

MAD NOVEMBER 2024

PROJECT ID: 3320-02-71

WITH: NA

COUNTY: ROCK

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 = 180

02

02

DESIGN DESIGNATION 3320-02-01

A.A.D.T. 2026 = 3300

A.A.D.T. 2046 = 3900

D.H.V. = 550

D.D. = 60/40

T. = 24%

DESIGN SPEED = 60 MPH

ESALS = 1,900,000

CONVENTIONAL SYMBOLS

PLAN

CORPORATE LIMITS

PROPERTY LINE

LOT LINE

LIMITED HIGHWAY EASEMENT

EXISTING RIGHT OF WAY

PROPOSED OR NEW R/W LINE

SLOPE INTERCEPT

REFERENCE LINE

EXISTING CULVERT

PROPOSED CULVERT (Box or Pipe)

COMBUSTIBLE FLUIDS

MARSH AREA

WOODED OR SHRUB AREA

PROFILE

GRADE LINE

ORIGINAL GROUND

MARSH OR ROCK PROFILE (To be noted as such)

SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)

UTILITIES

ELECTRIC

FIBER OPTIC

GAS

SANITARY SEWER

STORM SEWER

TELEPHONE

WATER

UTILITY PEDESTAL

POWER POLE

TELEPHONE POLE

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

BERGEN - EMERALD GROVE

0.17 MI N OGDEN AVENUE TO USH 14

STH 140

ROCK COUNTY

STATE PROJECT NUMBER

3320-02-71

END PROJECT

STA 337+80

X = 534442.30

Y = 258788.40

BEGIN PROJECT

STA 10+00

X = 535810.45

Y = 227696.88

TOTAL NET LENGTH OF CENTERLINE = 6.182 MI

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

STATE PROJECT

3320-02-71

FEDERAL PROJECT

PROJECT

WISC 2025024

CONTRACT

1

ORIGINAL PLANS DEVELOPED BY WISDOT SW REGION

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor R.H. BATTERMAN AND CO., INC.

Designer SHAUN ANDERSON, P.E.

Project Manager CHRIS HAZARD, P.E.

Regional Examiner SW REGION

Regional Supervisor JIM SIMPSON, PE, PLS

APPROVED FOR THE DEPARTMENT

Chris Hazard

DATE: 2024.07.18 14:00:00

(Signature)

E

FILE NAME : N:\PDS\C3D\33200271\SHEETSPLAN\010101_TI.DWG

PLOT DATE : 7/24/2023 8:51 AM

PLOT BY : ANDERSON, SHAUN M

PLOT NAME :

GENERAL NOTES

- 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.
- DIMENSIONS GIVEN FOR EXISTING FEATURES SHALL BE CONSIDERED AS APPROXIMATE AND MEASURED IN THE FIELD FOR MATCHING PURPOSES.
- DETAILS OF CONSTRUCTION NOT SHOWN ON THE PLAN SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER
- DO NOT DRIVE EQUIPMENT OR STORE EQUIPMENT OR MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS, OR WATERWAYS.
- PRIOR TO THE PLACEMENT OF STEEL PLATE BEAM GUARD OR MGS GUARDRAIL, THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED UNLESS SHOWN OTHERWISE.
- THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, BIKE OR PARKING LANE.
- APPLY TACK COAT AT A RATE OF 0.07 GAL/SY TO MILLED PAVEMENT SURFACES AND 0.05 GAL/SY BETWEEN LAYERS OF HMA PAVEMENT.
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.
- CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.
- DISTURBED AREAS WITHIN THE NORMAL CONSTRUCTION LIMITS, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, ARE TO BE TOPSOILED (SALVAGED), FERTILIZED, SEEDED, AND MULCHED OR SODDED AS DIRECTED BY THE ENGINEER.
- NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT APPROVAL OF THE ENGINEER.



Dial  or (800)242-8511

www.DiggersHotline.com

WISDOT DESIGN CONTACTS

PROJECT MANAGER

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DESIGNER

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DNR CONTACT

DNR SOUTH CENTRAL REGION

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STANDARD ABBREVIATIONS

ABUT	Abutment	MATL	Material
AC	Acre	MB	Message Board
AGG	Aggregate	NOM	Nominal
Z	Angle	NC	Normal Crown
AADT	Annual Average Daily Traffic	N	North
ASPH	Asphaltic	Y	North Grid Coordinate
AVG	Average	NB	Northbound
BL or B/L	Base Line	OD	Outside Diameter
BM	Bench Mark	PAVT	Pavement
BR	Bridge	PERM	Permanent
CB	Catch Basin	PU	Pipe Underdrain
CC	Center to Center	PT	Point
Δ	Central Angle or Delta	PC	Point of Curvature
CH	Chord	PI	Point of Intersection
CH BRG	Chord Bearing	PT	Point of Tangency
CE	Commercial Entrance	PCC	Portland Cement Concrete
CONC	Concrete	LB	Pound
CO	County	PE	Private Entrance
CTH	County Trunk Highway	PL	Property Line
CR	Creek	R	Radius
CR	Crushed	RL or R/L	Reference Line
CABC	Crushed Aggregate Base Course	RP	Reference Point
CY or CUYD	Cubic Yard	REBAR	Reinforcement Bar
CULV	Culvert	REINF	Reinforcing or Reinforcement
CP	Culvert Pipe	REL	Relocate (d)
CPCA	Culvert Pipe Corrugated Aluminum	REQD	Required
CPCS	Culvert Pipe Corrugated Steel	RES	Residence or Residential
CPRC	Culvert Pipe Reinforced Concrete	RT	Right
C & G	Curb and Gutter	R/W	Right-of-Way
D	Degree of Curve	R	River
DHV	Design Hour Volume	RD	Road
DIA	Diameter	RDWY	Roadway
DD	Directional Distribution	SALV	Salvaged
DISCH	Discharge	SEC	Section
DWY	Driveway	SHLDR	Shoulder
E	East	SHR	Shrinkage
X	East Grid Coordinate	S	South
EB	Eastbound	SB	Southbound
ELEC	Electric (al)	SPECS	Specifications
EL or ELEV	Elevation	SQ	Square
EMB	Embankment	SF or SQ FT	Square Feet
EW	Endwall	SY or SQ YD	Square Yard
ESALS	Equivalent Single Axle Loads	STD	Standard
EXC	Excavation	SDD	Standard Detail Drawings
EBS	Excavation Below Subgrade	STH	State Trunk Highways
EXIST	Existing	STA	Station
EXP	Expansion	SS	Storm Sewer
FERT	Fertilize	STR	Structure or Structural
FE	Field Entrance	SE	Superelevation
F	Fill	SURF	Surface
FG	Finished Grade	SL or S/L	Survey Line
FAB	Flashing Arrow Board	T	Tangent
FL or F/L	Flow Line	TEL	Telephone
FT	Foot	TEMP	Temporary
HT	Height	TPM	Temporary Pavement Marking
HES	High Early Strength	T	Ton
H	House	TC	Top of Curb
CWT	Hundredweight	T or TN	Town
HYD	Hydrant	TRANS	Transition
IN DIA	Inch Diameter	T	Trucks (percent of)
INL	Inlet	TYP	Typical
ID	Inside Diameter	UG	Underground
INTERS	Intersection	USH	United States Highway
I	Intersection Angle	VAR	Variable
INV	Invert	V	Velocity or Design Speed
IP	Iron Pipe or Pin	VERT	Vertical
JT	Joint	VC	Vertical Curve
LT	Left	VOL	Volume
L	Length of Curve	W	Water
LIN FT or LF	Linear Foot	WM	Water Main
LS	Lump Sum	WV	Water Valve
MAINT	Maintenance	W	Well
MH	Manhole	W	West
M	Marsh	WB	Westbound
ML or M/L	Match Line	YD	Yard

UTILITY CONTACTS

ELECTRICITY

ALLIANT ENERGY - ELECTRICITY
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GAS/PETROLEUM

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ELECTRICITY-TRANSMISSION

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COMMUNICATION LINE

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PLYMOUTH, WI 53073
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COMMUNICATION LINE

SPECTRUM COMMUNICATIONS
TOM PHILLIPS
1348 PLAINFIELD RD.
JANESVILLE, WI 53546
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GAS/PETROLEUM

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COMMUNICATION LINE

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COMMUNICATION LINE

EVERSTREAM - COMMUNICATION LINE
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SGARCIA@EVERSTREAM.NET

ELECTRICITY

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GAS/PETROLEUM

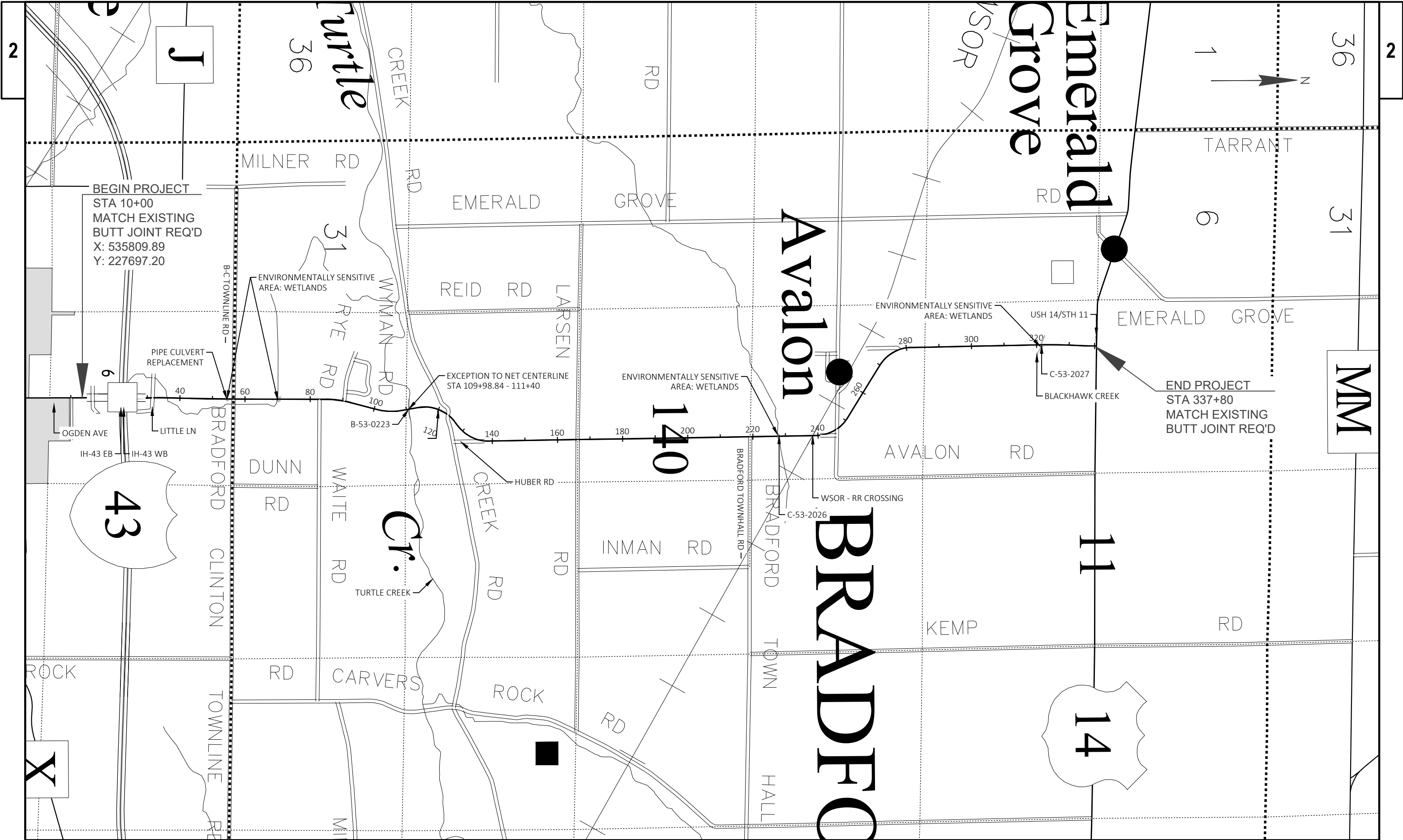
WE ENERGIES
SCOTT HOLSTEIN
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BURLINGTON, WI 53214
PHONE: O:(262)763-1084 M:(262)949-0490
EMAIL: SCOTT.HOLSTEIN@WE-ENERGIES.COM

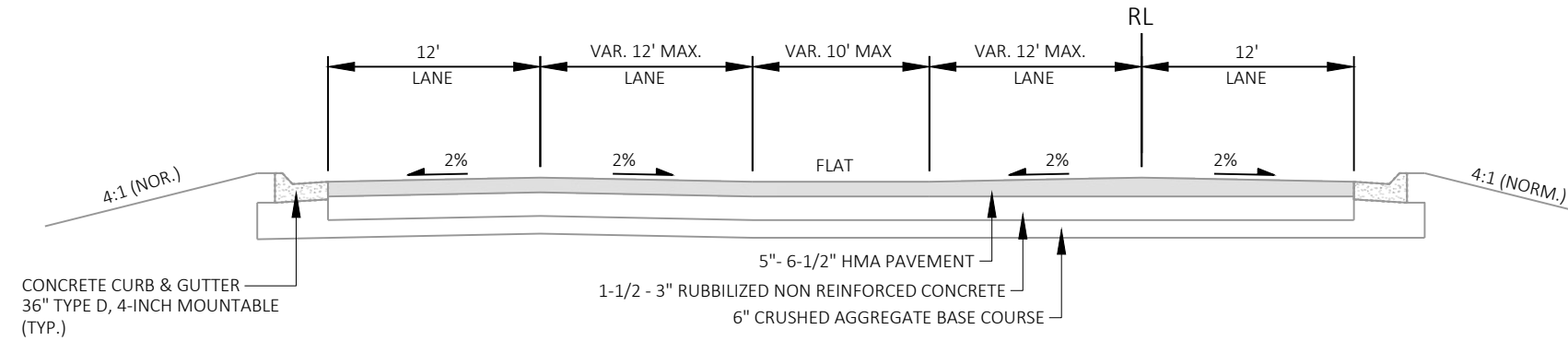
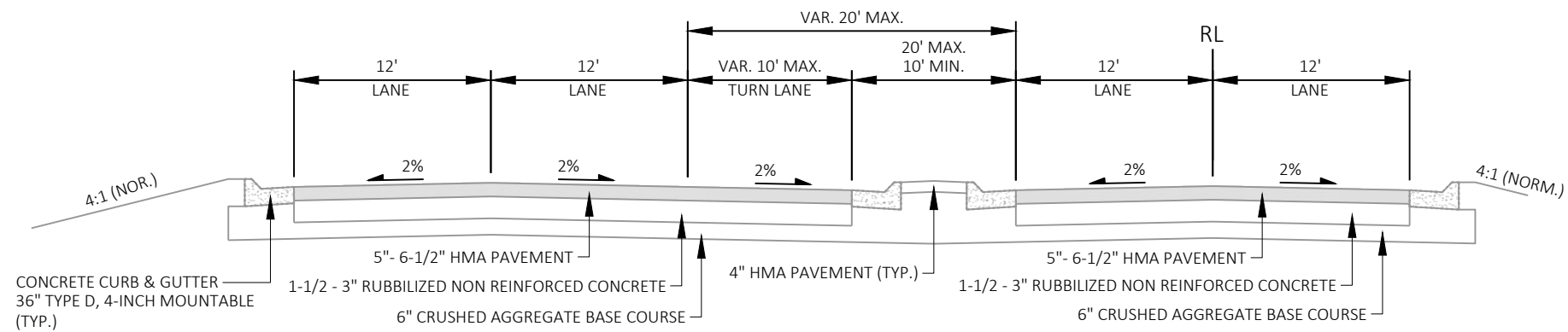
ROADWAY BORING SUMMARY TABLE

EXISTING STH 140
BORINGS TAKEN 02/27/2020

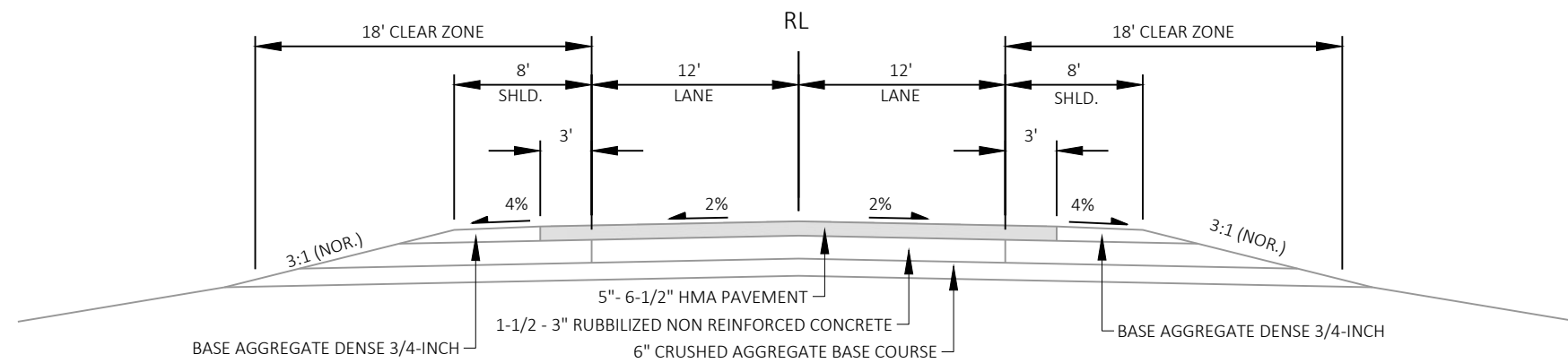
BORING #	STA.	OFFSET	HMA	RECLAIMED HMA	CONCRETE	SAND/BASE
1	31+90	1' LT	5.25	-	10.75	18
2	45+80	6' LT	2.5	-	6	-
3	80+60	9' LT	4.5	8	5.5	-
4	115+35	9' RT	6.5	-	-	-
5	129+05	3' RT	3.5	5	-	16
6	170+55	9' LT	3	5	-	-
7	185+57	9' LT	3.5	5	6*	5.5
8	202+75	9' RT	4	4	7*	6
9	228+25	9' RT	3.5	4.5	10.5*	5.5
10	239+80	6' LT	5	4.5	6	-
11	321+58	9' LT	4.5	2	-	17.5
12	332+87	3' RT	3.5	9.5	-	-

NOTE: ALL DEPTHS ARE IN INCHES
ALL STATIONING IS APPROXIMATE
* INDICATES THAT CONCRETE LAYER LIES BELOW SAND/BASE LAYER

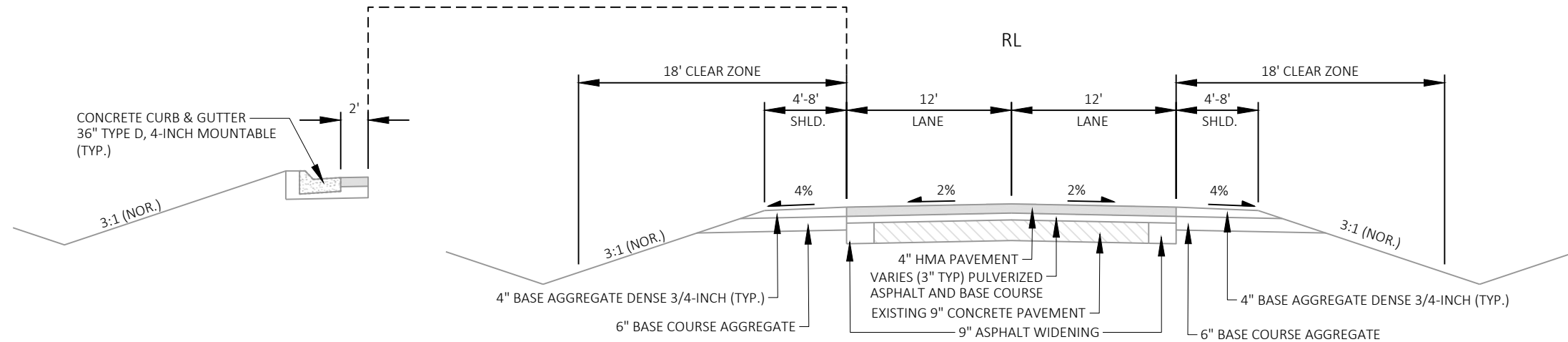
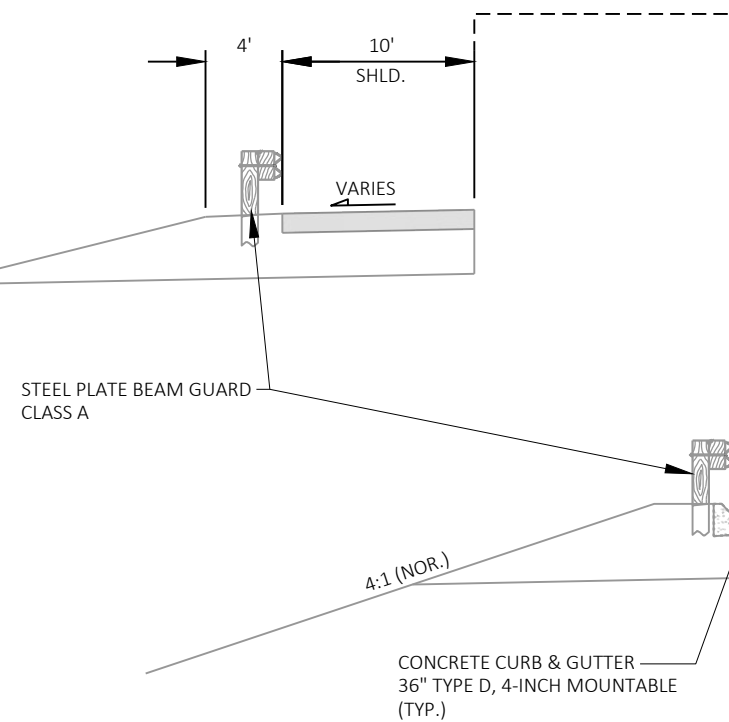
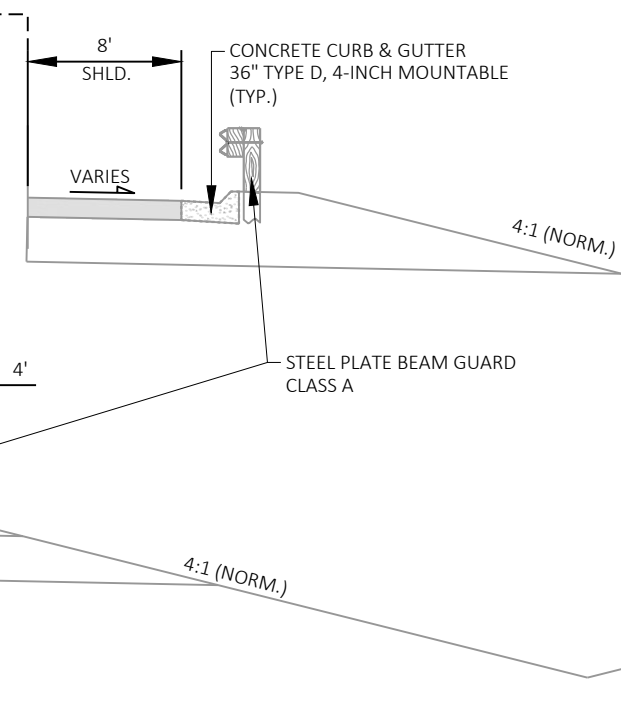


**EXISTING TYPICAL SECTION**STA 10+00 - 14+90
STA 29+55 - 33+89**EXISTING TYPICAL SECTION**

STA 14+90 - 29+55

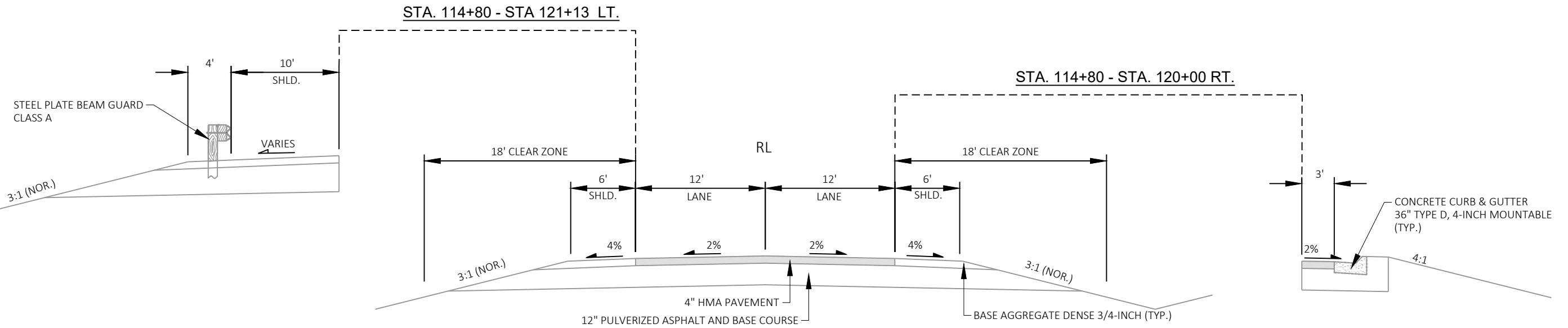
**EXISTING TYPICAL SECTION**

STA 33+89 - 40+70

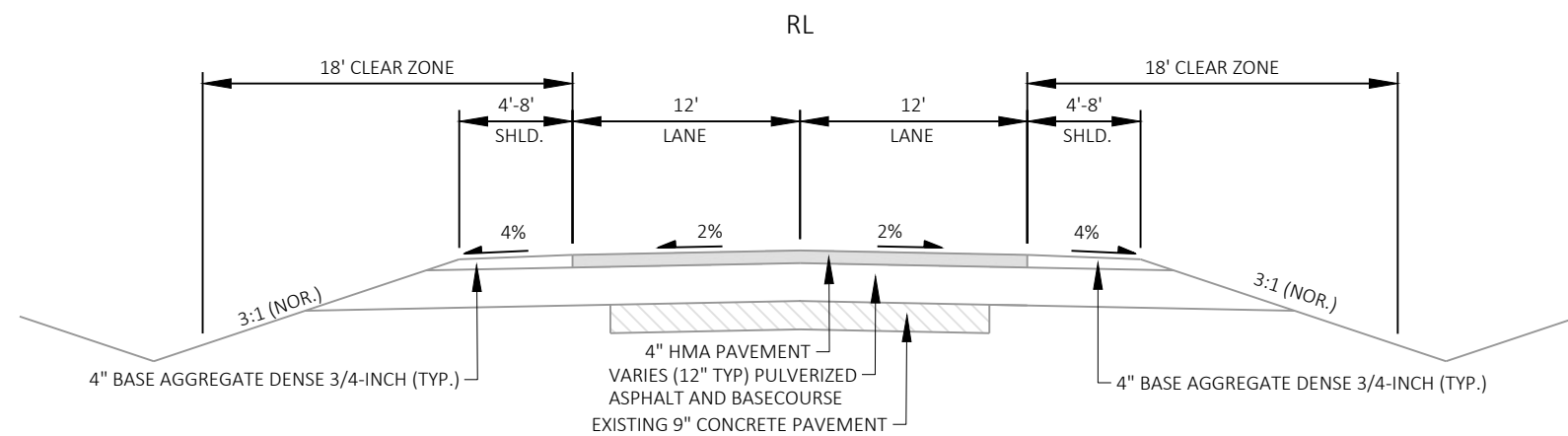
STA. 97+25 - STA. 102+90 LT.EXISTING TYPICAL SECTIONSTA 40+70 - 102+90
STA 317+60 - 337+80STA. 111+55 - STA. 114+80 LT.STA. 111+55 - STA. 114+80 RT.EXISTING TYPICAL SECTION

STA 102+90 - 114+80

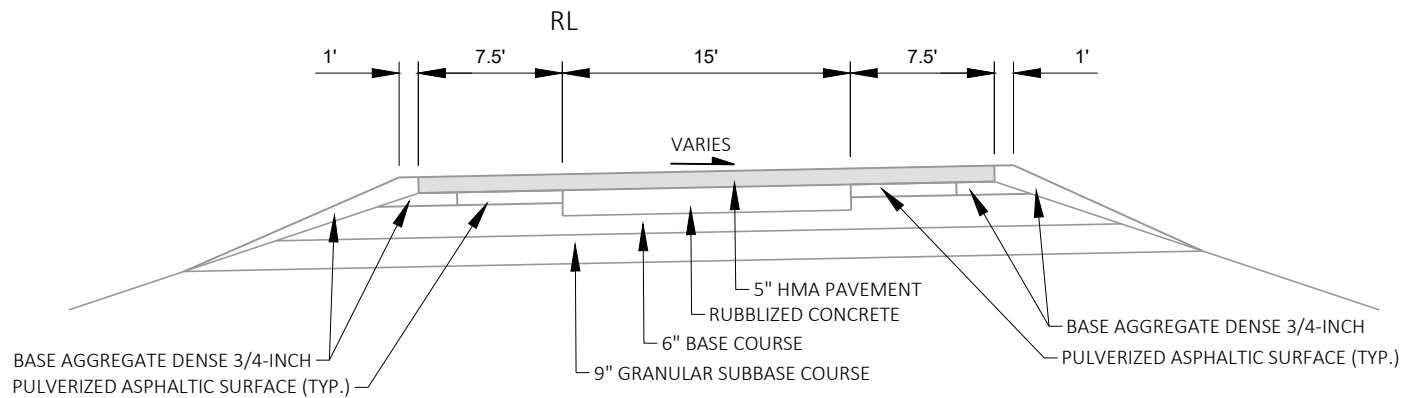
SUPERELEVATION MAXIMUM ESTIMATION (BASED ON AS-BUILTS)				
STA - STA	SHOULDER	LANE	LANE	SHOULDER
	LT	LT	RT	RT
102+90 - 109+80	-3.40%	-3.40%	3.40%	3.40%
109+80 - 111+55	-2.00%	-2.00%	-2.00%	-2.00%
111+55 - 121+30	Varies	6.00%	-6.00%	-6.00%

**EXISTING TYPICAL SECTION**

STA 114+80 - 129+00

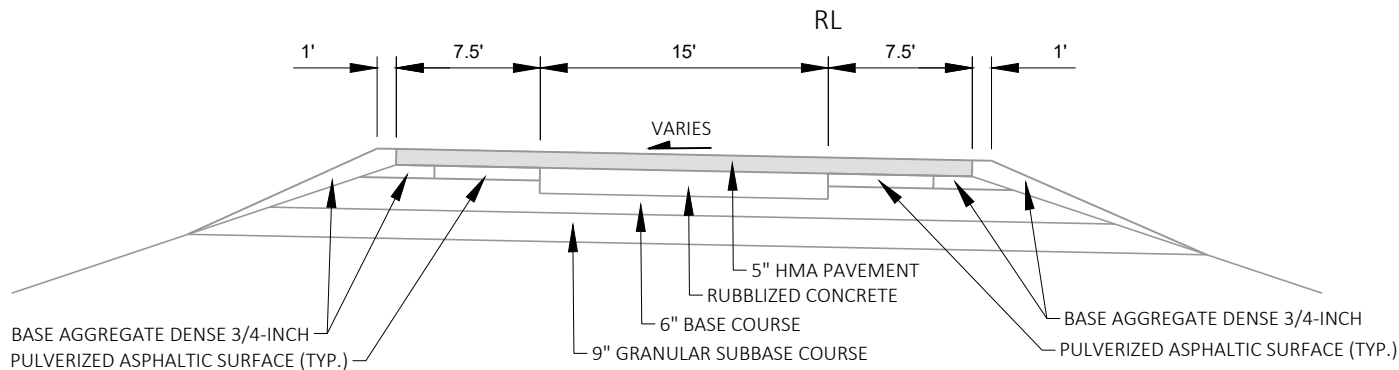
**EXISTING TYPICAL SECTION**

STA 129+00 - 317+60



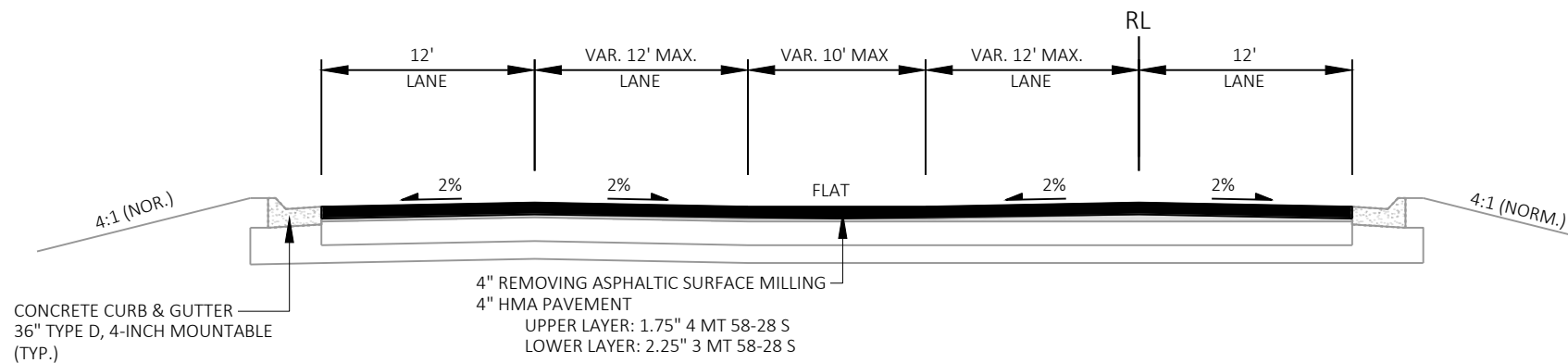
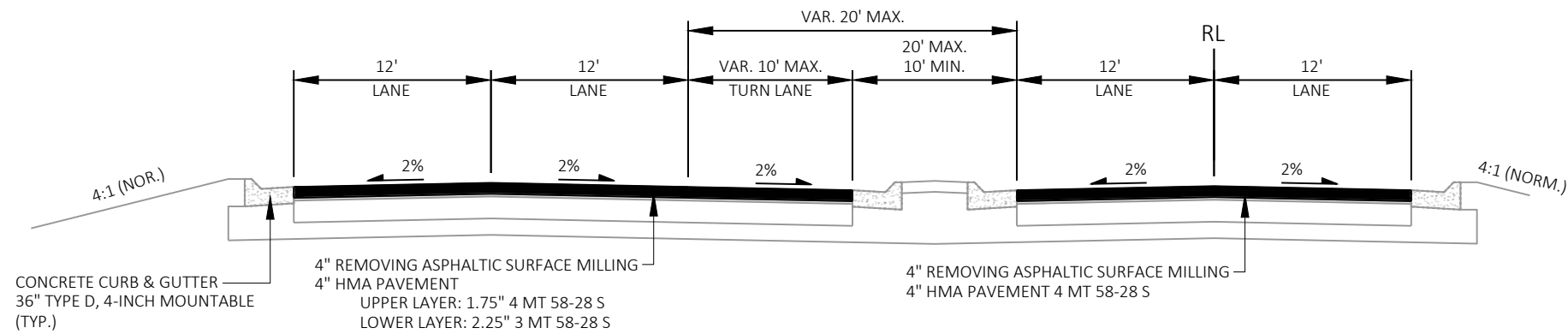
EXISTING TYPICAL RAMP SECTION

STA 35'KD'+00 - 36'KD'+68
STA 37'KA'+26 - 39'KA'+70

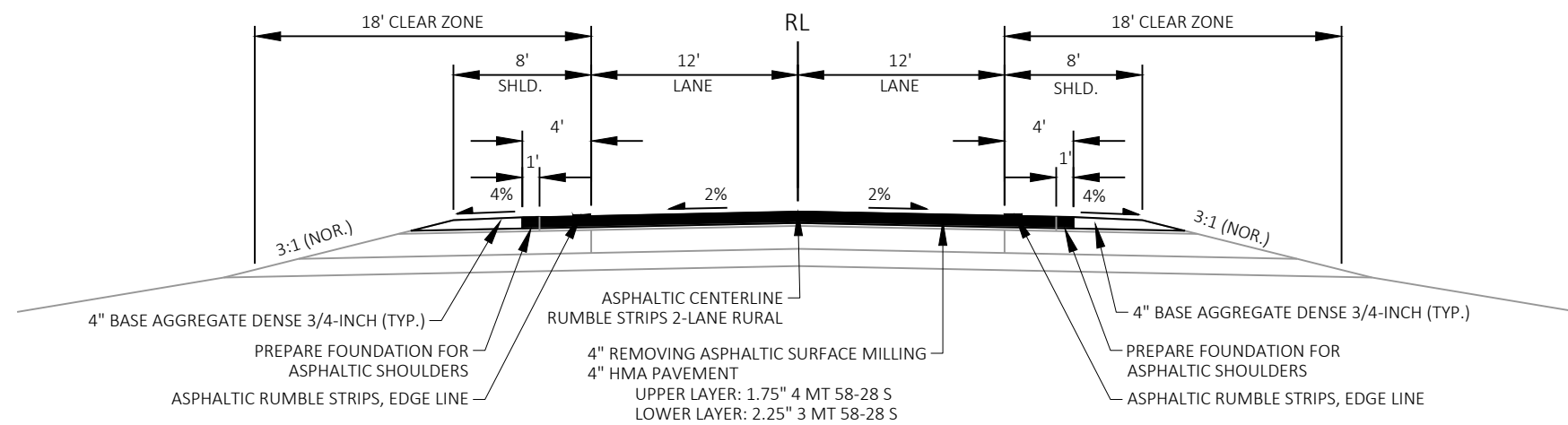


EXISTING TYPICAL RAMP SECTION

STA 35'KC'+03 - 37'KC'+09
STA 37'KB'+04 - 39'KB'+00

**FINISHED TYPICAL SECTION**STA 10+00 - 14+90
STA 29+55 - 33+89**FINISHED TYPICAL SECTION**

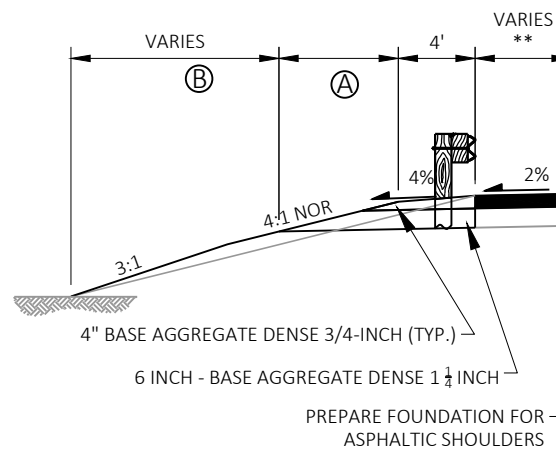
STA 14+90 - 29+55

**FINISHED TYPICAL SECTION**

STA 33+89 - 40+70

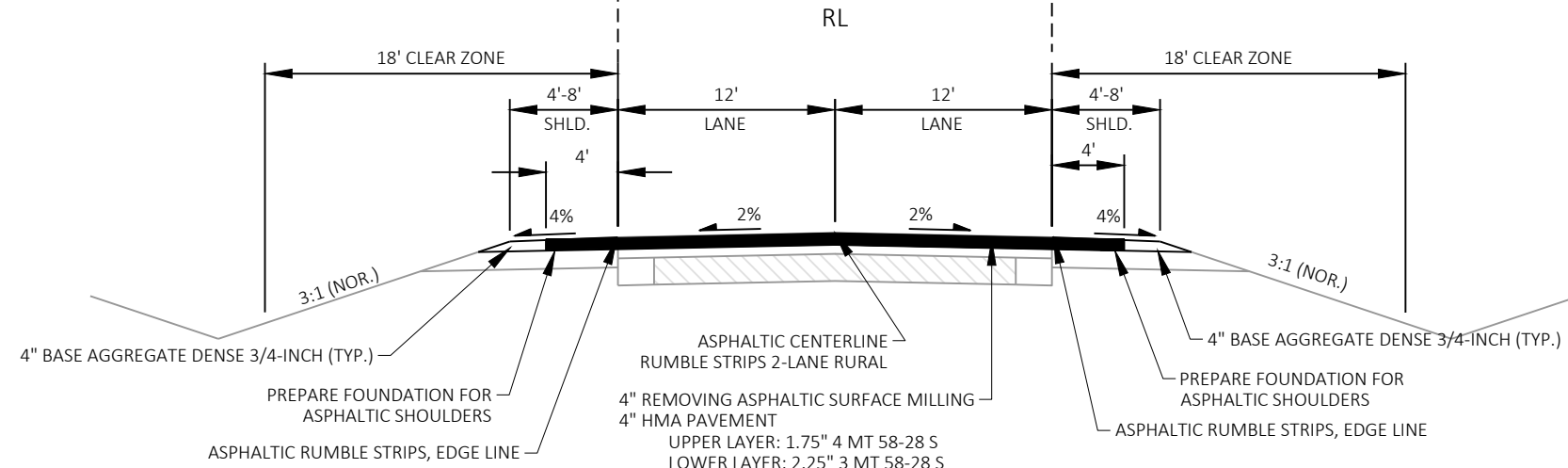
FINISHED PARTIAL TYPICAL SECTION

STA 53+25 - 55+94 LT ** 6'
STA 320+47 - 323+28 LT ** 5'



STA. 97+25 - STA. 102+90 LT.

CONCRETE CURB & GUTTER
36" TYPE D, 4-INCH MOUNTABLE
(TYP.)

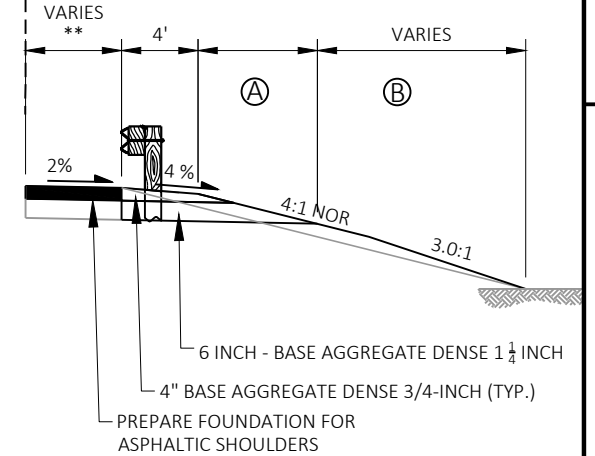


FINISHED TYPICAL SECTION

STA 40+70 - 53+90
STA 54+70 - 102+90
STA 317+60 - 321+10
STA 322+00 - 337+80

FINISHED PARTIAL TYPICAL SECTION

STA 52+76 - 55+45 RT ** 6'
STA 319+76 - 322+57 RT ** 5'

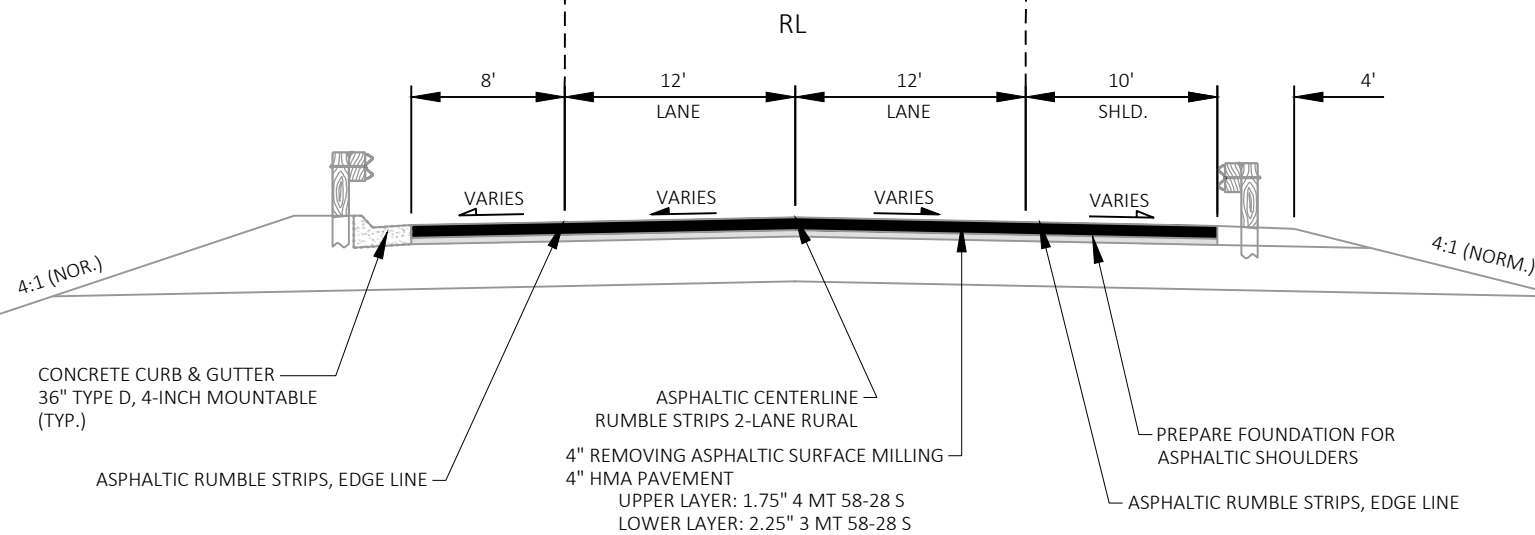
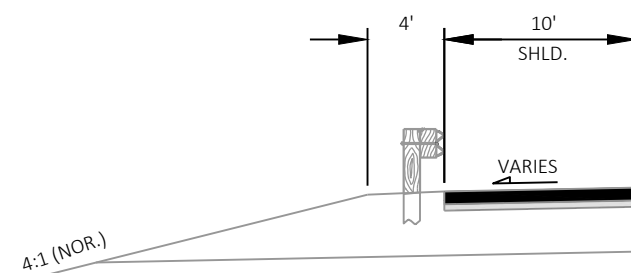


LEGEND

- Ⓐ SEEDING MIXTURE NO. 30, FERTILIZER B
Ⓑ TOPSOIL, SEEDING MIXTURE NO 30, FERTILIZER B, AND MULCH

STA. 111+55 - STA. 114+80 LT.

STA. 111+55 - STA. 114+80 RT.

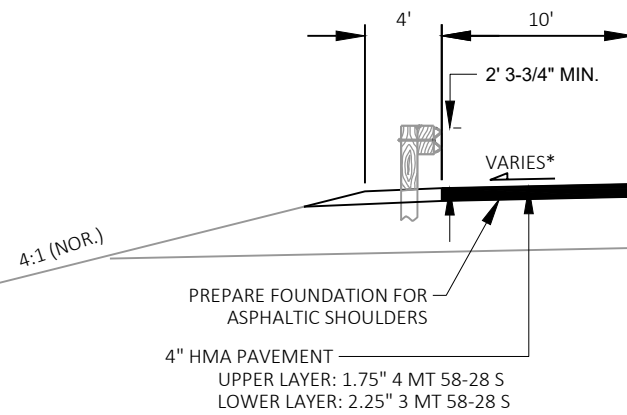


FINISHED TYPICAL SECTION

STA 102+90 - 114+80

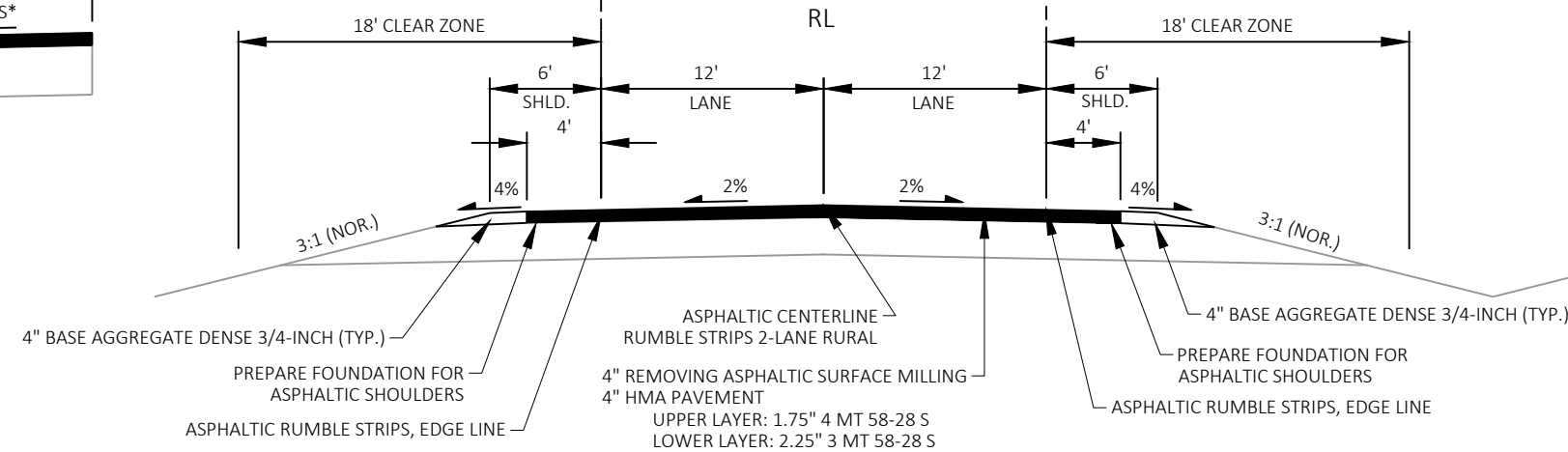
STA. 114+80 - STA 121+13 LT.

STA. 114+80 - STA. 120+00 RT.

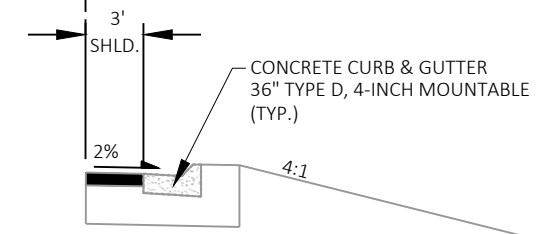


- * SLOPE WILL BE DETERMINED BASED ON TWO FACTORS:
- ROLLOVER RATE BETWEEN LANE AND SHOULDER MAY NOT EXCEED 8%
 - MIN. HEIGHT BETWEEN THE EDGE OF THE PAVED SHOULDER AND THE TOP OF THE STEEL BEAM GUARD PLATE MUST BE A MINIMUM OF 2' 3-3/4".

IF ONE OR BOTH OF THESE FACTORS CAN'T BE MEET, AS DETERMINED BY THE FEILD ENGINEER. FOREGO SHOULDER PAVEMENT.



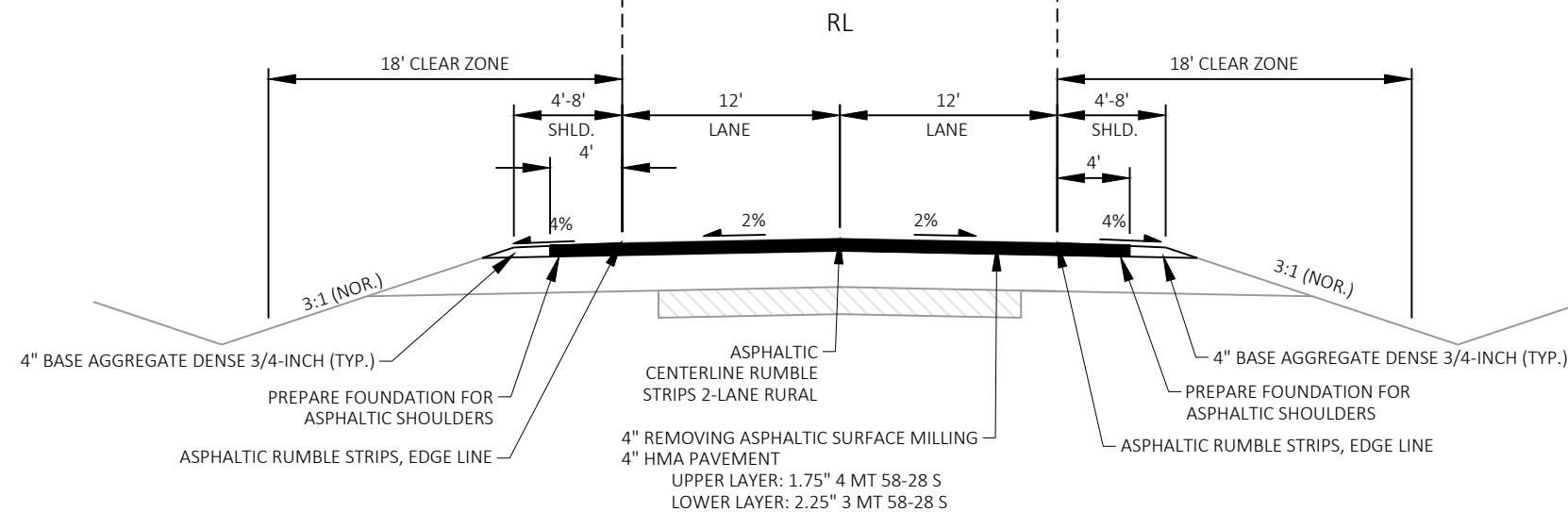
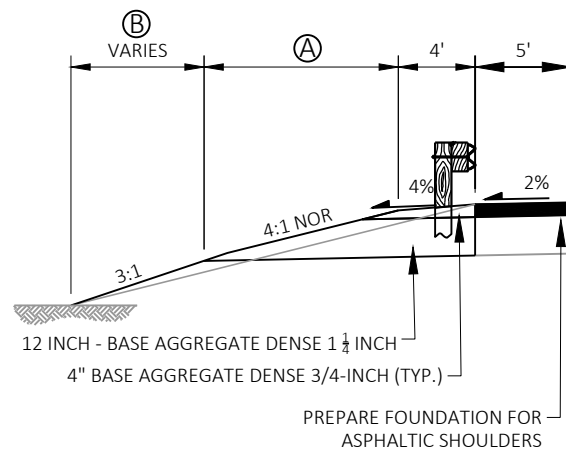
FINISHED TYPICAL SECTION
STA 114+80 - 129+00



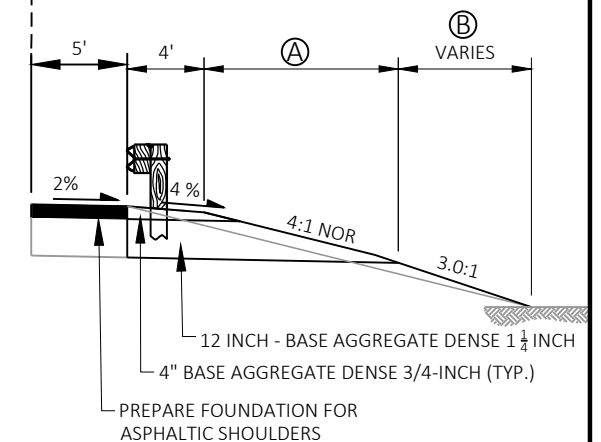
- LEGEND**
- Ⓐ SEEDING MIXTURE NO. 30, FERTILIZER B
 - Ⓑ TOPSOIL, SEEDING MIXTURE NO 30, FERTILIZER B, AND MULCH

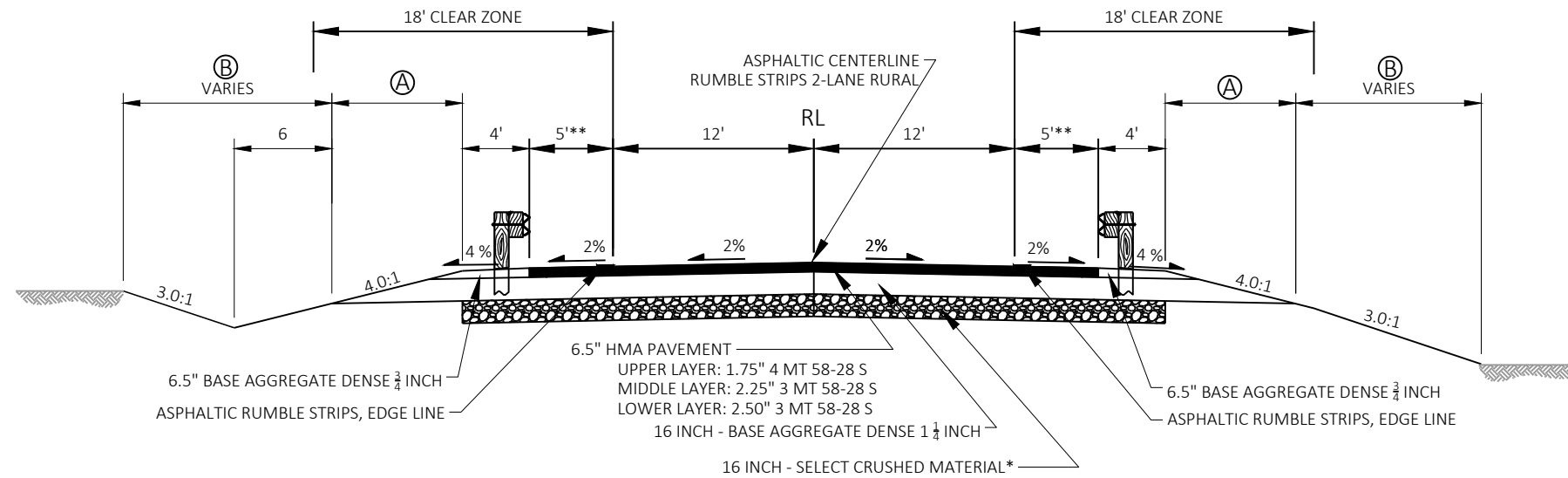
STA 226+65 - 229+46 LT

STA 226+00 - 228+81 RT



FINISHED TYPICAL SECTION
STA 129+00 - 317+60



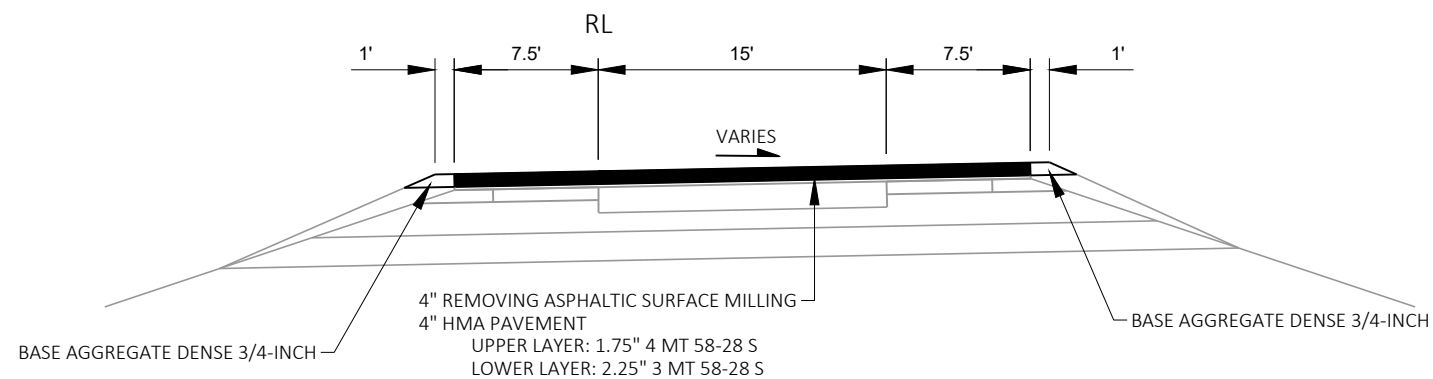
**FINISHED TYPICAL SECTION**

STA 53+90 - 54+70 ** 6'
STA 227+40 - 228+10
STA 321+10 - 322+00

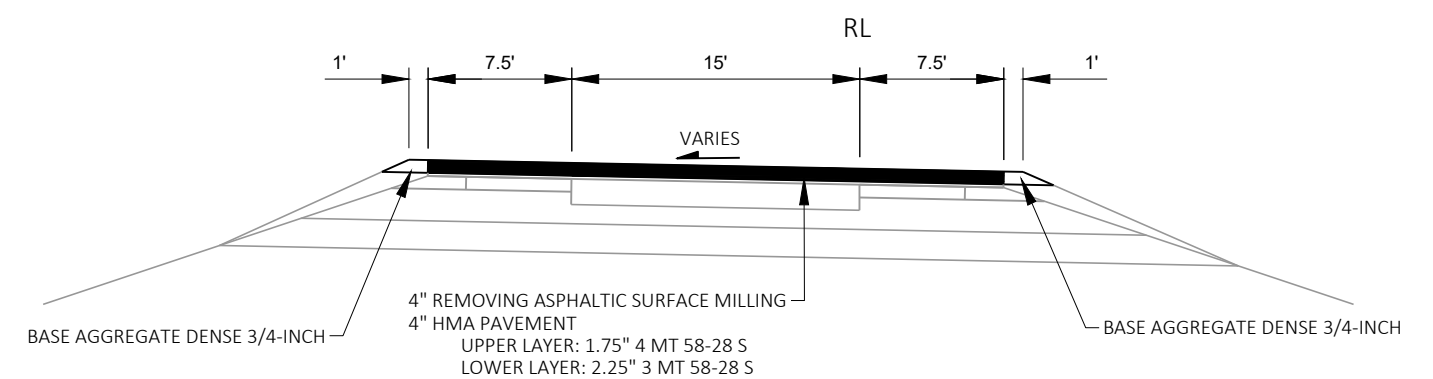
LEGEND

- Ⓐ SEEDING MIXTURE NO. 30, FERTILIZER B
Ⓑ TOPSOIL, SEEDING MIXTURE NO 30, FERTILIZER B, AND MULCH

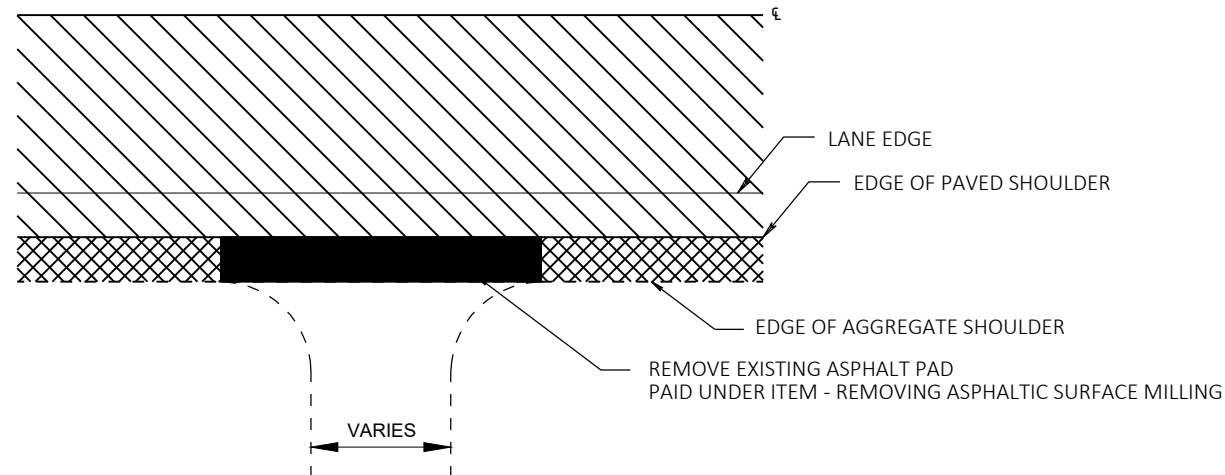
* AT STRUCTURE C-53-2038 ELIMINATE SELECT CRUSH AND USE BASE AGGREGATE DENSE 1 1/4-INCH TO THE TOP OF THE STRUCTURE

**FINISHED TYPICAL RAMP SECTION**

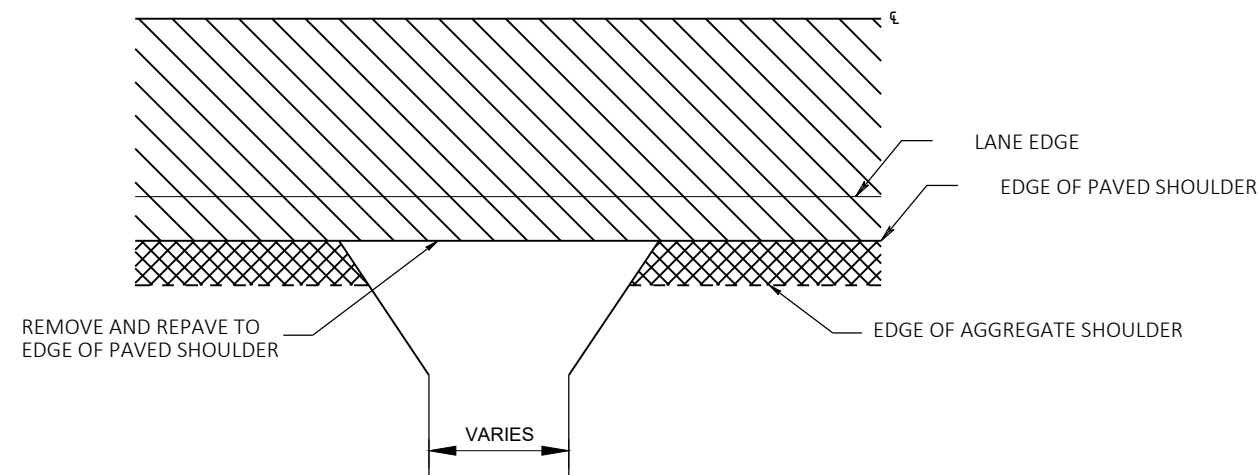
STA 35'KD'+00 - 36'KD'+68
STA 37'KA'+26 - 39'KA'+70

**FINISHED TYPICAL RAMP SECTION**

STA 35'KC'+03 - 37'KC'+09
STA 37'KB'+04 - 39'KB'+00



PLAN VIEW
EXISTING AGGREGATE DRIVEWAY/FIELD ENTRANCE



PLAN VIEW
EXISTING PAVED DRIVEWAY

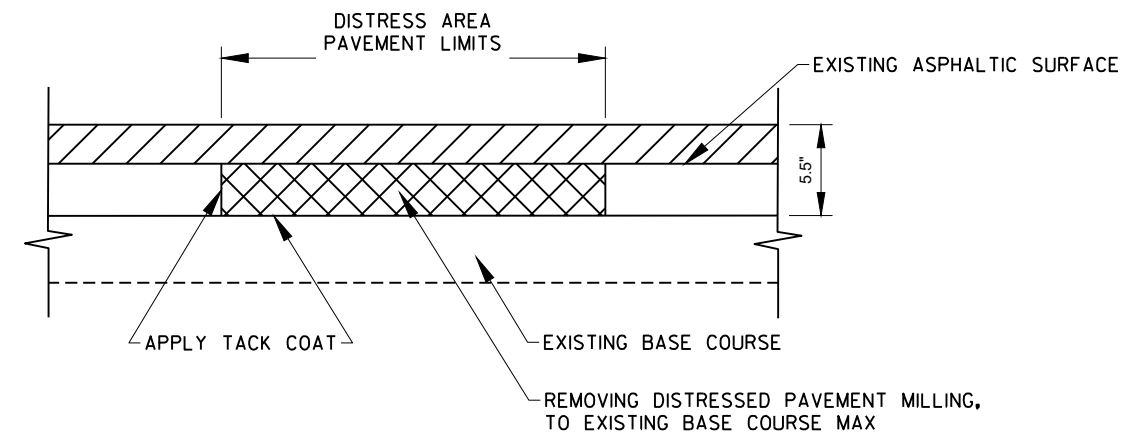
BASE AGGREGATE DENSE
3/4-INCH

HMA PAVEMENT

EXISTING ASPHALT PAD
TO BE REMOVED

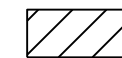
SEE NOTE IN MISC. QUANTITIES
REGARDING AGGREGATE DRIVEWAY &
FIELD ENTRANCE B.A.D. SIZE

RURAL DRIVEWAY DETAIL



REMOVING DISTRESSED PAVEMENT MILLING

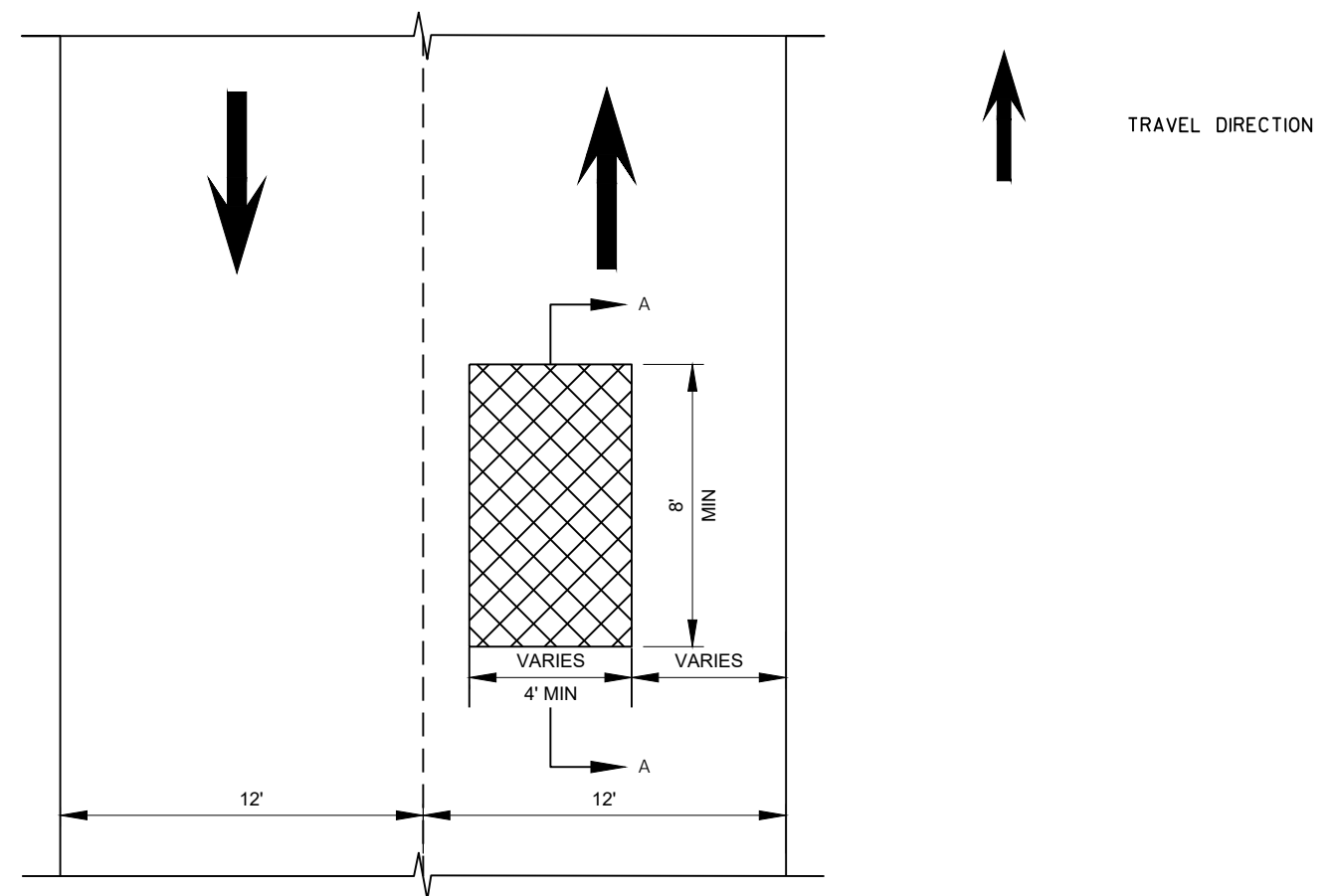
SECTION A-A



2" REMOVING ASPHALTIC SURFACE MILLING/
2" HMA PAVEMENT OVERLAY



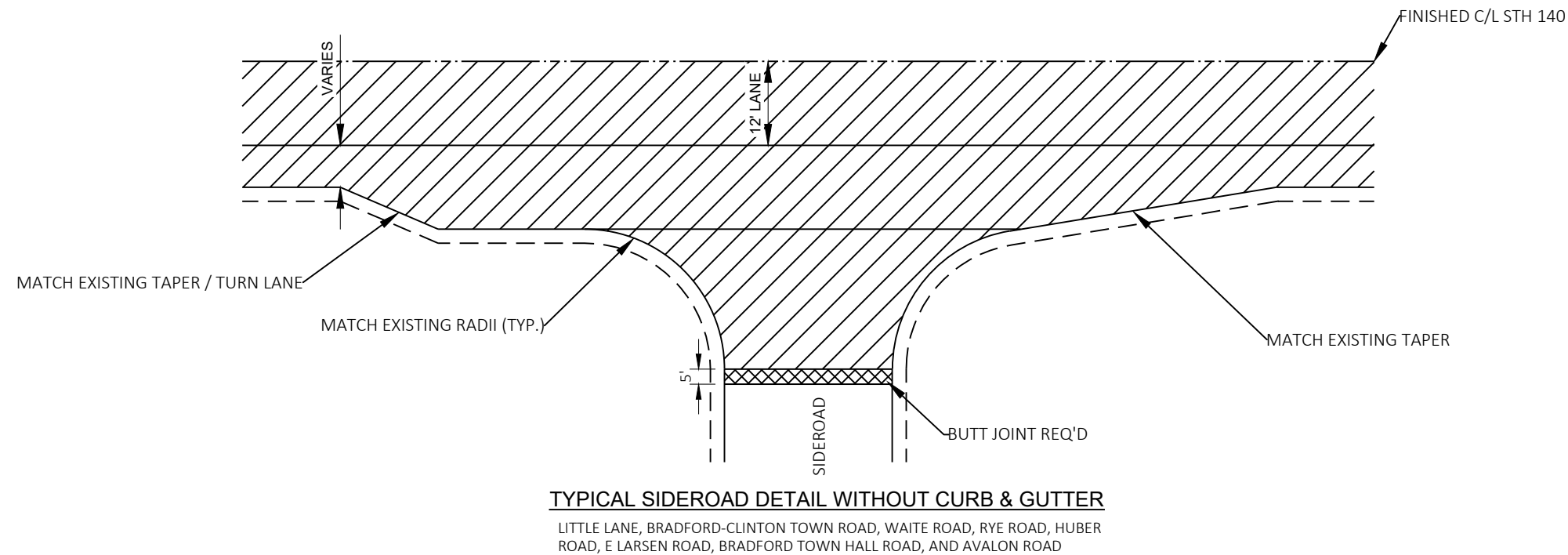
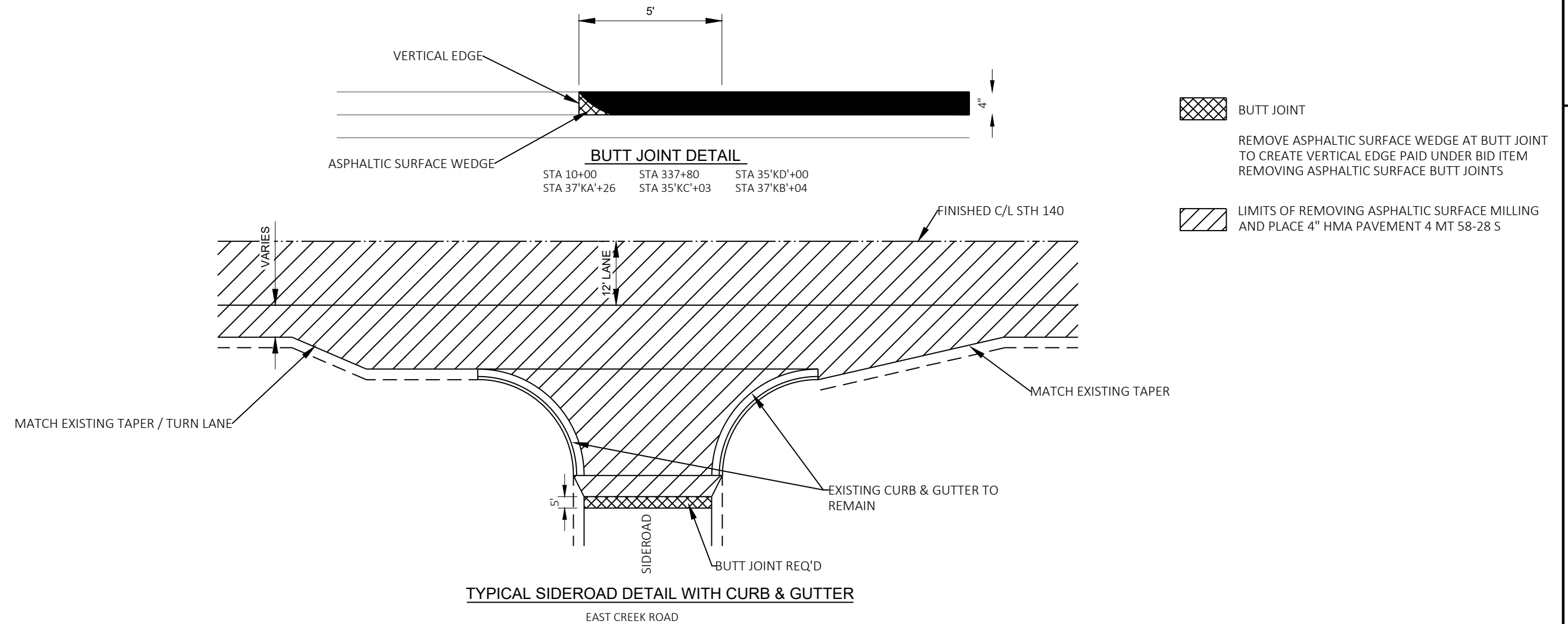
REMOVING DISTRESSED PAVEMENT MILLING/
ASPHALTIC SURFACE

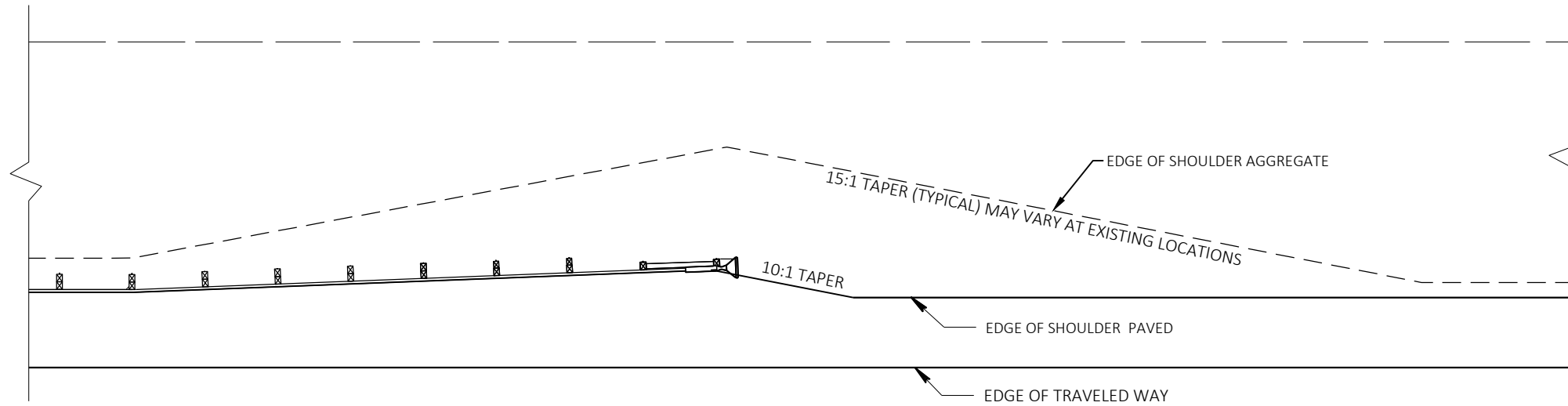


REMOVING DISTRESSED PAVEMENT MILLING

PLAN VIEW

EXACT LOCATION AND LIMITS OF REMOVING DISTRESSED
PAVEMENT MILLING TO BE DETERMINED BY THE
ENGINEER IN THE FIELD

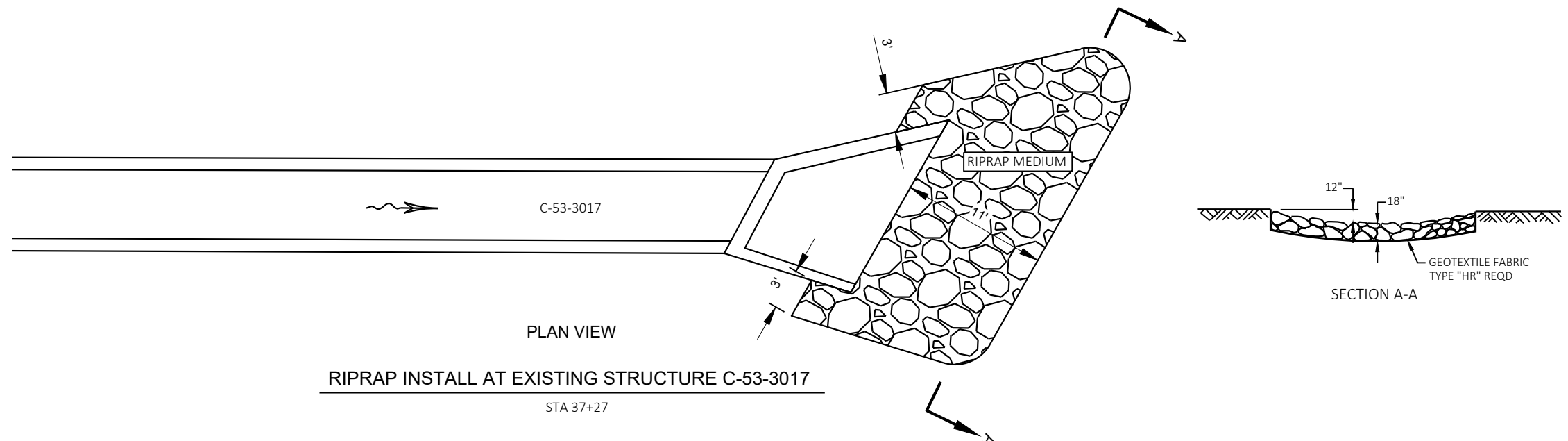




PLAN VIEW

PAVING AT EXISTING GUARDRAIL END TERMINALS

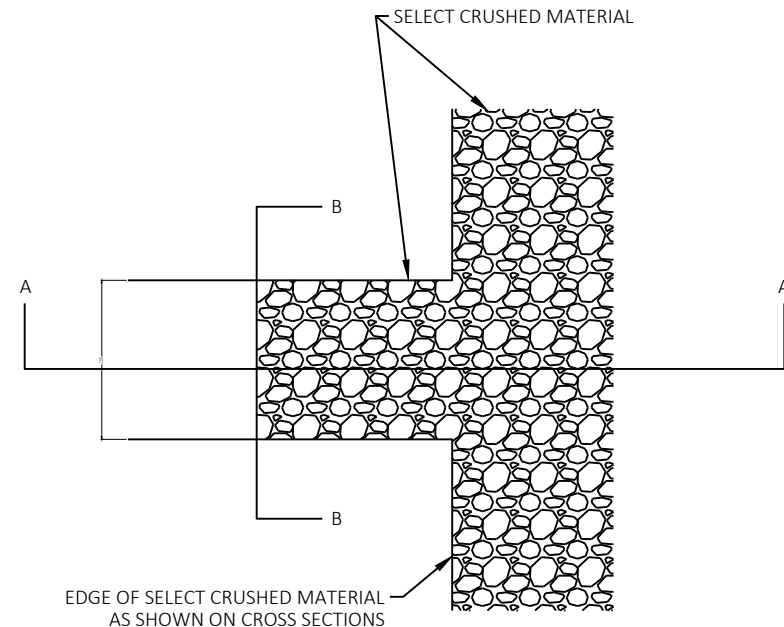
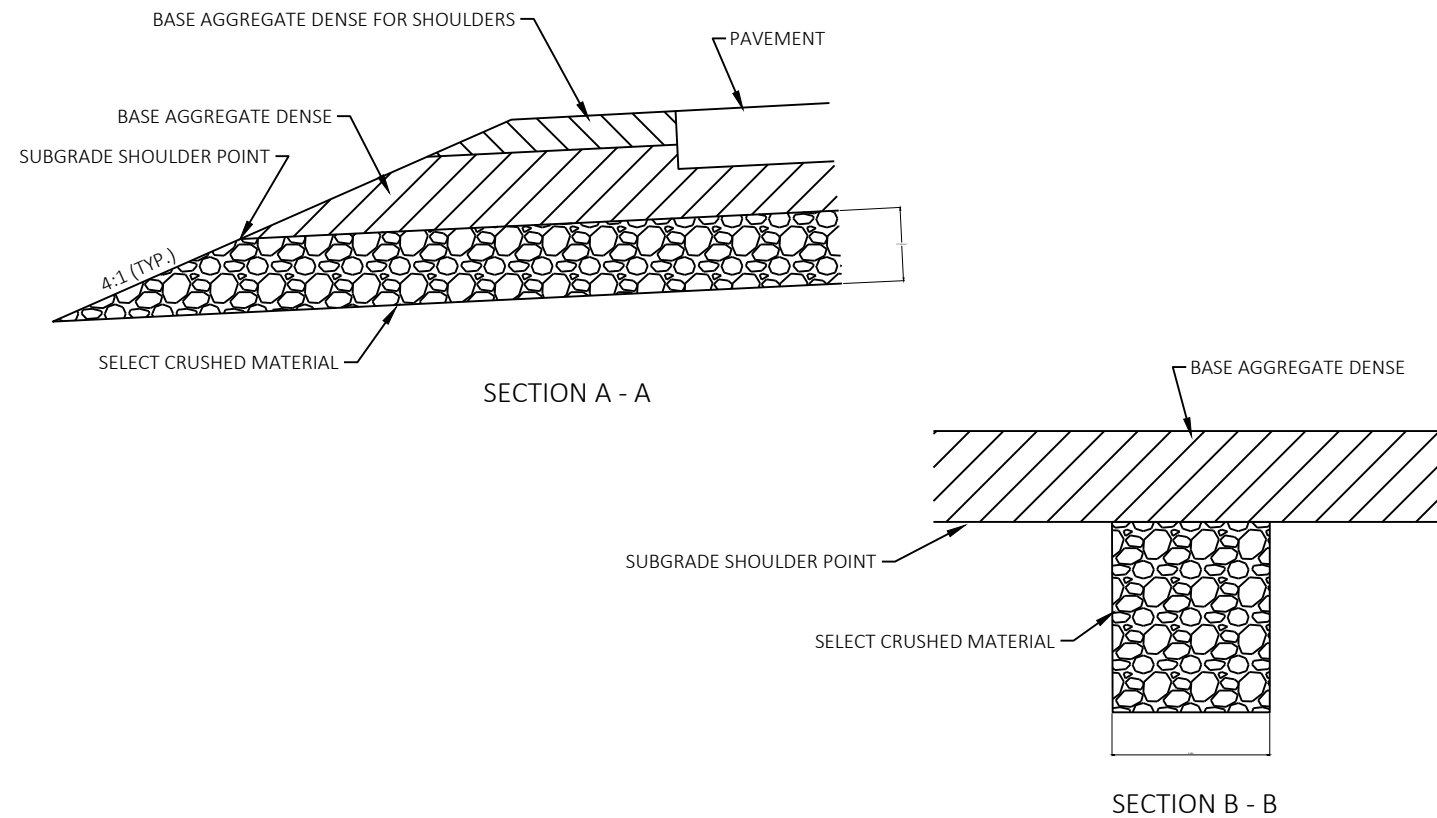
STA 68+50 - 72+46
STA 120+75 LT
STA 146+10 - 149+30



PLAN VIEW

RIPRAP INSTALL AT EXISTING STRUCTURE C-53-3017

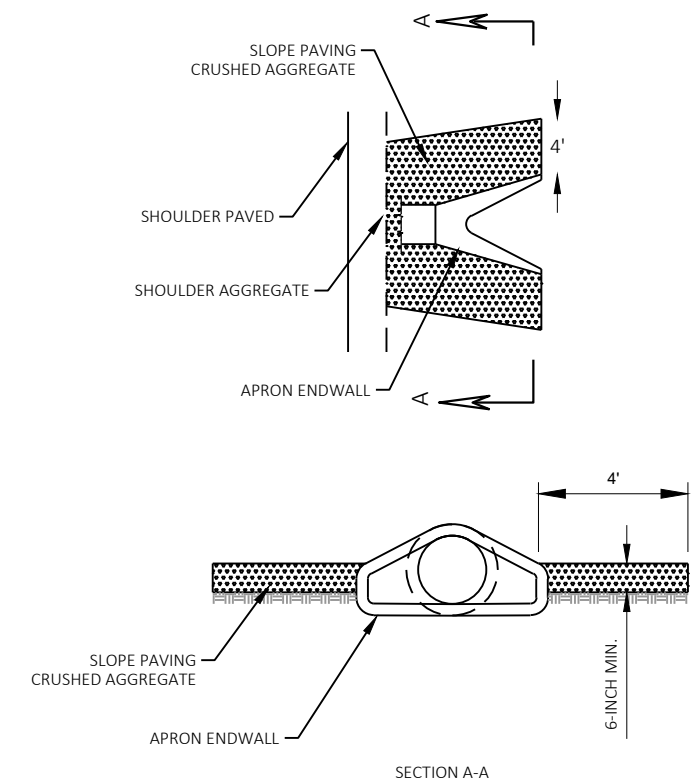
STA 37+27



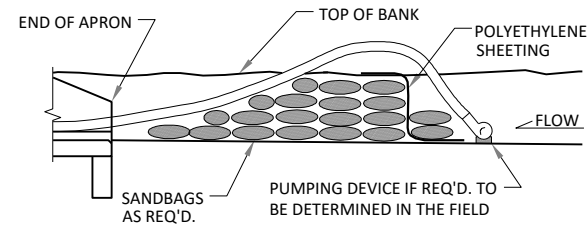
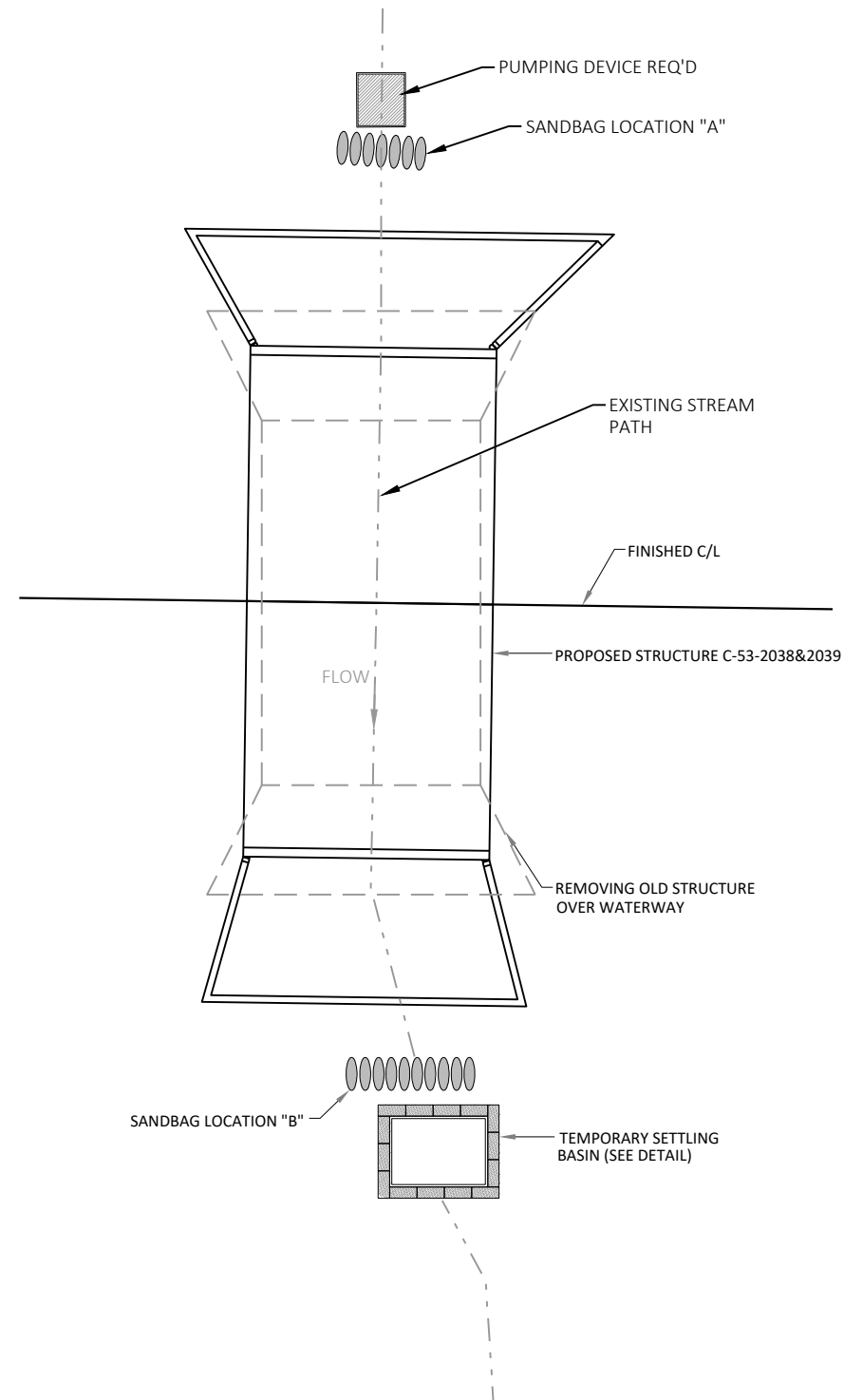
DETAIL FOR SUBGRADE IMPROVEMENT RELIEF TRENCHES
STA 227+40 - 228+10 AND STA 321+10 - 322+00

CONSTRUCT RELIEF TRENCHES AT NEAR SAG VERTICAL CURVE IN THE PROFILE (LOCATIONS TO BE DETERMINED IN THE FIELD BY THE ENGINEER)

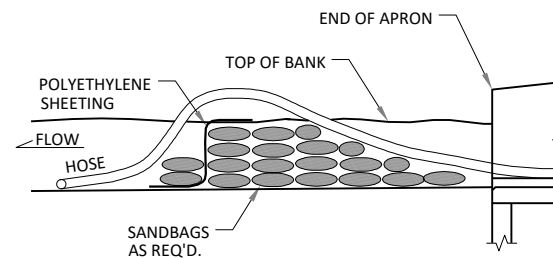
EXCAVATION REQUIRED TO CONSTRUCT RELIEF TRENCHES INCLUDED IN THE ITEM SELECT CRUSHED MATERIAL



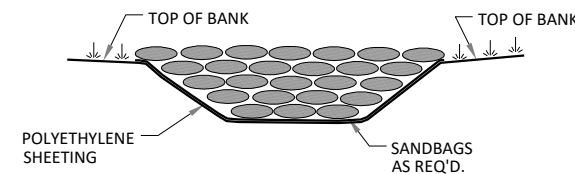
SLOPE PAVING CRUSHED AGGREGATE AT CULVERTS
STA 70+45 RT AND STA 116+65 LT/RT



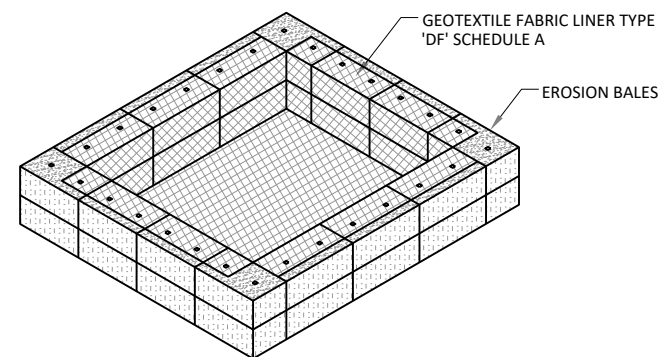
SANDBAG LOCATION "A" DETAIL
(TO STOP FLOW INTO WORK AREA)



SANDBAG LOCATION "B" DETAIL
(TO STOP BACKWASH INTO WORK AREA)



**TYPICAL SANDBAG INSTALLATION
IN EXISTING CHANNEL**

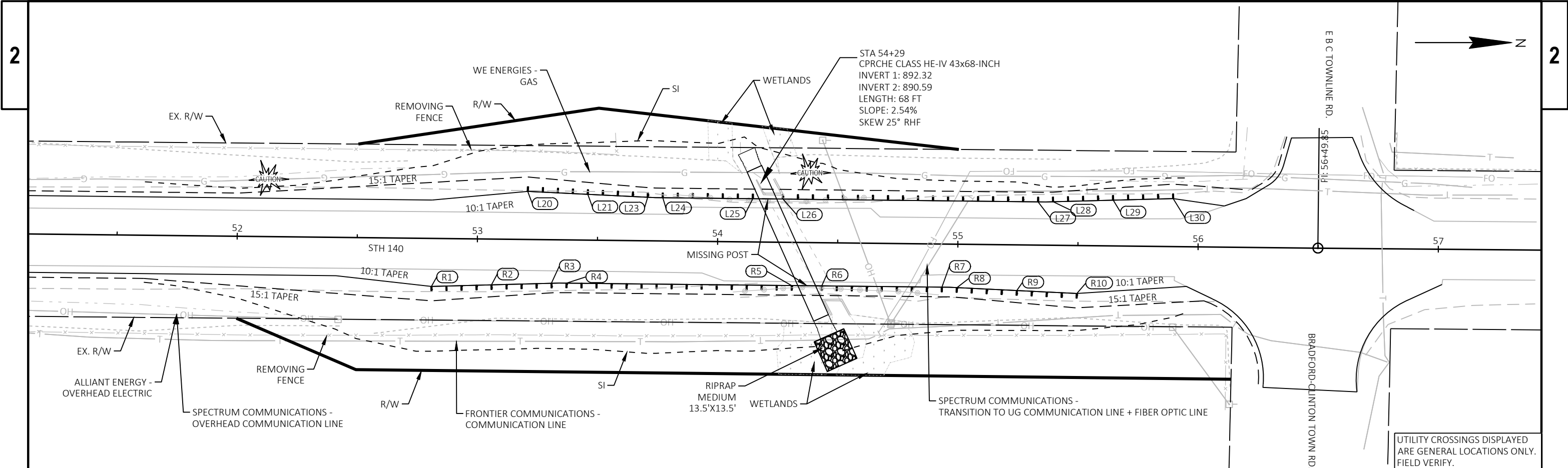


TEMPORARY SETTLING BASIN
SIZE TO BE DETERMINED BY WATER
QUANTITY AND QUALITY

DEWATERING AT STRUCTURES

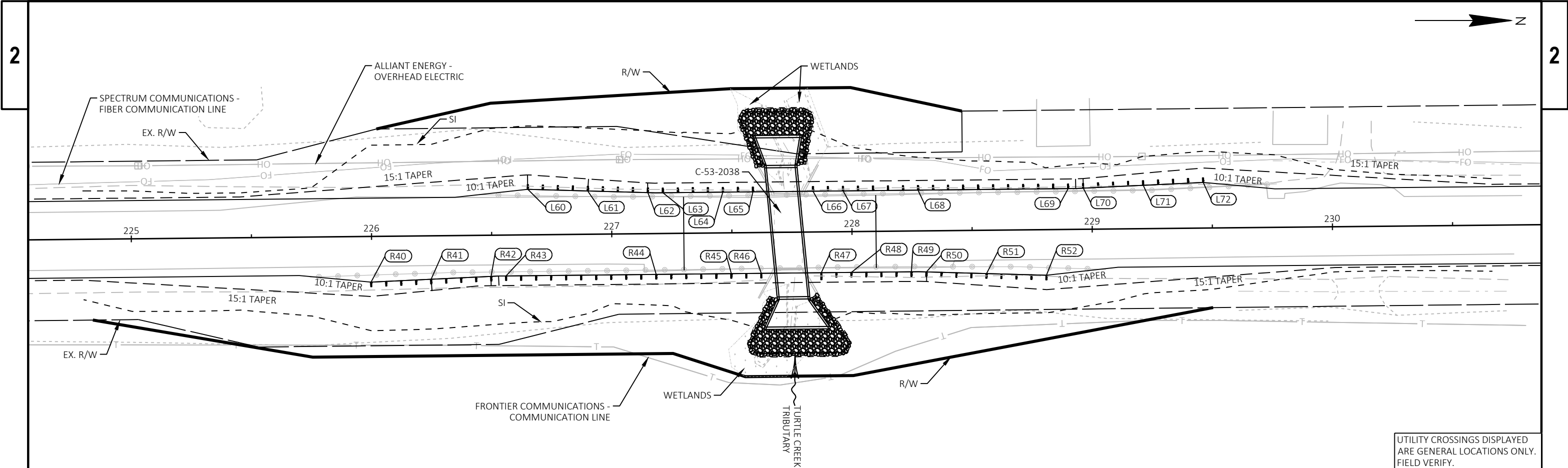
NOTES:

1. DEWATERING DETAILS, SANDBAG LOCATIONS, AND TEMPORARY SETTLING BASIN DETAILS SHOWN ON THIS SHEET PRESENT ONE POSSIBLE CONSTRUCTION METHOD. ALTERNATE METHODS AND LOCATIONS MAY BE ACCEPTABLE PROVIDED THEY MEET THE APPROVAL OF THE FIELD ENGINEER. THE DEWATERING MEANS AND METHODS PROPOSED TO BE USED DURING CONSTRUCTION SHALL BE SUBMITTED FOR APPROVAL AS PART OF THE EROSION CONTROL IMPLEMENTATION PLAN.
2. SIZE OF TEMPORARY SETTLING BASIN OR APPROVED ALTERNATE TO BE DETERMINED BY WATER QUANTITY AND QUALITY.
3. THE TEMPORARY SETTLING BASIN SHALL BE COMPLETED PRIOR TO BEGINNING OF PUMPING OPERATIONS. WATER REMOVED FROM STRUCTURE EXCAVATION TO BE PUMPED TO BASIN OR APPROVED ALTERNATE PRIOR TO DISCHARGE INTO THE STREAM.
4. BASIN SHALL BE KEPT LESS THAN 10% FULL OF SEDIMENT. GEOTEXTILE FABRIC TYPE DF AND SEDIMENTS SHALL BE DISPOSED OF BY THE CONTRACTOR OFF OF THE PROJECT SITE.
5. ALL EQUIPMENT AND MATERIALS REQUIRED FOR DEWATERING OPERATIONS TO BE PAID FOR UNDER BID ITEM "DEWATERING".



STA 53+20 - STA 55+90 MGS POST LAYOUT					
POINT NUMBER	STATION	OFFSET	NORTHING	EASTING	DESCRIPTION
R1	52+81.07	20.00' RT	231975.68	535896.73	POST 1
R2	53+06.05	19.06' RT	232000.67	535896.07	POST 5
R3	53+31.04	18.12' RT	232025.66	535895.40	POST 9
R4	53+37.28	18.00' RT	232031.91	535895.35	POST 10
R5	54+31.03	18.00' RT	232125.65	535896.38	
R6	54+43.53	18.00' RT	232138.15	535896.52	
R7	54+93.53	18.00' RT	232188.15	535897.07	POST 10
R8	54+99.78	18.12' RT	232194.39	535897.26	POST 9
R9	55+24.76	19.06' RT	232219.36	535898.47	POST 5
R10	55+49.75	20.00' RT	232244.34	535899.69	POST 1

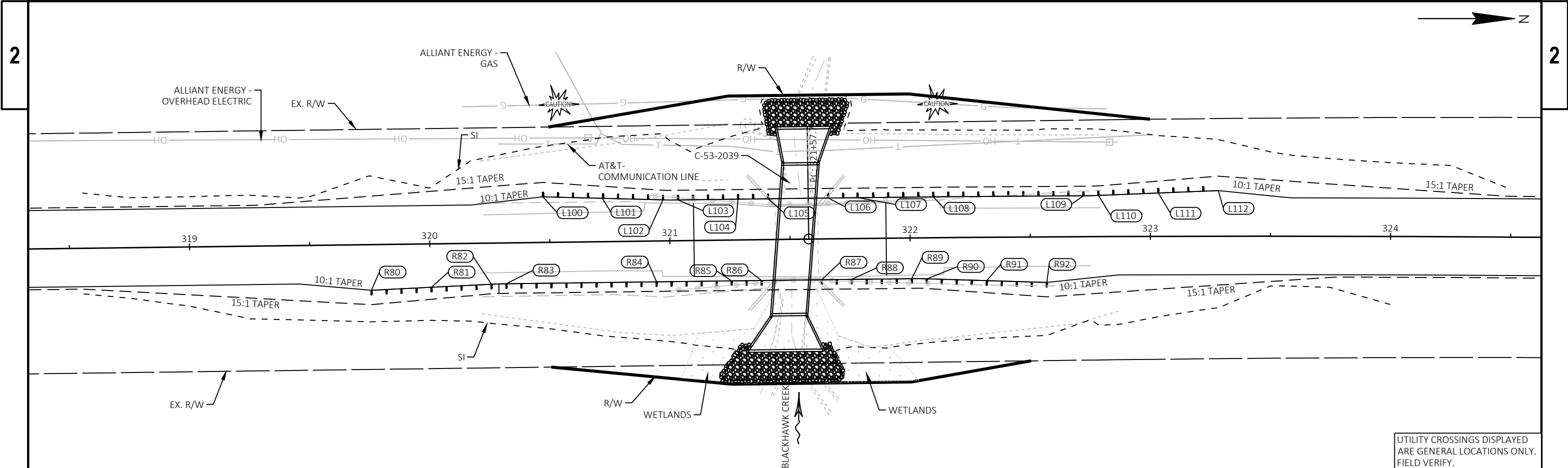
STA 53+20 - STA 55+90 MGS POST LAYOUT					
POINT NUMBER	STATION	OFFSET	NORTHING	EASTING	DESCRIPTION
L20	53+20.74	20.00' LT	232015.78	535857.17	POST 1
L21	53+45.72	19.06' LT	232040.75	535858.39	POST 5
L23	53+70.71	18.12' LT	232065.73	535859.60	POST 9
L24	53+76.96	18.00' LT	232071.97	535859.79	POST 10
L25	54+14.46	18.00' LT	232109.47	535860.20	
L26	54+26.96	18.00' LT	232121.97	535860.34	
L27	55+33.21	18.00' LT	232228.21	535861.51	POST 10
L28	55+39.45	18.12' LT	232234.46	535861.46	POST 9
L29	55+64.43	19.06' LT	232259.45	535860.79	POST 5
L30	55+89.42	20.00' LT	232284.44	535860.13	POST 1



UTILITY CROSSINGS DISPLAYED
ARE GENERAL LOCATIONS ONLY.
FIELD VERIFY.

STA 226+00 - STA 229+47 MGS POST LAYOUT					
POINT NUMBER	STATION	OFFSET	NORTHING	EASTING	DESCRIPTION
R40	225+99.62	19.00' RT	248878.99	537162.28	POST 1
R41	226+24.60	18.06' RT	248903.96	537161.09	POST 5
R42	226+49.58	17.12' RT	248928.93	537159.89	POST 9
R43	226+55.83	17.00' RT	248935.18	537159.71	POST 10
R44	227+18.33	17.00' RT	248997.67	537159.08	MGS L POST 8
R45	227+49.58	17.00' RT	249028.92	537158.76	MGS L POST 3
R46	227+62.08	17.00' RT	249041.42	537158.64	MGS L POST 1
R47	227+87.08	17.00' RT	249066.42	537158.38	MGS L POST 1
R48	227+99.58	17.00' RT	249078.92	537158.25	MGS L POST 3
R49	228+24.58	17.00' RT	249103.92	537158.00	MGS L POST 7
R50	228+30.83	17.12' RT	249110.17	537158.06	POST 9
R51	228+55.81	18.06' RT	249135.16	537158.74	POST 5
R52	228+80.79	19.00' RT	249160.15	537159.43	POST 1

STA 226+00 - STA 229+47 MGS POST LAYOUT					
POINT NUMBER	STATION	OFFSET	NORTHING	EASTING	DESCRIPTION
L60	226+65.22	19.00' LT	248944.20	537123.62	POST 1
L61	226+90.20	18.06' LT	248969.19	537124.31	POST 5
L62	227+15.18	17.12' LT	248994.18	537125.00	POST 9
L63	227+21.43	17.00' LT	249000.43	537125.05	MGS L POST 7
L64	227+46.43	17.00' LT	249025.43	537124.80	MGS L POST 3
L65	227+58.93	17.00' LT	249037.93	537124.67	MGS L POST 1
L66	227+83.93	17.00' LT	249062.92	537124.42	MGS L POST 1
L67	227+96.46	17.00' LT	249075.45	537124.29	MGS L POST 3
L68	228+27.68	17.00' LT	249106.67	537123.97	MGS L POST 8
L69	228+90.18	17.00' LT	249169.17	537123.34	POST 10
L70	228+96.43	17.12' LT	249175.42	537123.16	POST 9
L71	229+21.41	18.06' LT	249200.39	537121.96	POST 5
L72	229+46.39	19.00' LT	249225.36	537120.77	POST 1



STA 319+75 - STA 323+29 MGS POST LAYOUT					
POINT NUMBER	STATION	OFFSET	NORTHING	EASTING	DESCRIPTION
R80	319+75.49	19.00' RT	256985.57	534416.76	POST 1
R81	320+00.47	18.06' RT	257010.54	534415.50	POST 5
R82	320+25.45	17.12' RT	257035.51	534414.24	POST 9
R83	320+31.70	17.00' RT	257041.75	534414.04	POST 10
R84	320+94.20	17.00' RT	257104.25	534413.25	MGS L POST 8
R85	321+25.44	17.00' RT	257135.49	534412.85	MGS L POST 3
R86	321+37.95	17.00' RT	257147.99	534412.69	MGS L POST 1
R87	321+62.95	17.00' RT	257172.99	534412.37	MGS L POST 1
R88	321+75.47	17.00' RT	257185.49	534412.22	MGS L POST 3
R89	322+00.50	17.00' RT	257210.49	534411.95	MGS L POST 7
R90	322+06.75	17.12' RT	257216.74	534412.02	POST 9
R91	322+31.76	18.08' RT	257241.73	534412.76	POST 3
R92	322+56.78	19.00' RT	257266.71	534413.51	POST 1

STA 319+75 - STA 323+29 MGS POST LAYOUT					
POINT NUMBER	STATION	OFFSET	NORTHING	EASTING	DESCRIPTION
L100	320+47.37	19.00' LT	257056.96	534377.85	POST 1
L101	320+72.10	18.07' LT	257081.71	534378.46	POST 5
L102	320+97.34	17.12' LT	257106.95	534379.09	POST 9
L103	321+03.58	17.00' LT	257113.20	534379.13	MGS L POST 7
L104	321+28.58	17.00' LT	257138.20	534378.81	MGS L POST 3
L105	321+41.08	17.00' LT	257150.70	534378.65	MGS L POST 1
L106	321+66.07	17.00' LT	257175.69	534378.34	MGS L POST 1
L107	321+78.31	17.00' LT	257187.94	534378.19	MGS L POST 3
L108	322+09.77	17.00' LT	257219.44	534377.87	MGS L POST 8
L109	322+72.20	17.00' LT	257281.94	534377.42	POST 10
L110	322+78.44	17.11' LT	257288.19	534377.28	POST 9
L111	323+03.40	18.01' LT	257313.17	534376.29	POST 5
L112	323+28.35	19.00' LT	257338.15	534375.25	POST 1

LEGEND

- ##### SEEDING MIXTURE NO. 30, FERTILIZER B, AND MULCH
- SILT FENCE



5

5

WETLAND IMPACT POINT 1
STA 54+27 - 54+41
83 SQ. FT/ 0.002 ACRES

WE ENERGIES -
GAS

SI

WETLANDS

WETLAND IMPACT POINT 2
STA 54+23 - 54+26
8 SQ. FT/ 0.001 ACRES

CPRCHE CLASS HE-III 43x68-INCH
INVERT 1: 892.32
INVERT 2: 890.59
LENGTH: 68 FT
SLOPE: 2.54%
SKEW 25° RHF

BRADFORD-CLINTON TOWN RD

58+75.11

EX. R/W

R/W

CAUTION

CAUTION

52

53

54

55

56

57

EX. R/W
ALLIANT ENERGY -
OVERHEAD ELECTRIC

SPECTRUM COMMUNICATIONS -
OVERHEAD COMMUNICATION LINE

R/W

FRONTIER COMMUNICATIONS -
COMMUNICATION LINE

SI

WETLANDS

SPECTRUM COMMUNICATIONS -
TRANSITION TO UG COMMUNICATION LINE + FIBER OPTIC LINE

WETLAND IMPACT POINT 3
STA 54+27 - 54+41
225 SQ. FT/ 0.005 ACRES

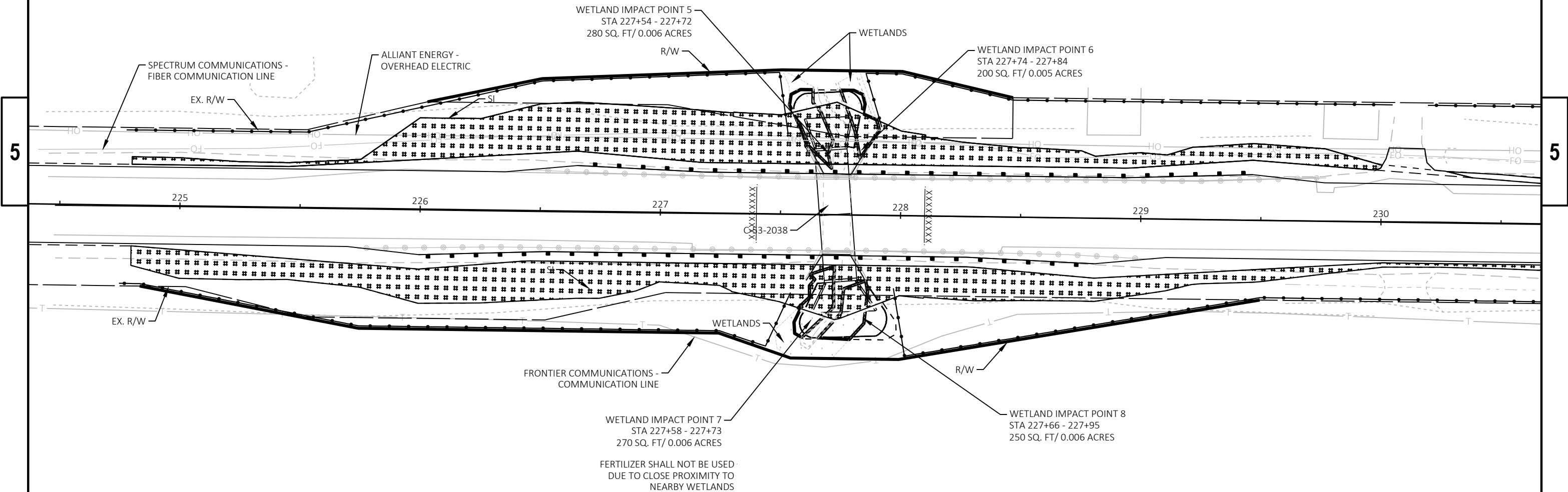
FERTILIZER SHALL NOT BE USED
DUE TO CLOSE PROXIMITY TO
NEARBY WETLANDS

WETLAND IMPACT POINT 4
STA 54+54 - 54+83
170 SQ. FT/ 0.004 ACRES

BRADFORD-CLINTON TOWN RD

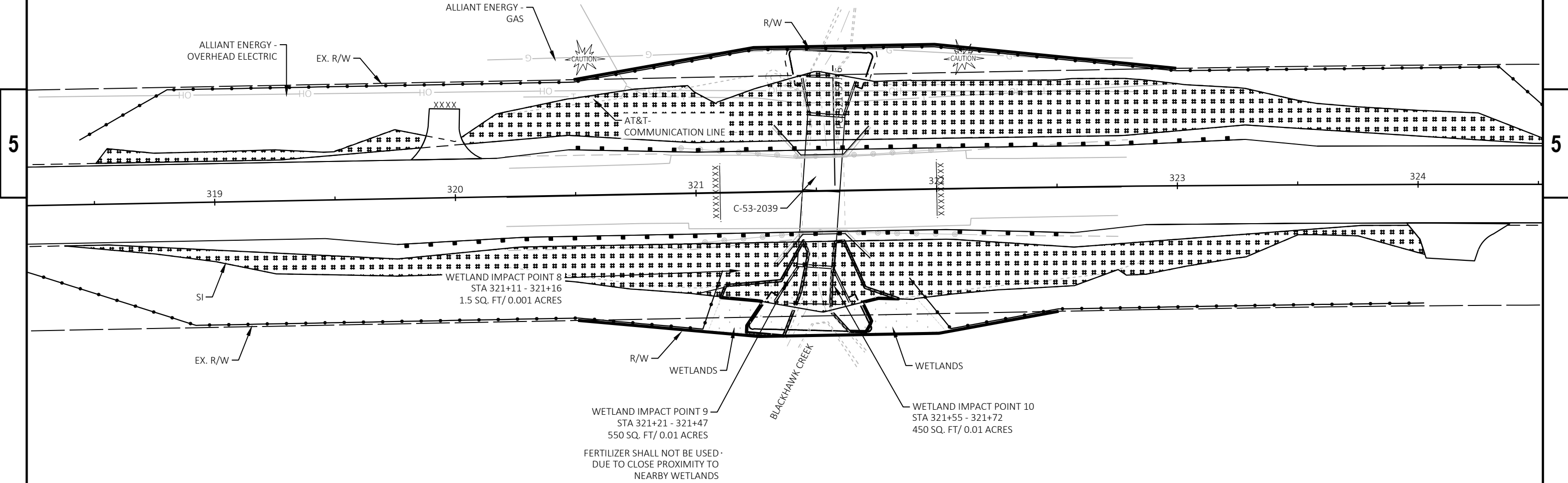
LEGEND

- ##### SEEDING MIXTURE NO. 30, FERTILIZER B, AND MULCH
- SILT FENCE



LEGEND

- ##### SEEDING MIXTURE NO. 30, FERTILIZER B, AND MULCH
- SILT FENCE



PROJECT NO: 3320-02-71

HWY: STH 140

COUNTY: ROCK

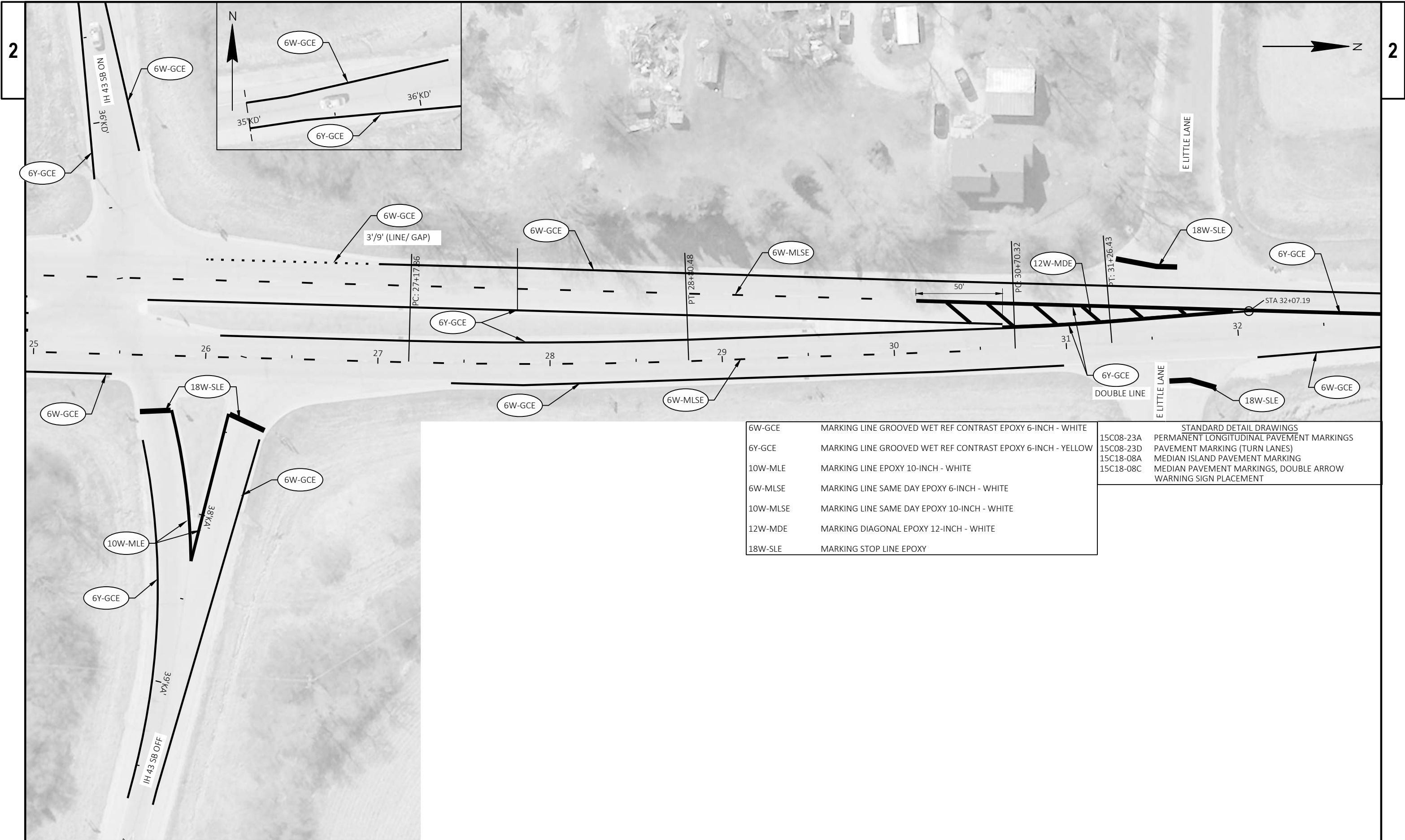
EROSION CONTROL

SHEET

22

E



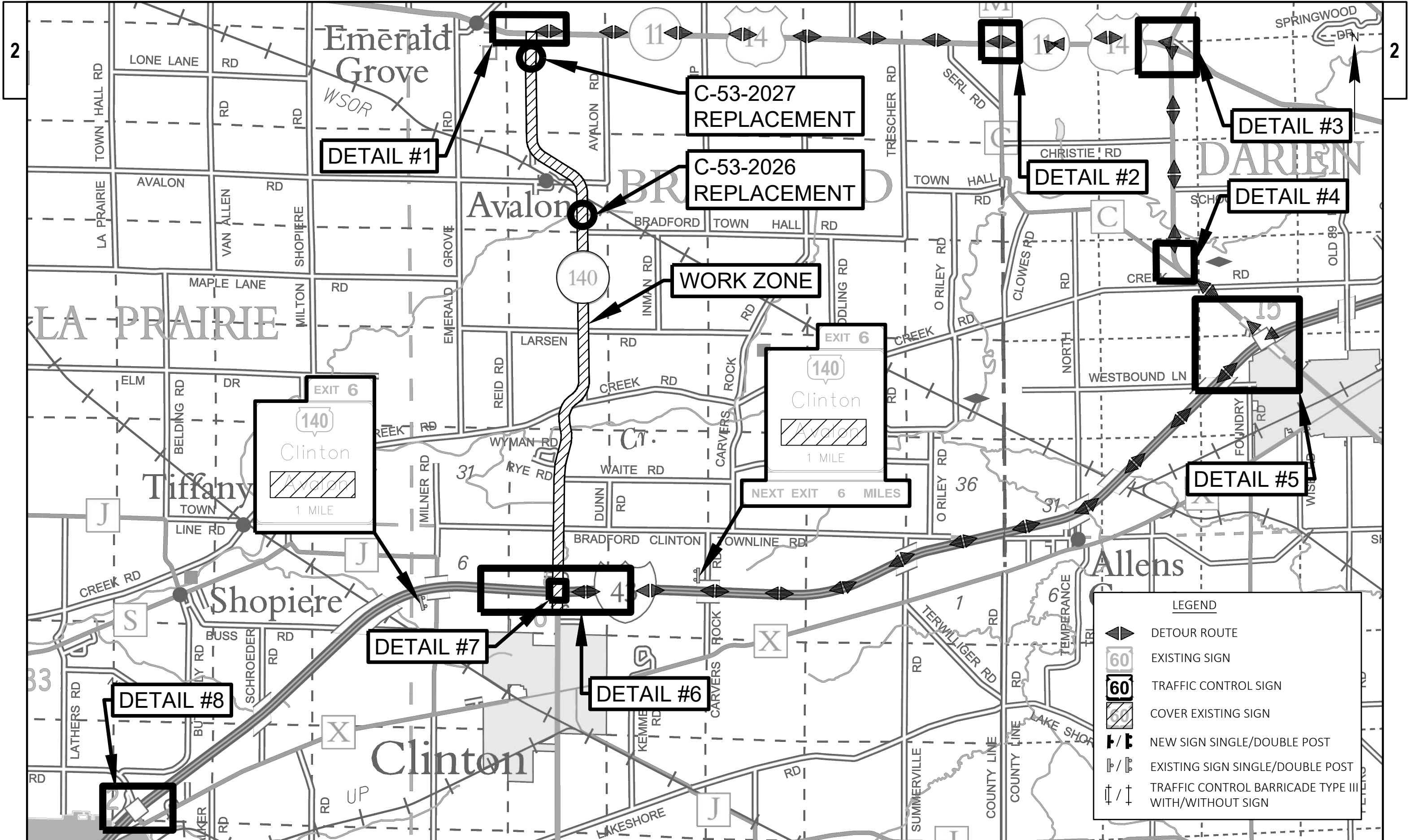


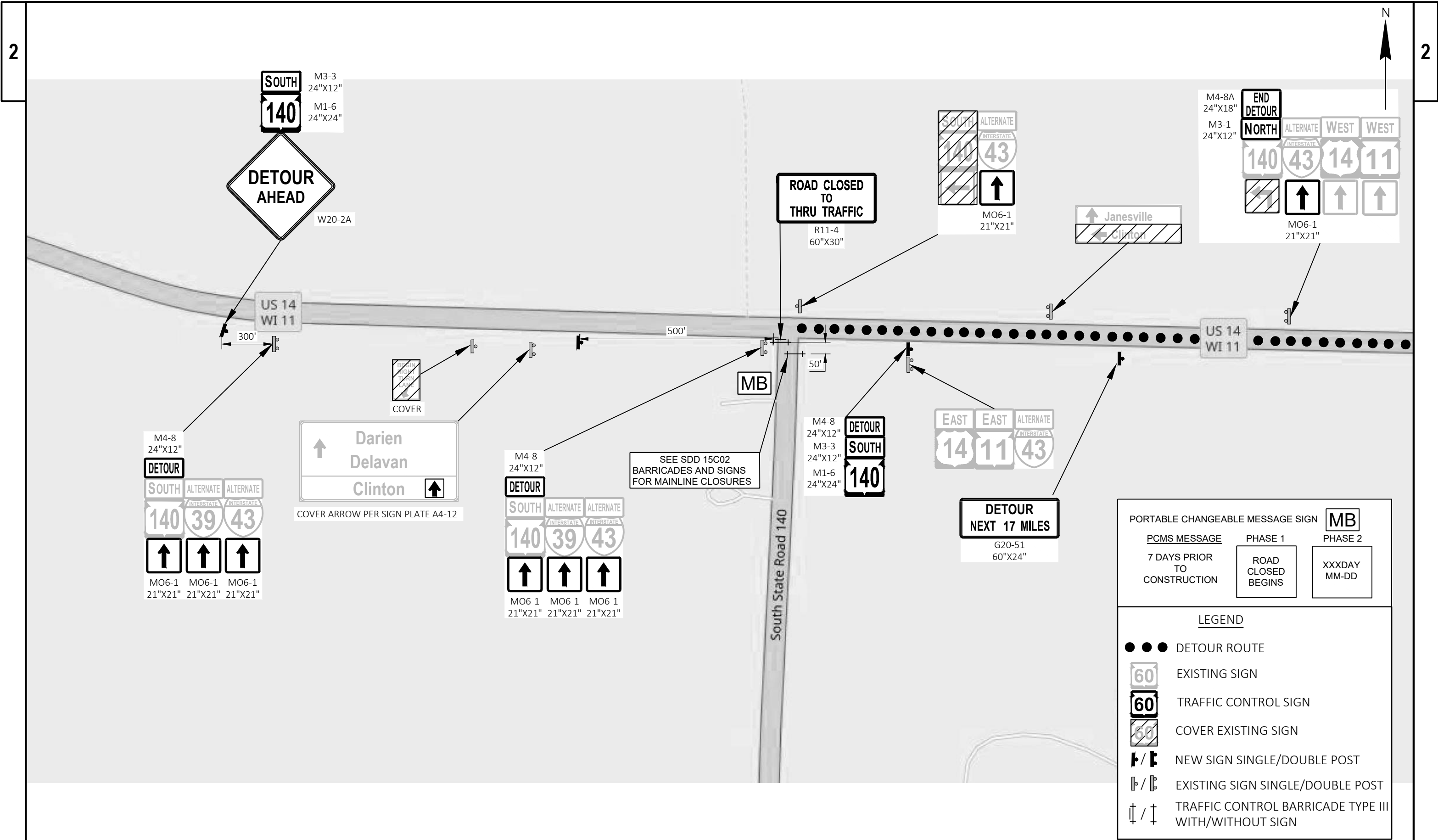
6W-GCE	MARKING LINE GROOVED WET REF CONTRAST EPOXY 6-INCH - WHITE
6Y-GCE	MARKING LINE GROOVED WET REF CONTRAST EPOXY 6-INCH - YELLOW
10W-MLE	MARKING LINE EPOXY 10-INCH - WHITE
6W-MLSE	MARKING LINE SAME DAY EPOXY 6-INCH - WHITE
10W-MLSE	MARKING LINE SAME DAY EPOXY 10-INCH - WHITE
12W-MDE	MARKING DIAGONAL EPOXY 12-INCH - WHITE
18W-SLE	MARKING STOP LINE EPOXY

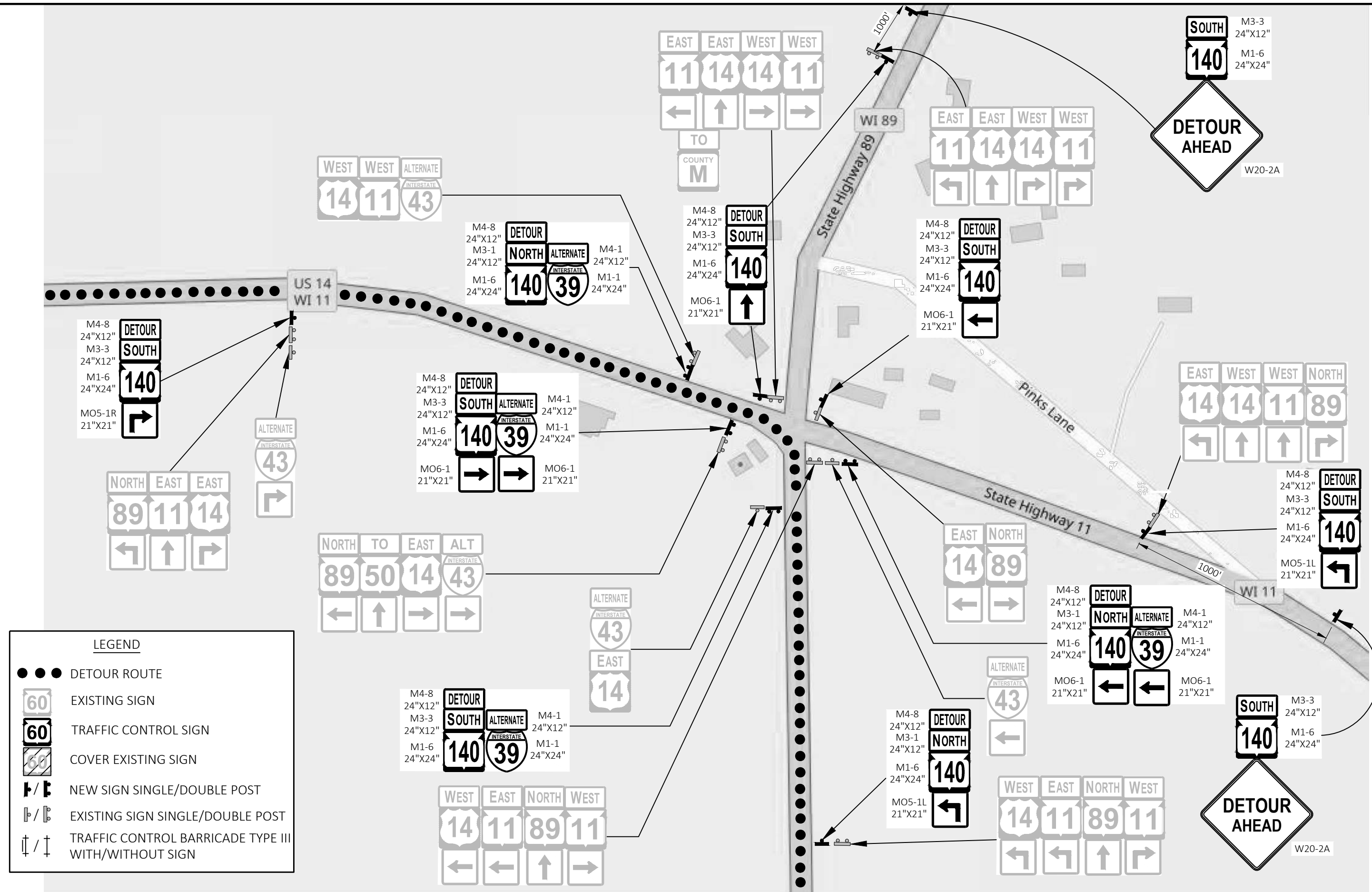
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23D	PAVEMENT MARKING (TURN LANES)
15C18-08A	MEDIAN ISLAND PAVEMENT MARKING
15C18-08C	MEDIAN PAVEMENT MARKINGS, DOUBLE ARROW
	WARNING SIGN PLACEMENT





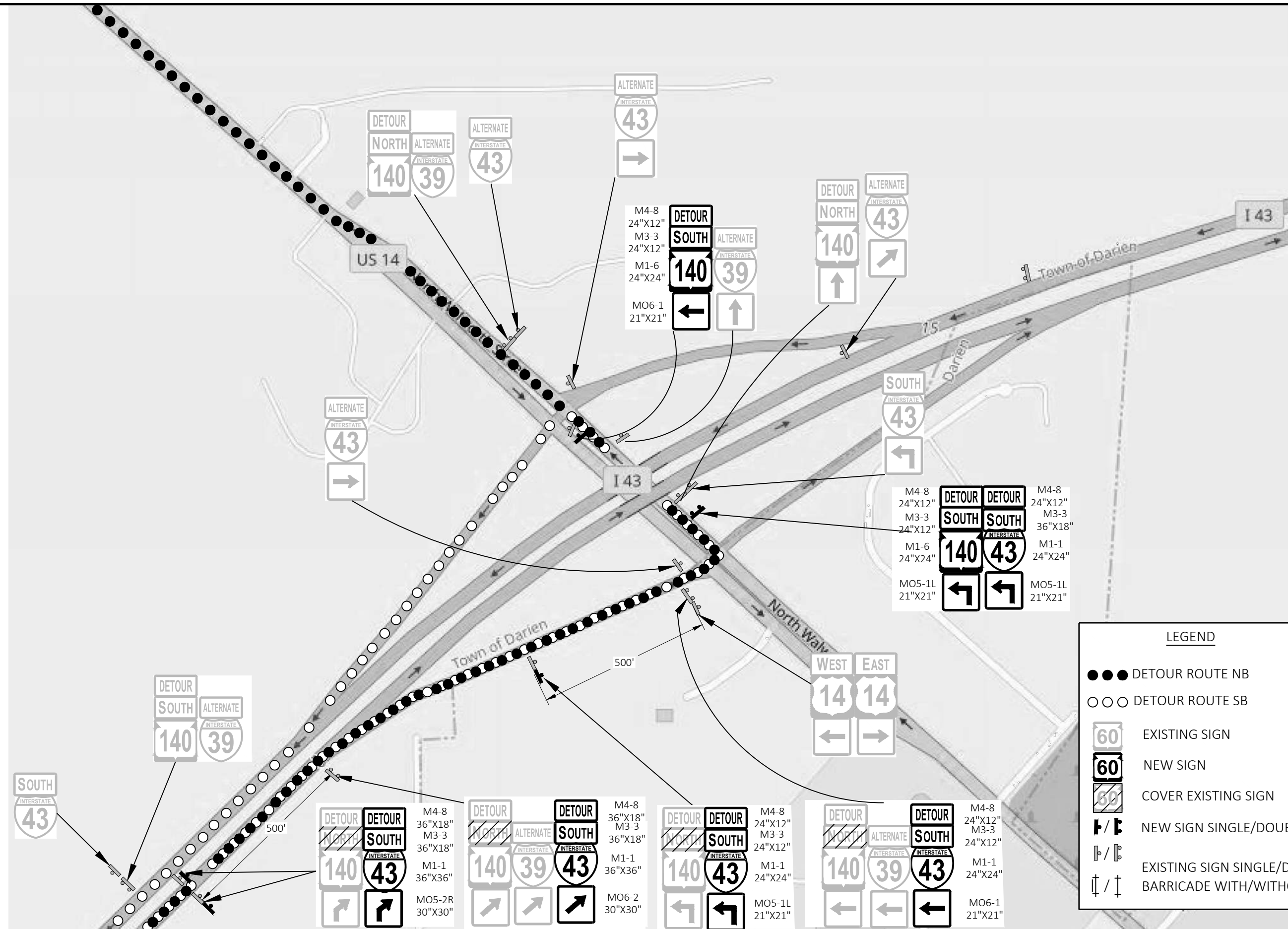






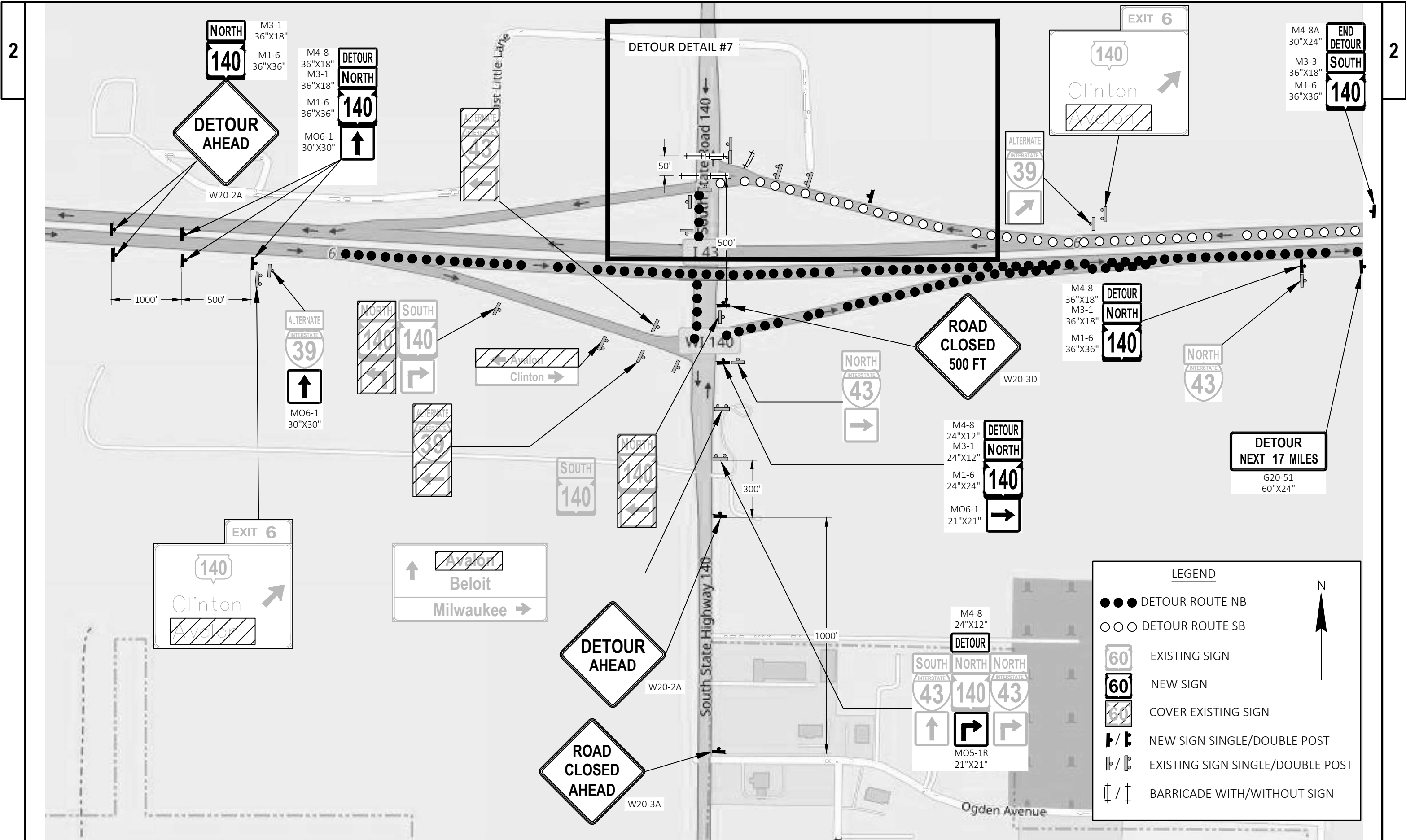


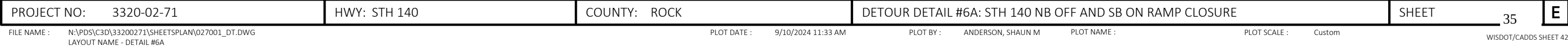


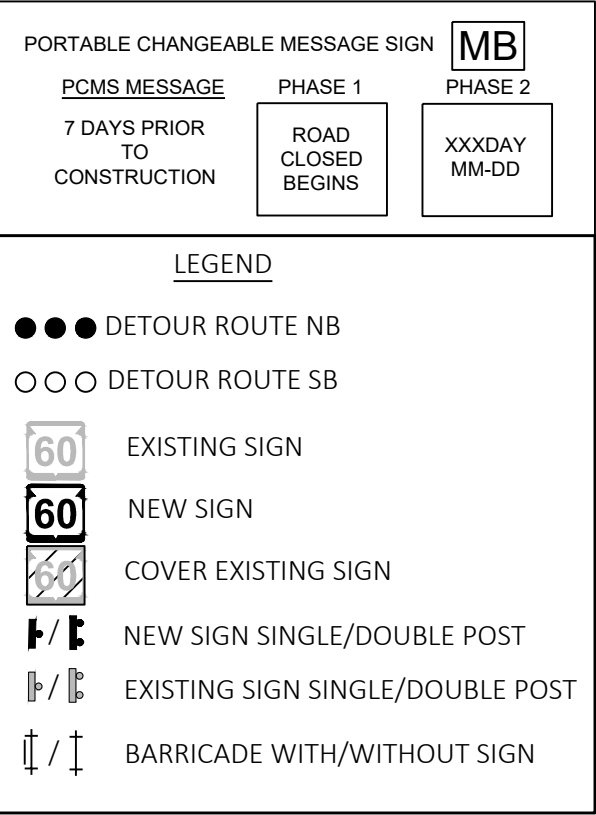


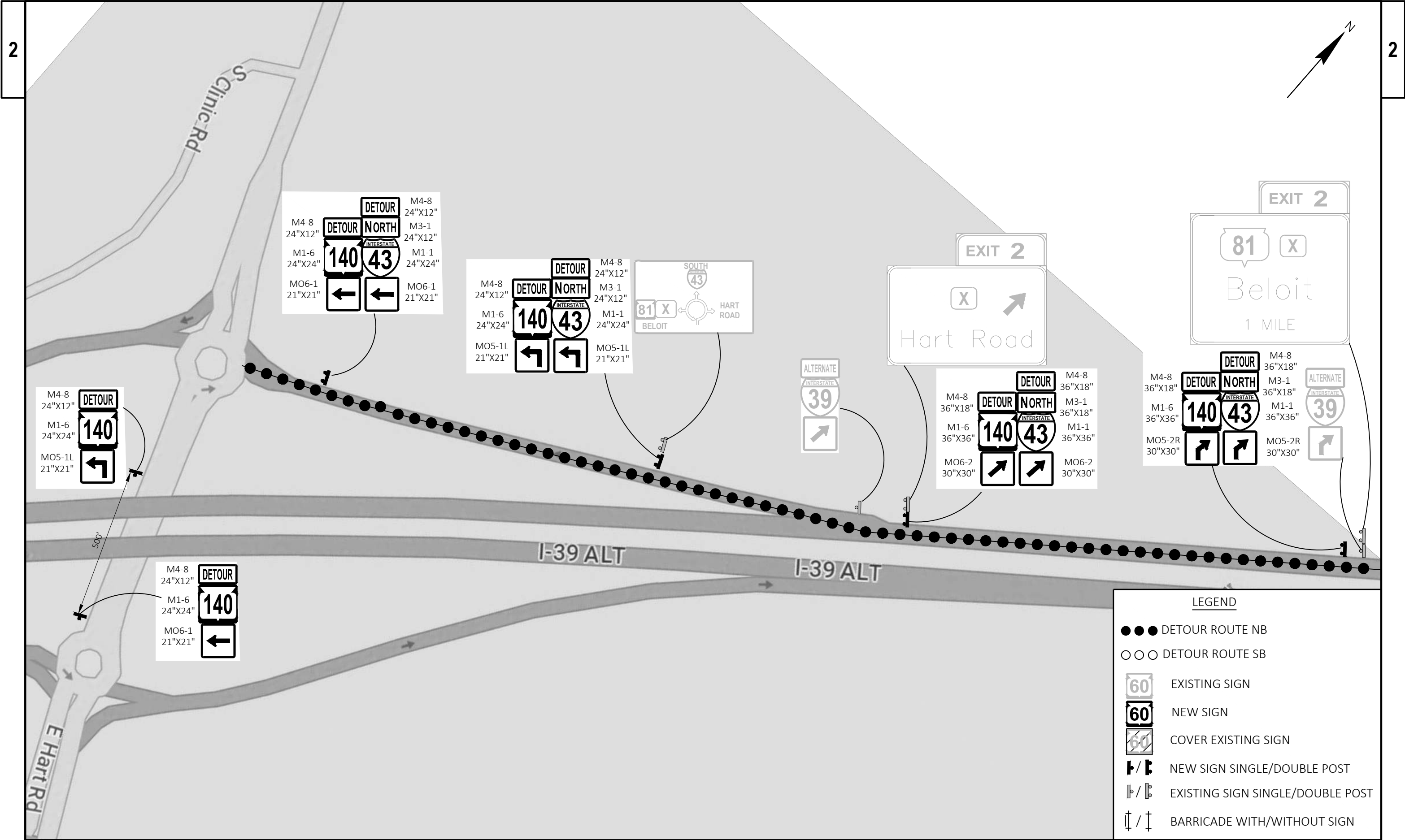
LEGEND

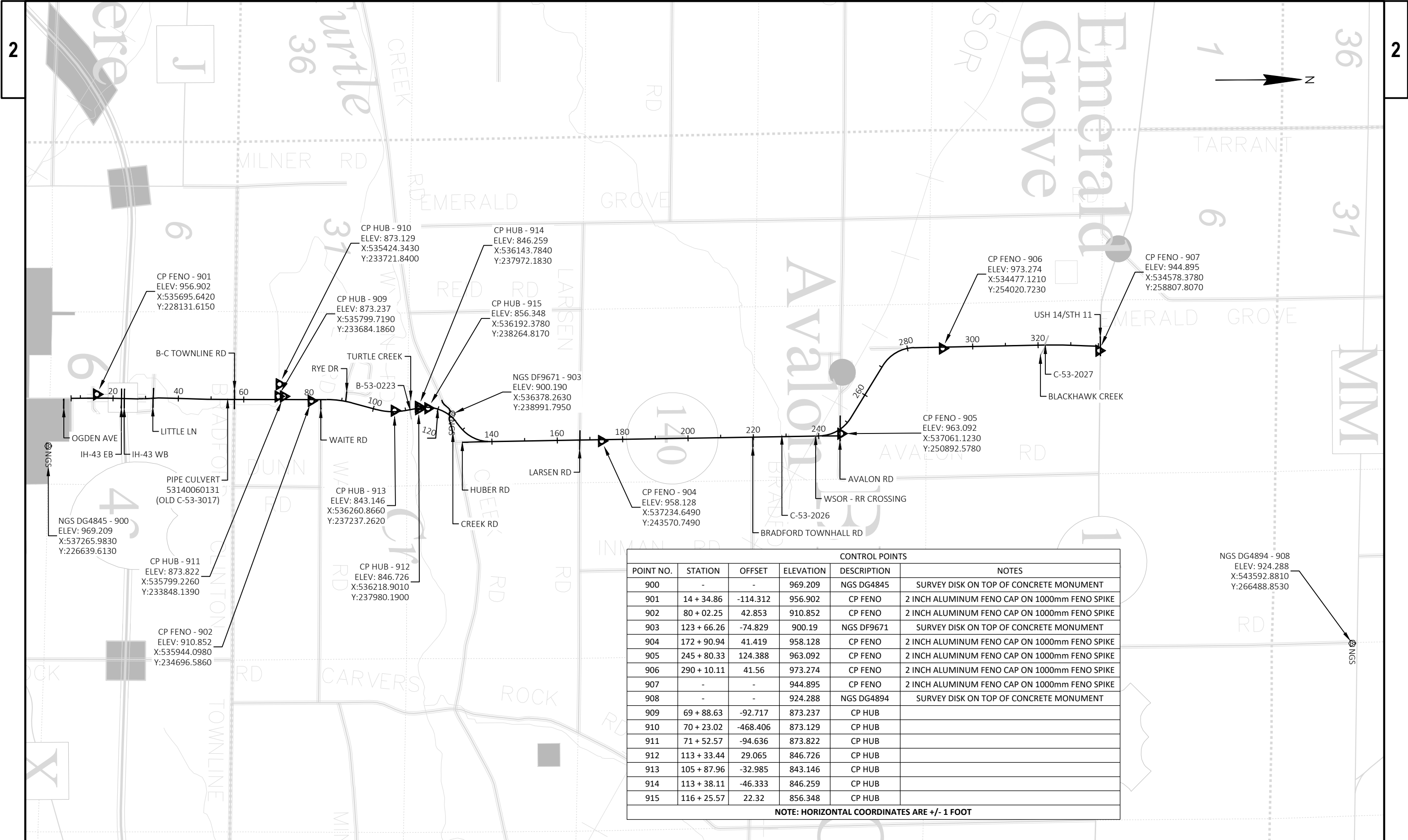
- DETOUR ROUTE NB
- DETOUR ROUTE SB
- EXISTING SIGN
- NEW SIGN
- COVER EXISTING SIGN
- NEW SIGN SINGLE/DOUBLE POST
- EXISTING SIGN SINGLE/DOUBLE POST
- BARRICADE WITH/WITHOUT SIGN











CONTROL POINTS					
POINT NO.	STATION	OFFSET	ELEVATION	DESCRIPTION	NOTES
900	-	-	969.209	NGS DG4845	SURVEY DISK ON TOP OF CONCRETE MONUMENT
901	14 + 34.86	-114.312	956.902	CP FENO	2 INCH ALUMINUM FENO CAP ON 1000mm FENO SPIKE
902	80 + 02.25	42.853	910.852	CP FENO	2 INCH ALUMINUM FENO CAP ON 1000mm FENO SPIKE
903	123 + 66.26	-74.829	900.19	NGS DF9671	SURVEY DISK ON TOP OF CONCRETE MONUMENT
904	172 + 90.94	41.419	958.128	CP FENO	2 INCH ALUMINUM FENO CAP ON 1000mm FENO SPIKE
905	245 + 80.33	124.388	963.092	CP FENO	2 INCH ALUMINUM FENO CAP ON 1000mm FENO SPIKE
906	290 + 10.11	41.56	973.274	CP FENO	2 INCH ALUMINUM FENO CAP ON 1000mm FENO SPIKE
907	-	-	944.895	CP FENO	2 INCH ALUMINUM FENO CAP ON 1000mm FENO SPIKE
908	-	-	924.288	NGS DG4894	SURVEY DISK ON TOP OF CONCRETE MONUMENT
909	69 + 88.63	-92.717	873.237	CP HUB	
910	70 + 23.02	-468.406	873.129	CP HUB	
911	71 + 52.57	-94.636	873.822	CP HUB	
912	113 + 33.44	29.065	846.726	CP HUB	
913	105 + 87.96	-32.985	843.146	CP HUB	
914	113 + 38.11	-46.333	846.259	CP HUB	
915	116 + 25.57	22.32	856.348	CP HUB	
NOTE: HORIZONTAL COORDINATES ARE +/- 1 FOOT					

Estimate Of Quantities

3320-02-71

Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	2.000	2.000
0004	201.0205	Grubbing	STA	2.000	2.000
0006	203.0220	Removing Structure (structure) 01. C-53-2026	EACH	1.000	1.000
0008	203.0220	Removing Structure (structure) 02. C-53-2027	EACH	1.000	1.000
0010	203.0220	Removing Structure (structure) 03. 36 Inch X 72 Inch Box Culvert	EACH	1.000	1.000
0012	204.0100	Removing Concrete Pavement	SY	160.000	160.000
0014	204.0115	Removing Asphaltic Surface Butt Joints	SY	345.000	345.000
0016	204.0120	Removing Asphaltic Surface Milling	SY	122,050.000	122,050.000
0018	204.0165	Removing Guardrail	LF	1,074.000	1,074.000
0020	204.0170	Removing Fence	LF	550.000	550.000
0022	205.0100	Excavation Common	CY	1,220.000	1,220.000
0024	206.2001	Excavation for Structures Culverts (structure) 01. C-53-2038	EACH	1.000	1.000
0026	206.2001	Excavation for Structures Culverts (structure) 02. C-53-2039	EACH	1.000	1.000
0028	208.0100	Borrow	CY	1,280.000	1,280.000
0030	210.2500	Backfill Structure Type B	TON	1,960.000	1,960.000
0032	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	546.000	546.000
0034	213.0100	Finishing Roadway (project) 01. 3320-02-71	EACH	1.000	1.000
0036	305.0110	Base Aggregate Dense 3/4-Inch	TON	13,900.000	13,900.000
0038	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	1,390.000	1,390.000
0040	311.0115	Breaker Run	CY	142.000	142.000
0042	312.0110	Select Crushed Material	TON	910.000	910.000
0044	455.0605	Tack Coat	GAL	15,552.000	15,552.000
0046	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	2.000	2.000
0048	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0050	460.2000	Incentive Density HMA Pavement	DOL	7,400.000	7,400.000
0052	460.2005	Incentive Density PWL HMA Pavement	DOL	8,980.000	8,980.000
0054	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	6,690.000	6,690.000
0056	460.2010	Incentive Air Voids HMA Pavement	DOL	28,560.000	28,560.000
0058	460.6223	HMA Pavement 3 MT 58-28 S	TON	16,745.000	16,745.000
0060	460.6224	HMA Pavement 4 MT 58-28 S	TON	12,950.000	12,950.000
0062	465.0105	Asphaltic Surface	TON	385.000	385.000
0064	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	35.000	35.000
0066	465.0540	Asphaltic Rumble Strips, Edge Line	LF	57,571.000	57,571.000
0068	465.0560	Asphaltic Rumble Strips, Centerline	LF	28,786.000	28,786.000
0070	504.0100	Concrete Masonry Culverts	CY	229.000	229.000
0072	505.0400	Bar Steel Reinforcement HS Structures	LB	33,330.000	33,330.000
0074	505.0600	Bar Steel Reinforcement HS Coated Structures	LB	4,190.000	4,190.000
0076	516.0500	Rubberized Membrane Waterproofing	SY	41.000	41.000
0078	520.8000	Concrete Collars for Pipe	EACH	2.000	2.000
0080	522.0124	Culvert Pipe Reinforced Concrete Class III 24-Inch	LF	8.000	8.000
0082	522.1024	Apron Endwalls for Culvert Pipe Reinforced Concrete 24-Inch	EACH	2.000	2.000
0084	522.2643	Apron Endwalls for Culvert Pipe Reinforced Concrete Horizontal Elliptical 43x68-Inch	EACH	2.000	2.000
0086	604.0500	Slope Paving Crushed Aggregate	SY	40.000	40.000
0088	606.0200	Riprap Medium	CY	26.000	26.000
0090	606.0300	Riprap Heavy	CY	136.000	136.000
0092	612.0700	Drain Tile Exploration	LF	200.000	200.000
0094	614.0400	Adjusting Steel Plate Beam Guard	LF	743.000	743.000
0096	614.2300	MGS Guardrail 3	LF	575.000	575.000
0098	614.2340	MGS Guardrail 3 L	LF	450.000	450.000

Estimate Of Quantities

3320-02-71

Line	Item	Item Description	Unit	Total	Qty
0100	614.2610	MGS Guardrail Terminal EAT	EACH	12.000	12.000
0102	618.0100	Maintenance and Repair of Haul Roads (project) 01. 3320-02-71	EACH	1.000	1.000
0104	619.1000	Mobilization	EACH	1.000	1.000
0106	624.0100	Water	MGAL	229.000	229.000
0108	625.0100	Topsoil	SY	4,490.000	4,490.000
0110	627.0200	Mulching	SY	5,620.000	5,620.000
0112	628.1504	Silt Fence	LF	3,240.000	3,240.000
0114	629.0210	Fertilizer Type B	CWT	3.500	3.500
0116	630.0130	Seeding Mixture No. 30	LB	101.000	101.000
0118	630.0500	Seed Water	MGAL	28.000	28.000
0120	633.5200	Markers Culvert End	EACH	4.000	4.000
0122	642.5001	Field Office Type B	EACH	1.000	1.000
0124	643.0300	Traffic Control Drums	DAY	300.000	300.000
0126	643.0420	Traffic Control Barricades Type III	DAY	7,730.000	7,730.000
0128	643.0705	Traffic Control Warning Lights Type A	DAY	15,460.000	15,460.000
0130	643.0715	Traffic Control Warning Lights Type C	DAY	24.000	24.000
0132	643.0900	Traffic Control Signs	DAY	29,410.000	29,410.000
0134	643.0910	Traffic Control Covering Signs Type I	EACH	8.000	8.000
0136	643.0920	Traffic Control Covering Signs Type II	EACH	37.000	37.000
0138	643.1050	Traffic Control Signs PCMS	DAY	42.000	42.000
0140	643.3180	Temporary Marking Line Removable Tape 6-Inch	LF	10,320.000	10,320.000
0142	643.5000	Traffic Control	EACH	1.000	1.000
0144	645.0105	Geotextile Type C	SY	475.000	475.000
0146	645.0120	Geotextile Type HR	SY	333.000	333.000
0148	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	117,575.000	117,575.000
0150	646.4020	Marking Line Epoxy 10-Inch	LF	470.000	470.000
0152	646.4720	Marking Line Same Day Epoxy 6-Inch	LF	1,295.000	1,295.000
0154	646.4820	Marking Line Same Day Epoxy 10-Inch	LF	240.000	240.000
0156	646.5320	Marking Railroad Crossing Epoxy	EACH	2.000	2.000
0158	646.6120	Marking Stop Line Epoxy 18-Inch	LF	194.000	194.000
0160	646.7120	Marking Diagonal Epoxy 12-Inch	LF	160.000	160.000
0162	648.0100	Locating No-Passing Zones	MI	6.180	6.180
0164	650.4500	Construction Staking Subgrade	LF	160.000	160.000
0166	650.5000	Construction Staking Base	LF	160.000	160.000
0168	650.6000	Construction Staking Pipe Culverts	EACH	1.000	1.000
0170	650.6501	Construction Staking Structure Layout (structure) 01. C-53-2038	EACH	1.000	1.000
0172	650.6501	Construction Staking Structure Layout (structure) 02. C-53-2039	EACH	1.000	1.000
0174	650.8000	Construction Staking Resurfacing Reference	LF	32,775.000	32,775.000
0176	650.9920	Construction Staking Slope Stakes	LF	3,210.000	3,210.000
0178	690.0150	Sawing Asphalt	LF	358.000	358.000
0180	715.0502	Incentive Strength Concrete Structures	DOL	6,000.000	6,000.000
0182	740.0440	Incentive IRI Ride	DOL	26,280.000	26,280.000
0184	ASP.1.1PA	On-the-Job Training Pre-Apprentice at \$5.00/HR	HRS	250.000	250.000
0186	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	250.000	250.000
0188	SPV.0060	Special 01. Verify Landmark Reference Monuments	EACH	1.000	1.000
0190	SPV.0060	Special 02. Dewatering	EACH	2.000	2.000
0192	SPV.0090	Special 01. Culvert Pipe Reinforced Concrete Horizontal Elliptical Class HE-IV 43x68-in	LF	68.000	68.000
0194	SPV.0180	Special 01. Removing Distressed Pavement Milling	SY	6,110.000	6,110.000

3320-02-71

BUTT JOINT

					204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS
CATEGORY	STATION	TO	STATION	LOCATION	SY
0010	10+00	-	10+00	LT/RT	18
	31+35	-	31+75	RT	22
	31+54	-	31+94	LT	22
	56+38	-	56+61	LT	12
	56+38	-	56+60	RT	13
	82+79	-	83+08	RT	16
	90+38	-	90+66	LT	16
	122+76	-	123+01	LT	17
	123+37	-	123+56	RT	14
	123+85	-	124+18	RT	21
	135+76	-	135+84	RT	12
	166+11	-	166+40	LT	16
	166+11	-	166+34	RT	13
	219+07	-	219+29	RT	12
	242+58	-	242+64	RT	12
245+88	-	246+06	RT	13	
246+69	-	246+94	LT	17	
277+21	-	277+28	LT	11	
TOTAL 0010					277
0050	18+80	-	19+09	LT	17
	19+50	-	19+80	RT	17
	25+08	-	25+37	LT	17
	25+55	-	25+84	RT	17
	TOTAL 0050				
PROJECT 3320-02-71 TOTAL:					345

REMOVALS

					204.0100 REMOVING CONCRETE PAVEMENT SY	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	204.0165 REMOVING GUARDRAIL LF	204.0170 REMOVING FENCE LF	SPV.0180.01 SPECIAL (01. REMOVING DISTRESSED PAVEMENT MILLING) SY
CATEGORY	STATION	TO	STATION	LOCATION	SY	SY	LF	LF	SY
0010	10+00	-	31+52	LT/RT	-	13,180		-	660
	31+36	-	109+83	LT/RT	-	24,340		-	1,220
	52+00		56+20	LT/RT	-	-	170	550	-
	111+56	-	238+37	LT/RT	-	47,830	664	-	2,390
	238+35	-	337+75	LT/RT	160	36,700	240	-	1,840
PROJECT 3320-02-71 TOTAL:					160	122,050	1,074	550	6,110

CLEARING AND GRUBBING

CATEGORY	STATION	TO	STATION	LOCATION	201.0105 CLEARING STA	201.0205 GRUBBING STA
0010	320+50	-	322+50	RT	2	2
PROJECT 3320-02-71 TOTAL:					2	2

DIVISION	FROM/TO STATION	LOCATION	205.0100 COMMON EXCAVATION (1)		SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (6)	MASS ORDINATE +/- (7)	WASTE	208.0100 BORROW	COMMENT
			CUT (2)	EBS EXCAVATION (3)				FACTOR 1.25				
DIVISION 1												
STA 51 - 55	51+61.34/55+24.76		450	0	33	417	575	719	-306	0	340	
DIVISION 1 SUBTOTAL			450	0	33	417	575	719	-306	0	340	
DIVISION 2												
STA 224 - 230	224+79.88/229+21.41		340	0	29	311	378	473	-171	0	190	
DIVISION 2 SUBTOTAL			340	0	29	311	378	473	-171	0	190	
DIVISION 3												
STA 318 - 324	318+55.72/323+28.35		430	0	32	398	863	1,079	-690	0	750	
DIVISION 3 SUBTOTAL			430	0	32	398	863	1,079	-690	0	750	
GRAND TOTAL			1,220	0	94	1,126	1,816	2,270	-1,166	0	1,280	
TOTAL COMMON EXC			1,220									

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 NOT ANTICIPATED - IF NECESARRY BACKFILL WITH SUITABLE BORROW MATERIAL OR SELECT CRUSHED MATERIAL
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
(5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUALE PAVEMENT MATERIAL
(6) EXPANDED FILL FACTOR = 1.25
(7) 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.

PREP FOUNDATION

211.0400
PREPARE
FOUNDATION
FOR
ASPHALTIC
SHOULDERS

CATEGORY	STATION	TO	STATION	LOCATION	STA
0020	32+03	-	40+58	RT	9
	33+93	-	40+29	LT	6
	40+34	-	52+85	LT	13
	41+08	-	52+36	RT	11
	56+90	-	103+35	LT	46
	56+99	-	82+57	RT	26
	83+41	-	103+53	RT	20
	114+18	-	121+80	LT	8
	114+51	-	120+22	RT	6
	124+73	-	165+78	LT	41
	125+66	-	135+58	RT	10
	138+03	-	165+84	RT	28
	166+59	-	226+35	LT	60
	166+62	-	218+85	RT	52
	219+52	-	225+70	RT	6
	229+11	-	238+19	RT	9
	229+76	-	238+37	LT	9
	238+35	-	240+80	RT	2
	238+54	-	245+83	LT	7
	242+63	-	245+82	RT	3
	246+45	-	319+46	RT	73
	247+16	-	277+19	LT	30
	278+16	-	320+18	LT	42
	322+87	-	337+80	RT	15
	323+58	-	337+80	LT	14
PROJECT 3320-02-71 TOTAL:					546

BASE COURSE

305.0110
BASE
AGGREGATE
DENSE 3/4-
INCH
TON

305.0120
BASE
AGGREGATE
DENSE 1 1/4-
INCH
TON

312.0110
SELECT
CRUSHED
MATERIAL
TON

624.0100
WATER
MGAL

CATEGORY	STATION	TO	STATION	LOCATION	TON	TON	TON	MGAL
0010	31+36	-	109+83	LT	1,800	-	-	27
	31+36	-	109+83	RT	1,800	-	-	27
	52+00		55+80	RT	-	420	310	6
	111+56	-	238+37	LT	2,900	-	-	44
	111+56	-	238+37	RT	2,900	-	-	44
	238+35	-	337+80	LT	2,250	-	-	34
	238+35	-	337+75	RT	2,250	-	-	34
	224+80	-	229+90	LT/RT	-	490	260	7
	319+00	-	324+45	LT/RT	-	480	340	7
	PROJECT 3320-02-71 TOTAL:				13,900	1,390	910	229

SLOPE PROTECTION

604.0500
SLOPE PAVING
CRUSHED
AGGREGATE

CATEGORY	STATION	LOCATION	SY
0010	70+45	LT/RT	20
	116+60	LT	10
	116+70	RT	10
PROJECT 3320-02-71 TOTAL:			40

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PAVEMENT										
					455.0605	460.6223	460.6224	465.0105	465.0120	
						HMA	HMA		ASPHALTIC	
					TACK COAT	PAVEMENT 3	PAVEMENT 4	ASPHALTIC	DRIVEWAYS	
					GAL	MT 58-28 S	MT 58-28 S	SURFACE	AND FIELD	
CATEGORY	STATION	TO	STATION	LOCATION		TON	TON	TON	ENTRANCES	REMARKS
0010	10+00	-	30+79	LT/RT	1,530	1,605	1,250	35	-	
	30+79	-	109+83	LT/RT	2,970	3,120	2,425	70	-	
	111+56	-	227+40	LT/RT	4,145	4,365	3,395	135	-	
	227+40	-	228+10	LT/RT	45	70	25	-	-	
	228+10	-	321+10	LT/RT	3,285	3,450	2,680	135	-	
	321+10	-	322+00	LT/RT	60	90	35	-	-	
	322+00	-	337+75	LT/RT	530	555	430	10	-	
	48+20	-	334+48	LT/RT	17	-	-	-	35	ASPHALTIC DRIVEWAYS
TOTAL 0010					12,582	13,255	10,240	385	35	
0020	32+03	-	40+58	RT	45	50	35	-	-	
	33+93	-	40+29	LT	35	35	30	-	-	
	40+34	-	52+85	LT	65	70	55	-	-	
	41+08	-	52+36	RT	60	65	50	-	-	
	56+90	-	103+35	LT	250	260	200	-	-	
	56+99	-	82+57	RT	135	145	110	-	-	
	83+41	-	103+53	RT	105	115	90	-	-	
	114+18	-	121+80	LT	40	45	35	-	-	
	114+51	-	120+22	RT	30	30	25	-	-	
	124+73	-	165+78	LT	220	230	180	-	-	
	125+66	-	135+58	RT	55	55	45	-	-	
	138+03	-	165+84	RT	150	155	120	-	-	
	166+59	-	226+35	LT	320	335	260	-	-	
	166+62	-	218+85	RT	280	295	230	-	-	
	219+52	-	225+70	RT	35	35	25	-	-	
	229+11	-	238+19	RT	50	50	40	-	-	
	229+76	-	238+37	LT	45	50	40	-	-	
	238+35	-	240+80	RT	15	15	10	-	-	
	238+54	-	245+83	LT	40	40	30	-	-	
	242+63	-	245+82	RT	15	20	15	-	-	
	246+45	-	319+46	RT	390	410	320	-	-	
	247+16	-	277+19	LT	160	170	130	-	-	
	278+16	-	320+18	LT	225	235	185	-	-	
	322+87	-	337+80	RT	80	85	65	-	-	
	323+58	-	337+80	LT	75	80	60	-	-	
TOTAL 0020					2,920	3,075	2,385	0	0	
0050	37+26	-	39+70	'KA'	15	130	100	-	-	IH 43 SB OFF RAMP
	37+04	-	39+00	'KB'	10	90	70	-	-	IH 43 NB ON RAMP
	35+03	-	37+09	'KC'	15	120	95	-	-	IH 43 NB OFF RAMP
	35+00	-	36+68	'KD'	10	75	60	-	-	IH 43 SB ON RAMP
TOTAL 0050					50	415	325	0	0	
PROJECT 3320-02-71 TOTAL:					15,552	16,745	12,950	385	35	

PROJECT NO: 3320-02-71	HWY: STH 140	COUNTY: ROCK	MISCELLANEOUS QUANTITIES	SHEET: 46	E
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PERCENT WITHIN LIMITS

					460.0105.S	460.0110.S
					HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS EACH	HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP DENSITY EACH
CATEGORY	STATION	TO	STATION	LOCATION		
0010	10+00	-	337+90		2	1
PROJECT 3320-02-71 TOTAL:					2	1

Quality Management Acceptance Program to be used for:								
Location	Sta	-	Sta	Layer	Surface	Tons	Thickness (Inch)	Density Acceptance
Driving Lane	10+00	-	337+80	Upper	3 MT 58-28 LT	8980	1.75	PWL Incentive Air Voids HMA Pavement 460.2010 Incentive Density PWL HMA Pavement 460.2005
Driving Lane	10+00	-	227+40	Lower	Existing Milled Surface/ Existing Base Aggregate	7840	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Incentive Density HMA Pavement 460.2000
Driving Lane	227+40	-	228+10	Lower	Base Aggregate	30	2.5	QMP as per SS 460 Incentive Density HMA Pavement 460.2000
Driving Lane	227+40	-	228+10	Middle	3 MT 58-28 LT	20	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Incentive Density HMA Pavement 460.2000
Driving Lane	228+10	-	321+10	Lower	Existing Milled Surface/ Existing Base Aggregate	3120	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Incentive Density HMA Pavement 460.2000
Driving Lane	321+10	-	322+00	Lower	Base Aggregate	30	2.5	QMP as per SS 460 Incentive Density HMA Pavement 460.2000
Driving Lane	321+10	-	322+00	Middle	3 MT 58-28 LT	30	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Incentive Density HMA Pavement 460.2000
Driving Lane	322+00	-	337+80	Lower	Existing Milled Surface/ Existing Base Aggregate	530	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Incentive Density HMA Pavement 460.2000
Shoulder	10+00	-	337+75	Upper	3 MT 58-28 LT	3510	1.75	PWL Incentive Air Voids HMA Pavement 460.2010 Acceptance testing by department; Not eligible for incentive or disincentive
Intersections	10+00	-	30+79	Lower	Existing Milled Surface/ Existing Base Aggregate	340	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Acceptance testing by department; Not eligible for incentive or disincentive
Shoulder	30+79	-	227+40	Lower	Base Aggregate	2770	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Acceptance testing by department; Not eligible for incentive or disincentive
Shoulder	227+40	-	228+10	Lower	Base Aggregate	10	2.5	QMP as per SS 460 Acceptance testing by department; Not eligible for incentive or disincentive
Shoulder	227+40	-	228+10	Middle	3 MT 58-28 LT	10	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Acceptance testing by department; Not eligible for incentive or disincentive
Shoulder	228+10	-	321+10	Lower	Base Aggregate	1190	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Acceptance testing by department; Not eligible for incentive or disincentive
Shoulder	321+10	-	322+00	Lower	Base Aggregate	10	2.5	QMP as per SS 460 Acceptance testing by department; Not eligible for incentive or disincentive
Shoulder	321+10	-	322+00	Middle	3 MT 58-28 LT	10	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Acceptance testing by department; Not eligible for incentive or disincentive
Shoulder	322+00	-	337+75	Lower	Base Aggregate	190	2.25	PWL Incentive Air Voids HMA Pavement 460.2010 Acceptance testing by department; Not eligible for incentive or disincentive

RUMBLE STRIPS

CATEGORY	STATION	TO	STATION	LOCATION	465.0540	465.0560
					ASPHALTIC RUMBLE STRIPS, EDGE LINE LF	ASPHALTIC RUMBLE STRIPS, CENTERLINE LF
0010	33+89	-	337+90		-	28,786
TOTAL 0010					0	28,786
0020	33+89	-	40+39	LT & RT	1,300	-
	40+39	-	97+25	LT & RT	11,372	-
	97+25	-	102+55	RT	530	-
	102+55	-	109+83	RT	728	-
	109+83	-	111+55	LT & RT	344	-
	111+55	-	114+85	LT	330	-
	114+85	-	120+22	LT	537	-
	125+75	-	337+90	LT & RT	42,430	-
TOTAL 0020					57,571	0
PROJECT 3320-02-71 TOTAL:					57,571	28,786

CULVERTS									
			203.0220.03	520.8000	522.0124	522.1024	522.2643	633.5200	SPV.0090.01
			REMOVING STRUCTURE (STRUCTURE) (03. 36 INCH X 72 INCH BOX CULVERT)	CONCRETE COLLARS FOR PIPE	CULVERT PIPE REINFORCED CONCRETE CLASS III 24- INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE 24- INCH	APRON ENDWALLS FOR CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL 43X68-INCH	MARKERS CULVERT END	SPECIAL (01.CULVERT PIPE REINFORCED CONCRETE HORIZONTAL ELLIPTICAL CLASS HE-IV 43X68-IN)
CATEGORY	STATION	LOCATION	EACH	EACH	LF	EACH	EACH	EACH	LF
0010	54+30		1	-	-	-	2	2	68
	269+25		-	2	8	2	-	2	-
PROJECT 3320-02-71 TOTAL:			1	2	8	2	2	4	68

DRAIN TILE EXPLORATION													
RIP RAP													
					606.0200 RIPRAP MEDIUM	645.0120 GEOTEXTILE TYPE HR			612.0700 DRAIN TILE EXPLORATION				
CATEGORY	STATION	TO	STATION	LOCATION	CY	SY	CATEGORY	STATION	TO	STATION	LOCATION	LF	REMARKS
0010	37+27			RT	16	33	0010	224+85	-	229+50	LT/RT	150	EXISTING FIELD DRAIN TILE
	54+54			RT	10	20	0010	320+50	-	322+50	LT/RT	50	EXISTING FIELD DRAIN TILE
PROJECT 3320-02-71 TOTAL:					26	53	PROJECT 3320-02-71 TOTAL:					200	

BEAM GUARD									
						614.0400 ADJUSTING STEEL PLATE BEAM GUARD	614.2300 MGS GUARDRAIL 3	614.2340 MGS GUARDRAIL 3 L	614.2610 MGS GUARDRAIL TERMINAL EAT
CATEGORY	STATION	TO	STATION	LOCATION	LF	LF	LF	LF	EACH
0010	52+76	-	55+45	RT	-	162.5	-	2	
	53+25	-	55+93	LT	-	162.5	-	2	
	113+70	-	121+13	LT	743	-	-	-	
	226+00	-	228+81	RT	-	62.5	112.5	2	
	226+65	-	229+46	LT	-	62.5	112.5	2	
	319+75	-	322+57	RT	-	62.5	112.5	2	
	320+47	-	323+28	LT	-	62.5	112.5	2	
PROJECT 3320-02-71 TOTAL:					743	575	450	12	

PROJECT NO: 3320-02-71	HWY: STH 140	COUNTY: ROCK	MISCELLANEOUS QUANTITIES	SHEET: 49	E
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LANDSCAPING AND EROSION CONTROL

					625.0100	627.0200	628.1504	629.0210	630.0130	630.0500
									SEEDING	
								FERTILIZER	MIXTURE NO.	
					TOPSOIL	MULCHING	SILT FENCE	TYPE B	30	SEED WATER
CATEGORY	STATION	TO	STATION	LOCATION	SY	SY	LF	CWT	LB	MGAL
0010	52+00	-	56+25	LT/RT	1,320	1,650	850	1.0	30	7
	225+50	-	230+00	LT/RT	1,460	1,830	1,210	1.2	33	7
	319+00	-	324+00	LT/RT	1,710	2,140	1,180	1.3	38	9
	UNDISTRIBUTED									5
PROJECT 3320-02-71 TOTAL:					4,490	5,620	3,240	3.5	101	28

DEWATERING

		SPV.0060.02
		SPECIAL (01. DEWATERING)
CATEGORY	LOCATION	EACH
0010	C-53-2038	1
	C-53-2039	1
PROJECT 3320-02-71 TOTAL:		2

TRAFFIC CONTROL

		643.0300		643.0420		643.0705		643.0715		643.0900		643.0910		643.0920		643.1050		643.3180		643.5000			
		TRAFFIC CONTROL DRUMS		TRAFFIC CONTROL BARRICADES TYPE III		TRAFFIC CONTROL WARNING LIGHTS TYPE A		TRAFFIC CONTROL WARNING LIGHTS TYPE C		TRAFFIC CONTROL SIGNS		TRAFFIC CONTROL COVERING SIGNS TYPE I		TRAFFIC CONTROL COVERING SIGNS TYPE II		TRAFFIC CONTROL SIGNS PCMS		TEMPORARY MARKING LINE REMOVABLE TAPE 6-INCH		TRAFFIC CONTROL			
CATEGORY	LOCATION	DAYS*	EACH* DAY	EACH* DAY	EACH* DAY	EACH* DAY	EACH* DAY	EACH* DAY	EACH* DAY	EACH	# CYCLES* # OF SIGNS*		EACH	# CYCLES* # OF SIGNS*		EACH* DAY	LF		EACH				
0010	DETOUR AND ROAD CLOSURE	119	-	-	6	710	12	1430	-	-	174	20710	4	1	4	17	1	17	2	14	120	-	1
	SIDEROAD CLOSURES	119	-	-	45	5360	90	10710	-	-	60	7140	-	-	-	-	-	-	-	-	-	-	-
	BOX CULVERT REPLACEMENT ROAD CLOSURES	90	-	-	18	1620	36	3240	-	-	14	1260	-	-	-	-	-	-	-	-	-	-	-
	IH 43 INTERCHANGE SB ON CLOSURE	2	70	140	10	20	20	40	6	12	68	140	1	1	1	10	1	10	2	14	700	4400	-
	IH 43 INTERCHANGE NB ON CLOSURE	2	80	160	10	20	20	40	6	12	79	160	3	1	2	10	1	10	2	14	700	4400	-
PROJECT 3320-02-71 TOTAL:			300		7,730		15,460		24		29,410		8		37		42		10,320		1		
* ESTIMATE ONLY																							

3

3

PAVEMENT MARKING														
					646.2040	646.4020		646.4720		646.4820	646.5320	646.6120	646.7120	
					MARKING LINE		MARKING	MARKING LINE SAME		MARKING	MARKING	MARKING	MARKING	
					GROOVED WET REF	LINE EPOXY 10-	MARKING LINE SAME	DAY EPOXY 6-INCH		DAY EPOXY 10-	RAILROAD	STOP LINE	DIAGONAL	
					EPOXY 6-INCH	INCH	DAY EPOXY 6-INCH	WHITE	YELLOW	INCH	CROSSING	EPOXY 18-	EPOXY 12-	
CATEGORY	STATION	TO	STATION	LOCATION	WHITE LF	YELLOW LF	LF	WHITE LF	YELLOW LF	LF	EACH	LF	LF	REMARKS
0010	10+00	-	31+98		5,710	4,515	-	820	475	240	-	110	160	IH 43 INTERCHANGE
0010	31+98	-	337+80		56,890	49,170	100	-	-	-	2	-	-	
TOTAL 0010					116,285		100	1,295		240	2	110	160	
0050	37+26	-	39+70	'KA'	220	210	180	-	-	-	-	40	-	SB OFF RAMP
	37+04	-	39+00	'KB'	150	155	-	-	-	-	-	-	-	NB ON RAMP
	35+03	-	37+09	'KC'	140	165	190	-	-	-	-	44	-	NB OFF RAMP
	35+00	-	36+68	'KD'	120	130	-	-	-	-	-	-	-	SB ON RAMP
TOTAL 0050					1,290		370	0		0	0	84	0	
PROJECT 3320-02-71 TOTAL:					117,575		470	1,295		240	2	194	160	

LOCATE NO-PASSING					
CATEGORY	STATION	TO	STATION	LOCATION	648.0100 LOCATING NO-PASSING ZONES MI
0010	10+00	-	337+90		6.18
PROJECT 3320-02-71 TOTAL:					6.18

3

CONSTRUCTION STAKING

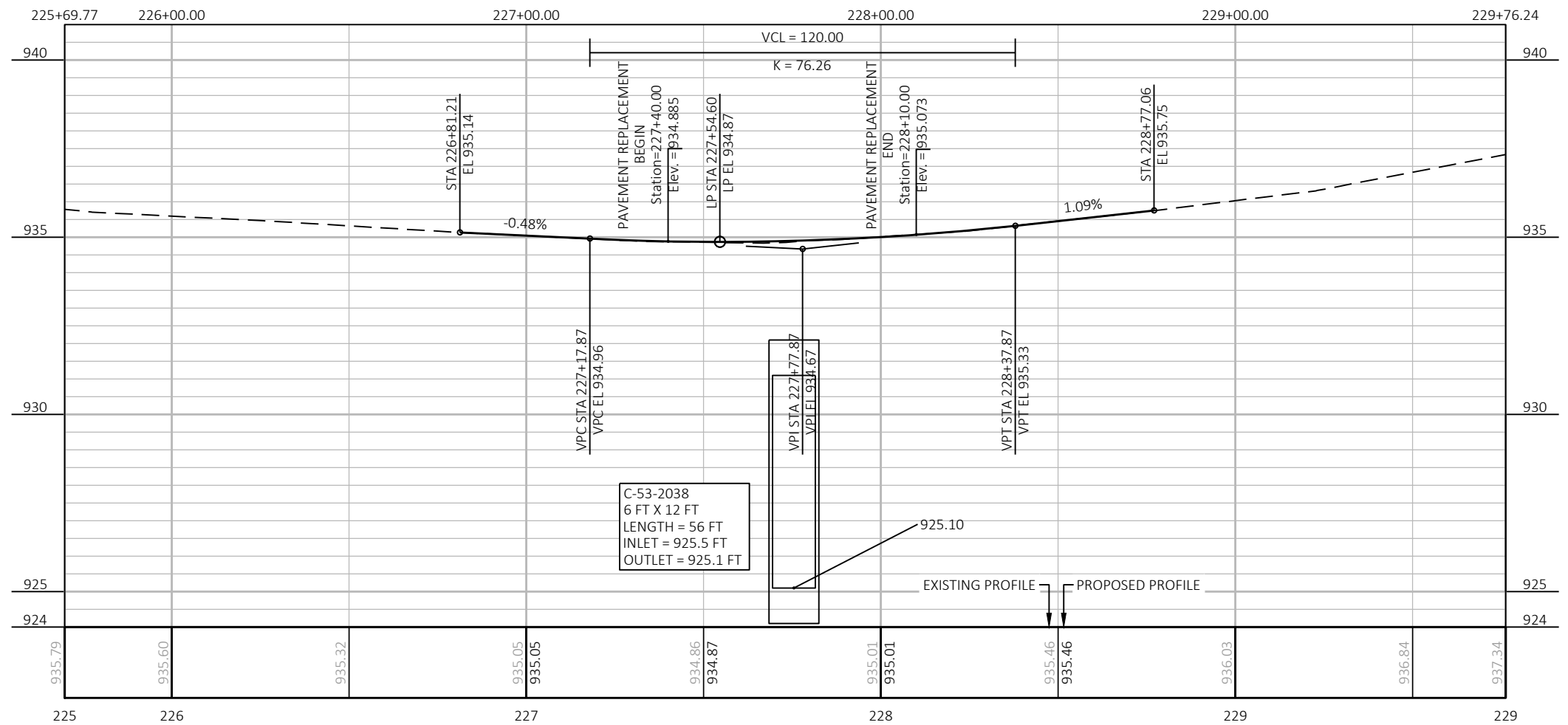
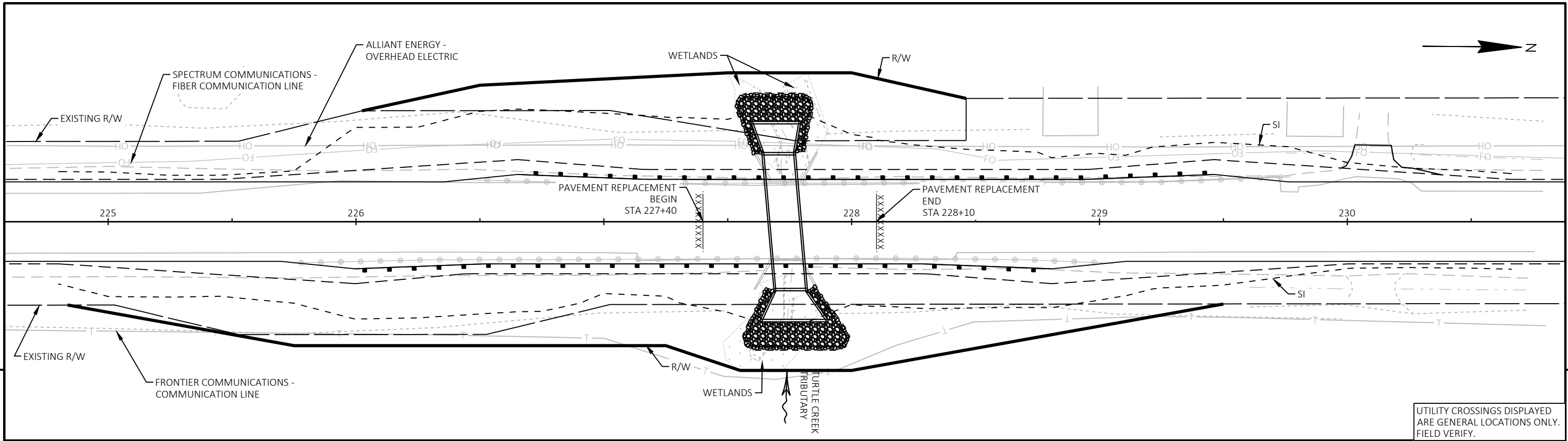
			650.4500	650.5000	650.6000	650.6501.01	650.6501.02	650.8000	650.9920	SPV.0060.01
						CONSTRUCTION STAKING STRUCTURE LAYOUT (01. C-53-2038)	CONSTRUCTION STAKING STRUCTURE LAYOUT (01. C-53-2039)	CONSTRUCTION STAKING RESURFACING REFERENCE	CONSTRUCTION STAKING SLOPE STAKES	SPECIAL (01. VERIFY LANDMARK REFERENCE MONUMENTS)
CATEGORY	STATION		LF	LF	EACH	EACH	EACH	LF	LF	EACH
0010	10+00	-	337+75	-	-	-	-	32,775	-	-
	51+61	-	55+89	-	1	-	-	-	860	-
	56+48			-	-	-	-	-	-	1
	224+80	-	230+66	70	70	-	1	-	1,170	-
	318+56	-	324+48	90	90	-	-	1	1,180	-
PROJECT 3320-02-71 TOTAL:			160	160	1	1	1	32,775	3,210	1

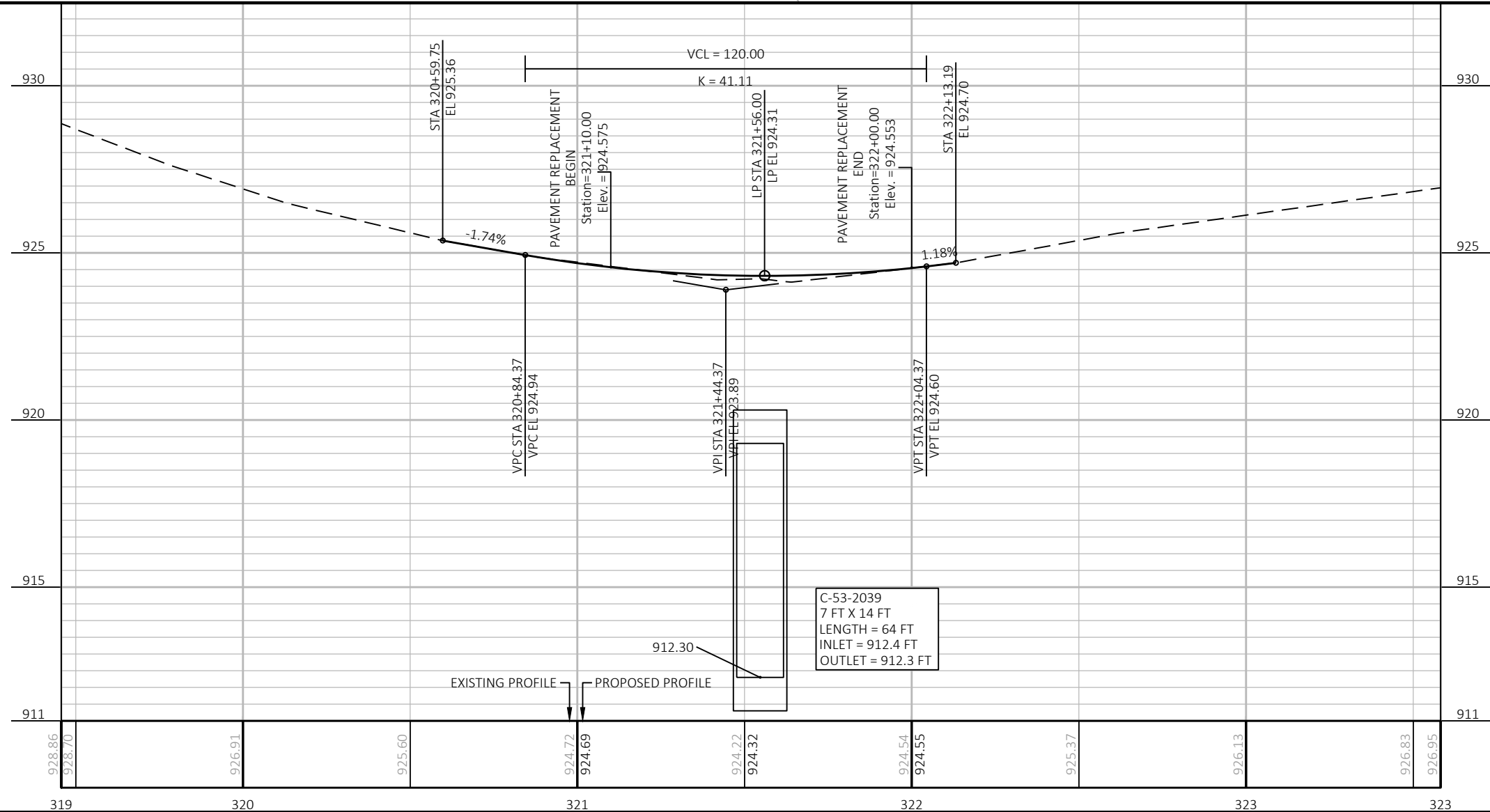
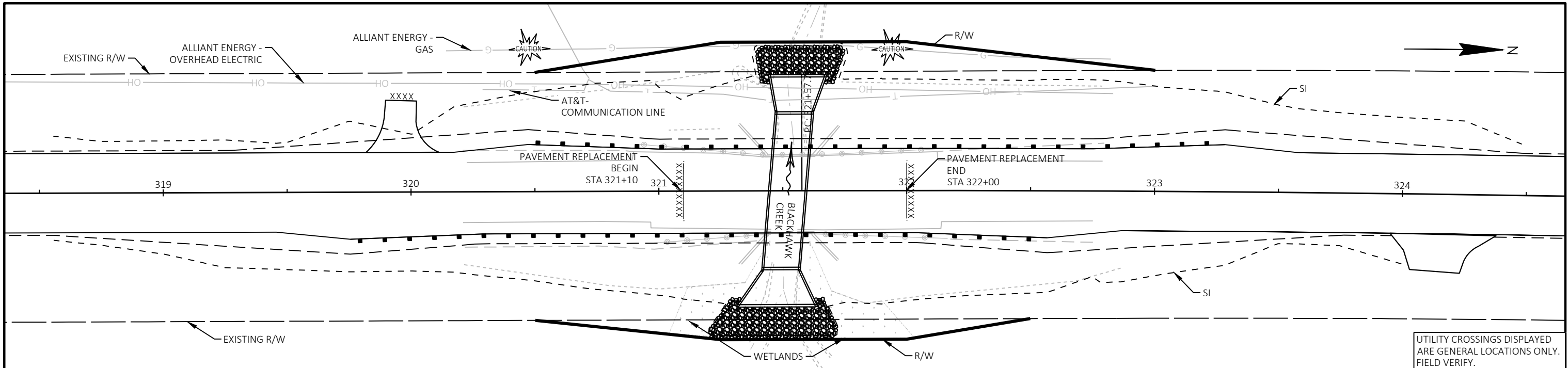
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SAWING

					690.0150
					SAWING
					ASPHALT
CATEGORY	STATION	TO	STATION	LOCATION	LF
0010	10+00	-	10+14	RT	14
	13+06	-	13+38	RT	32
	13+13	-	13+41	LT	28
	48+23	-	48+38	LT	15
	73+93	-	74+04	RT	11
	112+62	-	112+74	RT	12
	114+05	-	114+19	RT	14
	227+40	-	227+40	LT/RT	24
	228+10	-	228+10	LT/RT	24
	232+15	-	232+25	LT	10
	238+18	-	238+37	LT/RT	38
	238+35	-	238+54	LT/RT	38
	303+40	-	303+50	LT	10
	303+40	-	303+50	LT	10
	319+90	-	320+02	LT	12
	321+10	-	321+10	LT	24
	322+00	-	322+00	LT	24
	334+19	-	334+37	LT	18
PROJECT 3320-02-71 TOTAL:					358

PROJECT NO: 3320-02-71	HWY: STH 140	COUNTY: ROCK	MISCELLANEOUS QUANTITIES	SHEET: 52	E
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PROJECT NO: 3320-02-71

HWY: STH 140

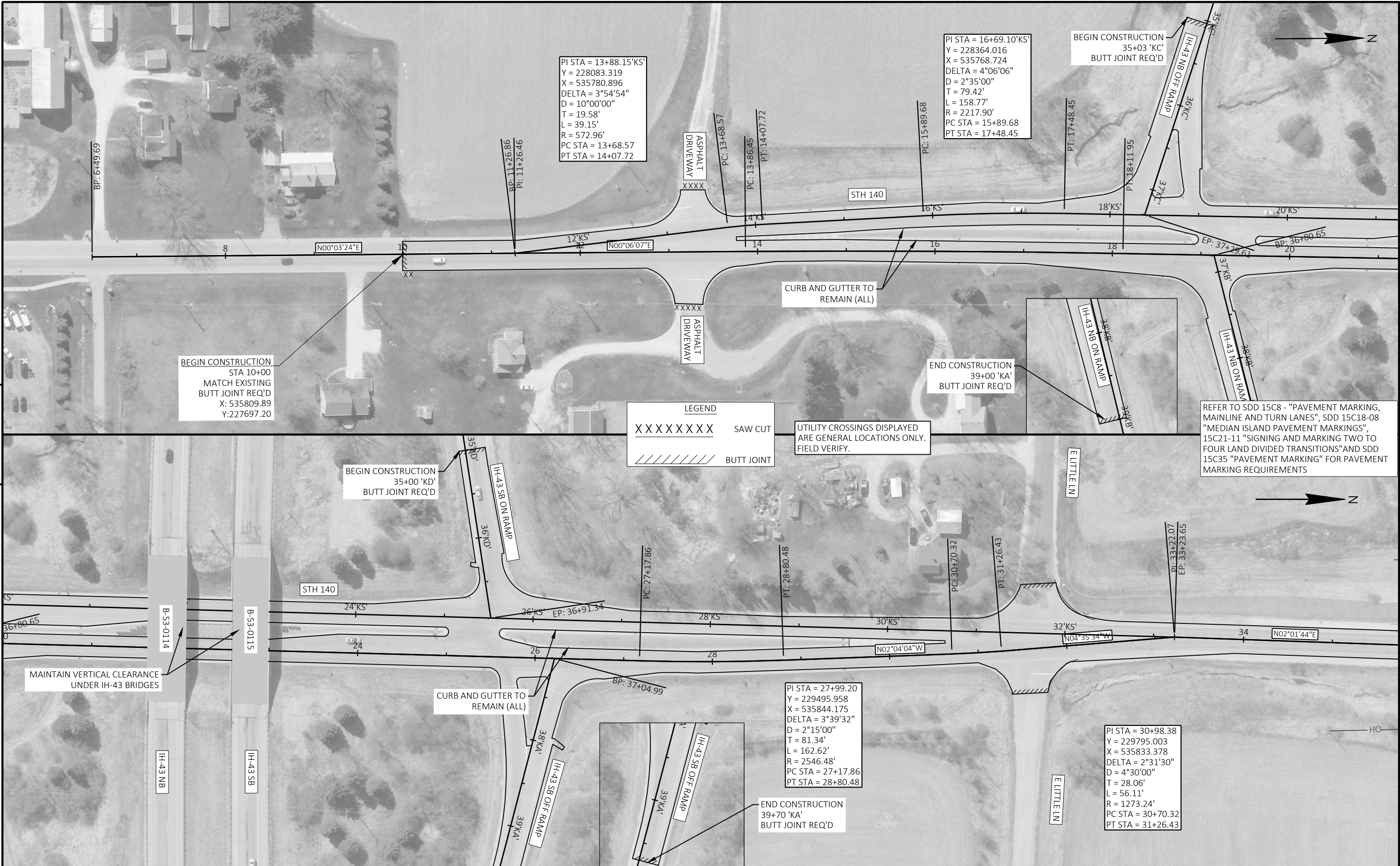
COUNTY: ROCK

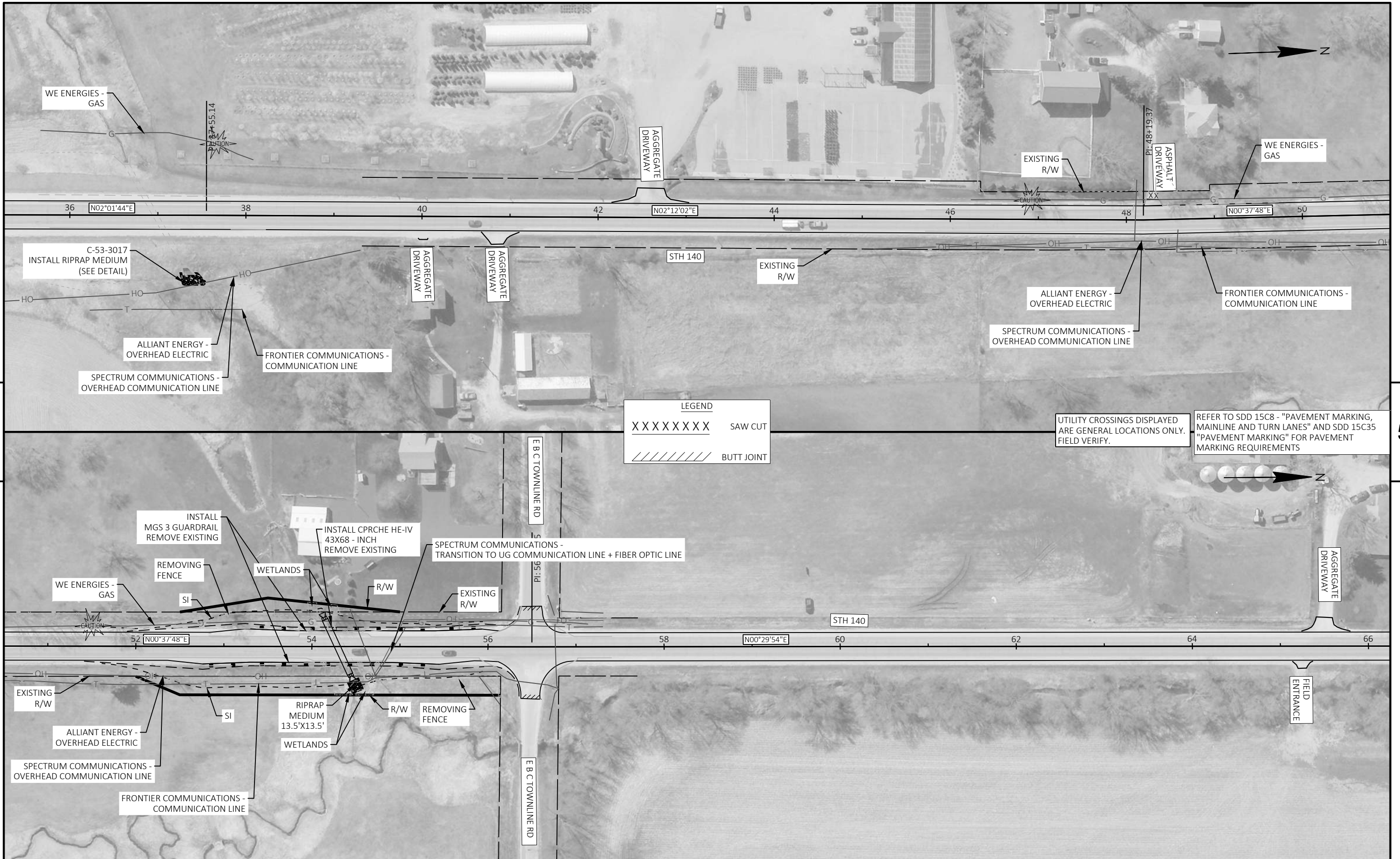
PLAN AND PROFILE: STH 140

SHEET

54

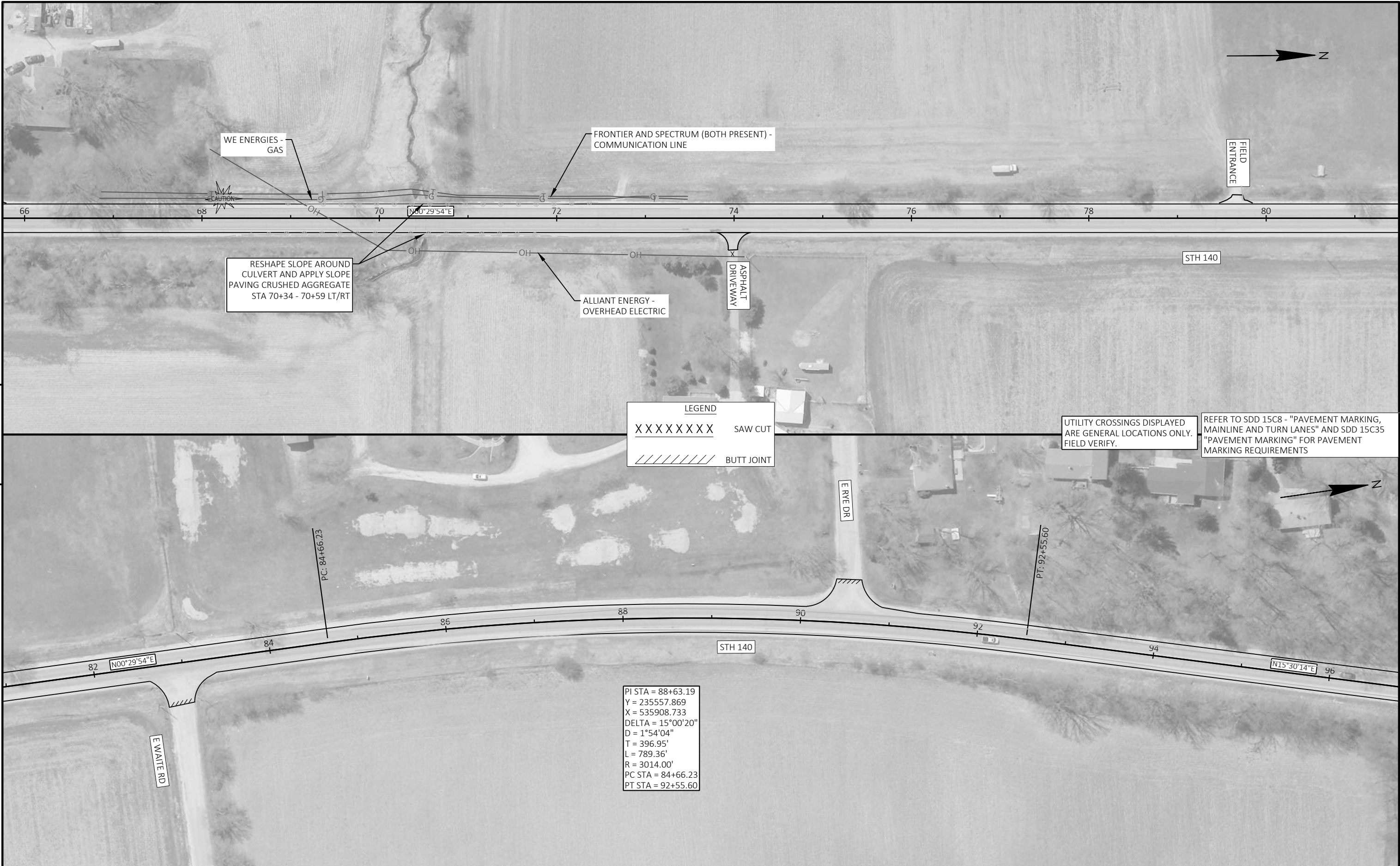
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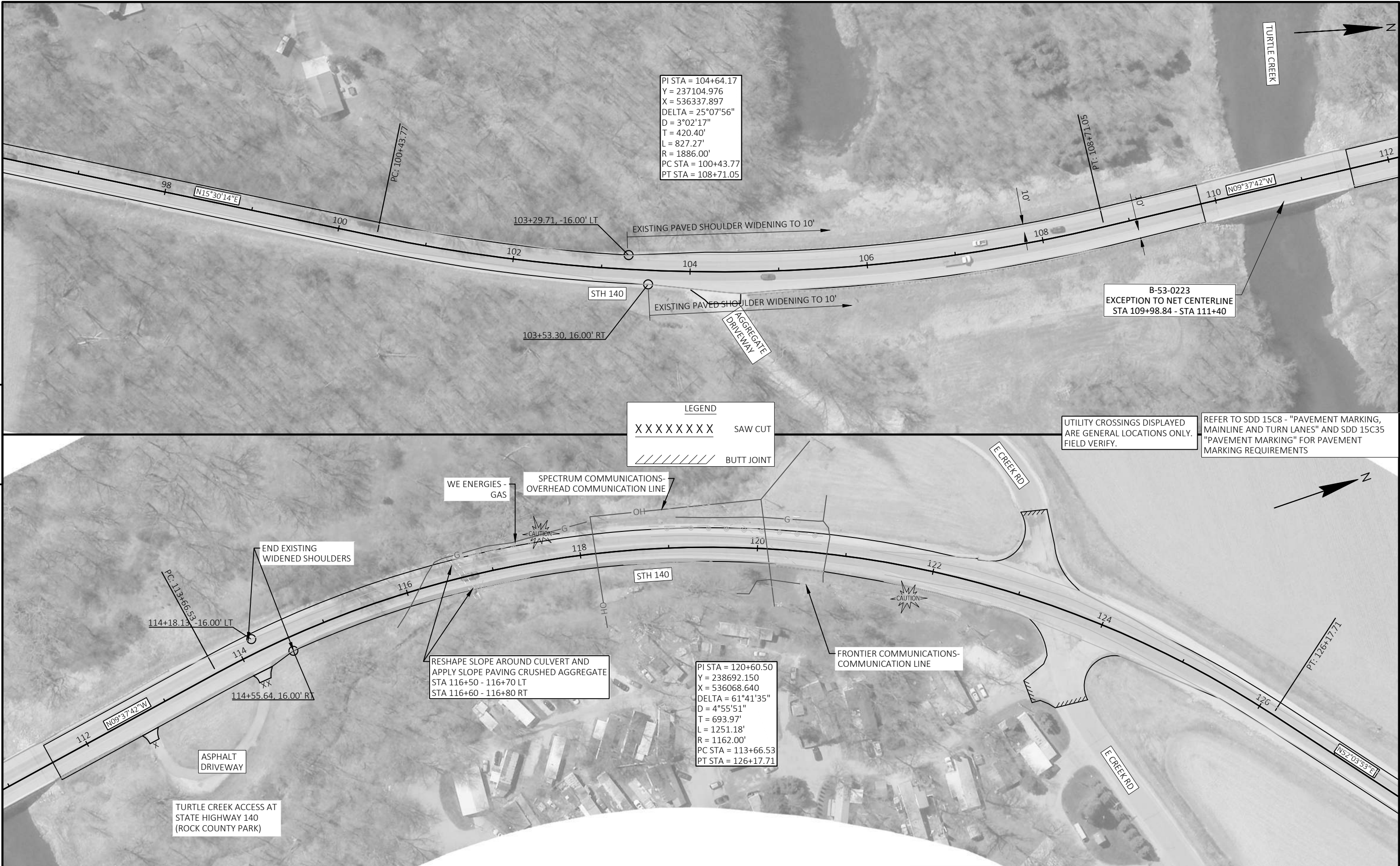
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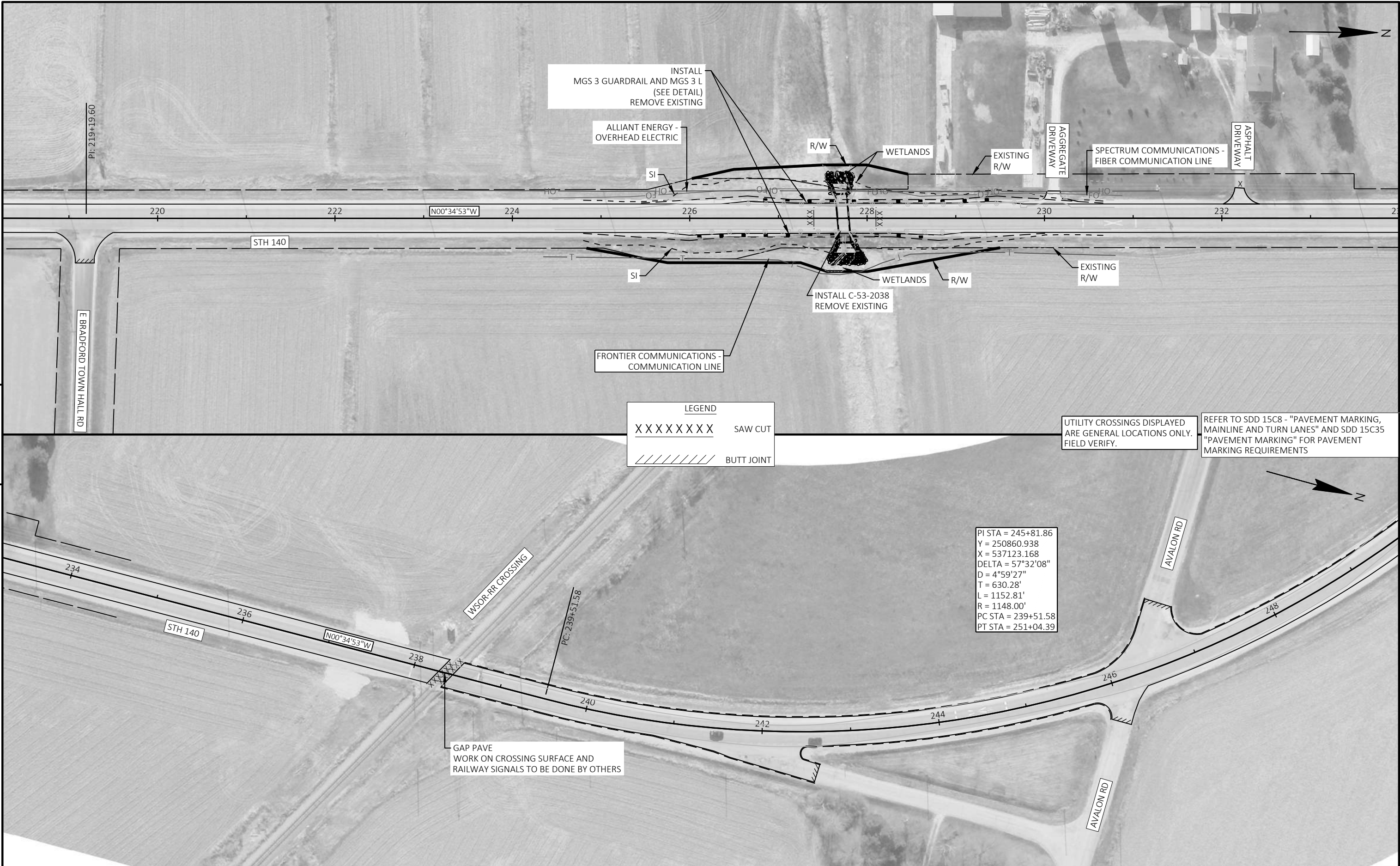
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5

5





PI STA = 326+90.87
Y = 257700.657
X = 534388.642
DELTA = 4°08'34"
D = 0°23'19"
T = 533.11'
L = 1065.76'
R = 14740.00'
PC STA = 321+57.76
PT STA = 332+23.52

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PC STA = 321+57.76
PT STA = 332+23.52

LEGEND

XXXXXXXXXX

SAW CUT

////

BUTT JOINT

UTILITY CROSSINGS DISPLAYED
ARE GENERAL LOCATIONS ONLY.
FIELD VERIFY.

REFER TO SDD 15C8 - "PAVEMENT MARKING,
MAINLINE AND TURN LANES" AND SDD 15C35
"PAVEMENT MARKING" FOR PAVEMENT
MARKING REQUIREMENTS

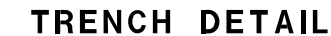
END CONSTRUCTION
STA 337+80
MATCH EXISTING
BUTT JOINT REQ'D

Standard Detail Drawing List

08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
08F02-01	APRON ENDWALLS FOR PIPE ARCH AND ELLIPTICAL PIPE
08F04-08	JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL
12A03-10	NAME PLATE (STRUCTURES)
13A10-03E	EDGE LINE RUMBLE STRIPS - ASPHALT
13A10-03G	SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A10-03H	SHOULDER AND EDGE LINE RUMBLE STRIPS - RAILROAD, PASSING, CLIMBING AND BYPASS LANES
13A11-04A	CENTERLINE RUMBLE STRIPS - ASPHALT
13A11-04D	CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS
13B01-11A	PAVEMENT DETAILS FOR RAILROAD APPROACH
13C19-03	HMA LONGITUDINAL JOINTS
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
14B43-04A	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04B	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
14B43-04C	MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)
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)
15A01-13A	MARKER POST FOR RIGHT-OF-WAY
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
15C02-09C	DETOUR SIGNING FOR MAINLINE CLOSURES
15C03-05	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-23C	PAVEMENT MARKING (TURN LANES)
15C08-23D	PAVEMENT MARKING (TURN LANES)
15C09-13A	SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD-HIGHWAY GRADE CROSSINGS
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C18-08A	MEDIAN ISLAND MARKING PAVEMENT MARKINGS
15C18-08B	MEDIAN ISLAND MARKING MEDIAN ISLAND NOSE
15C18-08C	MEDIAN PAVEMENT MARKINGS DOUBLE ARROW WARNING SIGN PLACEMENT
15C21-11	SIGNING AND MARKING FOR TWO LANE TO FOUR LANE DIVIDED TRANSITIONS
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D16-06	TRAFFIC CONTROL, EXIT RAMP CLOSURE
15D40-05A	TRAFFIC CONTROL, FULL LANE SHIFT NON-FREEWAY OR MULTILANE DIVIDED 45 MPH AND UNDER
16A01-07	LANDMARK REFERENCE MONUMENTS AND COVERS



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



SILT FENCE

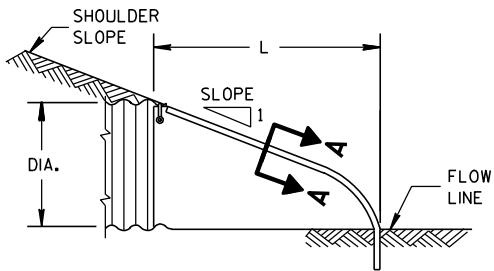
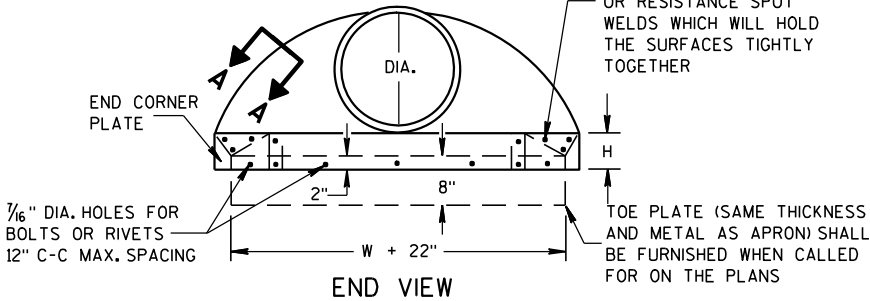
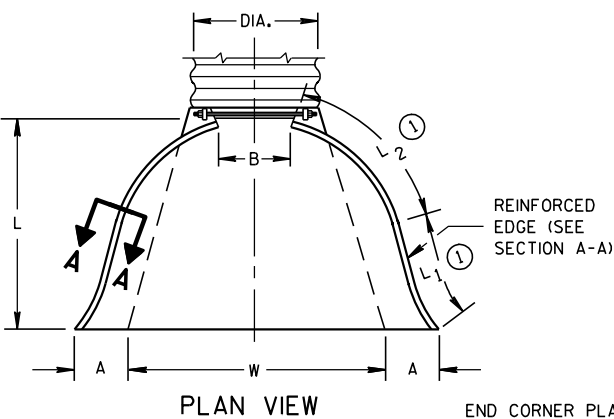
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE /S/ Beth Connolly
CHIEF ROADWAY DEVELOPMENT 67 INCHES

FHWA

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

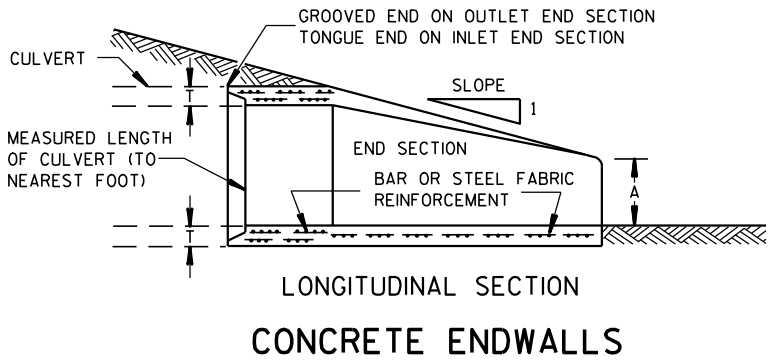
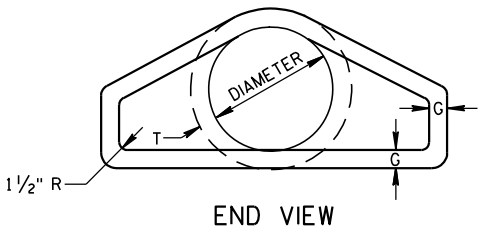
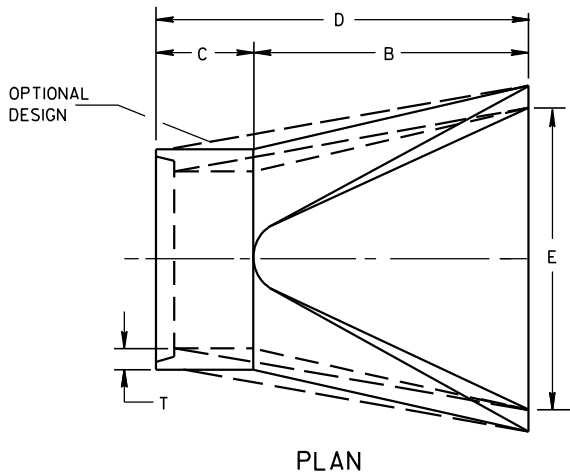
* EXCEPT CENTER PANEL
SEE GENERAL NOTES



SIDE ELEVATION
METAL ENDWALLS

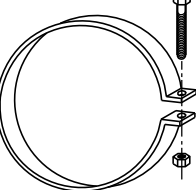
REINFORCED CONCRETE APRON ENDWALLS												
PIPE DIA. (IN.)	DIMENSIONS (Inches)							APPROX. SLOPE				
	T	A	B	C	D	E	G					
12	2	4	24	48 1/8	72 1/8	24	2	3 to 1				
15	2 1/4	6	27	46	73	30	2 1/4	3 to 1				
18	2 1/2	9	27	46	73	36	2 1/2	3 to 1				
21	2 3/4	9	36	37 1/2	73 1/2	42	2 3/4	3 to 1				
24	3	9 1/2	43 1/2	30	73 1/2	48	3	3 to 1				
27	3 1/4	10 1/2	49 1/2	24	73 1/2	54	3 1/4	3 to 1				
30	3 1/2	12	54	19 3/4	73 1/2	60	3 1/2	3 to 1				
36	4	15	63	34 3/4	97 3/4	72	4	3 to 1				
42	4 1/2	21	63	35	98	78	4 1/2	3 to 1				
48	5	24	72	26	98	84	5	3 to 1				
54	5 1/2	27	65	33 1/4-35	98 1/4-100	90	5 1/2	2 1/2 to 1				
60	6	30-35	60	39	99	96	5	2 to 1				
66	6 1/2	24-30	72-78	21-27	99	102	5 1/2	2 to 1				
72	7	24-36	78	21	99	108	6	2 to 1				
78	7 1/2	24-36	78	21	99	114	6 1/2	2 to 1				
84	8	36	90 1/2	21	111 1/2	120	6 1/2	1 1/2 to 1				
90	8 1/2	41	87 1/2	24	111 1/2	132	6 1/2	1 1/2 to 1				

* MINIMUM
** MAXIMUM

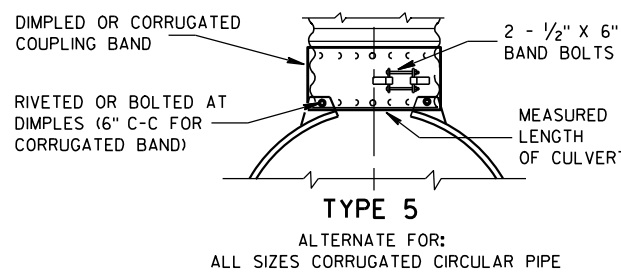
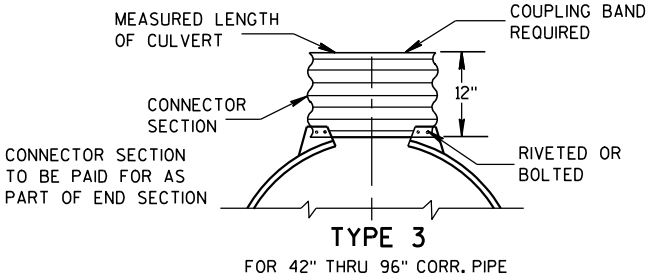
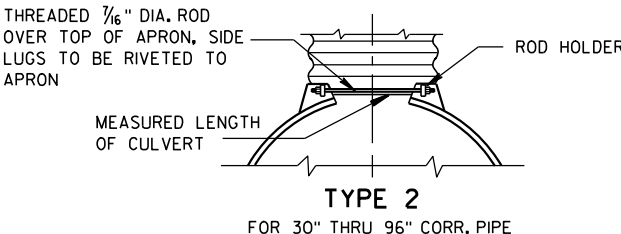
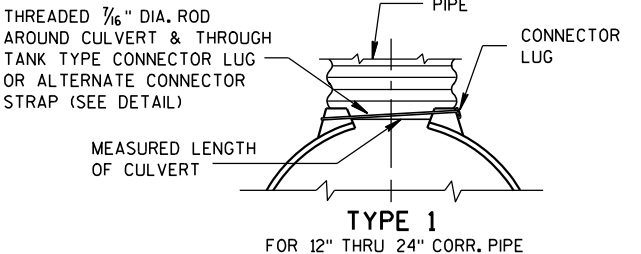


LONGITUDINAL SECTION
CONCRETE ENDWALLS

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



ALTERNATE FOR TYPE 1 CONNECTION
END SECTION CONNECTOR STRAP



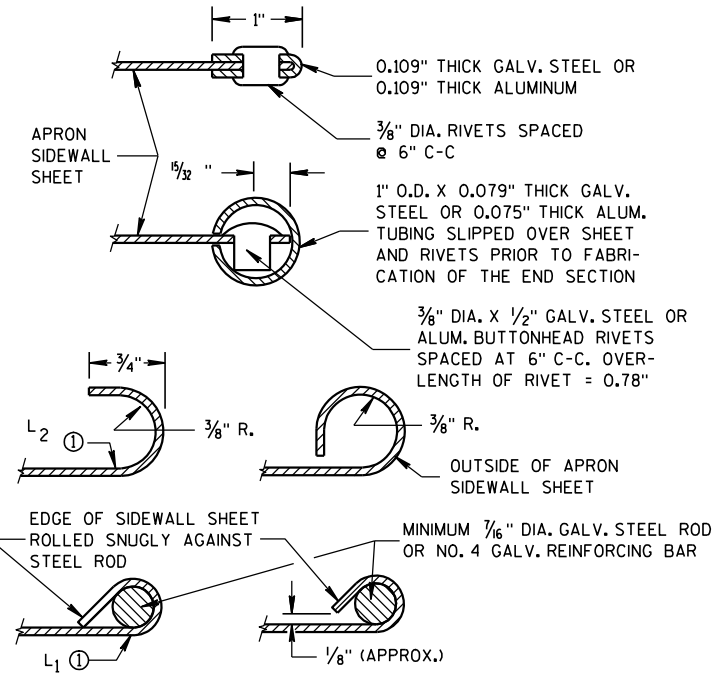
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

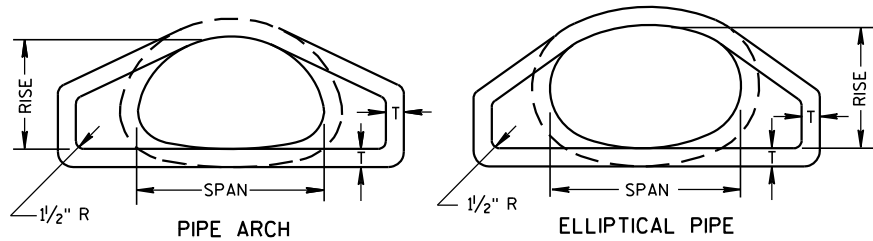
ALL THREE PIECE STEEL APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.109" SIDES AND 0.138" CENTER PANELS. ALL THREE PIECE ALUMINUM APRON ENDWALLS FOR 60" DIAMETER PIPE AND LARGER SHALL HAVE 0.105" SIDES AND 0.134" CENTER PANELS. THE WIDTH OF CENTER PANELS SHALL BE GREATER THAN 20 PERCENT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

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

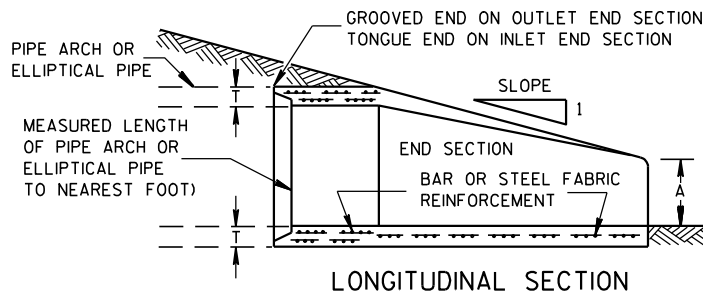
WHERE TWO OR MORE PIPES WITH APRON ENDWALLS ARE LAID ADJACENT TO EACH OTHER, THEY SHALL BE SEPARATED BY A DISTANCE SUFFICIENT TO PROVIDE A MINIMUM CLEARANCE OF 6 INCHES BETWEEN APRON ENDWALLS.

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

APRON ENDWALLS FOR CULVERT PIPE			
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION			
APPROVED 11/30/94 DATE	/S/ Rory L. Rhin... CHIEF ROADWAY DEVELOP 68	NEER	
FHWA			

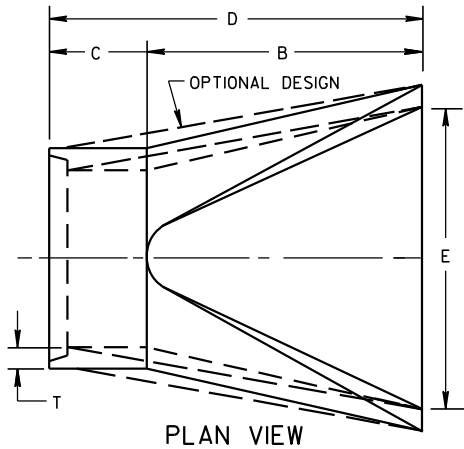


END VIEW

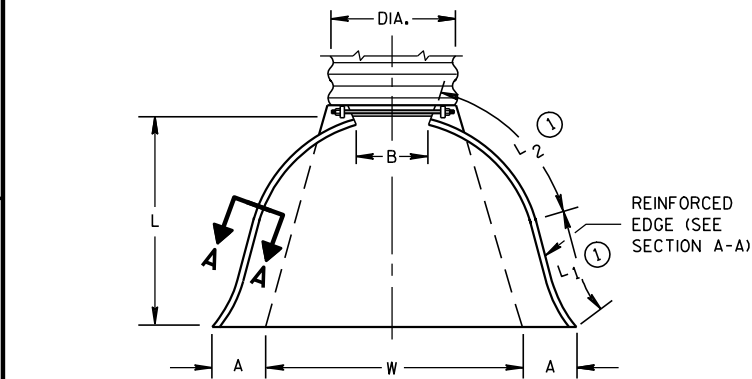


LONGITUDINAL SECTION

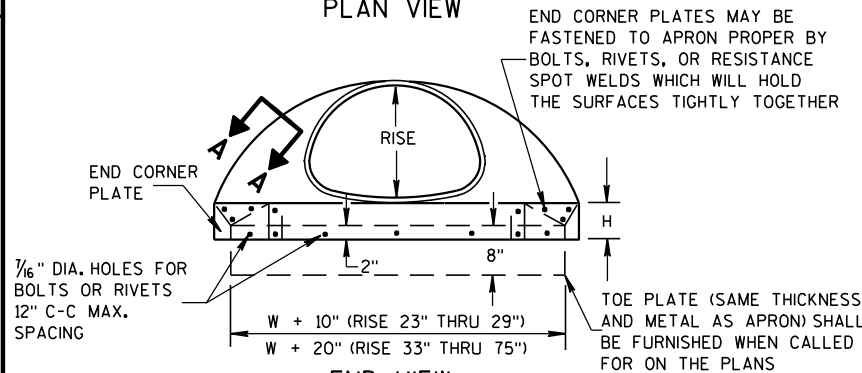
CONCRETE ENDWALLS



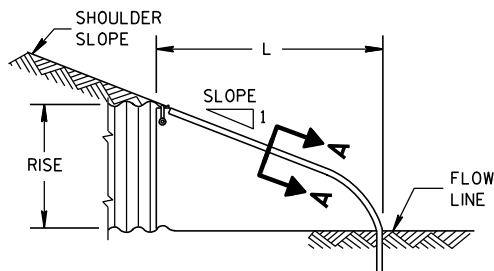
PLAN VIEW



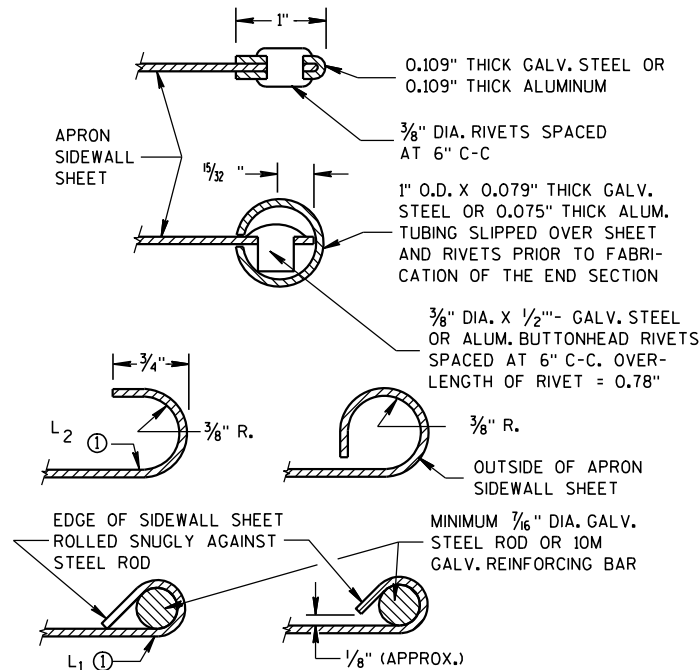
PLAN VIEW



END VIEW



SIDE ELEVATION
METAL ENDWALLS



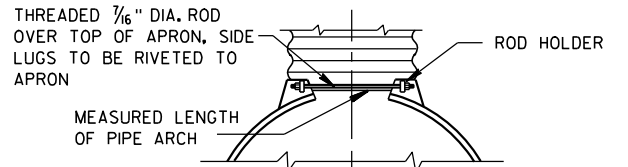
SECTION A-A

2- 2/3" X 1/2" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±2")		
15	17	13	.064	.060	7	9	6	19	14	16	30	2 1/2 to 1	1 Pc.
18	21	15	.064	.060	7	10	6	23	14	19 3/8	36	2 1/2 to 1	1 Pc.
21	24	18	.064	.060	8	12	6	28	18	21 3/4	42	2 1/2 to 1	1 Pc.
24	28	20	.064	.060	9	14	6	32	18	27 1/2	48	2 1/2 to 1	1 Pc.
30	35	24	.079	.075	10	16	6	39	18	37 5/8	60	2 1/2 to 1	1 Pc.
36	42	29	.079	.075	12	18	8	46	24	45 3/8	75	2 1/2 to 1	1 Pc.
42	49	33	.109	.105	13	21	9	53	24	54 3/4	85	2 1/2 to 1	2 Pc.
48	57	38	.109	.105	18	26	12	63	24	68	90	2 1/2 to 1	3 Pc.
54	64	43	.109	.105	18	30	12	70	24	72 3/4	102	2 1/4 to 1	3 Pc.
60	71	47	.109*	.105*	18	33	12	77	30	82 1/4	114	2 1/4 to 1	3 Pc.
66	77	52	.109*	.105*	18	36	12	77	—	—	126	2 to 1	3 Pc.
72	83	57	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.

3" X 1" CORRUGATIONS													
EQUIV. DIA. (Inches)	(Inches)		MIN. THICK. (Inches)		DIMENSIONS (Inches)							APPROX. SLOPE	BODY
	SPAN	RISE	STEEL	ALUM.	A (±1")	B (MAX.)	H (±1")	L (±1 1/2")	L1 ①	L2 ①	W (±2")		
					(±1")	(MAX.)	(±1")	(±1 1/2")	①	①	(±2")		
48	53	41	.109	.105	18	26	12	63	24	72 3/4	90	2 1/2 to 1	2 Pc.
54	60	46	.109	.105	18	30	12	70	30	82 1/4	102	2 to 1	2 Pc.
60	66	51	.109*	.105*	18	33	12	77	—	—	114	1 1/2 to 1	3 Pc.
66	73	55	.109*	.105*	18	36	12	77	—	—	126	1 1/2 to 1	3 Pc.
72	81	59	.109*	.105*	18	39	12	77	—	—	138	2 to 1	3 Pc.
78	87	63	.109*	.105*	22	38	12	77	—	—	148	1 1/2 to 1	3 Pc.
84	95	67	.109*	.105*	22	34	12	77	—	—	162	1 1/2 to 1	3 Pc.
90	103	71	.109*	.105*	22	38	12	77	—	—	174	1 1/2 to 1	3 Pc.
96	112	75	.109*	.105*	24	40	12	77	—	—	174	1 1/2 to 1	3 Pc.

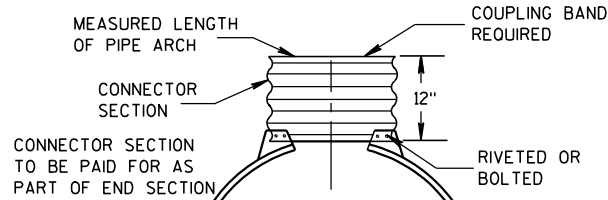
NOTE: ALL SPLICES TO BE LAP RIVETED OR BOLTED.

* EXCEPT CENTER PANEL
SEE GENERAL NOTES



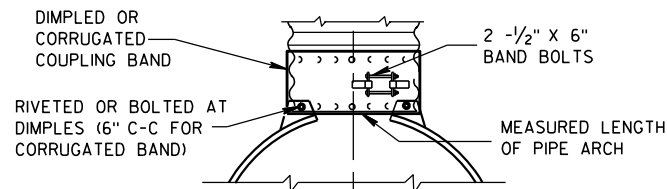
TYPE 2

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



TYPE 3

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



TYPE 5

ALTERNATE FOR:
ALL SIZES CORRUGATED PIPE ARCHES

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

CONNECTION DETAILS

REINFORCED CONCRETE PIPE ARCH									
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	29	18	3	8½	39	33	72	48	3 to 1
30	36	22	3½	9½	50	46	96	60	3 to 1
36	44	27	4	11⅞	60	36	96	72	3 to 1
42	51	31	4½	15⅞	60	36	96	78	3 to 1
48	58	36	5	21	60	36	96	84	3 to 1
54	65	40	5½	25½	60	36	96	90	3 to 1
60	73	45	6	31	60	36	96	96	3 to 1
72	88	54	7	31	60	39	99	120	2 to 1
84	102	62	8	28½	83	19	102	144	2 to 1

REINFORCED CONCRETE ELLIPTICAL PIPE									
EQUIV. DIA. (Inches)	DIMENSIONS (Inches)								APPROX. SLOPE
	** SPAN	** RISE	T	A	B	C	D	E	
24	30	19	3¼	8½	39	33	72	48	3 to 1
30	38	24	3¾	9½	54	18	72	60	3 to 1
36	45	29	4½	11⅞	60	24	84	72	2½ to 1
42	53	34	5	15¾	60	36	96	78	2½ to 1
48	60	38	5½	21	60	36	96	84	2½ to 1
54	68	43	6	25½	60	36	96	90	2½ to 1
60	76	48	6½	30	60	36	96	96	2½ to 1

**NOMINAL SIZE

GENERAL NOTES

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

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

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

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

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

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

APRON ENDWALLS FOR
PIPE ARCH AND
ELLIPTICAL PIPE

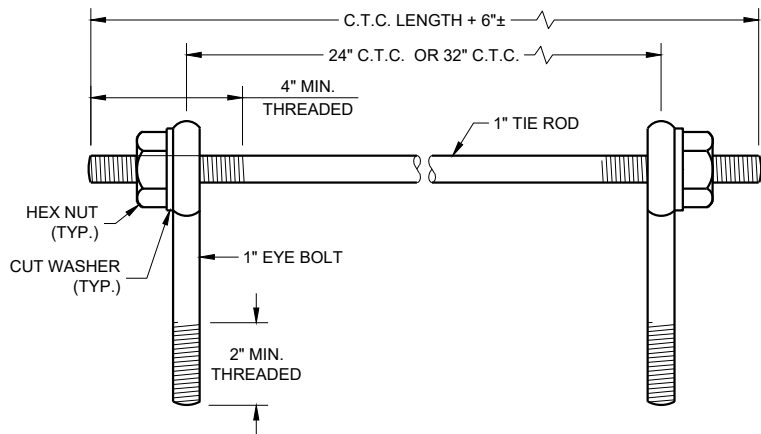
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/94
DATE

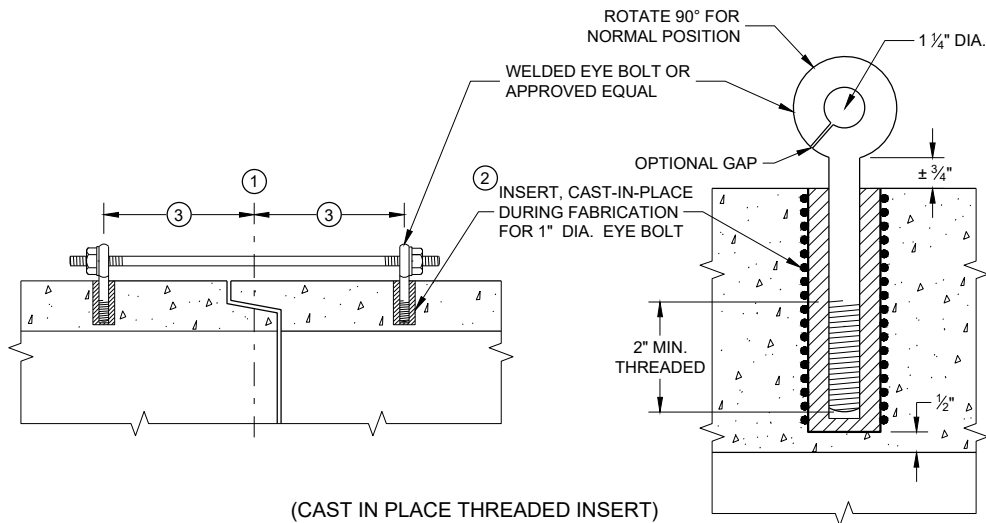
/S/ Rory L. Rhin...
CHIEF ROADWAY DEVELOPER

FHWA



EYE BOLTS AND TIE ROD

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



(CAST IN PLACE THREADED INSERT)

LONGITUDINAL SECTIONS

GENERAL NOTES

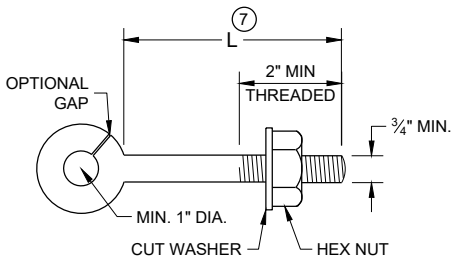
DETAILS OF CONSTRUCTION, MATERIALS, AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

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

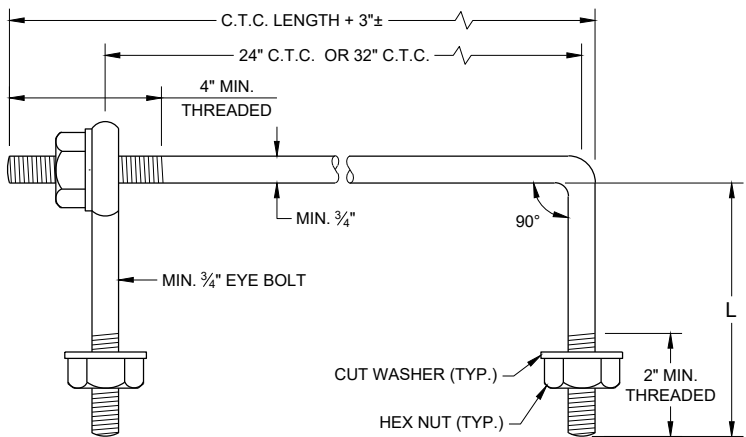
JOINT TIES TO BE HOT-DIP GALVANIZED PER ASTM A 153.

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

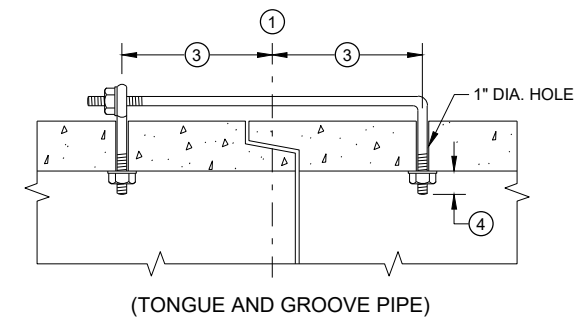


EYE BOLT 7

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



EYE BOLT AND TIE ROD

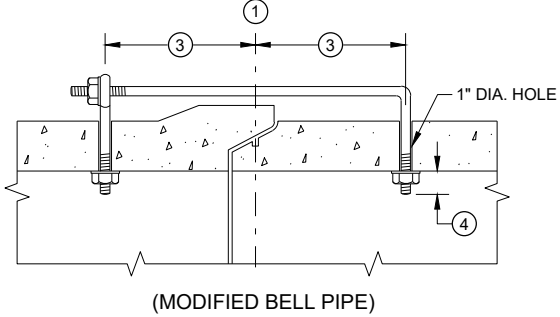


(TONGUE AND GROOVE PIPE)

LONGITUDINAL SECTION

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

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

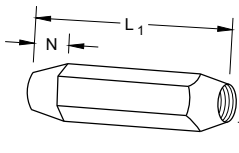


(MODIFIED BELL PIPE)

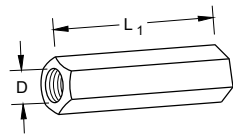
ADJUSTABLE TIE ROD TABLE

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

DIMENSIONS SHOWN ARE IN INCHES

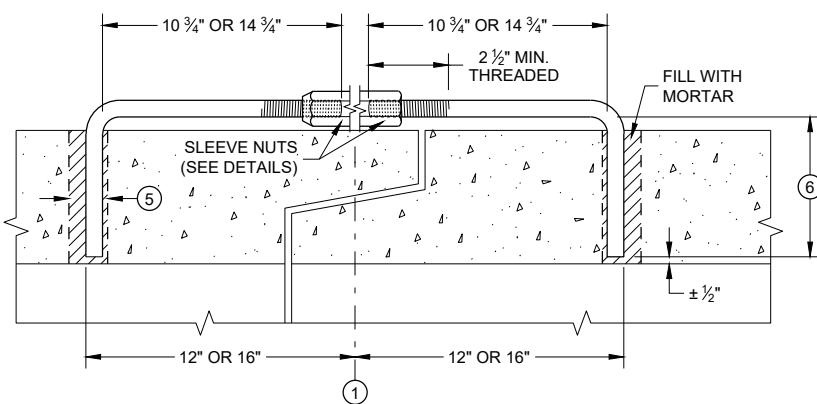


TAPERED



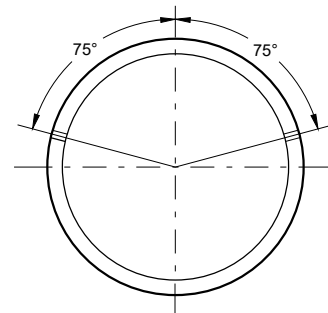
PLAIN

RIGHT AND LEFT THREADS
SLEEVE NUTS



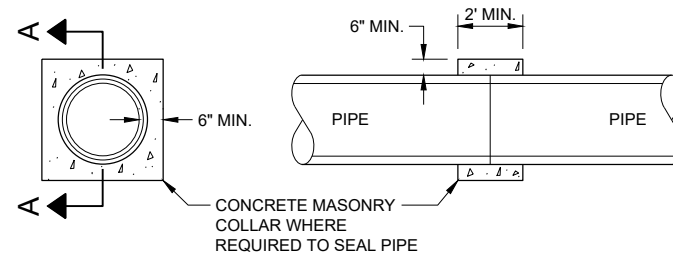
LONGITUDINAL SECTION

ADJUSTABLE TIE ROD (ALTERNATE NO. 3)



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

TRANSVERSE SECTION



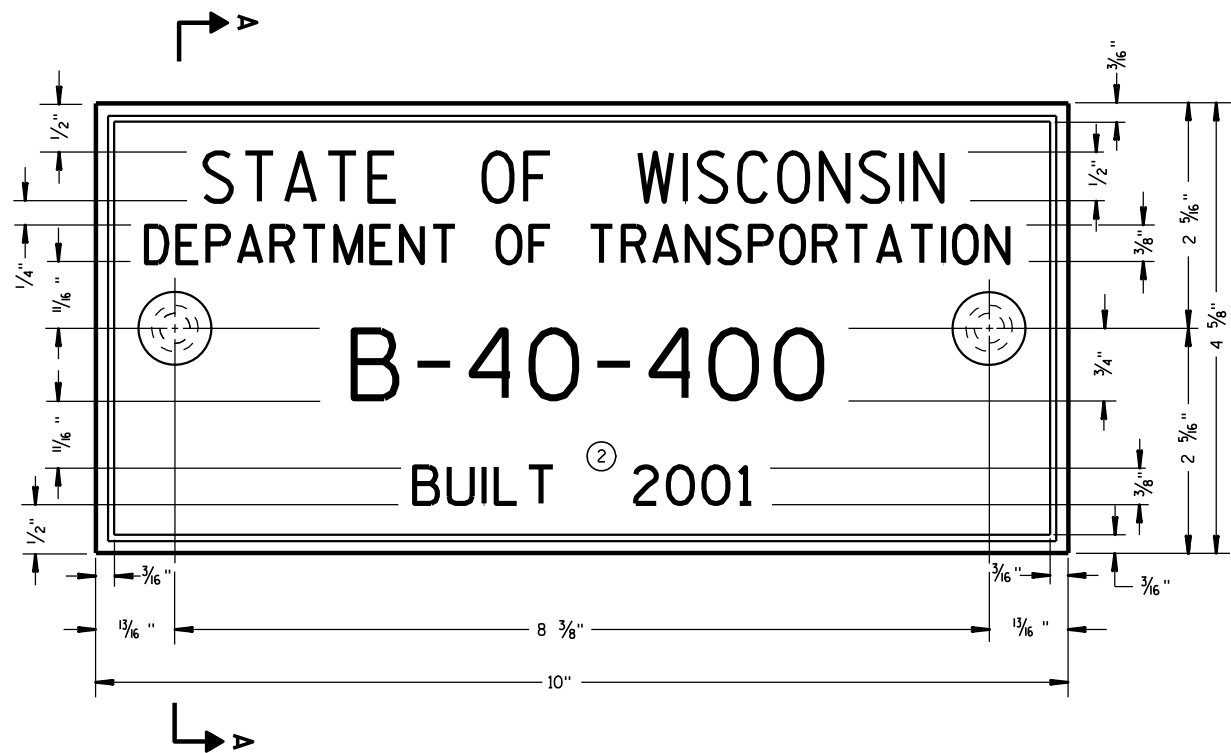
SECTION A - A

CONCRETE COLLAR DETAIL

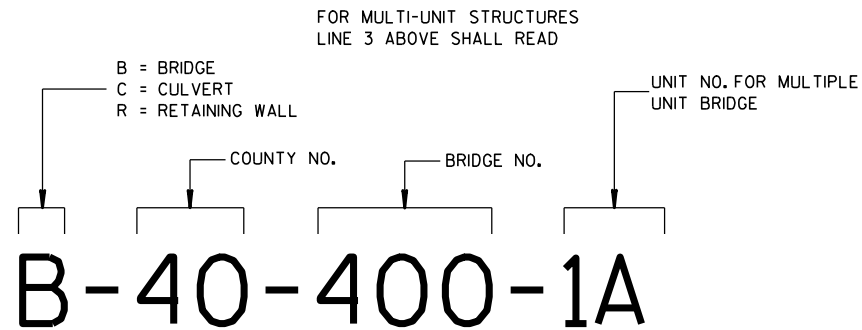
JOINT TIES FOR CONCRETE PIPE AND CONCRETE COLLAR DETAIL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2021 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 70
FHWA



TYPICAL NAME PLATE
(BRIDGES, CULVERTS, AND RETAINING WALLS)



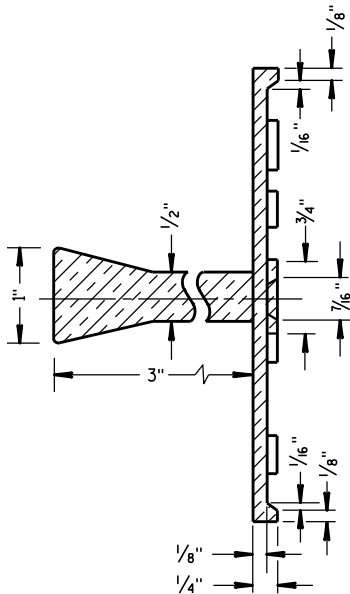
**NUMBERING DESIGNATION
MULTI-UNIT STRUCTURES**

GENERAL NOTES

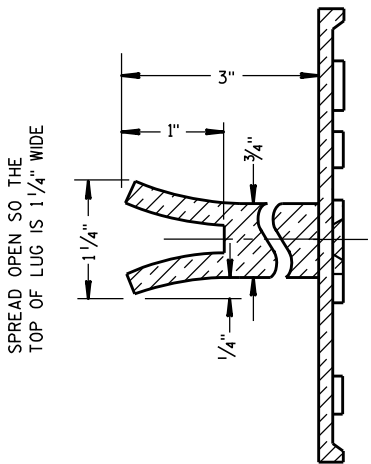
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

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

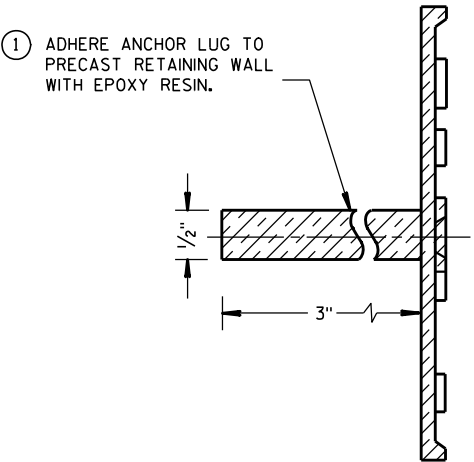
- ① EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ② REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.



SECTION A-A

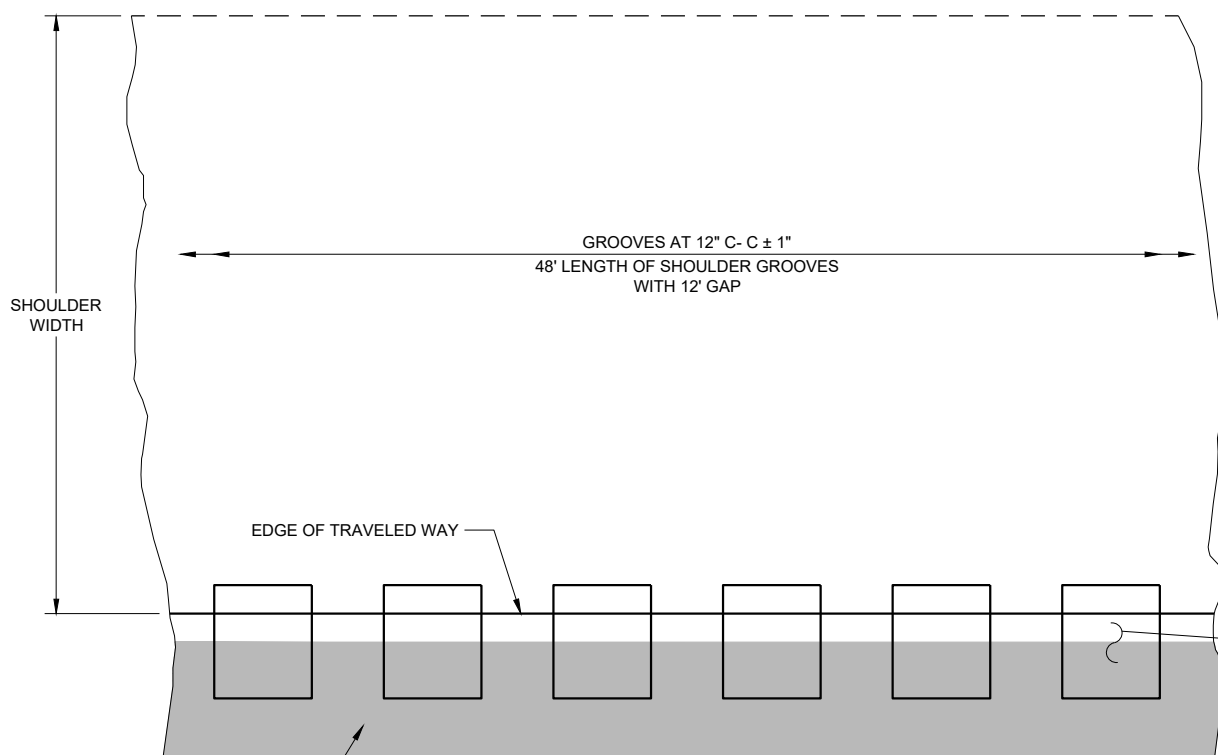


ALTERNATE LUG

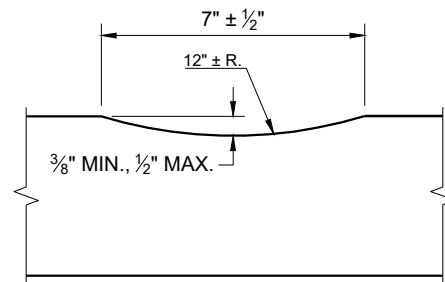


ALTERNATE LUG
(FOR ATTACHMENT TO PRECAST STRUCTURES)

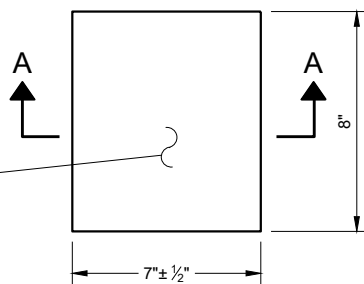
NAME PLATE (STRUCTURES)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED 3/26/10 DATE	/S/ Scot Beck CHIEF STRUCTURAL DEVELOPER	71 JEER
FHWA		



PLAN DETAIL VIEW
SHOULDER WITH GROOVES



SECTION A - A

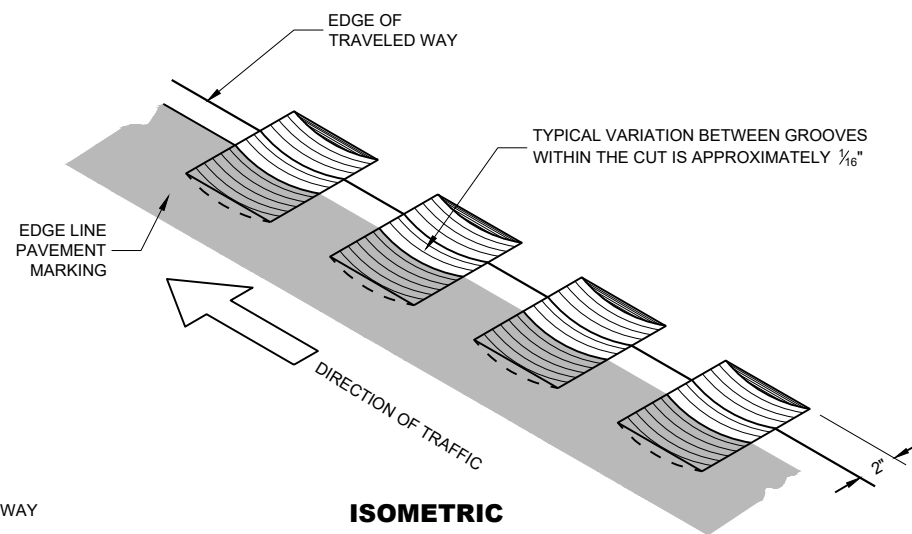


PLAN VIEW
(SINGLE GROOVE)

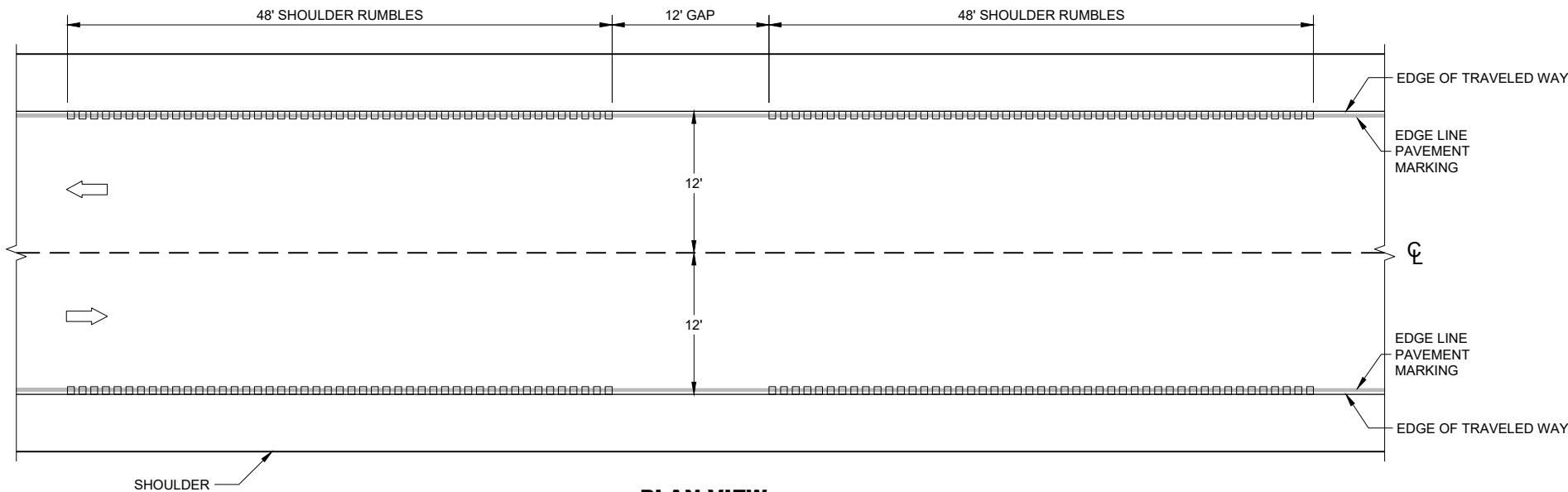
GENERAL NOTES

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.



ISOMETRIC

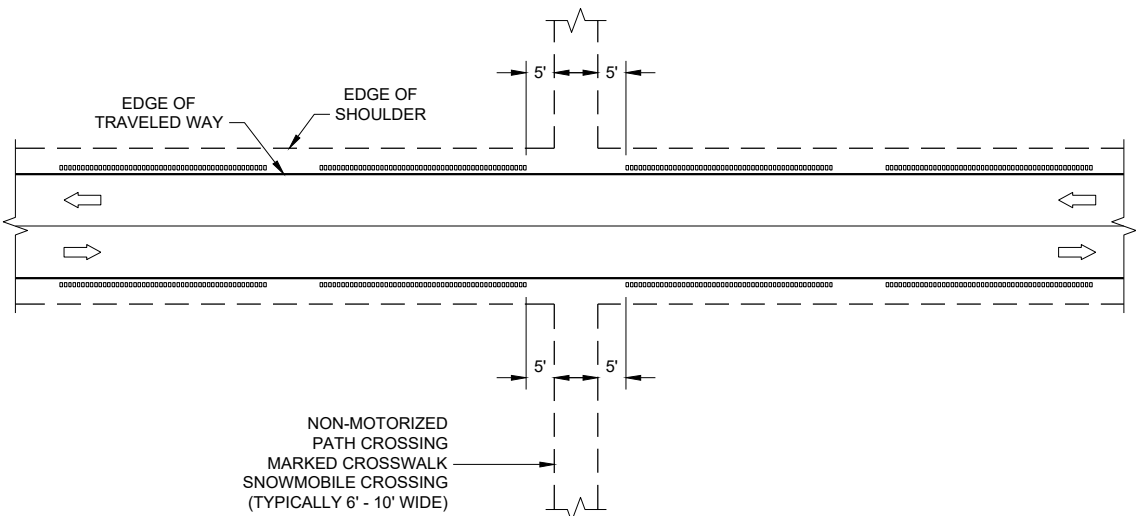


PLAN VIEW

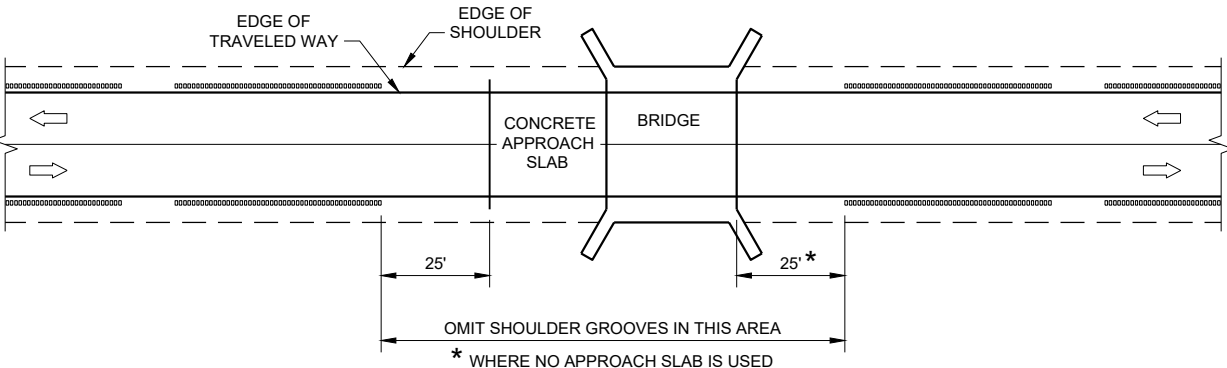
EDGE LINE RUMBLE STRIPS - ASPHALT

EDGE LINE RUMBLE
STRIPS - ASPHALT

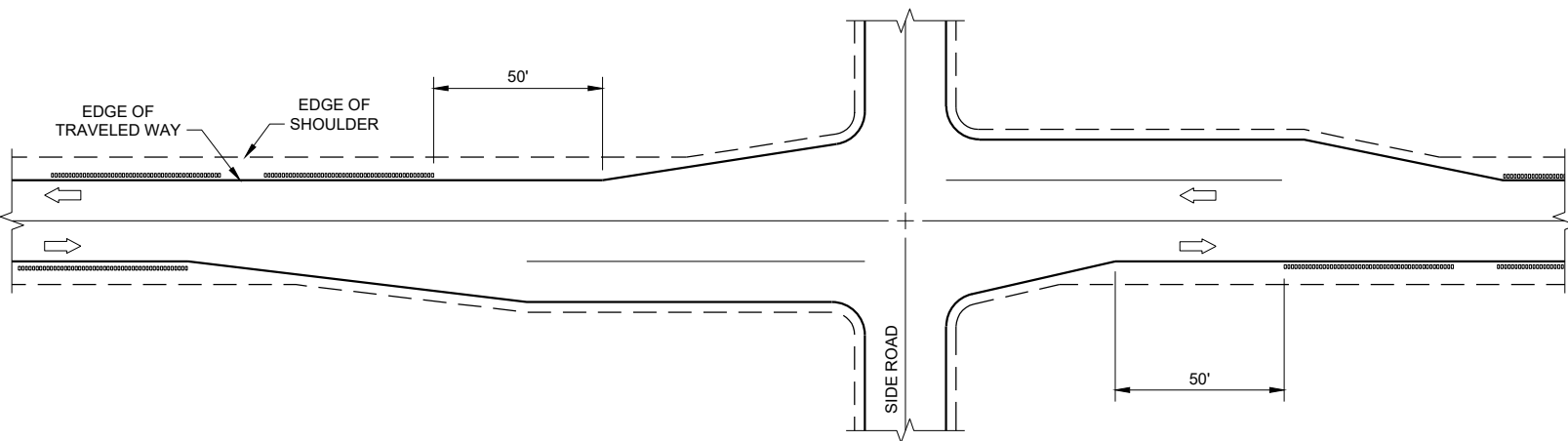
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 72



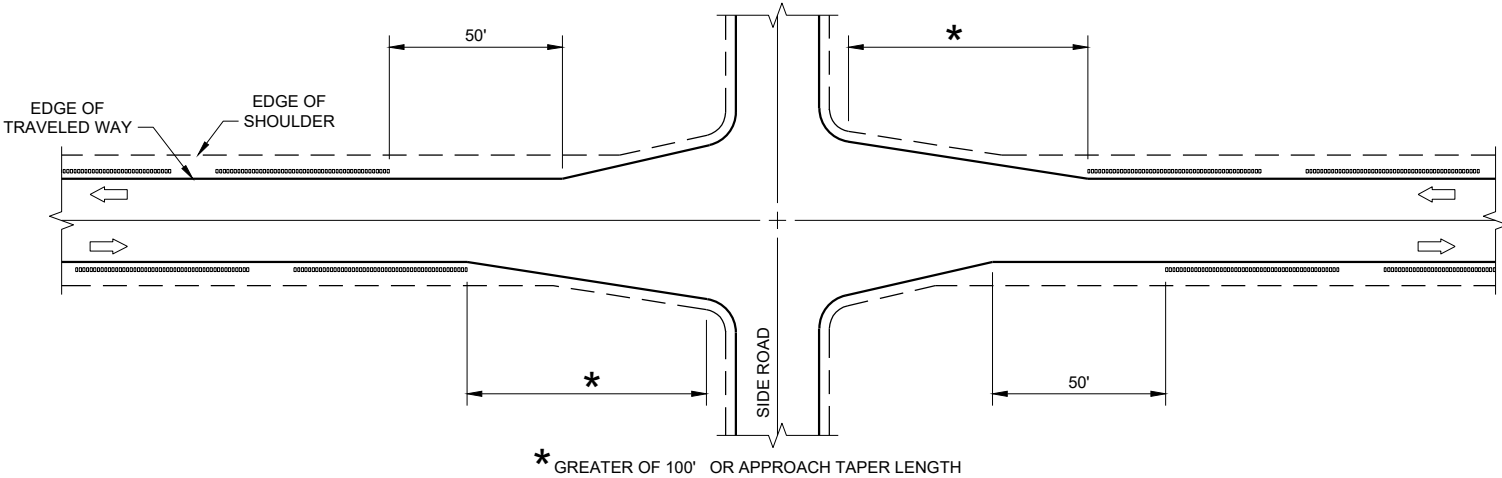
GROOVES AT MISCELLANEOUS CROSSINGS



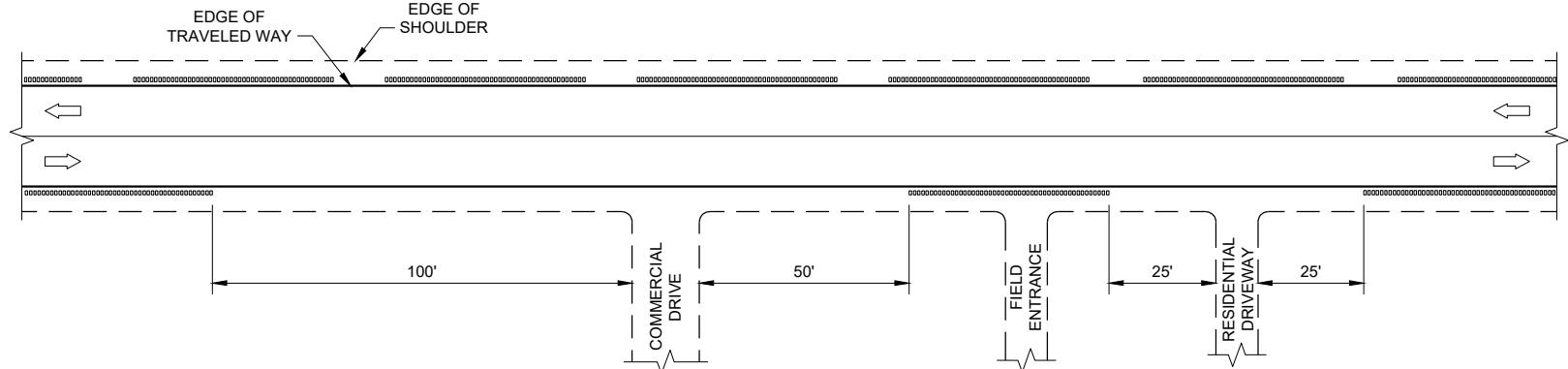
GROOVES AT BRIDGES



GROOVES AT RIGHT TURN LANE



GROOVES AT INTERSECTIONS WITH APPROACH TAPER



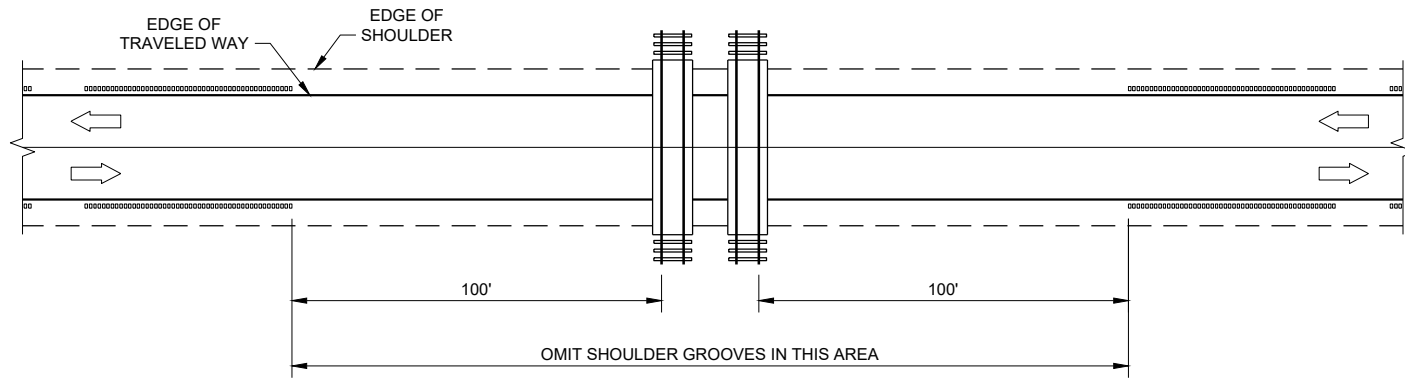
GROOVES AT DRIVEWAYS

GENERAL NOTES

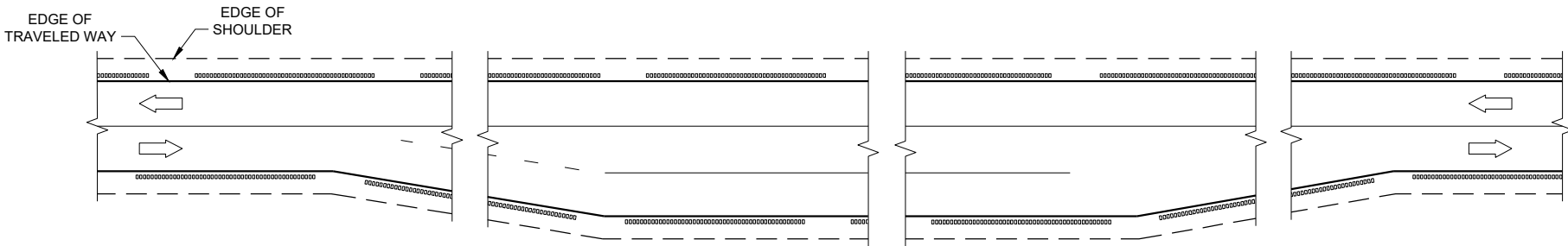
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

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

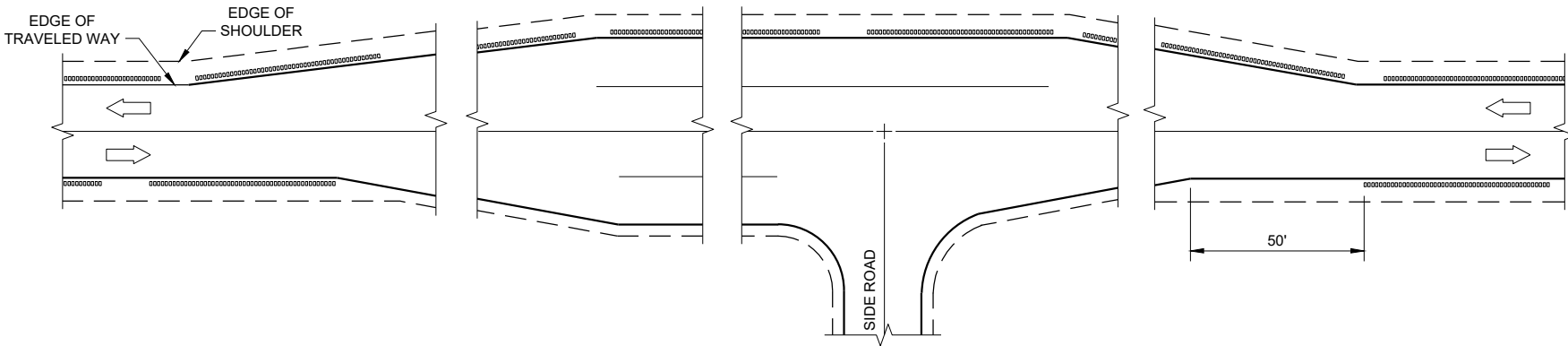
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GROOVES AT RAILROADS



GROOVES AT PASSING AND CLIMBING LANES

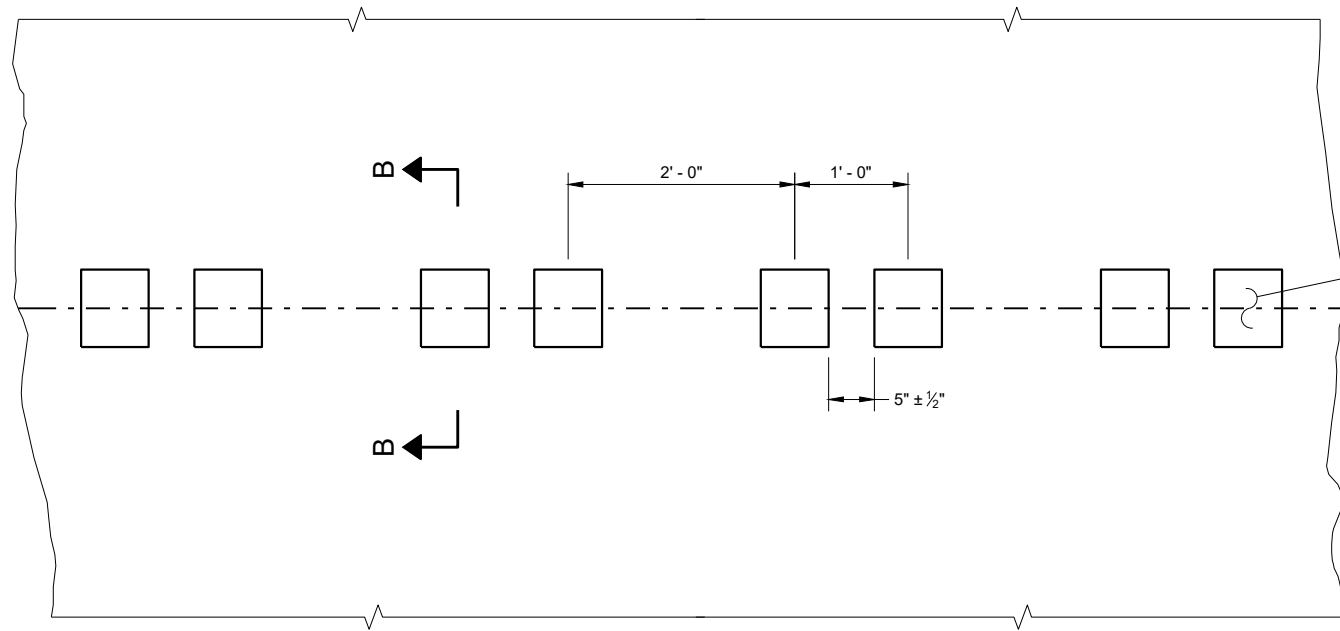


GROOVES AT BYPASS LANES

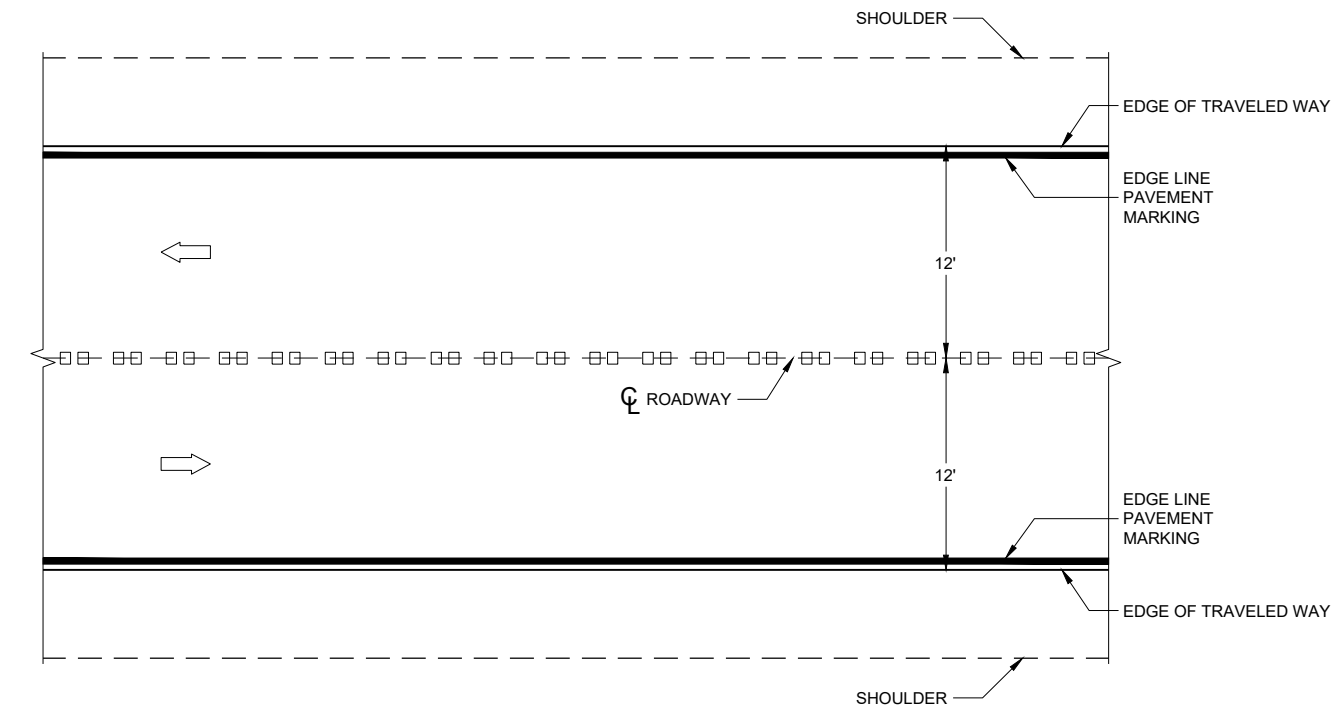
**SHOULDER AND EDGE LINE
RUMBLE STRIPS -
RAILROAD, PASSING,
CLIMBING AND BYPASS LANES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ John Jenkins
DATE ROADWAY STANDARDS DEVELOPMENT ENGINEER 74
FHWA

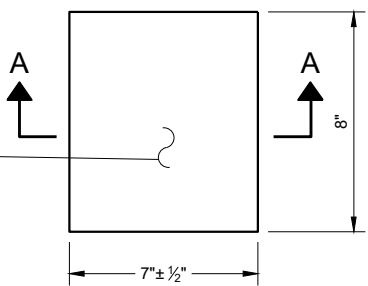


PLAN DETAIL VIEW

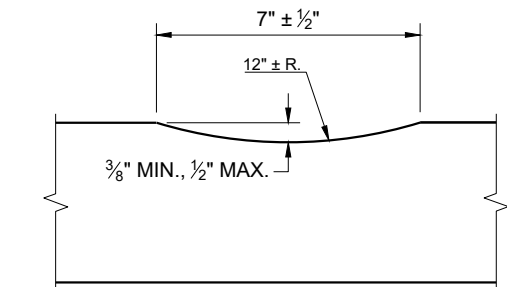


PLAN VIEW

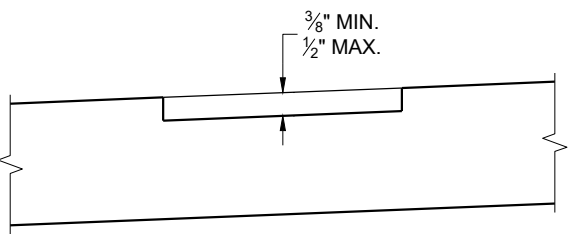
CENTERLINE RUMBLE STRIPS - ASPHALT



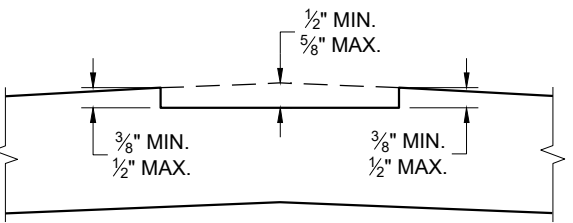
PLAN VIEW
(SINGLE GROOVE)



SECTION A - A



SECTION B - B
SUPERELEVATED ROADWAY

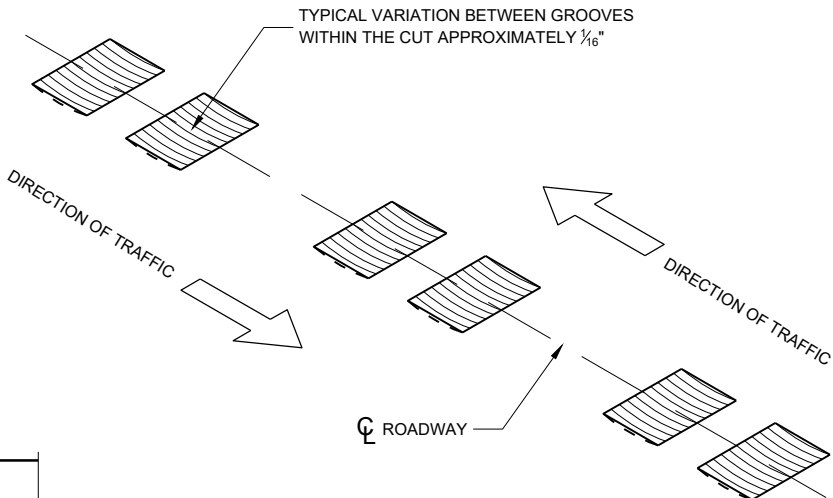


SECTION B - B
CROWNED ROADWAY

GENERAL NOTES

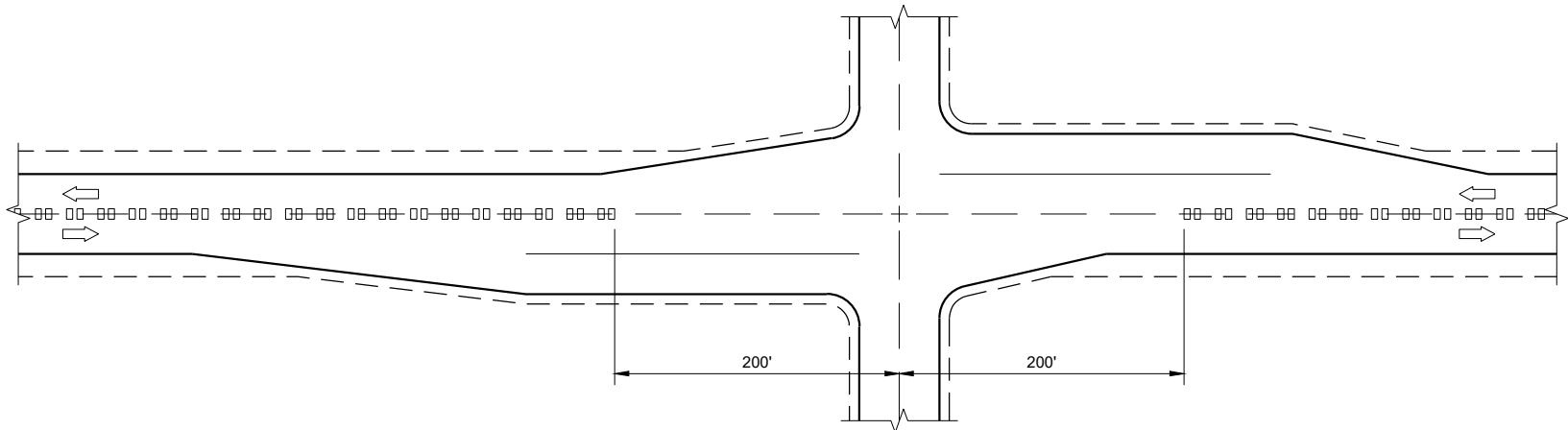
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

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

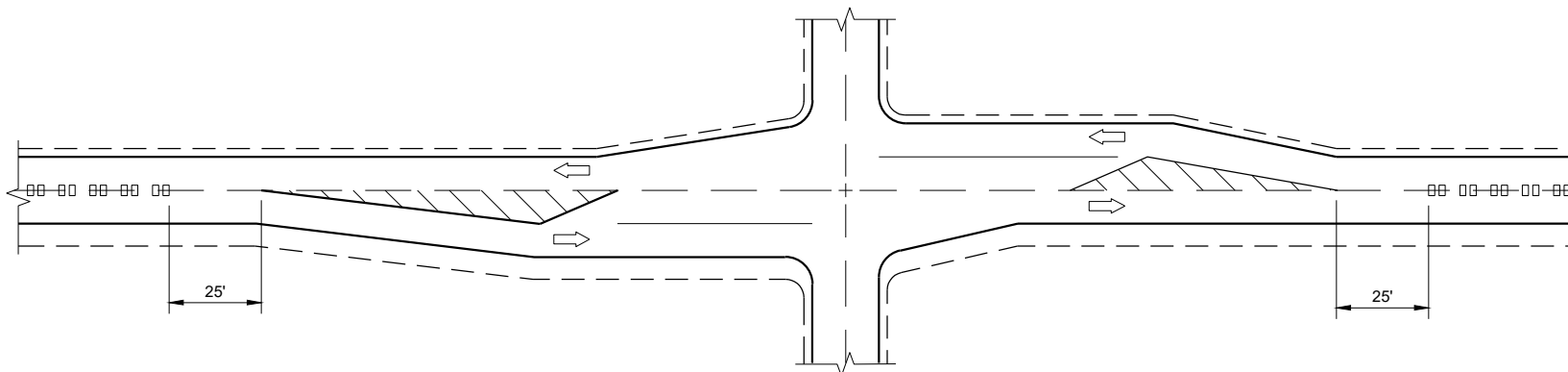


CENTERLINE RUMBLE
STRIPS - ASPHALT

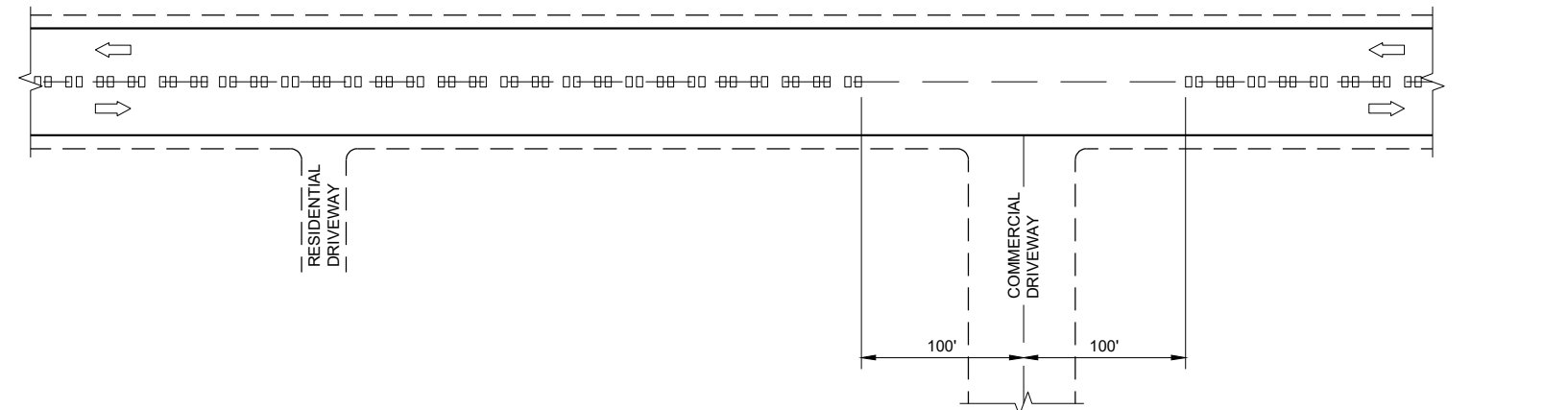
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



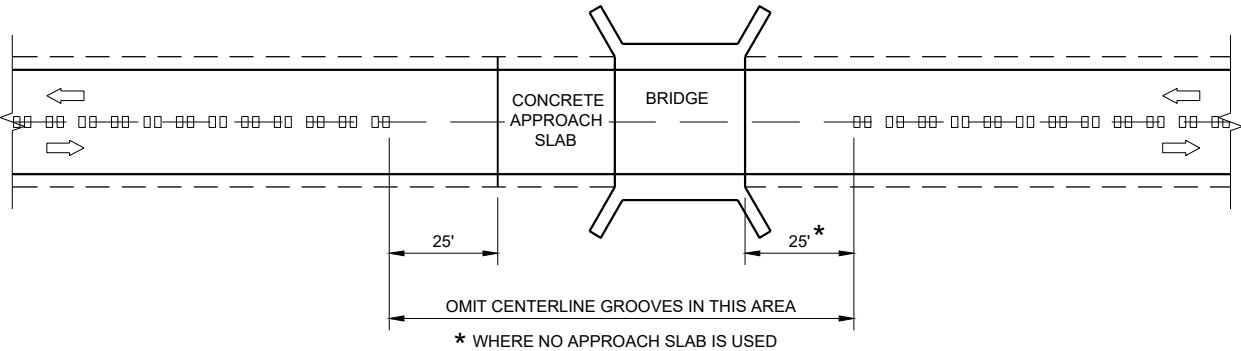
CENTERLINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)



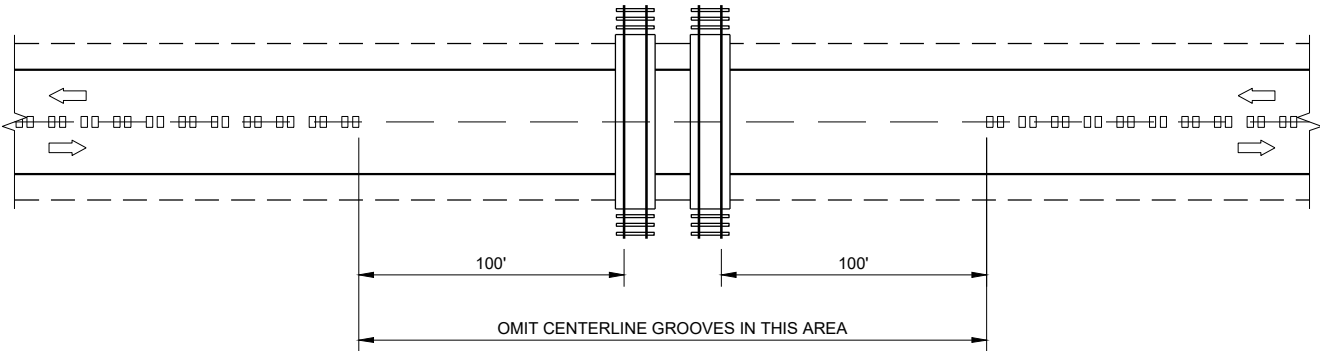
CENTERLINE GROOVES AT DRIVEWAYS^①

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES

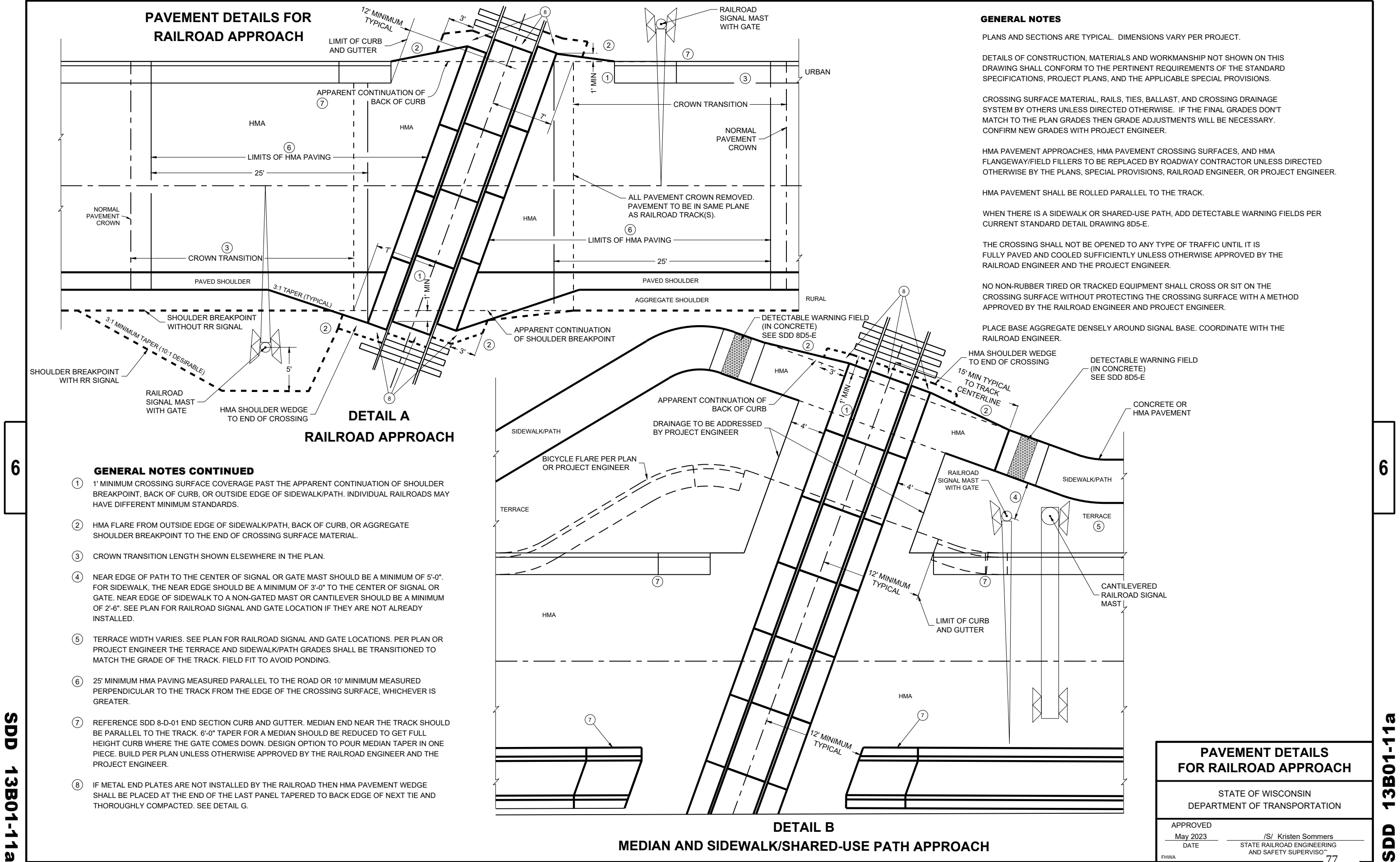


CENTERLINE GROOVES AT RAILROADS

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ John Jenkins
ROADWAY STANDARDS DEVELOPMENT
ENGINEER
76
FHWA



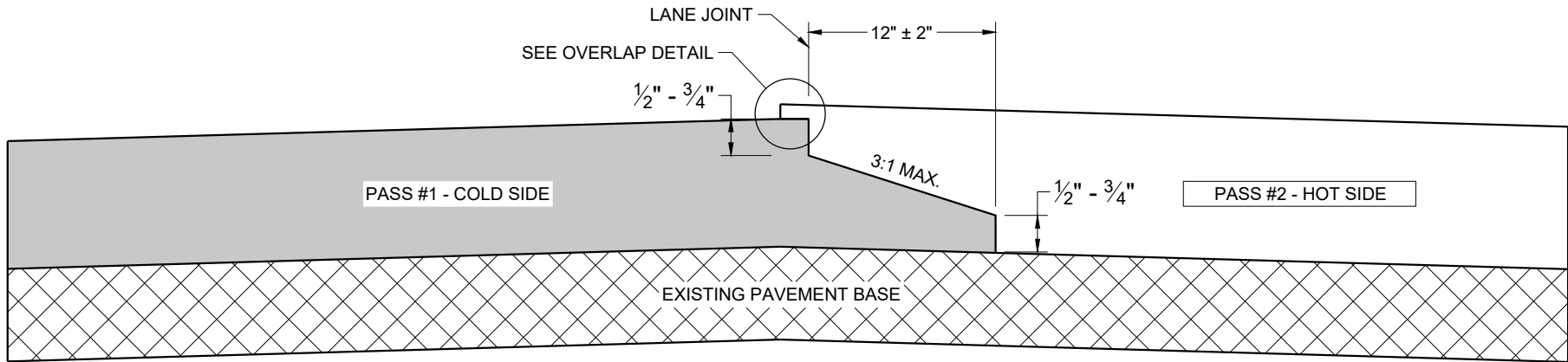
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SDD 13B01-11a

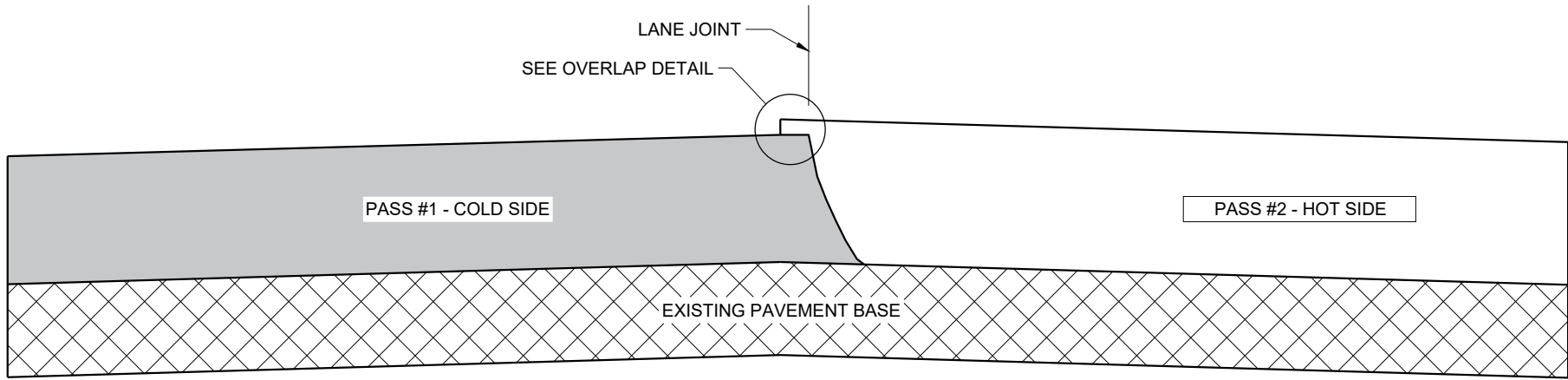
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SDD 13B01-11a

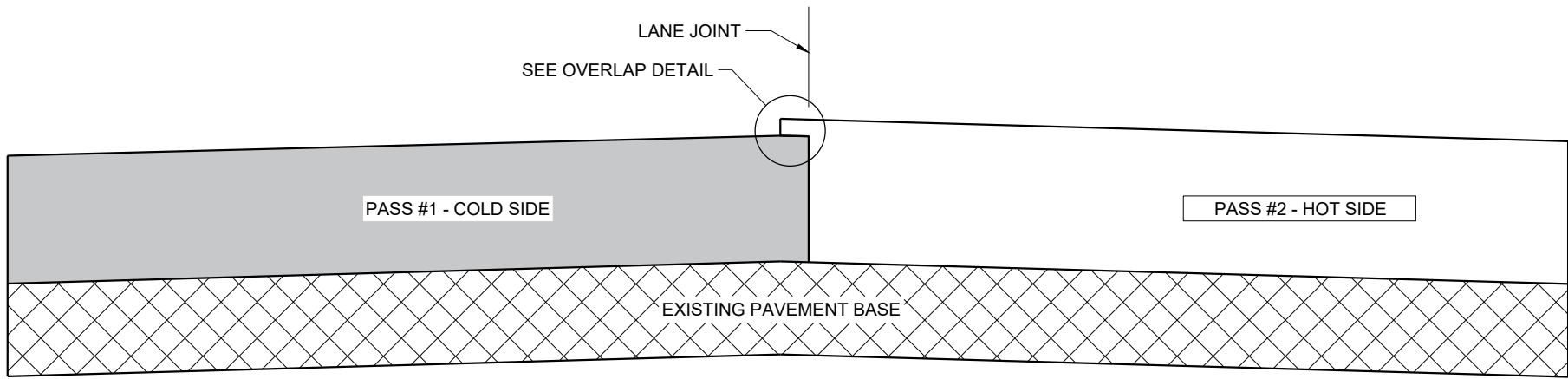
PAVEMENT DETAILS FOR RAILROAD APPROACH	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Kristen Sommers STATE RAILROAD ENGINEERING AND SAFETY SUPERVISOR
FHWA 77	



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

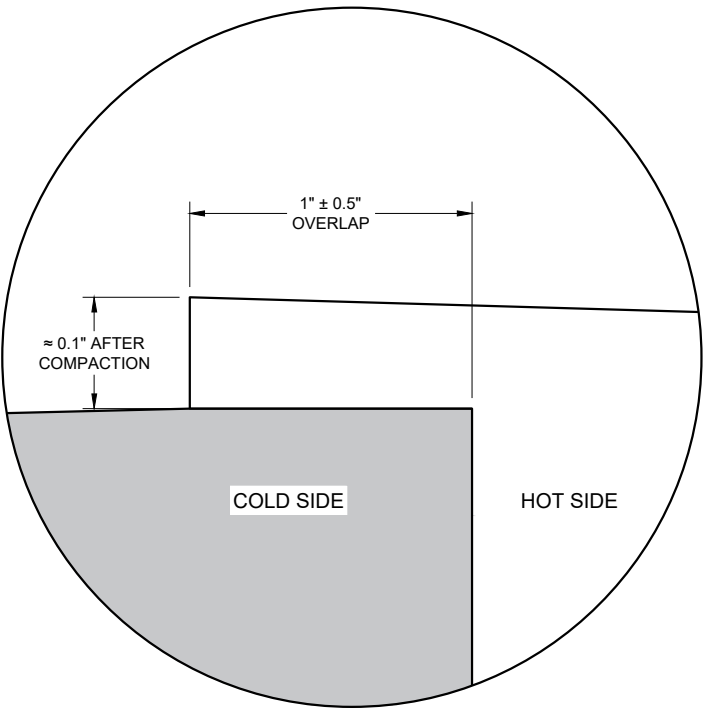
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



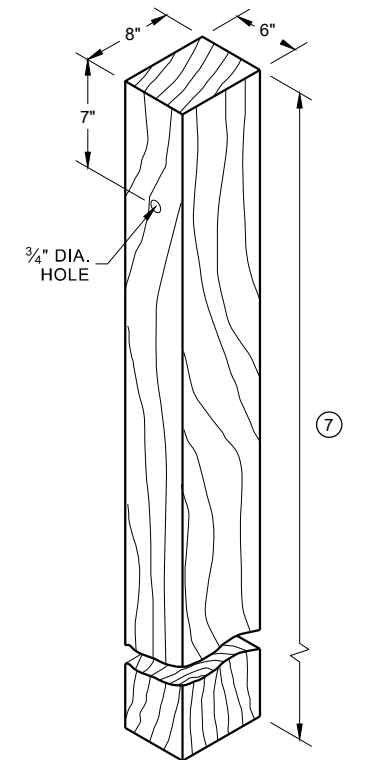
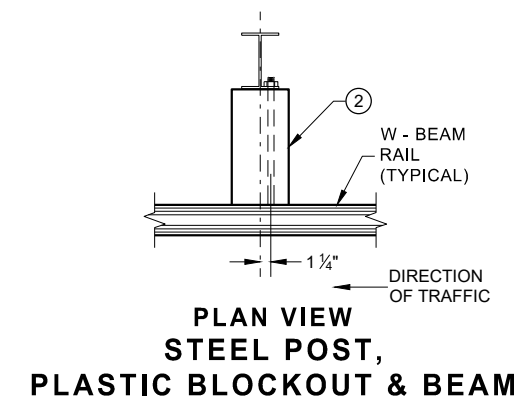
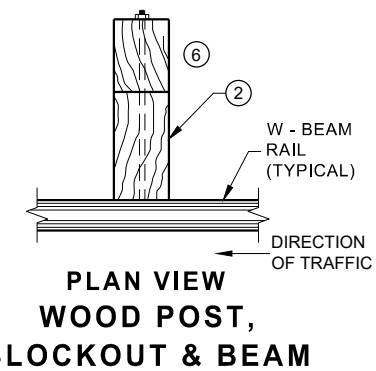
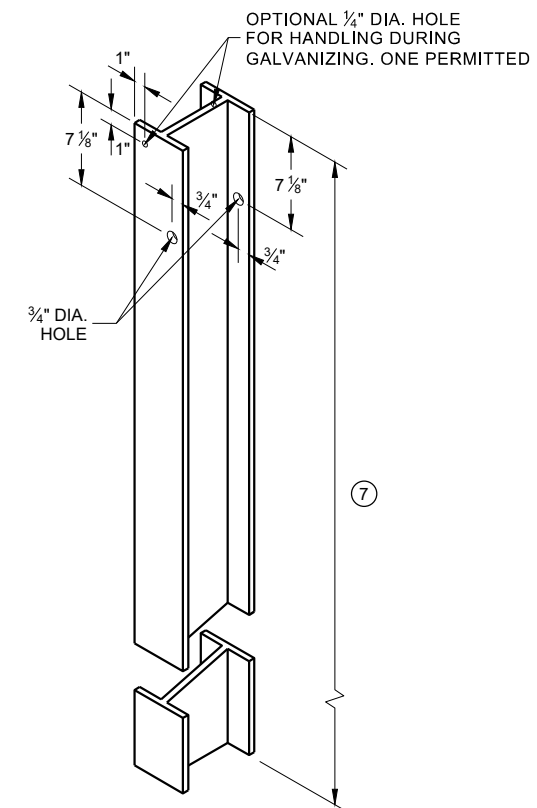
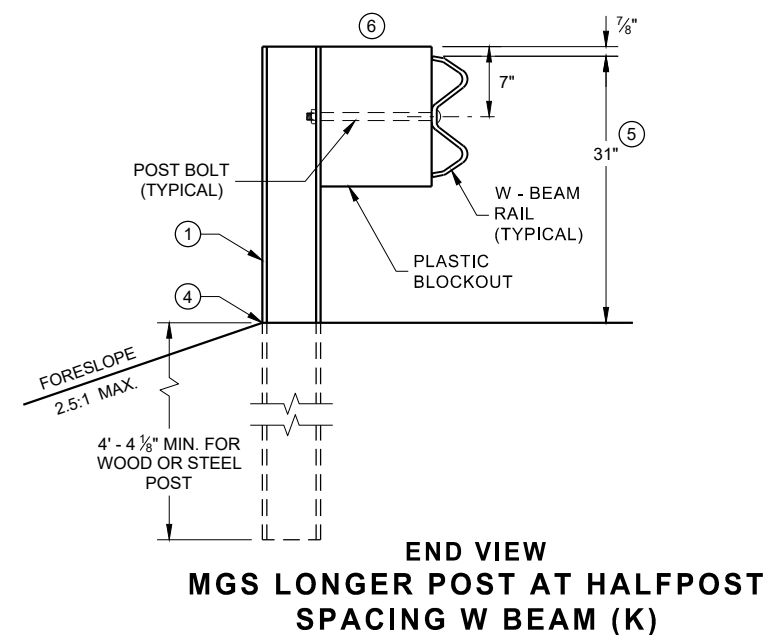
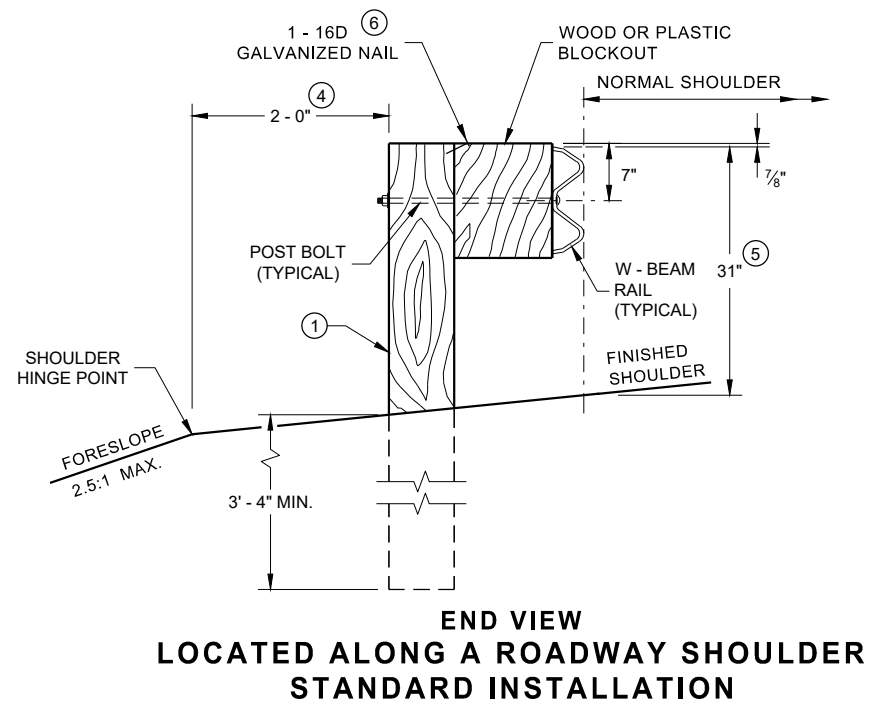
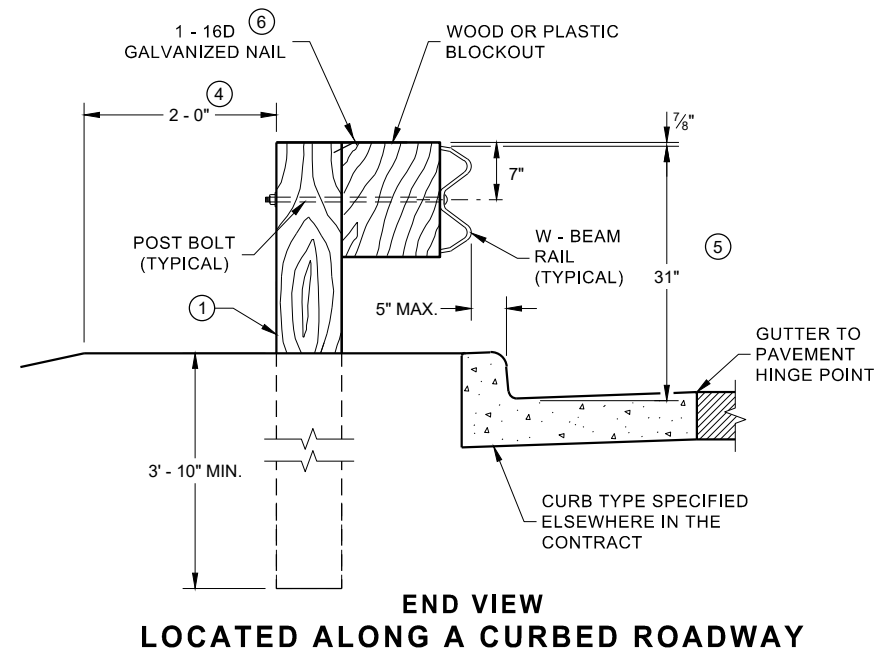
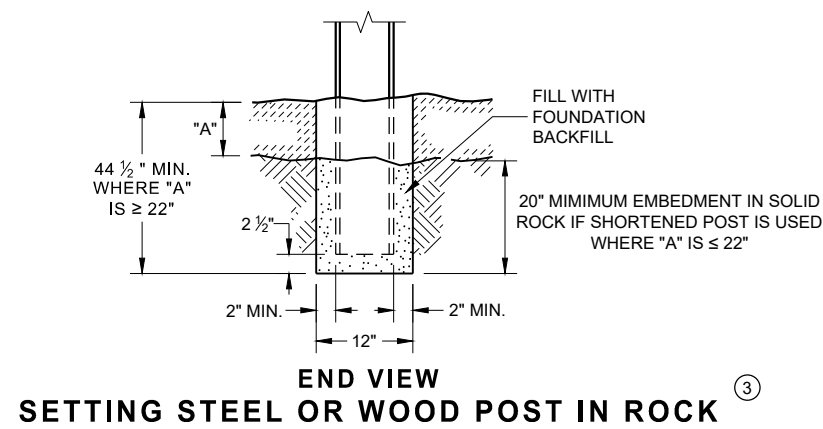
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

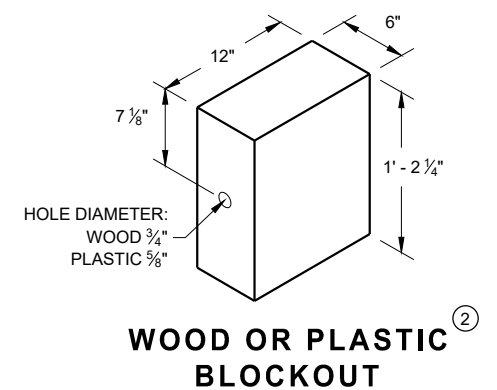
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 78
FHWA

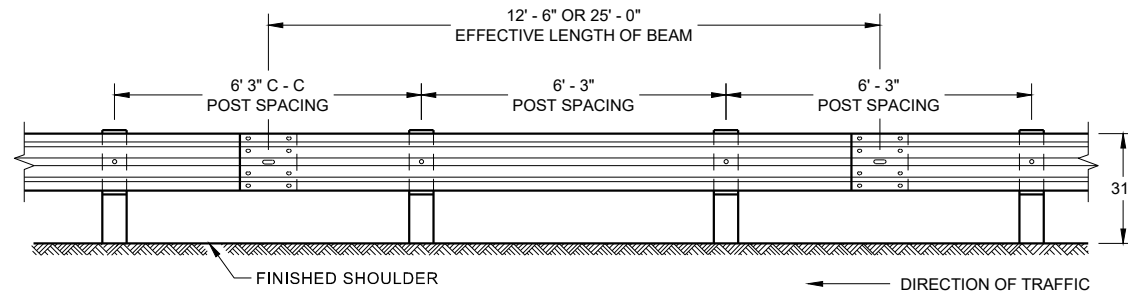
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE 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".



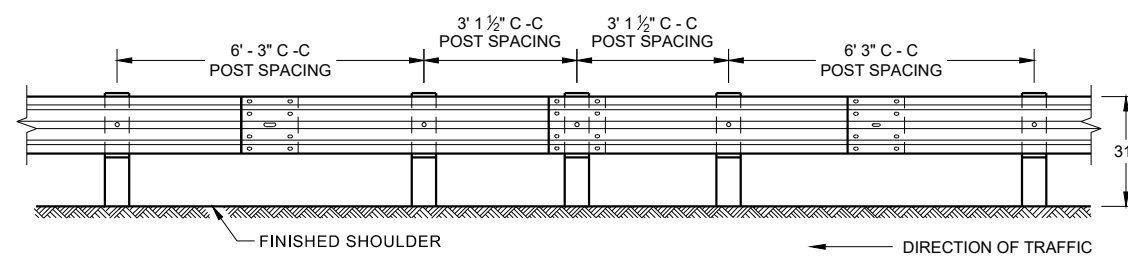
WOOD POST (6" X 8") NOMINAL ⁽¹⁾



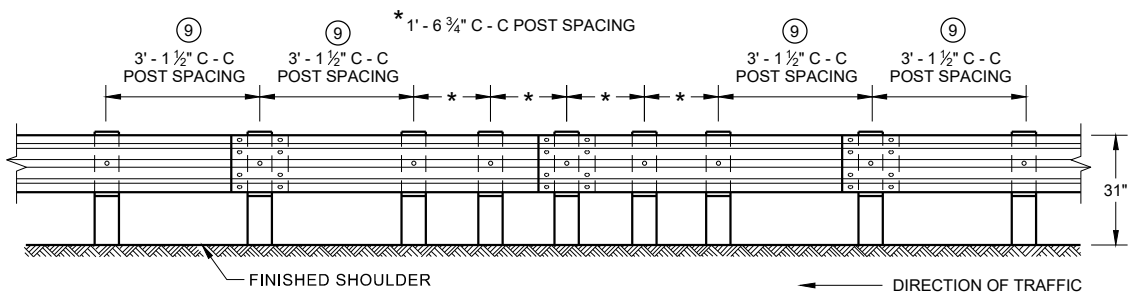
**WOOD OR PLASTIC
BLOCKOUT**



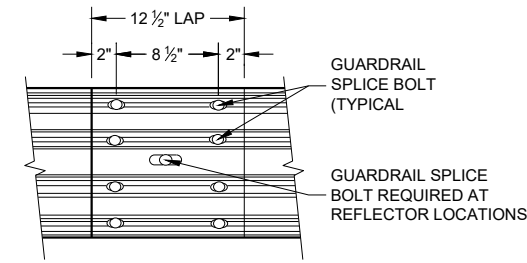
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



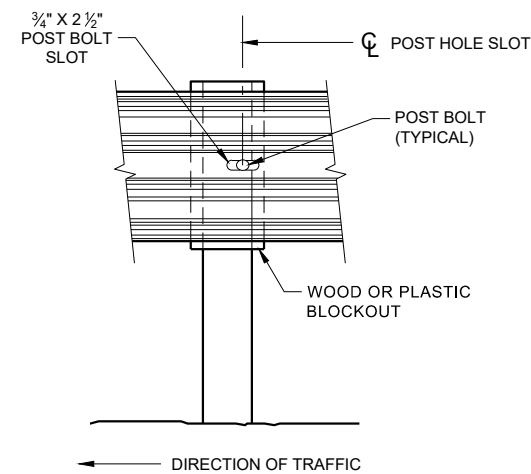
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



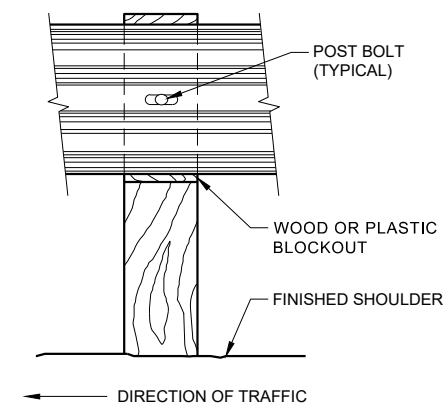
**FRONT VIEW
QUARTER POST SPACING (QS)**



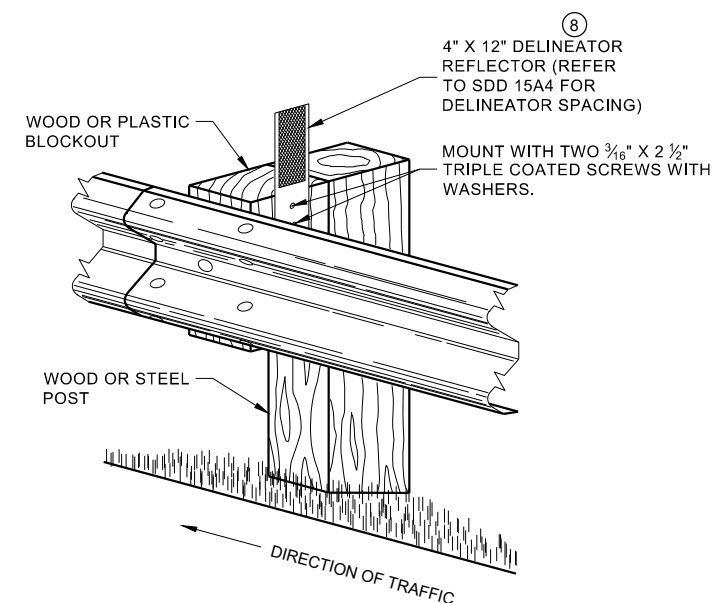
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



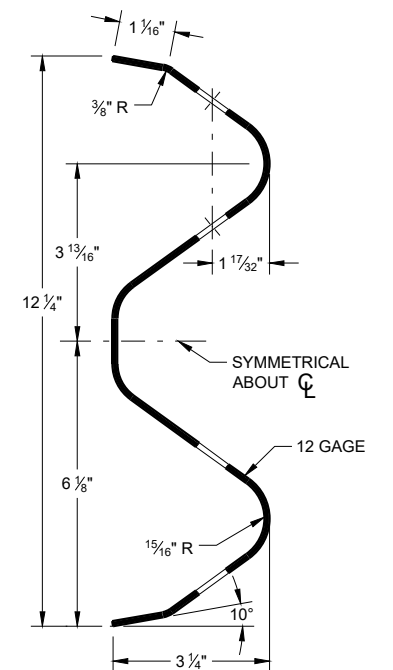
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

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

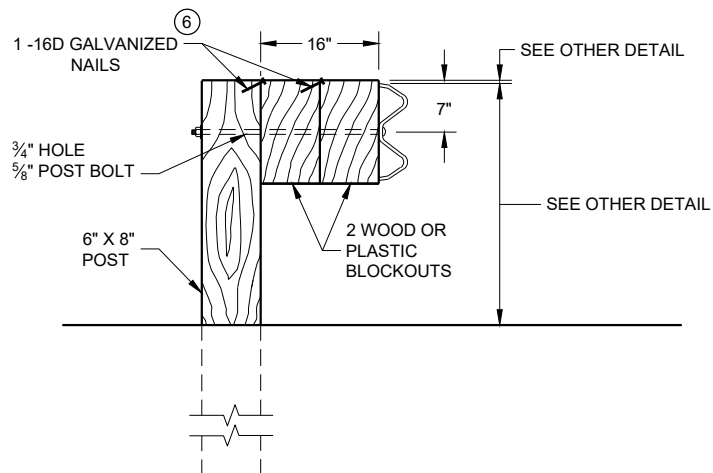
GUARD RAIL SPLICE BOLTS ARE A $\frac{3}{8}$ " DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES $\frac{3}{8}$ " DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



SECTION THRU W-BEAM RAIL

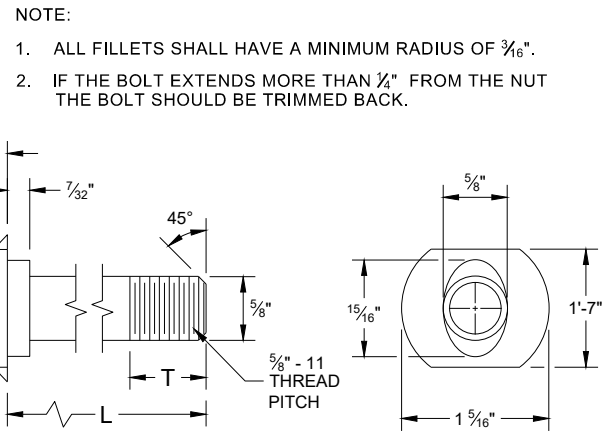
**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 80



DETAIL FOR 16" BLOCKOUT DEPTH

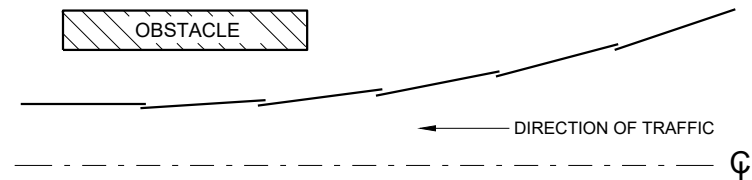
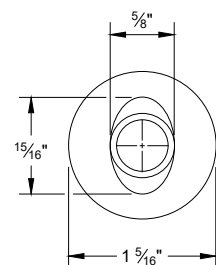
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



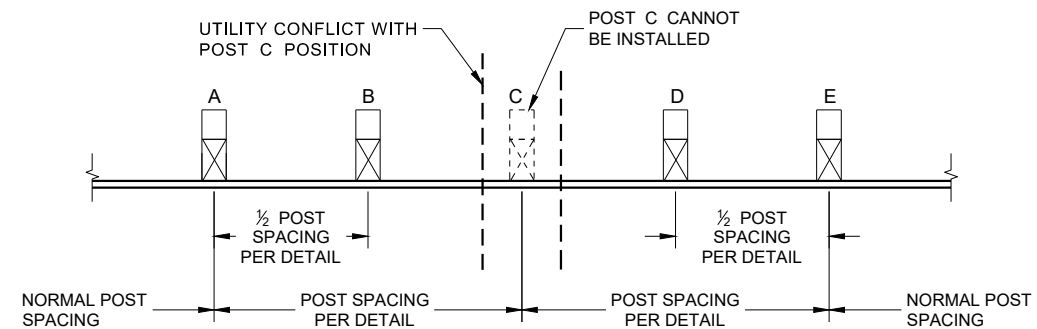
POST BOLT TABLE

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"

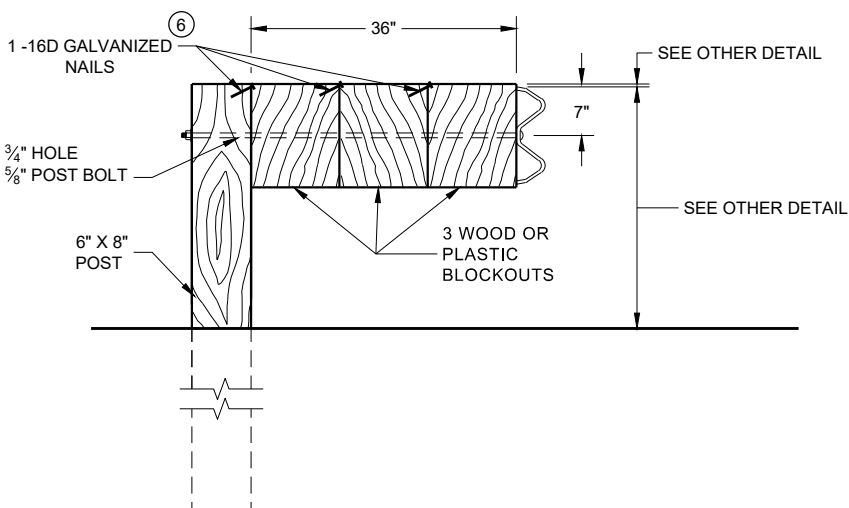
ALTERNATE BOLT HEAD



PLAN VIEW
BEAM LAPPING DETAIL

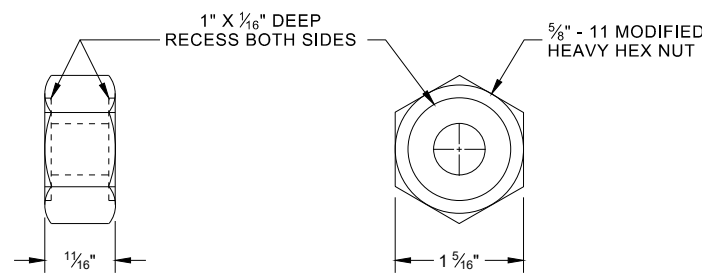


POST DRIVING FOR CONTINUOUS
UNDERGROUND OBSTRUCTION

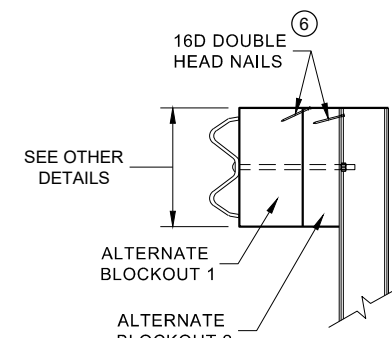


DETAIL FOR 36" BLOCKOUT DEPTH

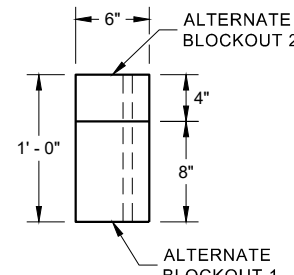
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT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



POST BOLT, SPLICE BOLT
AND RECESS NUT



SIDE VIEW



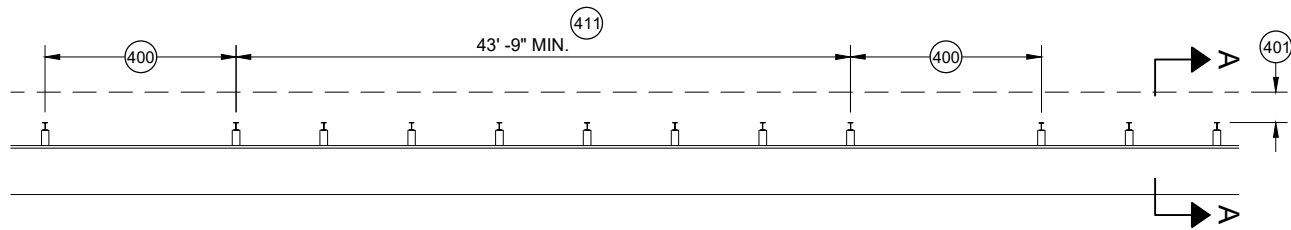
PLAN VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

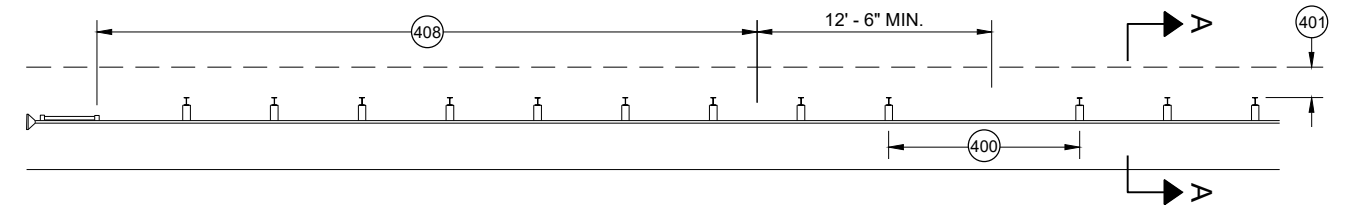
6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.

MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL

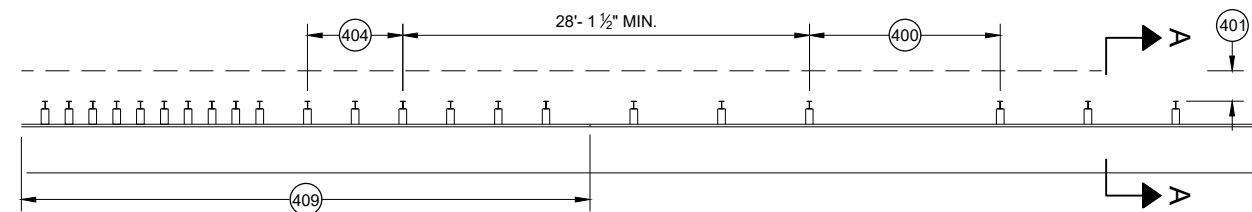
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



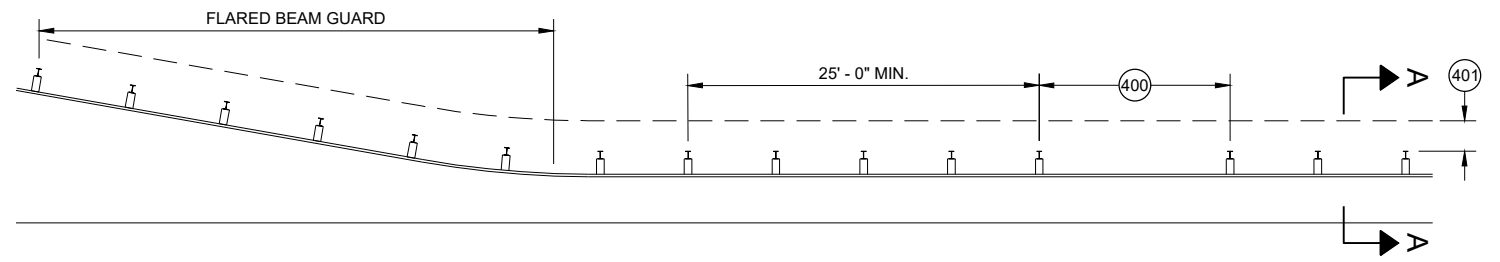
MISSING POST IN MGS GUARDRAIL



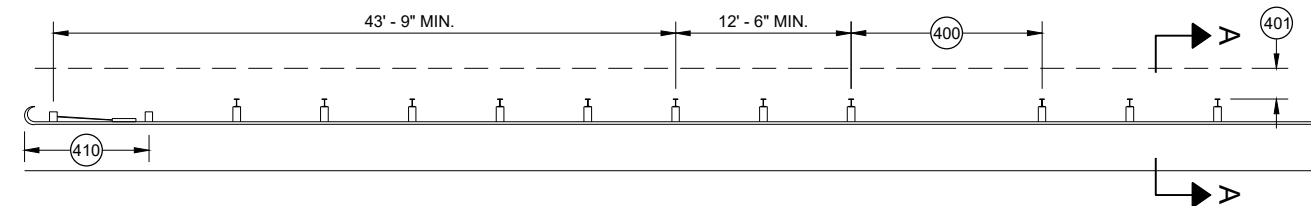
MISSING POST IN MGS GUARDRAIL NEAR EAT



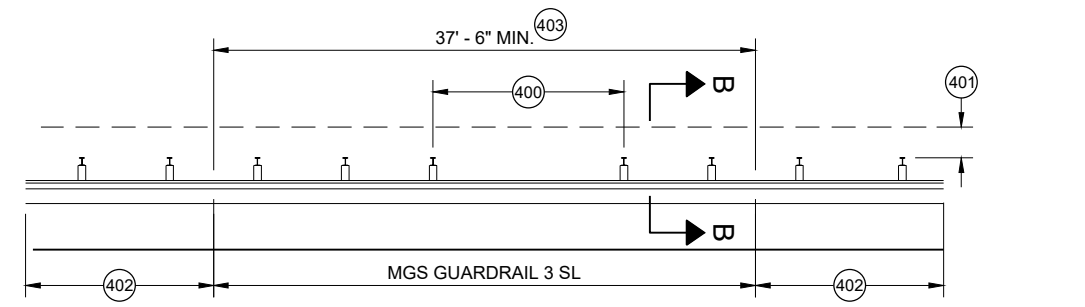
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

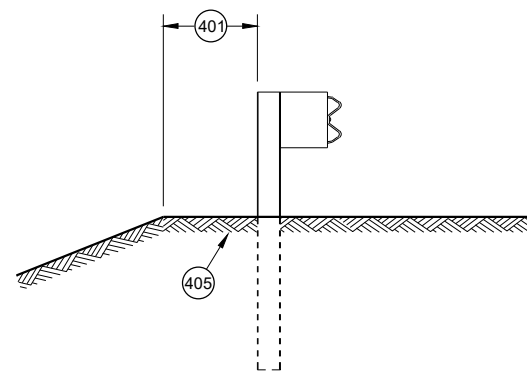


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

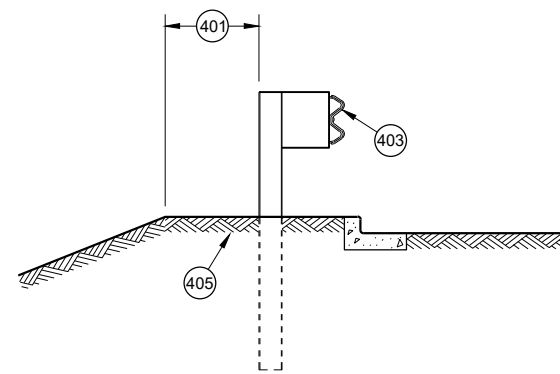


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (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
FHWA 82	

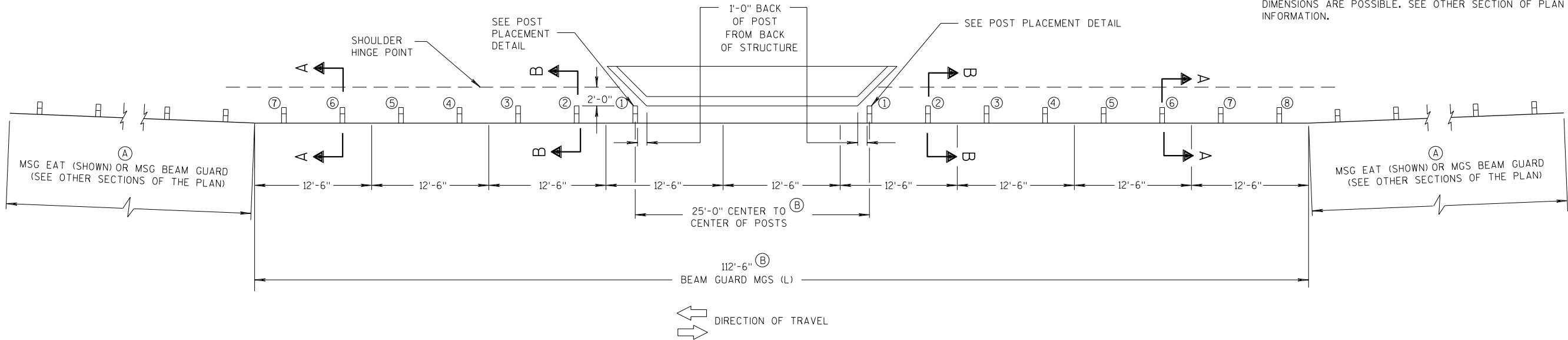
GENERAL NOTES

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

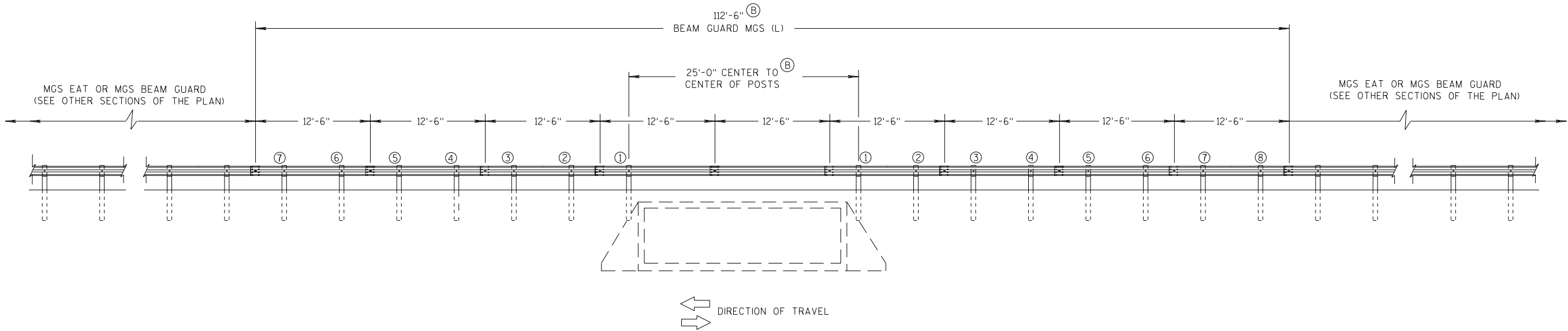
SEE SDD 14 B 42 FOR MORE DETAILS.

(A) FLARE FOR MGS EAT SHOWN, IF INSTALLING MGS NO FLARE NEEDED.

(B) VALUES SHOWN ON DRAWING REPRESENT THE MAXIMUM LENGTH. SHORTER DIMENSIONS ARE POSSIBLE. SEE OTHER SECTION OF PLAN FOR MORE INFORMATION.



PLAN VIEW



ELEVATION VIEW

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

MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

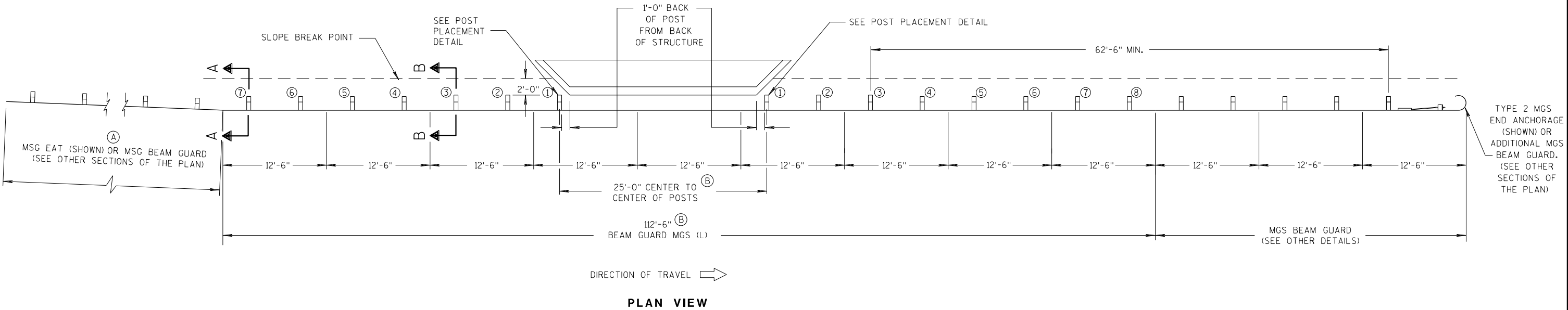
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

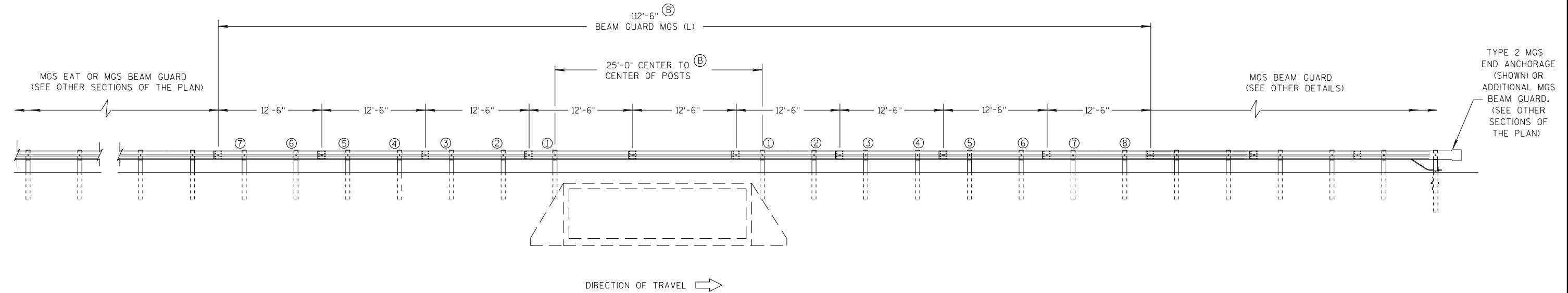
POSTS 1 THROUGH 3 ARE CRT POSTS.
ALL OTHER POSTS SHALL BE WOOD OR STEEL.

SEE SDD 14 B 42 FOR MORE DETAILS.

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



PLAN VIEW

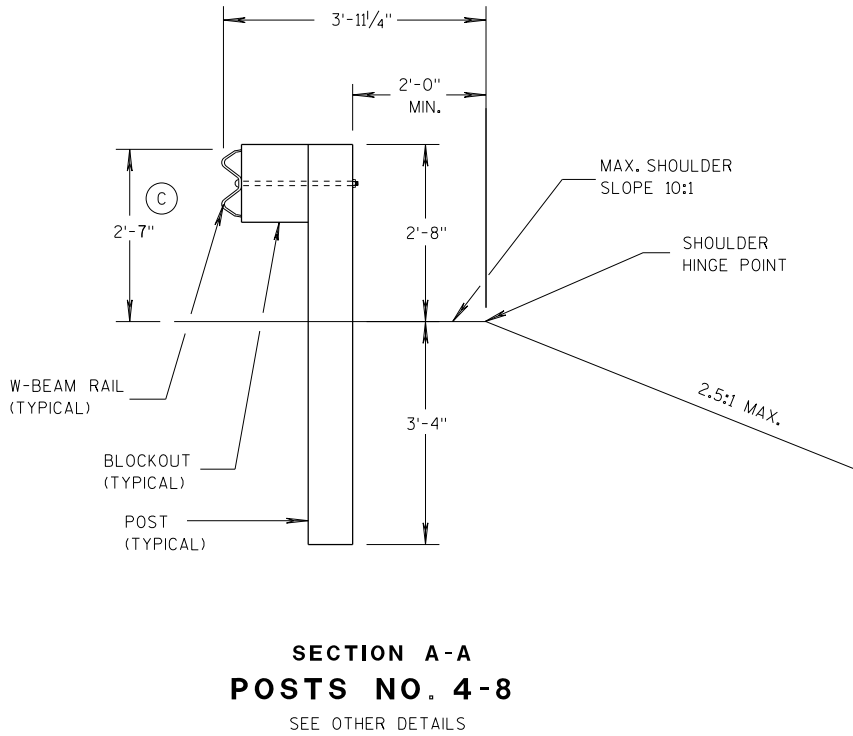
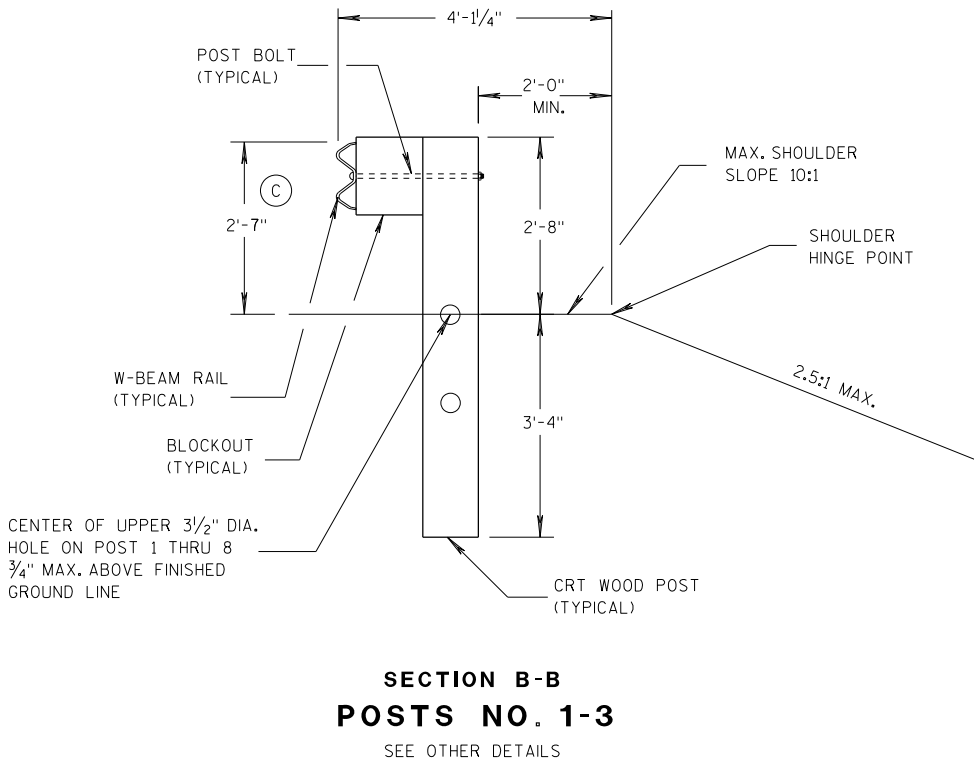
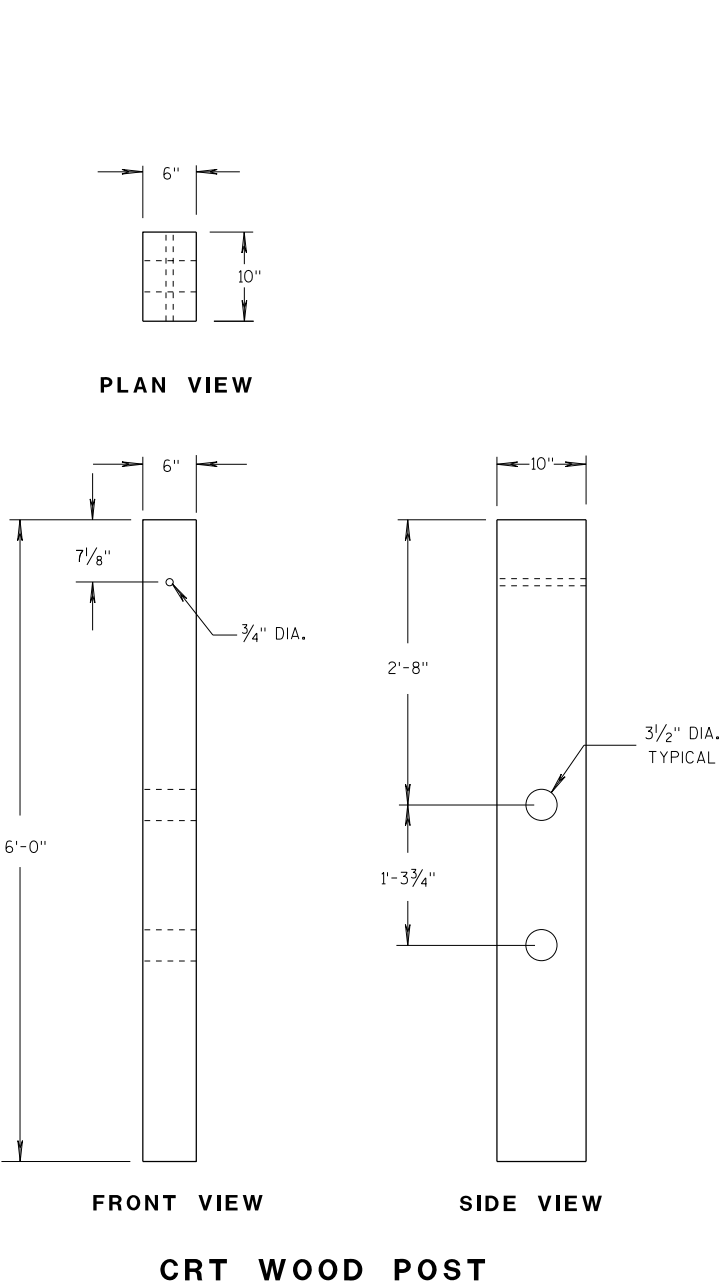


ELEVATION VIEW

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

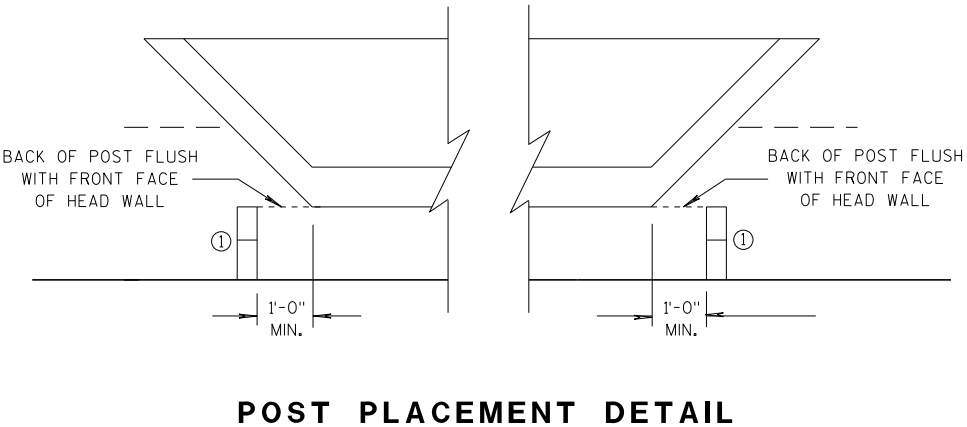
MIDWEST GUARDRAIL SYSTEM
LONG SPAN MGS (L)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

(C) TOLERANCE FOR TOP OF W-BEAM RAIL IS ± 1".



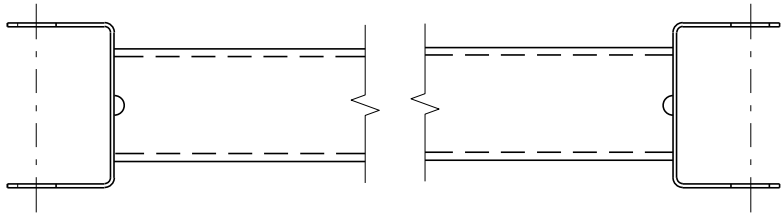
MIDWEST GUARDRAIL SYSTEM LONG SPAN MGS (L)		
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION		
APPROVED DATE 07/2018	/S/ Rodney Taylor ROADWAY STANDARDS ENGINEER	85 NT
FHWA		

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

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

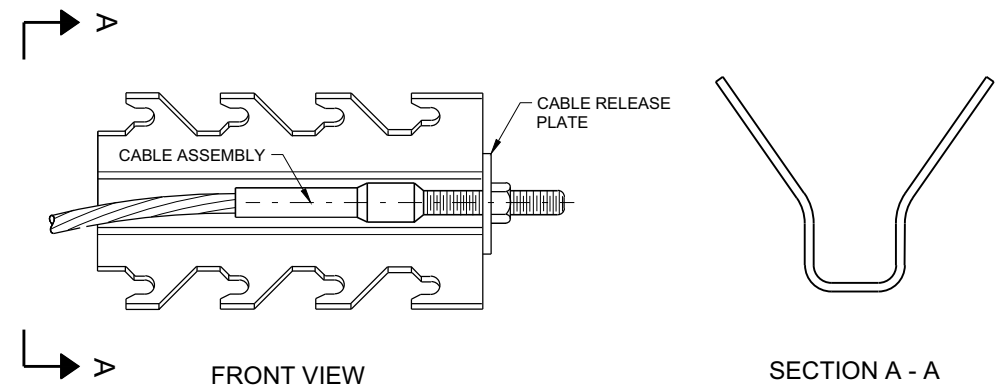
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 186

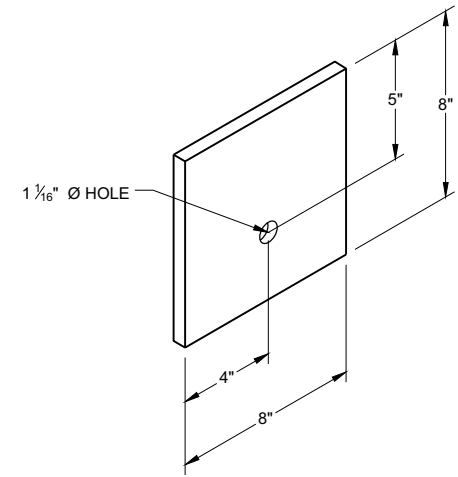


GENERIC GROUND STRUT ⁹ ^E

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



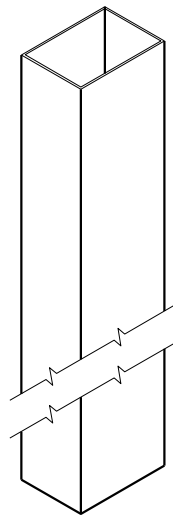
GENERIC ANCHOR CABLE BOX ⁹ ^E



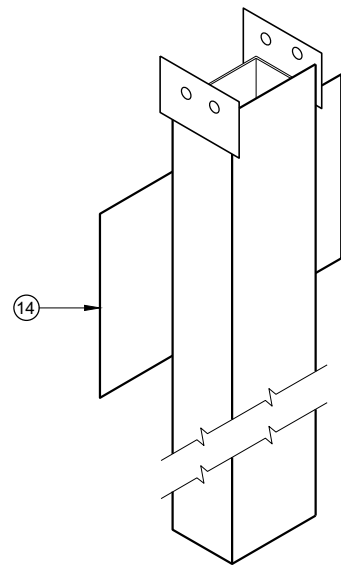
BEARING PLATE ⁶ ^E

MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)

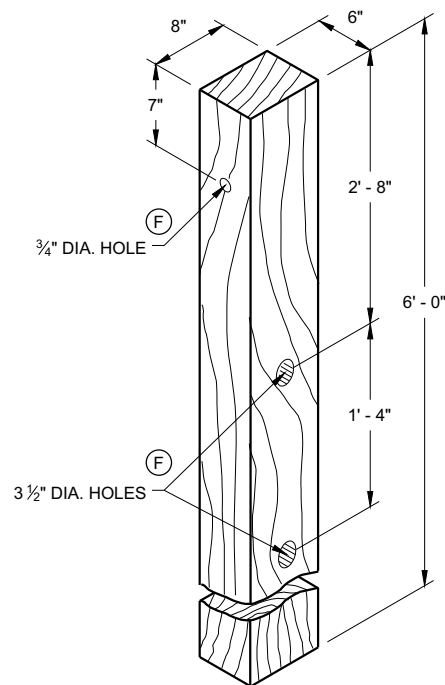
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



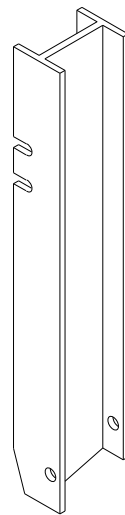
UPPER POST NO. 1 ⁽¹⁾ (E)



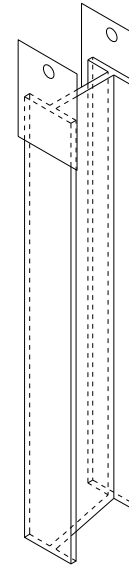
LOWER POST NO. 1 ⁽²⁾ (E)



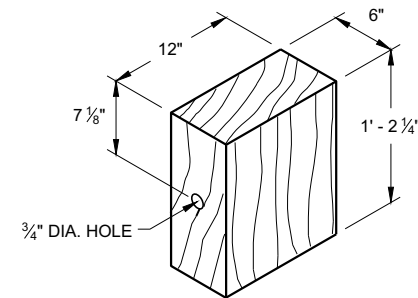
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



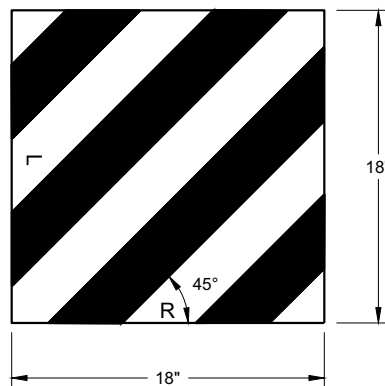
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



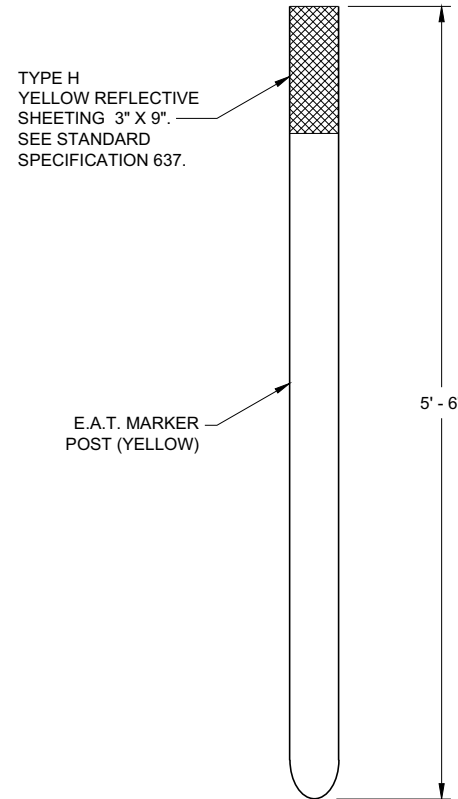
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



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



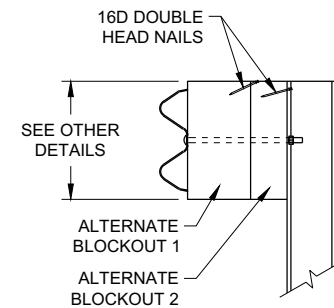
REFLECTIVE SHEETING DETAIL ^(E)



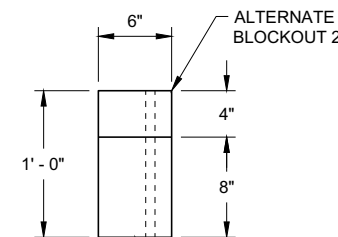
FRONT VIEW

SIDE VIEW

E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW



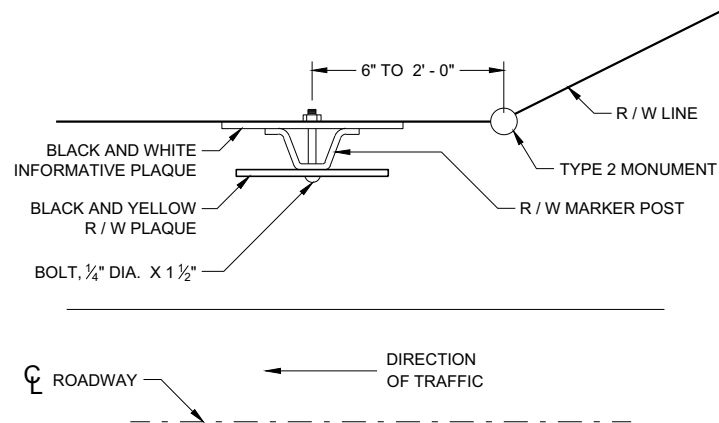
TOP VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

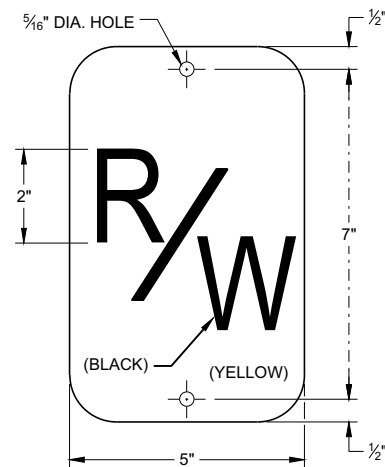
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA 88

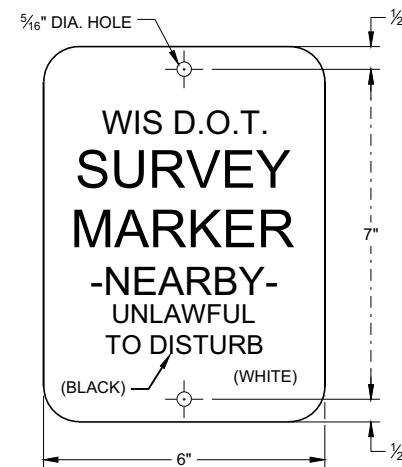


**PLAN VIEW
STEEL MARKER POST**



R / W PLAQUE

THE RIGHT-OF-WAY PLAQUE AND INFORMATIVE PLAQUE WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.



INFORMATIVE PLAQUE

GENERAL NOTES

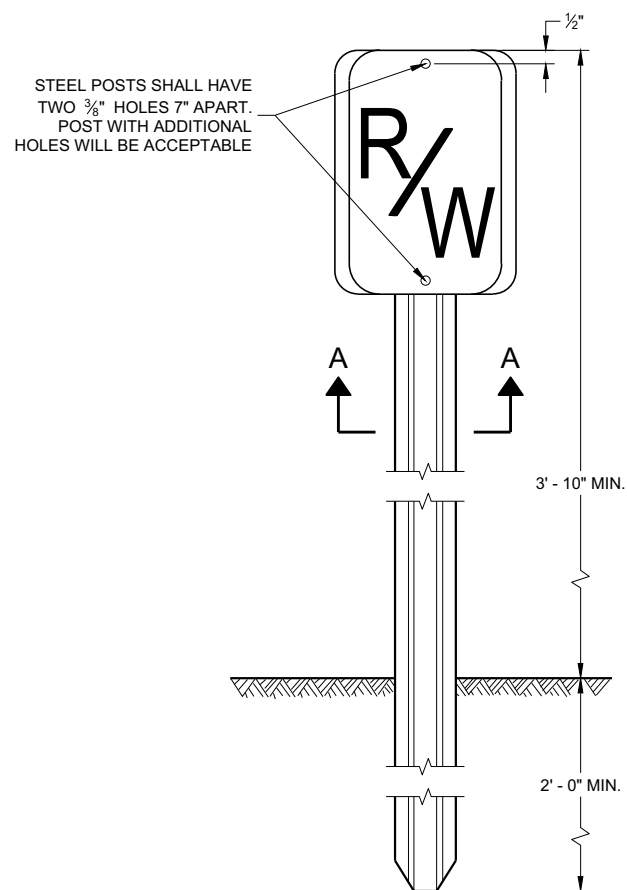
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

A STEEL MARKER POST FOR RIGHT -OF-WAY SHALL BE PLACED IN THE RIGHT-OF-WAY WITH THE BACK OF THE POST ON THE LONGER RIGHT-OF-WAY TANGENT, 6 INCHES TO 24 INCHES FROM EACH TYPE 2 MONUMENT TO SERVE AS A GUARD POST, AND AT OTHER LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

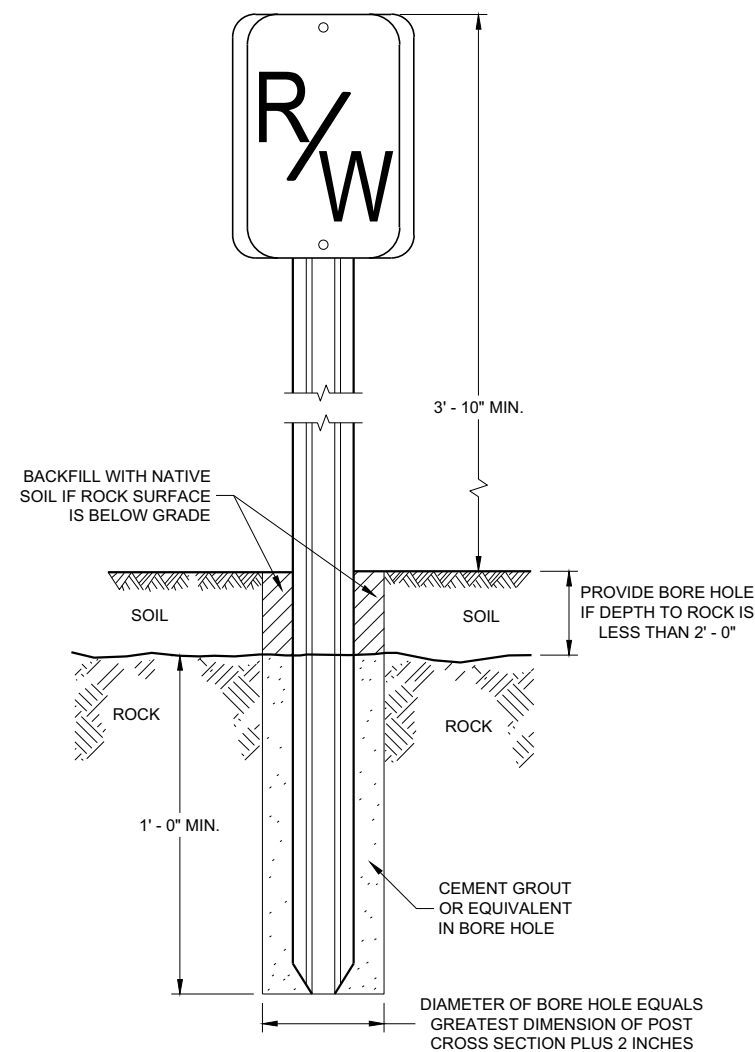
THE "R/W" PLAQUE SHALL FACE THE ROADWAY AND THE INFORMATIVE PLAQUE SHALL FACE AWAY FROM THE ROADWAY. "R/W" AND INFORMATIVE PLAQUES WILL BE FURNISHED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.

STEEL MARKER POSTS SHALL MEET THE MINIMUM MATERIAL REQUIREMENTS FOR STEEL DELINEATOR POSTS; EXCEPT POSTS PAINTED WITH FEDERAL YELLOW ENAMEL NEED NOT BE ZINC COATED.

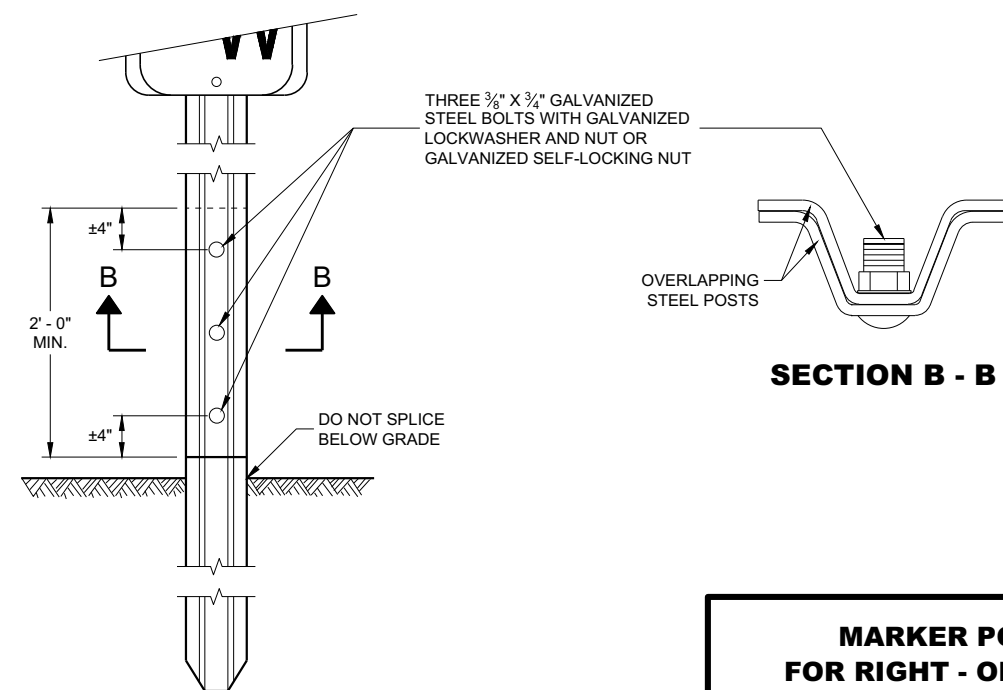
- ① IN AREAS OF SOLID ROCK, DRILL A BORE HOLE 2" GREATER THAN THE WIDEST DIMENSION OF THE POST CROSS SECTION INTO THE ROCK A MINIMUM DEPTH OF 12 INCHES. CUT OR SPLICE THE POST SO THAT A MINIMUM LENGTH OF 3' - 10" PROTRUDES ABOVE THE GROUND. BLOW OUT THE BORE HOLE IN THE ROCK USING COMPRESSED AIR. FILL THE BORE HOLE WITH CEMENT GROUT OR EQUIVALENT, DEPENDING ON THE STABILITY OF THE ROCK.



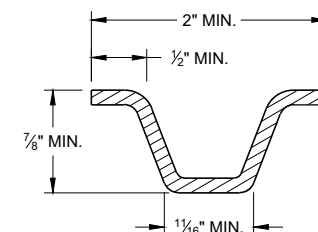
**FRONT VIEW
STEEL MARKER POST**



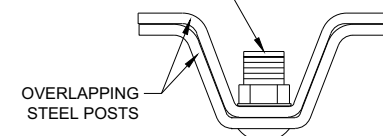
**FRONT VIEW
ROCK INSTALLATION** ①



**FRONT VIEW
SPLICE DETAIL**



MIN. WEIGHT 1.12 LB./FT.
SECTION A - A



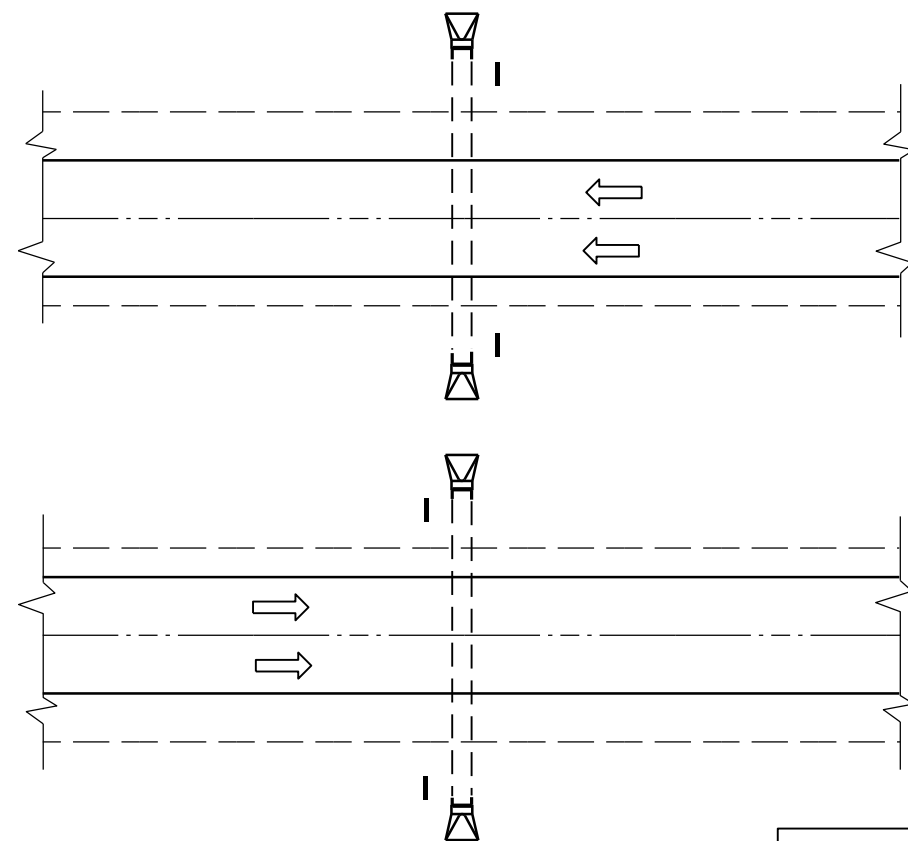
SECTION B - B

MARKER POST FOR RIGHT - OF - WAY

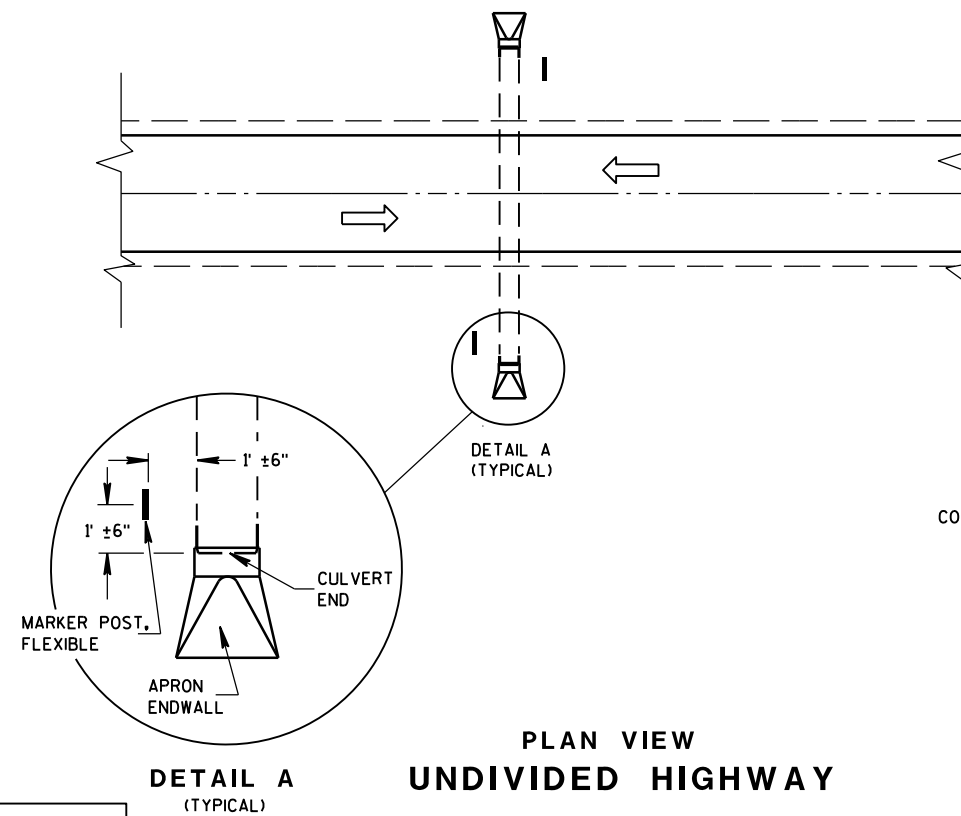
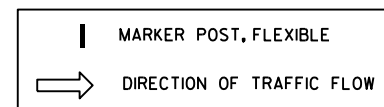
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
2/18/2016
DATE
/S/ Ray Kumapayi
CHIEF SURVEYING AND MAPPING ENGINEER
89

FHWA



PLAN VIEW
DIVIDED HIGHWAY

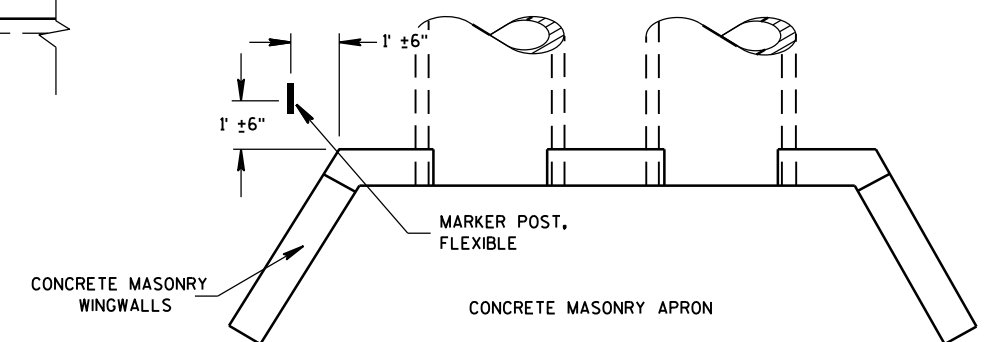


PLAN VIEW
UNDIVIDED HIGHWAY

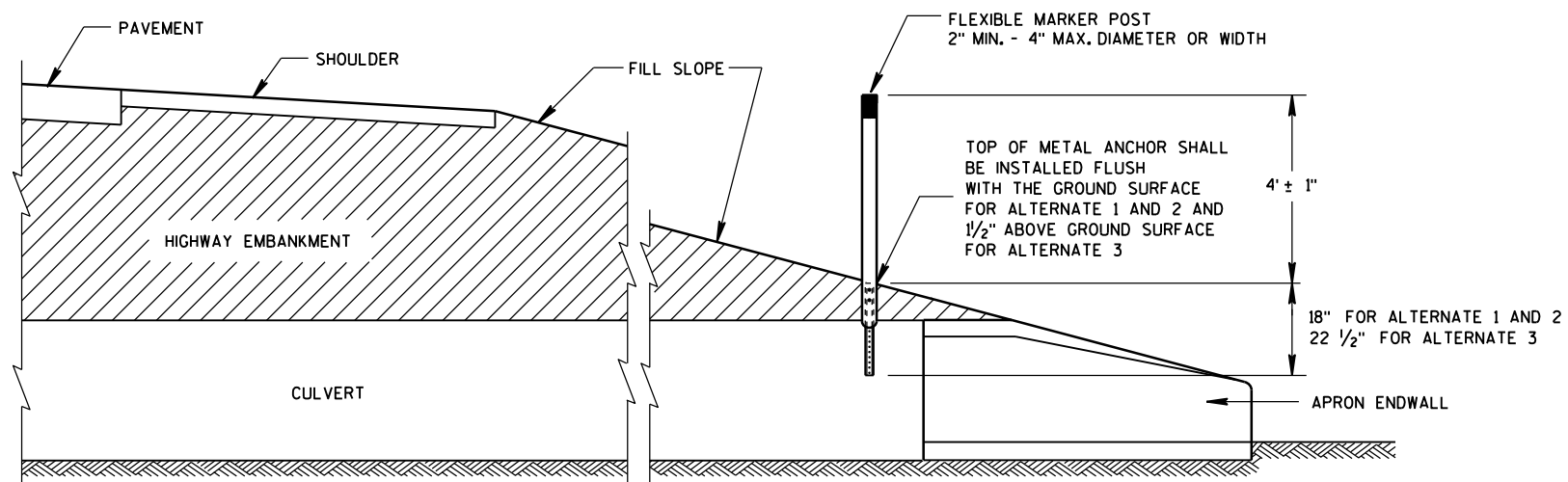
FLEXIBLE MARKER POST LOCATION

GENERAL NOTES

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



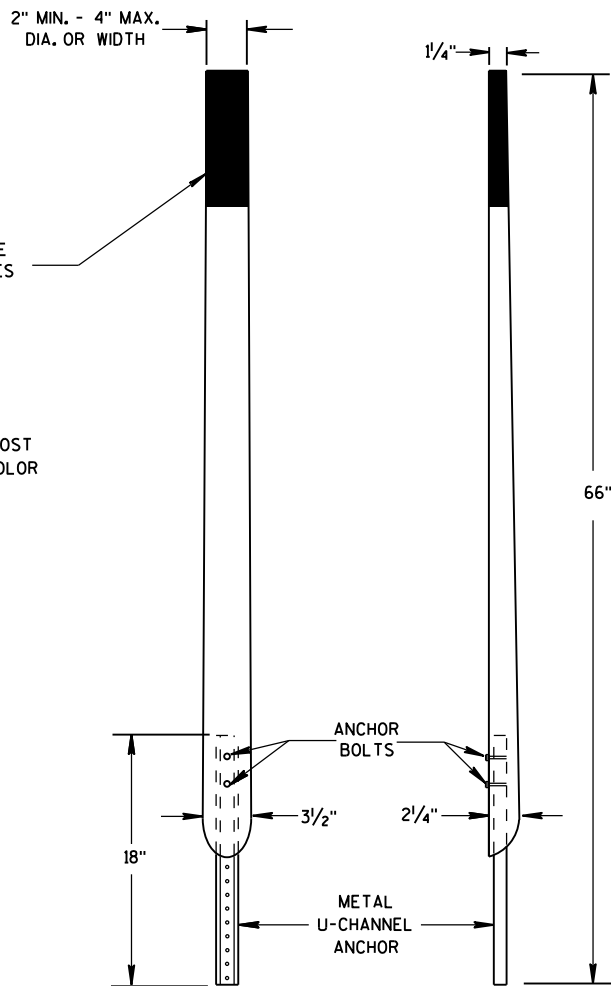
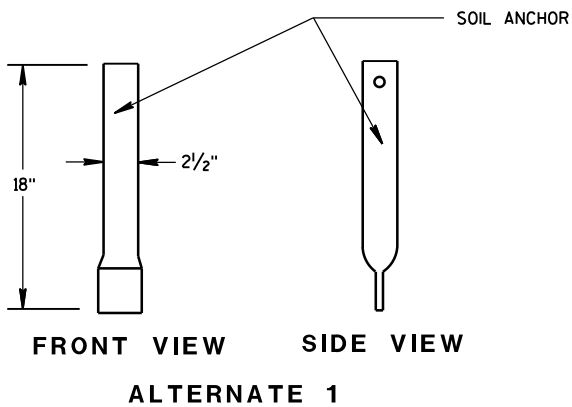
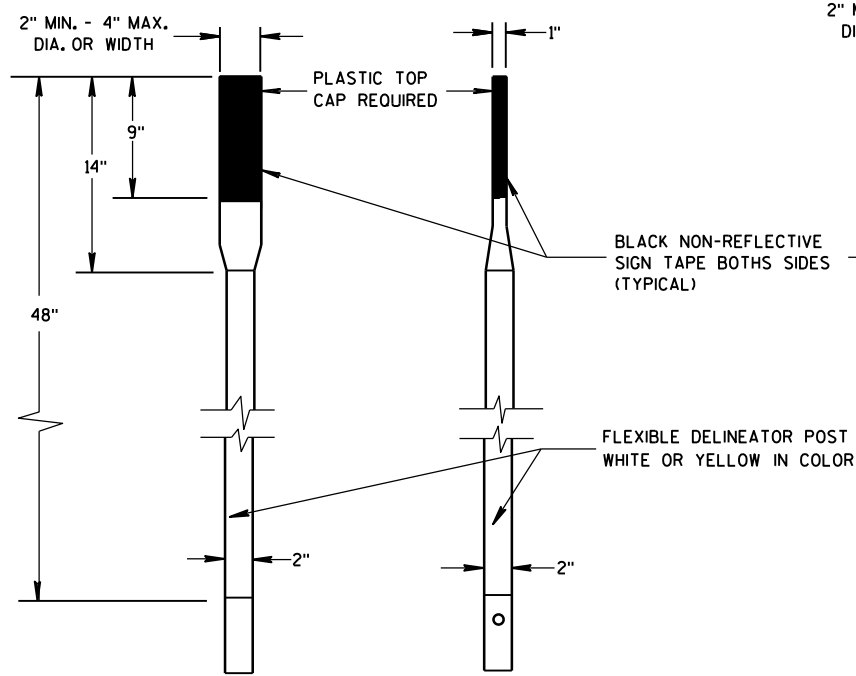
PLAN VIEW
CONCRETE MASONRY ENDWALLS FOR
CULVERT PIPE AND PIPE ARCH



CROSS SECTION
FLEXIBLE MARKER POST

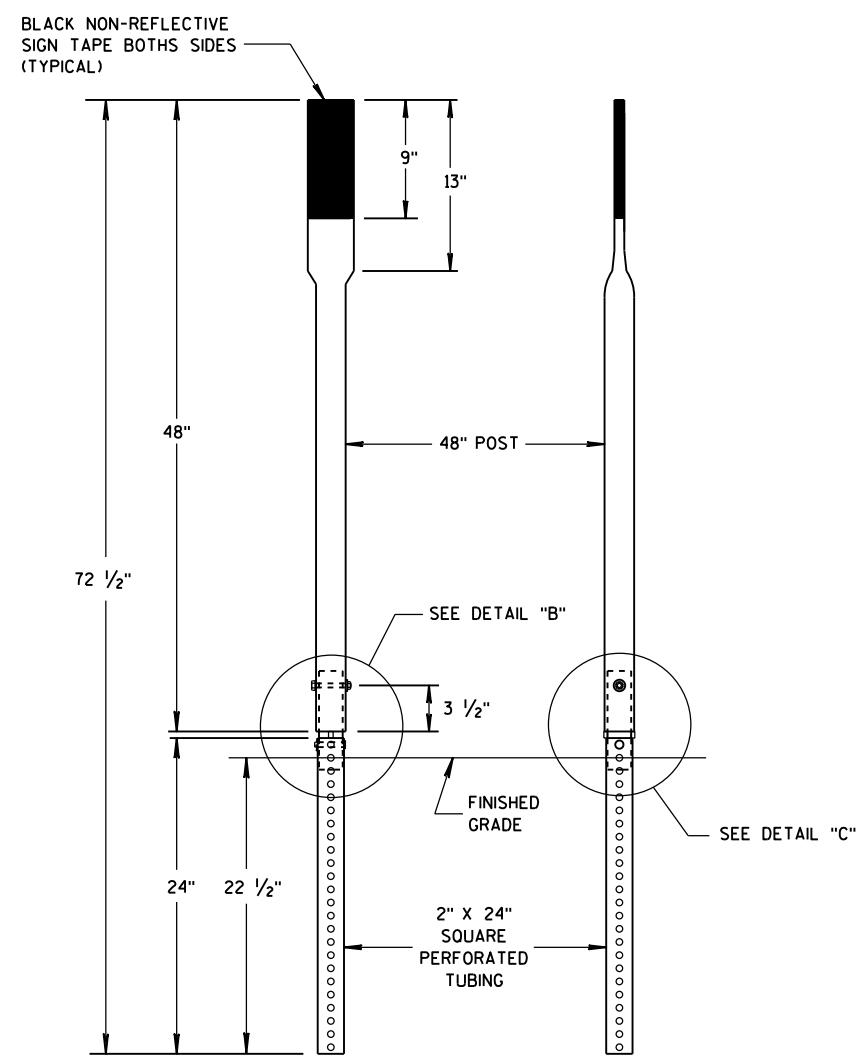
FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

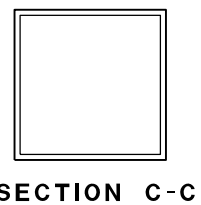


FRONT VIEW SIDE VIEW
ALTERNATE 2

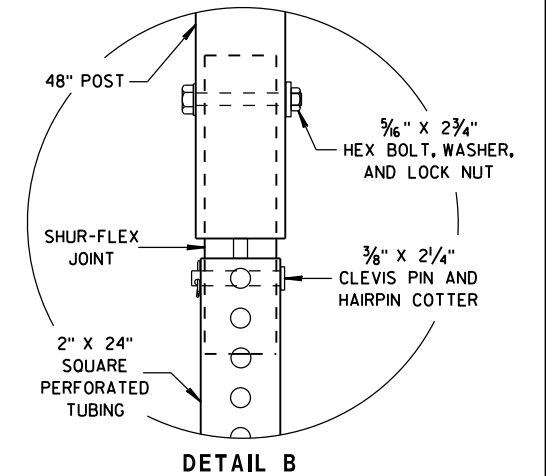
FLEXIBLE MARKER POSTS



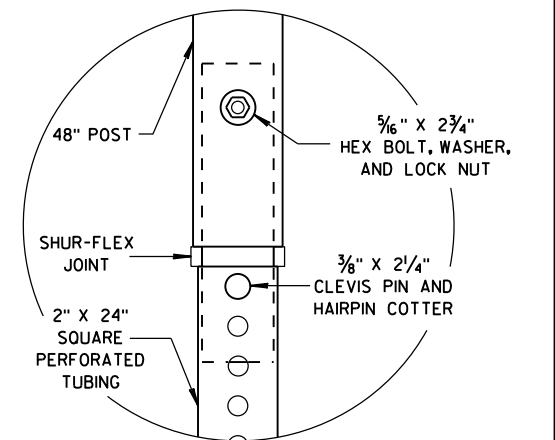
FRONT VIEW SIDE VIEW
ALTERNATE 3



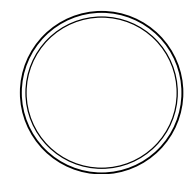
SECTION C-C



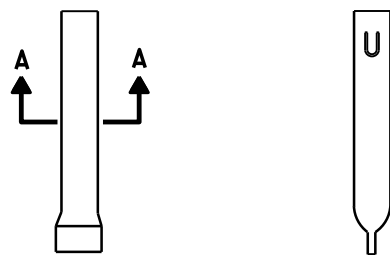
DETAIL B



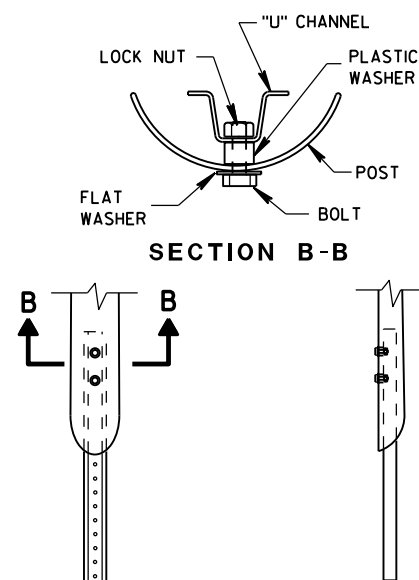
DETAIL C



SECTION A-A

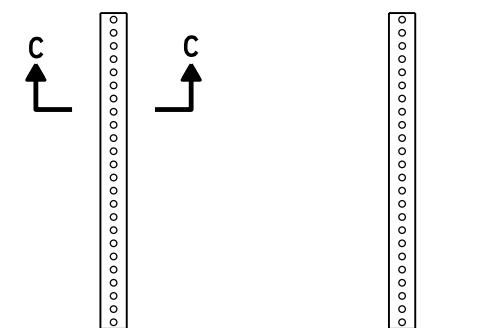


FRONT VIEW SIDE VIEW
ALTERNATE 1



FRONT VIEW SIDE VIEW
ALTERNATE 2

FLEXIBLE MARKER POST ANCHORS



FRONT VIEW SIDE VIEW
ALTERNATE 3

FLEXIBLE MARKER POST
FOR CULVERT END

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

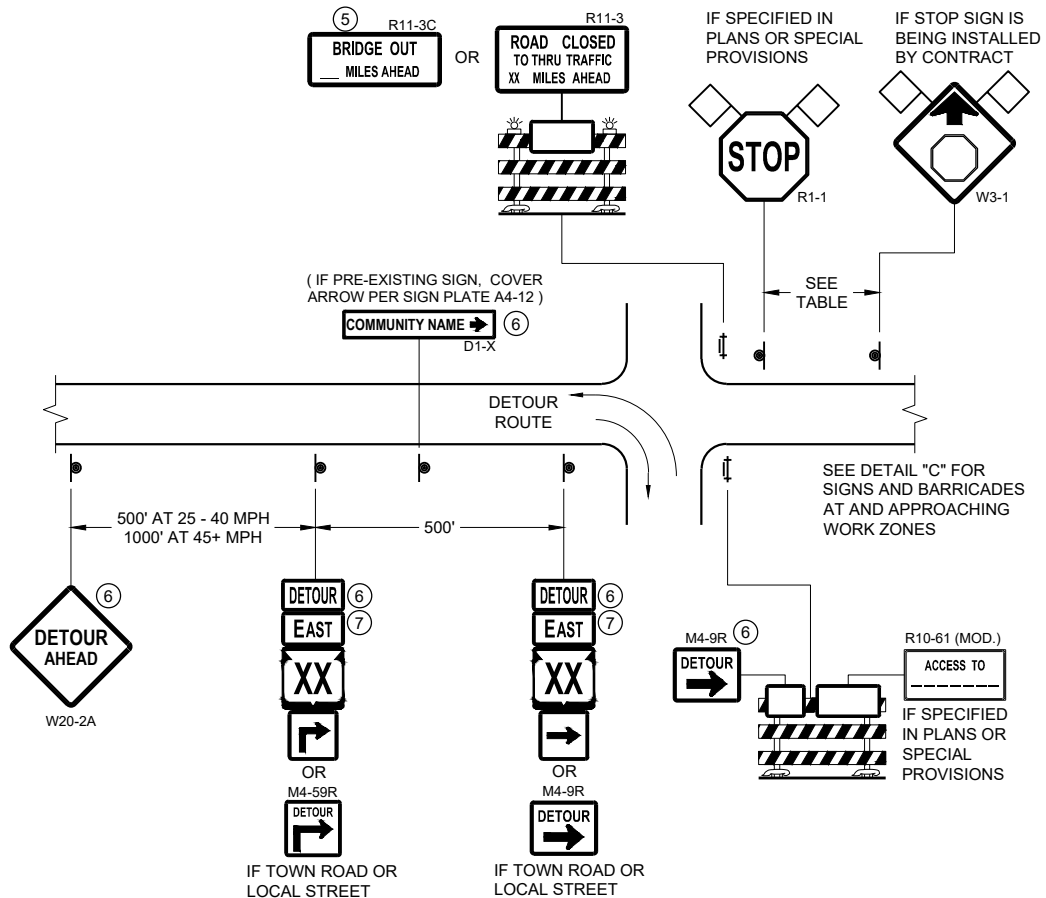
APPROVED

10/1/2012
DATE

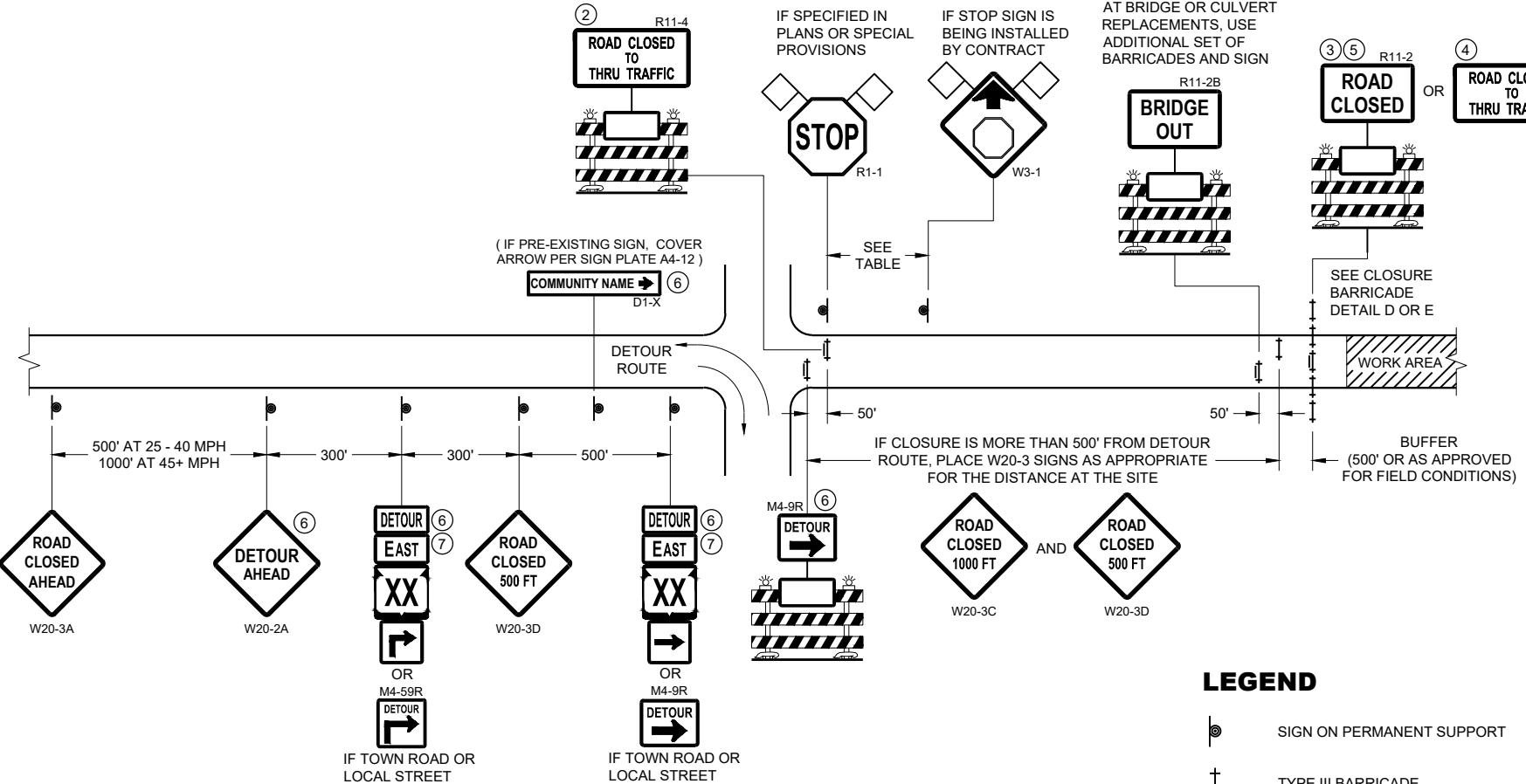
FHWA

/S/ Travis Feltes
STATE TRAFFIC ENGINEER

IGN



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



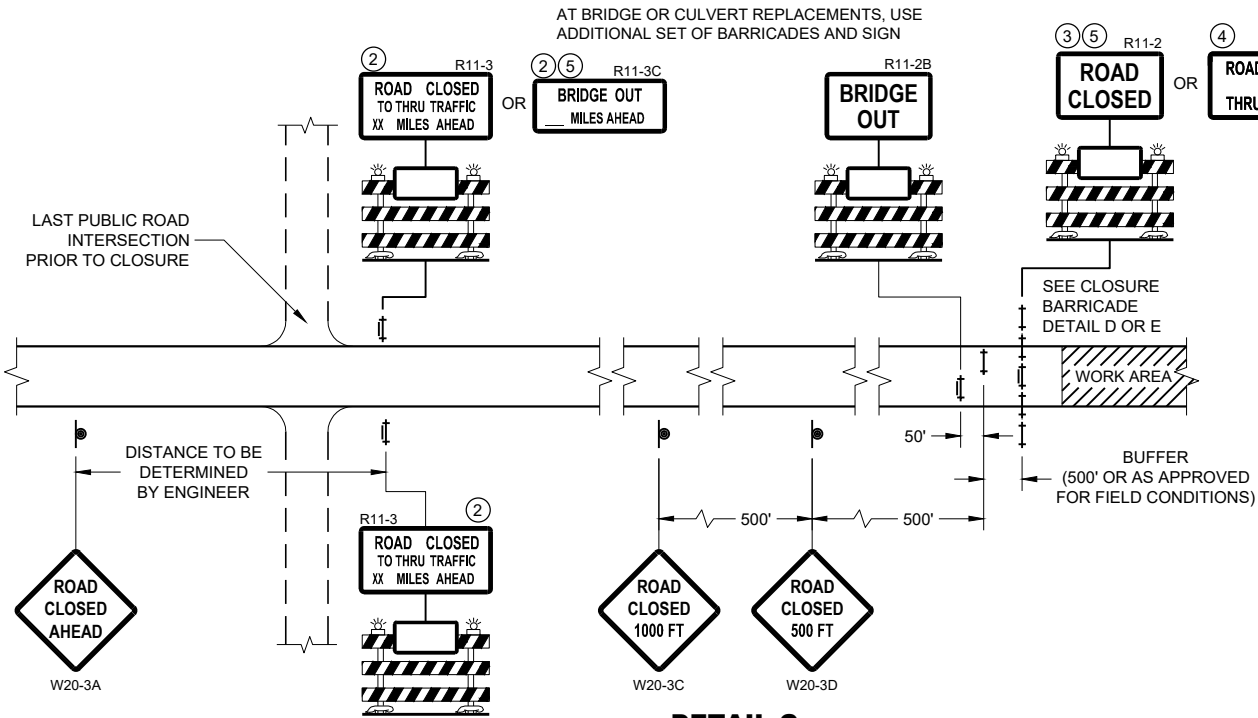
DETAIL B
MAINLINE CLOSURE WITH POSTED DETOUR
WORK ZONE LESS THAN ½ MILE FROM
DETOUR ROUTE (1000 FEET IF URBAN)

- LEGEND**
- SIGN ON PERMANENT SUPPORT
 - TYPE III BARRICADE
 - TYPE III BARRICADE WITH ATTACHED SIGN
 - TYPE "A" WARNING LIGHT (FLASHING)
 - WORK AREA
 - FLAGS, 16" X 16" MIN. (ORANGE)

- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
- OR M05 - 1 OR M06 - 1

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

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



DETAIL C
MAINLINE CLOSURE, NO POSTED DETOUR

**BARRICADES AND SIGNS
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 92

FHWA



SEE SDD 15C2 - SHEET "a" FOR LEGEND

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

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

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

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

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

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

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

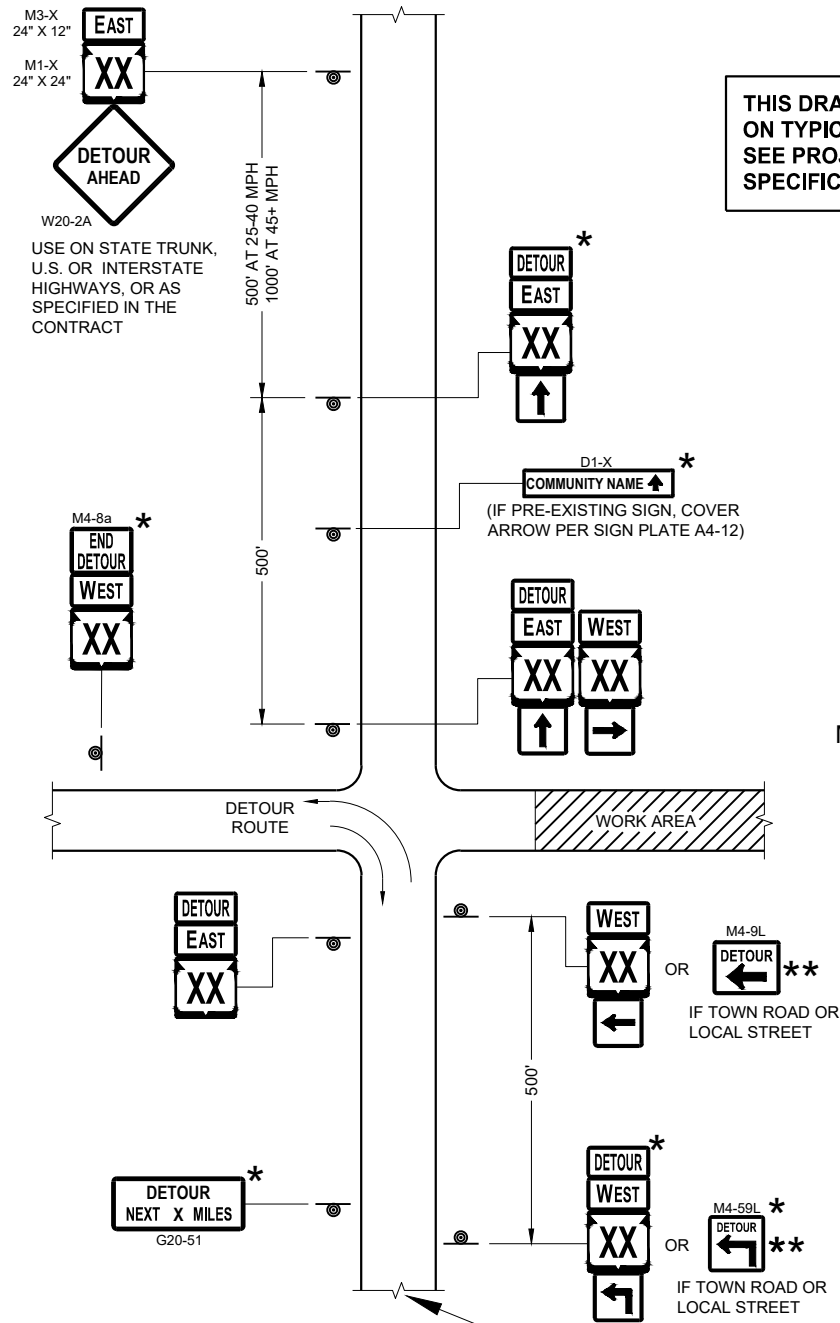
THE R11 - 2, R11 - 3, M4 - 9, R11 - 4, AND R10 - 61 SIGNS PLACED ON THE BARRICADES SHALL COVER NO MORE THAN THE TOP RAIL. THE SIGNS SHALL NOT COVER ANY PORTION OF THE MIDDLE RAIL OR BOTTOM RAILS.

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

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

R11 - 2 SHALL BE 48" X 30"
R11 - 3 SHALL, R11 - 4 AND R10 - 61 SHALL BE 60" X 30"
M4 - 9 SHALL BE 30" X 24"
M3 - X SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
M4 - 8 SHALL BE 24" X 12" (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS)
M1 - 4, M1 - 5A AND M1 - 6 SHALL BE 24" X 24" (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS)
MO5 - 1 AND MO6 - 1 SHALL BE 21" X 21" (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS)
D1 - X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.
R1 - 1 SHALL BE 36" X 36"

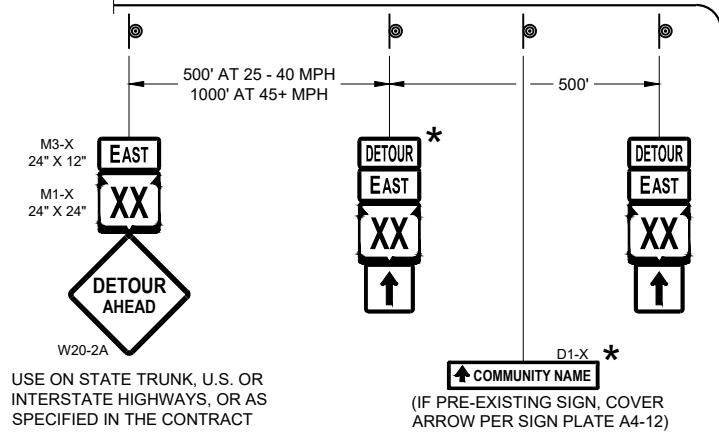
- ① TWO WARNING LIGHTS SHALL BE PROVIDED ON THE CENTER BARRICADE AND A MINIMUM OF ONE WARNING LIGHT SHALL BE PROVIDED ON EACH OF THE OTHER BARRICADES WITHIN THE ROADWAY LIMITS. SPACING OF THE WARNING LIGHTS SHALL BE UNIFORM TO THE EDGE OF ROADWAY AS SHOWN (APPROX. 8 FOOT LIGHT SPACING).
- ② THESE SIGNS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



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

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

MATCH POINT



DETAIL F
DETOUR SIGNING

LEGEND

- SIGN ON PERMANENT SUPPORT
- WORK AREA
- DETOUR EAST (M4 - 8)
- DETOUR WEST (M4 - 8)
- DETOUR AHEAD (M1 - 4)
- DETOUR NEXT X MILES (M1 - 6)
- DETOUR END (M1 - 5A)
- DETOUR WEST (M05 - 1)
- DETOUR EAST (M06 - 1)
- DETOUR AHEAD (M06 - 1)

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.

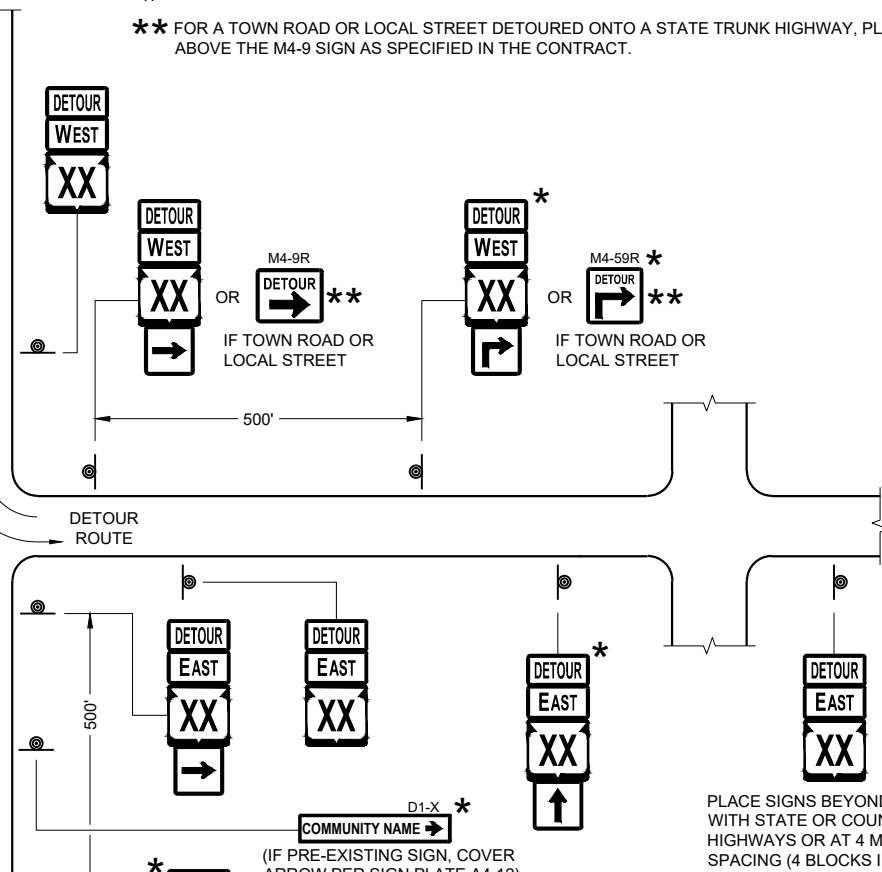
SIGNS THAT WILL BE IN PLACE LESS THAN 7 CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

"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 M4-9R SHALL BE 30" X 24"
- M4-8a SHALL BE 24" X 18"
- G20-51 SHALL BE 60" X 24"
- W20-2A SHALL BE 48" X 48"
- D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

- * OPTIONAL SIGNS. SEE SPECIFIC PROJECT DETOUR SIGNING DETAIL SHEETS.
- ** FOR A TOWN ROAD OR LOCAL STREET DETOURED ONTO A STATE TRUNK HIGHWAY, PLACE A ROAD NAME PLAQUE ABOVE THE M4-9 SIGN AS SPECIFIED IN THE CONTRACT.

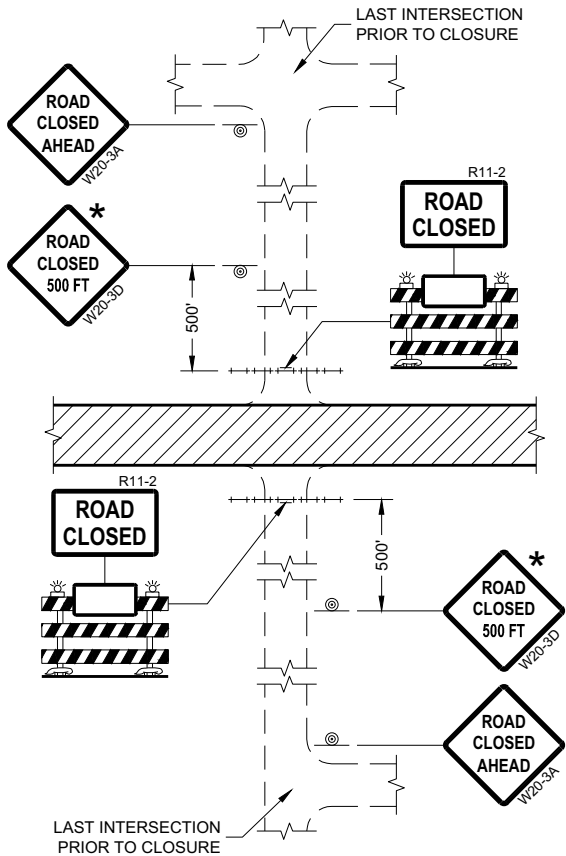


**DETOUR SIGNING
FOR MAINLINE CLOSURES**

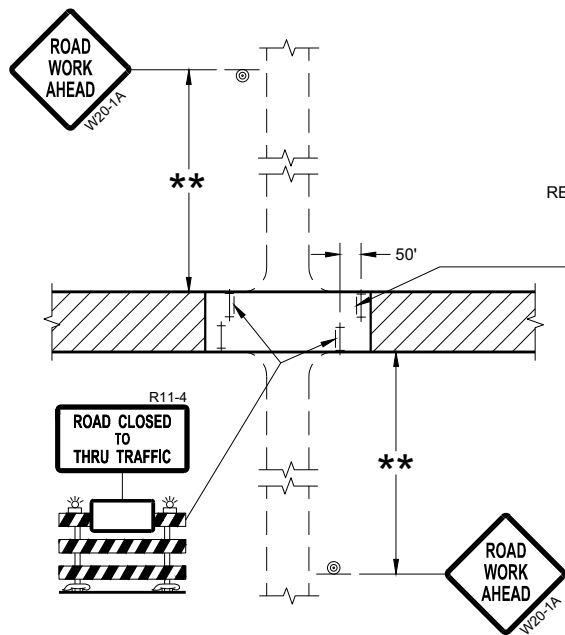
STATE OF WISCONSIN
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May 2023 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 94

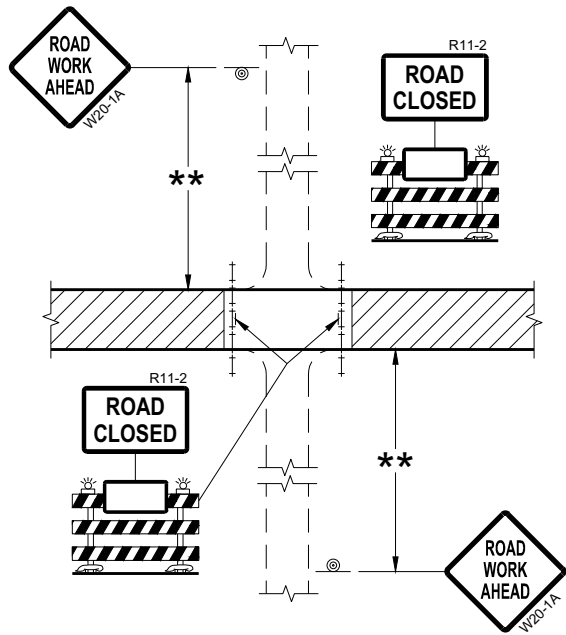
FHWA



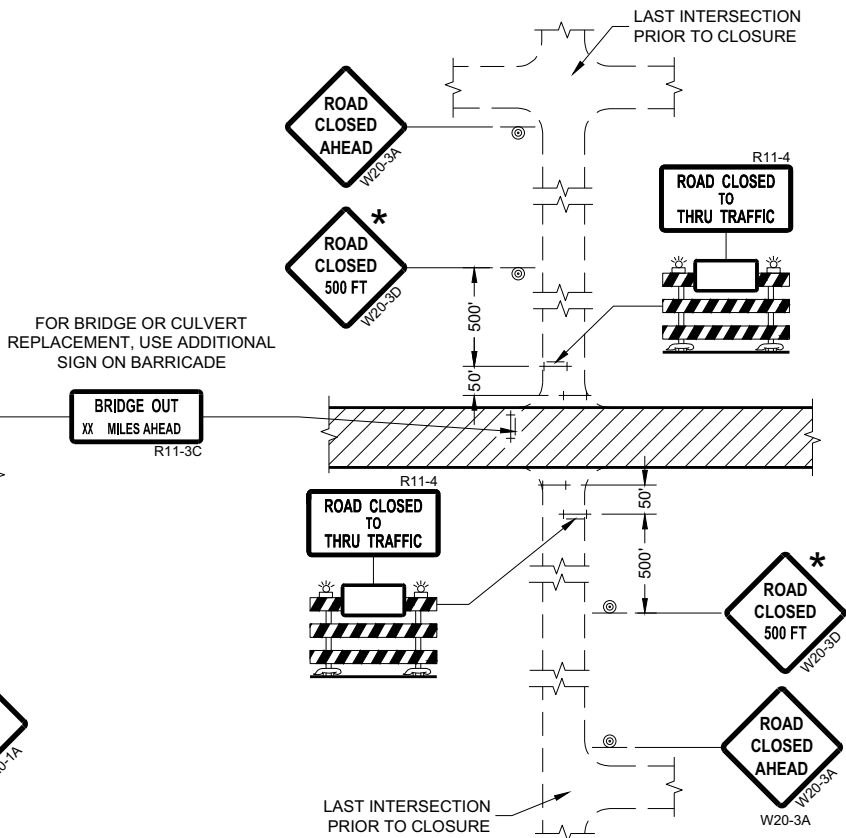
DETAIL 1
(NO ACCESS TO PROJECT)



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



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



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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

LEGEND

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

**BARRICADES AND SIGNS
FOR
SIDEROAD CLOSURES**

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GENERAL NOTES

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

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

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

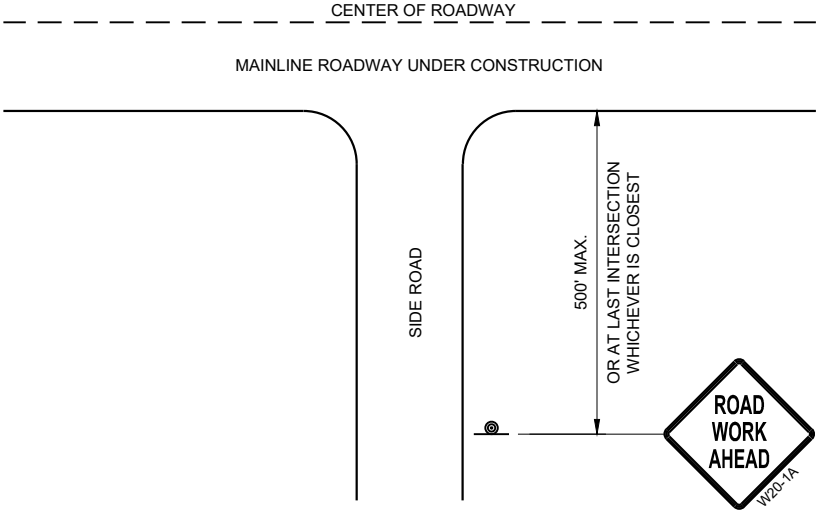
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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

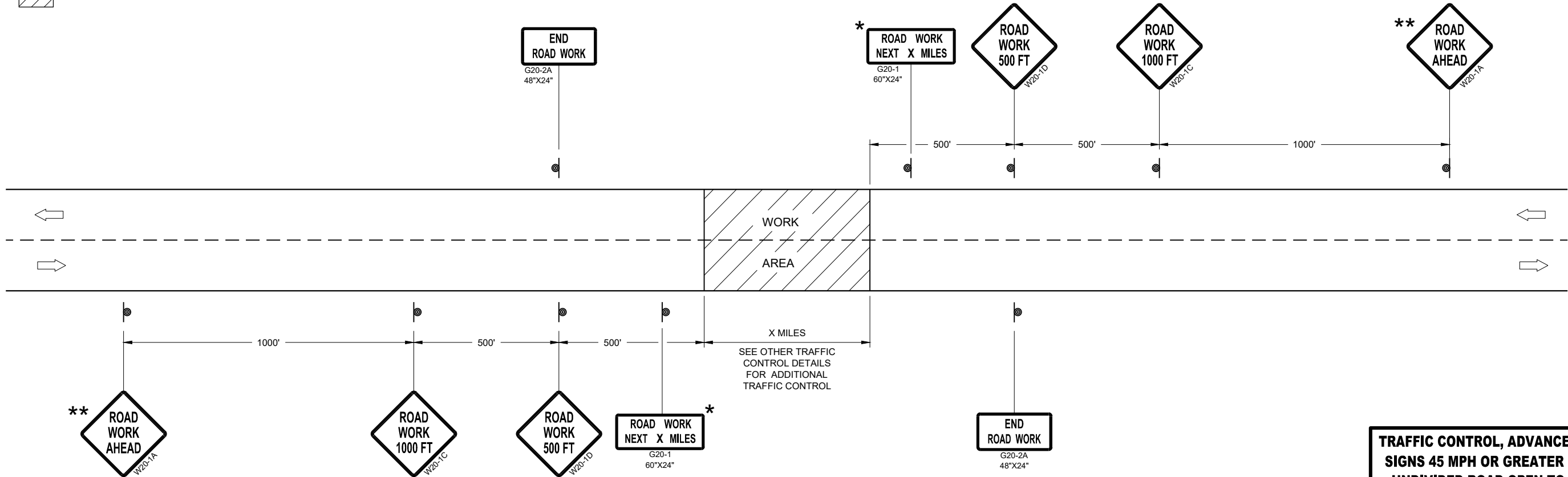
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

LEGEND

-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

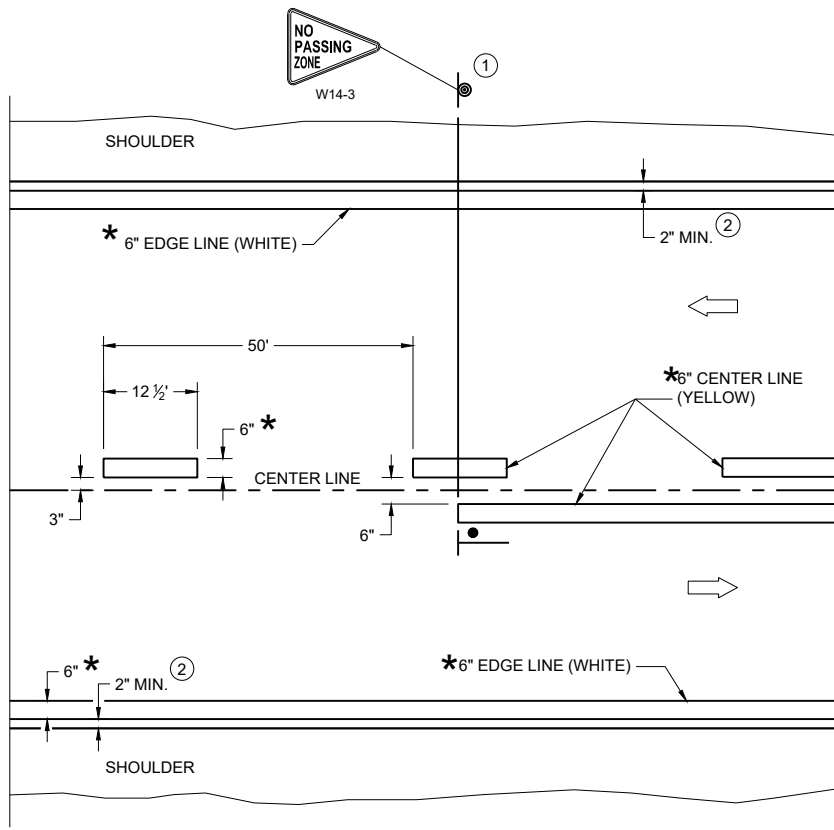


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER

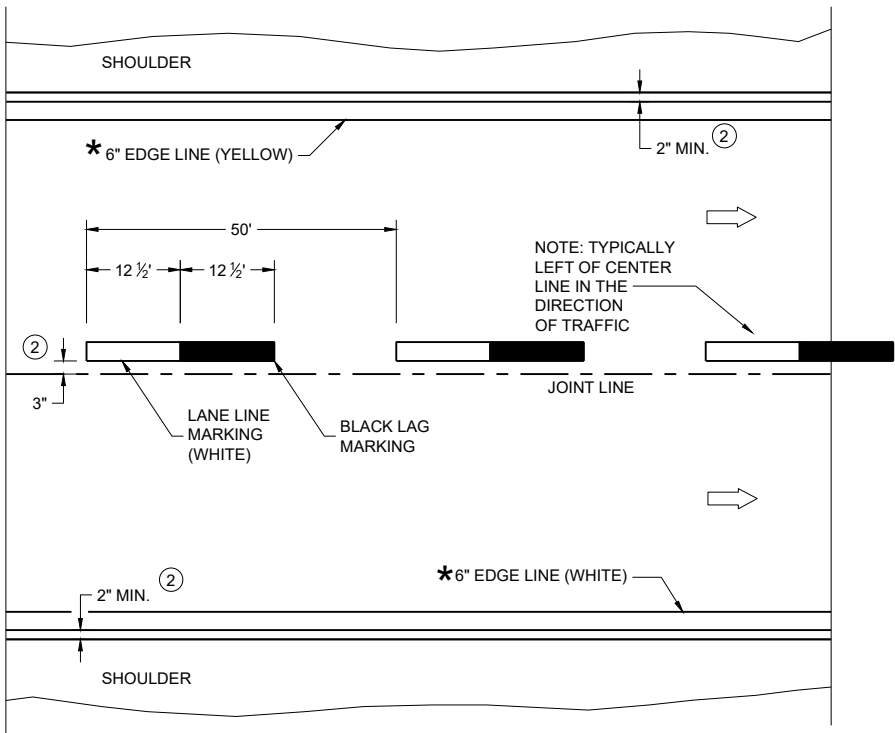
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 45 MPH OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

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TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

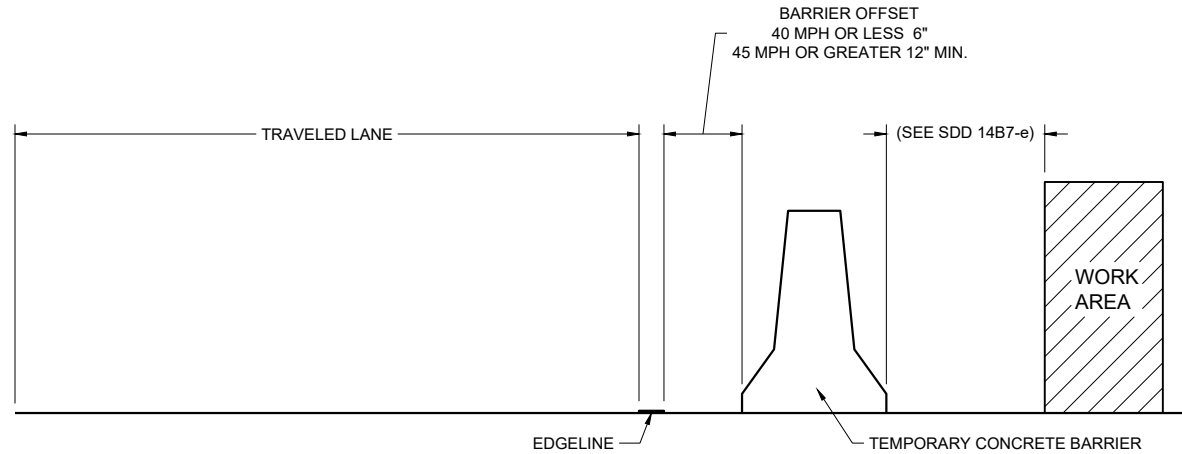
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS.

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

LEGEND

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

PERMANENT LONGITUDINAL PAVEMENT MARKINGS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver Statewide Pavement Marking Engineer
FHWA 97	



TEMPORARY BARRIER OFFSET FROM EDGE LINE

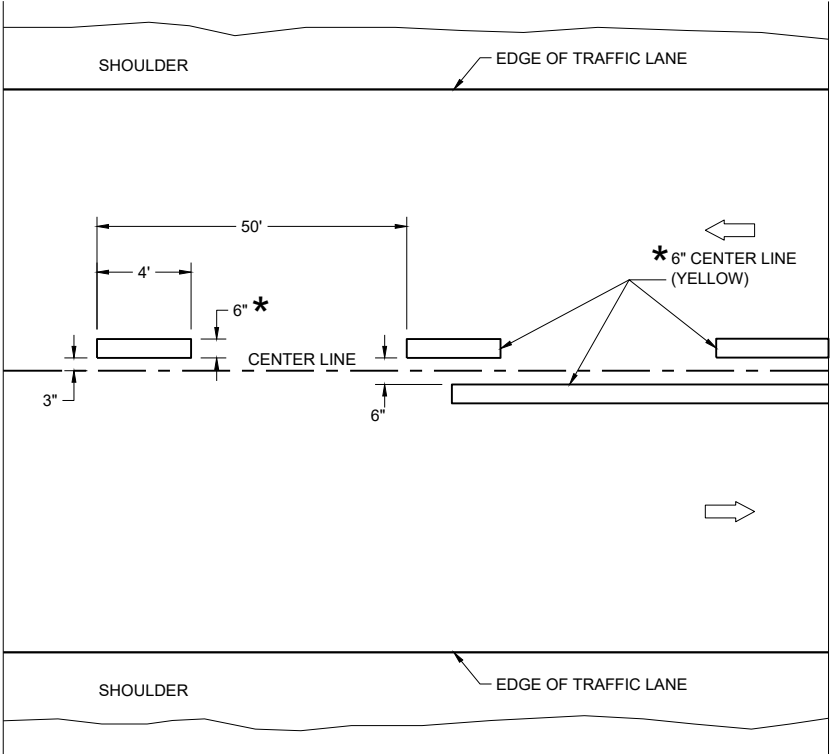
GENERAL NOTES

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

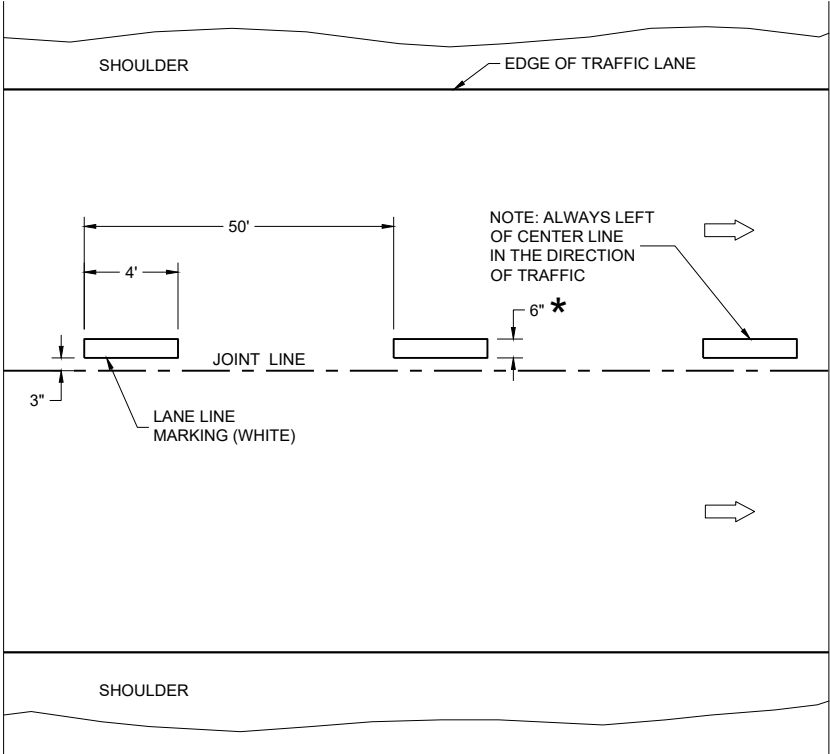
LEGEND

DIRECTION OF TRAFFIC

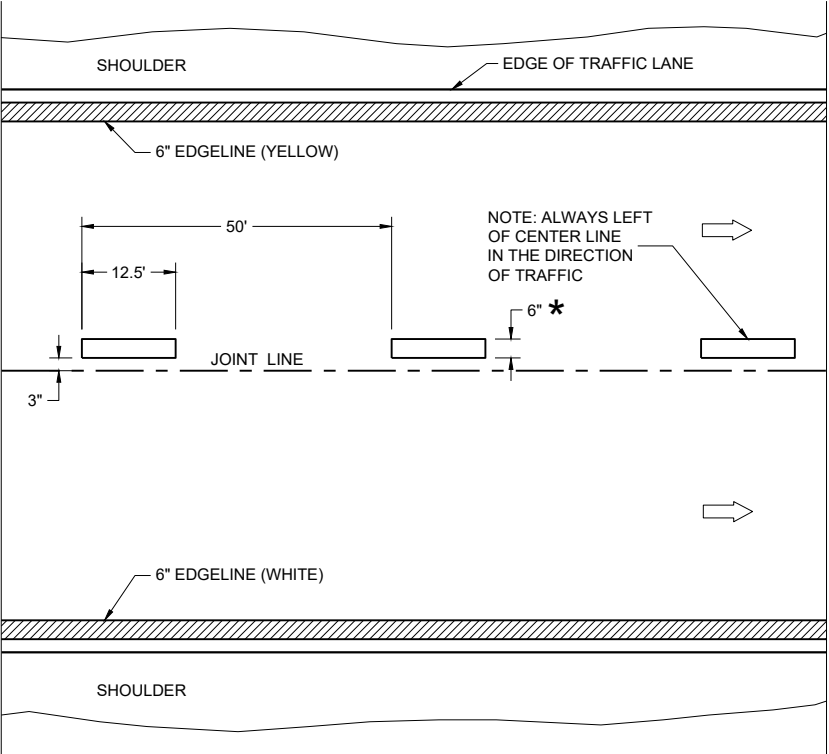
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



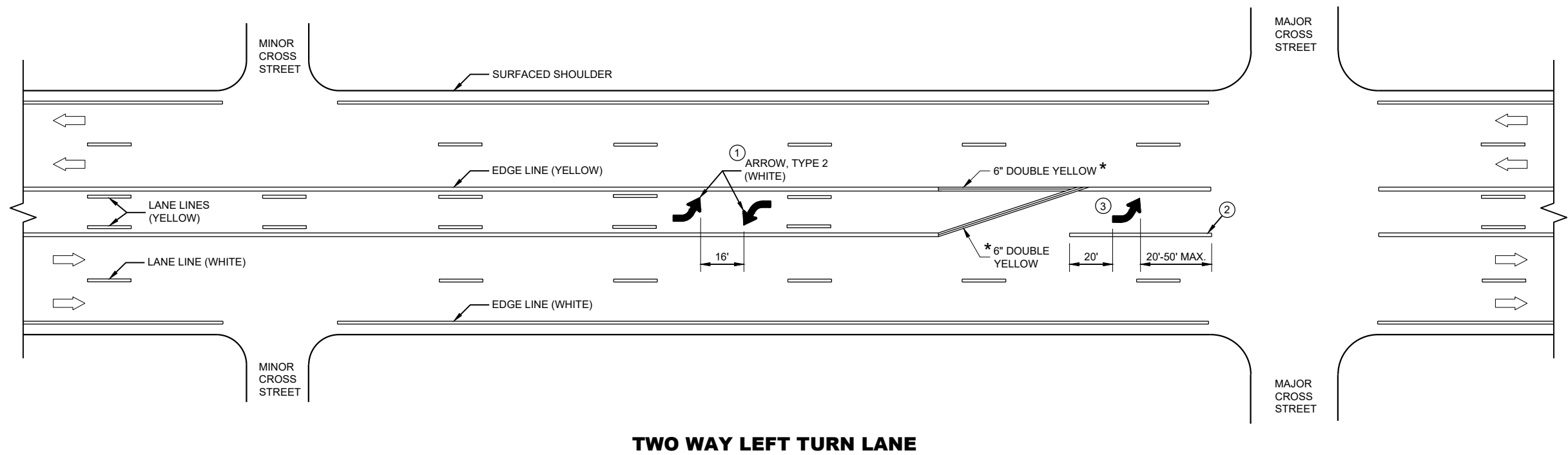
ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

TEMPORARY LONGITUDINAL PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
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GENERAL NOTES

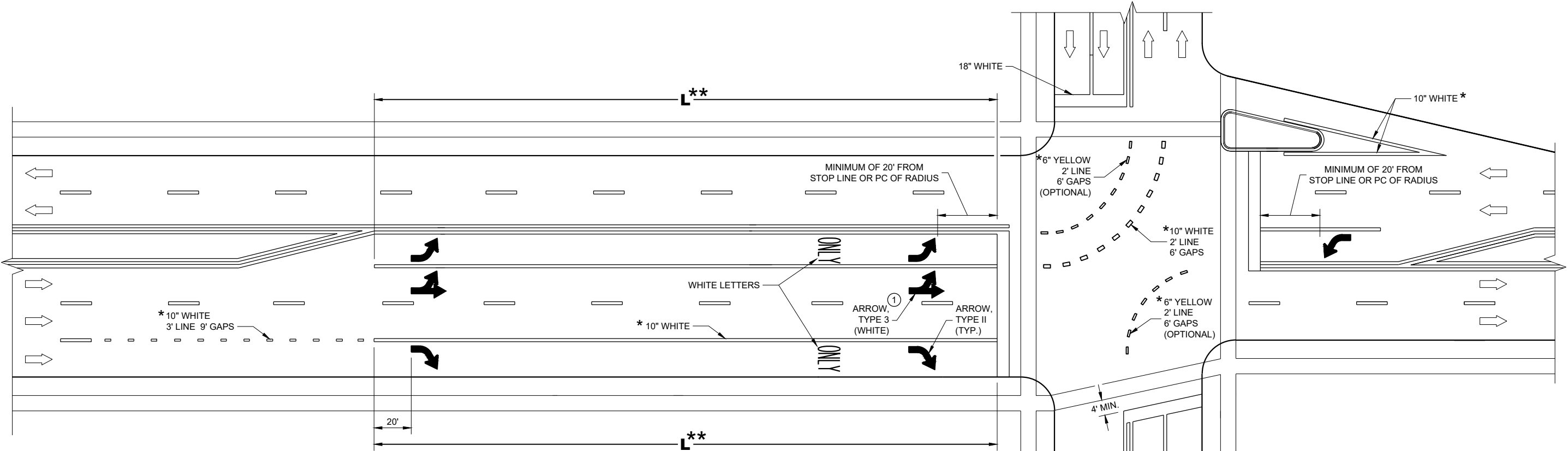
- ① A SET OF ARROWS IS REQUIRED EVERY 400 FEET OR NEAR INTERSECTIONS OR DRIVEWAYS WITH TURNING TRAFFIC.
- ② 10" WHITE
- ③ TURN BAY LENGTH OF LESS THAN 48' DOES NOT REQUIRE PAVEMENT ARROWS OR TEXT.

➡ DIRECTION OF TRAFFIC

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

**PAVEMENT MARKING
(TURN LANES)**

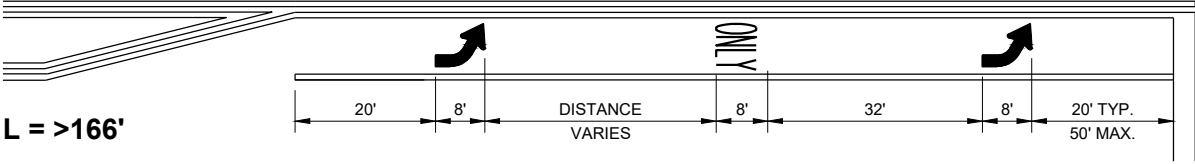
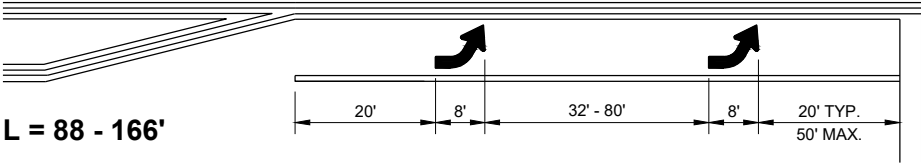
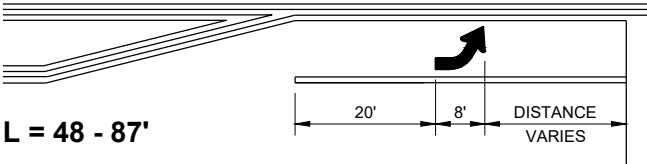
STATE OF WISCONSIN
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** (SEE TURN LANE OPTIONS FOR PLACEMENT OF PAVEMENT MARKING ARROWS AND WORDS)

TURN LANE OPTIONS

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



GENERAL NOTES

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

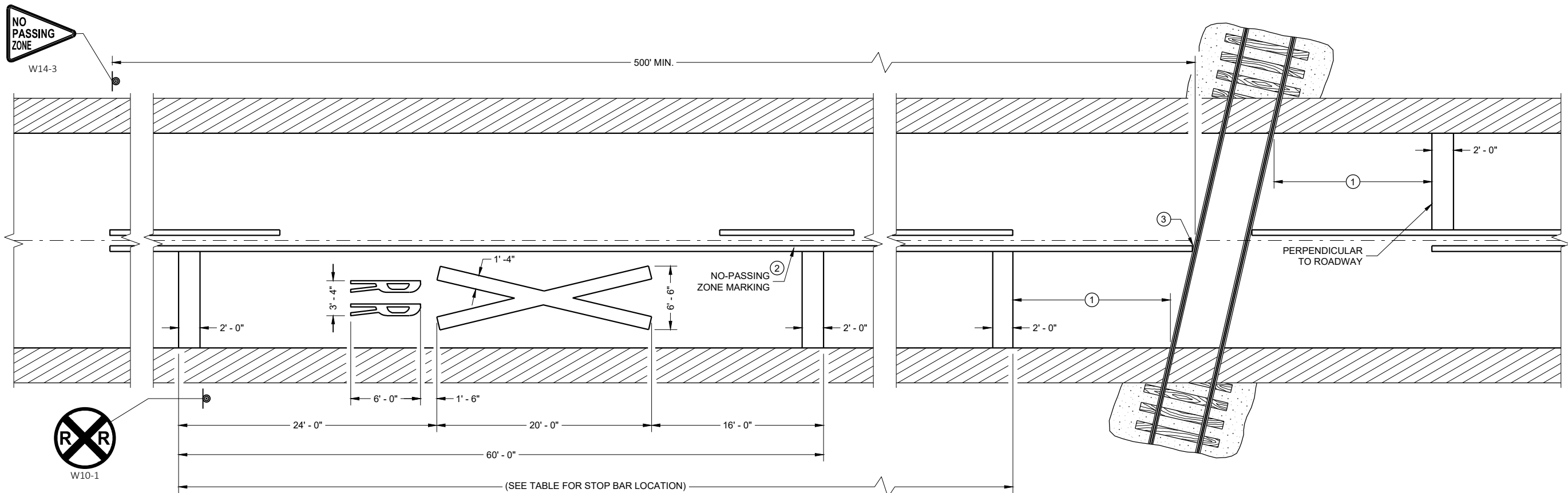
→ DIRECTION OF TRAFFIC

L = LENGTH OF TURN BAY

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

PAVEMENT MARKING (TURN LANES)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION 100



PAVEMENT MARKING

LEGEND

 SIGN ON PERMANENT SUPPORT

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.

ON MULTI-LANE ROADS THE TRANSVERSE BANDS SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.

CENTER OR LANE LINES AND NO-PASSING ZONE MARKINGS SHOWN ON THIS DRAWING ARE REQUIRED AND PAID FOR UNDER OTHER ITEMS IN THE CONTRACT.

TRACE EXISTING SYMBOL WHERE EXISTING SYMBOLS ARE PLACED.

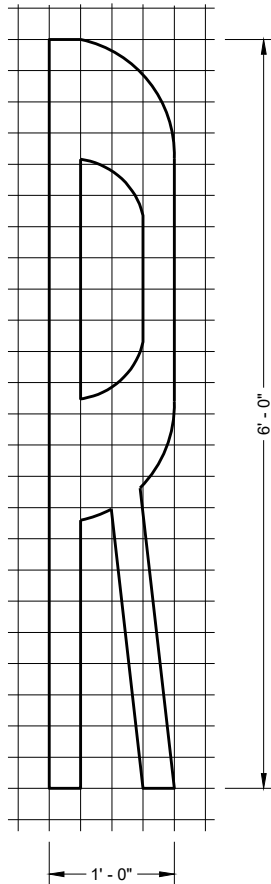
- 1 PLACE STOP BAR APPROXIMATELY 8 FEET IN ADVANCE OF THE GATE (IF PRESENT), BUT NO CLOSER THAN 15 FEET IN ADVANCE OF THE NEAREST RAIL. FIELD-FIT STOP BAR TO MAXIMIZE VIEW OF APPROACHING TRAIN.
- 2 500' MINIMUM. MARKING LIMITS MAY BE EXTENDED AS DIRECTED BY THE ENGINEER TO MEET ADJACENT NO-PASSING ZONE MARKINGS.
- 3 FOR MULTIPLE TRACK CROSSINGS, THE BARRIER LINE SHALL EXTEND TO THE NEAR RAIL OF THE FURTHEST TRACK IN THE DIRECTION OF HIGHWAY TRAVEL.

DISTANCE TABLE

TABLE BASED UPON 2C-4 WISCONSIN SUPPLEMENT OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

POSTED SPEED (M.P.H.)	DIMENSION RANGE (FEET)
25	150* - 250'
30	200* - 300'
35	250* - 450'
40	300* - 500'
45	400* - 650'
50	550* - 800'
55	750* - 1000'
60	1000* - 1250'
65	1000* - 1250'

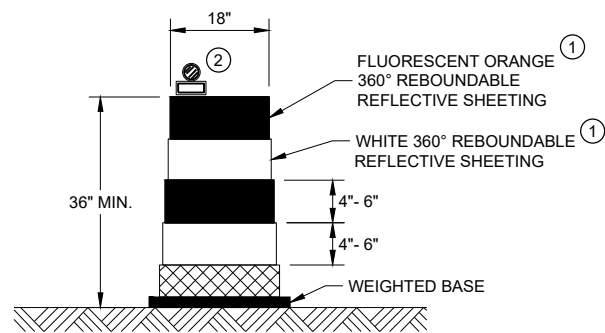
* THE MINIMUM DISTANCES IN THE TABLE ARE DESIRABLE AND SHOULD BE USED. THE DISTANCES MAY BE INCREASED UP TO THE MAXIMUM TO ALLOW FOR FIELD CONDITIONS SUCH AS THE CLOSED PROXIMITY OF DRIVEWAYS, BRIDGES, SIDE ROADS OR OTHER FEATURES THAT WOULD PROHIBIT THE MINIMUM DISTANCES FROM BEING USED.



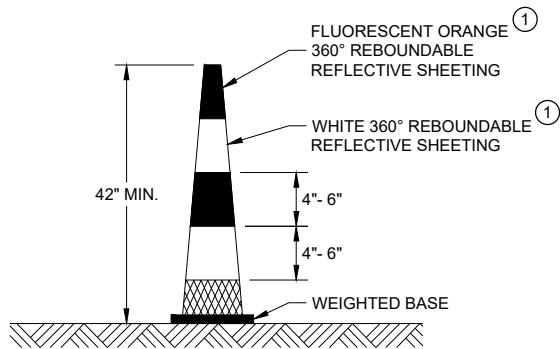
SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD - HIGHWAY GRADE CROSSINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

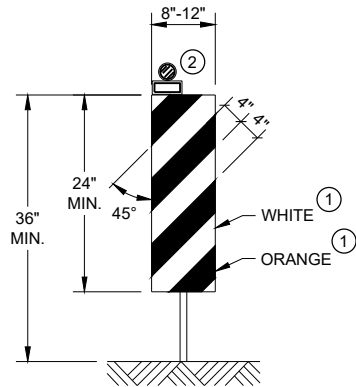
APPROVED
May 2023
DATE
/S/ Matthew R. Rauch
STATE SIGNING AND MAF
ENGINEER 101
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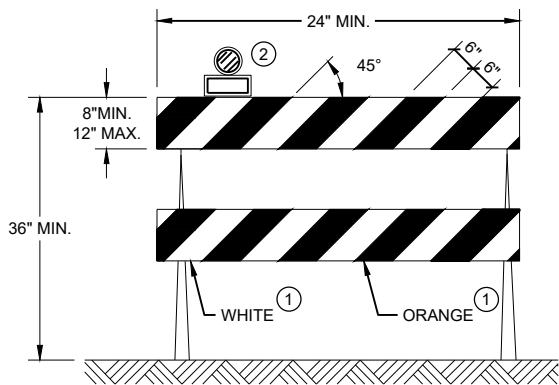
DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



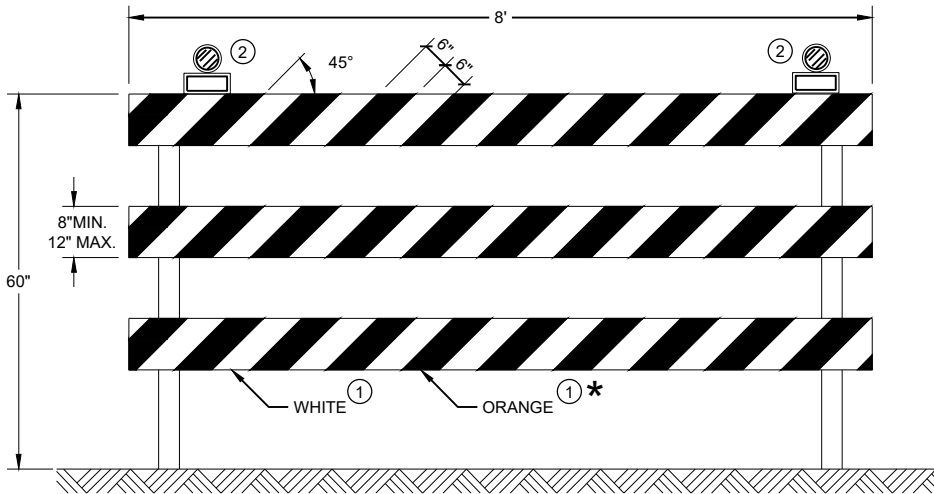
42" CONE
DO NOT USE IN TAPERS
½ SPACING OF DRUMS
BALLAST WIDTHS
RANGE FROM 14"-20"



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



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



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

GENERAL NOTES

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

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

STATE OF WISCONSIN
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November 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 102

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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

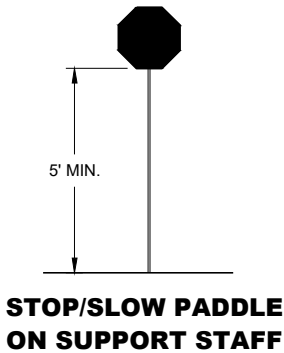
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

- 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.

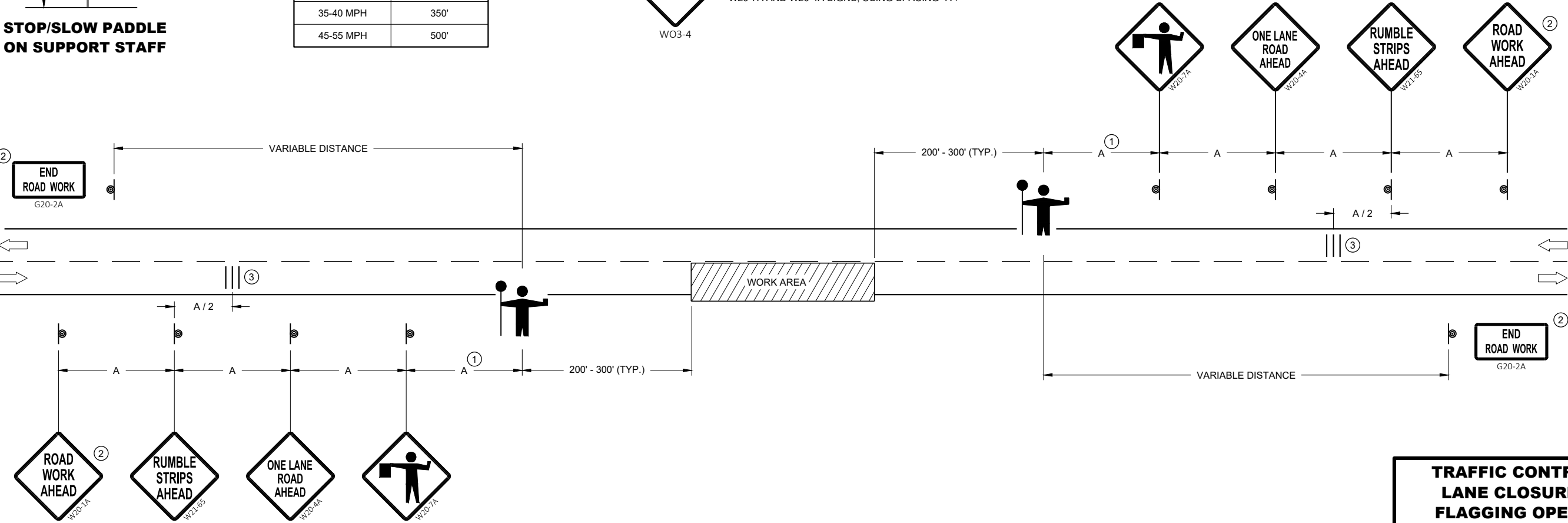


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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".

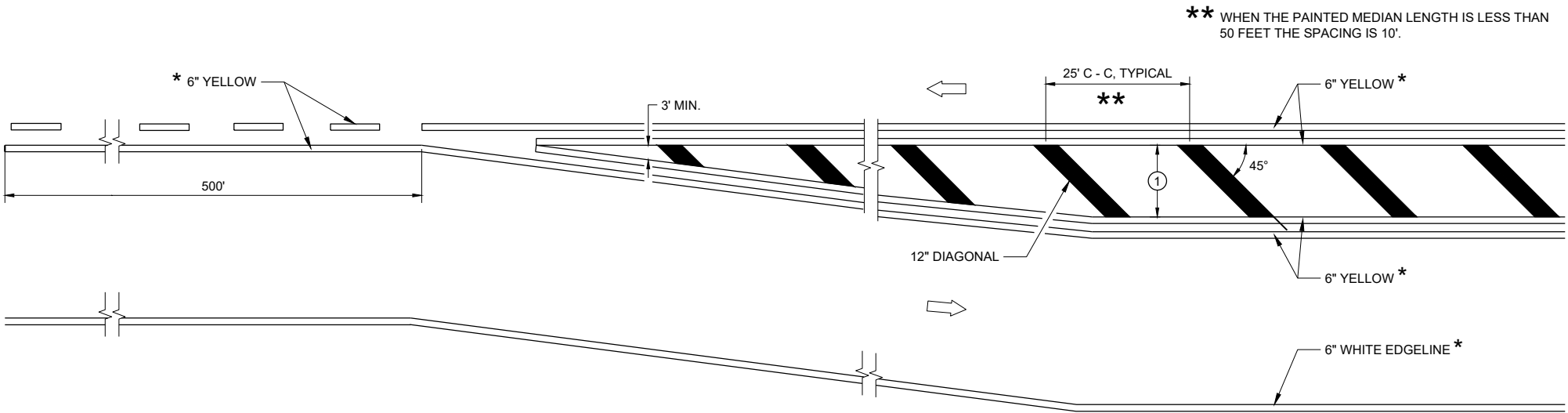


**TRAFFIC CONTROL FOR
LANE CLOSURE WITH
FLAGGING OPERATION**

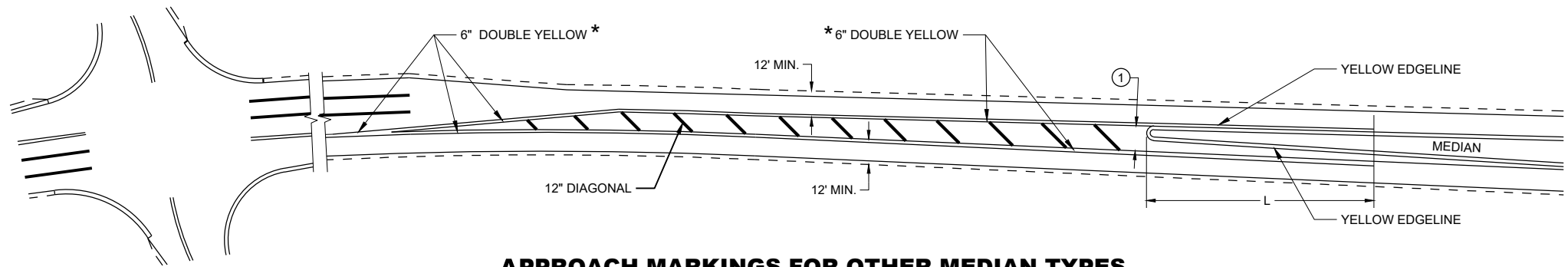
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May 2022 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 103

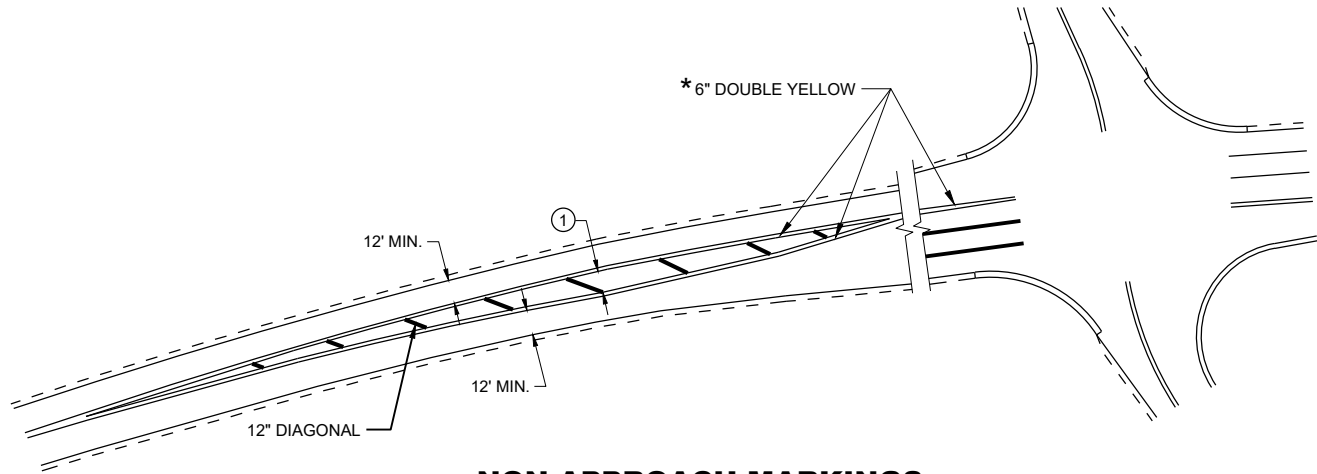
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MEDIAN ISLAND DETAIL



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

SPEED LIMIT	L
<35 MPH	5'
35> MPH	50'

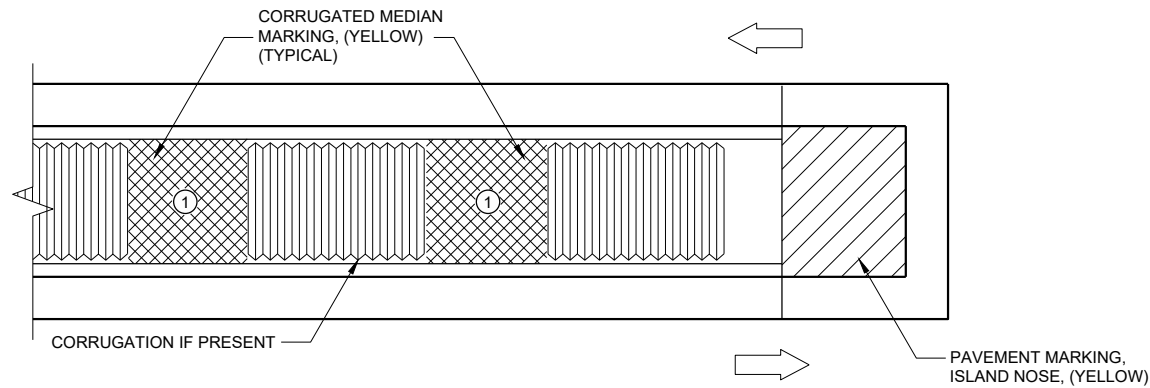
**MEDIAN ISLAND
PAVEMENT MARKINGS**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

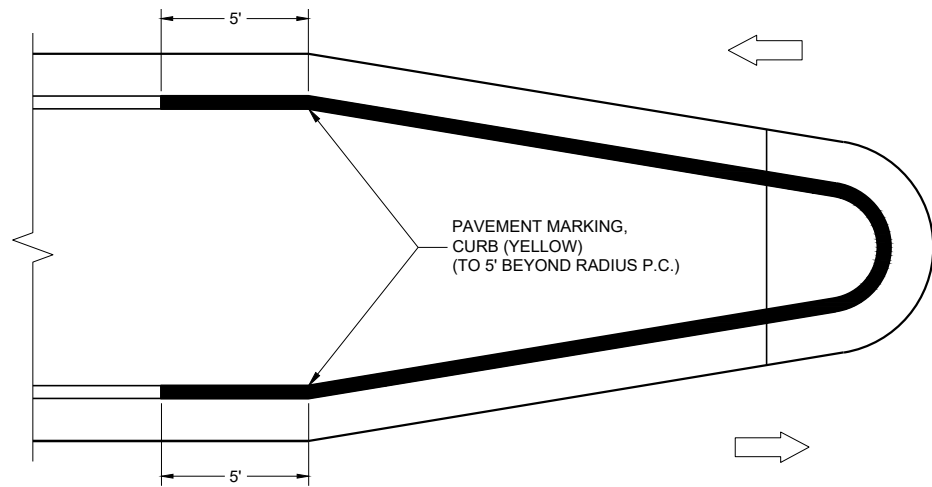
APPROVED
May 2023
DATE

/S/ Jeannie Silver
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

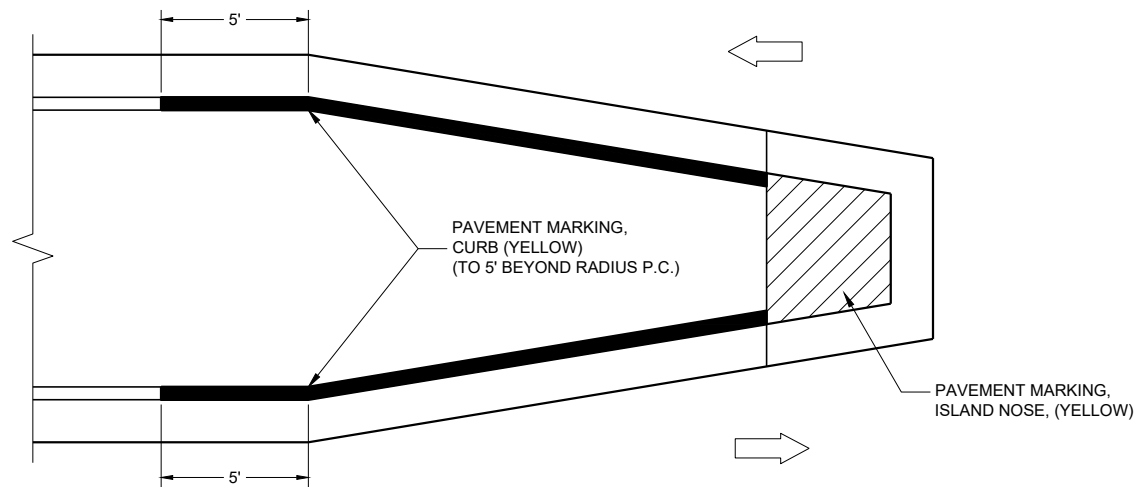
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MEDIAN ISLAND WITH SQUARE BLUNT NOSE



MEDIAN ISLAND WITH ROUND BLUNT NOSE



MEDIAN ISLAND WITH SLOPED NOSE

TYPICAL PLACEMENT OF
PAVEMENT MARKING ON MEDIAN ISLANDS

GENERAL NOTES

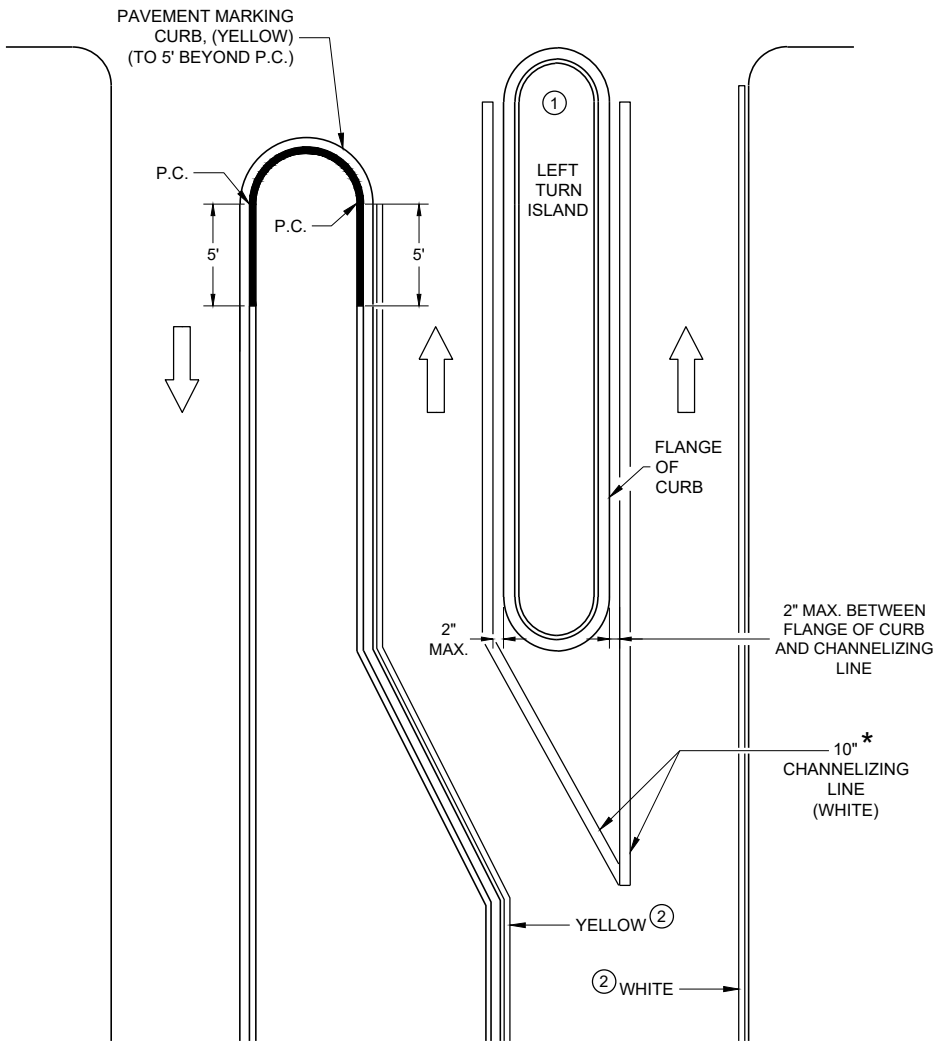
WHEN CONCRETE CORRUGATED MEDIAN IS CONSTRUCTED TO SEPARATE TRAFFIC OPERATING IN THE OPPOSING DIRECTION, YELLOW PAVEMENT MARKING SHALL BE APPLIED TO THE FLAT PORTION OF THE CONCRETE CORRUGATED MEDIAN. THE ITEM OF PAVEMENT MARKING, CONCRETE CORRUGATED MEDIAN, WILL BE MEASURED IN PLACE AND ACCEPTED IN ACCORDANCE 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

PAVEMENT MARKINGS, MEDIAN ISLAND NOSE	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2023 DATE	/S/ Jeannie Silver ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	105

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

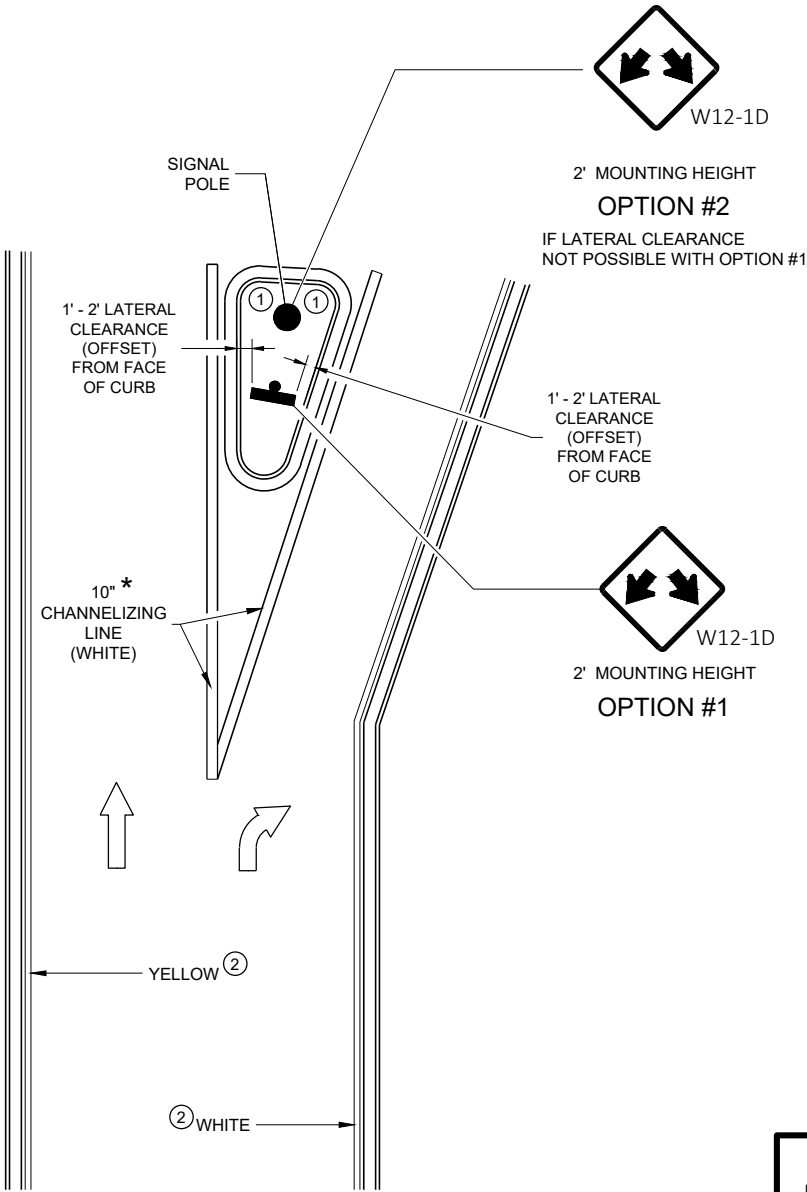
LEFT TURN & MEDIAN ISLAND

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.

➡ DIRECTION OF TRAVEL



RIGHT TURN ISLAND

MEDIAN PAVEMENT MARKINGS, DOUBLE ARROW WARNING SIGN PLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Jeannie Silver
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHWA

GENERAL NOTES

SIGNING AND MARKING IS SHOWN AS TYPICAL PLACEMENT. FIELD CONDITIONS MAY DICTATE CHANGES IN SIGNING AND MARKING PLACEMENT.

① USED ONLY WHEN APPROVED BY REGION TRAFFIC ENGINEER.

* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

** SIGNS MAY BE OMITTED IF SPACE DOES NOT PERMIT PLACEMENT.

*** IF POSTED SPEED IS 45 MPH OR GREATER, PLACE W5-54 SIGN UNDER R4-7 SIGN. MOUNT W5-54 SIGN AT 4' MOUNTING HEIGHT (TOP OF ROADWAY TO BOTTOM OF SIGN).

LEGEND

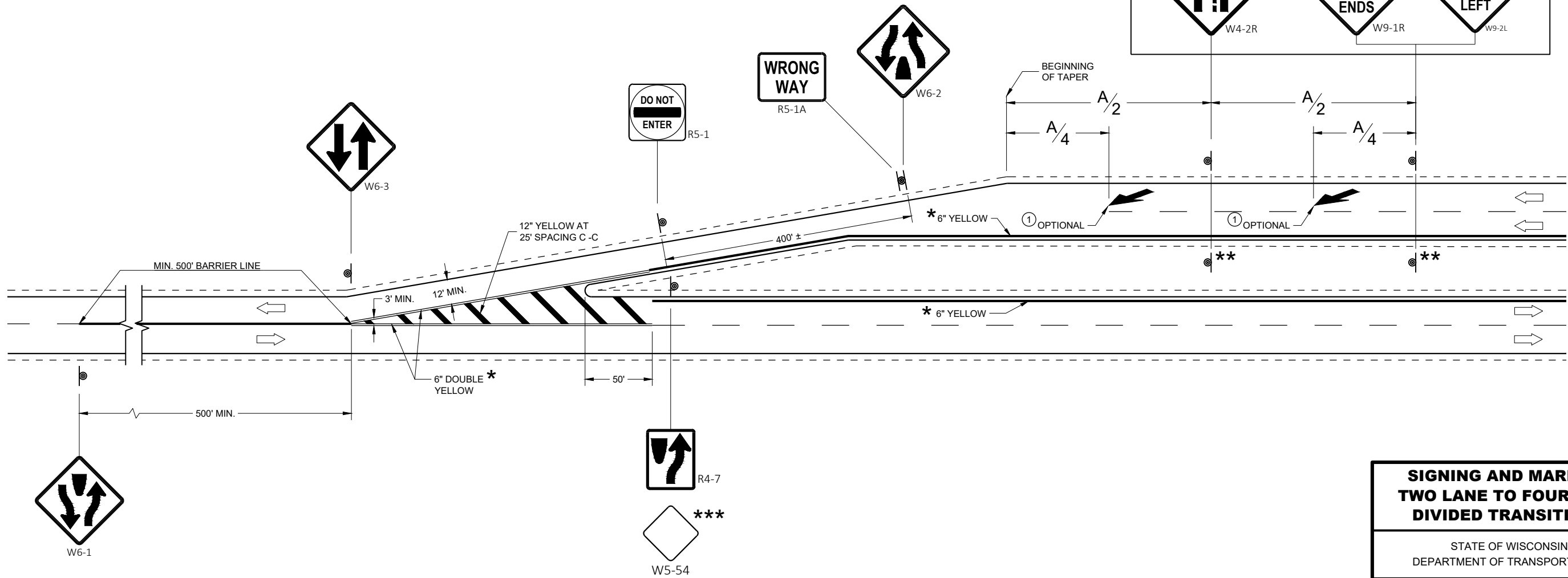
A DISTANCE DEPENDENT ON SPEED (SEE TABLE)

⦿ SIGN MOUNTED ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

DISTANCE TABLE

POSTED OR 85TH PERCENTILE SPEED	DISTANCE "A"
25	325'
30	460'
35	565'
40	670'
45	775'
50	885'
55	990'
65	1200'
70	1250'

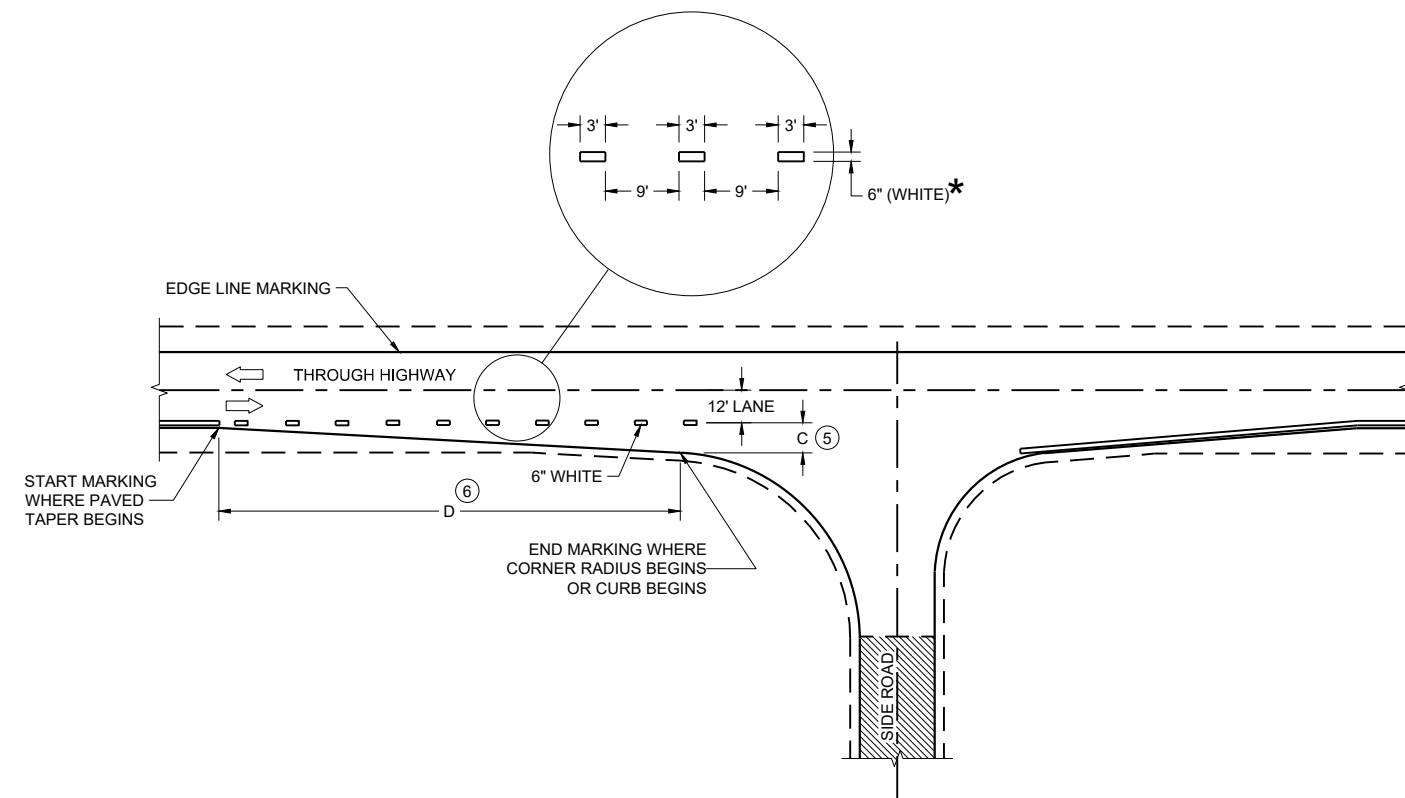


SIGNING AND MARKING
TWO LANE TO FOUR LANE
DIVIDED TRANSITIONS

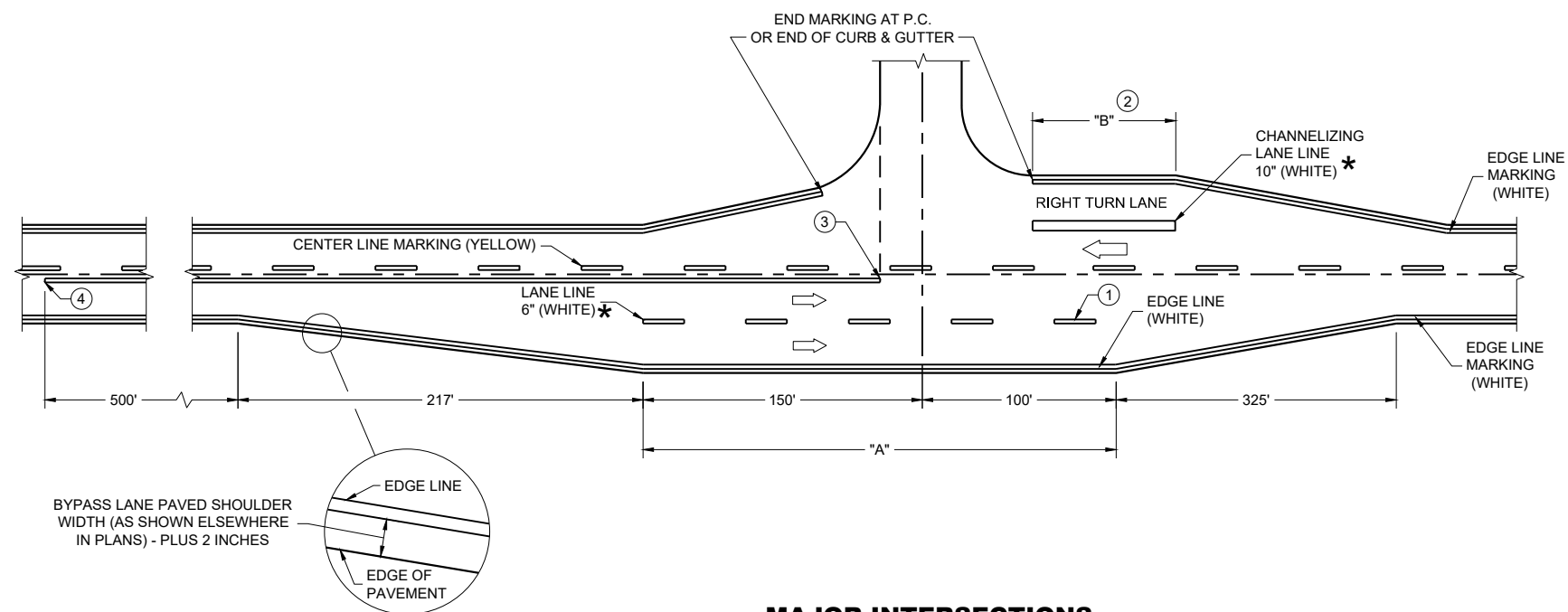
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023 /S/ Matthew Rauch
DATE STATE SIGNING AND MAF
ENGINEER 107

FHWA



MINOR INTERSECTION



MAJOR INTERSECTIONS

(INTERSECTION WITH FULL RIGHT TURN LANE OR BYPASS LANE)

*CONFIRM MARKING LINE WIDTH WITH
THE MISCELLANEOUS QUANTITIES

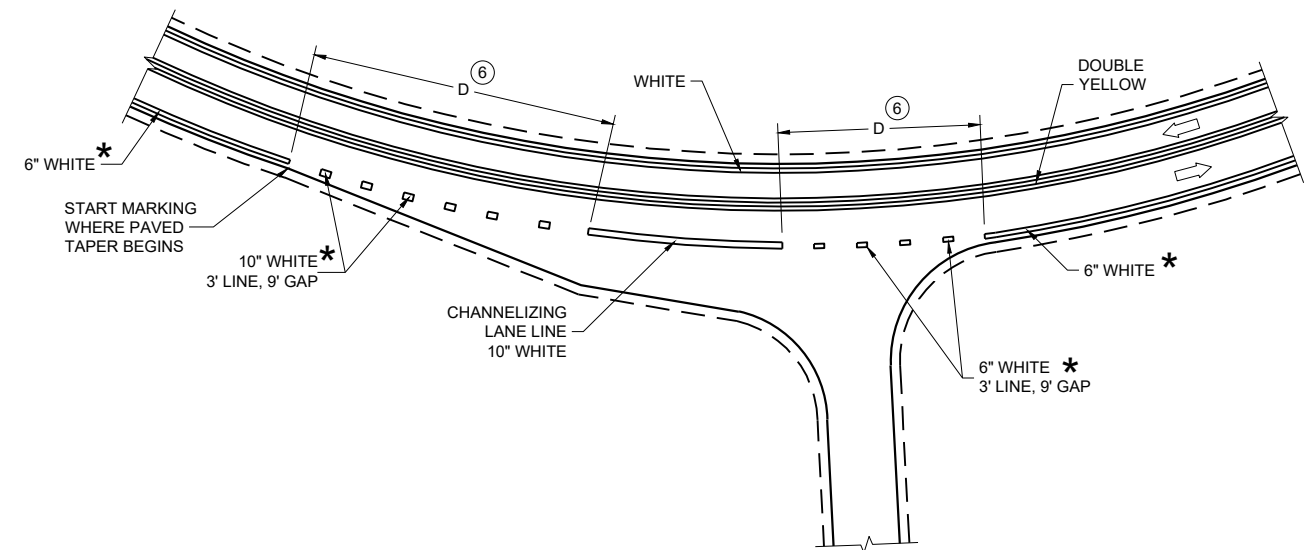
GENERAL NOTES

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

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

LEGEND

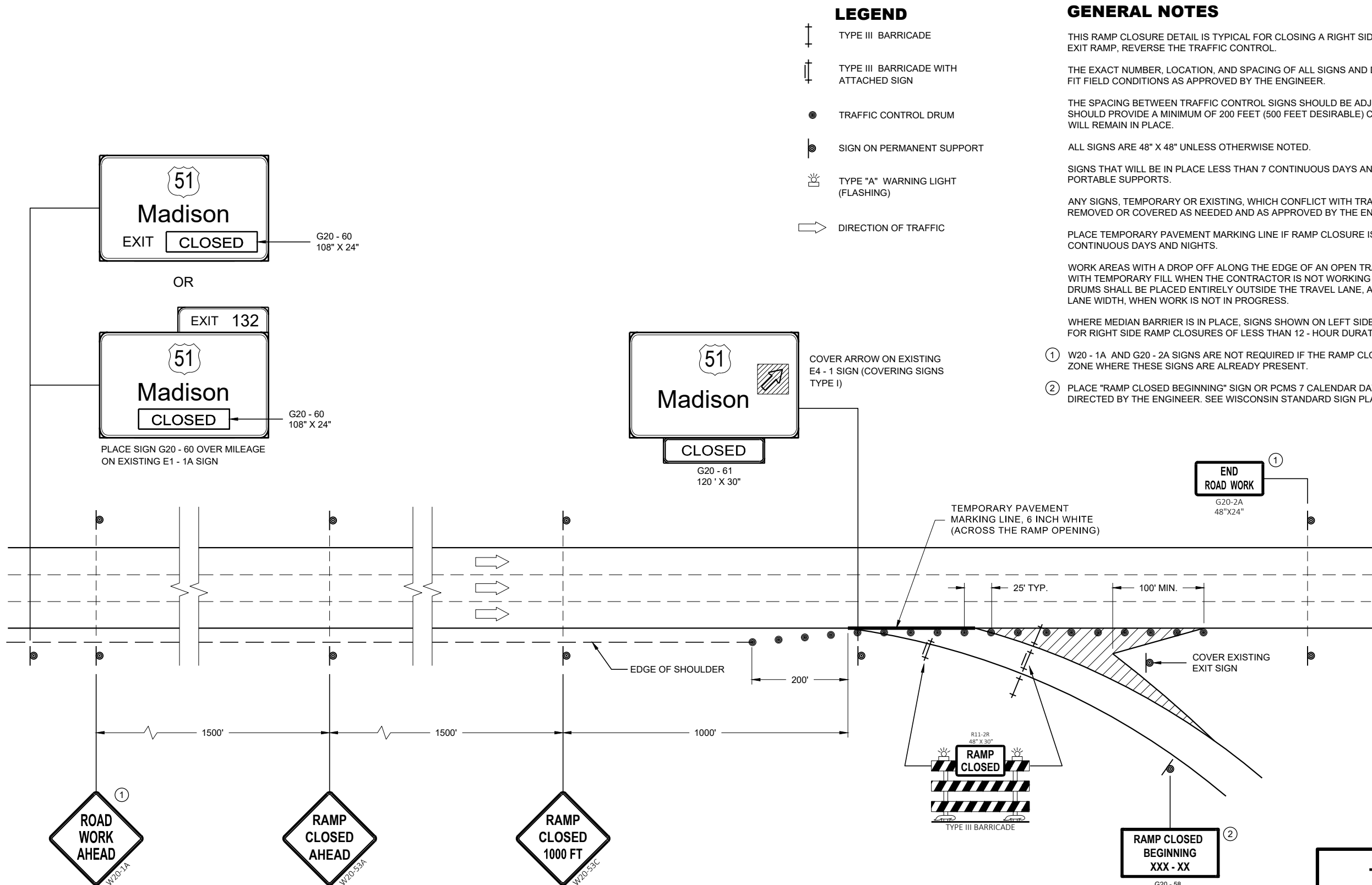
➡ DIRECTION OF TRAVEL



INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING
(INTERSECTIONS)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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.

TRAFFIC CONTROL,
EXIT RAMP CLOSURE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

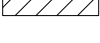
APPROVED
May 2023
DATE

/S/ Andrew Heidtke
ROADWAY STANDARDS DEVELOPMENT ENGINEER

109

FHWA

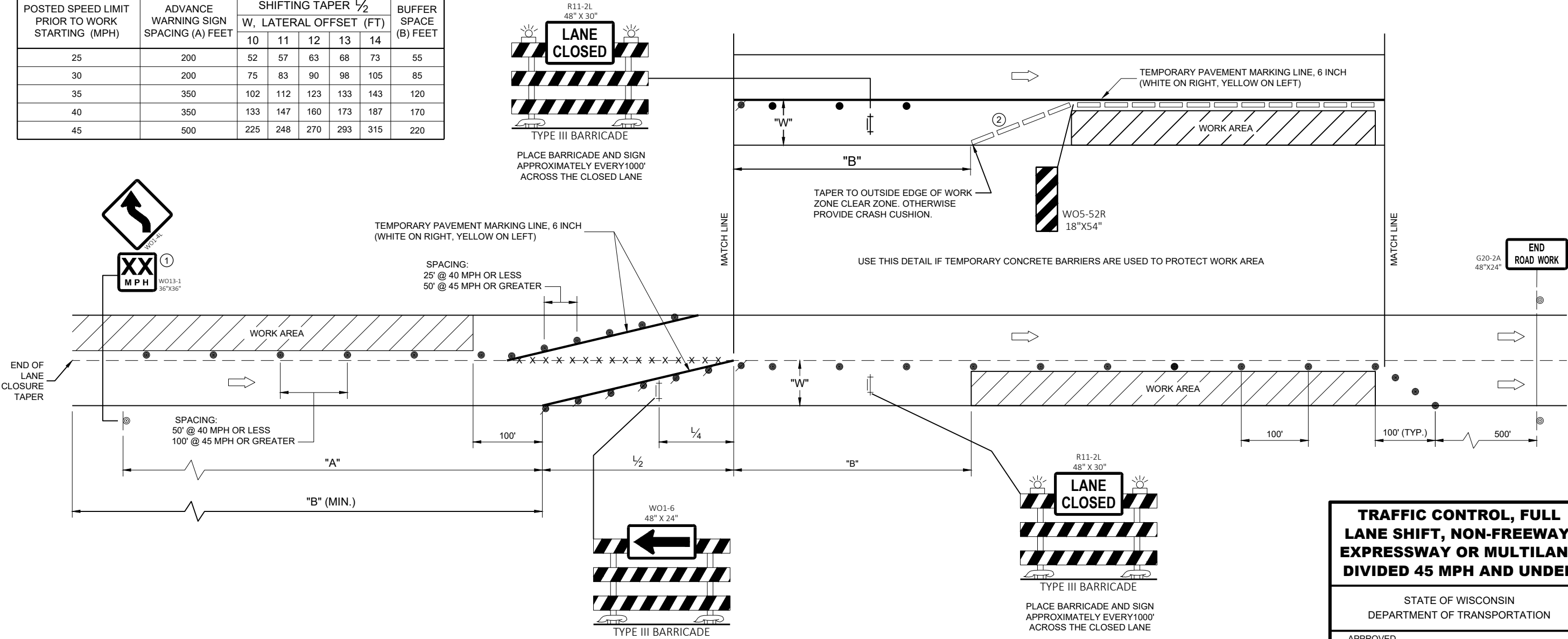
LEGEND

- 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

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHIFTING TAPER $\frac{L}{2}$ W, LATERAL OFFSET (FT)					BUFFER SPACE (B) FEET
		10	11	12	13	14	
25	200	52	57	63	68	73	55
30	200	75	83	90	98	105	85
35	350	102	112	123	133	143	120
40	350	133	147	160	173	187	170
45	500	225	248	270	293	315	220

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 RIGHT - REVERSE FOR SHIFTING LEFT.
- 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.
- ① USE ONLY IF DESIGN SPEED IS 10 MPH BELOW POSTED SPEED.
- ② BARRIER FLARE RATE: 6:1 @ 40 MPH OR LESS
8:1 @ 45 MPH OR GREATER



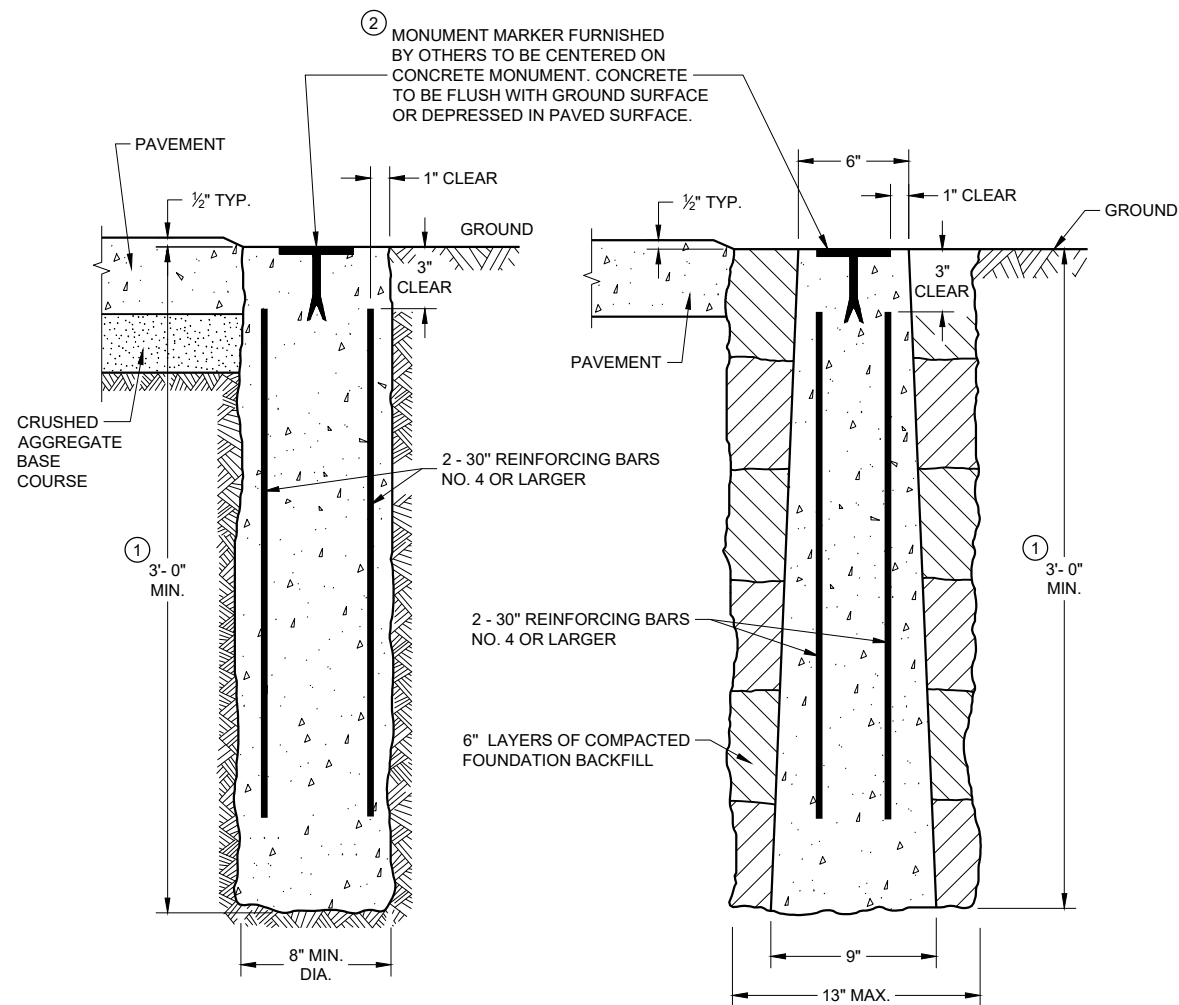
TRAFFIC CONTROL, FULL
LANE SHIFT, NON-FREEWAY/
EXPRESSWAY OR MULTILANE
DIVIDED 45 MPH AND UNDER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE

/S/ Andrew Heidtke
WORK ZONE ENGINEER 110

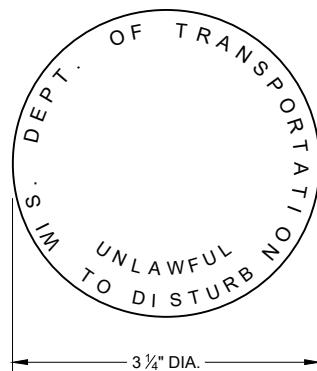
FHWA



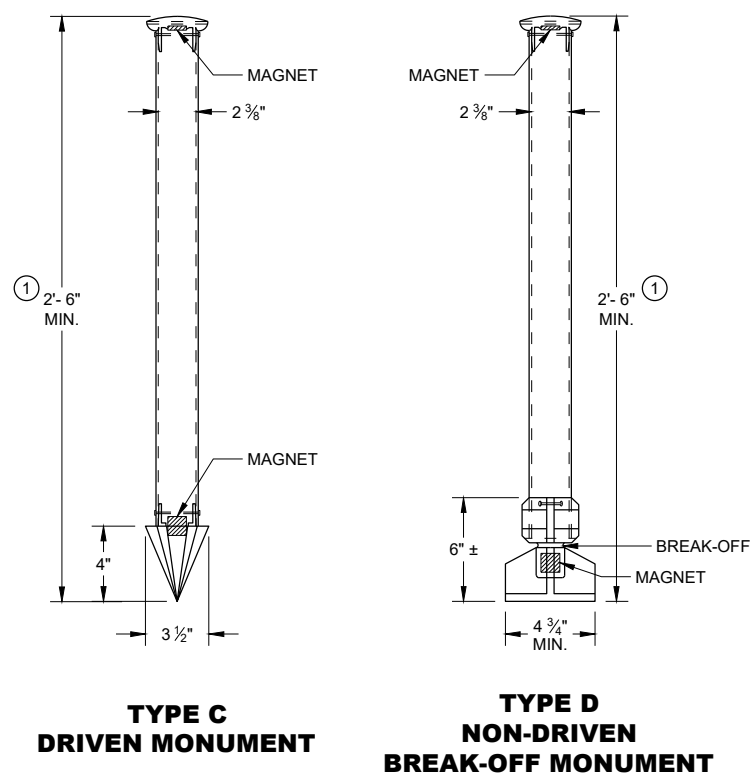
CAST-IN-PLACE

PRECAST

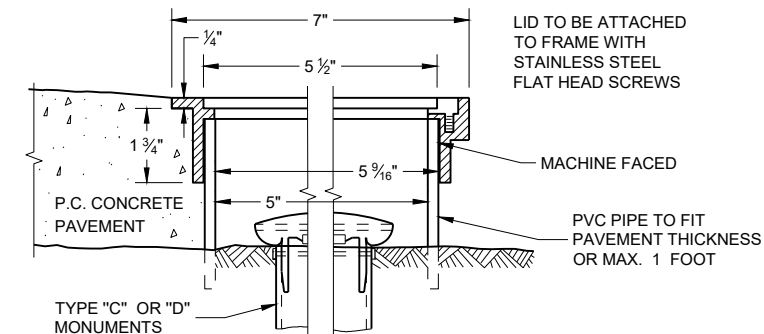
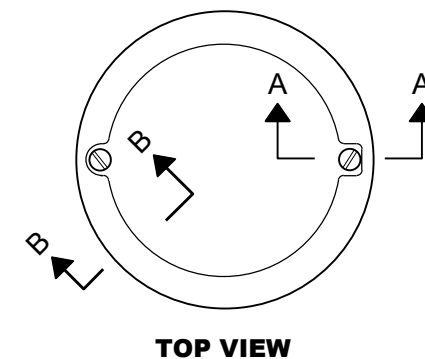
CONCRETE MONUMENTS TYPE A



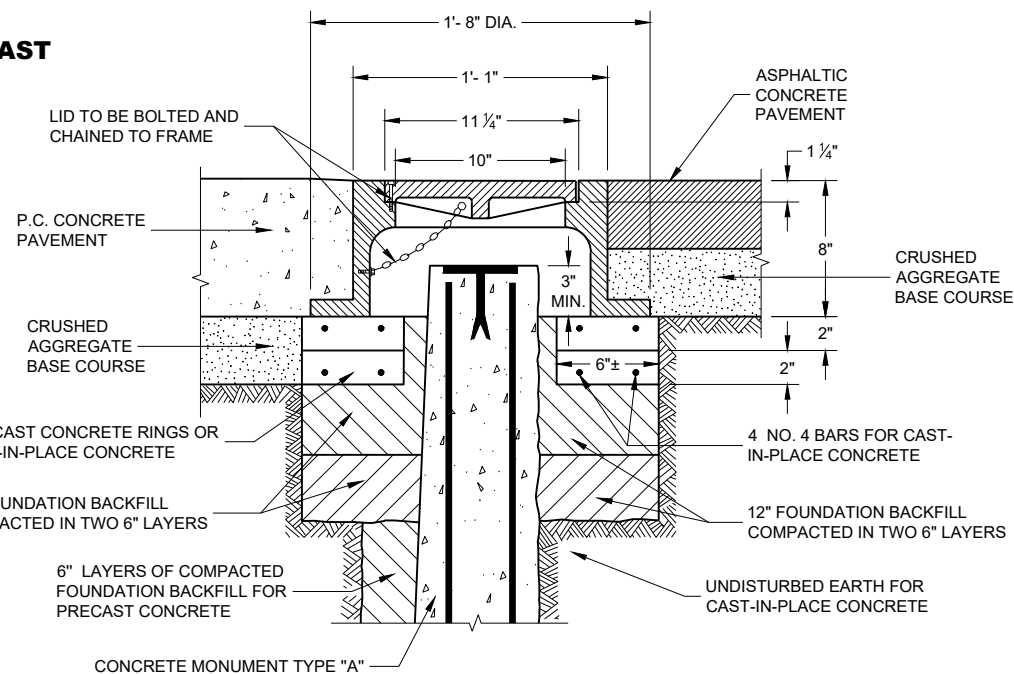
② **WIS DOT MONUMENT MARKER LOGO**
FOR TYPES "A", "C" & "D"



ALUMINUM MONUMENTS (INCLUDES MARKER)



SECTION B-B **SECTION A-A**
ALUMINUM MONUMENT COVER
(APPROXIMATE WEIGHT 2 LBS)
(FOR CONCRETE PAVEMENT ONLY)



CAST IRON MONUMENT COVER
(APPROXIMATE WEIGHT 95 LBS)

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.

DETAILED DRAWINGS OF PROPOSED ALTERNATE DESIGNS FOR METAL MONUMENTS OR MONUMENT COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

PERMANENT MAGNETS SHALL BE INSERTED NEAR THE TOP AND BOTTOM OF ALL ALUMINUM MONUMENTS SO THE MONUMENT CAN EASILY BE DETECTED BY A METAL DETECTOR.

THE CAST IRON MONUMENT COVER SHALL BE A "NON-ROCKING" TYPE. ADJUSTMENT OF THE COVER TO GRADE MAY BE ACCOMPLISHED BY THE USE OF MORTAR AND BRICK, OR BY EITHER PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE GRADE RINGS.

MONUMENTS SHALL BE LOCATED AND PLACED AT THE DIRECTION OF THE ENGINEER.

ALUMINUM MONUMENTS AND MONUMENT COVERS SHALL BE MADE FROM AN ALUMINUM AND MAGNESIUM ALLOY AS DETERMINED BY THE MANUFACTURER.

THE MONUMENT COVERS DETAILED ON THIS DRAWING ARE NOT EQUAL ALTERNATES. MONUMENT COVERS SHALL BE CAST IRON UNLESS ALUMINUM IS SPECIFIED ELSEWHERE IN THE CONTRACT.

MONUMENT SHALL BE CAST-IN-PLACE CONCRETE UNLESS PRECAST CONCRETE OR ALUMINUM MONUMENTS ARE SPECIFIED IN THE CONTRACT OR PERMITTED BY THE ENGINEER.

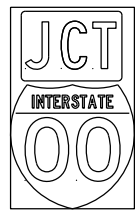
- ① MINIMUM LENGTH SHALL BE 4'-0" FOR MONUMENTS INSTALLED IN PAVED AREAS.
- ② AN OFFICIAL COUNTY MONUMENT MARKER SUPPLIED BY A COUNTY MAY BE REQUIRED FOR SOME SECTION CORNERS AND WITNESS MONUMENTS INSTEAD OF THIS WISDOT MARKER.

LANDMARK REFERENCE MONUMENTS AND COVERS

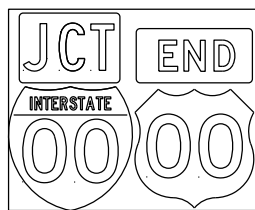
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
March 2018 /S/ Raymond A. Kumapavi
DATE CHIEF SURVEYING AND MAPPING ENGINEER 111
FHWA

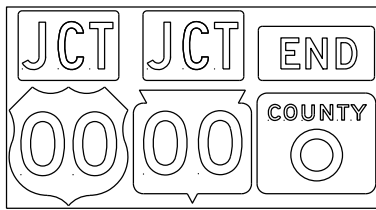
TYPICAL ASSEMBLIES



J1-1



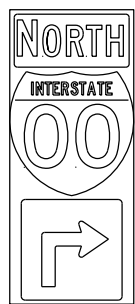
J1-2



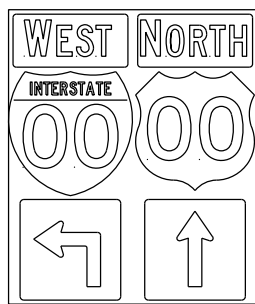
J1-3



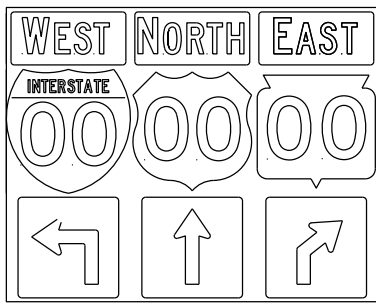
JR1-1



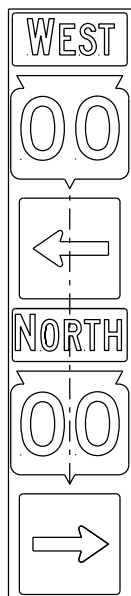
J2-1



J2-2

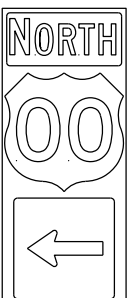


J2-3

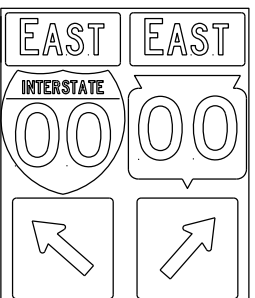


JV

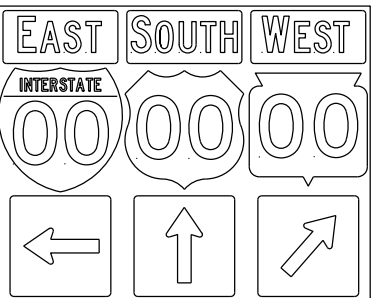
(Typical Vertical J-Assembly
See Note 10 and 11)



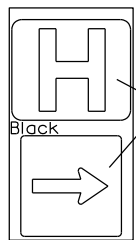
J3-1



J3-2



J3-3



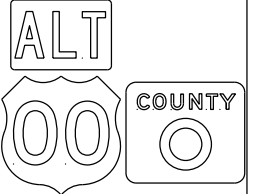
JH-1

Blue Background

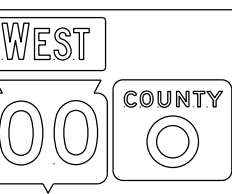
Black



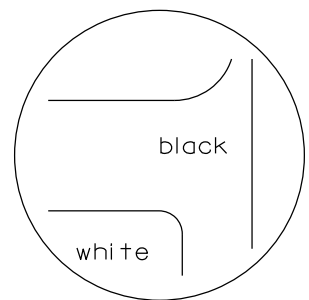
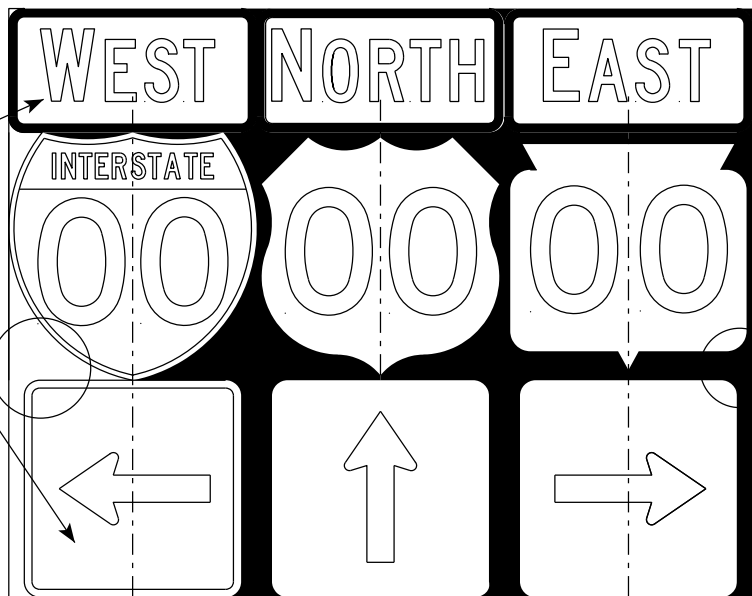
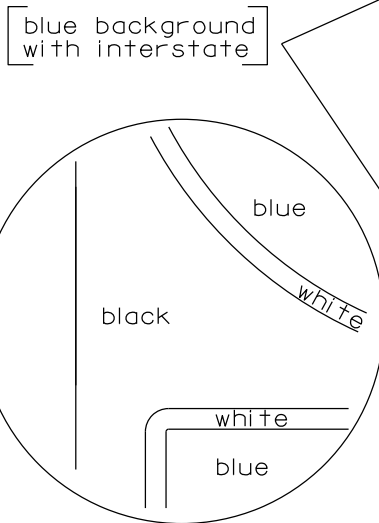
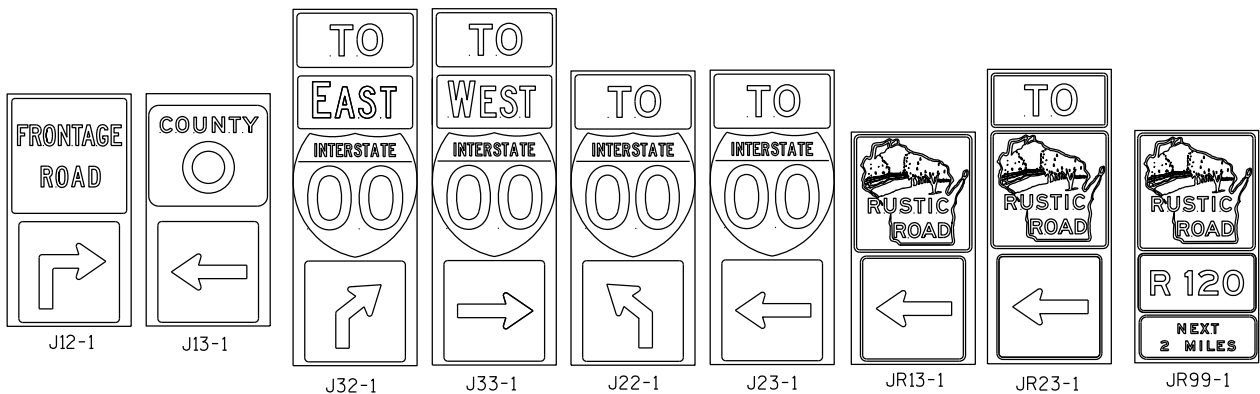
J4-1



J4-2



J4-2



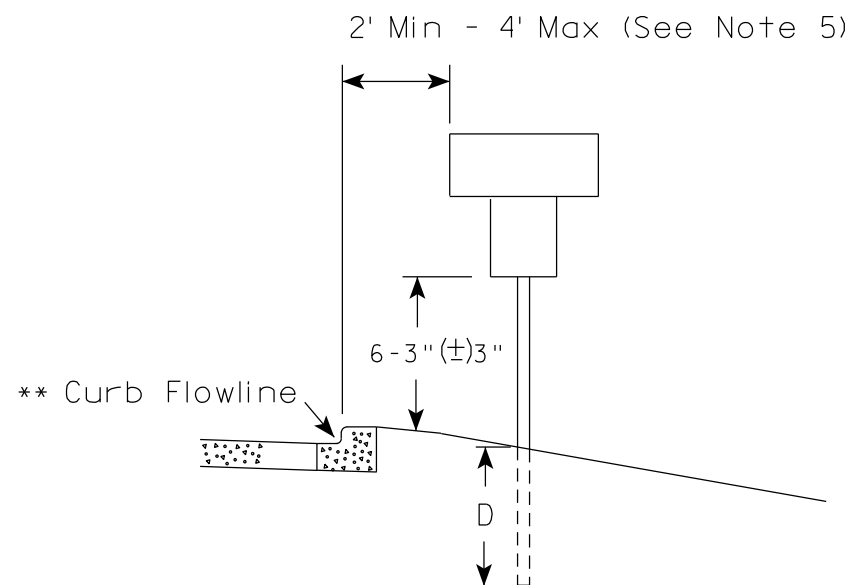
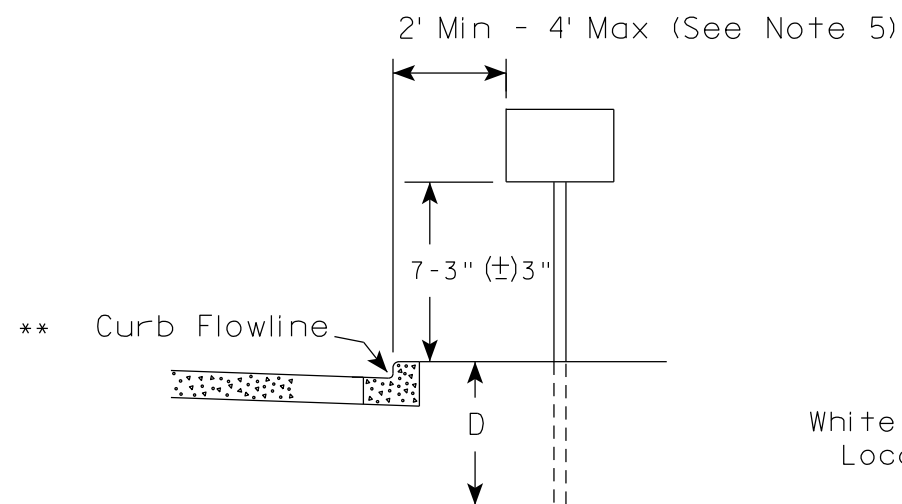
[black background]

ROUTE MARKERS & COMPONENTS IN TYPICAL ASSEMBLIES	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 6/7/23	PLATE NO. A2-1S.10

NOTES

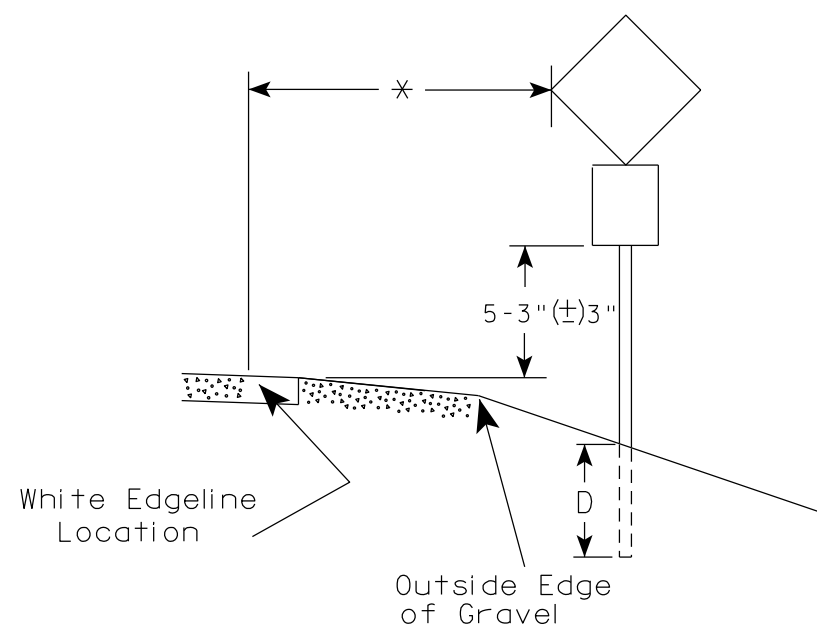
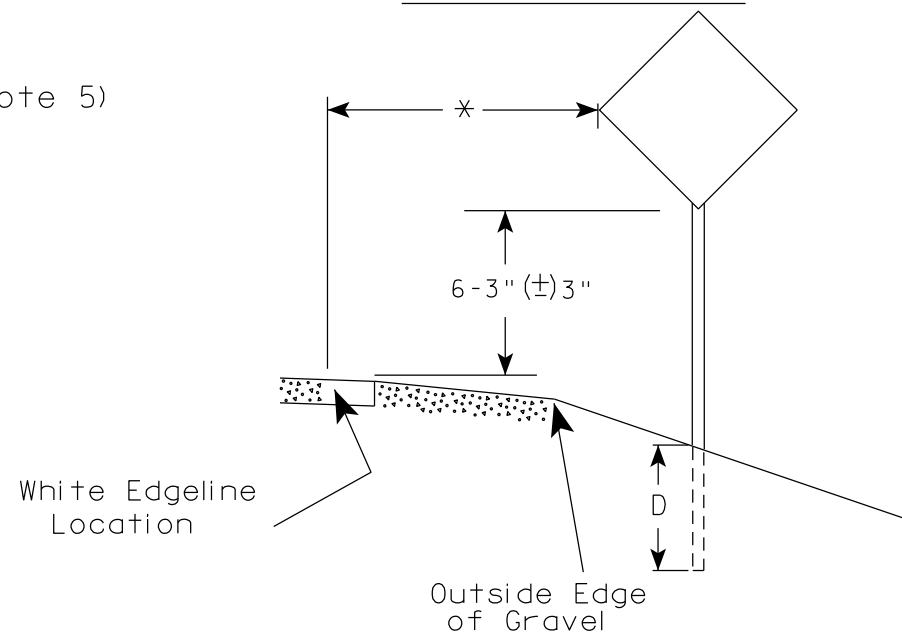
1. Signs are Type II - Type H Reflective
2. Color:
Background - Black Non-reflective
Message - see Note 4
3. Message Series - See Note 4
4. The colors and message spacing on each marker shall be according to the applicable route marker panel specifications.
5. Certain marker heads require the component pieces to be the same color. As an example, all the components used with an M1-1 Interstate marker shall be blue.
6. Single panel j-assemblies shall only be used with route marker shields that are same size. If the route marker shields are different size use multiple piece component.
7. Route assemblies that have 24 inch route shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have one horizontal splice between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 inches or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
8. Route assemblies that have 36 inch shields and have dimensions greater than 48 inches (both vertical and horizontal) shall have two horizontal splices. One horizontal splice shall be between the cardinal direction and route shields and the other horizontal splice shall be between the arrows and route shields. Vertical splices shall not be used on route assemblies with a horizontal dimension of 144 or less. The contractor shall not use more than one vertical joint per sign and the joint shall be between route shields.
9. All Vertical J Assemblies are given a Sign Code of JV
10. For JV Assemblies that have a mixture of Interstate and Non-Interstate shields, arrows and cardinals shall be white on blue.
11. For JV Assemblies that have a mixture of Non-Interstate and Auto-Tour shields, arrows and cardinals shall be black on white.

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.

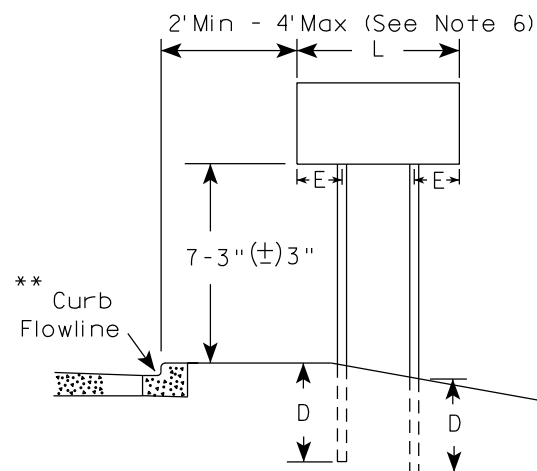
TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

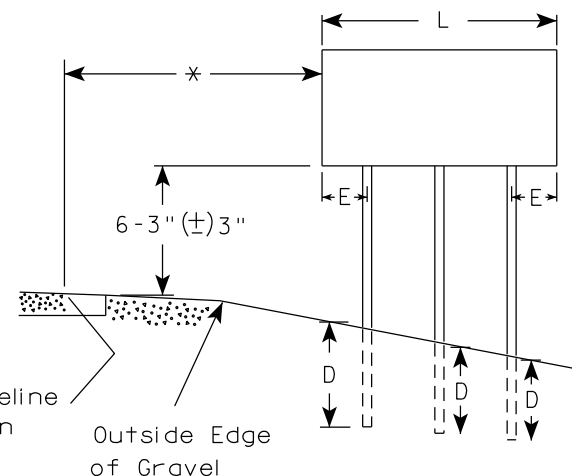
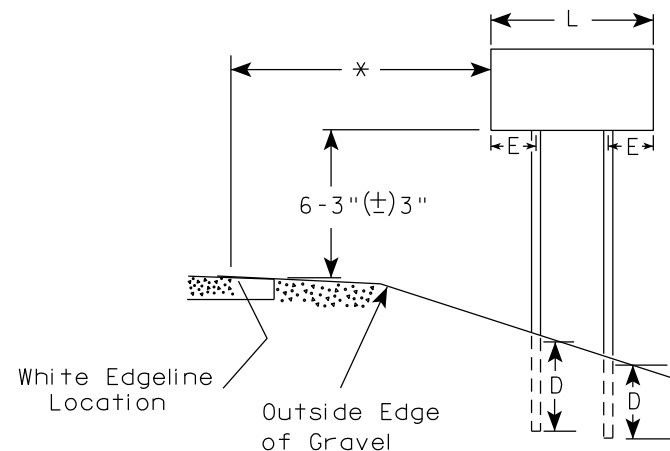
APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

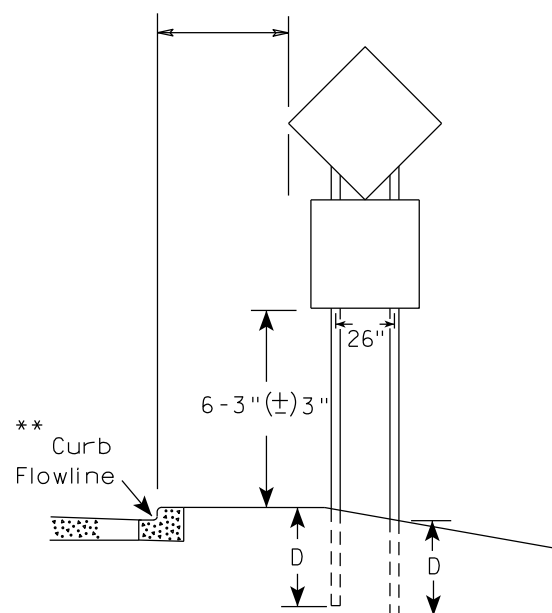
URBAN AREA



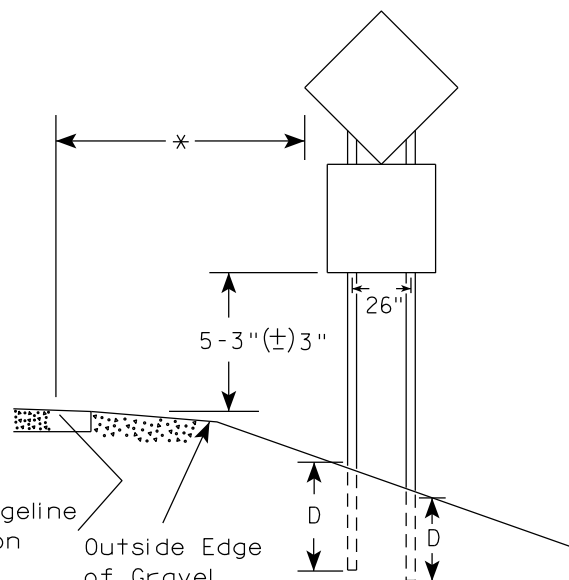
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 12/6/23 PLATE NO. A4-4.16

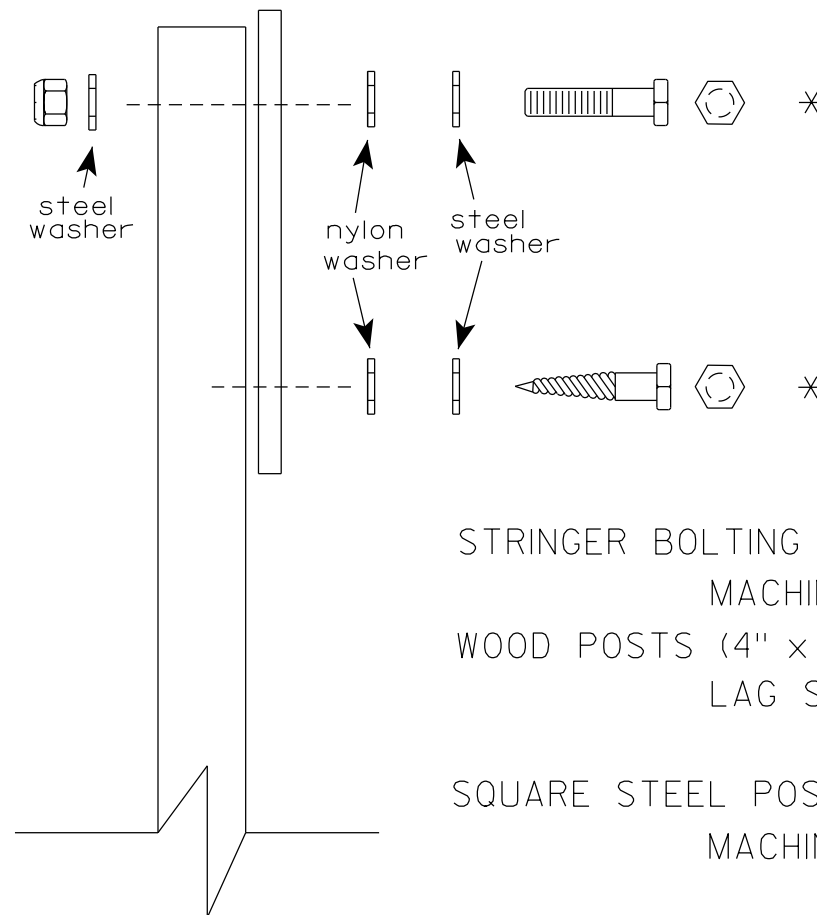
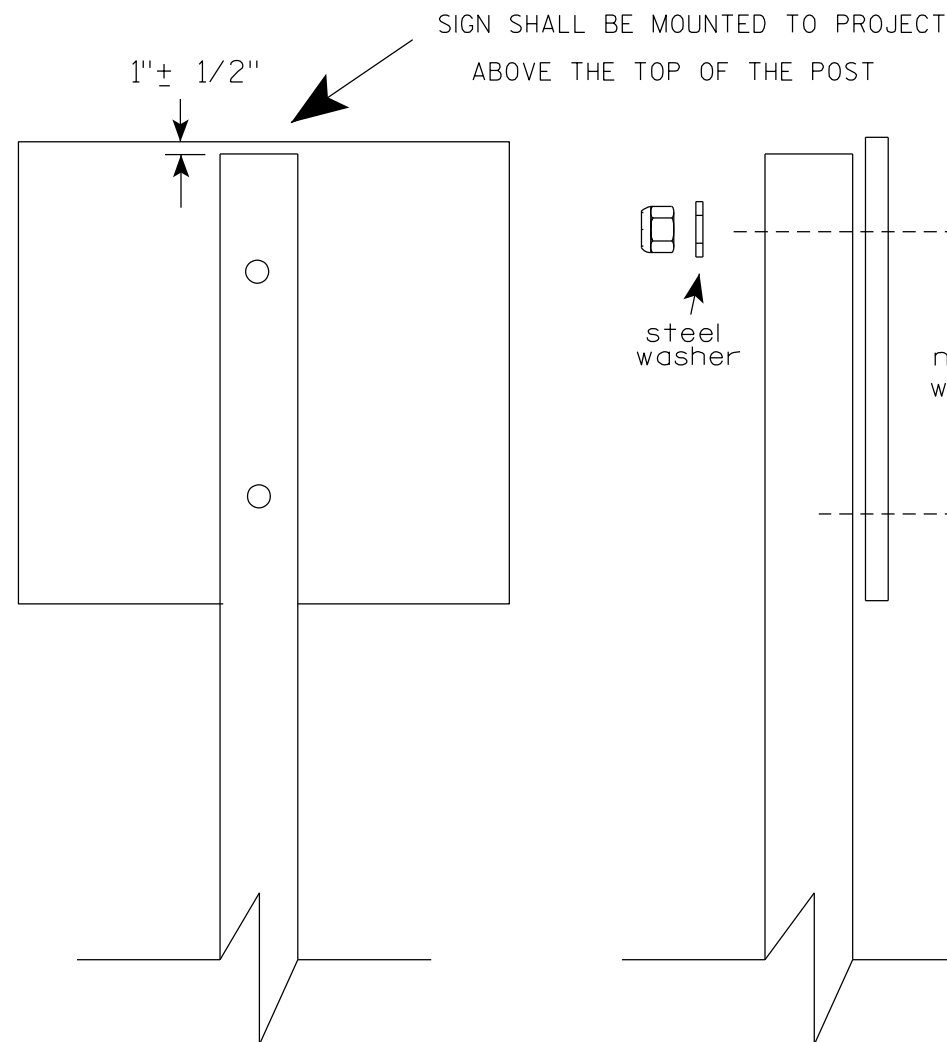
GENERAL NOTES

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

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

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

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



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

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

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

- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS - $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS - $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
- MACHINE BOLTS - $\frac{3}{8}$ " X 3-1/4" Length w/ nuts (NO STRINGER ON BACK OF SIGN)
 $\frac{3}{8}$ " X 5" Length w/ nuts (STRINGERS ON BACK OF SIGN)
- RIVETS - $\frac{9}{32}$ " (6605-9-6) BULB-TITE, TRI-FOLD, ALUMINUM BODY/MANDREL
O.D. FLANGE .720-.765 INCH, GRIP RANGE .042-.375 INCH
- WASHERS (ALL POSTS) -
- 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ " STEEL
 - 1-1/4" O.D. X $\frac{3}{8}$ " I.D. X .080 NYLON

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

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

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

1"

$\frac{1}{8}"$

ALL HOLES $\frac{7}{16}"$
SPACED 1" C-C
ALL FOUR SIDES

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

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

LENGTH SHOWN ON MISC. QTY'S

18" DIA SCHEDULE 40 PVC BOX-OUT

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

2 1/2" GRAVEL OR DIRT

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SIGN

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

36"

18"

13"

LENGTH SHOWN ON MISC. QTY'S

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

ALL HOLES $\frac{7}{16}$ " SPACED 1" C-C ALL FOUR SIDES

$\frac{3}{8}$ " ZINC PLATED CORNER ANCHOR BOLT AND NUT

1"

$\frac{3}{8}$ " ZINC PLATED ANCHOR BOLT AND NUT

2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)

2 1/4" SQUARE X 36"

SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL

SIGN

Diagram illustrating the corner detail of the guardrail assembly, labeled **SECTION A-A**. The diagram shows the corner of the guardrail structure, including the **3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT**. An arrow indicates the **DIRECTION OF TRAFFIC** flow.

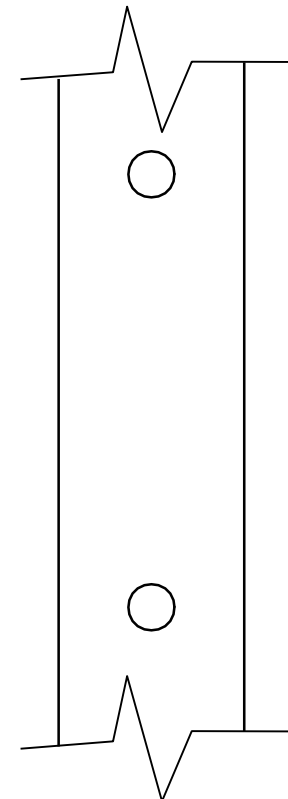
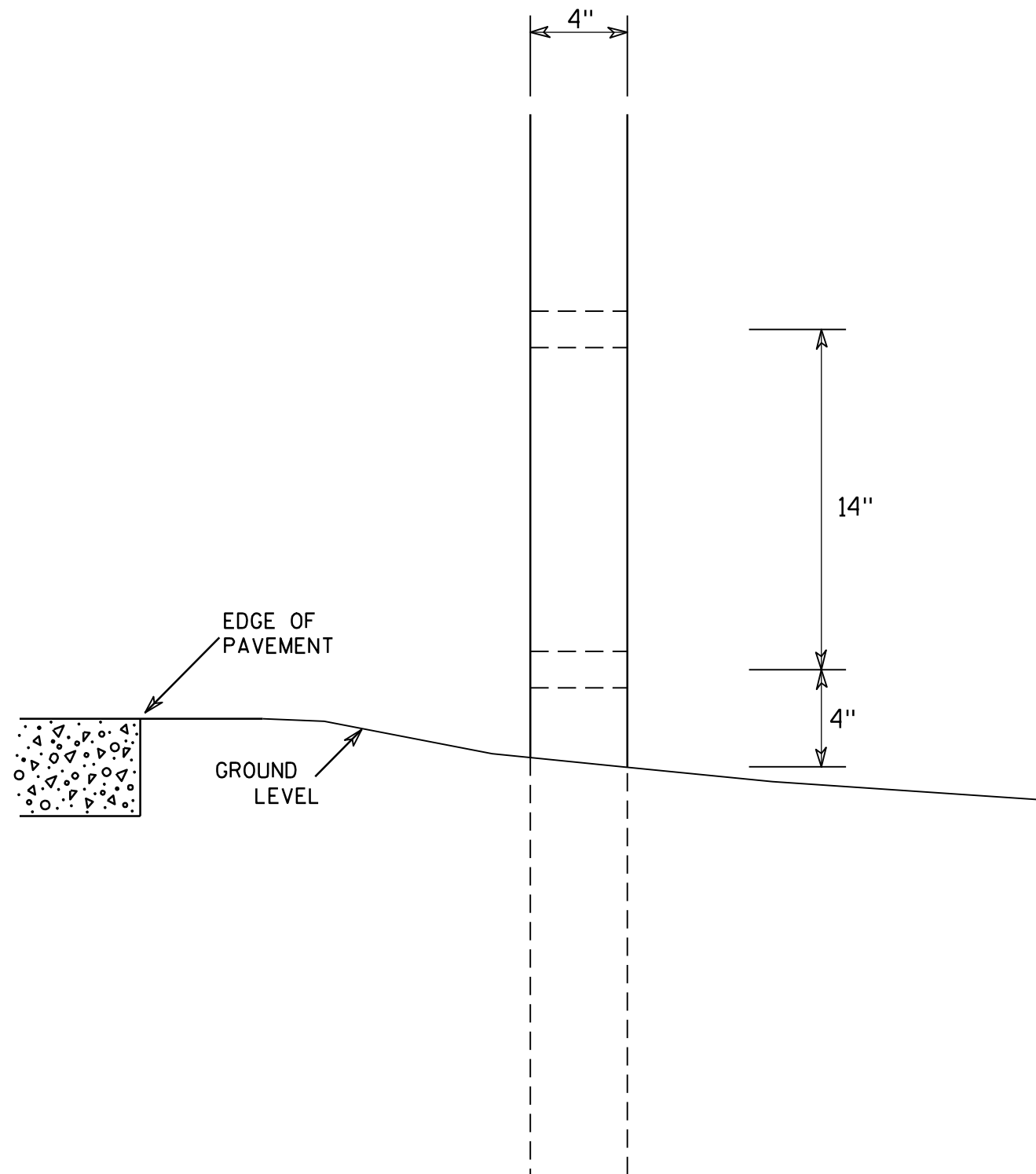
Area of Sign Installation (Sq. Ft.)	Number of Required Posts
9 or less	1
Greater than 9 less than or equal to 18	2
Greater than 18 less than or equal to 27	3

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthew R. Rauch
For State Traffic Engineer

DATE 2/05/15 PLAT 116 14-9.9



SIDE VIEW

GENERAL NOTES

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

4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Chester J. Spang
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

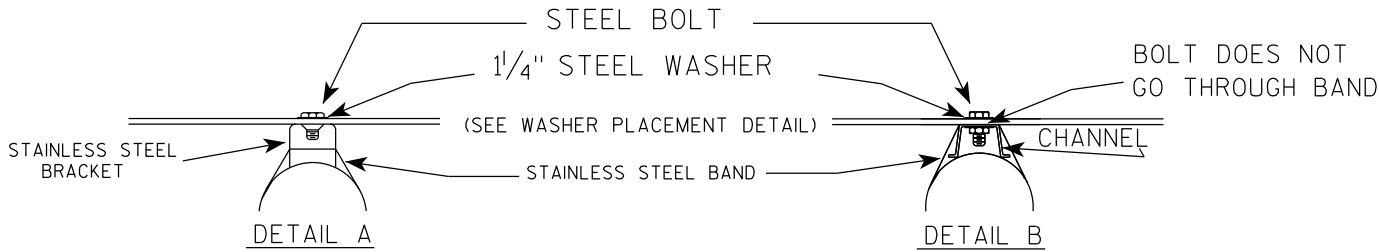
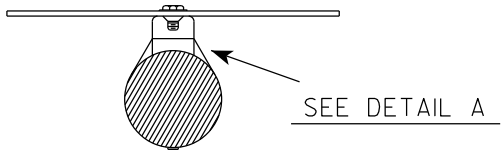
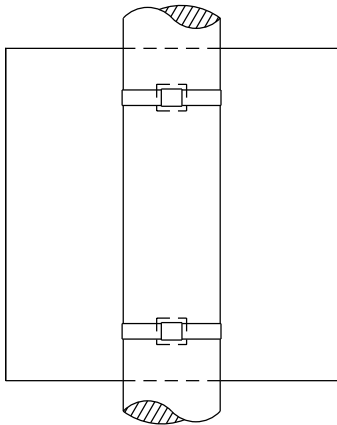
COUNTY:

SHEET NO: 117

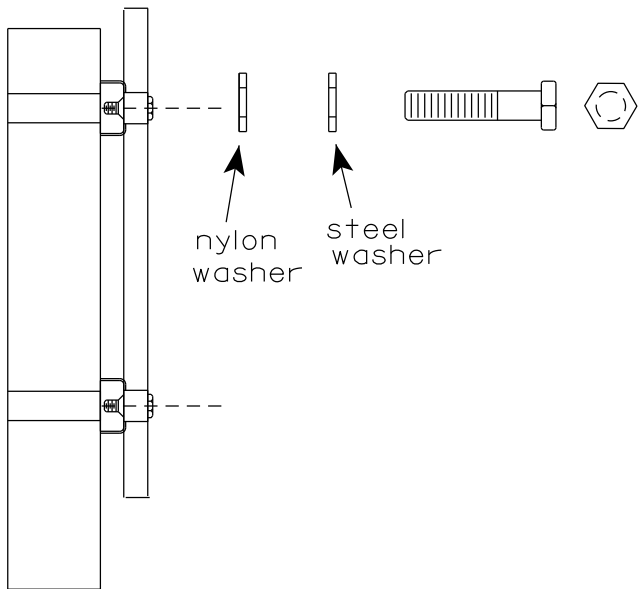
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

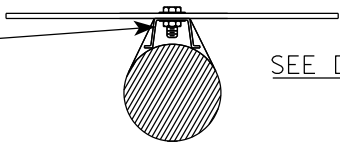
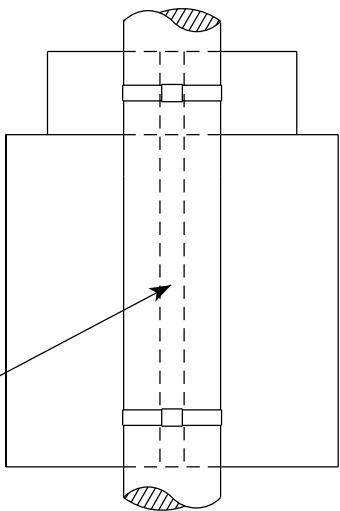


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

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

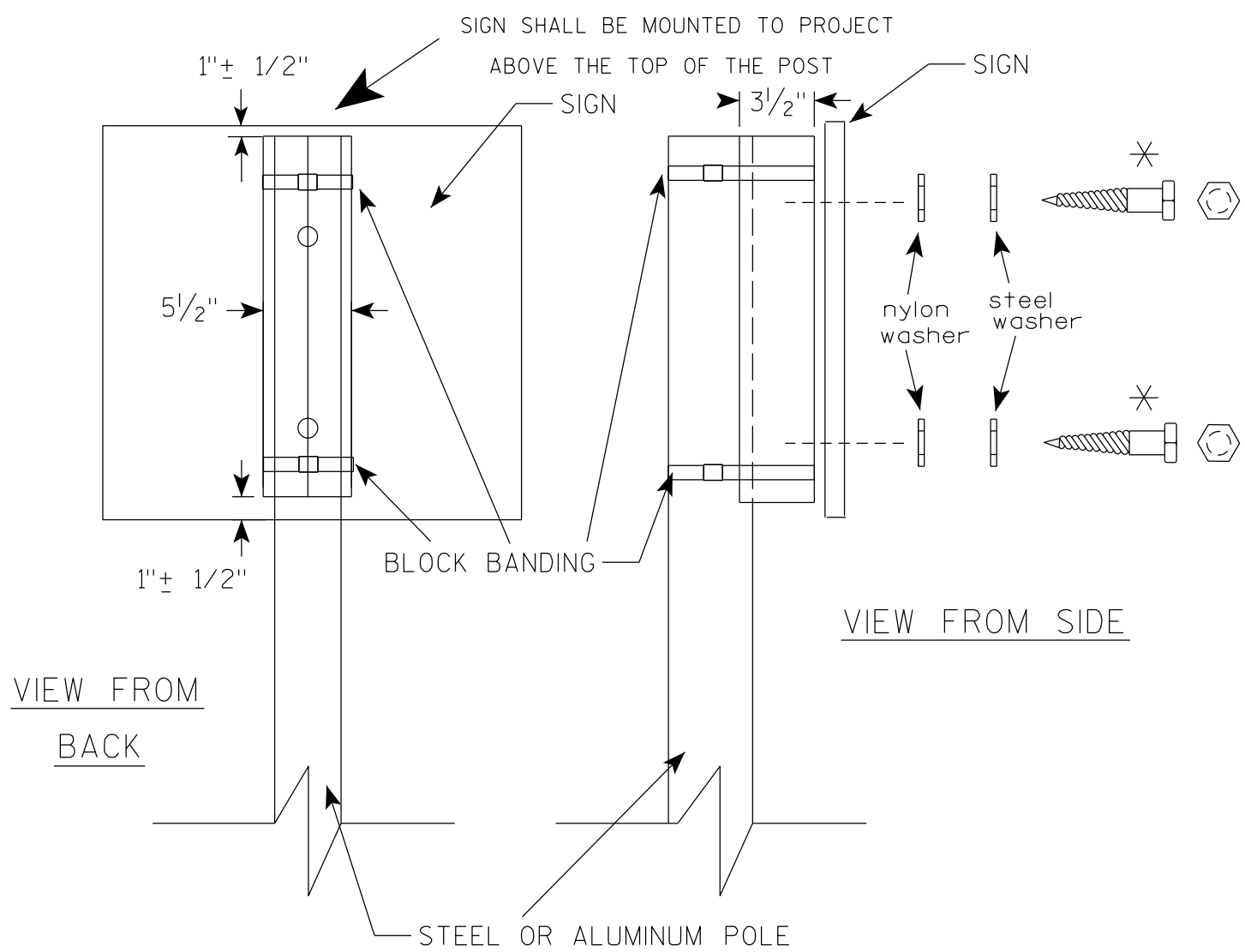
"J" ASSEMBLY



STANDARD SIGN
SIGN BANDING DETAILS

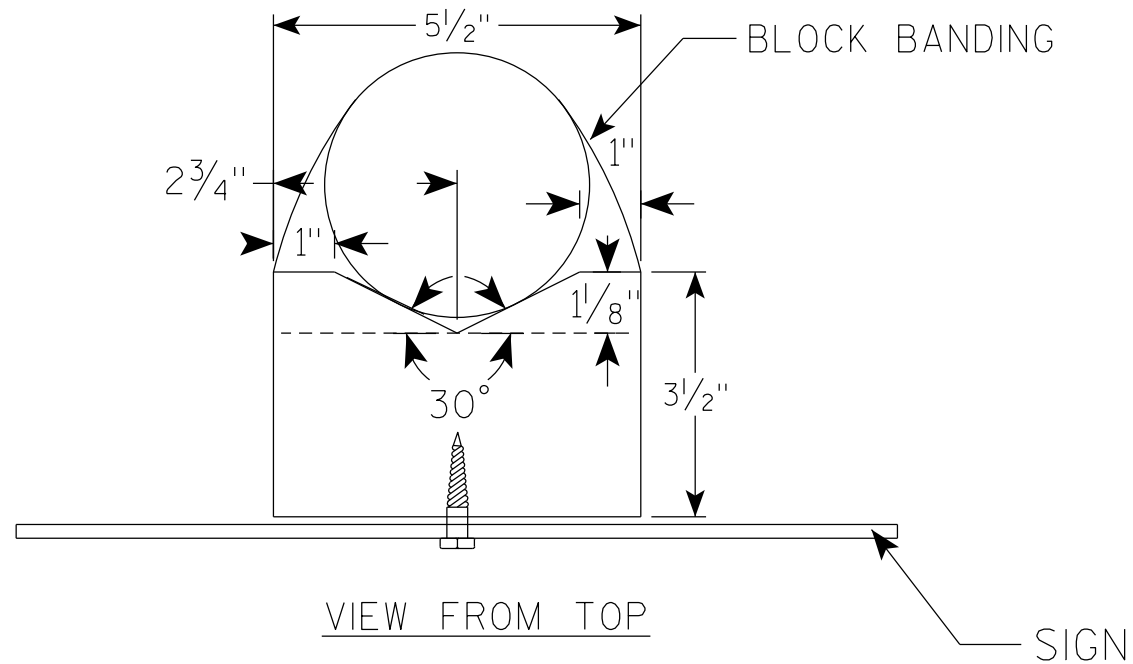
WISCONSIN DEPT OF TRANSPORTATION

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



VIEW FROM
BACK

VIEW FROM SIDE



VIEW FROM TOP

SIGN

GENERAL NOTES

1. WOOD 4"X6" POST MATERIAL SHALL CONFORM TO 507.2.2 OF THE WISDOT STANDARD SPECIFICATIONS
2. BLOCK BANDING AND CLIPS SHALL BE STAINLESS STEEL, $\frac{3}{4}$ " WIDTH AND 0.025" THICKNESS
3. SIGNS 3' OR GREATER IN HEIGHT SHALL UTILIZE 3 BLOCK BANDS. SIGNS UNDER 3' IN HEIGHT SHALL UTILIZE 2 BLOCK BANDS
4. ACTUAL NUMBER OF FASTENERS PER SIGN VARIES WITH THE SIGN AREA, BUT NORMALLY THERE ARE TWO. FOR SIGNS GREATER THAN 9 S.F. 3 FASTENERS SHALL BE USED.
5. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
 - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
 - b. Electro-galvanized in accordance with ASTM Designation : B 633, TYPE III, SC 3
6. ALL BOLTS SHALL HAVE HEXAGONAL HEADS.
7. STEEL WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X $\frac{1}{16}$ "
8. NYLON WASHERS SHALL BE $\frac{1}{4}$ " O.D. X $\frac{3}{8}$ " I.D. X .080 FOR TYPE H OR TYPE F FACE SIGN

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

BLOCK BANDING DETAIL
(V-BLOCK OPTION)

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

PROJECT NO:

SHEET NO: 119

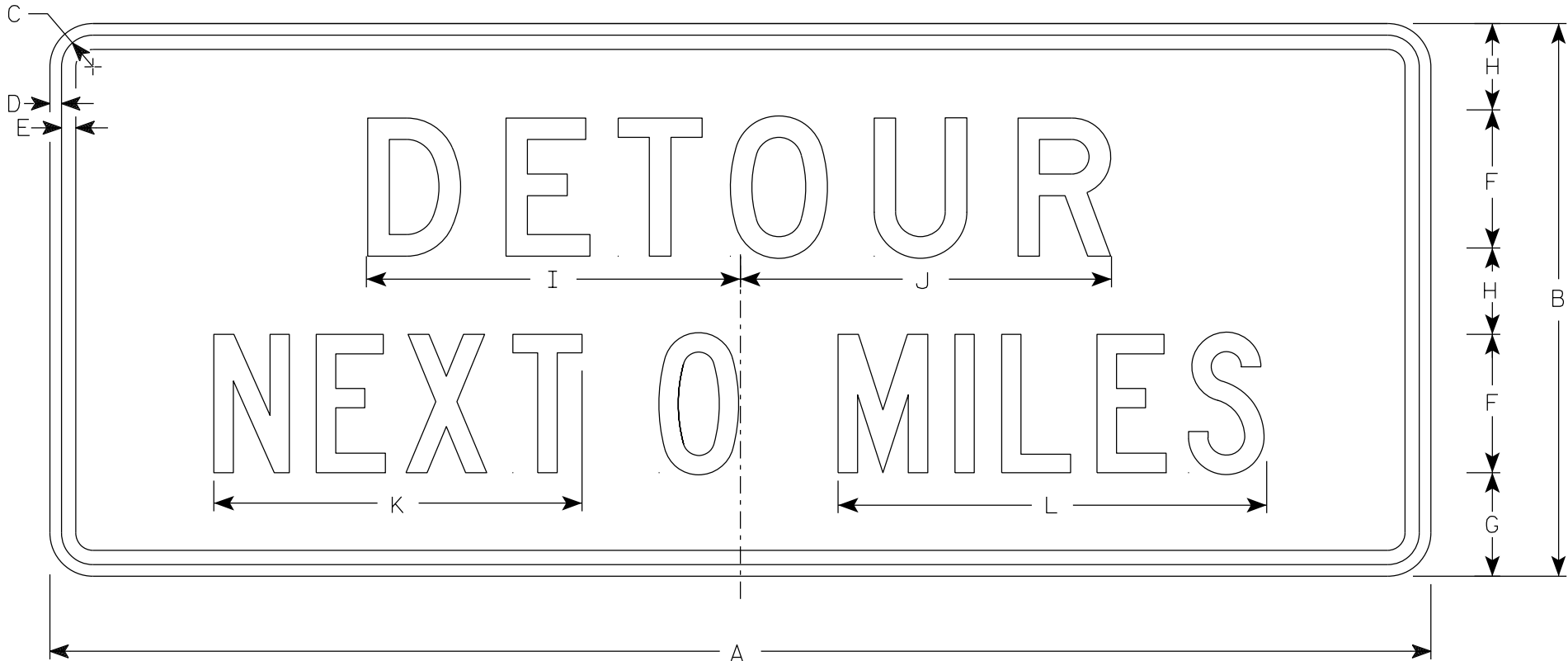
E

7

7

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
Background - Orange
Message - Black
- 3. Message Series - Line 1 is D and Line 2 is 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. Round distance to nearest whole Mile and substitute appropriate numerals and optically adjust spacing to achieve proper balance



G20-51

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	60	24	1 7⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10.0
2M	60	24	1 7⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10.0
3	60	24	1 7⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10.0
4	60	24	1 7⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10.0
5	60	24	1 7⁄8	1⁄2	5⁄8	6	4 1⁄2	3 3⁄4	16 1⁄4	16 1⁄8	16	18 5⁄8															10.0

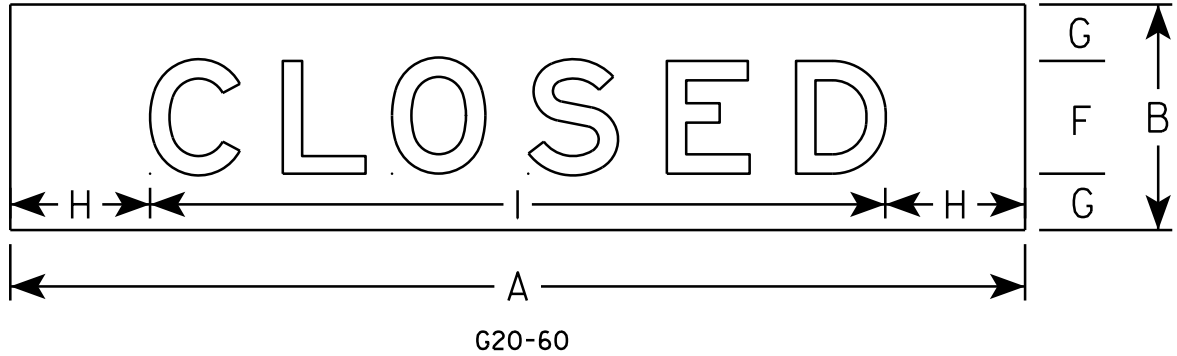
STANDARD SIGN

G20-51

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
State Traffic Engineer

DATE 1/26/2023 PLATE NO. G20-51.3



NOTES

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

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																											
2																											
3																											
4	108	24				12	6	14 7/8	78 1/4																		18.0
5																											

STANDARD SIGN
G20-60

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 5/13/15 PLATE NO. G20-60.1
121

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

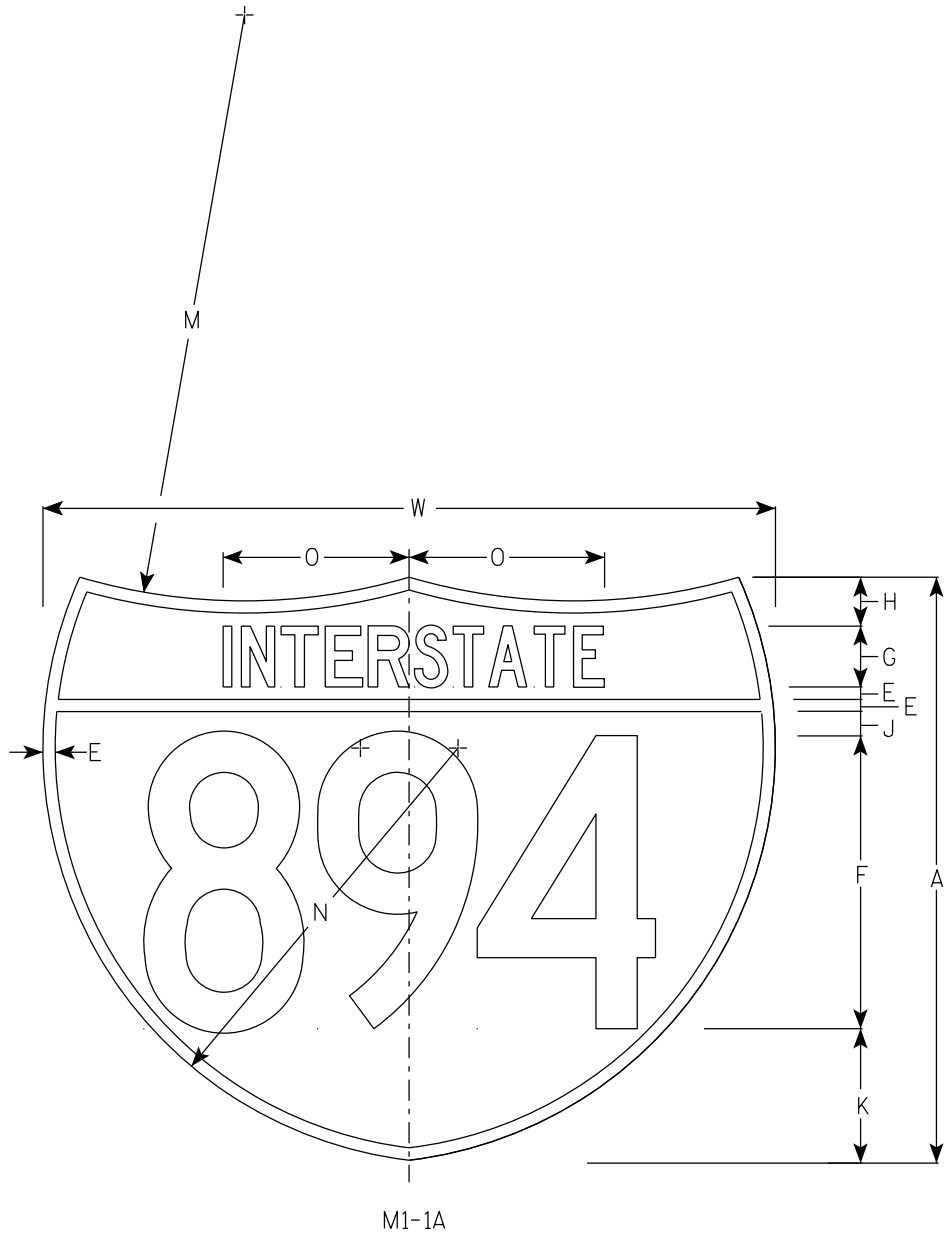
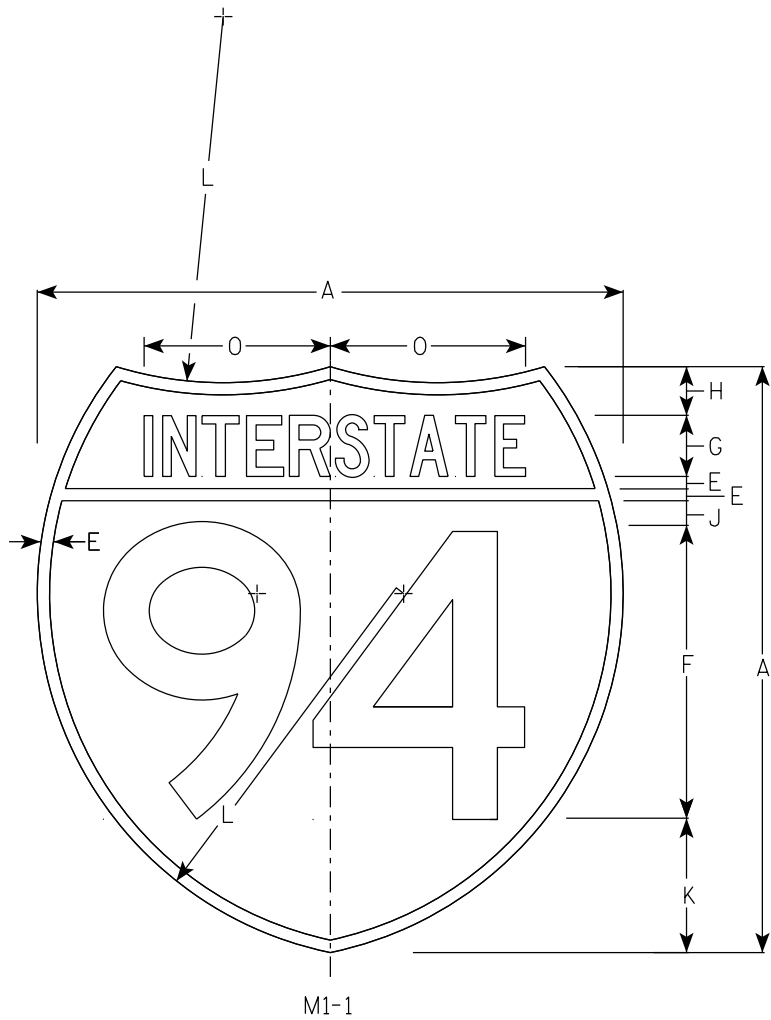
Matthew R. Rauch

for State Traffic Engineer

DATE 5/07/15PLATE NO. 122G20-61.1

SHEET NO: E

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

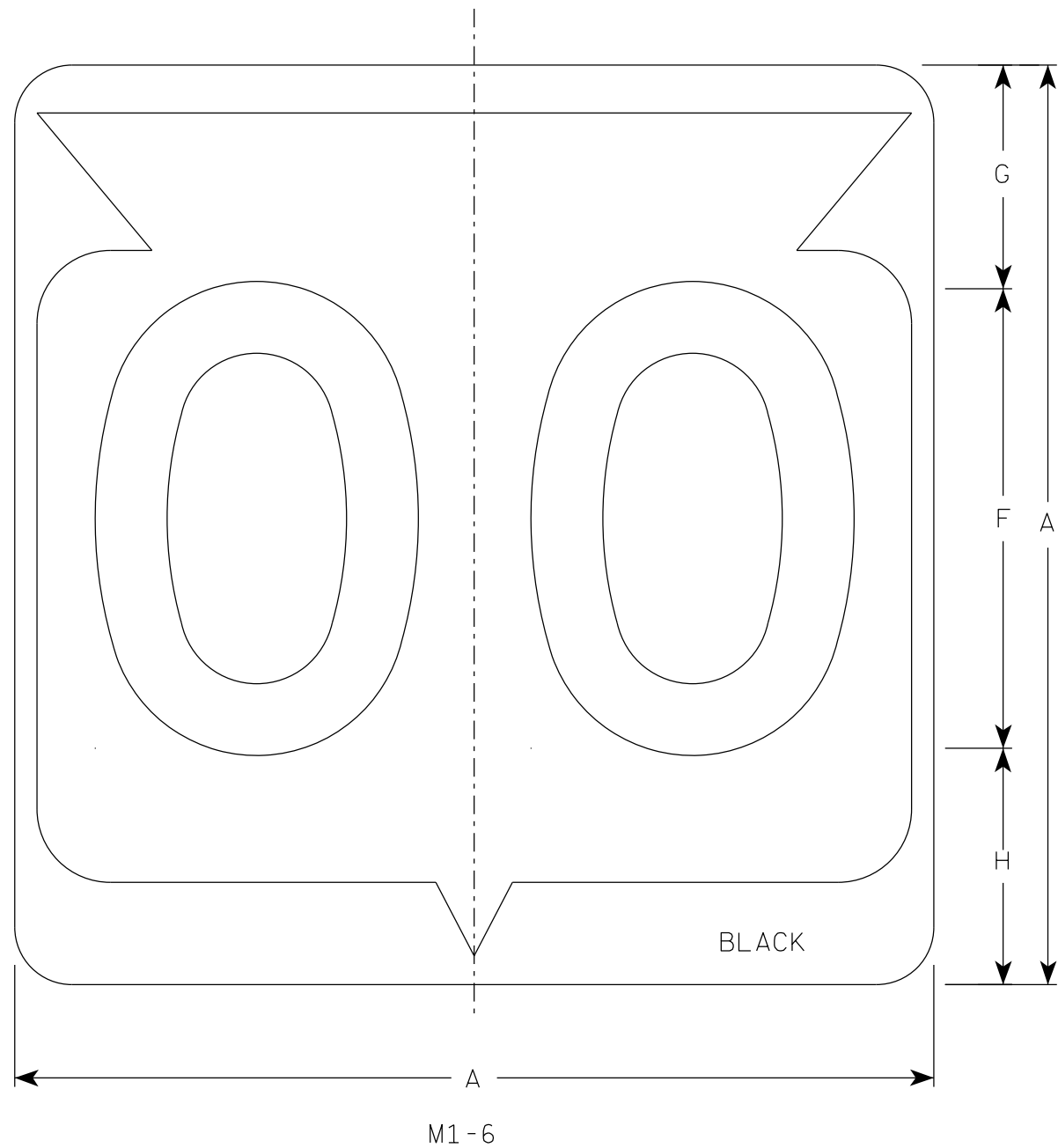
INTERSTATE ROUTE MARKER
M1-1 FOR ASSEMBLIES

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

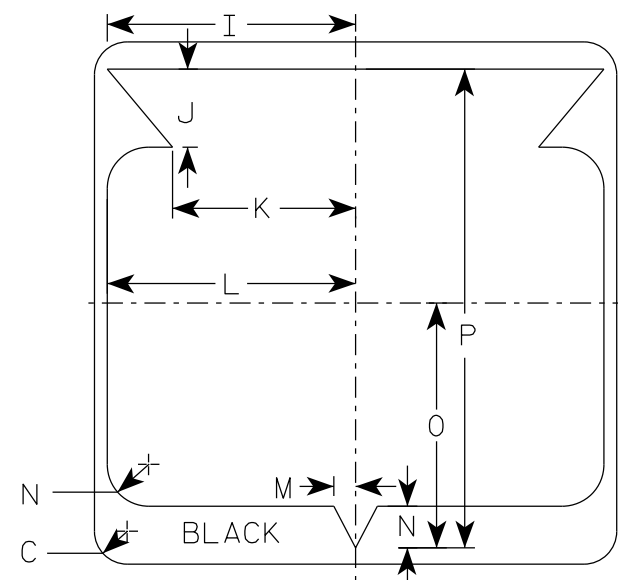
DATE 11/7/2022 PLATE NO. M1-1.9

7



NOTES

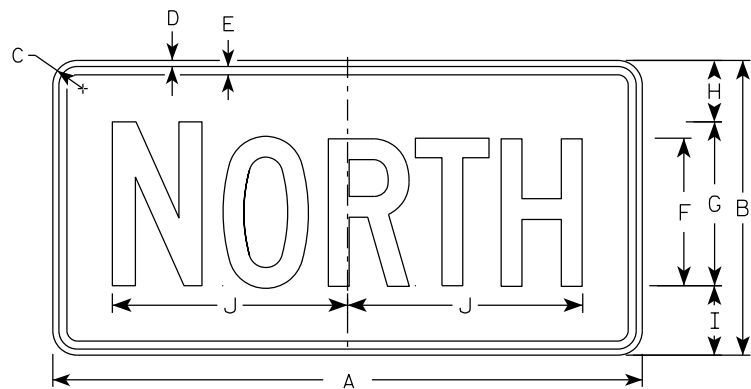
1. Sign is Type II - Type H Reflective
2. Color:
Background - White
Message - Black
3. Message Series - D except 3 number signs Series C



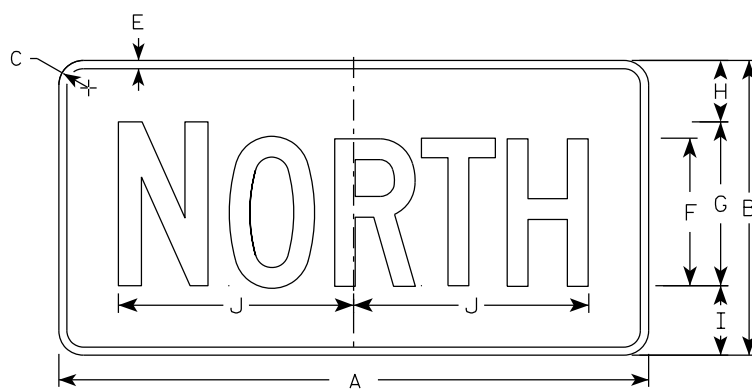
7

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

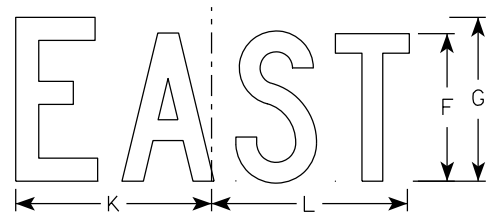
PROJECT NO:	HWY:	COUNTY:	SHEET NO: 124	E
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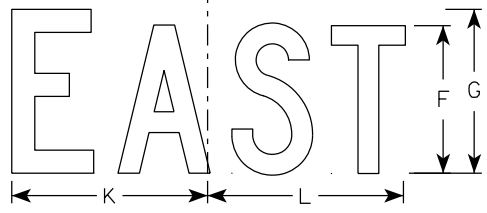
M3-1
MM3-1
MP3-1



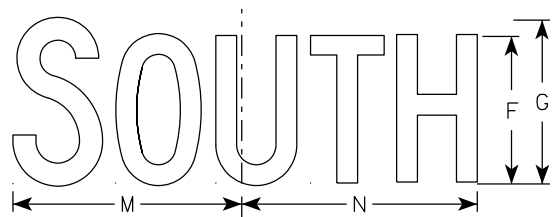
MB3-1
MK3-1
MN3-1



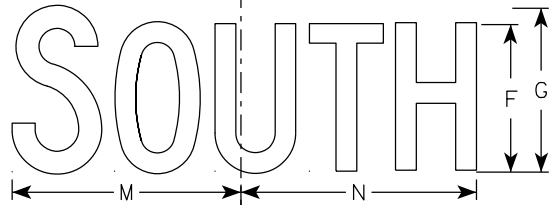
M3-2
MM3-2
MP3-2



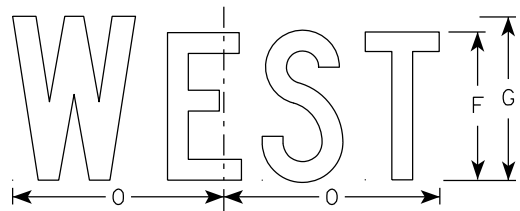
MB3-2
MK3-2
MN3-2



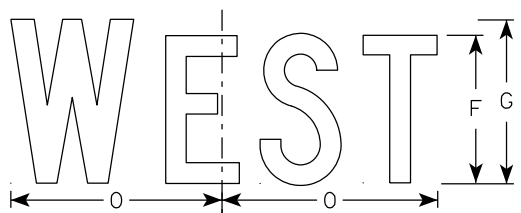
M3-3
MM3-3
MP3-3



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.

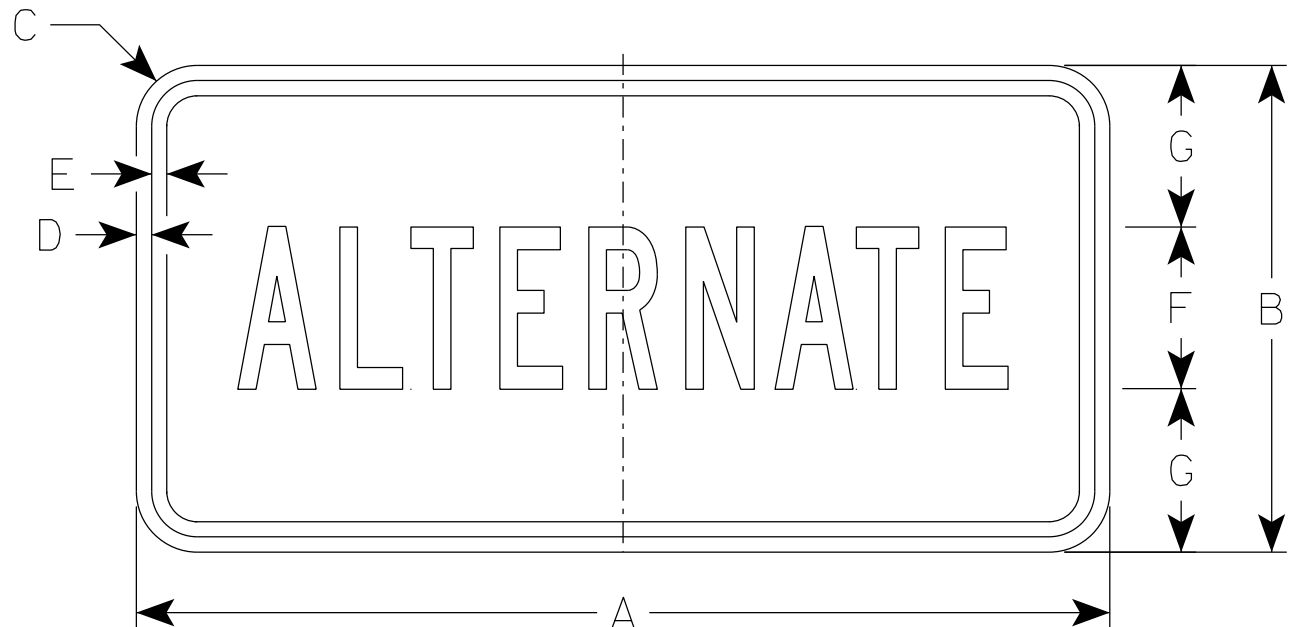
7

7

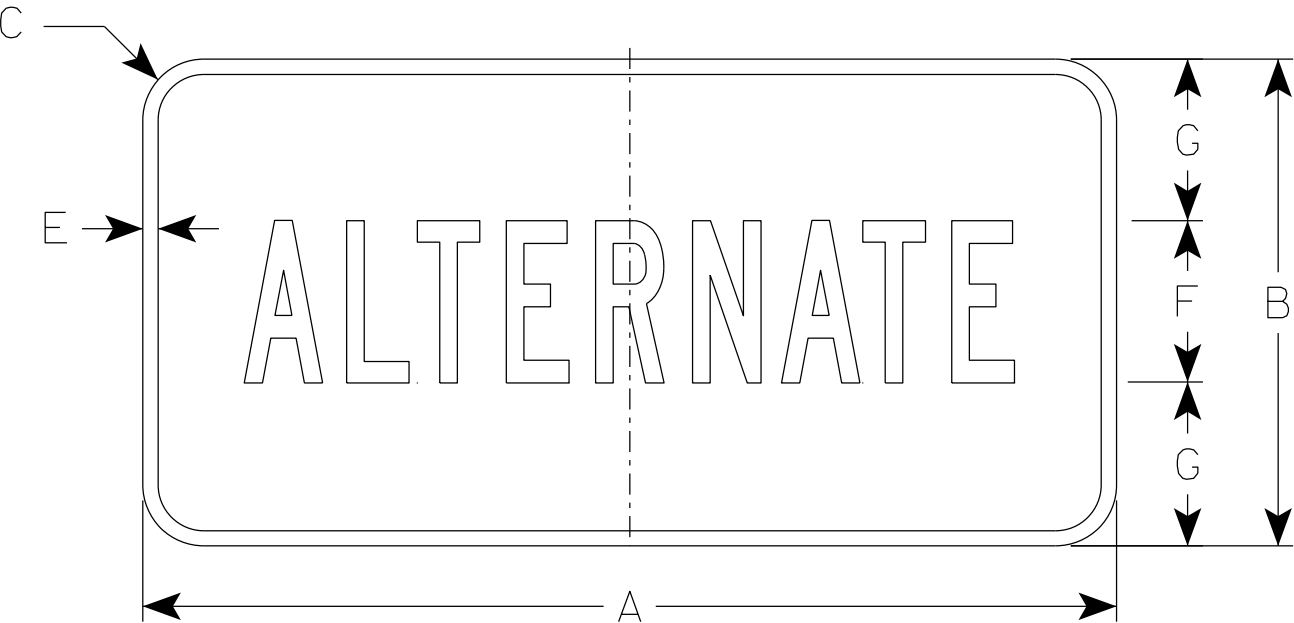
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
2M	24	12	1 1/2	3/8	3/8	6	7	2 1/4	2 3/4	10 1/4	7 7/8	8 3/8	10 1/4	9 3/4	8 3/4												2.00
3	36	18	1 1/2	3/8	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: 125	E
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7



M4 - 1
M04 - 1



MB4 - 1

NOTES

- 1. Sign is Type II - Type H Reflective except as Shown
- 2. Color:
Background - See Note 5
Message - See note 5
- 3. Message Series - B
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. M4-1 Background - White
Message - Black
MB4-1 Background - Blue
Message - White
M04-1 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	4	4	9 3/4	9 1/2																		2.00
2M	24	12	1 1/2	3/8	3/8	4	4	9 3/4	9 1/2																		2.00
3	36	18	1 1/2	3/8	1/2	7	5 1/2	16 3/8	16 1/2																		4.5
4	36	18	1 1/2	3/8	1/2	7	5 1/2	16 3/8	16 1/2																		4.5
5	36	18	1 1/2	3/8	1/2	7	5 1/2	16 3/8	16 1/2																		4.5

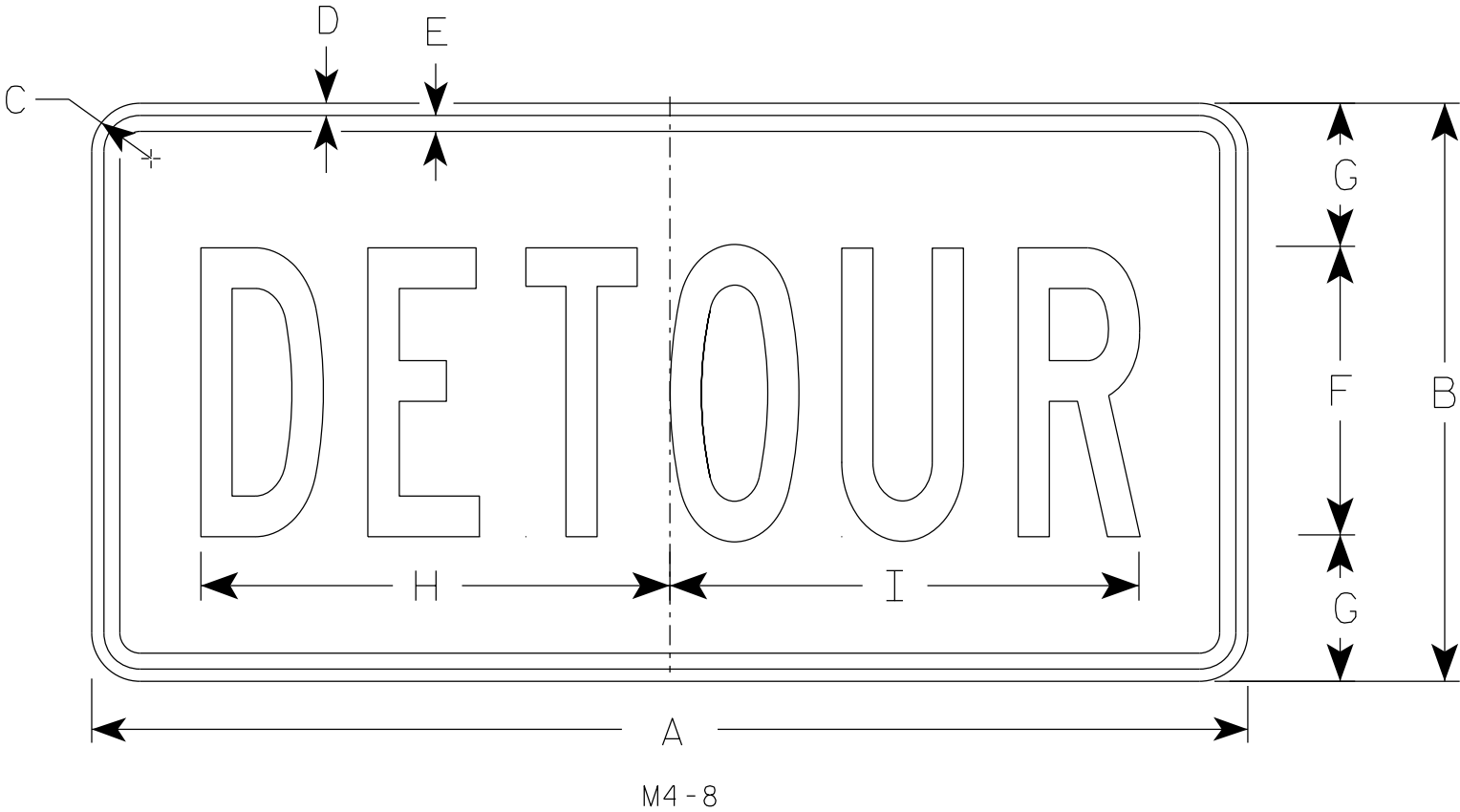
7

7

7

NOTES

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



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

STANDARD SIGN

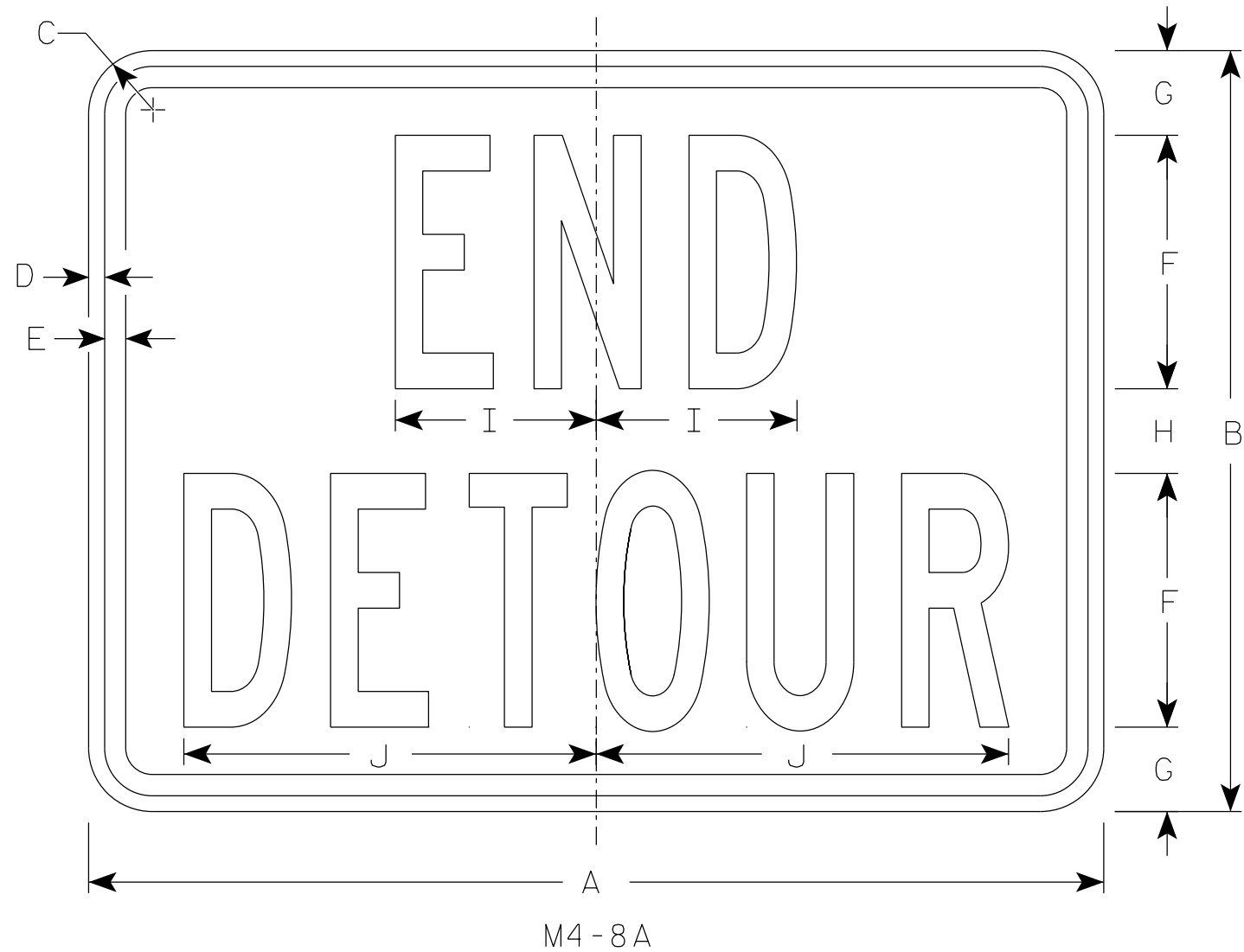
M4-8

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

7



NOTES

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

7

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

STANDARD SIGN
M4-8A

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

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

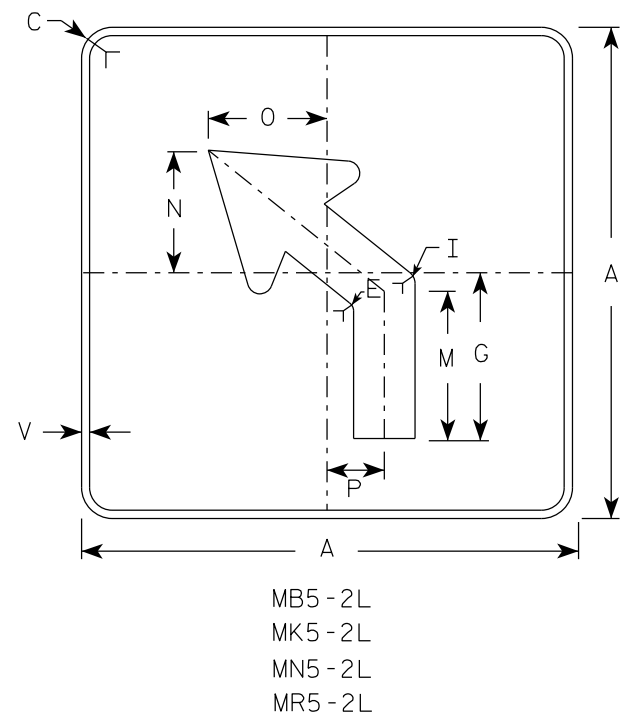
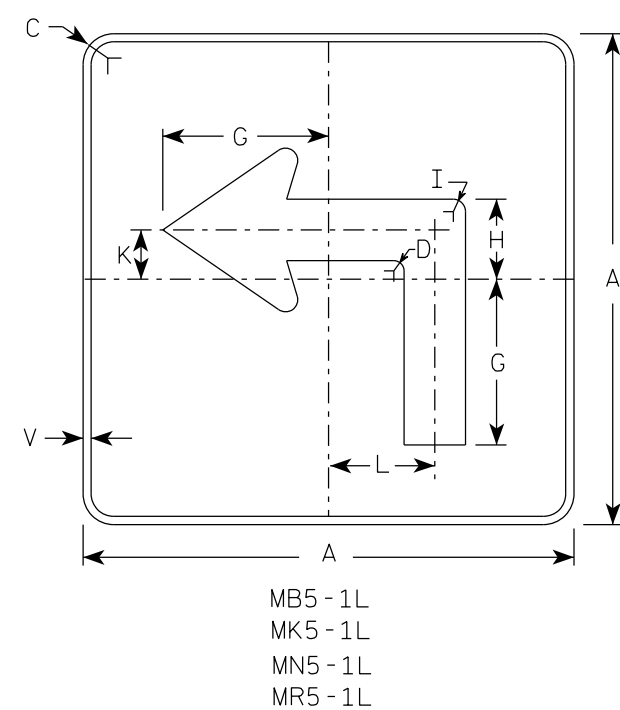
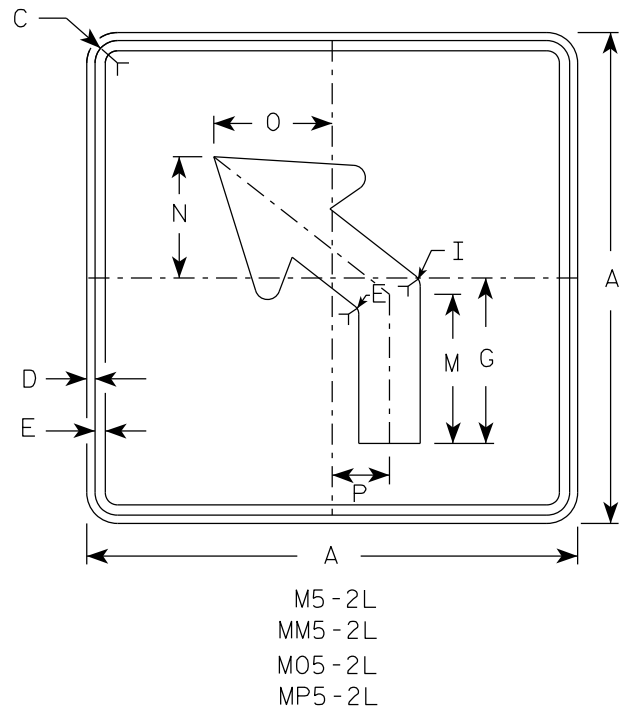
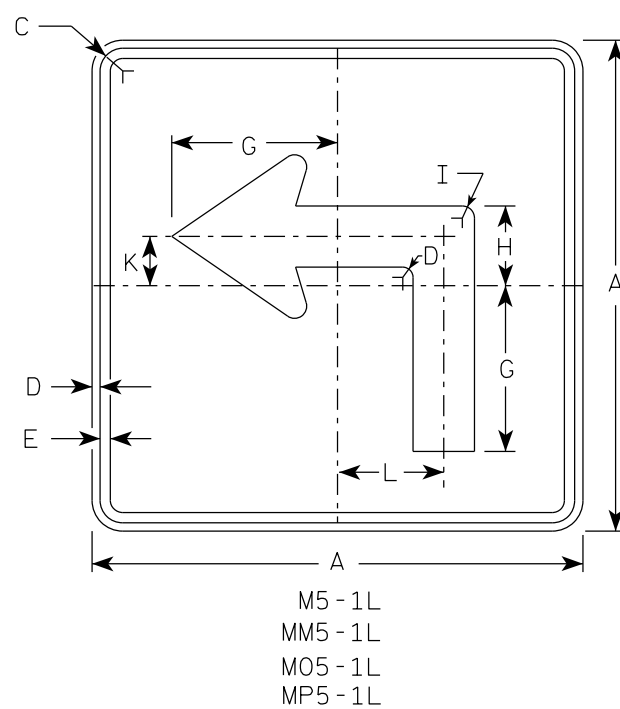
PROJECT NO:

HWY:

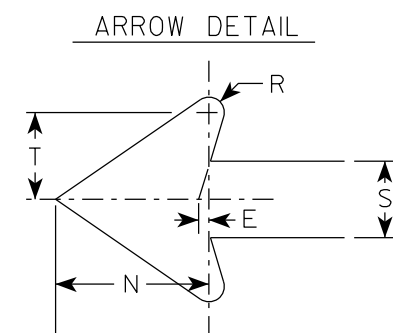
COUNTY:

SHEET NO: 128

E



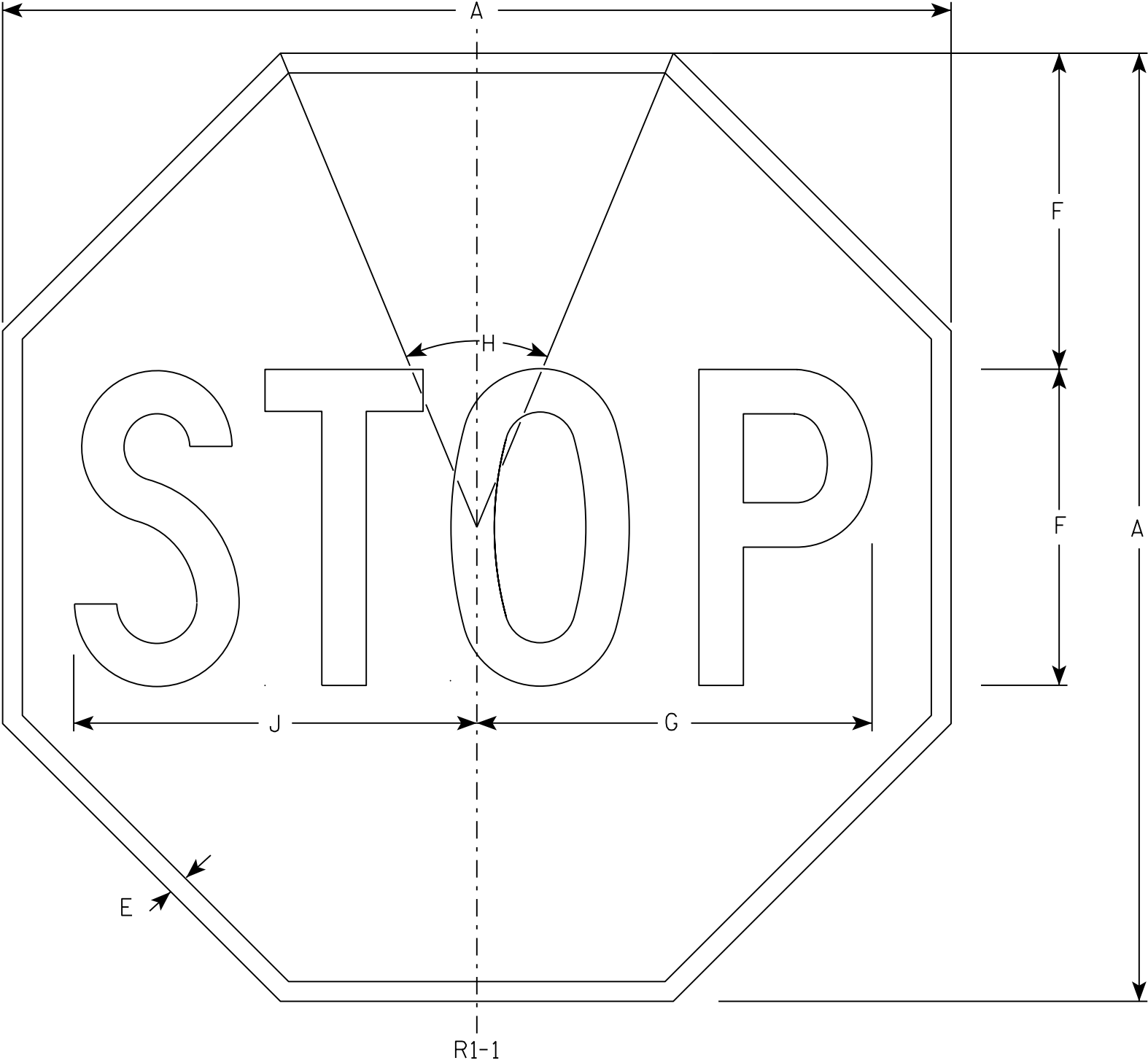
- NOTES
- Signs are Type II - Type H reflective except as shown
 - Color:
Background - See note 4
Message - See note 4
 - Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
 - | |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



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: 129		E
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7



NOTES

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

7

R1-1

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

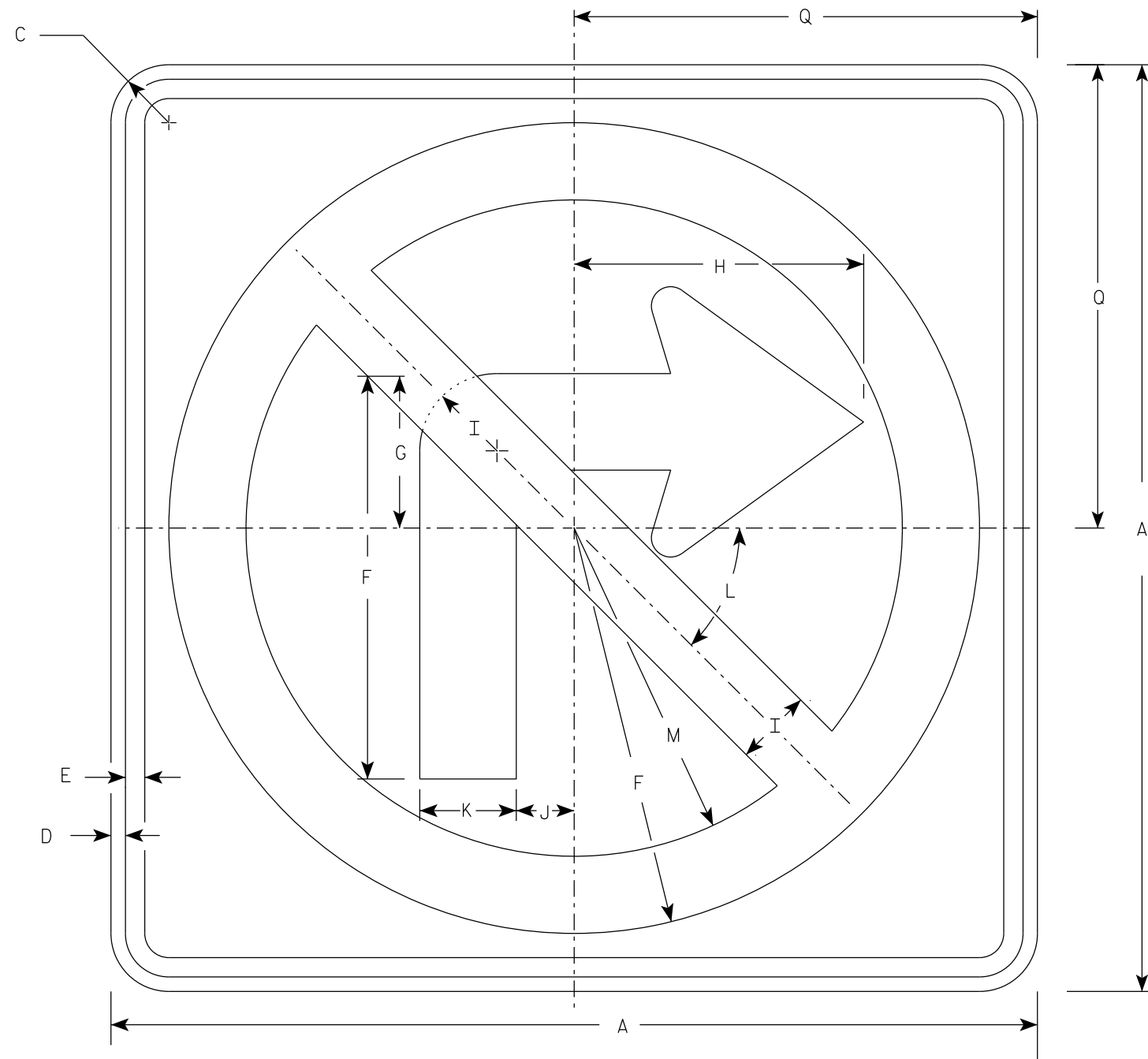
STANDARD SIGN
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

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

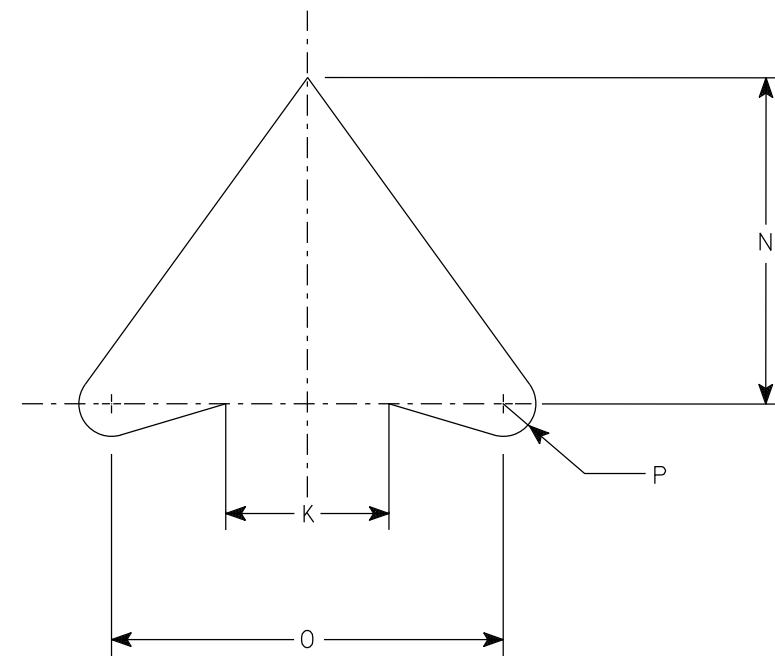
7



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:

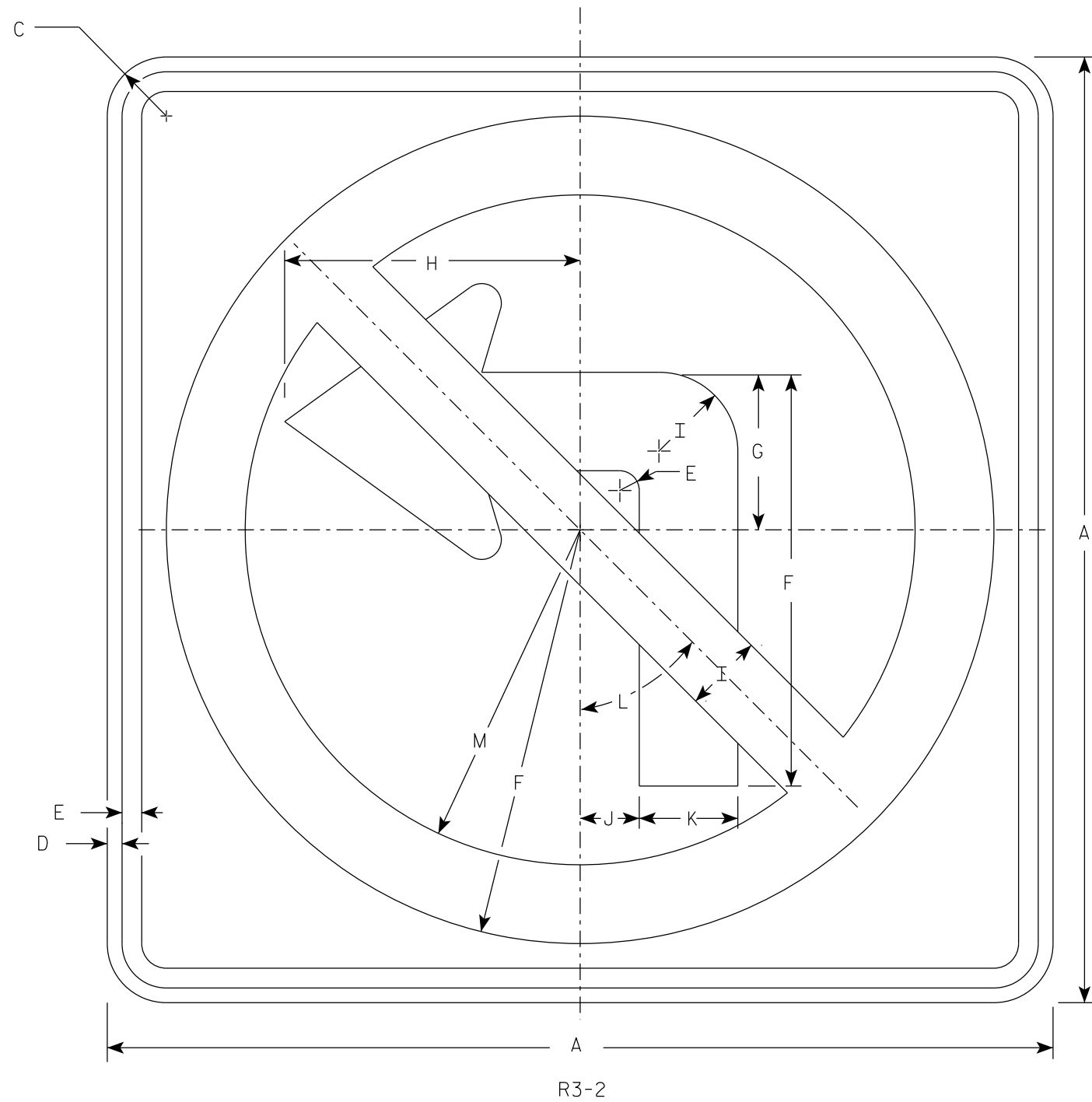
HWY:

COUNTY:

SHEET NO: 131

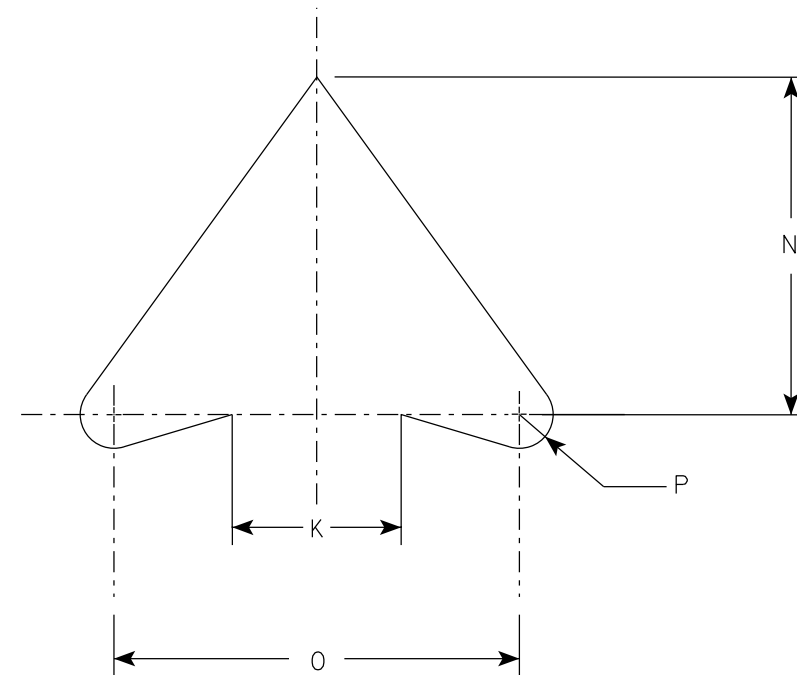
E

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: 132

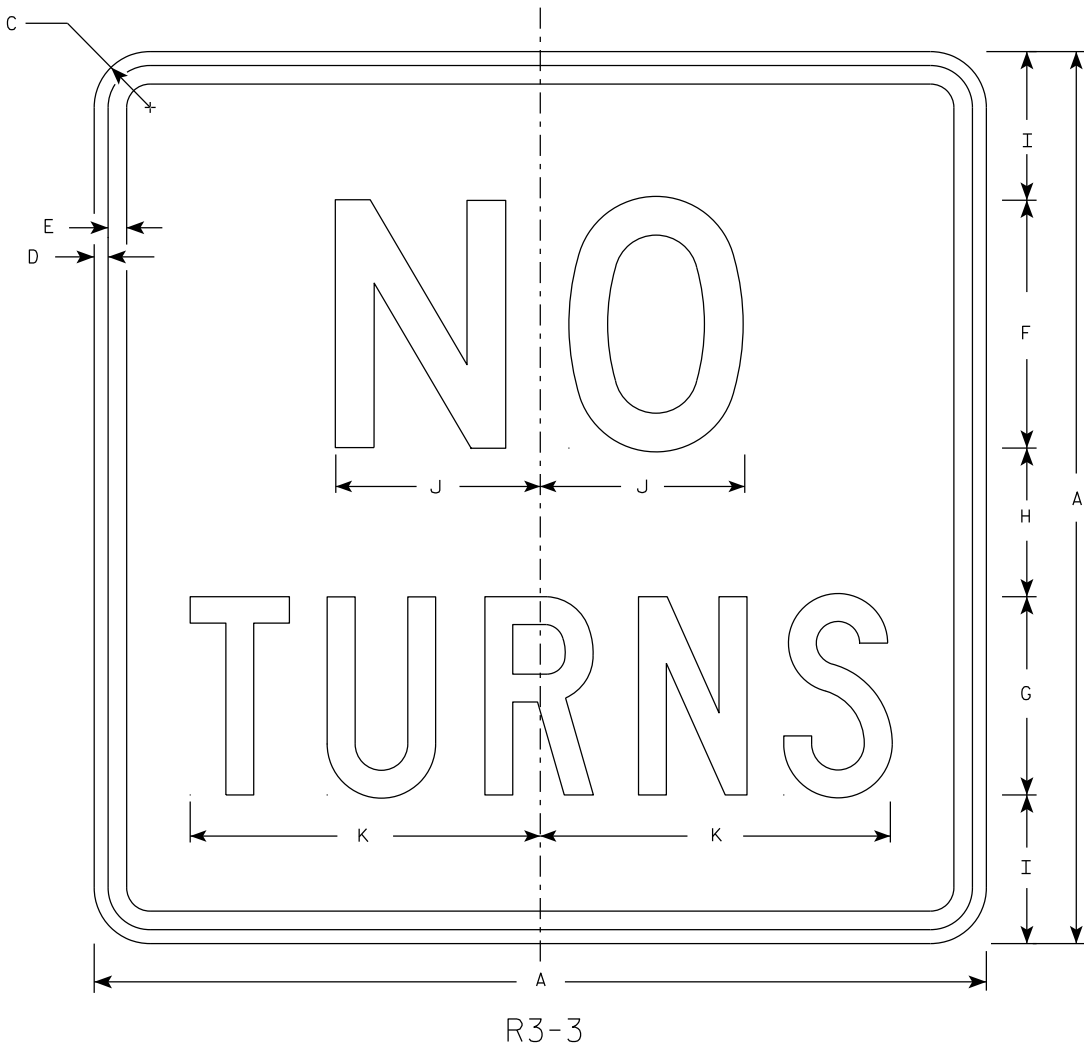
E

7

7

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
Background - White
Message - Black
- 3. Message Series - See Note 4
- 4. Line 1 is Series D and Line 2 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																											
2S	24		1 1/2	3/8	1/2	6	5	4	4 1/2	5 1/8	8 3/4																4.0
2M	36		2 1/4	5/8	3/4	10	8	6	6	8 1/4	14 1/8																9.0
3	36		2 1/4	5/8	3/4	10	8	6	6	8 1/4	14 1/8																9.0
4	36		2 1/4	5/8	3/4	10	8	6	6	8 1/4	14 1/8																9.0
5	48		2 1/4	3/4	1	12	10	8	9	10 1/4	17 5/8																16.0

PROJECT NO:

HWY:

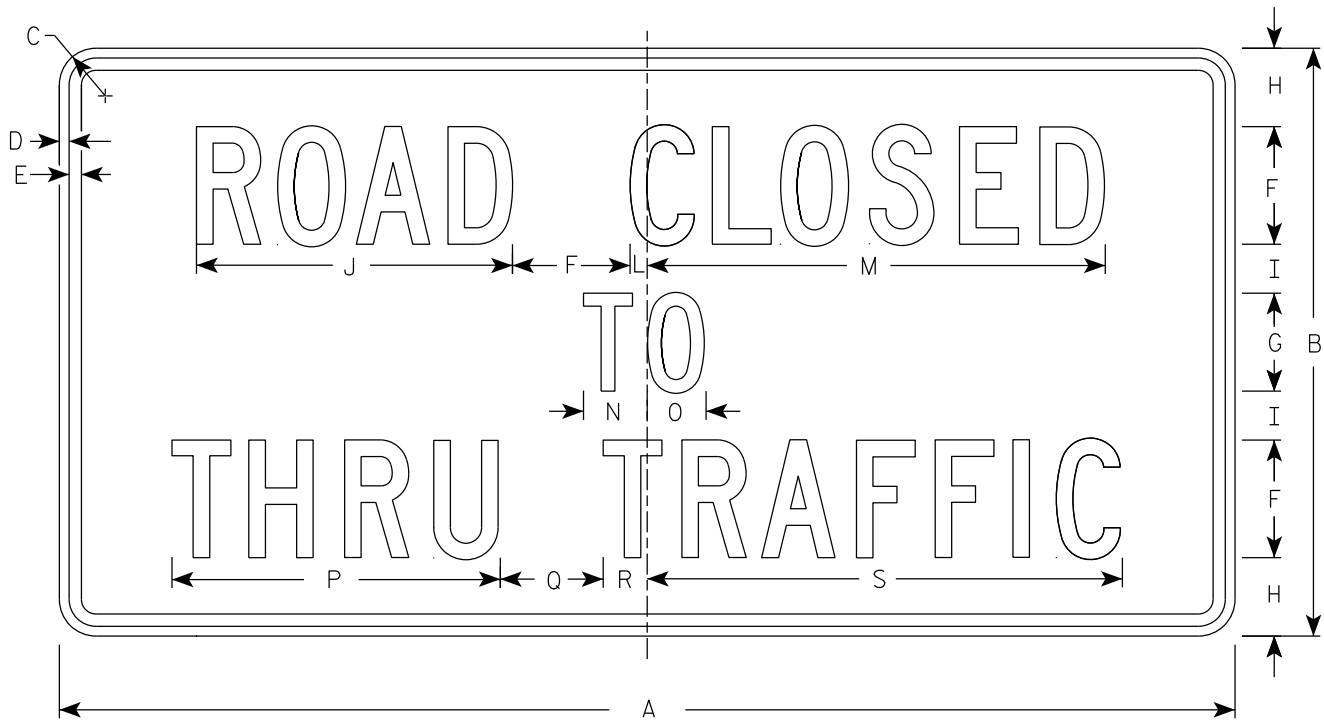
COUNTY:

SHEET NO: 133

E

NOTES

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



R11-4

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

PROJECT NO:

HWY:

COUNTY:

SHEET NO: 135

E

STANDARD SIGN

R11 - 4

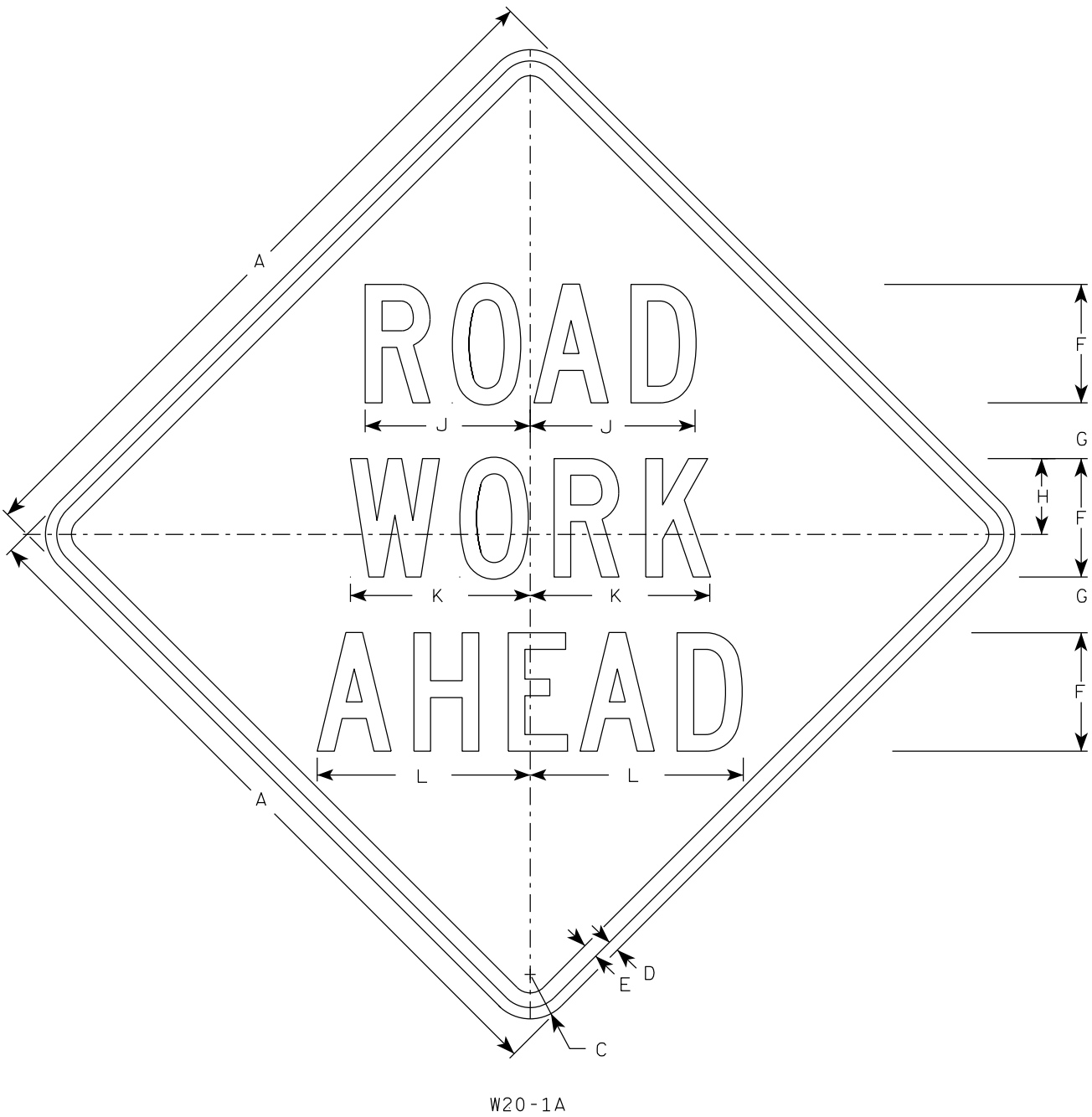
WISCONSIN DEPT OF TRANSPORTATION

APPROVED

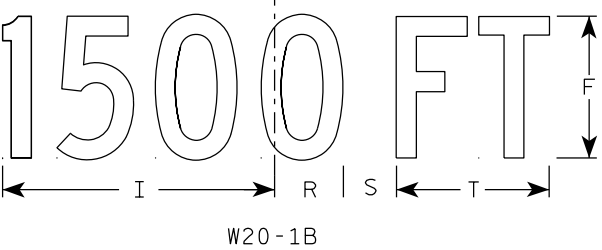
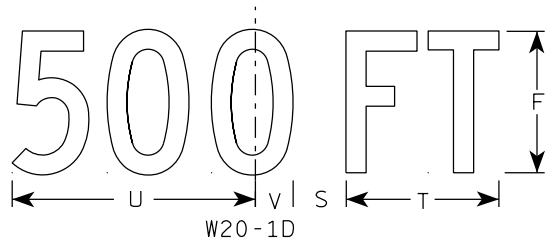
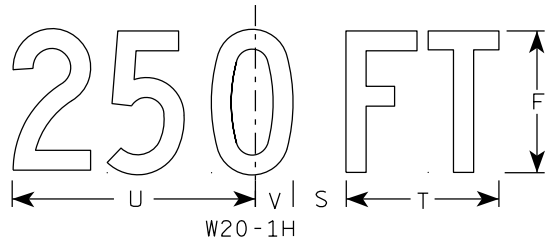
Matthew R. Rauch
for State Traffic Engineer

DATE 2/5/24

PLATE NO. R11-4.4

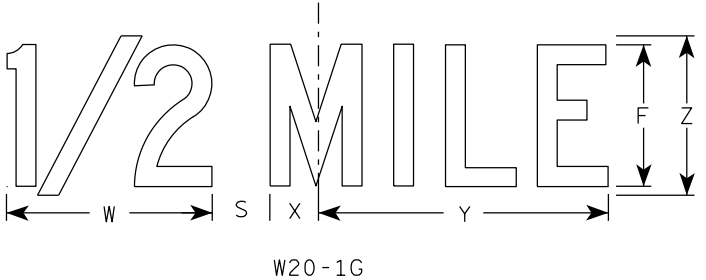


W20-1A

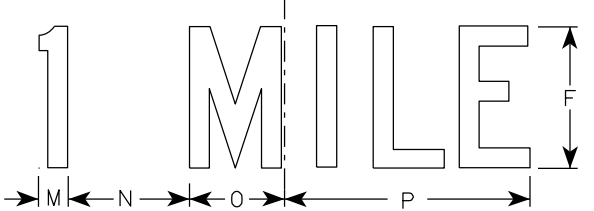


W20-1B

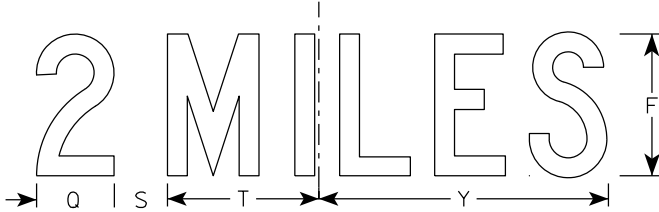
- NOTES
1. Sign is Type II - Type F Reflective
 2. Color:
Background - Orange
Message - Black
 3. Message Series - C
 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G

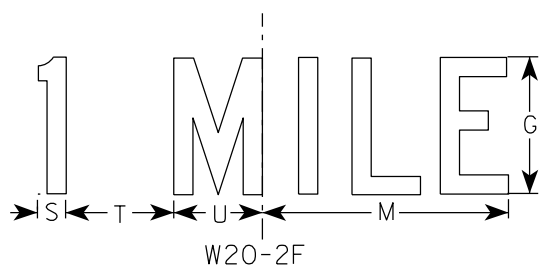
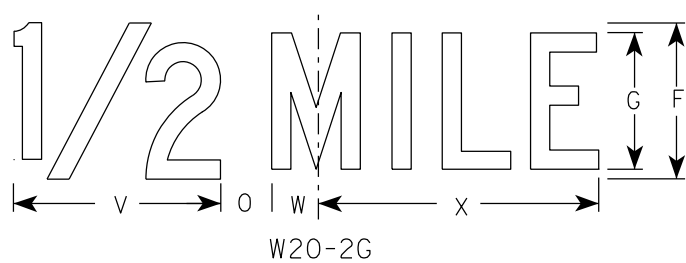
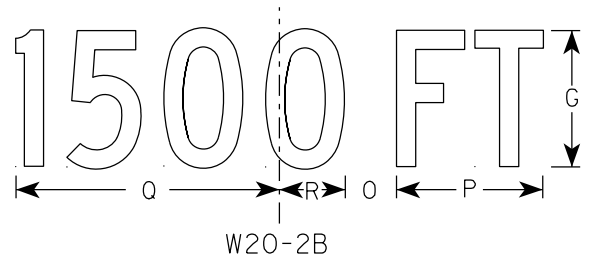
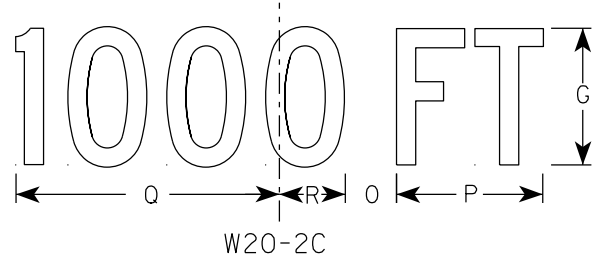
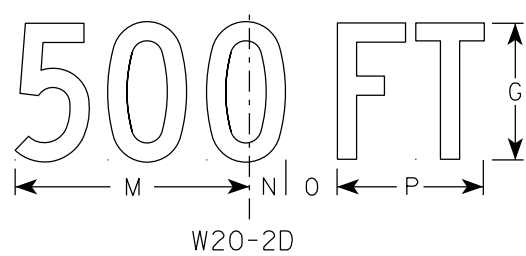
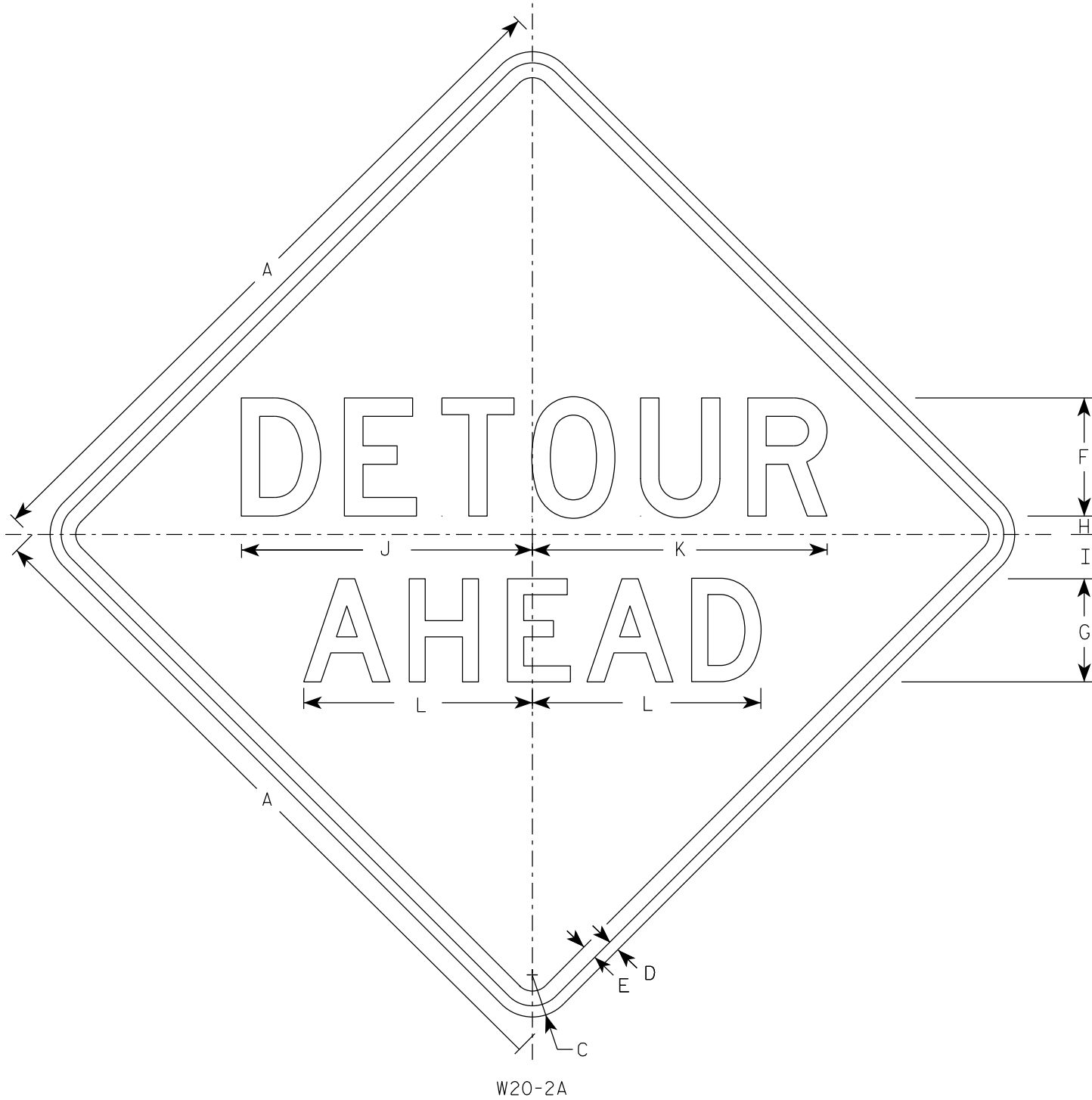


W20-1F



W20-1E

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



NOTES

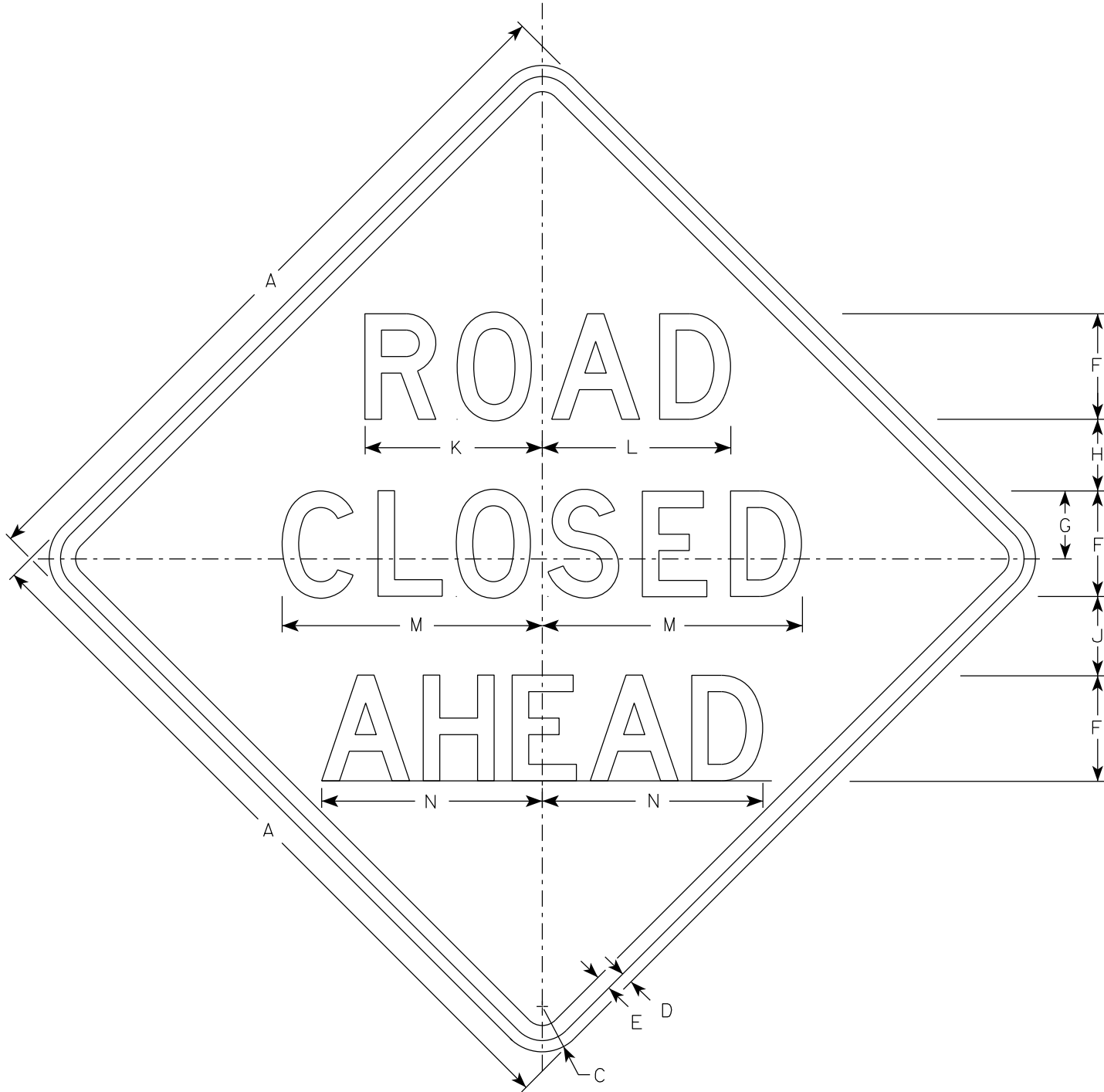
1. Sign is Type II - Type F Reflective
2. Color:
Background - Orange
Message - Black
3. Message Series - See note 5
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Line 1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

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	w	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	6	5	1	2 1/4	14 3/4	15	11 5/8	9	1 3/8	1 7/8	5 5/8	10 1/8	2 1/2	1 1/8	4 1/2	3 1/2	8	1 3/4	10 3/4			9.0
2S	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
2M	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
3	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
4	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0
5	48		3	3/4	1	8	7	1 1/4	3	19 3/4	20	15 1/2	12	1 7/8	2 5/8	7 1/2	13 1/2	3 3/8	1 1/2	6	4 5/8	10 5/8	2 3/8	14 3/8			16.0

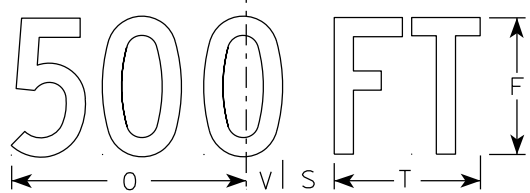
STANDARD SIGN W20-2A,B,C,D,F & G	
WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> For State Traffic Engineer
DATE 1/10/2024	PLATE NO. W20-2.7

PROJECT NO:	HWY:	COUNTY:	SHEET NO: 137	E
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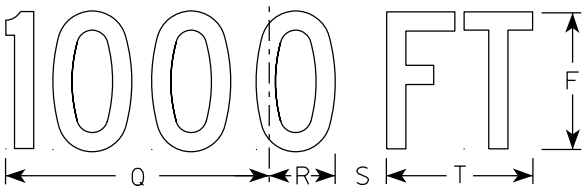
7



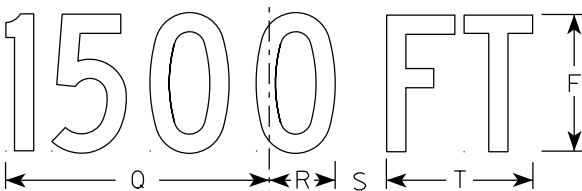
W20-3A



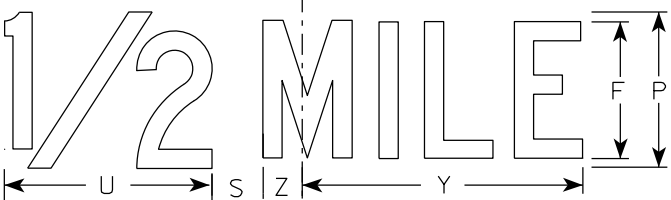
W20-3D



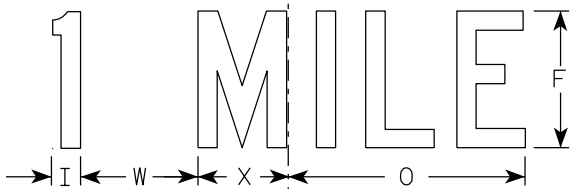
W20-3C



W20-3B



W20-3G



W20-3F

NOTES

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

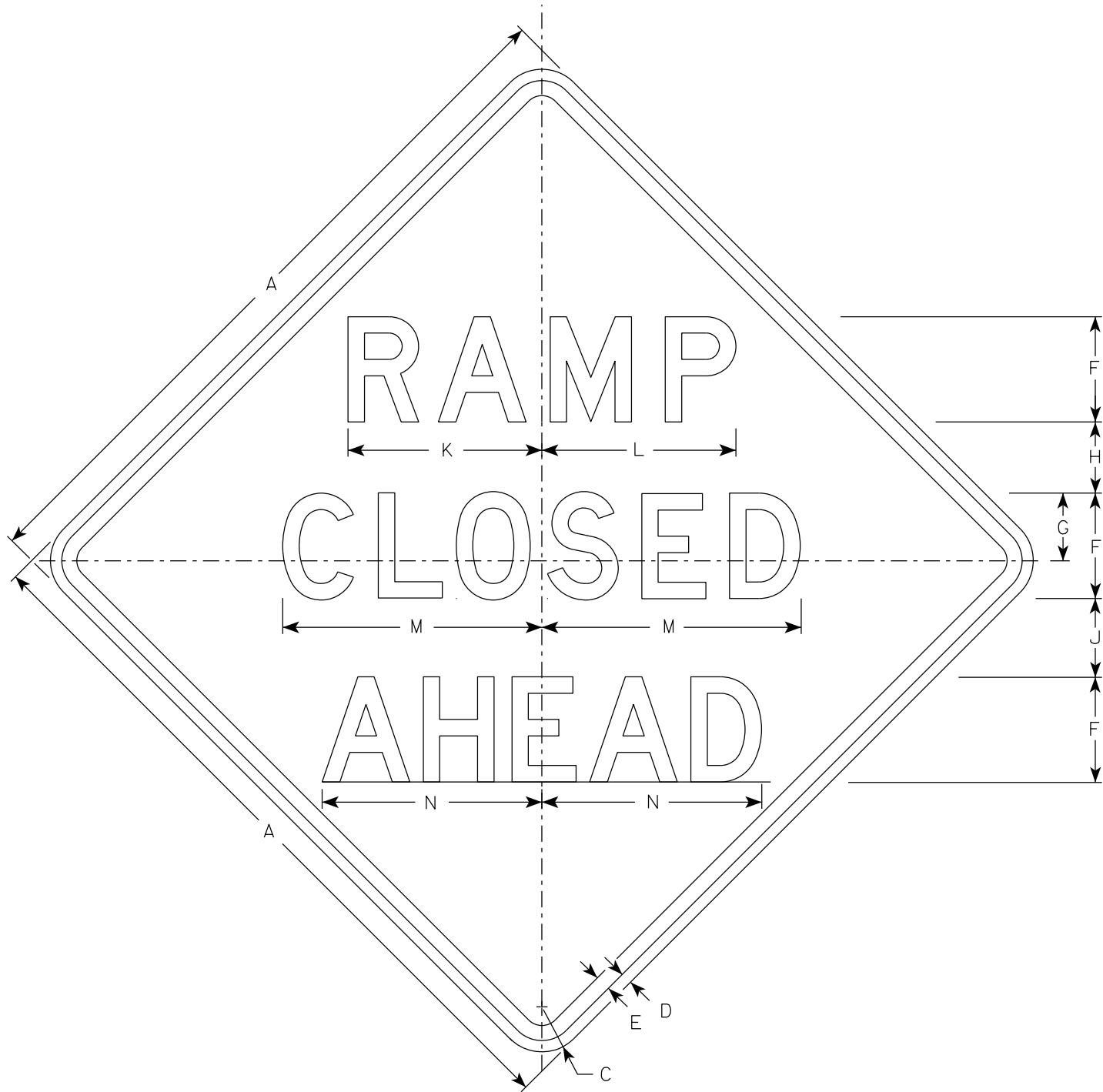
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	v	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	8 3/8	8 7/8	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
2M	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
3	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
4	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0
5	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	11 3/4	12 1/2	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 5/8	1 7/8	6	4 5/8	14 3/8	2 3/8	16.0

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

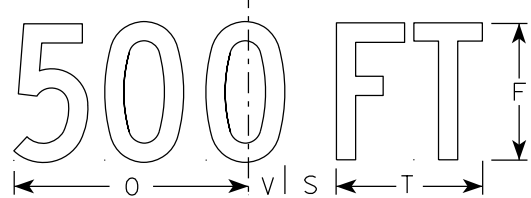
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

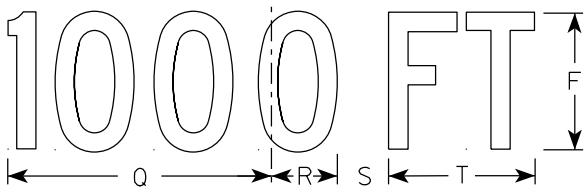
DATE 1/10/2024 PLATE NO. W20-3.8



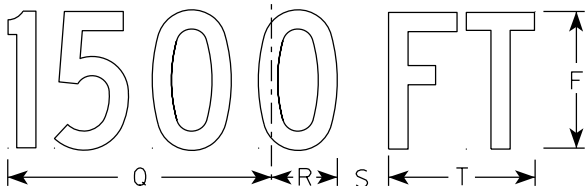
W20-53A



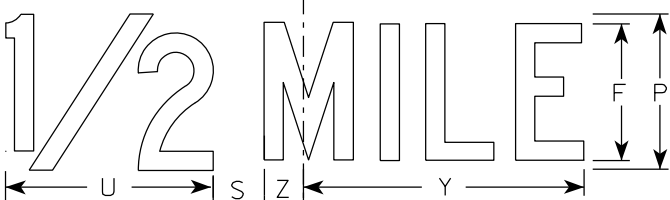
W20-53D



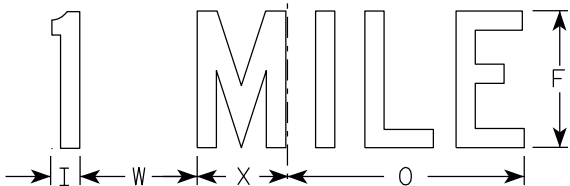
W20-53C



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.

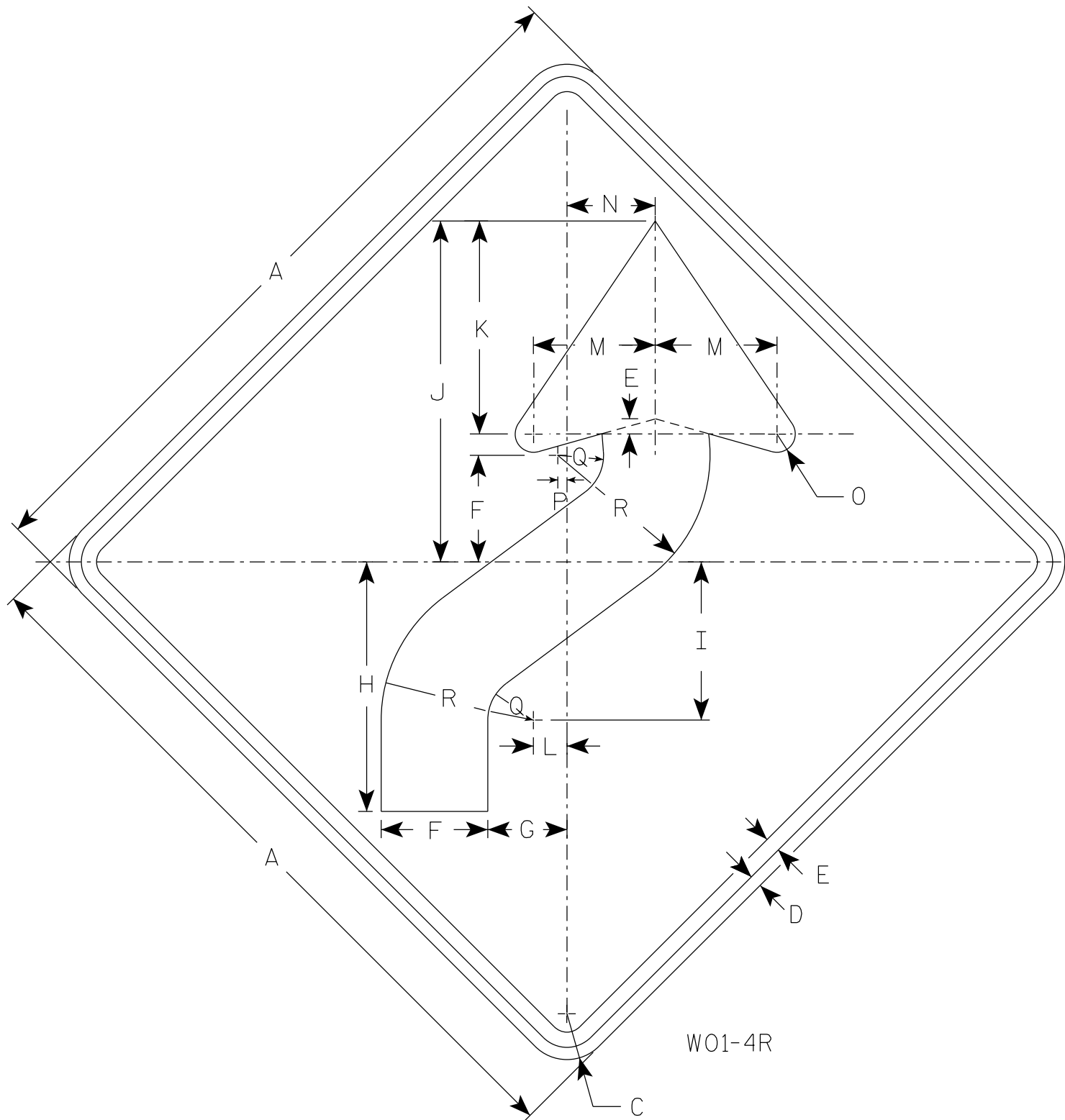
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	36		2 1/4	5/8	3/4	5	3 3/8	3 1/2	1 1/8	4	9 1/4	9 1/4	12 1/2	11	9	6	10 1/8	2 1/2	1 7/8	5 5/8	8	1 3/8	4 1/2	3 1/2	10 3/4	1 3/4	9.0
2S	48		3	3/4	1	7	4 1/2	4 3/4	1 1/2	5 1/4	12 7/8	12 7/8	17 1/4	14 5/8	12	8	13 1/2	3 3/8	2 5/8	7 1/2	10 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

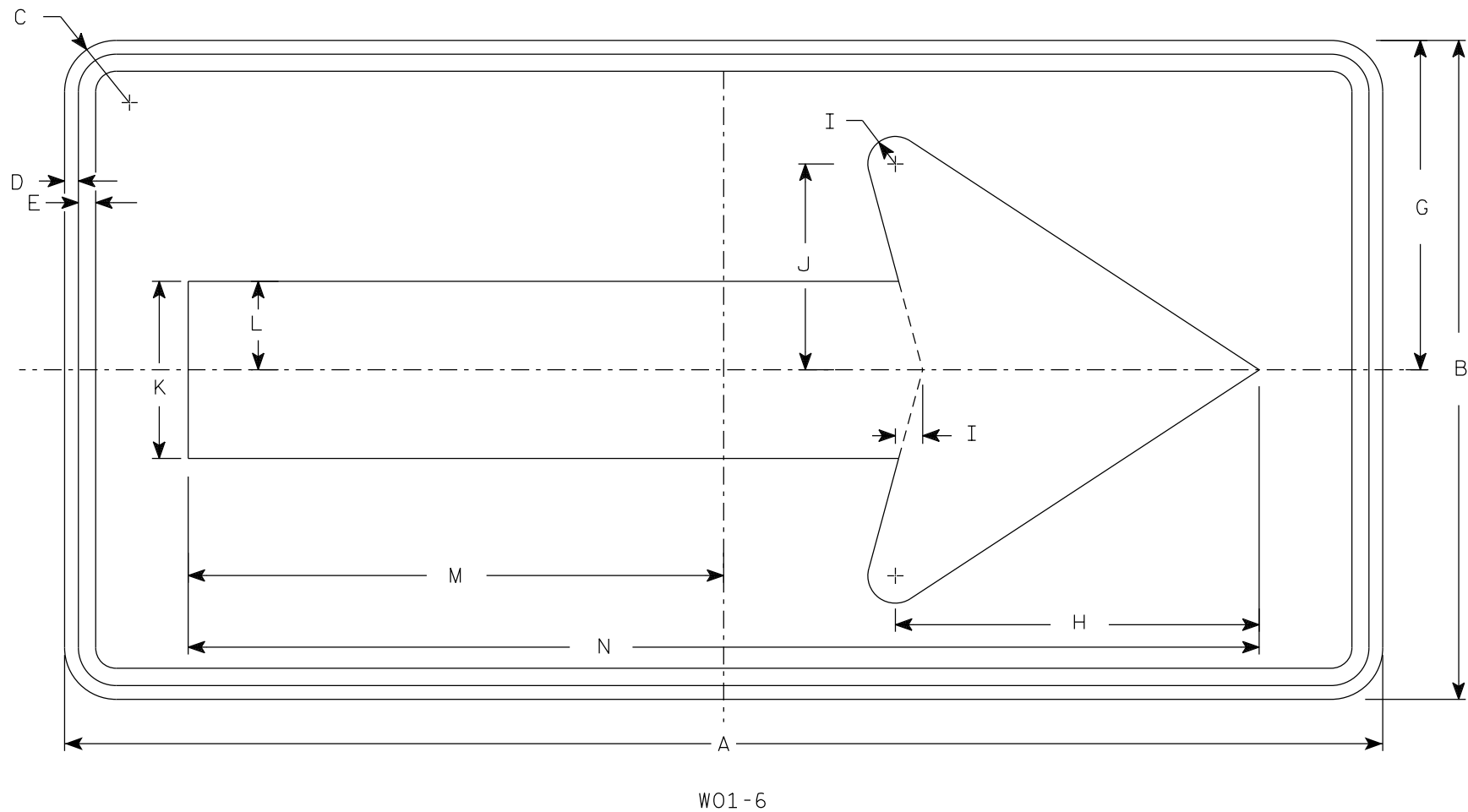
STANDARD SIGN
W01-4

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

- NOTE: STRUCTURE BACKFILL REQUIRED
BEHIND ALL WING WALLS

TO MINIMIZE IMPACTS TO STREAM MORPHOLOGY, AQUATIC ORGANISM PASSAGE AND WATER QUALITY, THE INVERT ELEVATIONS ARE SET BELOW THE NATURAL STREAM BED ELEVATION.

— LIMITS OF HEAVY RIPRAP AND
GEOTEXTILE TYPE HR, TYP.

ELEVATION
(LOOKING NORTH)

LIVE LOAD:

DESIGN LOADING: HL-93

INVENTORY RATING: RF = 1.26

OPERATING RATING: RF = 1.64

WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 255 (KIPS)

DESIGNED FOR 2.0 TO 3.0 FT. OF FILL.

CONCRETE MASONRY _____ $f'_c = 3,500$ PSI
BAR STEEL REINFORCEMENT _____ $f_y = 60,000$ PSI

100-YEAR FREQUENCY:
 $Q_{100} = 410$ C.F.S.
 $V_{100} = 12.3$ F.P.S.
 $HW_{100} = \text{EL. } 931.21$
 WATERWAY AREA = 72 SQ. FT.
 DRAINAGE AREA = 0.61 SQ. MI.
 ROADWAY OVERTOPPING = N/A
 SCOUR CRITICAL CODE = 8

Q₂= 95 C.F.S.
V₂= 4.6 F.P.S.
HW₂= EL. 929.60

STH 140
ADT = 2100 (2040)
R.D.S. = 60 MPH

1. LAYOUT
2. QUANTITIES & NOTES
3. BOX DETAILS
4. APRON DETAILS
5. WING DETAILS
6. DETAILS
7. SUBSURFACE EXPLORATION

NO.		DATE		REVISION		BY	
		BUREAU OF STRUCTURES					
ACCEPTED						DMB 09/05/24	
		CHIEF STRUCTURES DESIGN ENGINEER				DATE	
STRUCTURE C-53-2038							
STH 140 OVER TURTLE CREEK TRIBUTARY							
COUNTY				ROCK		TOWN	
						BRADFORD	
DESIGN SPEC.							
AASHTO LRFD BRIDGE DESIGN SPECIFICATION							
DESIGNED BY		JJS		DESIGNED CK'D		NJK	
DRAWN BY		JPH		PLANS CK'D		NJK	
LAYOUT				SHEET 1 OF 7			
				142			

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

EXISTING STRUCTURE, C-53-2026, A SINGLE CELL CONCRETE BOX CULVERT TO BE REMOVED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE ¾" UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-53-2038" SHALL BE THE EXISTING GROUNDLINE.

ALL VOLUME WHICH CANNOT BE PLACED BEFORE CULVERT CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL WITHIN THE LENGTH OF THE CULVERT INCLUDING THE APRON WING WALLS.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

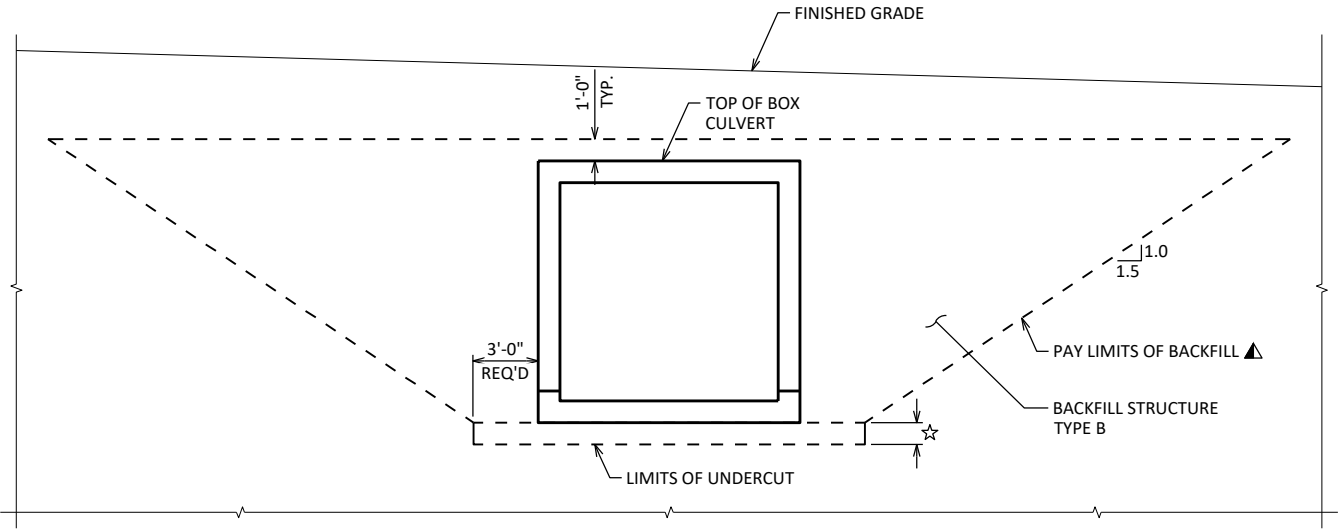
PLACE 18" (MIN.) WIDE SHEET OF "RUBBERIZED MEMBRANE WATERPROOFING" ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO 6" MIN. BELOW TOP OF BOTTOM SLAB.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISCONSIN DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

LOCATE NAME PLATE ON THE NEAREST RIGHT WING TRAVELING UP STATION, FACE NAME PLATE UP STATION.

TOTAL ESTIMATED QUANTITIES

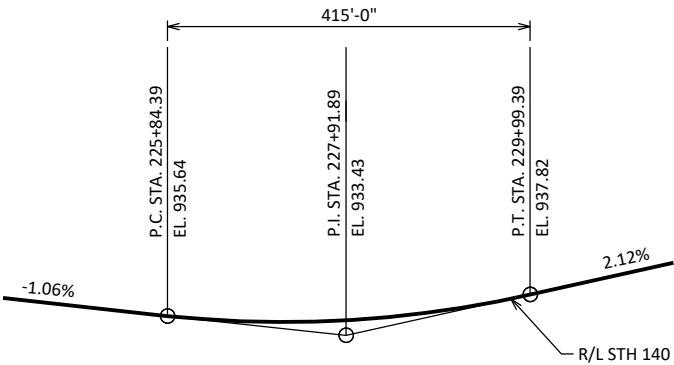
BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
203.0220	REMOVING STRUCTURE C-53-2026	EACH	1
206.2001	EXCAVATION FOR STRUCTURES CULVERTS C-53-2038	EACH	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	830
311.0115	BREAKER RUN	CY	62
504.0100	CONCRETE MASONRY CULVERTS	CY	99
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	13,770
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	1,860
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	19
606.0300	RIPRAP HEAVY	CY	68
645.0105	GEOTEXTILE TYPE C	SY	210
645.0120	GEOTEXTILE TYPE HR	SY	140
	NON-BID ITEMS		
	FILLER	Size	¾"



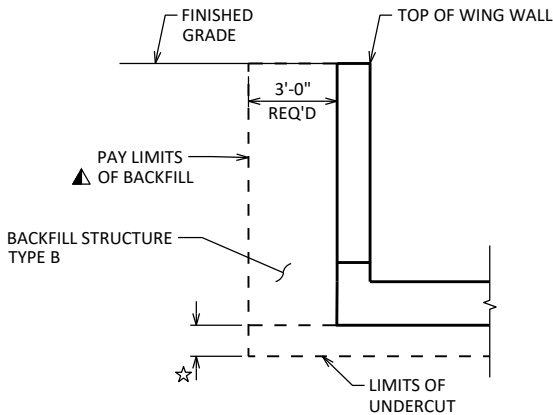
TYPICAL SECTION THRU BOX CULVERT

- ▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.
- ☆ UNDERCUT 1'-0". EXCAVATION FOR UNDER CUT IS TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN".

IN LIEU OF USING BREAKER RUN FOR THE BOX CONSTRUCTION PLATFORM, THE CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE BASE STABILITY WITH ANY SUBSTITUTED MATERIAL. THE REGION GEOTECHNICAL ENGINEER MAY BE CONTACTED TO DETERMINE IF "OTHER GRANULAR MATERIAL" IS ACCEPTABLE.



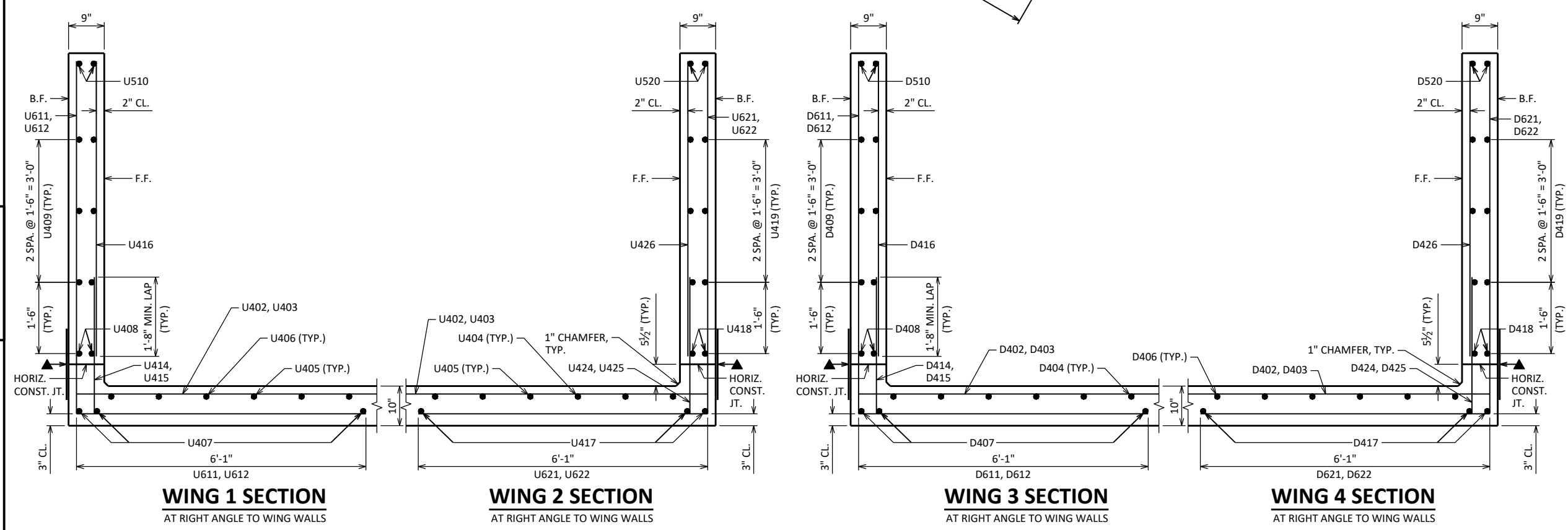
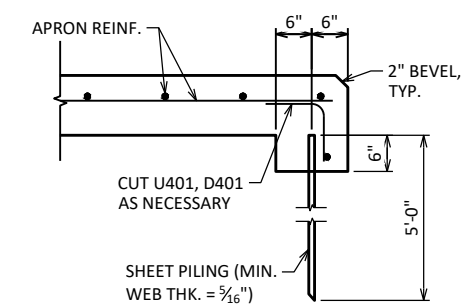
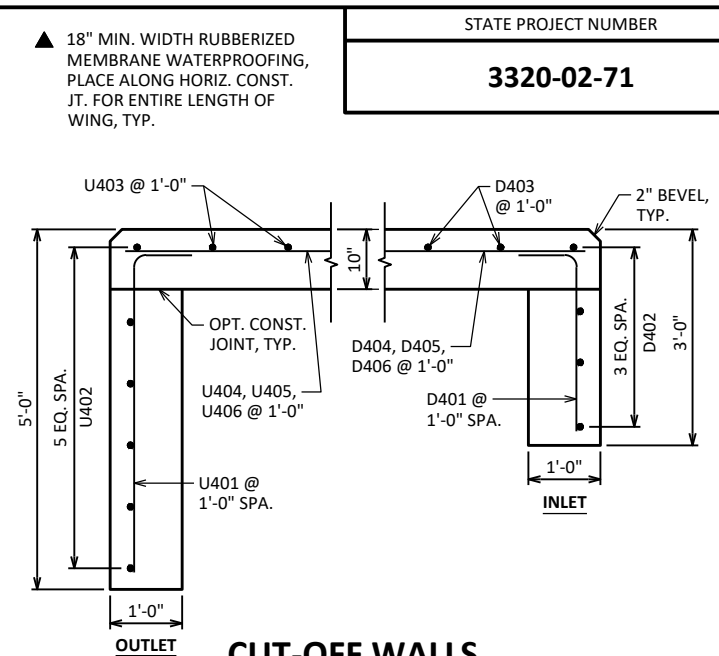
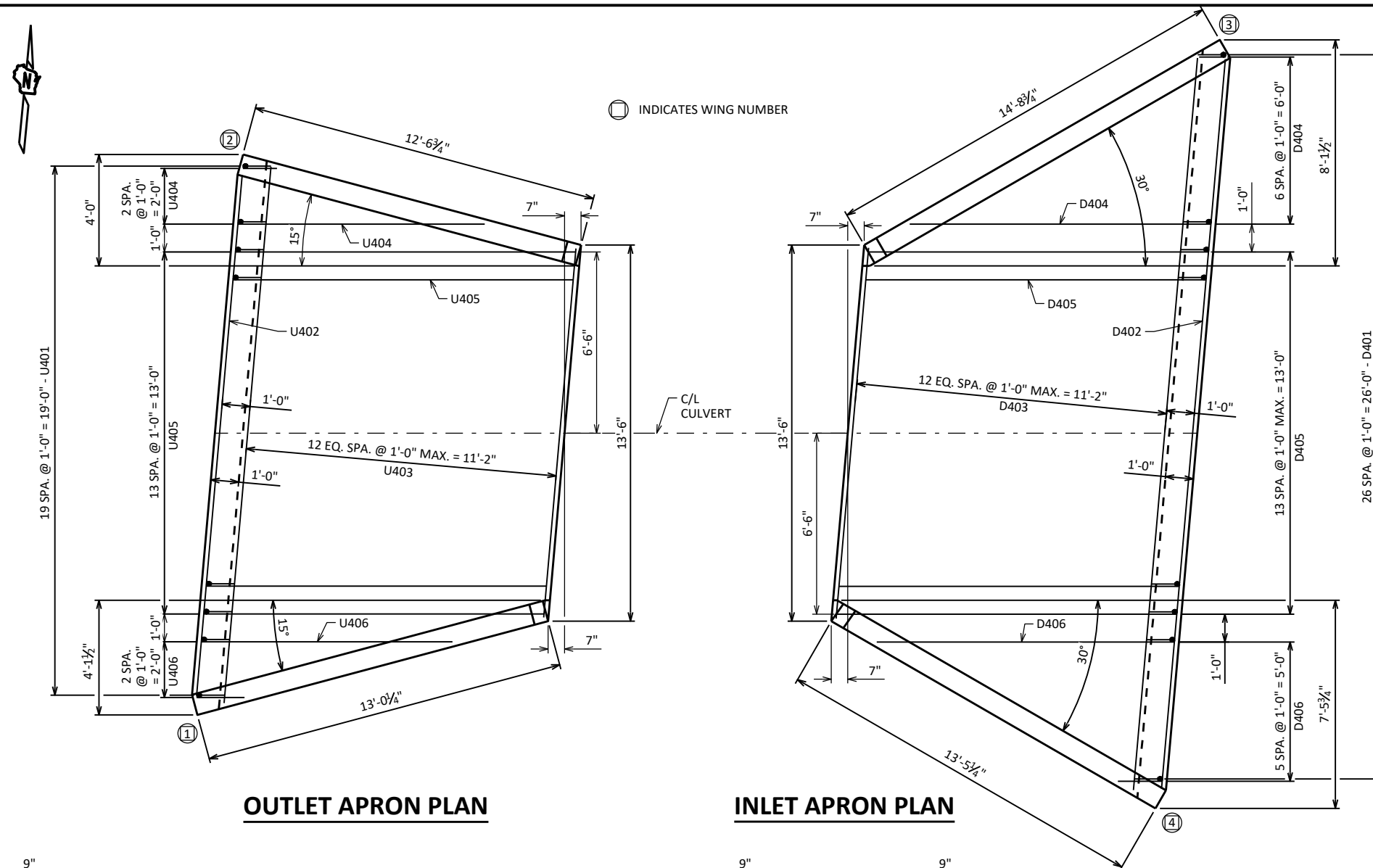
PROFILE GRADE LINE - STH 140



TYPICAL SECTION THRU WINGWALL

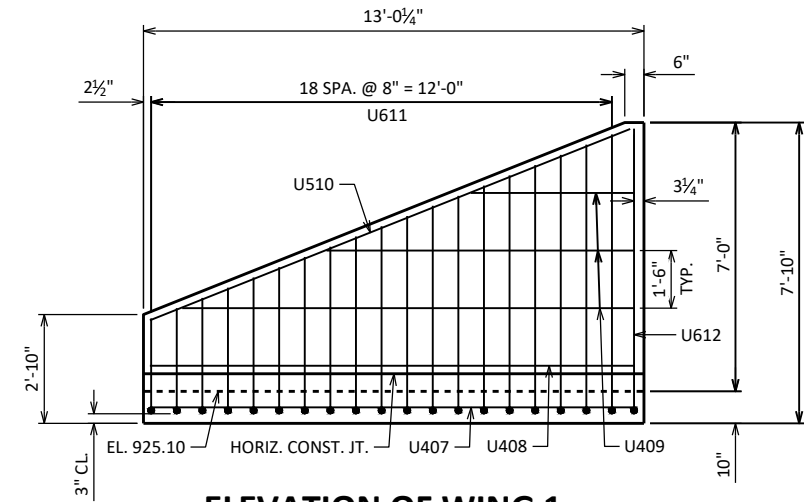
STATE PROJECT NUMBER
3320-02-71

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-53-2038			
DRAWN BY JPH		PLANS CK'D NJK	
QUANTITIES & NOTES		SHEET 2	
		143	

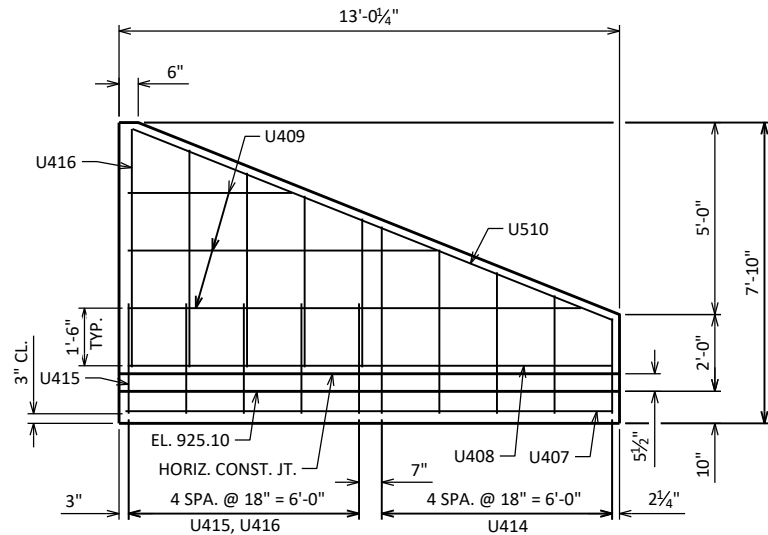


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-53-2038			
		DRAWN BY JPH	PLANS CK'D NJK
APRON DETAILS		SHEET 4 145	

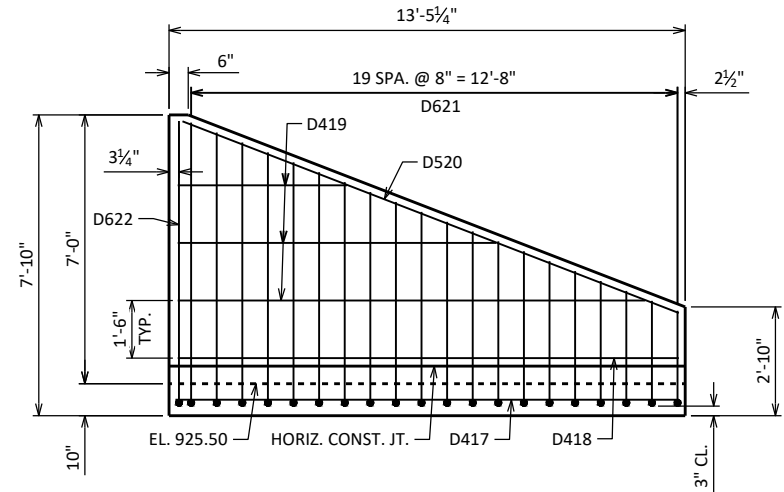
SCALE =



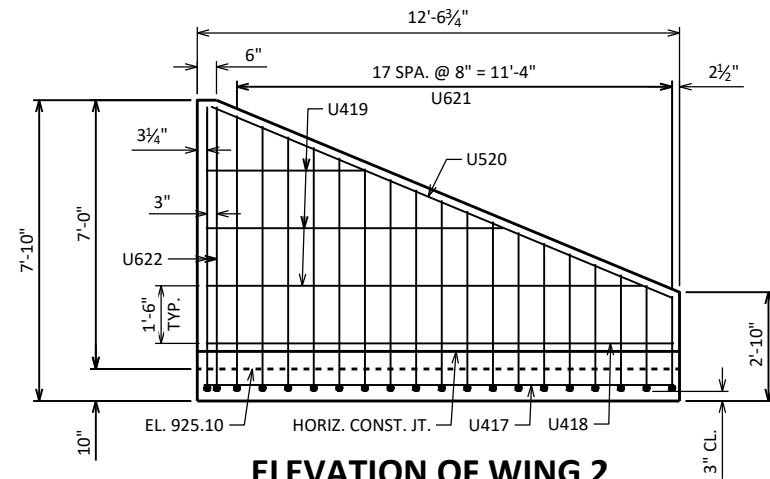
ELEVATION OF WING 1
SHOWING B.F. REINFORCEMENT



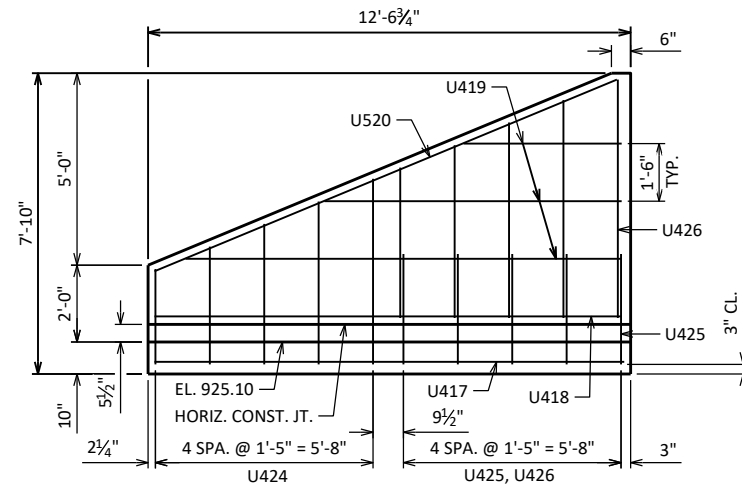
ELEVATION OF WING 1
SHOWING F.F. REINFORCEMENT



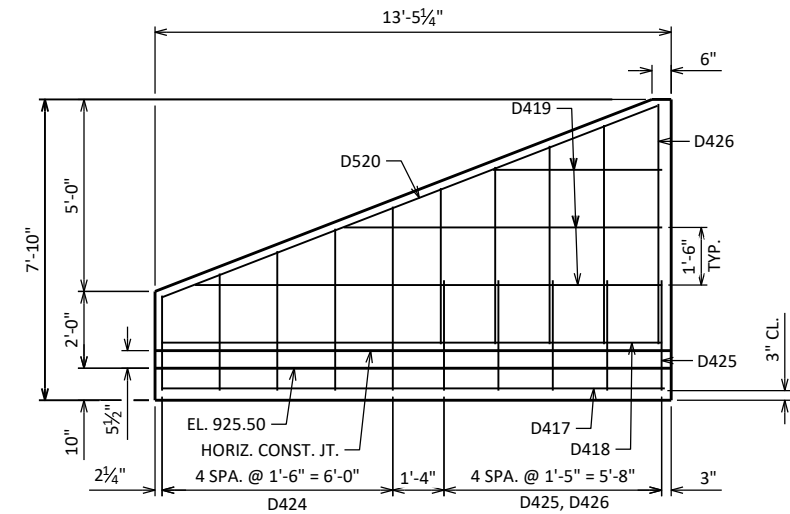
ELEVATION OF WING 4
SHOWING B.F. REINFORCEMENT



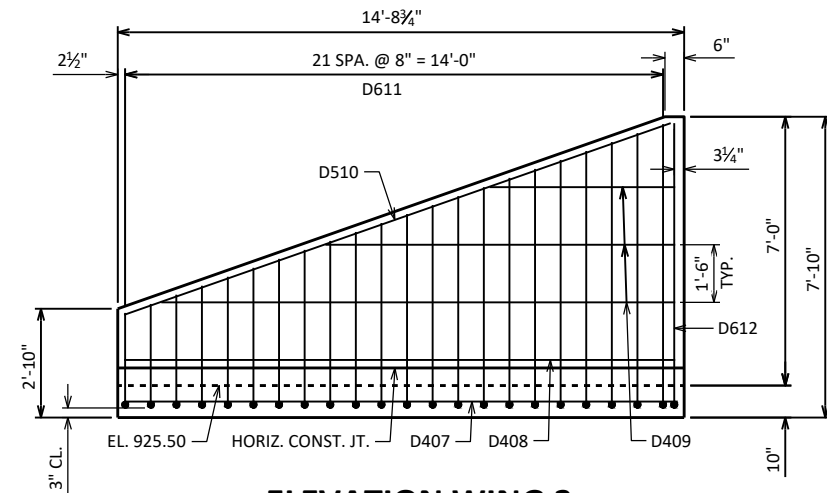
ELEVATION OF WING 2
SHOWING B.F. REINFORCEMENT



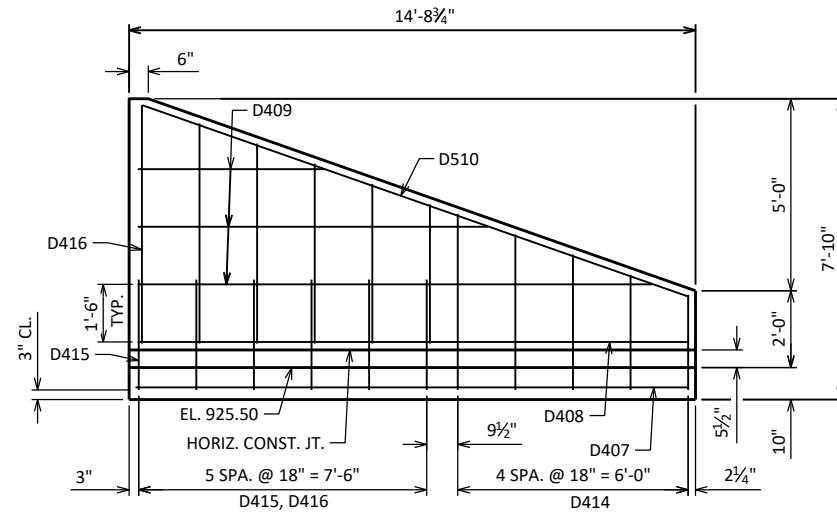
ELEVATION OF WING 2
SHOWING F.F. REINFORCEMENT



ELEVATION OF WING 4
SHOWING F.F. REINFORCEMENT



ELEVATION WING 3
SHOWING B.F. REINFORCEMENT



ELEVATION WING 3
SHOWING F.F. REINFORCEMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE		C-53-2038	
DRAWN BY		JPH	PLANS CK'D NJK
WING DETAILS		SHEET 5 146	

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

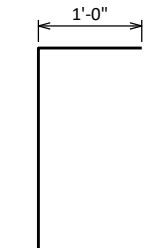
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
U401		20	5'-5"	X		OUTLET APRON CUTOFF - VERT.
U402		6	18'-8"			OUTLET APRON CUTOFF - HORIZ.
U403		13	16'-4"		▲	OUTLET APRON - HORIZ.
U404		3	5'-0"		▲	OUTLET APRON - LONGIT.
U405		14	12'-2"			OUTLET APRON - LONGIT.
U406		3	5'-4"		▲	OUTLET APRON - LONGIT.
U407		3	12'-8"			WING 1 - HORIZ. - BOT.
U408	X	2	12'-7"			WING 1 - HORIZ.
U409	X	6	8'-0"		▲	WING 1 - HORIZ.
U510	X	2	13'-5"			WING 1 - HORIZ. - TOP
U611	X	19	10'-9"	X	▲	WING 1 - VERT. - B.F.
U612	X	1	13'-4"	X		WING 1 - VERT. - B.F.
U413		--	---			NOT USED
U414	X	5	3'-8"		▲	WING 1 - VERT. - F.F.
U415	X	5	2'-11"			WING 1 - VERT. - DOWELS - F.F.
U416	X	5	5'-1"		▲	WING 1 - VERT. - F.F.
U417		3	12'-2"			WING 2 - HORIZ. - BOT.
U418	X	2	12'-2"			WING 2 - HORIZ.
U419	X	6	7'-9"		▲	WING 2 - HORIZ.
U520	X	2	13'-0"			WING 2 - HORIZ. - TOP
U621	X	18	10'-9"	X	▲	WING 2 - VERT. - B.F.
U622	X	2	13'-4"	X		WING 2 - VERT. - B.F.
U423		--	---			NOT USED
U424	X	5	3'-8"		▲	WING 2 - VERT. - F.F.
U425	X	5	2'-11"			WING 2 - VERT. - DOWELS - F.F.
U426	X	5	5'-2"		▲	WING 2 - VERT. - F.F.
D401		27	3'-6"	X		INLET APRON CUTOFF - VERT.
D402		4	26'-3"			INLET APRON CUTOFF - HORIZ.
D403		13	19'-10"		▲	INLET APRON - HORIZ.
D404		7	5'-10"		▲	INLET APRON - LONGIT.
D405		14	12'-2"			INLET APRON - LONGIT.
D406		6	6'-2"		▲	INLET APRON - LONGIT.
D407		3	14'-4"			WING 3 - HORIZ. - BOT.
D408	X	2	14'-4"			WING 3 - HORIZ.
D409	X	6	9'-1"		▲	WING 3 - HORIZ.
D510	X	2	15'-1"			WING 3 - HORIZ. - TOP
D611	X	22	10'-10"	X	▲	WING 3 - VERT. - B.F.
D612	X	1	13'-4"	X		WING 3 - VERT. - B.F.
D413		--	---			NOT USED
D414	X	5	3'-6"		▲	WING 3 - VERT. - F.F.
D415	X	6	2'-11"			WING 3 - VERT. - DOWELS - F.F.
D416	X	6	5'-0"		▲	WING 3 - VERT. - F.F.
D417		3	13'-1"			WING 4 - HORIZ. - BOT.
D418	X	2	13'-0"			WING 4 - HORIZ.
D419	X	6	8'-3"		▲	WING 4 - HORIZ.
D520	X	2	13'-10"			WING 4 - HORIZ. - TOP
D621	X	20	10'-10"	X	▲	WING 4 - VERT. - B.F.
D622	X	1	13'-4"	X		WING 4 - VERT. - B.F.
D423		--	---			NOT USED
D424	X	5	3'-8"		▲	WING 4 - VERT. - F.F.
D425	X	5	2'-11"			WING 4 - VERT. - DOWELS - F.F.
D426	X	5	5'-2"		▲	WING 4 - VERT. - F.F.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

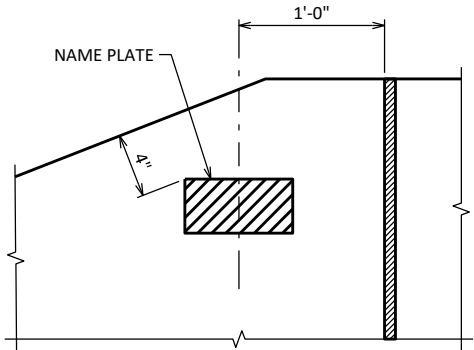
BUNDLE AND TAG EACH SERIES SEPARATELY.

BAR MARK	NO. REQ'D.	LENGTH
U403	1 SERIES OF 13	13'-4" TO 19'-4"
U404	1 SERIES OF 3	1'-2" TO 8'-10"
U406	1 SERIES OF 3	1'-8" TO 9'-0"
U409	2 SERIES OF 3	4'-3" TO 11'-9"
U611	1 SERIES OF 19	8'-4" TO 13'-2"
U414	1 SERIES OF 5	2'-6" TO 4'-10"
U416	1 SERIES OF 5	3'-11" TO 6'-3"
U419	2 SERIES OF 3	4'-1" TO 11'-4"
U621	1 SERIES OF 18	8'-4" TO 13'-1"
U424	1 SERIES OF 5	2'-5" TO 4'-10"
U426	1 SERIES OF 5	4'-0" TO 6'-3"
D403	1 SERIES OF 13	13'-4" TO 26'-4"
D404	1 SERIES OF 7	0'-10" TO 10'-9"
D406	1 SERIES OF 6	1'-7" TO 10'-8"
D409	2 SERIES OF 3	4'-10" TO 13'-4"
D611	1 SERIES OF 22	8'-4" TO 13'-3"
D414	1 SERIES OF 5	2'-5" TO 4'-7"
D416	1 SERIES OF 6	3'-8" TO 6'-3"
D419	2 SERIES OF 3	4'-4" TO 12'-2"
D621	1 SERIES OF 20	8'-4" TO 13'-3"
D424	1 SERIES OF 5	2'-6" TO 4'-9"
D426	1 SERIES OF 5	4'-1" TO 6'-3"



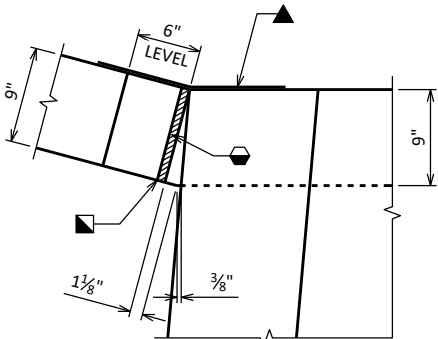
U401 D401

U611 U612 U621 U622
D611 D612 D621 D622

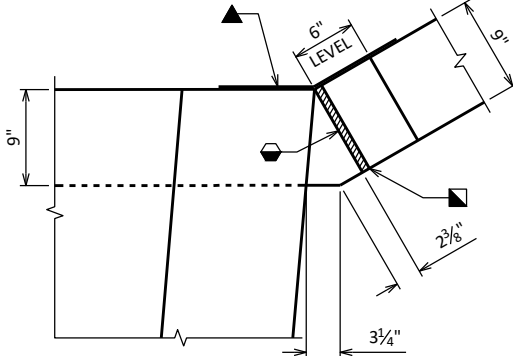


NAME PLATE DETAIL

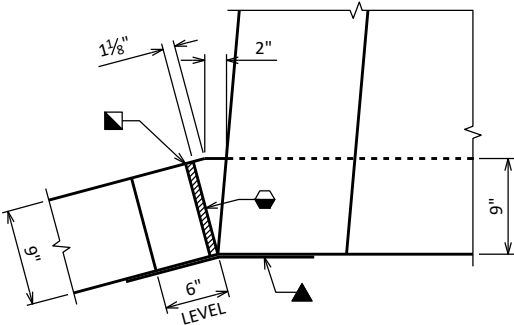
WING 4



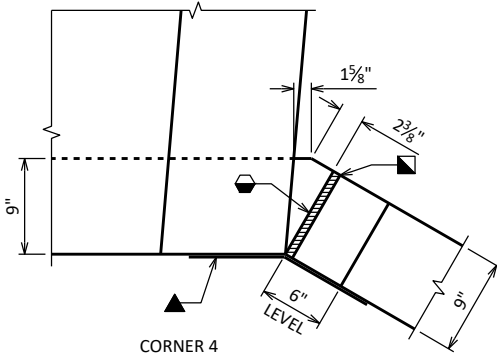
CORNER 2



CORNER 3



CORNER 1



CORNER 4

CORNER DETAILS

● 3/4" FILLER TO EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WING

■ 1" BEVEL, TYP.

▲ 18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING, EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WING.

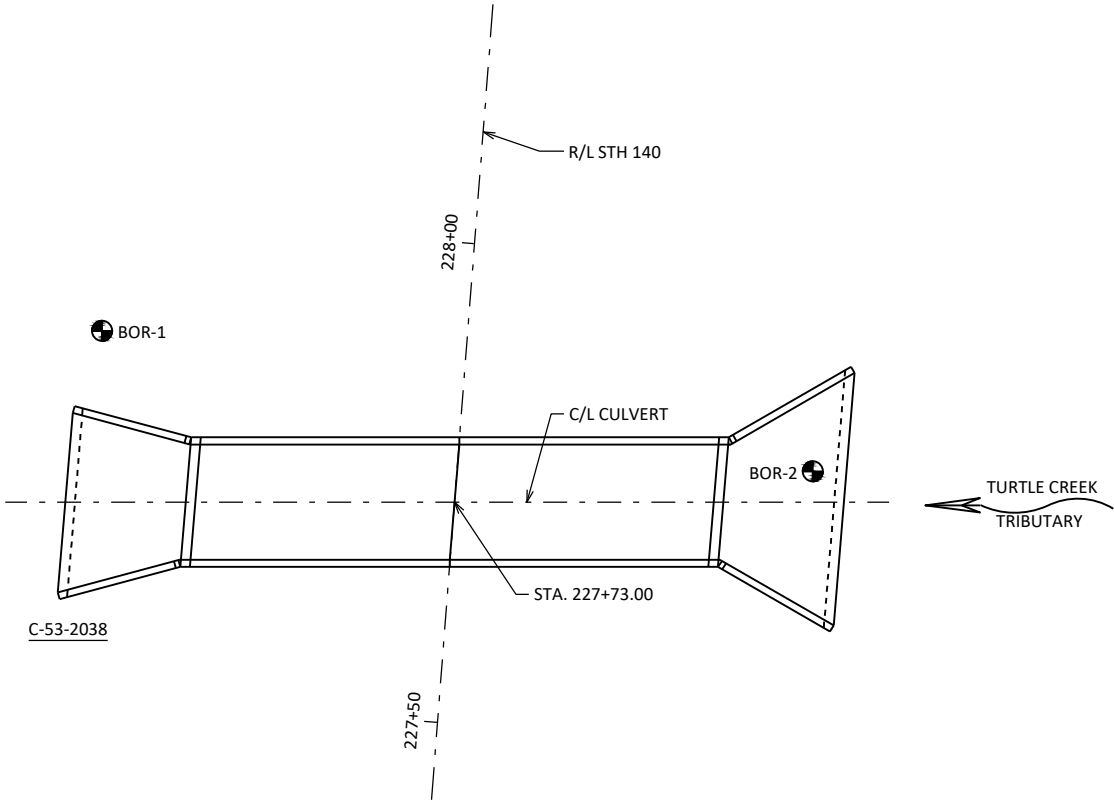
STATE PROJECT NUMBER

3320-02-71

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE		C-53-2038	
DRAWN BY		JPH	PLANS CK'D NJK
DETAILS		SHEET 6	147

SCALE =

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	8/25/2022	249067	537104
2	8/25/2022	249059	537180
BORINGS COMPLETED BY: GESTRA			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83 (91) ROCK COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			



STATE PROJECT NUMBER

3320-02-71

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/ META

LEGEND OF BORING

BORING #/EL. STA./OFFSET

ST 17

0.25

F-C COBBLE OR BOULDER

WEATHERED LIMESTONE

CORE RUN #1 - 24'-29' REC=80%, RQD=72%

⁽¹⁾ UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

⁽²⁾ UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

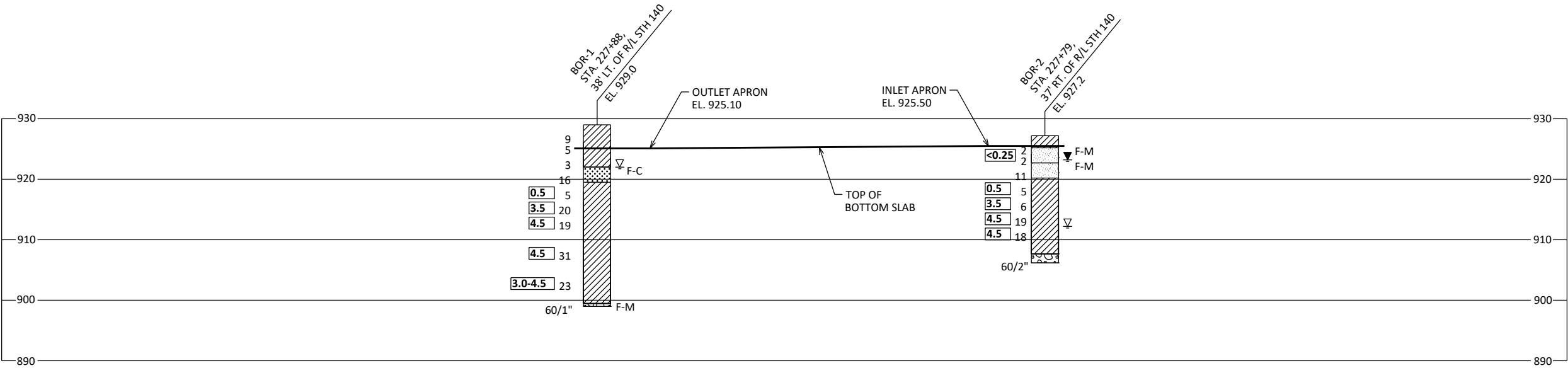
▽ AT TIME OF DRILLING

▼ END OF DRILLING

▽ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE



SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION			
BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.			
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE		C-53-2038	
DRAWN BY		JPH	PLANS CK'D NJK
SUBSURFACE EXPLORATION		SHEET 7 148	

SCALE = 20

- ▲ SEE CORNER DETAILS ON "DETAILS" SHEET
- NAME PLATE LOCATION (SEE "DETAILS" SHEET)
- * BUILD APRON AND END OF BOX LEVEL
- INDICATES WING NUMBER
- ▲ VERT. CONST. JOINT (TYP.)

NOTE: STRUCTURE BACKFILL REQUIRED BEHIND ALL WING WALLS

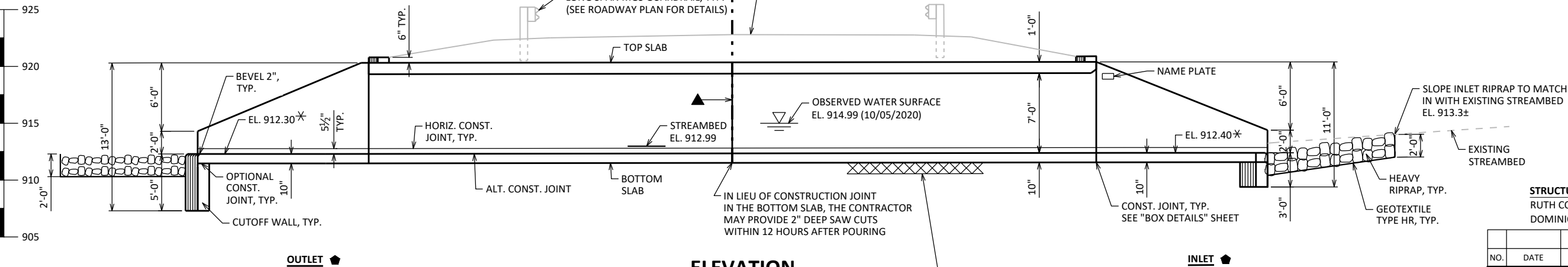
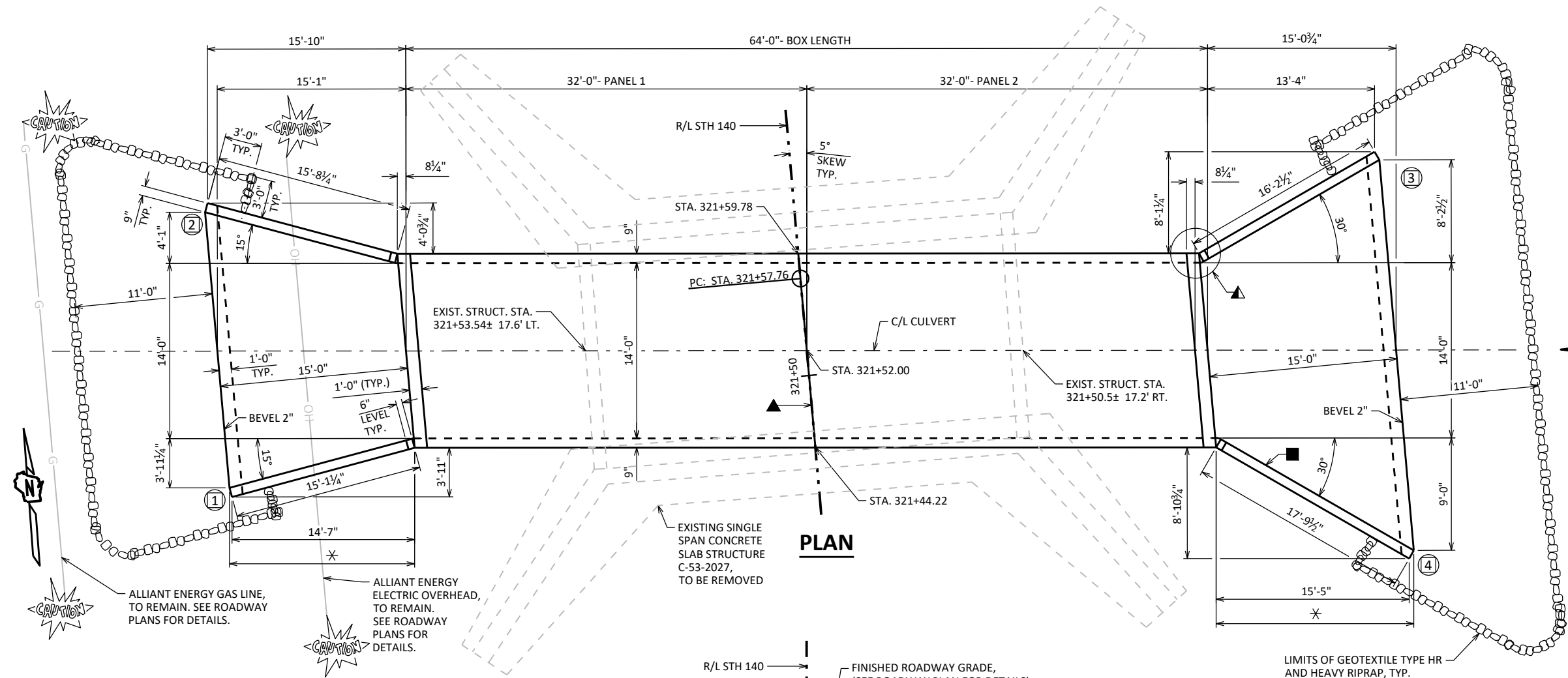
BLACKHAWK CREEK

TO MINIMIZE IMPACTS TO STREAM MORPHOLOGY, AQUATIC ORGANISM PASSAGE, AND WATER QUALITY, THE INVERT ELEVATIONS ARE SET BELOW THE NATURAL STREAM BED ELEVATION.

PLAN

ELEVATION

(LOOKING NORTH)



DESIGN DATA

LIVE LOAD:
DESIGN LOADING: HL-93
INVENTORY RATING: RF = 1.64
OPERATING RATING: RF = 2.13
WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 255 (KIPS)
EARTHLOAD:
DESIGNED FOR 3.5 TO 4.0 FT. OF FILL.
MATERIAL PROPERTIES:
CONCRETE MASONRY: $f'_c = 3,500$ PSI
BAR STEEL REINFORCEMENT: $f_y = 60,000$ PSI

HYDRAULIC DATA

100-YEAR FREQUENCY:
 $Q_{100} = 630$ C.F.S.
 $V_{100} = 9.5$ F.P.S.
 $HW_{100} = EL. 919.33$
WATERWAY AREA = 98 SQ. FT.
DRAINAGE AREA = 0.8 SQ. MI.
ROADWAY OVERTOPPING = N/A
SCOUR CRITICAL CODE = 8
2-YEAR FREQUENCY:
 $Q_2 = 130$ C.F.S.
 $V_2 = 2.4$ F.P.S.
 $HW_2 = EL. 916.92$

TRAFFIC DATA

STH 140:
A.D.T. = 2,100 (2040)
R.D.S. = 60 MPH

LIST OF DRAWINGS

1. LAYOUT
2. QUANTITIES & NOTES
3. BOX DETAILS
4. APRON DETAILS
5. WING DETAILS
6. DETAILS
7. SUBSURFACE EXPLORATION

STRUCTURE DESIGN CONTACTS:
RUTH COISMAN 608-246-3865
DOMINIQUE BECHLE 608-261-8205

NO.	DATE	REVISION	BY
BUREAU OF STRUCTURES			
ACCEPTED <i>[Signature]</i> 09/05/24 CHIEF STRUCTURES DESIGN ENGINEER DATE			
STRUCTURE C-53-2039			
STH 140 OVER BLACKHAWK CREEK			
COUNTY	ROCK	TOWN	BRADFORD
DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION			
DESIGNED BY	JJS	DESIGNED CK'D	NJK
DRAWN BY	JPH	PLANS CK'D	NJK
LAYOUT		SHEET 1 OF 7 149	

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

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

EXISTING STRUCTURE, C-53-2027, A SINGLE SPAN CONCRETE SLAB STRUCTURE TO BE REMOVED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE ¾ " UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES CULVERTS C-53-2039" SHALL BE THE EXISTING GROUNDLINE.

ALL VOLUME WHICH CANNOT BE PLACED BEFORE CULVERT CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL WITHIN THE LENGTH OF THE CULVERT INCLUDING THE APRON WING WALLS.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

THE CONCRETE IN THE CUTOFF WALLS MAY BE PLACED UNDERWATER IF THE EXCAVATION CANNOT BE DEWATERED.

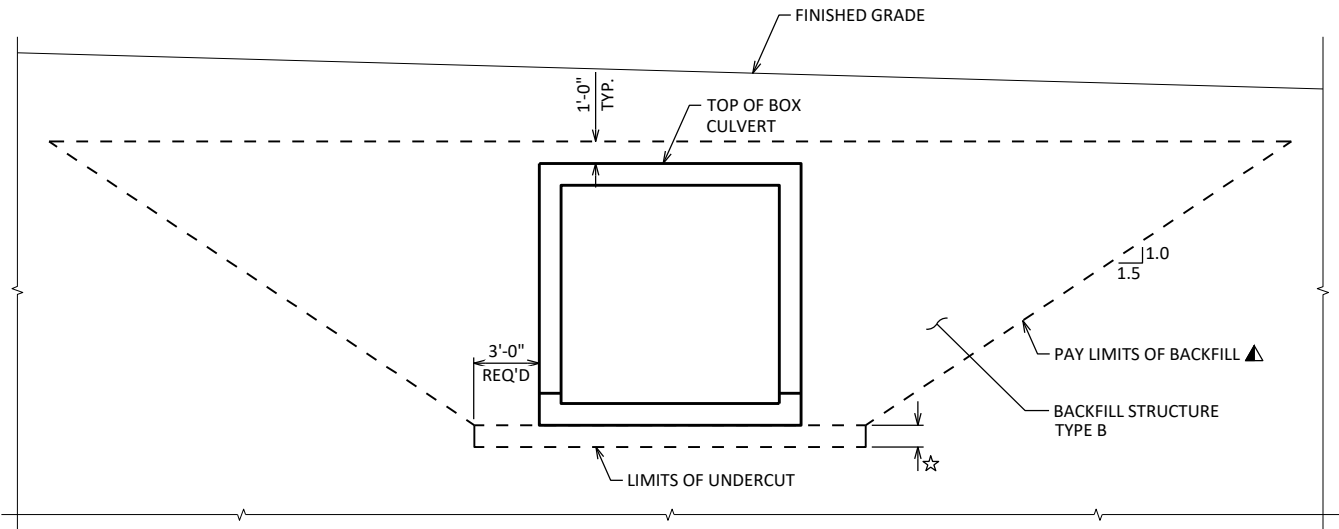
PLACE 18" (MIN.) WIDE SHEET OF "RUBBERIZED MEMBRANE WATERPROOFING" ON TOP SLAB OVER ALL CONSTRUCTION JOINTS AND EXTEND DOWN TO 6" MIN. BELOW TOP OF BOTTOM SLAB.

THE CONTRACTOR MAY FURNISH A PRECAST CONCRETE BOX CULVERT IN LIEU OF THE CAST-IN-PLACE BOX CULVERT WITH THE ACCEPTANCE OF THE SHOP DRAWINGS BY THE STRUCTURES DESIGN SECTION. THE PRECAST CONCRETE BOX CULVERT SHALL CONFORM TO PRECAST DETAILS ON CHAPTER 36 STANDARDS OF THE CURRENT WISCONSIN DOT BRIDGE MANUAL. PAYMENT FOR THE PRECAST CULVERT SHALL BE BASED ON THE QUANTITIES AND PRICES BID FOR THE ITEMS LISTED IN THE "TOTAL ESTIMATED QUANTITIES".

LOCATE NAME PLATE ON THE NEAREST RIGHT WING TRAVELING UP STATION, FACE NAME PLATE UP STATION.

TOTAL ESTIMATED QUANTITIES

BID ITEM NUMBER	BID ITEMS	UNIT	TOTALS
203.0220	REMOVING STRUCTURE C-53-2027	EACH	1
206.2001	EXCAVATION FOR STRUCTURES CULVERTS C-53-2039	EACH	1
210.2500	BACKFILL STRUCTURE TYPE B	TON	1,130
311.0115	BREAKER RUN	CY	80
504.0100	CONCRETE MASONRY CULVERTS	CY	130
505.0400	BAR STEEL REINFORCEMENT HS STRUCTURES	LB	19,560
505.0600	BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2,330
516.0500	RUBBERIZED MEMBRANE WATERPROOFING	SY	22
606.0300	RIPRAP HEAVY	CY	68
645.0105	GEOTEXTILE TYPE C	SY	265
645.0120	GEOTEXTILE TYPE HR	SY	140
	NON-BID ITEMS		
	FILLER	Size	¾"

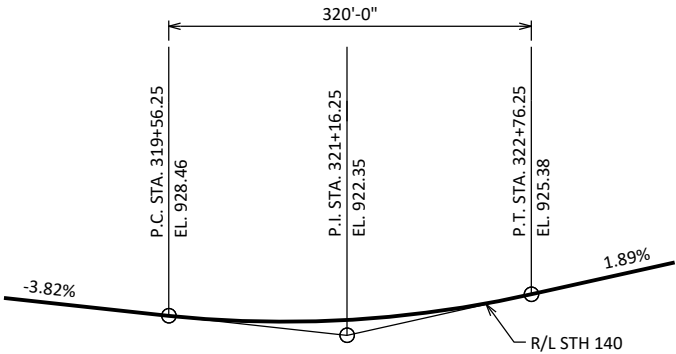


TYPICAL SECTION THRU BOX CULVERT

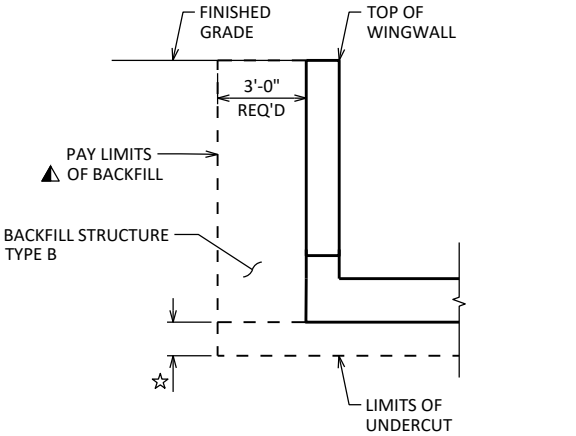
▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

☆ UNDERCUT 1'-0". EXCAVATION FOR UNDER CUT IS TO BE INCLUDED IN EXCAVATION FOR STRUCTURES. PLACE "GEOTEXTILE TYPE C" AND BACKFILL WITH "BREAKER RUN".

IN LIEU OF USING BREAKER RUN FOR THE BOX CONSTRUCTION PLATFORM, THE CONTRACTOR MAY ELECT TO SUBSTITUTE #1 OR #2 CONCRETE COARSE AGGREGATE, SELECT CRUSHED MATERIAL OR OTHER GRANULAR MATERIAL AS APPROVED BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR THE BASE STABILITY WITH ANY SUBSTITUTED MATERIAL. THE REGION GEOTECHNICAL ENGINEER MAY BE CONTACTED TO DETERMINE IF "OTHER GRANULAR MATERIAL" IS ACCEPTABLE.



PROFILE GRADE LINE - STH 140

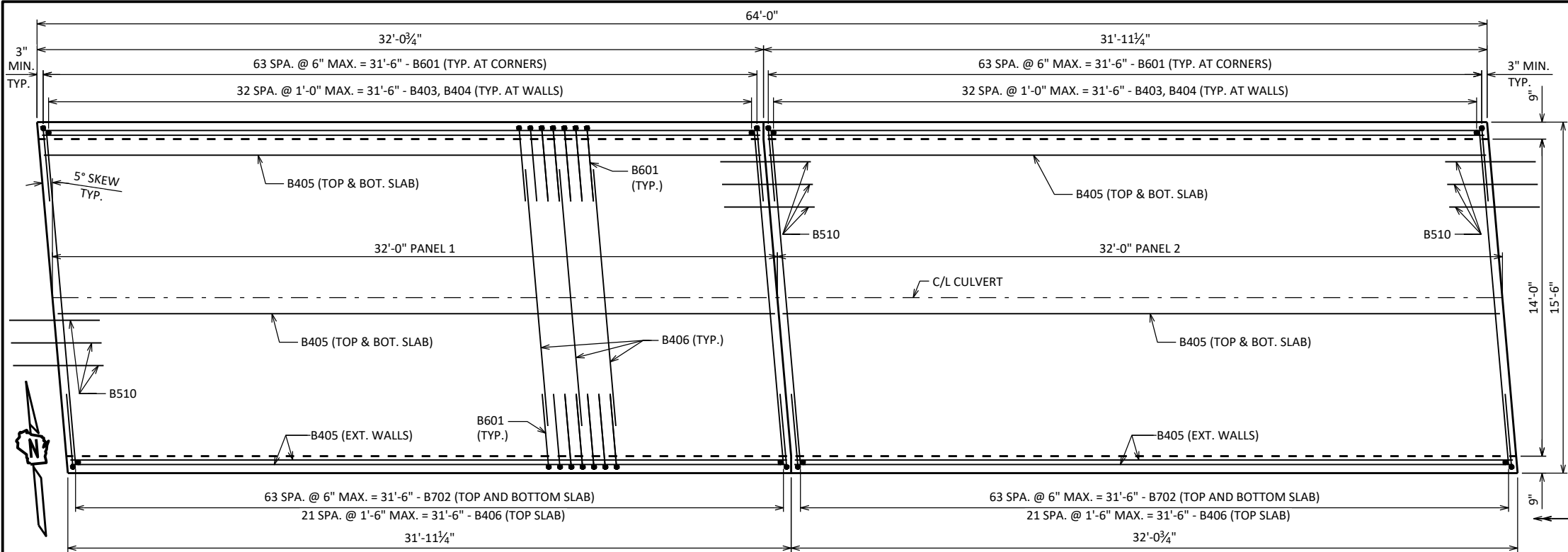


TYPICAL SECTION THRU WINGWALL

STATE PROJECT NUMBER
3320-02-71

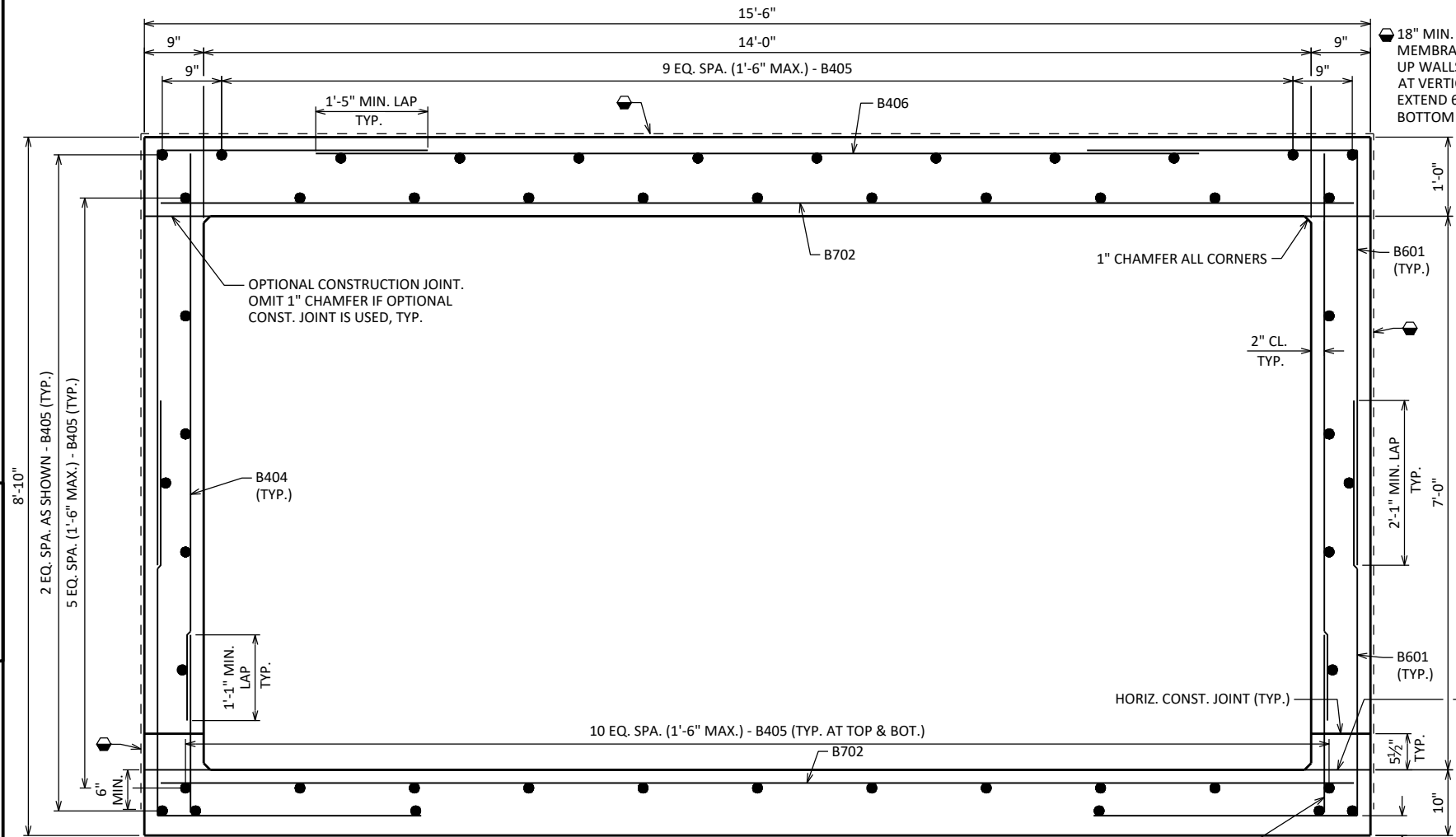
NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-53-2039			
DRAWN BY JPH		PLANS CK'D NJK	
QUANTITIES & NOTES		SHEET 2	
		150	

SCALE =



PLAN

APRON AND HEADER ARE NOT SHOWN FOR CLARITY



TYPICAL SECTION THRU BOX

ALL LONGITUDINAL BARS NOT SHOWN LABELED ARE B405 AS SHOWN

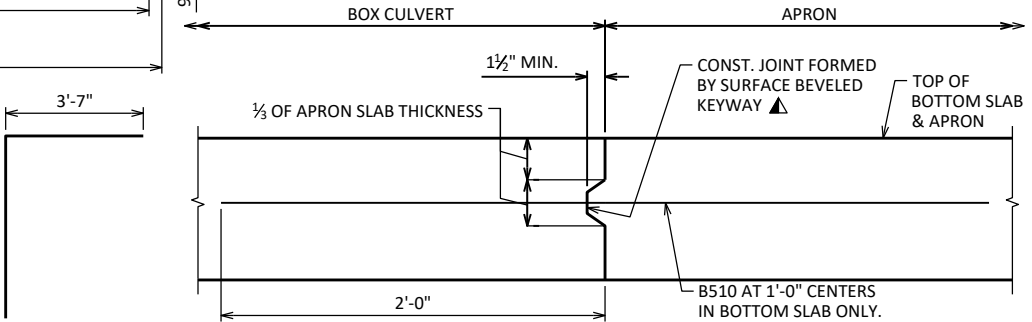
STATE PROJECT NUMBER

3320-02-71

BILL OF BARS

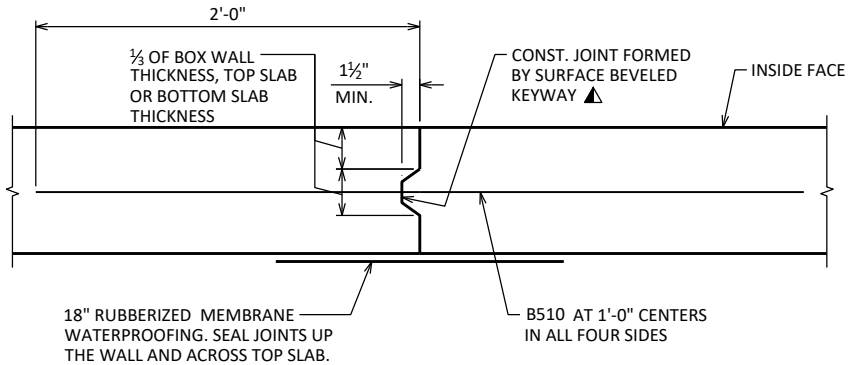
NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
B601		512	8'-9"	X		CORNERS - VERTICAL
B702		256	15'-0"			BOTTOM & TOP SLAB - TRANSVERSE - HORIZONTAL
B403		132	2'-4"			WALLS - DOWELS -VERTICAL
B404		132	7'-2"			WALLS - VERTICAL
B405		100	31'-7"			TOP & BOTTOM SLABS & WALLS - LONGITUDINAL
B406		44	10'-11"			TOP SLAB - TRANSVERSE - HORIZONTAL
B307		21	3'-0"	X		HEADER - VERTICAL - INLET
B308		21	3'-4"	X		HEADER - VERTICAL - OUTLET
B409		4	15'-3"			HEADERS - TRANSVERSE - HORIZONTAL
B510		78	4'-0"			VERT CONST. JOINT & APRON CONNECTION



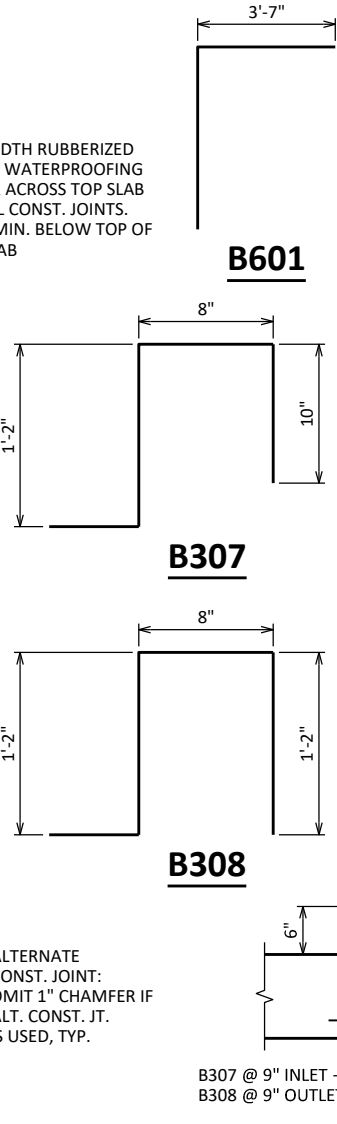
APRON CONNECTION DETAIL

IN LIEU OF CONSTRUCTION JOINTS IN BOTTOM SLAB, THE CONTRACTOR MAY USE 2" DEEP SAW CUTS WITHIN 12 HOURS AFTER POURING. #5 BARS 4'-0" AT 1'-0" CENTERS REQUIRED.



VERTICAL CONSTRUCTION JOINT

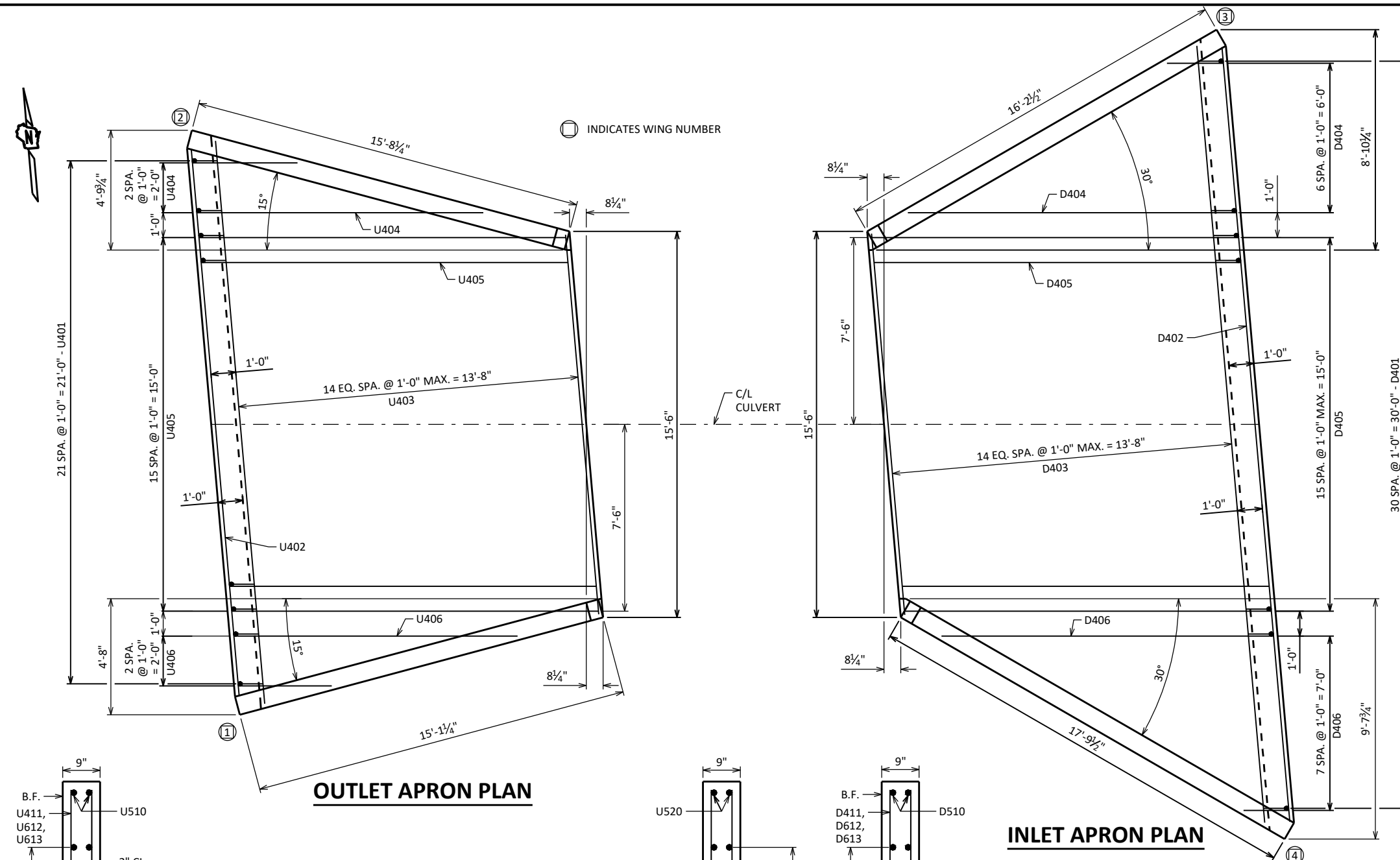
IN LIEU OF CONSTRUCTION JOINTS IN BOTTOM SLAB, THE CONTRACTOR MY USE 2" DEEP SAW CUTS WITHIN 12 HOURS AFTER POURING. #5 BARS 4'-0" AT 1'-0" CENTERS REQUIRED.



SECTION THRU HEADER

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE		C-53-2039	
DRAWN BY		JPH	PLANS CK'D NJK
BOX DETAILS		SHEET 3 151	

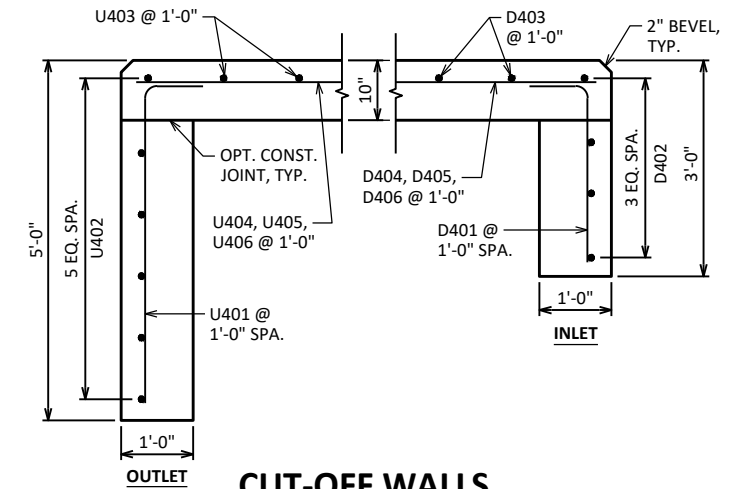
SCALE =



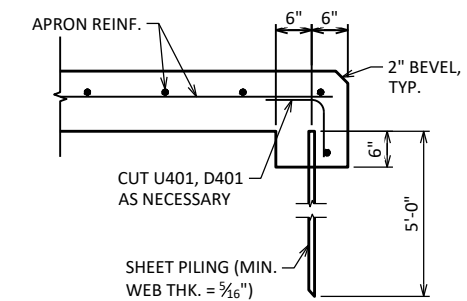
▲ 18" MIN. WIDTH RUBBERIZED
MEMBRANE WATERPROOFING,
PLACE ALONG HORIZ. CONST.
JT. FOR ENTIRE LENGTH OF
WING, TYP.

STATE PROJECT NUMBER

3320-02-71

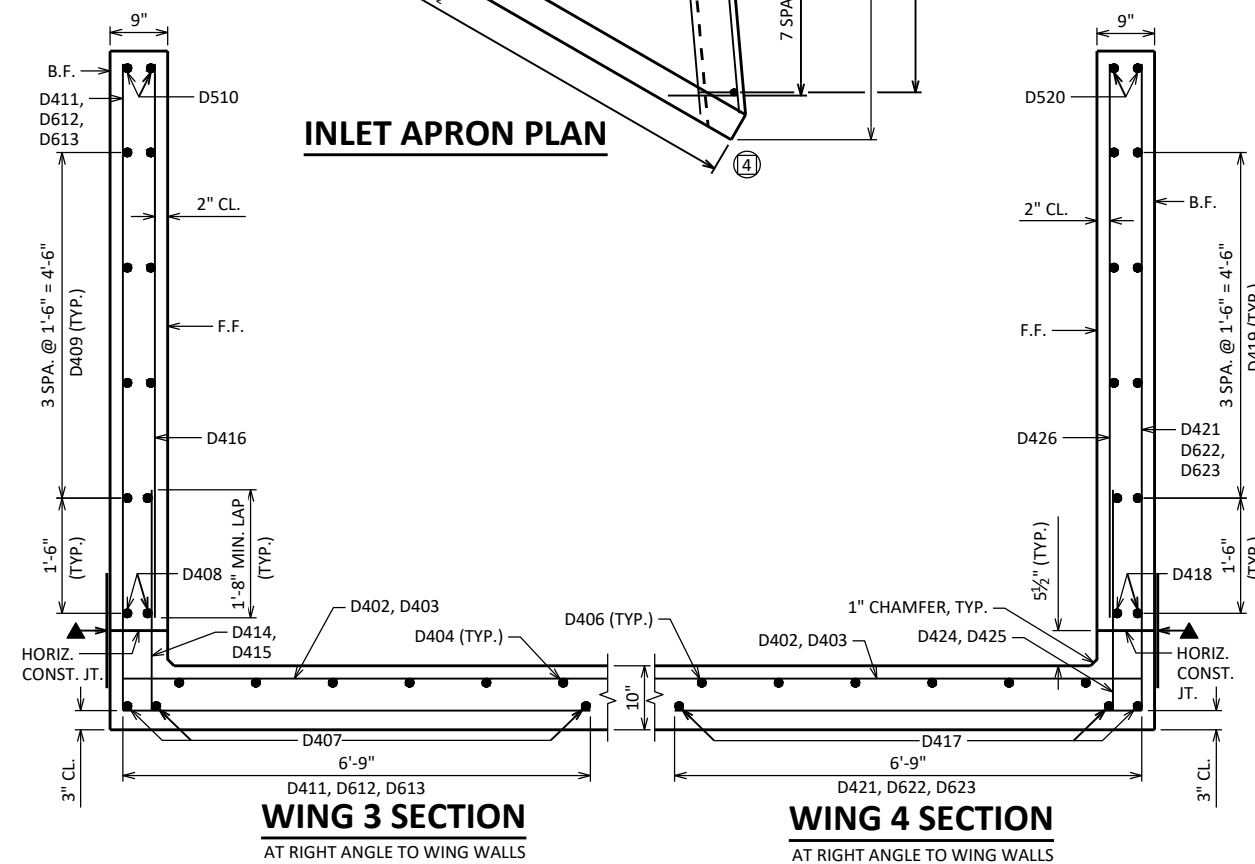
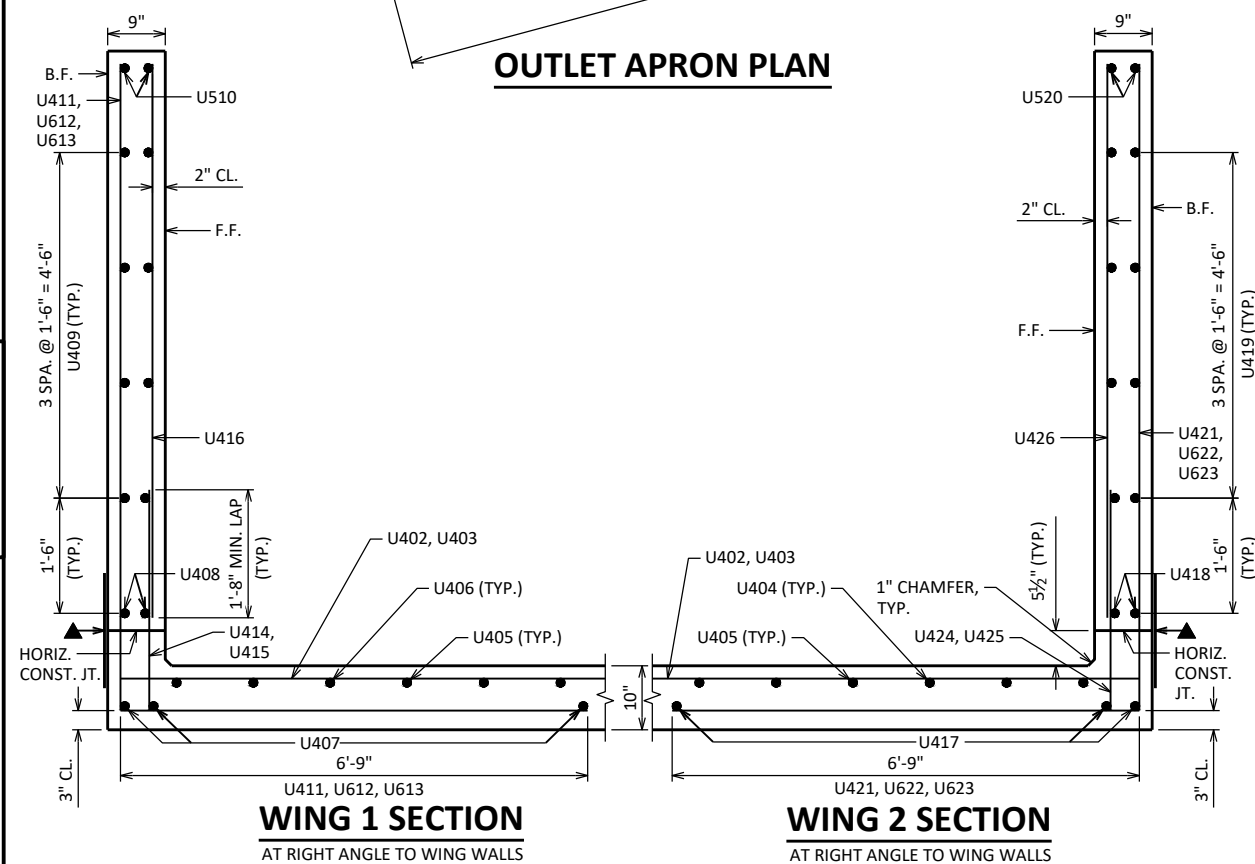


CUT-OFF WALLS



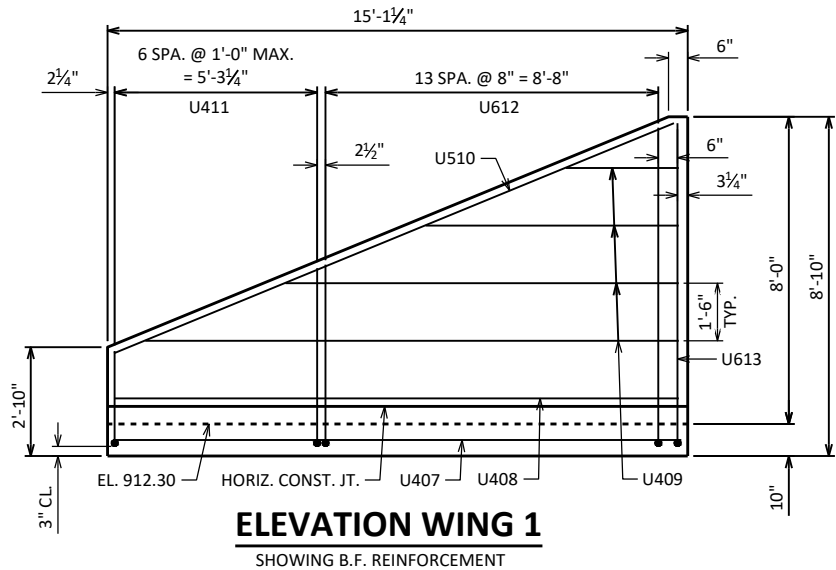
ALTERNATE CUT-OFF WALLS

THE ABOVE ALTERNATIVE MAY BE USED IN LIEU OF CAST-IN-PLACE CONCRETE CUT-OFF WALLS. PAYMENT WILL BE BASED ON THE CONCRETE CUT-OFF WALLS.

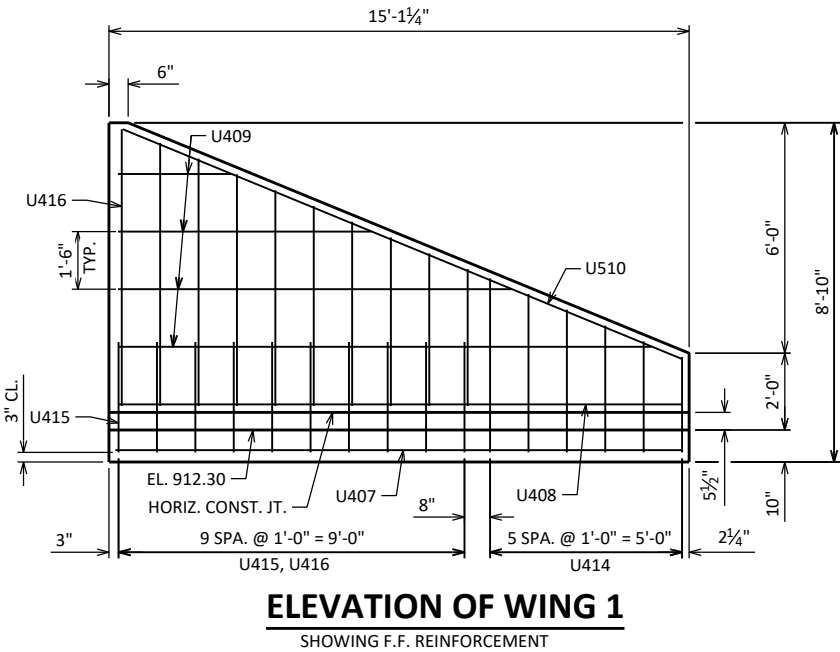


NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE C-53-2039			
DRAWN BY		JPH	PLANS CK'D NJK
APRON DETAILS		SHEET 4	
		152	

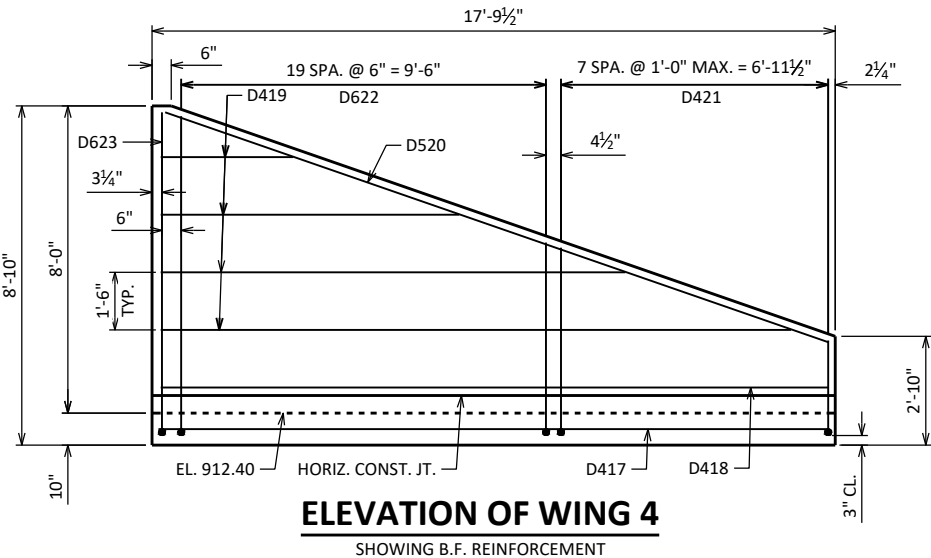
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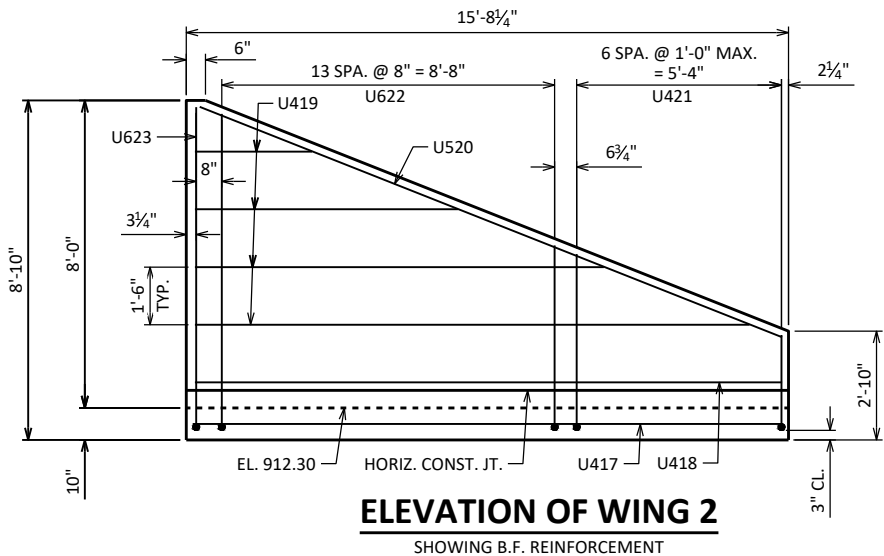
ELEVATION WING 1
SHOWING B.F. REINFORCEMENT



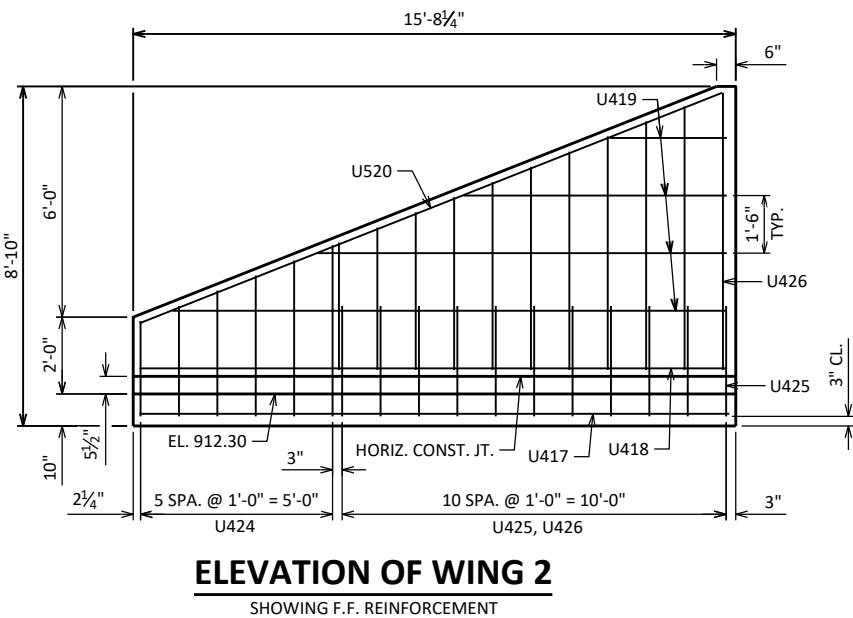
ELEVATION OF WING 1
SHOWING F.F. REINFORCEMENT



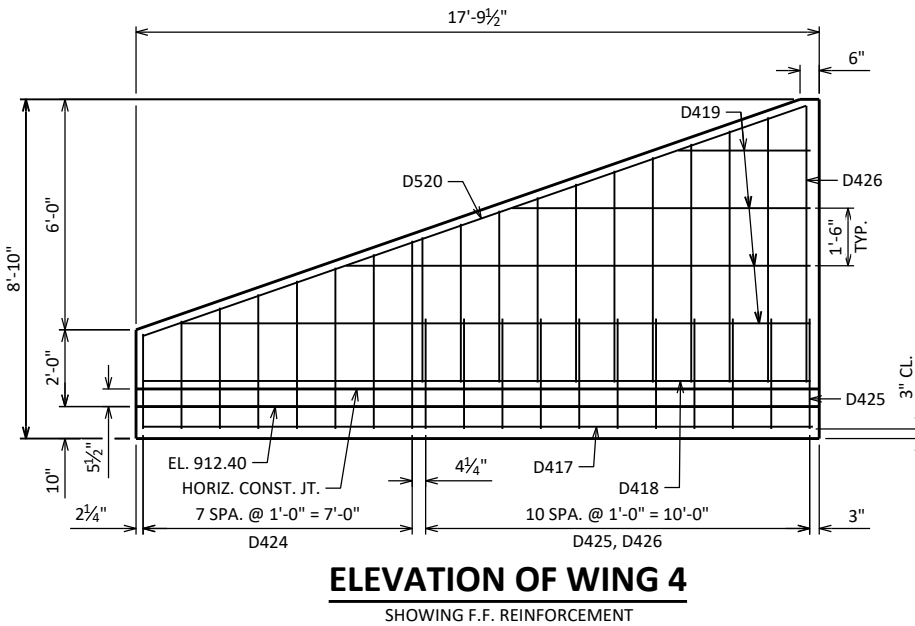
ELEVATION OF WING 4
SHOWING B.F. REINFORCEMENT



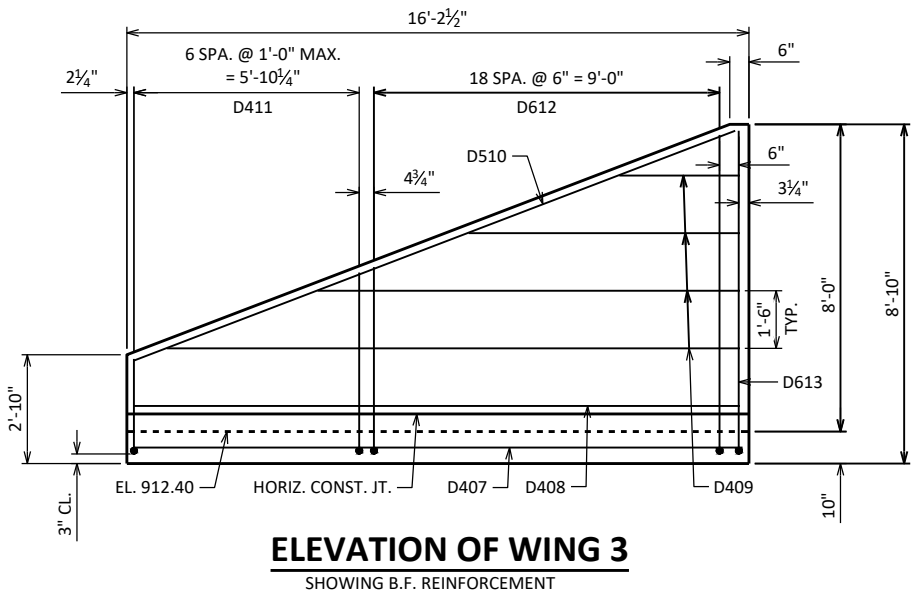
ELEVATION OF WING 2
SHOWING B.F. REINFORCEMENT



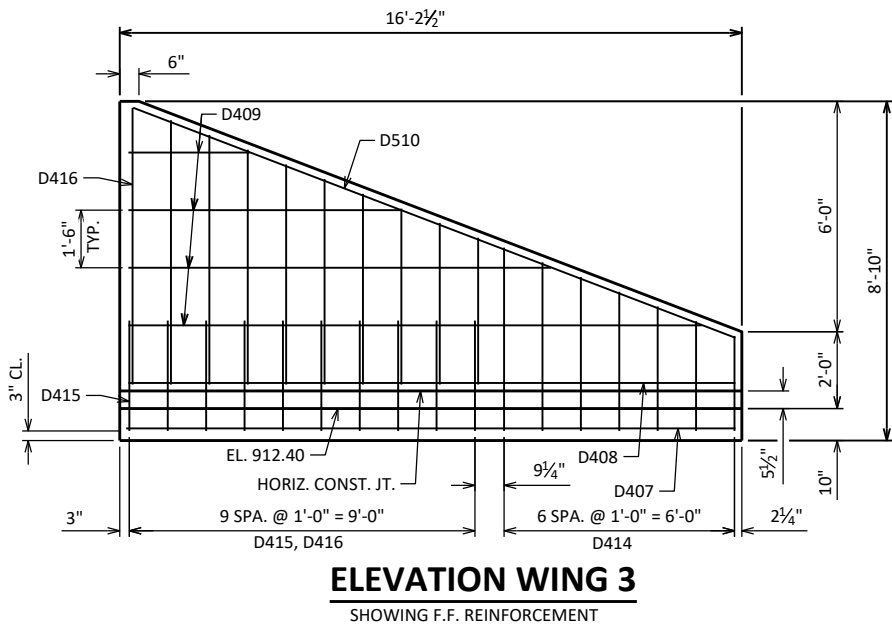
ELEVATION OF WING 2
SHOWING F.F. REINFORCEMENT



ELEVATION OF WING 4
SHOWING F.F. REINFORCEMENT



ELEVATION OF WING 3
SHOWING B.F. REINFORCEMENT



ELEVATION WING 3
SHOWING F.F. REINFORCEMENT

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE		C-53-2039	
DRAWN BY		JPH	PLANS CK'D NJK
WING DETAILS		SHEET 5 153	

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

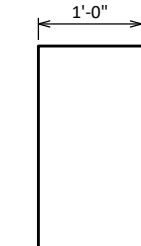
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
U401		22	5'-5"	X		OUTLET APRON CUTOFF - VERT.
U402		6	22'-0"			OUTLET APRON CUTOFF - HORIZ.
U403		15	19'-0"		▲	OUTLET APRON - HORIZ.
U404		3	7'-10"		▲	OUTLET APRON - LONGIT.
U405		16	14'-8"			OUTLET APRON - LONGIT.
U406		3	7'-7"		▲	OUTLET APRON - LONGIT.
U407		3	14'-9"			WING 1 - HORIZ. - BOT.
U408	X	2	14'-8"			WING 1 - HORIZ.
U409	X	8	8'-5"		▲	WING 1 - HORIZ.
U510	X	2	15'-8"			WING 1 - HORIZ. - TOP
U411	X	7	10'-2"	X	▲	WING 1 - VERT. - B.F.
U612	X	14	13'-1"	X	▲	WING 1 - VERT. - B.F.
U613	X	1	15'-0"	X		WING 1 - VERT. - B.F.
U414	X	6	3'-6"		▲	WING 1 - VERT. - F.F.
U415	X	10	2'-11"			WING 1 - VERT. - DOWELS - F.F.
U416	X	10	5'-5"		▲	WING 1 - VERT. - F.F.
U417		3	15'-4"			WING 2 - HORIZ. - BOT.
U418	X	2	15'-3"			WING 2 - HORIZ.
U419	X	8	8'-9"		▲	WING 2 - HORIZ.
U520	X	2	16'-3"			WING 2 - HORIZ. - TOP
U421	X	7	10'-2"	X	▲	WING 2 - VERT. - B.F.
U622	X	14	13'-1"	X	▲	WING 2 - VERT. - B.F.
U623	X	1	15'-0"	X		WING 2 - VERT. - B.F.
U424	X	6	3'-5"		▲	WING 2 - VERT. - F.F.
U425	X	11	2'-11"			WING 2 - VERT. - DOWELS - F.F.
U426	X	11	5'-4"		▲	WING 2 - VERT. - F.F.
D401		31	3'-5"	X		INLET APRON CUTOFF - VERT.
D402		4	31'-3"			INLET APRON CUTOFF - HORIZ.
D403		15	23'-4"		▲	INLET APRON - HORIZ.
D404		7	7'-9"		▲	INLET APRON - LONGIT.
D405		16	14'-8"			INLET APRON - LONGIT.
D406		8	7'-7"		▲	INLET APRON - LONGIT.
D407		3	15'-10"			WING 3 - HORIZ. - BOT.
D408	X	2	15'-9"			WING 3 - HORIZ.
D409	X	8	9'-0"		▲	WING 3 - HORIZ.
D510	X	2	16'-8"			WING 3 - HORIZ. - TOP
D411	X	7	10'-3"	X	▲	WING 3 - VERT. - B.F.
D612	X	19	13'-2"	X	▲	WING 3 - VERT. - B.F.
D613	X	1	15'-0"	X		WING 3 - VERT. - B.F.
D414	X	7	3'-7"		▲	WING 3 - VERT. - F.F.
D415	X	10	2'-11"			WING 3 - VERT. - DOWELS - F.F.
D416	X	10	5'-7"		▲	WING 3 - VERT. - F.F.
D417		3	17'-5"			WING 4 - HORIZ. - BOT.
D418	X	2	17'-4"			WING 4 - HORIZ.
D419	X	8	9'-11"		▲	WING 4 - HORIZ.
D520	X	2	18'-2"			WING 4 - HORIZ. - TOP
D421	X	8	10'-4"	X	▲	WING 4 - VERT. - B.F.
D622	X	20	13'-3"	X	▲	WING 4 - VERT. - B.F.
D623	X	1	15'-0"	X		WING 4 - VERT. - B.F.
D424	X	8	3'-8"		▲	WING 4 - VERT. - F.F.
D425	X	11	2'-11"			WING 4 - VERT. - DOWELS - F.F.
D426	X	11	5'-6"		▲	WING 4 - VERT. - F.F.

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

BAR SERIES TABLE

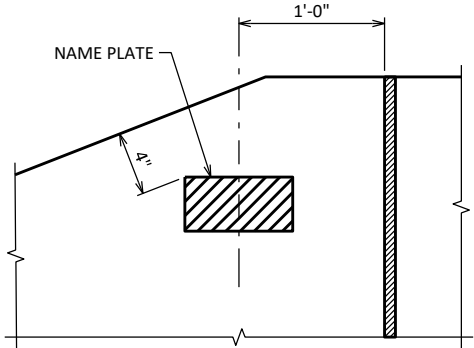
BUNDLE AND TAG EACH SERIES SEPARATELY.

BAR MARK	NO. REQ'D.	LENGTH
U403	1 SERIES OF 15	15'-3" TO 22'-8"
U404	1 SERIES OF 3	4'-2" TO 11'-6"
U406	1 SERIES OF 3	3'-9" TO 11'-5"
U409	2 SERIES OF 4	2'-11" TO 13'-11"
U411	1 SERIES OF 7	9'-1" TO 11'-3"
U612	1 SERIES OF 14	11'-3" TO 14'-10"
U414	1 SERIES OF 6	2'-5" TO 4'-6"
U416	1 SERIES OF 10	3'-7" TO 7'-3"
U419	2 SERIES OF 4	3'-1" TO 14'-5"
U421	1 SERIES OF 7	9'-1" TO 11'-3"
U622	1 SERIES OF 14	11'-4" TO 14'-10"
U424	1 SERIES OF 6	2'-5" TO 4'-5"
U426	1 SERIES OF 11	3'-4" TO 7'-3"
D403	1 SERIES OF 15	15'-4" TO 31'-4"
D404	1 SERIES OF 7	2'-3" TO 13'-2"
D406	1 SERIES OF 8	1'-9" TO 13'-4"
D409	2 SERIES OF 4	3'-1" TO 14'-11"
D411	1 SERIES OF 7	9'-1" TO 11'-4"
D612	1 SERIES OF 19	11'-5" TO 14'-10"
D414	1 SERIES OF 7	2'-5" TO 4'-9"
D416	1 SERIES OF 10	3'-10" TO 7'-3"
D419	2 SERIES OF 4	3'-5" TO 16'-5"
D421	1 SERIES OF 8	9'-1" TO 11'-7"
D622	1 SERIES OF 20	11'-7" TO 14'-11"
D424	1 SERIES OF 8	2'-5" TO 4'-11"
D426	1 SERIES OF 11	3'-9" TO 7'-3"



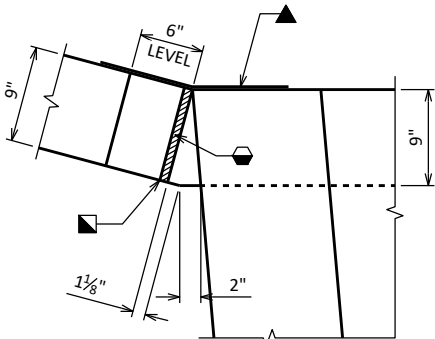
U401 D401

U411 U612 U613 U421 U622 U623
D411 D612 D613 D421 D622 D623

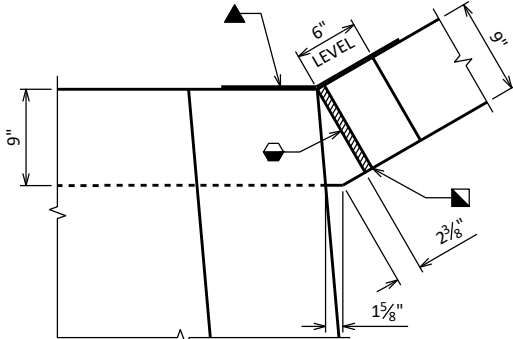


NAME PLATE DETAIL

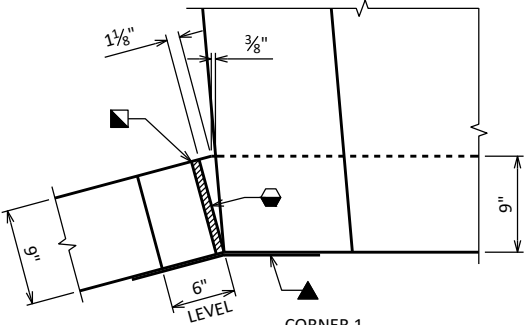
WING 4



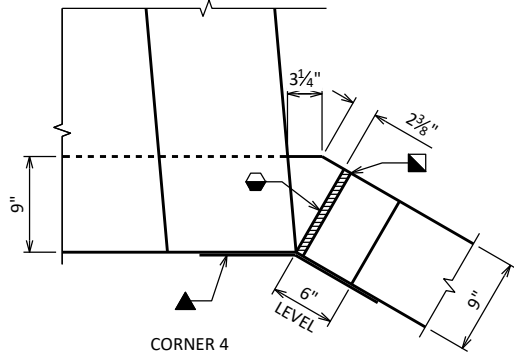
CORNER 2



CORNER 3



CORNER 1



CORNER 4

CORNER DETAILS

3/4" FILLER TO EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WING

1" BEVEL, TYP.

18" MIN. WIDTH RUBBERIZED MEMBRANE WATERPROOFING, EXTEND FROM HORIZ. CONST. JOINT TO TOP OF WING.

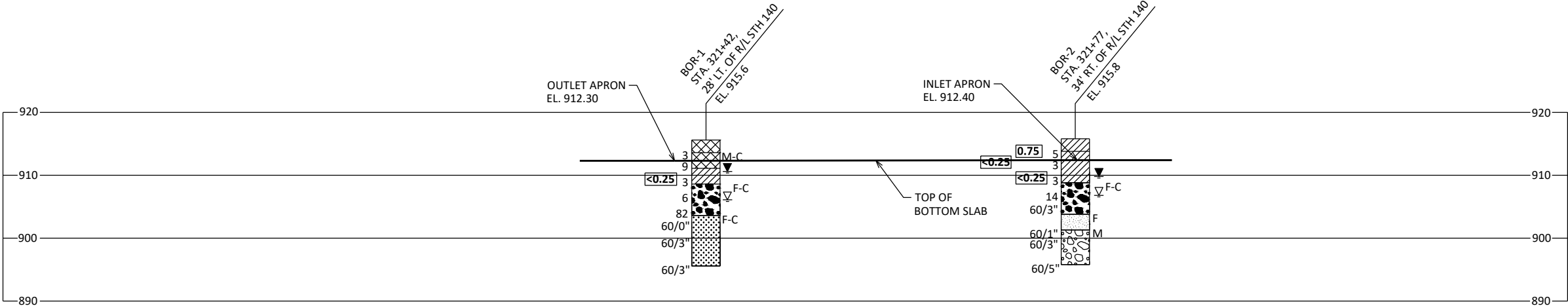
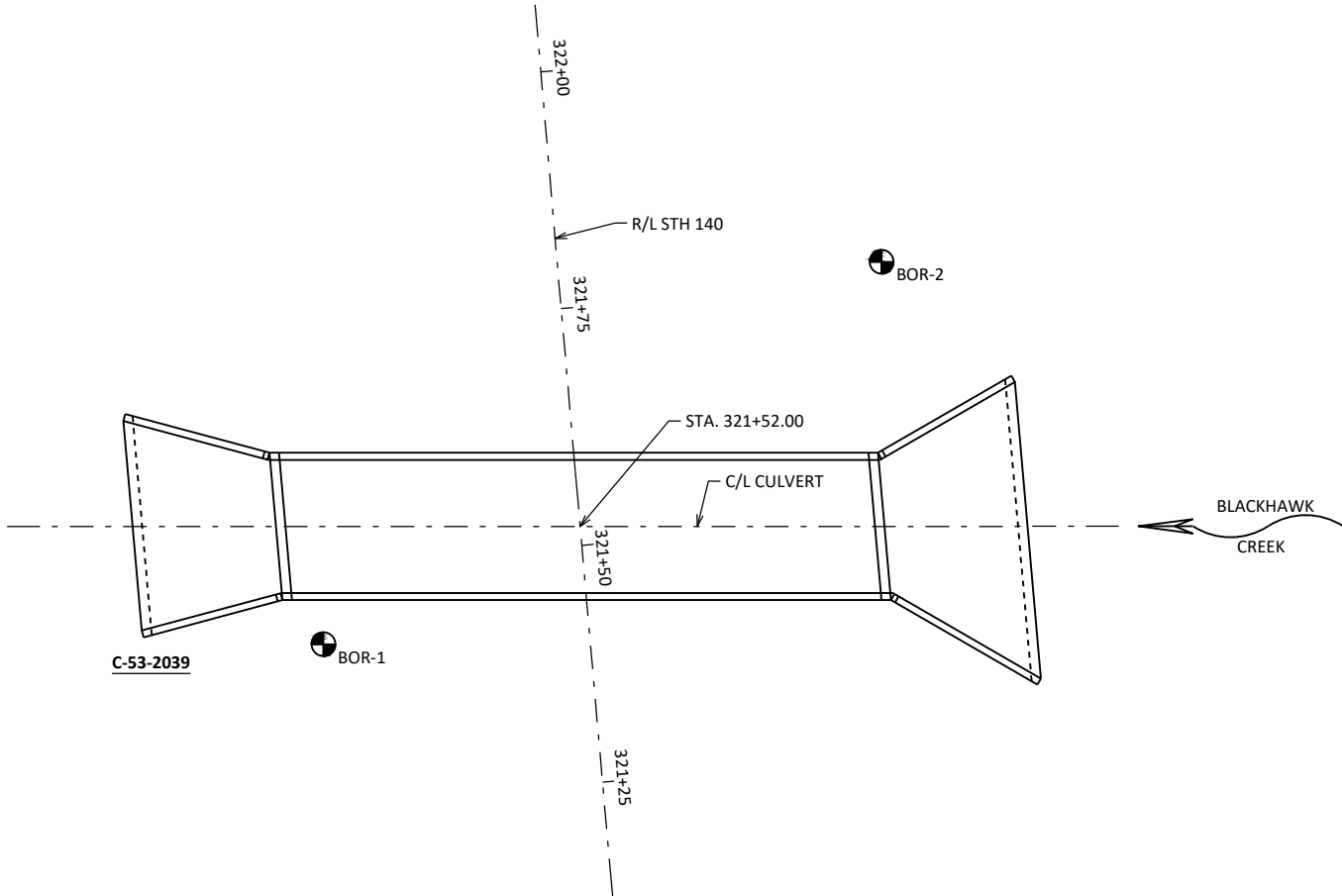
STATE PROJECT NUMBER

3320-02-71

NO.	DATE	REVISION	BY
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STRUCTURES DESIGN SECTION			
STRUCTURE		C-53-2039	
DRAWN BY		JPH	PLANS CK'D NJK
DETAILS		SHEET 6	154

SCALE =

BORING #	DATE COMPLETED	NORTHING (Y)	EASTING (X)
1	8/24/2022	257151	534369
2	8/24/2022	257184	534432
BORINGS COMPLETED BY: GESTRA			
REPORT COMPLETED BY: WISDOT			
ALL COORDINATES REFERENCED TO WCCS NAD 83 (91) ROCK COUNTY			
COORDINATES COLLECTED USING NON-SURVEY GRADE EQUIPMENT			



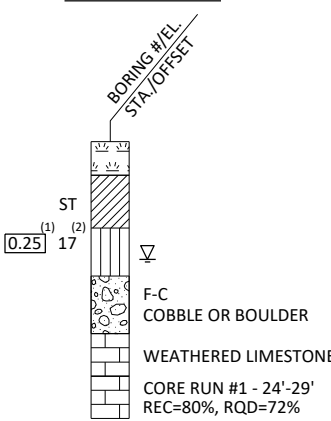
STATE PROJECT NUMBER

3320-02-71

MATERIAL SYMBOLS

ASPHALT	TOPSOIL	PEAT
CONCRETE	FILL	GRAVEL
SAND	CLAY	SILT
BOULDERS OR COBBLES	LIMESTONE	BEDROCK (UNKNOWN)
SHALE	SANDSTONE	IGNEOUS/META

LEGEND OF BORING



⁽¹⁾ UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

⁽²⁾ UNLESS OTHERWISE, SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

- ▽ AT TIME OF DRILLING
- ▼ END OF DRILLING
- ▼ AFTER DRILLING

ABBREVIATIONS

F-FINE M-MEDIUM C-COARSE ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

NO.	DATE	REVISION	BY
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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE C-53-2039

DRAWN BY	JPH	PLANS CK'D	NJK
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SUBSURFACE
EXPLORATION

SHEET 7
155

SCALE = 20

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	NOTE 2	NOTE 4
51+61.34	0.00	1.16	0.00	5.65	0	0	0	0	0	0
52+00.00	38.66	1.12	0.00	4.06	2	0	7	2	9	-7
52+81.07	81.07	1.84	0.00	50.42	4	0	82	6	111	-105
53+00.00	18.93	1.53	0.00	57.77	1	0	38	7	159	-152
53+06.05	6.05	1.65	0.00	60.31	0	0	13	7	175	-168
53+20.74	14.69	2.37	0.00	61.95	1	0	33	8	216	-208
53+31.04	10.30	1.80	0.00	65.54	1	0	24	9	246	-237
53+45.72	14.68	1.98	0.00	69.54	1	0	37	10	293	-283
53+70.78	25.06	1.63	0.00	89.56	2	0	74	12	385	-373
53+85.00	14.22	4.70	0.00	71.97	2	0	43	14	439	-425
53+90.00	5.00	134.56	10.00	55.31	13	1	12	27	454	-428
54+00.00	10.00	131.85	10.00	72.76	49	4	24	76	484	-413
54+14.97	14.97	125.79	10.00	100.54	71	6	48	147	544	-408
54+43.41	28.44	139.21	10.00	44.97	140	11	77	287	640	-375
54+70.00	26.59	145.90	10.00	17.05	140	10	31	427	679	-284
54+75.00	5.00	7.20	0.00	16.40	14	1	3	441	683	-275
55+00.00	25.00	1.42	0.00	15.95	4	0	15	445	701	-289
55+24.76	24.76	1.18	0.00	14.61	1	0	14	446	719	-306
55+39.45	14.69	0.78	0.00	14.96	1	0	8	447	729	-315
55+49.75	10.30	0.97	0.00	14.33	0	0	6	447	736	-322
55+64.43	14.68	1.07	0.00	10.91	1	0	7	448	745	-330
55+89.42	24.99	1.78	0.00	7.62	1	0	9	450	756	-340

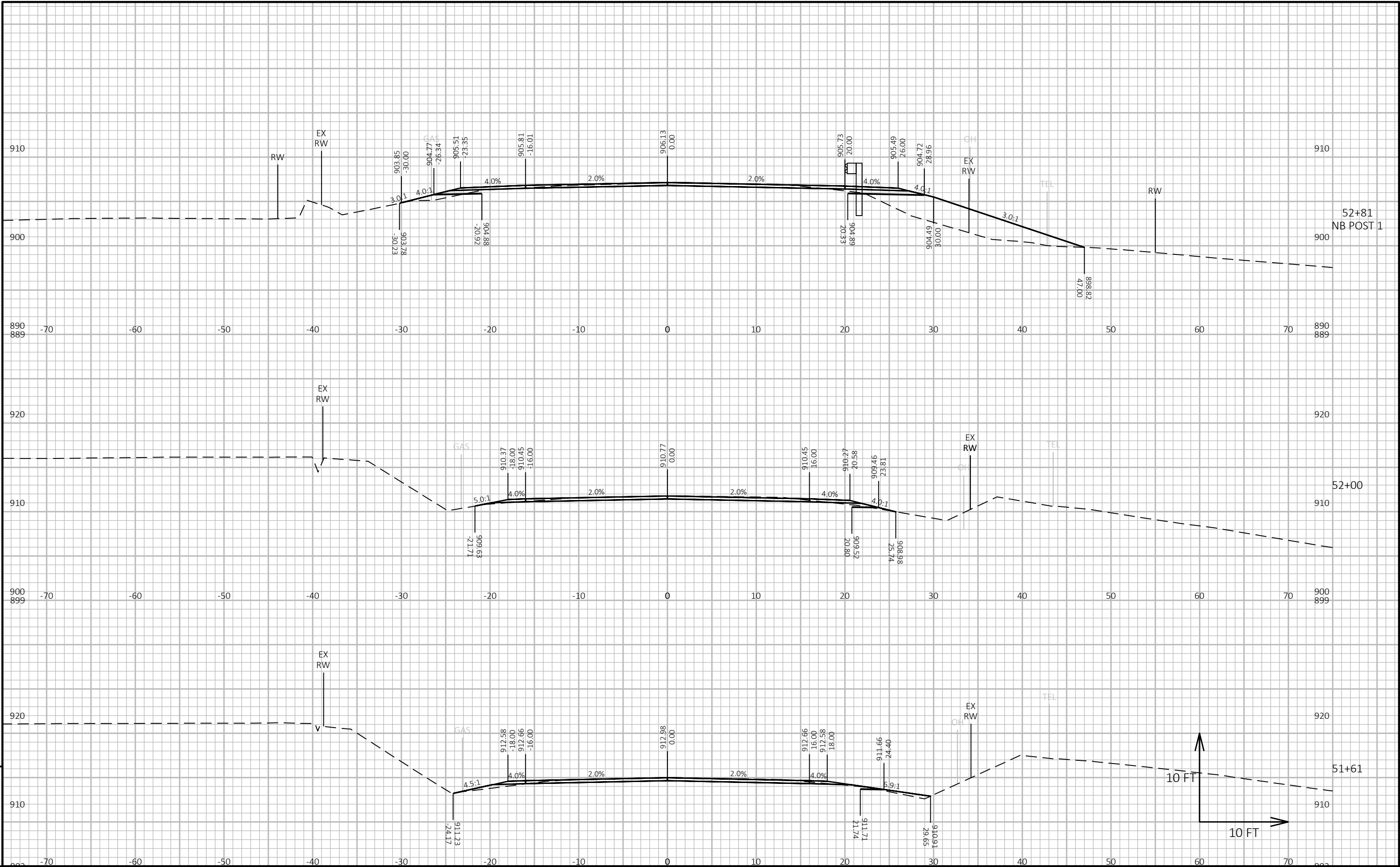
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	[CUT - (FILL * FILL FACTOR)]

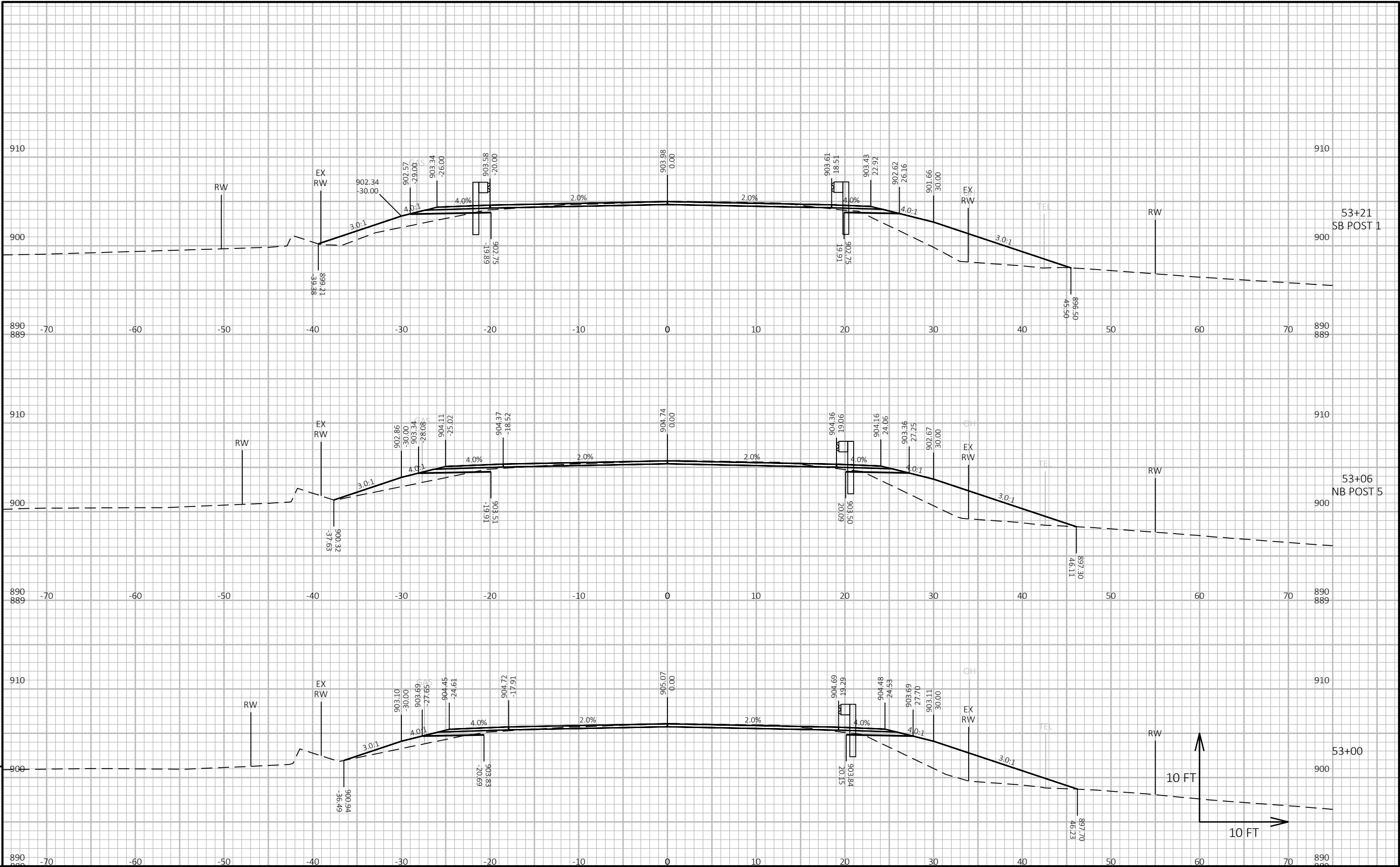
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
					NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.25	NOTE 4
224+79.88	0.00	0.67	0.00	3.93	0	0	0	0	0	0
225+00.00	20.12	2.50	0.00	3.37	1	0	3	1	4	-3
225+50.00	50.00	2.85	0.00	1.62	5	0	5	6	10	-4
226+00.00	50.00	4.61	0.00	14.68	7	0	15	13	29	-16
226+24.60	24.60	5.41	0.00	14.82	5	0	13	18	45	-27
226+49.58	24.98	7.06	0.00	21.34	6	0	17	24	66	-42
226+65.22	15.64	5.67	0.00	28.24	4	0	14	28	84	-56
226+90.20	24.98	5.37	0.00	26.43	5	0	25	33	115	-82
227+00.00	9.80	5.25	0.00	24.30	2	0	9	35	126	-91
227+15.18	15.18	5.39	0.00	23.53	3	0	13	38	143	-105
227+35.00	19.82	3.86	0.00	23.41	3	0	17	41	164	-123
227+40.00	5.00	0.38	10.00	34.15	0	1	5	41	170	-130
227+63.79	23.79	121.32	10.00	110.20	54	9	64	95	250	-165
227+82.13	18.34	118.27	10.00	145.45	81	7	87	176	359	-200
228+00.00	17.87	134.68	10.00	8.66	84	7	51	260	423	-187
228+10.00	10.00	136.75	10.00	7.06	50	4	3	310	426	-144
228+15.00	5.00	4.72	0.00	11.89	13	1	2	323	429	-135
228+30.83	15.83	2.73	0.00	12.40	2	0	7	325	438	-142
228+55.81	24.98	1.65	0.00	9.07	2	0	10	327	450	-152
228+80.79	24.98	1.48	0.00	10.44	1	0	9	328	461	-162
228+96.43	15.64	1.80	0.00	7.57	1	0	5	329	468	-168
229+00.00	3.57	2.03	0.00	7.23	0	0	1	329	469	-169
229+10.64	10.64	2.79	0.00	4.78	1	0	2	330	471	-170
229+21.41	10.77	3.98	0.00	2.27	1	0	1	331	473	-171
229+46.39	24.98	2.75	0.00	4.54	3	0	3	334	476	-171
229+76.24	29.85	2.53	0.00	5.93	3	0	6	337	484	-176
229+90.00	13.76	0.62	0.00	4.55	1	0	3	338	488	-179
230+66.39	76.39	0.00	0.00	1.94	1	0	9	340	499	-190

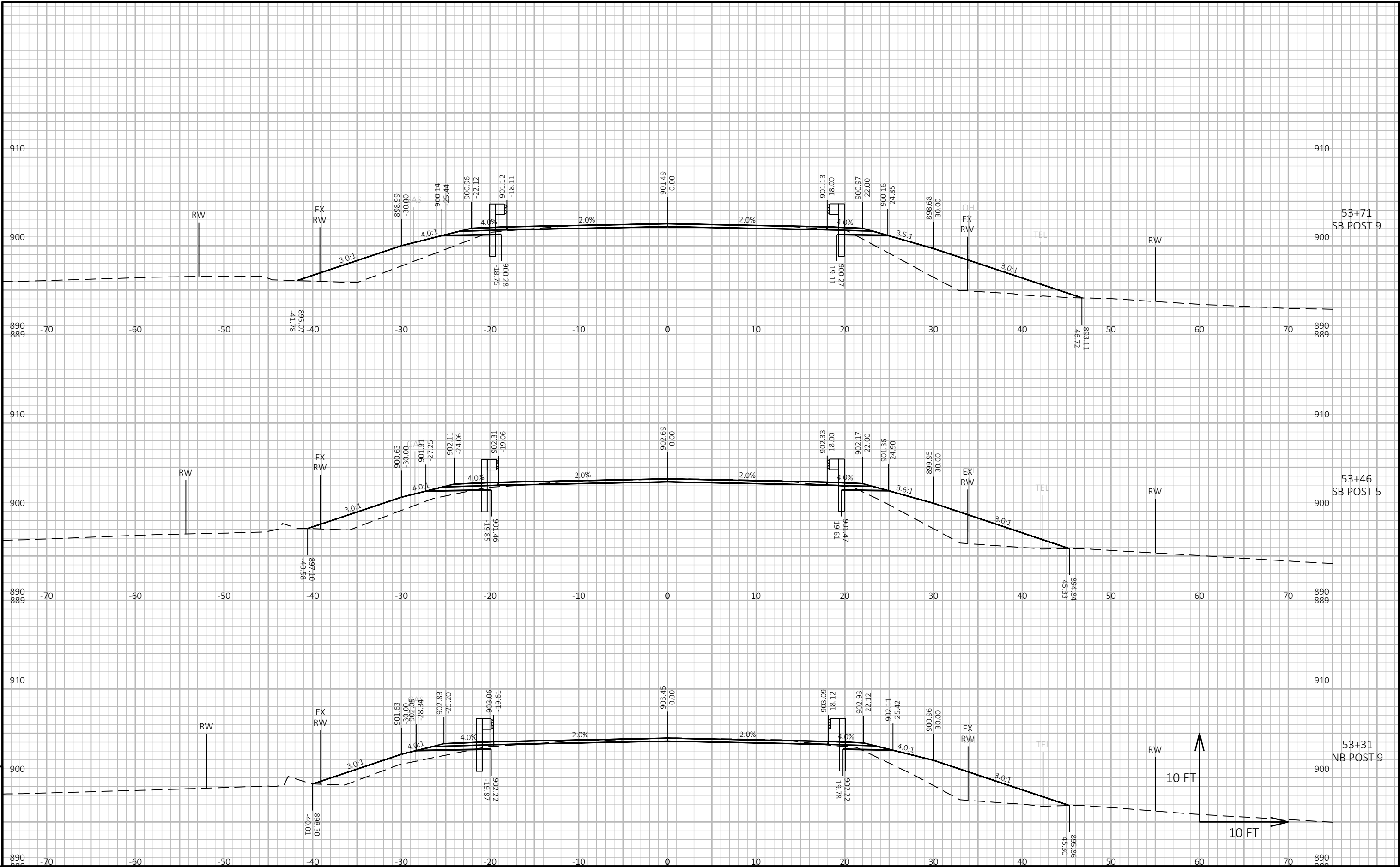
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	[CUT - (FILL* FILL FACTOR)]

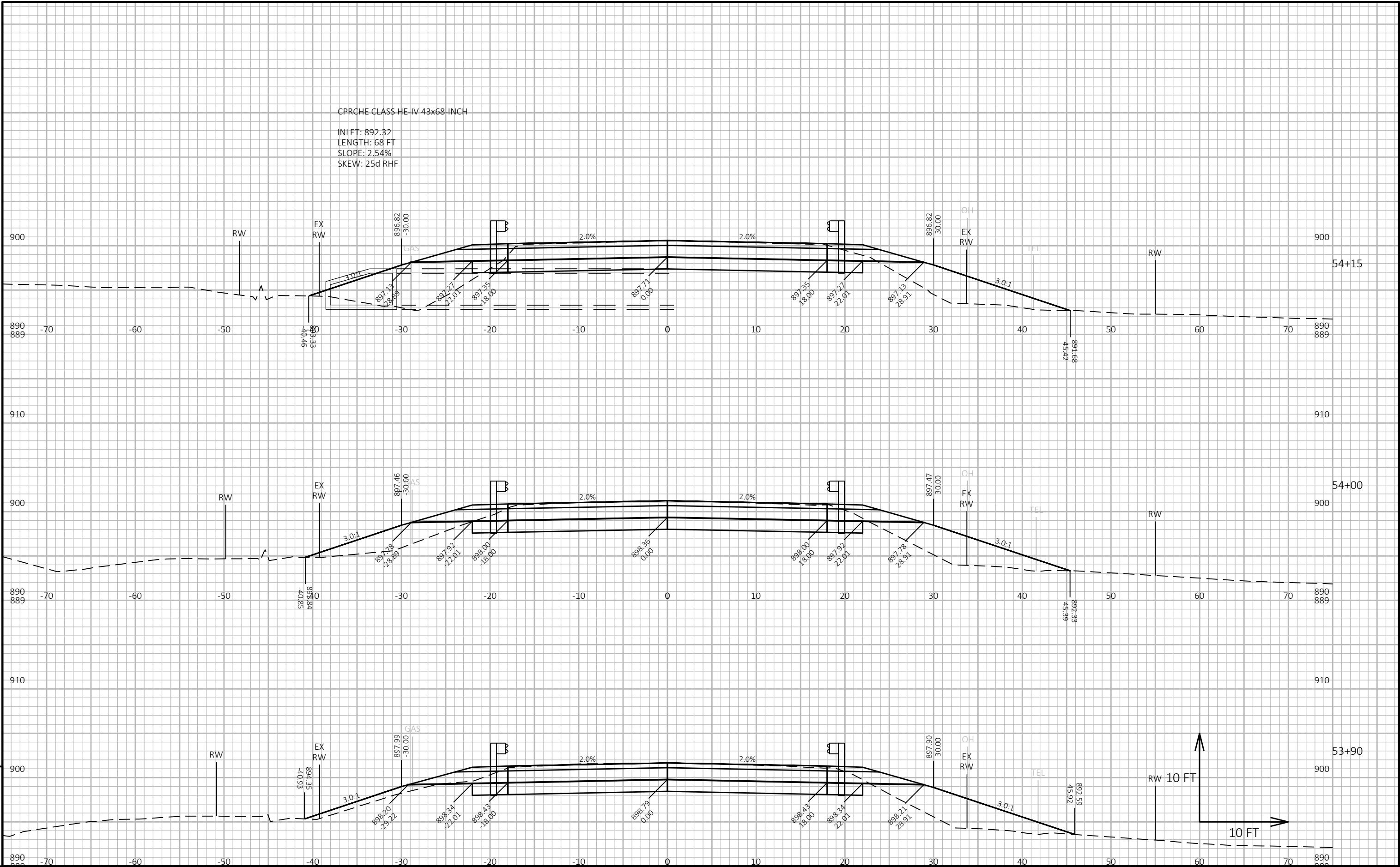
STATION	DISTANCE	AREA (SF)			INCREMENTAL VOL (CY) (UNADJUSTED)			CUMULATIVE VOL (CY)		
		CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	SALVAGED/UNUSABLE PAVEMENT MATERIAL	FILL	CUT	EXPANDED FILL	MASS ORDINATE
					NOTE 1	NOTE 2	NOTE 3	NOTE 1	1.25	NOTE 4
318+55.72	0.00	1.90	0.00	2.63	0	0	0	0	0	0
319+25.00	69.28	3.49	0.00	5.54	7	0	10	7	13	-6
319+45.64	20.64	3.09	0.00	6.78	3	0	5	10	19	-9
319+75.49	29.85	2.86	0.00	14.61	3	0	12	13	34	-21
320+00.00	24.51	3.30	0.00	8.36	3	0	10	16	46	-30
320+17.52	17.52	4.61	0.00	18.18	3	0	9	19	58	-39
320+25.45	7.93	4.42	0.00	21.98	1	0	6	20	65	-45
320+47.37	21.92	5.42	0.00	30.37	4	0	21	24	91	-67
320+72.35	24.98	5.10	0.00	35.34	5	0	30	29	129	-100
320+97.34	24.99	5.16	0.00	37.75	5	0	34	34	171	-137
321+05.00	7.66	3.61	0.00	29.80	1	0	10	35	184	-149
321+10.00	5.00	133.25	10.00	22.29	13	1	5	48	190	-143
321+41.42	31.42	112.70	10.00	223.99	143	12	143	191	369	-191
321+62.64	21.22	103.68	10.00	224.01	85	8	176	276	589	-334
321+90.00	27.36	125.23	10.00	61.18	116	10	144	392	769	-408
321+95.00	5.00	3.04	0.00	62.02	12	1	11	404	783	-411
322+00.00	5.00	3.32	0.00	55.75	1	0	11	405	796	-423
322+06.75	6.75	3.59	0.00	51.57	1	0	13	406	813	-439
322+31.76	25.01	4.08	0.00	50.86	4	0	47	410	871	-493
322+56.78	25.02	2.96	0.00	49.05	3	0	46	413	929	-548
322+78.44	21.66	2.70	0.00	52.06	2	0	41	415	980	-597
322+86.66	8.22	2.75	0.00	49.66	1	0	15	416	999	-615
323+03.40	16.74	2.72	0.00	42.83	2	0	29	418	1035	-649
323+28.35	24.95	4.38	0.00	32.30	3	0	35	421	1079	-690
323+58.16	29.81	2.03	0.00	16.42	4	0	27	425	1113	-720
323+75.00	16.84	2.85	0.00	12.79	2	0	9	427	1124	-729
324+47.85	72.85	0.74	0.00	2.34	5	0	20	430	1149	-750

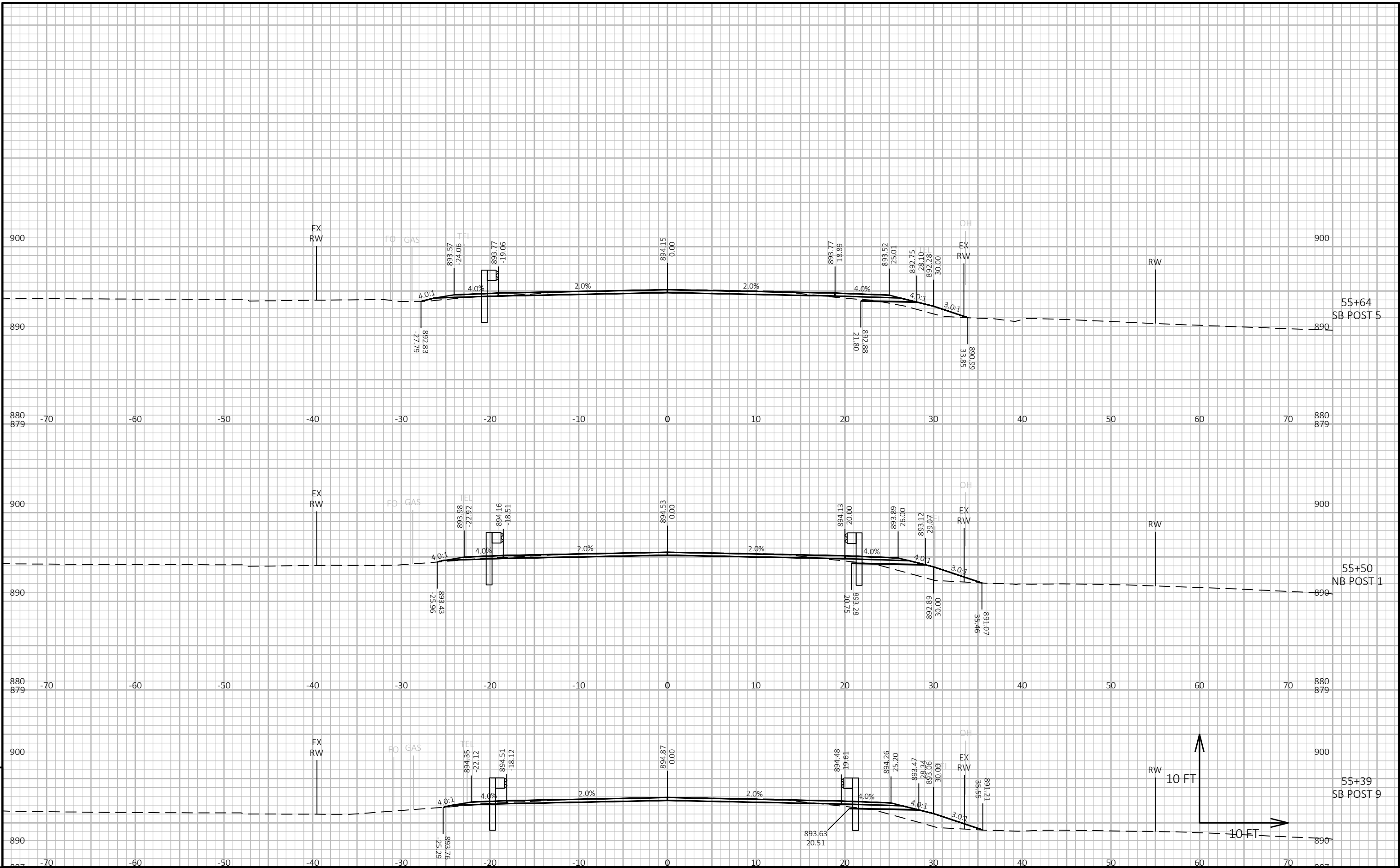
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
4 - MASS ORDINATE	[CUT - (FILL* FILL FACTOR)]

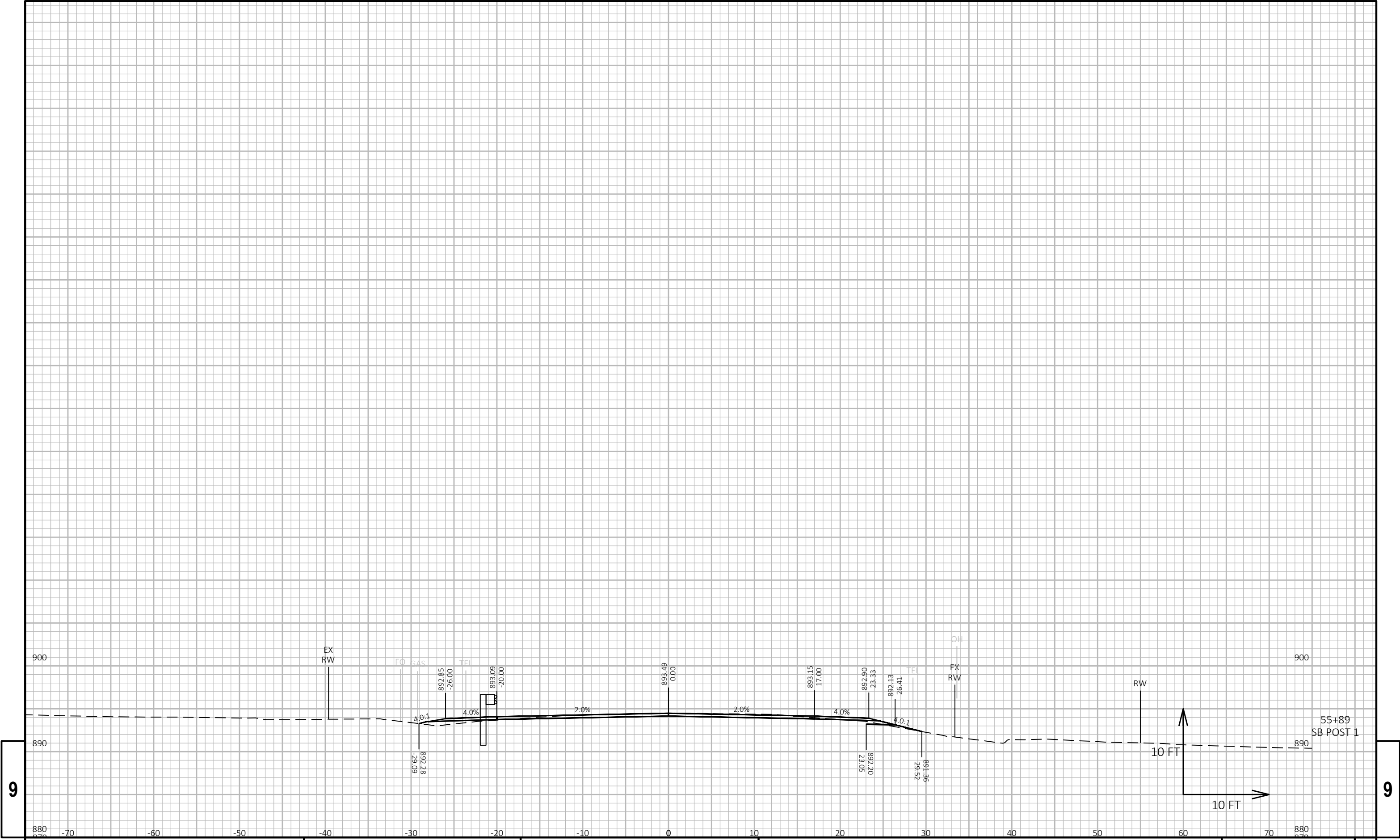


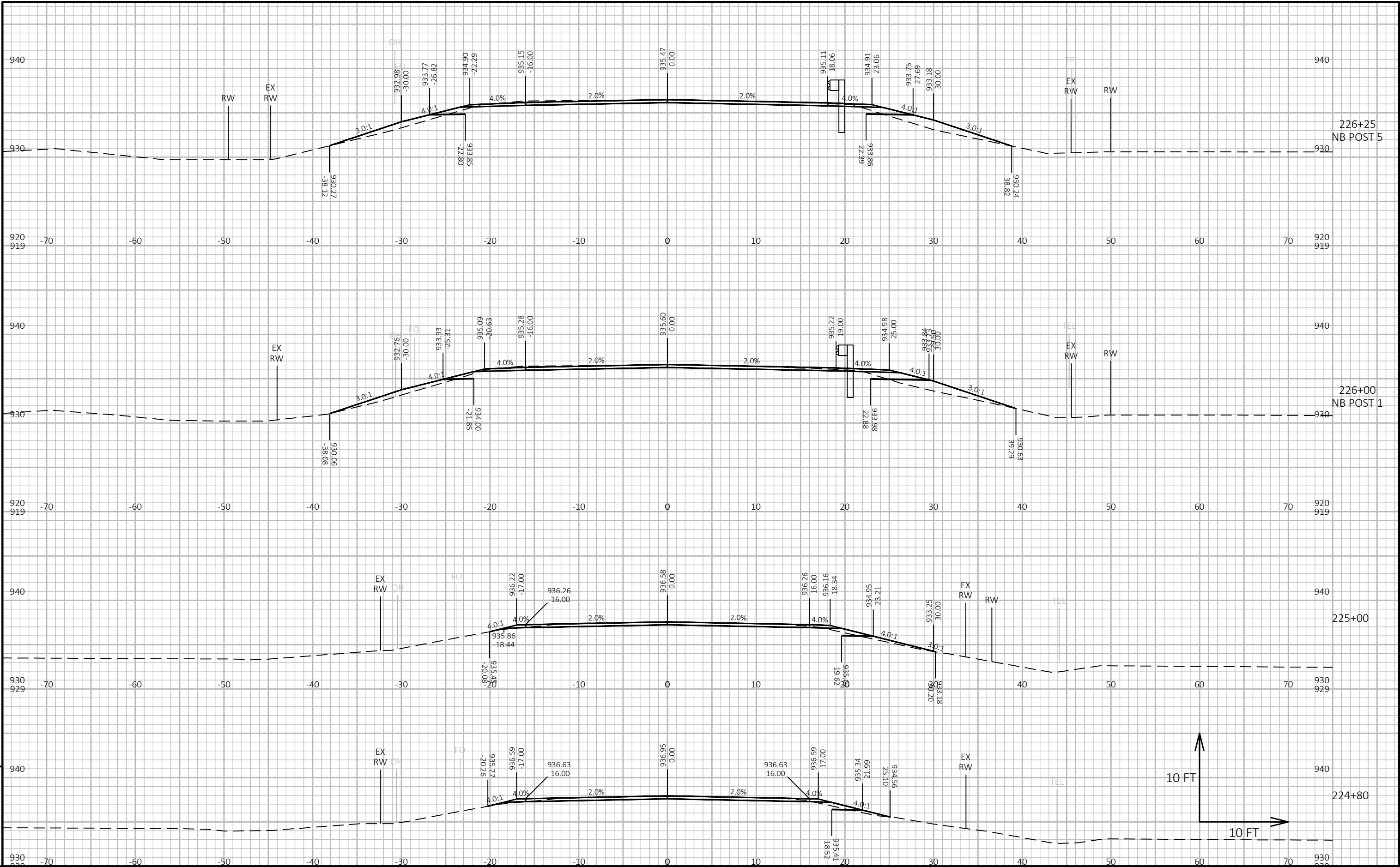


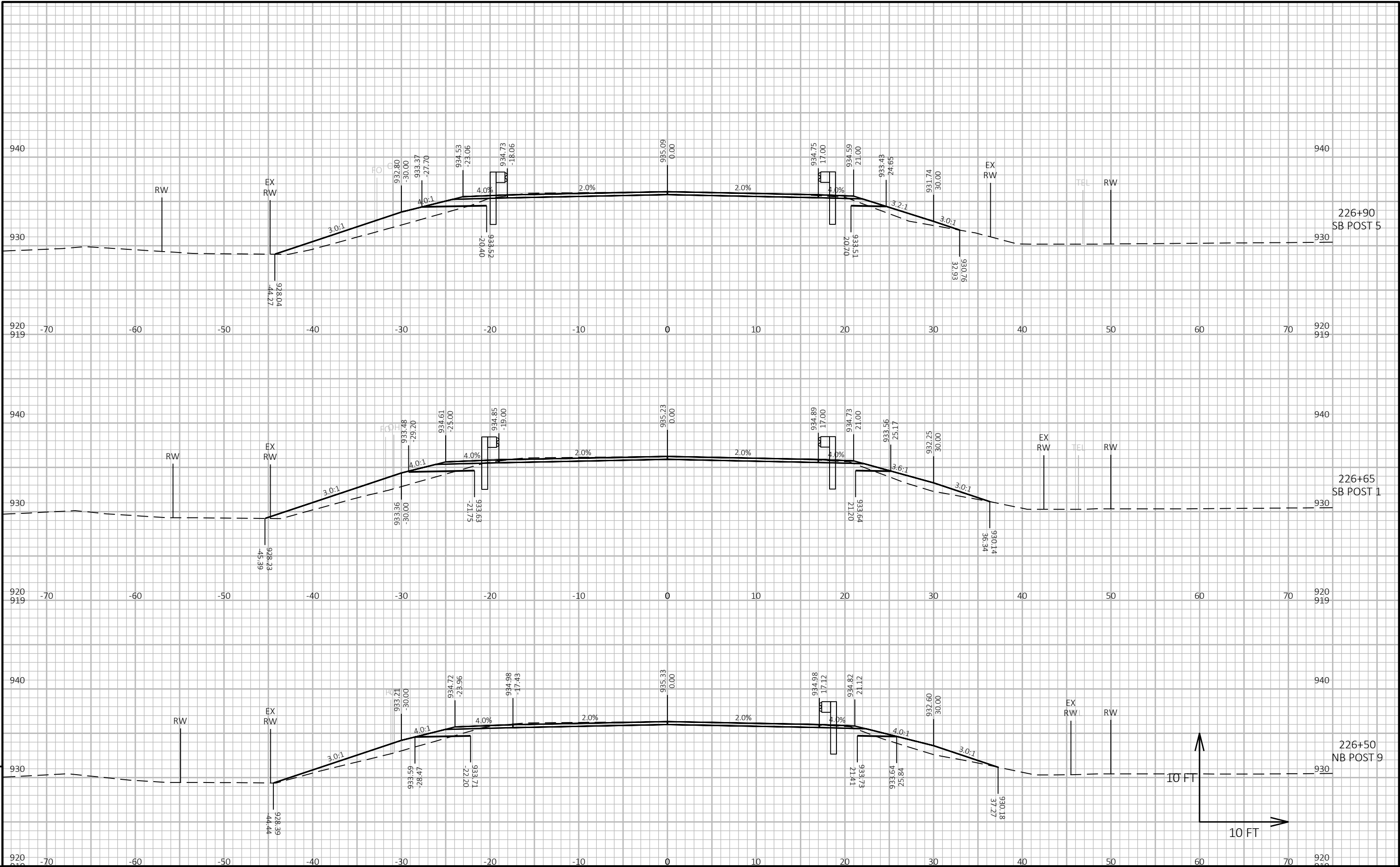


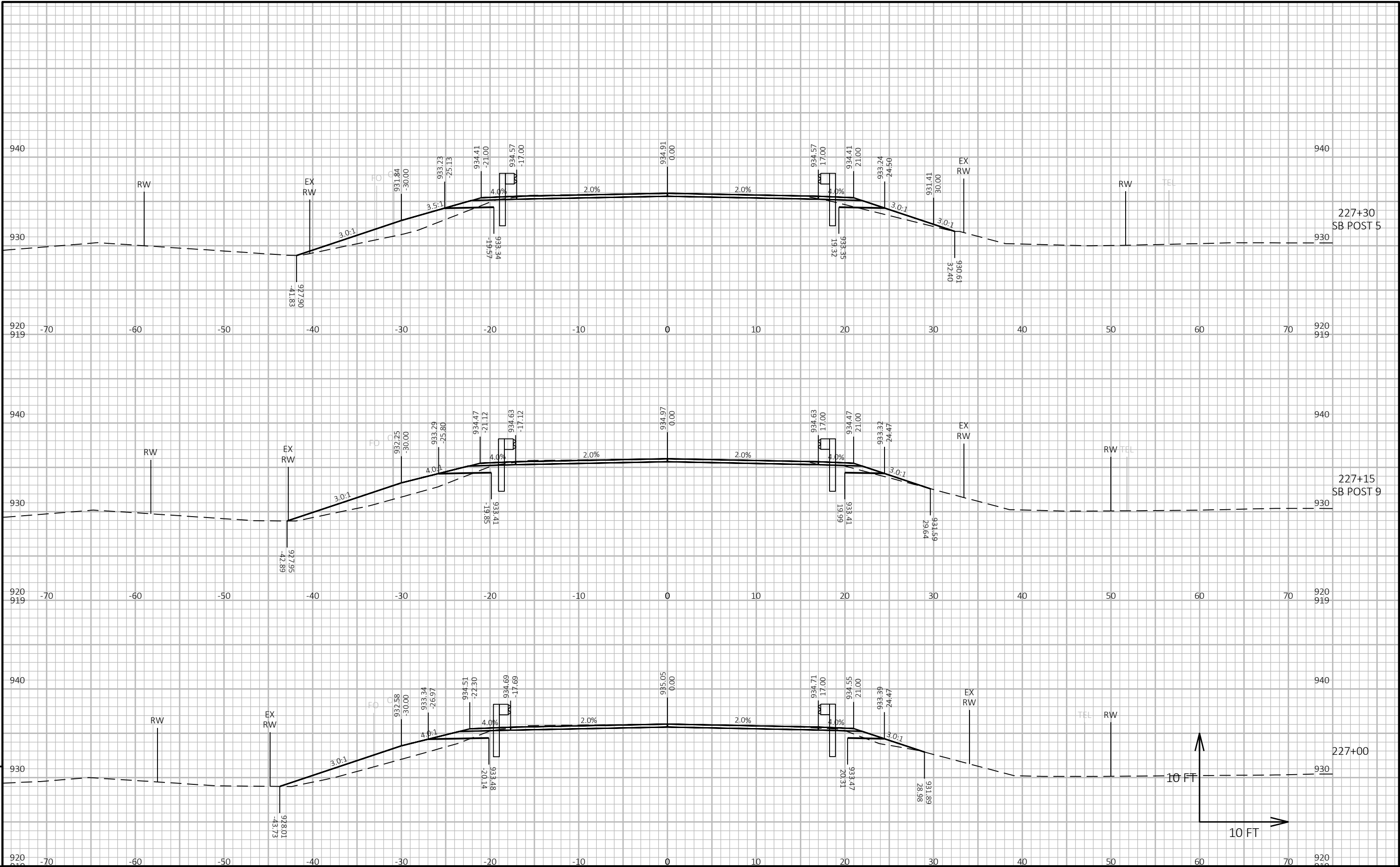


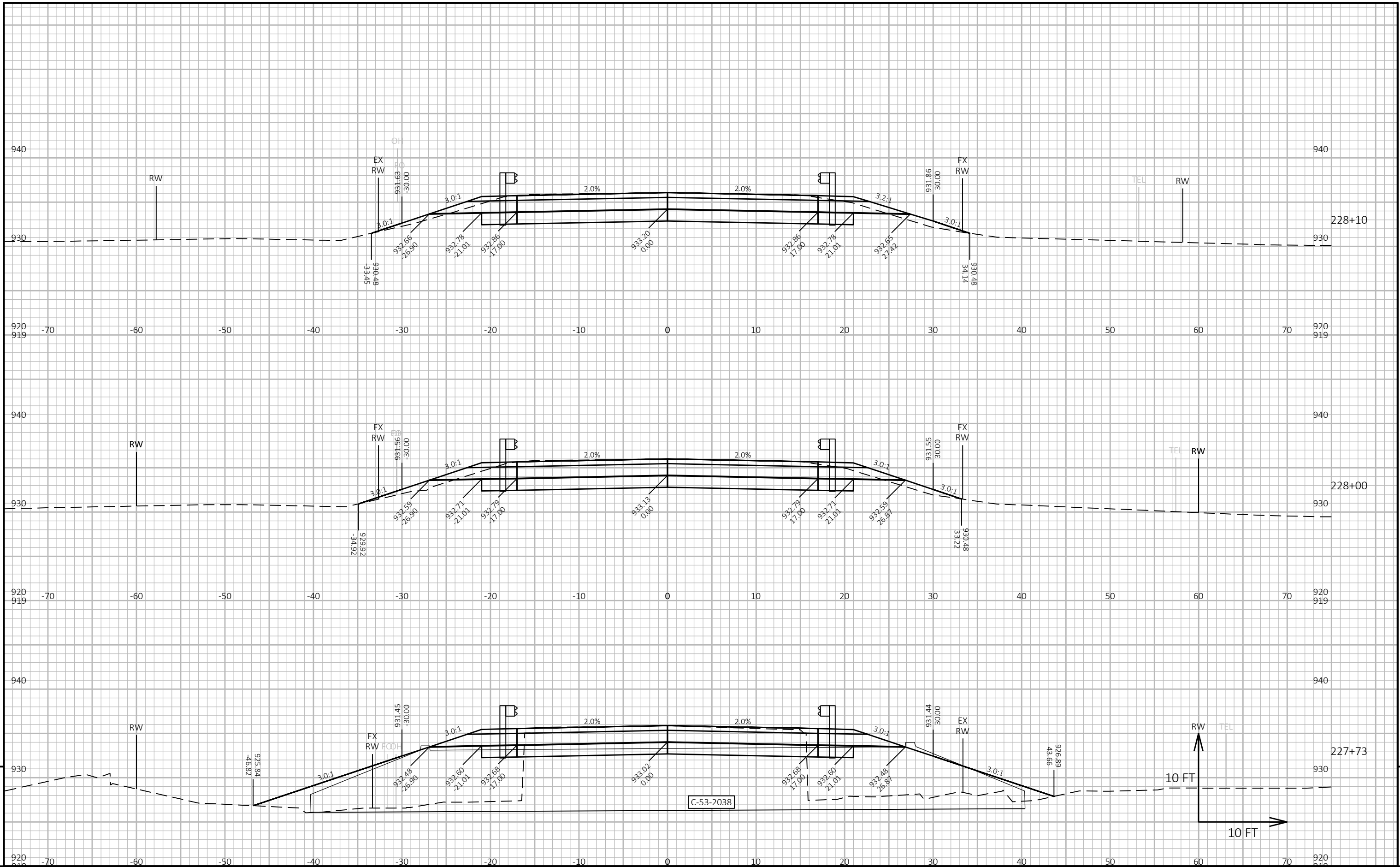


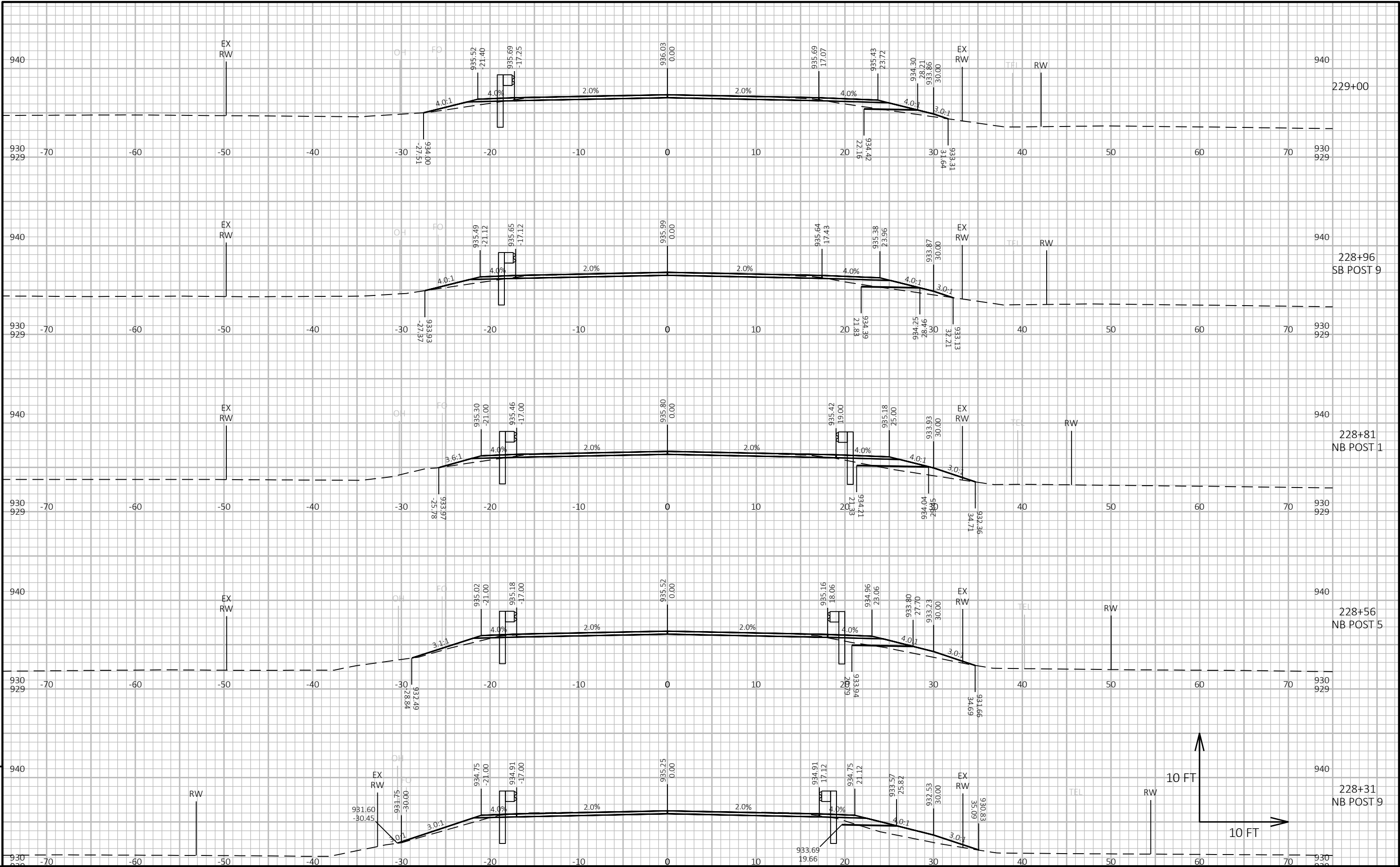


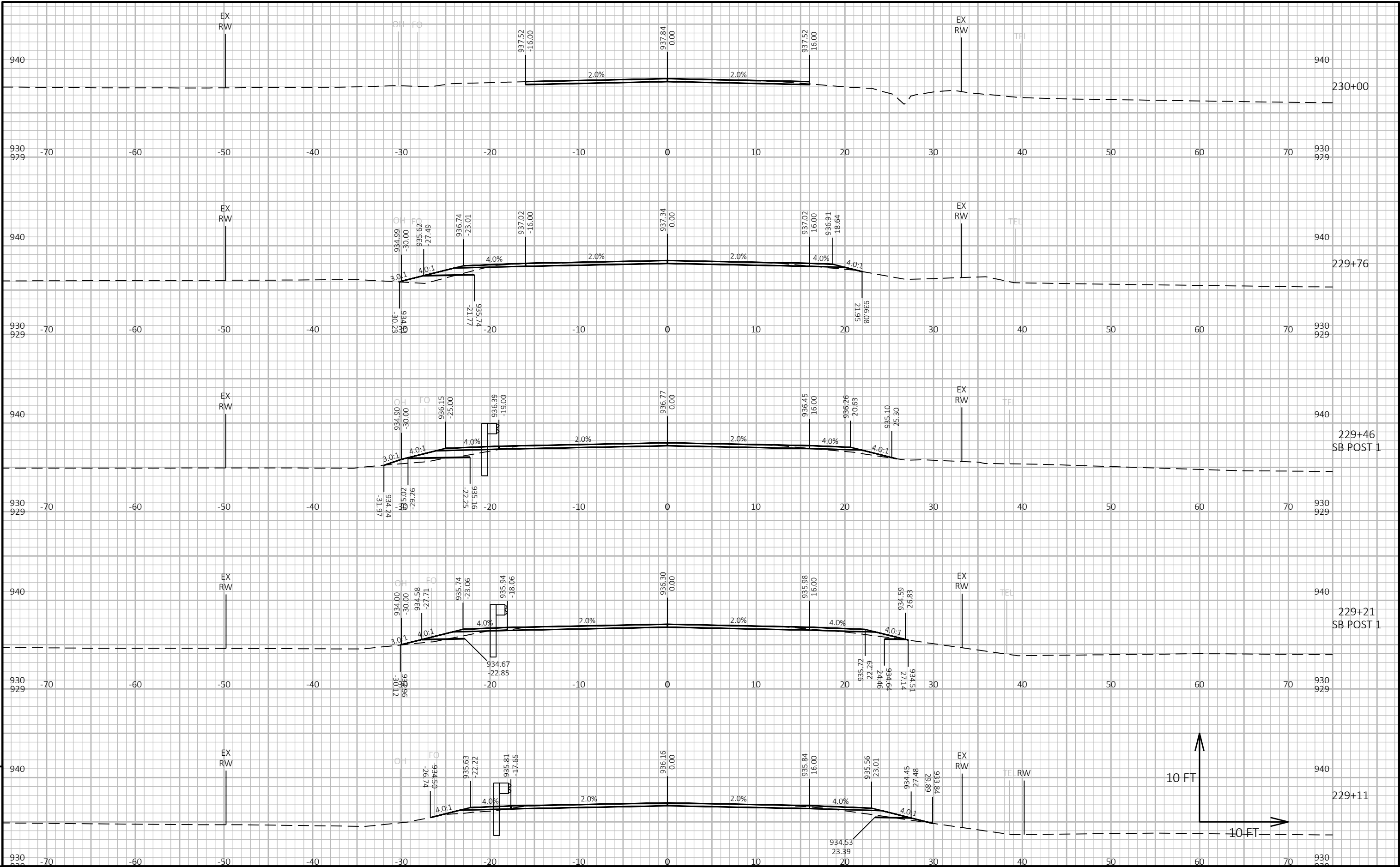


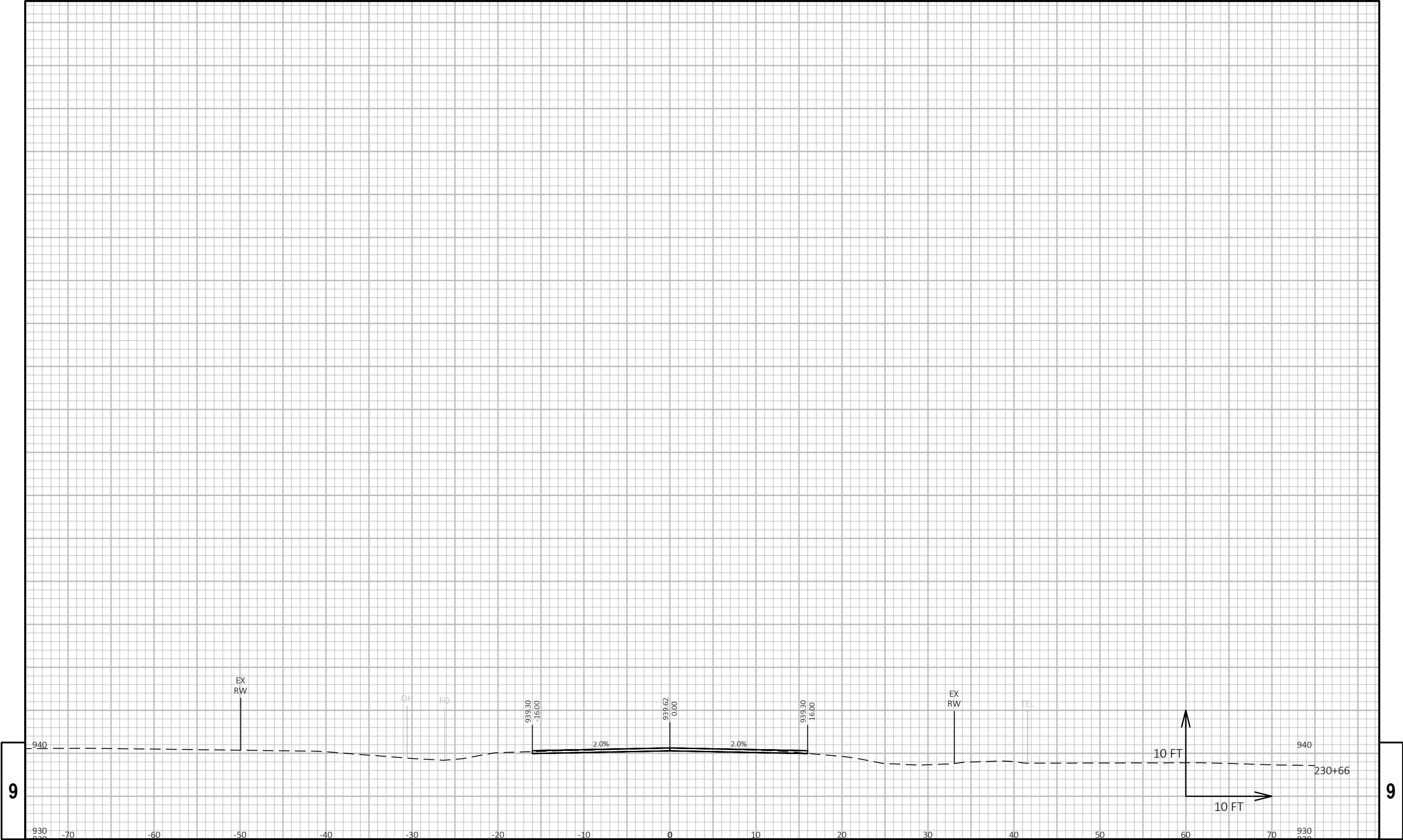




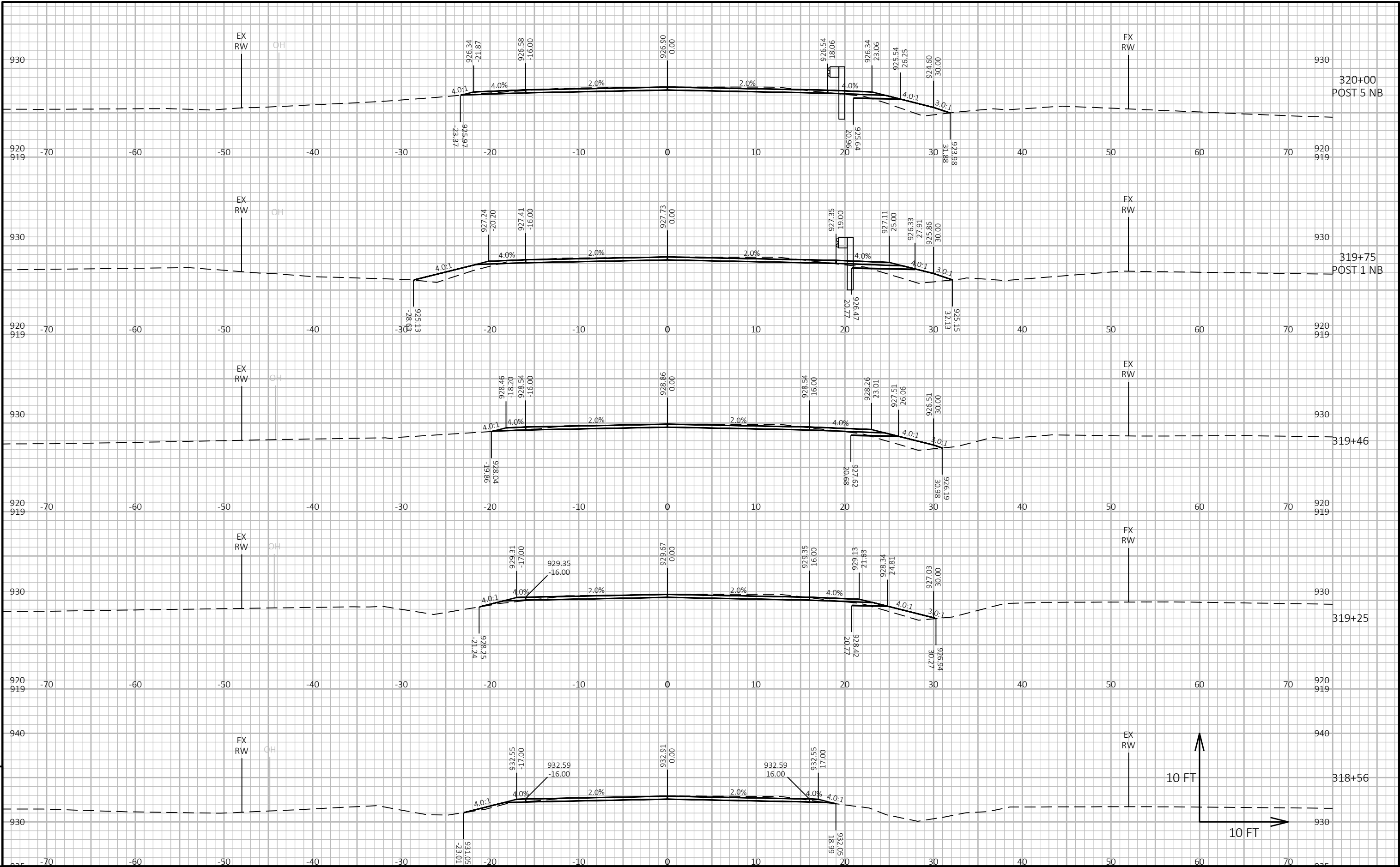


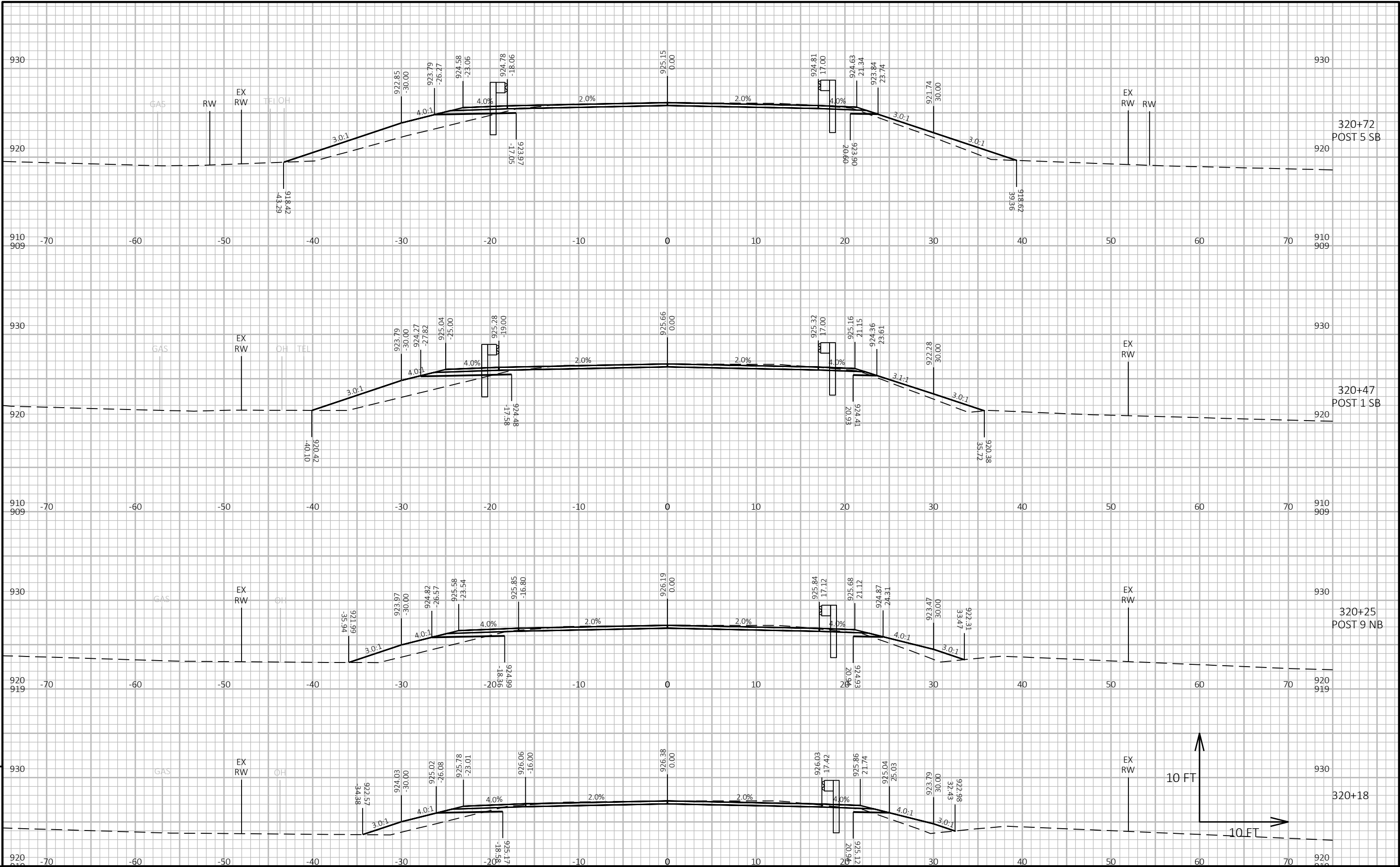


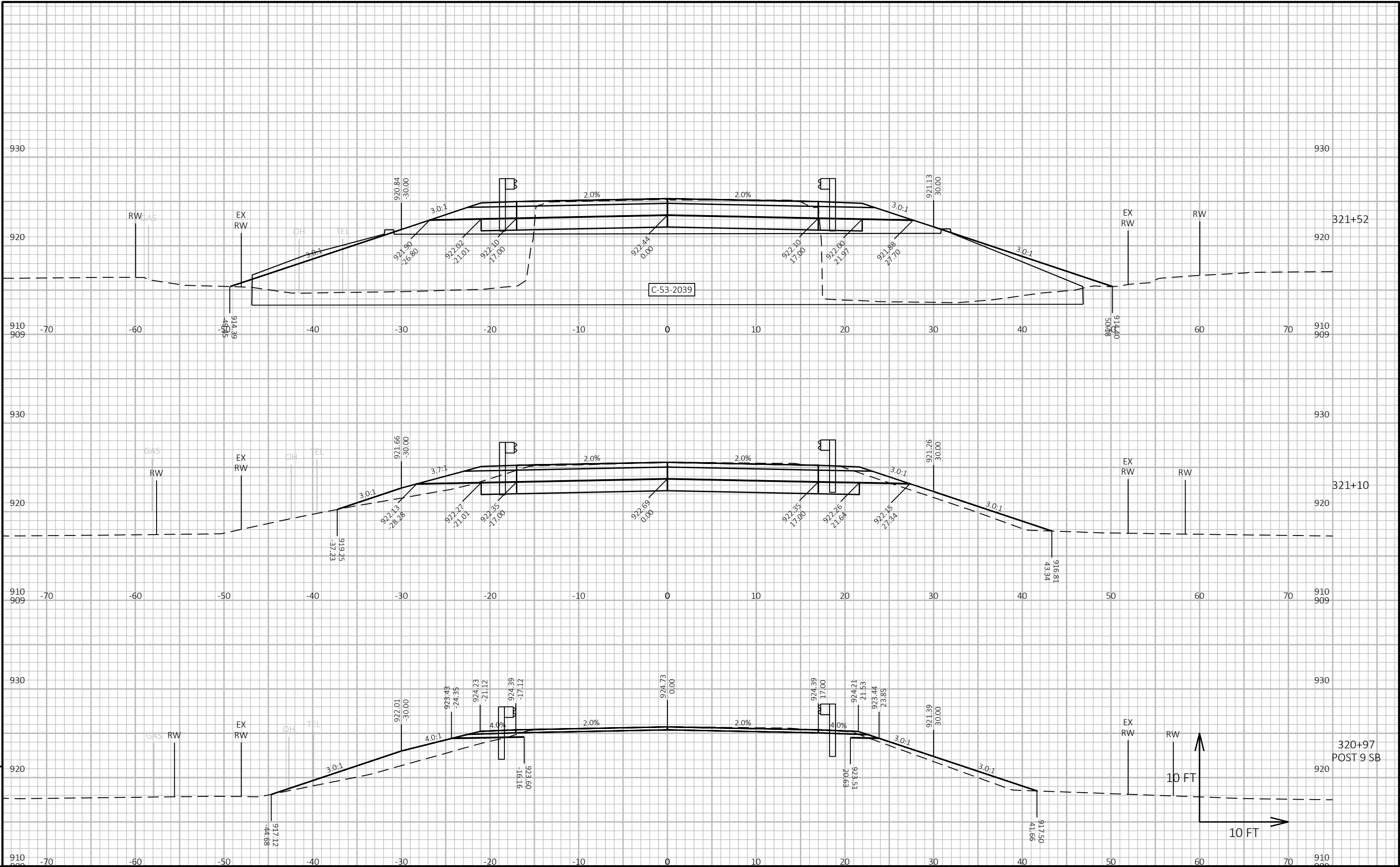


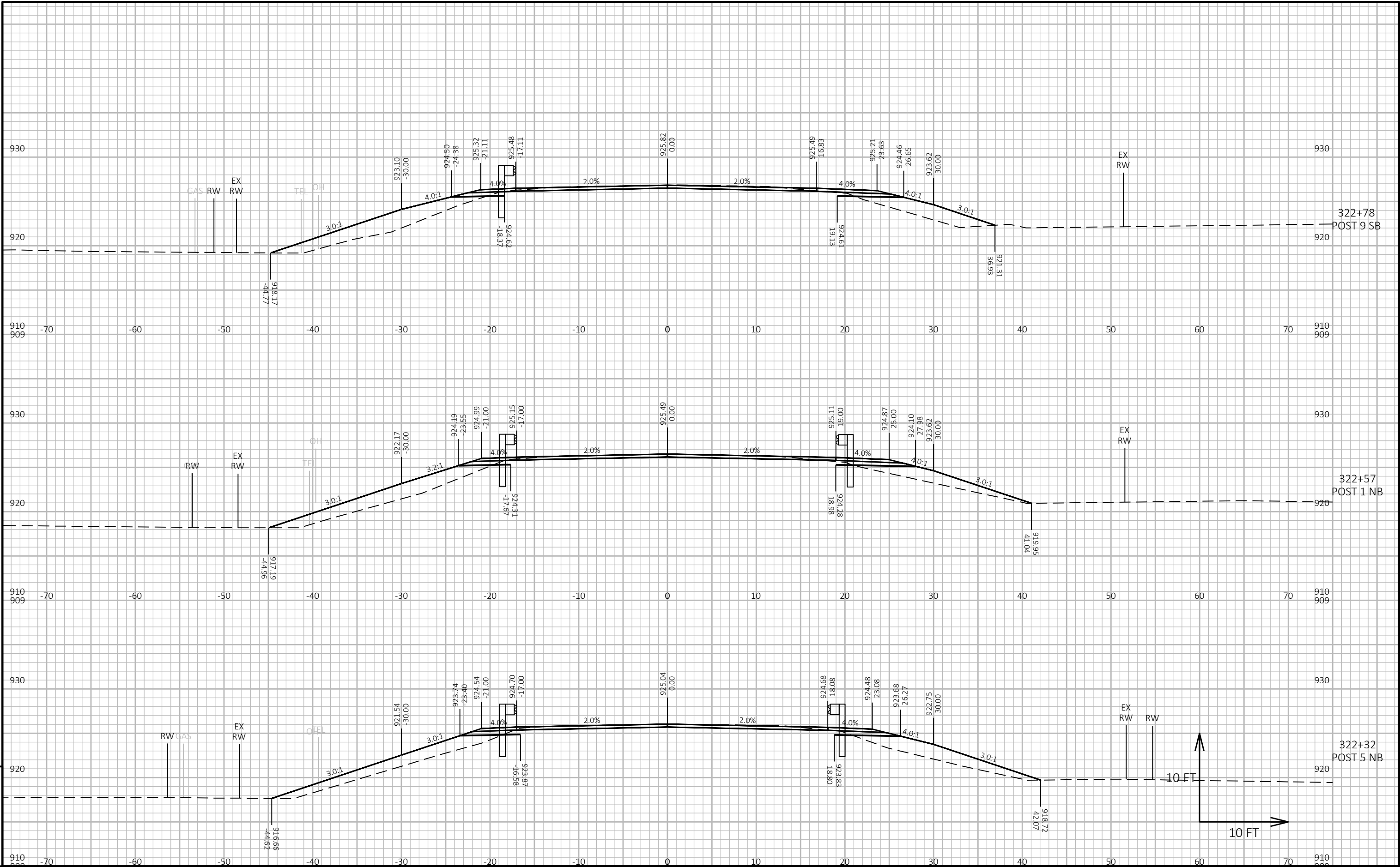


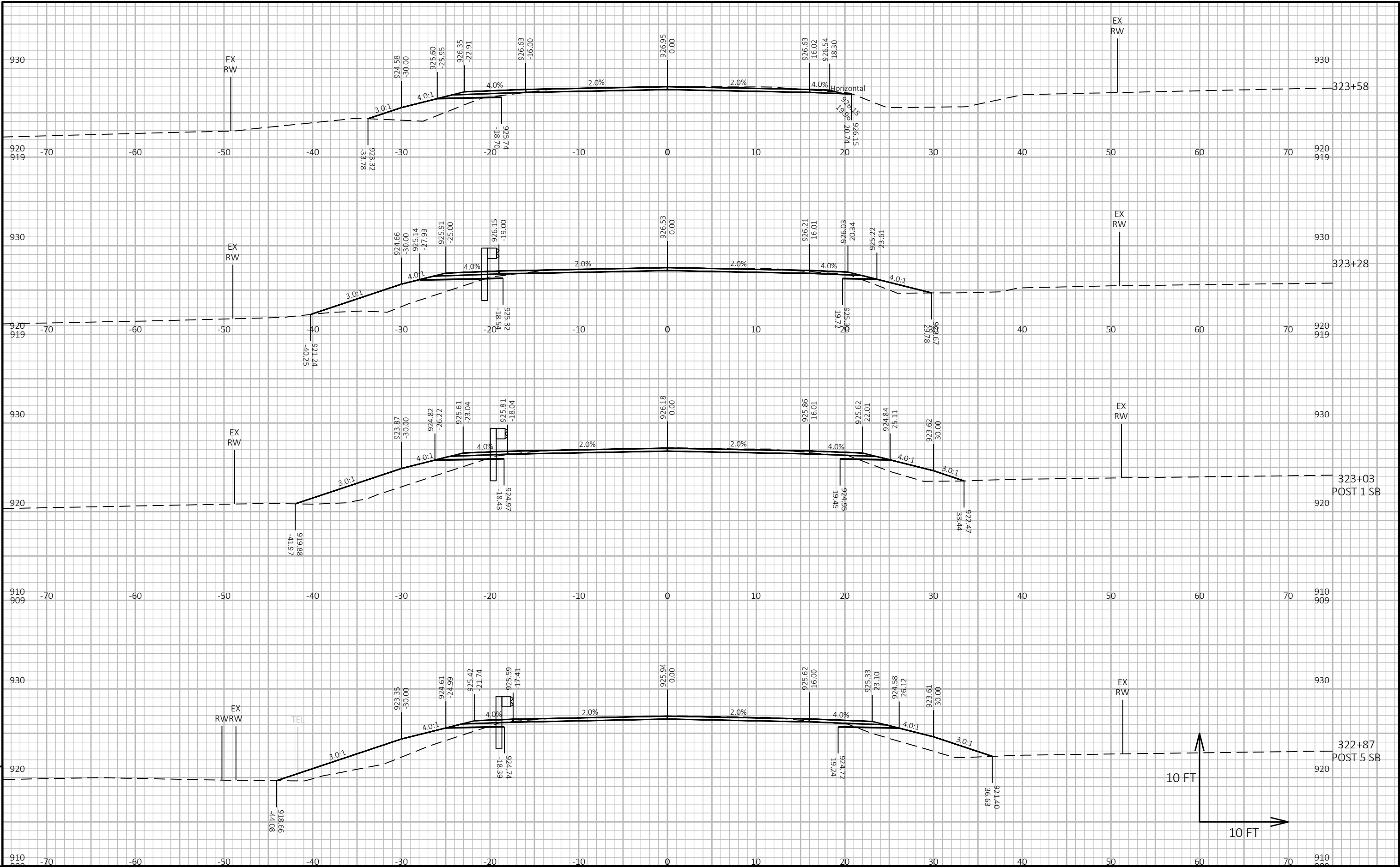
9	940															940	9
	930															930	
	-70	-60	-50	-40	-30	-20	-10	0	10	20	30	40	50	60	70		
2.0%																	
2.0%																	
10 FT																	
10 FT																	
230+66																	

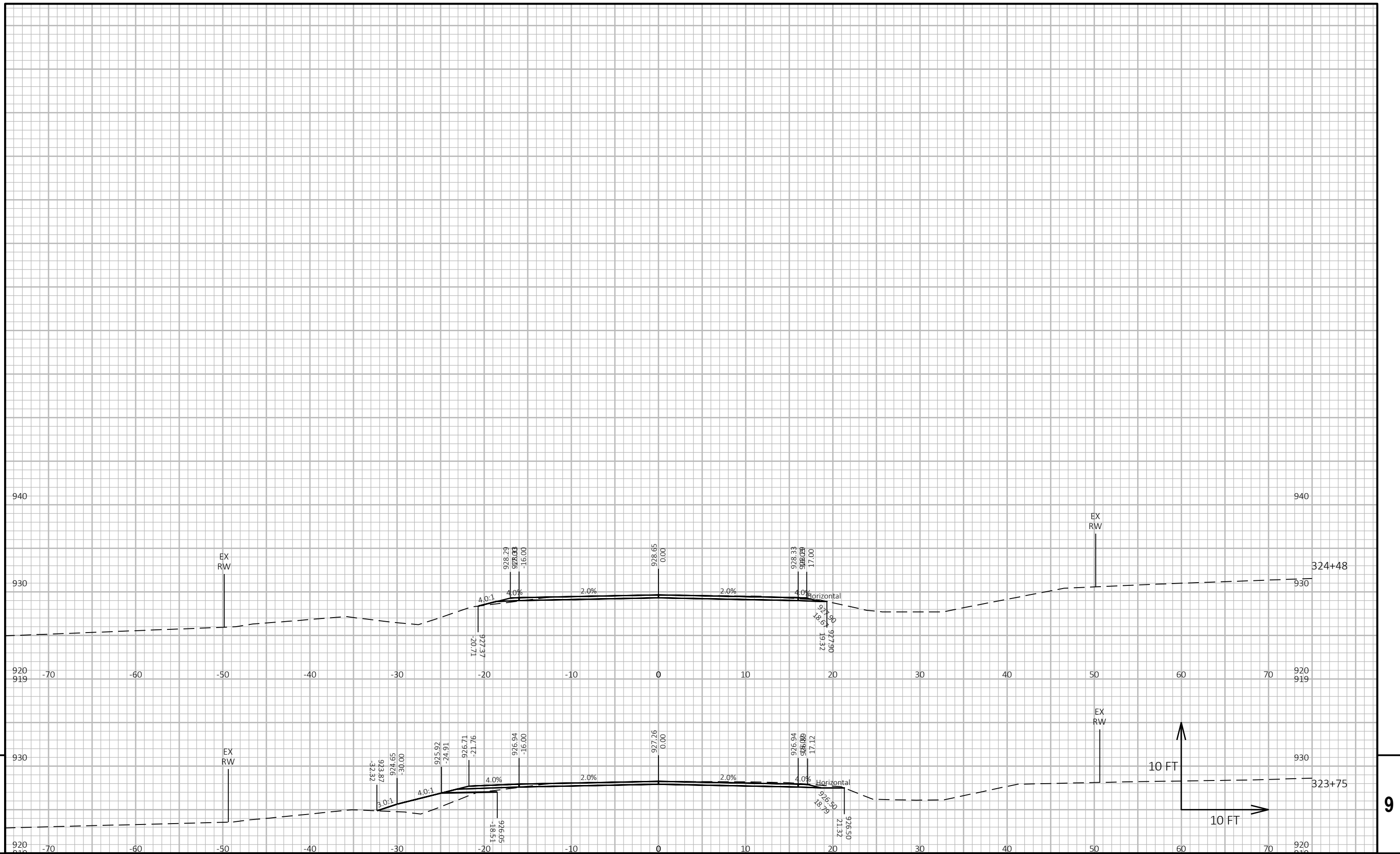
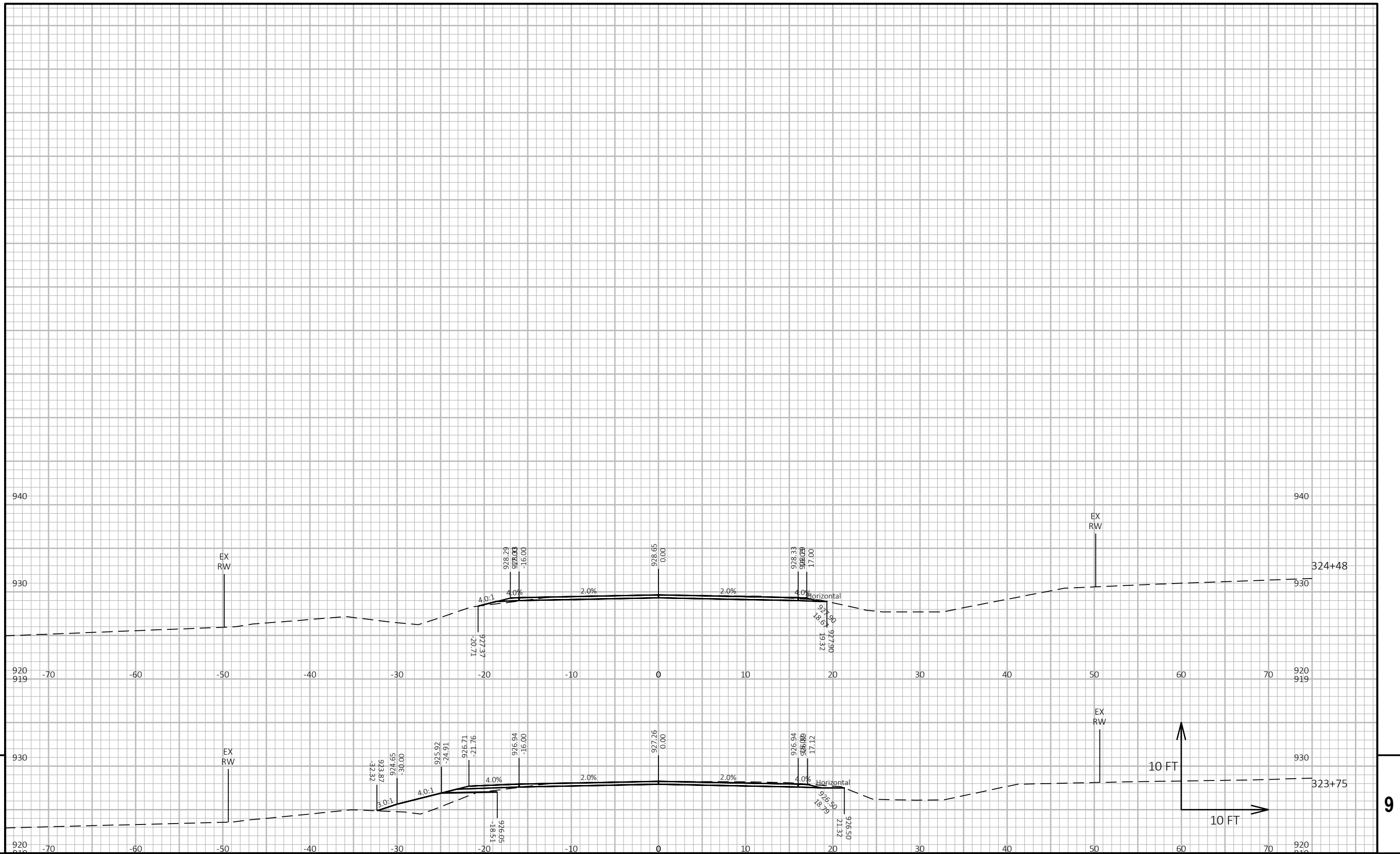




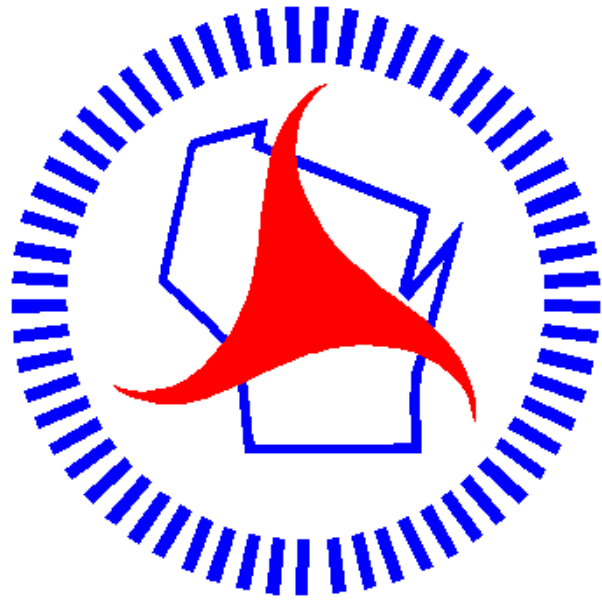








PROJECT NO: 3320-02-71	HWY: STH 140	COUNTY: ROCK	CROSS SECTIONS: C-53-2039	SHEET 179	E
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