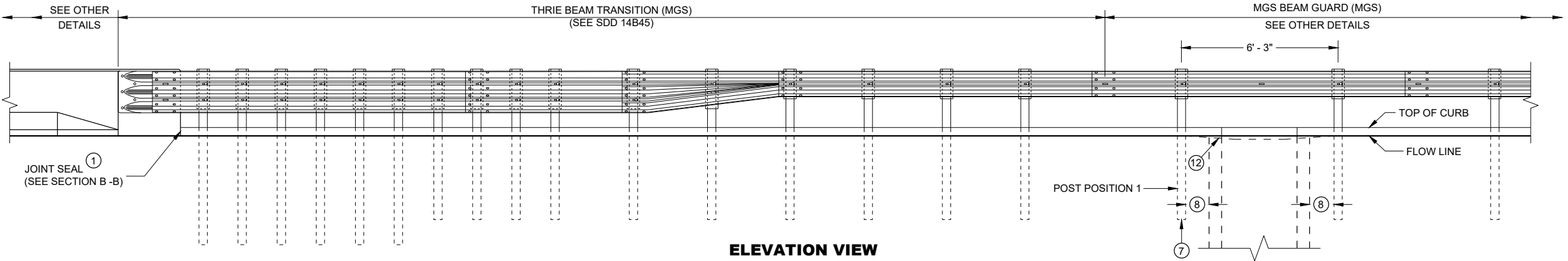
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- 1 USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- 2 NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- 3 PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- 4 CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- 5 PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.

- 6 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- 7 PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- 8 CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- 9 MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C-C.
- 10 SEE ROADWAY PLANS FOR FLUME LOCATION.
- 11 START CURB AND GUTTER TRANSITION OR END SECTION.
- 12 DEPRESS FLOW LINE (SEE DETAIL)



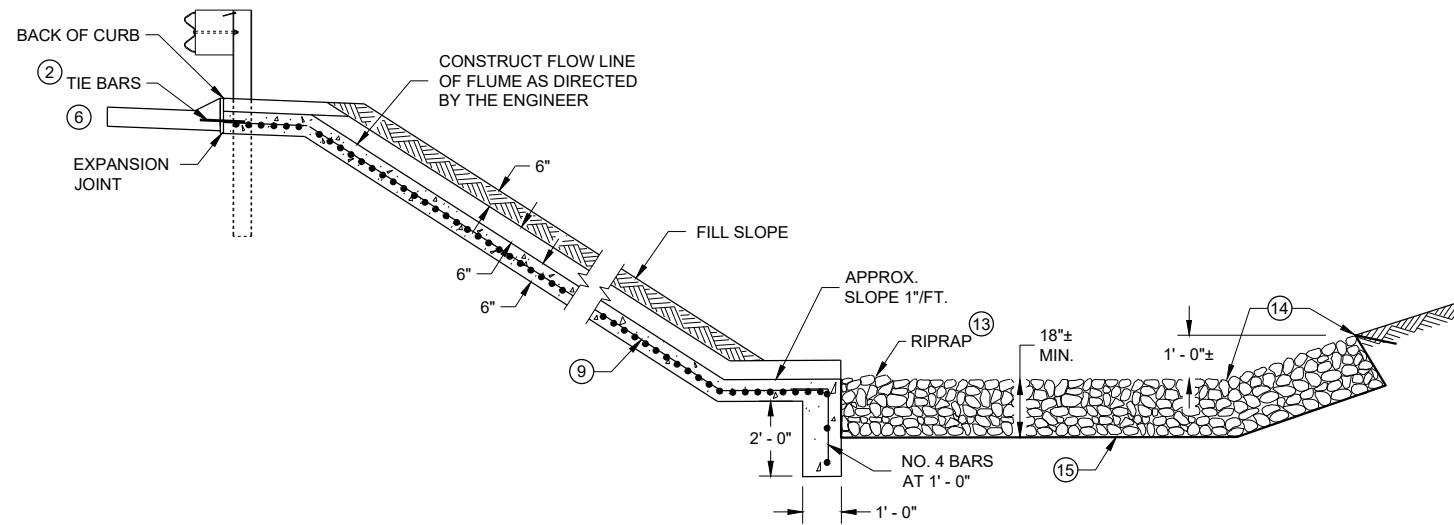
PLAN VIEW



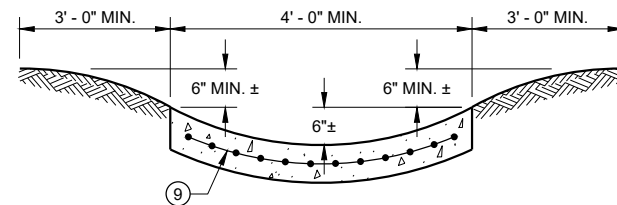
ELEVATION VIEW

CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES

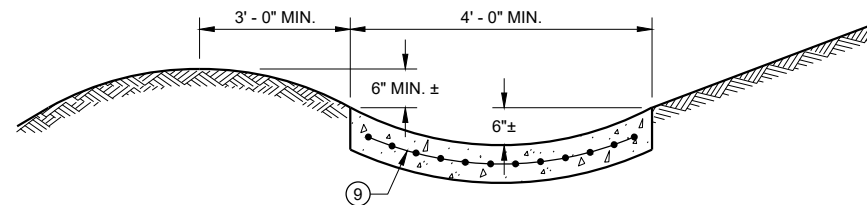
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



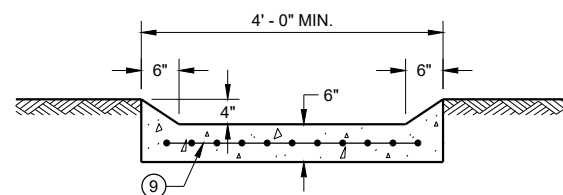
SECTION A - A



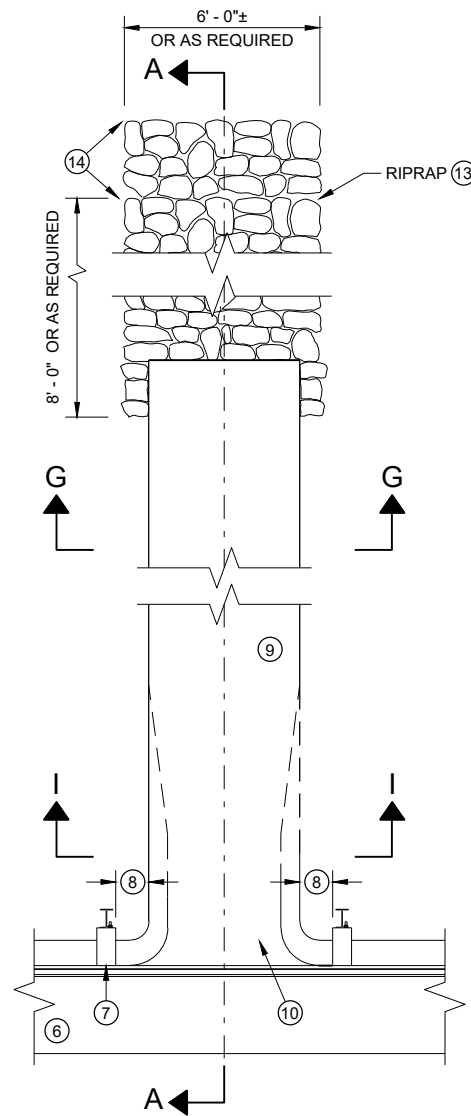
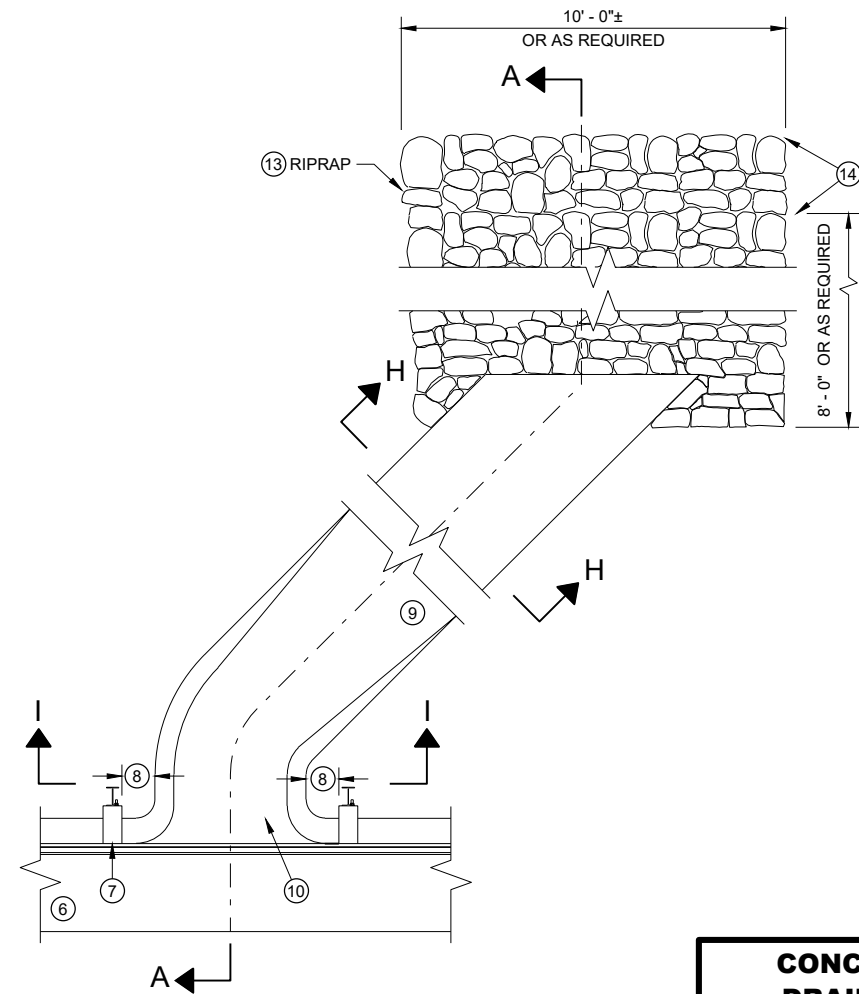
SECTION G - G



SECTION H - H



SECTION I - I

PLAN VIEW
PERPENDICULAR FLUMEPLAN VIEW
SKEWED FLUME

GENERAL NOTES

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

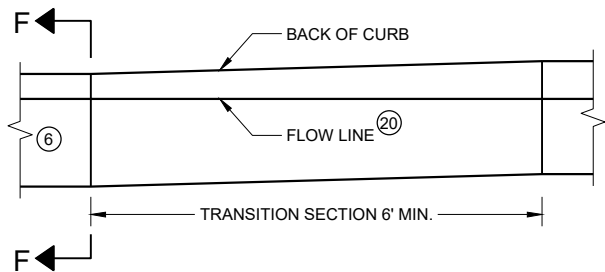
ALL STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.

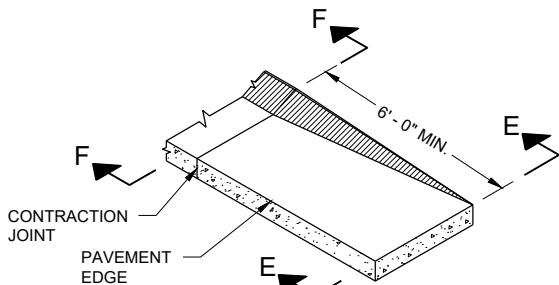
- ⑦ PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- ⑨ MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ⑩ SEE ROADWAY PLANS FOR FLUME LOCATION.
- ⑪ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑫ DEPRESS FLOW LINE (SEE DETAIL)
- ⑬ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑭ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH AS REQUIRED.
- ⑮ GEOTEXTILE TYPE HR.

**CONCRETE SURFACE
DRAINS FLUME TYPE
AT STRUCTURES**

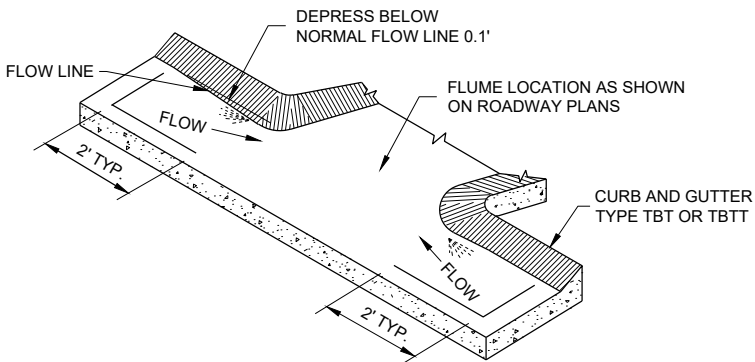
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 118



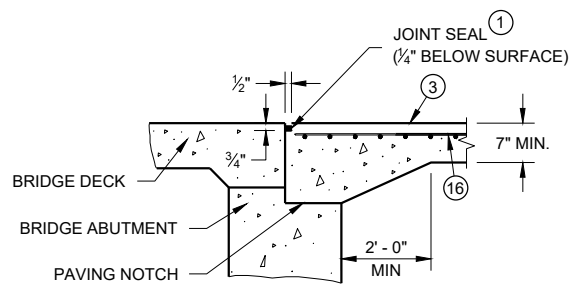
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



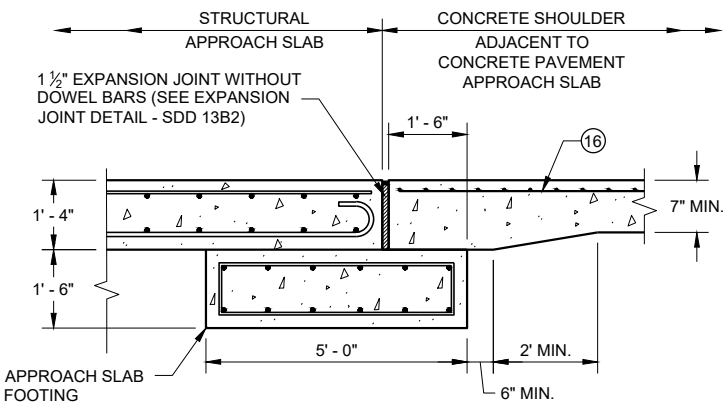
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBTT**



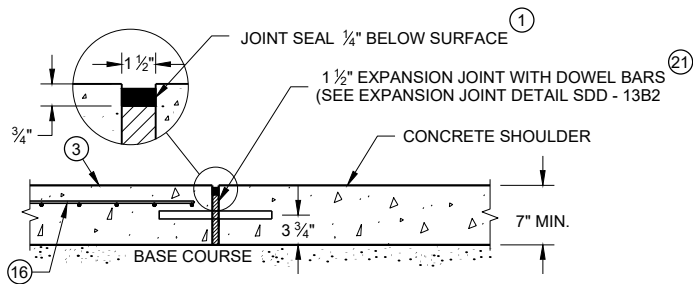
**CURB AND GUTTER FLOW LINE DEPRESSION
AT FLUMES CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBTT**



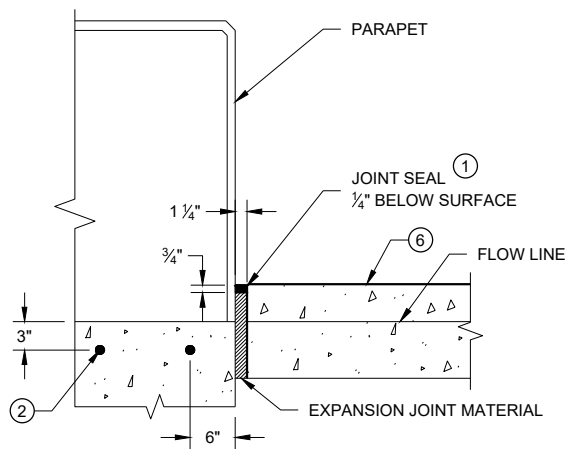
SECTION B-B



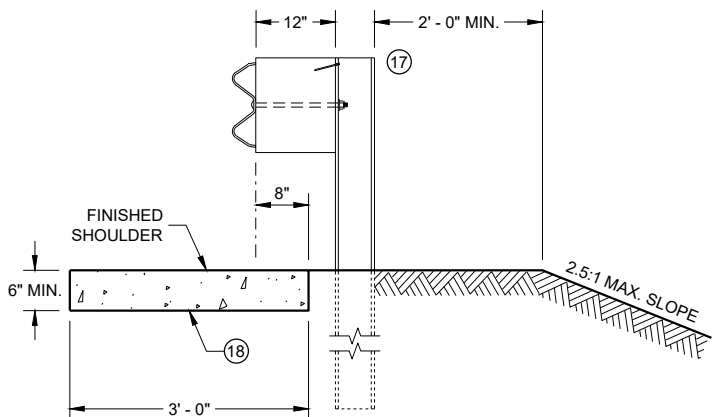
**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



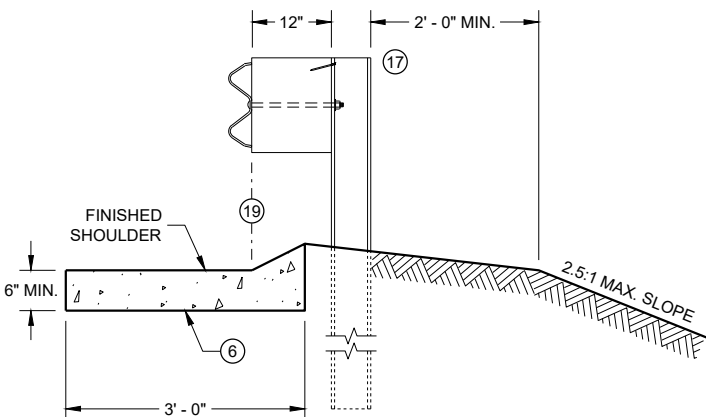
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



SECTION D - D



SECTION E - E



SECTION F - F

GENERAL NOTES

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

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

- USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBTT. USE TYPE TBTT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- PLACE FLUME BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- CENTER FLUME BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE EDGE OF FLUME TO POSTS.
- MINIMUM REINFORCEMENT SHALL BE 4" X 4" - W3.0 X W3.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- SEE ROADWAY PLANS FOR FLUME LOCATION.
- START CURB AND GUTTER TRANSITION OR END SECTION.
- DEPRESS FLOW LINE (SEE DETAIL)
- MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- GEOTEXTILE TYPE HR.
- MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBTT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.

CONCRETE SURFACE DRAINS FLUME TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVE ENGINEER 119

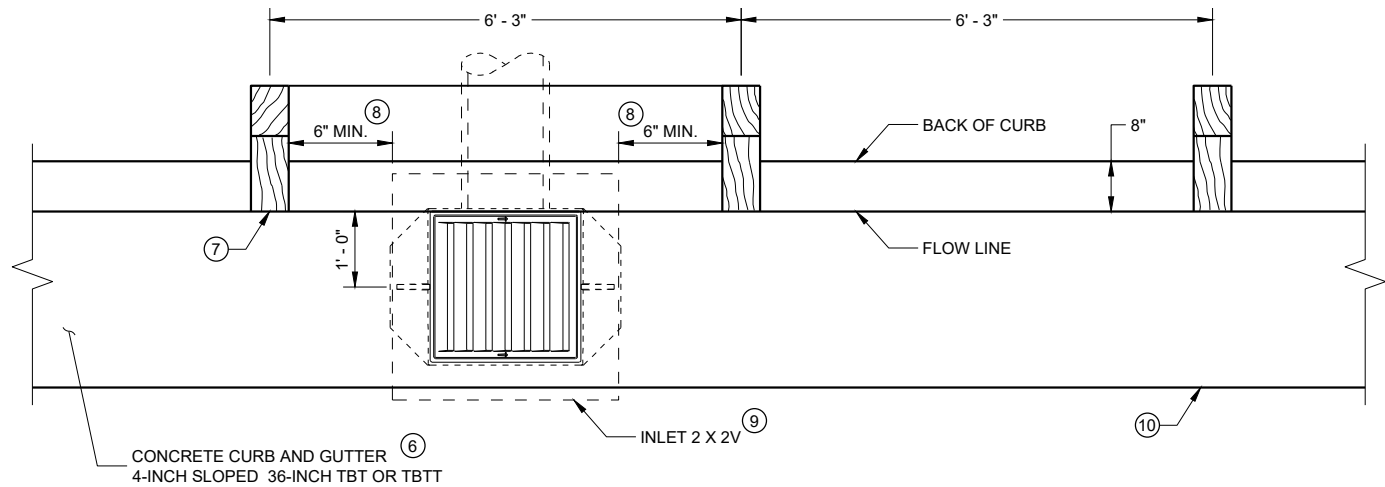
FHWA

GENERAL NOTES

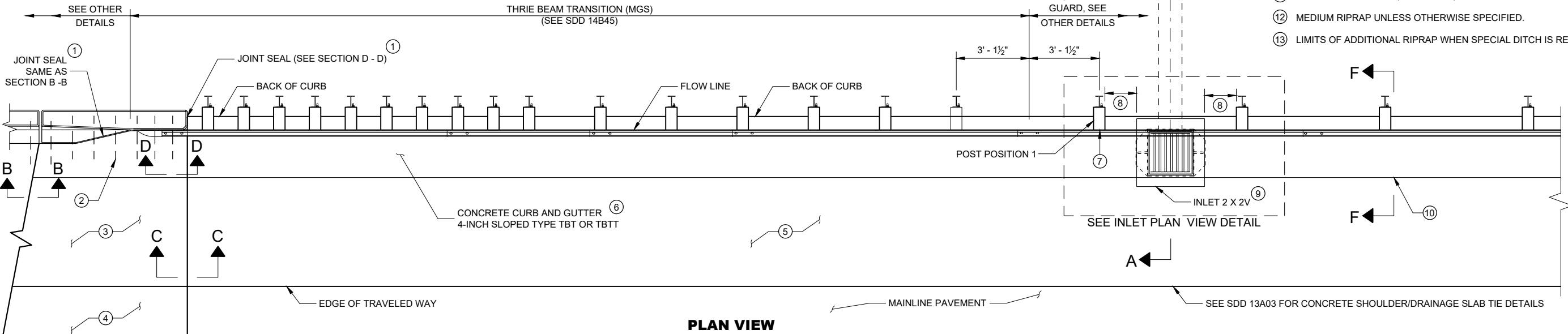
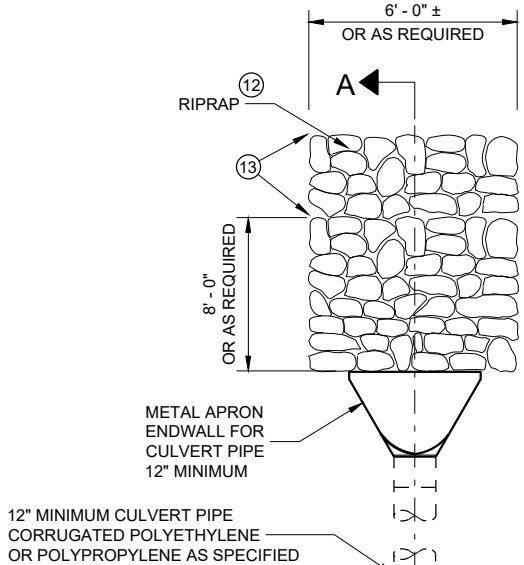
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

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

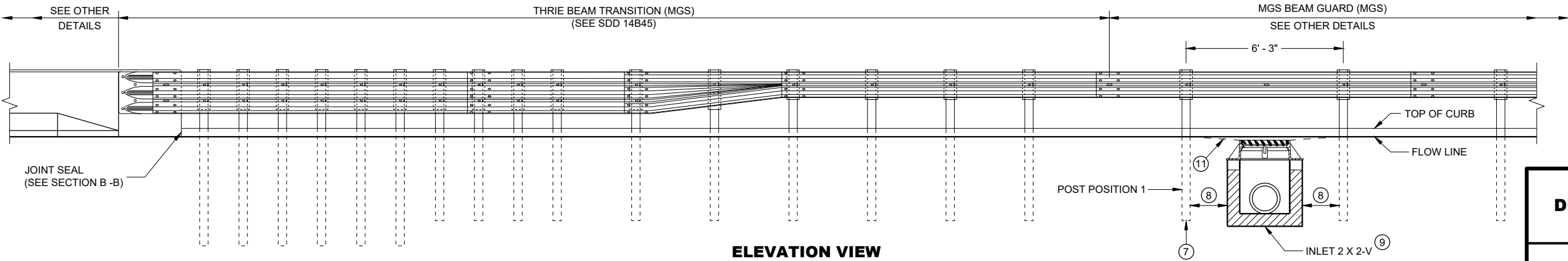
- 1 USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- 2 NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- 3 PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- 4 CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02.
- 5 PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- 6 CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- 7 PLACE DRAINAGE STRUCTURE BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- 8 CENTER DRAINAGE STRUCTURE BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE WALL OF DRAINAGE STRUCTURE TO POSTS.
- 9 SEE SDD 08A05 AND 08C07 FOR DETAILS. SEE ROADWAY PLANS FOR LOCATION.
- 10 START CURB AND GUTTER TRANSITION OR END SECTION.
- 11 DEPRESS FLOW LINE (SEE DETAIL)
- 12 MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- 13 LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.



INLET PLAN VIEW
(NOTE: RAIL NOT SHOWN FOR CLARITY)



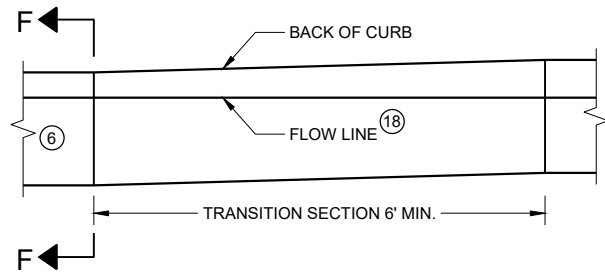
PLAN VIEW



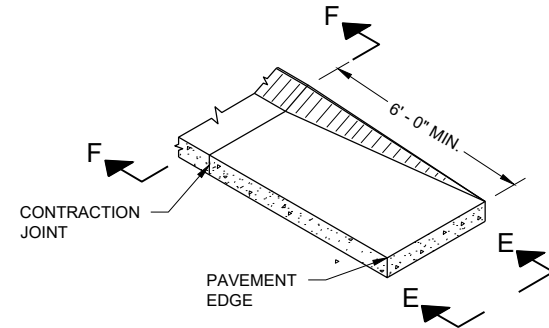
ELEVATION VIEW

CONCRETE SURFACE
DRAINS DROP INLET TYPE
AT STRUCTURES

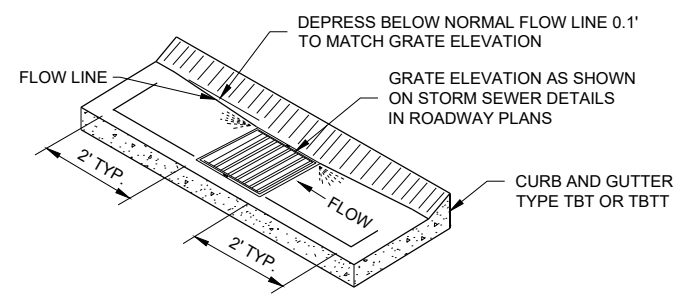
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 120



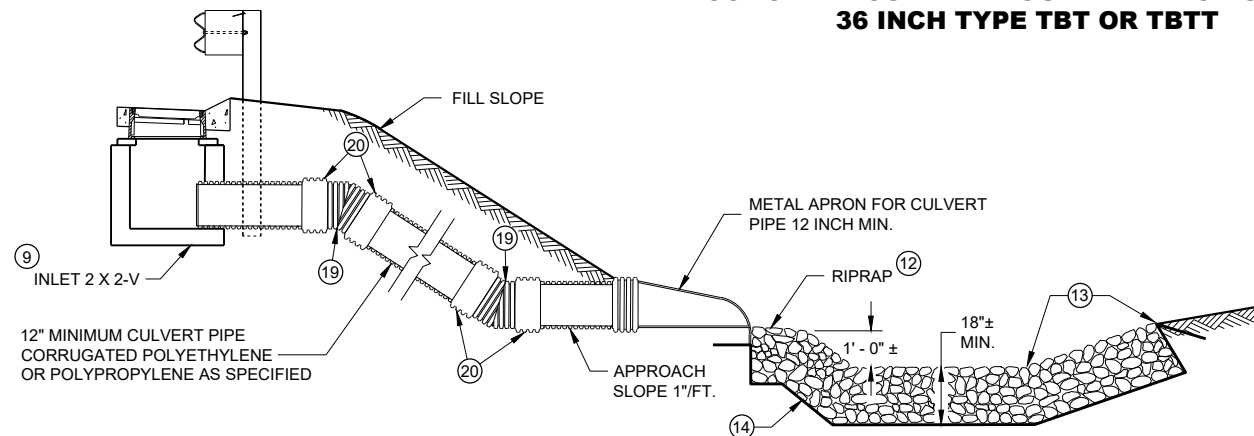
**CURB AND GUTTER TRANSITION SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBT**



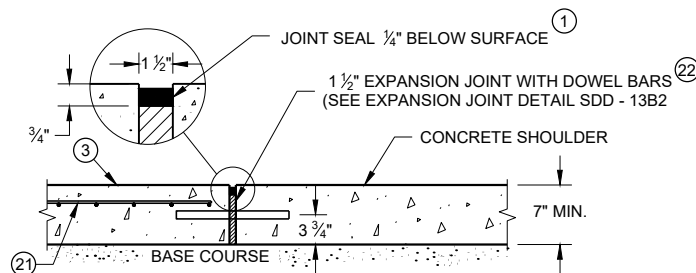
**CURB AND GUTTER END SECTION
CONCRETE CURB AND GUTTER 4-INCH SLOPED
36 INCH TYPE TBT OR TBT**



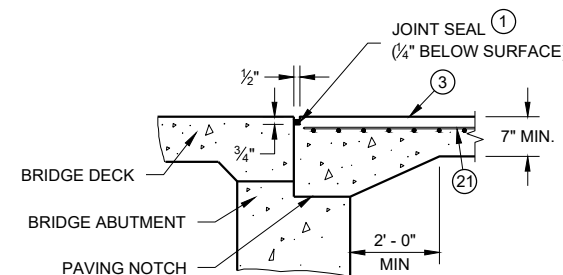
**CURB AND GUTTER FLOW LINE DEPRESSION
AT INLETS CONCRETE CURB AND GUTTER
4-INCH SLOPED 36 INCH TYPE TBT OR TBT**



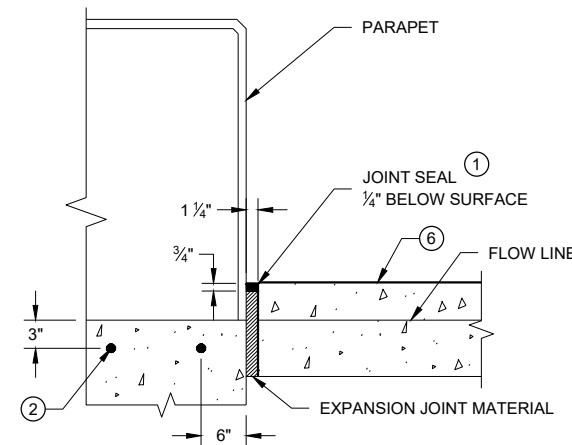
SECTION A - A



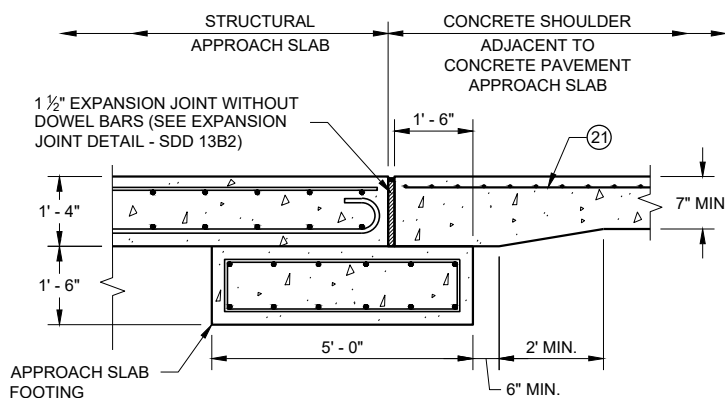
**SECTION C - C
JOINT DETAIL FOR BRIDGE APPROACH
WITH CONCRETE SHOULDERS**



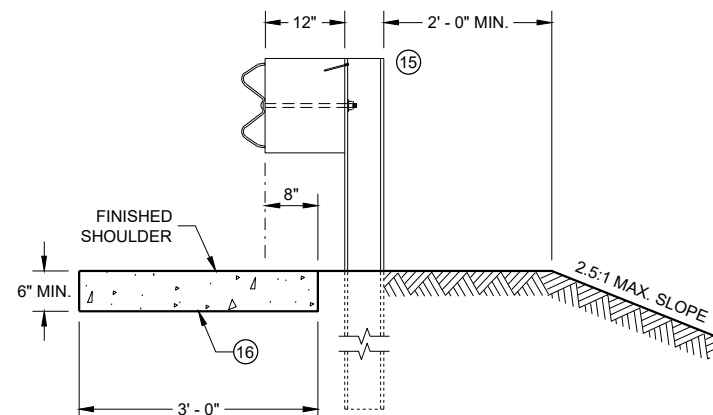
SECTION B-B



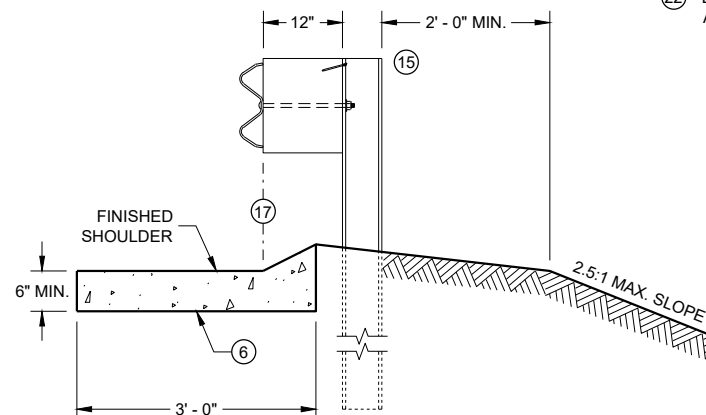
SECTION D - D



**SECTION C - C
JOINT DETAIL FOR BRIDGE WITH STRUCTURAL
APPROACH SLAB AND CONCRETE APPROACH SLAB**



SECTION E - E



SECTION F - F

GENERAL NOTES

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

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

- ① USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ② NO. 4 X 2' - 0" TIE BARS SPACED AT 12" C-C TO BE PLACED BY BRIDGE CONTRACTOR OR DRILLED TIE BARS PLACED AS DIRECTED BY THE ENGINEER.
- ③ PAVED CONCRETE SHOULDER (SDD 13A03) OR CONCRETE DRAINAGE SLAB.
- ④ CONCRETE PAVEMENT APPROACH SLAB (SHOWN) OR STRUCTURE APPROACH SLAB AND CONCRETE PAVEMENT APPROACH SLAB. SEE SDD 13B02 AND STRUCTURE PLANS.
- ⑤ PAVED CONCRETE SHOULDER (SDD 13A03) OR ASPHALT SHOULDER.
- ⑥ CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE TBT OR TBT. USE TYPE TBT CURB WITH NO. 4 X 2' - 0" TIE BARS SPACED AT 3' - 0" C-C ONLY WHEN ADJACENT TO CONCRETE PAVEMENTS.
- ⑦ PLACE DRAINAGE STRUCTURE BEFORE MSG THRIE BEAM TRANSITION POST 1 (SEE SDD 14B45)
- ⑧ CENTER DRAINAGE STRUCTURE BETWEEN POSTS. 6-INCH MINIMUM SEPARATION FROM OUTSIDE WALL OF DRAINAGE STRUCTURE TO POSTS.
- ⑨ SEE SDD 08A05 AND 08C07 FOR DETAILS. SEE ROADWAY PLANS FOR LOCATION.
- ⑩ START CURB AND GUTTER TRANSITION OR END SECTION.
- ⑪ DEPRESS FLOW LINE (SEE DETAIL)
- ⑫ MEDIUM RIPRAP UNLESS OTHERWISE SPECIFIED.
- ⑬ LIMITS OF ADDITIONAL RIPRAP WHEN SPECIAL DITCH IS REQUIRED.
- ⑭ GEOTEXTILE TYPE HR.
- ⑮ MSG THRIE BEAM TRANSITION POST 1. SEE SDD 14B45 FOR ADDITIONAL CONSTRUCTION DETAILS AND ACCEPTABLE MATERIALS.
- ⑯ MAINTAIN WIDTH, THICKNESS AND CROSS SLOPE OF ADJACENT TYPE TBT OR TBT CURB. SEE NOTE 6 FOR TIE BAR SPACING.
- ⑰ ALIGN FACE OF POST BLOCK WITH FLOW LINE.
- ⑱ MAINTAIN FLOW LINE AT EDGE OF PAVEMENT/FACE OF BEAM GUARD AS APPLICABLE.
- ⑲ MANUFACTURER SUPPLIED BEND.
- ⑳ MANUFACTURER SUPPLIED EXTERNAL MECHANICAL COUPLING OR A MANUFACTURER RECOMMENDED COUPLING WITH A MASTIC IMPREGNATED GEOTEXTILE WRAP AND MECHANICAL FASTENING BANDS.
- ㉑ MINIMUM REINFORCEMENT SHALL BE 6" X 6" - W4.0 X W4.0 OR NO. 3 BARS LONGITUDINAL AND TRANSVERSE SPACING 12" C - C.
- ㉒ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING HMA PAVEMENTS.

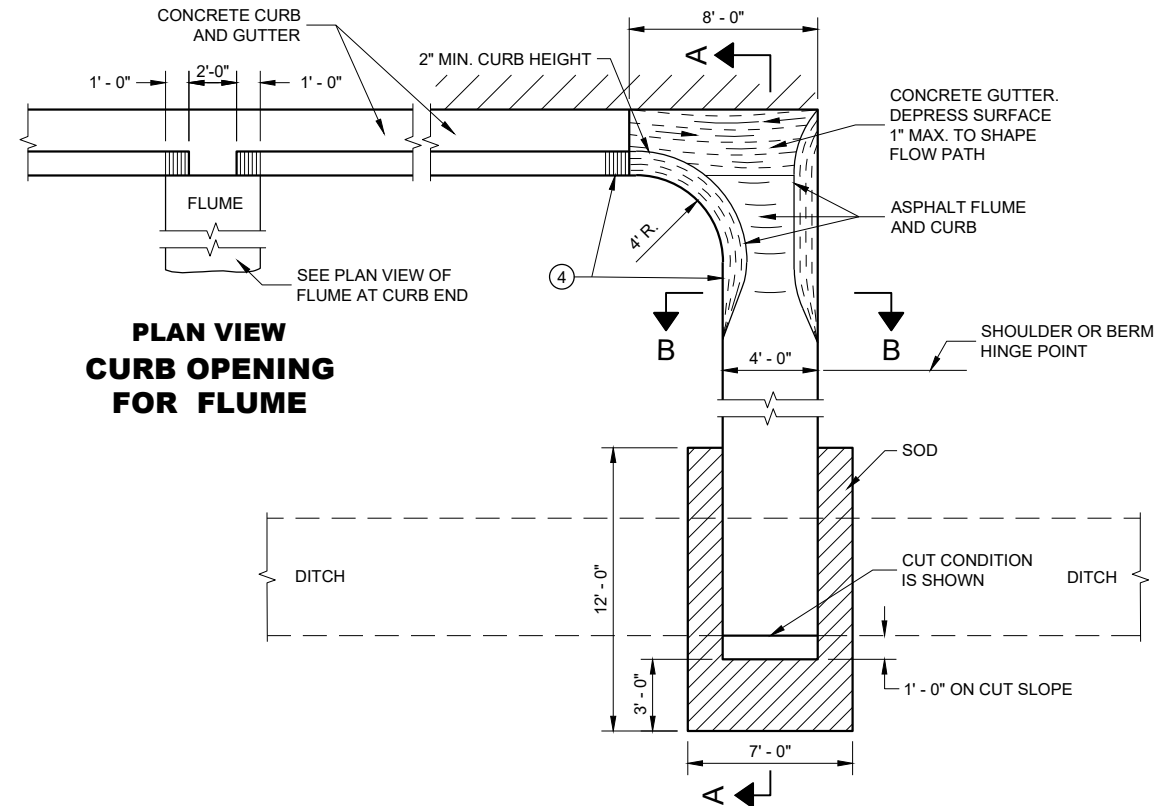
CONCRETE SURFACE DRAINS DROP INLET TYPE AT STRUCTURES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 121
FHWA

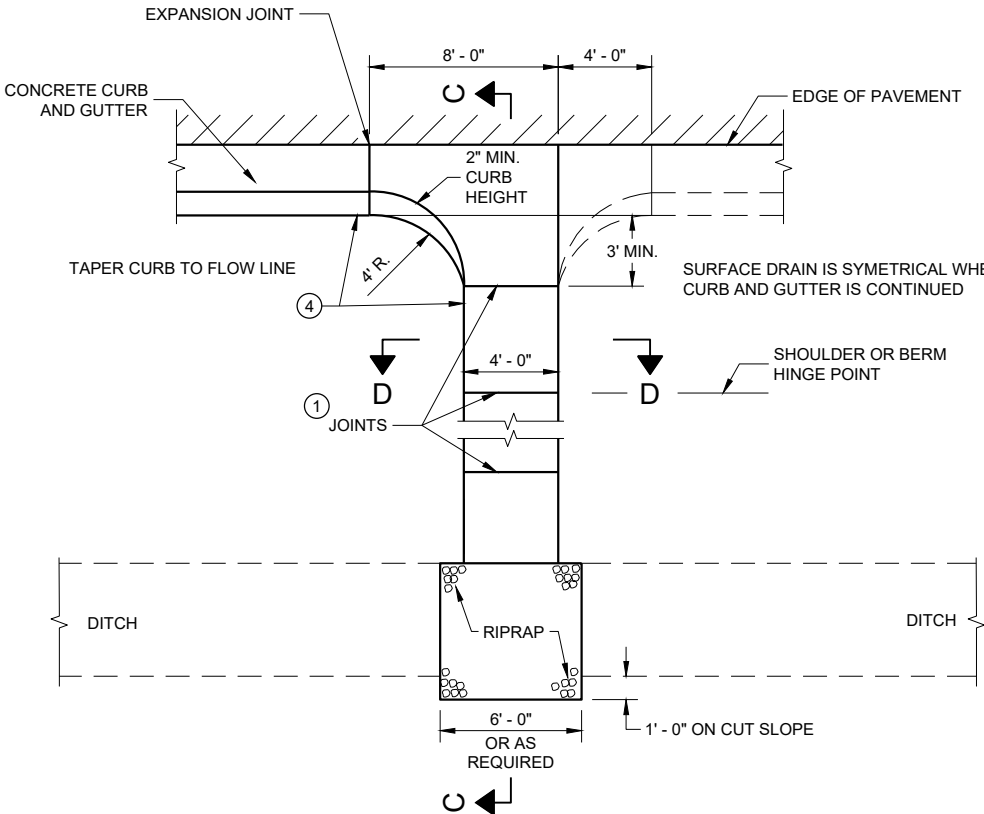
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING
FOR FLUME

PLAN VIEW
FLUME AT CURB END



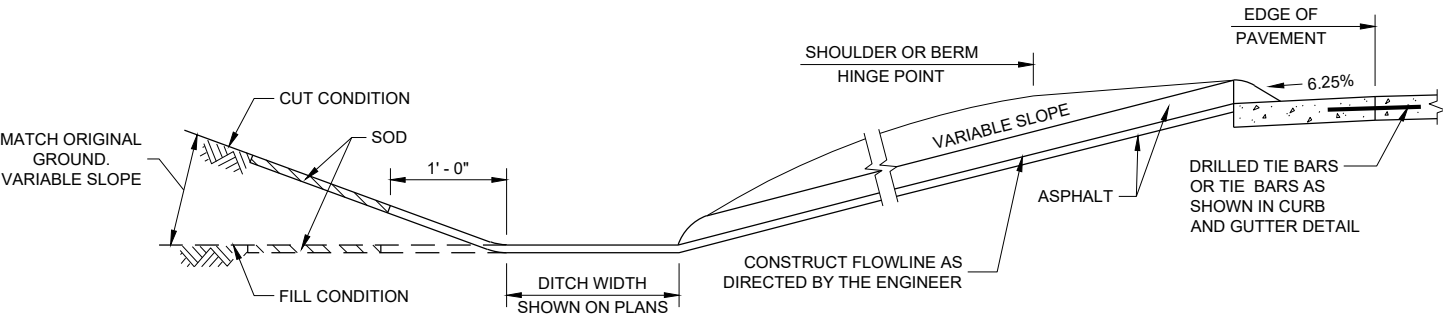
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

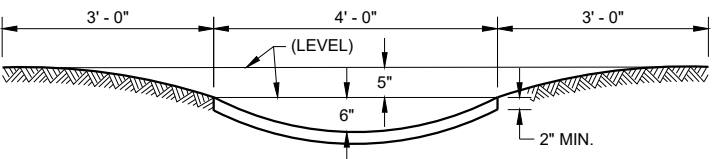
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

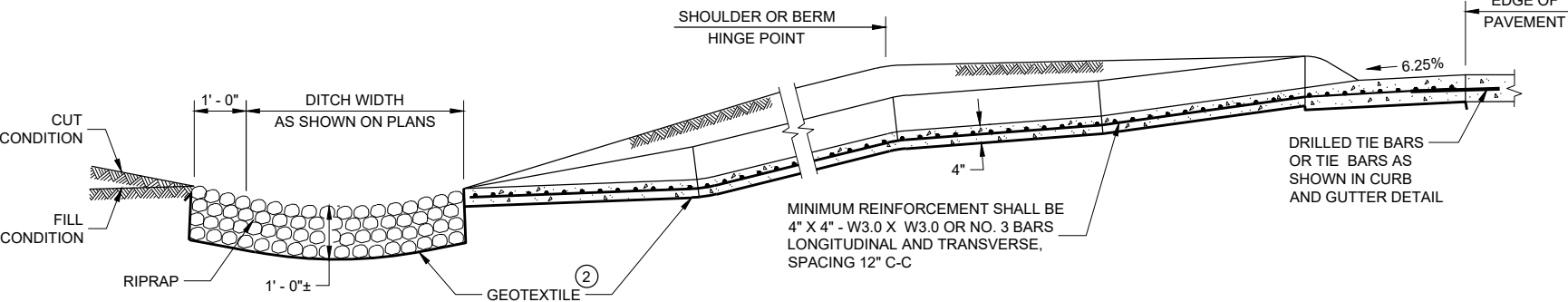
- JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.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



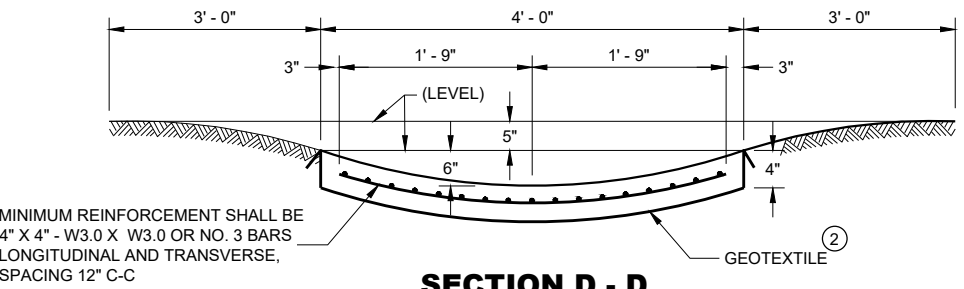
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

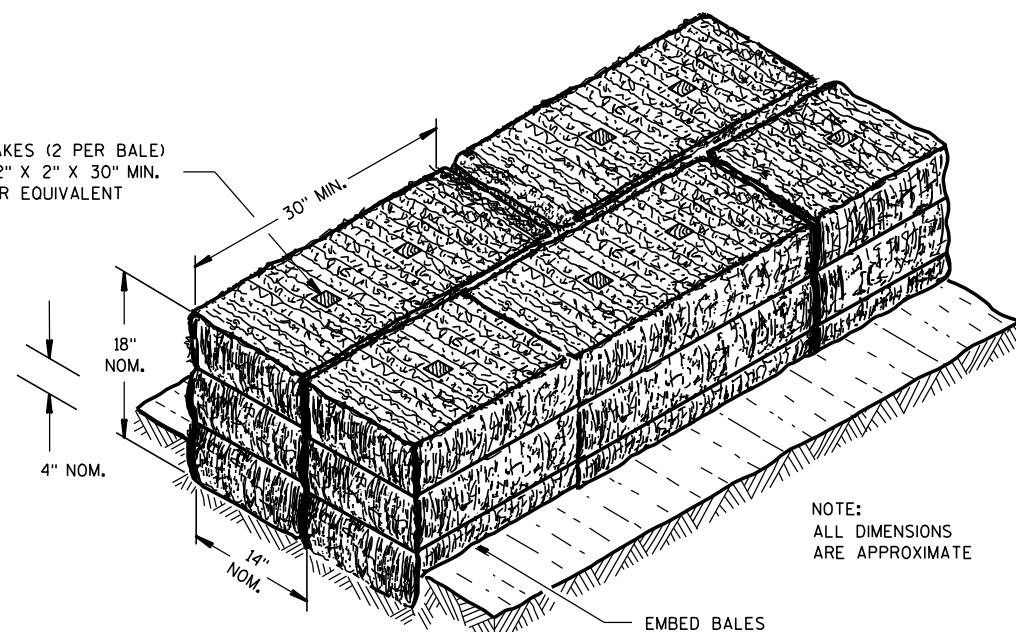
CONCRETE SURFACE
DRAINS AND
ASPHALTIC FLUMES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER
122

FHWA

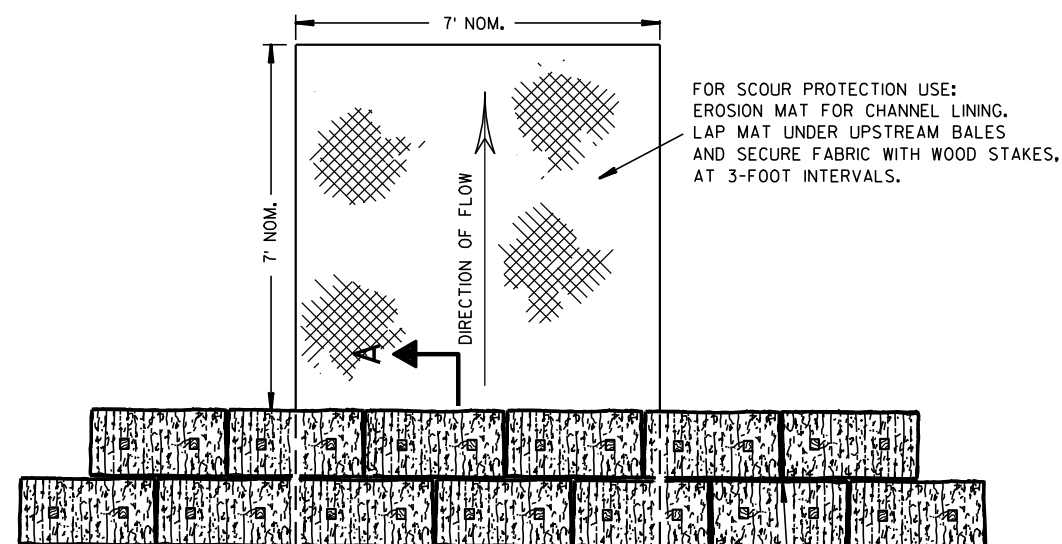
WOOD STAKES (2 PER BALE)
NOMINAL 2" X 2" X 30" MIN.
LENGTH OR EQUIVALENT



NOTE:
ALL DIMENSIONS
ARE APPROXIMATE

EMBED BALES

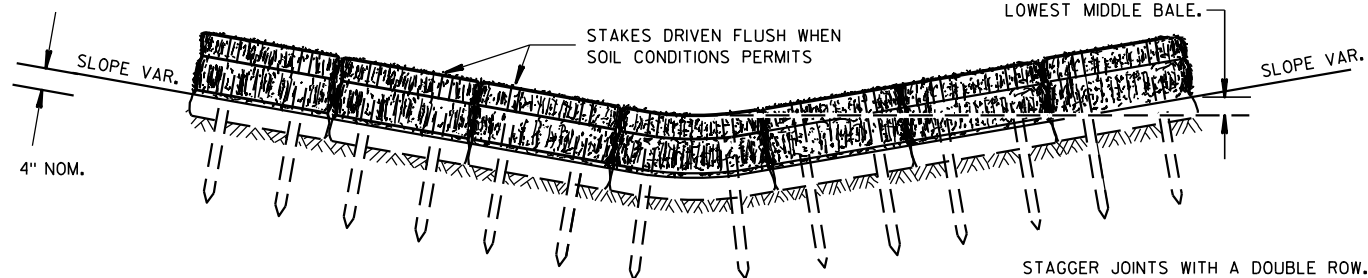
SECTION A-A



PLAN VIEW

STAGGER JOINTS BETWEEN ADJACENT
ROWS OF BALES.

BOTTOM ELEVATION OF END BALE SHALL
BE EQUAL TO OR GREATER THAN TOP OF
LOWEST MIDDLE BALE.



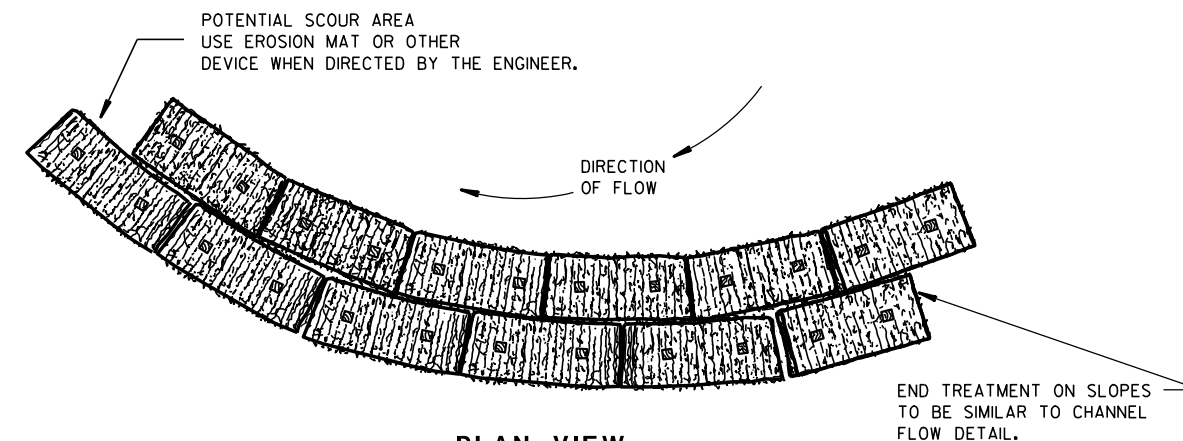
FRONT ELEVATION

TEMPORARY DITCH CHECK USING EROSION BALES ①

GENERAL NOTES

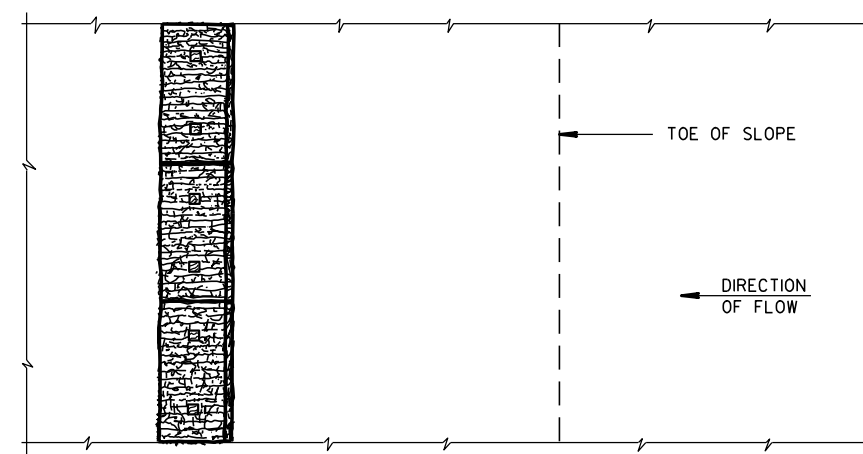
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

- 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.

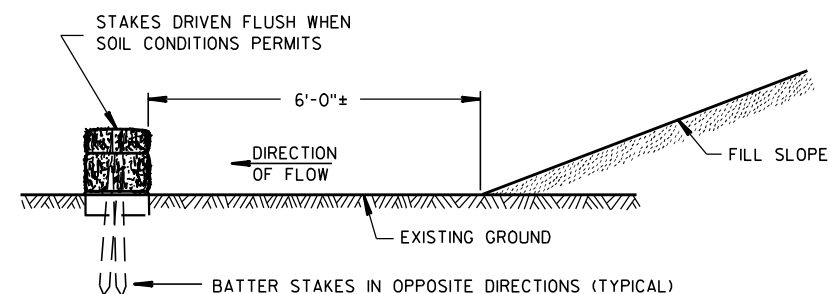


PLAN VIEW

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

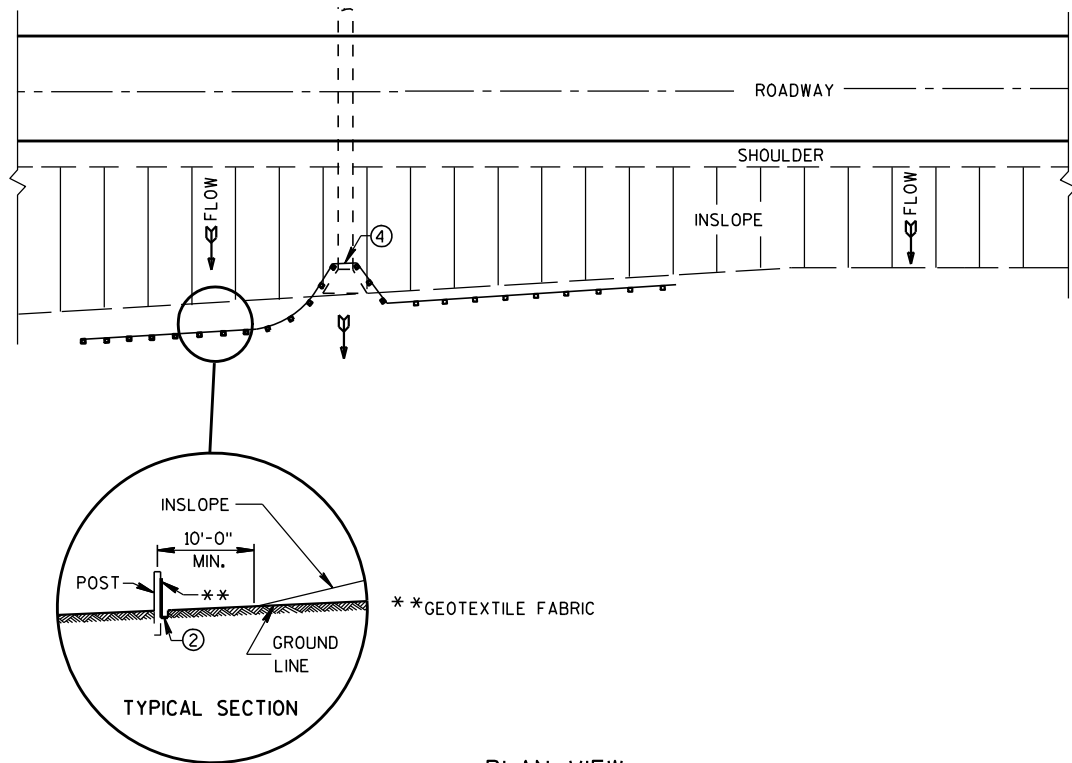
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

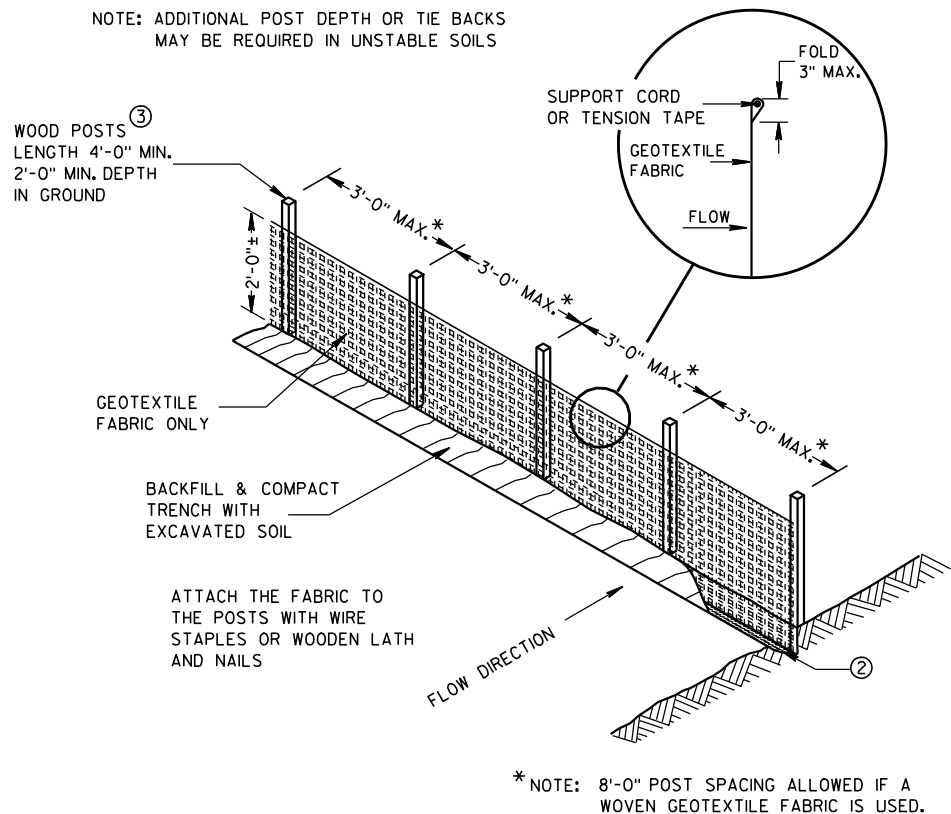
6/04/02
DATE

/S/ Beth Conn-----
CHIEF ROADWAY DEVELOP 123 ENGINEER

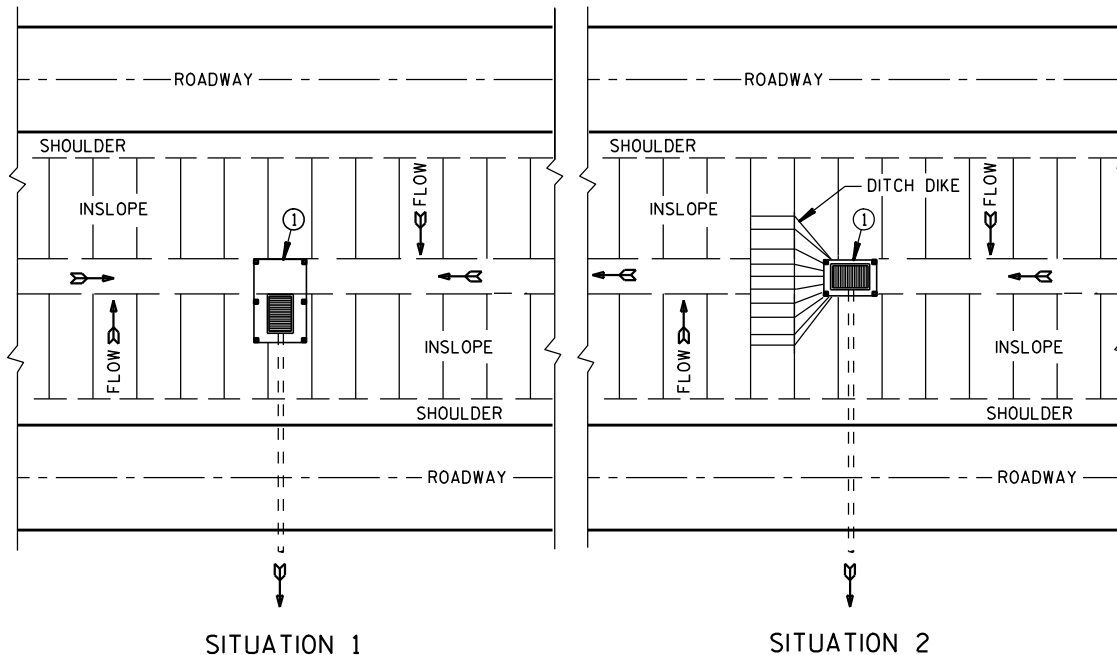
FHWA



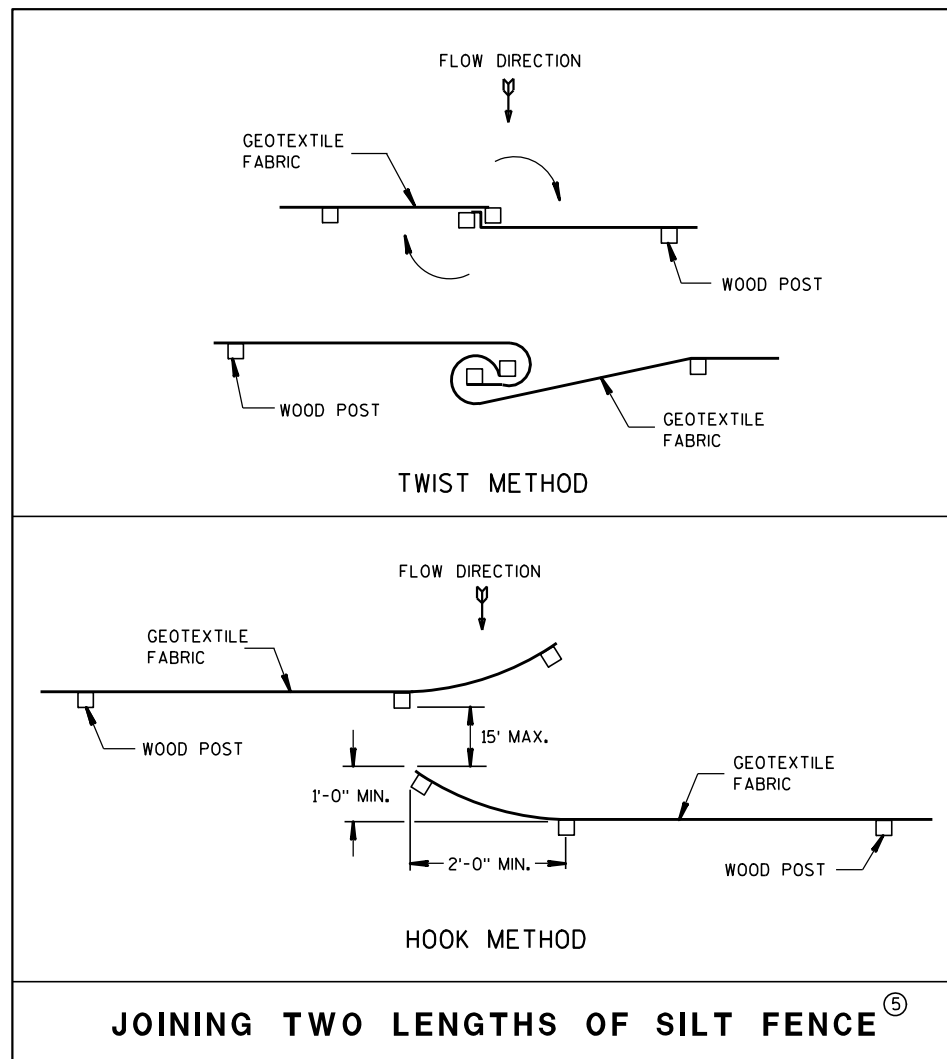
PLAN VIEW
TYPICAL APPLICATION OF SILT FENCE



SILT FENCE



PLAN VIEW
SILT FENCE AT MEDIAN SURFACE DRAINS

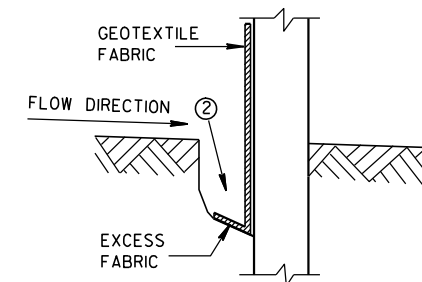


JOINING TWO LENGTHS OF SILT FENCE ⑤

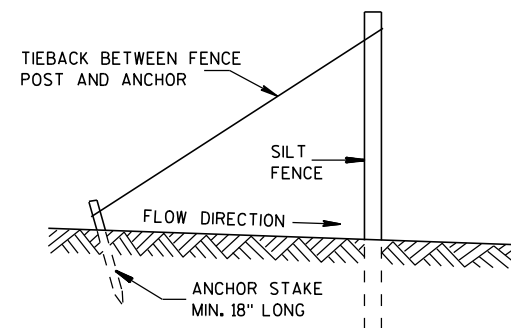
GENERAL NOTES

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

- ① HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- ② FOR MANUAL INSTALLATIONS THE TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- ③ WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY.
- ④ SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- ⑤ CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.

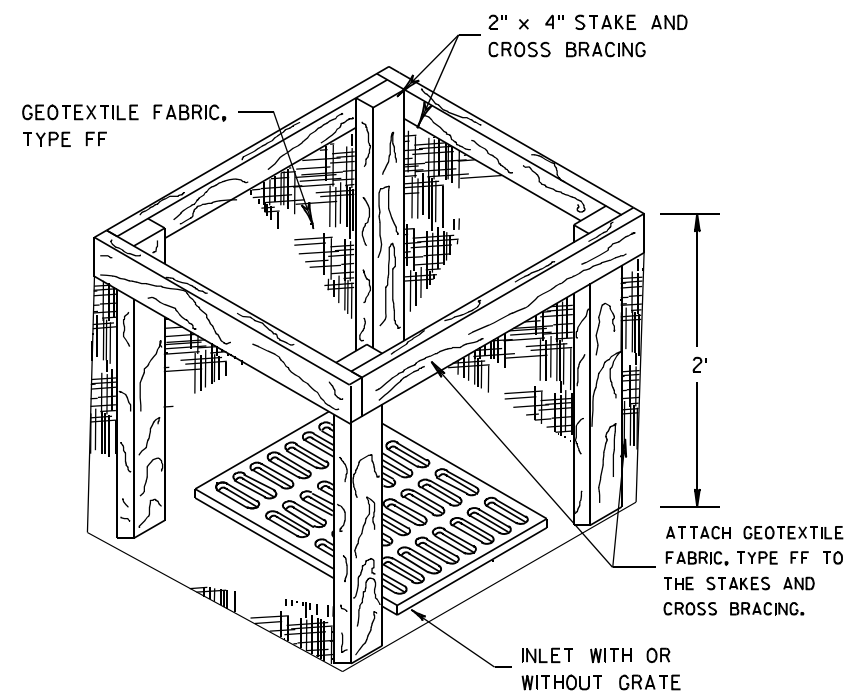
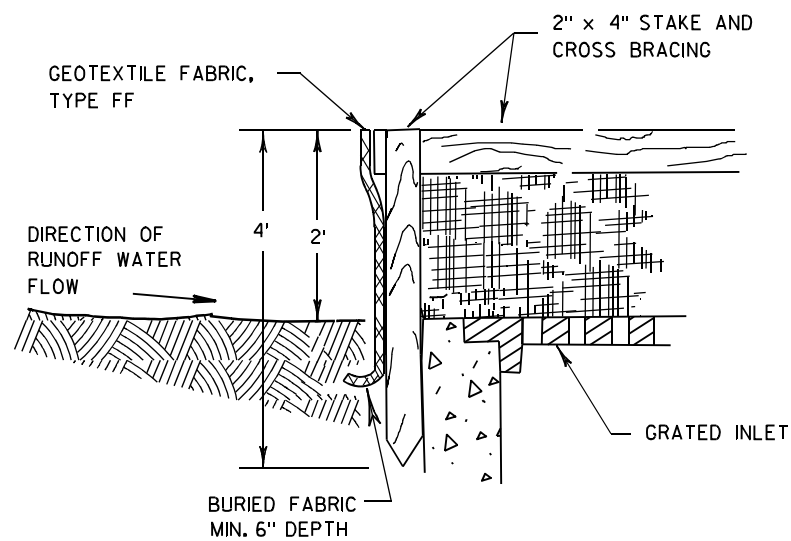


TRENCH DETAIL



SILT FENCE TIE BACK
(WHEN REQUIRED BY THE ENGINEER)

SILT FENCE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Conn CHIEF ROADWAY DEVELOPER
FHWA	124 ENGINEER



INLET PROTECTION, TYPE A

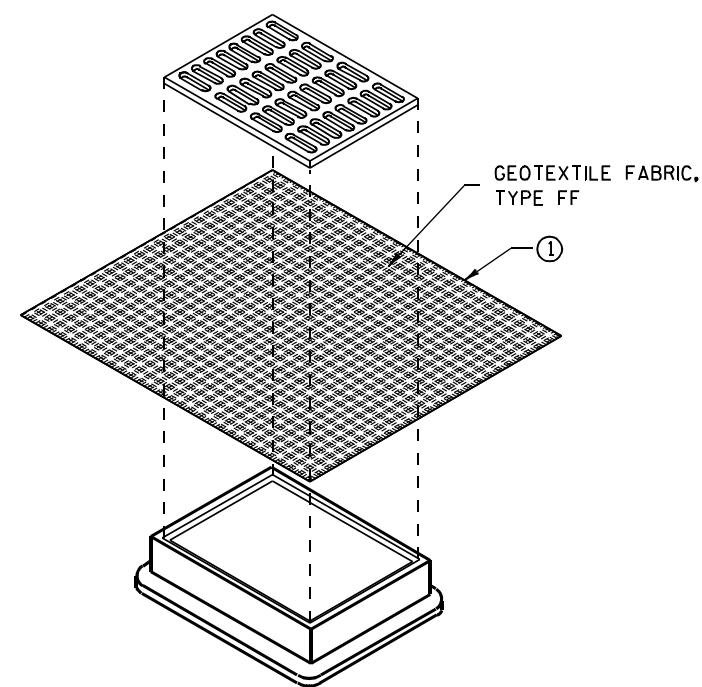
GENERAL NOTES

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.

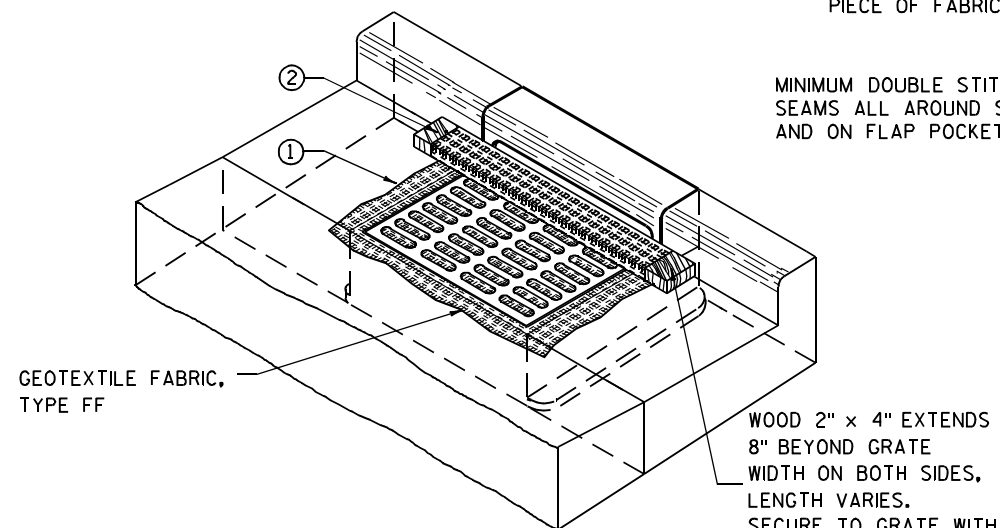
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

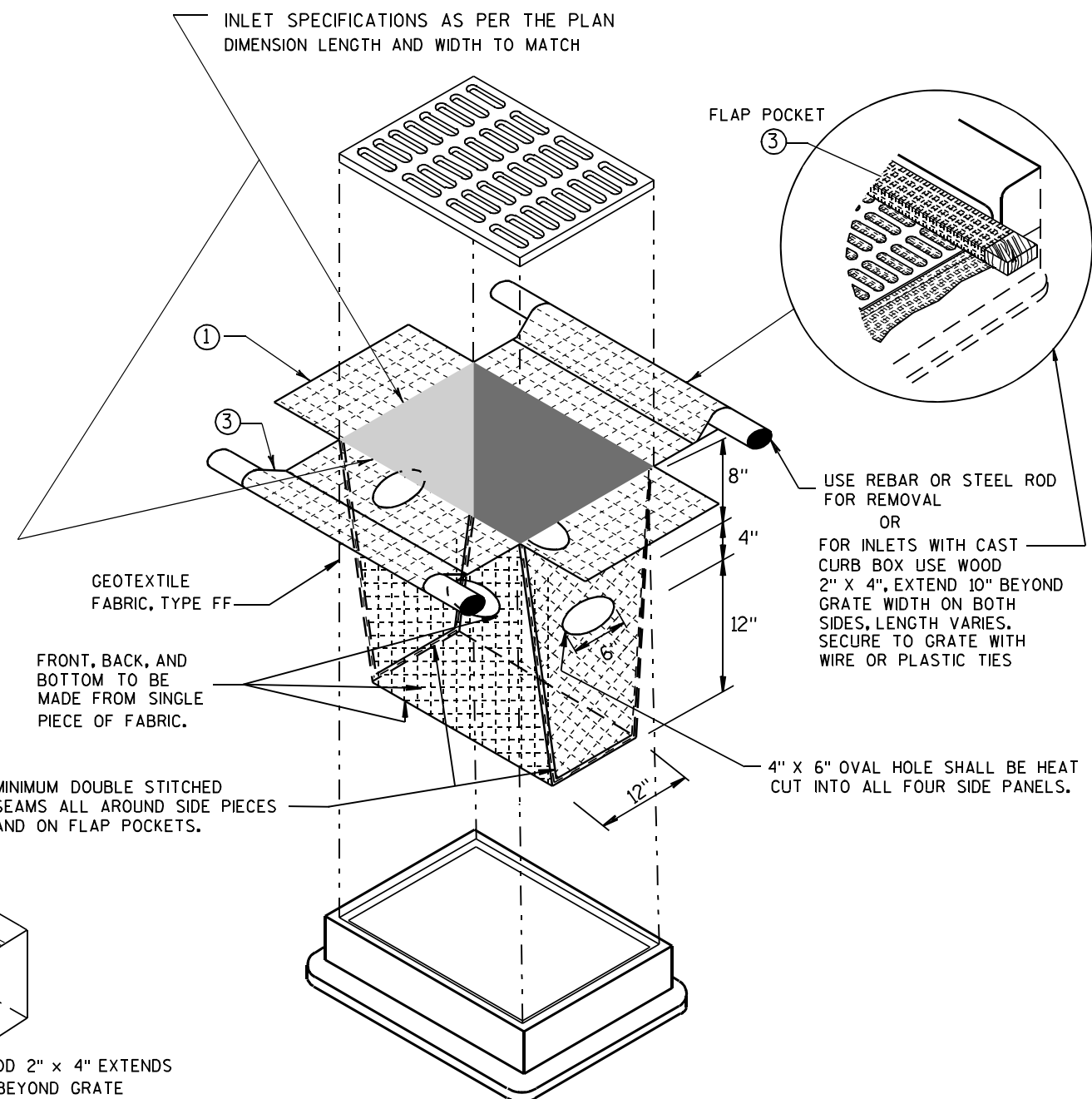
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

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)

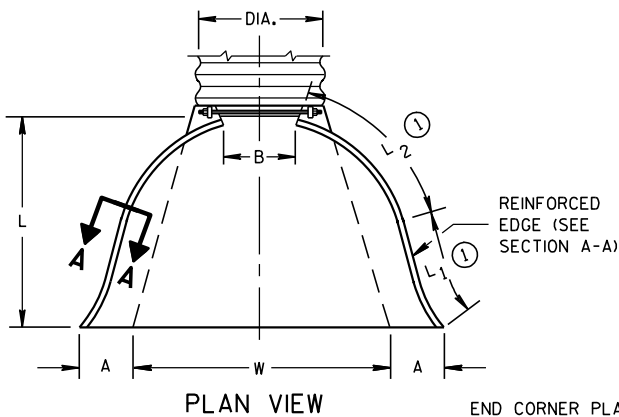
**INLET PROTECTION
TYPE A, B, C, AND D**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

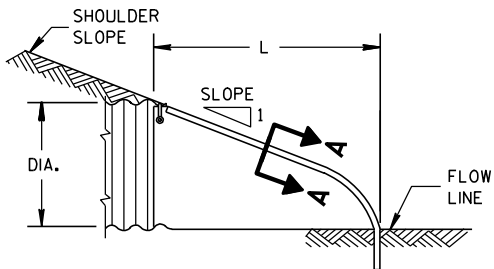
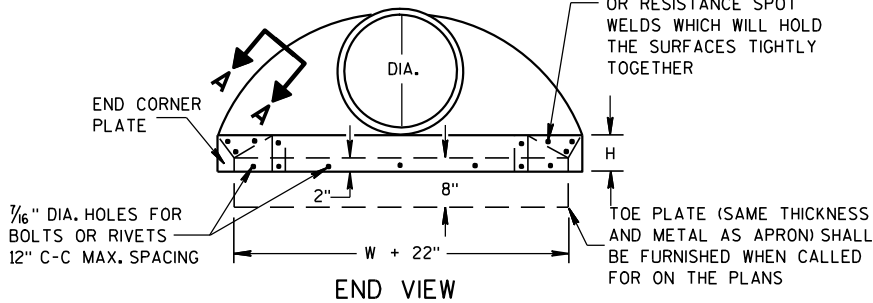
APPROVED
10/16/02 /S/ Beth Connolly
DATE 125
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER

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	Pc.
42	.109	.105	16	22	11	69	24	75 5/8	84	2 1/2 to 1	2	Pc.
48	.109	.105	18	27	12	78	24	81	90	2 1/4 to 1	3	Pc.
54	.109	.105	18	30	12	84	30	85 1/2	102	2 1/4 to 1	3	Pc.
60	.109x	.105x	18	33	12	87	—	—	114	2 to 1	3	Pc.
66	.109x	.105x	18	36	12	87	—	—	120	2 to 1	3	Pc.
72	.109x	.105x	18	39	12	87	—	—	126	2 to 1	3	Pc.
78	.109x	.105x	18	42	12	87	—	—	132	1 1/2 to 1	3	Pc.
84	.109x	.105x	18	45	12	87	—	—	138	1 1/2 to 1	3	Pc.
90	.109x	.105x	18	37	12	87	—	—	144	1 1/2 to 1	3	Pc.
96	.109x	.105x	18	35	12	87	—	—	150	1 1/2 to 1	3	Pc.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



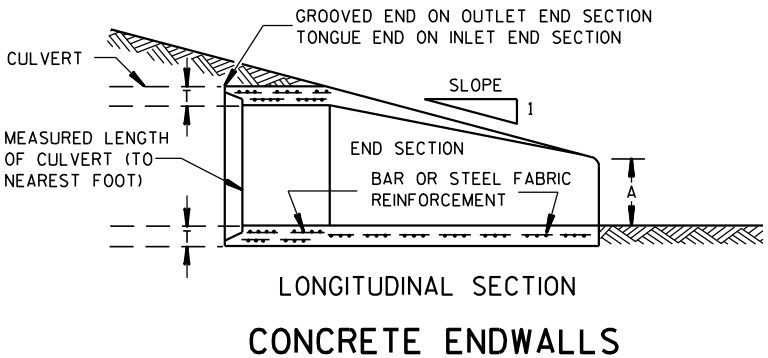
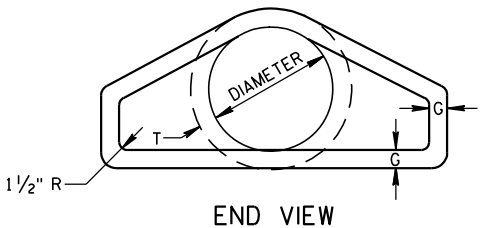
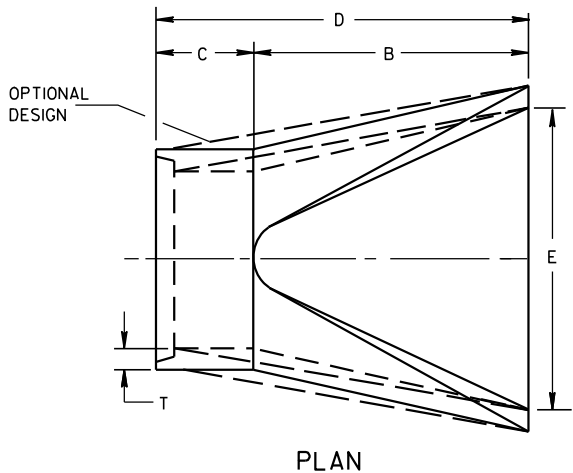
REINFORCED
EDGE (SEE
SECTION A-A)



SIDE ELEVATION
METAL ENDWALLS

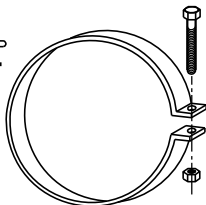
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 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

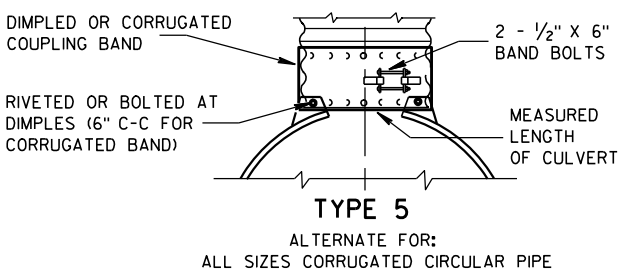
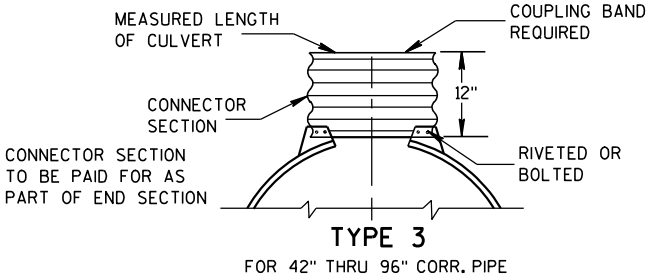
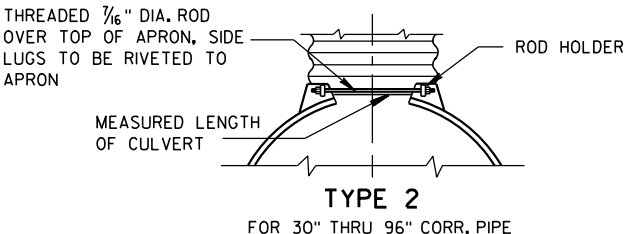
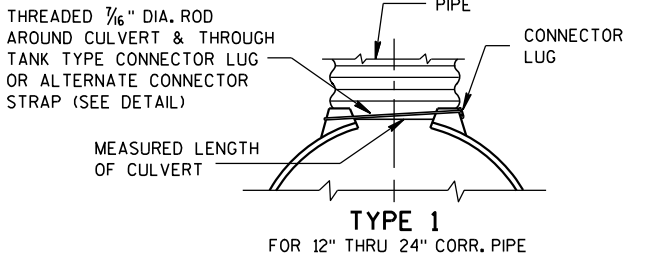


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



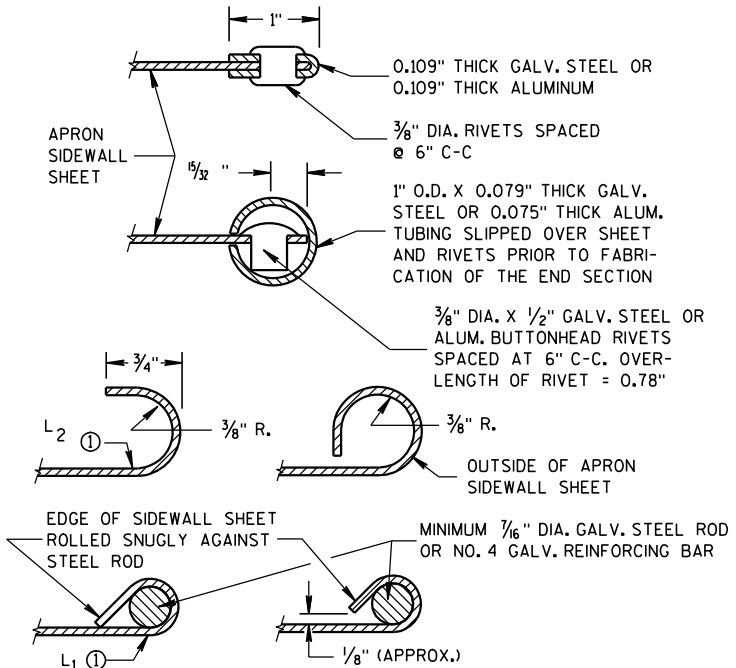
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL,
AND CORRUGATED BAND FITS INSIDE ENDWALL.
DIMPLED BAND MAY BE USED WITH HELICALLY
CORRUGATED PIPE.

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.

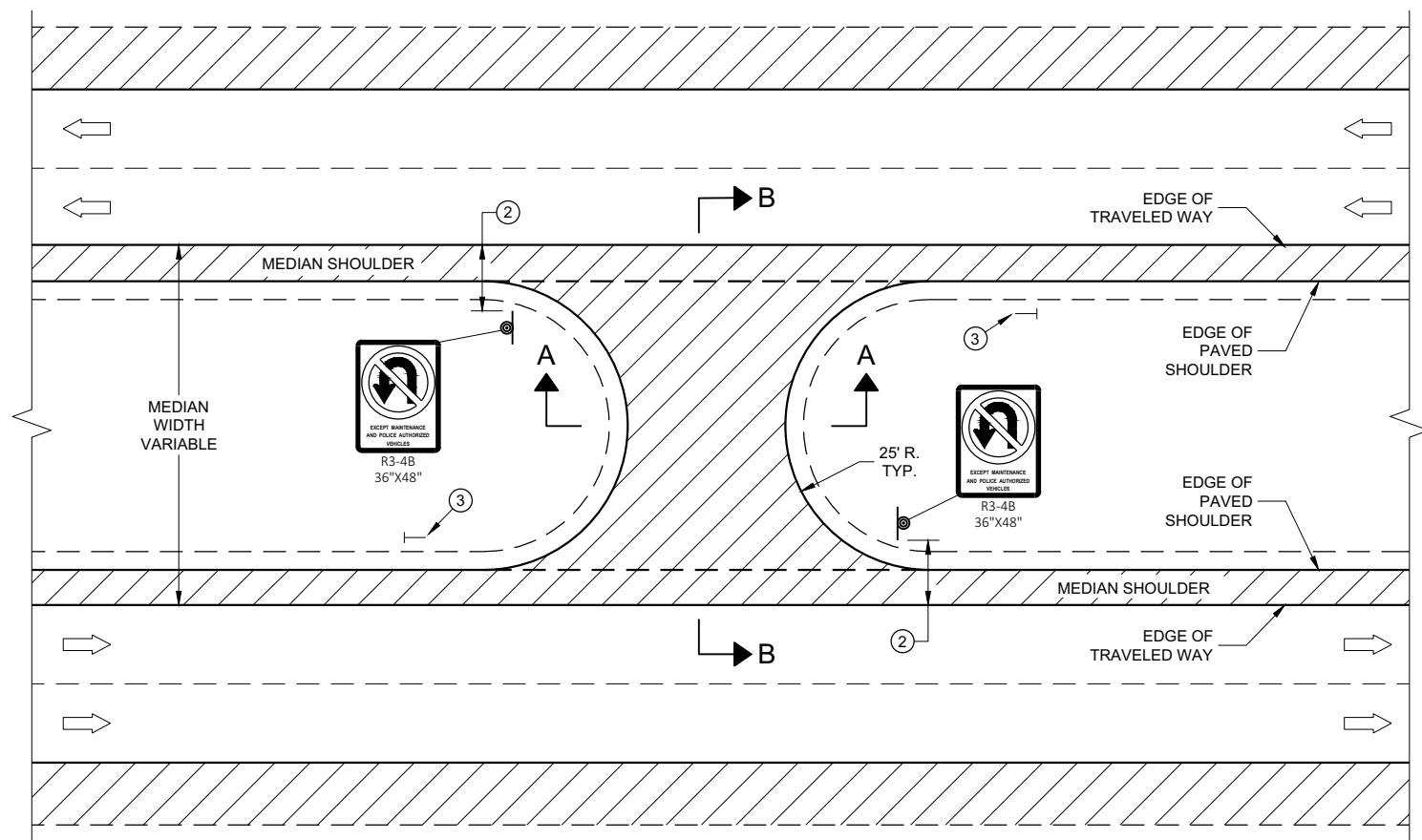
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT
TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT
TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

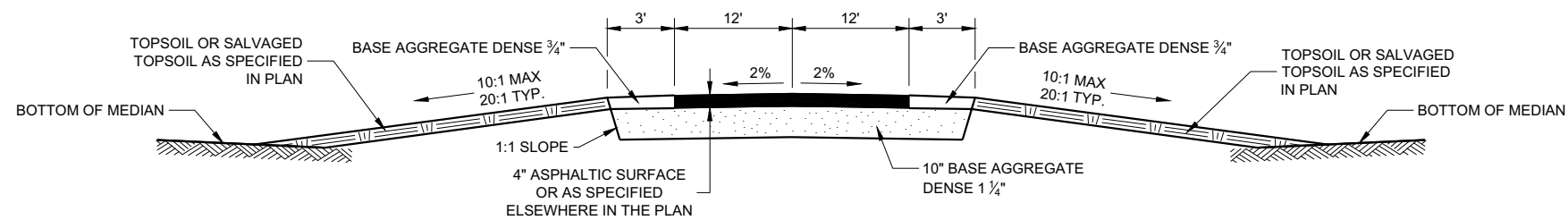
APRON ENDWALLS FOR CULVERT PIPE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

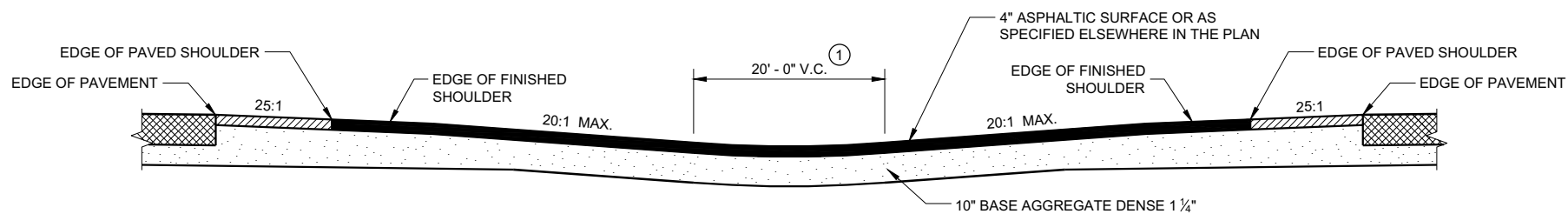
APPROVED
11/30/94
DATE
/S/ Rory L. Rhinehart
CHIEF ROADWAY DEVELOPMENT
NEER
FHWA



PLAN VIEW



SECTION A-A



SECTION B-B

GENERAL NOTES

- 1 ADJUST VERTICAL CURVE LOCATION LATERALLY TO MAINTAIN 20:1 MAX.
- 2 SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDED ELSEWHERE IN THE CONTRACT.
- 3 INSTALL DELINEATOR. SEE STANDARD DETAIL DRAWING 15A4.

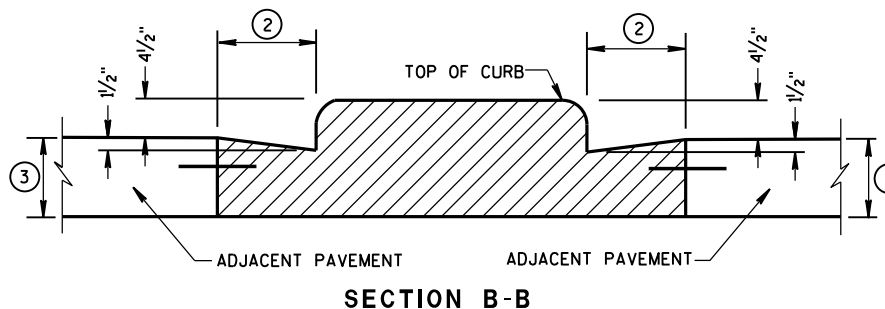
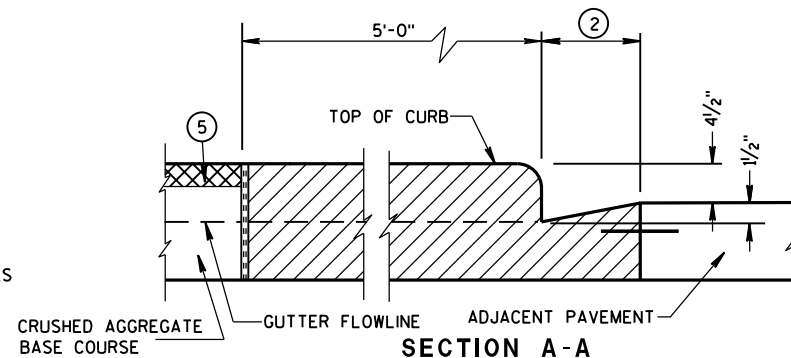
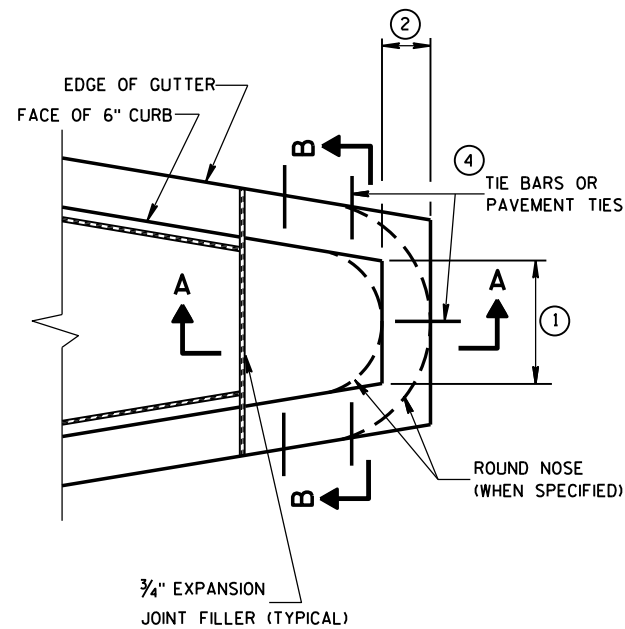
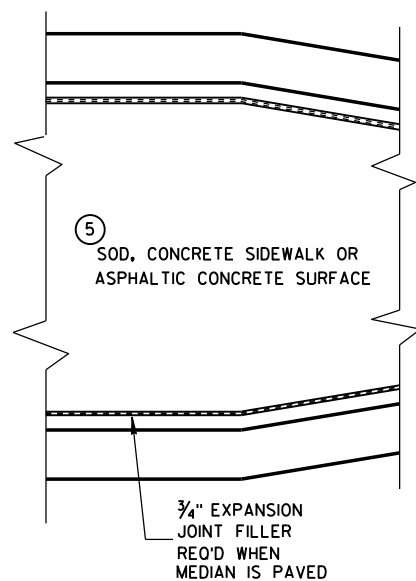
LEGEND

- SIGN ON PERMANENT SUPPORT
- DELINEATOR
- DIRECTION OF TRAFFIC

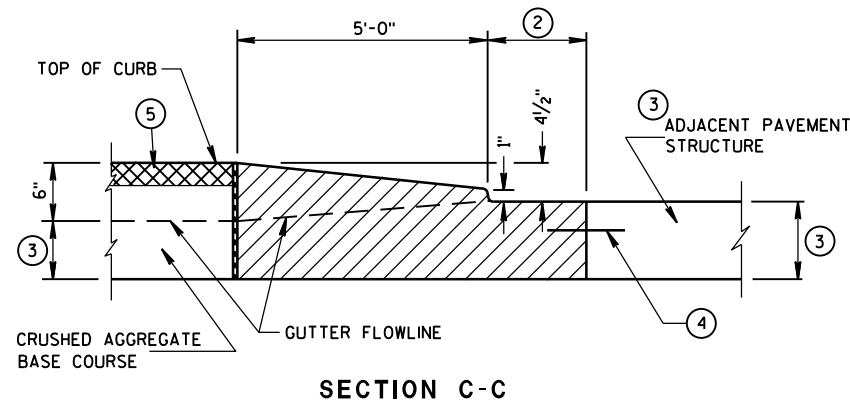
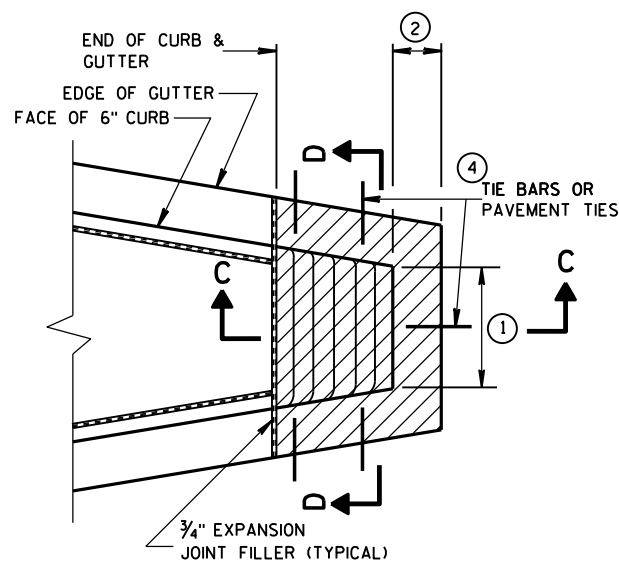
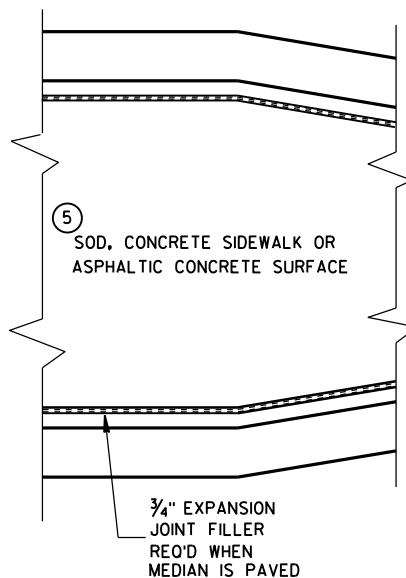
MAINTENANCE CROSSOVER
FOR FREEWAYS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

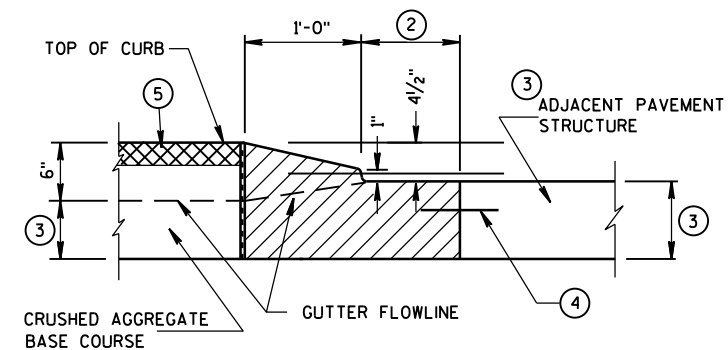
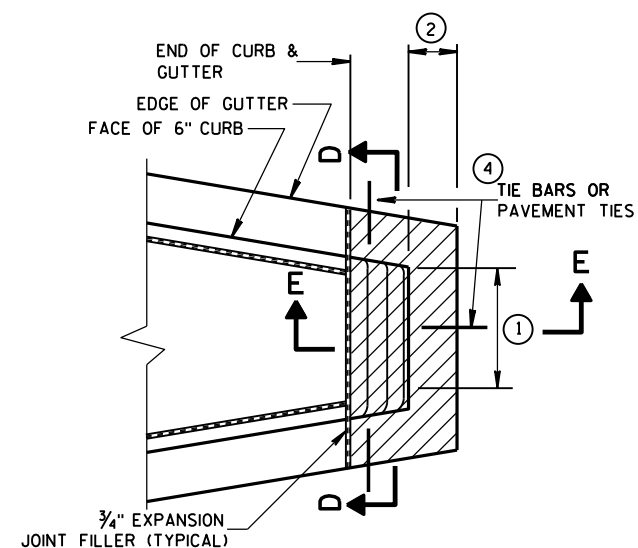
APPROVED
November 2019 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 127
FHWA



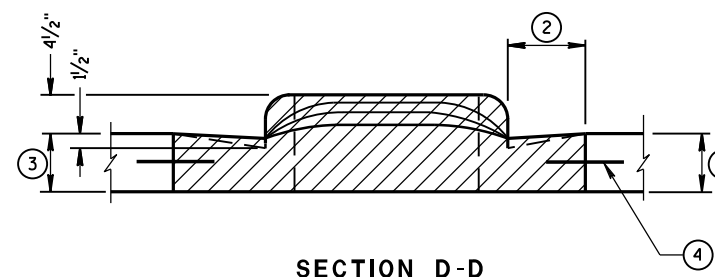
CONCRETE MEDIAN BLUNT NOSE DETAIL



CONCRETE MEDIAN SLOPED NOSE TYPE 1



CONCRETE MEDIAN SLOPED NOSE TYPE 2



GENERAL NOTES

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

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

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

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

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

CONCRETE MEDIAN NOSE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

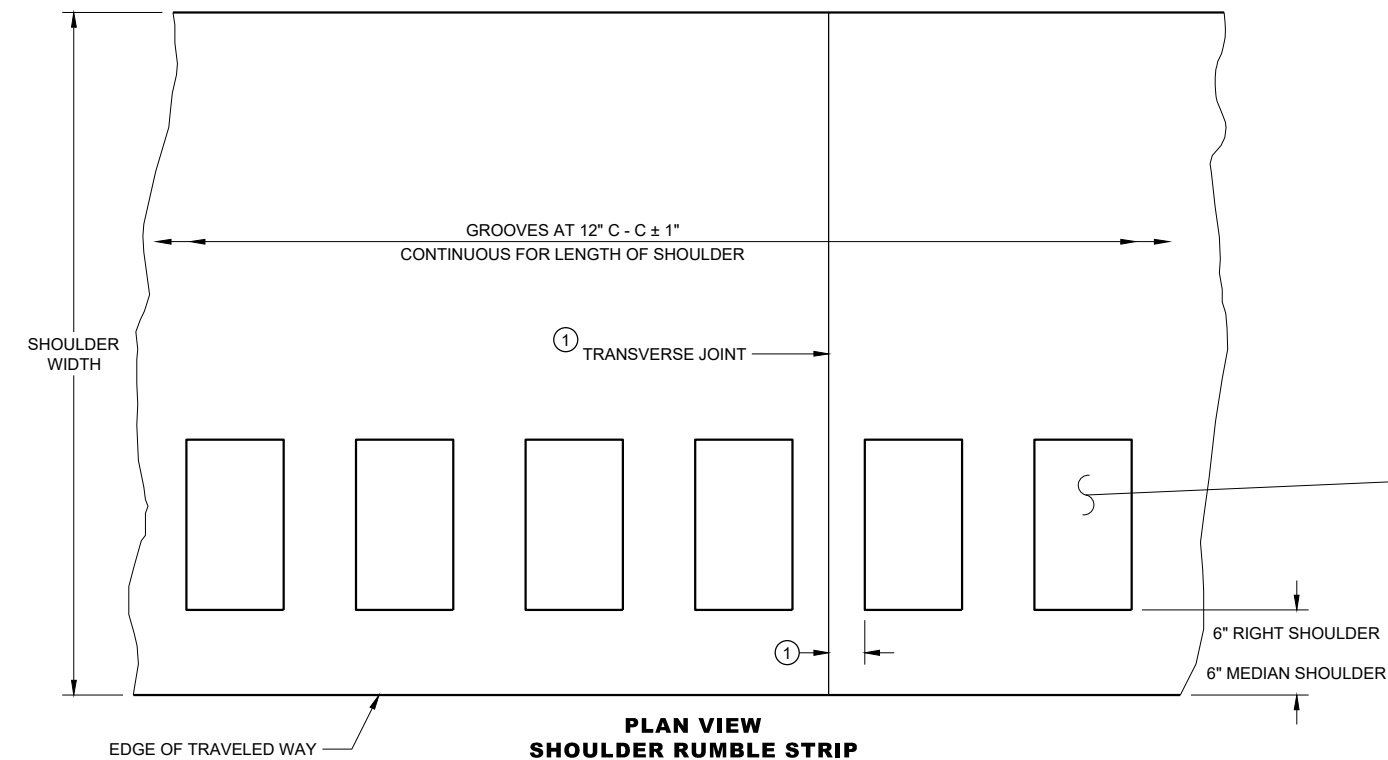
6/8/2006

DATE

FHWA

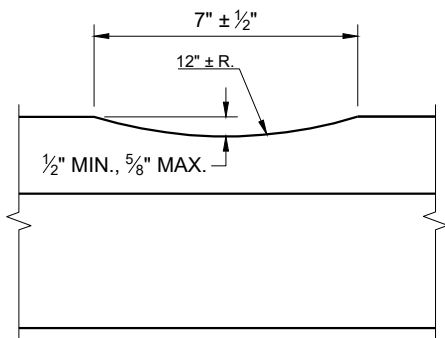
/S/ Jerry H. Zogg
ROADWAY STANDARDS & 128
ENGINEER

4T

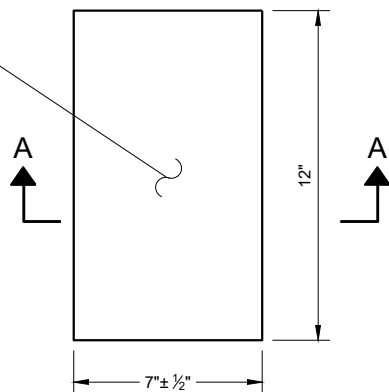


6

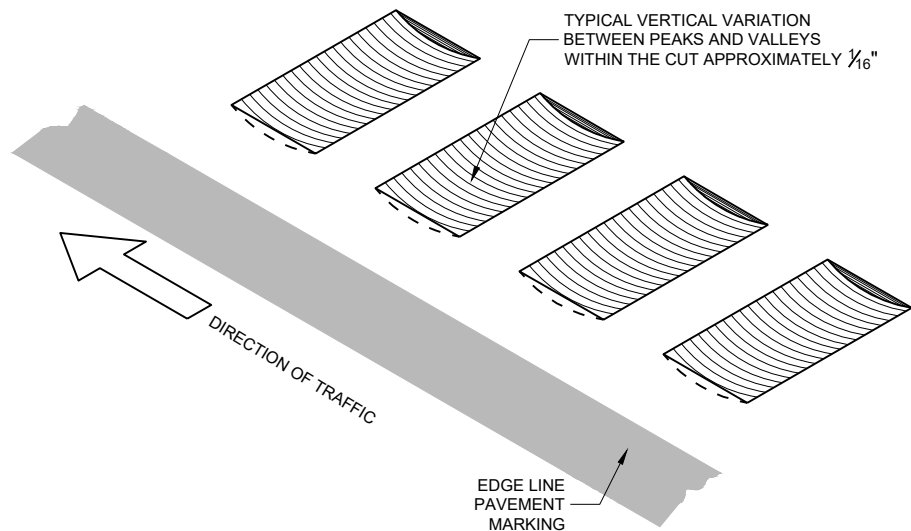
PLACEMENT DETAIL FOR RUMBLE STRIP



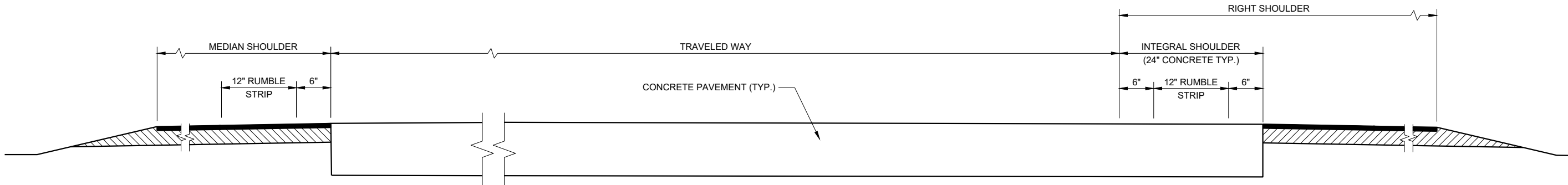
SECTION A - A



**PLAN VIEW
(SINGLE GROOVE)**



ISOMETRIC



SECTION VIEW

**TYPICAL SHOULDER RUMBLE STRIPS
(ONE ROADWAY IS SHOWN)**

GENERAL NOTES

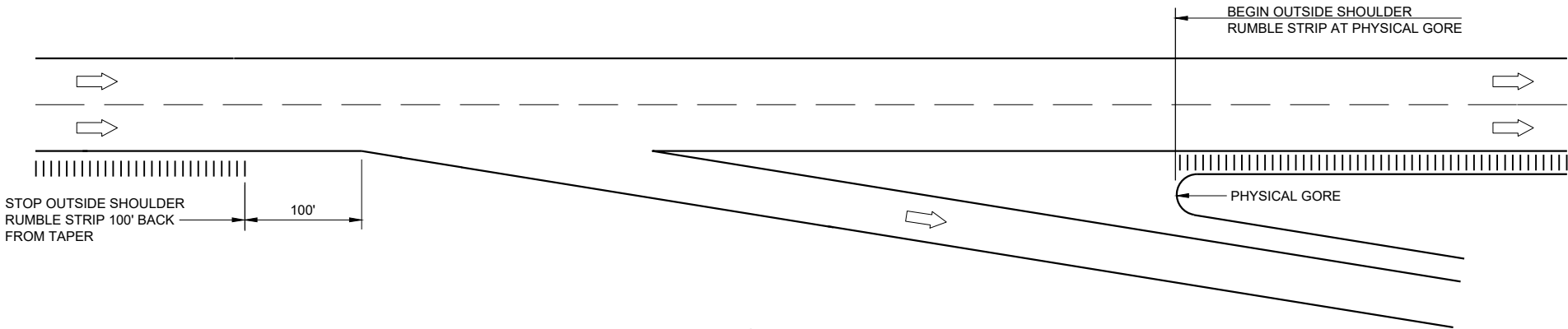
SDD 13A5, SHEET "b" SHOWS THE LOCATION OF THE RUMBLE STRIPS AT RAMP AND GORE LOCATIONS.

RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

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

**SHOULDER RUMBLE STRIPS,
DIVIDED ROADWAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 129



TYPICAL EXIT RAMP

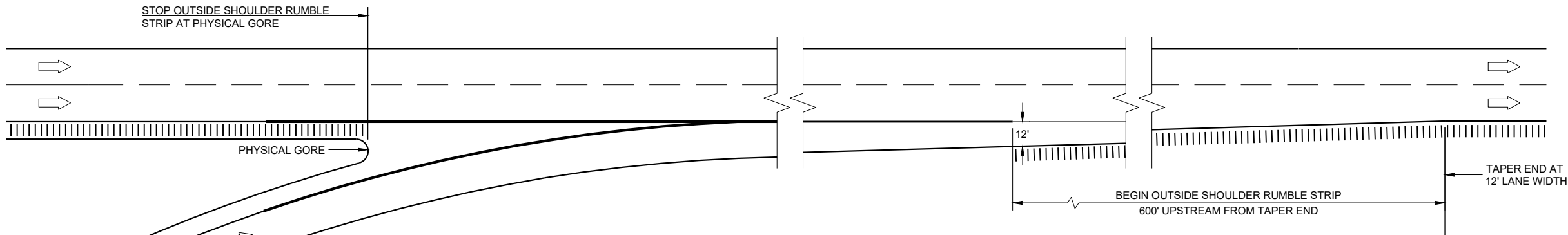
GENERAL NOTES

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

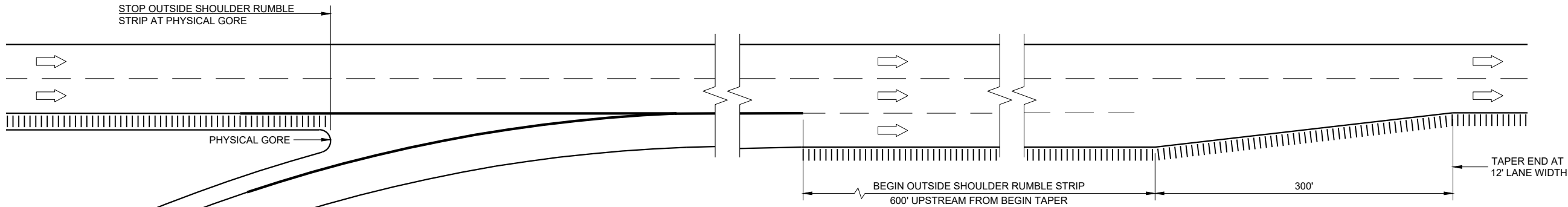
RUMBLE STRIPS ON EXPRESSWAYS:
DO NOT INSTALL SHOULDER RUMBLE STRIPS ACROSS SIDE ROAD INTERSECTIONS, COMMERCIAL AND PRIVATE DRIVEWAYS, ADJACENT TO RIGHT TURN LANES, LEFT TURN LANES, TURN LANE TAPERS, 25' IN ADVANCE OF BRIDGE DECKS, 25' IN ADVANCE OF BRIDGE APPROACHES, OR 100 FEET IN ADVANCE OF RAILROAD CROSSINGS.

LEGEND

➡ DIRECTION OF TRAFFIC



TYPICAL TAPERED ENTRANCE RAMP
RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS

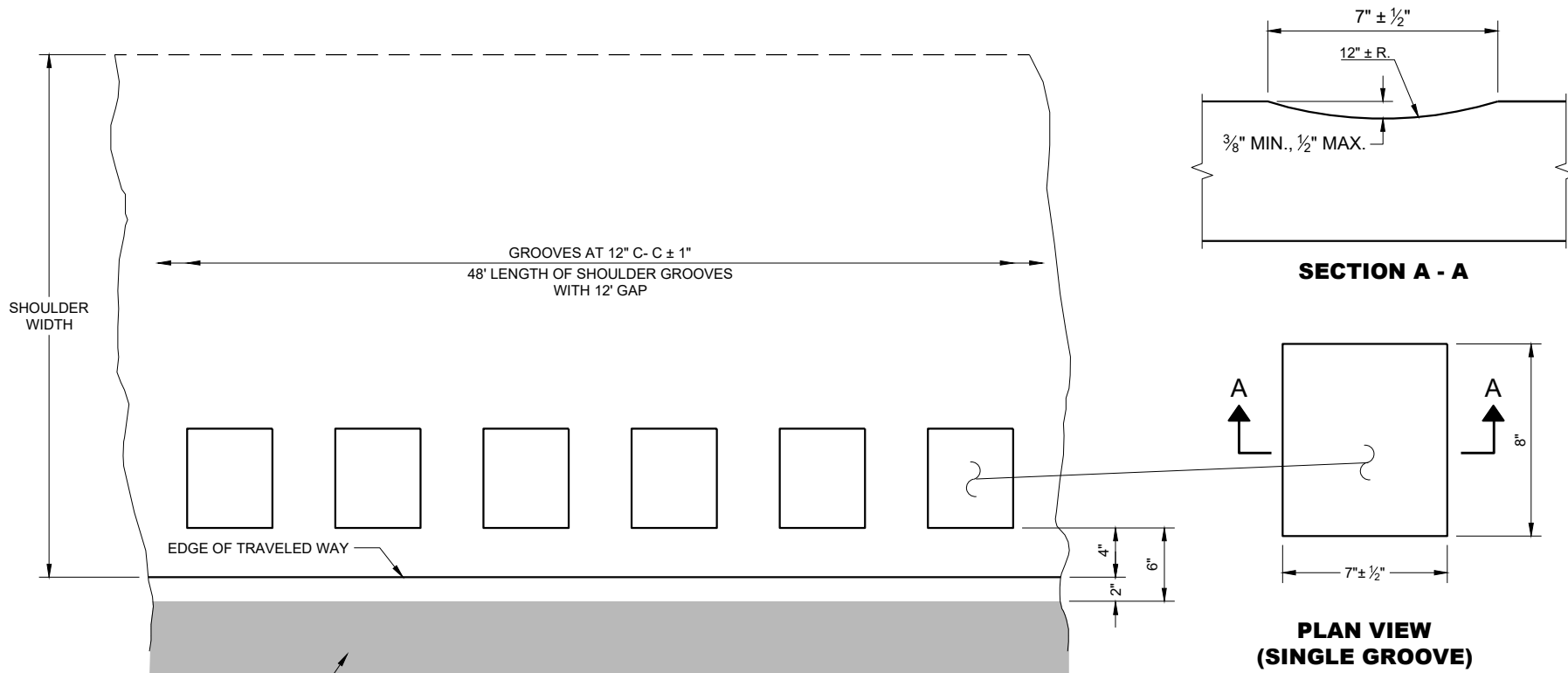


TYPICAL PARALLEL ENTRANCE RAMP
RAMP AND GORE SHOULDER RUMBLE STRIP LOCATIONS

SHOULDER RUMBLE STRIPS,
DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY DESIGN STAFF
UNIT SUPERVISOR
130
FHWA

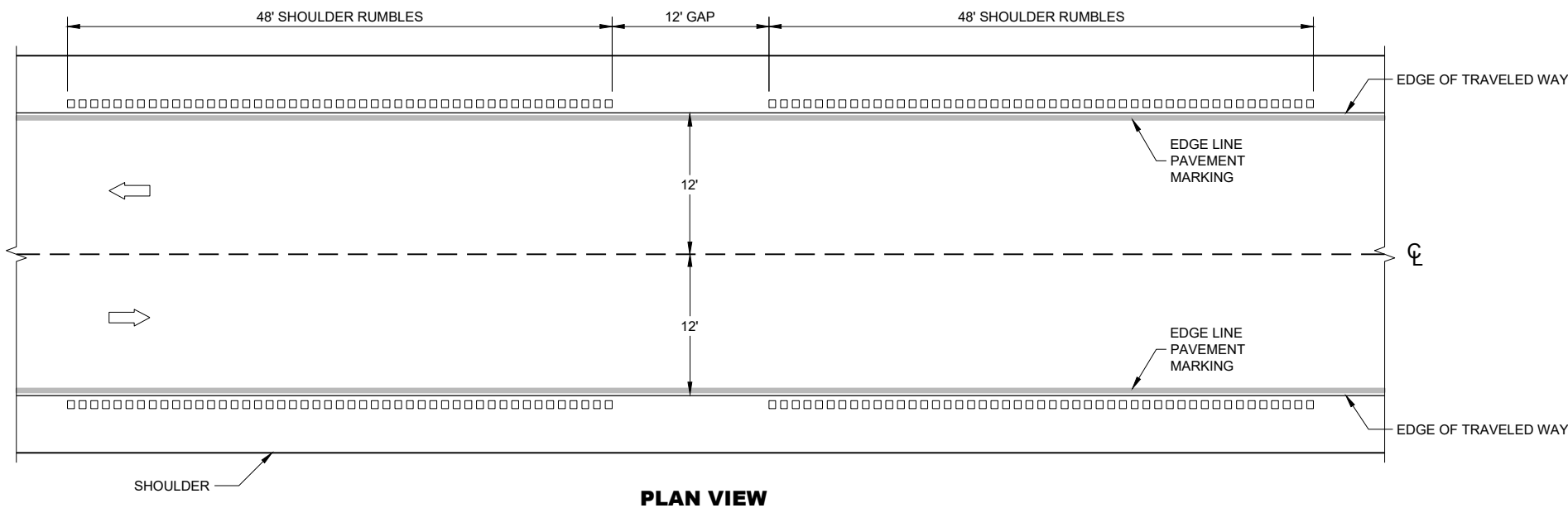
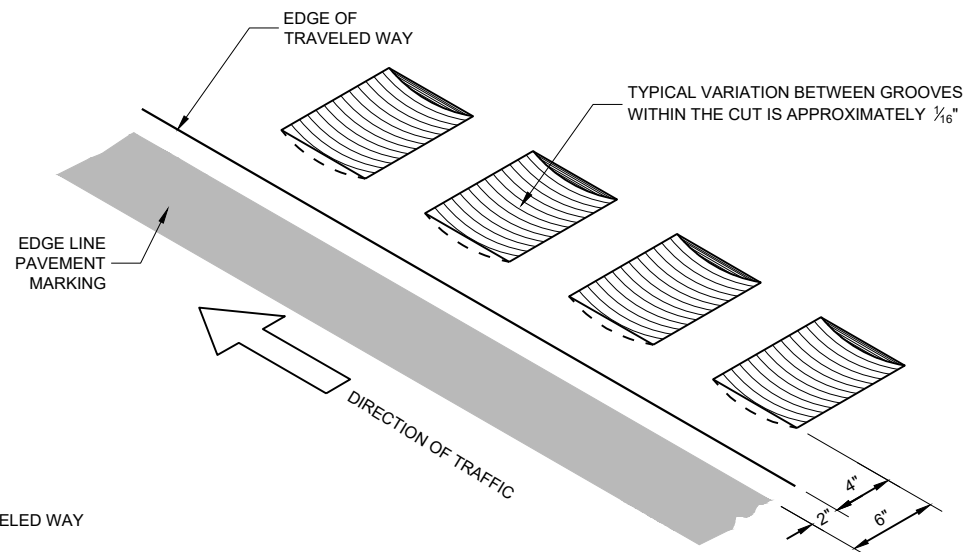


PLAN DETAIL VIEW
SHOULDER WITH GROOVES

GENERAL NOTES

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

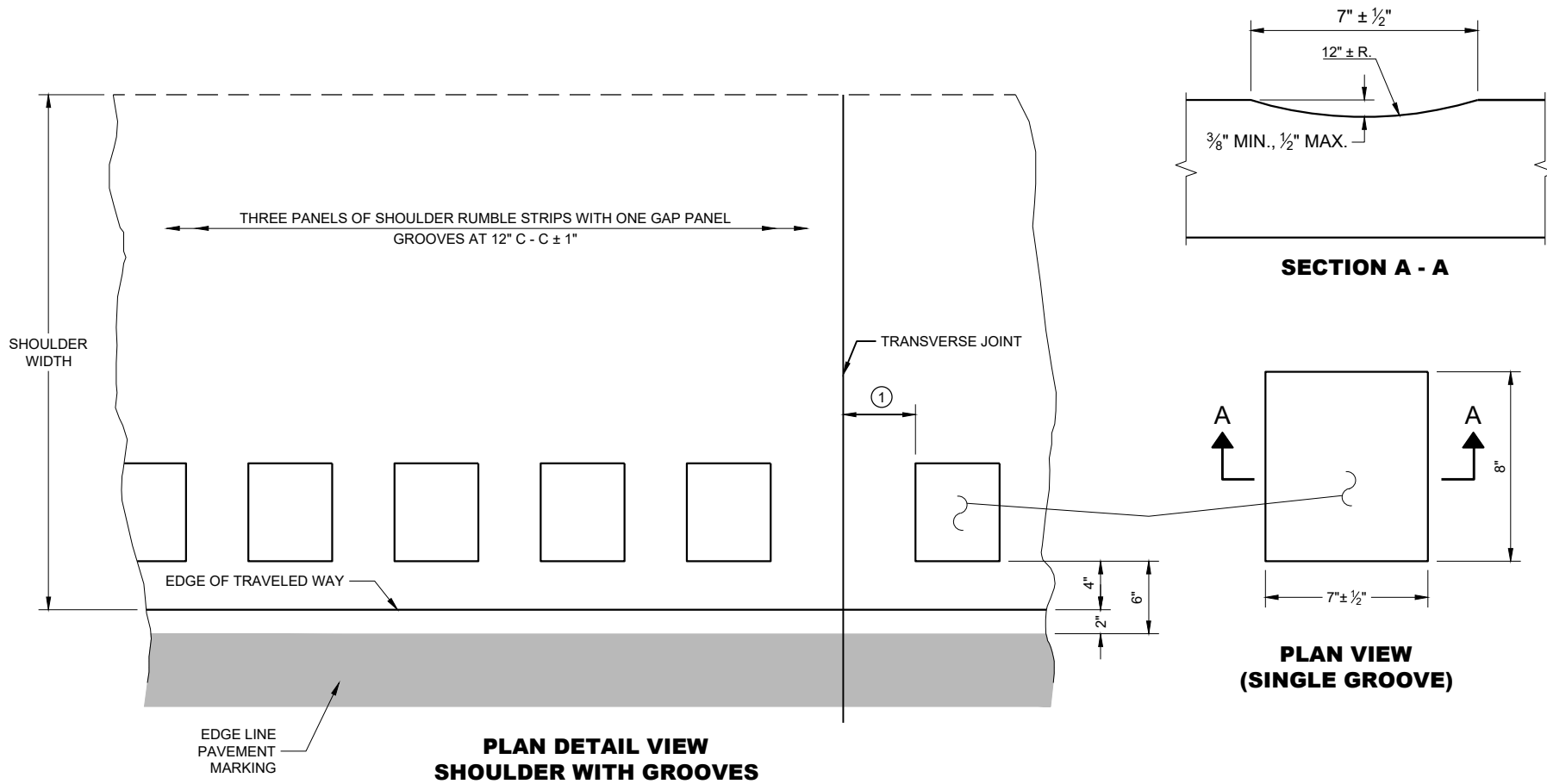
SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



SHOULDER RUMBLE STRIPS - ASPHALT

**SHOULDER RUMBLE
STRIPS ASPHALT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 131

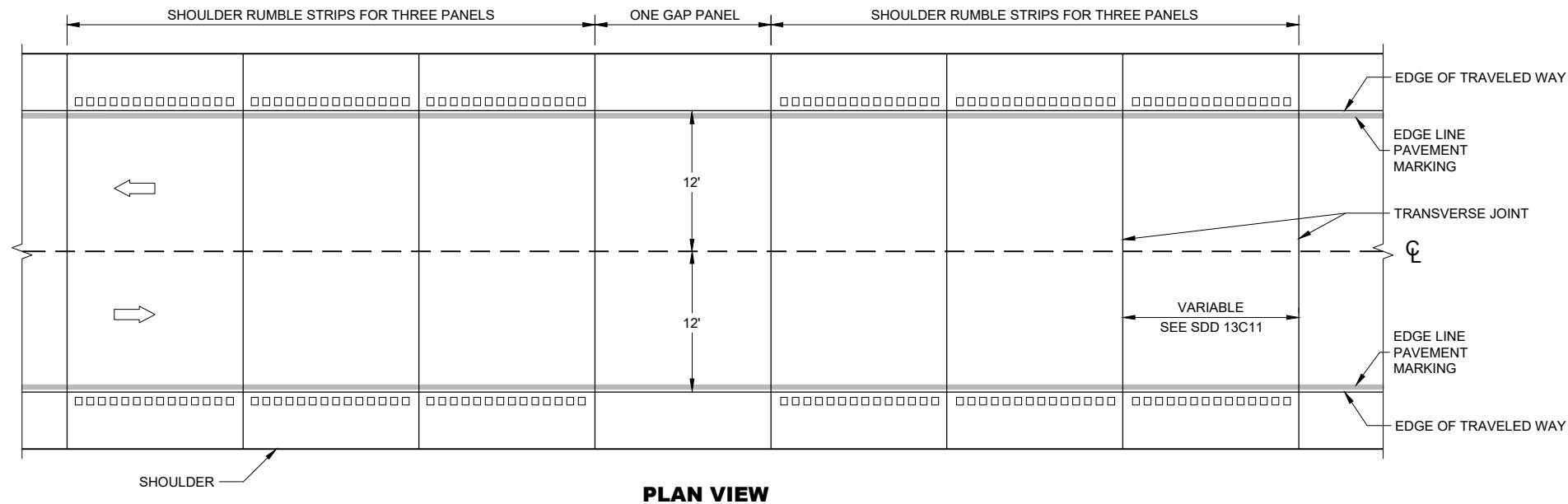
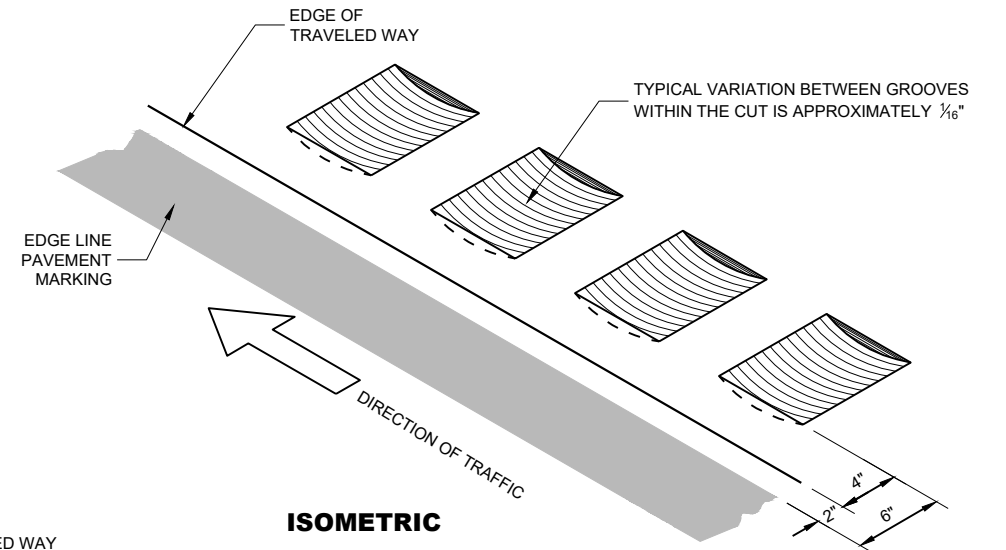


GENERAL NOTES

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.

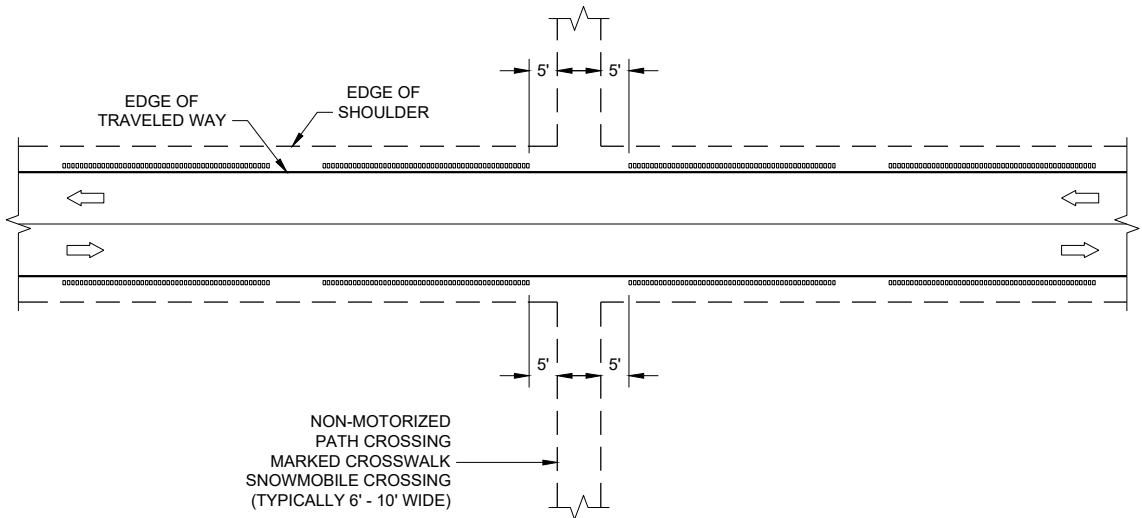
- ① FOR CONCRETE PAVEMENTS, RUMBLE STRIPS SHALL BE A MINIMUM OF 6 INCHES FROM TRANSVERSE JOINTS.



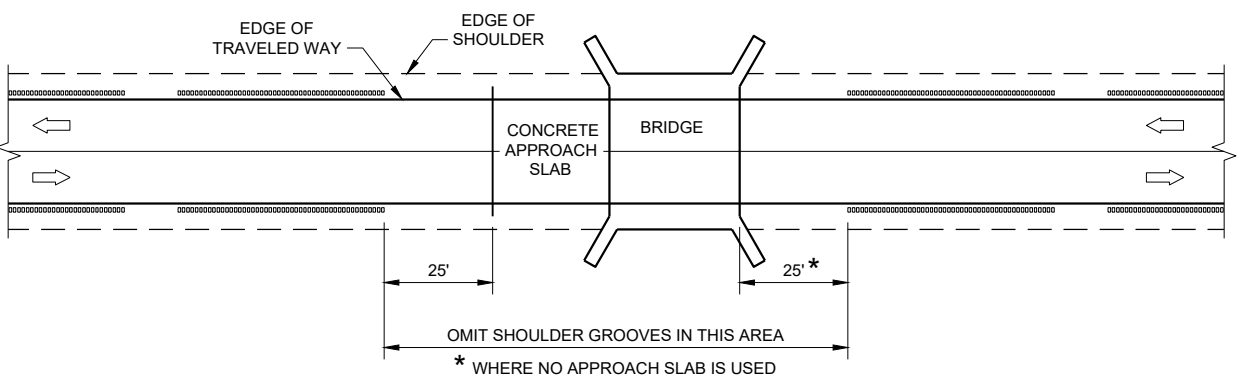
SHOULDER RUMBLE STRIPS - CONCRETE

SHOULDER RUMBLE STRIPS - CONCRETE

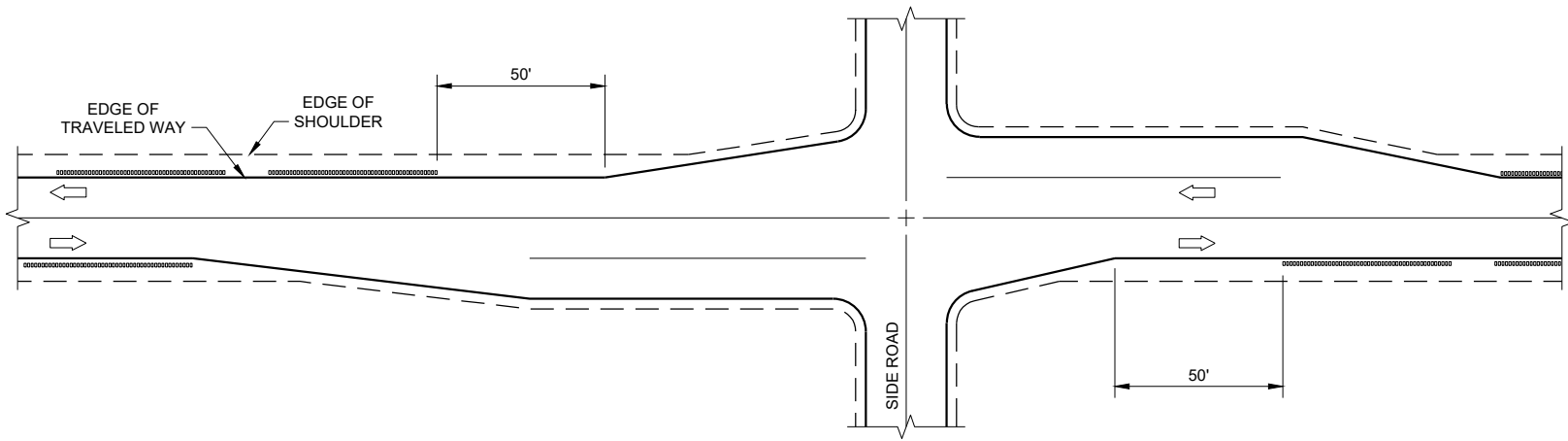
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



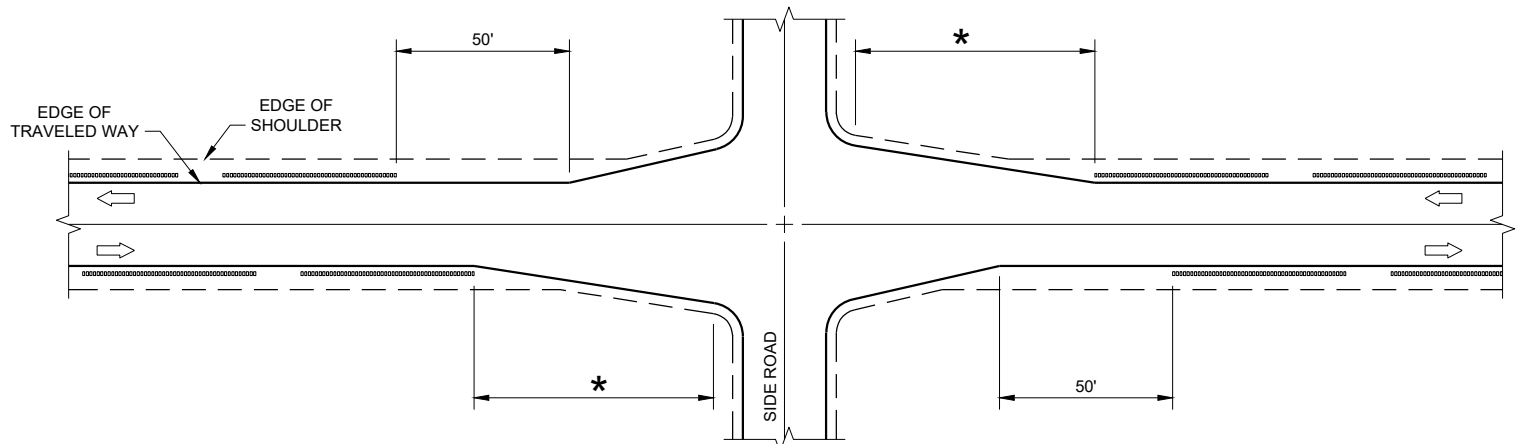
GROOVES AT MISCELLANEOUS CROSSINGS



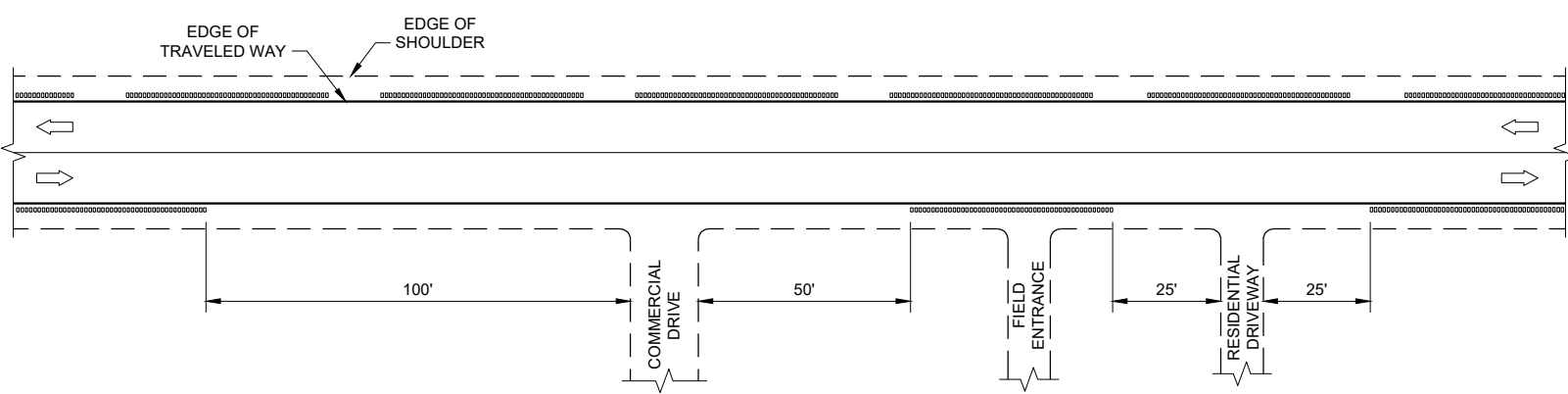
GROOVES AT BRIDGES



GROOVES AT RIGHT TURN LANE



GROOVES AT INTERSECTIONS WITH APPROACH TAPER



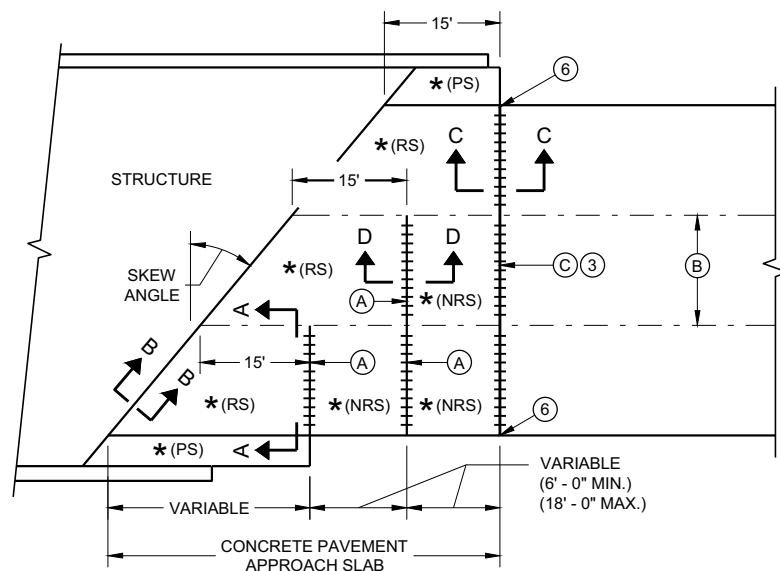
GROOVES AT DRIVEWAYS

GENERAL NOTES

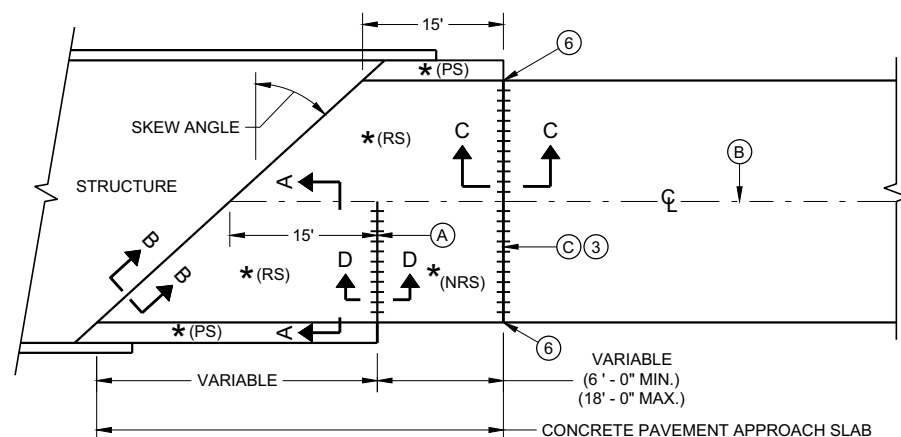
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

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

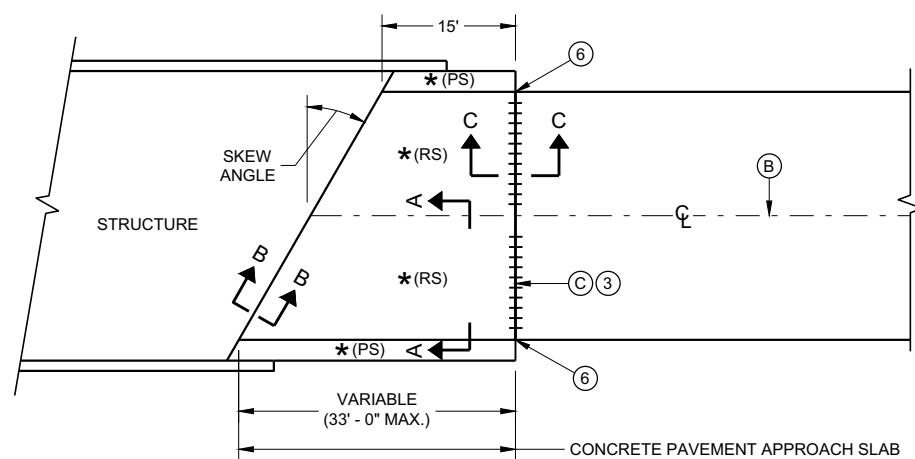
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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



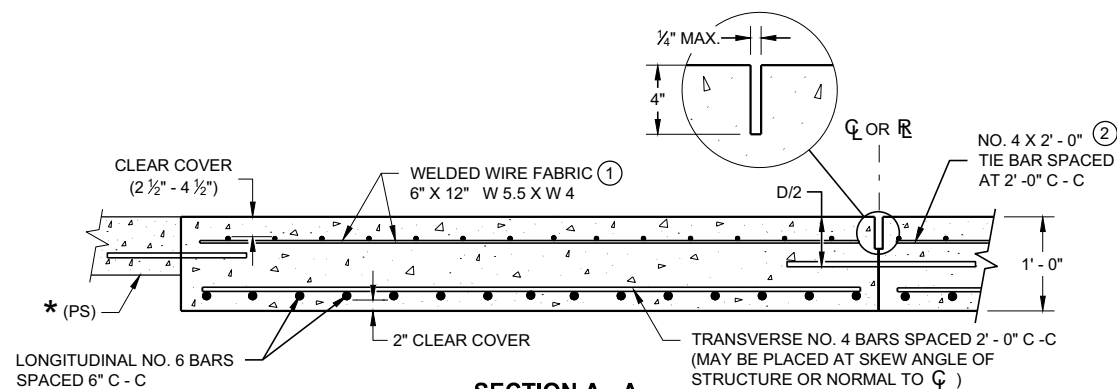
**SKews > 20°
(PAVEMENT WIDTH ≤ 30')**



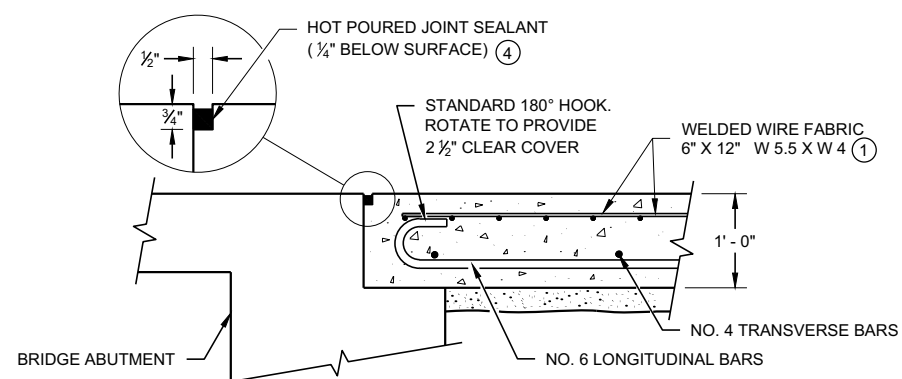
**SKews ≤ 20°
(PAVEMENT WIDTH ≤ 30')**

APPROACH SLAB AND ADJACENT PAVEMENT

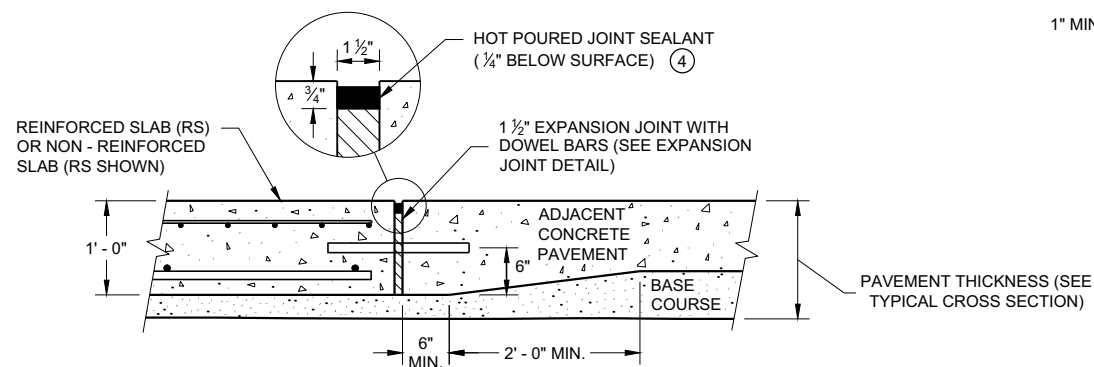
- * (RS) = REINFORCED CONCRETE SLAB
- * (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- * (NRS) = NON - REINFORCED CONCRETE SLAB
- *** STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A
REINFORCEMENT POSITIONING DETAIL**



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



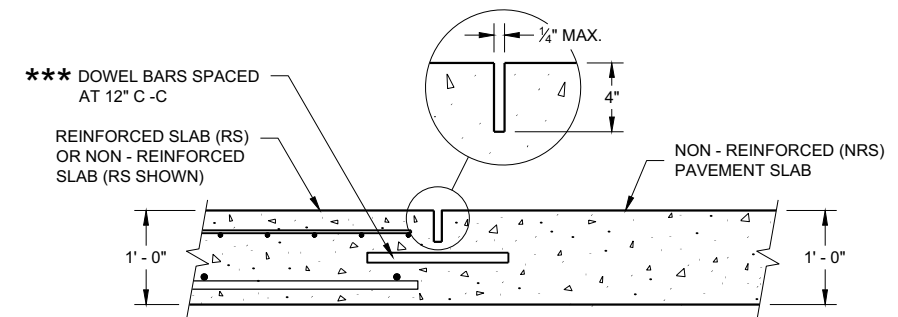
**SECTION C - C
TRANSITION DETAIL
APPROACH SLAB TO ADJACENT PAVEMENT**

GENERAL NOTES

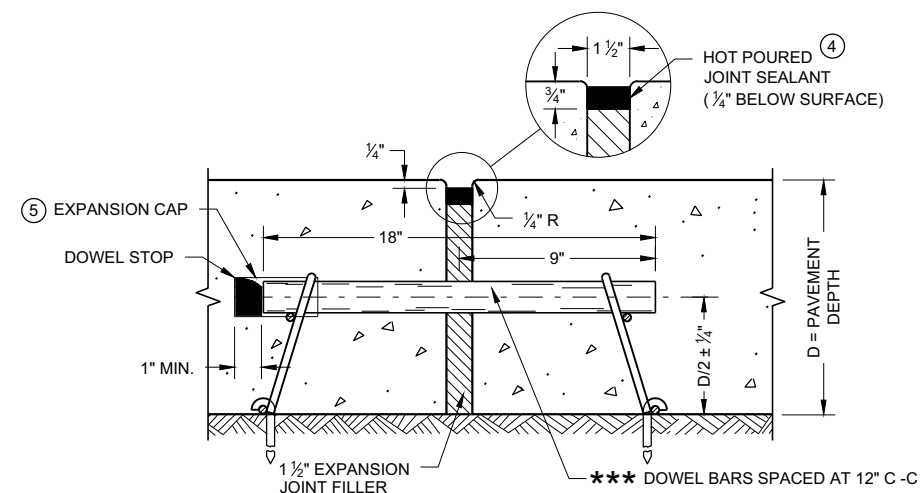
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- (A) STANDARD CONTRACTION JOINT NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.
- (B) STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- (C) 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO $\mathcal{C}$ OR $\mathcal{R}$.



**SECTION D - D
CONTRACTION JOINT**



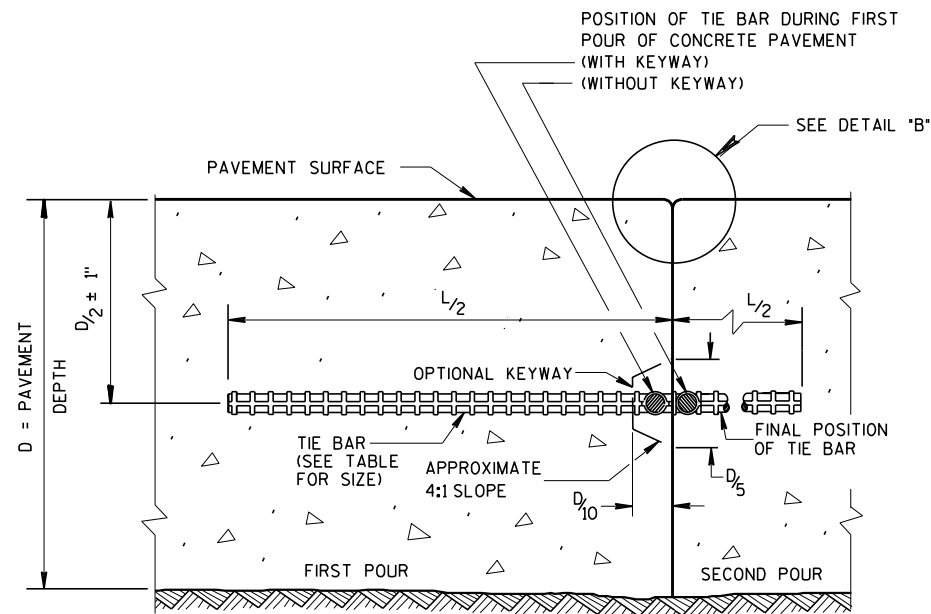
EXPANSION JOINT DETAIL

CONCRETE PAVEMENT APPROACH SLAB

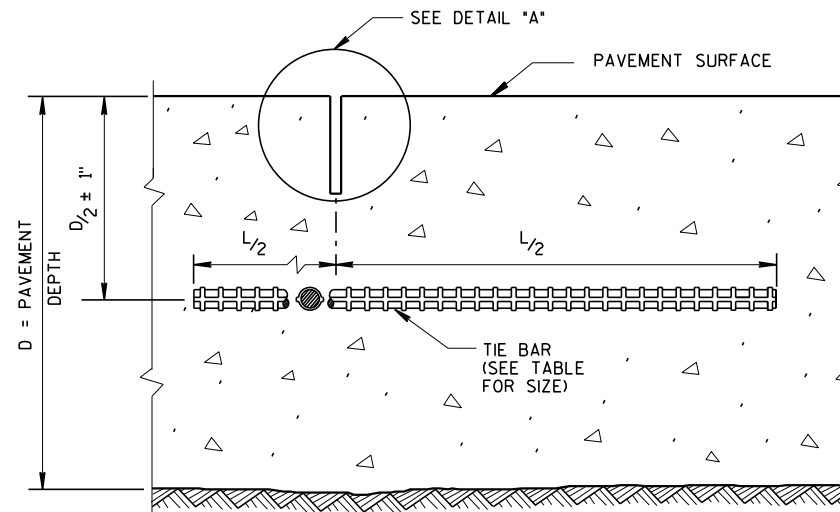
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2018 /S/ Peter Kemp, P.E.
DATE PAVEMENT SUPERVISOR 134

FHWA



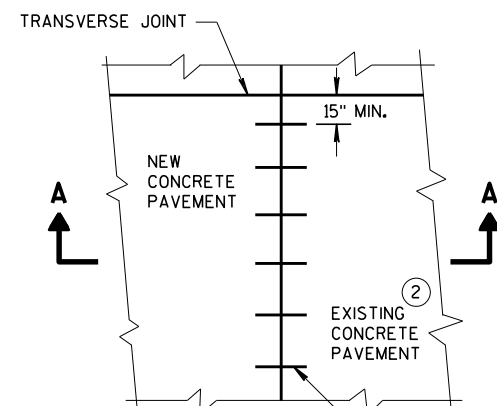
CONSTRUCTION JOINT



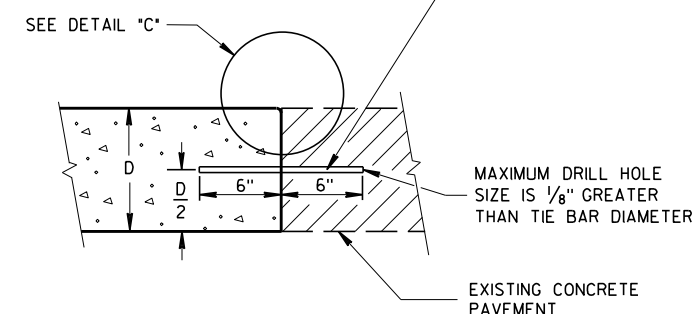
SAWED JOINT

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.

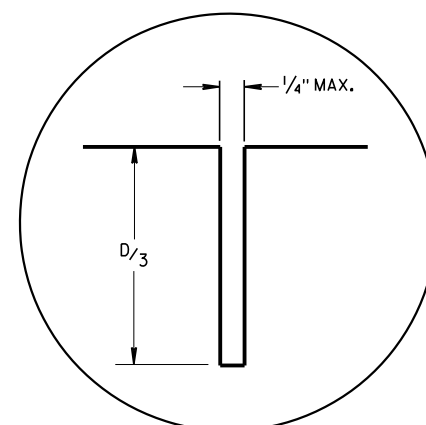


PLAN VIEW

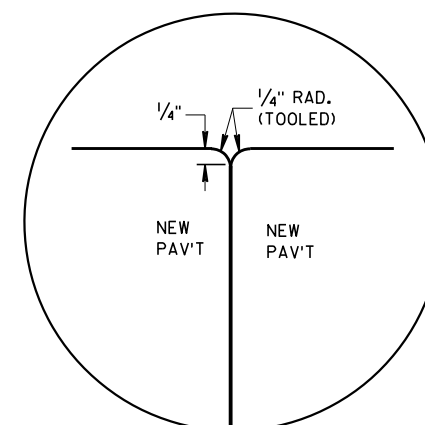


SECTION A-A
LONGITUDINAL CONSTRUCTION JOINT
TIE BARS ANCHORED
INTO EXISTING PAVEMENT

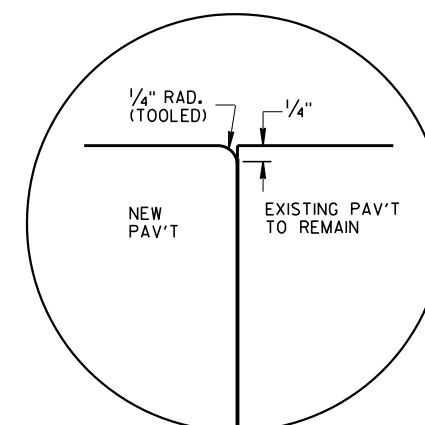
NO. 6 TIE BARS SPACED 30" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT. ①



DETAIL "A"



DETAIL "B"



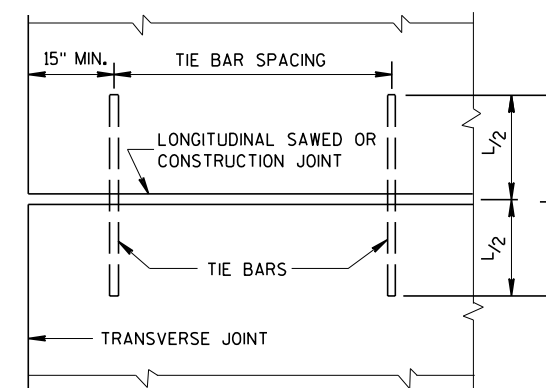
DETAIL "C"

TIE BAR TABLE

PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
$< 10 \frac{1}{2}"$	NO. 4	30"	36"
$\geq 10 \frac{1}{2}"$	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.



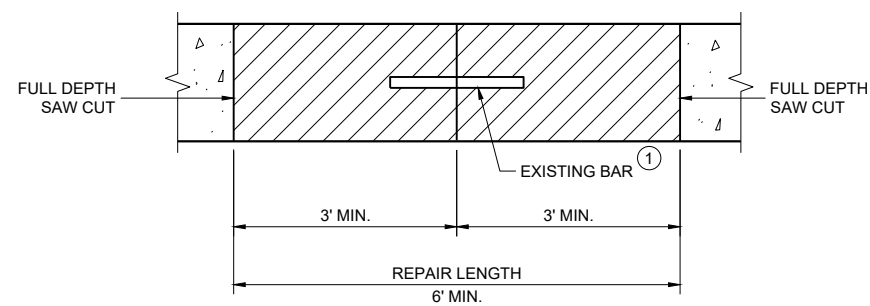
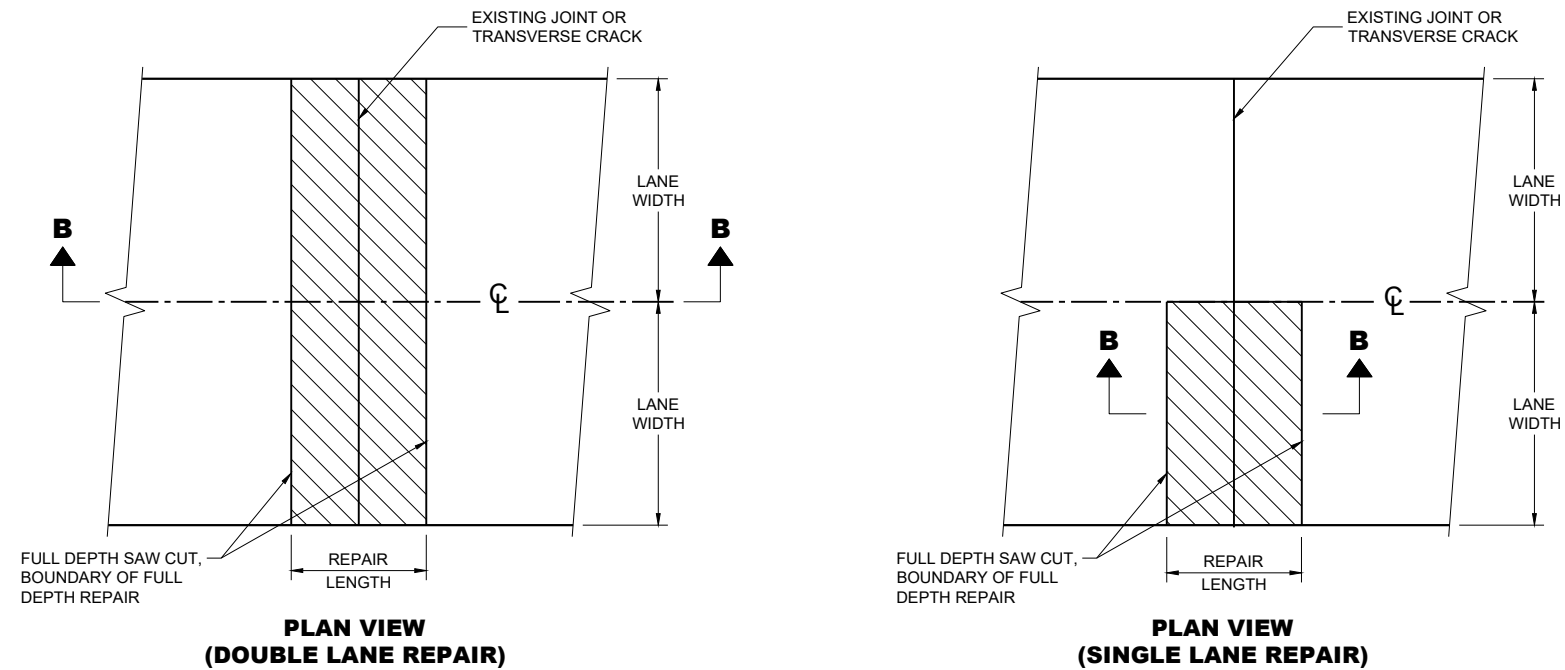
PLAN VIEW
SHOWING LOCATION OF TIE BARS

CONCRETE PAVEMENT
LONGITUDINAL JOINTS AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Peter Kern
DATE PAVEMENT SUPE 135
FHWA

FULL DEPTH CONCRETE PAVEMENT REMOVAL



**SECTION B - B
CONCRETE REMOVAL**

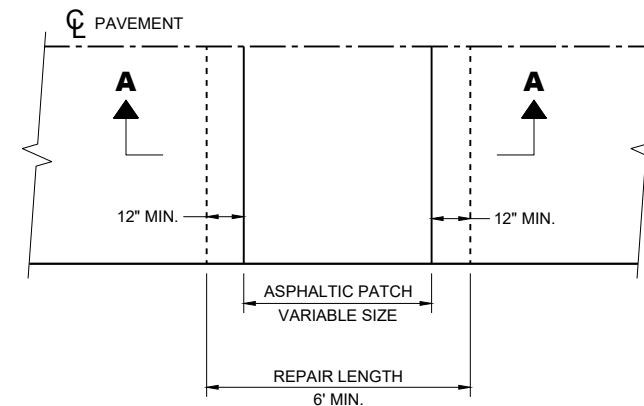
GENERAL NOTES

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.

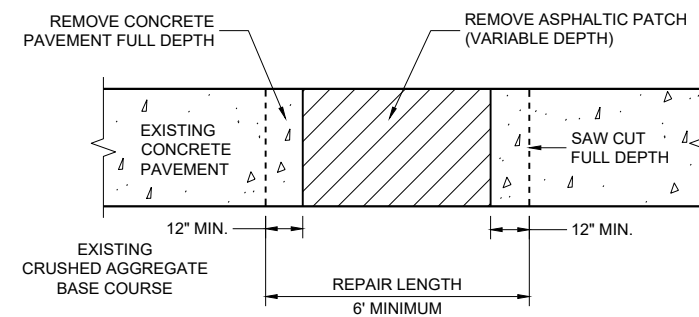
PROVIDE A 6 FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREA TO ADJACENT TRANSVERSE JOINT OR CRACK.

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.



PLAN VIEW

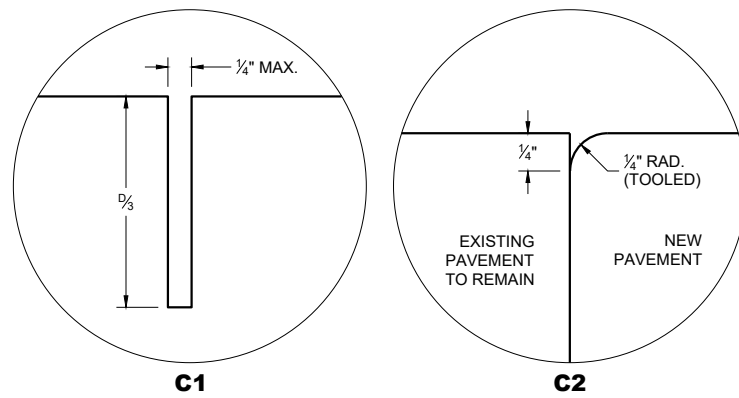
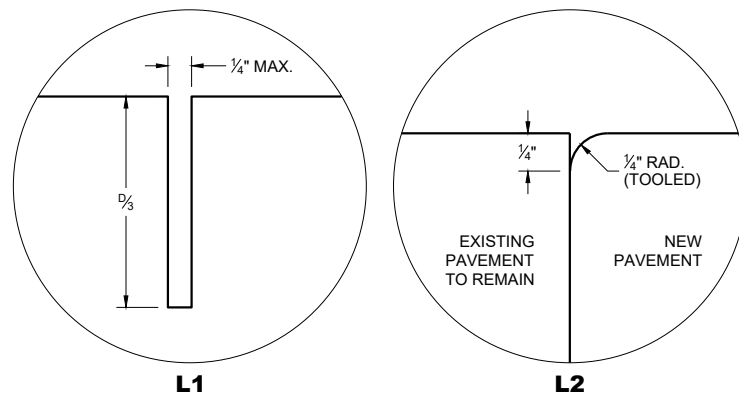
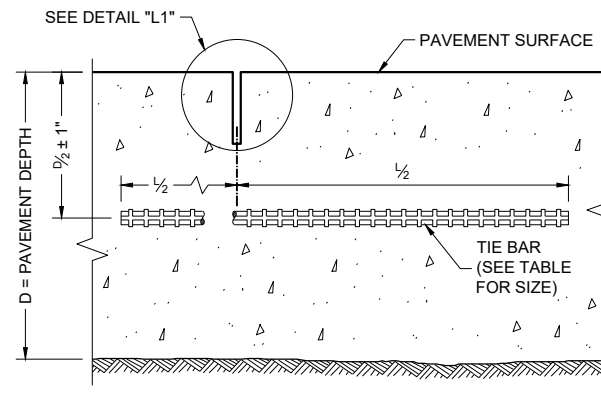
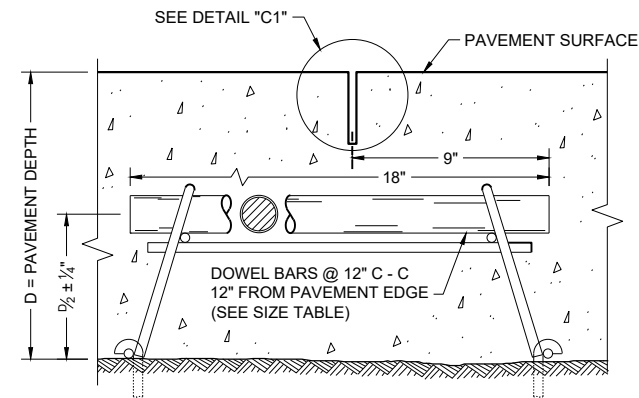
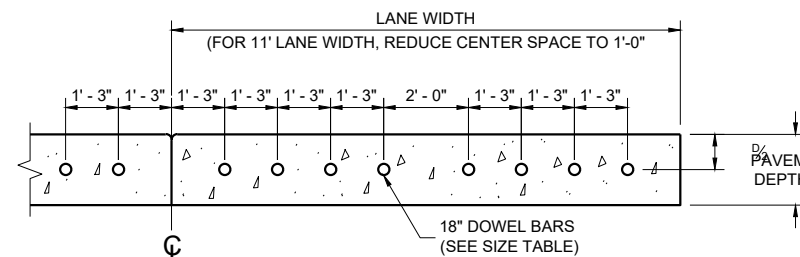
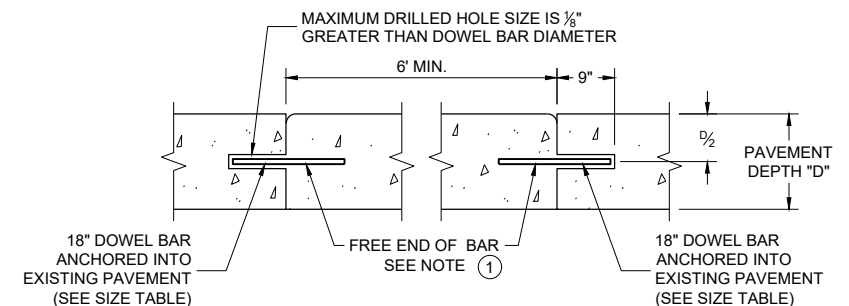


SECTION A - A

HMA PATCH REMOVAL

**CONCRETE PAVEMENT
REPAIR AND REPLACEMENT**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

**TRANSVERSE JOINTS****LONGITUDINAL JOINTS****SECTION C - C
SAWED LONGITUDINAL JOINT****SECTION F - F
DOWELED CONTRACTION JOINT****SECTION E - E
DRILLED DOWEL BAR CONSTRUCTION JOINT****SECTION D - D****TIE BAR TABLE**

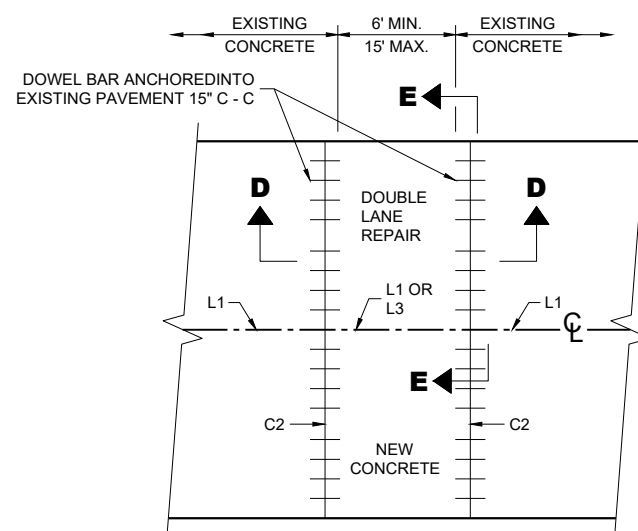
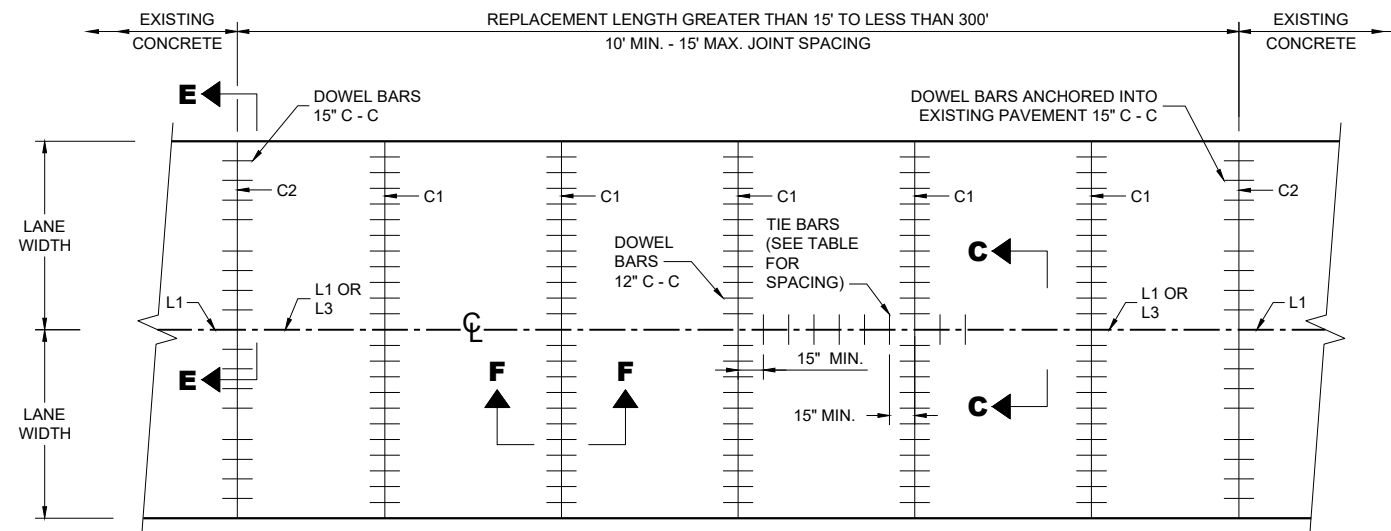
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4*	30"	24" **

* 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

GENERAL NOTES

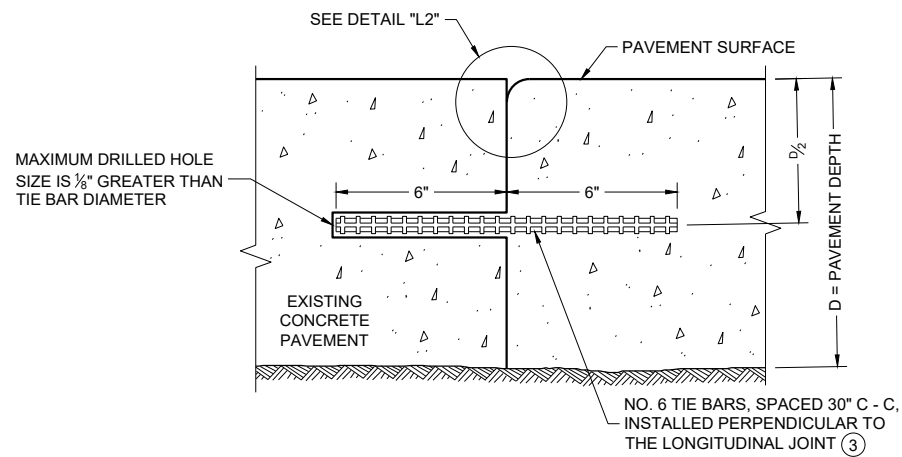
INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

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

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

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

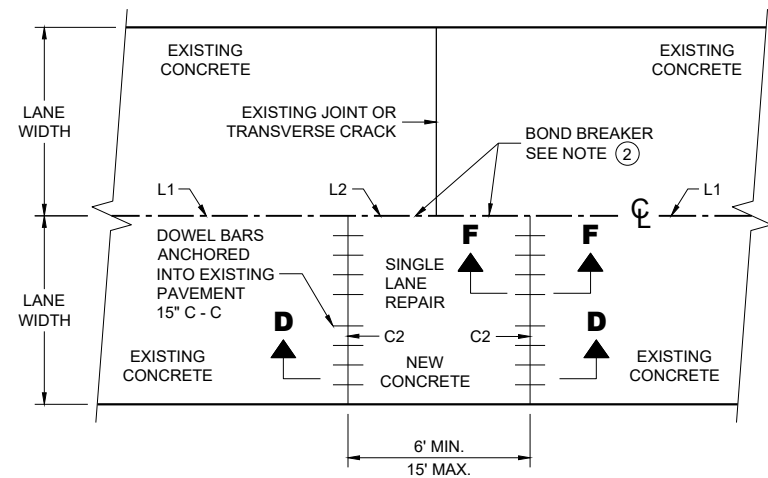
- ① APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.



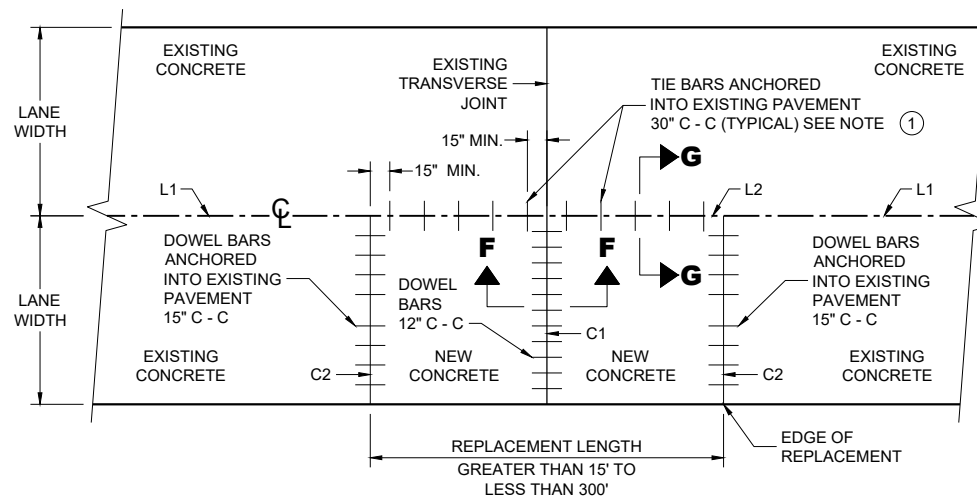
SECTION G - G
TIE BARS ANCHORED INTO EXISTING PAVEMENT

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.



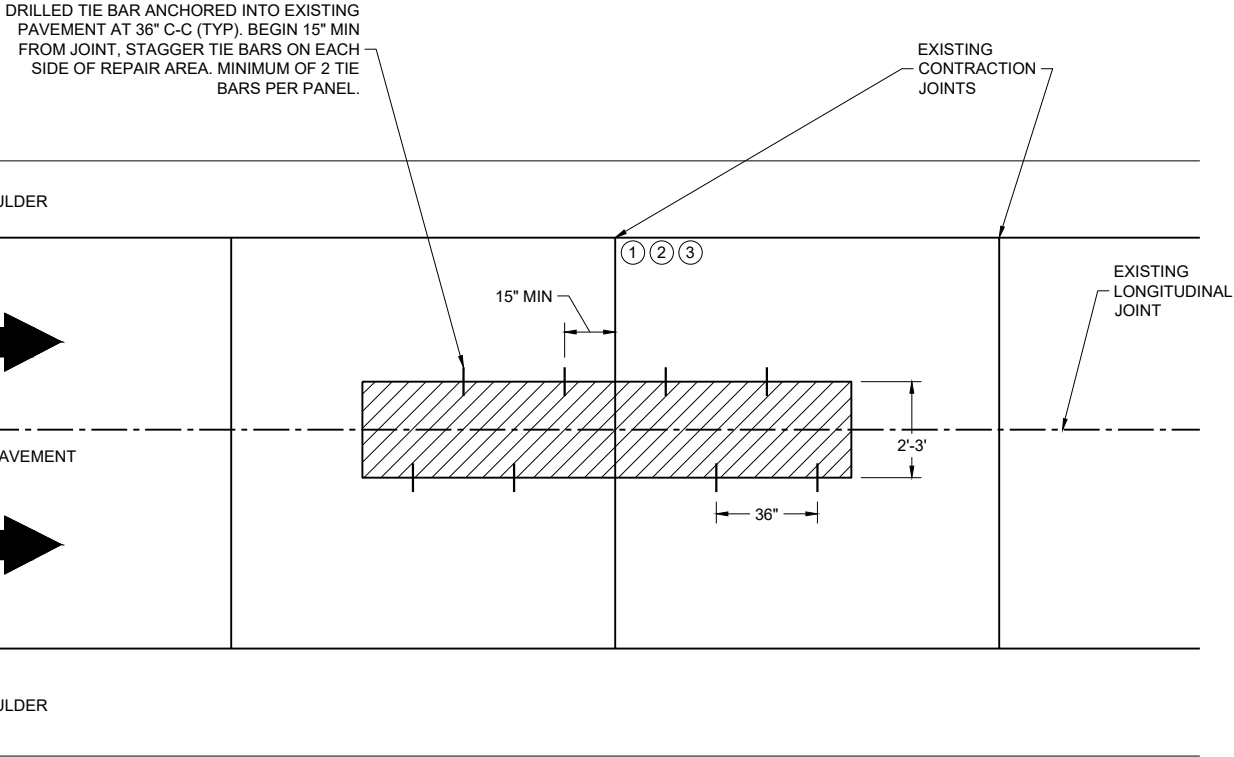
PLAN VIEW
SINGLE LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW
SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE REPAIR AND REPLACEMENT

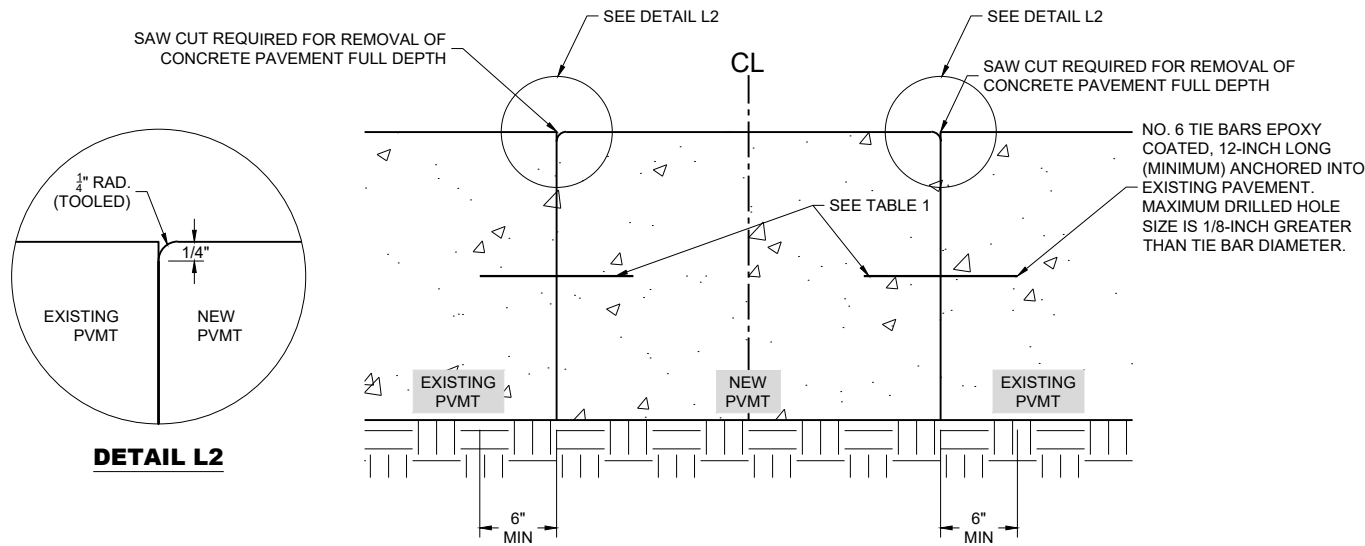
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

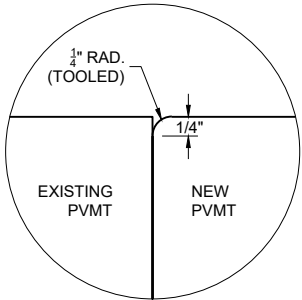
GENERAL NOTES

- ① TIE BARS MIN 15" FROM JOINT.
- ② LOCATION AND WIDTH OF PATCH ARE VARIABLE DEPENDING ON FIELD CONDITION
- ③ PRESERVE OR REESTABLISH EXISTING CONTRACTION JOINTS, KEEPING PATCH MATERIALS OUT OF REMAINING CONTRACTION JOINT.



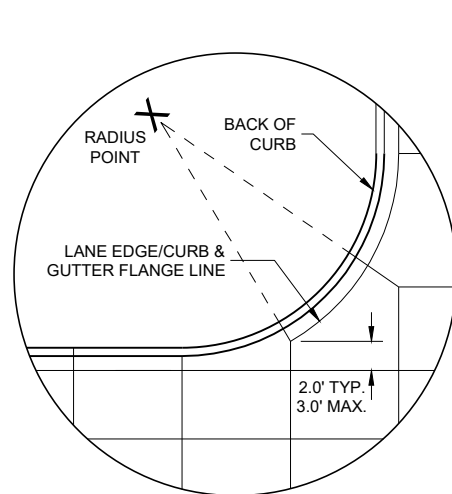
SECTION VIEW

TABLE 1	
PATCH WIDTH	TIE BAR LENGTH
24"	12"
36"	18"

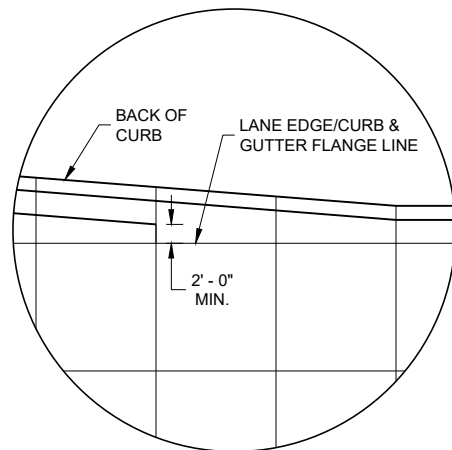


DETAIL L2

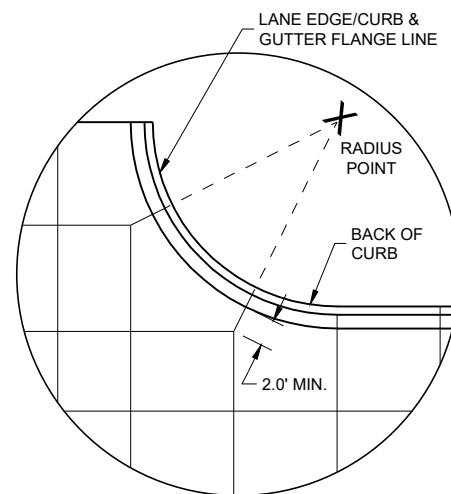
CONCRETE PAVEMENT CENTERLINE JOINT REPAIR	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED NOVEMBER 2025 DATE	/S/ Peter Kemp P.E. PAVEMENT SUPERVISOR
FHWA	



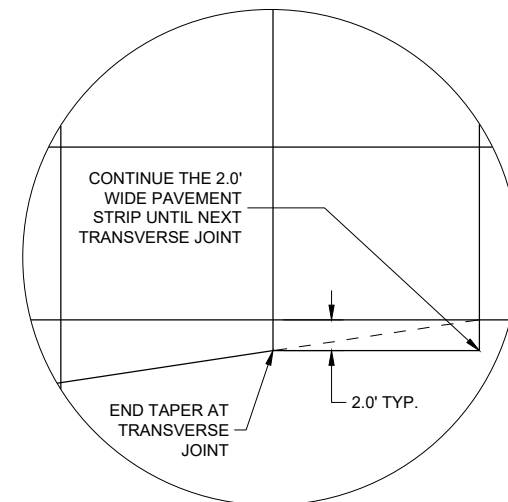
DETAIL "A"



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.

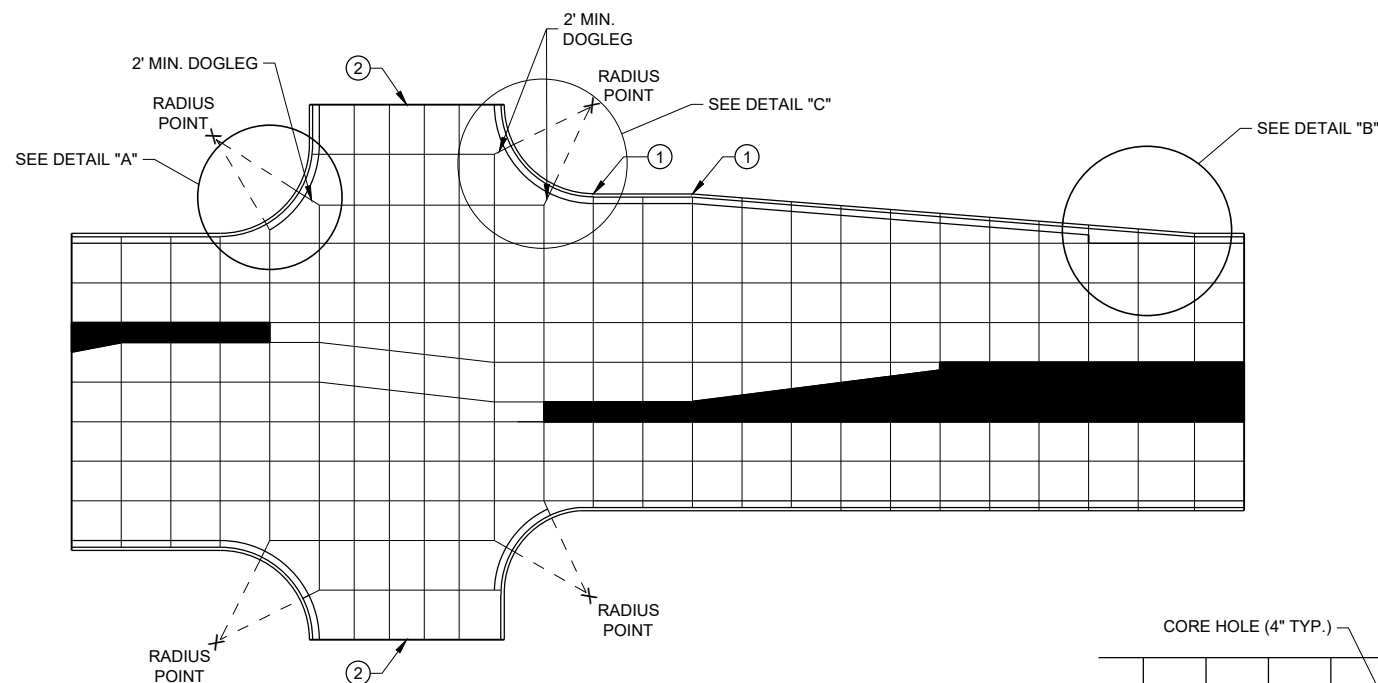
AVOID ANGLES LESS THAN 60° BY DOGLEGGING JOINTS THROUGH CURVE RADIUS POINTS. USE 90° ANGLES WHEN POSSIBLE.

CORRELATE LONGITUDINAL JOINTS WITH LANE LINES WHEN POSSIBLE.

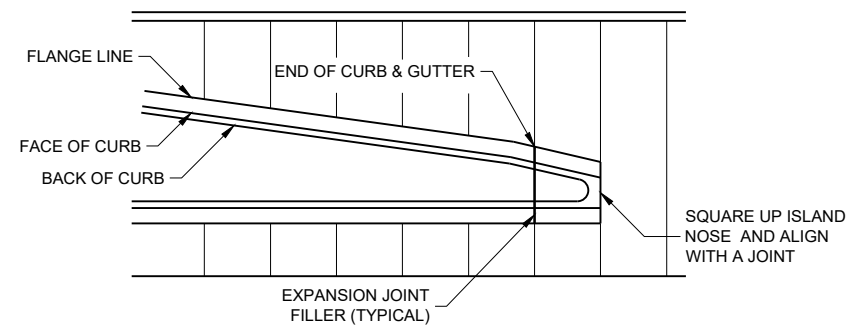
- ① PROVIDE TRANSVERSE JOINTS AT ALL PAVEMENT WIDTH CHANGES.
- ② CONSTRUCT DOWELED EXPANSION JOINT ON THE SIDE ROAD OF AN INTERSECTION IF THE SIDE ROAD IS CONCRETE PAVEMENT AND GREATER THAN 300 FEET IN LENGTH. ALIGN EXPANSION JOINT WITH EDGE OF RADIUS.
- ③ THE ENGINEER MAY APPROVE SLIGHT VARIATIONS FROM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

PAVEMENT DEPTH AND JOINT SPACING TABLE

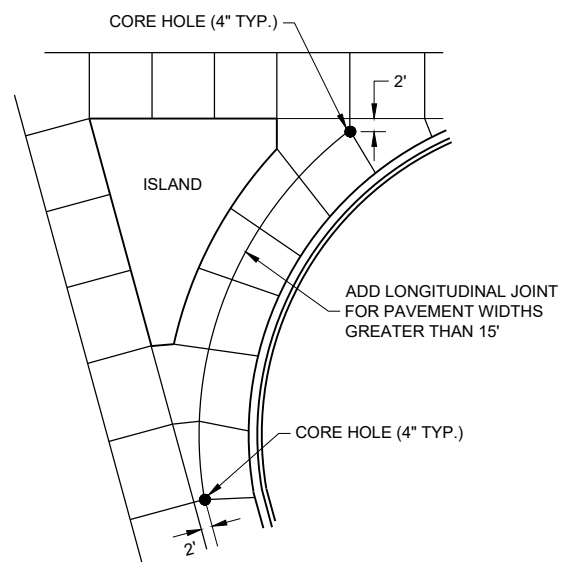
PAVEMENT DEPTH (D)	CONTRACTION JOINT SPACING
6", 6 ½"	12'
7", 7 ½"	14'
8" & ABOVE	15'



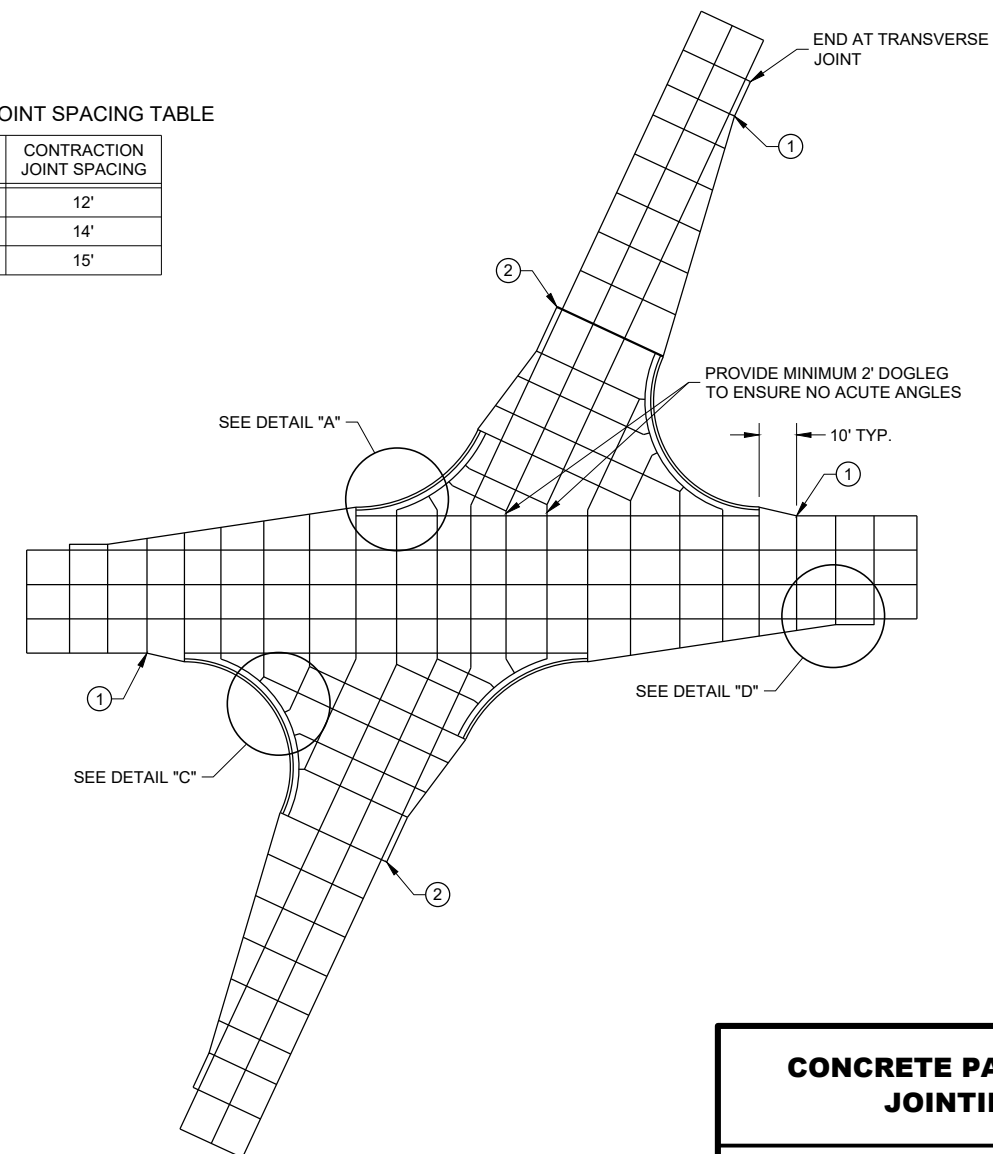
STANDARD INTERSECTION



APPROACH TO MEDIAN



LARGE RIGHT TURN



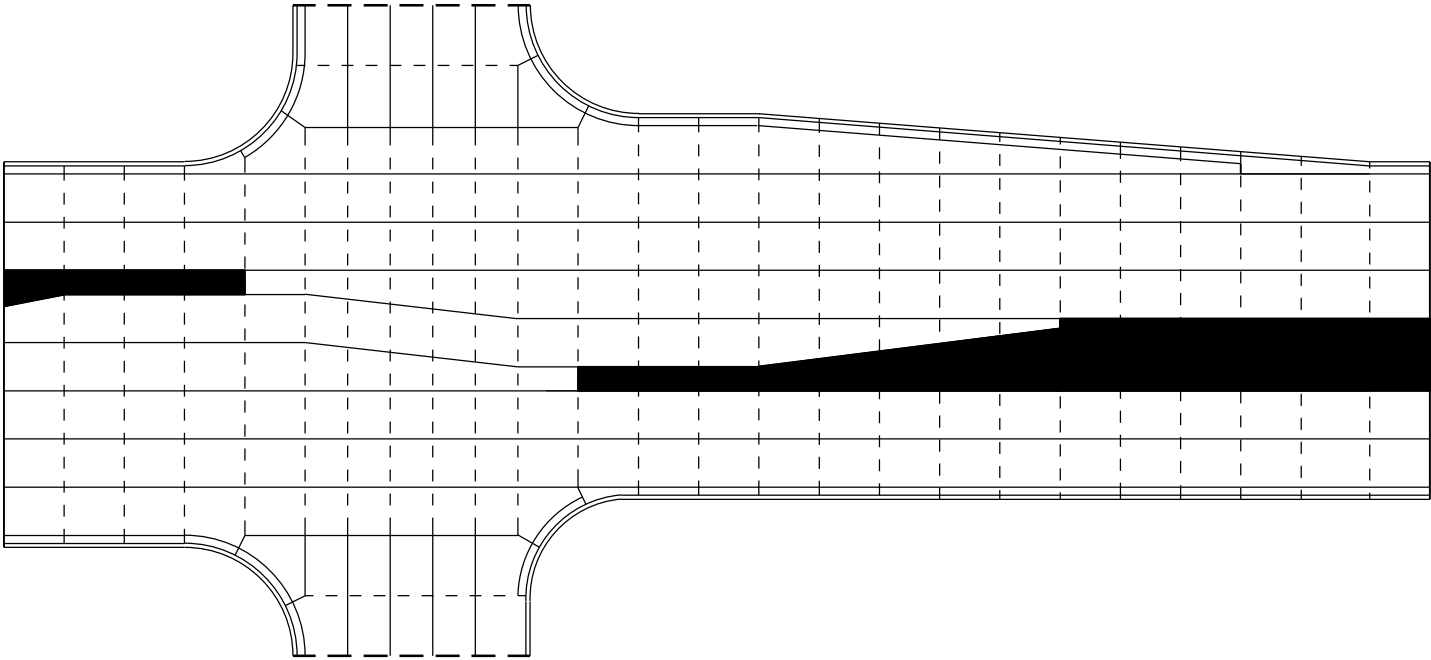
SKEWED INTERSECTION

CONCRETE PAVEMENT JOINTING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 140

LEGEND

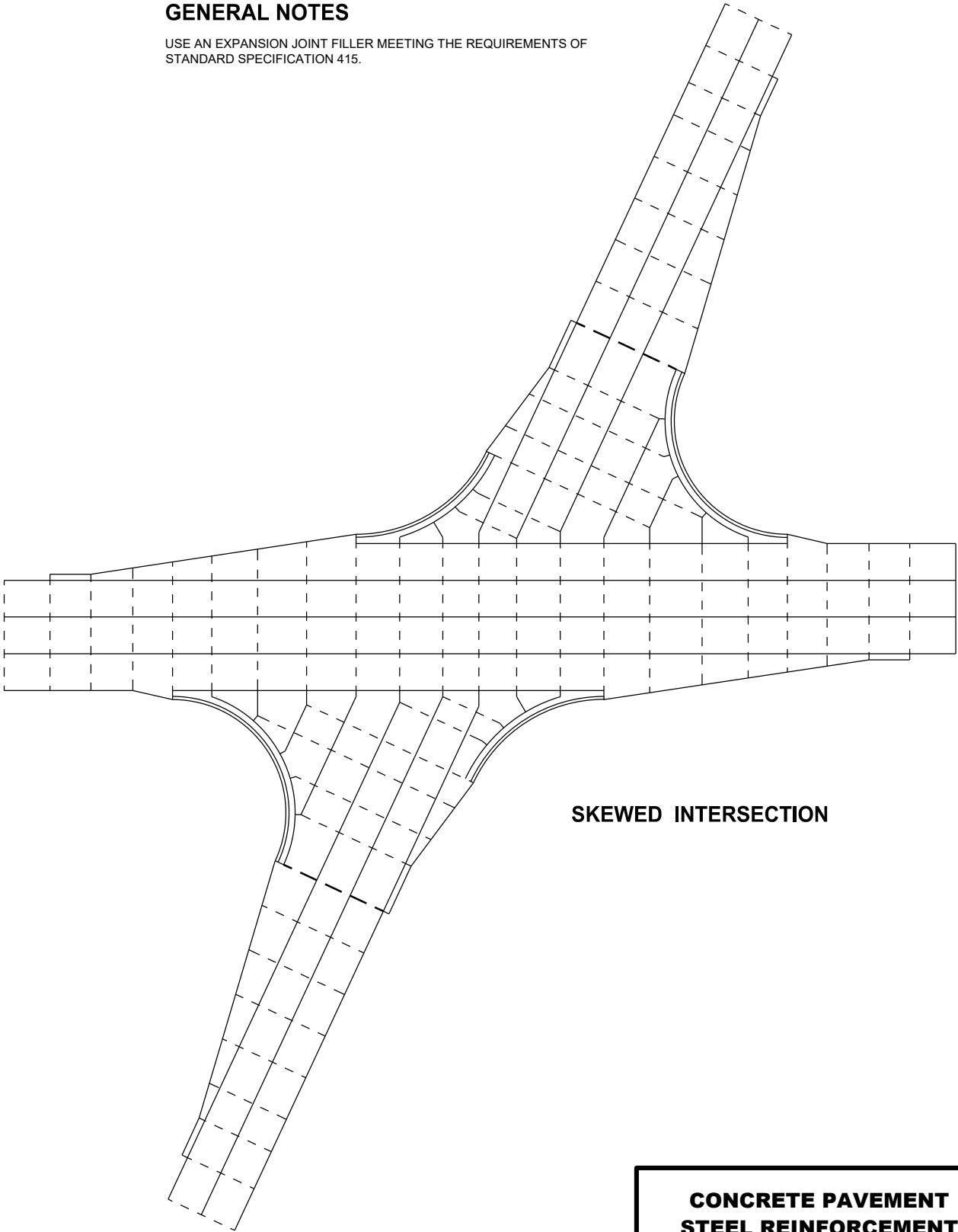
- POTENTIAL DOWELED EXPANSION JOINT
- DOWELED JOINT
- TIED JOINT



STANDARD INTERSECTION

GENERAL NOTES

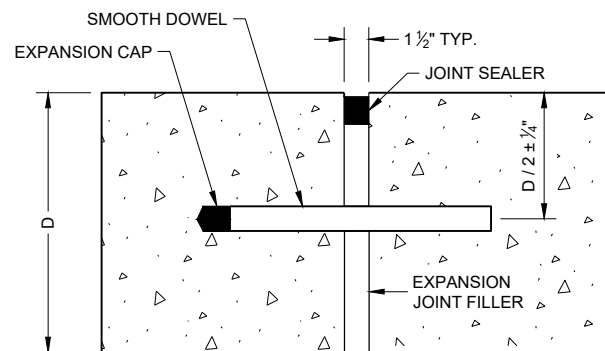
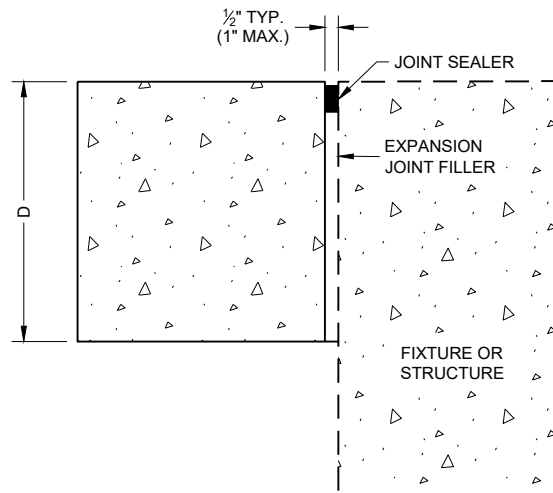
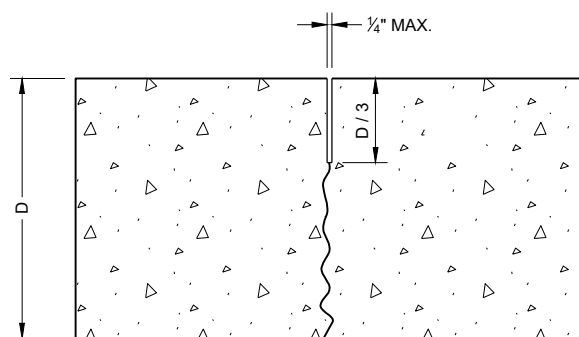
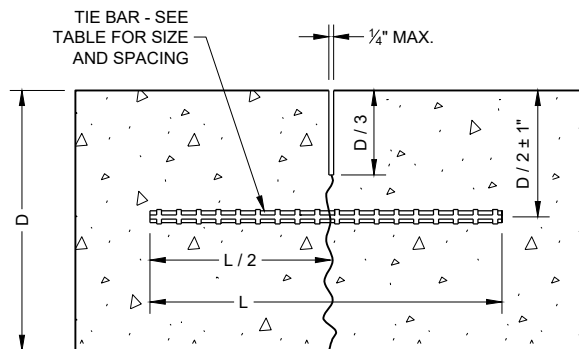
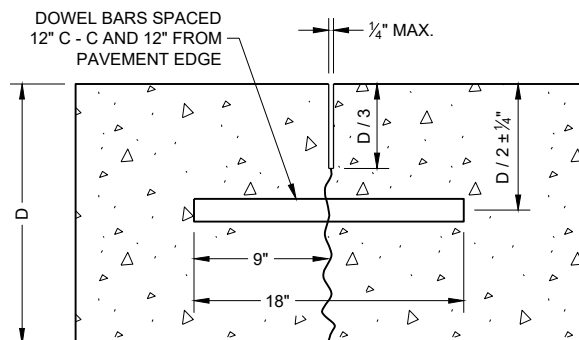
USE AN EXPANSION JOINT FILLER MEETING THE REQUIREMENTS OF STANDARD SPECIFICATION 415.



SKEWED INTERSECTION

CONCRETE PAVEMENT
STEEL REINFORCEMENT

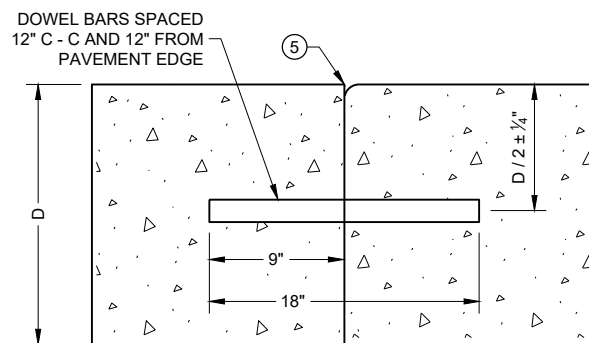
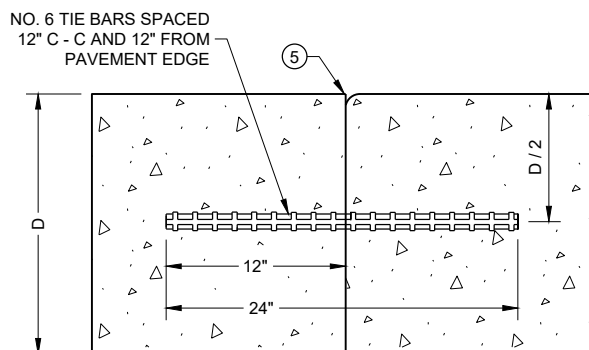
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 141

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

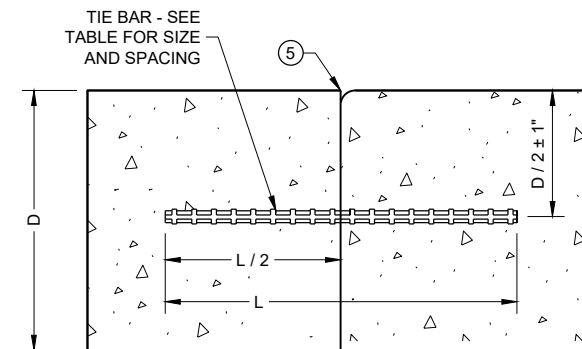
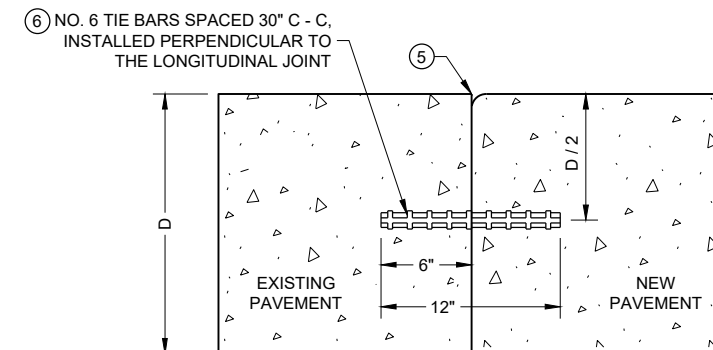
PAVEMENT DEPTH (D)	TIE BAR SIZE	TIE BAR LENGTH (L)	MAX. TIE BAR SPACING
< 10 1/2"	NO. 4	30"	36"
≥ 10 1/2"	NO. 5	36"	36"
	NO. 4 *	30"	24" **

* 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.

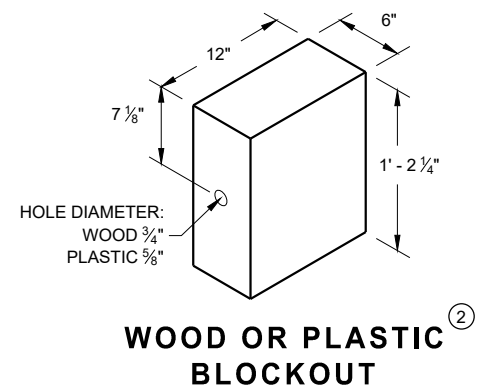
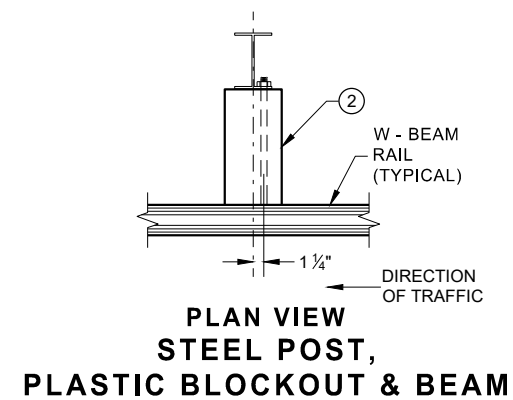
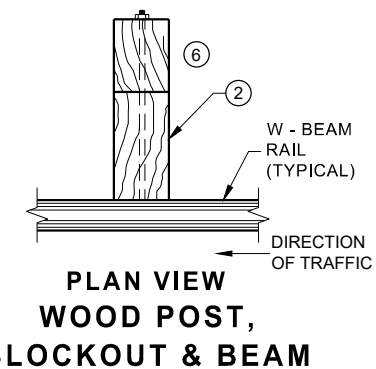
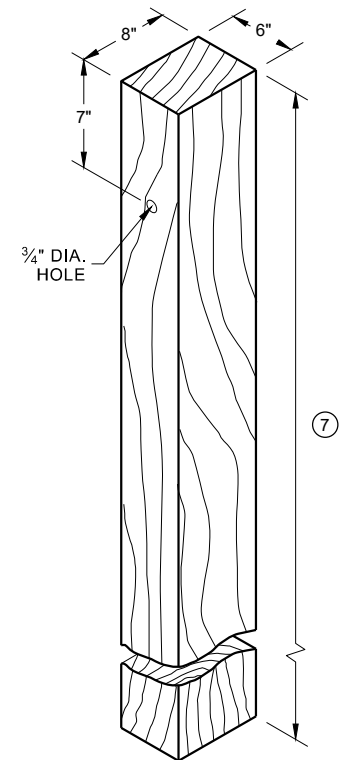
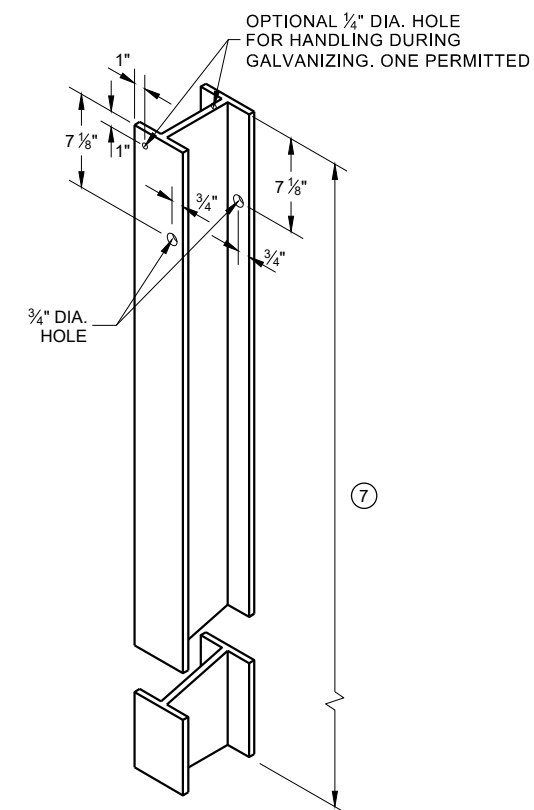
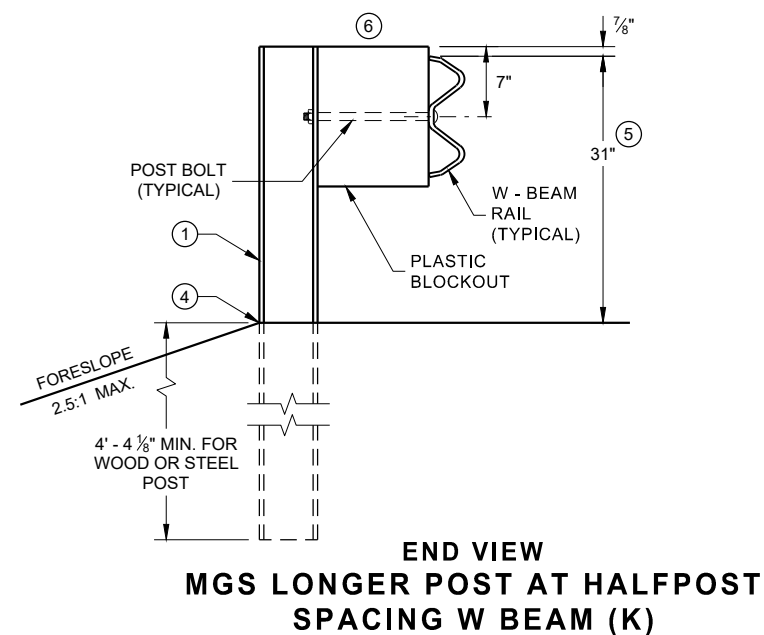
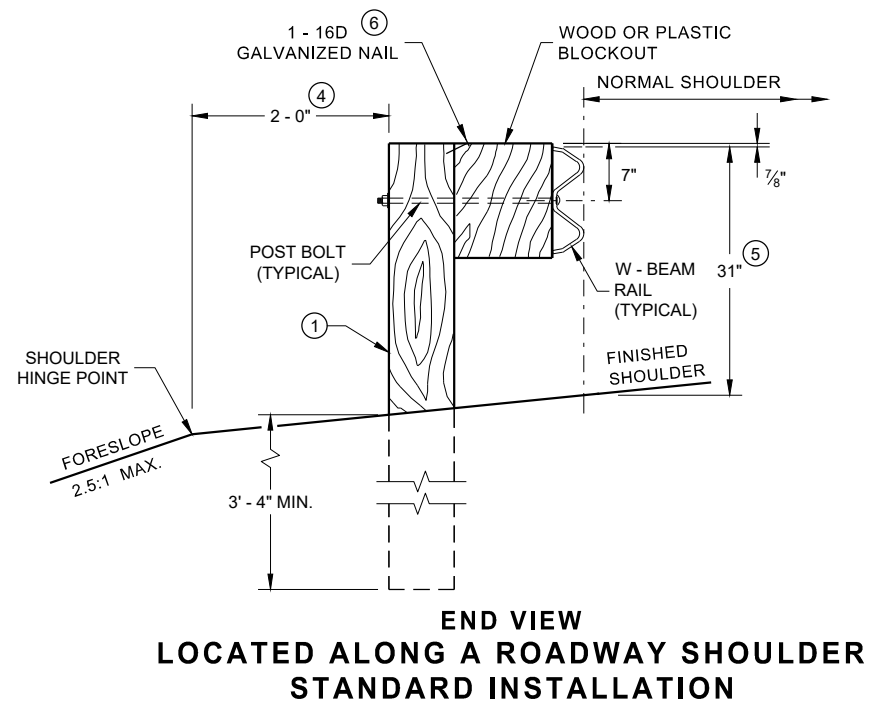
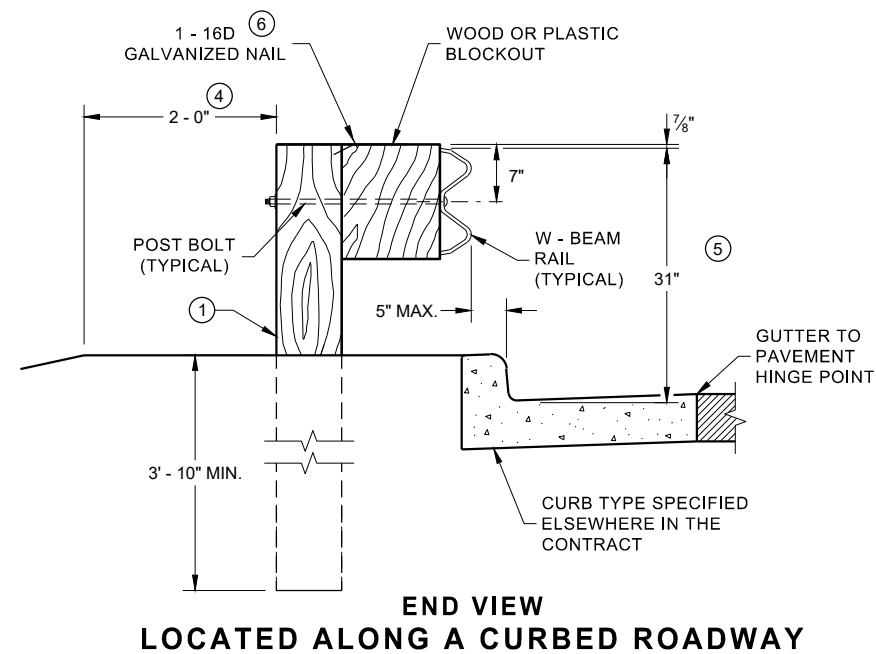
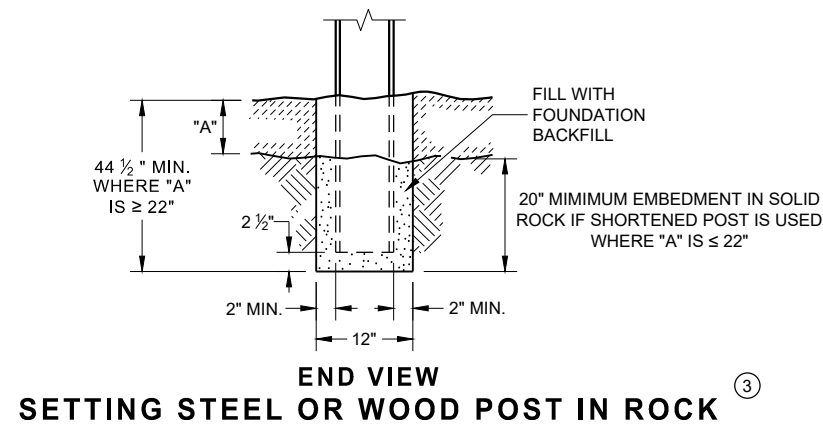
**DOWELED TRANSVERSE** ③**TIED TRANSVERSE** ③
(FOR USE ON NON-DOWELED PAVEMENTS ONLY)**CONSTRUCTION JOINTS** ④**GENERAL NOTES**

- 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.

**TIED LONGITUDINAL****TIED LONGITUDINAL TO EXISTING****CONCRETE PAVEMENT
JOINT TYPES**

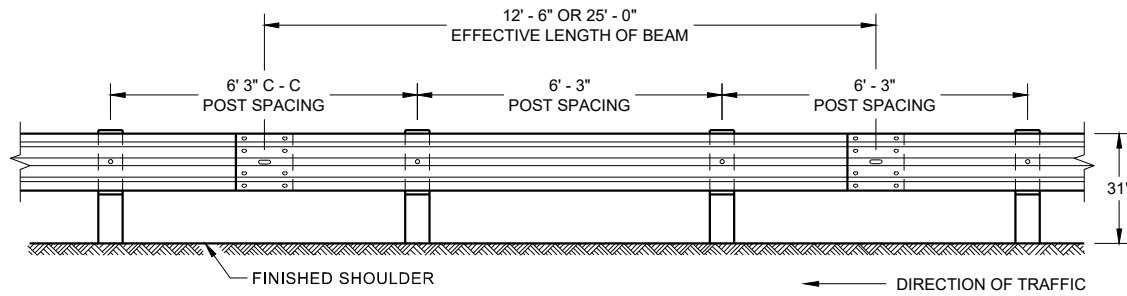
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 142

- 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".

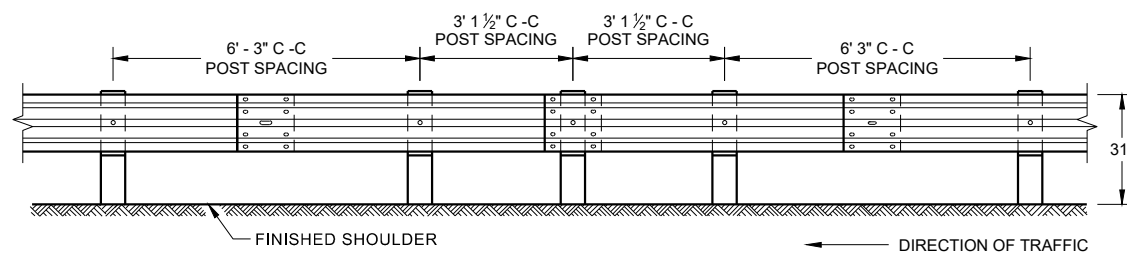


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

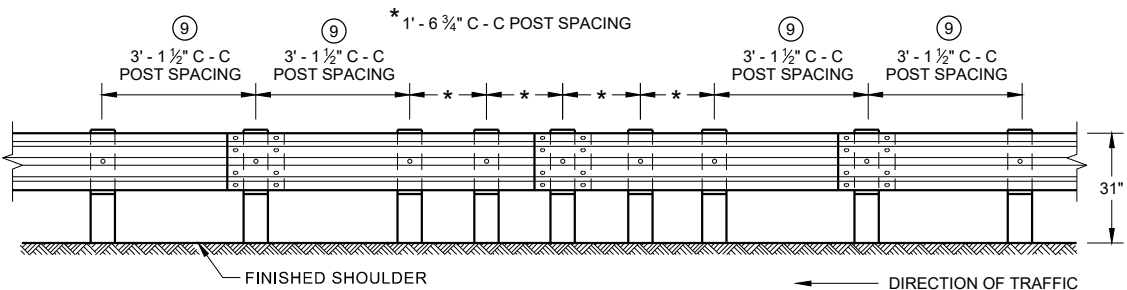
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 143



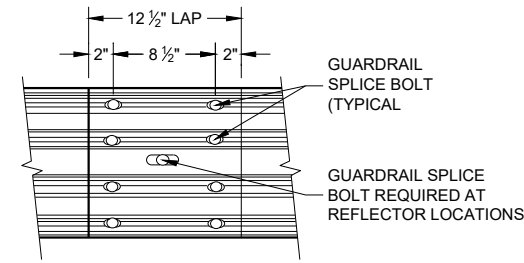
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



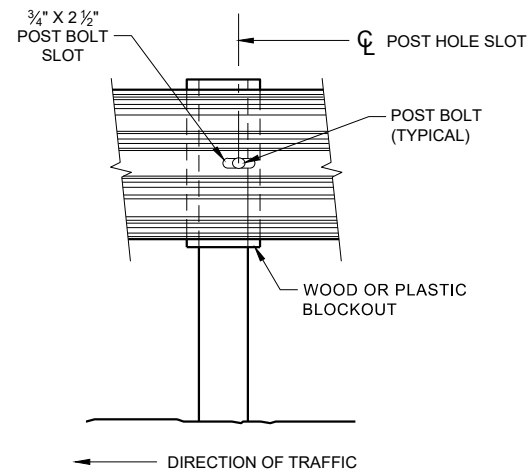
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



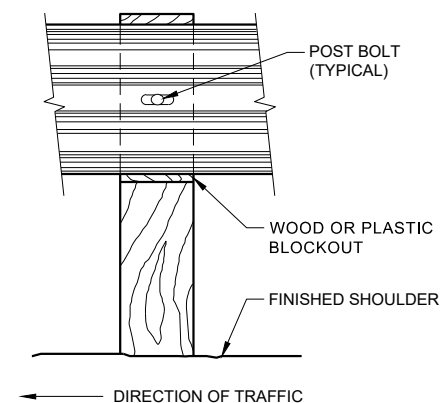
**FRONT VIEW
QUARTER POST SPACING (QS)**



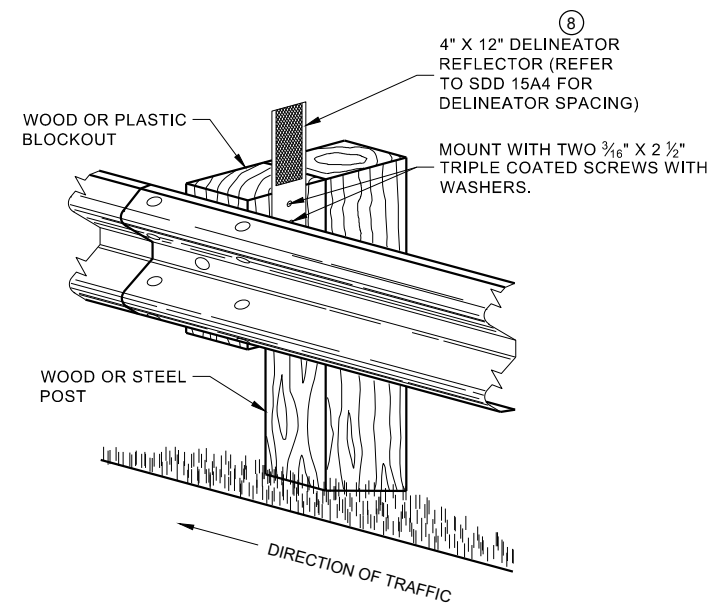
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



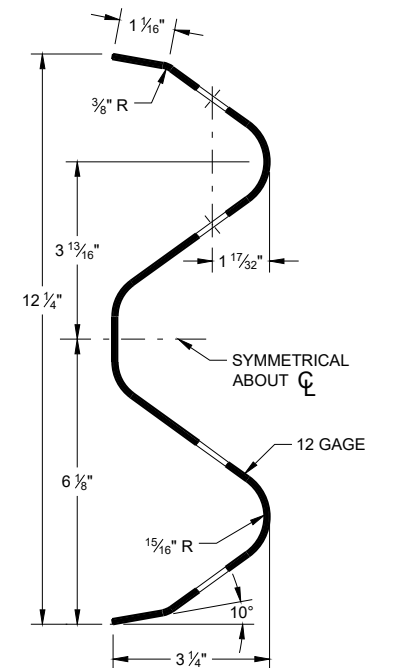
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

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 3/4" 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.

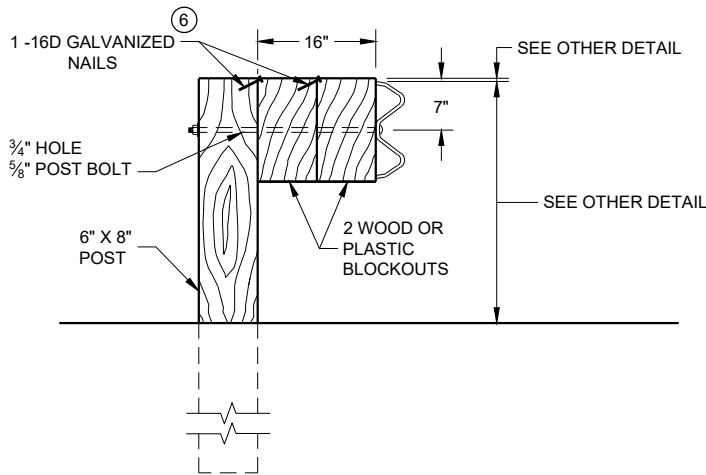
GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

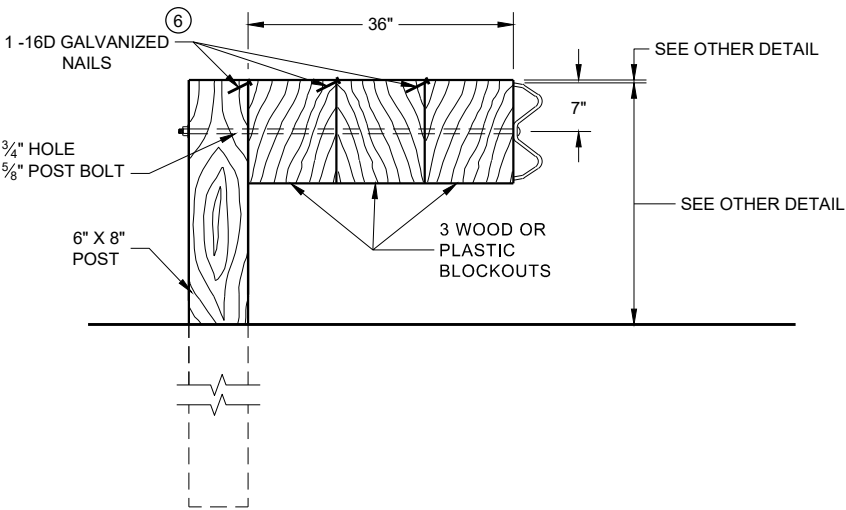
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 144



DETAIL FOR 16" BLOCKOUT DEPTH

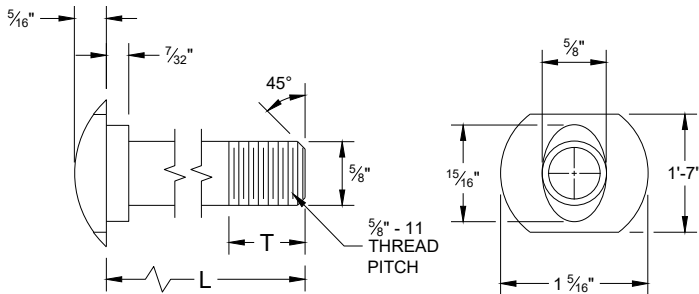
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

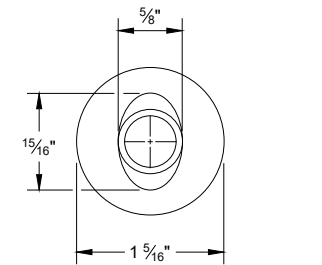
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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

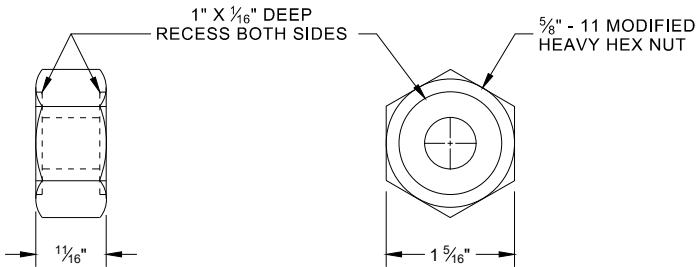


POST BOLT TABLE

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"

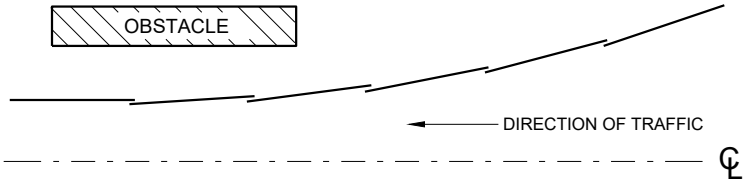


ALTERNATE BOLT HEAD

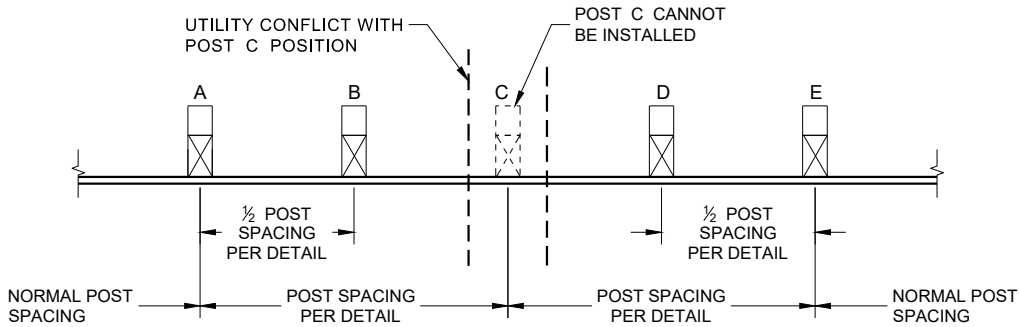


POST BOLT, SPLICE BOLT
AND RECESS NUT

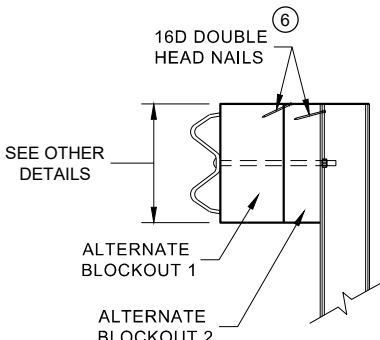
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



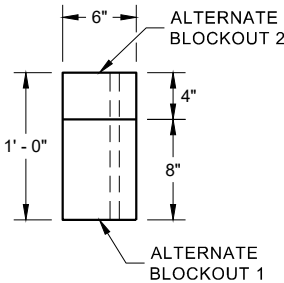
PLAN VIEW
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION



SIDE VIEW

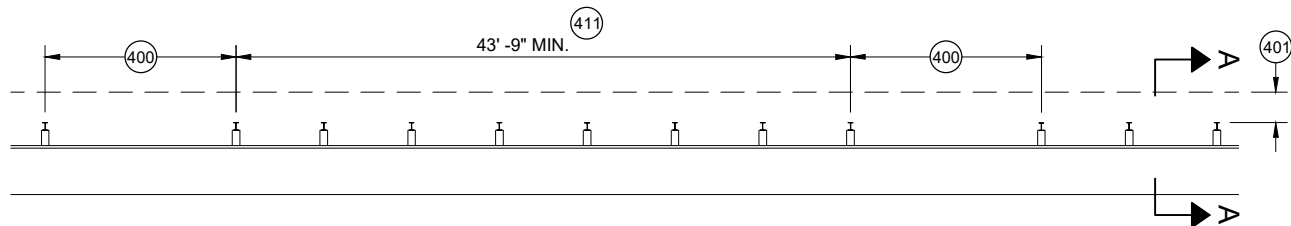


PLAN VIEW

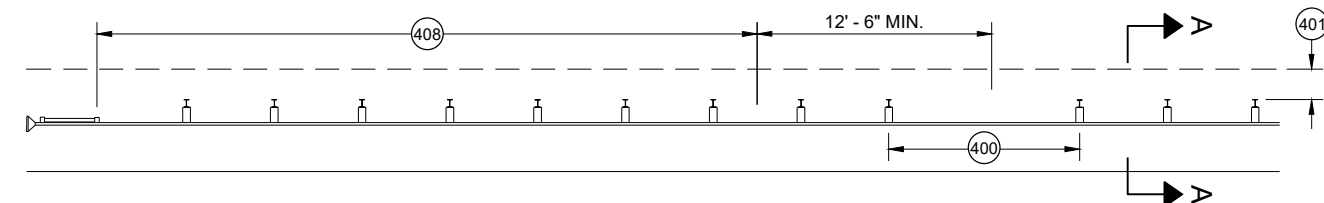
ALTERNATE WOOD
BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

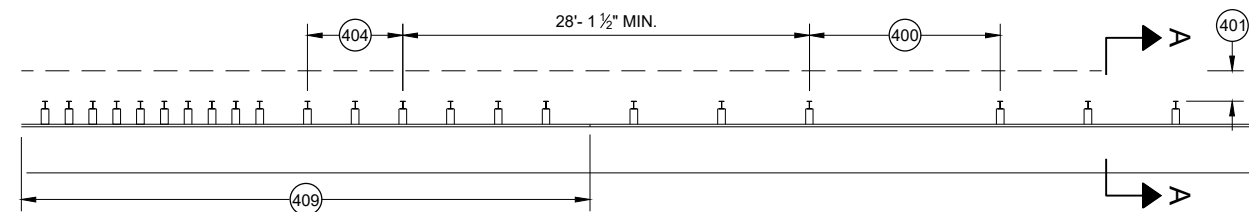
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



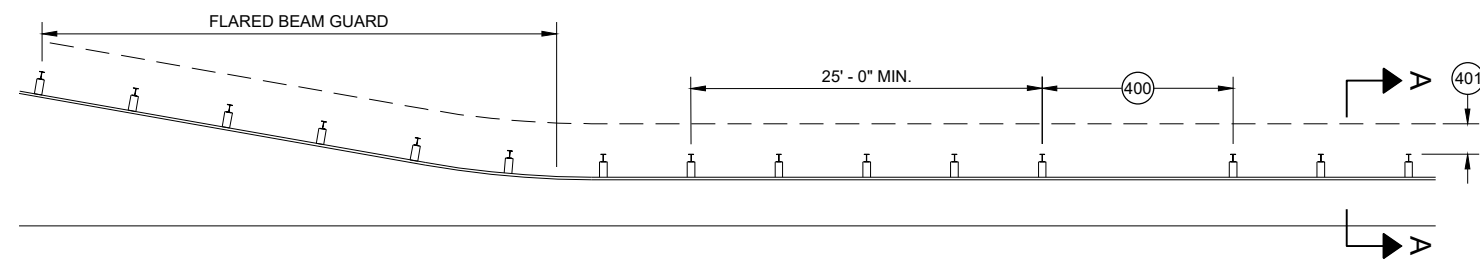
MISSING POST IN MGS GUARDRAIL



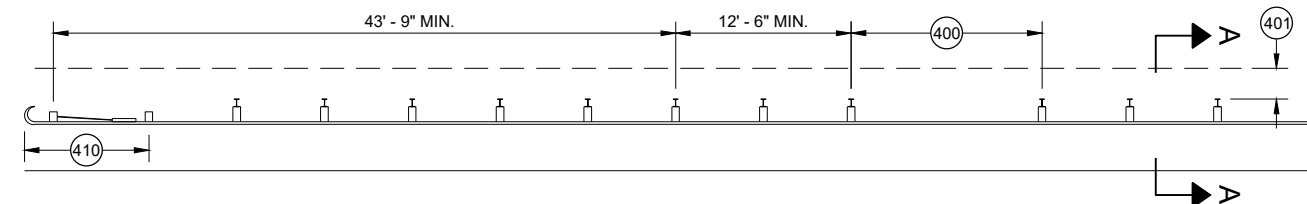
MISSING POST IN MGS GUARDRAIL NEAR EAT



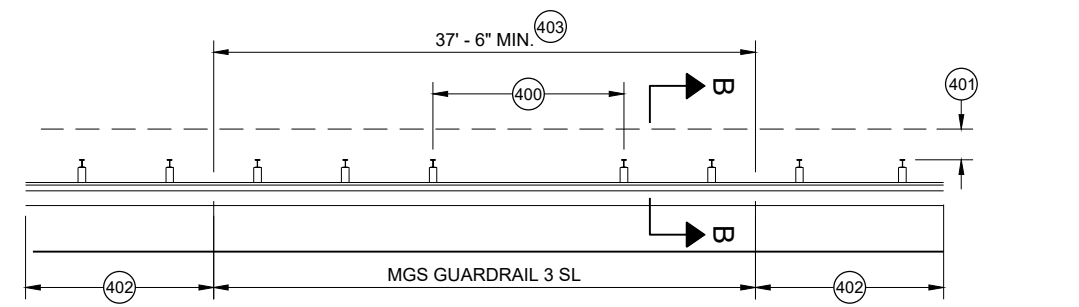
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

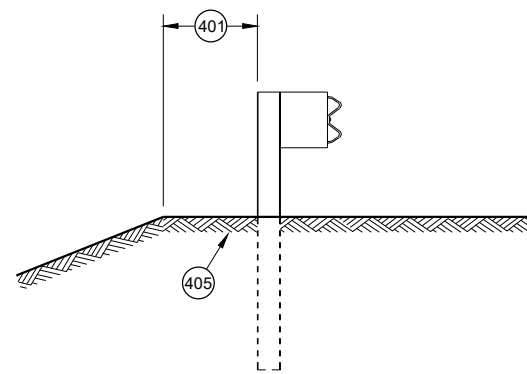


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

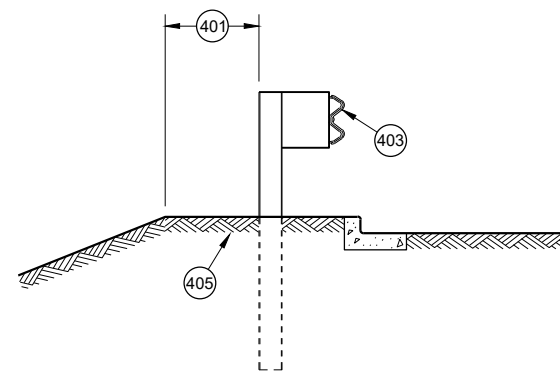


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (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 146

FHWA

GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
 - (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
 - (C) DIFFERENT 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.

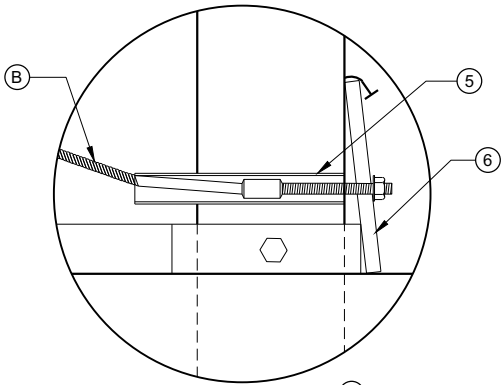
SEE SDD 14B42 FOR MORE INFORMATION.

* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

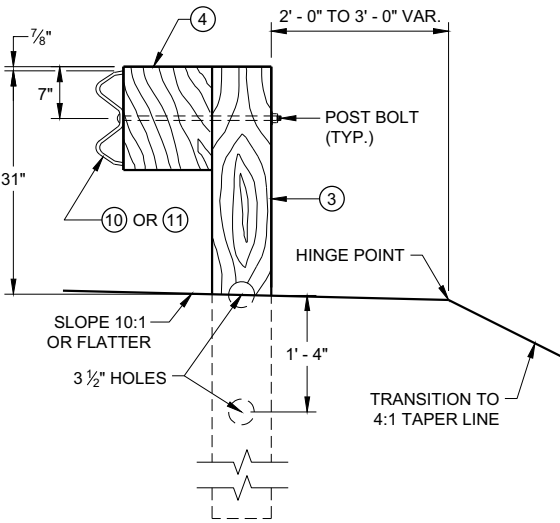
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

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

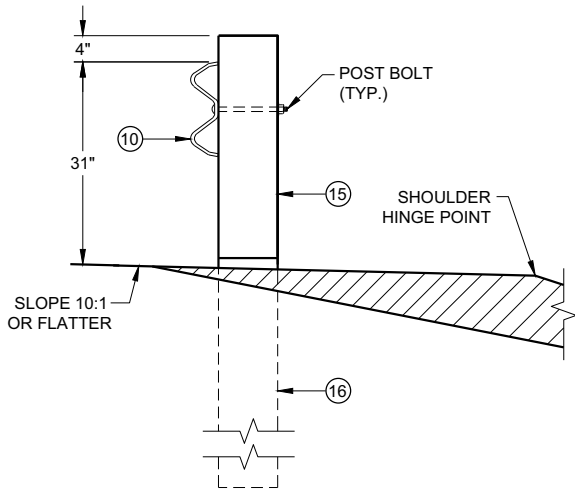
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



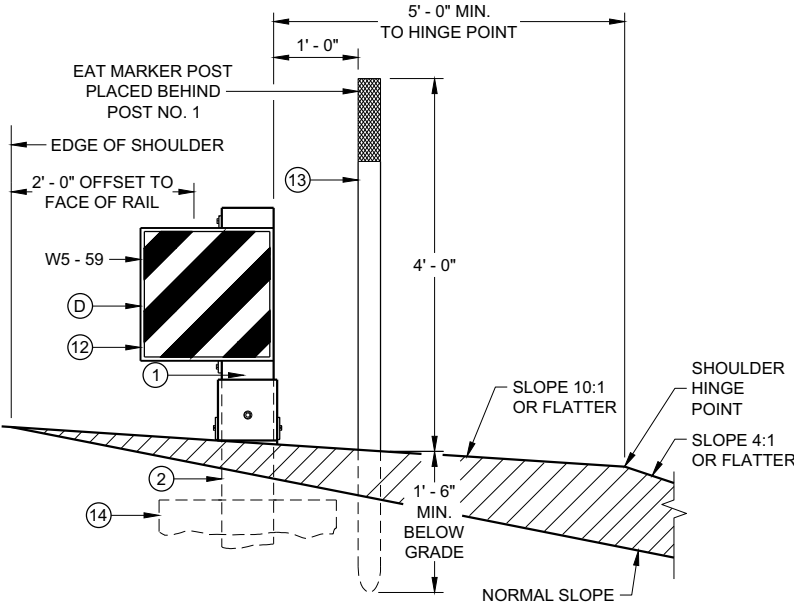
DETAIL "A"



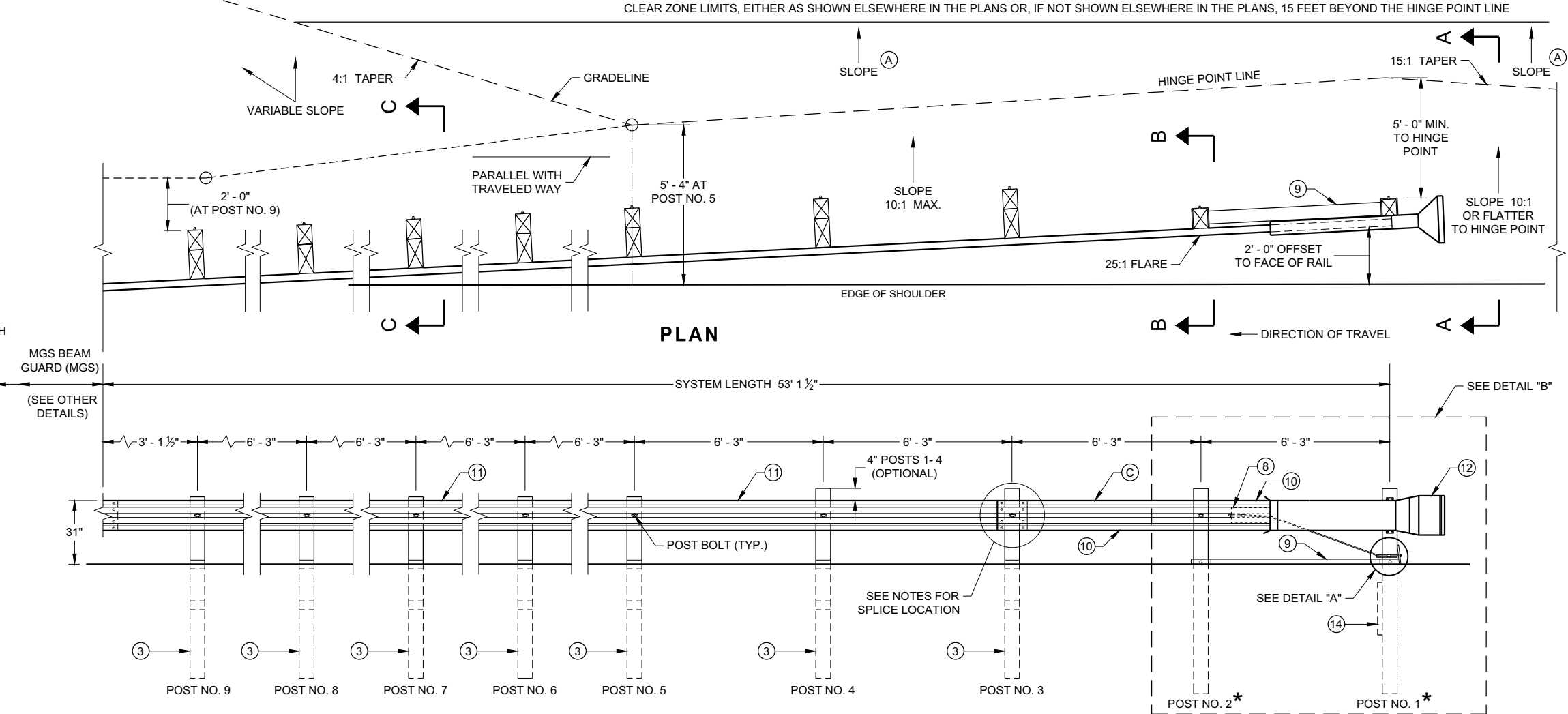
SECTION C - C
TYPICAL AT POST NOS. 3 - 9



SECTION B - B
TYPICAL AT POST NO. 2*

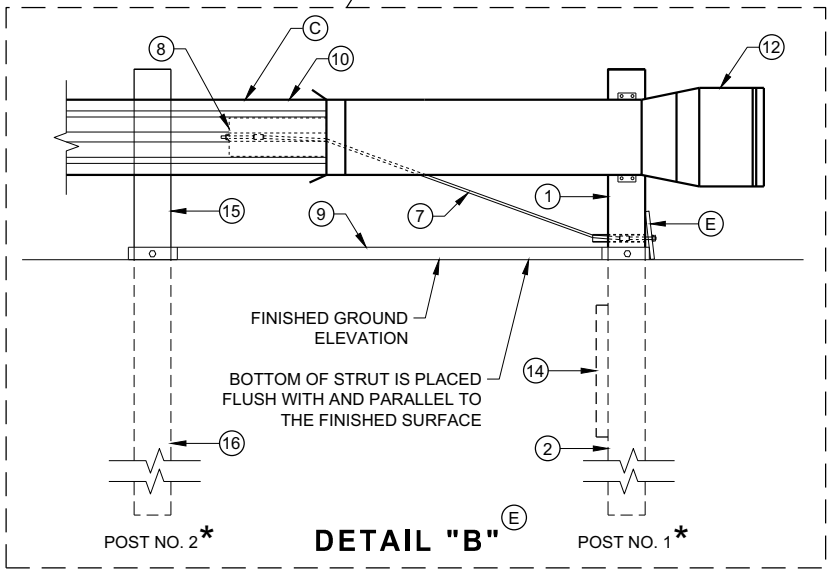


SECTION A - A
TYPICAL AT POST NO. 1*



PLAN

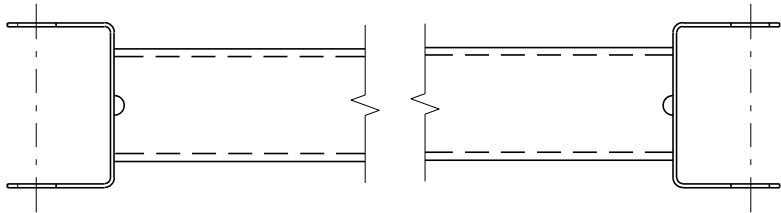
ELEVATION



DETAIL "B"

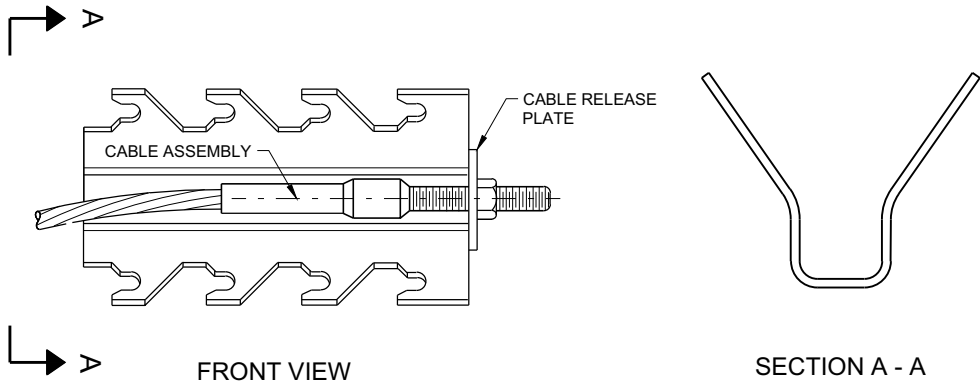
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

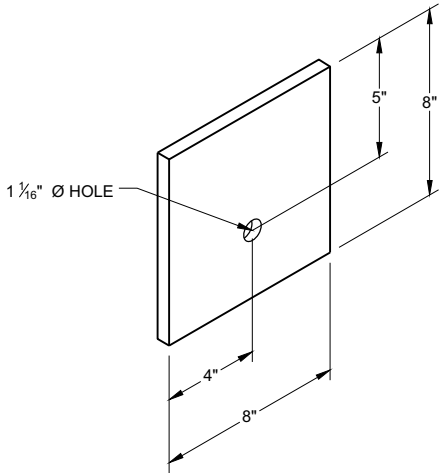


GENERIC GROUND STRUT⁹ ^E

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



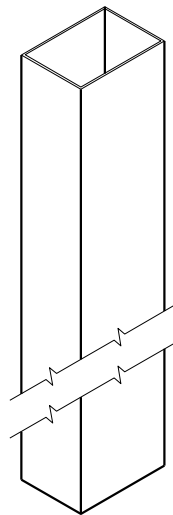
GENERIC ANCHOR CABLE BOX⁹ ^E



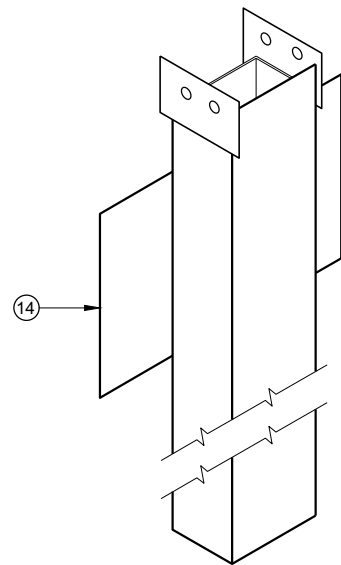
BEARING PLATE⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

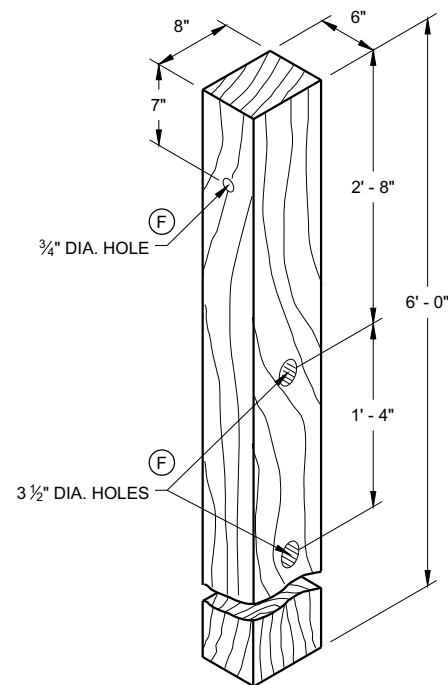
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 148



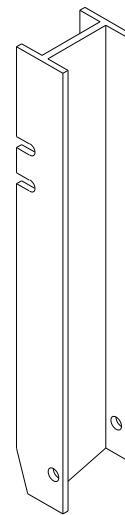
UPPER POST NO. 1 ⁽¹⁾ (E)



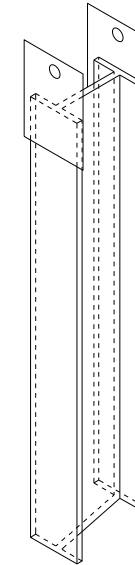
LOWER POST NO. 1 ⁽²⁾ (E)



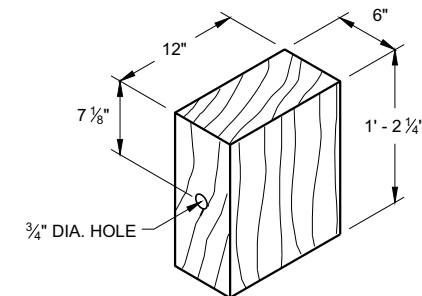
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



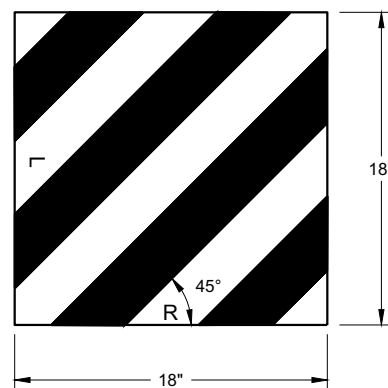
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



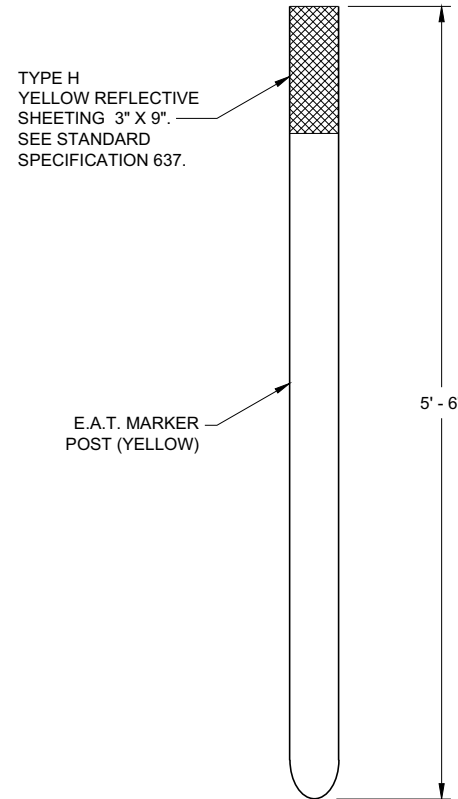
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



REFLECTIVE SHEETING DETAIL ^(E)

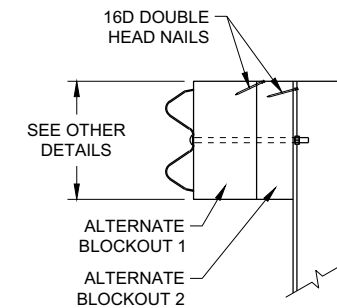


FRONT VIEW

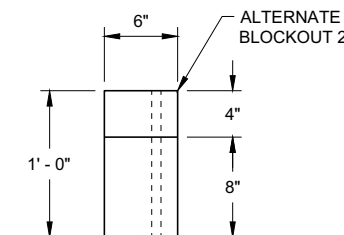


SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



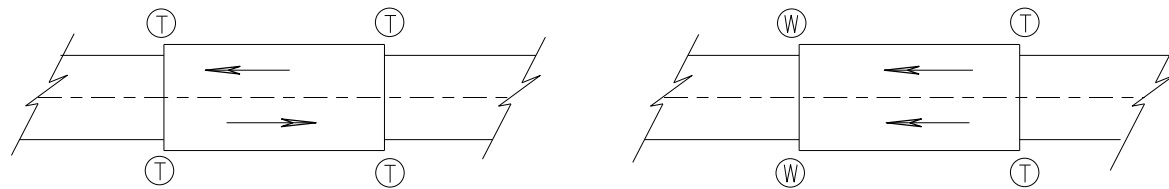
TOP VIEW

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 149
FHWA



TWO WAY TRAFFIC

ONE WAY TRAFFIC

Ⓣ THRIE BEAM CONNECTION

Ⓦ W-BEAM CONNECTION WHEN REQUIRED

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

GENERAL NOTES

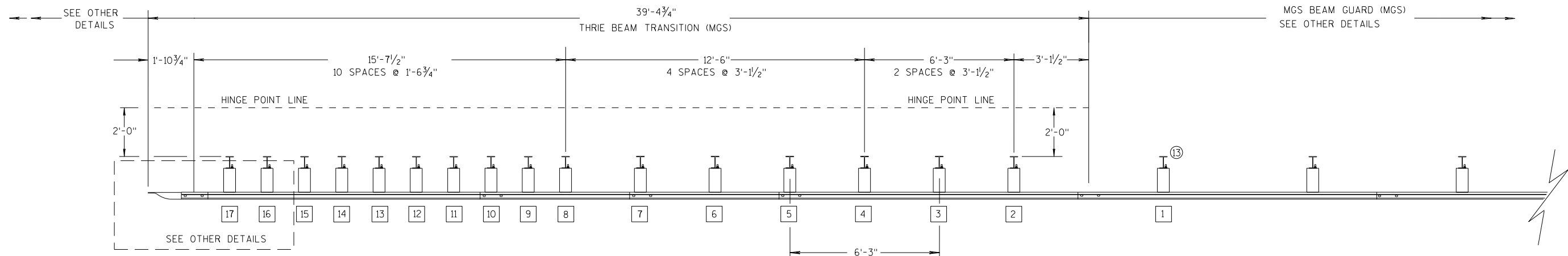
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2½", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

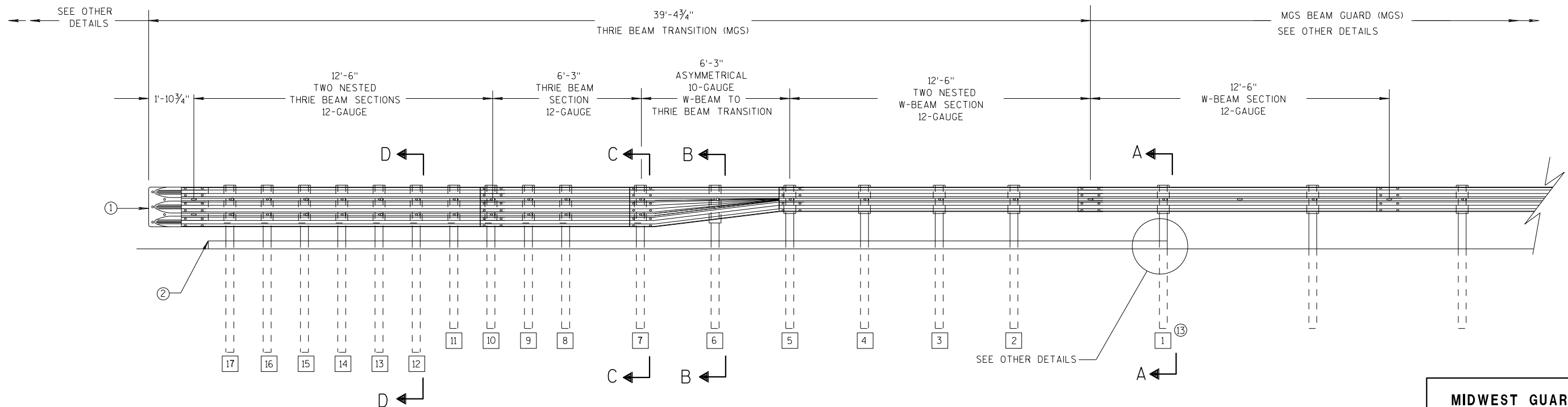
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

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

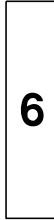
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION

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

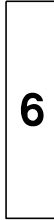
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 150

6

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

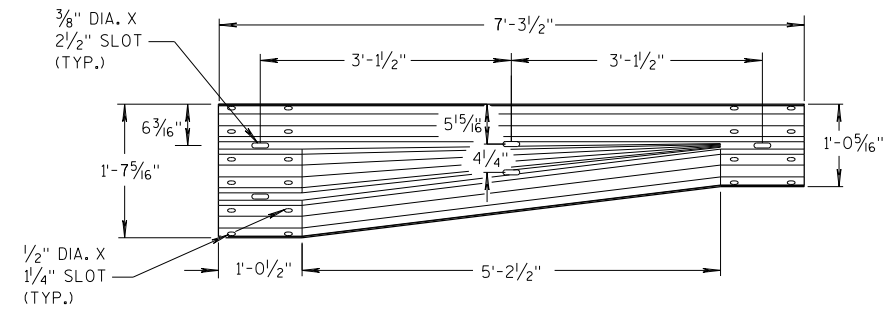


S.D.D. 14 B 45-5b

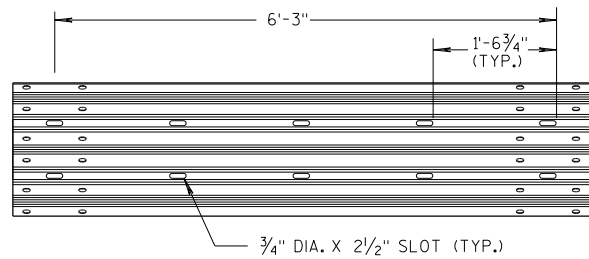


S.D.D. 14 B 45-5b

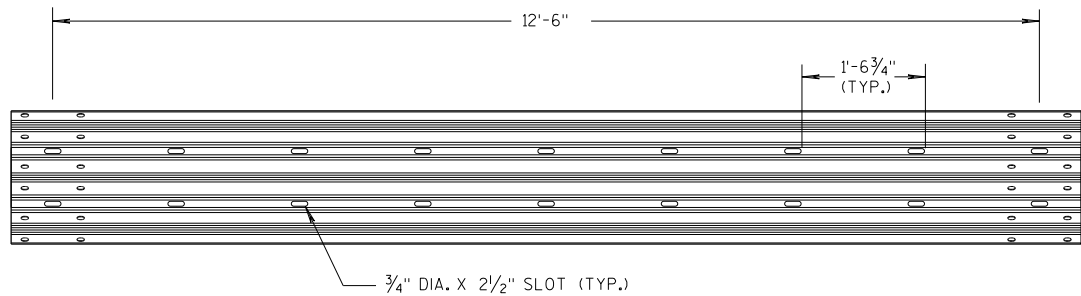




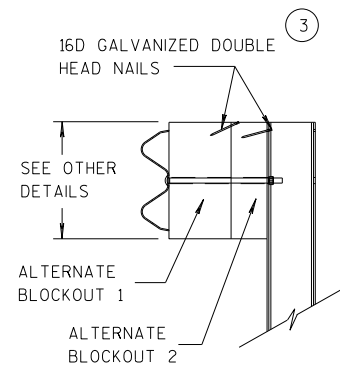
W-BEAM TO THRIE BEAM TRANSITION SECTION



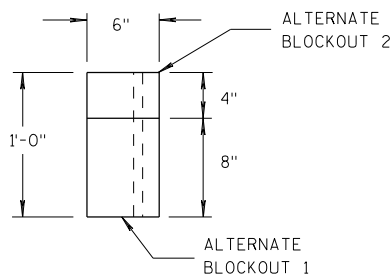
6'-3" THRIE BEAM SECTION



12'-6" THRIE BEAM SECTION

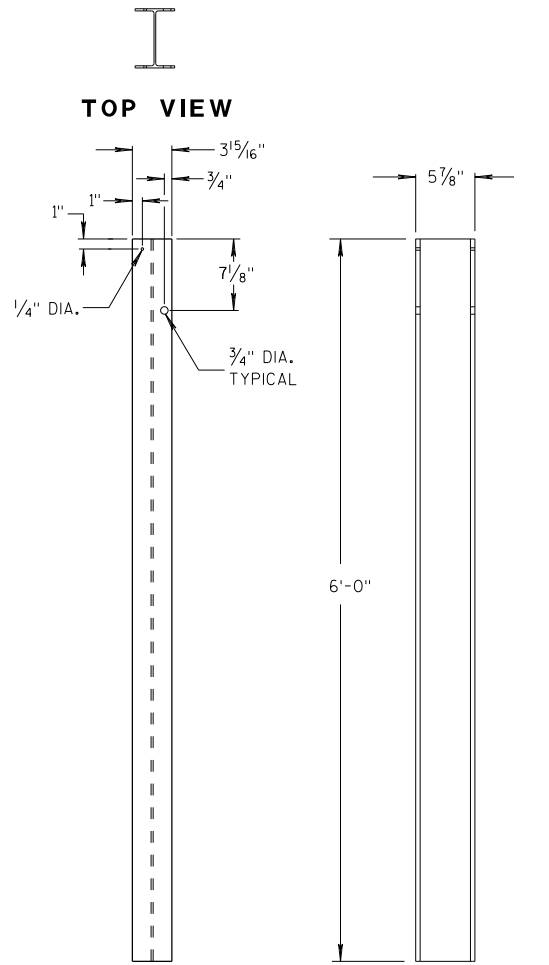


SIDE VIEW



TOP VIEW

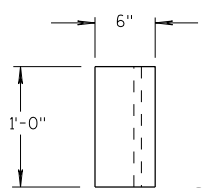
ALTERNATE WOOD BLOCKOUT DETAIL



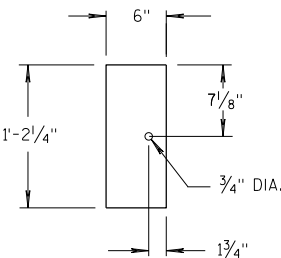
FRONT VIEW

SIDE VIEW

STEEL POSTS 1-5

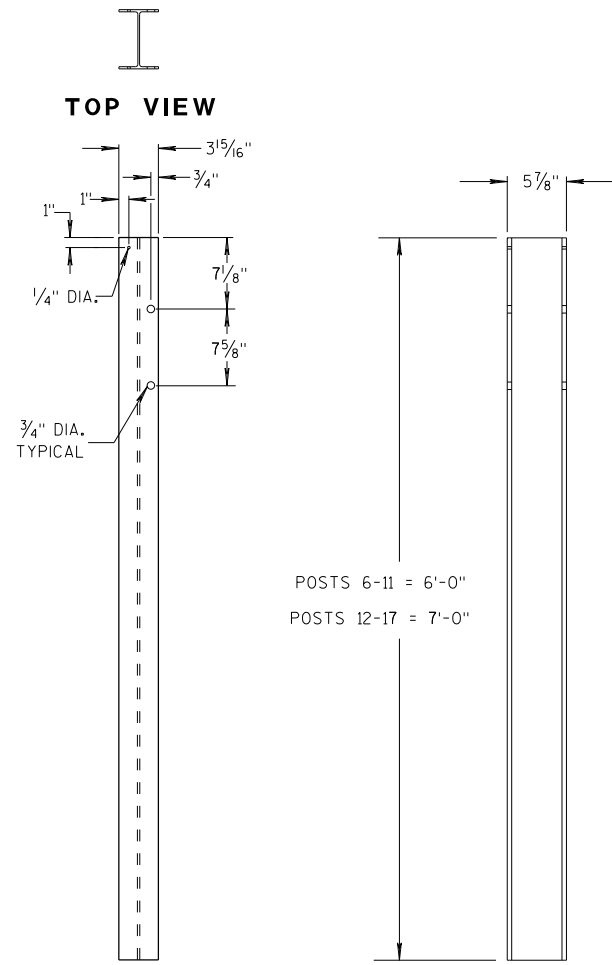


TOP VIEW



FRONT VIEW

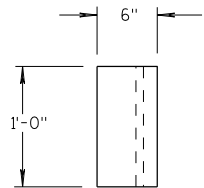
BLOCKOUT POSTS 1-5



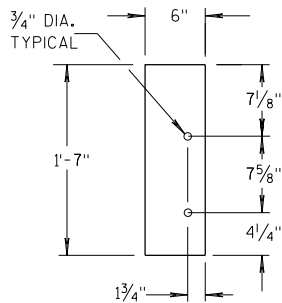
FRONT VIEW

SIDE VIEW

STEEL POSTS 6-17



TOP VIEW



FRONT VIEW

BLOCKOUT POSTS 6-17

GENERAL NOTES

STEEL POSTS ARE W6X9 OR W6X8.5.

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

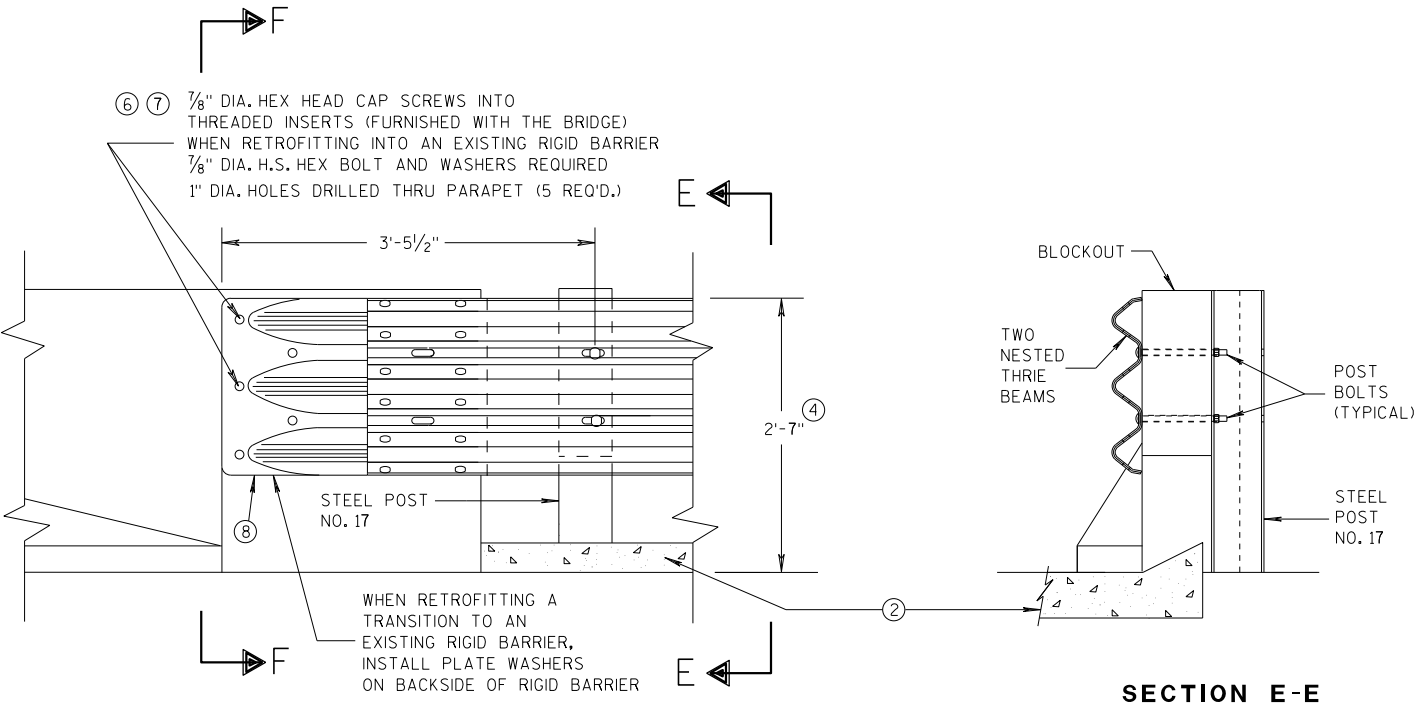
③ WHEN USING STEEL POSTS AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

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

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

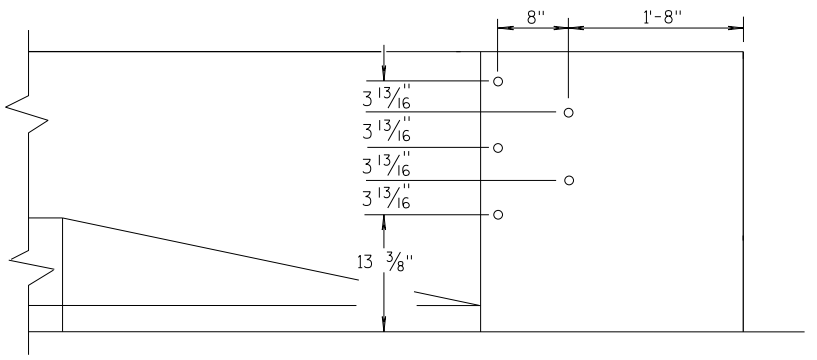
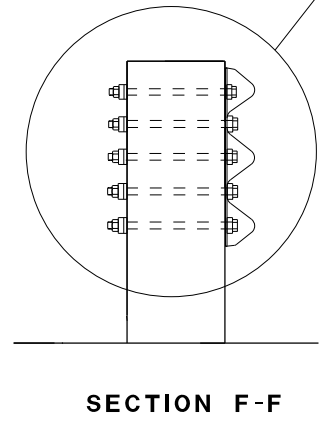
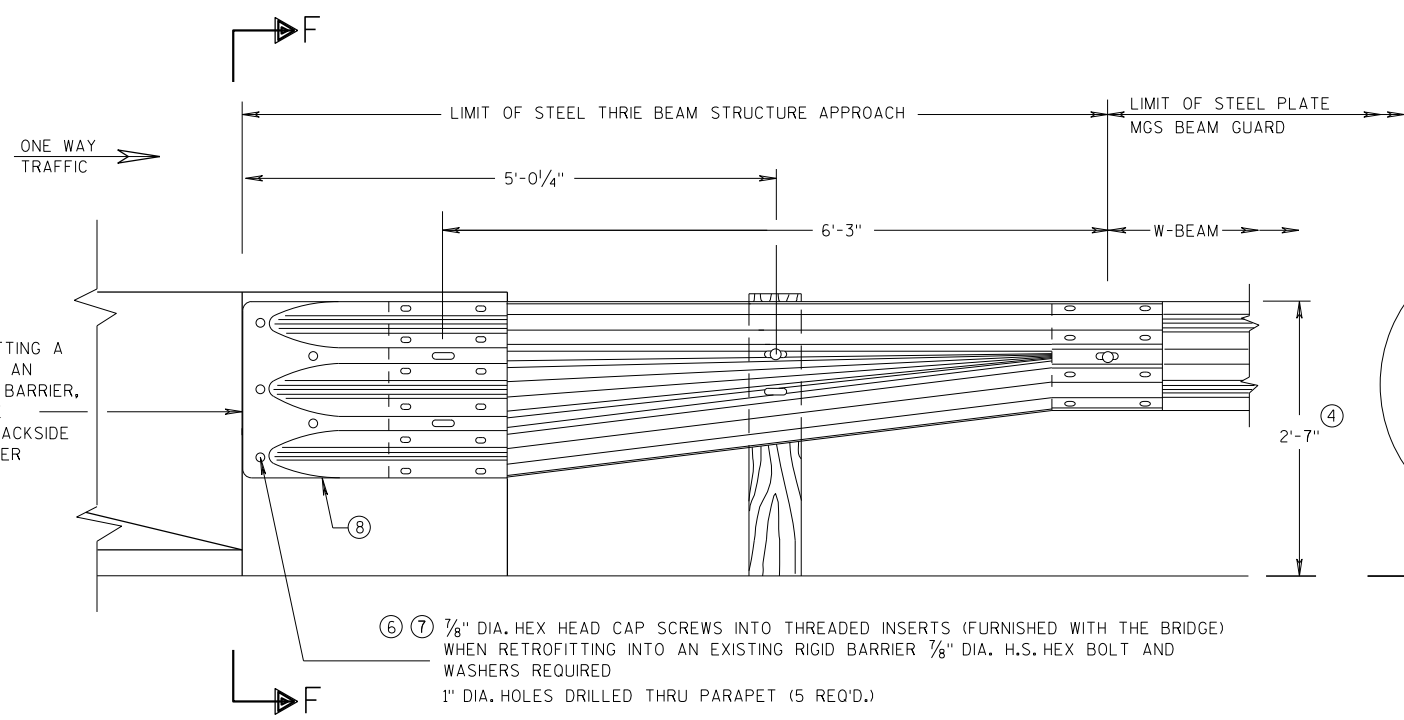
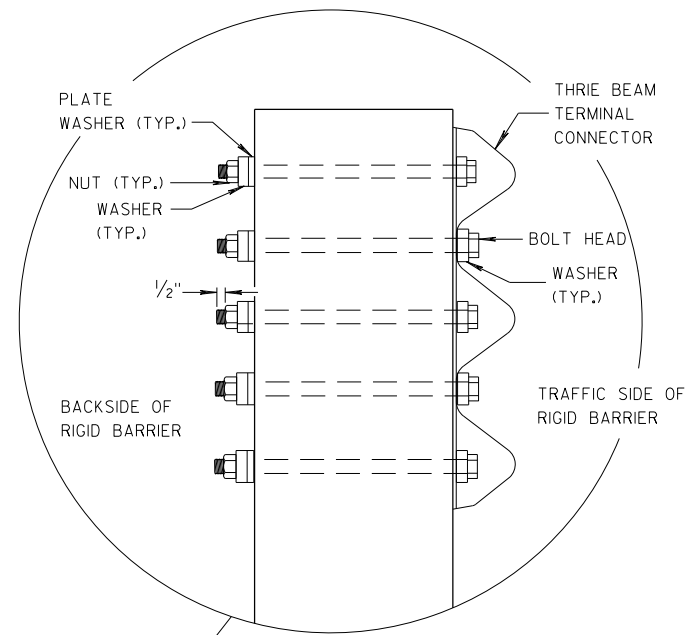
MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

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".

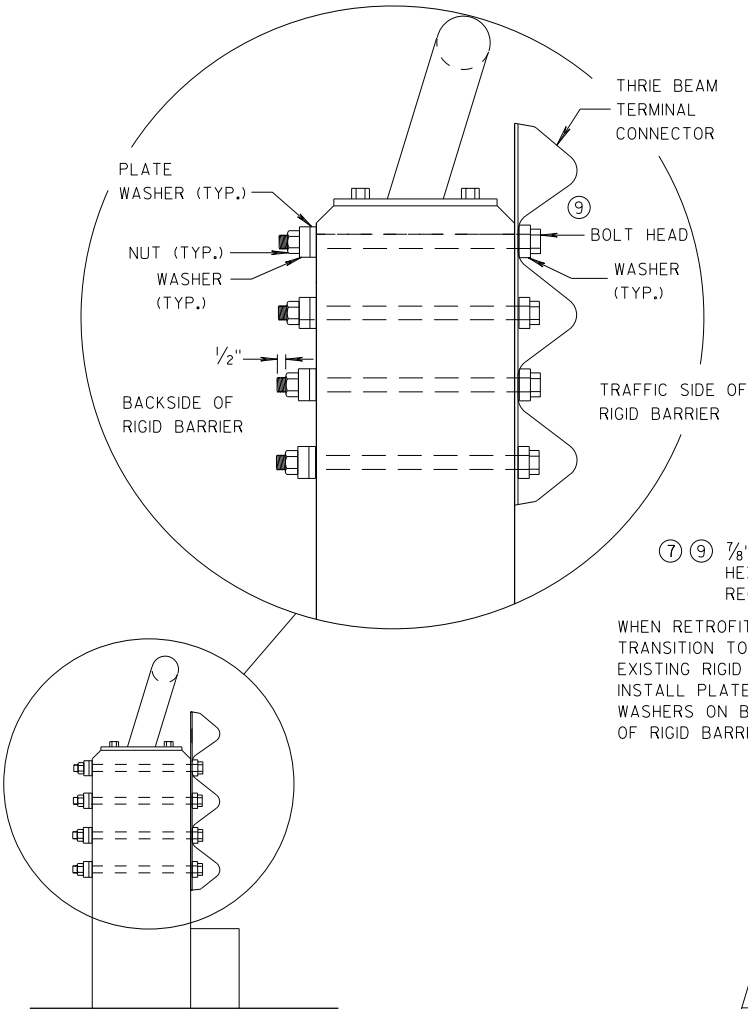


MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 07/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS UNIT SUPERVISOR		
FHWA	153	NT	

GENERAL NOTES

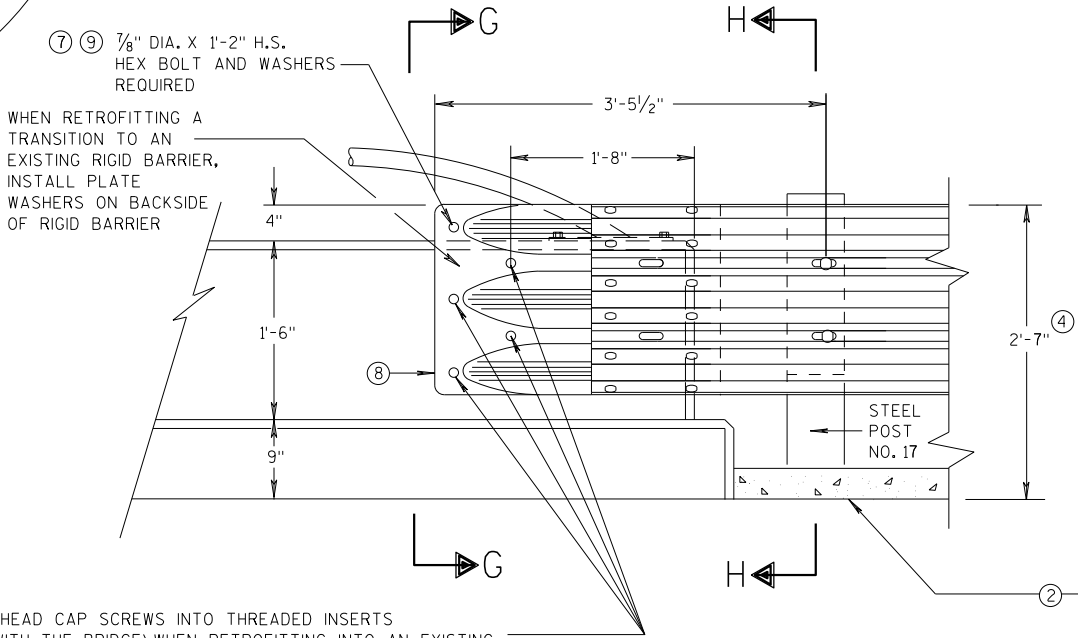
THESE ARE TYPICAL CONNECTION DETAILS. ADJUST THE POSTION OF CONNECTIONS TO EXISTING BRIDGES TO FIT THE ACTUAL BRIDGE AND SITE DIMENSIONS.

- 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.



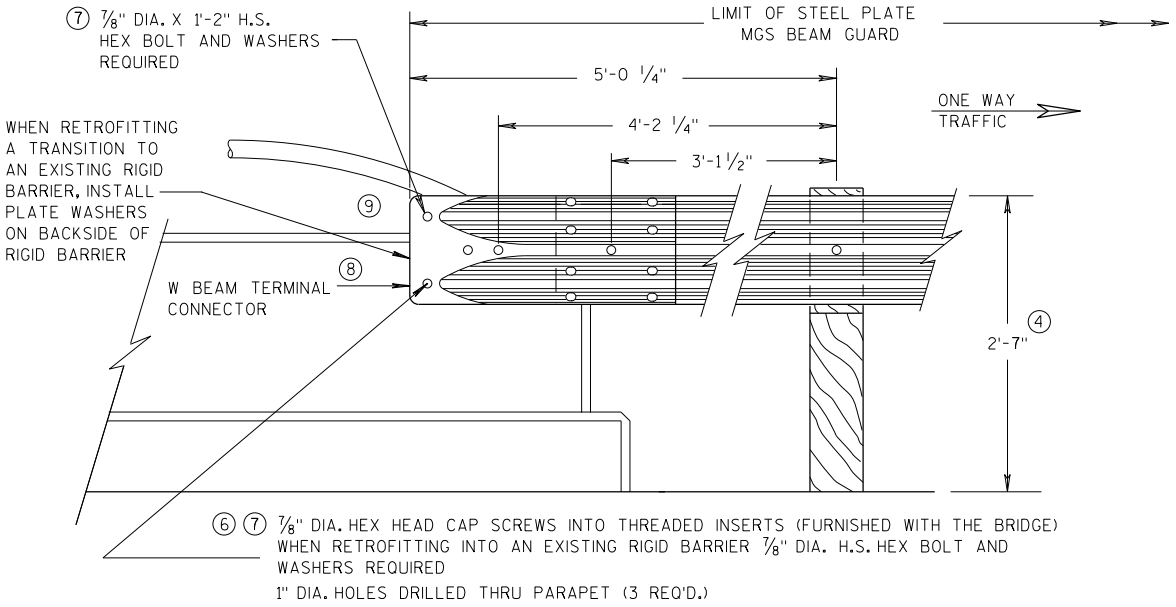
SECTION G-G

- ⑥ ⑦
- $\frac{7}{8}"$ DIA. HEX HEAD CAP SCREWS INTO THREADED INSERTS (FURNISHED WITH THE BRIDGE) WHEN RETROFITTING INTO AN EXISTING RIGID BARRIER $\frac{7}{8}"$ DIA. H.S. HEX BOLT AND WASHERS REQUIRED 1" DIA. HOLES DRILLED THRU PARAPET (4 REQ'D.)



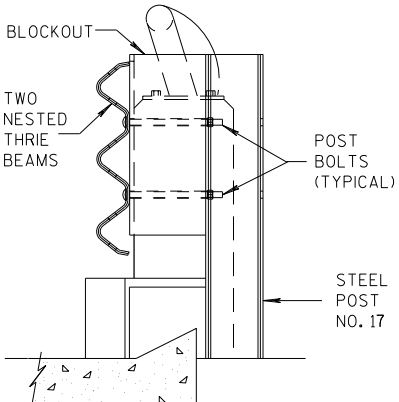
FRONT VIEW

THRIE BEAM CONNECTION TO VERTICAL FACED PARAPETS



FRONT VIEW

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

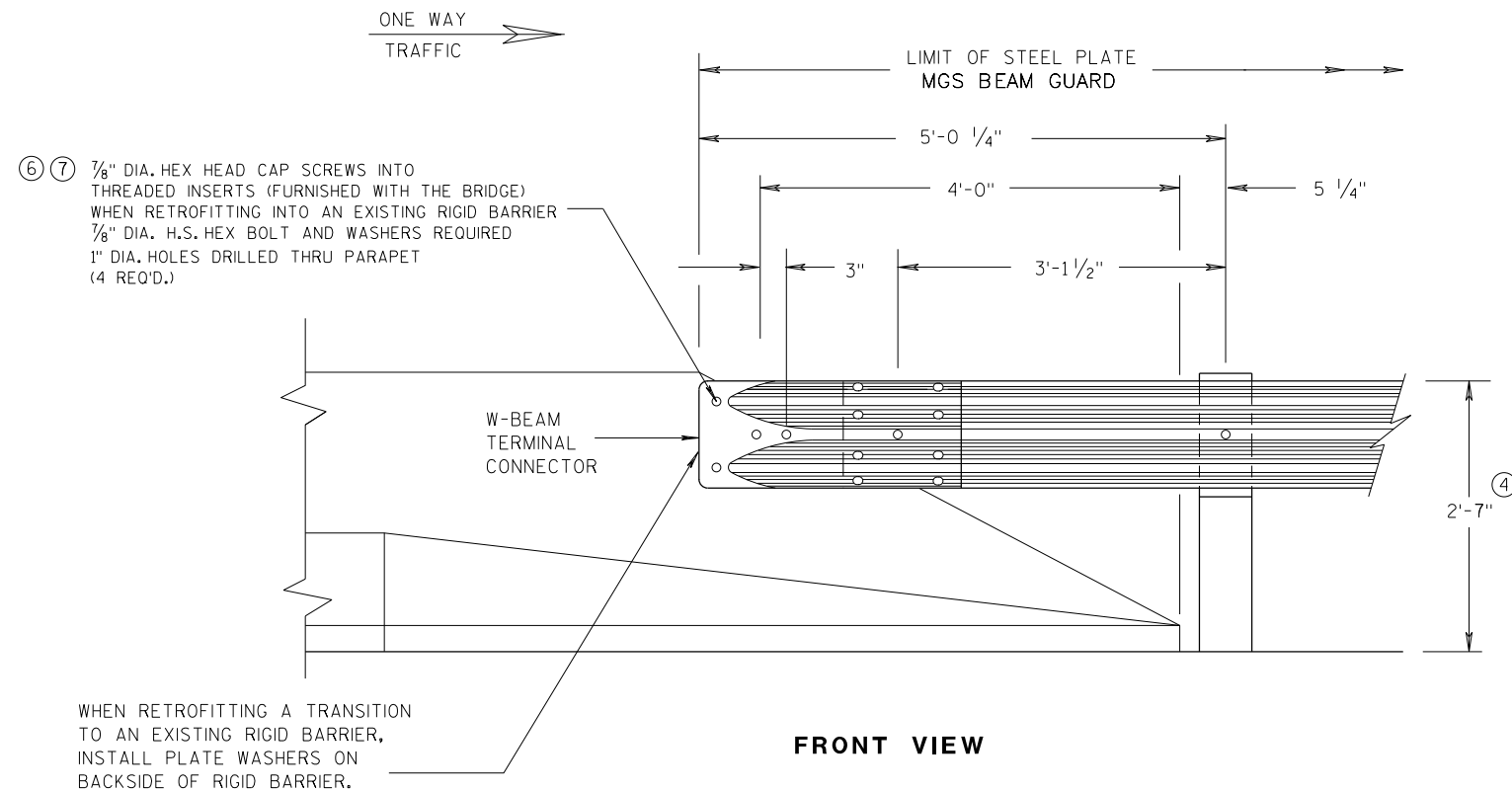


SECTION H-H

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

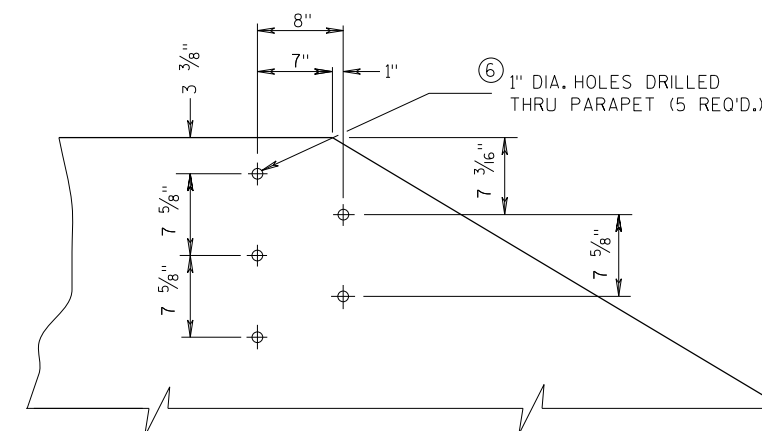
APPROVED
07/2018 /S/ Rodney Taylor
DATE ROADWAY STANDARDS UNIT SUPERVISOR
FHWA



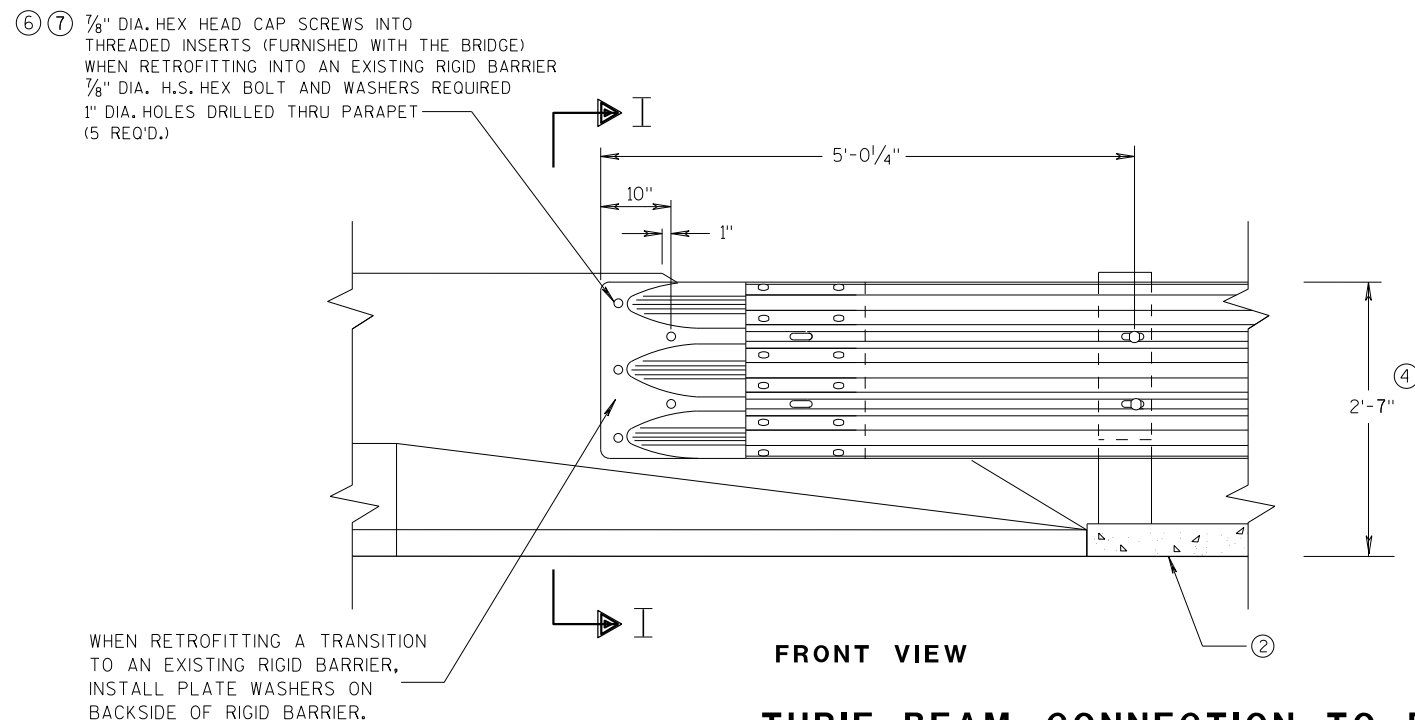
**W BEAM CONNECTION TO
PARAPETS WITH SLOPED ENDS**
(USE ONLY AT TRAFFIC EXIT END OF ONE WAY BRIDGE)

GENERAL NOTES

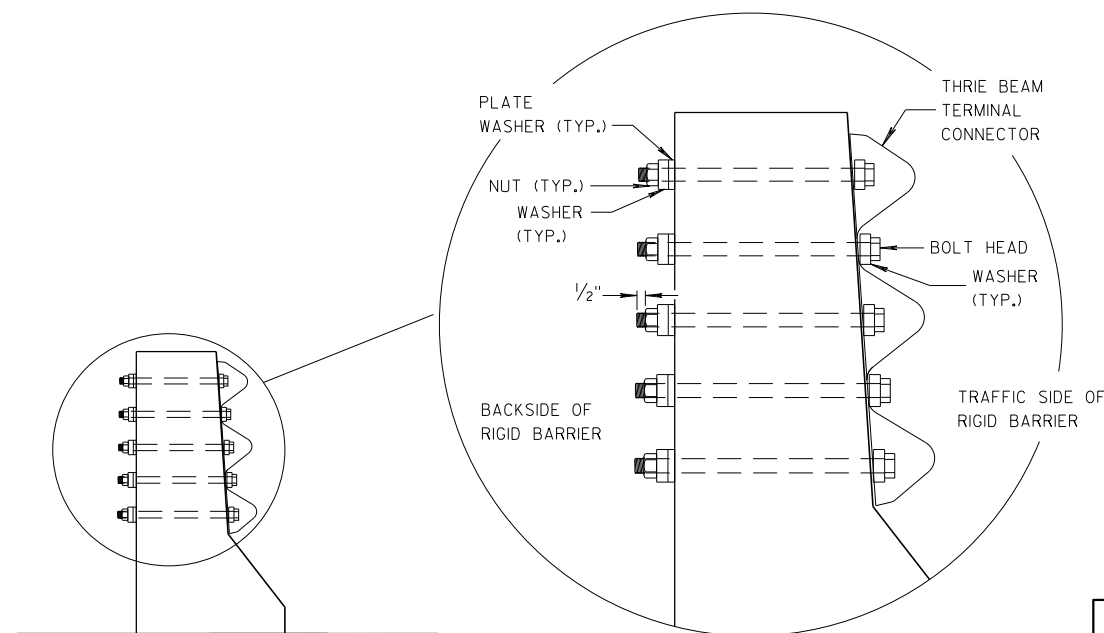
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ④ TOLERANCE FOR TOP OF BEAM IS $\pm 1"$.
- ⑥ DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ⑦ BOLTS MAY BE A325 BOLTS OR A449 BOLTS. BOLT LENGTH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



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



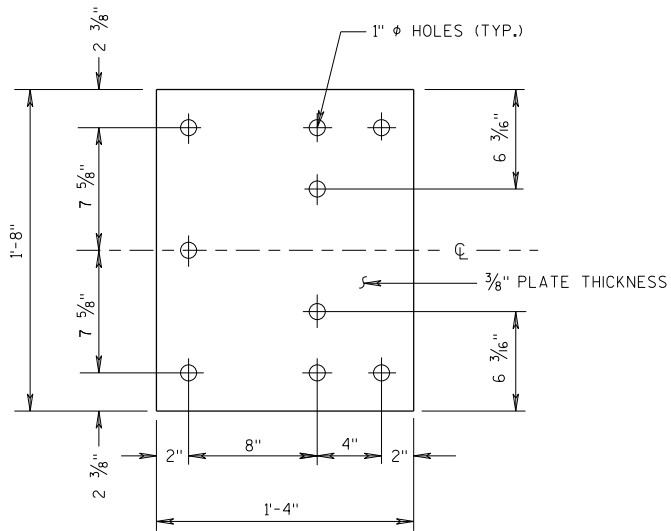
**THRIE BEAM CONNECTION TO BRIDGE
PARAPETS WITH SLOPED ENDS**



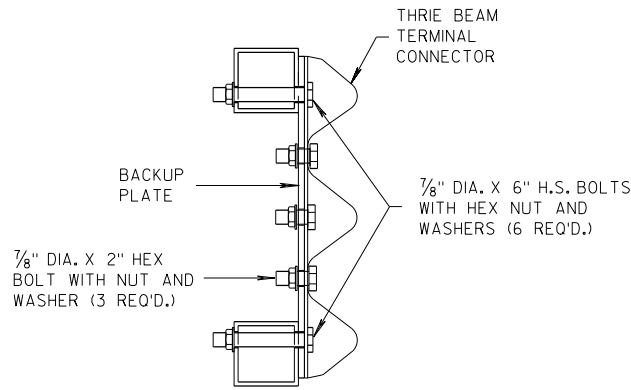
**MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

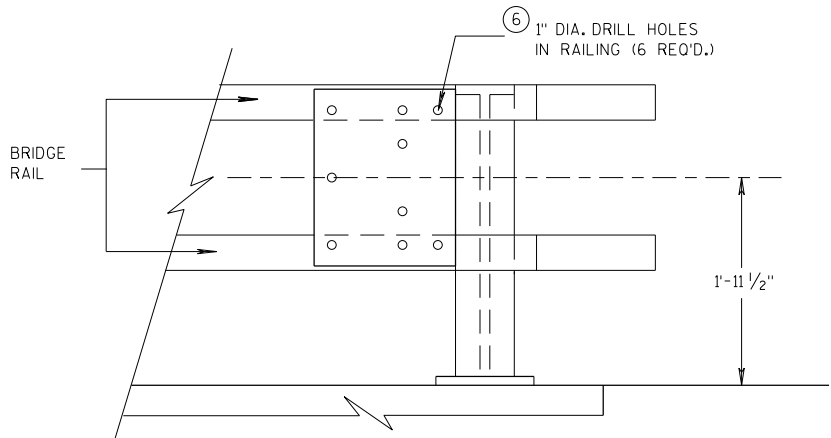
APPROVED
07/2018
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR
155
FHWA



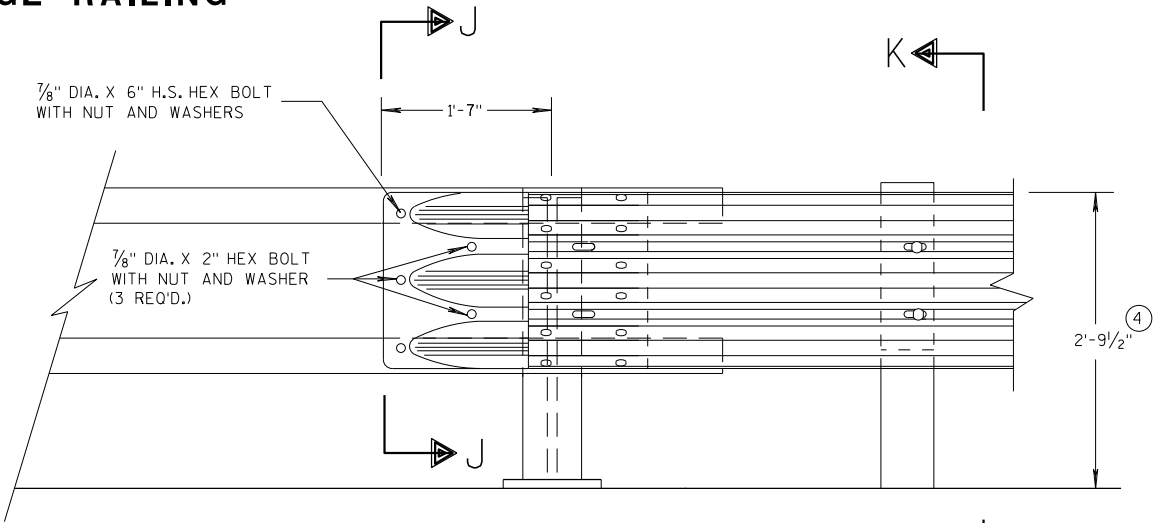
BACK-UP PLATE DETAIL



SECTION J-J

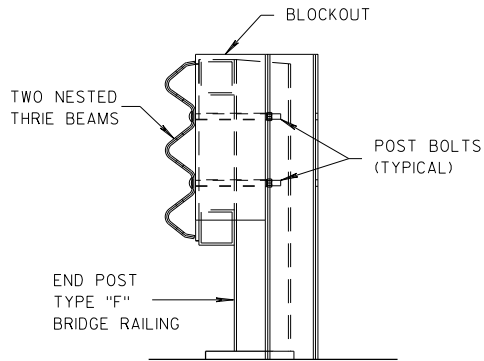


BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING



FRONT VIEW

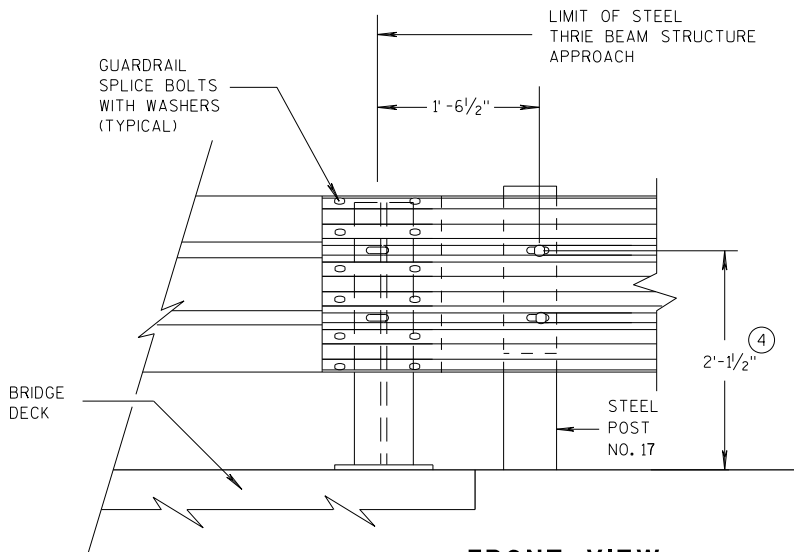
THRIE BEAM CONNECTION TO TUBULAR RAILING TYPE "F"



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.



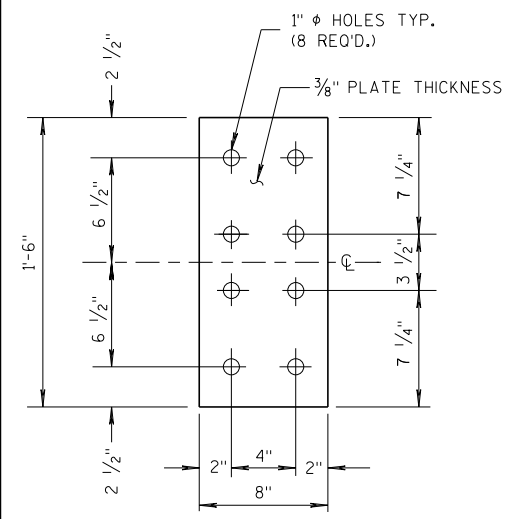
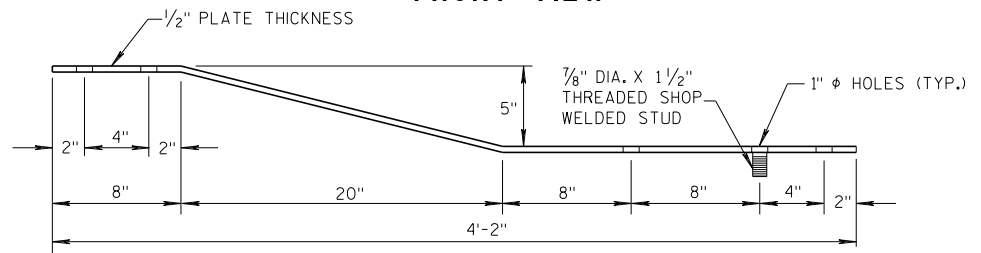
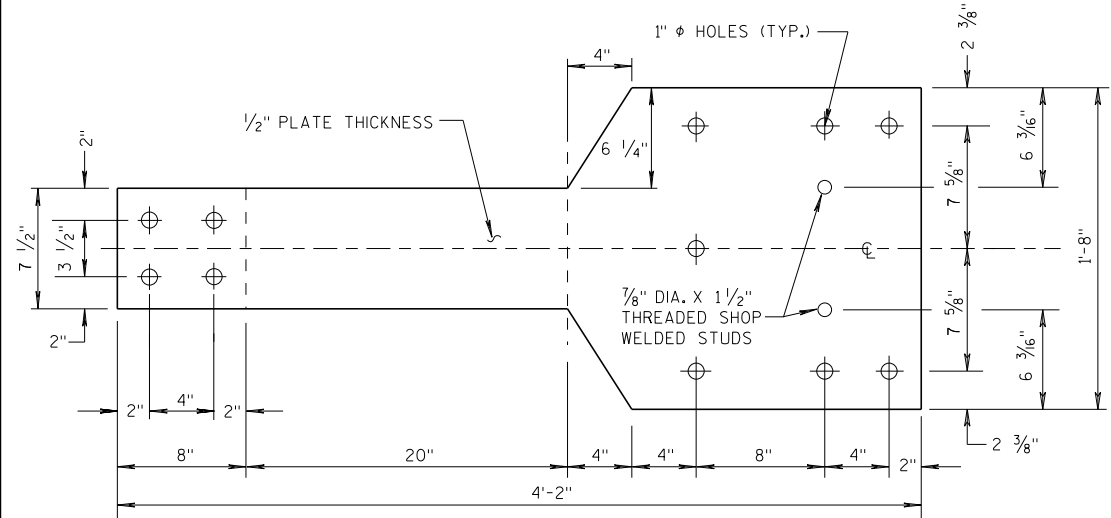
FRONT VIEW

THRIE BEAM CONNECTION TO STEEL RAILING TYPE "W"

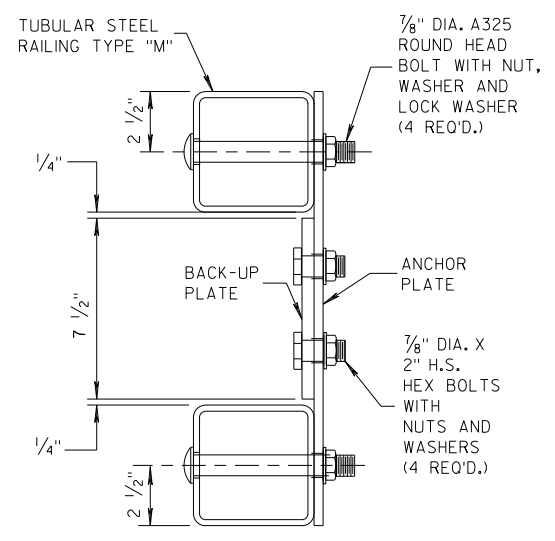
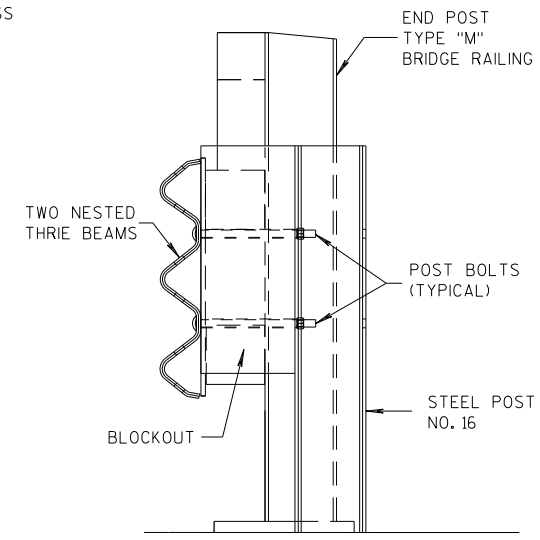
MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 07/2018	/S/ Rodney Taylor	156
DATE	ROADWAY STANDARDS DEVELOPMENT	UNIT SUPERVISOR
FHWA		

GENERAL NOTES

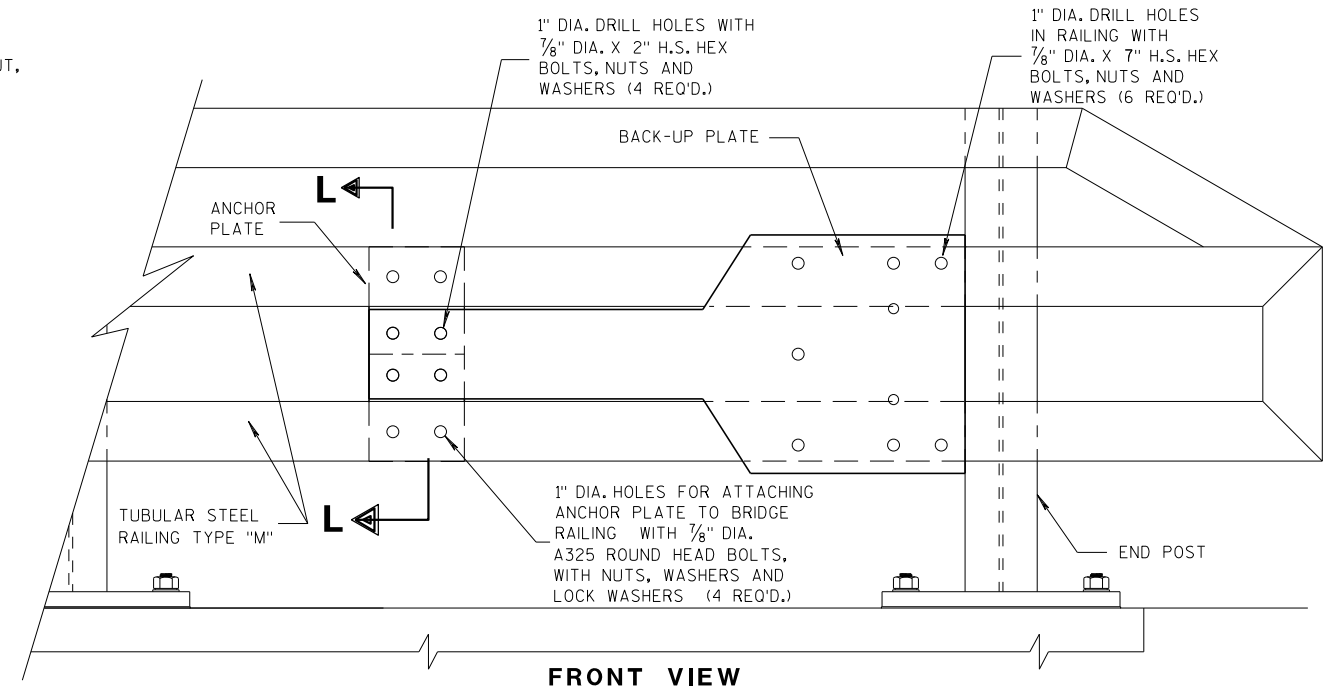
④ TOLERANCE FOR TOP OF W-BEAM RAIL IS $\pm 1"$.



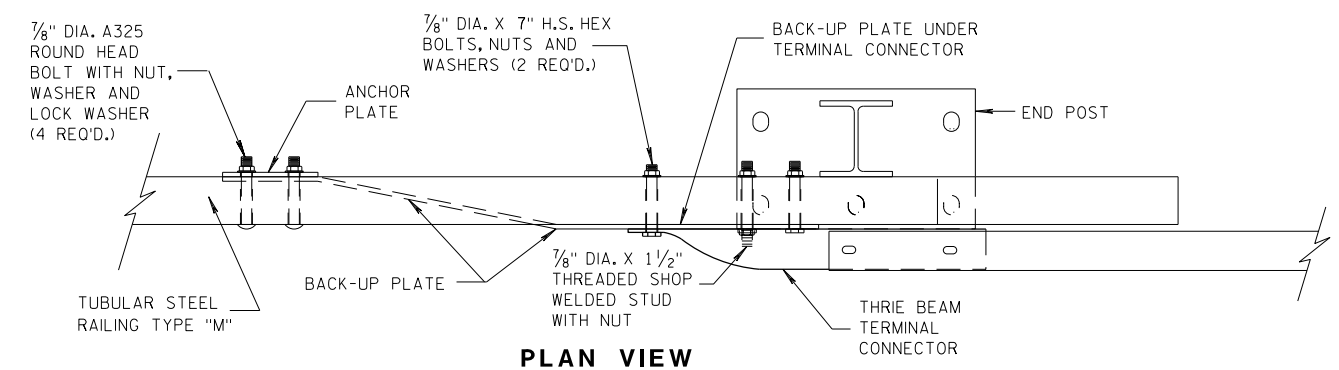
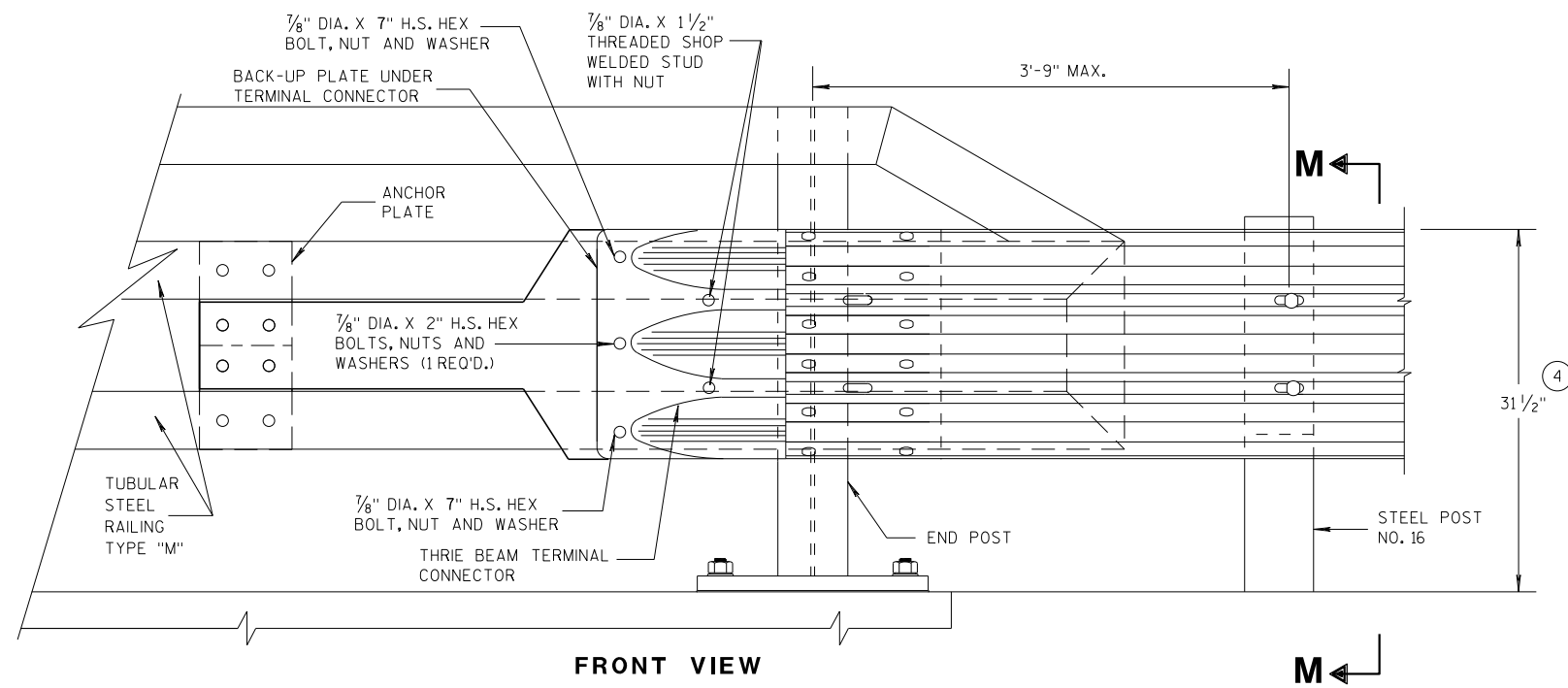
ANCHOR PLATE DETAIL, TYPE "M"



SECTION L-L



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



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 157 ENT	

6

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

6

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



COVER PLATE PANELS ARE $\frac{3}{16}$ " THICK.

ALL STIFFENERS ARE $\frac{1}{4}$ " THICK.

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

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

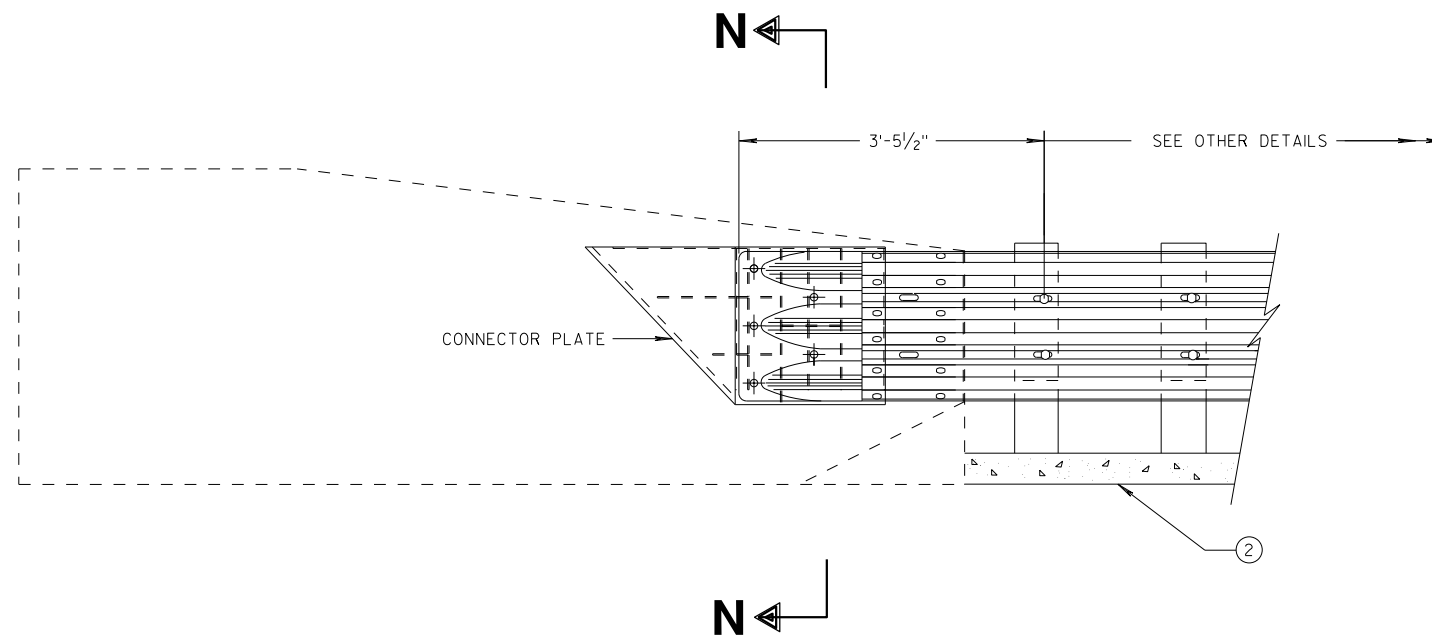
ALL HOLE DIAMETERS SHALL BE 1".

FOR OPPOSITE SIDE INSTALLATION MIRROR DRAWINGS.

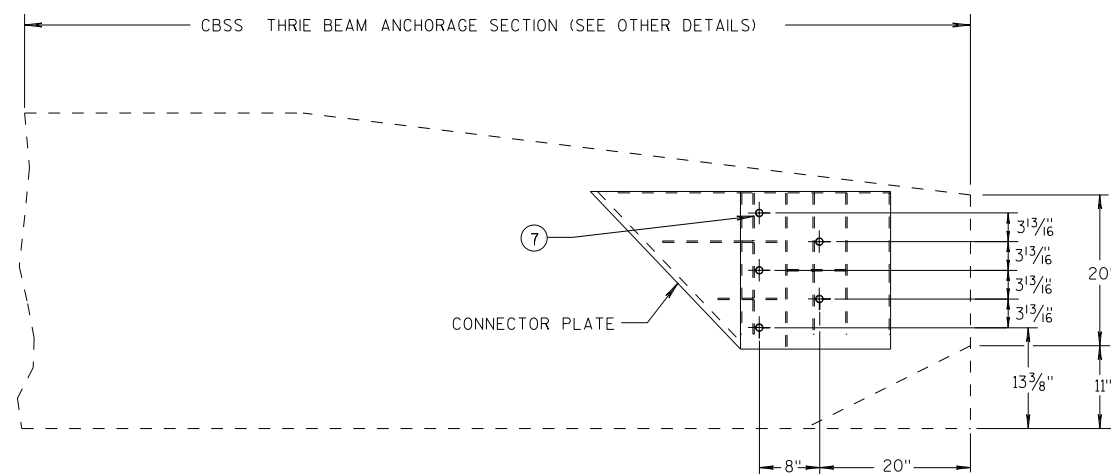
- 10 STIFFENERS LOCATED AT THE OUTSIDE EDGES OF THE COVER PLATES SHALL BE WELDED AS FOLLOWS:
SINGLE BEVEL GROOVE WELD ON EXTERNAL SIDES AND $\frac{3}{16}$ " FILLET WELD BY 1" LONG SPACED AT 2" ON INTERNAL SIDES.
- 11 STIFFENERS LOCATED ON THE INSIDE OF THE COVER PLATE SHALL BE WELDED AS FOLLOWS:
 $\frac{3}{16}$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

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

SINGLE SLOPE CONNECTION PLATE



THRIE BEAM CONNECTION TO SINGLE SLOPE BARRIER



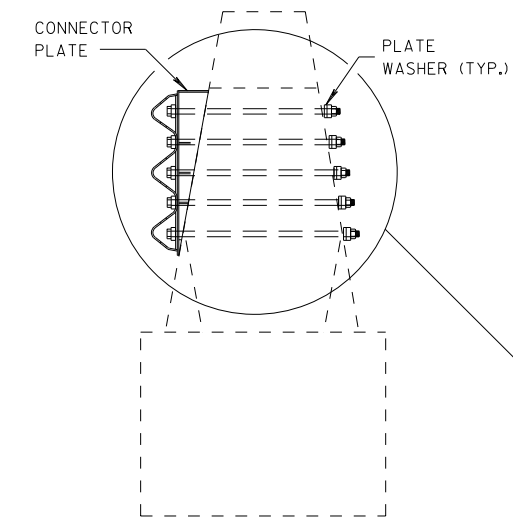
SINGLE SLOPE CONNECTION PLATE PLACEMENT

GENERAL NOTES

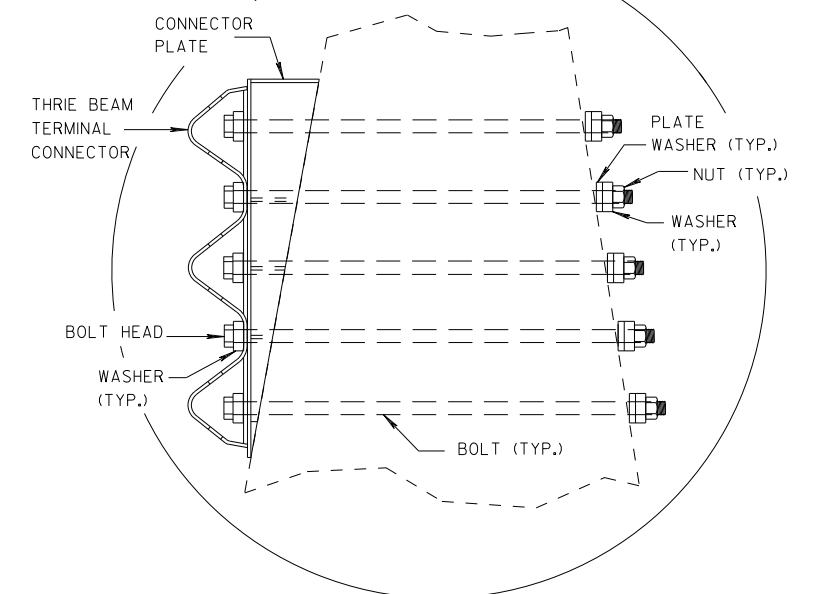
CONNECTOR PLATE, DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.

(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 CONNECTION 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

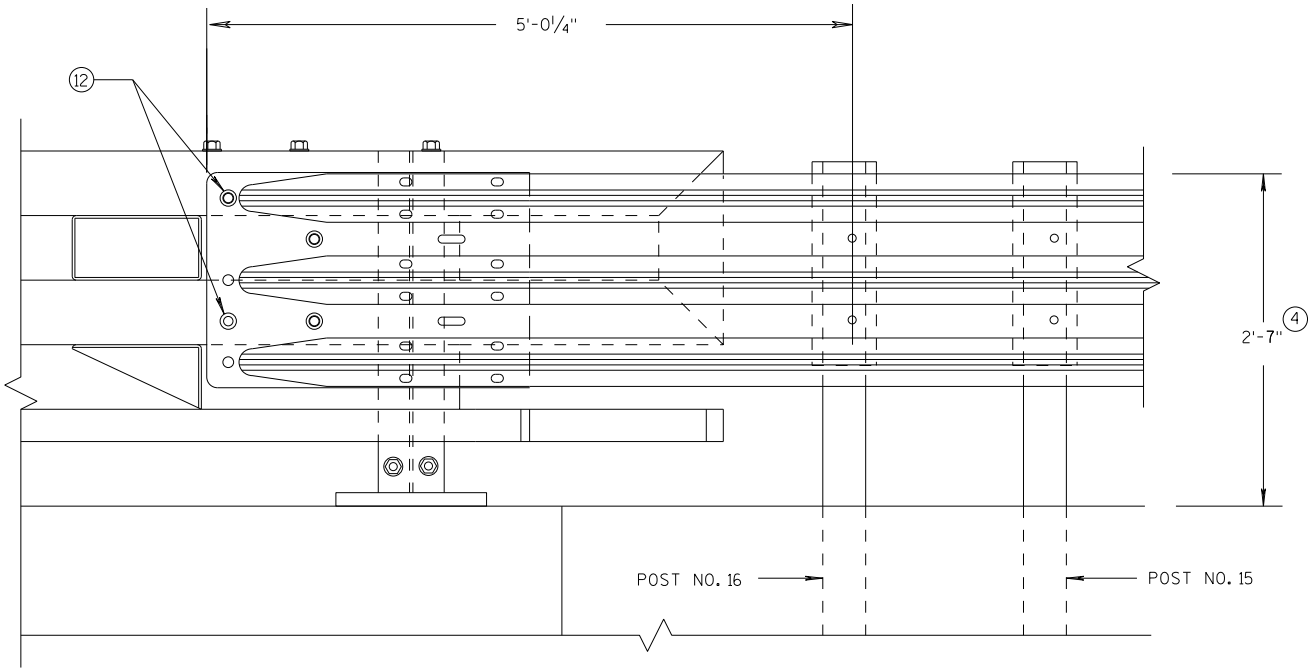
ROADWAY STANDARDS DISTRICT SUPERVISOR

UNIT SUPERVISOR 159

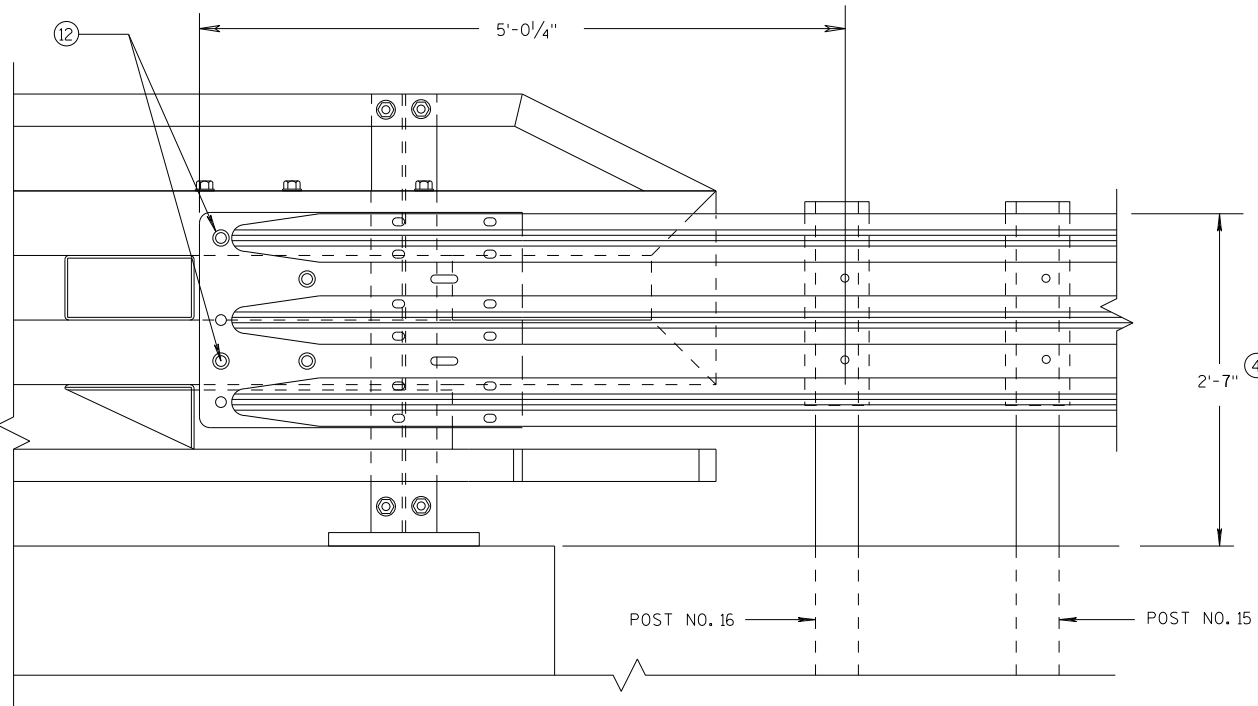
UNIT SUPERVISOR

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

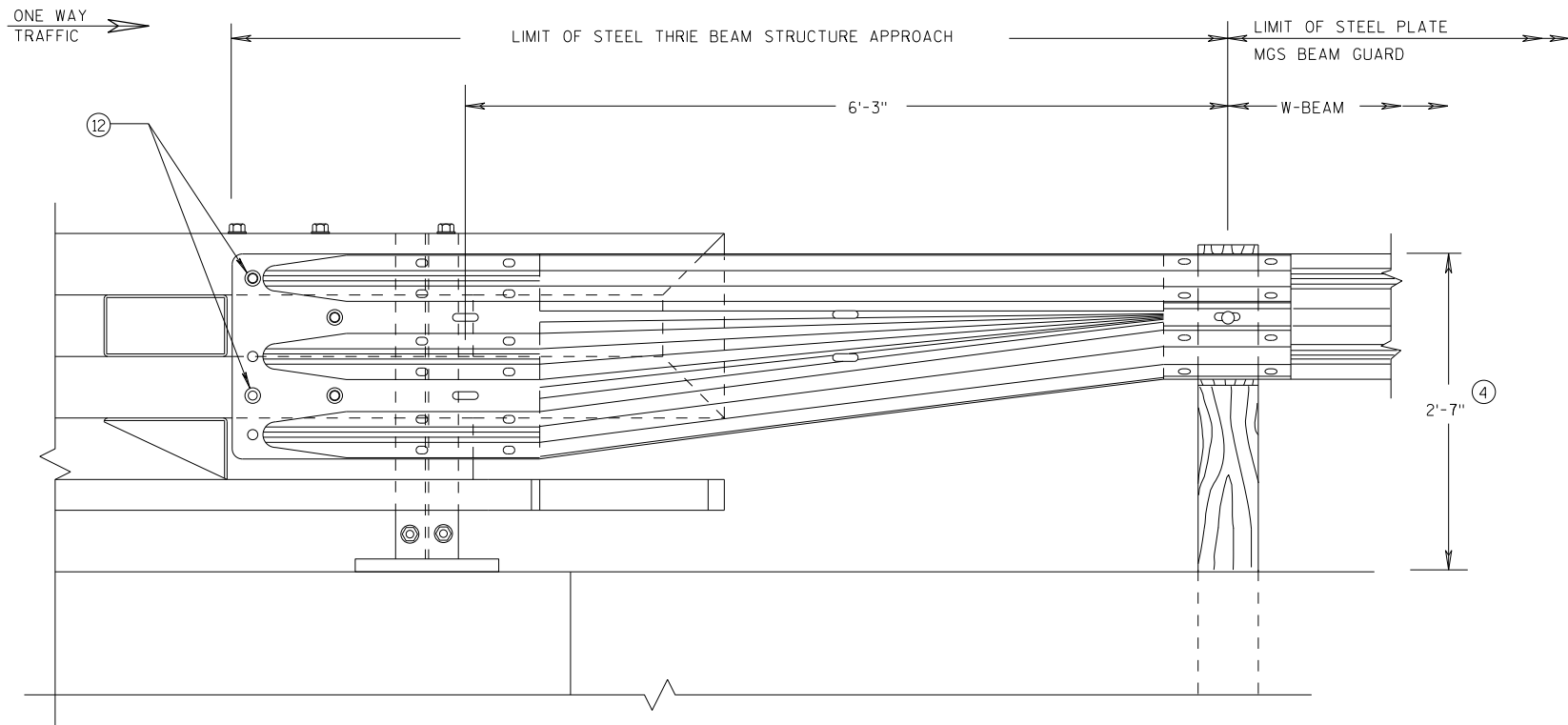


ELEVATION OF DETAIL AT NY4 END POST
THRIE BEAM RAIL ATTACHMENT

MIDWEST GUARDRAIL SYSTEM
THRIE BEAM TRANSITION (MGS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
DATE 7/2018 /S/ Rodney Taylor
ROADWAY STANDARDS UNIT SUPERVISOR 160 NT
FHWA

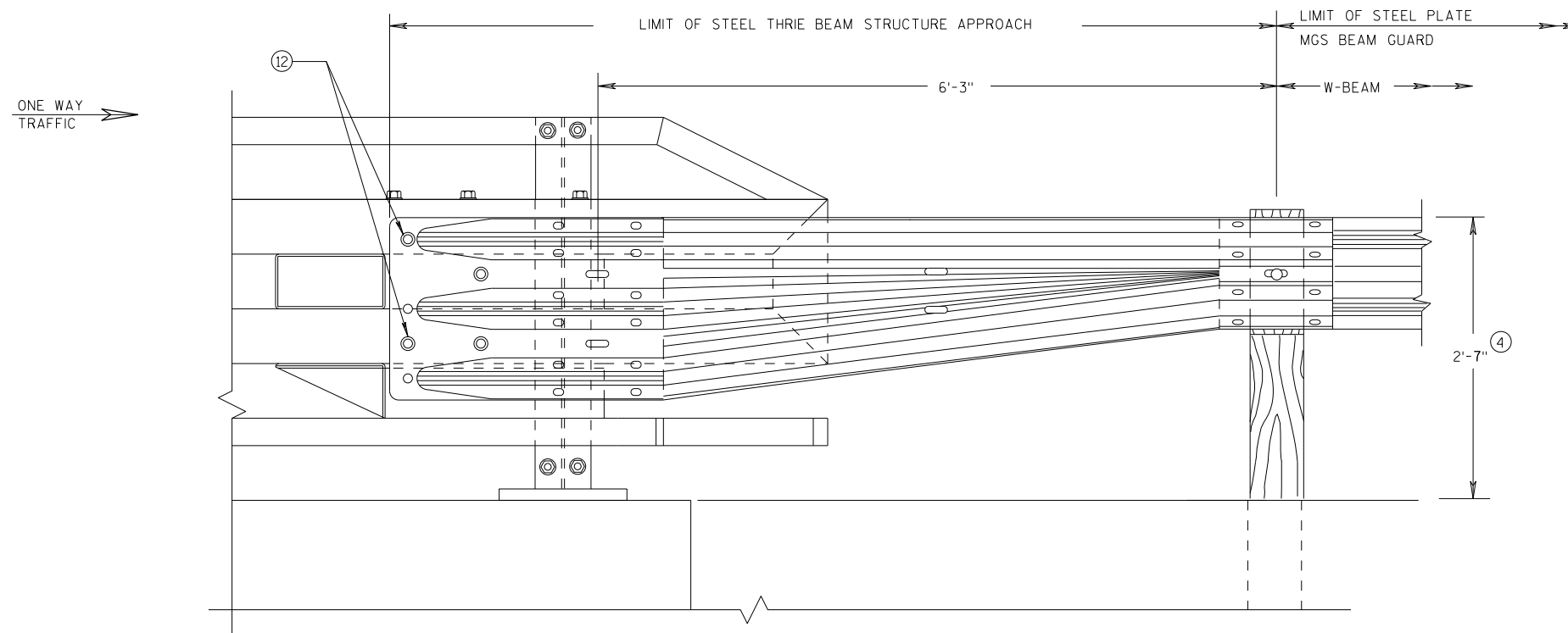


GENERAL NOTES

- 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 "NY3" (USE ONLY ON THE TRAFFIC EXIT END OF ONE WAY BRIDGES)



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

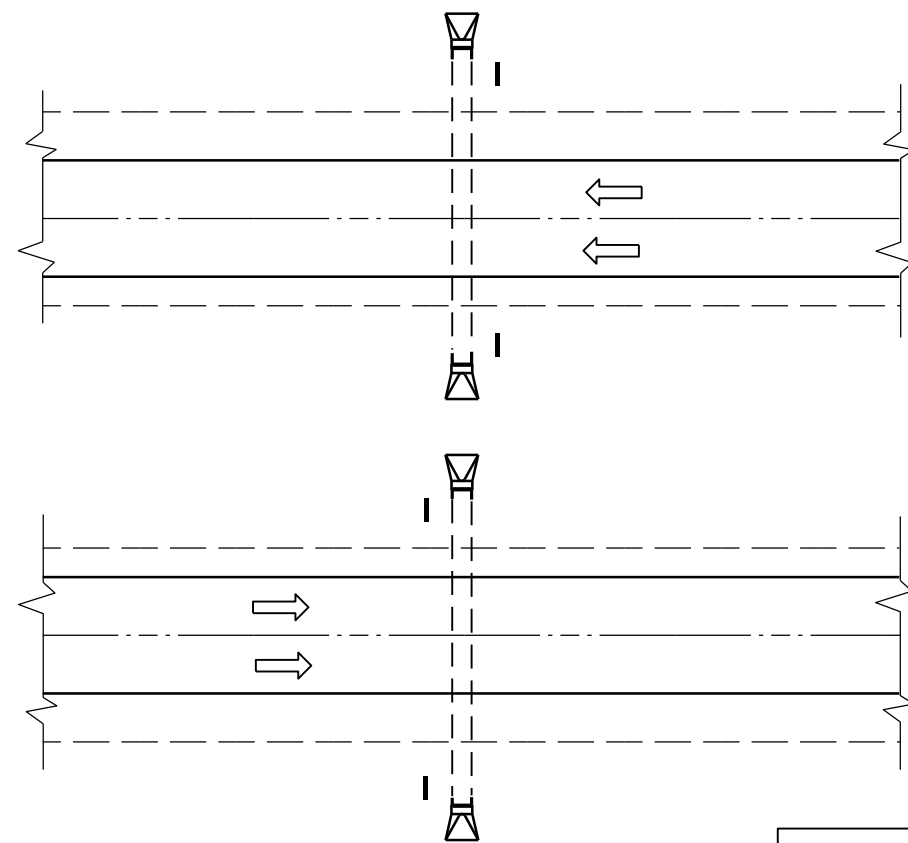
FHWA

/S/ Rodney Taylor

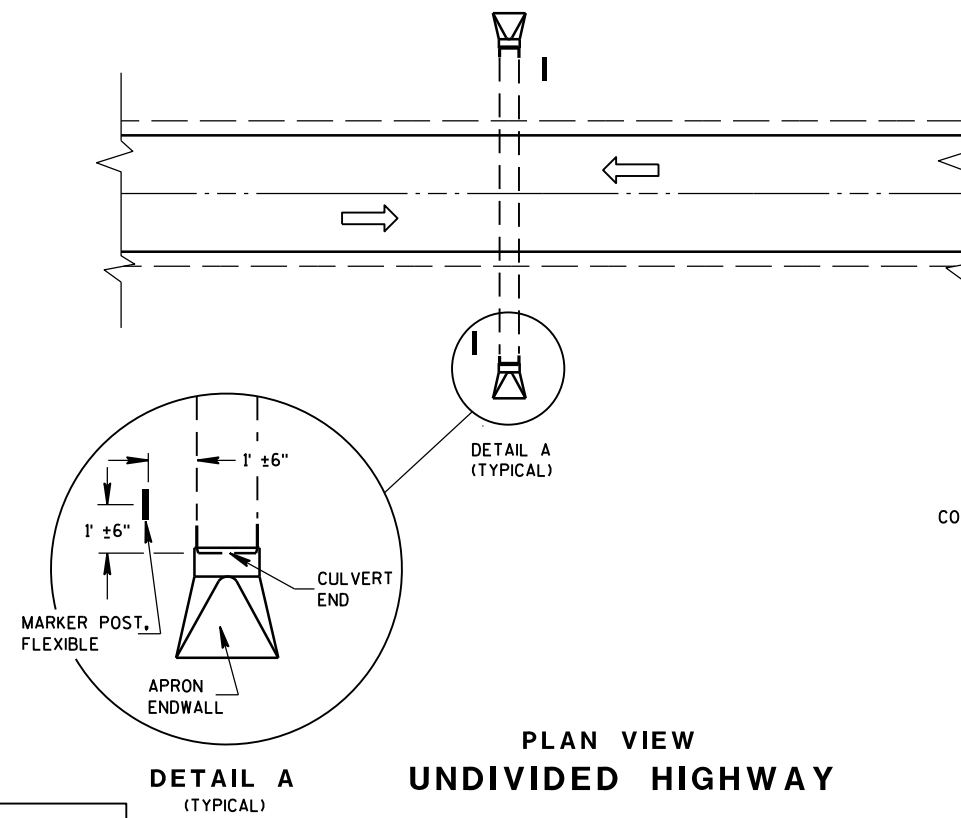
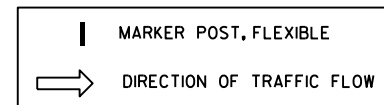
ROADWAY STANDARDS C 161

UNIT SUPERVISOR

NT



PLAN VIEW
DIVIDED HIGHWAY

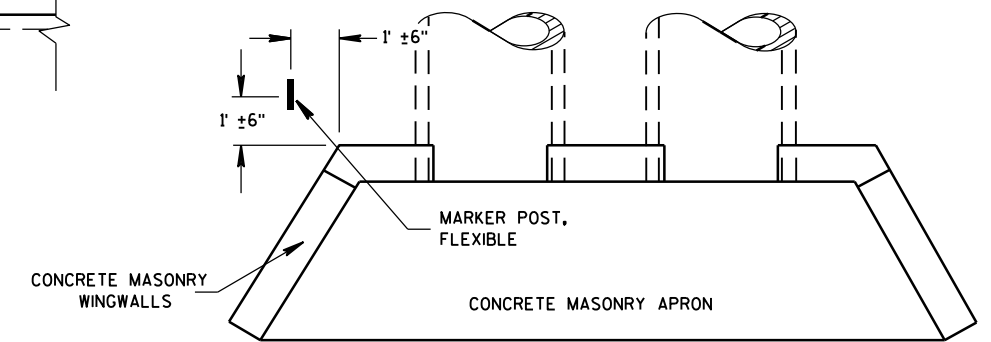


PLAN VIEW
UNDIVIDED HIGHWAY

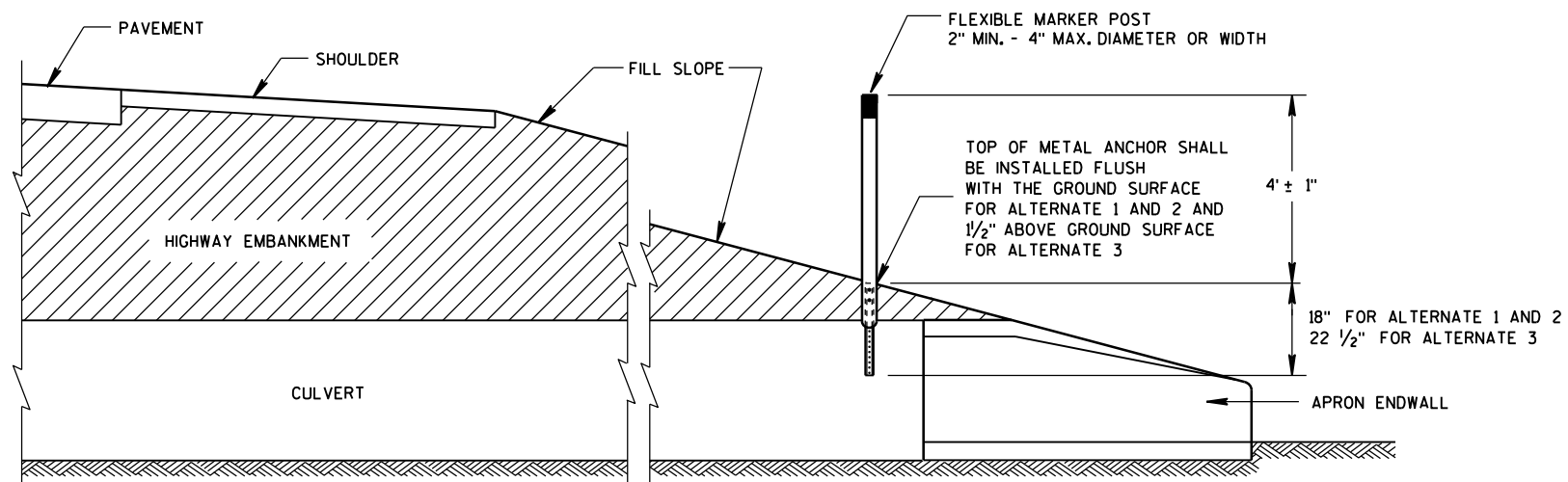
FLEXIBLE MARKER POST LOCATION

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.



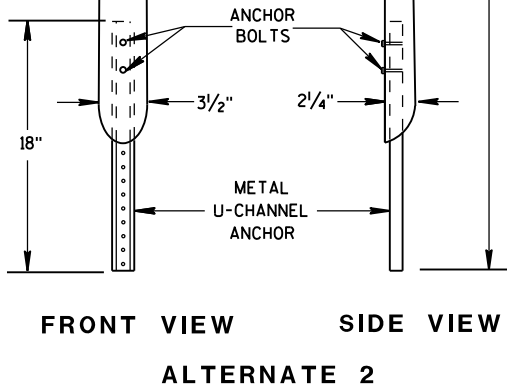
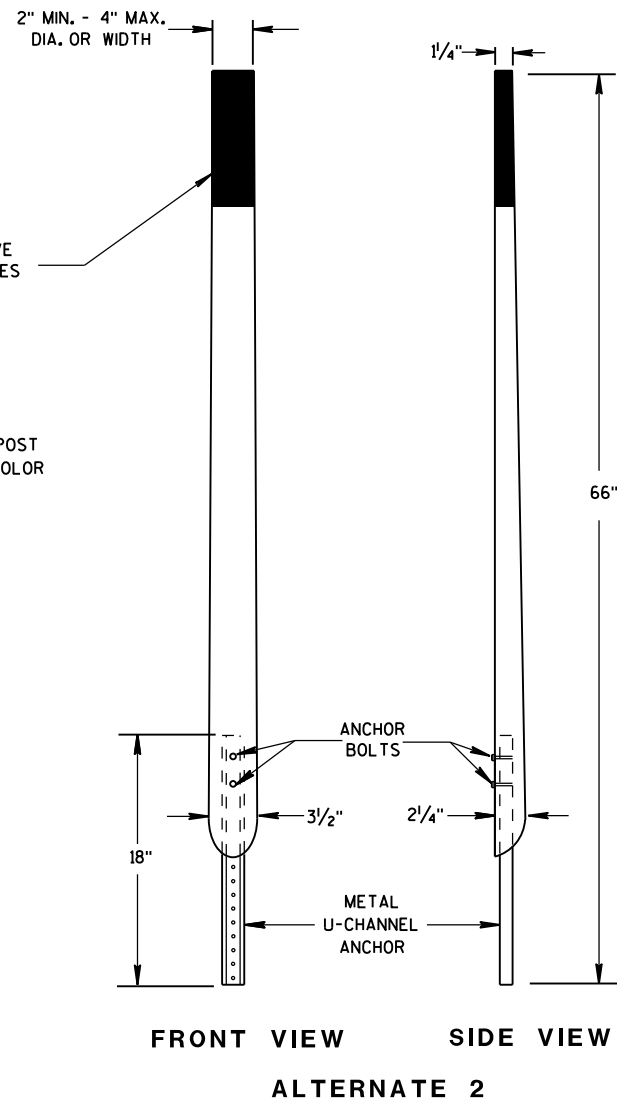
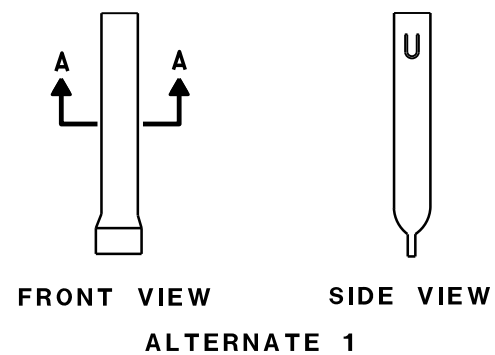
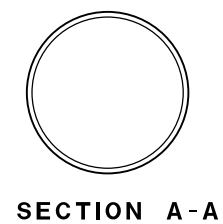
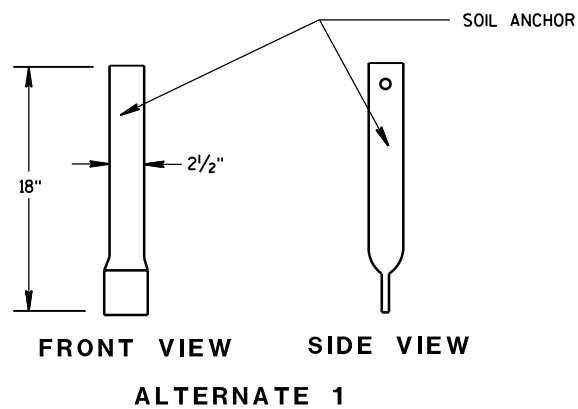
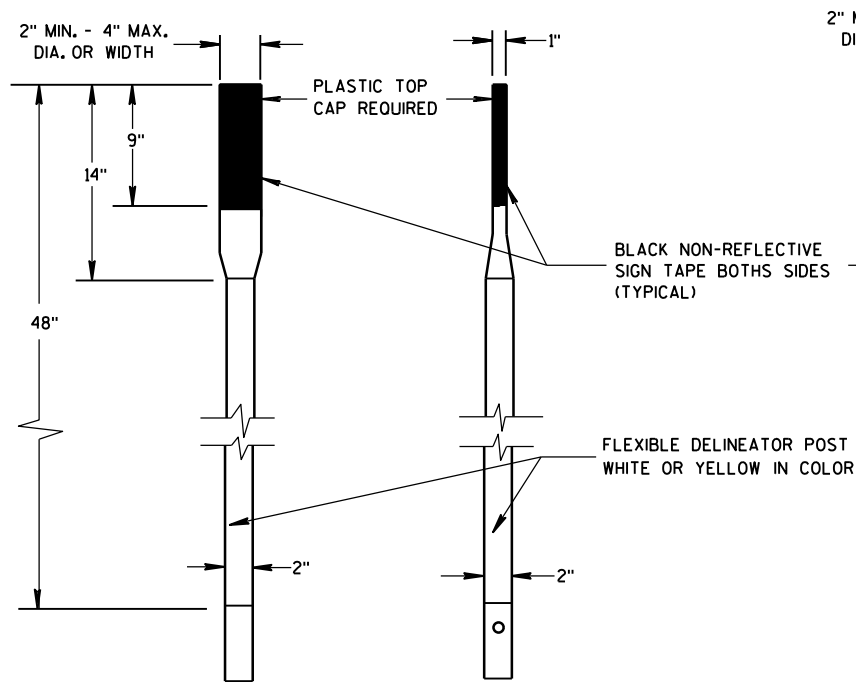
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



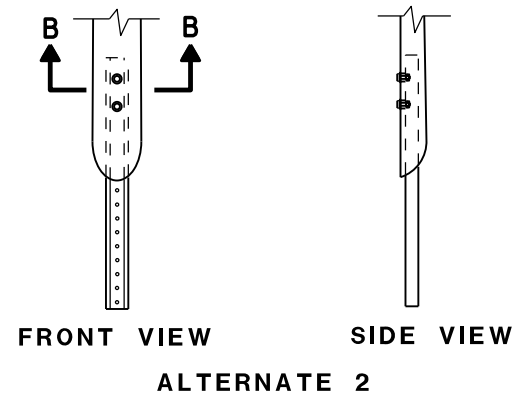
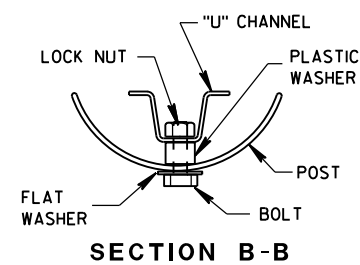
CROSS SECTION
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST
FOR CULVERT END

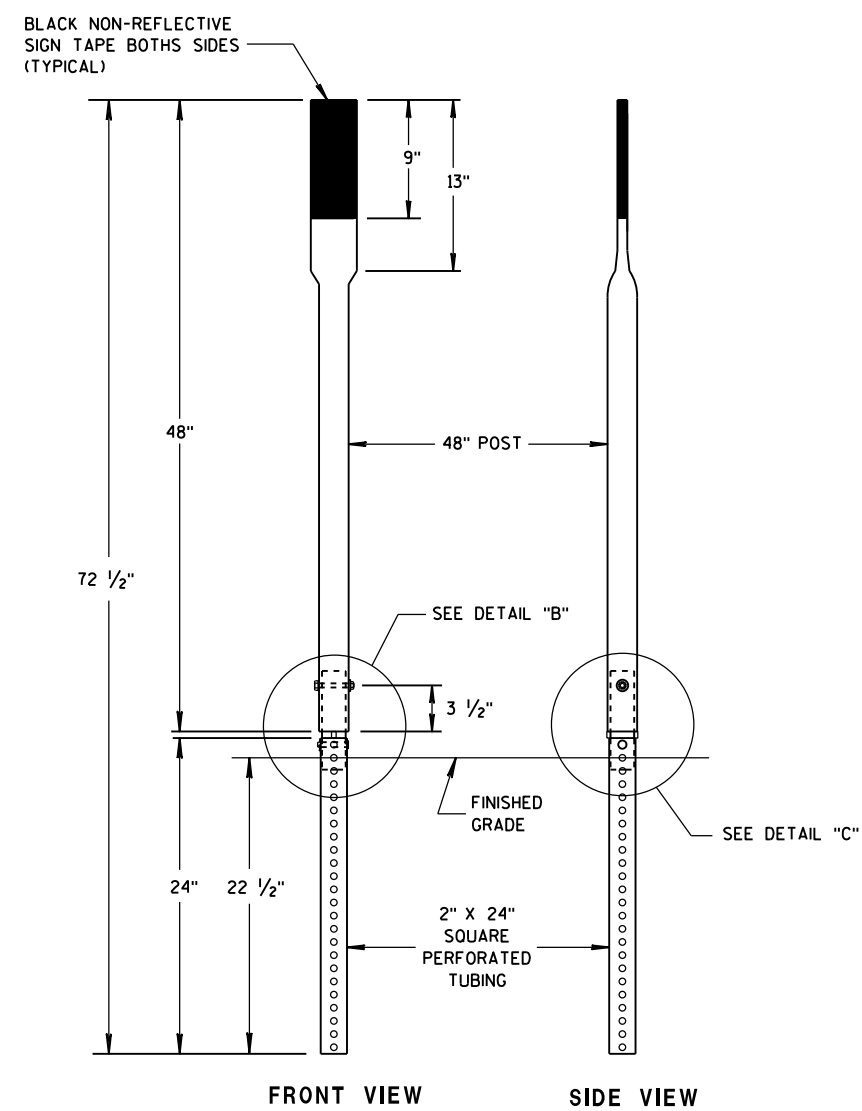
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 162



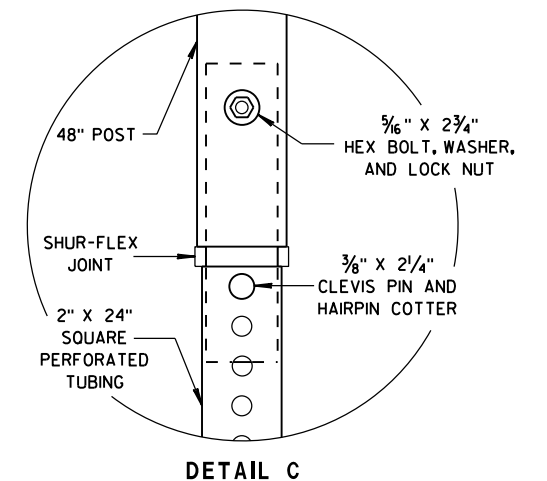
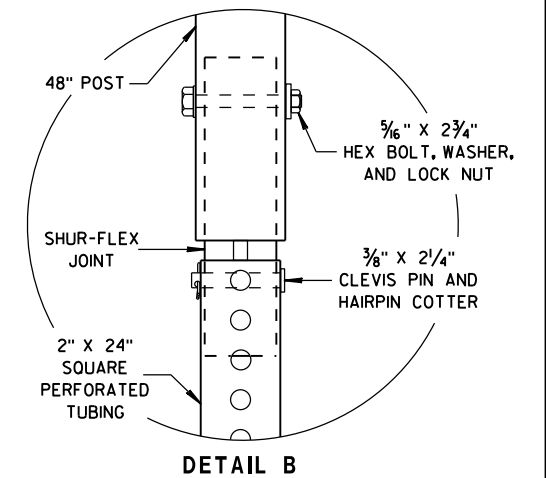
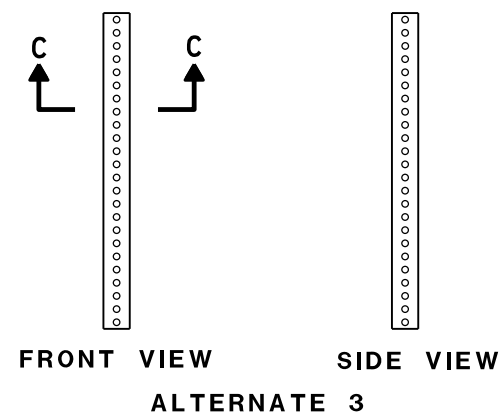
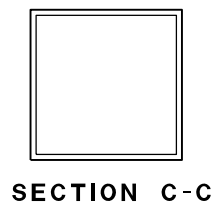
FLEXIBLE MARKER POSTS



FLEXIBLE MARKER POST ANCHORS



FRONT VIEW SIDE VIEW
ALTERNATE 3



FLEXIBLE MARKER POST FOR CULVERT END

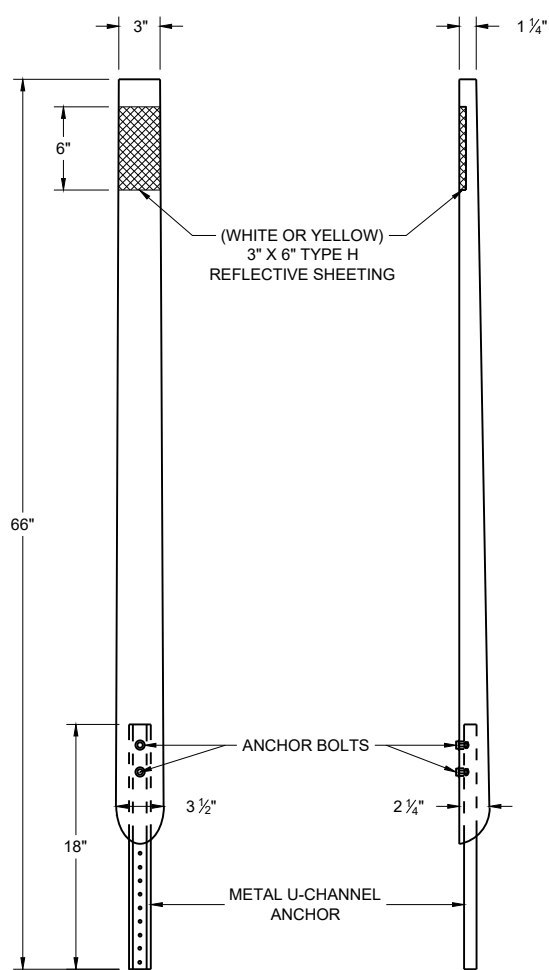
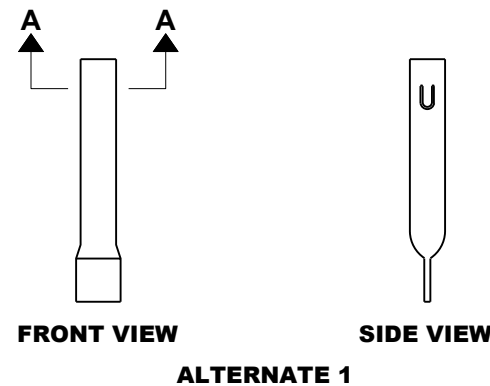
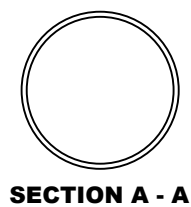
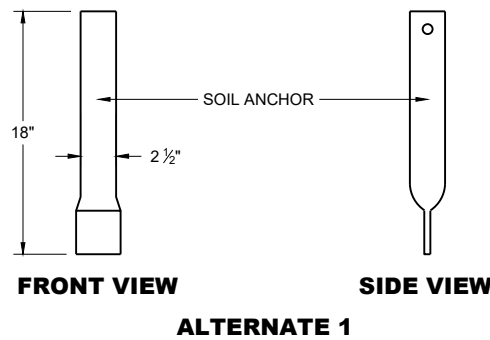
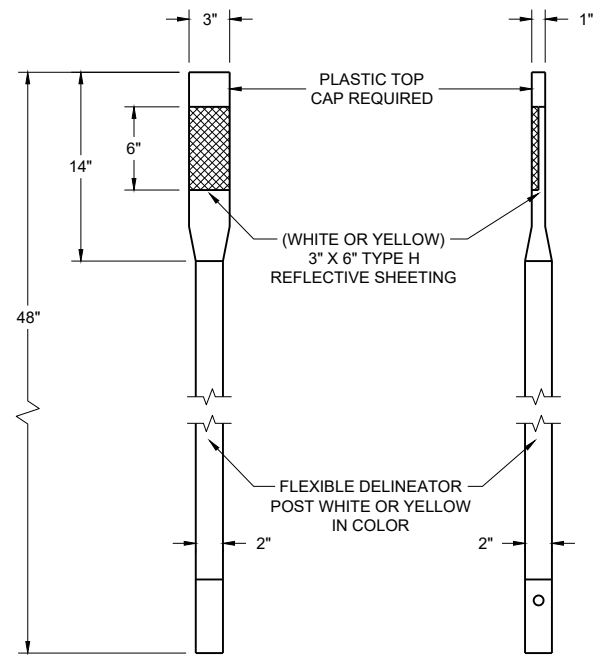
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

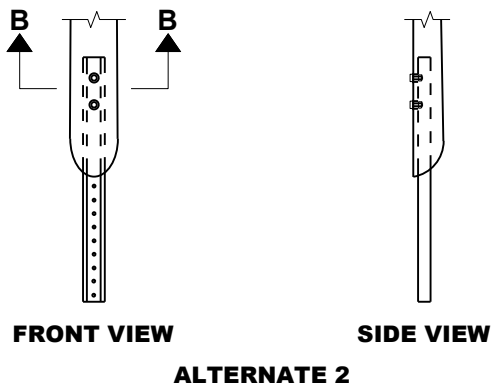
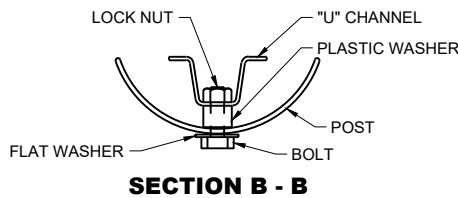
10/1/2012
DATE

FHWA

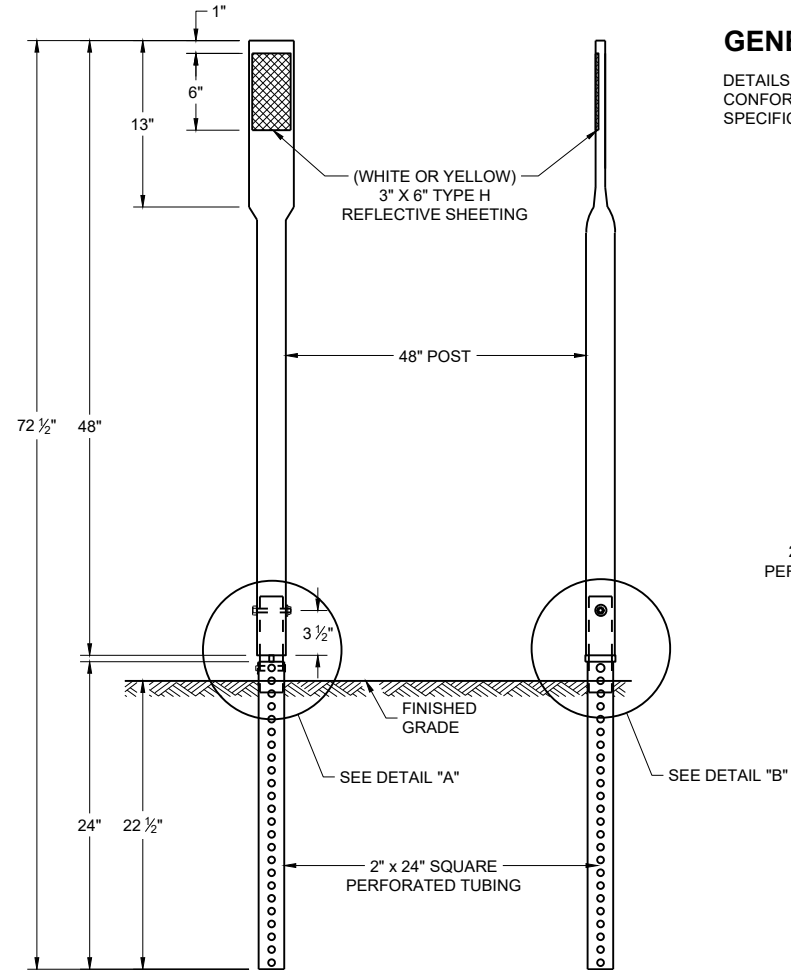
/S/ Travis Feltes
STATE TRAFFIC ENGINEER 163 IGN



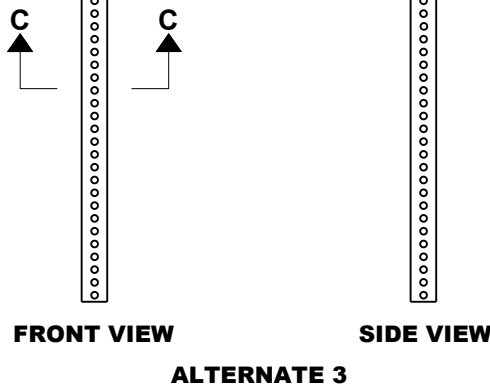
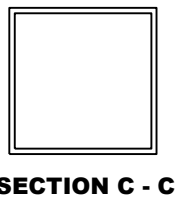
ALTERNATE 2
FLEXIBLE DELINEATOR POSTS



FLEXIBLE MARKER POST ANCHORS

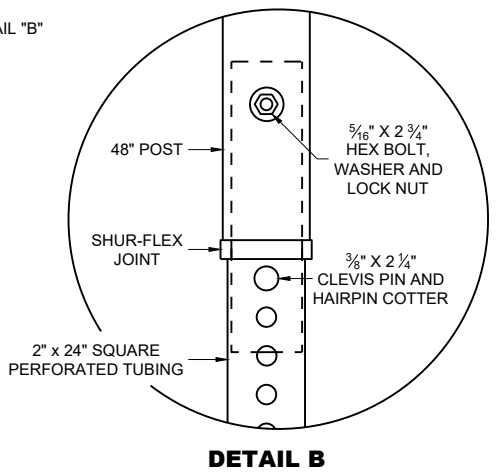
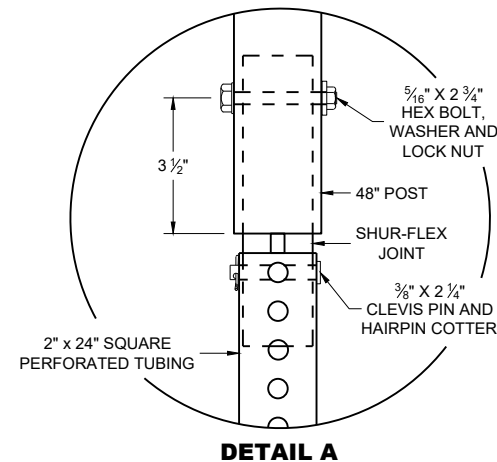


ALTERNATE 3



GENERAL NOTES

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



REFLECTOR SPACING TABLE

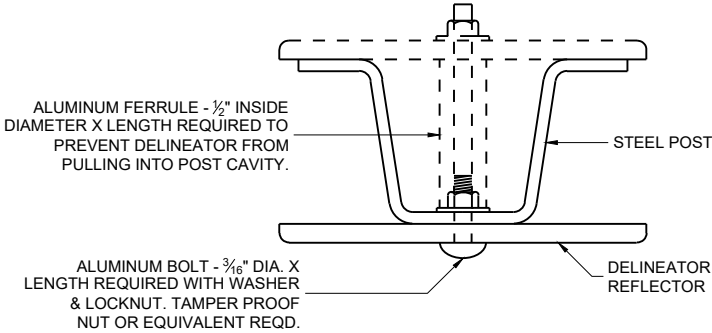
REFLECTOR SPACING	LOCATION
* 100' C-C	RAMPS
400' C-C	MAINLINE

* START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER

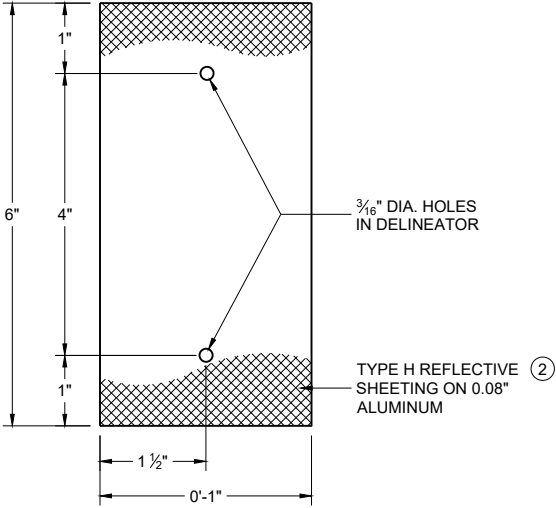
FLEXIBLE DELINEATOR POST

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

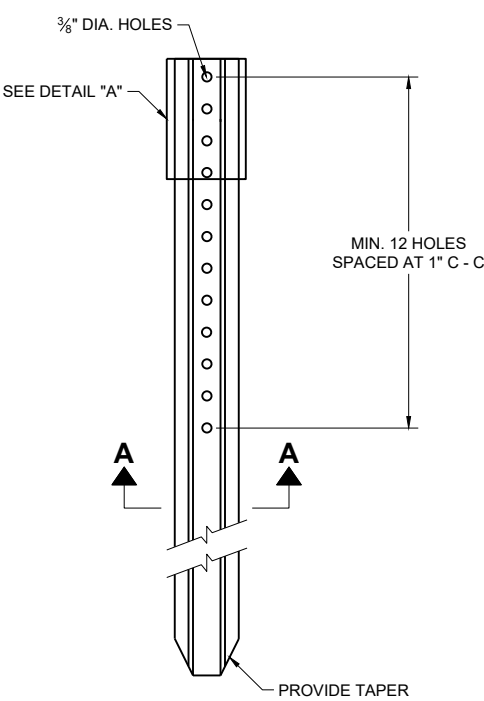
APPROVED
March 2024 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer
FHWA



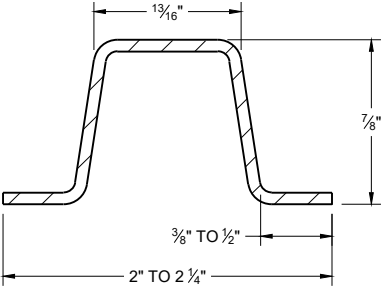
MOUNTING DETAIL FOR DELINEATOR REFLECTOR



DETAIL "A" 3" X 6" DELINEATOR REFLECTOR



DELINEATOR POST



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

REFLECTOR SPACING TABLE

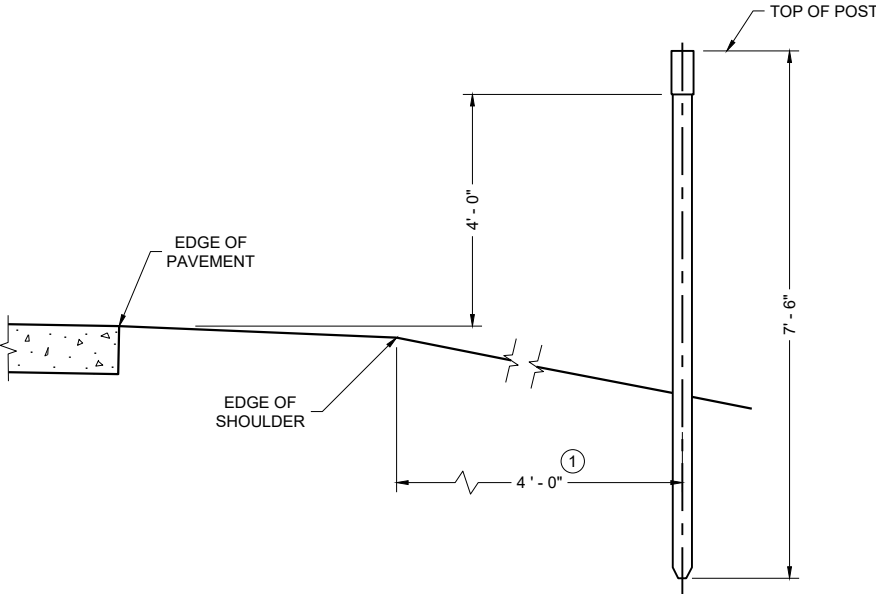
REFLECTOR SPACING	LOCATION
★ 100' C-C	RAMPS
400' C-C	MAINLINE

★ START AT BEGINNING OF RAMP TAPER AND END AT END OF RAMP TAPER

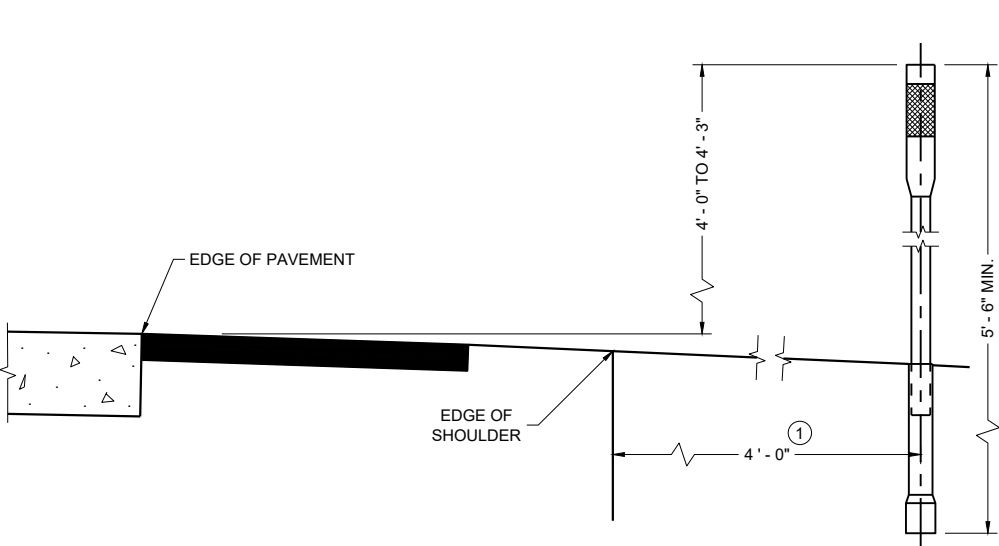
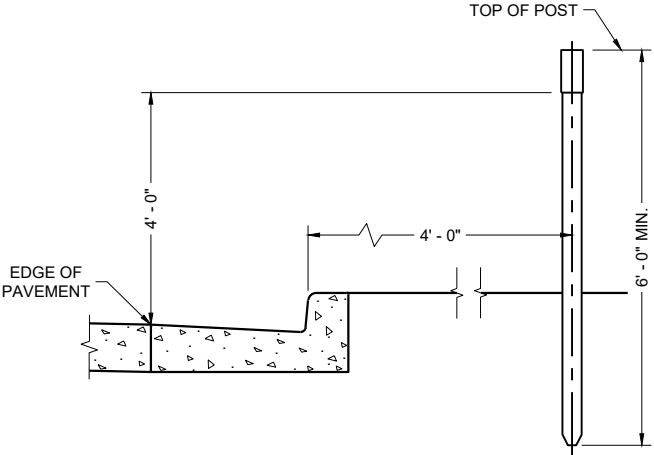
GENERAL NOTES

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

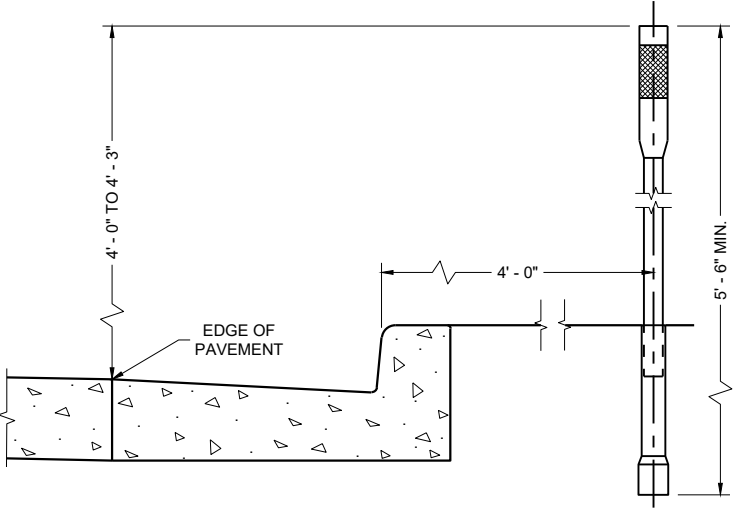
- ① DELINEATORS SHALL BE PLACED AT A CONSTANT DISTANCE FROM THE EDGE OF THE SHOULDER FOR THE LENGTH OF THE INSTALLATION.
- ② FURNISH TYPE H SHEETING FROM THE APPROVED PRODUCTS LIST.



TYPICAL INSTALLATIONS OF DELINEATOR POSTS



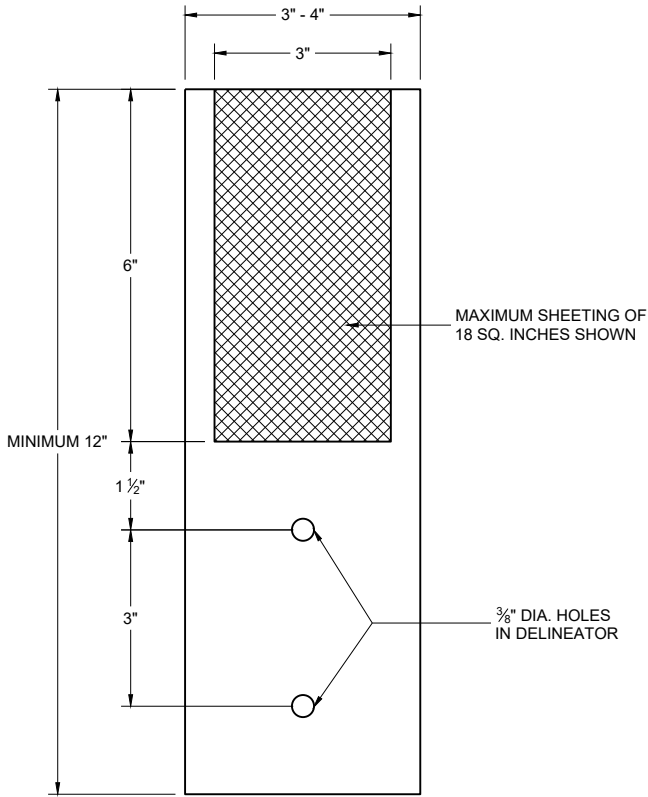
TYPICAL INSTALLATIONS OF FLEXIBLE DELINEATOR POSTS



DELINEATOR POST
WITH REFLECTIVE SHEETING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



4" x 12" DELINEATOR
WITH REFLECTIVE SHEETING

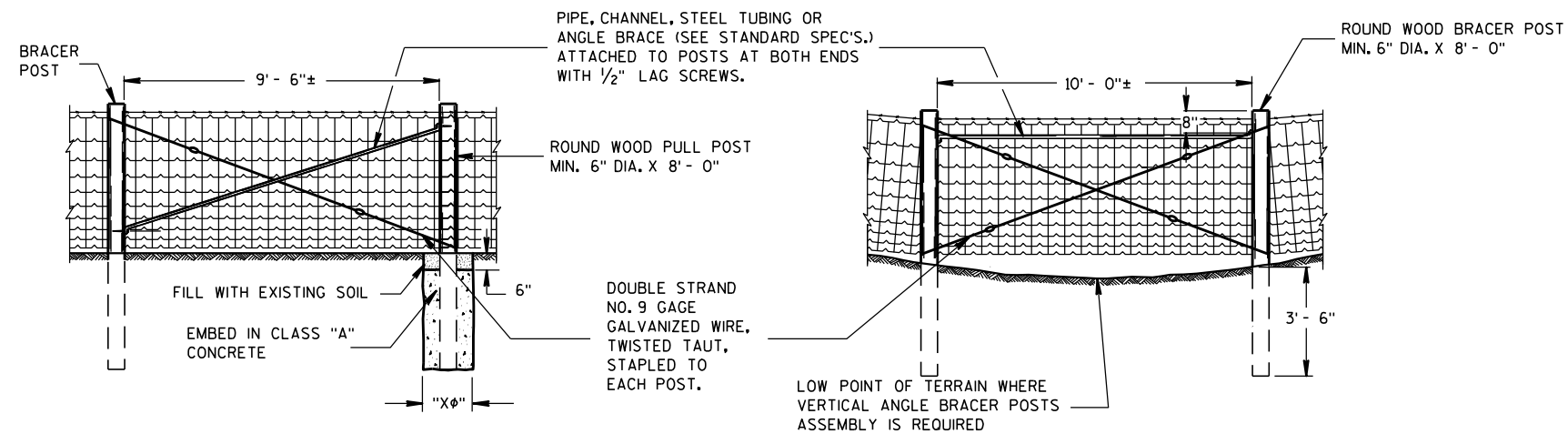
REFLECTOR SPACING TABLE

REFLECTOR SPACING	MINIMUM NUMBER OF REFLECTORS
100' C-C	3

DELINEATOR POST WITH REFLECTIVE SHEETING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer

FHWA

ILLUSTRATION SHOWS POSITION OF STANDARD STEEL BRACE, DOUBLE STRAND GALVANIZED WIRE, AND THE POST TO BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM LEFT TO RIGHT. THE BRACES SHALL BE POSITIONED ON THE OPPOSITE DIAGONALS AND THE OPPOSITE POST SHALL BE EMBEDDED IN CONCRETE WHEN WIRE FENCE IS INSTALLED FROM RIGHT TO LEFT.



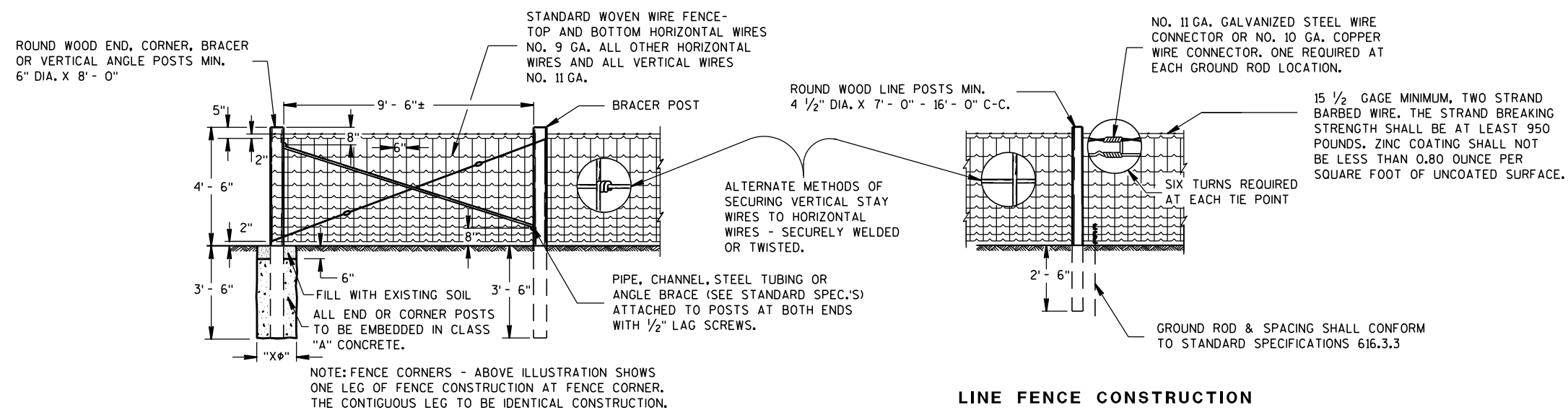
PULL OR STRETCHER POSTS ASSEMBLY

VERTICAL ANGLE BRACER POSTS ASSEMBLY

"X ϕ " = DIAMETER OF THE POST PLUS 12".

DO NOT STAPLE WIRE TIGHT TO THE LINE POSTS. ALLOW MOVEMENT OF WIRE FOR EXPANSION AND CONTRACTION. STAPLE ARRANGEMENT SHALL BE THE SAME FOR ALL OTHER POSTS EXCEPT THAT THEY SHALL BE DRIVEN TIGHT TO POSTS. ALL STAPLES SHALL BE 2" X 9 GAGE AND SHALL BE MANUFACTURED FROM GALVANIZED WIRE OR HOT DIP GALVANIZED AFTER FORMING. STAPLES SHALL HAVE SLASH-CUT POINTS.

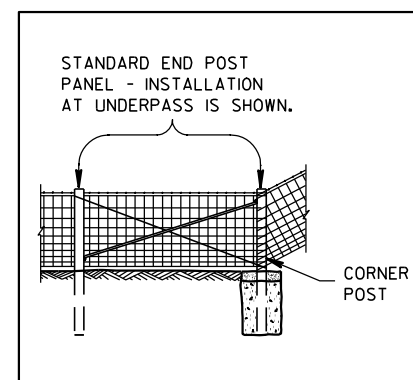
FENCE SHALL BE LOCATED 3'-0" INSIDE
THE RIGHT OF WAY LINE UNLESS
OTHERWISE INDICATED ON THE PLANS.



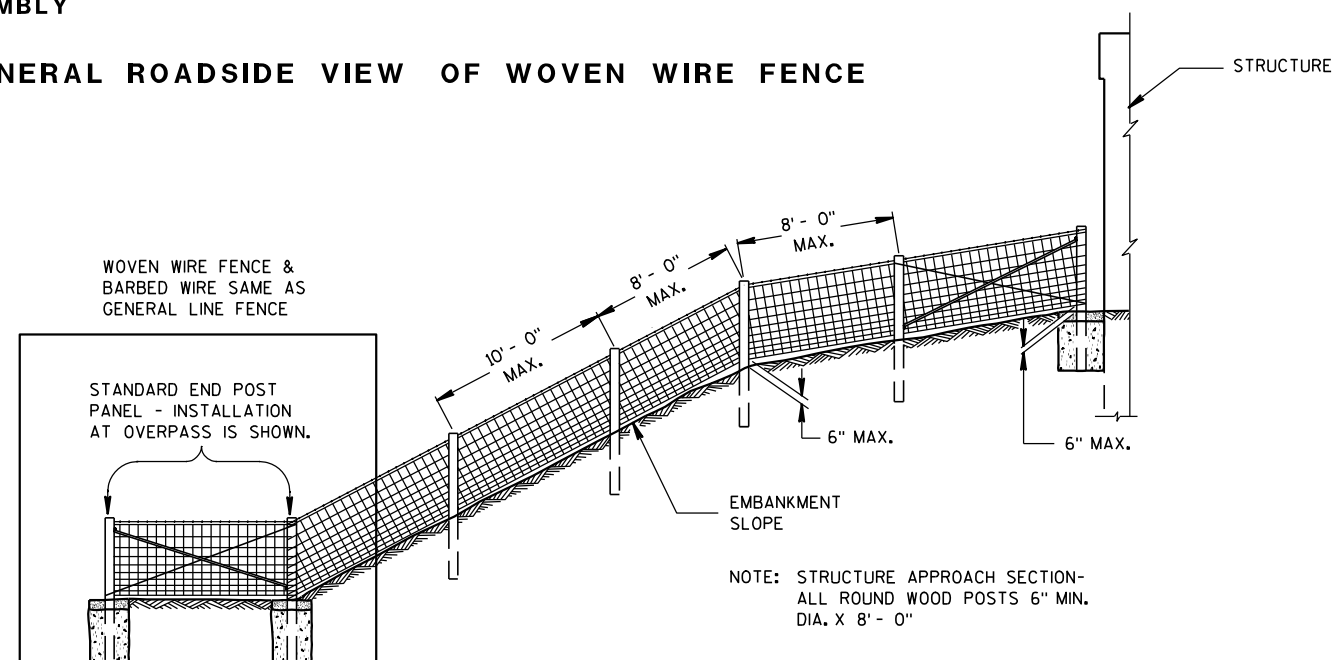
LINE FENCE CONSTRUCTION

END OR CORNER POSTS ASSEMBLY

GENERAL ROADSIDE VIEW OF WOVEN WIRE FENCE



ALTERNATE FENCE DESIGN AT STRUCTURE



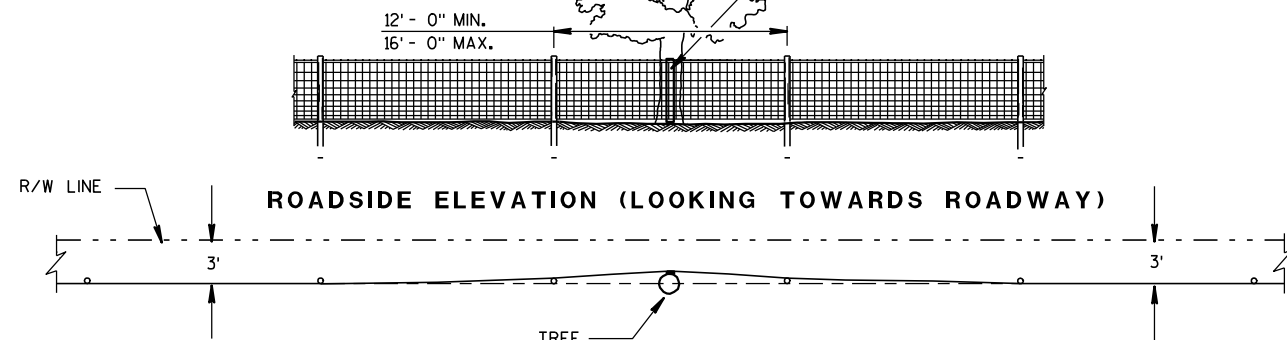
FENCE DESIGN AT STRUCTURE APPROACH

FENCE WOVEN WIRE

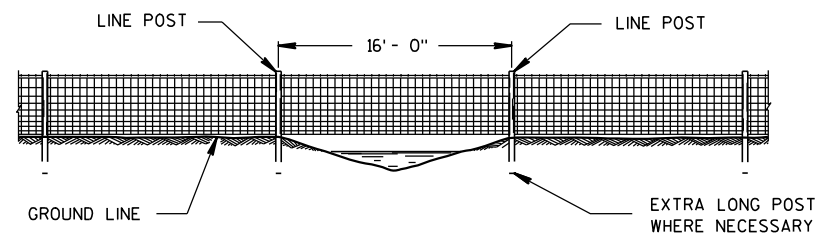
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

NOTE: TREE IN NORMAL FENCE LINE SPECIFICALLY ORDERED BY ENGINEER TO REMAIN IN PLACE.

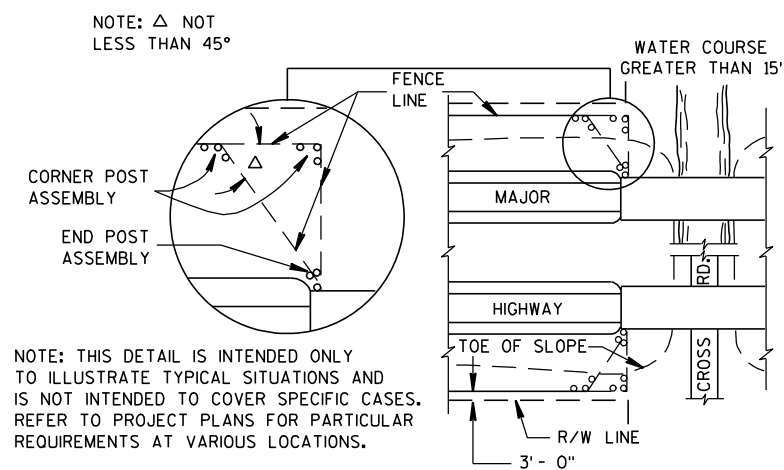
2" X 6" DOUGLAS FIR OR SO. YELLOW PINE PLACED BETWEEN TREE AND WOVEN WIRE FENCE. WOVEN WIRE FENCE AND BARBED WIRE TO BE STAPLED TO 2" X 6" LIKE AS TO LINE POST. 2" X 6" NOT FASTENED TO TREE.



PLAN VIEW
FENCE DESIGN AT TREES REMAINING
IN NORMAL FENCE LINE

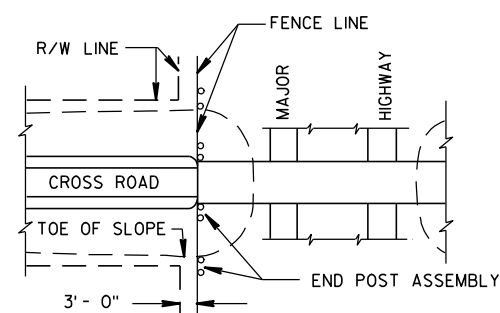


FENCE CONSTRUCTION OVER STREAM
COURSES OF 15 FT. OR LESS IN WIDTH

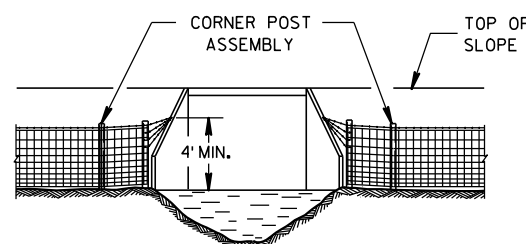


PLAN VIEW
MAJOR HIGHWAY OVERPASS OR STREAM COURSE
CROSSING OF GREATER THAN 15 FT. IN WIDTH

FENCE LOCATION AT STRUCTURES

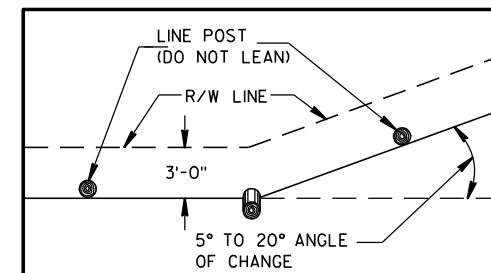


PLAN VIEW
MAJOR HIGHWAY UNDERPASS

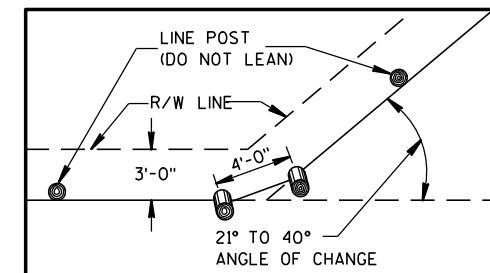


FENCE INSTALLATION TO WINGWALLS

NOTE: PLACE A MINIMUM OF 4 STRANDS OF BARBED WIRE, 6" MAXIMUM CENTERS IN FAN SHAPE CONNECTED TO AN EYE BOLT ON WINGWALL OR SET A LONE POST WHEN NECESSARY TO CONNECT BARBED WIRE.



PLAN VIEW
SINGLE POST CORNER

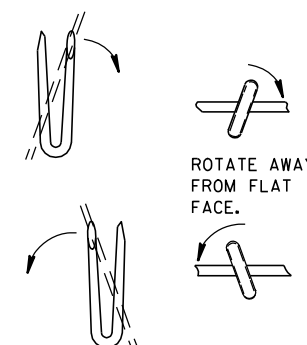


PLAN VIEW
DOUBLE POST CORNER

RIGHT OF WAY LINE CHANGE 40° AND LESS

NOTE: SINGLE AND DOUBLE POSTS SHALL BE A MIN. 6" DIA. X 8'-0" WITH A LEAN OF 4" TOWARD THE OUTSIDE OF THE CURVE.

WHEN THE RIGHT OF WAY LINE CHANGE IS MORE THAN 40° USE THE CORNER OR STRETCHER POSTS ASSEMBLY.



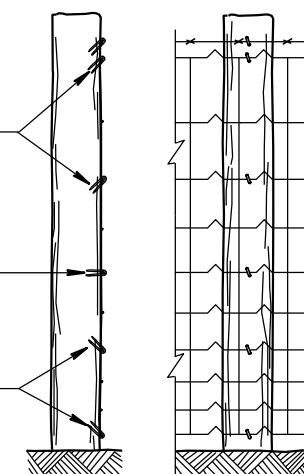
LINE POST

NOTE: WHEN POSTS ARE DRIVEN THE SMALL END SHALL BE DOWN.

STAPLES SLOPED DOWNWARD FOR SUSTAINED GRADES AND OVER KNOLLS.

STAPLES LEVEL FOR LEVEL GROUND.

SLOPE UPWARDS WHEN FENCE TENDS TO LIFT.



END ELEVATION
FARM SIDE ELEVATION
FENCE MOUNTING DETAIL

FENCE WOVEN WIRE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

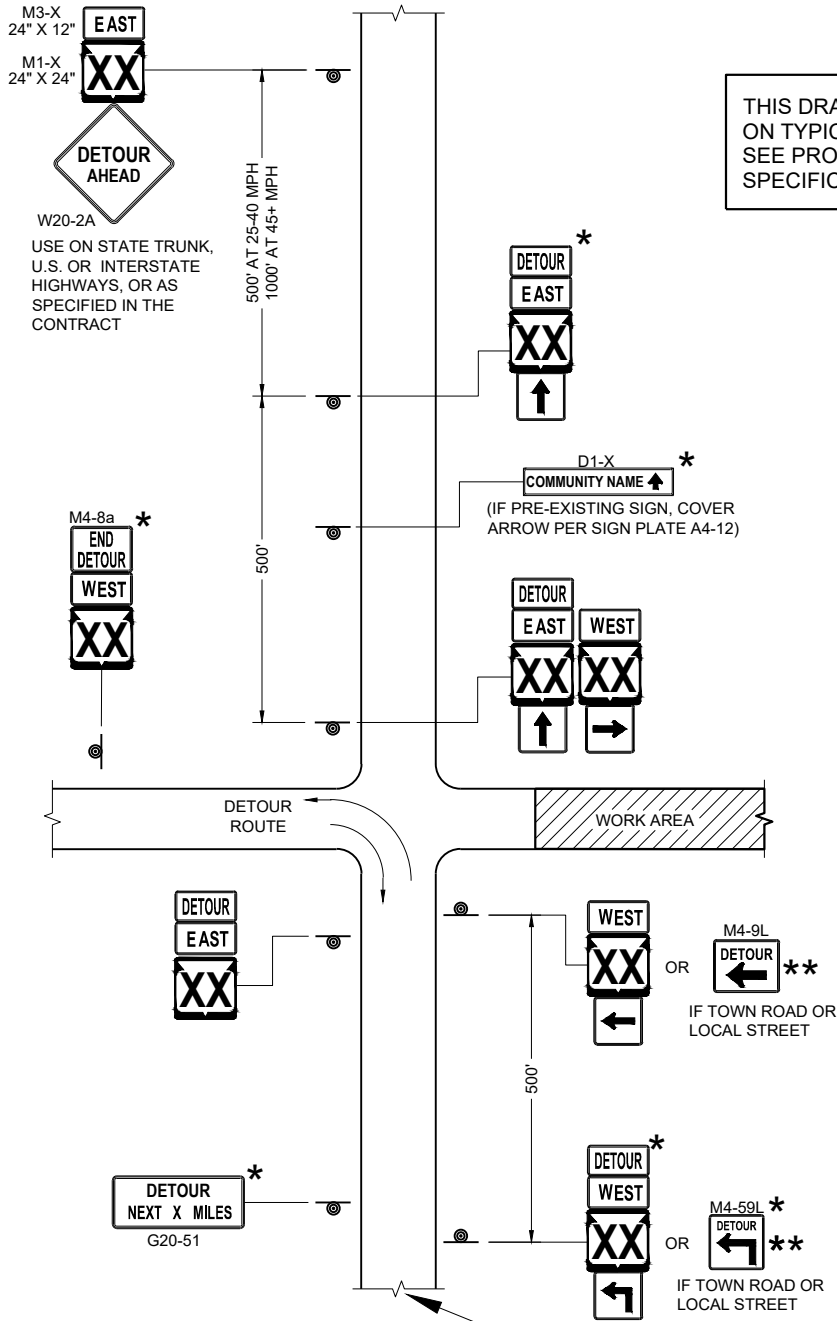
4/4/2008

DATE

FHWA

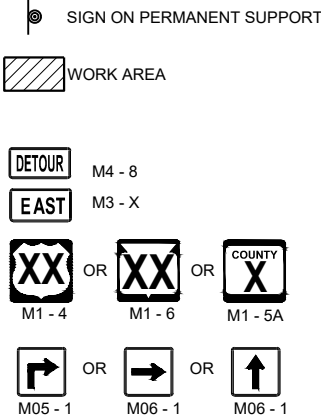
/S/ Jerry H. 7-
ROADWAY STANDARDS 168
ENGINEER

ENT



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

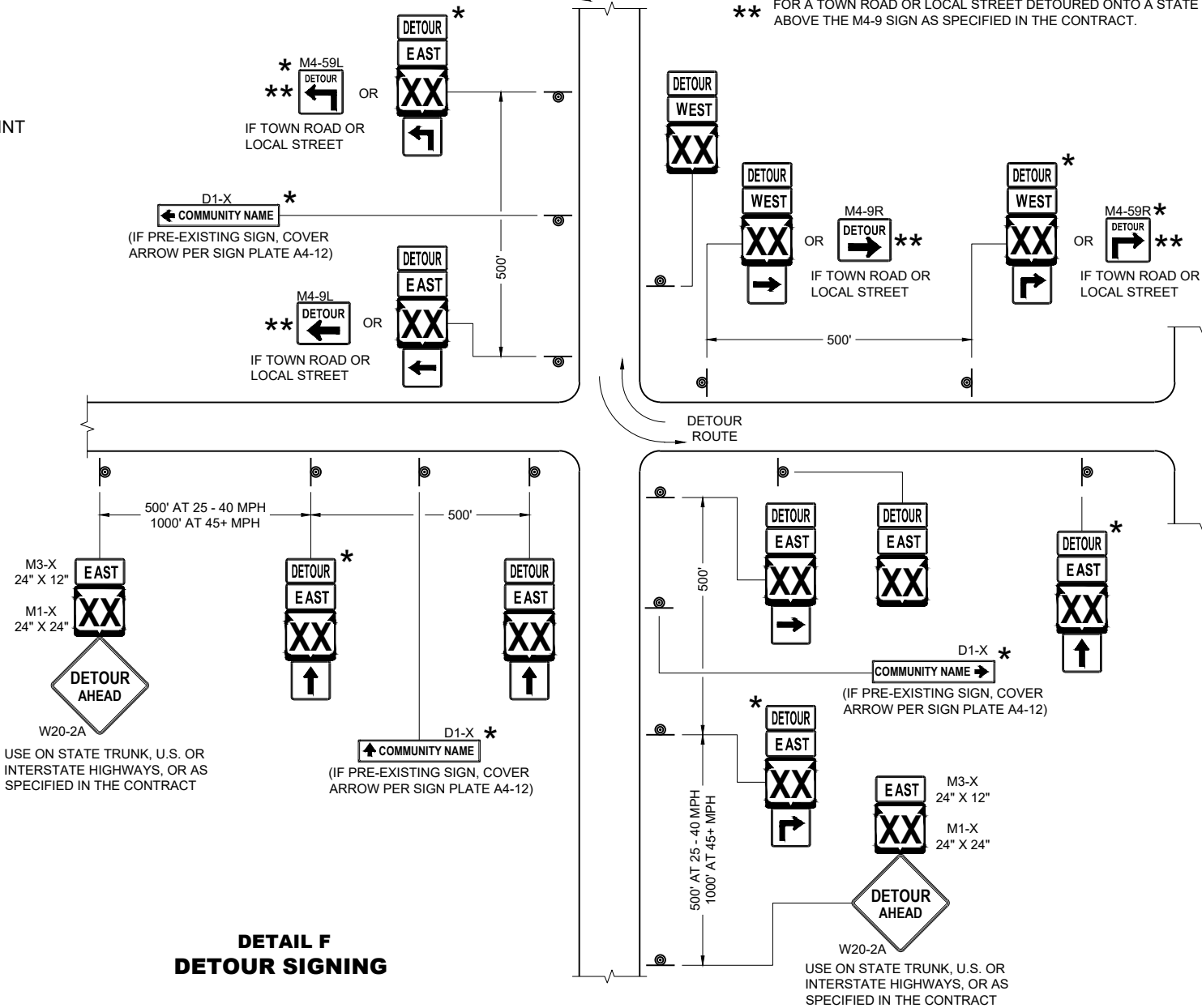
LEGEND



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.

MATCH POINT



DETAIL F
DETOUR SIGNING

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

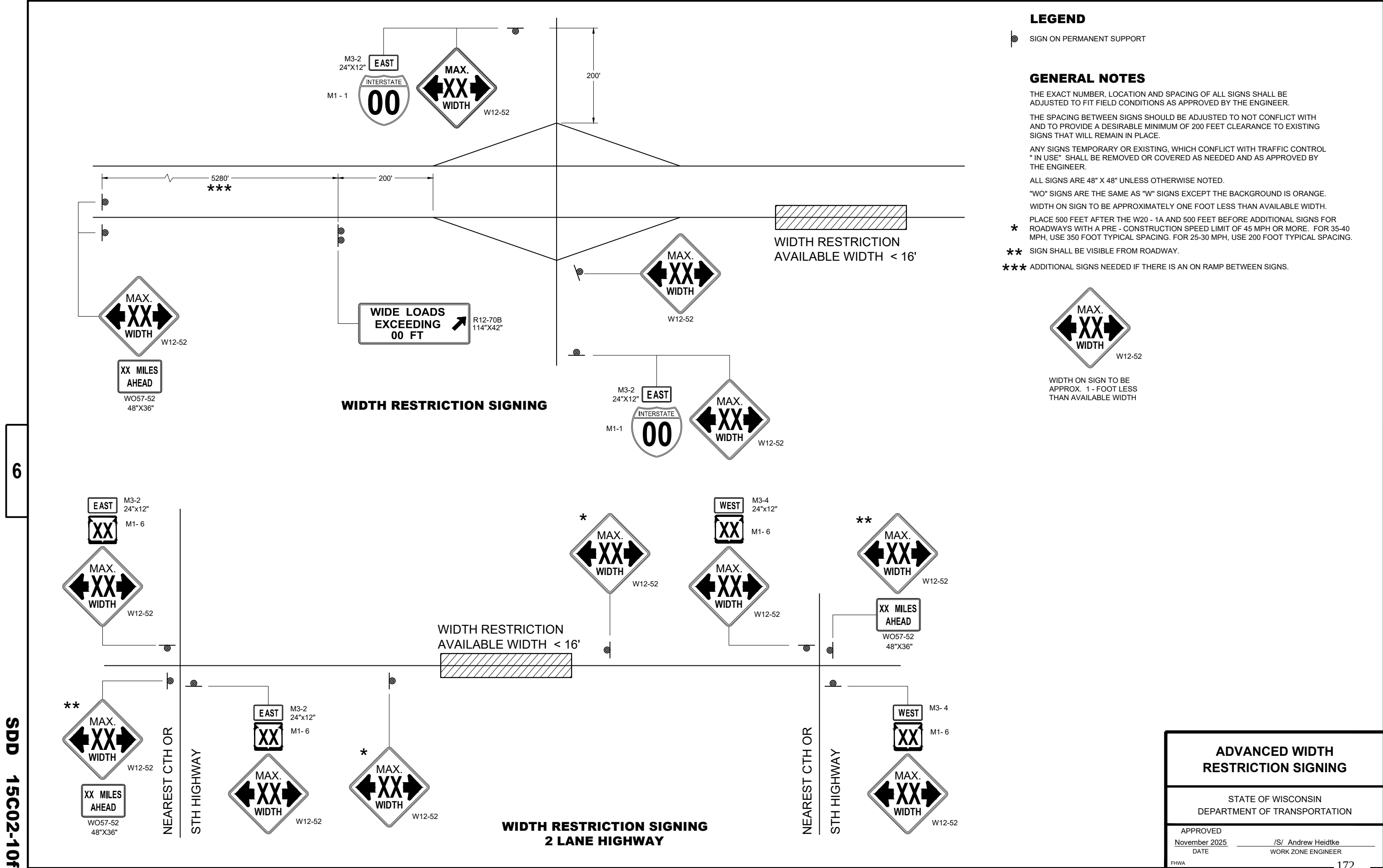
DETOUR SIGNING
FOR MAINLINE CLOSURES

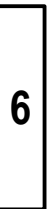
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025
DATE

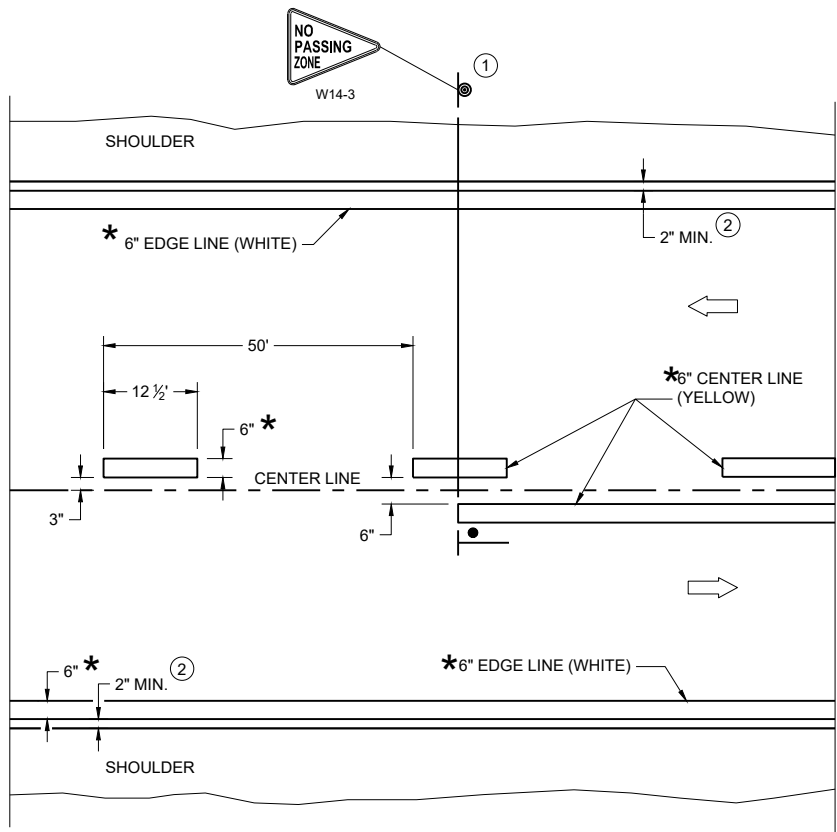
/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

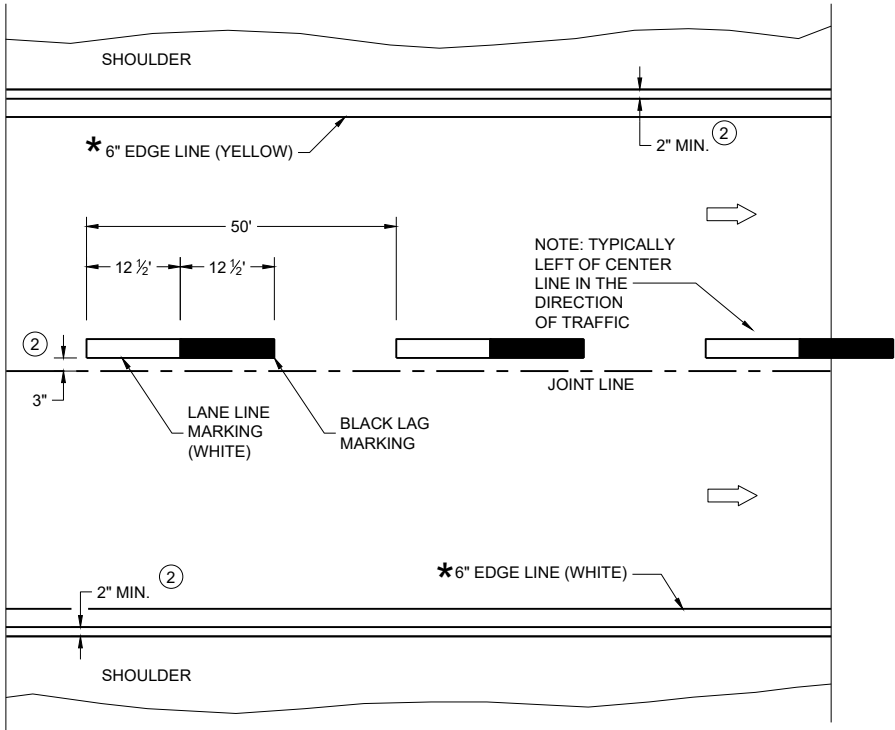




FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

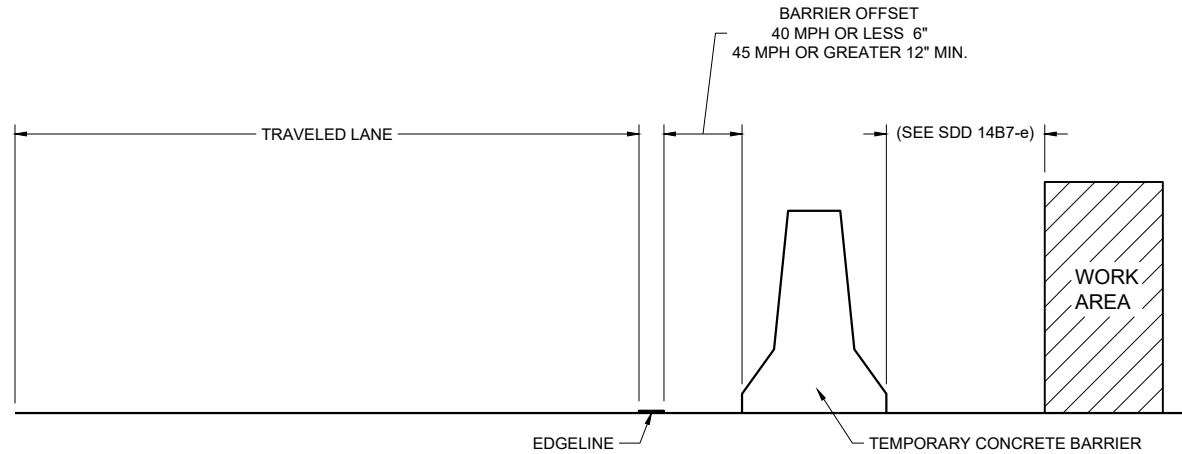
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

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

LEGEND

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

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA 174	



TEMPORARY BARRIER OFFSET FROM EDGE LINE

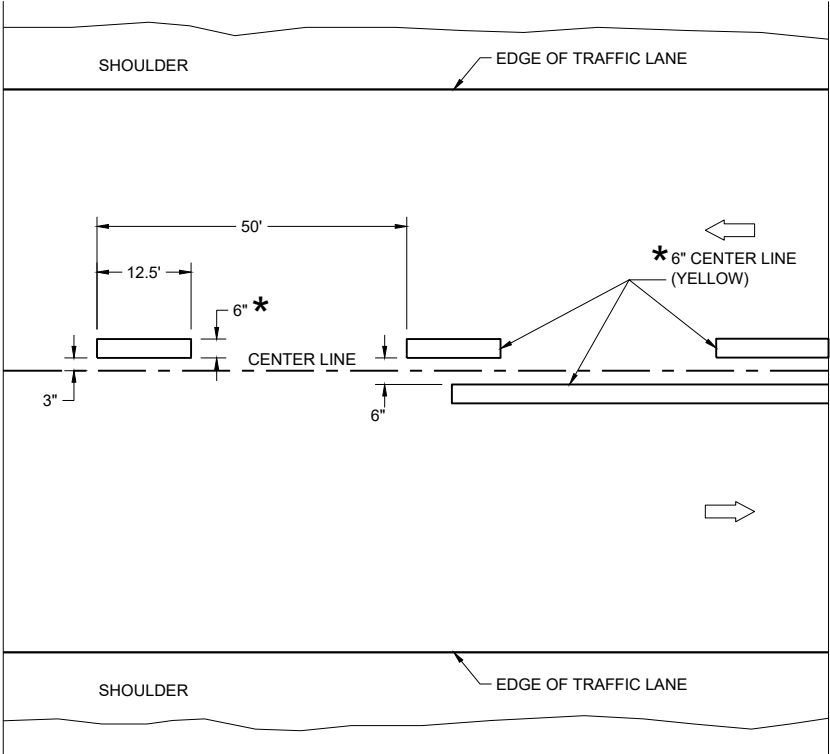
GENERAL NOTES

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

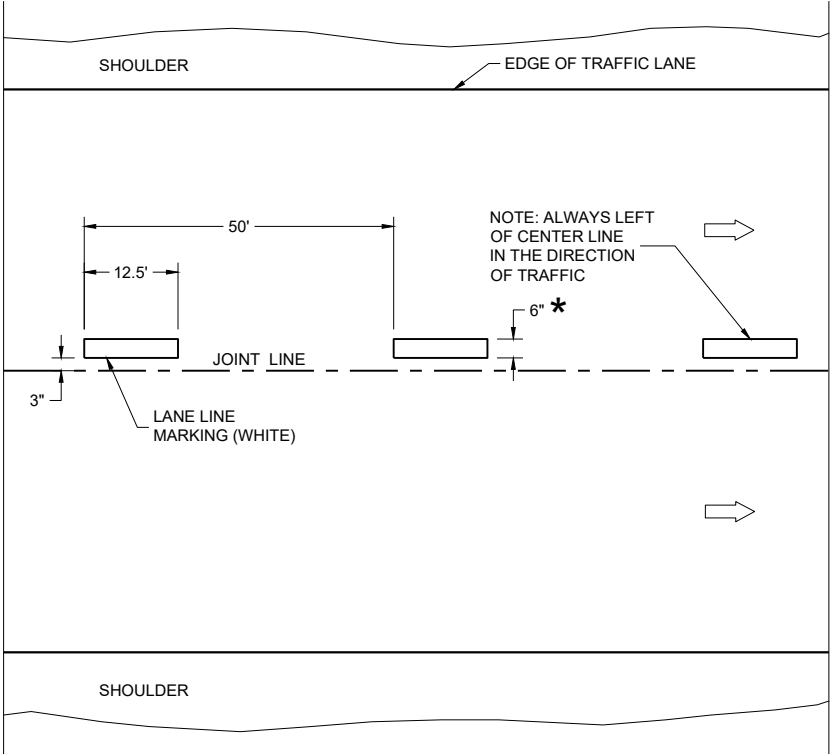
LEGEND

DIRECTION OF TRAFFIC

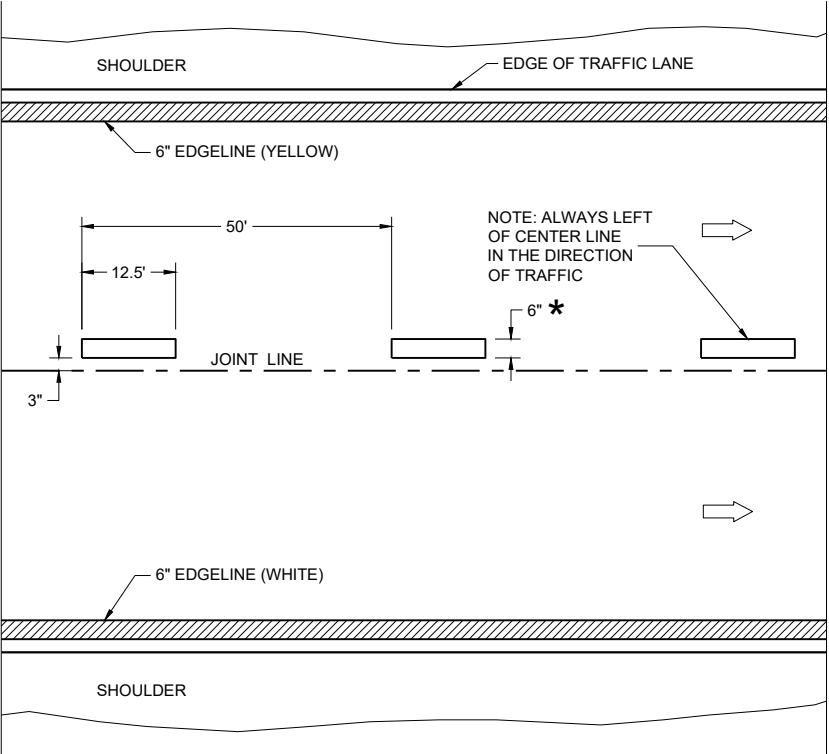
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



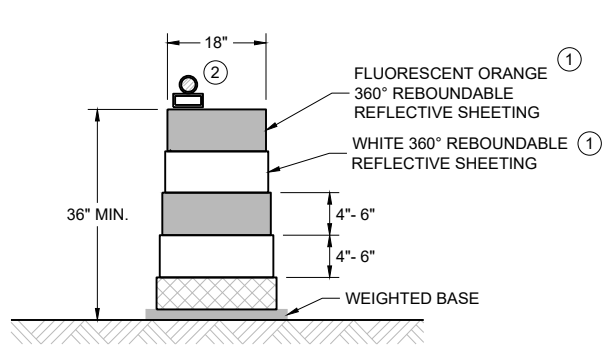
ONE WAY TRAFFIC



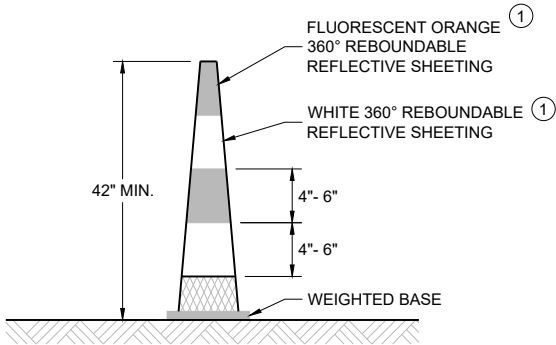
FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

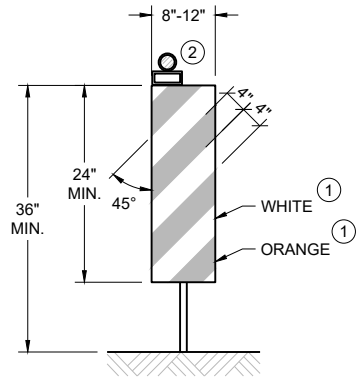
TEMPORARY LONGITUDINAL PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	175



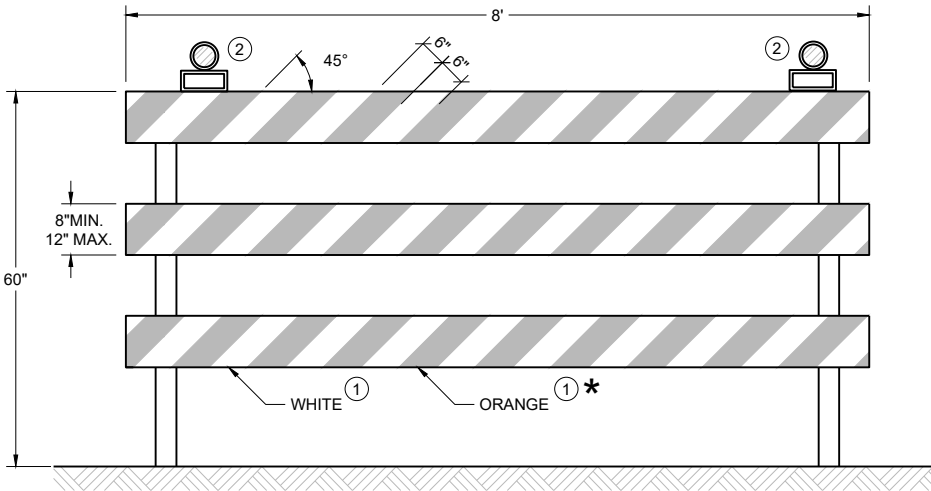
DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



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



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



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

GENERAL NOTES

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2026 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

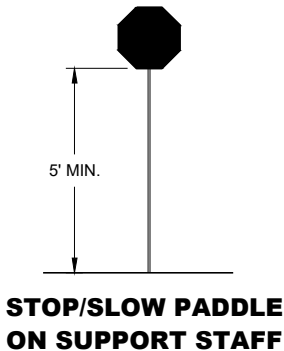
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

TEMPORARY PORTABLE RUMBLE STRIPS

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.
- INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.
- PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.
- DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

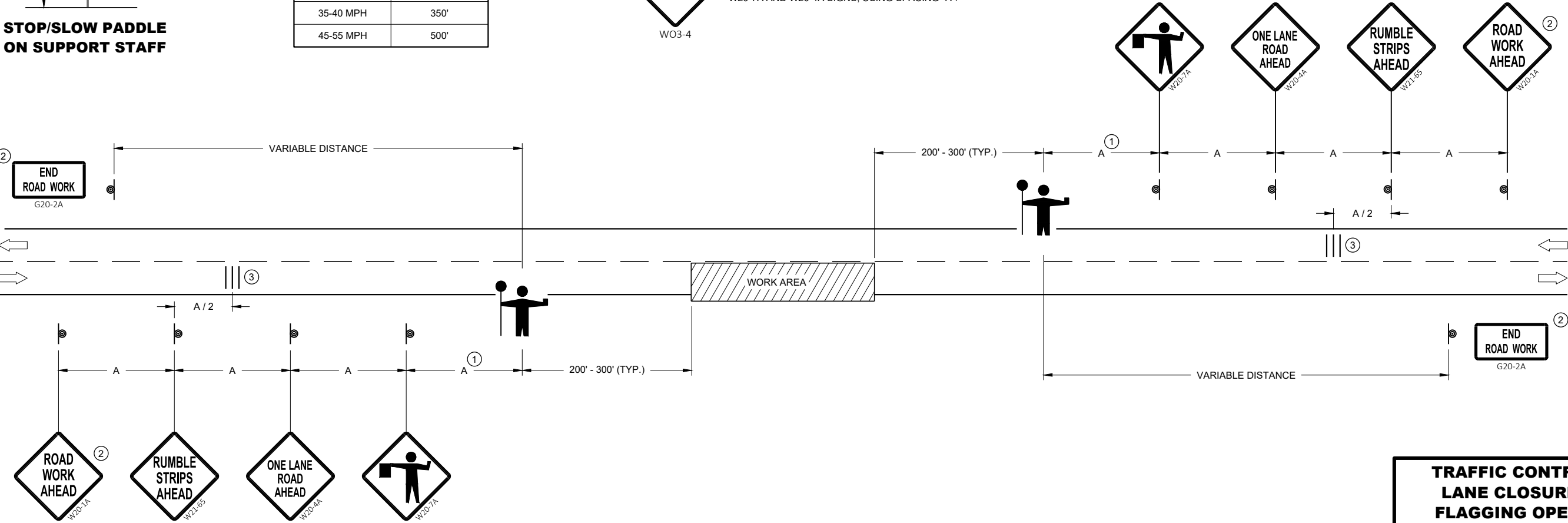


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 177
FHWA	

GENERAL NOTES

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL CONE 42-INCH
-  TRAFFIC CONTROL DRUM
-  TEMPORARY PORTABLE RUMBLE STRIP ARRAY
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

- ① SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ② IF FLAGGERS ARE PHYSICALLY NEEDED TO FLAG, REPLACE WO3-4 SIGNS WITH W20-7A SIGNS.

TEMPORARY PORTABLE RUMBLE STRIPS

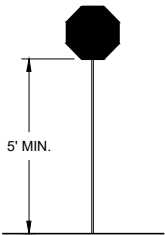
UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

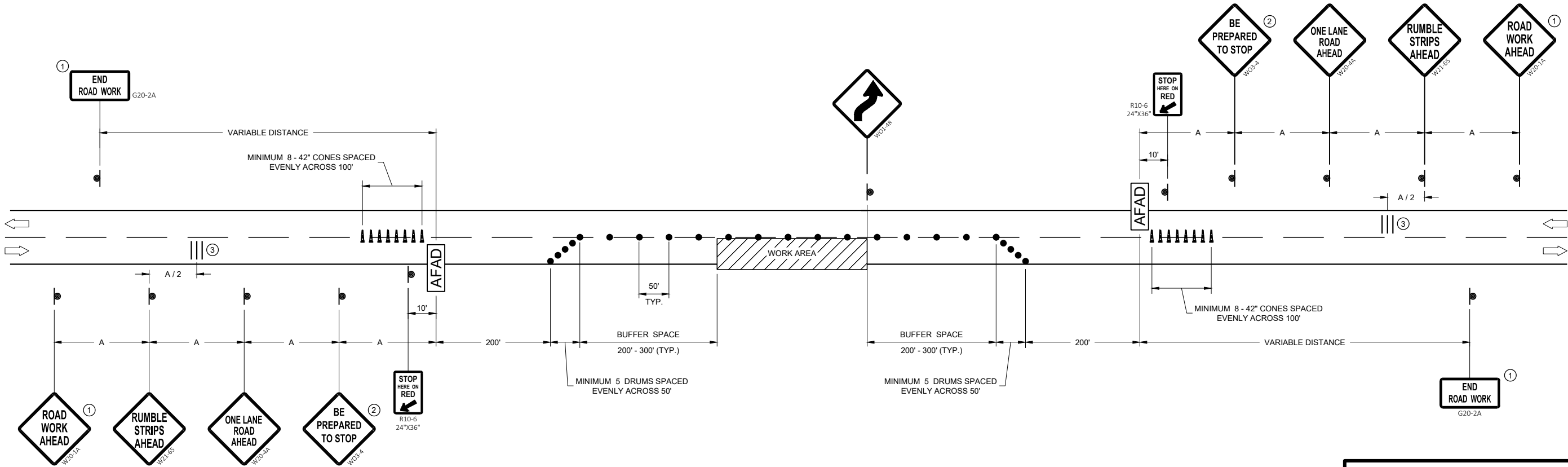
③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSELY AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER.



STOP/SLOW PADDLE
ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE
STRIP ARRAY SPACING TABLE

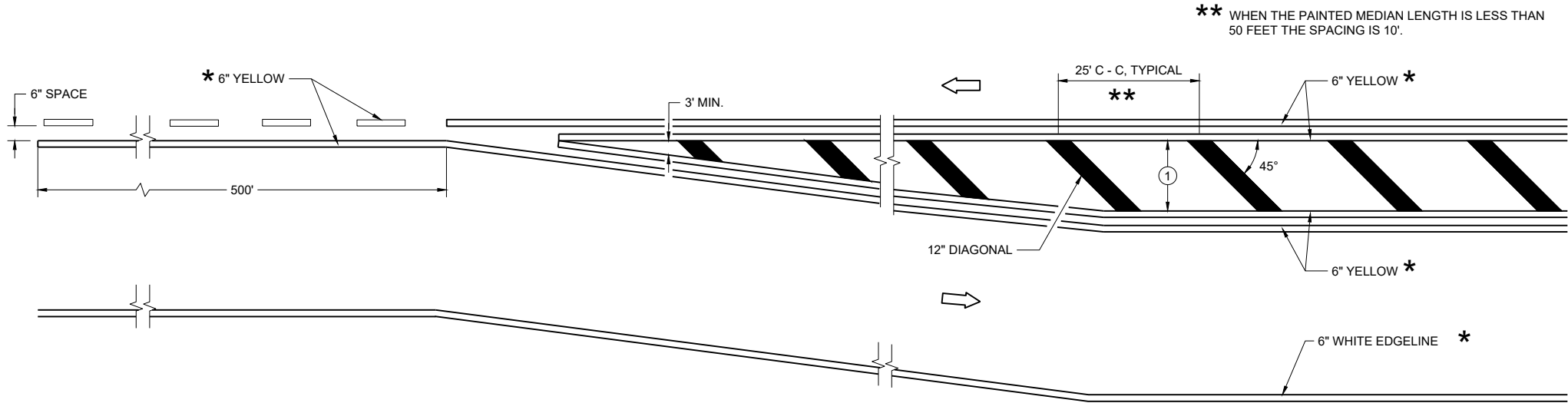
SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



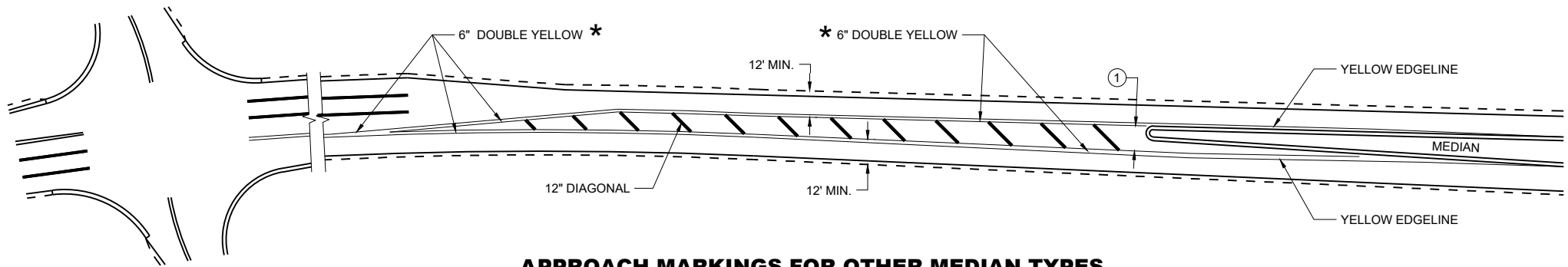
TRAFFIC CONTROL, LANE
CLOSURE WITH AUTOMATED
FLAGGER ASSISTANCE DEVICE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

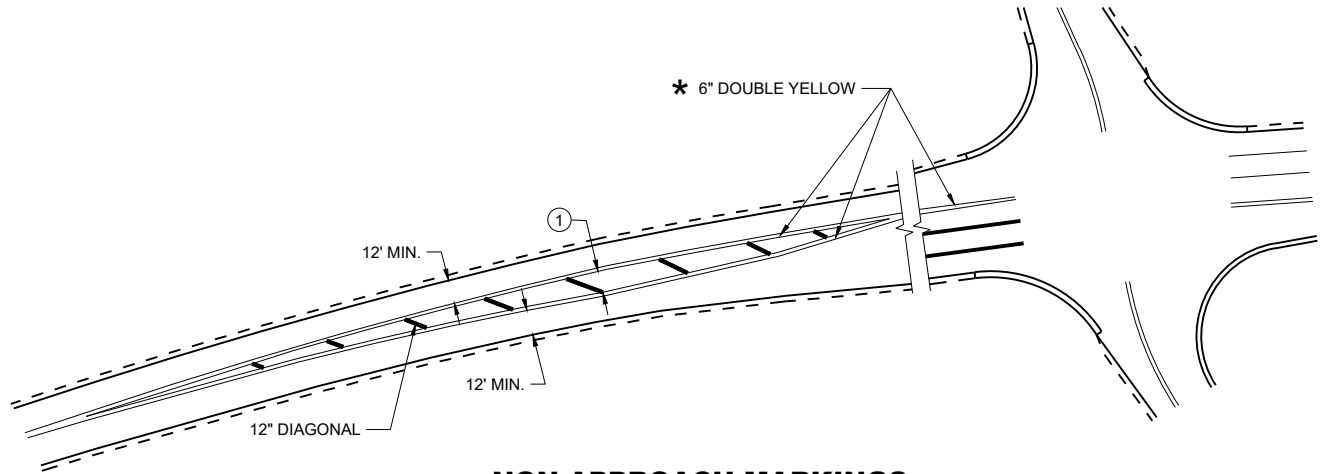
APPROVED
May 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 178
FHWA



MEDIAN ISLAND DETAIL



APPROACH MARKINGS FOR OTHER MEDIAN TYPES



NON-APPROACH MARKINGS

GENERAL NOTES

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

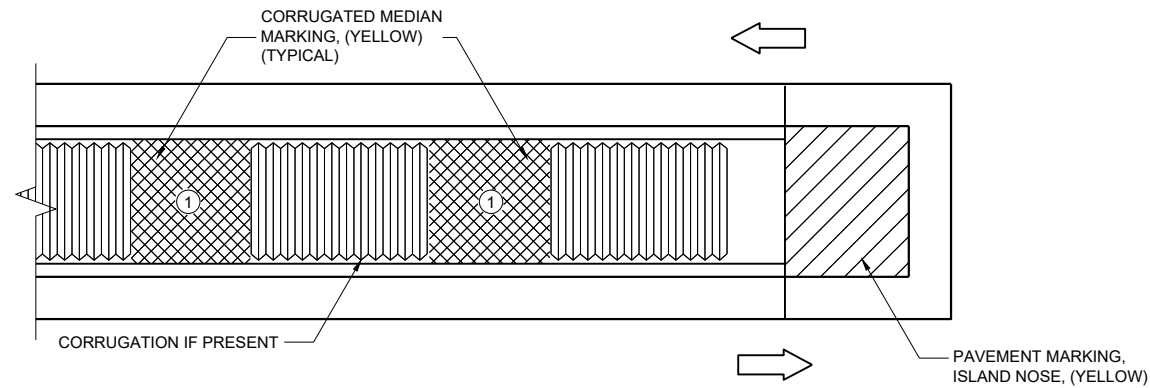
➡ DIRECTION OF TRAVEL

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

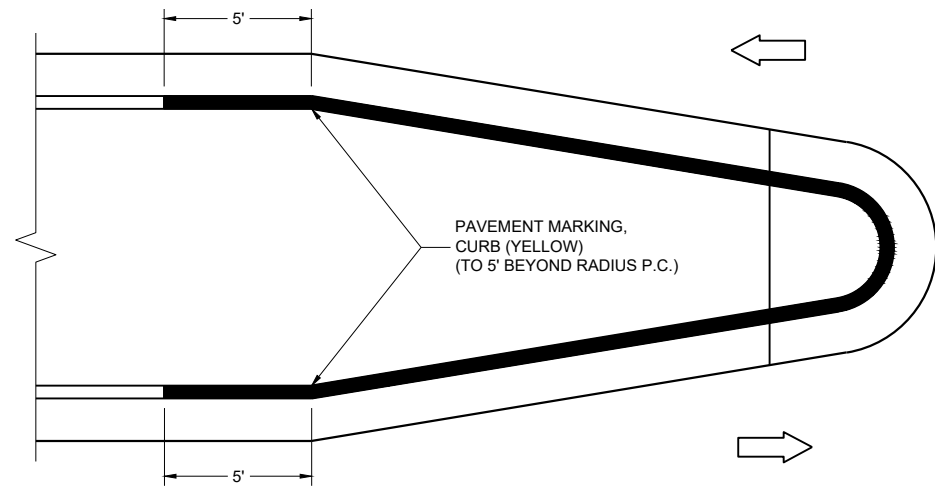
MEDIAN ISLAND
PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

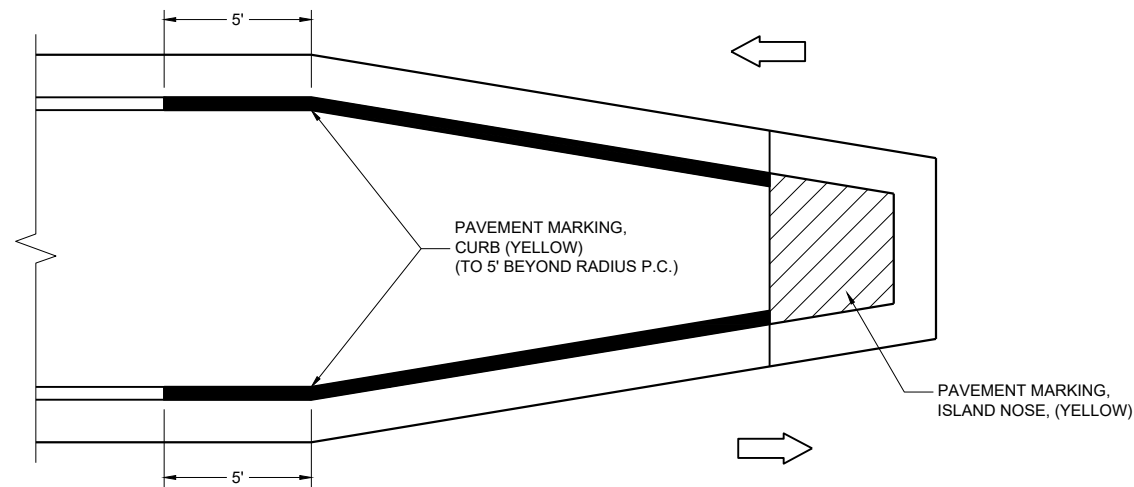
APPROVED
August 2024 /S/ Jeannie Silver
DATE Statewide Pavement Marking Engineer



MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

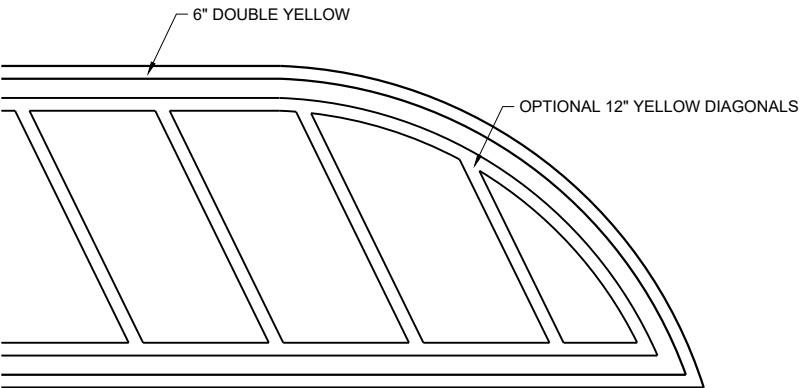
TYPICAL PLACEMENT OF PAVEMENT MARKING ON MEDIAN ISLANDS

GENERAL NOTES

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

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

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



FLUSH MEDIAN ISLAND NOSE

PAVEMENT MARKINGS, MEDIAN ISLAND NOSE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED August 2024 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA	180

REQUIREMENTS FOR EDGE LINES		
POSTED SPEED	IS THERE CONTINUOUS LIGHTING?	
	YES	NO
≤ 30 MPH	NO	OPTIONAL
35 OR 40 MPH	OPTIONAL	RECOMMENDED
≥ 45 MPH	RECOMMENDED	REQUIRED

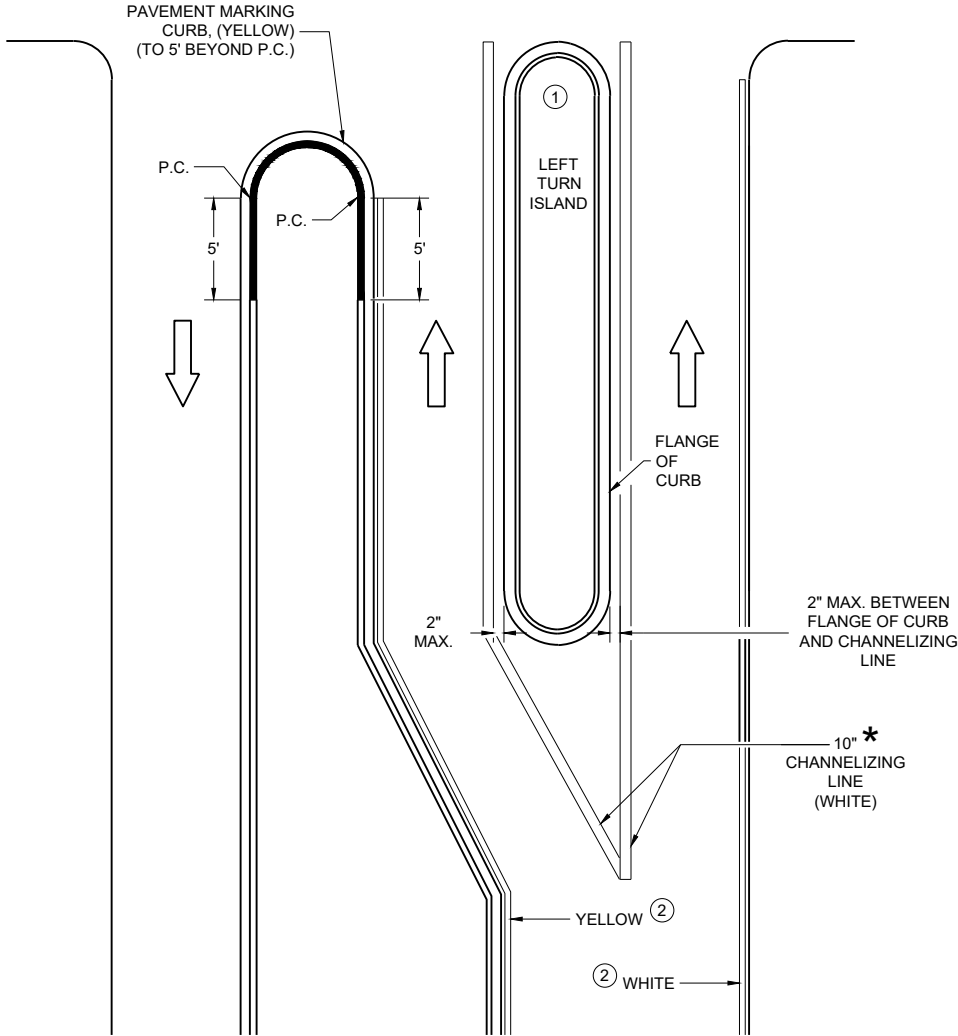
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

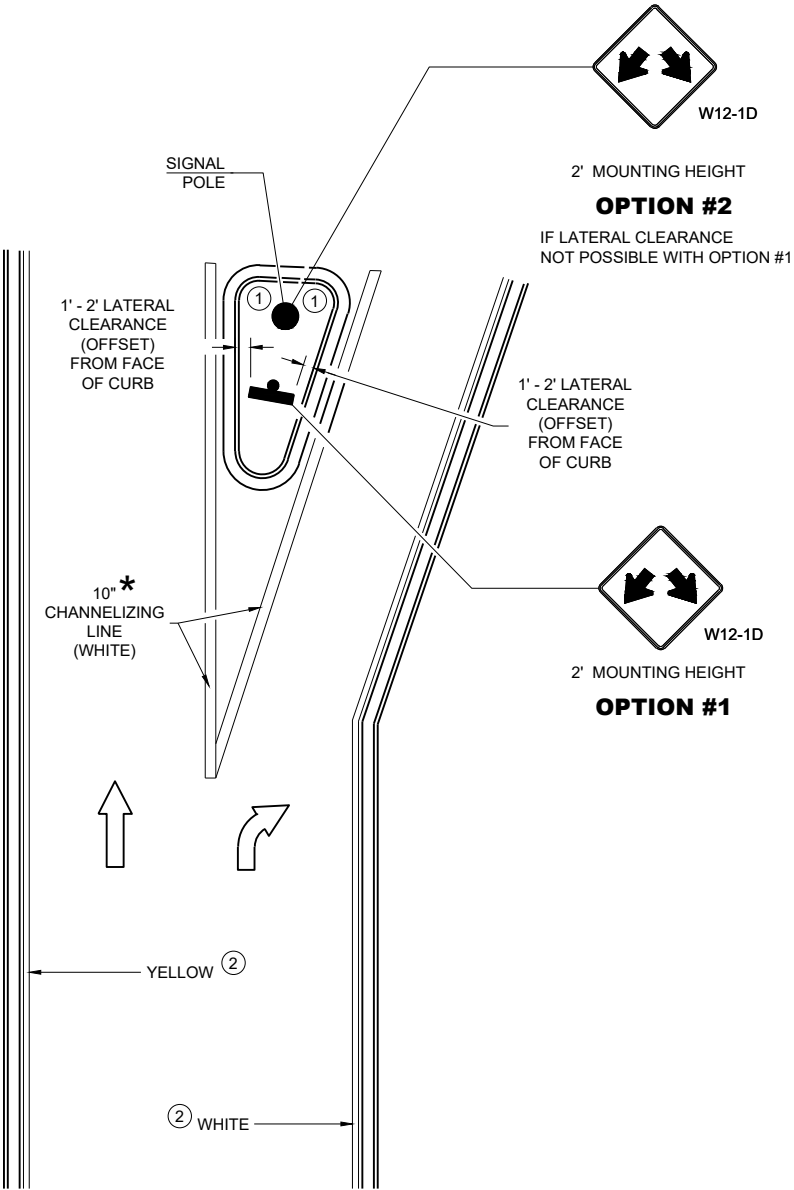
APPLIES TO ISLANDS AT LEFT TURNS AT ONE WAY ROADWAYS AS WELL.
SEE MISCELLANEOUS QUANTITIES FOR SIGN SIZE.

- ① MARK CURB NOSES YELLOW.
- ② MARK ACCORDING TO TABLE.
- ③ CHEVRON MAY BE OMITTED IF LESS THAN 4" WIDE

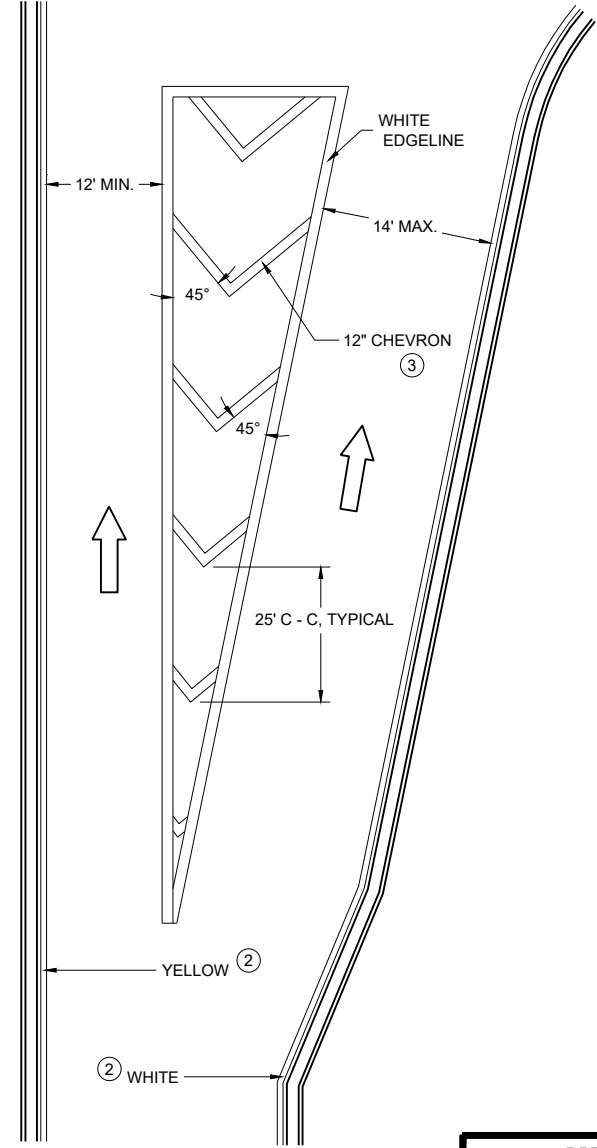
DIRECTION OF TRAVEL



LEFT TURN & MEDIAN ISLAND



RIGHT TURN ISLAND



TURN LANE DETAIL

MEDIAN PAVEMENT MARKINGS, DOUBLE ARROW WARNING SIGN PLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

- V1

LEAD VEHICLE
- V2

MARKING VEHICLE
- V3

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

SIGN ON TEMPORARY SUPPORT
- 

DIRECTION OF TRAFFIC

GENERAL NOTES

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

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

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

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

THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH

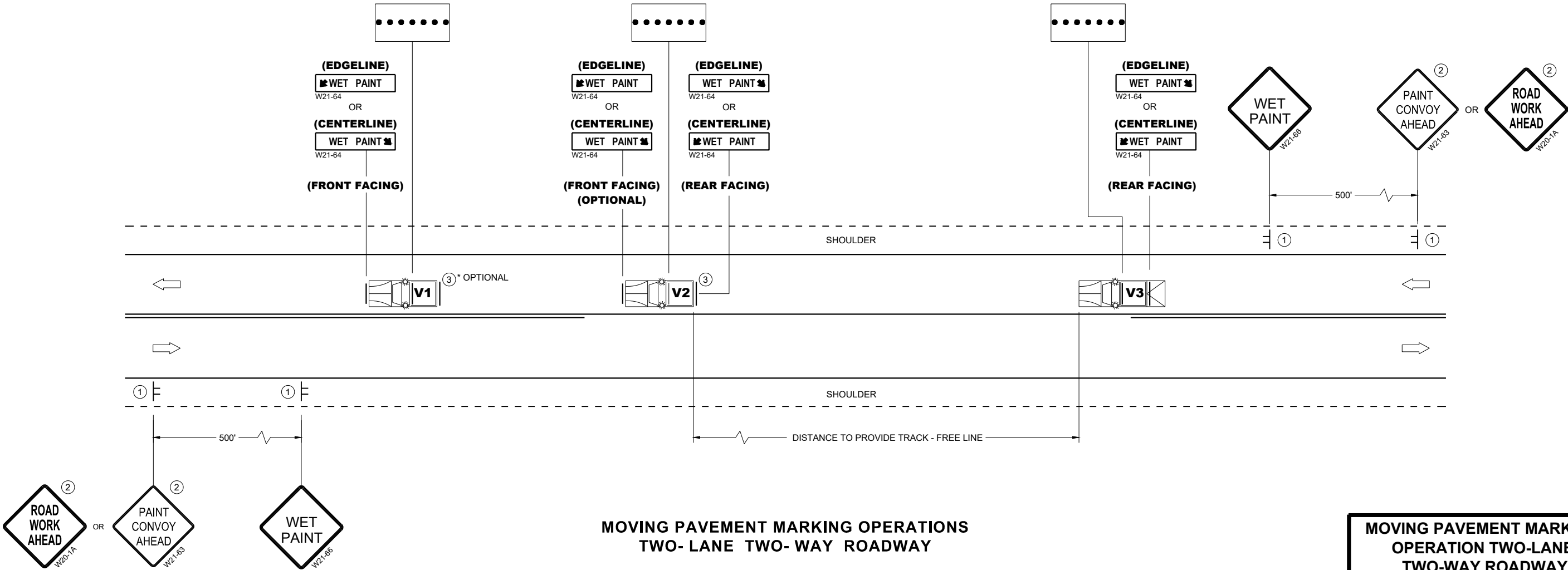
WORKERS SHALL NOT PERFORM WORK FROM ANY SHADOW OR PROTECTION VEHICLES.

UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

CONES SHALL BE A MINIMUM OF 28" FOR WET PAVEMENT MARKING .

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY MAJOR INTERSECTION.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.
- ③ V1 AND V2 CAN BE SWITCHED SO THAT THE MARKER IS THE LEAD VEHICLE.



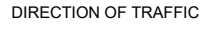
MOVING PAVEMENT MARKING
OPERATION TWO-LANE
TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE STATE ELECTRICAL ENGINEER

FHWA

V1	LEAD VEHICLE
V2	MARKING VEHICLE
V3	SHADOW VEHICLE



WORKERS SHALL NOT PERFORM WORK FROM ANY SHADOW OR PROTECTION VEHICLES.

CONES SHALL HAVE A MINIMUM HEIGHT OF 28" FOR WET PAVEMENT MARKINGS.

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY MAJOR INTERSECTION.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.



APPROVED
November 2025 /S/ Andrew Heidtke
DATE STATE ELECTRICAL ENGINEER

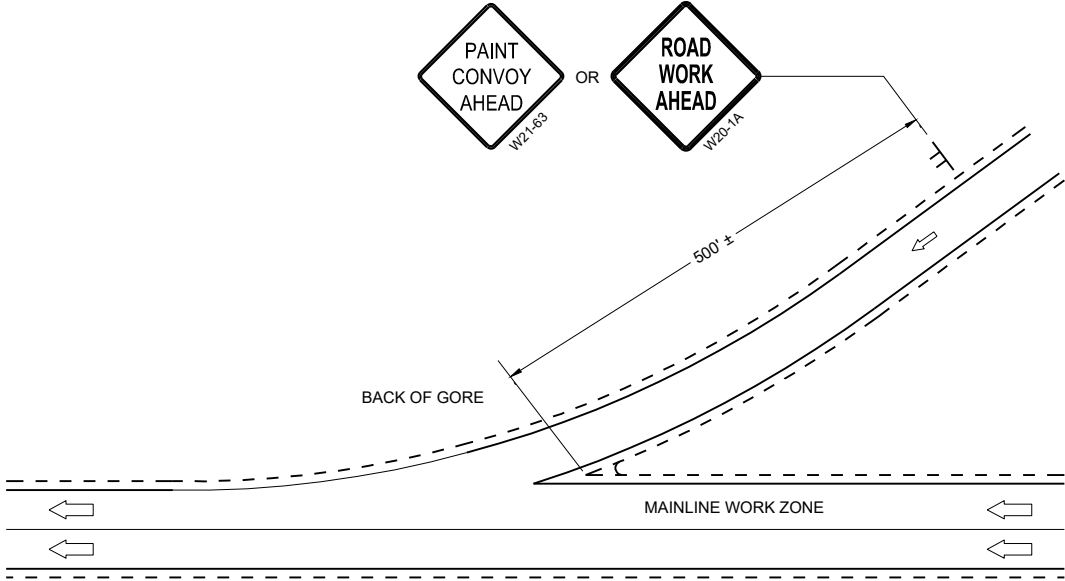
LEGEND

- V1

MARKING VEHICLE
- V2

SHADOW VEHICLE
- V3

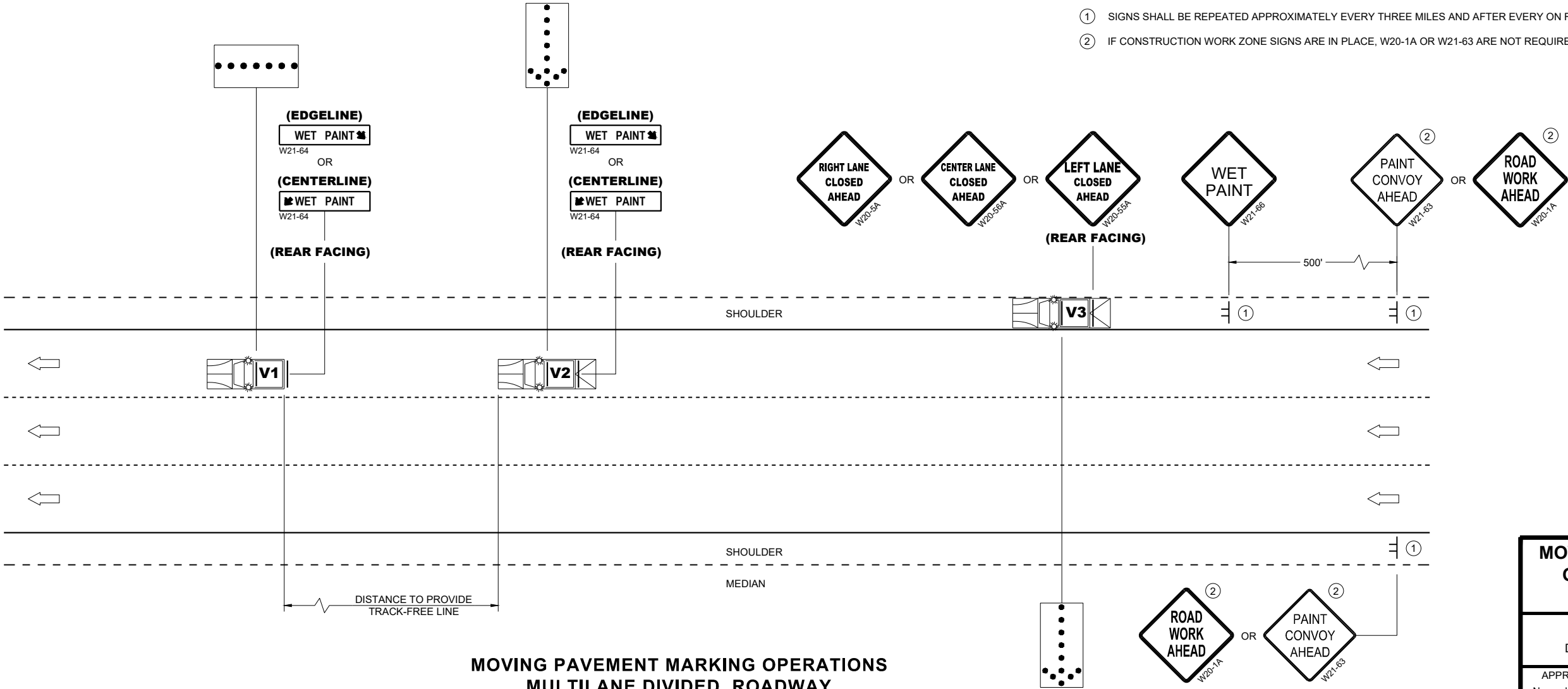
TRAIL VEHICLE
- TRUCK MOUNTED ATTENUATOR (TMA)
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC
- ARROW PANEL (CAUTION)



GENERAL NOTES

- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
- DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE, PAINT DRYING TIME, AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- WHEN WORK ACTIVITY BLOCKS THE LEFT LANE, REVERSE TRAFFIC CONTROL.
- WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.
- USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.
- IF THE SHOULDER IS TOO NARROW TO ACCOMMODATE THE LAST TRAILING VEHICLE, THE VEHICLE SHOULD STRADDLE THE EDGE LINE.
- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC
- CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- CONES SHALL BE A MINIMUM HEIGHT OF 28" FOR WET PAVEMENT MARKINGS
- WORKERS SHALL NOT PERFORM WORK FROM ANY SHADOW OR PROTECTION VEHICLES.

- ① SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES AND AFTER EVERY ON RAMP.
- ② IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1A OR W21-63 ARE NOT REQUIRED.

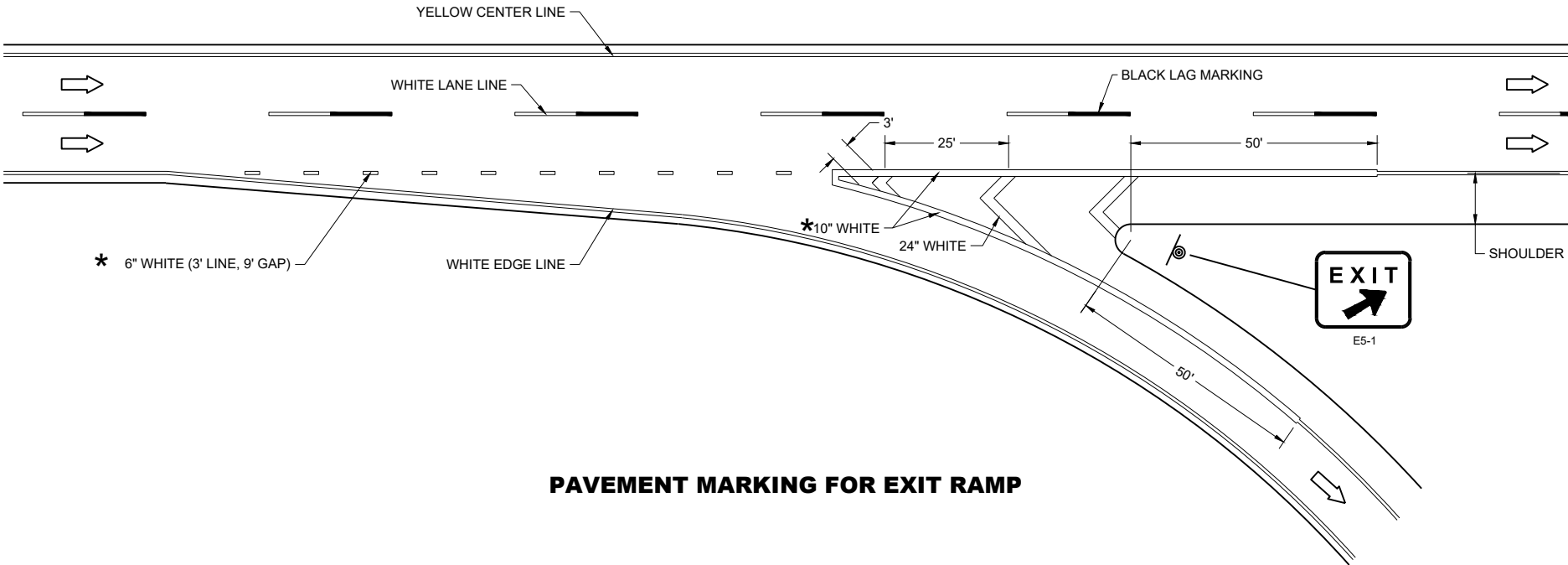


MOVING PAVEMENT MARKING
OPERATION MULTI-LANE
DIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE STATE ELECTRICAL ENGINEER

FHWA



PAVEMENT MARKING FOR EXIT RAMP

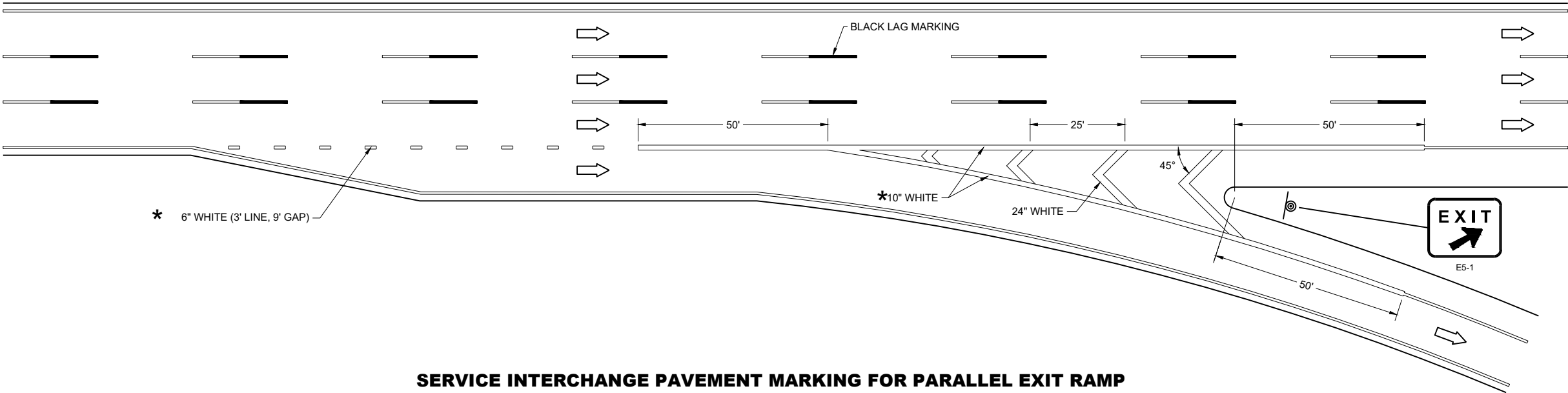
GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

LEGEND

- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAVEL

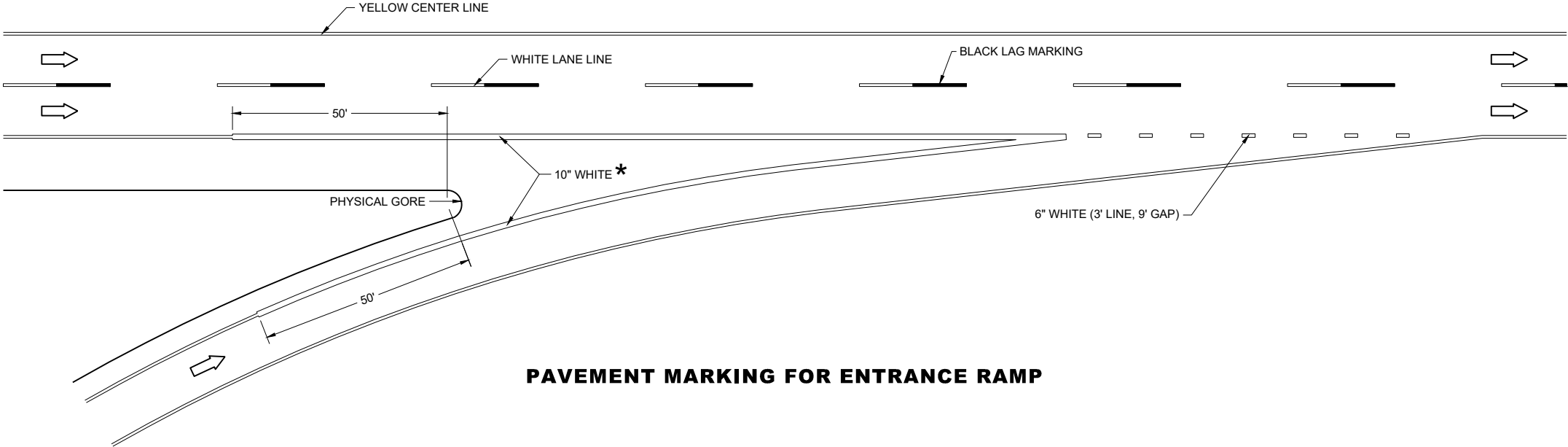
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



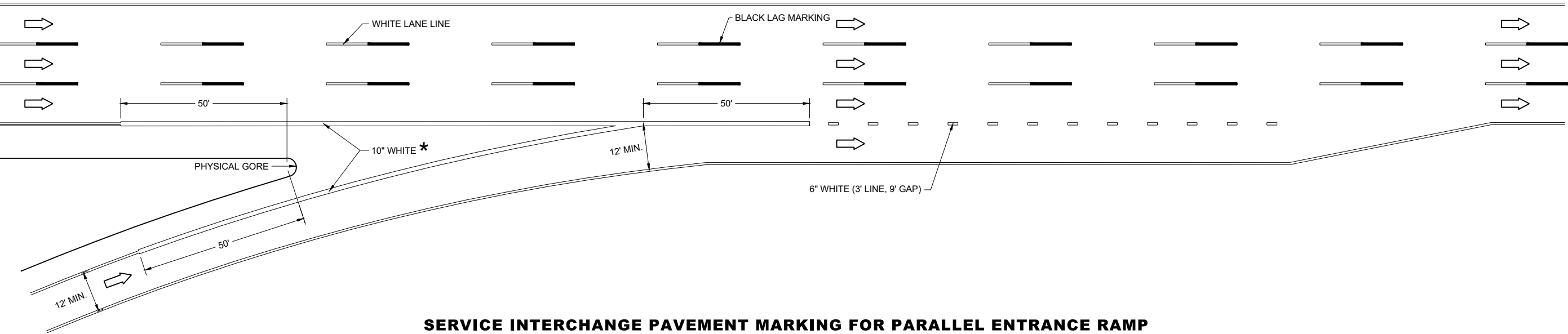
SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL EXIT RAMP

PAVEMENT MARKING,
EXIT RAMP AND
PARALLEL EXIT RAMP

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PAVEMENT MARKING FOR ENTRANCE RAMP



SERVICE INTERCHANGE PAVEMENT MARKING FOR PARALLEL ENTRANCE RAMP

GENERAL NOTES

PLACE GROOVE 3 INCHES LEFT OF JOINT.

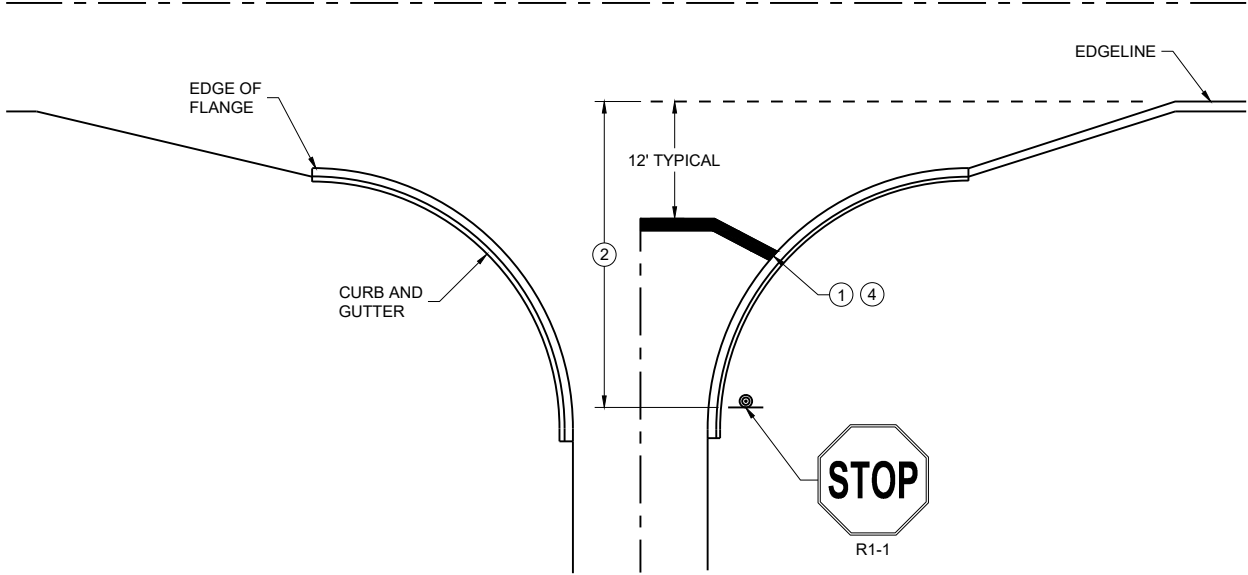
LEGEND

DIRECTION OF TRAVEL

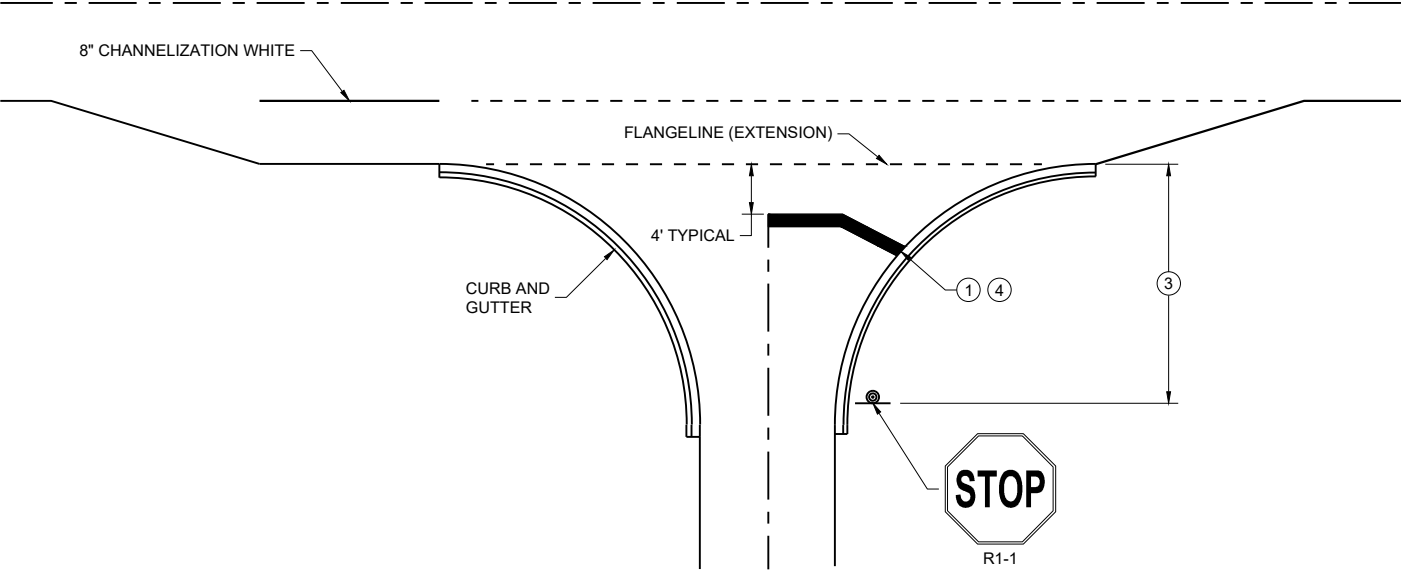
*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING,
ENTRANCE RAMP AND
PARALLEL ENTRANCE RAMP

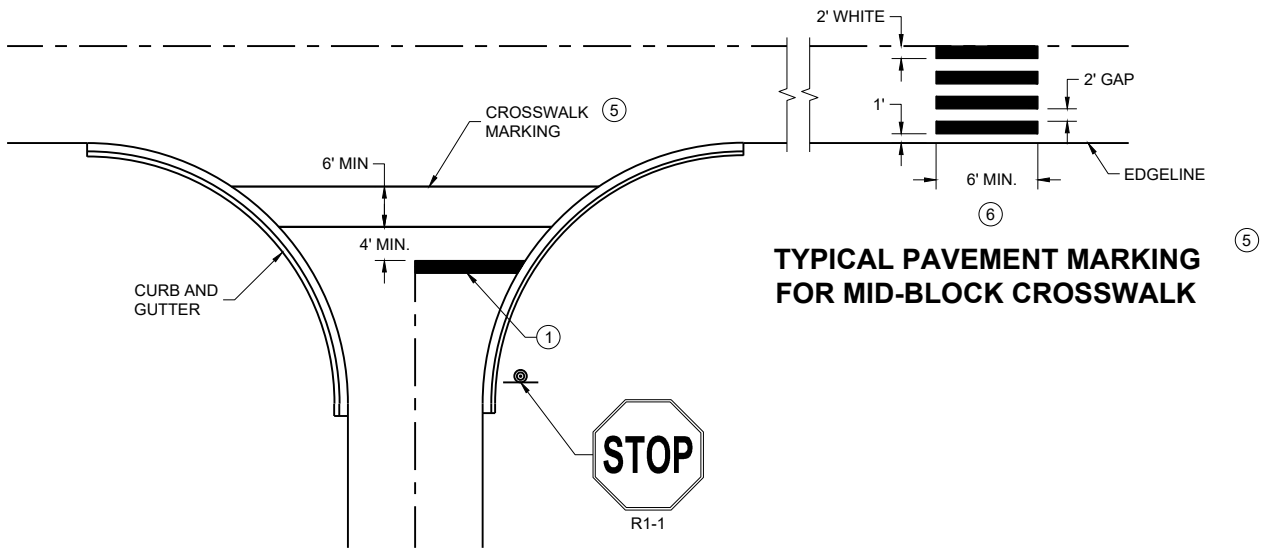
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



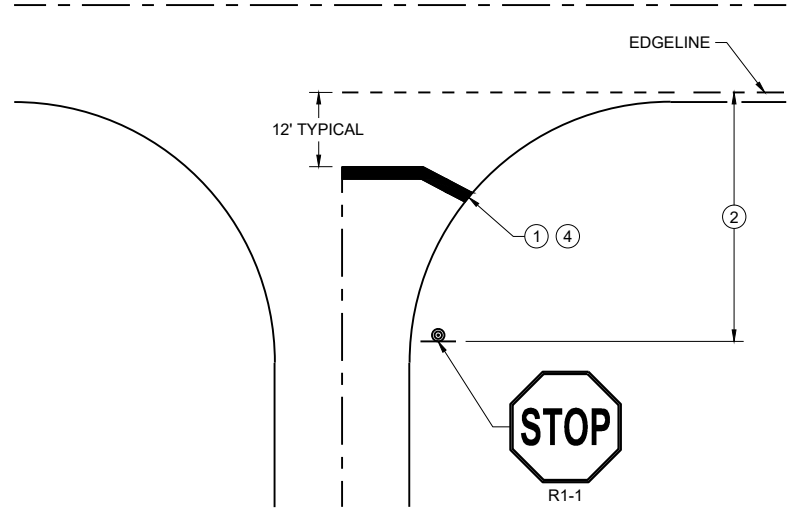
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH RIGHT TURN LANE



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS 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 FLANGE LINE 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.
- 6 POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS

STOP LINE AND CROSSWALK PAVEMENT MARKING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2024 /S/ Matthew Rauch
DATE STATE SIGNING AND MARKING
ENGINEER

FHWA

GENERAL NOTES

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

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

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

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

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

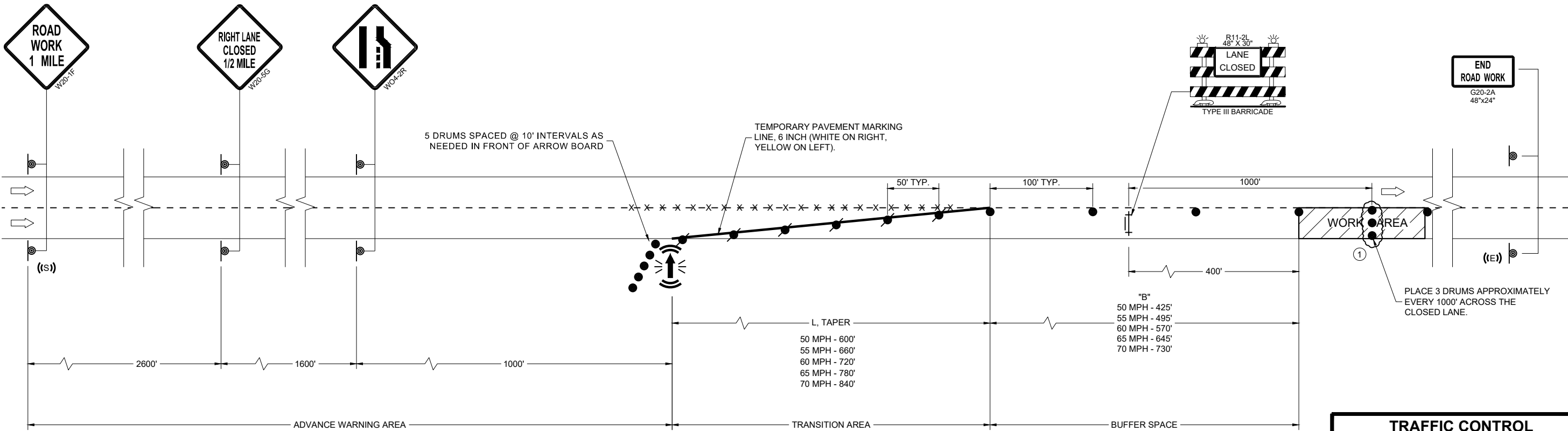
ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

① DRUMS IN A CLOSED LANE 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.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER



TRAFFIC CONTROL
LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  REMOVING PAVEMENT MARKINGS
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  WZ START LOCATION MARKER
-  WZ END LOCATION MARKER
-  CONNECTED ARROW BOARD
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  PORTABLE TRAFFIC SENSOR (PTS)
-  FLASHING BEACON SIGNS
- 

WO8-76
96" x 48"

GENERAL NOTES

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

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

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

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

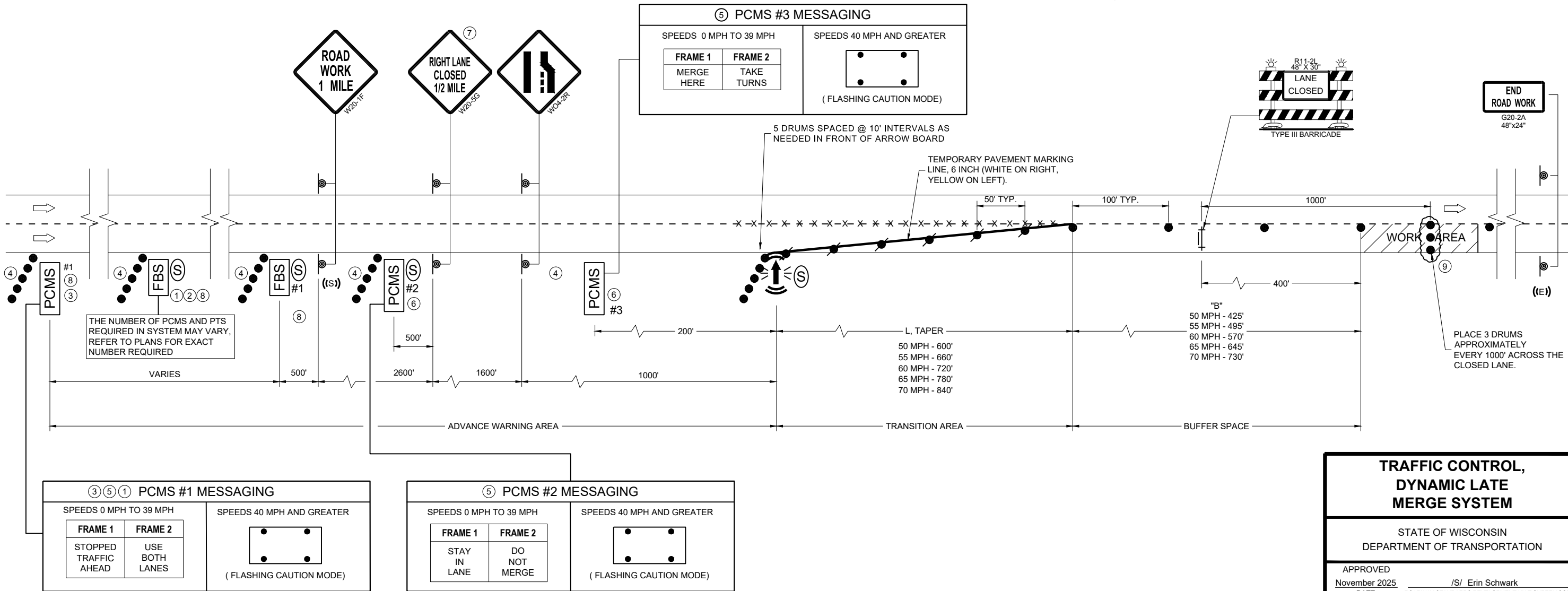
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION. ADJUSTMENTS IN BUFFER SPACE NEED TO BE INCORPORATED WHEN THE LANE CLOSURE OCCURS NEAR AN INTERCHANGE EXIT OR ENTRANCE RAMP OR INTERSECTION. THE LANE CLOSURE MUST TAKE PLACE FAR ENOUGH IN ADVANCE OF AN EXIT OR ENTRANCE RAMP TO STILL ALLOW FOR ADEQUATE BUFFER SPACE. THE MINIMUM LENGTH OF THE BUFFER SPACE BEFORE AN EXIT RAMP SHOULD BE ONE HALF THE LENGTH OF THE TRANSITION AREA. THE ENTRANCE RAMP SHOULD BE FOLLOWED BY THE ORIGINAL BUFFER SPACE LENGTH OF 800 FEET DESIRABLE PRIOR TO ANOTHER TRAFFIC CONTROL CHANGE SUCH AS A CROSSOVER MANEUVER.

THIS DETAIL IS FOR RIGHT LANE CLOSURES ONLY. IF LEFT LANE CLOSURE IS NEEDED WITH THE DLMS, TAKE A RIGHT LANE CLOSURE AND SHIFT TRAFFIC TO THE RIGHT LANE.

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

PORTABLE TRAFFIC SENSOR (PTS) MAY BE MOUNTED ON PCMS, FBS, ARROW BOARD OR OTHER TRAILER DEVICES.

- ① FURTHEST UPSTREAM FBS DOES NOT HAVE A PTS.
- ② PLACE FLASHING BEACON SIGNS EVERY ONE MILE BETWEEN PCMS #1 AND FBS #1. THE NUMBER OF FBS MAY BE MORE THAN SHOWN ON THIS DETAIL.
- ③ FOR THREE LANE CONFIGURATION, CHANGE PCMS #1 FRAME 2 MESSAGE TO "USE ALL LANES".
- ④ 5 DRUMS SPACED @ 10' INTERVALS AS NEEDED.
- ⑤ PCMS SHALL FOLLOW ARROW BOARD STANDARDS WHEN DISPLAYING FLASHING FOUR CORNER CAUTION MODE.
- ⑥ TO REMOVE OBSTRUCTION OF THE ARROW BOARD BY THE PCMS, OFFSET THE PCMS AS NEEDED FROM THE EDGE LINE
- ⑦ IF THERE IS AN APPROVED TEMPORARY SPEED DECLARATION, ADD WO-3-5 SIGNS 400 FEET AFTER THE W20-5G SIGNS AND ADD R2-1 SIGNS (48"x60") 700 FEET AFTER THE WO3-5 SIGNS. A SPEED LIMIT SIGN SHALL BE LOCATED 1500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. PLACE A SPEED LIMIT SIGN A MINIMUM OF EVERY 3 MILES. INCLUDE A "RESUME SPEED LIMIT" SIGN 200 FEET MINIMUM (800 FEET DESIRABLE) BEYOND THE G30-3A "END ROAD WORK" SIGN.
- ⑧ IF THERE ARE MORE THAN TWO LANES OR IF SPECIFIED IN THE PLANS, PLACE PCMS AND FBS ON BOTH SIDES OF THE ROADWAY.
- ⑨ DRUMS IN A CLOSED LANE 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.



GENERAL NOTES

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

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

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

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

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

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

CONSIDER ROADWAY GEOMETRICS WHEN LOCATING SIGNS AND ARROW BOARD SO THE DRIVER HAS A CLEAR VIEW OF THE ARROW BOARD AND LANE CLOSURE DRUMS.

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

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

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

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

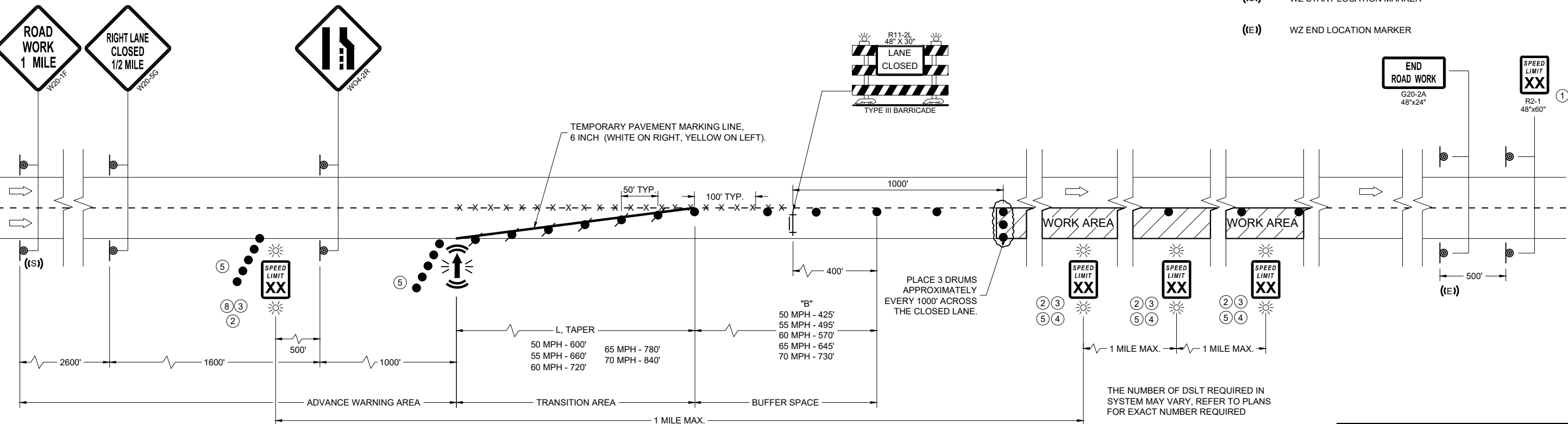
IF THE SPEED LIMIT WILL CHANGE BASED ON THE PRESENCE OF WORKERS, USE THE TAPER LENGTH THAT MATCHES THE HIGHER OF THE TWO SPEEDS FOR A CONTINUOUS LANE CLOSURE.

EXISTING POST MOUNTED SPEED LIMIT SIGNS SHOULD BE COVERED OR REMOVED.

- 1 POST NON-CONSTRUCTION SPEED LIMIT.
- 2 IF THE LANE CLOSURE MOVES DOWNSTREAM, LEAVE DSLT IN PLACE.
- 3 PLACE DSLT AT EXISTING POST MOUNTED SPEED LIMIT SIGN AFTER THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP. IF THERE IS NOT AN EXISTING SIGN, PLACE 1,500 FEET BEYOND THE END OF THE ACCELERATION LANE OF EACH ENTRANCE RAMP
- 4 FOR LEFT LANE CLOSURES, DSLT REMAINS ON RIGHT SHOULDER.
- 5 5 DRUMS SPACED @ 10' INTERVALS AS NEEDED.

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- DIGITAL SPEED LIMIT TRAILER (DSLT)
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER

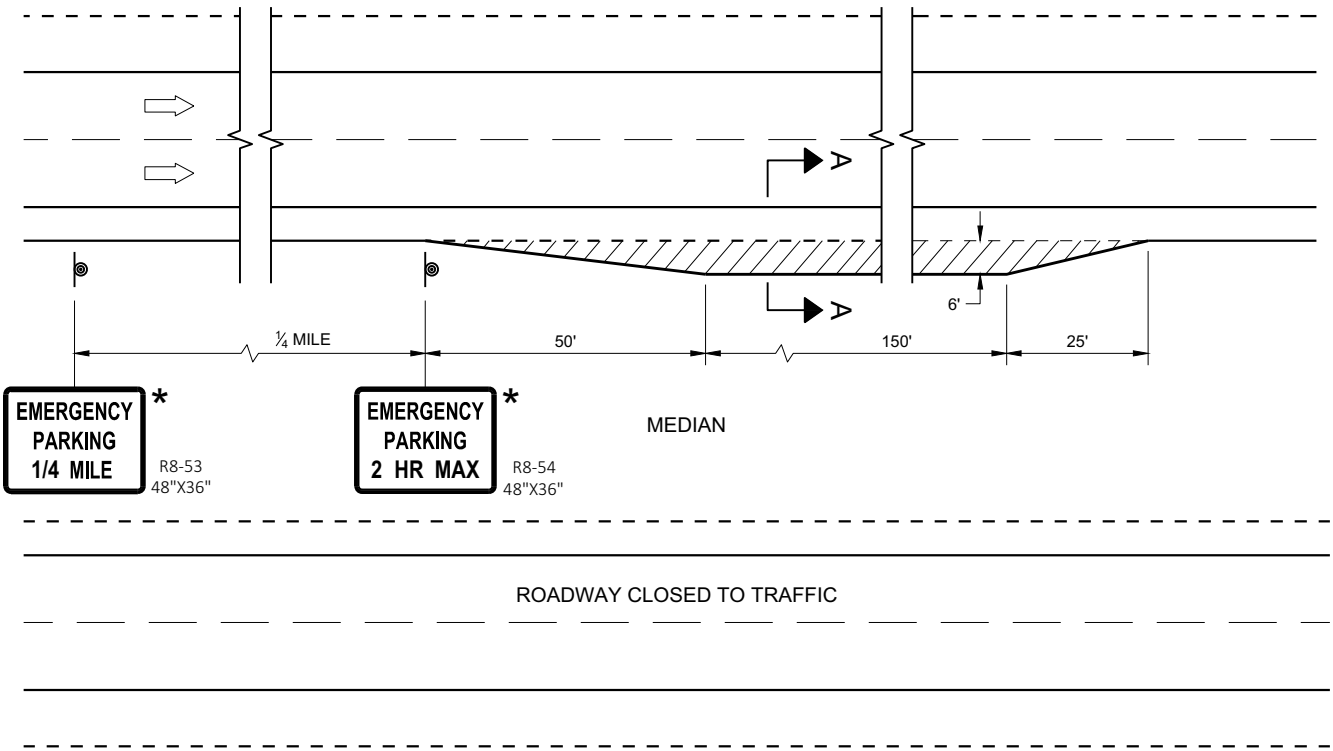


TRAFFIC CONTROL, LANE CLOSURE, DIGITAL SPEED REDUCTION SYSTEM

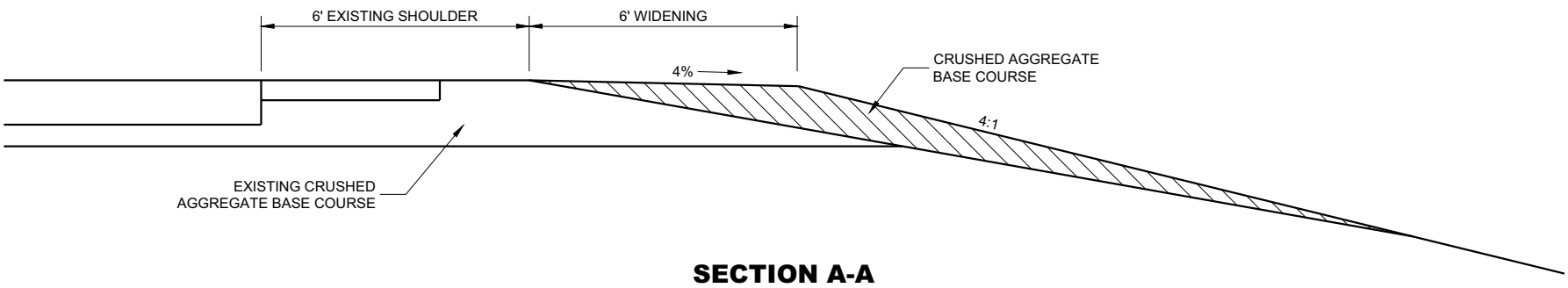
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2025 /S/ Andrew Heidtke
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FWHA



TEMPORARY EMERGENCY PULLOUTS FOR DIVIDED HIGHWAYS



GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIAL AND WORKMANSHIP NO SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS, APPLICABLE SPECIAL PROVISIONS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

TEMPORARY EMERGENCY PULLOUTS AND SIGNS SHALL BE REMOVED AND THE ROADWAY RESTORED TO ITS ORIGINAL CROSS SECTION AND CONDITION PRIOR TO REOPENING THE ROADWAY TO ONE WAY TRAFFIC.

* SIGNS TO BE BLACK LETTERS ON WHITE REFLECTIVE BACKGROUND

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC

TEMPORARY
EMERGENCY PULLOUTS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2013 /S/ Travis Feltes
DATE STATE TRAFFIC ENGINEER O 191
FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

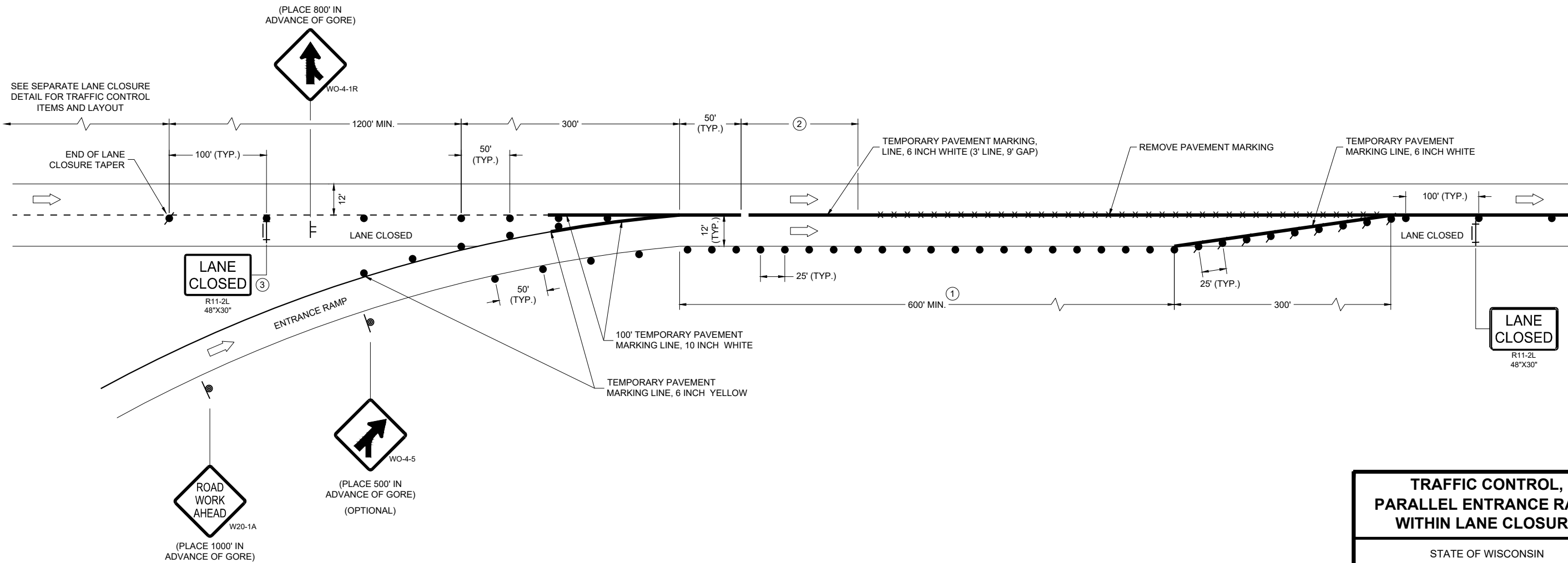
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

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

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

- ① EXTEND THE LENGTH OF THE MERGE ARE IF THE ENTERING (DESIGN) SPEED IS LESS THAN 50MPH OR IF THE MAINLINE GRADE EXCEEDS ±2.2%.
- ② END TEMPORARY PAVEMENT MARKING LINE AT 1/2 THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.
- ③ IF LOCATED AFTER INITIAL LANE CLOSURE BARRICADE AND "LANE CLOSED" SIGN, USE 3 DRUMS IN PLACE OF BARRICADE AND SIGN.



TRAFFIC CONTROL,
PARALLEL ENTRANCE RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

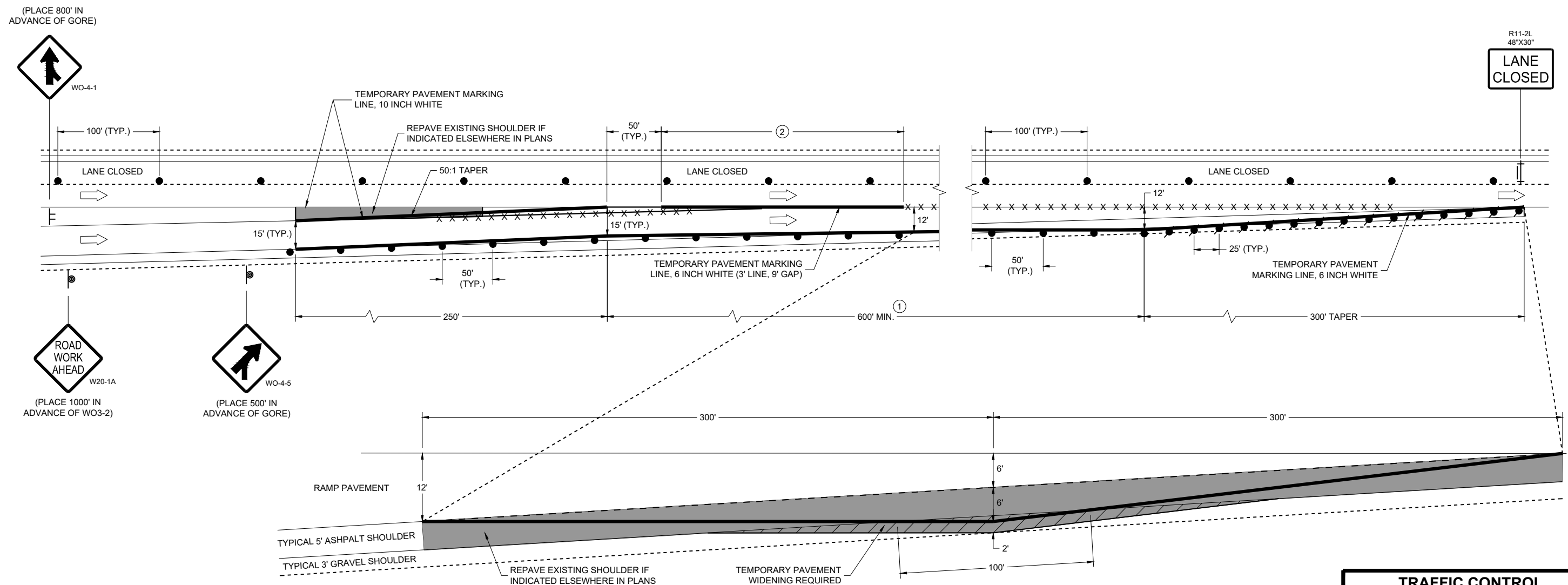
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS /OR DRUMS IN THE GORE BETWEEN THE EXIT RAMP AND MAINLINE TRAFFIC.

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

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

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

- ① EXTEND THE LENGTH OF THE MERGE AREA IF THE ENTERING (DESIGN) SPEED OF THE RAMP IS LESS THAN 50 MPH OR IF THE MAINLINE GRADE EXCEEDS $\pm 2.2\%$.
- ② END TEMPORARY PAVEMENT MARKING LINE AT 1/2 THE LENGTH OF FULL WIDTH OF THE ACCELERATION LANE.



TEMPORARY PAVEMENT DETAIL

(EXISTING RAMP DIMENSIONS MAY VARY,
ADJUST TEMPORARY PAVEMENT ACCORDINGLY)

**TRAFFIC CONTROL,
ENTRANCE RAMP
WITHIN LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA 102

LEGEND

- SIGN ON PERMANENT SUPPORT
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- TYPE III BARRICADE WITH ATTACHED SIGN
- FLAGS, 16" X 16" MIN., ORANGE
- DIRECTION OF TRAFFIC

GENERAL NOTES

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

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

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

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

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

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

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

SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

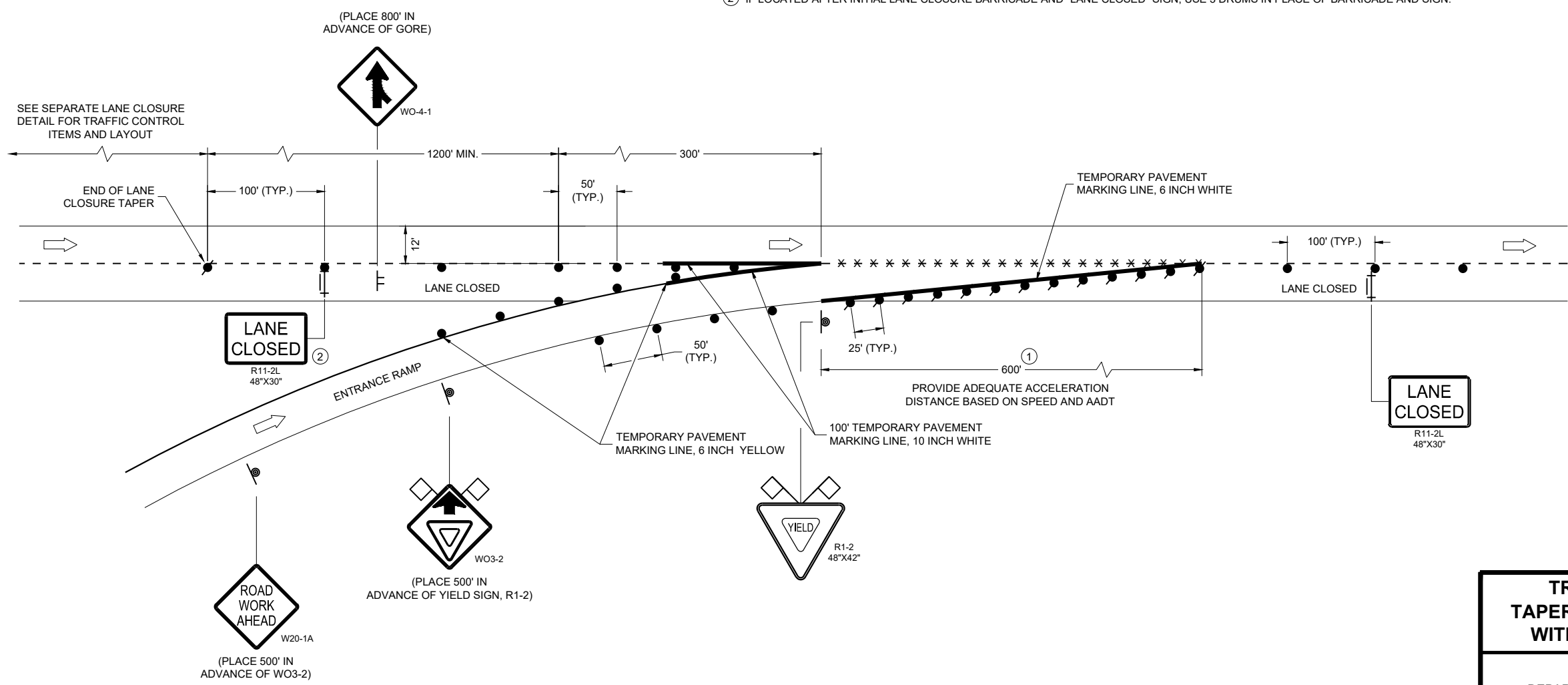
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE ENTRANCE RAMP AND MAINLINE TRAFFIC.

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

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

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

- ① CONSULT WITH REGIONAL WORK ZONE ENGINEER IF NEED TO REDUCE LENGTH EXISTS.
- ② IF LOCATED AFTER INITIAL LANE CLOSURE BARRICADE AND "LANE CLOSED" SIGN, USE 3 DRUMS IN PLACE OF BARRICADE AND SIGN.



TRAFFIC CONTROL,
TAPERED ENTRANCE RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 /S/ Andrew Heidtke
DATE <position>

FHWA

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  SIGN ON TEMPORARY SUPPORT
-  TRAFFIC CONTROL DRUM
-  TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  FLAGS, 16" X 16" MIN., ORANGE
-  DIRECTION OF TRAFFIC

GENERAL NOTES

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

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

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

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

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

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

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

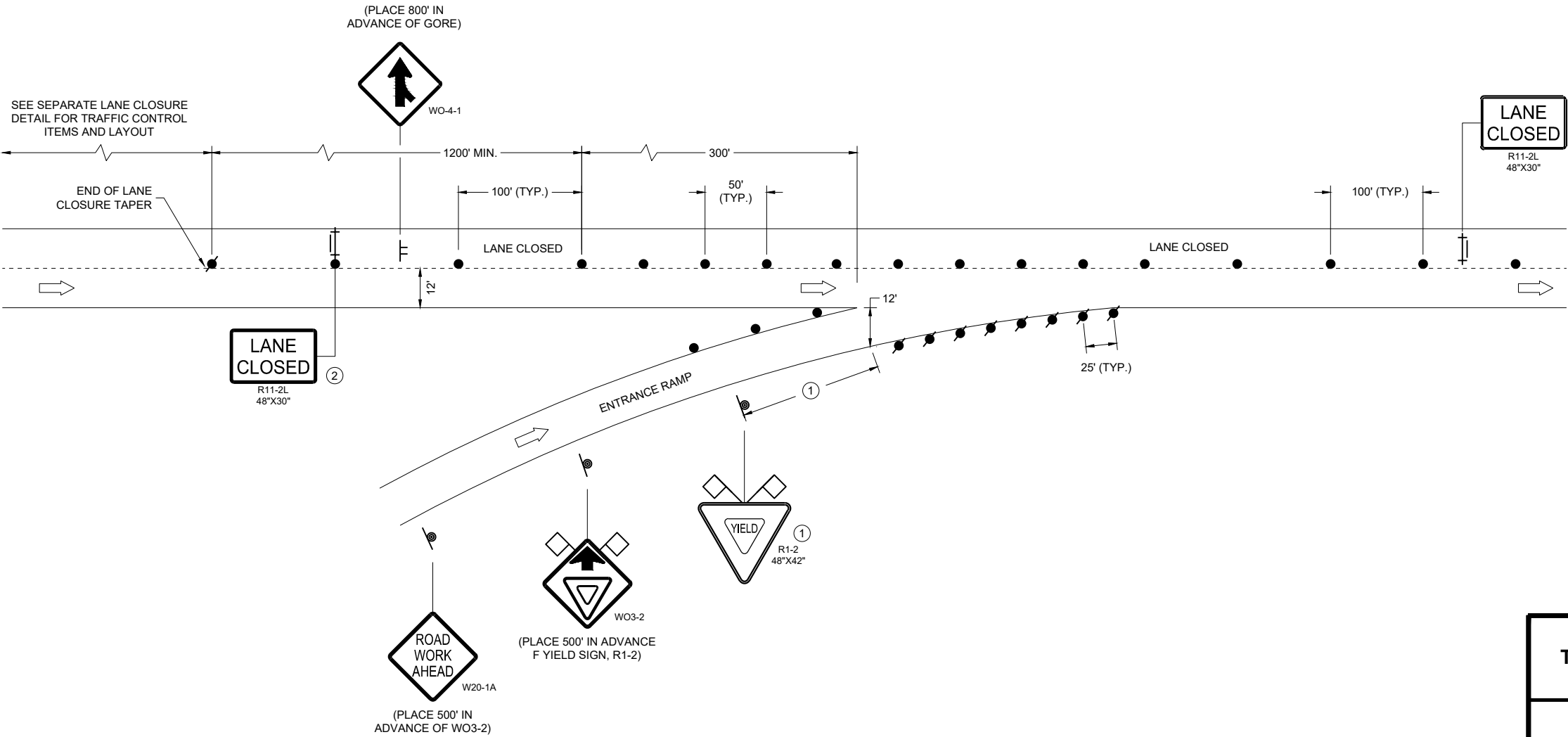
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONSECUTIVE DAYS AND NIGHTS OR THAT WILL BE PLACED IN A CLOSED LANE, MAY BE MOUNTED ON PORTABLE SUPPORTS. USE SUPPORTS THAT PROVIDE A MINIMUM OF 5 FEET FROM THE BOTTOM OF THE SIGN TO THE PAVEMENT.

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

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

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

- 1 PLACE YIELD SIGN TO PROVIDE ADEQUATE SIGHT DISTANCE AND ACCELERATION DISTANCE.
- 2 IF LOCATED AFTER INITIAL LANE CLOSURE BARRICADE AND "LANE CLOSED" SIGN, USE 3 DRUMS IN PLACE OF BARRICADE AND SIGN.



TRAFFIC CONTROL,
TAPERED ENTRANCE RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

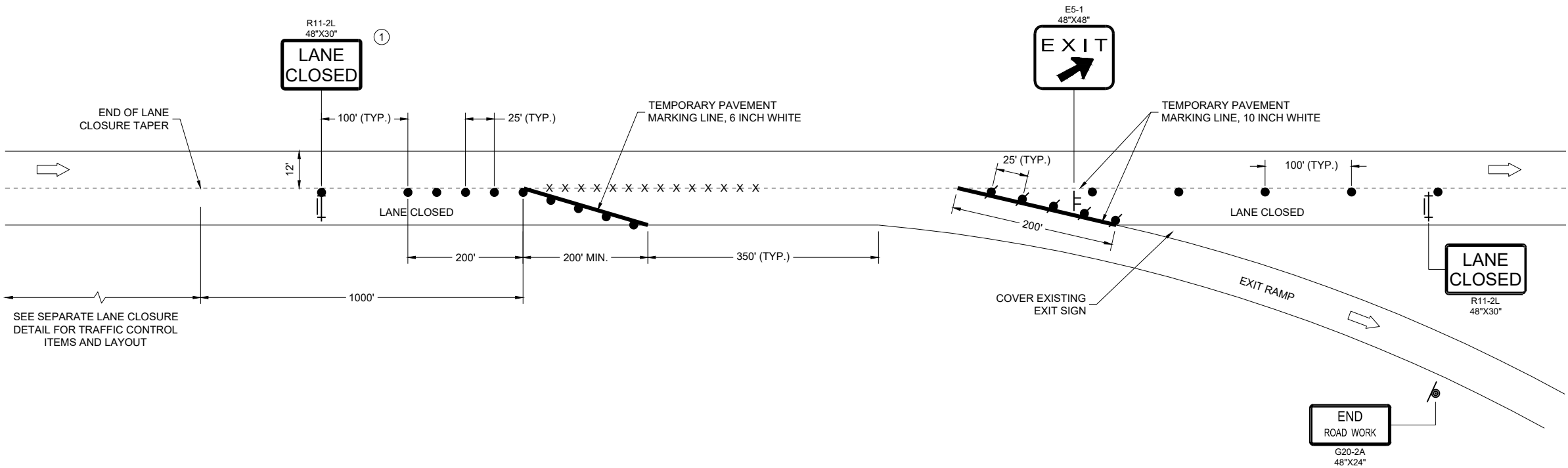
IF INDICATED IN MISCELLANEOUS QUANTITIES, SUBSTITUTE FLEXIBLE TUBULAR MARKERS FOR DRUMS IN THE GORE BETWEEN THE EXIT RAMP AND MAINLINE TRAFFIC.

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

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

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

① IF LOCATED AFTER INITIAL LANE CLOSURE BARRICADE AND "LANE CLOSED" SIGN, USE 3 DRUMS IN PLACE OF BARRICADE AND SIGN.

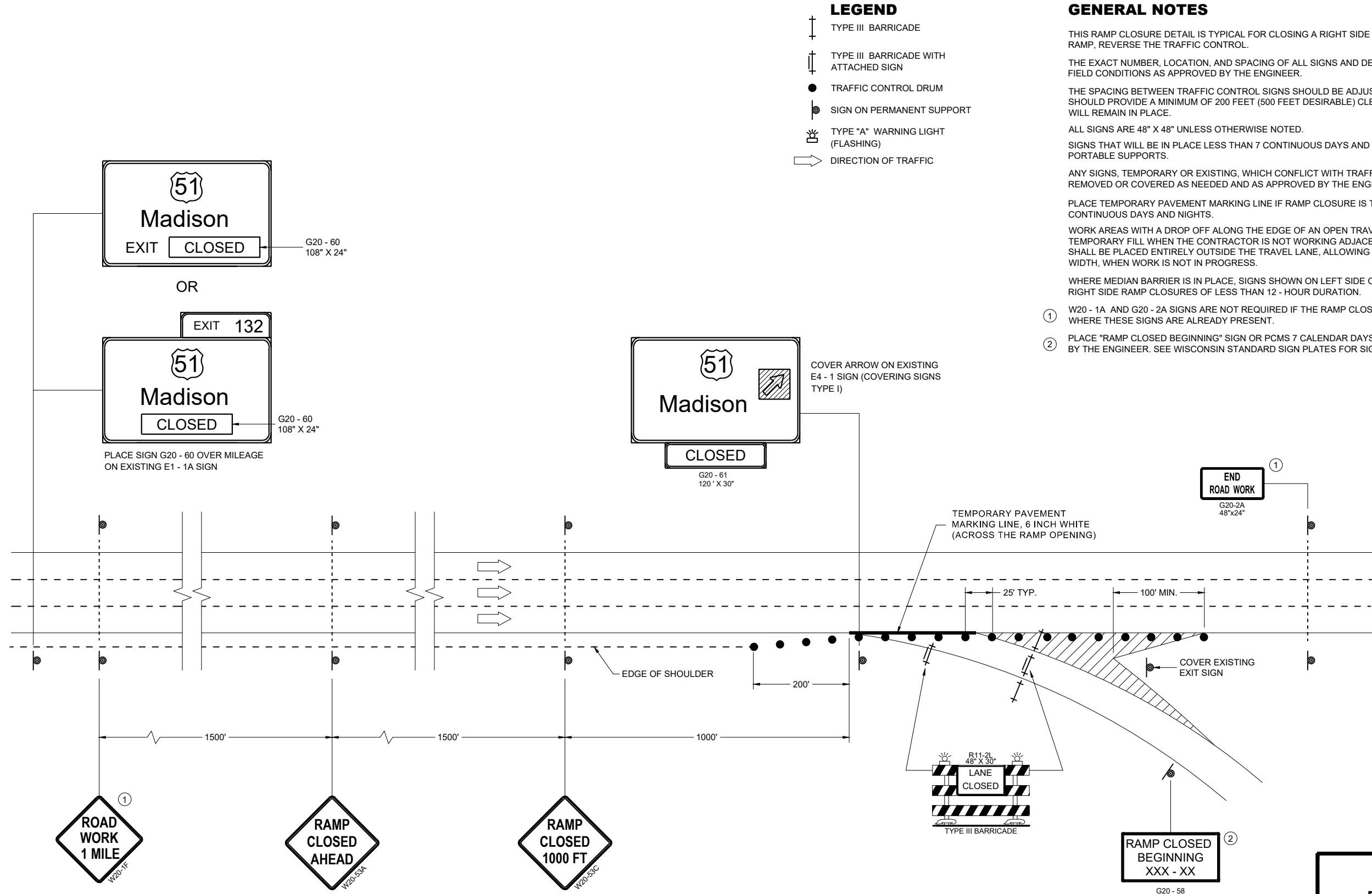


TRAFFIC CONTROL,
PARALLEL EXIT RAMP
WITHIN LANE CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER

FHWA



LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

PLACE TEMPORARY PAVEMENT MARKING LINE IF RAMP CLOSURE IS TO BE IN PLACE 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

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

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

② PLACE "RAMP CLOSED BEGINNING" SIGN OR PCMS 7 CALENDAR DAYS PRIOR TO CLOSURE OR AS DIRECTED BY THE ENGINEER. SEE WISCONSIN STANDARD SIGN PLATES FOR SIGN LAYOUT.

**RAMP CLOSED BEGINNING
XXX - XX**

G20 - 58
OR

PCMS MESSAGING

FRAME 1	FRAME 2
RAMP TO CLOSE	XXXDAY XX XX XX

TRAFFIC CONTROL, EXIT RAMP CLOSURE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2025 DATE	/S/ Andrew Heidtke <position>

FHWA

	SIGN ON PERMANENT SUPPORT
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
	TYPE III BARRICADE WITH ATTACHED SIGN
	TYPE "A" WARNING LIGHT (FLASHING)
	REMOVING PAVEMENT MARKINGS
	DIRECTION OF TRAFFIC
	WORK AREA
	CONNECTED ARROW BOARD
	WZ START LOCATION MARKER
	WZ END LOCATION MARKER

FOR WORK ON ROADWAYS WITH SPEEDS GREATER THAN 45MPH, USE SDD 15D12.

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

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

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"X 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.

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

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

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

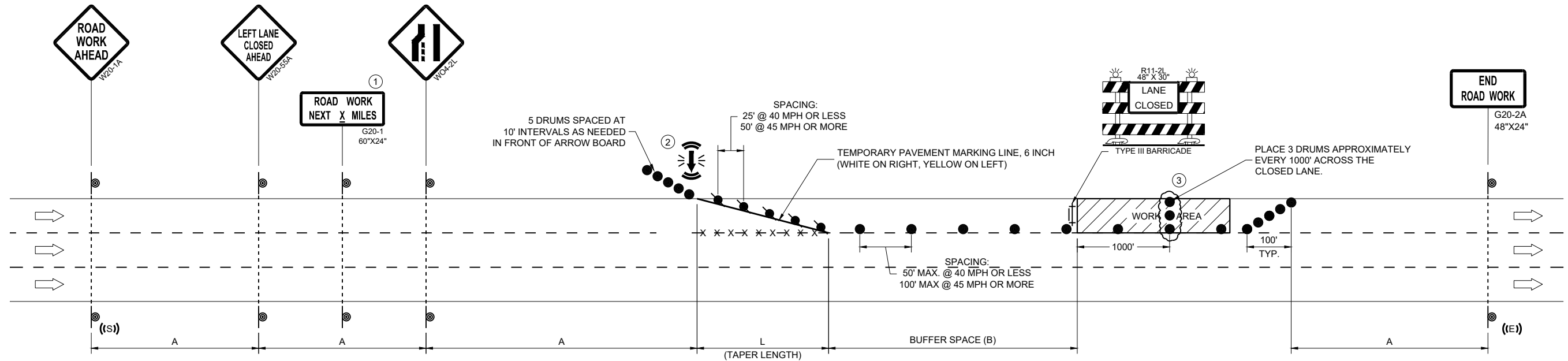
THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES SHALL BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.

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

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

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE IN

- ① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ② WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO PLACE THE ARROW BOARD AS SHOWN, PLACE THE ARROW BOARD AT THE END OF THE TAPER.
- ③ DRUMS IN A CLOSED LANE 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.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	155'
30	200'	180'	200'
35	350'	245'	250'
40	350'	320'	305'
45	500'	540'	360'

APPROVED	
<u>November 2025</u>	<u>/S/ Andrew Heidtke</u>
DATE	WORK ZONE ENGINEER

	SIGN ON PERMANENT SUPPORT
	TRAFFIC CONTROL DRUM
	TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
	TYPE III BARRICADE WITH ATTACHED SIGN
	TYPE "A" WARNING LIGHT (FLASHING)
	REMOVING PAVEMENT MARKINGS
	DIRECTION OF TRAFFIC
	WORK AREA
	CONNECTED ARROW BOARD
	WZ START LOCATION MARKER
	WZ END LOCATION MARKER

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

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"X 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.

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

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

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

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

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

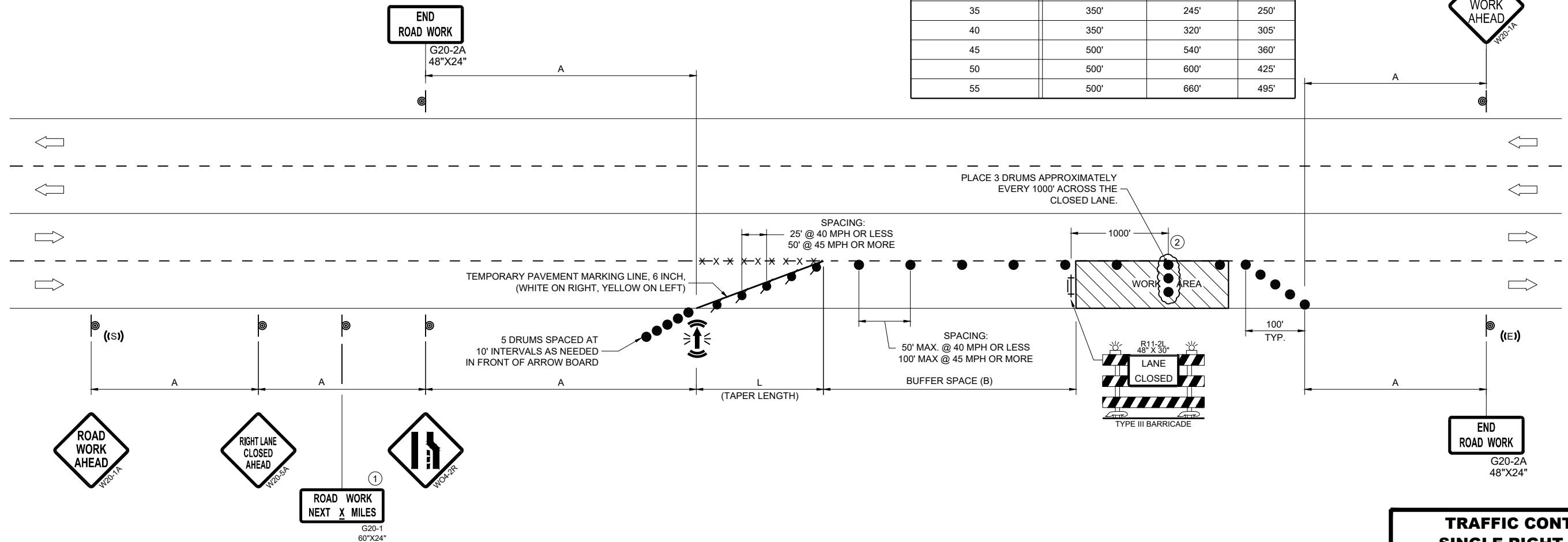
W20-1A, G20-1 AND G20-2A SIGNS ARE NOT REQUIRED IF THE LANE CLOSURE IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINE IF LANE CLOSURE IS TO BE

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

- ① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ② DRUMS IN A CLOSED LANE 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.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	155'
30	200'	180'	200'
35	350'	245'	250'
40	350'	320'	305'
45	500'	540'	360'
50	500'	600'	425'
55	500'	660'	495'



**TRAFFIC CONTROL,
SINGLE RIGHT LANE
CLOSURE, UNDIVIDED
NON-FREEWAY/EXPRESSWAY**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- REMOVING PAVEMENT MARKINGS
- DIRECTION OF TRAFFIC
- WORK AREA
- CONNECTED ARROW BOARD
- WZ START LOCATION MARKER
- WZ END LOCATION MARKER

GENERAL NOTES

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

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS IN URBAN AREAS, 36"X 36" SIGNS MAY BE USED IF APPROVED BY REGIONAL TRAFFIC UNIT.

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

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

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

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

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

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

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

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

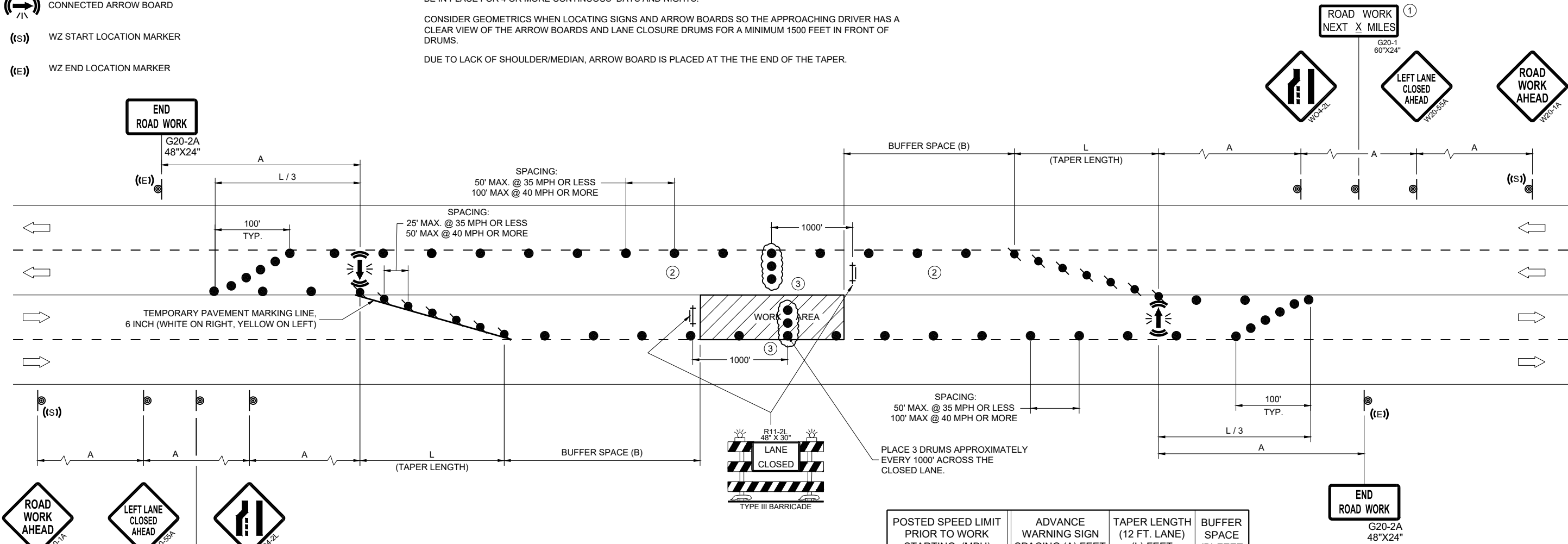
DUE TO LACK OF SHOULDER/MEDIAN, ARROW BOARD IS PLACED AT THE THE END OF THE TAPER.

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

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

- ① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ② LANE MAY BE OPENED WHEN WORKERS ARE NOT PRESENT IN THE WORK AREA.

DRUMS IN A CLOSED LANE 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.



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	TAPER LENGTH (12 FT. LANE) (L) FEET	BUFFER SPACE (B) FEET
25	200'	125'	155'
30	200'	180'	200'
35	350'	245'	250'
40	350'	320'	305'
45	500'	540'	360'
50	500'	600'	425'
55	500'	660'	495'

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  TRAFFIC CONTROL DRUM
-  DIRECTION OF TRAFFIC
-  CONNECTED ARROW BOARD
-  WORK AREA
-  WZ START LOCATION MARKER
-  WZ END LOCATION MARKER

GENERAL NOTES

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

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

ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

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

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

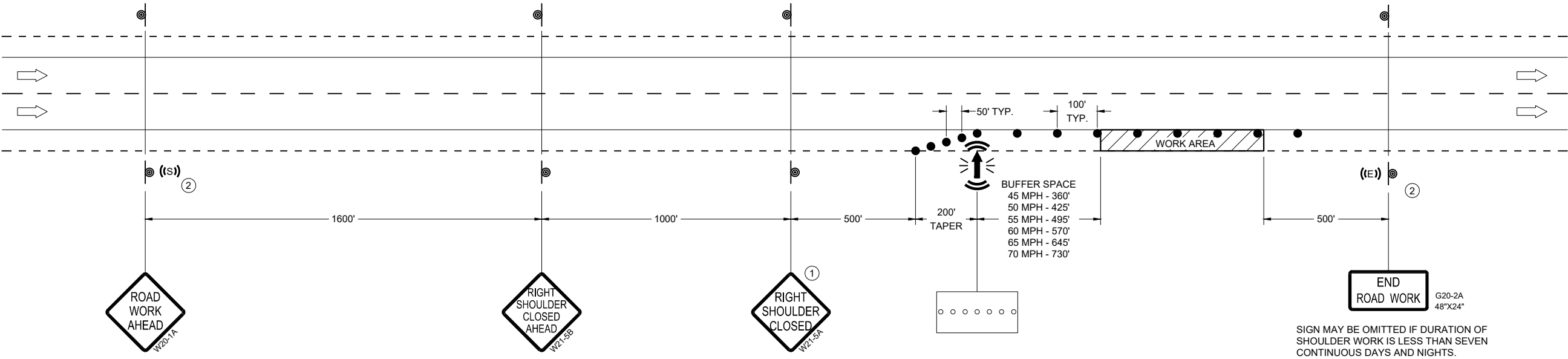
WHEN A RAMP OR SIDE ROAD INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

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

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

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

- ① FOR SHORT DURATION SHOULDER WORK OF LESS THAN ONE HOUR THE W21-5A SIGN MAY BE OMITTED.
- ② IF ALREADY PRESENT WITHIN PROJECT , DO NOT INCLUDE ADDITIONAL DEVICE.



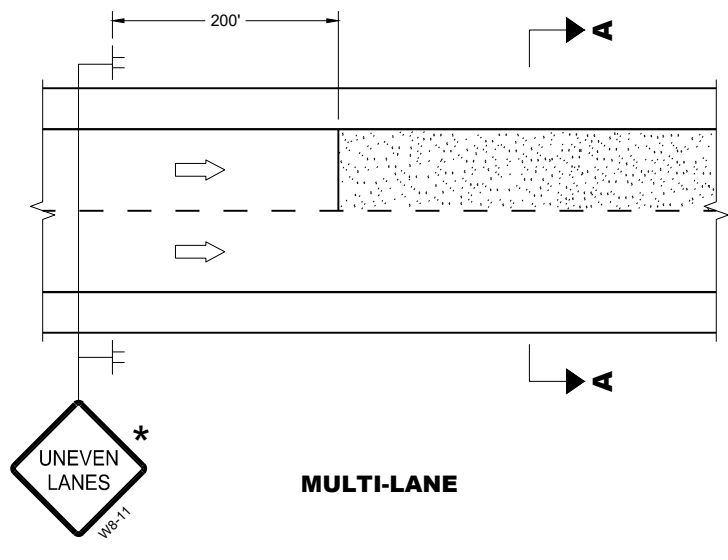
**TRAFFIC CONTROL,
SHOULDER CLOSURE ON
DIVIDED ROADWAY, SPEEDS
GREATER THAN 40 MPH**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

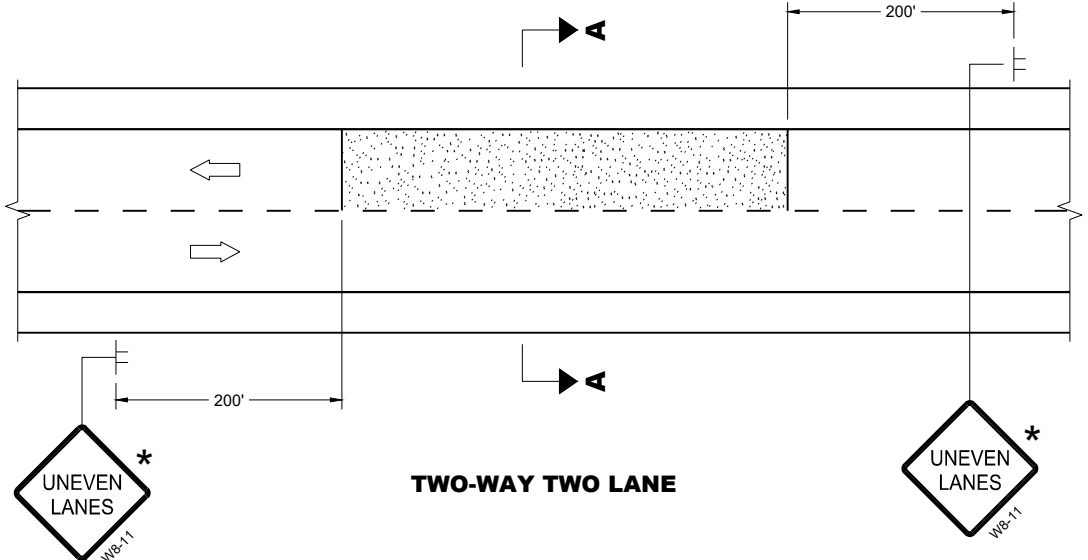
APPROVED
Noveber 2025
DATE

/S/ Andrew Heidtke
STATEWIDE WORK ZONE TRAFFIC
SAFETY ENGINEER

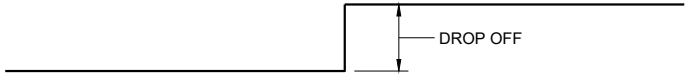
FHWA



MULTI-LANE

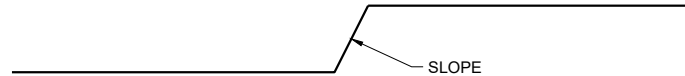


TWO-WAY TWO LANE

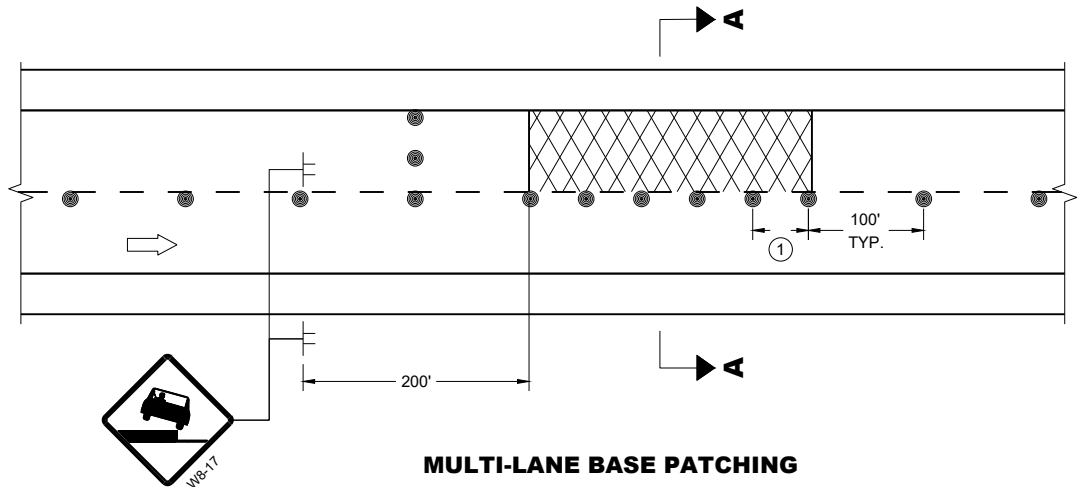


SECTION A - A

OR



SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

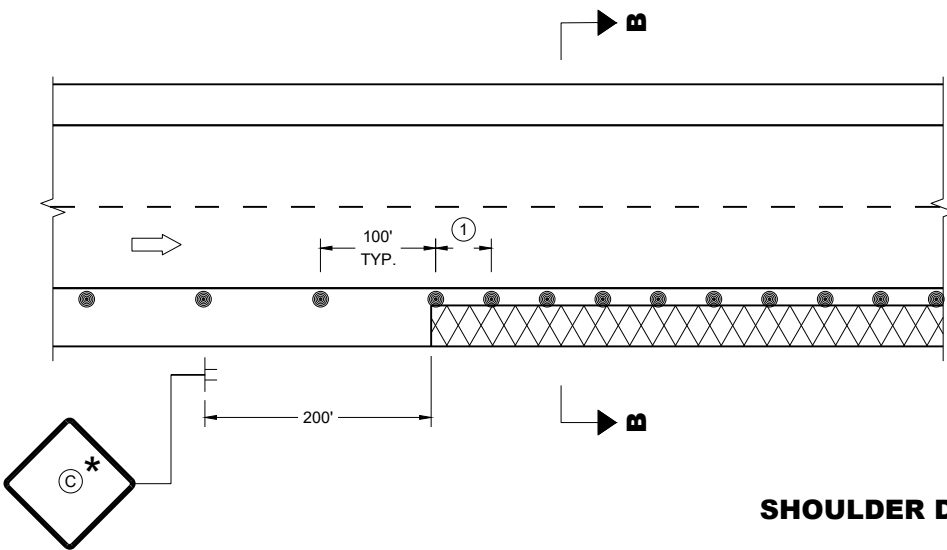
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

★ IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.

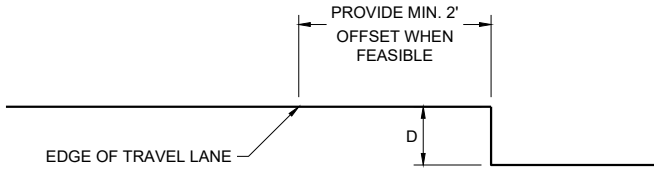
① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE



SHOULDER DROP-OFFS



SECTION B - B

D	SIGN ③
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP - OFF WB-9A
PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT	

TRAFFIC CONTROL,
DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
February 2025
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER

FHWA

LEGEND

- TYPE III BARRICADE WITH ATTACHED SIGN
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE "C" STEADY BURN LIGHT
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA
- REMOVING PAVEMENT MARKING (SEE GENERAL NOTES)
- CONCRETE BARRIER TEMPORARY PRECAST

GENERAL NOTES

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

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

THIS LANE CLOSURE IS TYPICAL FOR LANE SHIFT LEFT - REVERSE FOR SHIFTING RIGHT.

ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

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

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

FOR A LANE CLOSURE THAT IS IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS, THE ADVANCED WARNING SIGNS MAY BE MOUNTED ON PORTABLE SUPPORTS.

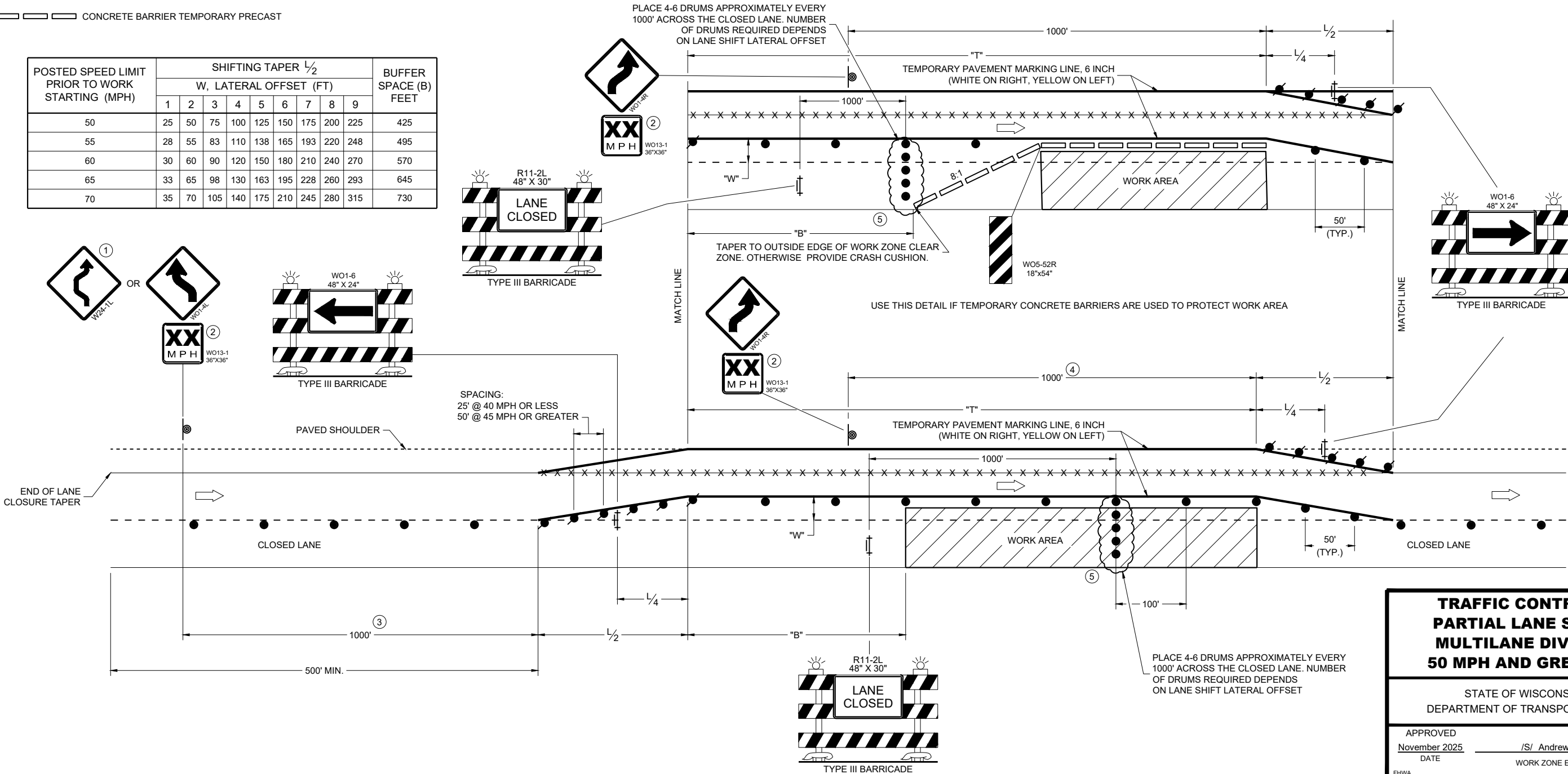
REMOVE PAVEMENT MARKINGS AND PLACE TEMPORARY PAVEMENT MARKING LINES IF LANE CLOSURE IS TO BE IN PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

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

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

- USE ONLY WHEN T<600', OMIT WO1-4R.
- IF NEEDED, USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.
- IF THE BEGINNING OF LANE SHIFT TAPER IS 1200 FEET OR LESS FROM END OF LANE CLOSURE TAPER, PLACE THE WO1-4L SIGN 200 FEET AFTER THE END OF THE LANE CLOSURE TAPER.
- IF THE BEGINNING OF THE SECOND LANE SHIFT TAPER IS 1200 FEET OR LESS FROM END OF THE FIRST LANE CLOSURE TAPER, PLACE THE WO1-4L SIGN 200 FEET AFTER THE END OF THE FIRST LANE CLOSURE TAPER.
- DRUMS IN A CLOSED LANE 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.



**TRAFFIC CONTROL,
PARTIAL LANE SHIFT
MULTILANE DIVIDED
50 MPH AND GREATER**

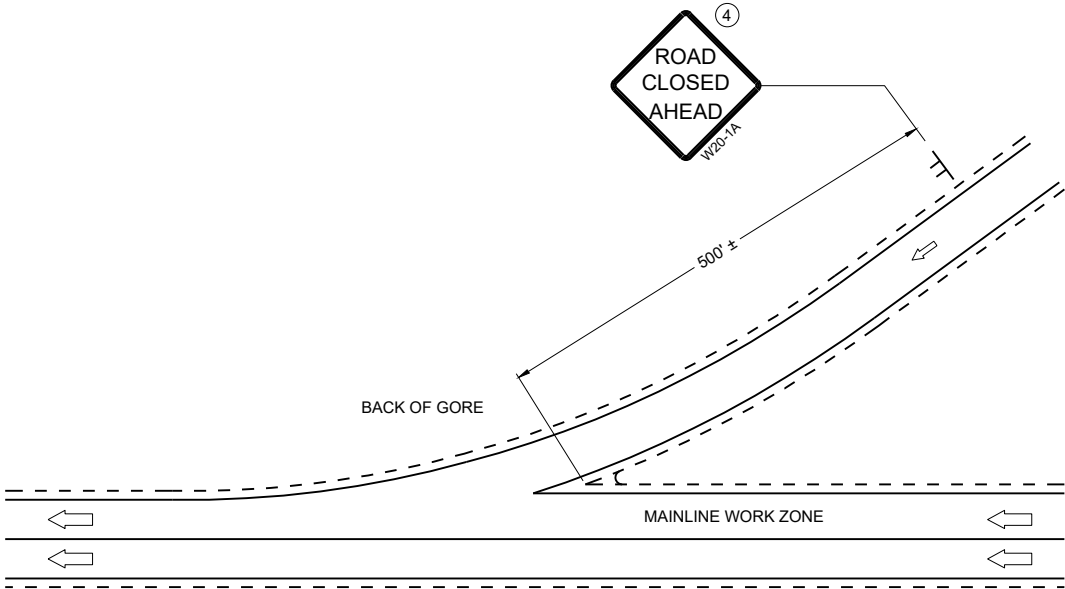
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA 203

LEGEND

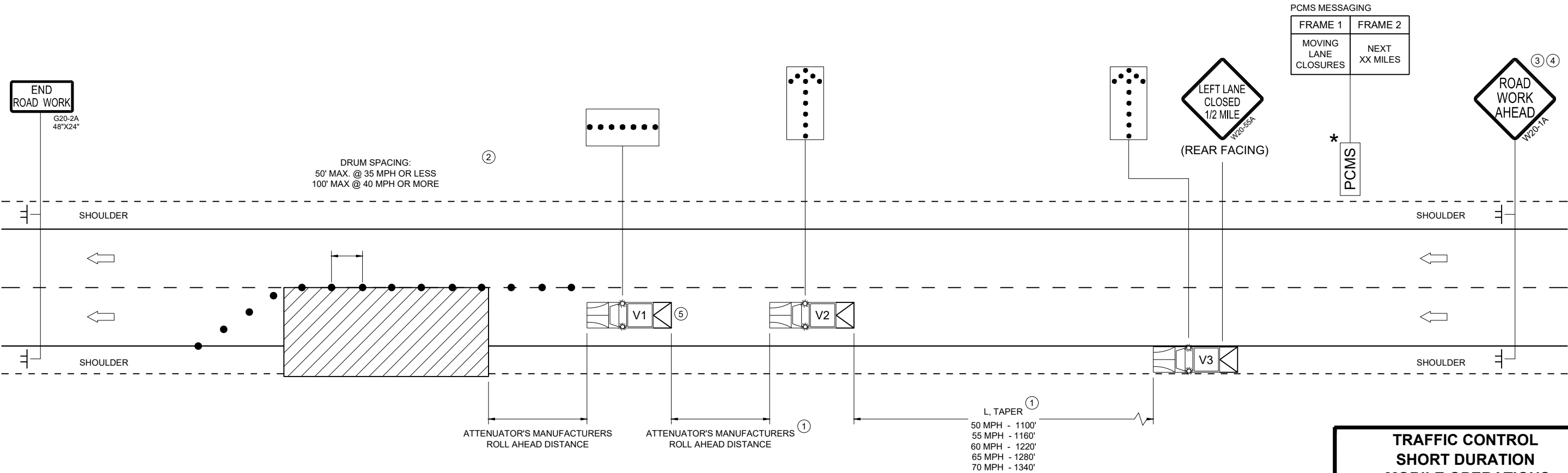
- V1 SHADOW VEHICLE 1
- V2 SHADOW VEHICLE 2
- V3 ADVANCE WARNING TRUCK
- TRAFFIC CONTROL DRUM
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  FLASHING ARROW PANEL (MERGE)
-  FLASHING ARROW PANEL (CAUTION)
-  PORTABLE CHANGEABLE MESSAGE SIGN
-  WORK AREA



GENERAL NOTES

- SHORT DURATION IS WORK THAT OCCUPIES A LOCATION UP TO 1 HOUR.
- MOBILE IS WORK THAT MOVES INTERMITTENTLY OR CONTINUOUSLY.
- ALL VEHICLES SHALL BE EQUIPPED WITH TWO 360 DEGREE HIGH INTENSITY YELLOW FLASHING LIGHTS OR STROBE LIGHTS AND OPERATED WITH HEADLIGHTS TURNED ON.
- ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL. SIGNS PLACED ON VEHICLES MUST NOT OBSCURE THE ARROW PANEL.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE SPECIFIED.
- WHEN WORK ACTIVITY BLOCKS THE RIGHT LANE, REVERSE TRAFFIC CONTROL.
- WHEN A RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, PROVIDE ADDITIONAL TRAFFIC CONTROLS AS SPECIFIED IN THE CONTRACT OR AS APPROVED BY THE ENGINEER.
- USE DOUBLE ARROWS WHEN CONVOY IS IN CENTER LANE ONLY.
- WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC
- WORKERS SHALL NOT PERFORM WORK FROM ANY SHADOW OR PROTECTION VEHICLES.

- ① DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO 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 AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- ② DRUMS ARE TO BE USED FOR BRIDGE DECK SEALING AND OTHER PROJECTS THAT REQUIRE DELINEATION.
- ③ WITHIN 5 MILES, RELOCATE SIGNS AS WORK PROGRESSES AND NECESSARY OR AS DIRECTED BY THE ENGINEER.
- ④ SIGN NOT REQUIRED IF MOVING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ⑤ SHADOW VEHICLE 1 (V1) IS OPTIONAL
- * PCMS OPTIONAL



TRAFFIC CONTROL
SHORT DURATION
MOBILE OPERATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

FHWA

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.

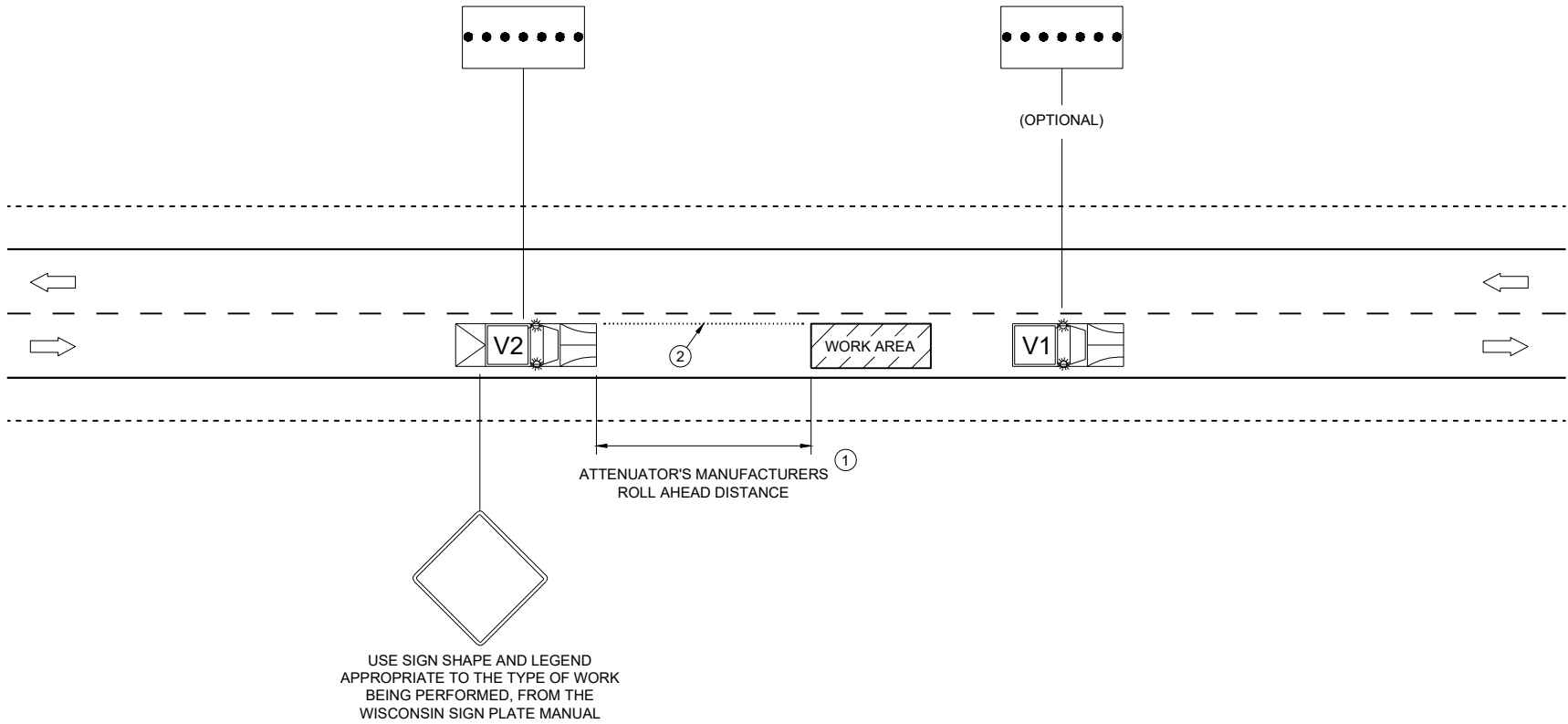
USE AN ATTENUATOR ON THE REARMOST VEHICLE THAT BLOCKS ALL OR PART OF THE TRAFFIC LANE.

WORKERS SHALL NOT PERFORM WORK FROM ANY SHADOW OR PROTECTION VEHICLES.

- 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

November 2025

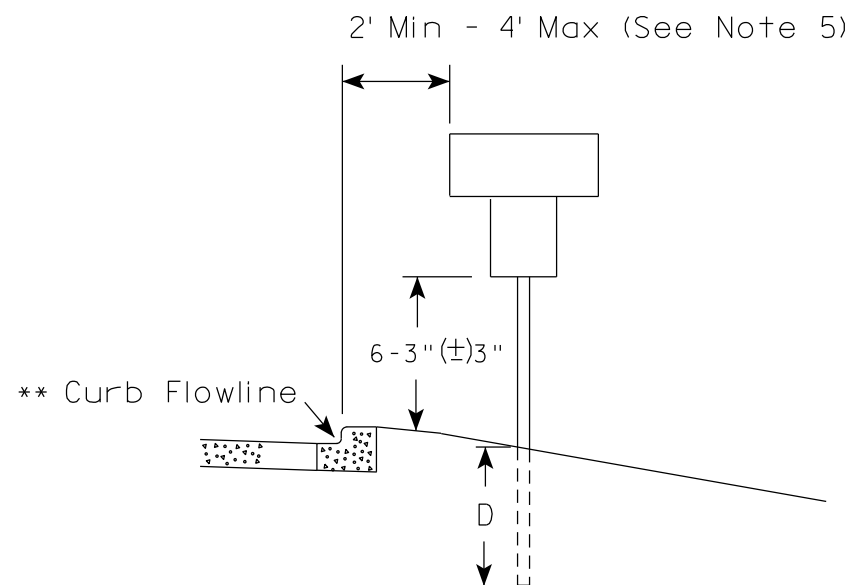
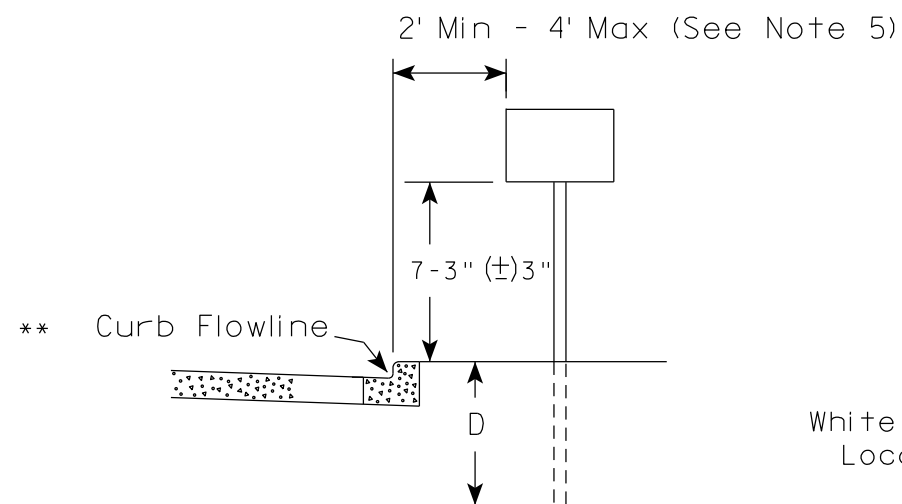
DATE

/S/ Andrew Heidtke

STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

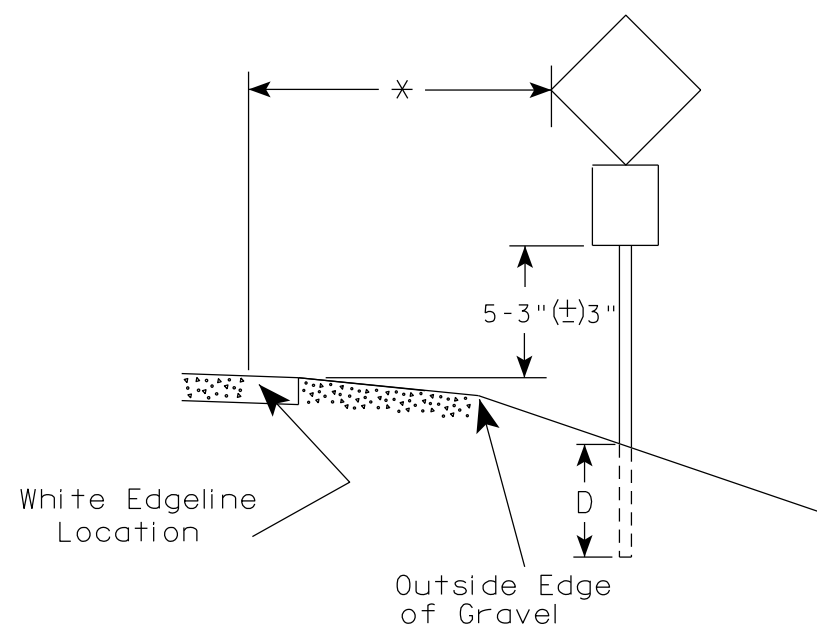
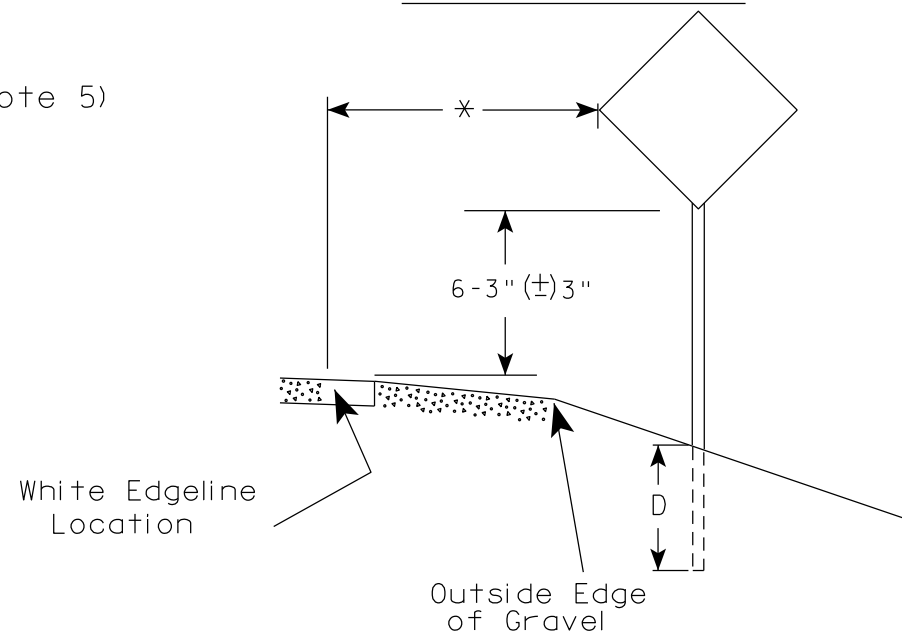
FHWA

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.

POST EMBEDMENT DEPTH

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

GENERAL NOTES

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 12/6/23

PLATE NO. A4-3.23

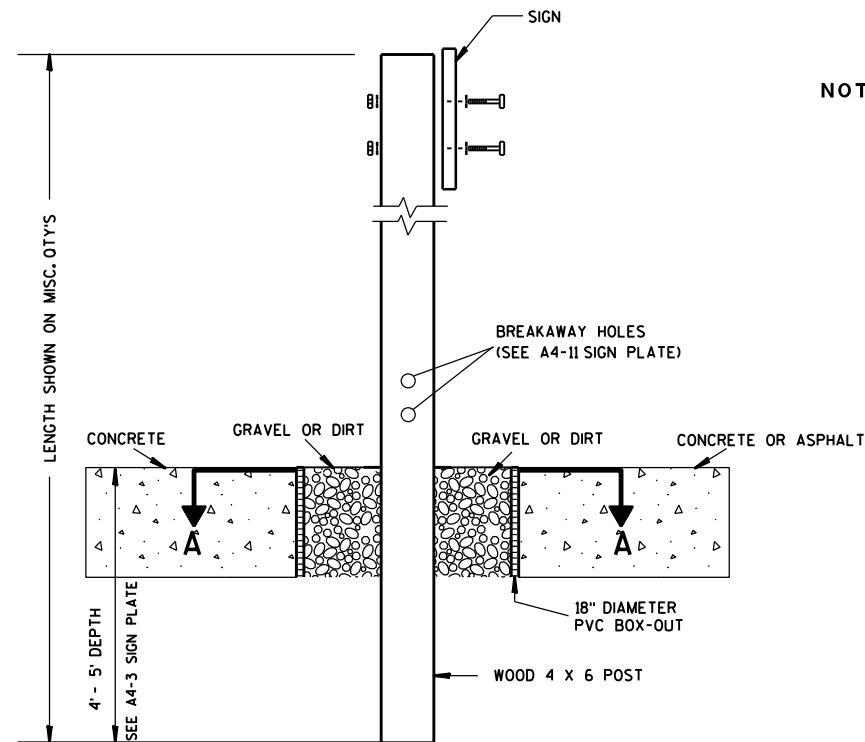
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 206

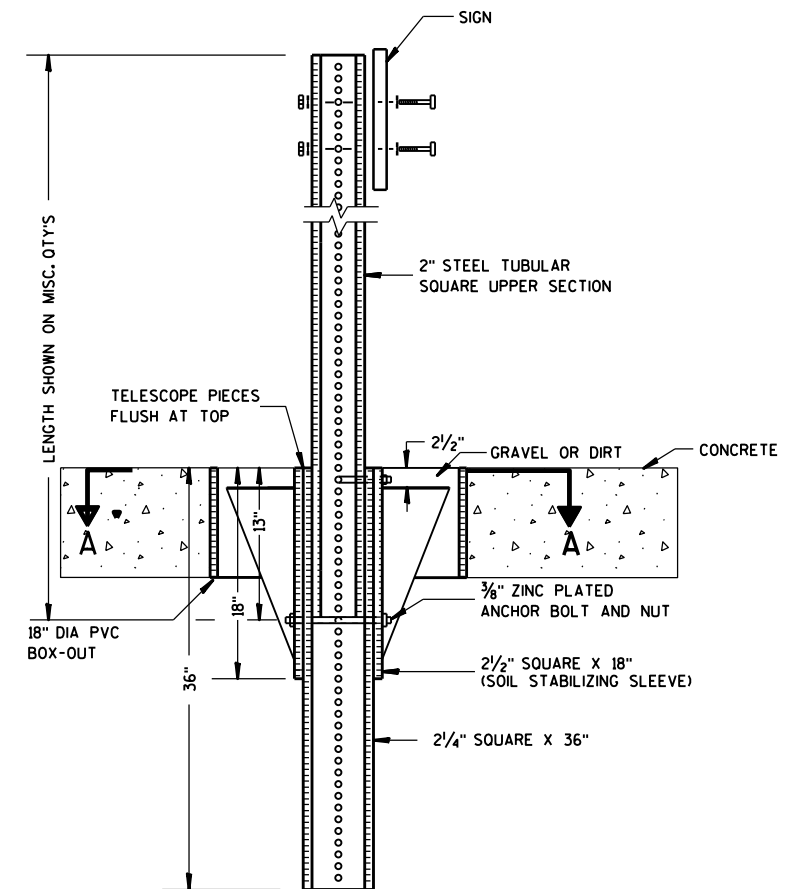
E



ELEVATION VIEW

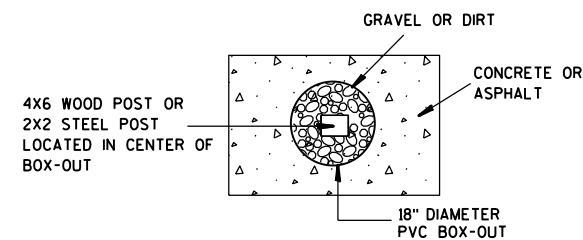
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 207 A4-3B.1

PROJECT NO:

HWY:

COUNTY:

SHEET NO:

E

GENERAL NOTES

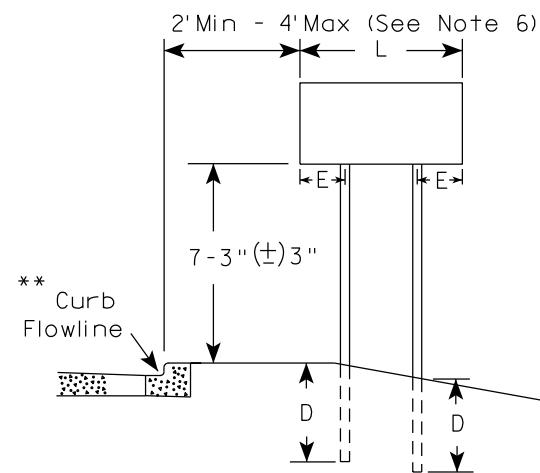
1. For 3 or 4 post installations, individual post spacing shall be greater than 3'-6".
2. See tables below for required number of posts.
3. For expressways and freeways, mounting height is 7'-3" ($\pm$ 3") or 6'-3" ($\pm$ 3") depending upon existence of sub-sign.
4. The ($\pm$) tolerance for mounting height is 3 inches.
5. J-Assemblies are considered to be one sign for mounting height.
6. Offset distance shall be consistent with existing signs or consistent throughout length of project.
7. Folding signs shall be mounted at a height of 5'-3" ($\pm$ 3") or as directed by the engineer.
8. The Double Arrow sign (W12-1) shall be mounted at a height of 2'-3" ($\pm$ 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" ($\pm$ 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.

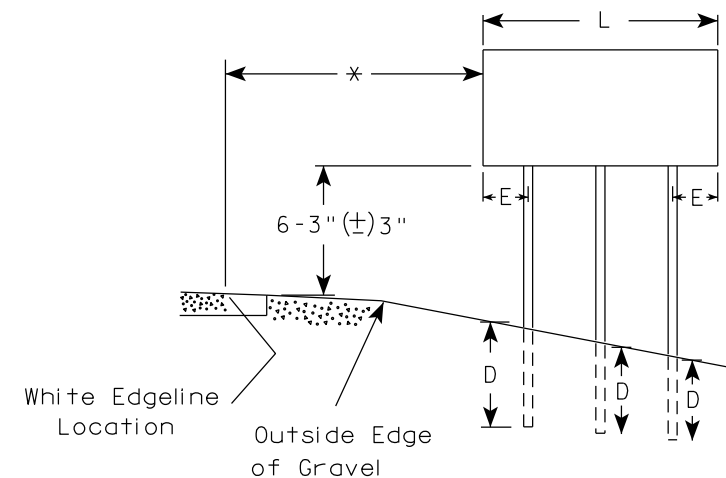
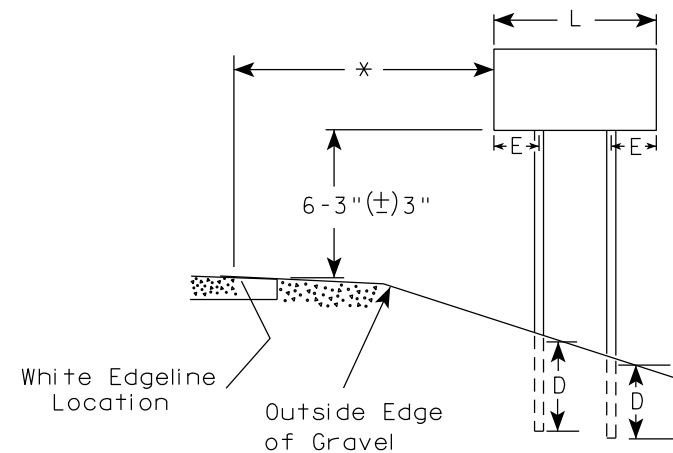
** The existence of curb and gutter does not in itself mandate the vertical clearance illustrated. That height is typically measured where there is sidewalk adjacent to the roadway or parking is permitted. In the absence of sidewalk vertical clearance is measured from the top of the curb. Offset of signs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

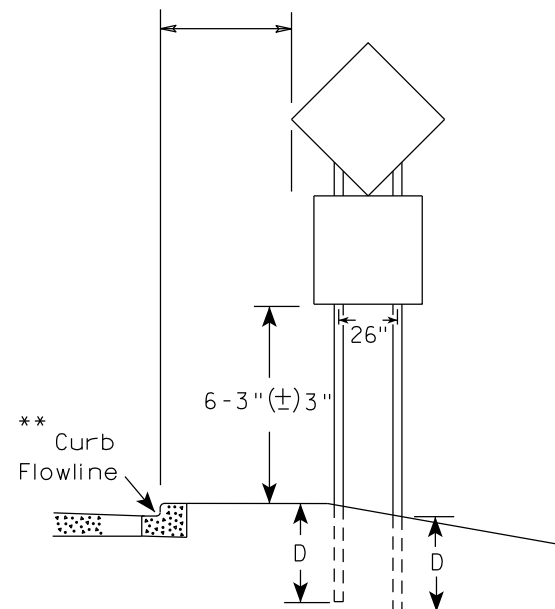
URBAN AREA



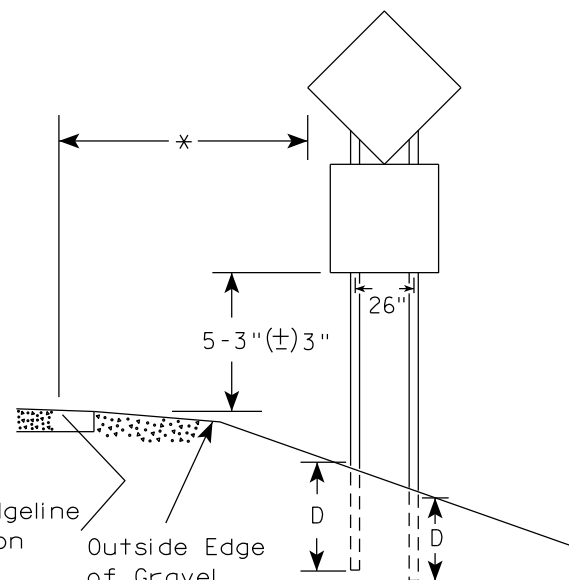
RURAL AREA (See Note 3)



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

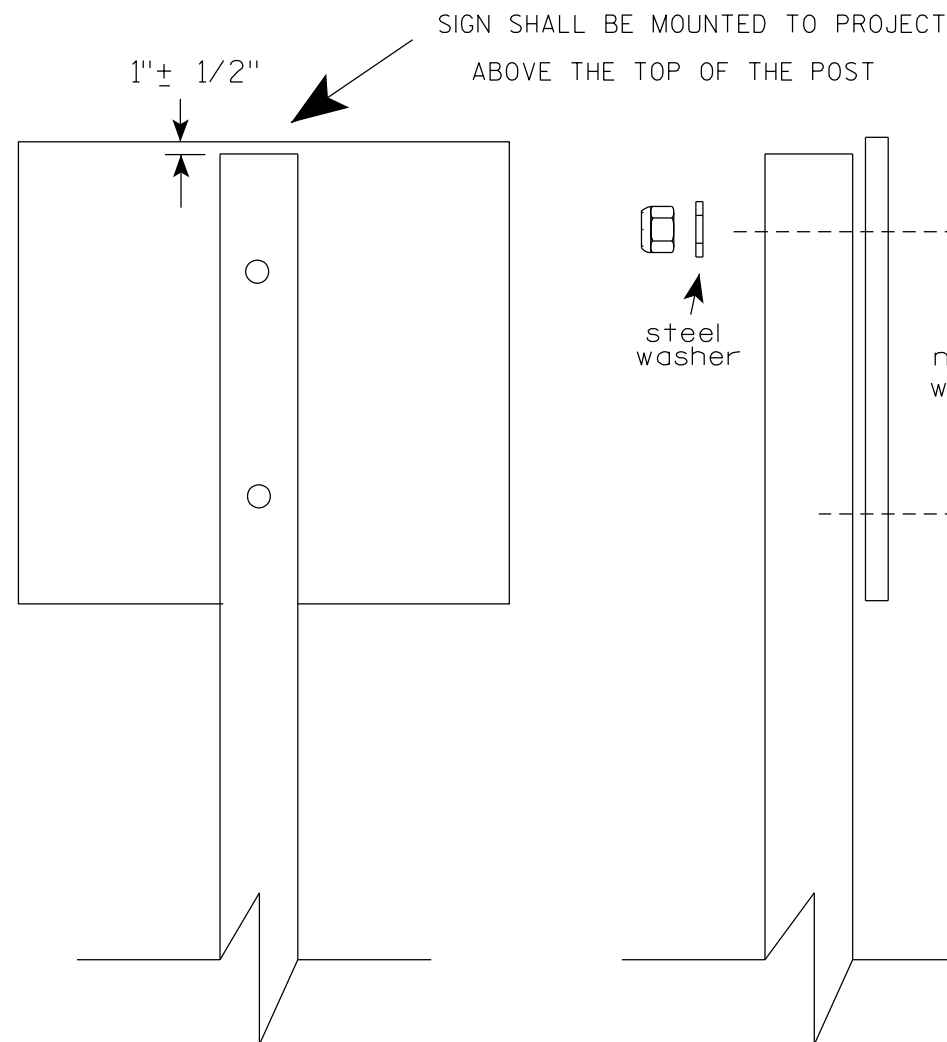
Area of Sign Installation (Sq.Ft.)	D (Min)
20 or Less	4'
Greater than 20	5'

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.

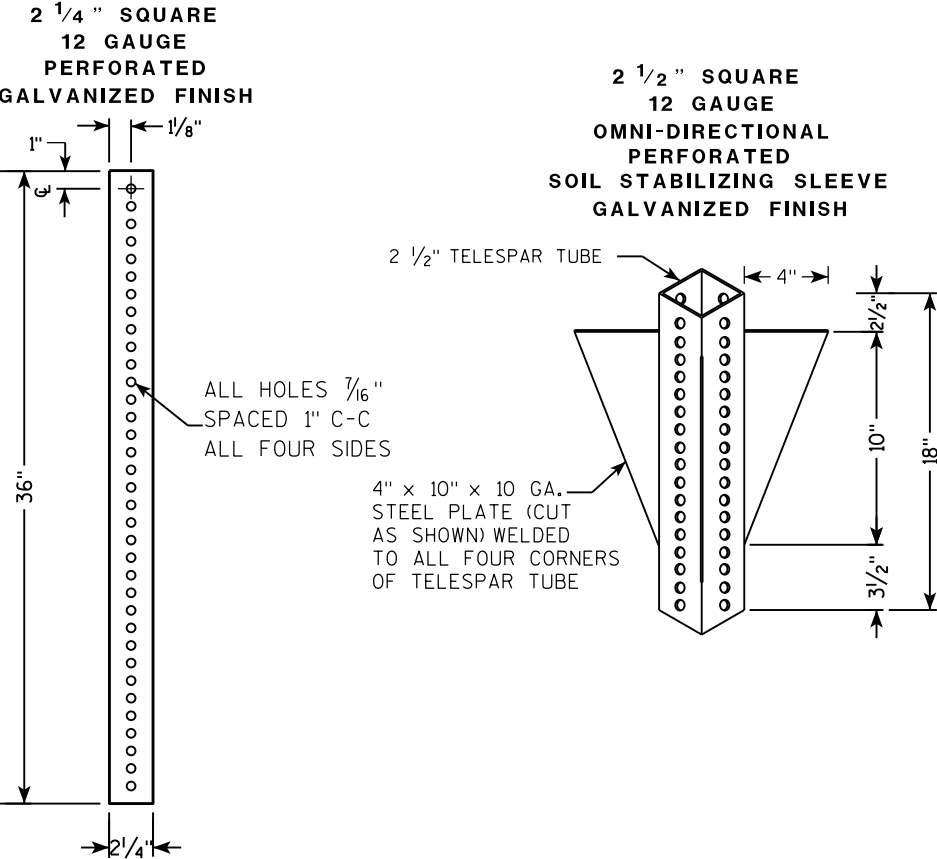
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

- 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

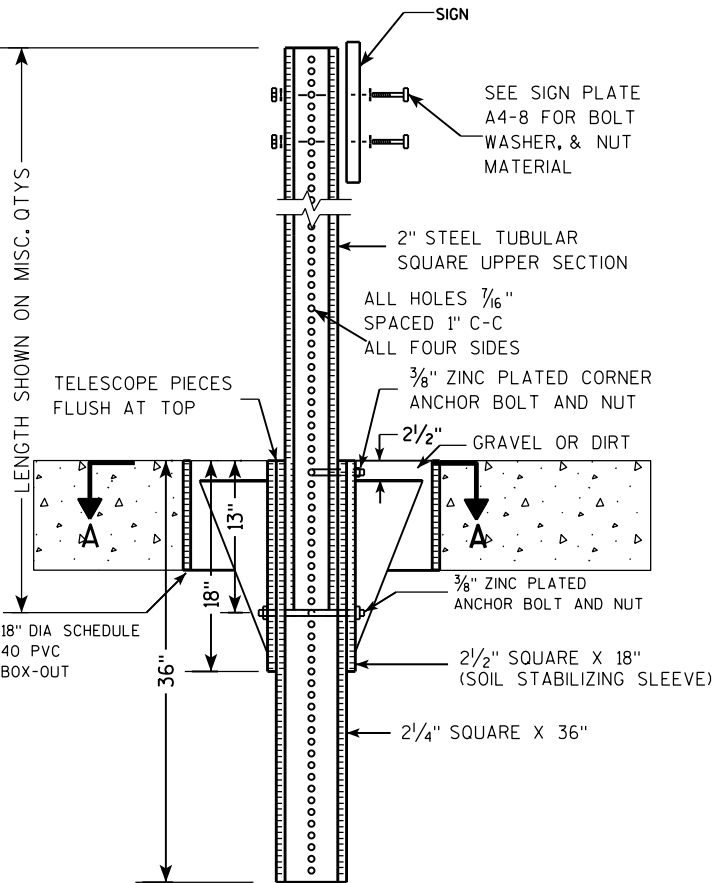
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

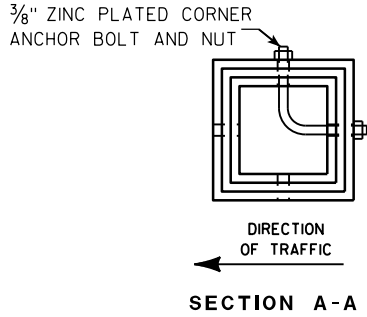
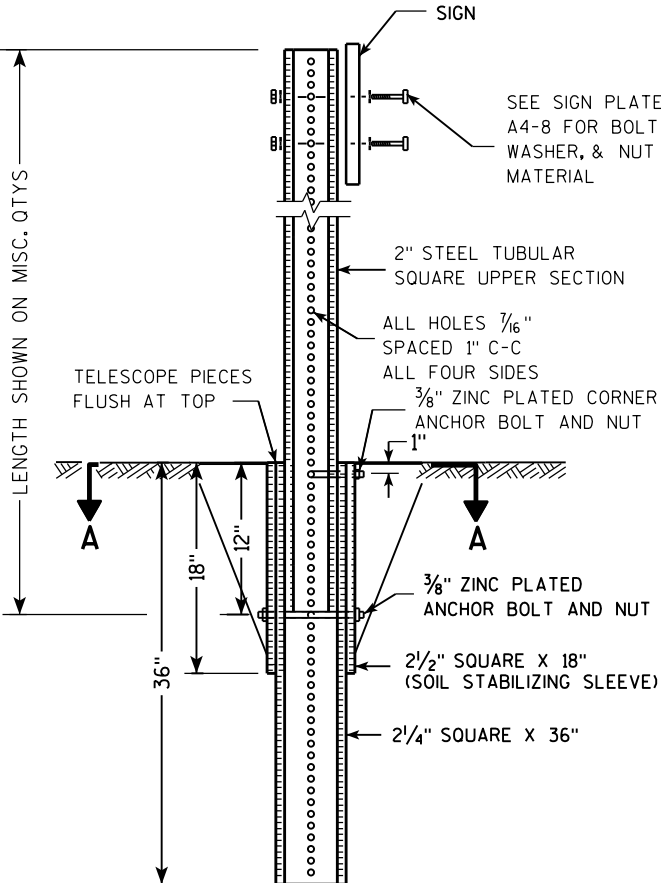
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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).

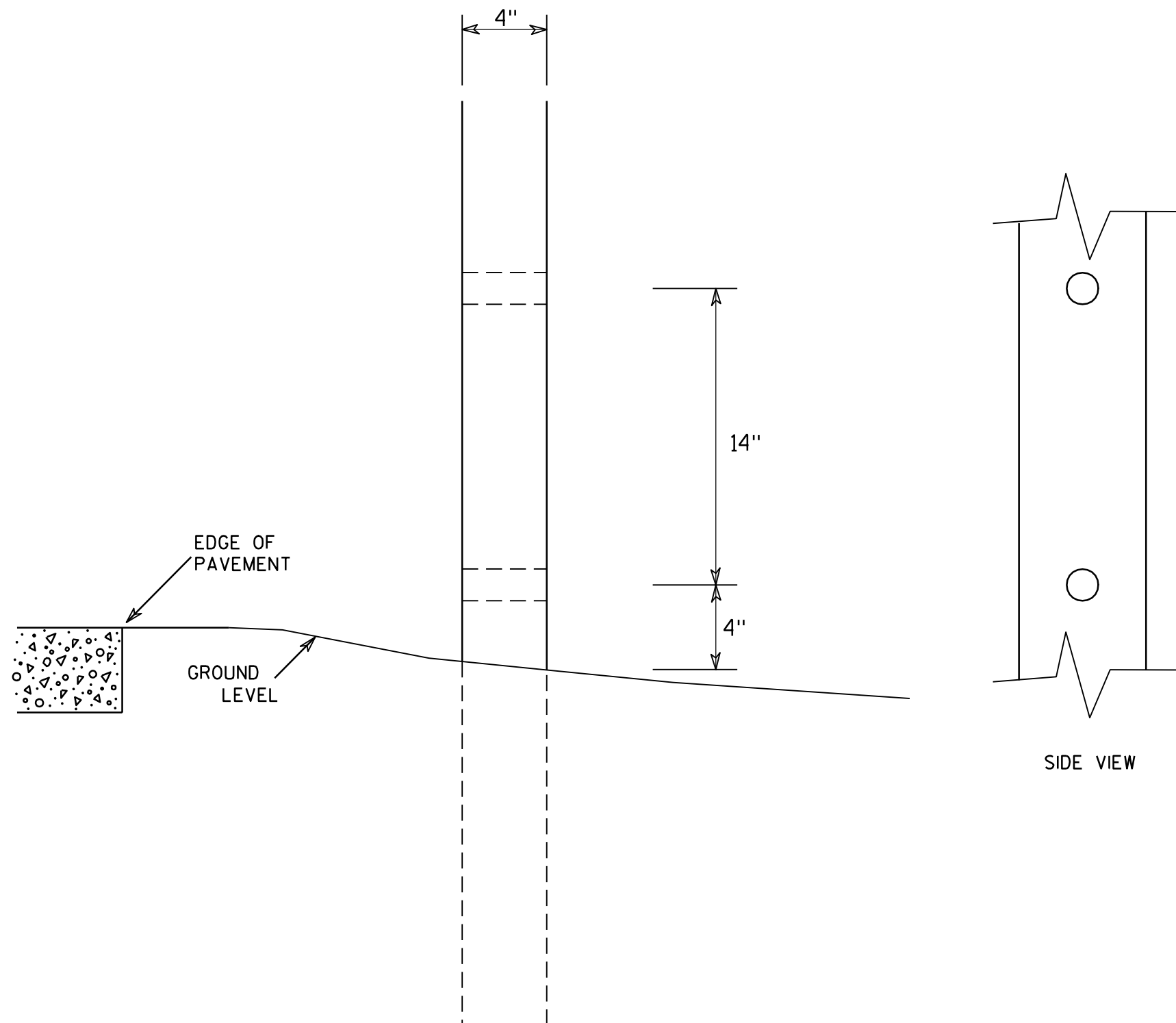
TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 210 14-9.9

7



GENERAL NOTES

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

7

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 211

E

SIGN LAYOUT WITH VARIOUS SIZED MESSAGES

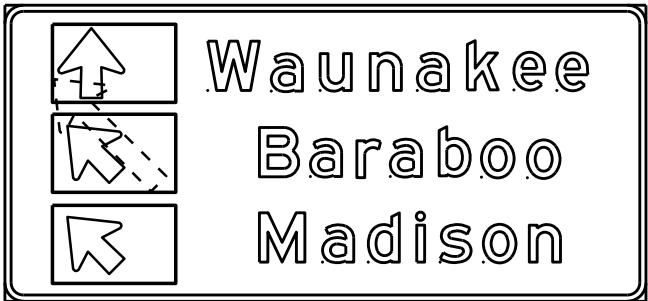
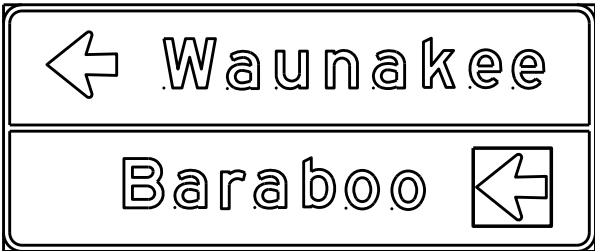
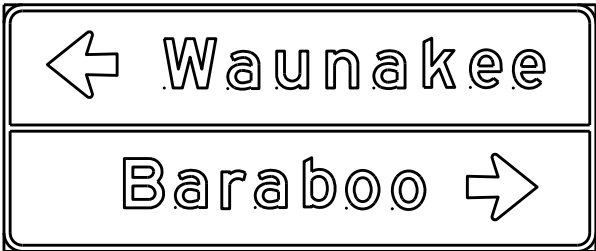
GENERAL NOTES

- 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

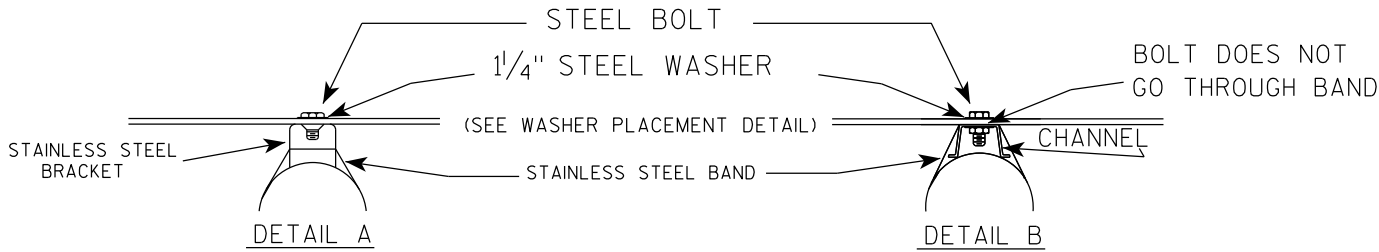
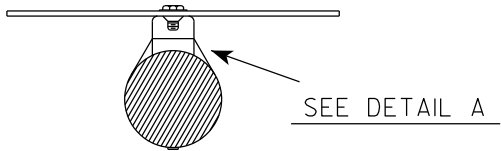
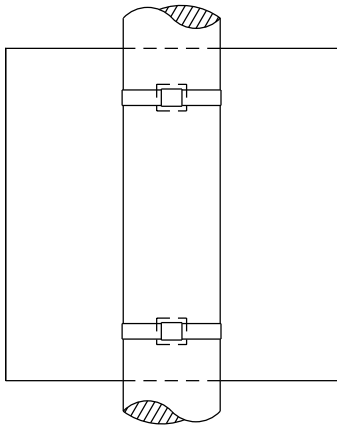
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

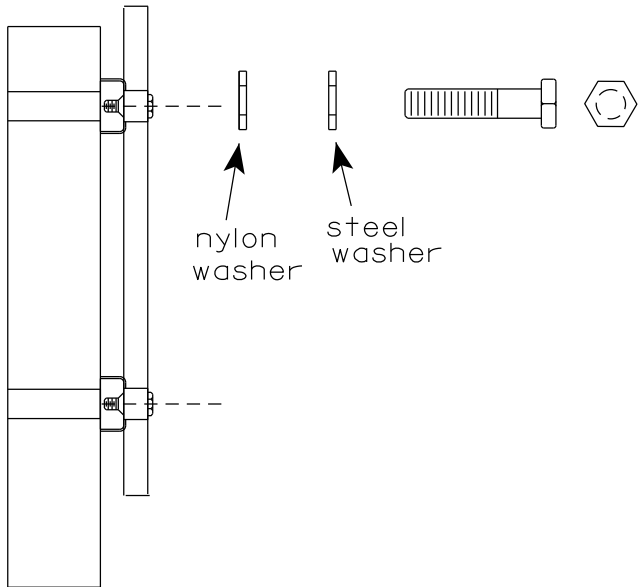
DATE 10/08/14 212 . A4-12.2

BANDING

SINGLE SIGN



WASHER PLACEMENT

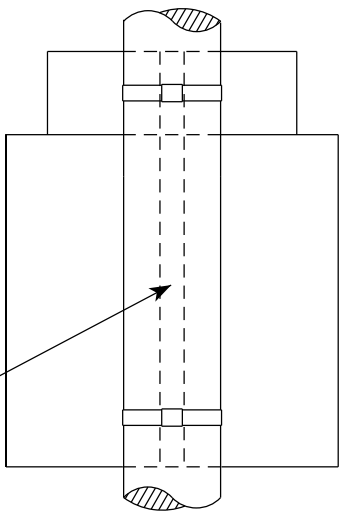


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

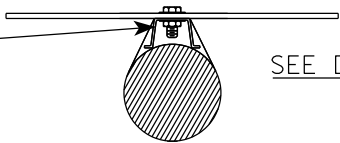
GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be 3/4" in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

"J" ASSEMBLY



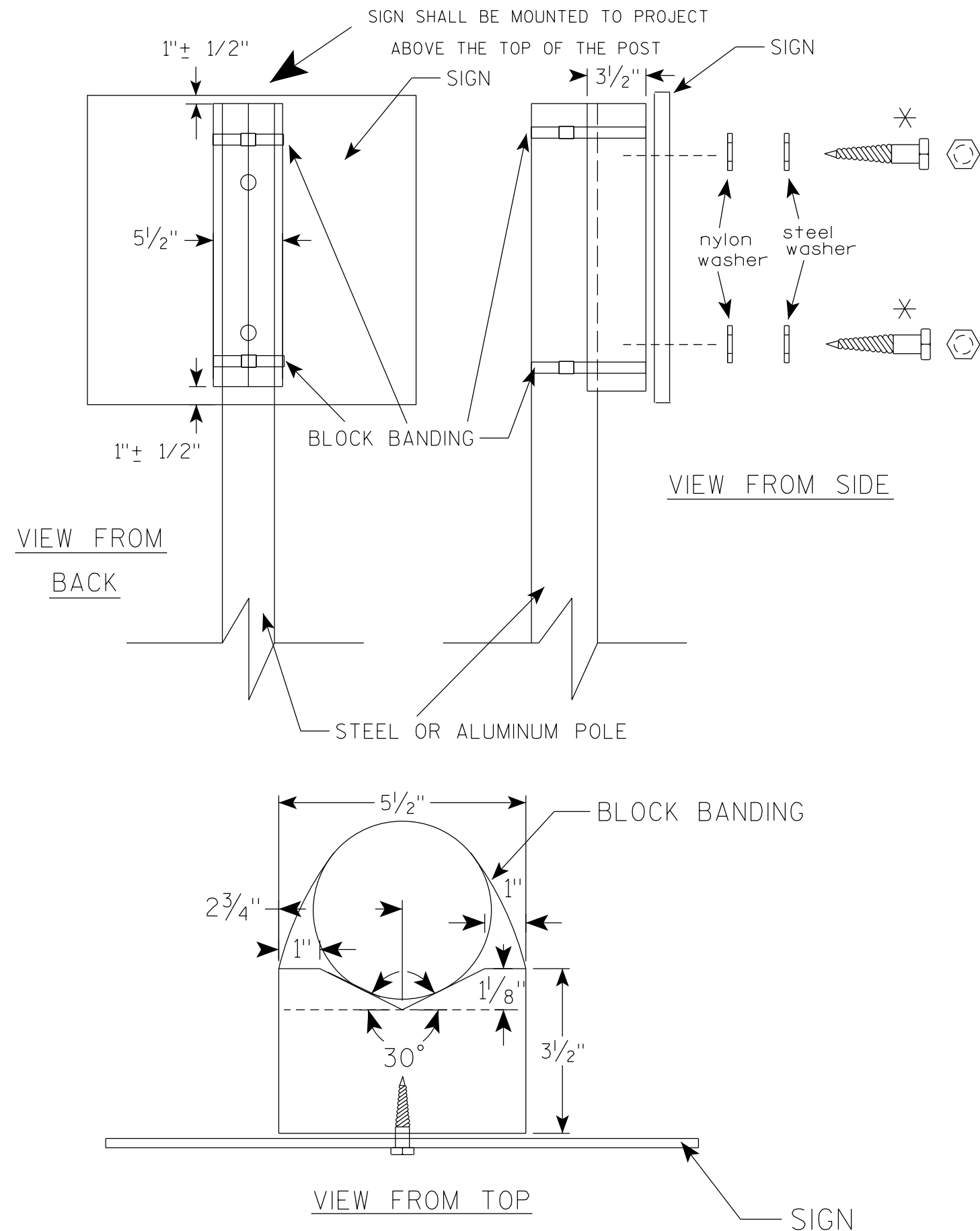
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

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



GENERAL NOTES

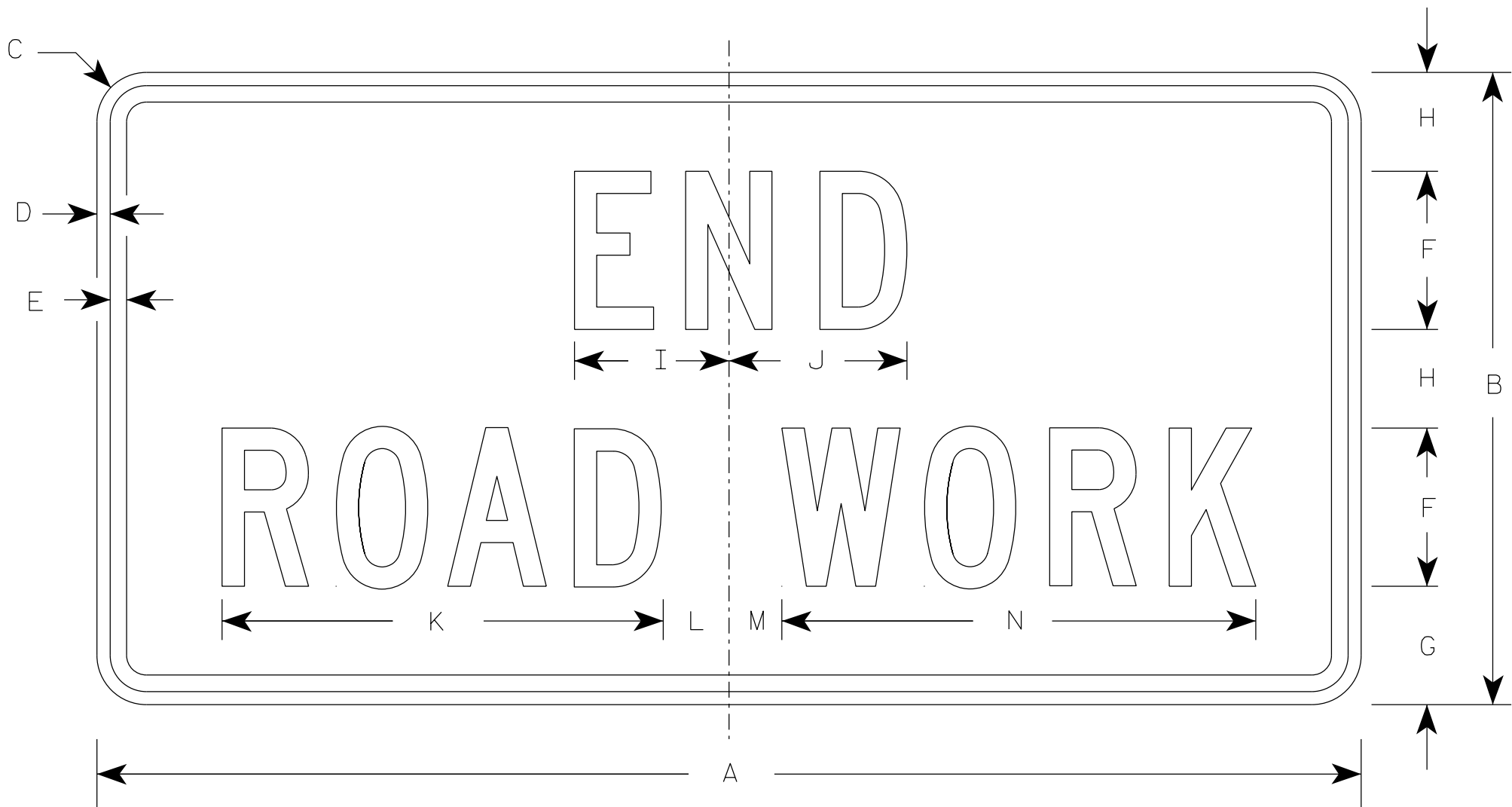
1. WOOD 4"x6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WisDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS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

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

BLOCK BANDING DETAIL (V-BLOCK OPTION)	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<u>Matthew R Rauch</u> for State Traffic Engineer
DATE <u>4/19/2022</u>	PLATE NO. <u>A5-10.3</u>

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.



G20-2A

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	1/2	4	3 3/4	2 1/2	4 1/8	4 1/8	11 1/8	2	1	12 1/8													4.5
2	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
2M	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
3	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
4	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0
5	48	24	1 7/8	1/2	5/8	6	4 1/2	3 3/4	5 7/8	6 3/4	16 3/4	2 1/2	1 3/4	18 1/2													8.0

STANDARD SIGN

G20-2A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

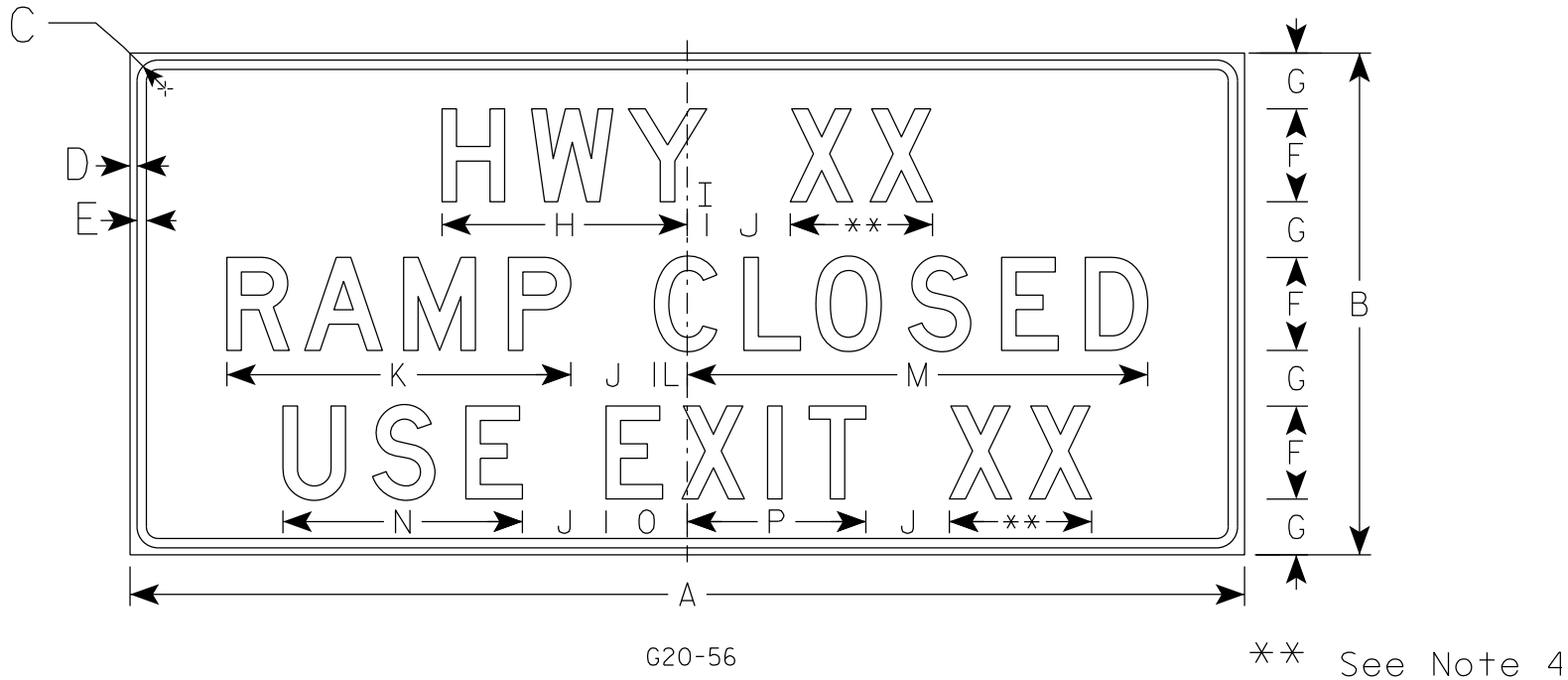
DATE 1/26/2023 PLATE NO. G20-2A.10

7

7

NOTES

- 1. Sign is Type II- Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D
- 4. Substitute appropriate Highway Number and Exit Number and optically center message



SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2																											
3																											
4	120	54	3	¾	1	10	6	26 ⅜	2 ⅛	9	37	3 ½	49 ⅝	25 ¾	8 ¾	19 ¼											45.0
5	120	54	3	¾	1	10	6	26 ⅜	2 ⅛	9	37	3 ½	49 ⅝	25 ¾	8 ¾	19 ¼											45.0

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 216

E

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 1/4	3 1/2	1 1/2	23 1/4		29 7/8	1 3/4	3 1/4	28 1/2						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	4 3/8	1 5/8	31		39 1/4	2	4	37 7/8						32.0
5																											

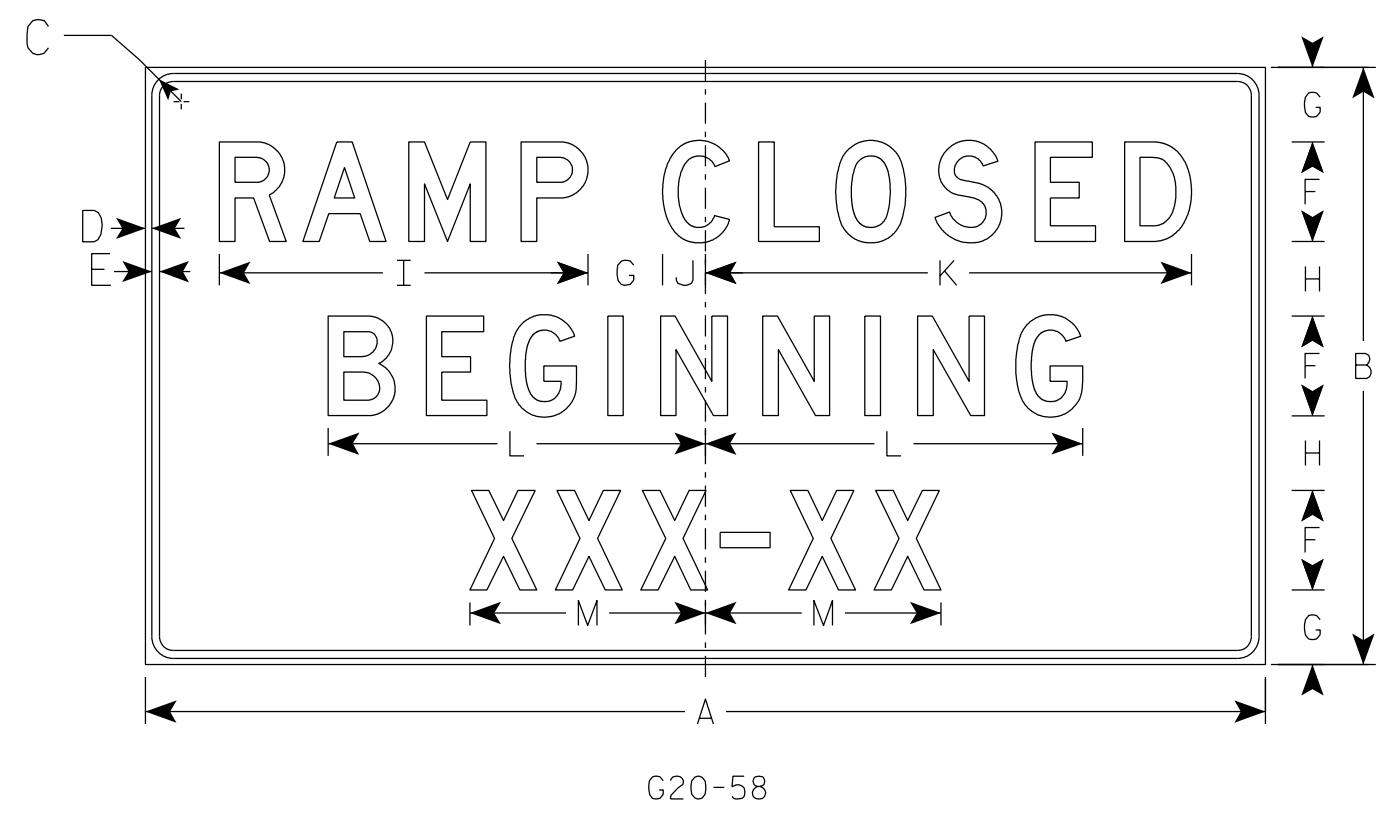
STANDARD SIGN
G20-57

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 1/22/19 PLATE NO. G20-57.3

7



NOTES

- 1. Sign is Type II- Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D

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	72	36	1 5⁄8	5⁄8	3⁄4	6	5	4	22 1⁄4	2 3⁄8	29 1⁄2	22 3⁄4	14 1⁄4														18.0
3	90	48	1 5⁄8	5⁄8	3⁄4	8	6	6	29 5⁄8	3 3⁄8	39	30 3⁄8	19														30.0
4																											
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 218

E

7

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - E



G20-61

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																											
4	120	30	6		2	12	9	21	78 1/4	20 3/4																	25.0
5																											

STANDARD SIGN

G20-61

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/07/15

PLATE NO. 219

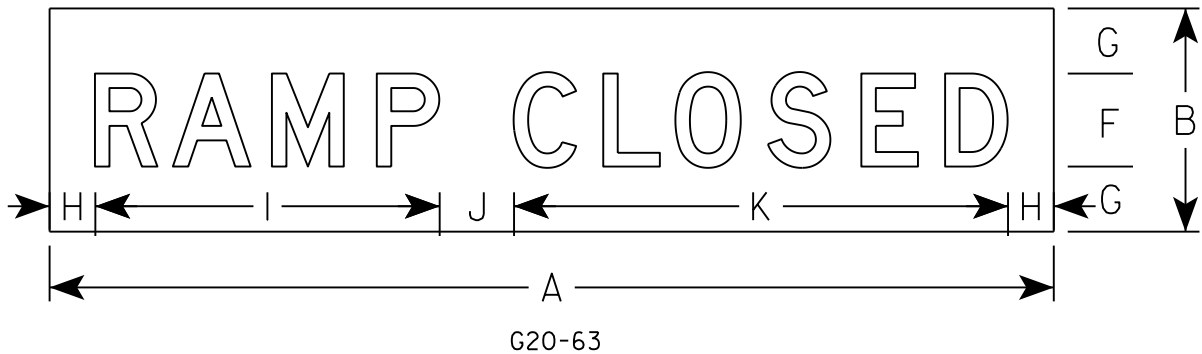
G20-61.1

SHEET NO:

E

NOTES

- 1. Sign is Type II- Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - D
- 4. Material shall be .040 aluminum



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	12				6	3	6	22 1/8	6	31 7/8																6.0
4	108	24				10	7	4 7/8	37	8	53 1/8																18.0
5																											

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 220

E

STANDARD SIGN

G20-63

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

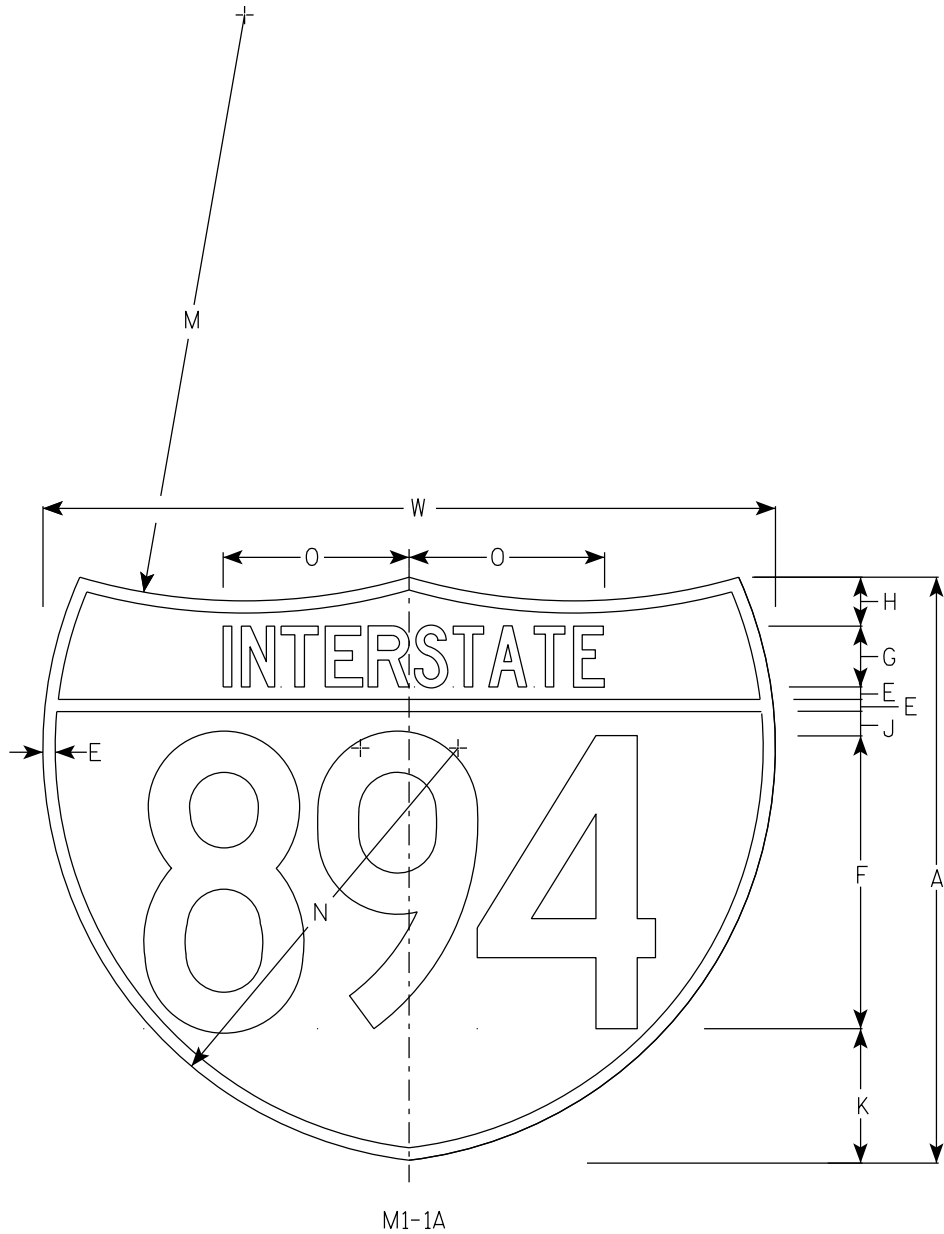
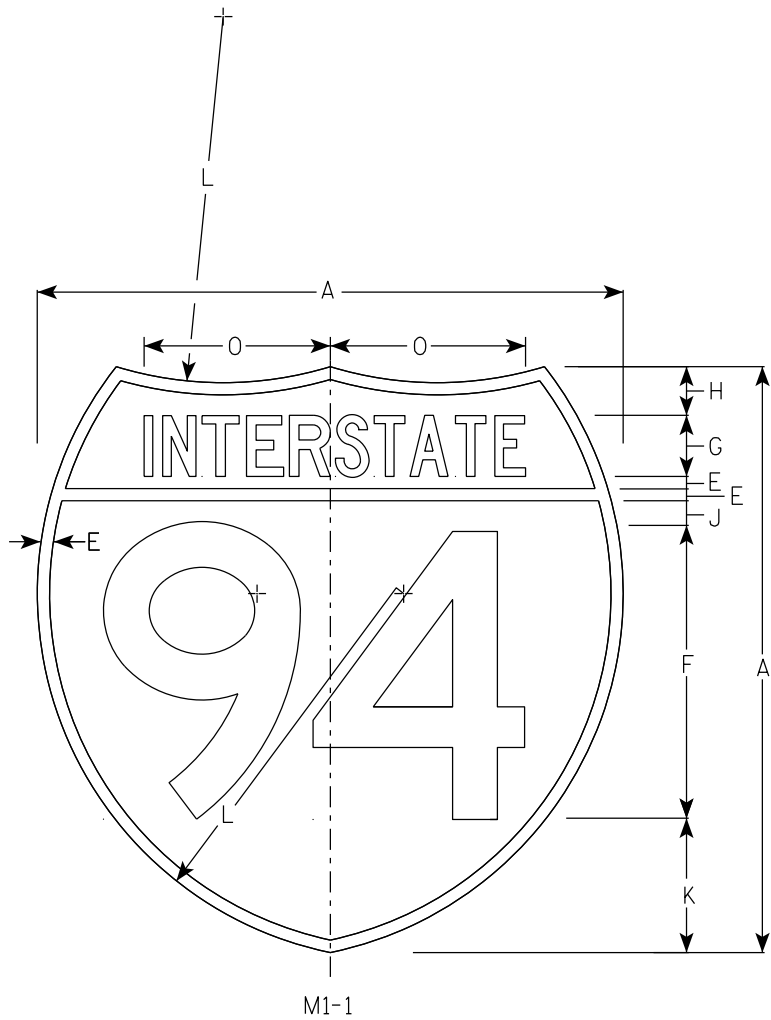
Matthew R. Rauch

for State Traffic Engineer

DATE 11/8/17

PLATE NO. G20-63.1

7



NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - Top Red - Bottom Blue
Message - White
- 3. Message Series - See note 5
- 4. Substitute appropriate numerals & adjust spacing as per plate A10-1.
- 5. M1-1 - Numerals - D
Interstate - C
M1-1A - All copy - C

7

																										M1-1	M1-1A
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	Area sq. ft.	Area sq. ft.
1																											
2	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91
2M	24				1/2	12	2 1/2	2		1	5 1/2	15	24	17	7 7/8								30			3.13	3.91
3	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79
4	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79
5	36				3/4	18	3 3/4	3		1 1/2	8 1/4	22 1/2	36	25 1/2	11 3/4								45			7.03	8.79

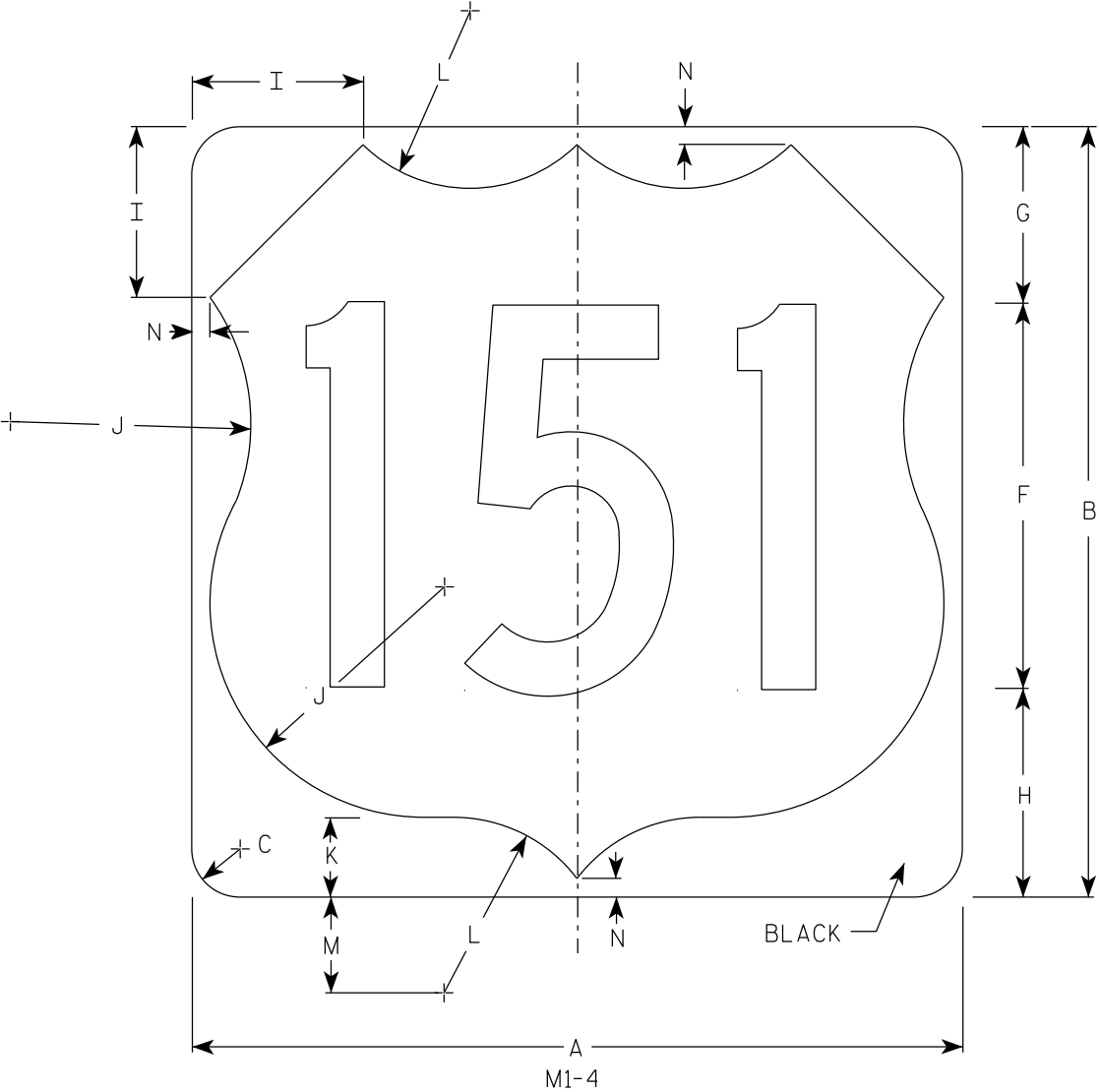
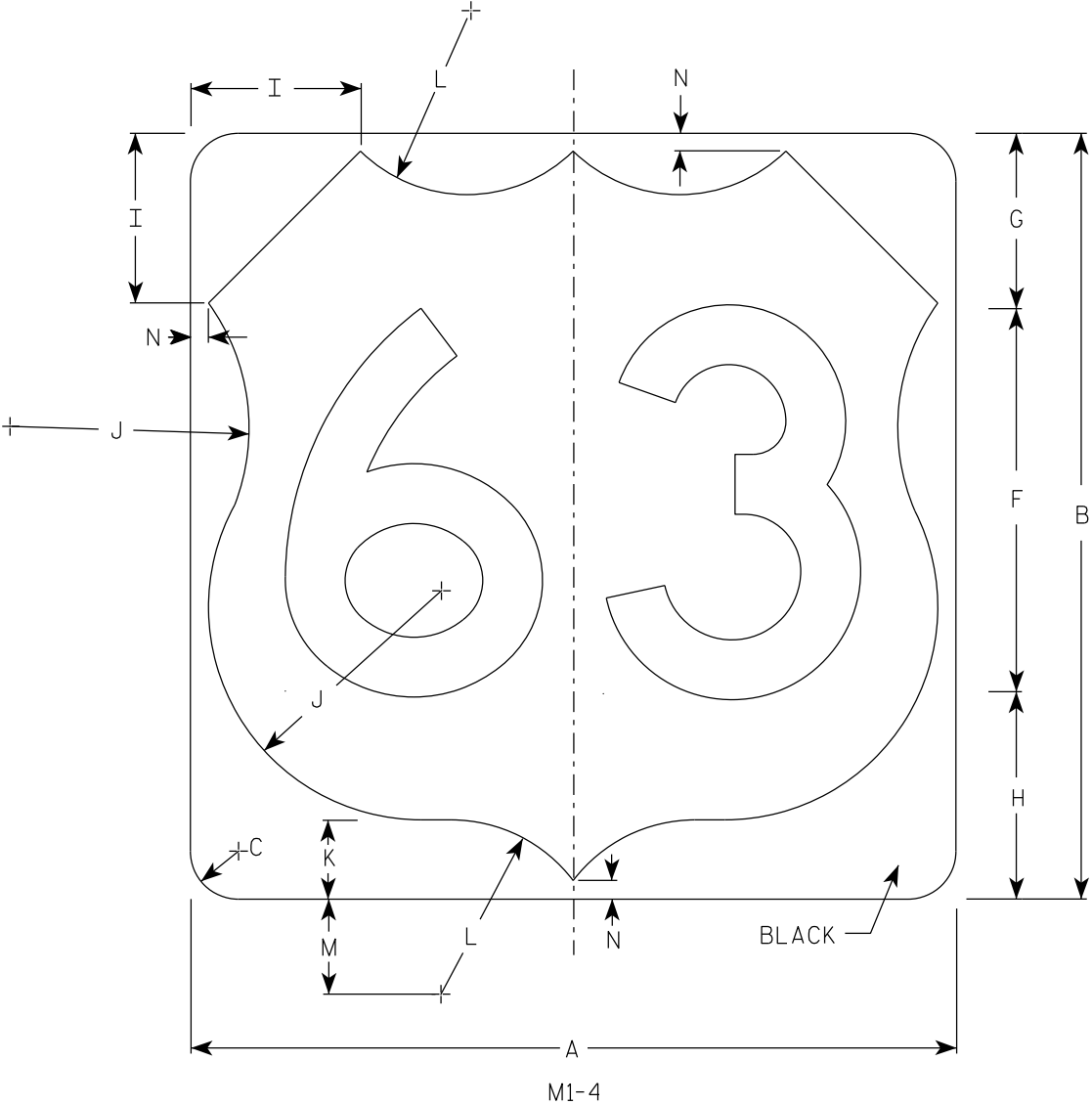
INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 11/7/2022 PLATE NO. M1-1.9

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	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
2M	24	24	1 1/2			12	5 1/2	6 1/2	5	7 1/2	2 1/2	5 1/2	3	1/2													4.0
3	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
4	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0
5	36	36	2 1/4			18	8 1/4	9 1/4	7 1/4	11 1/4	3 3/4	8 1/4	4 1/2	3/4													9.0

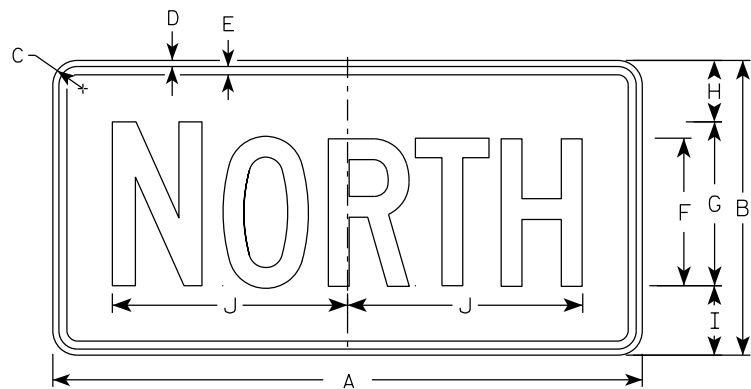
USH MARKER
M1-4 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

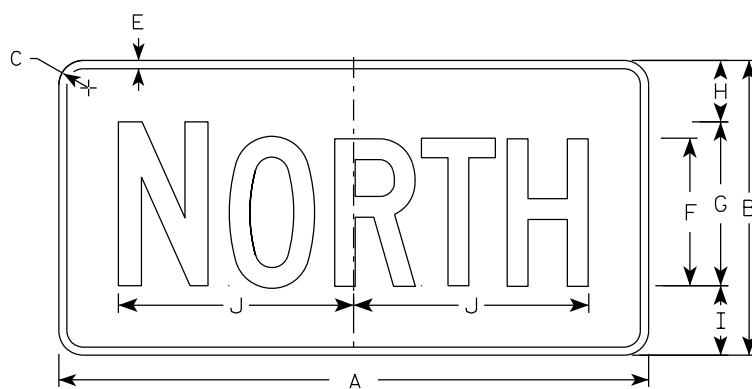
APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 12/20/22 PLATE NO. M1-4.11

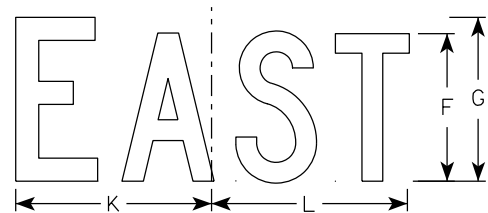
7



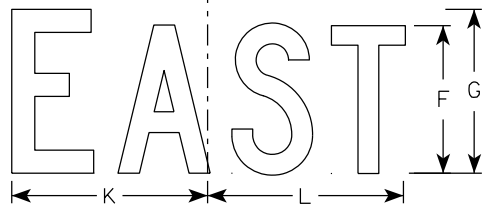
M3-1
MM3-1
MP3-1



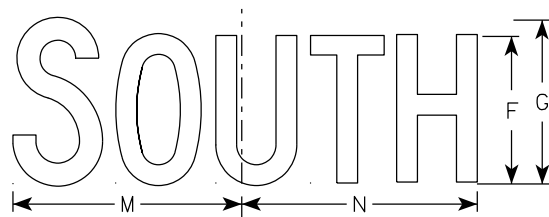
MB3-1
MK3-1
MN3-1



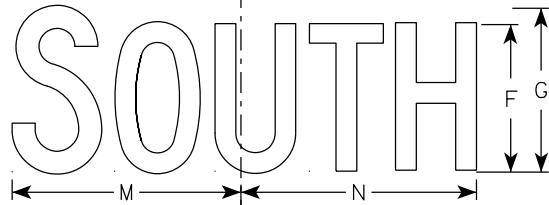
M3-2
MM3-2
MP3-2



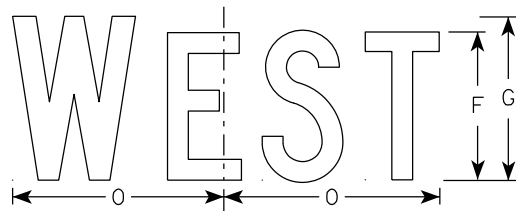
MB3-2
MK3-2
MN3-2



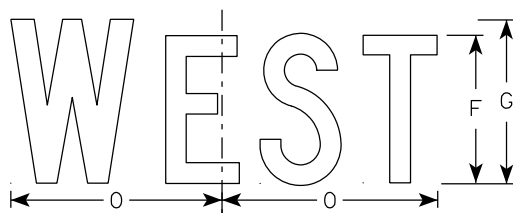
M3-3
MM3-3
MP3-3



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.

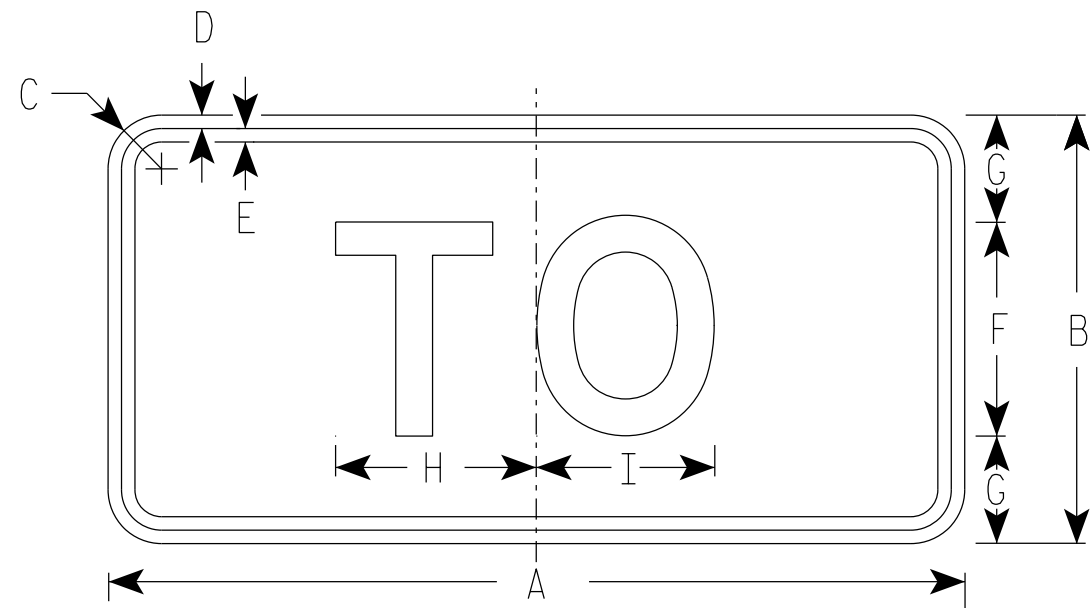
7

7

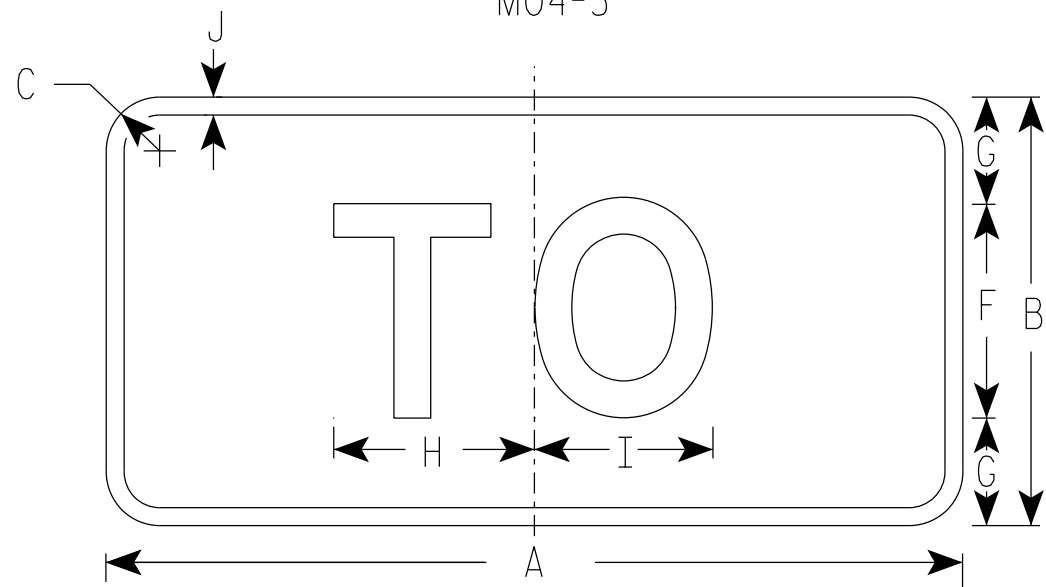
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
2M	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
3	36	18	1 1/2	3/8	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: 223	E
-------------	------	---------	---------------	---

7



M4-5
MM4-5
MP4-5
M04-5



MB4-5
MK4-5
MN4-5

NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - See note 5
Message - See note 5
3. Message Series - E
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. M4-5 Background - White
Message - Black
MB4-5 Background - Blue
Message - White
MK4-5 Background - Green
Message - White
MM4-5 Background - White
Message - Green
MN4-5 Background - Brown
Message - White
MP4-5 Background - White
Message - Blue
M04-5 Background - Orange Type F Reflective
Message - Black

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

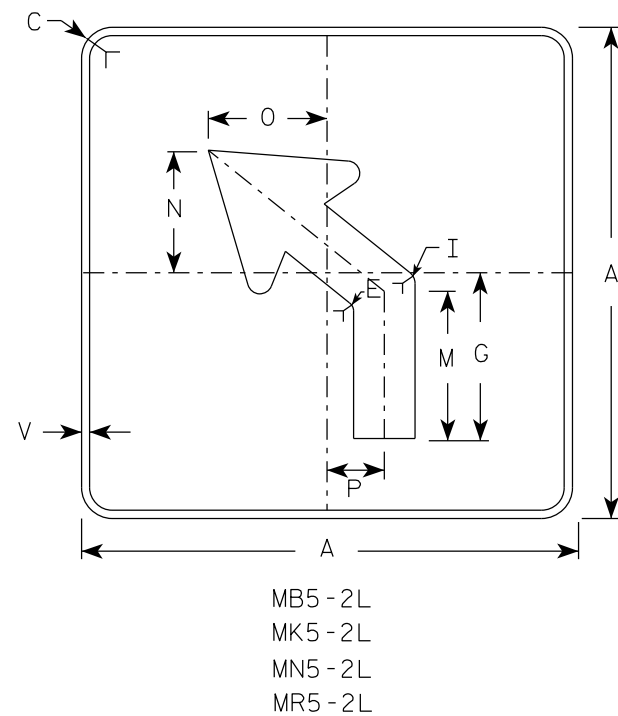
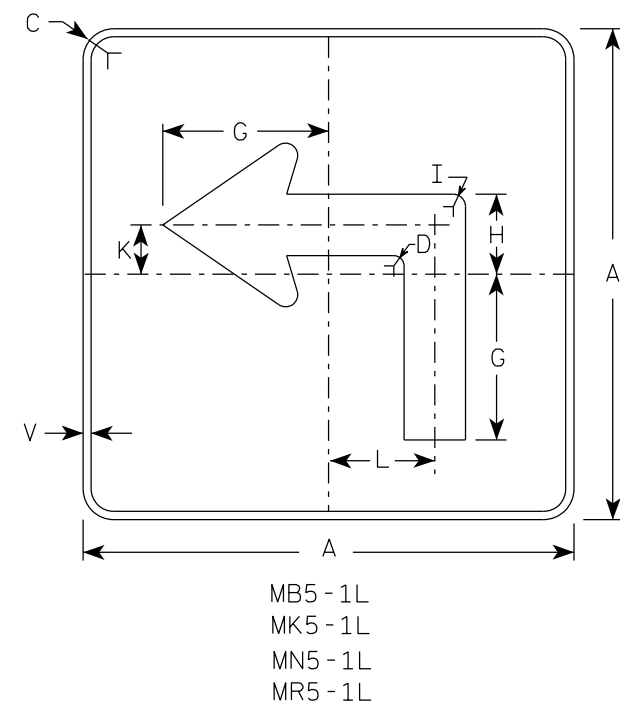
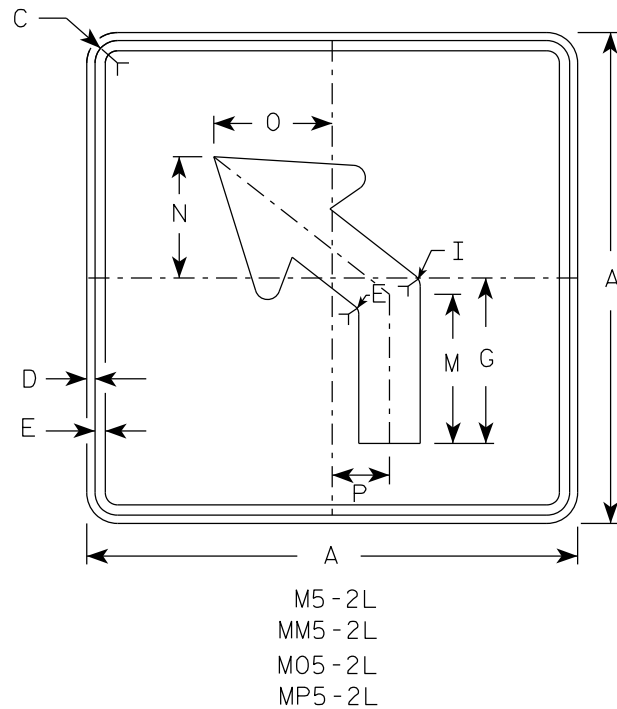
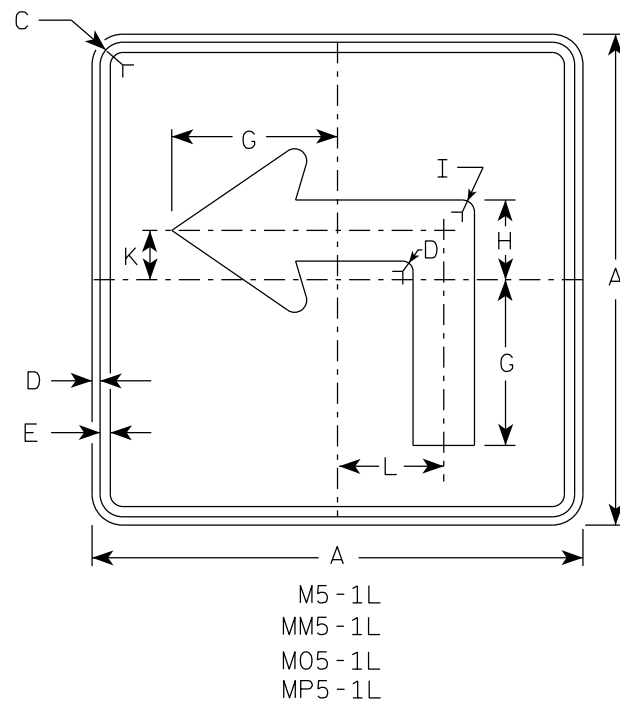
PROJECT NO:		HWY:		COUNTY:		SHEET NO: 224										E
-------------	--	------	--	---------	--	---------------	--	--	--	--	--	--	--	--	--	---

STANDARD SIGN
M4-5

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

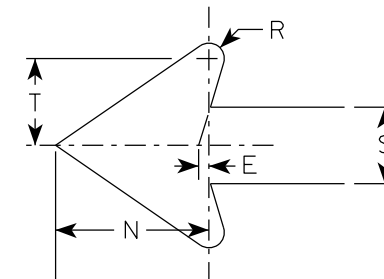
DATE 2/8/2023 PLATE NO. M4-5.11



NOTES

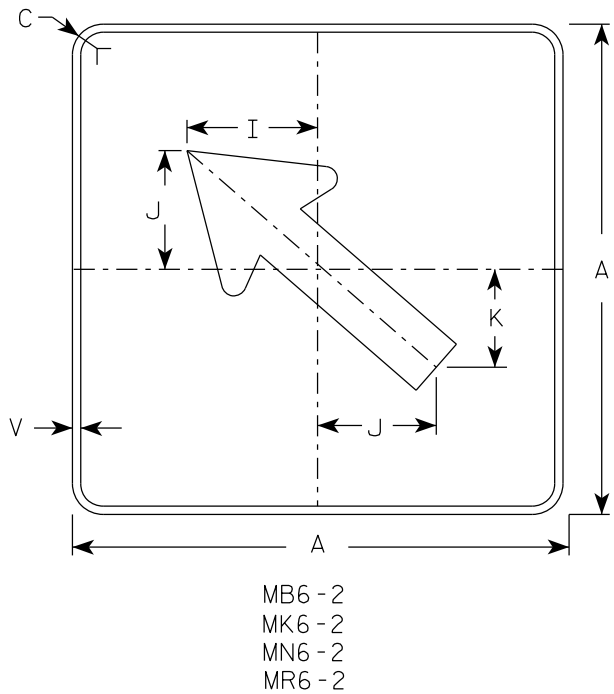
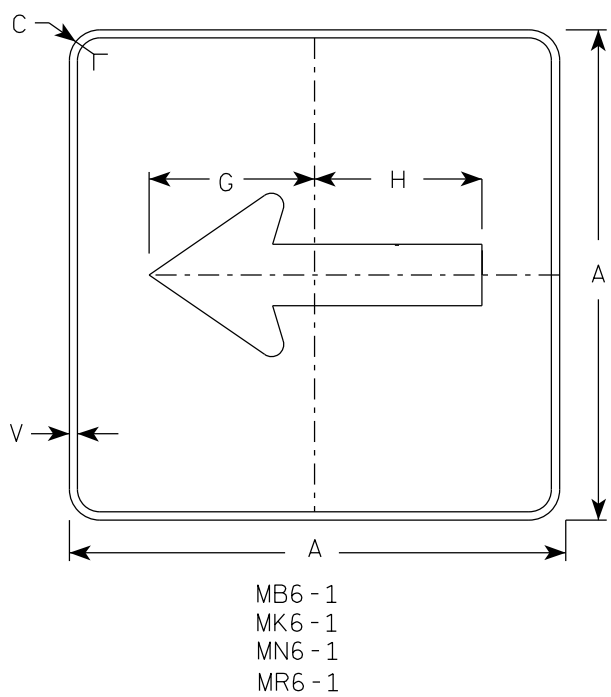
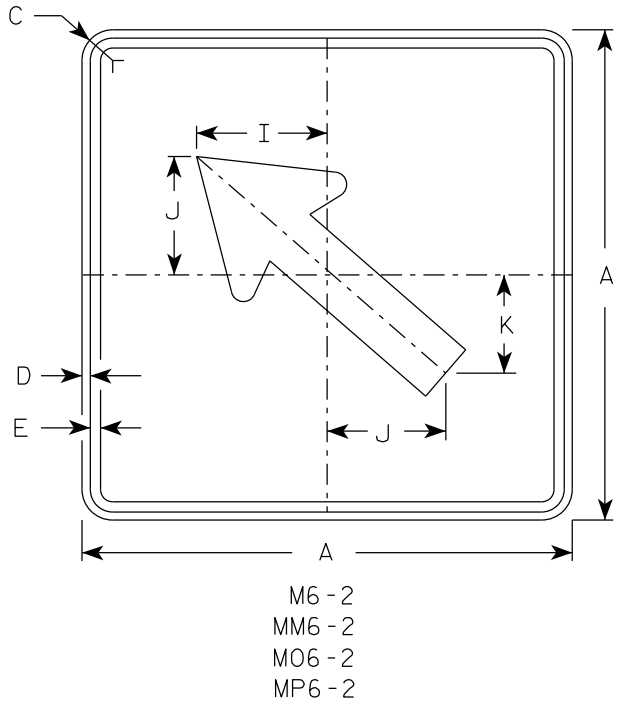
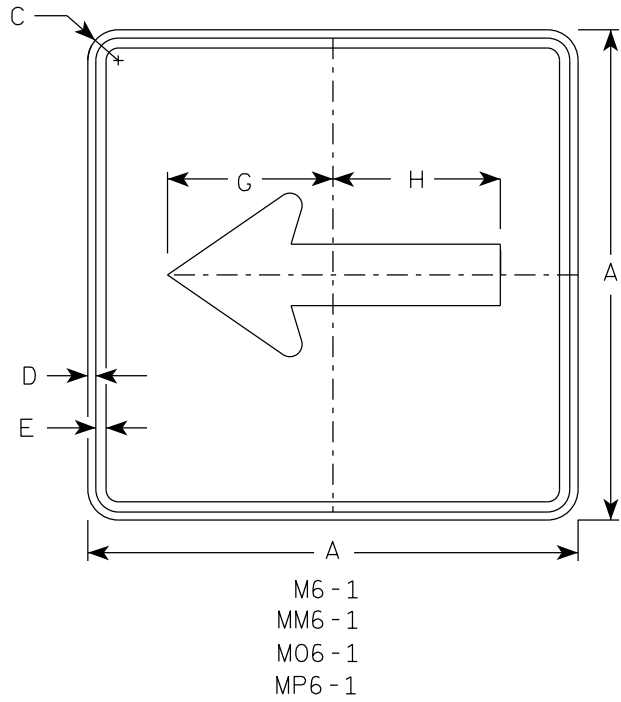
- Signs are Type II - Type H reflective except as shown
- Color:
Background - See note 4
Message - See note 4
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- | | |
|-----------------|---|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

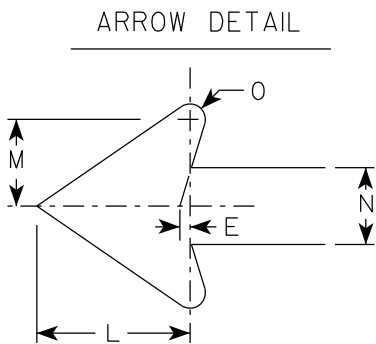


SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
2M	21		1 1/2	3/8	3/8		7	3 3/8	5/8		2 1/8	4 1/2	6 3/8	5 1/4	5	2 1/2		1/2	2 5/8	3		1/2					3.06
3	30		1 7/8	1/2	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: 225	E
-------------	------	---------	---------------	---

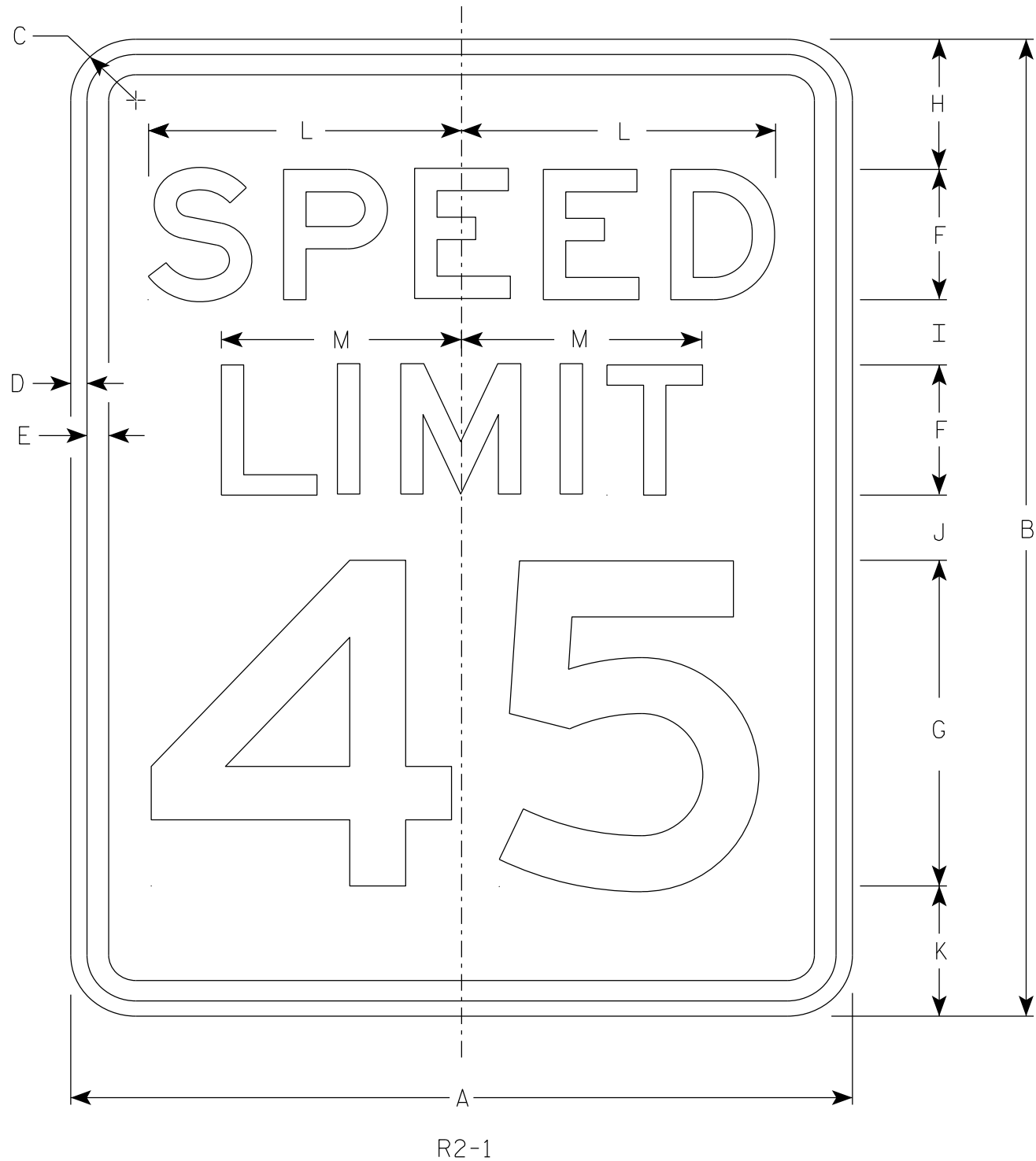


- NOTES**
- Signs are Type II - Type H Reflective except as Shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - M6-1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



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

7



NOTES

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

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	18	24	1 1/2	3/8	1/2	3	8	3	2	2	3	7 1/4	5 1/2														3.0
2S	24	30	1 1/2	3/8	1/2	4	10	3	2 1/4	3 3/8	3 3/8	9 5/8	7 3/8														5.0
2M	30	36	1 7/8	1/2	5/8	5	12	5	2 1/2	2 1/2	4	12	9 1/4														7.5
3	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
4	36	48	1 7/8	1/2	5/8	6	14	6	5	5	6	14 3/8	11														12.0
5	48	60	3	3/4	1	8	20	6	4 1/2	6 3/4	6 3/4	19 1/4	14 5/8														20.0

STANDARD SIGN

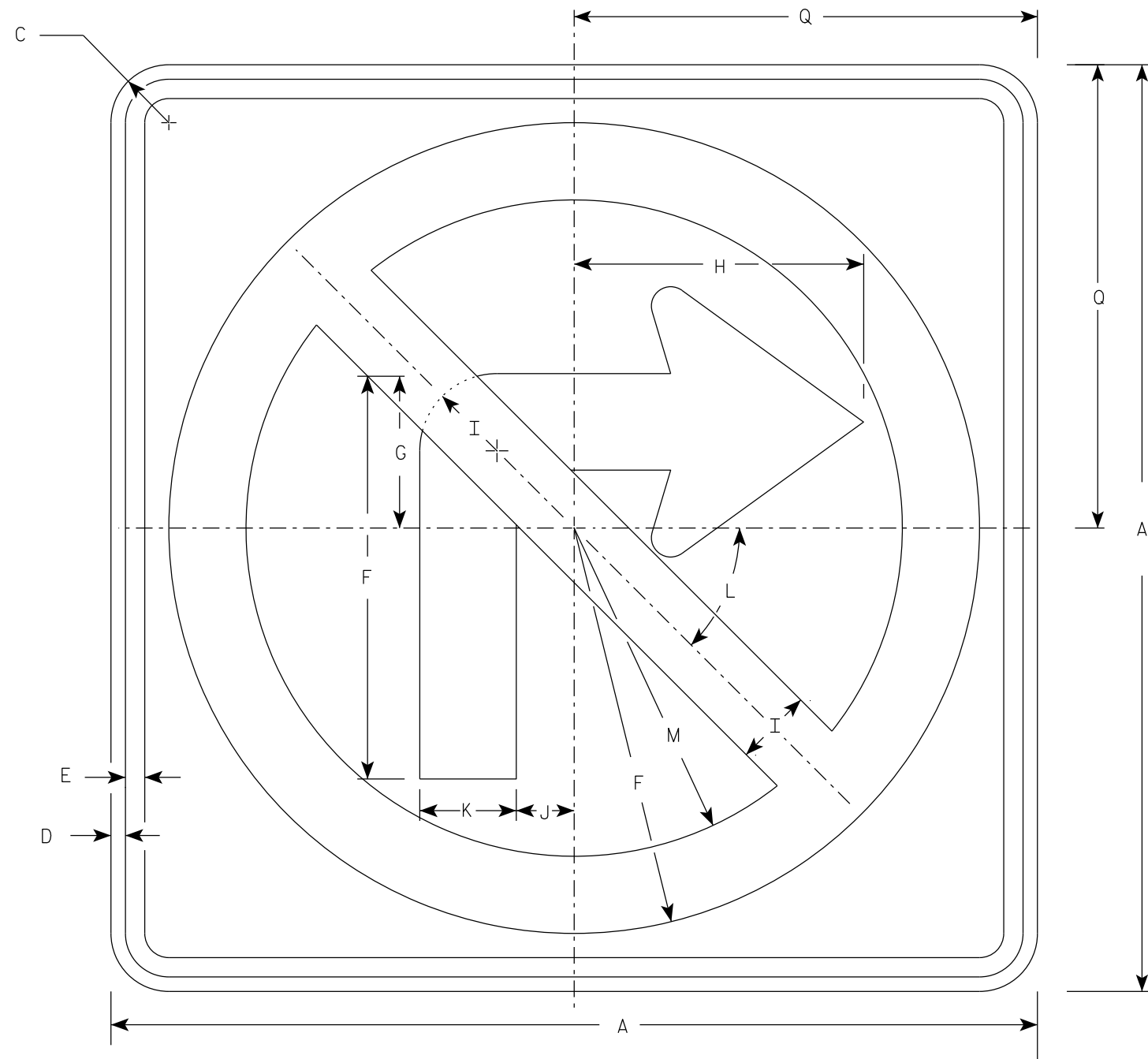
R2 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

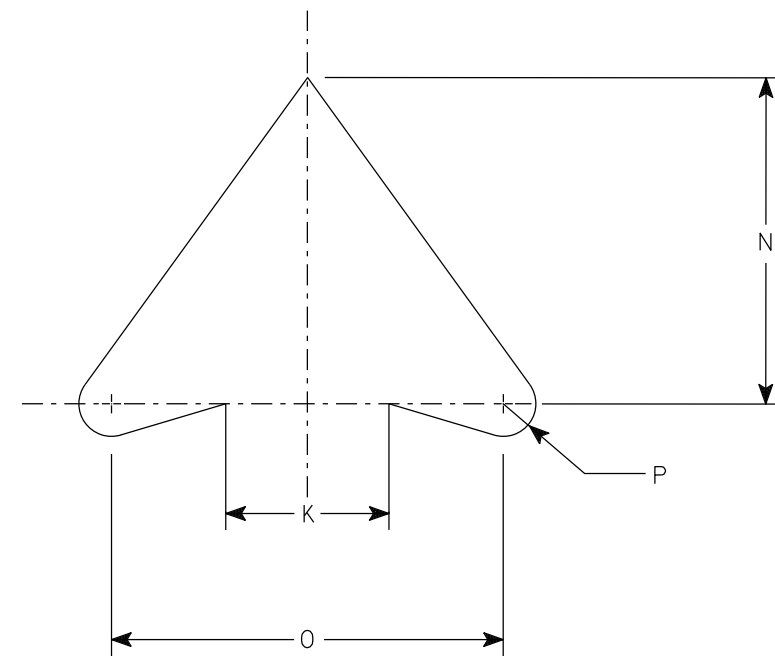
7



R3-1

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - See note 3
- 3. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45	8 1/2	5	6	1/2	12										4.0
2S	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2	12										4.0
2M	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
3	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45	12 3/4	7 1/2	9	3/4	18										9.0
4	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4	18										9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1	24										16.0

PROJECT NO:

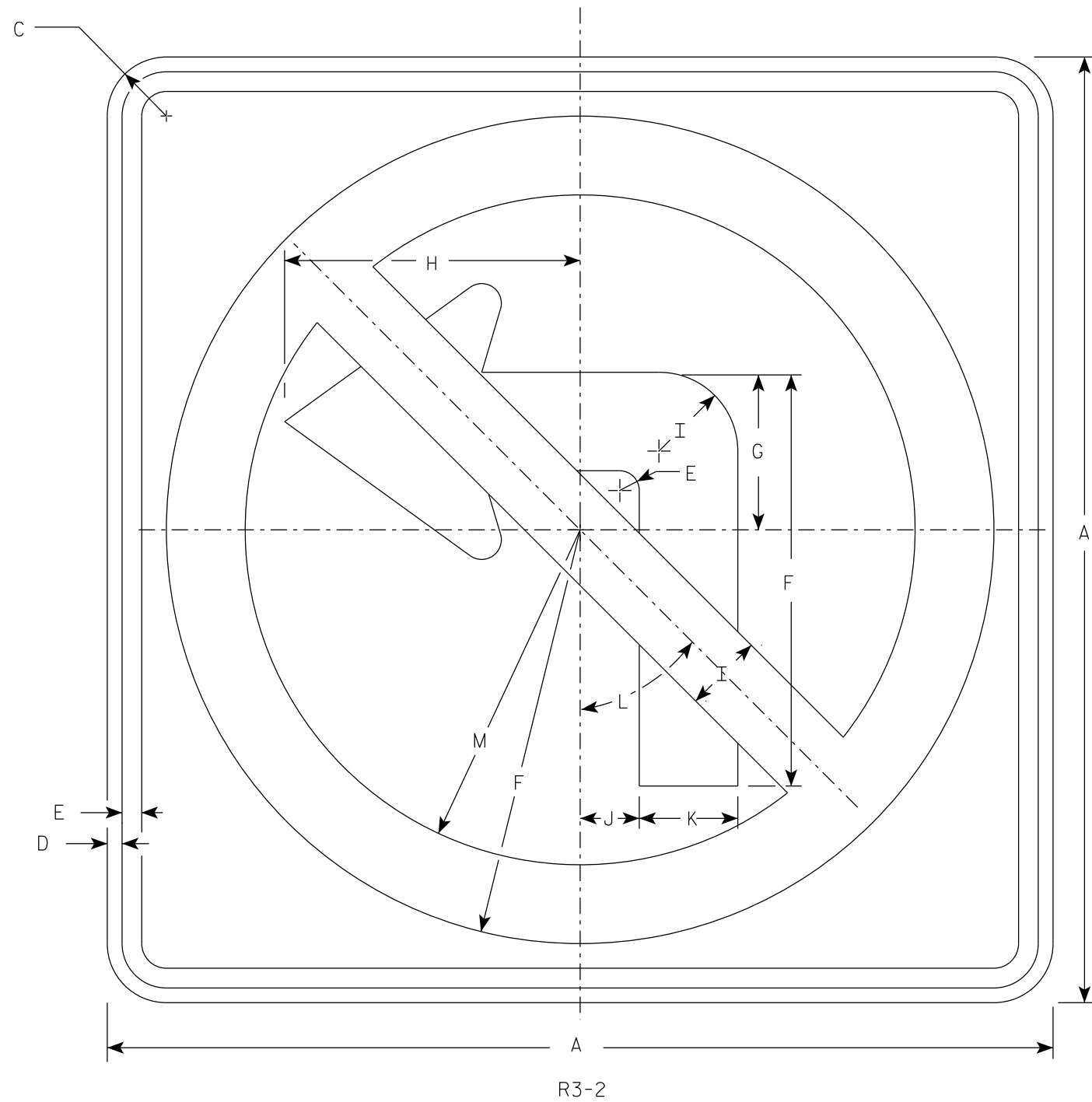
HWY:

COUNTY:

SHEET NO: 228

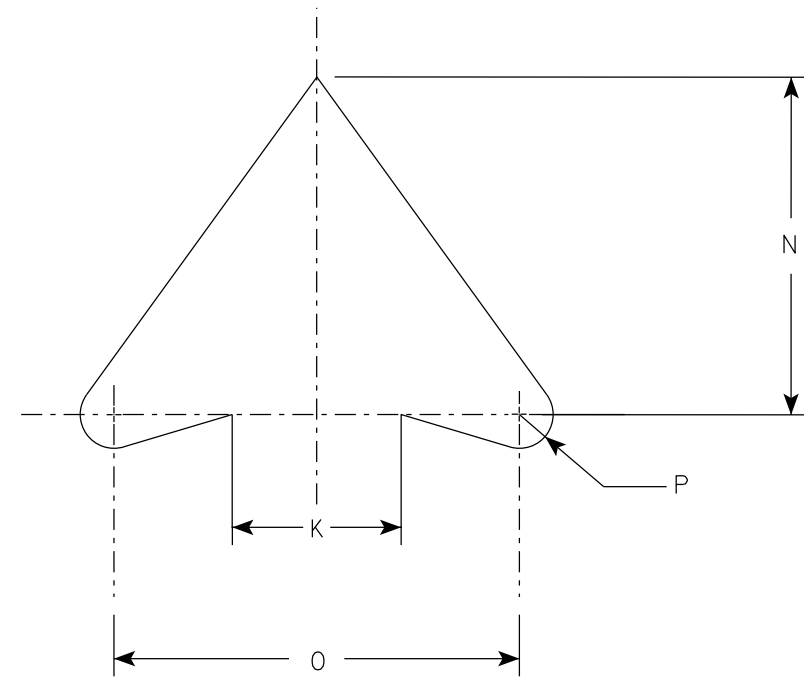
E

7



NOTES

1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - See note 3
3. Border & Arrow are non reflective black, the circle with diagonal bar is reflective red.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2S	24		1 1/2	3/8	1/2	10 1/2	4	7 1/2	2	1 1/2	2 1/2	45°	8 1/2	5	6	1/2											4.0
2M	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
3	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
4	36		2 1/4	5/8	3/4	15 3/4	6	11 1/4	3	2 1/4	3 3/4	45°	12 3/4	7 1/2	9	3/4											9.0
5	48		2 1/4	3/4	1	21	8	15	4	3	5	45°	17	10	12	1											16.0

PROJECT NO:

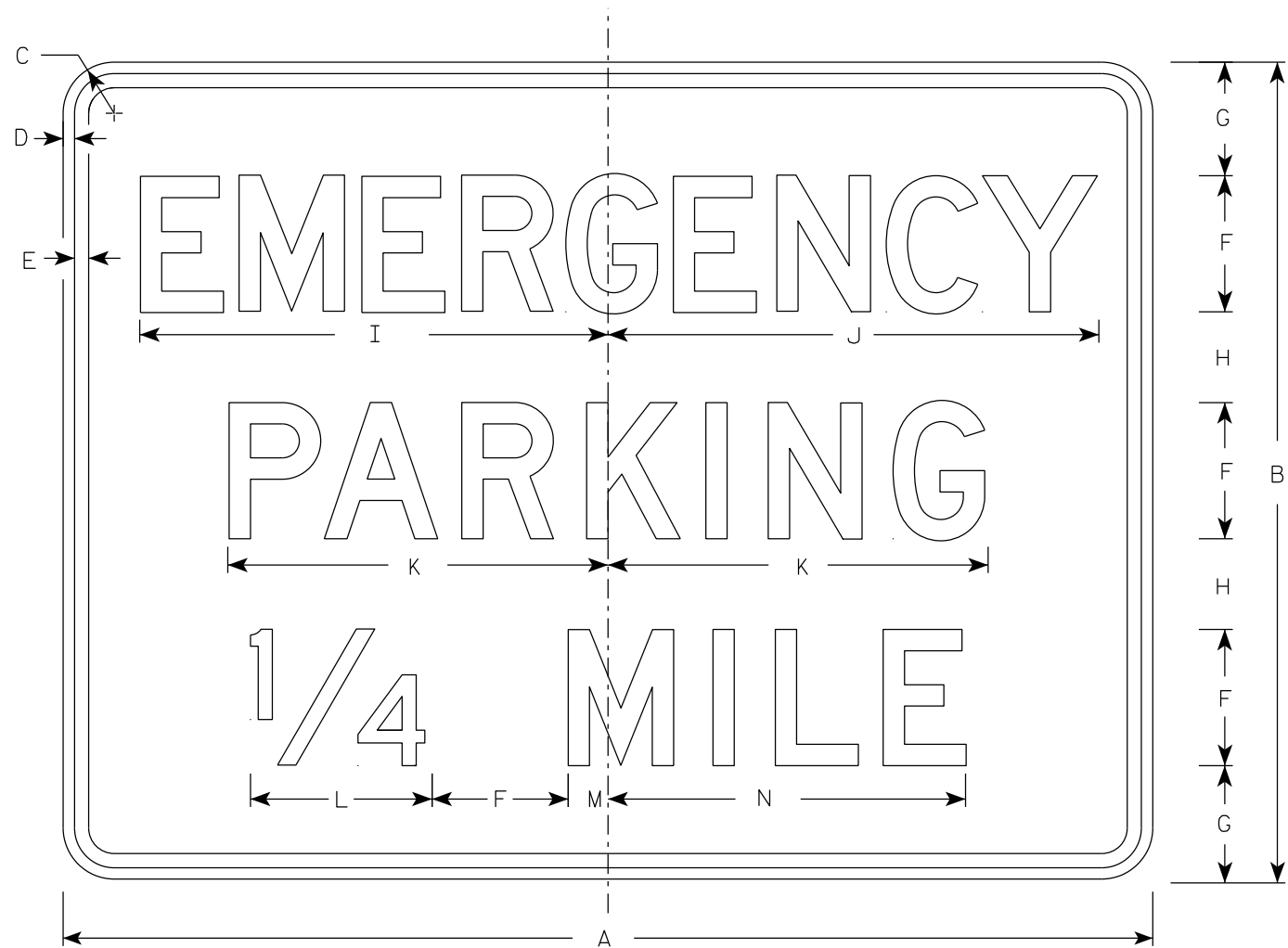
HWY:

COUNTY:

SHEET NO: 229

E

7



R8-53

NOTES

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

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S																											
2M																											
3																											
4	48	36	1 7⁄8	1⁄2	5⁄8	6	5	4	20 5⁄8	21 5⁄8	16 3⁄4	8	1 3⁄4	15 3⁄4													12.0
5	48	36	1 7⁄8	1⁄2	5⁄8	6	5	4	20 5⁄8	21 5⁄8	16 3⁄4	8	1 3⁄4	15 3⁄4													12.0

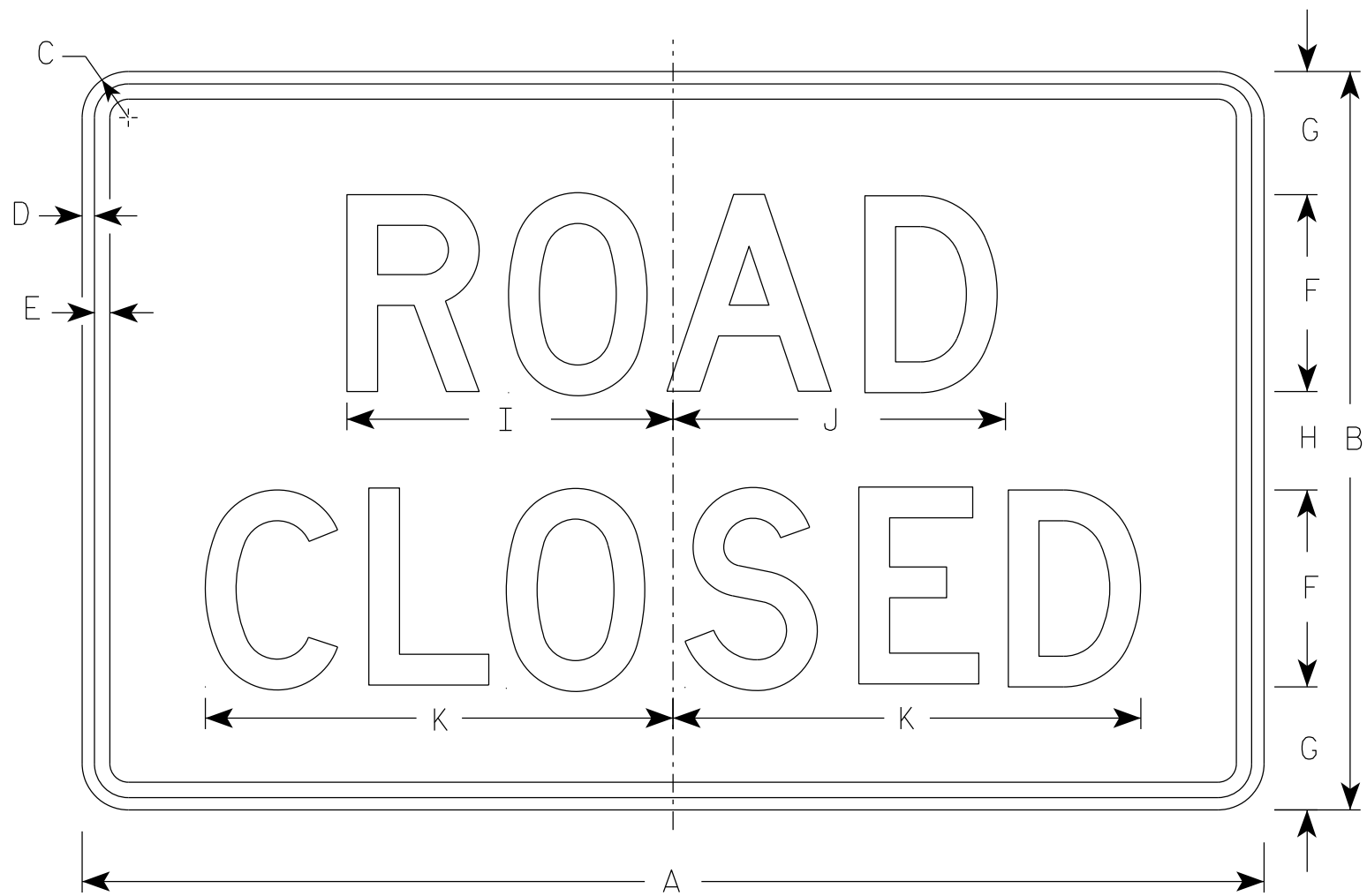
PROJECT NO:

HWY:

COUNTY:

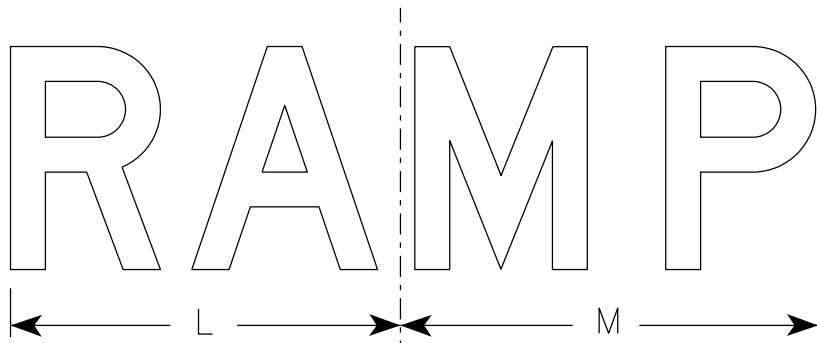
SHEET NO: 230

E

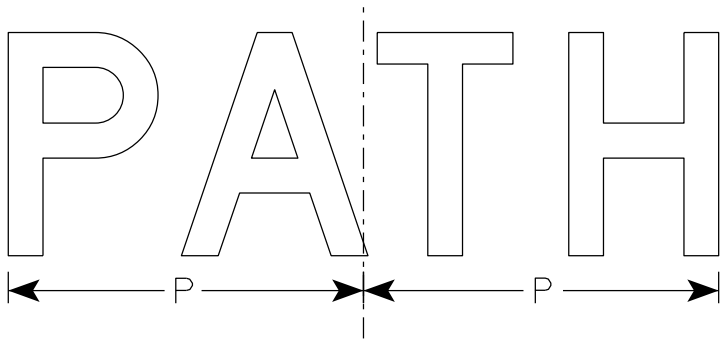


R11-2

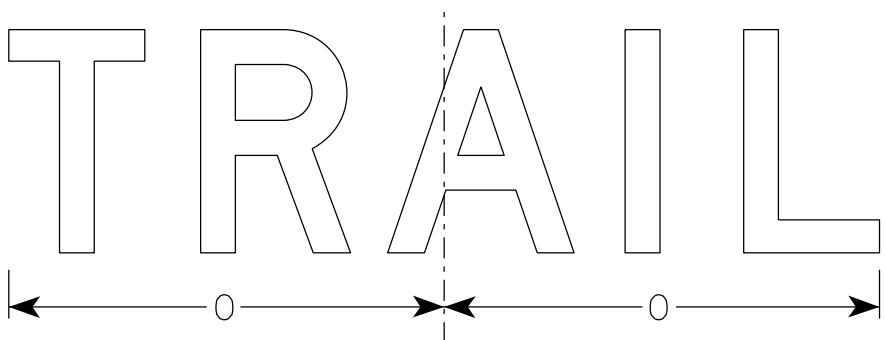
- NOTES
1. Sign is Type II - Type H Reflective
 2. Color:
Background - White
Message - Black
 3. Message Series - D
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 5. Modify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



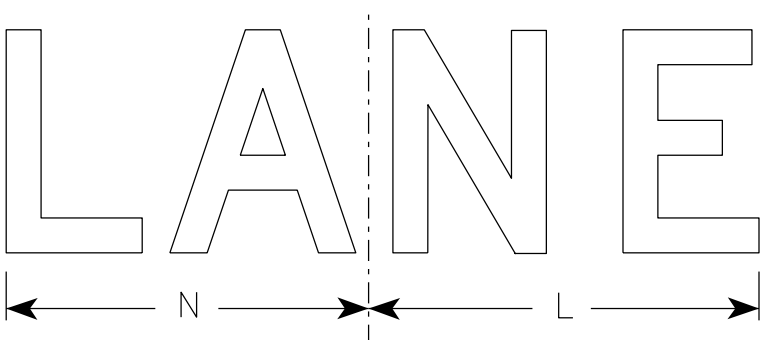
R11-2R



R11-2C



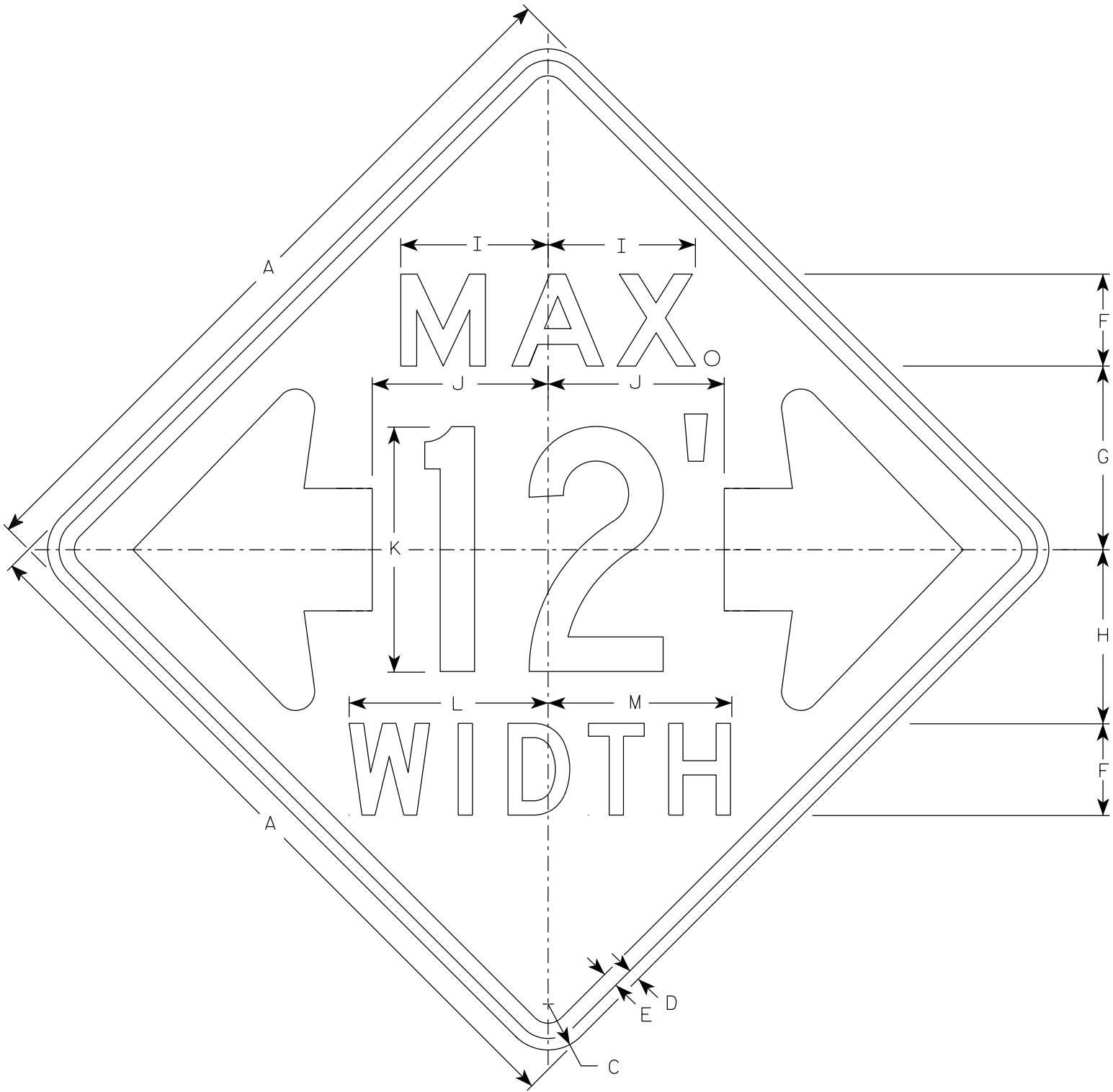
R11-2T



R11-2L

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	30	1 7⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13	15 5⁄8	12 3⁄4											10.0
2M	48	30	1 7⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13	15 5⁄8	12 3⁄4											10.0
3	48	30	1 7⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13	15 5⁄8	12 3⁄4											10.0
4	48	30	1 7⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13	15 5⁄8	12 3⁄4											10.0
5	48	30	1 7⁄8	1⁄2	5⁄8	8	5	4	13 1⁄4	13 1⁄2	19	14	15	13	15 5⁄8	12 3⁄4											10.0

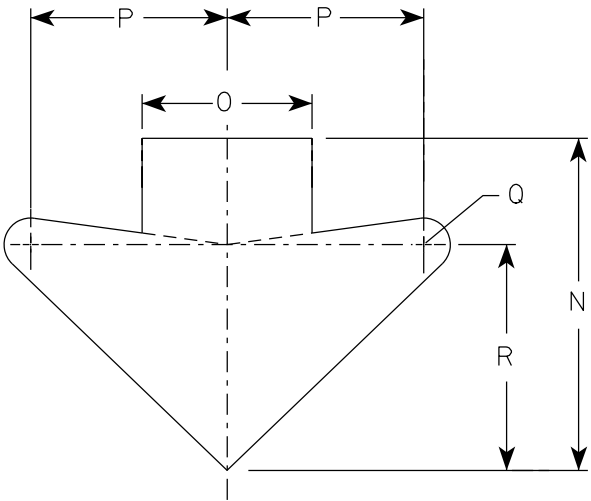
STANDARD SIGN R11-2	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 2/3/26	PLATE NO. R11-2.13



W12-52

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - See note 5
- 4. The top line is series E, the numerals are series C, and the bottom line is series D.
- 5. Substitute appropriate numerals and adjust spacing as required.



ARROW DETAIL

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48		3	¾	1	6	12	11 ⅜	9 ⅝	11 ½	16	13	12	15 ⅝	8	9 ¼	1 ¼	10 ⅝									16.0
2M	48		3	¾	1	6	12	11 ⅜	9 ⅝	11 ½	16	13	12	15 ⅝	8	9 ¼	1 ¼	10 ⅝									16.0
3																											
4																											
5																											

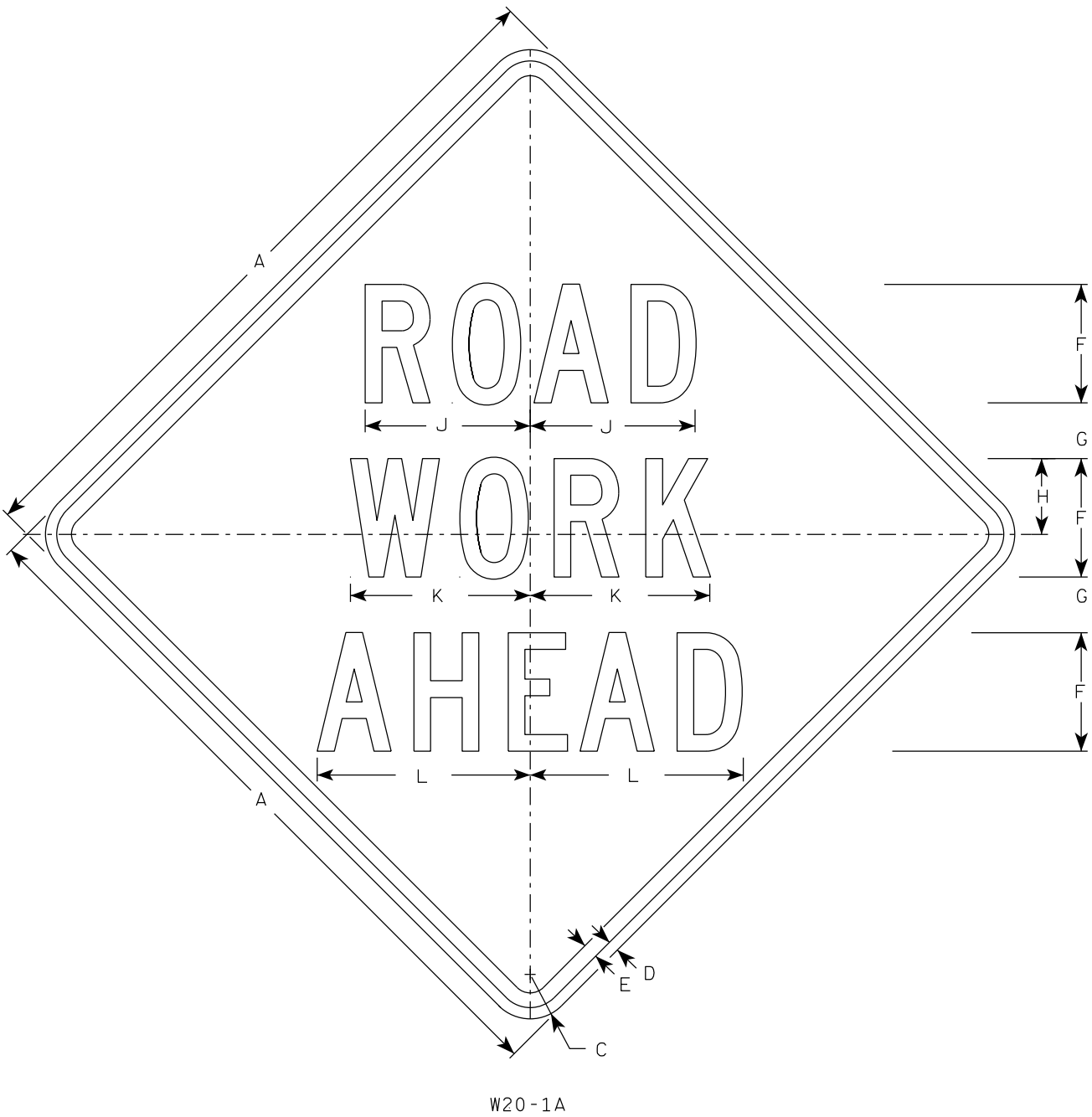
STANDARD SIGN

W12-52

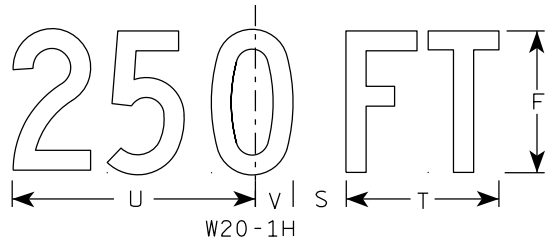
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

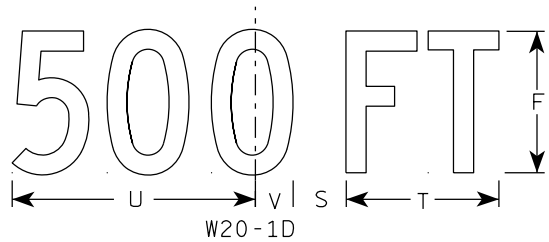
DATE 3/10/2024 PLATE NO. W12-52.8



W20-1A



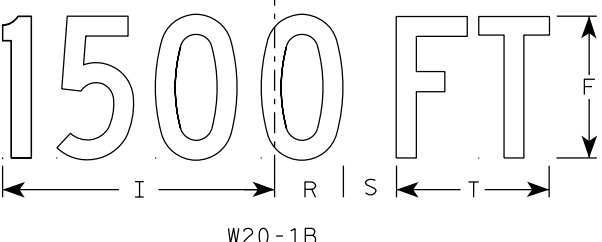
W20-1H



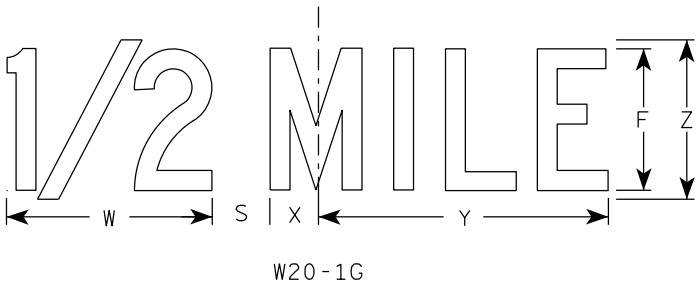
W20-1D



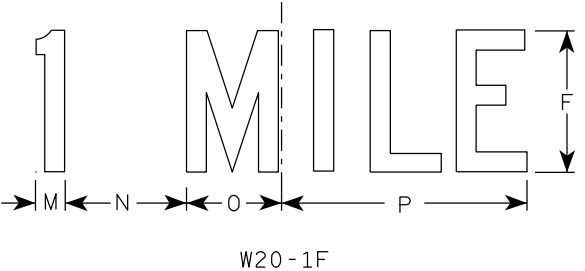
W20-1C



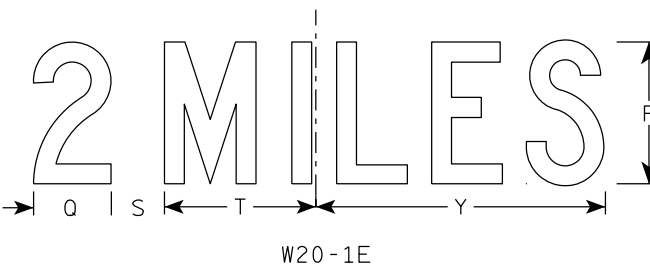
W20-1B



W20-1G



W20-1F

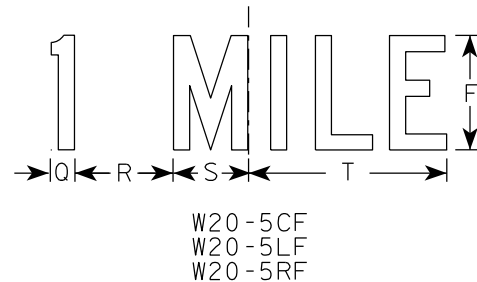
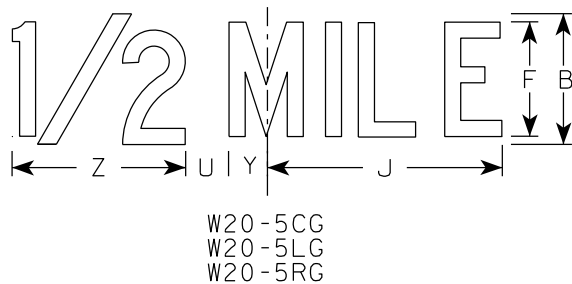
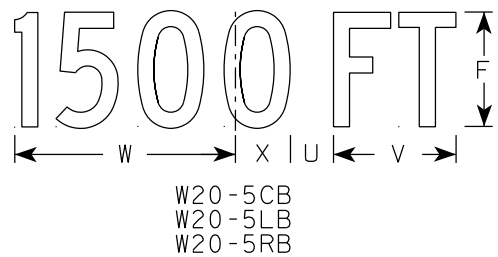
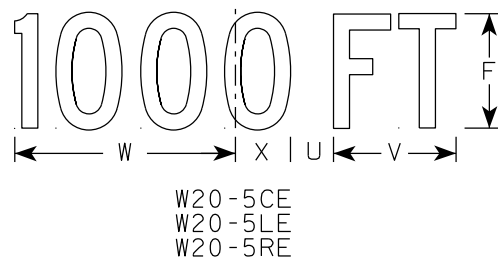
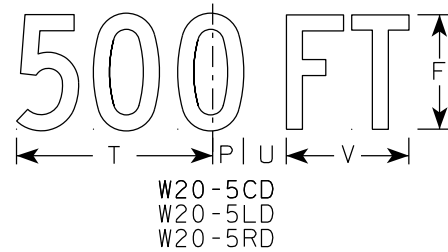
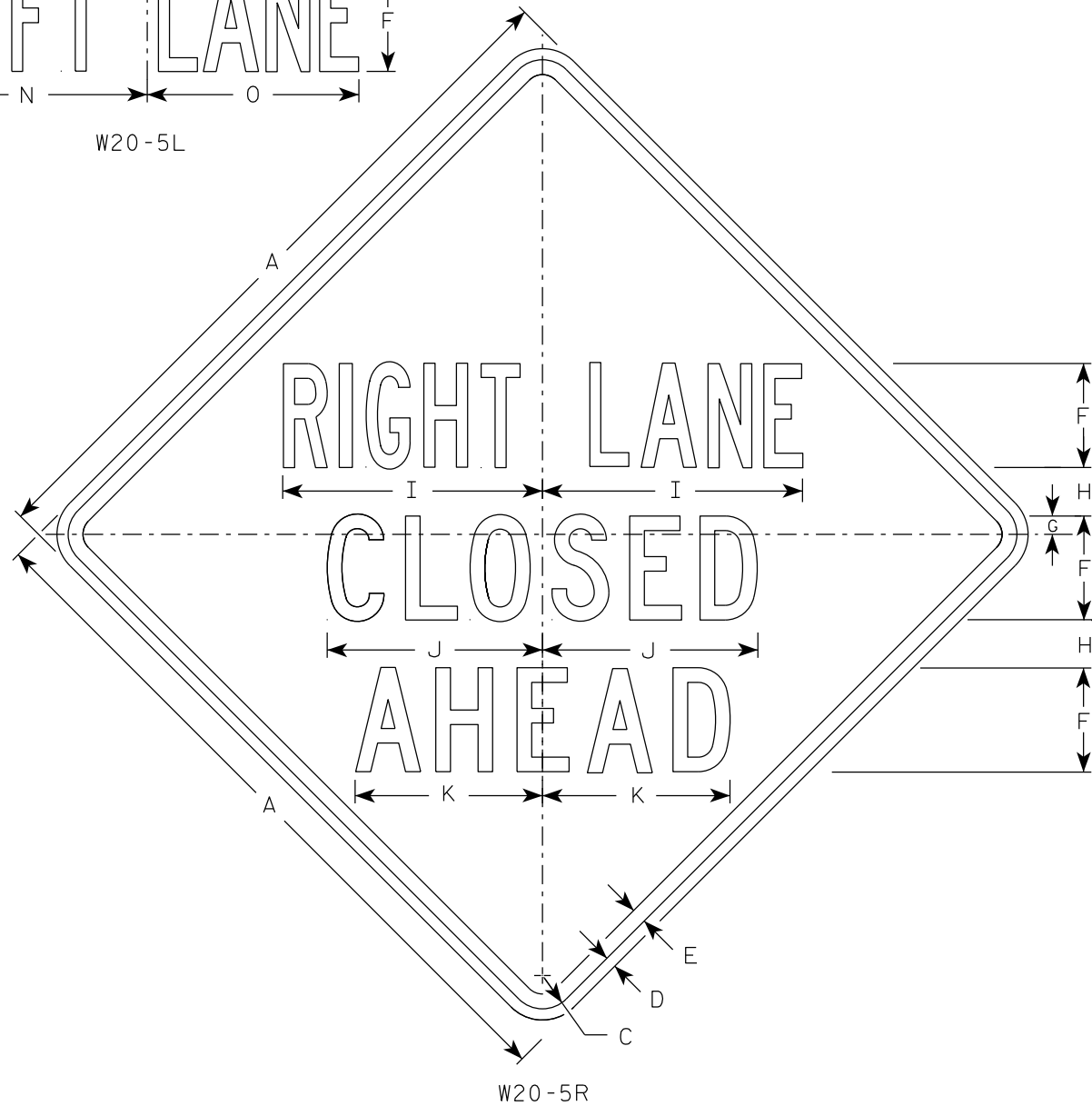
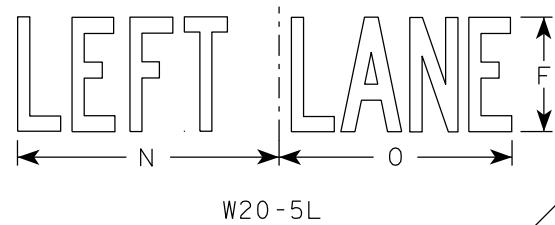
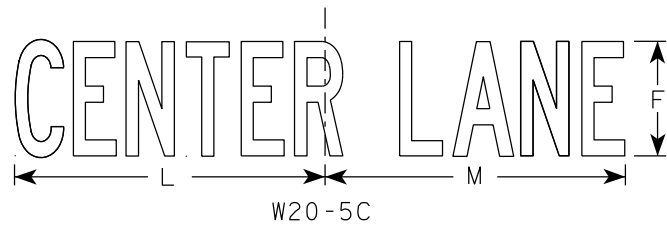


W20-1E

NOTES

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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		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



NOTES

- Sign is Type II - Type F Reflective
- Color:
Background - Orange
Message - Black
- Message Series - See Note 5
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- " _____ LANE" is Series B.
All other copy is Series C.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	6	2 1/4	5/8	3/4	5	7/8	2 1/2	13 1/8	10 3/4	9 1/2	14 1/4	13 5/8	12	12	1 3/8	1 1/8	4 1/2	3 1/2	9	1 7/8	5 5/8	10 1/8	2 1/2	1 3/4	8	9.0
2S	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
2M	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
3	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
4	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0
5	48	8	3	3/4	1	7	1 1/4	3 1/4	17 1/2	14 3/8	12 5/8	19	18 3/8	16	14 1/4	1 7/8	1 1/2	6	4 5/8	12	2 5/8	7 1/2	13 1/2	3 3/8	2 3/8	10 5/8	16.0

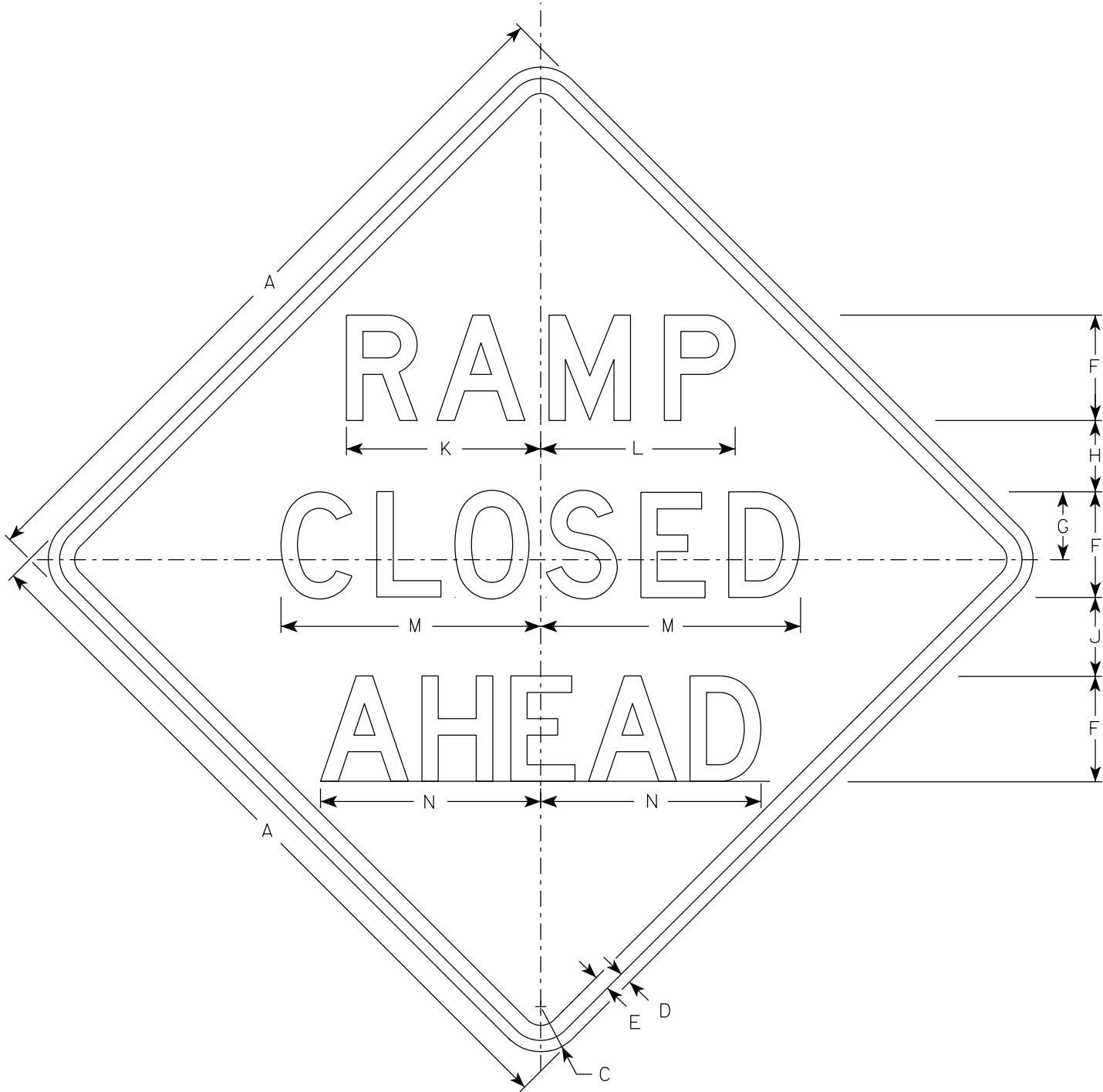
PROJECT NO:

HWY:

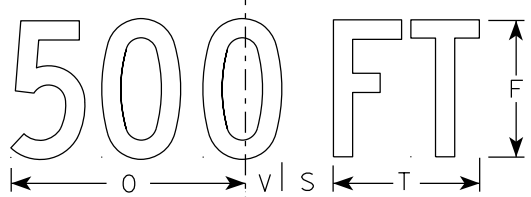
COUNTY:

SHEET NO: 234

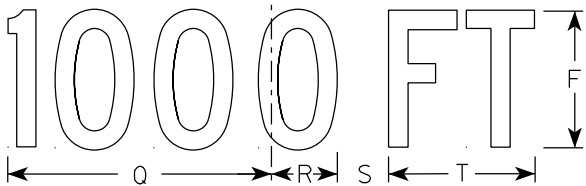
E



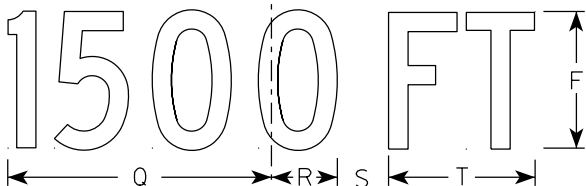
W20-53A



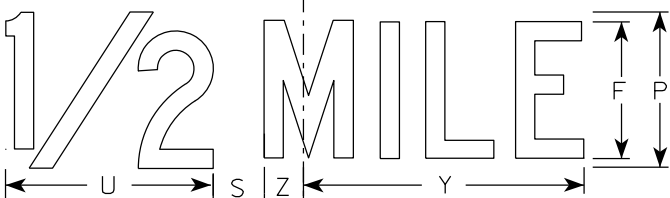
W20-53D



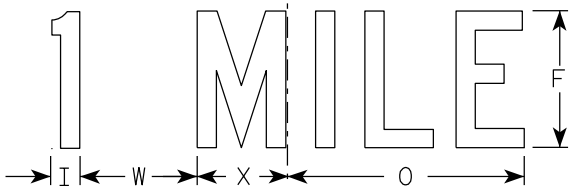
W20-53C



W20-53B



W20-53G



W20-53F

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.

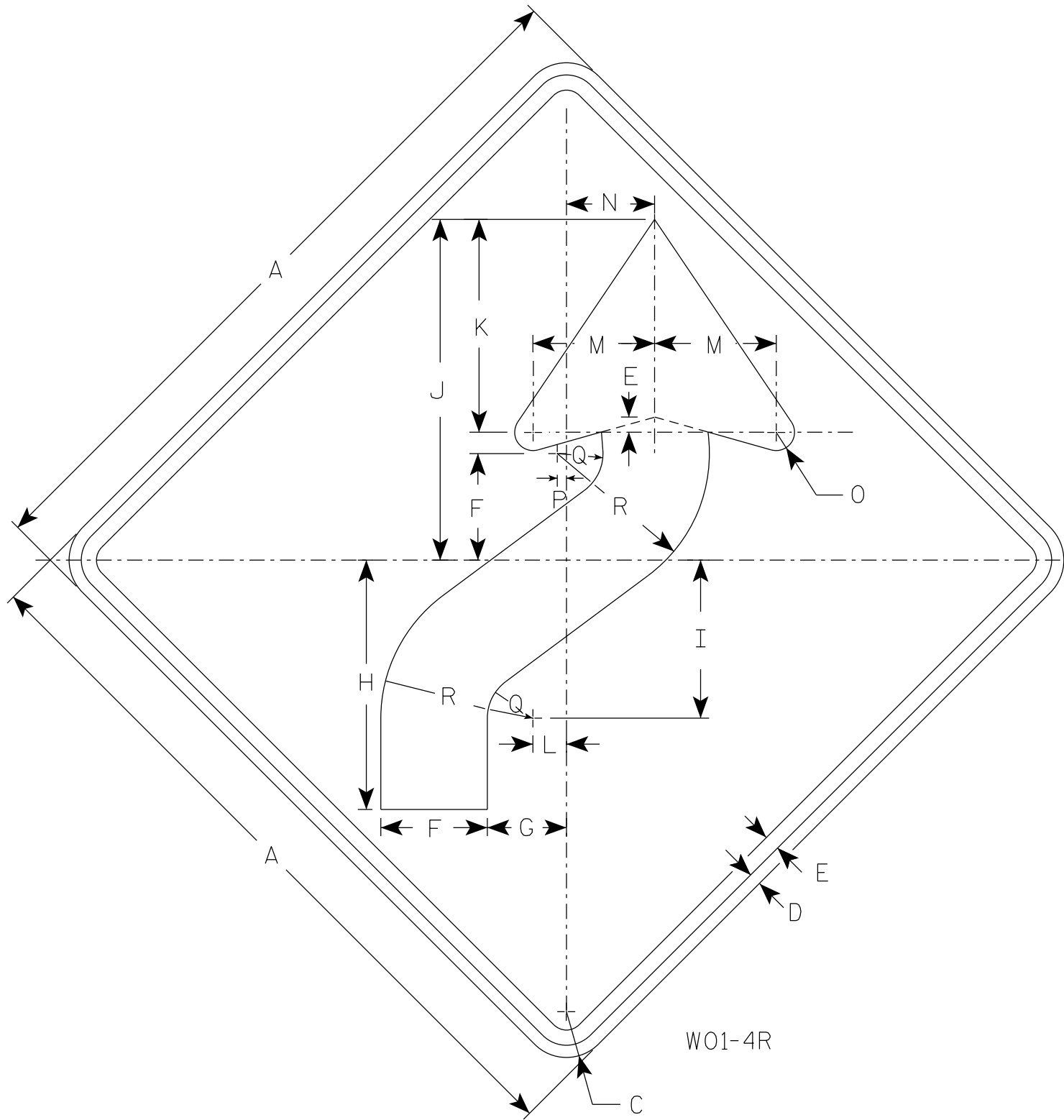
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	9 1/4	9 1/4	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 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	12 7/8	12 7/8	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	12 7/8	12 7/8	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	12 7/8	12 7/8	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	12 7/8	12 7/8	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
W20-53A,B,C,D,F,G

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R Rauch*
for State Traffic Engineer

DATE 1/10/2024 PLATE NO. W20-53.2



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
4. W01-4L is the same as W01-4R except the arrow is reversed along the vertical centerline.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5 1/4	4	12 3/8	7 7/8	16 7/8	10 1/2	1 5/8	6	4 1/2	1	1/2	2 1/4	7 1/2									9.0
2S	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
2M	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
3	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
4	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0
5	48		3	3/4	1	7	5 1/4	16 1/2	10 1/2	22 1/2	14	2 1/4	8	6	1 1/4	5/8	3	10									16.0

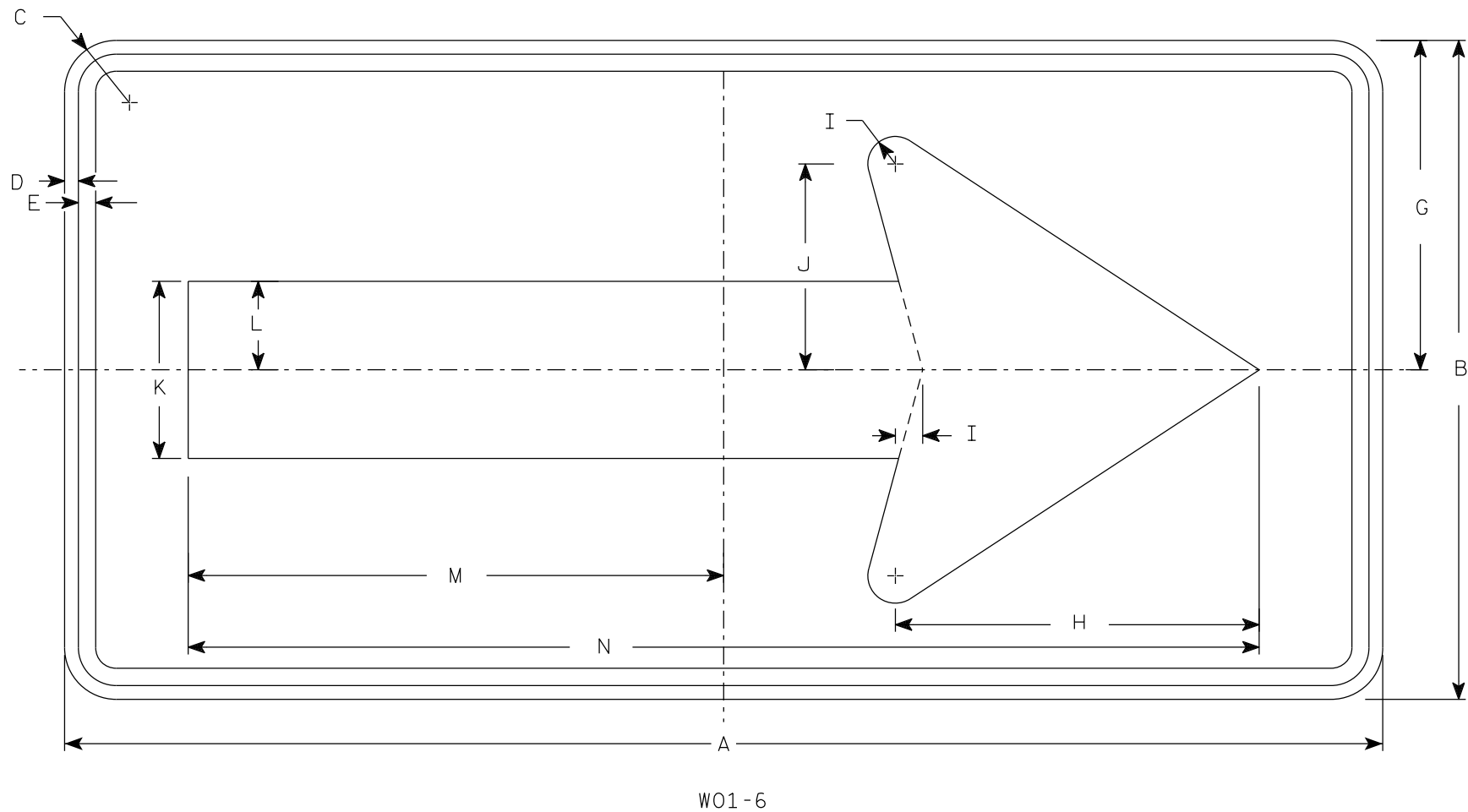
STANDARD SIGN
W01-4

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-4.2

7



NOTES

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

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	48	24	1 7/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
2M	48	24	1 7/8	1/2	5/8		12	13 1/4	1	7 1/2	6 1/2	3 1/4	19 1/2	39													8.0
3	60	30	1 7/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
4	60	30	1 7/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5
5	60	30	1 7/8	1/2	5/8		15	16 1/4	1 1/4	9 1/4	8	4	24 3/8	48 3/4													12.5

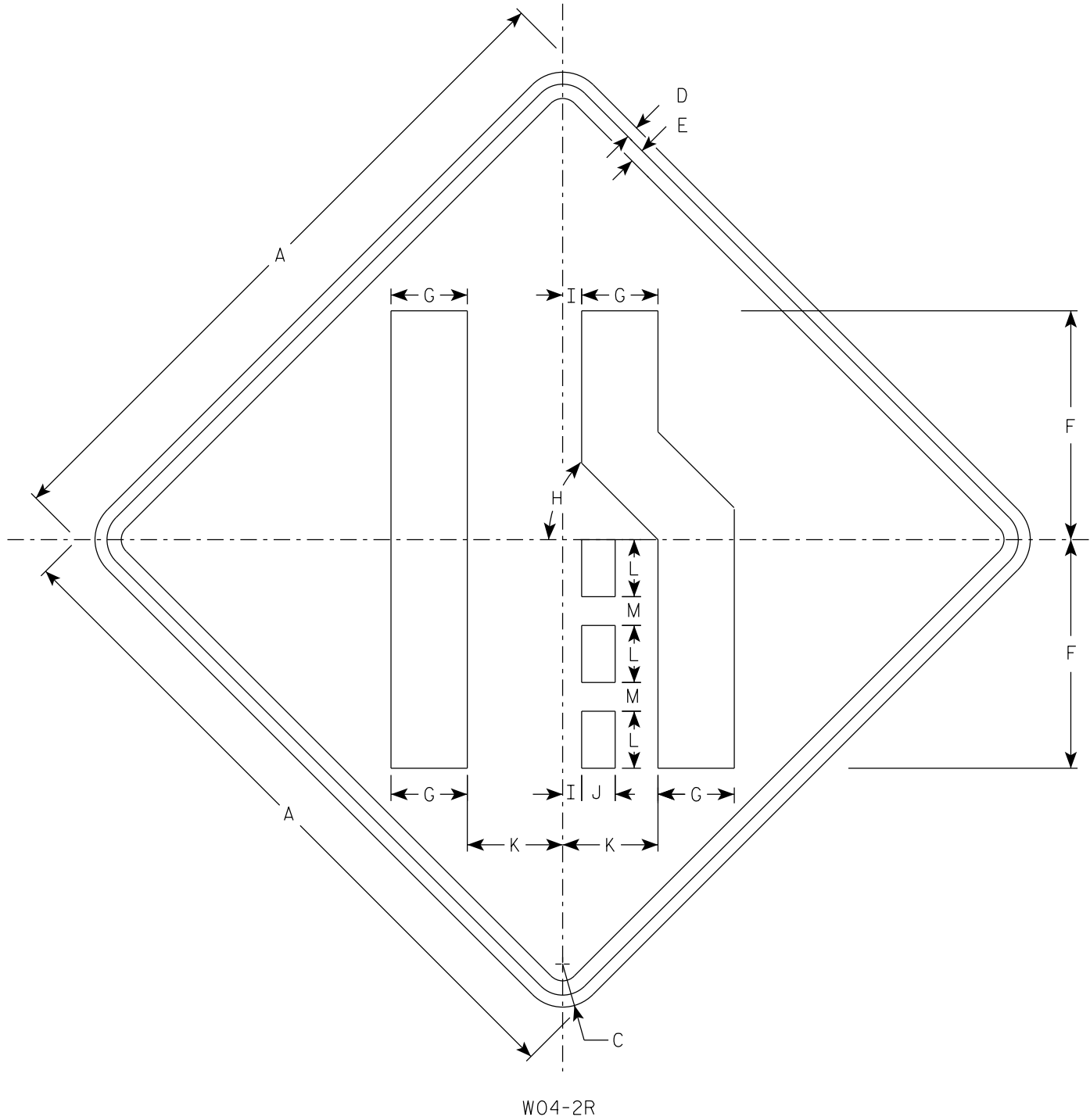
STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-6.2

7



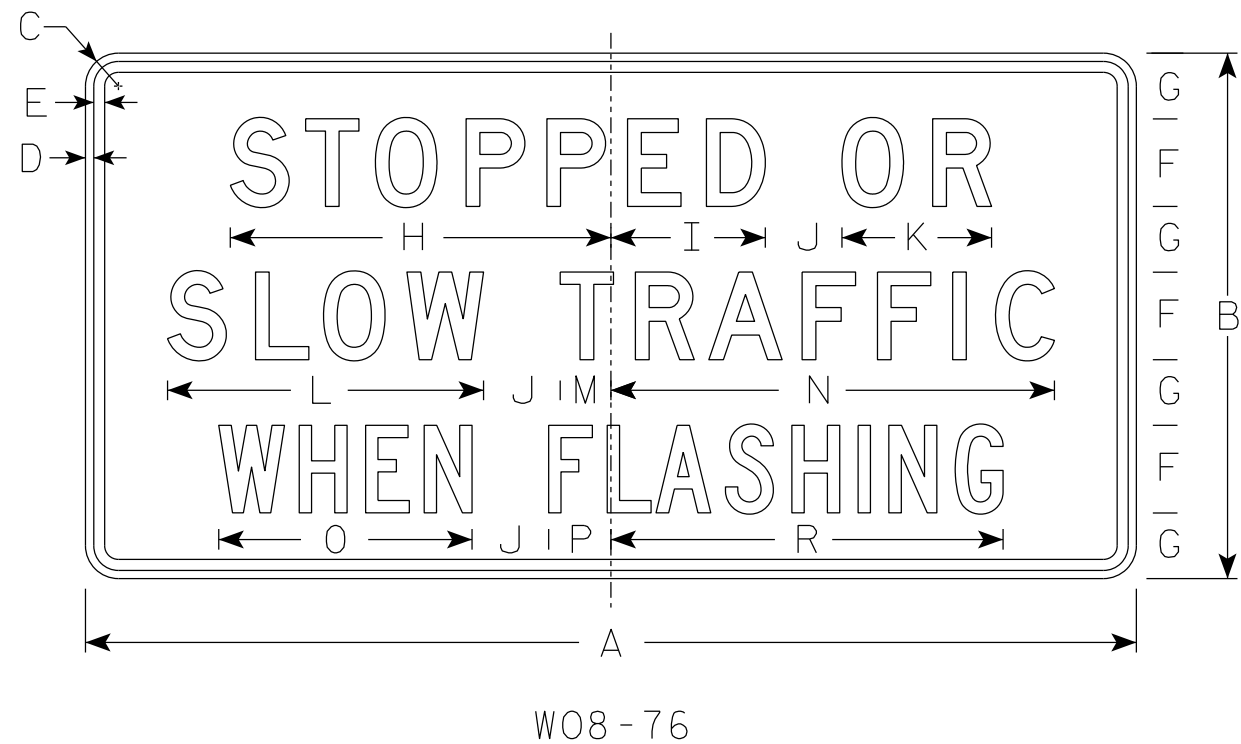
NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 4. W04-2L is the same as W04-2R except the symbol is reversed along the vertical centerline.

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	12	4	45°	1	1 3/4	5	3	1 1/2														9.0
2S	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
2M	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
3	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
4	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0
5	48		3	3/4	1	16	5 3/8	45°	1 1/4	2 3/8	6 3/4	4	2														16.0

7



NOTES

1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - Lines 1 and 2 are series D
Line 3 is 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																											
2																											
3																											
4	96	48	3	¾	1	8	6	34 ¾	14 ⅛	7	13 ⅝	28 ⅞	4 ⅝	40 ½	23 ⅛	5 ¾		35 ⅞									32.0
5																											

PROJECT NO:		HWY:		COUNTY:		SHEET NO: 239		E
-------------	--	------	--	---------	--	---------------	--	---

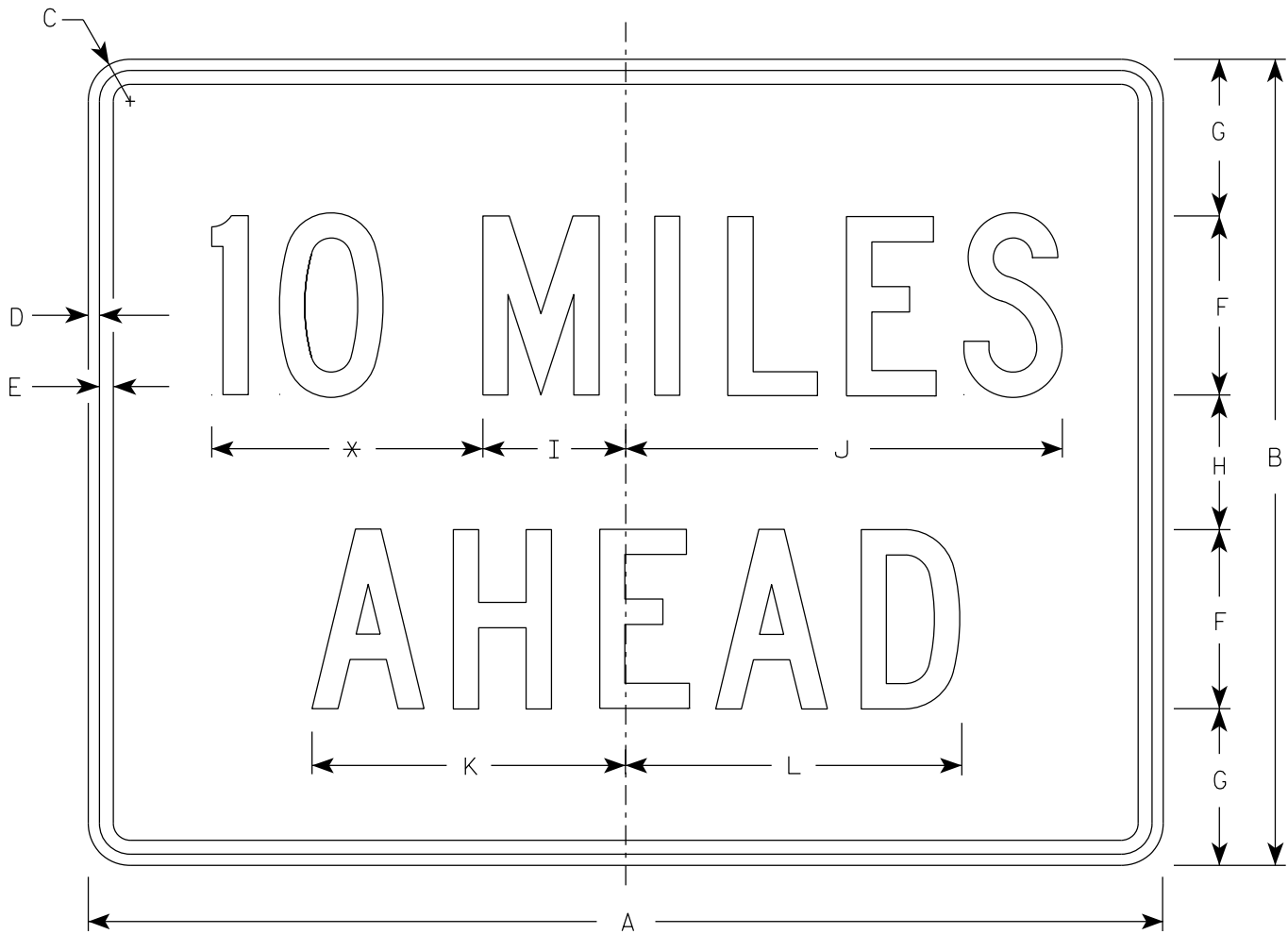
STANDARD SIGN
W08-76

WISCONSIN DEPT OF TRANSPORTATION

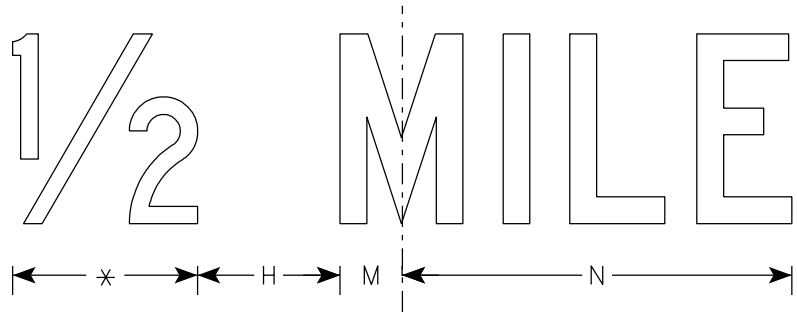
APPROVED *Matthew R. Rauch*
For State Traffic Engineer

DATE 3/13/2024 PLATE NO. W08-76.3

7



W057-52



* See note 5

NOTES

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

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36	24	1 1/2	3/8	1/2	6	4 1/2	3	4 3/4	14 5/8	10 5/8	11 3/8	2	12													6.0
2S	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
2M	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
3	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
4	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0
5	48	36	2 1/4	1/2	5/8	8	7	6	6 3/8	19 1/2	14	15	2 3/4	16 3/8													12.0

STANDARD SIGN
W057-52

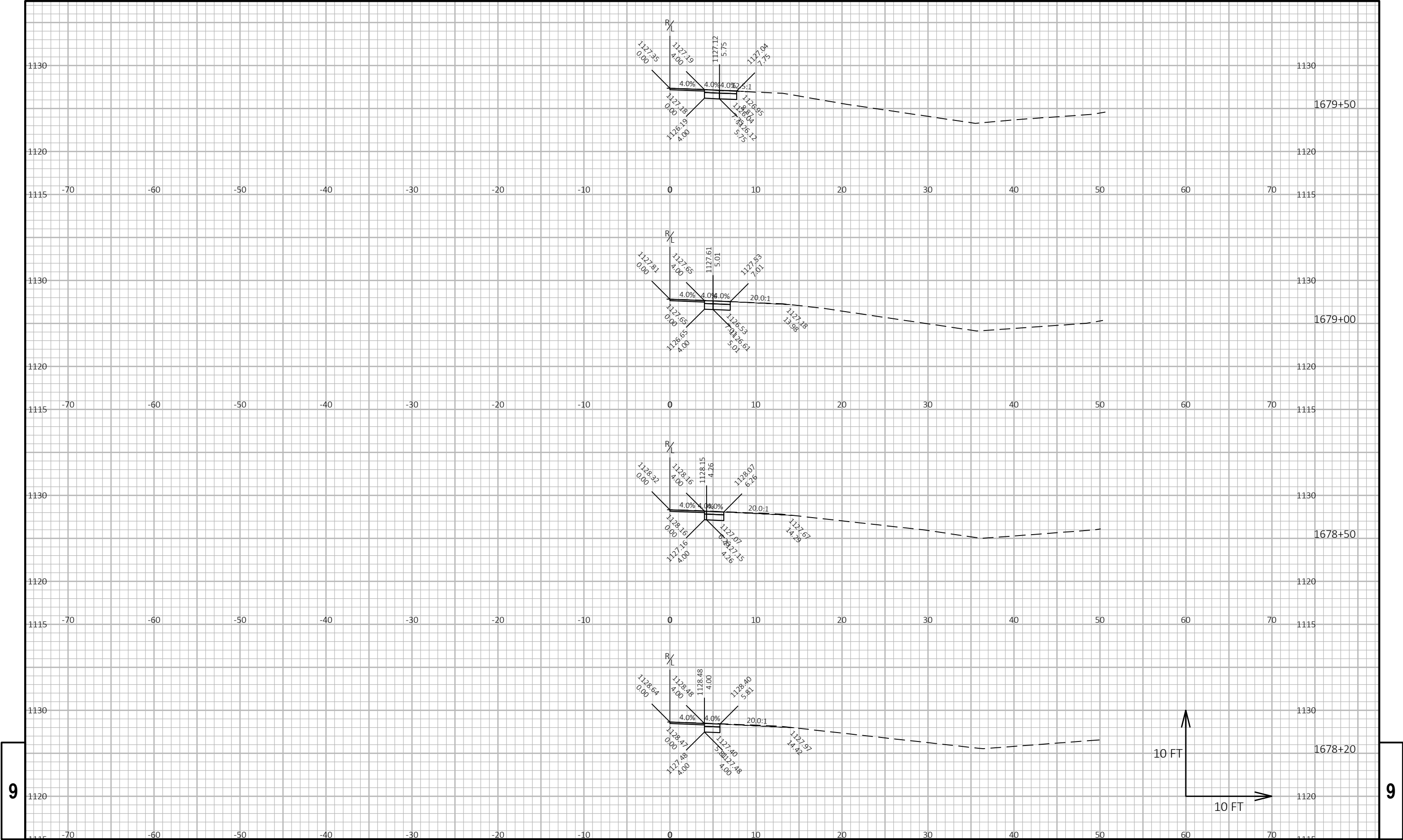
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/1/2024 PLATE NO. W057-52.3

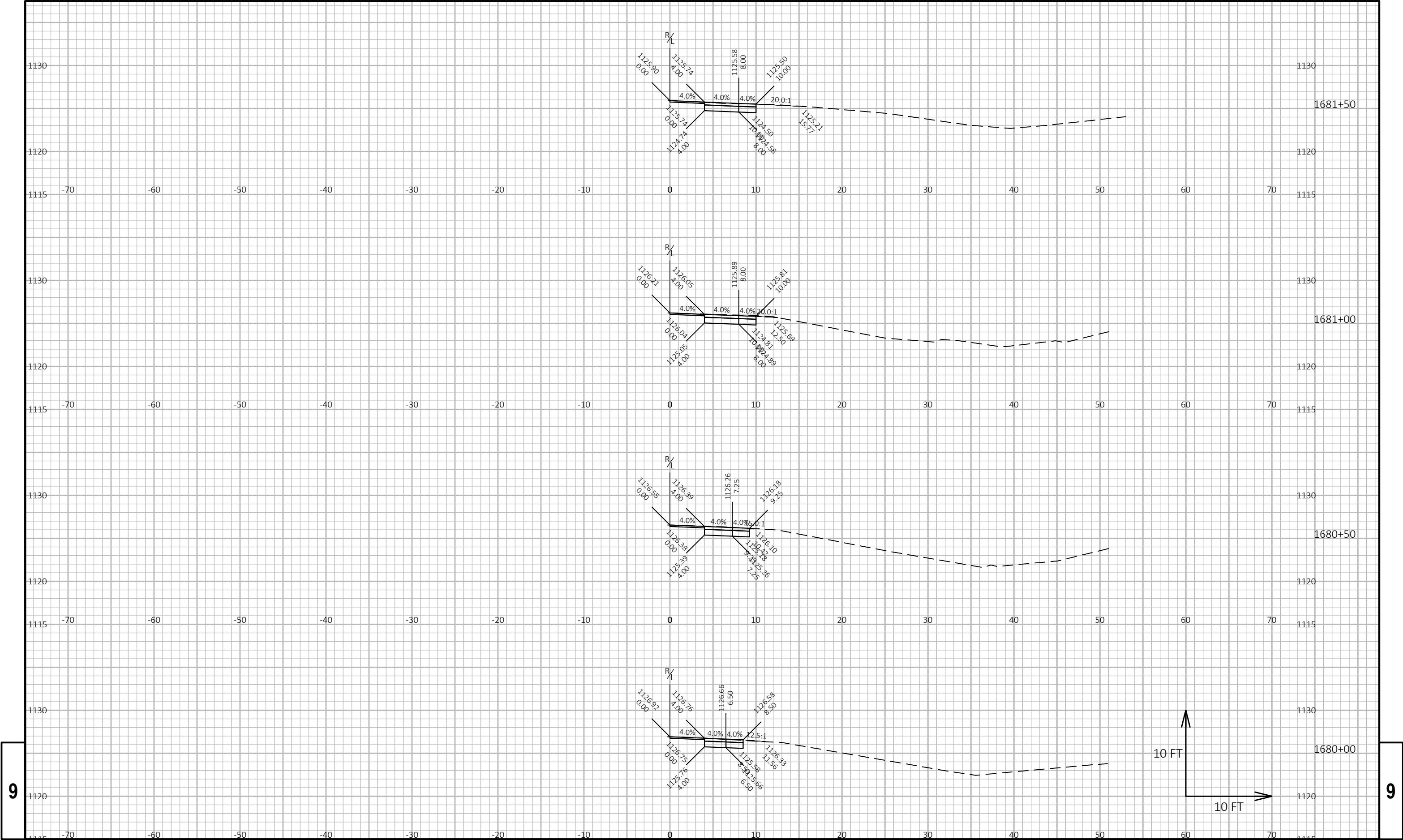
DIVISION 1 - IH 39 TEMPORARY WIDENING CONSTRUCTION											
STATION	REAL STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
			CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
						NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.20	NOTE 8
1678+20.00	167820.00	0.00	3.64	0.83	0.00	0	0	0	0	0	0
1678+50.00	167850.00	30.00	3.81	0.83	0.00	4	1	0	4	0	3
1679+00.00	167900.00	50.00	4.27	0.83	0.00	7	2	0	11	0	8
1679+50.00	167950.00	50.00	4.71	0.83	0.02	8	2	0	19	0	14
1680+00.00	168000.00	50.00	5.41	0.83	0.12	9	2	0	28	0	21
1680+50.00	168050.00	50.00	6.46	0.83	0.01	11	2	0	39	0	30
1681+00.00	168100.00	50.00	7.63	0.83	0.00	13	2	0	52	0	41
1681+50.00	168150.00	50.00	6.87	0.83	0.00	13	2	0	65	0	52
1682+00.00	168200.00	50.00	6.50	0.83	0.15	12	2	0	77	0	62
1682+50.00	168250.00	50.00	6.95	0.83	0.02	12	2	0	89	0	72
1683+00.00	168300.00	50.00	7.40	0.83	0.00	13	2	0	102	0	83
1683+50.00	168350.00	50.00	7.66	0.83	0.00	14	2	0	116	0	95
1684+00.00	168400.00	50.00	9.18	0.83	0.00	16	2	0	132	0	109
1684+50.00	168450.00	50.00	8.95	0.83	0.00	17	2	0	149	0	124
1685+00.00	168500.00	50.00	9.02	0.83	0.00	17	2	0	166	0	139
1685+50.00	168550.00	50.00	8.88	0.83	0.00	17	2	0	183	0	154
1686+00.00	168600.00	50.00	8.09	0.83	0.00	16	2	0	199	0	168
1686+50.00	168650.00	50.00	8.20	0.83	0.00	15	2	0	214	0	181
1687+00.00	168700.00	50.00	7.78	0.83	0.00	15	2	0	229	0	194
1687+50.00	168750.00	50.00	7.54	0.83	0.00	14	2	0	243	0	206
1688+00.00	168800.00	50.00	6.83	0.83	0.01	13	2	0	256	0	217
1688+50.00	168850.00	50.00	7.89	0.83	0.00	14	2	0	270	0	229
1689+00.00	168900.00	50.00	7.64	0.83	0.00	14	2	0	284	0	241
1689+50.00	168950.00	50.00	7.18	0.83	0.04	14	2	0	298	0	253
1690+00.00	169000.00	50.00	6.32	0.83	0.09	12	2	0	310	0	263
1690+50.00	169050.00	50.00	5.88	0.83	0.00	11	2	0	321	0	272
1691+00.00	169100.00	50.00	5.69	0.83	0.00	11	2	0	332	0	281
1691+50.00	169150.00	50.00	4.43	0.83	0.06	9	2	0	341	0	288
1692+00.00	169200.00	50.00	3.36	0.83	0.27	7	2	0	348	0	293
1692+50.00	169250.00	50.00	3.08	0.83	0.07	6	2	0	354	0	297
1692+51.43	169251.43	1.43	0.00	0.83	0.00	0	0	0	354	0	297

NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	IF MARSH OR EBS TO BE BACKFILLED WITH COMMON OR BORROW: [(CUT - SALVAGED PAVT) - (FILL * FILL FACTOR)]



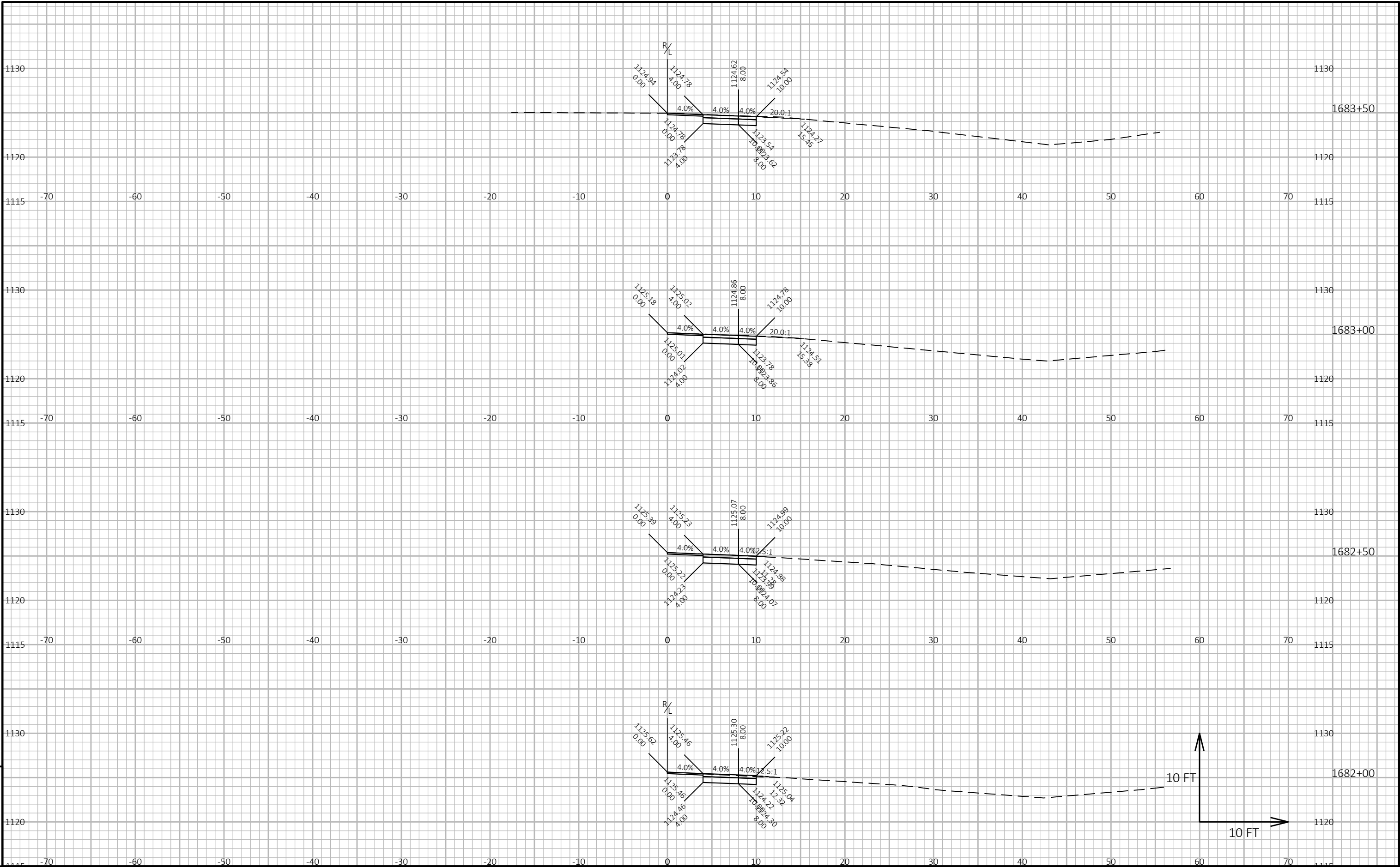
9

9



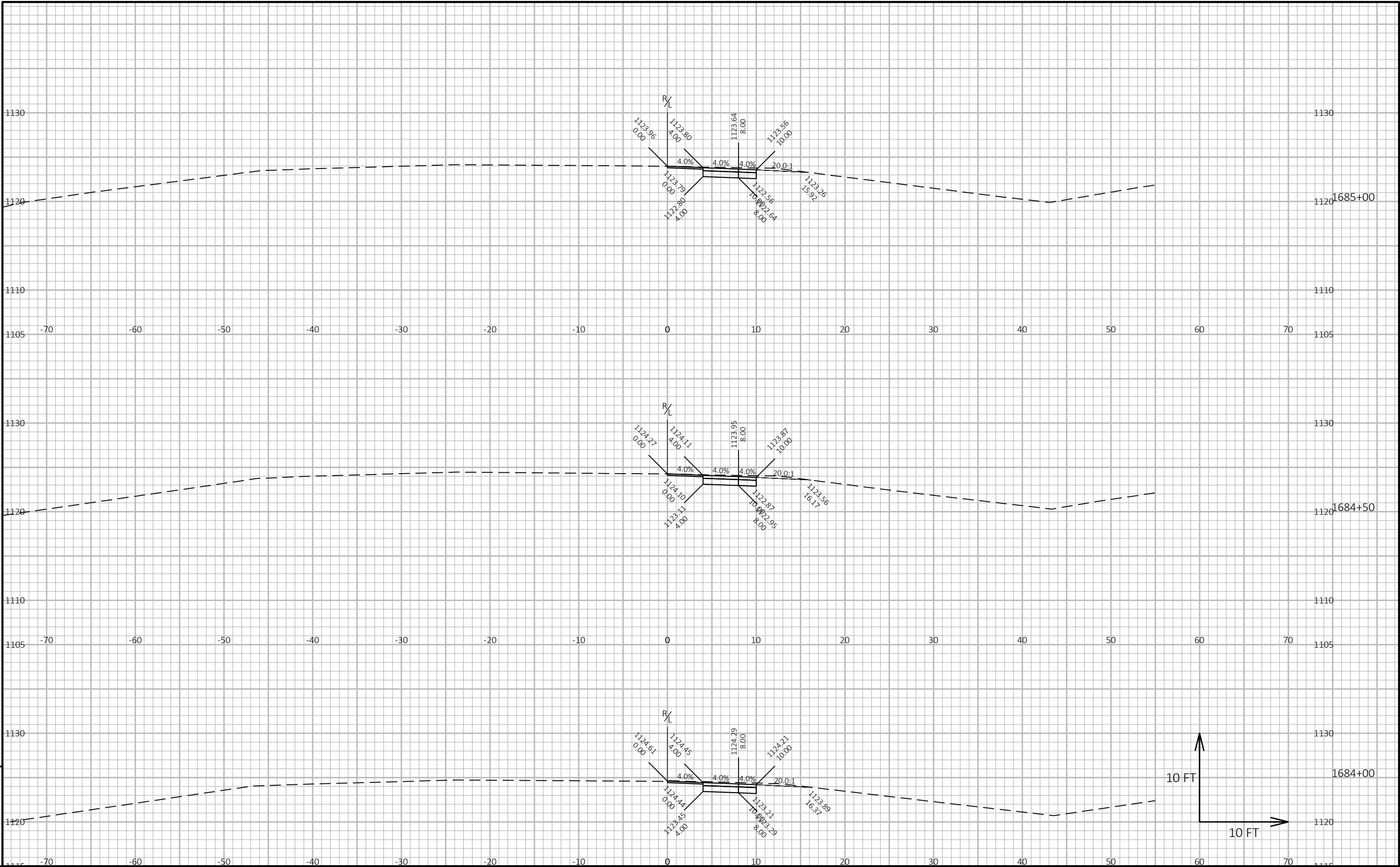
9

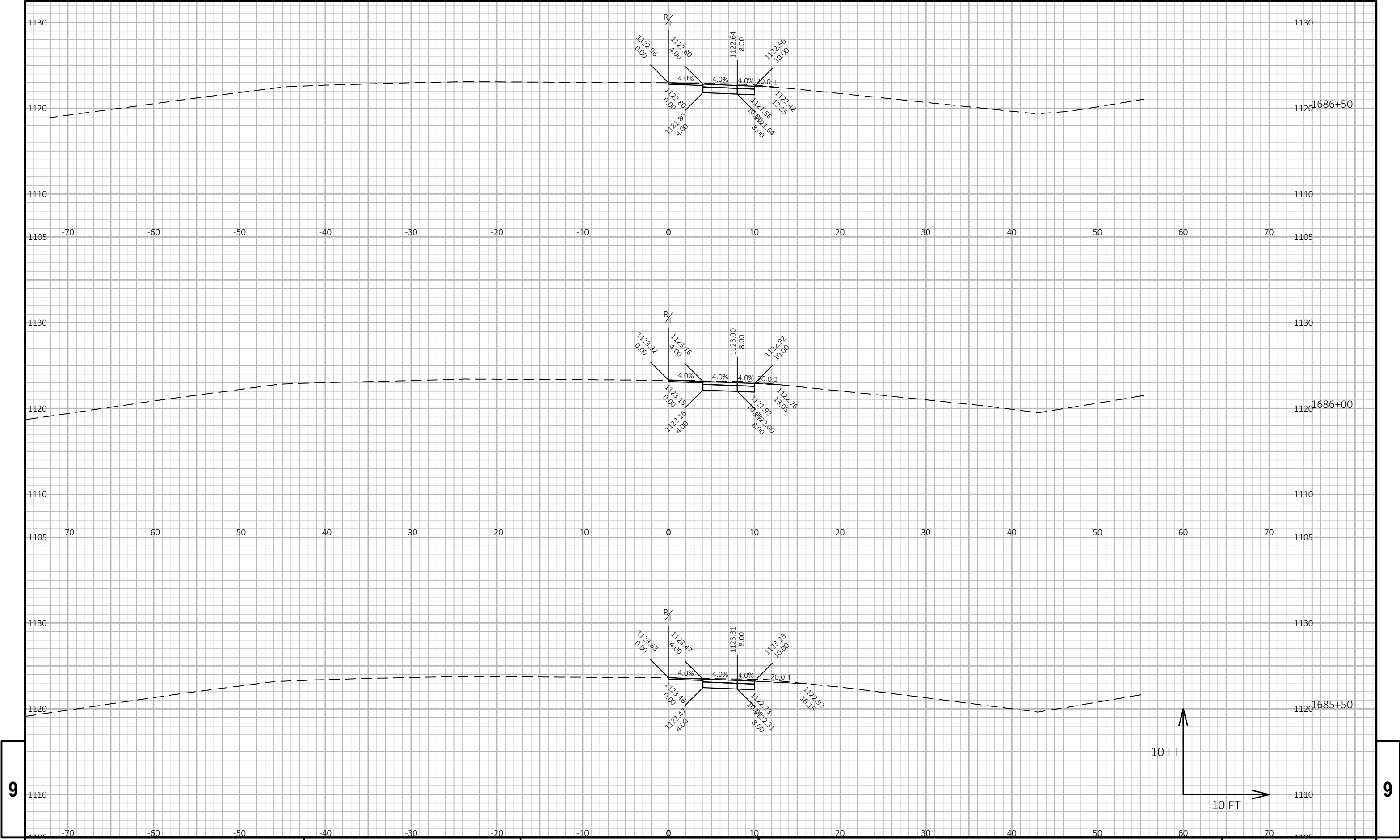
9



9

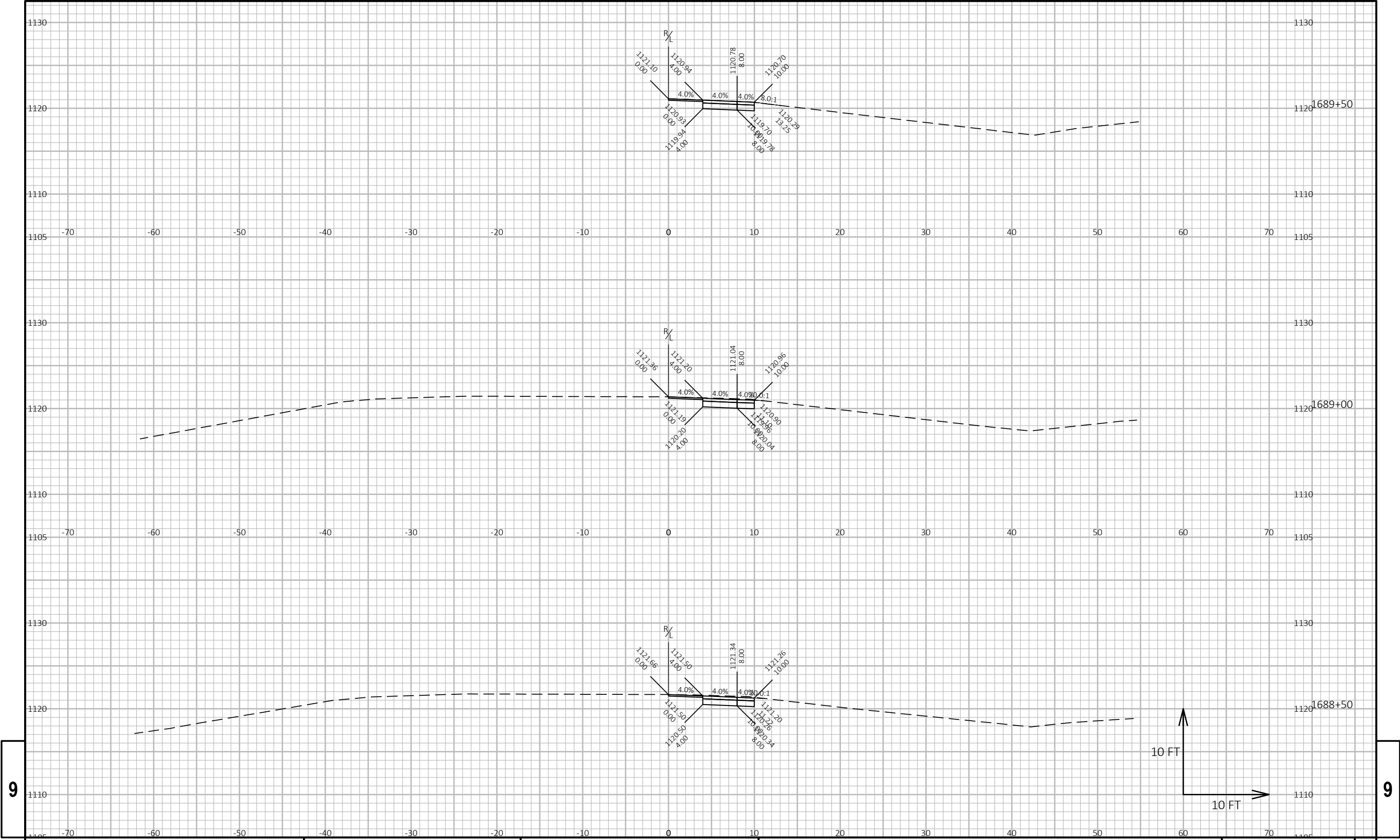
9





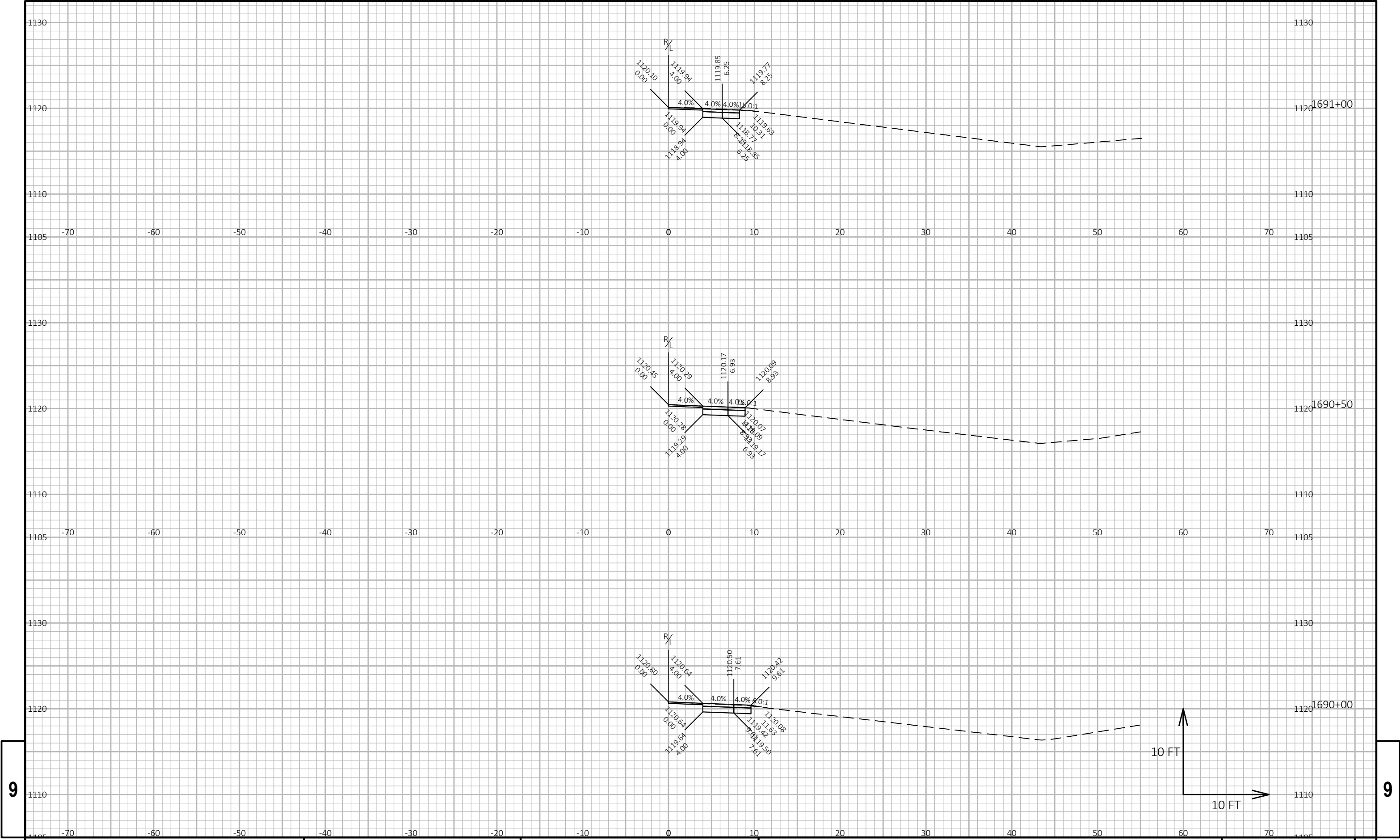
9

9



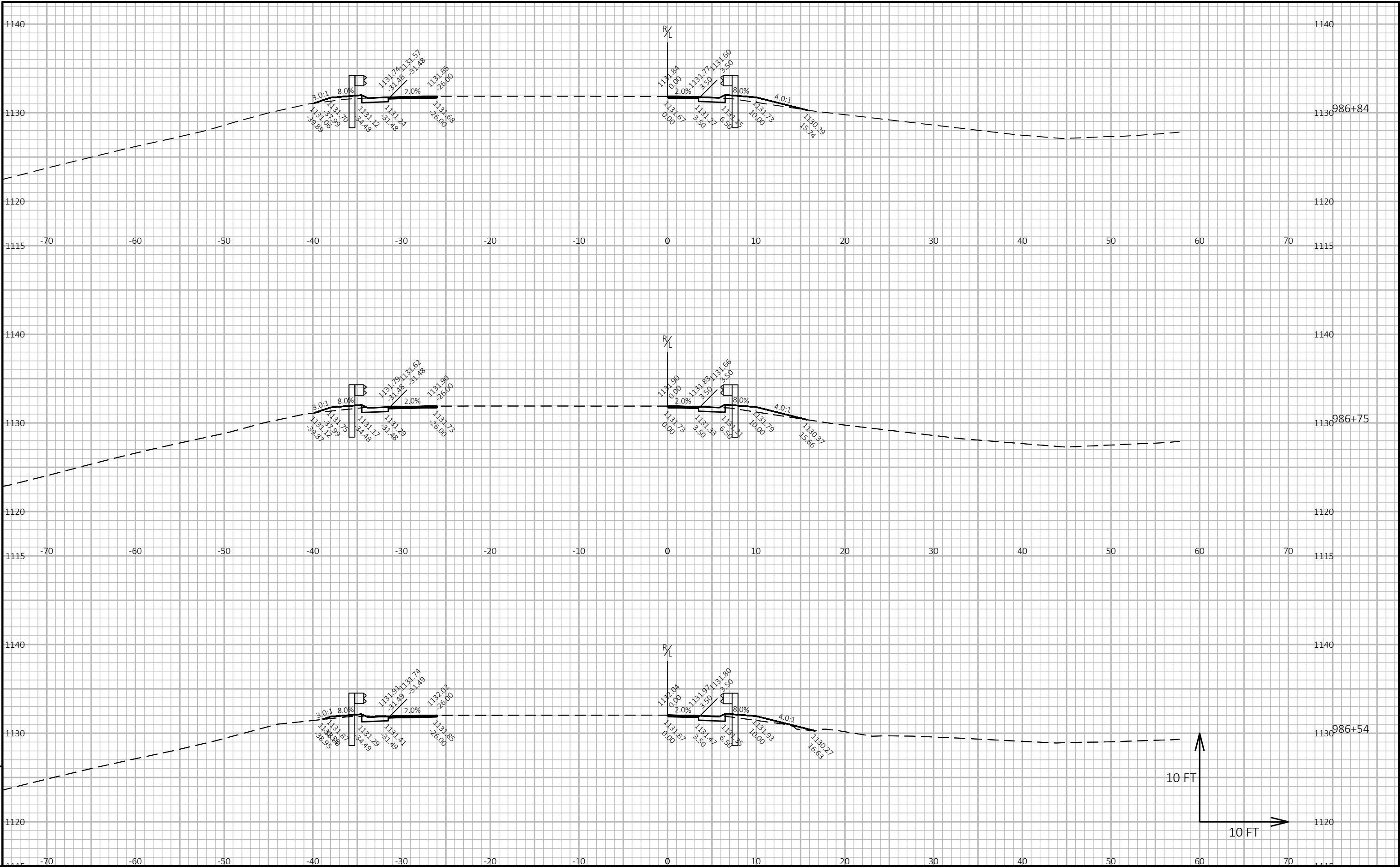
9

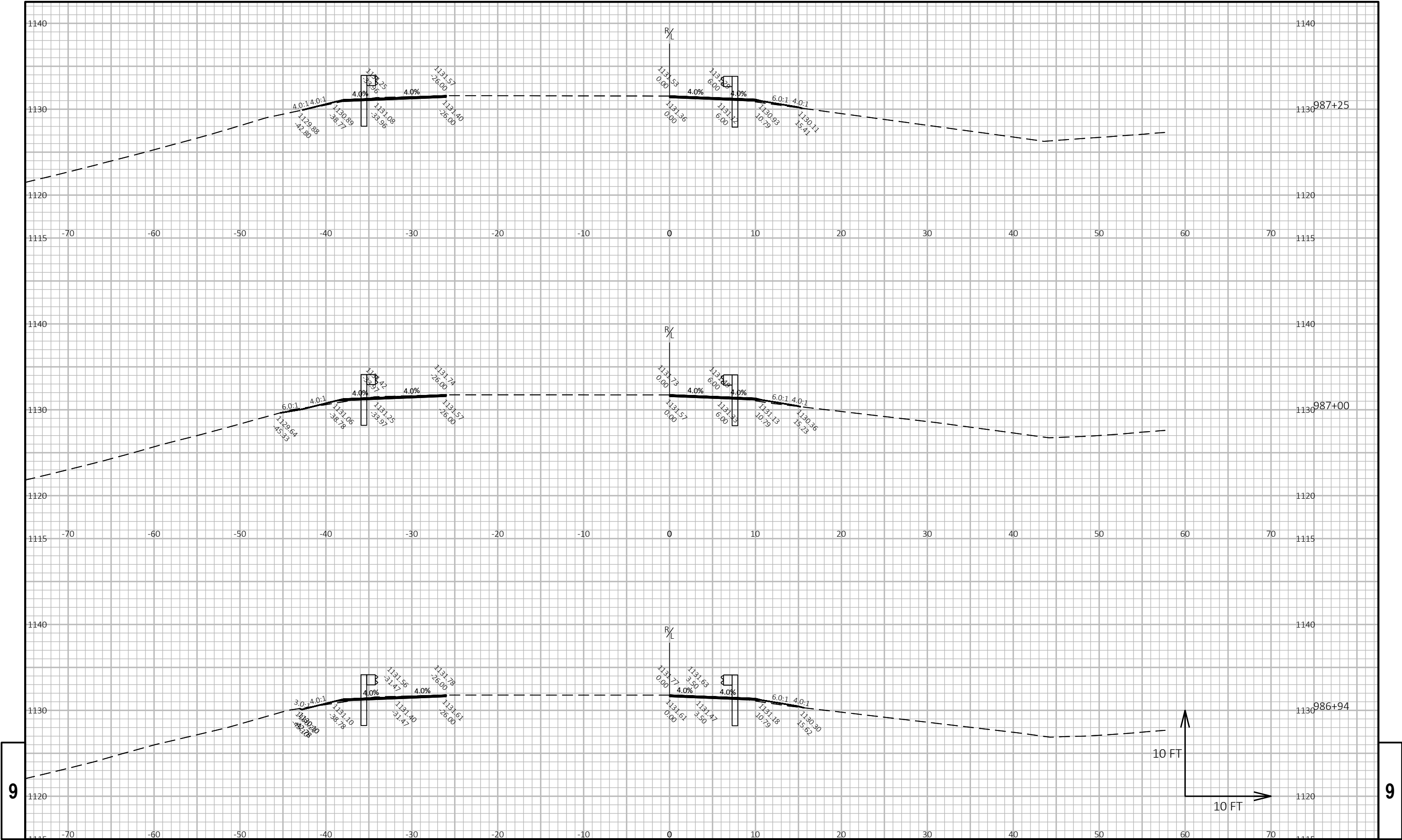
9



9

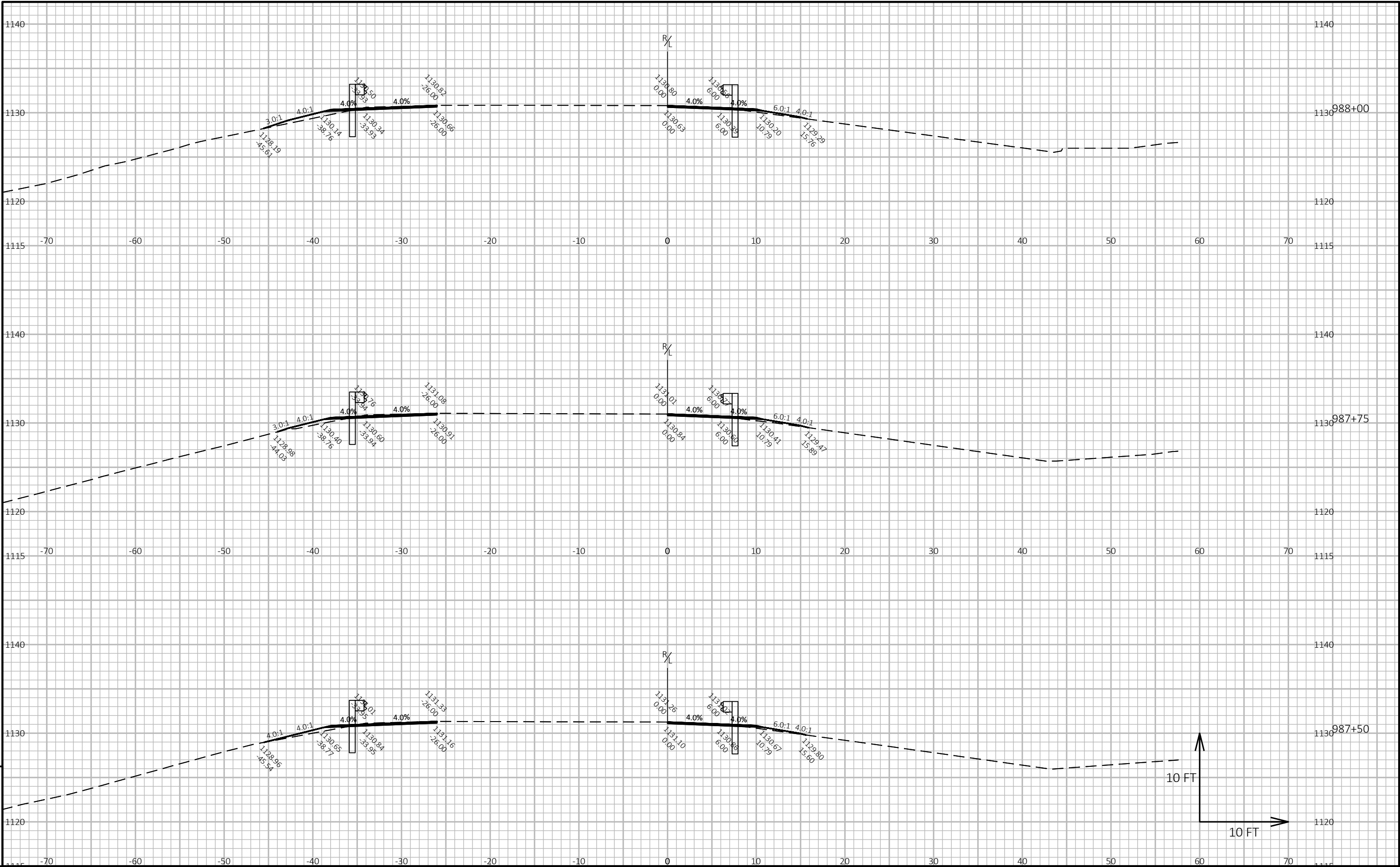
9

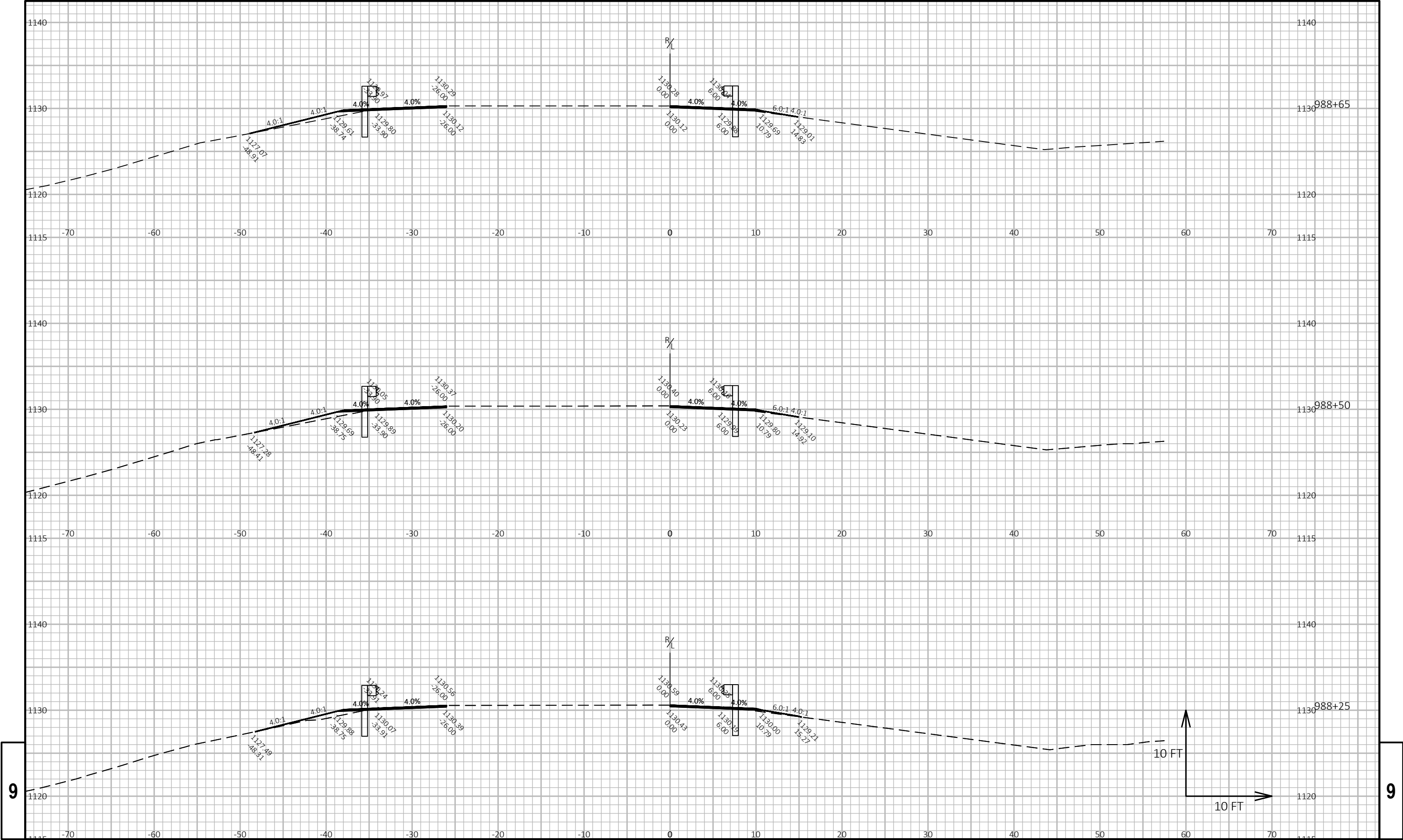




9

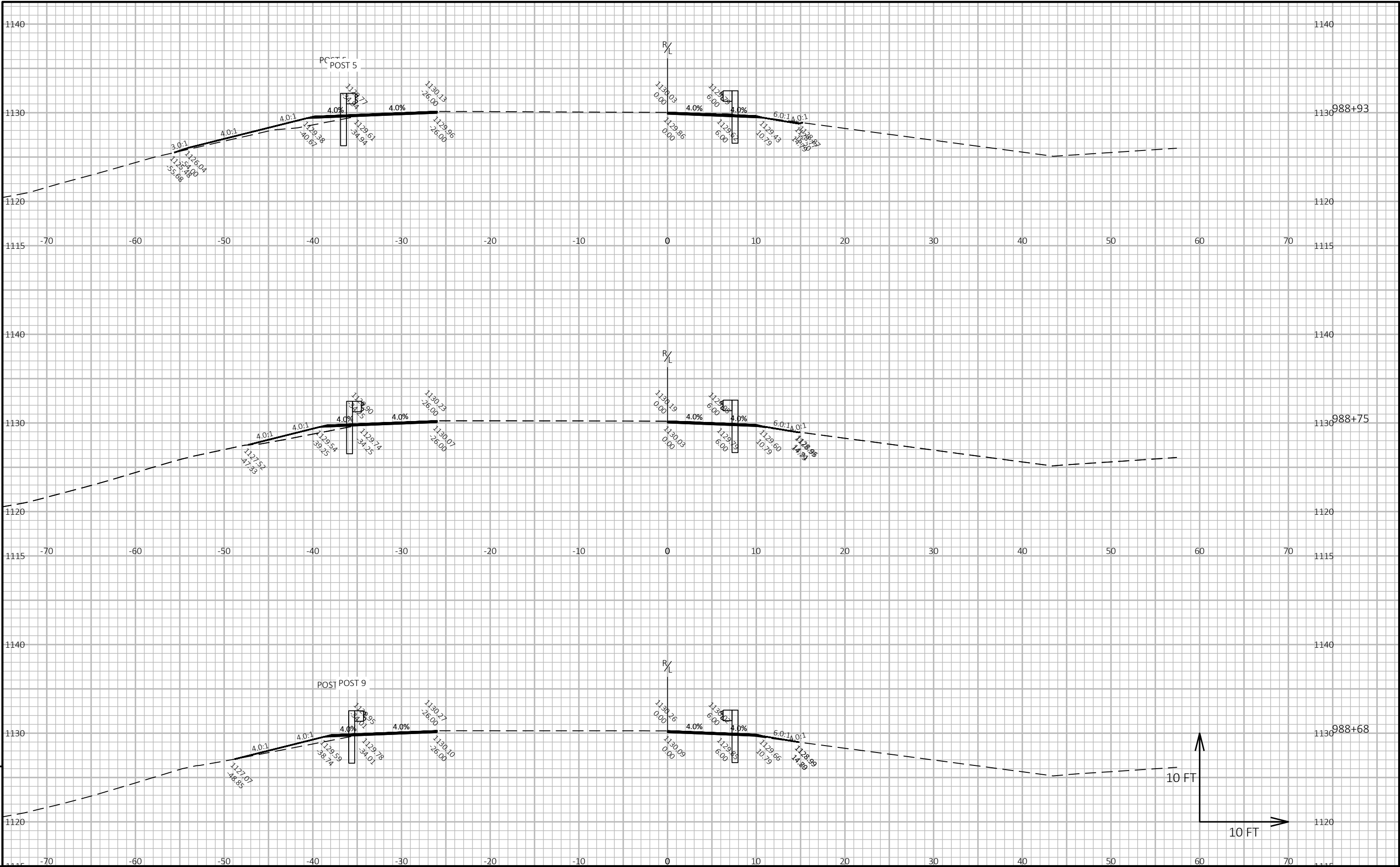
9

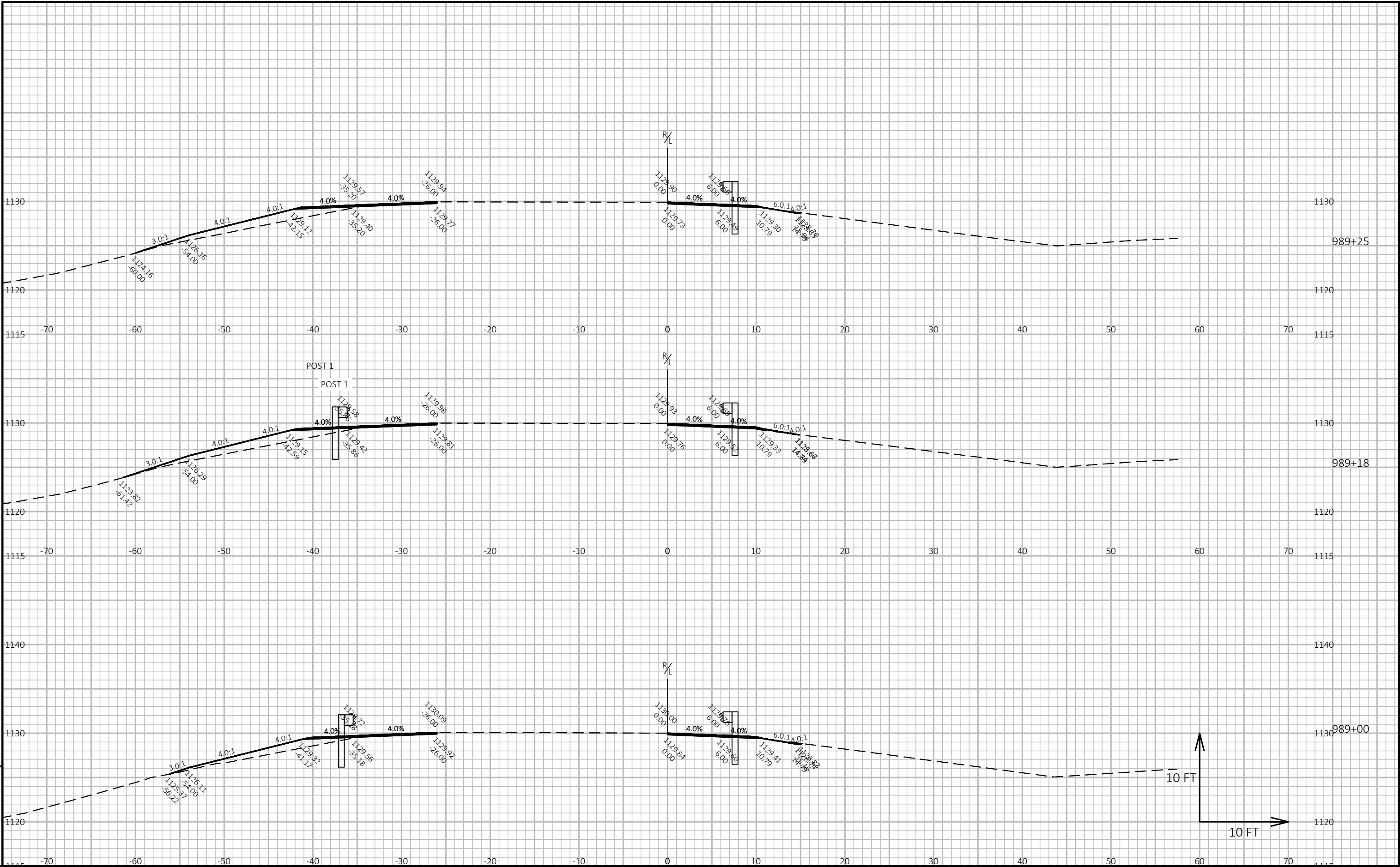


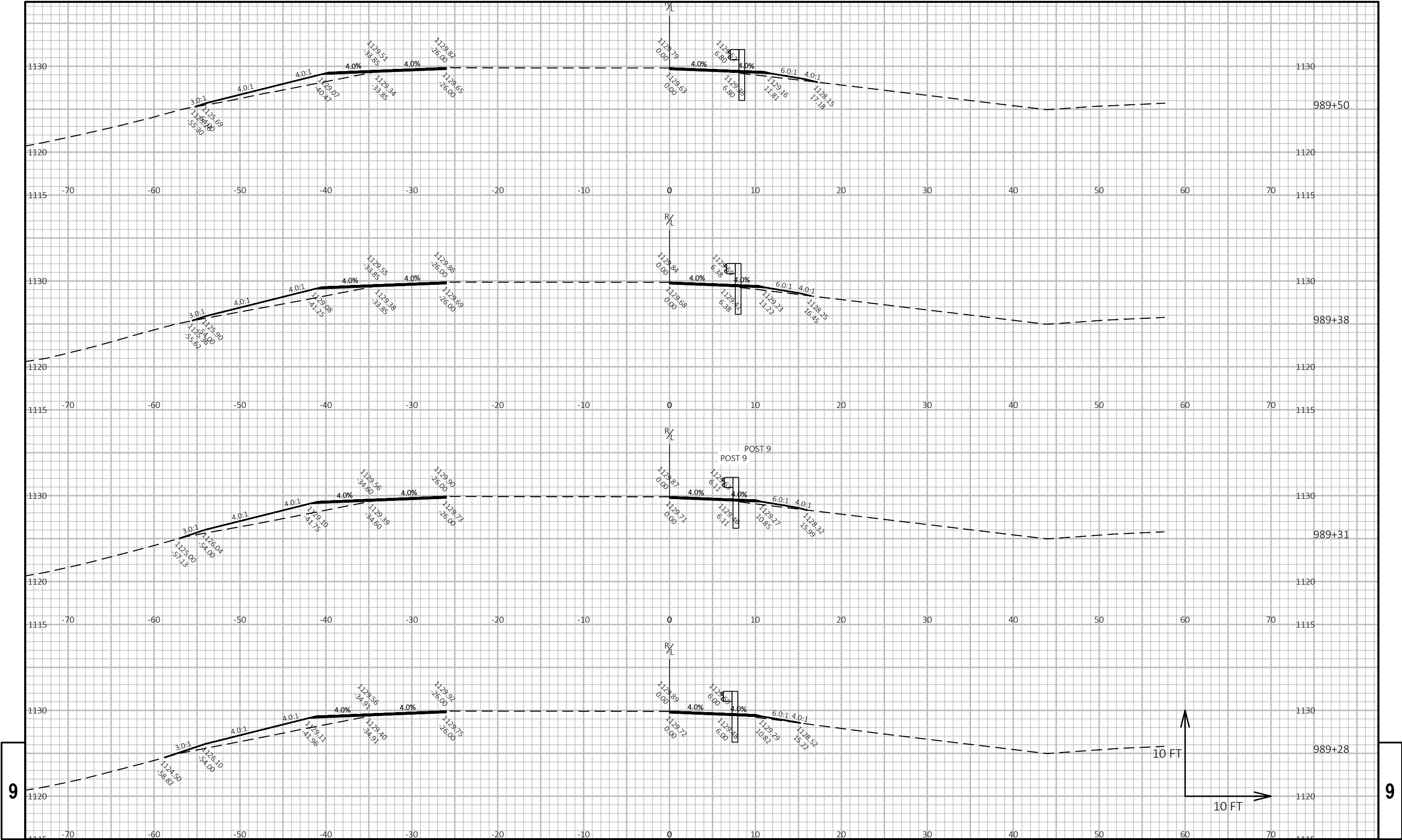


9

9

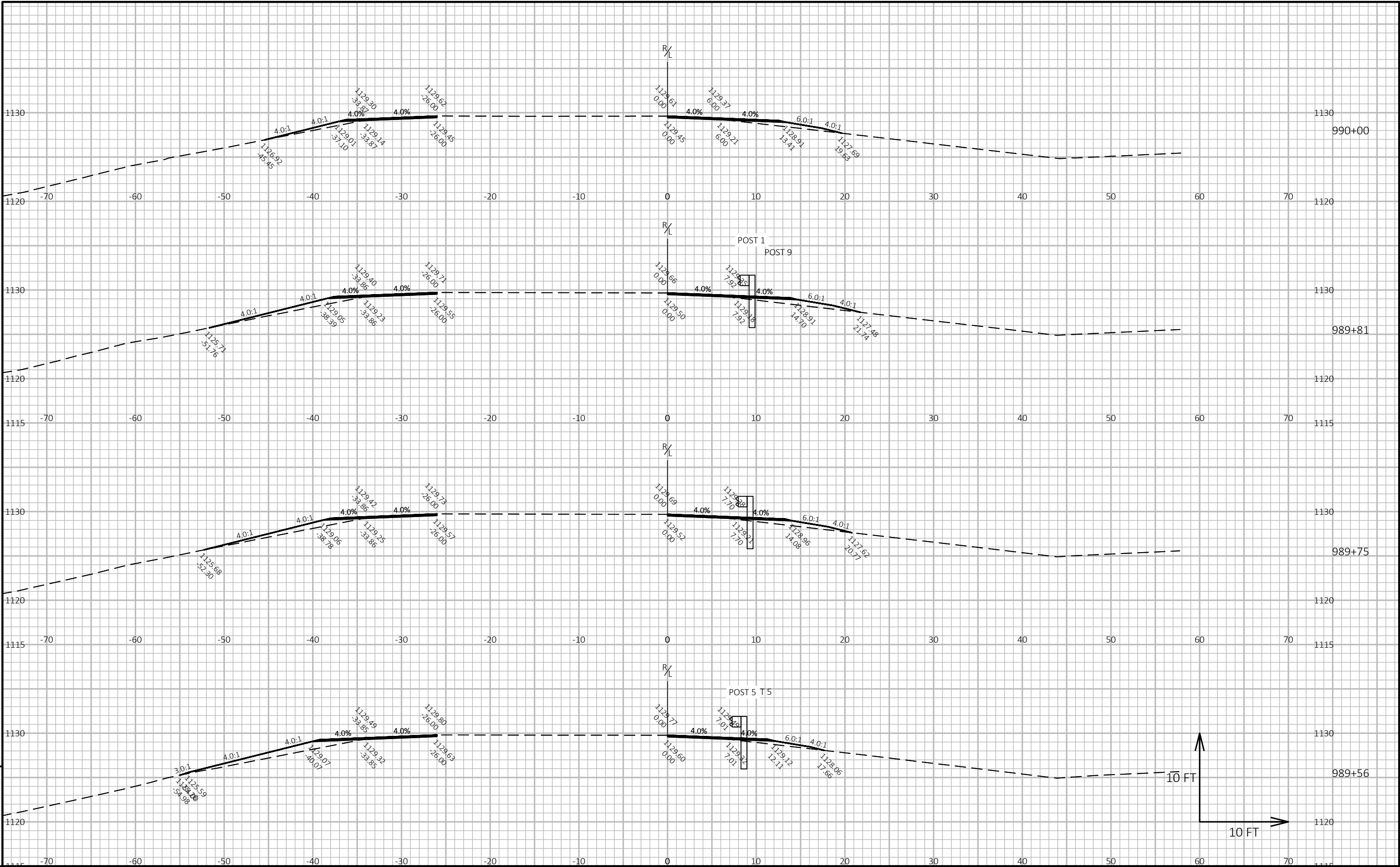


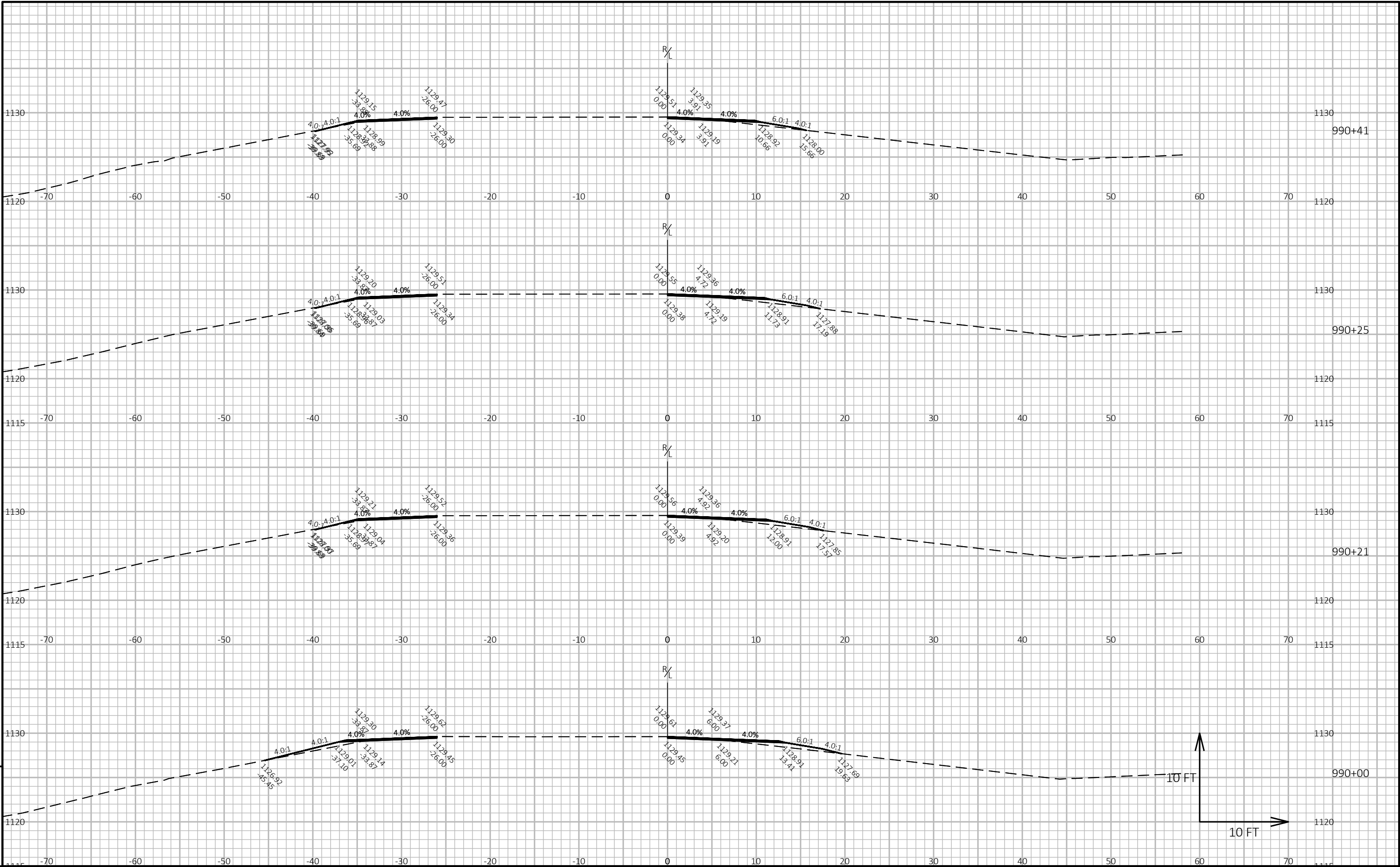


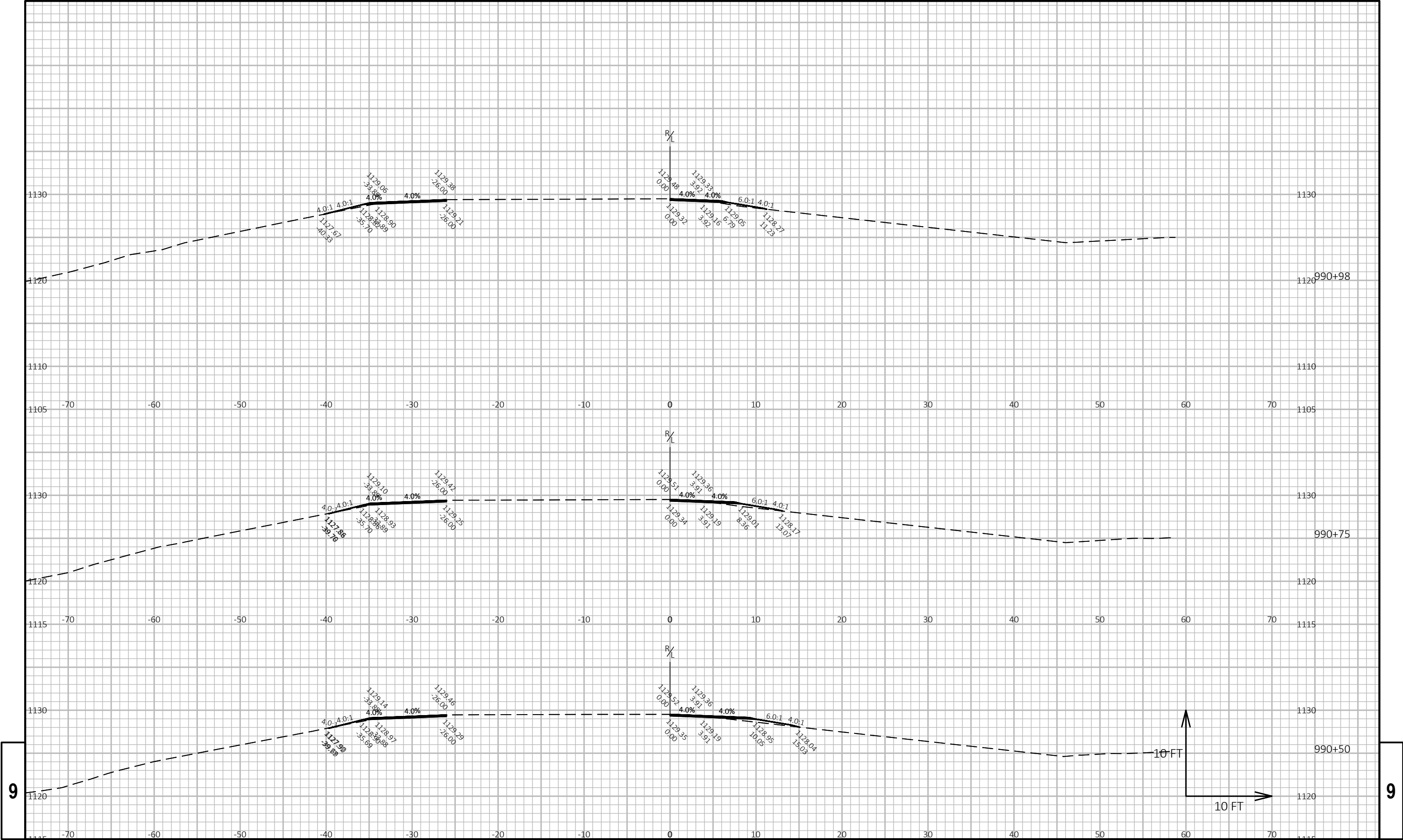


9

9

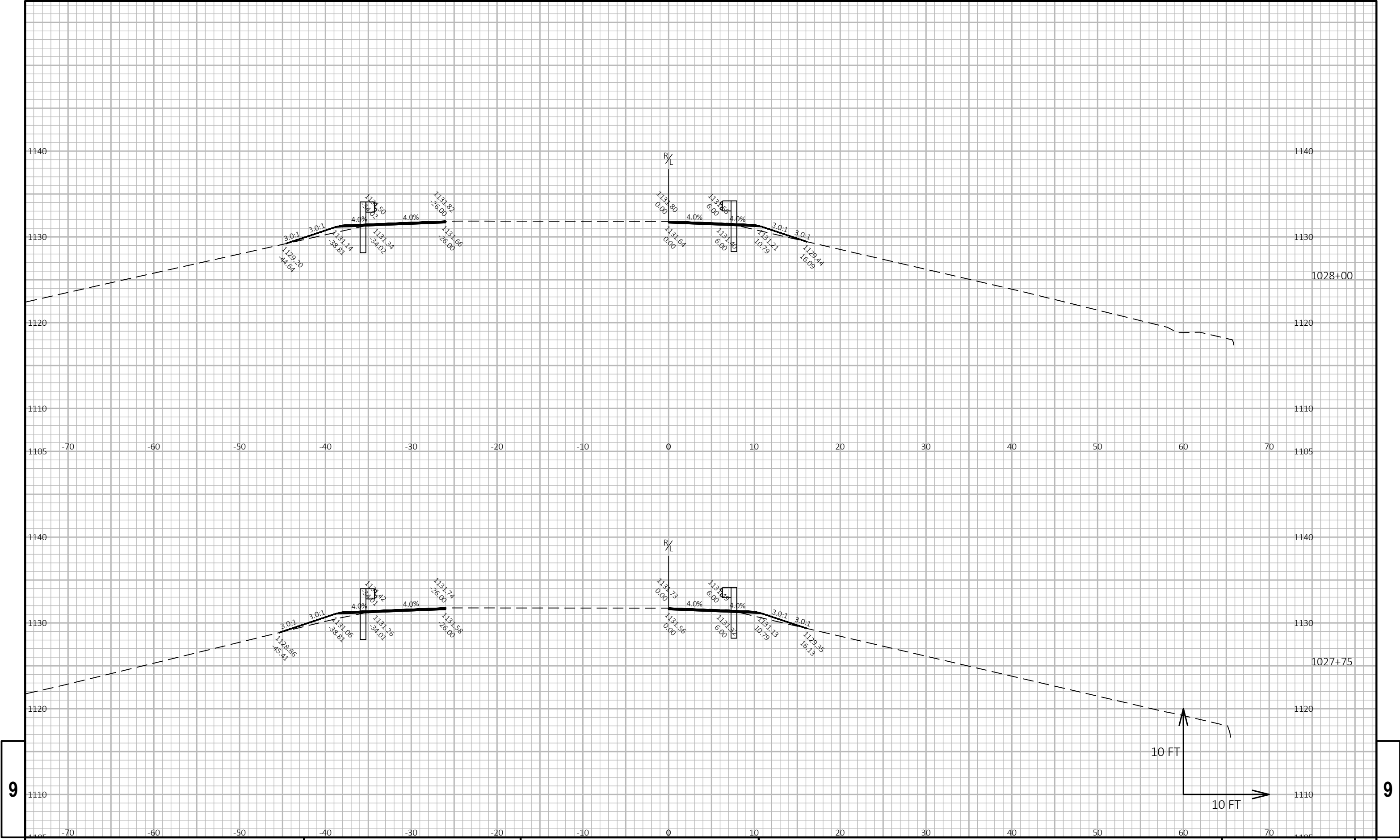






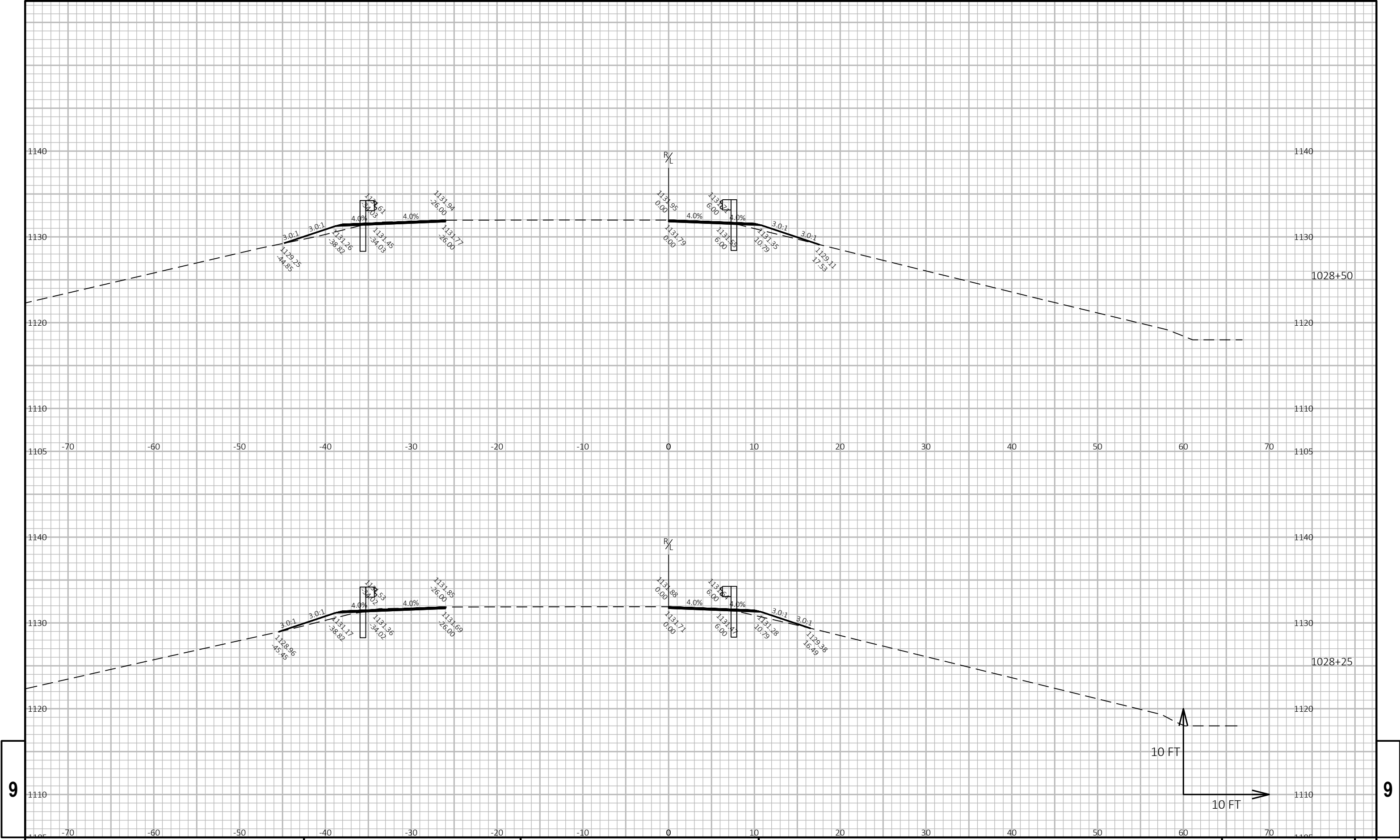
9

9



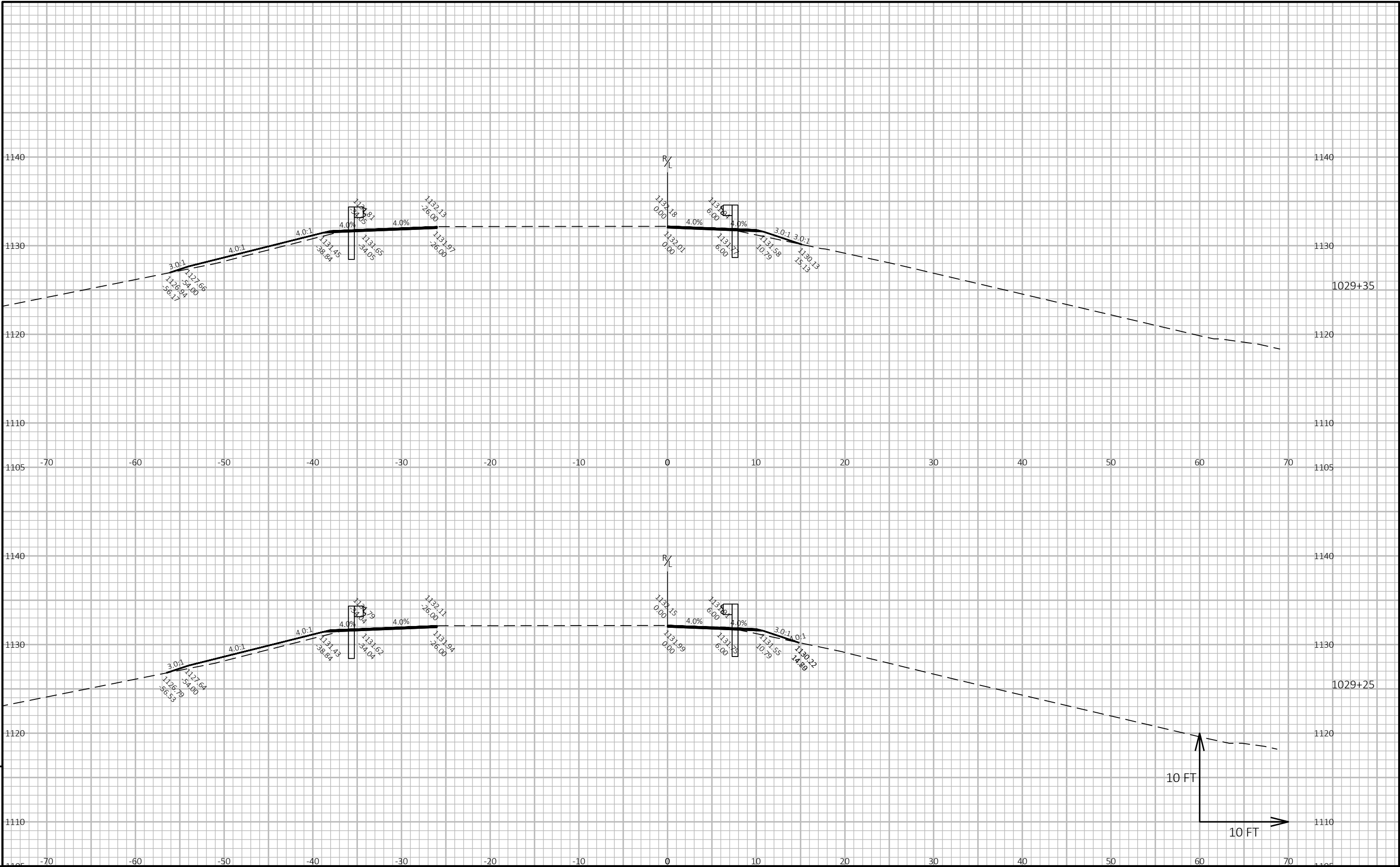
9

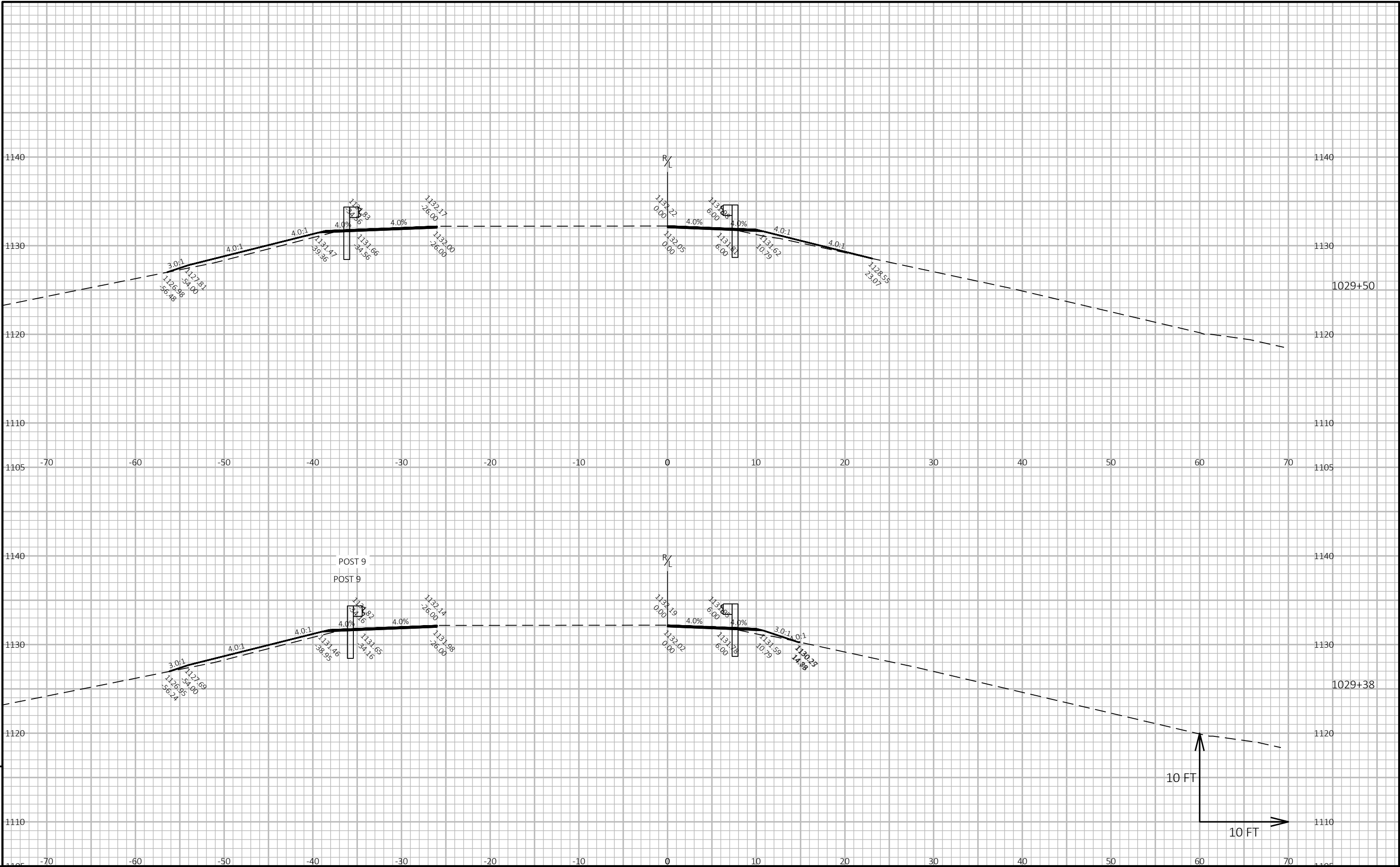
9

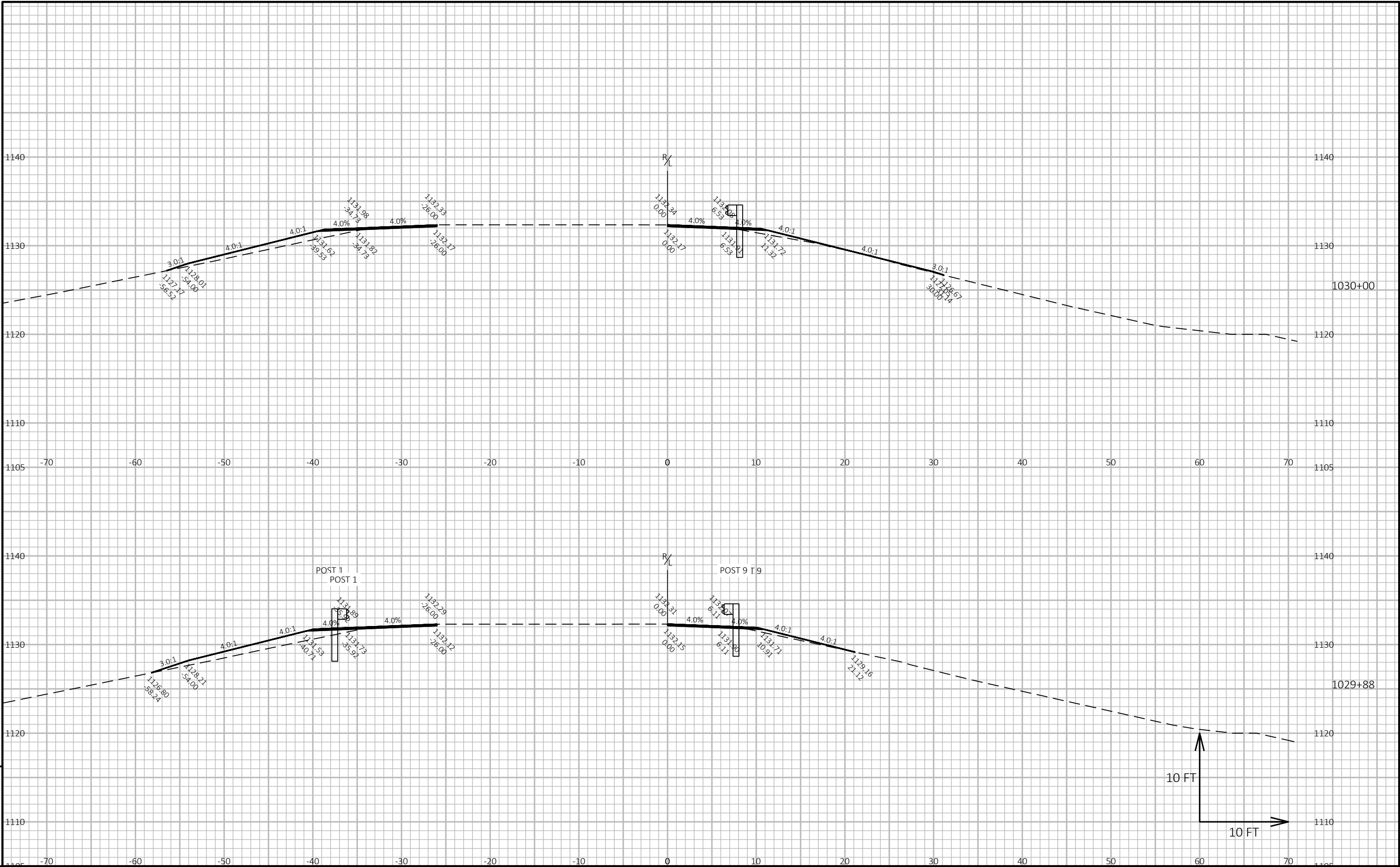


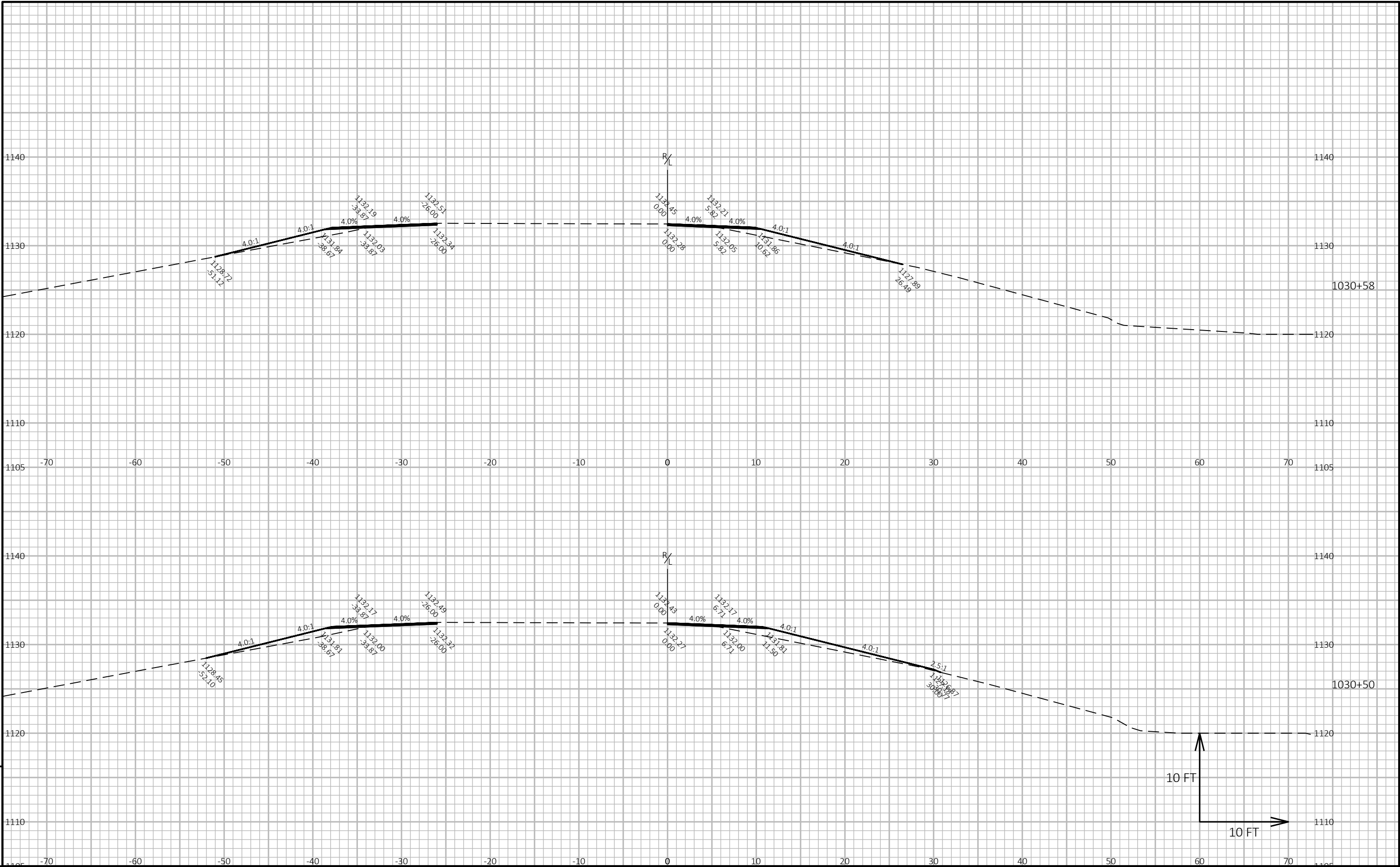
9

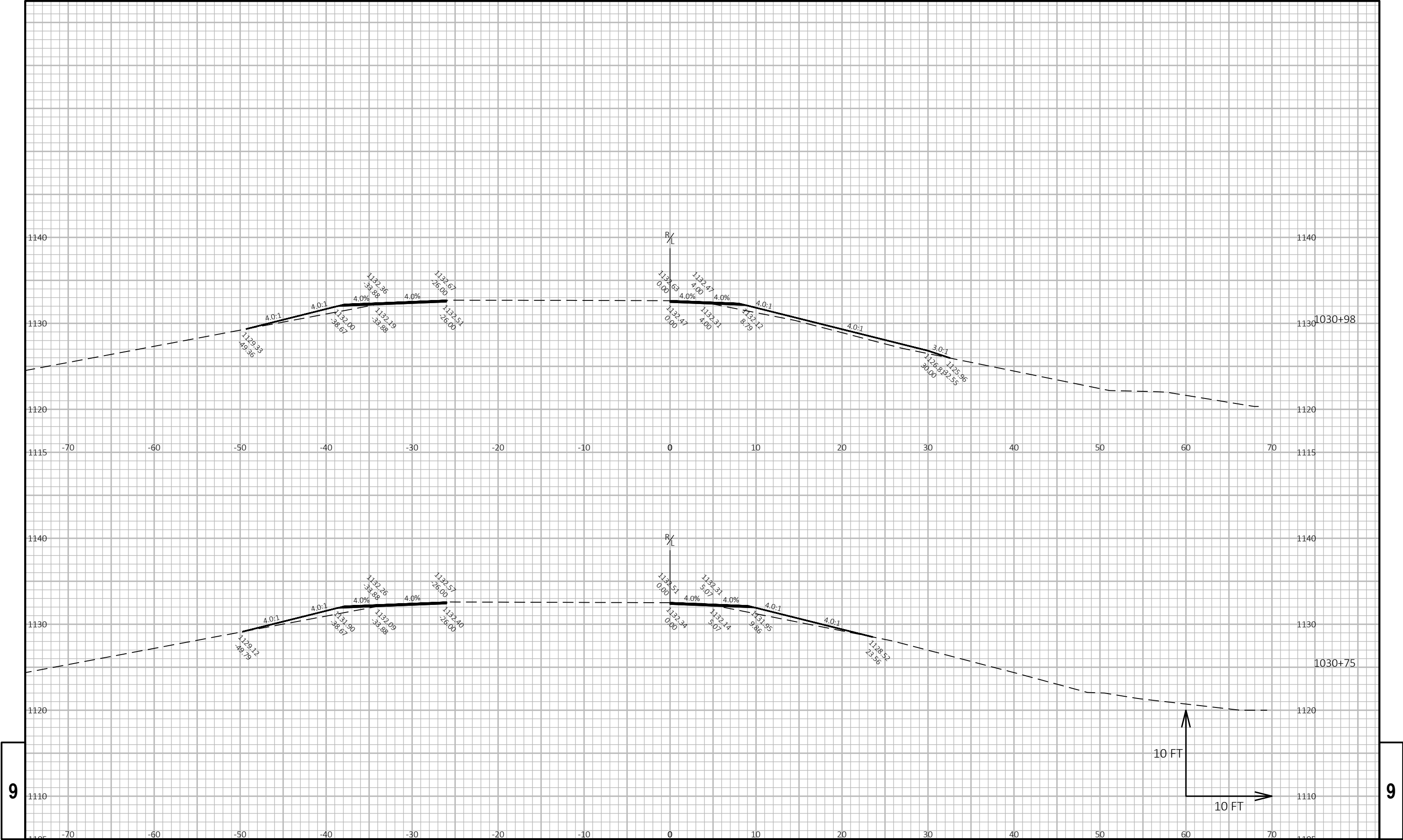
9

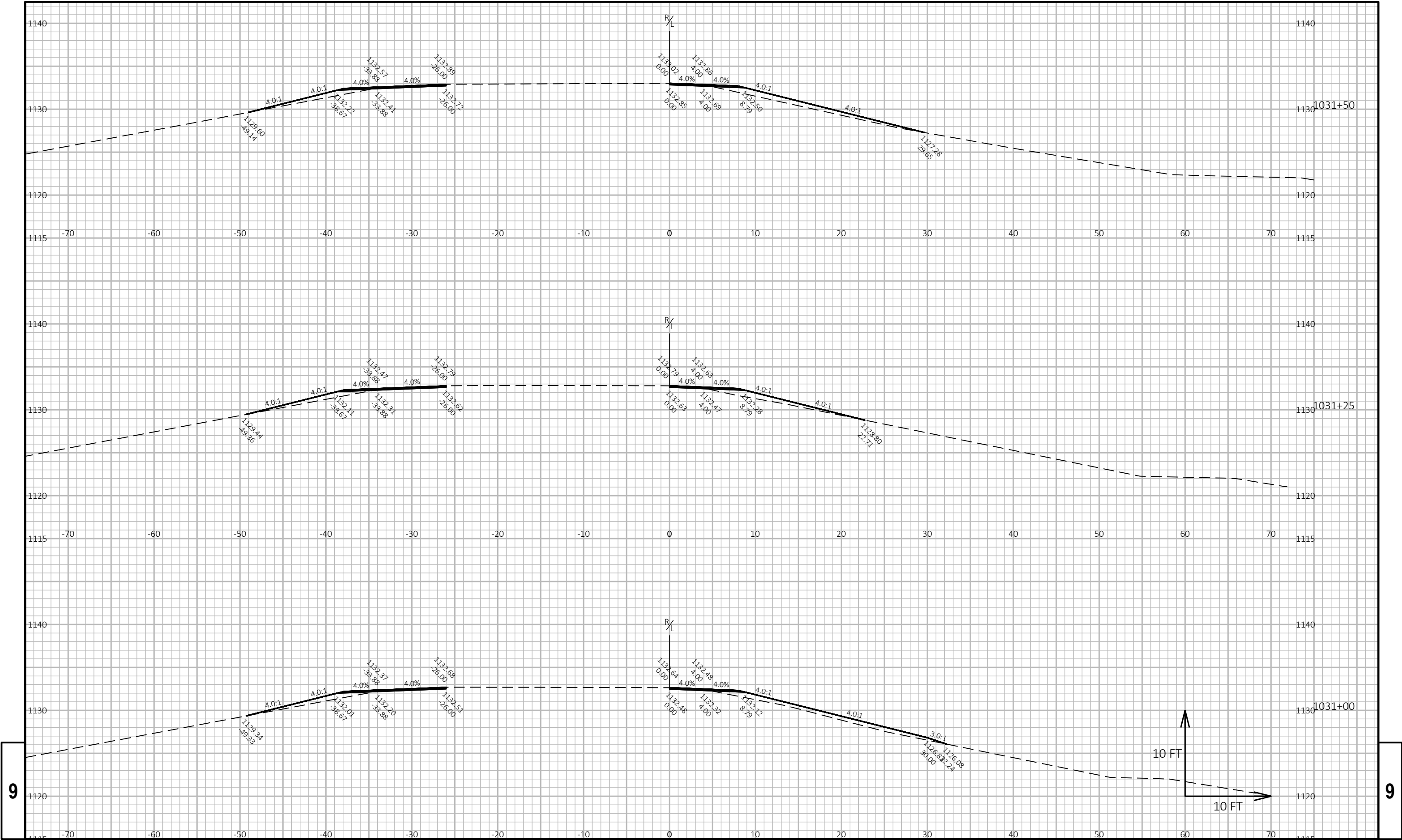






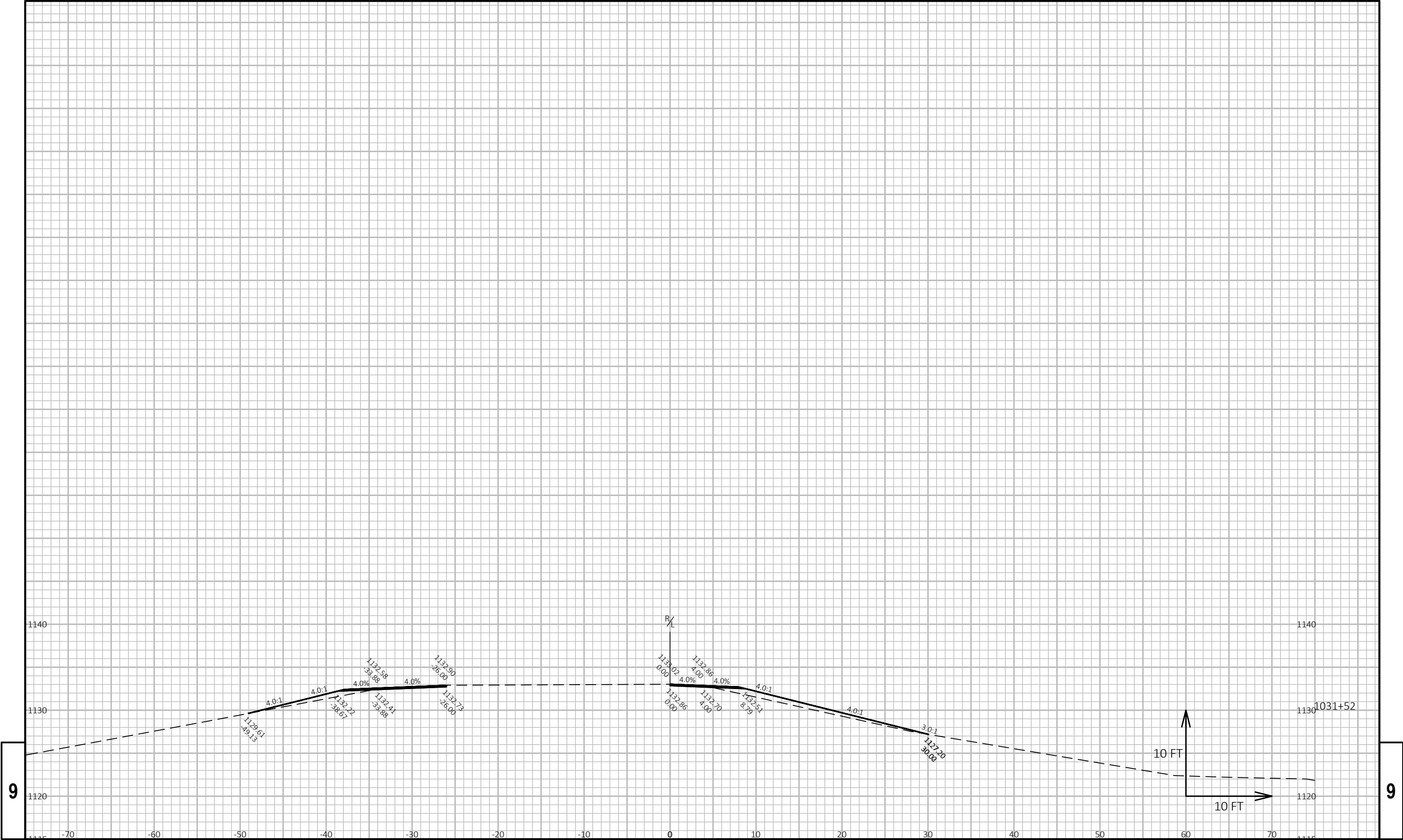






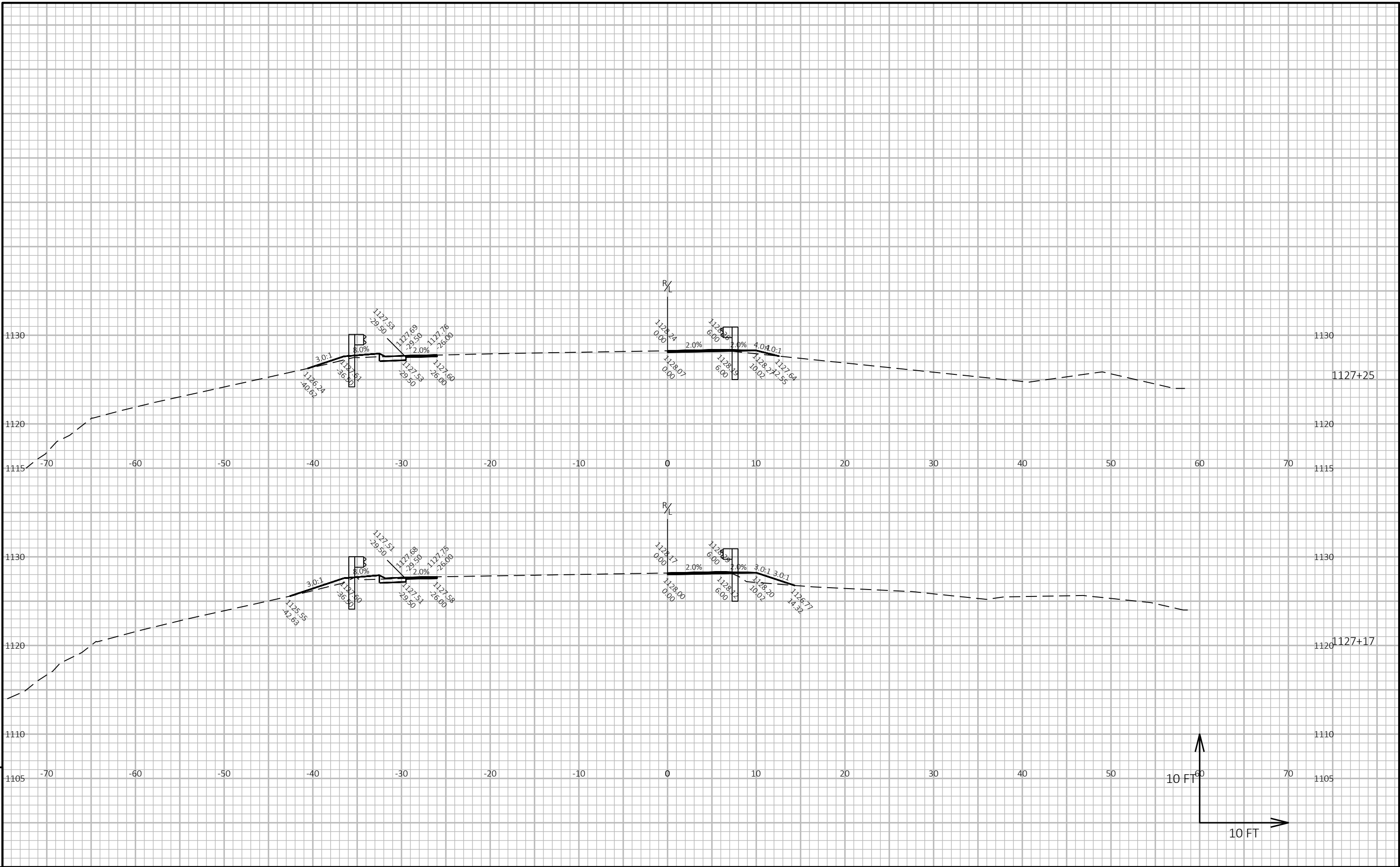
9

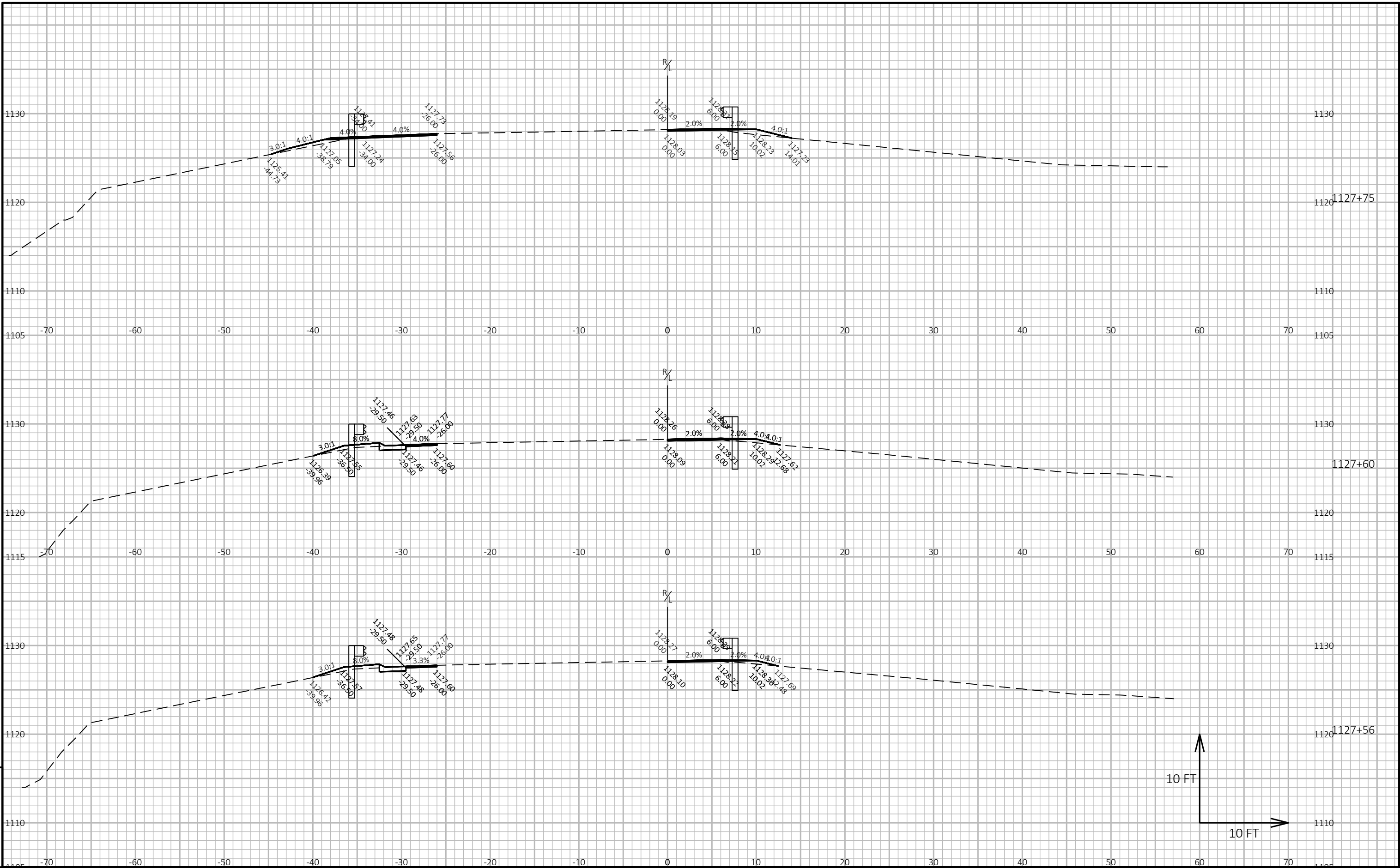
9

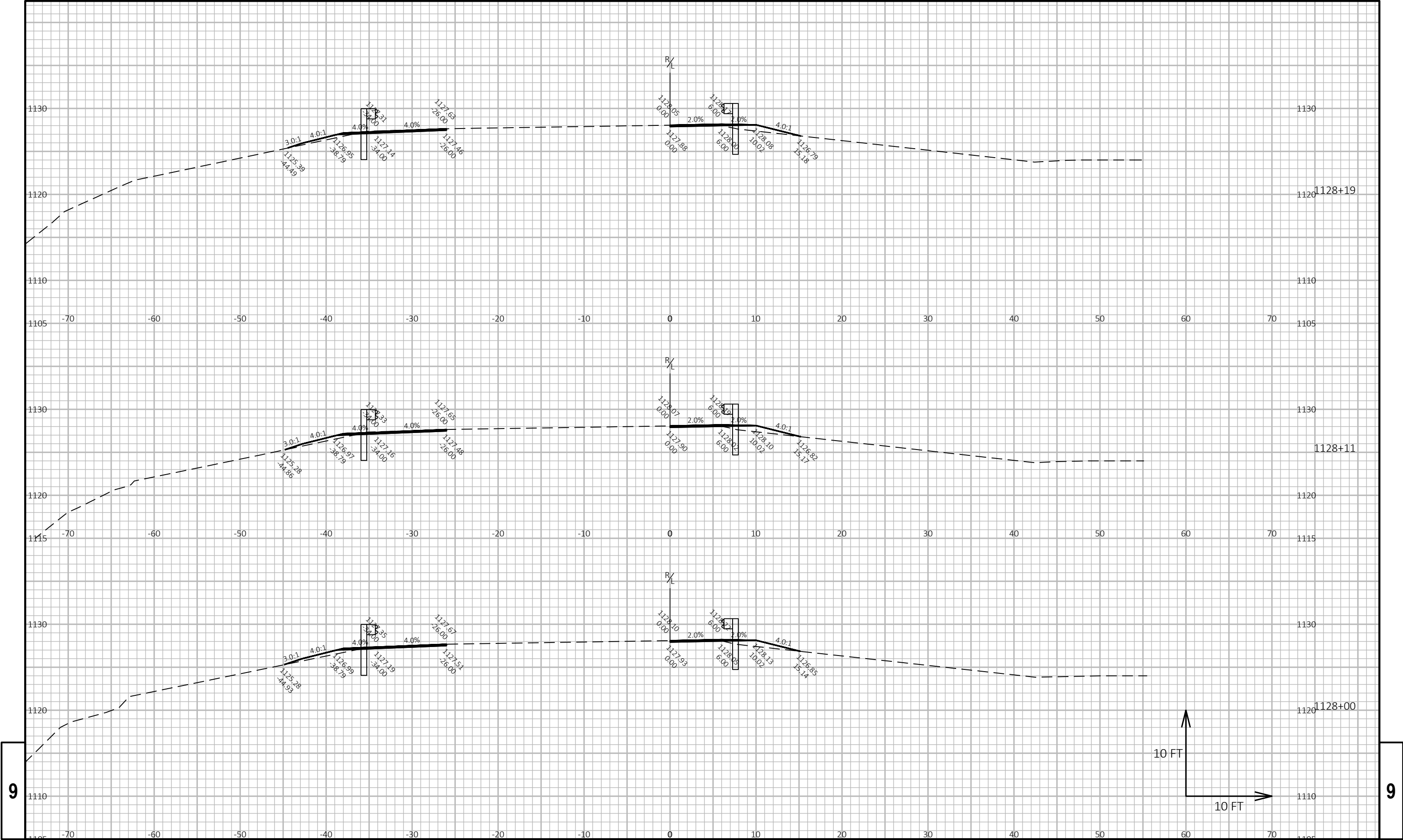


9

9

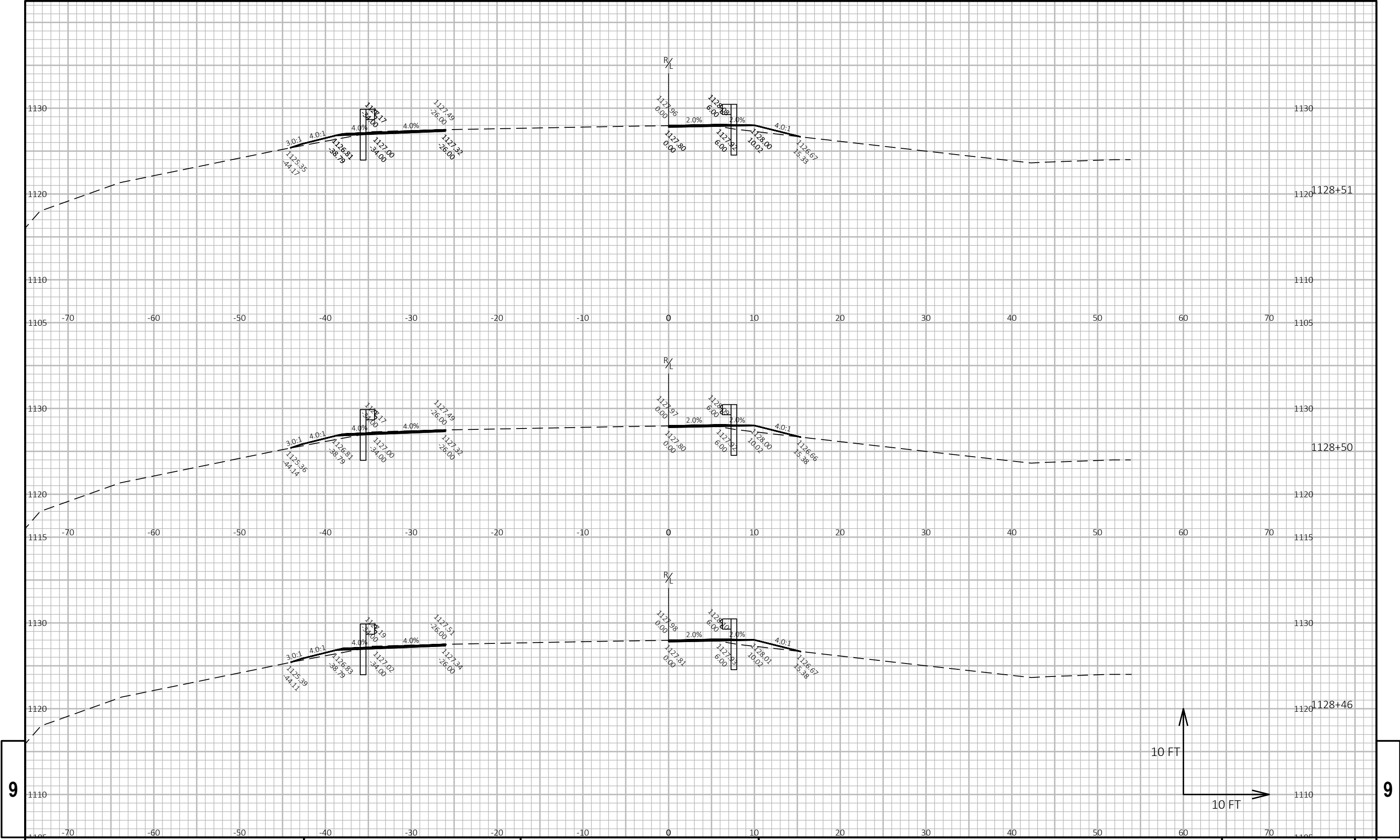






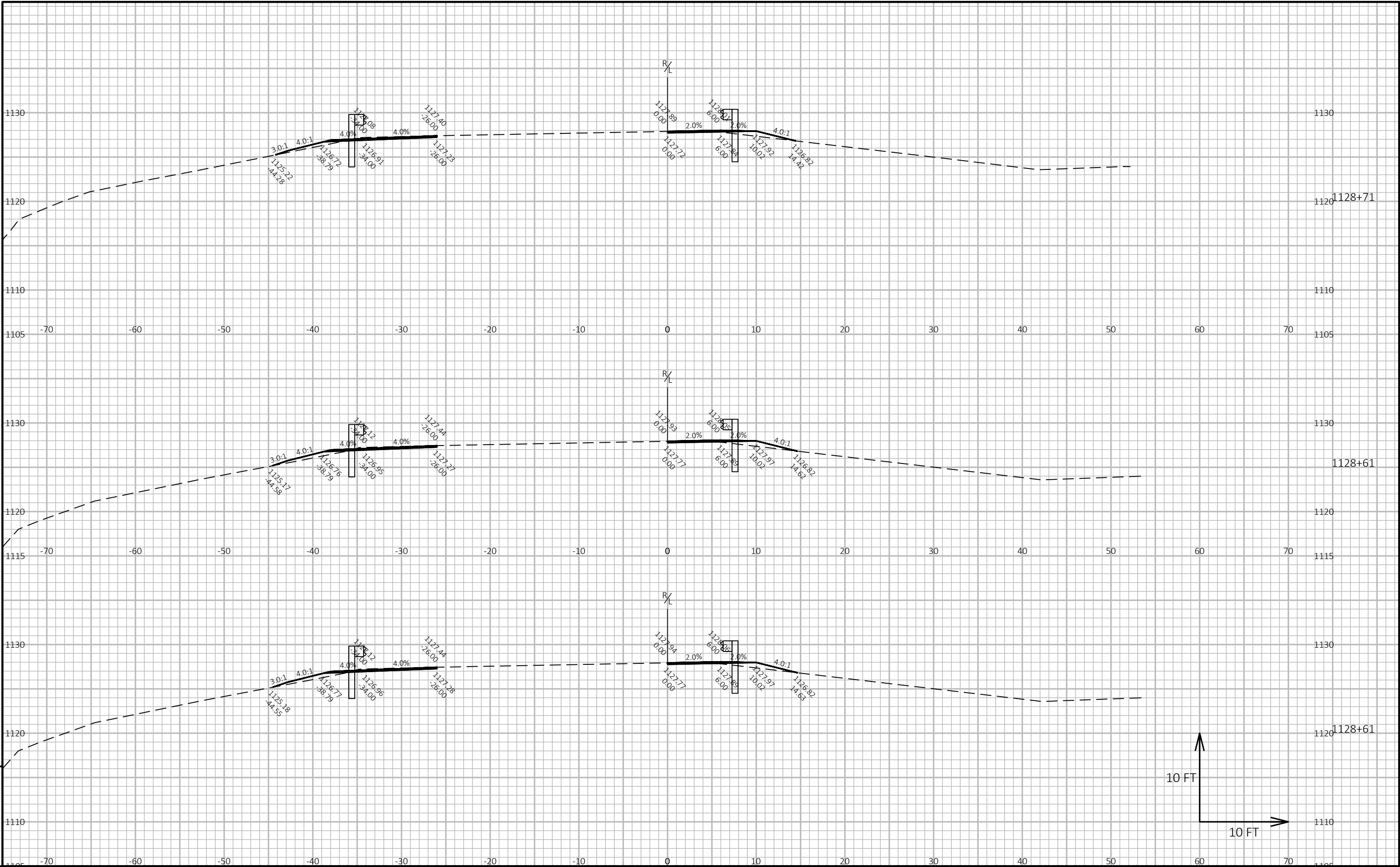
9

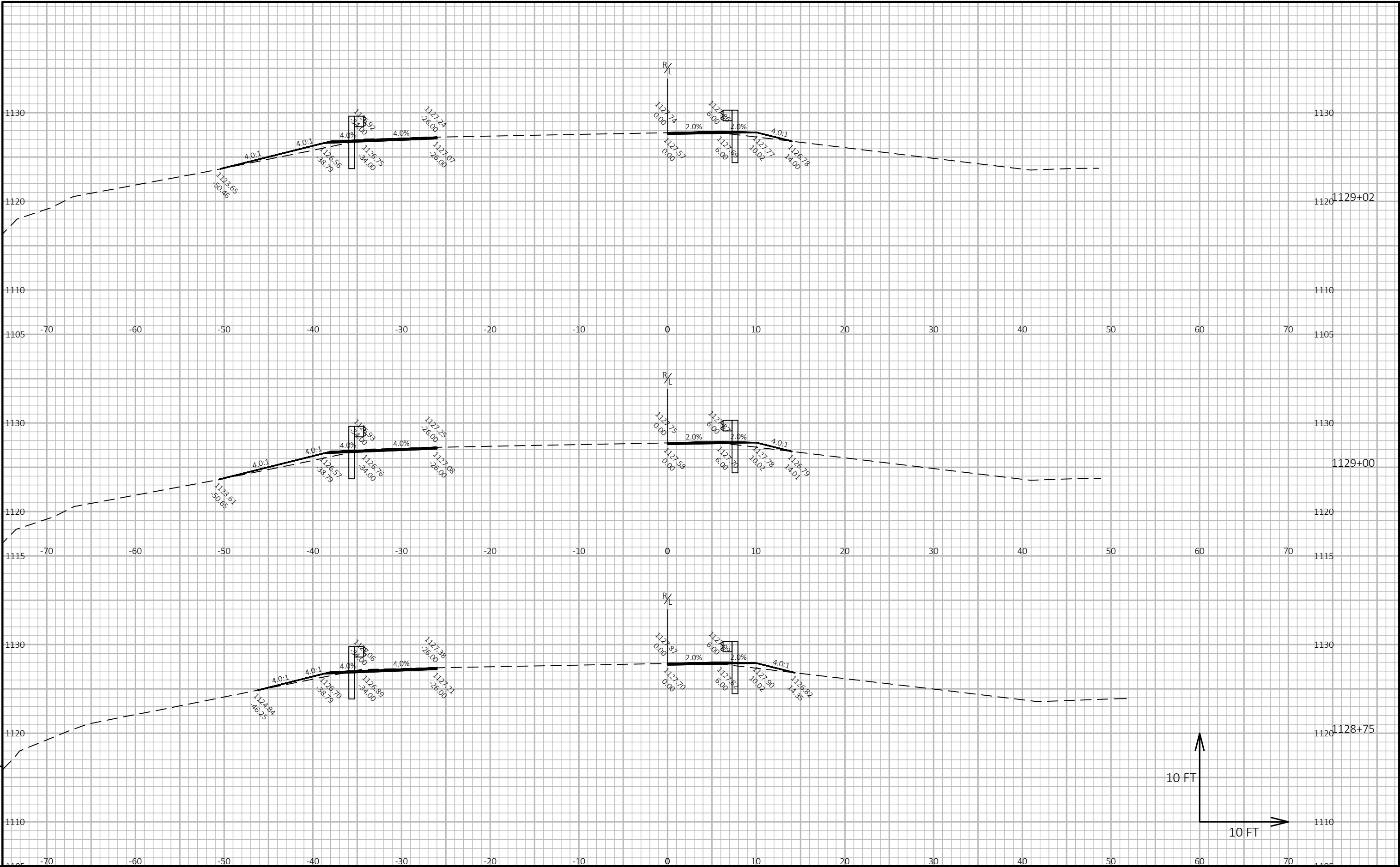
9

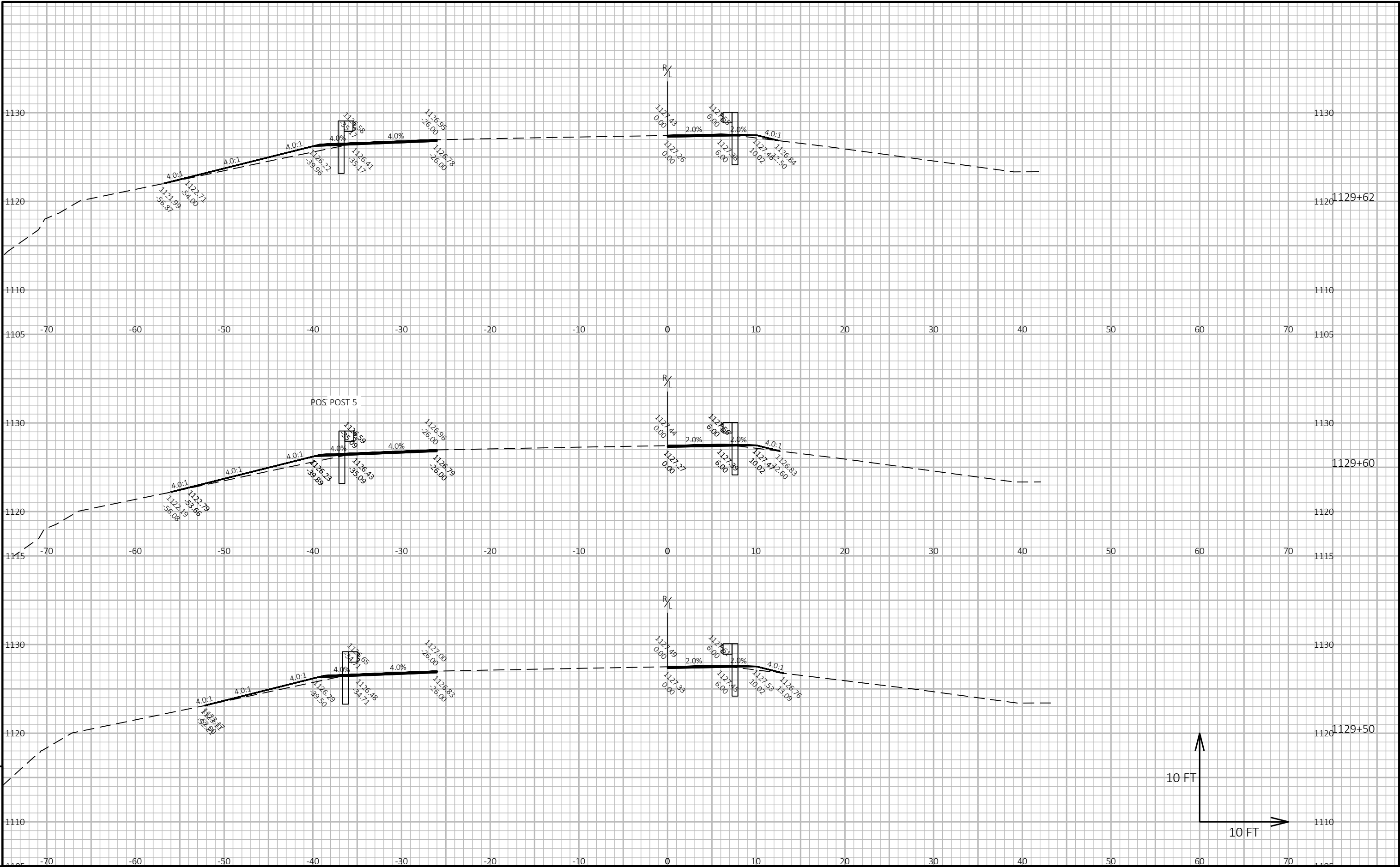


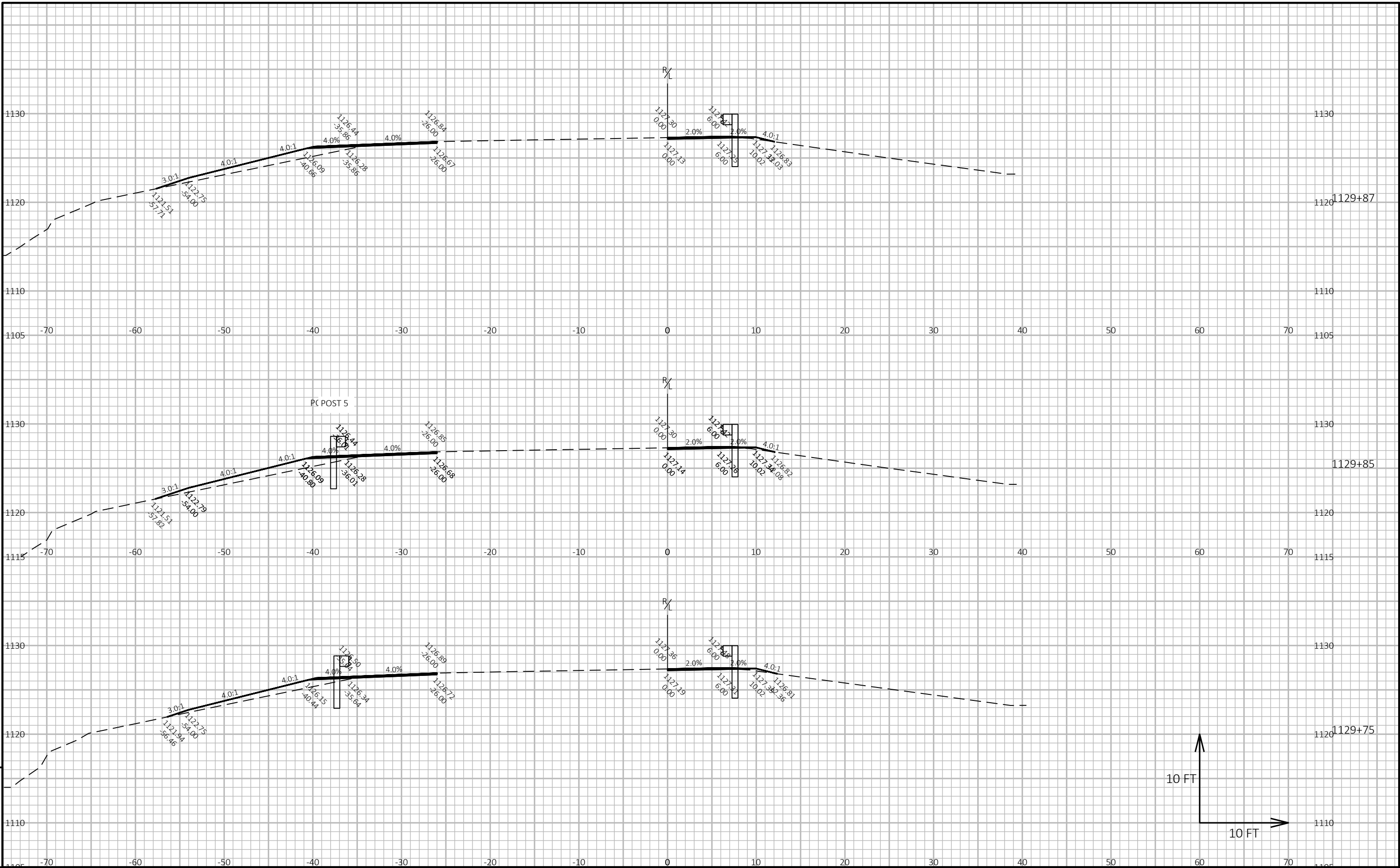
9

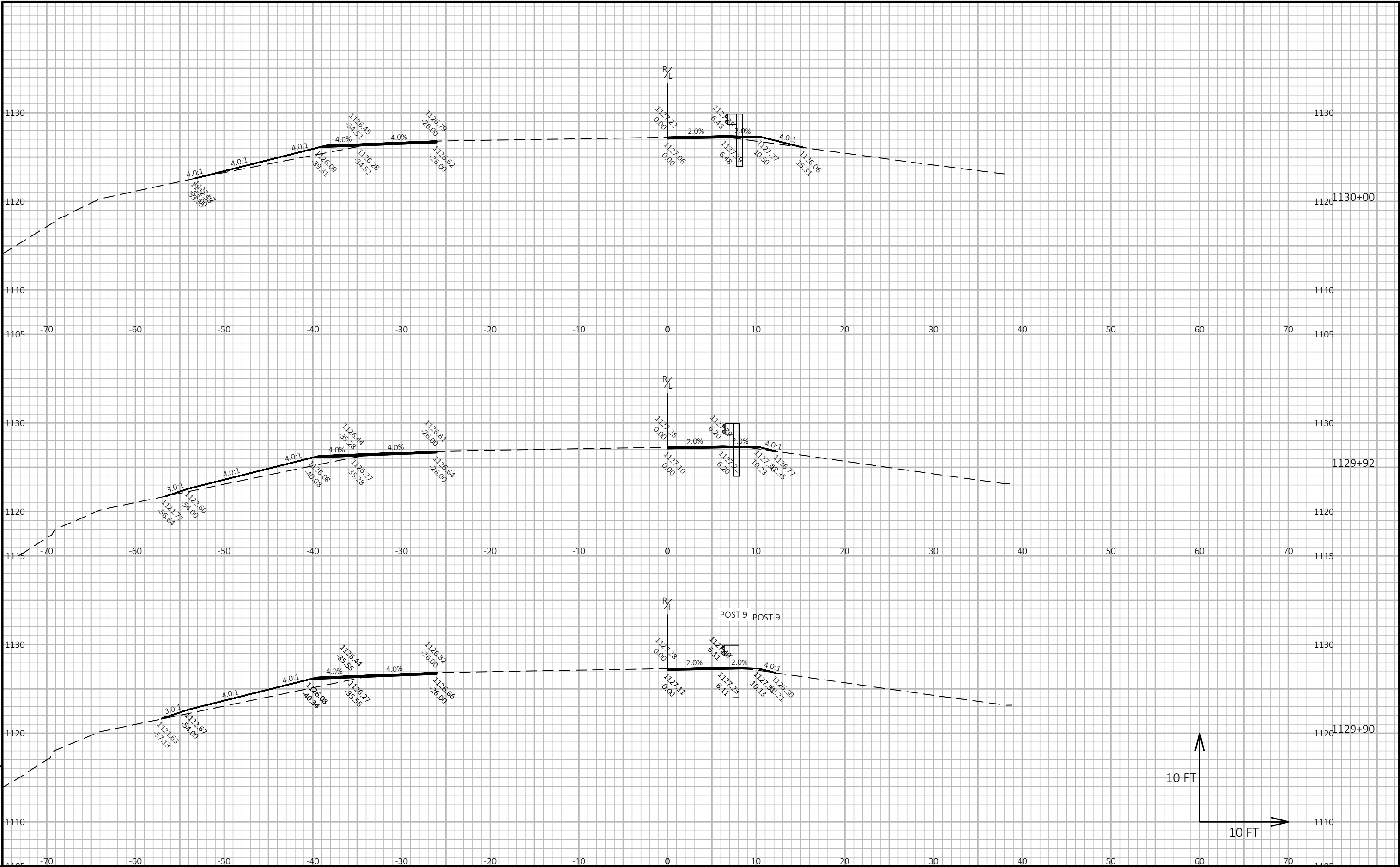
9

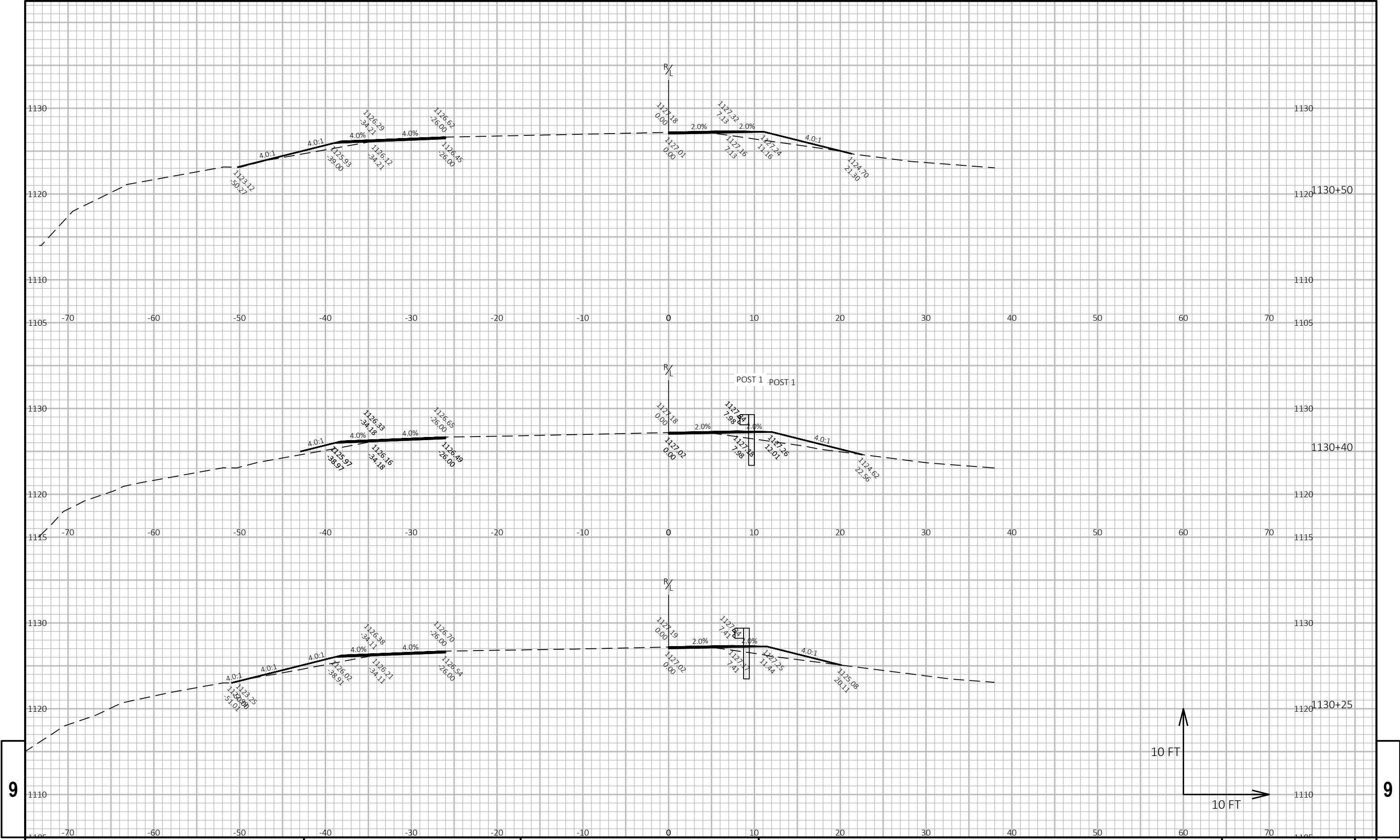






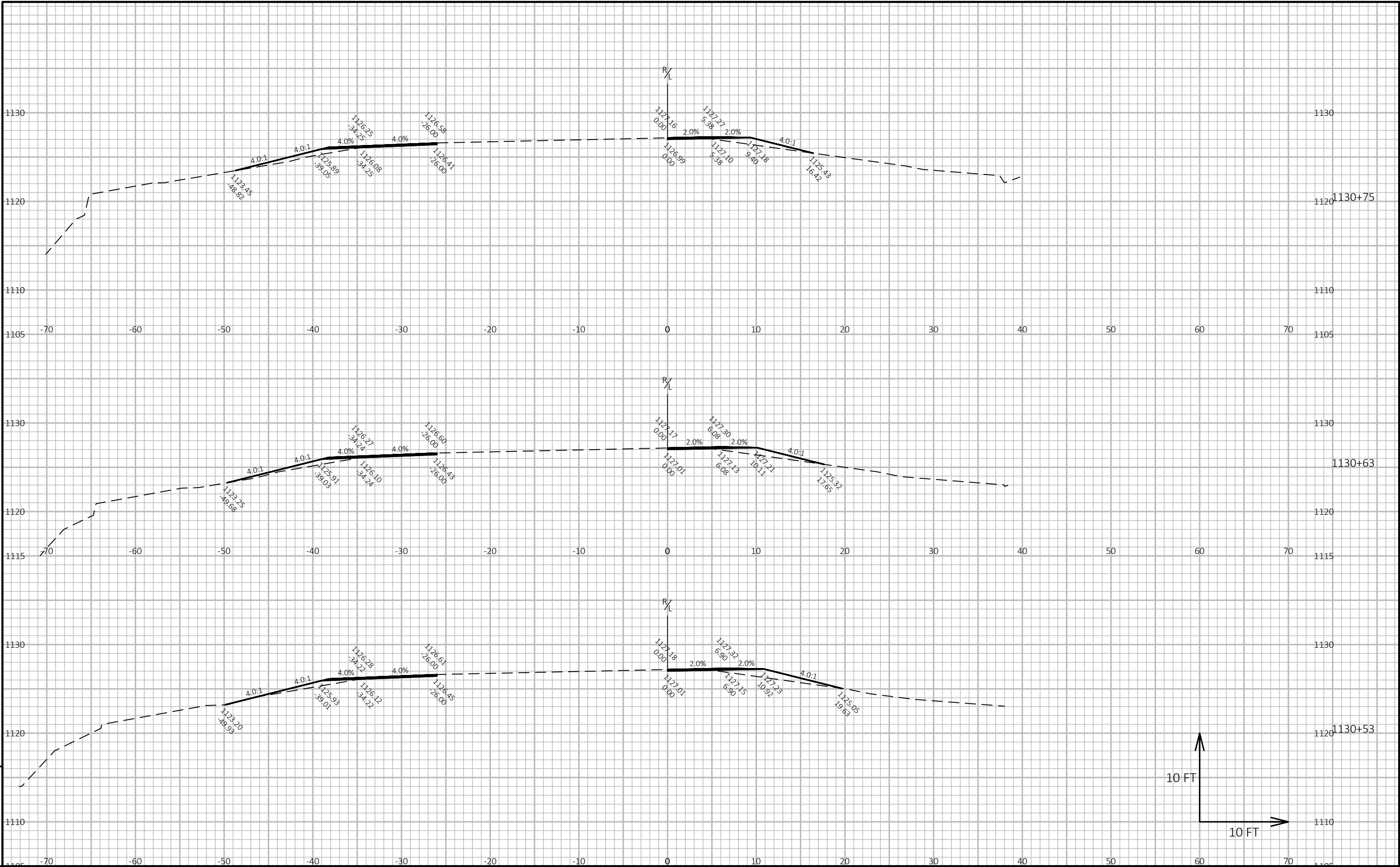


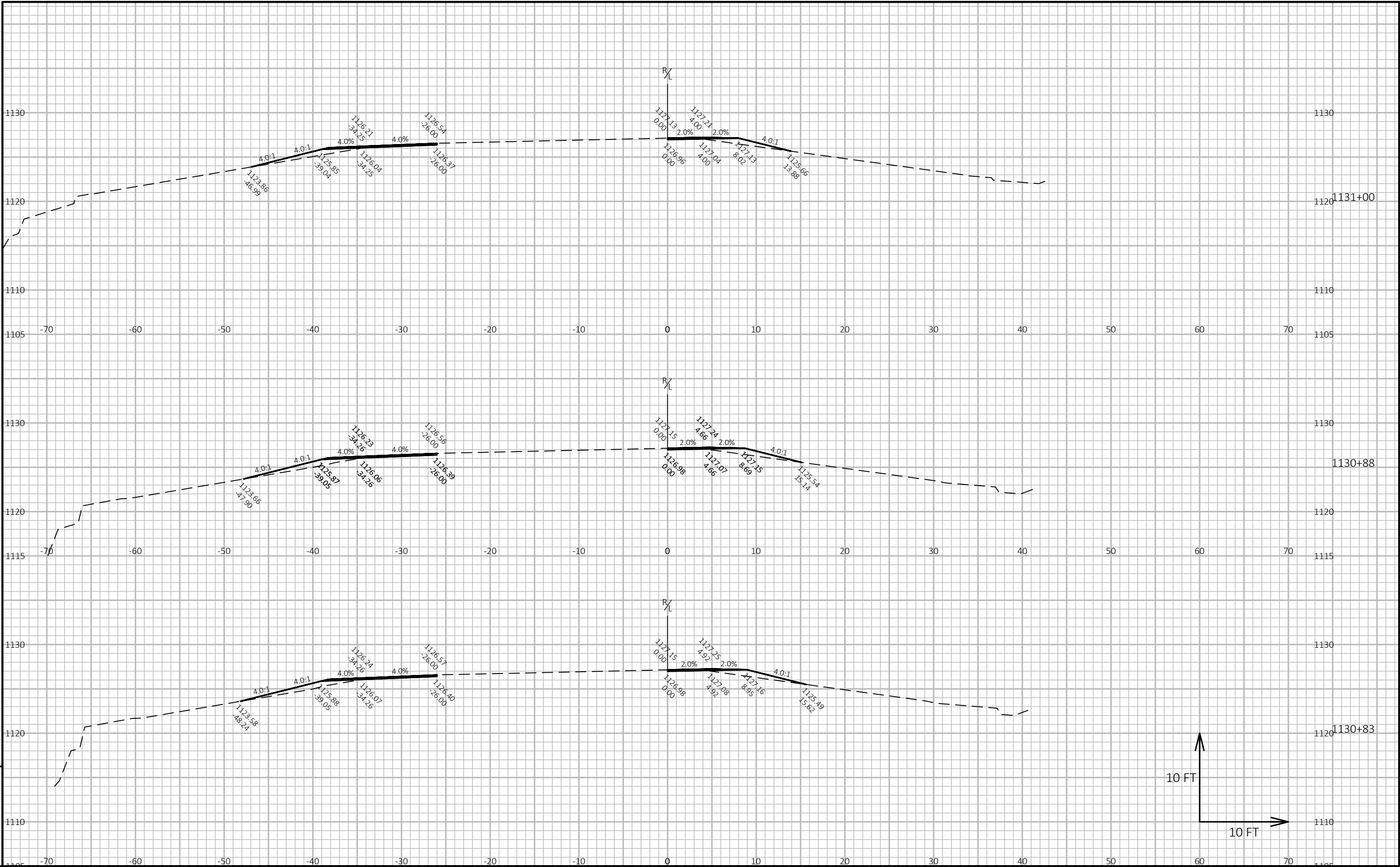




9

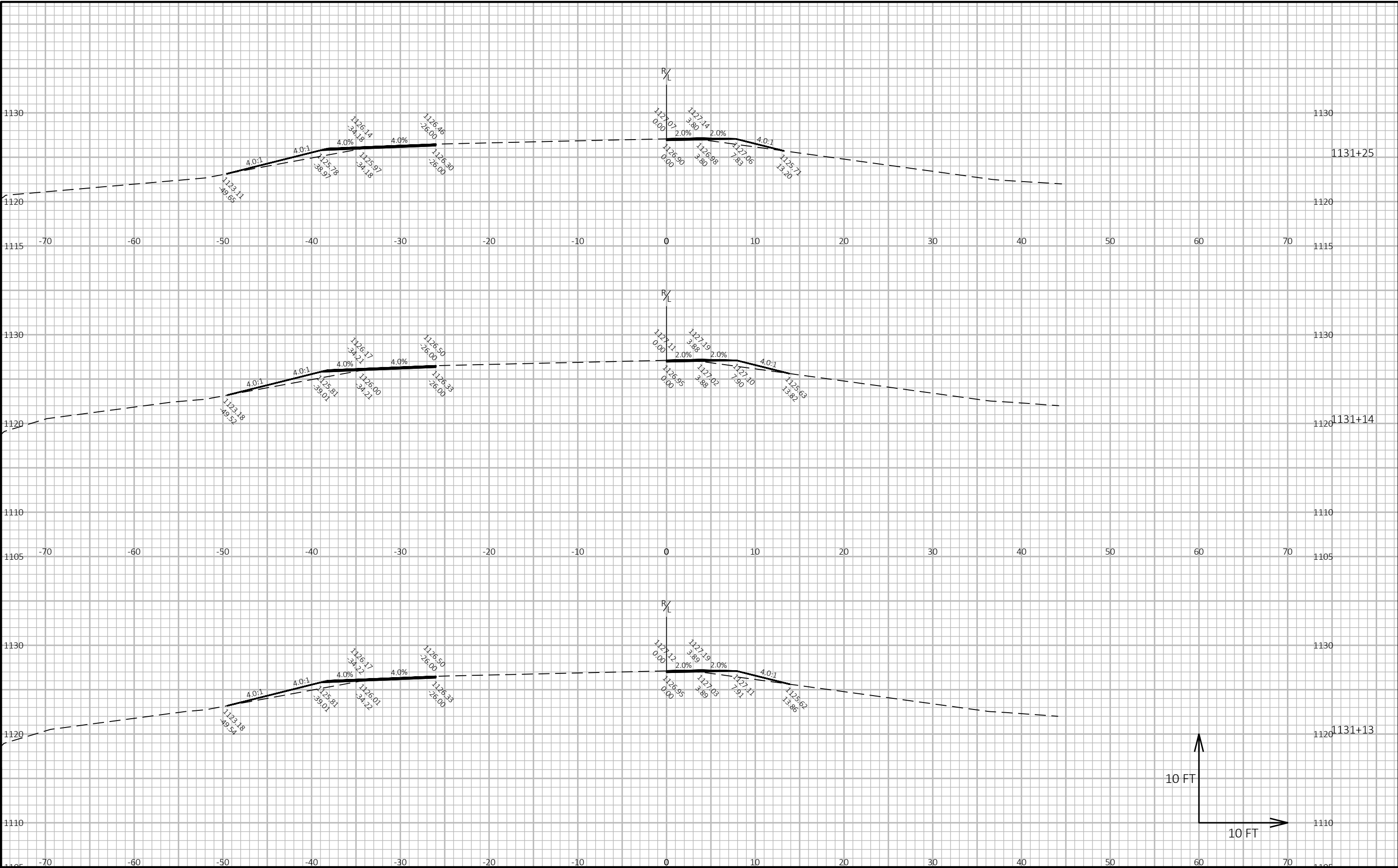
9

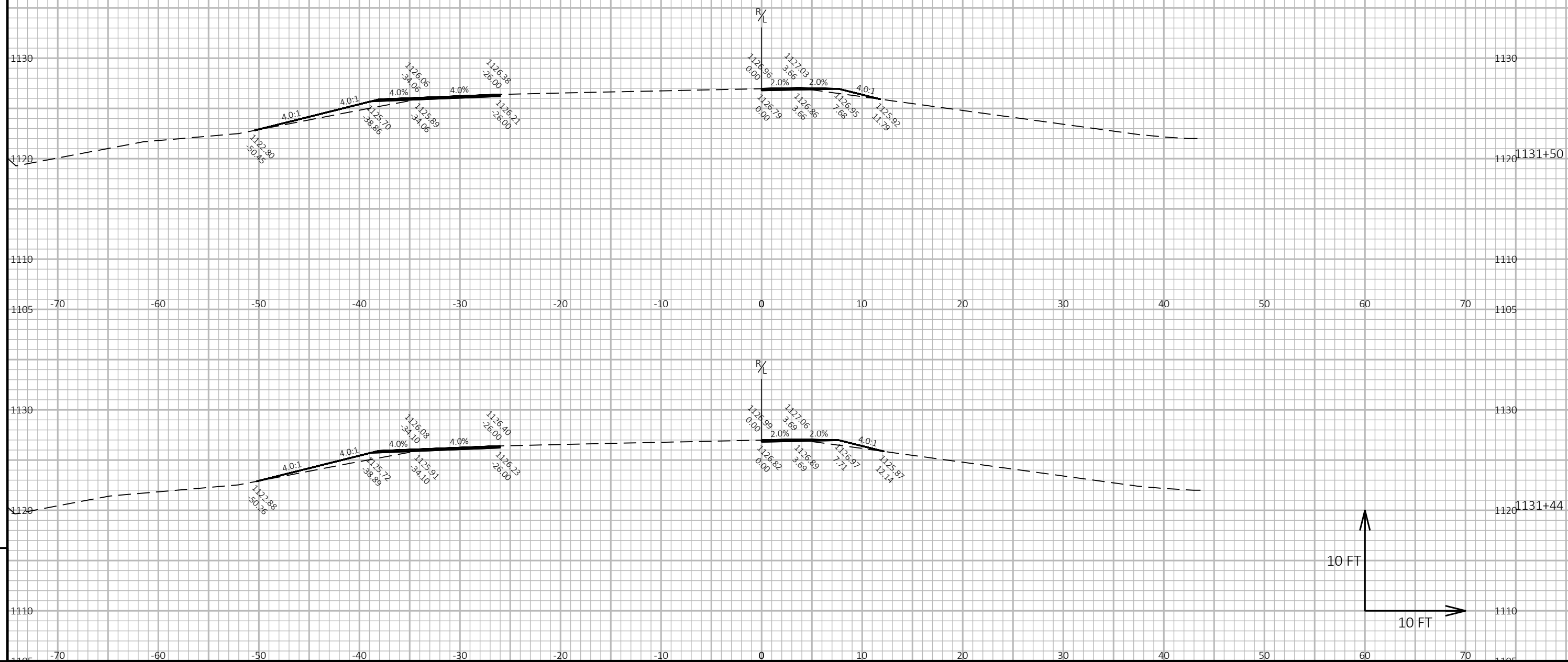


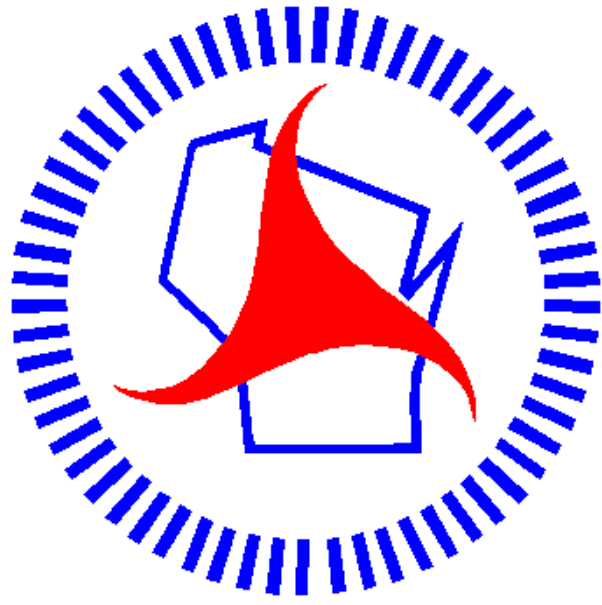


9

9







Wisconsin Department of Transportation

Dedicated people creating transportation solutions through innovation and exceptional service.

<http://www.dot.wisconsin.gov>