

RHI

PROJECT ID:
WITH: N/A

9877-00-72

COUNTY:

ONEIDA

NOVEMBER 2026

ORDER OF SHEETS

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

TOTAL SHEETS = 106



DESIGN DESIGNATION 9877-00-02

A.A.D.T.	(2026)	=	5400
A.A.D.T.	(2046)	=	5700
D.H.V.		=	778
D.D.		=	61/39
T.		=	8.6%
DESIGN SPEED		=	40 MPH
ESALS		=	1,200,000

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

RHINELANDER - USH 8

EISENHOWER PARKWAY TO FAUST LAKE RD

CTH P
ONEIDA COUNTY

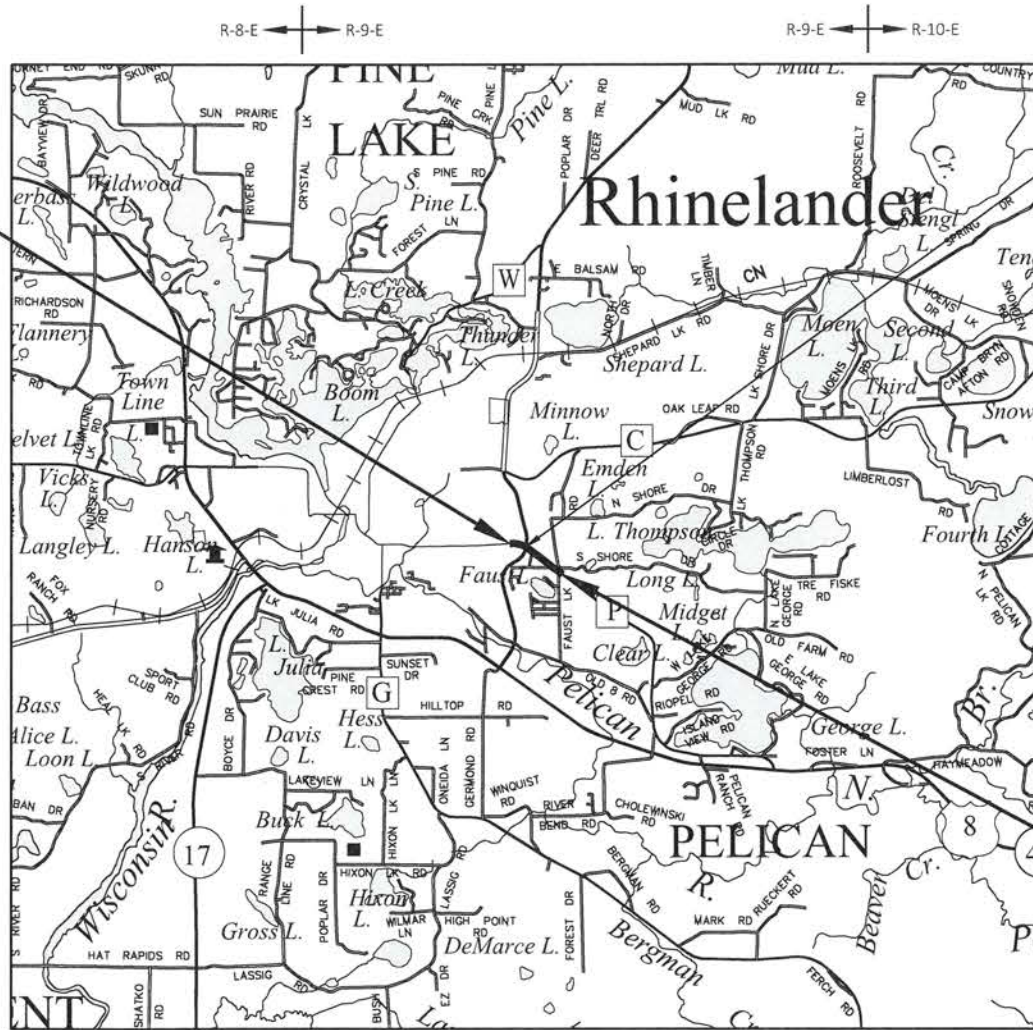
STATE PROJECT NUMBER

9877-00-72

BEGIN PROJECT
STA 105+41.00EB
Y = 163126.746
X = 272118.122

NET EXCEPTION TO CL LENGTH
STA 109+97.39EB - STA 113+18.26EB
STH 17 INTERSECTION

END PROJECT
STA 137+75.00EB



LAYOUT
SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 0.552 MI

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

9877-00-72

FEDERAL PROJECT

PROJECT

WISC 2027042

CONTRACT

1

ACCEPTED FOR
ONEIDA COUNTY

7-15-26
DATE
HIGHWAY COMMISSIONER

ORIGINAL PLANS PREPARED BY

AYRES



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY	
Surveyor	AYRES
Designer	AYRES
Project Manager	NATHAN WAITE
Regional Supervisor	DAN ERVA

APPROVED FOR THE DEPARTMENT
DATE: 07/17/2026
07/17/2026 (Signature)
(DATE)

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.

RIGHT OF WAY INFORMATION SHOWN ON THE PLANS IS APPROXIMATE.

CURVE DATA IS BASED ON THE RADIUS DEFINITION.

BEARINGS SHOWN ON THE PLAN ARE TRUE BEARINGS.

UTILITIES CONTACTS

CHARTER
COMMUNICATION
JASON GOERTZ
853 MCINTOSH ST
WAUSAU, WI 54403
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RHINELANDER WATER DEPARTMENT
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NET LEC
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WISCONSIN PUBLIC SERVICE
GAS
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2027 NAVAJO ST
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PROJECT CONTACTS

WISCONSIN DNR LIAISON

WENDY HENNIGES
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DESIGN PROJECT MANAGER

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COUNTY HIGHWAY COMMISSIONER

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730 W. KEMP ST, PO BOX 696
RHINELANDER, WI 54501
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EMAIL: brich@oneidacountywi.gov

LOCAL PROGRAM PROJECT MANAGER

NATHAN WAITE
WISDOT
510 HANSON LAKE RD
RHINELANDER, WI 54501
PHONE: 715-365-5762
EMAIL: nathaniel.waite@dot.wi.gov

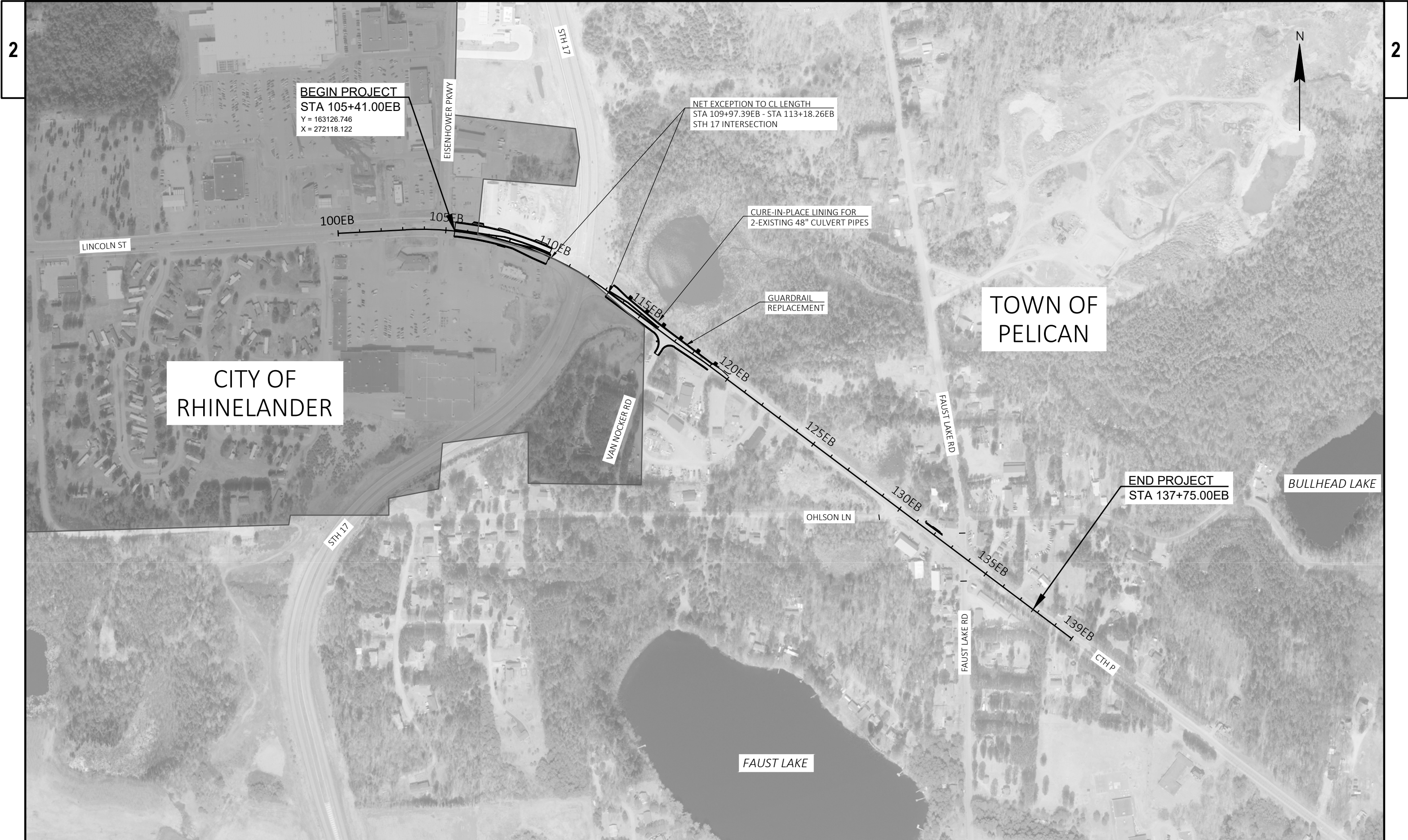
RUNOFF COEFFICIENT TABLE

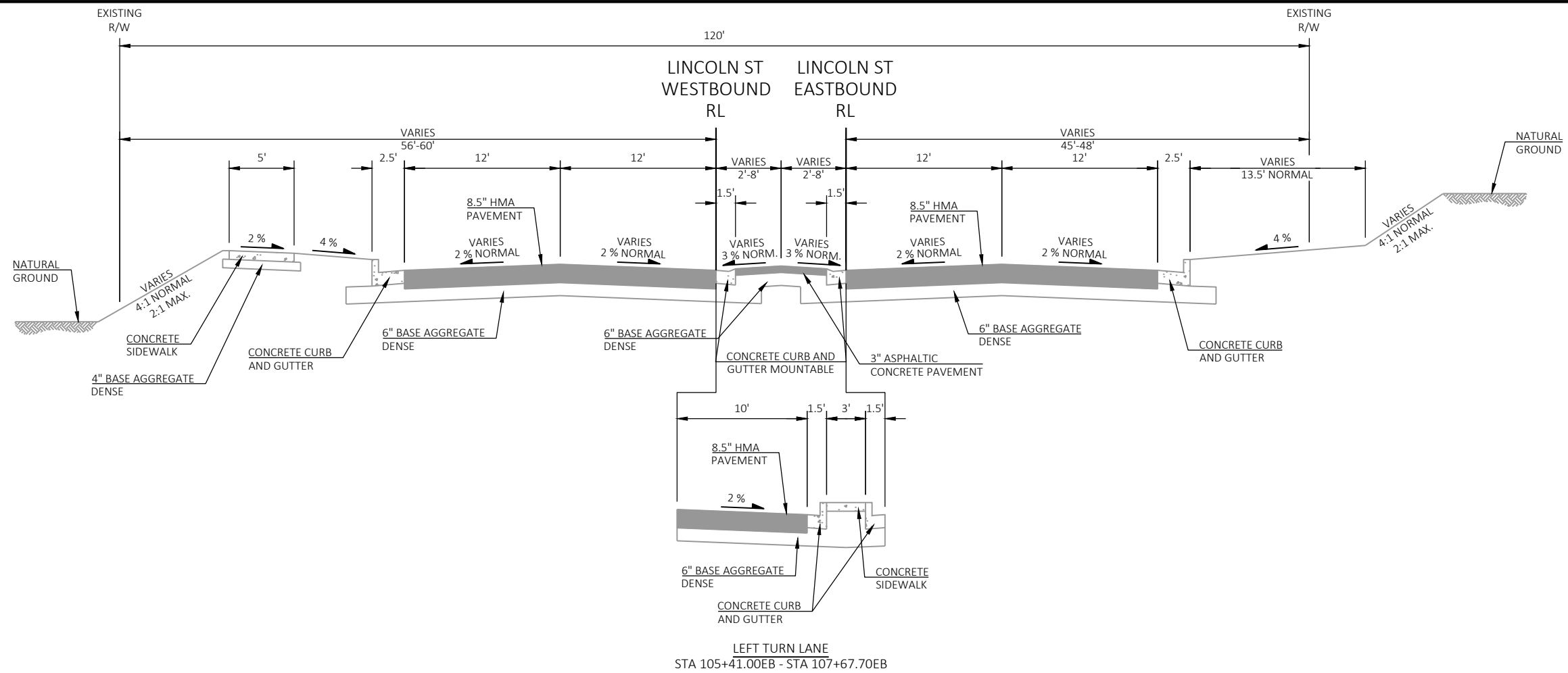
	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
LAND USE:												
ROW CROPS:	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22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

TOTAL PROJECT AREA = 3.793 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.250 ACRES

ORDER OF SECTION 2 DETAIL SHEETS

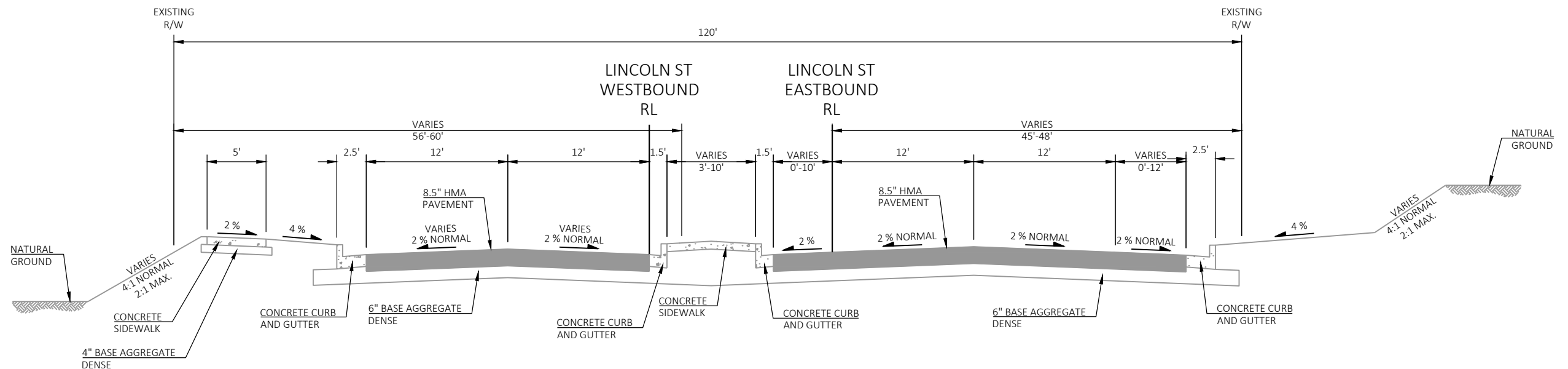
- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- PLAN GRADES
- EROSION CONTROL
- PAVEMENT MARKING
- TRAFFIC CONTROL





EXISTING TYPICAL SECTION FOR LINCOLN STREET

STA 105+41.00EB - STA 108+22.10EB

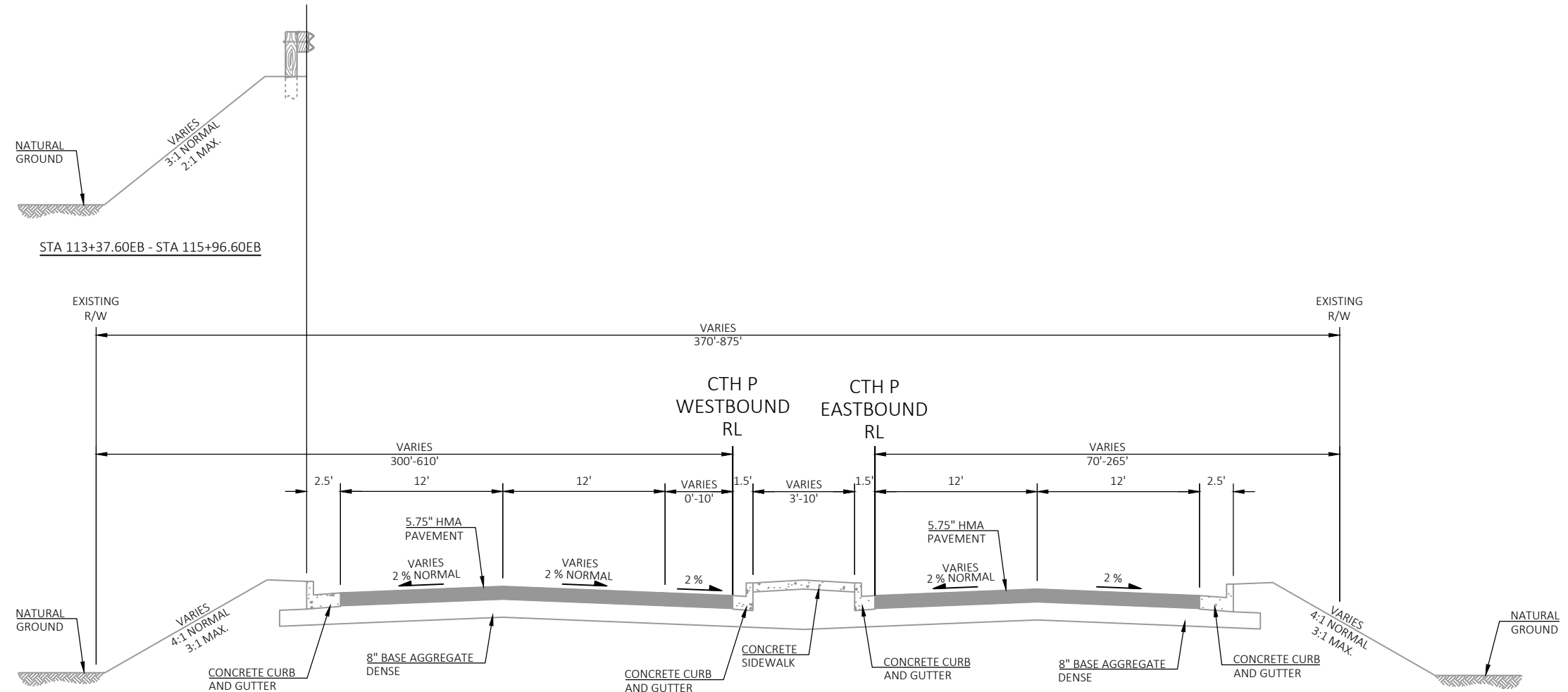


EXISTING TYPICAL SECTION FOR LINCOLN STREET

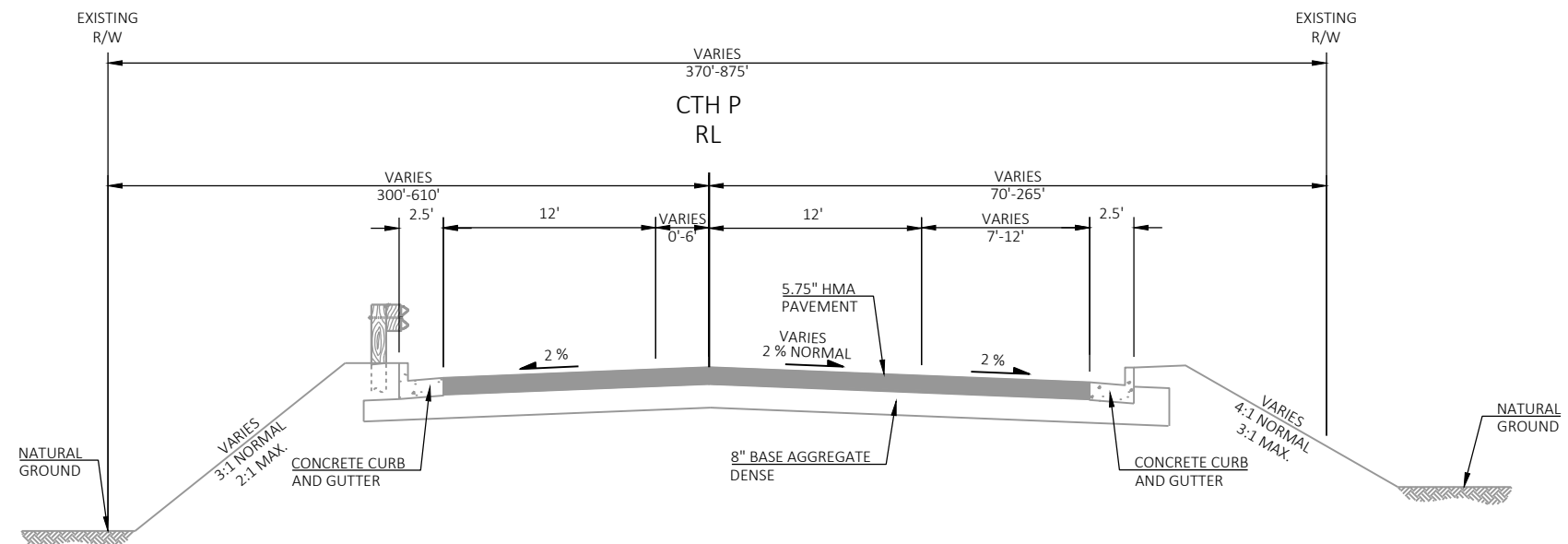
STA 108+22.10EB - STA 109+97.39EB

2

2



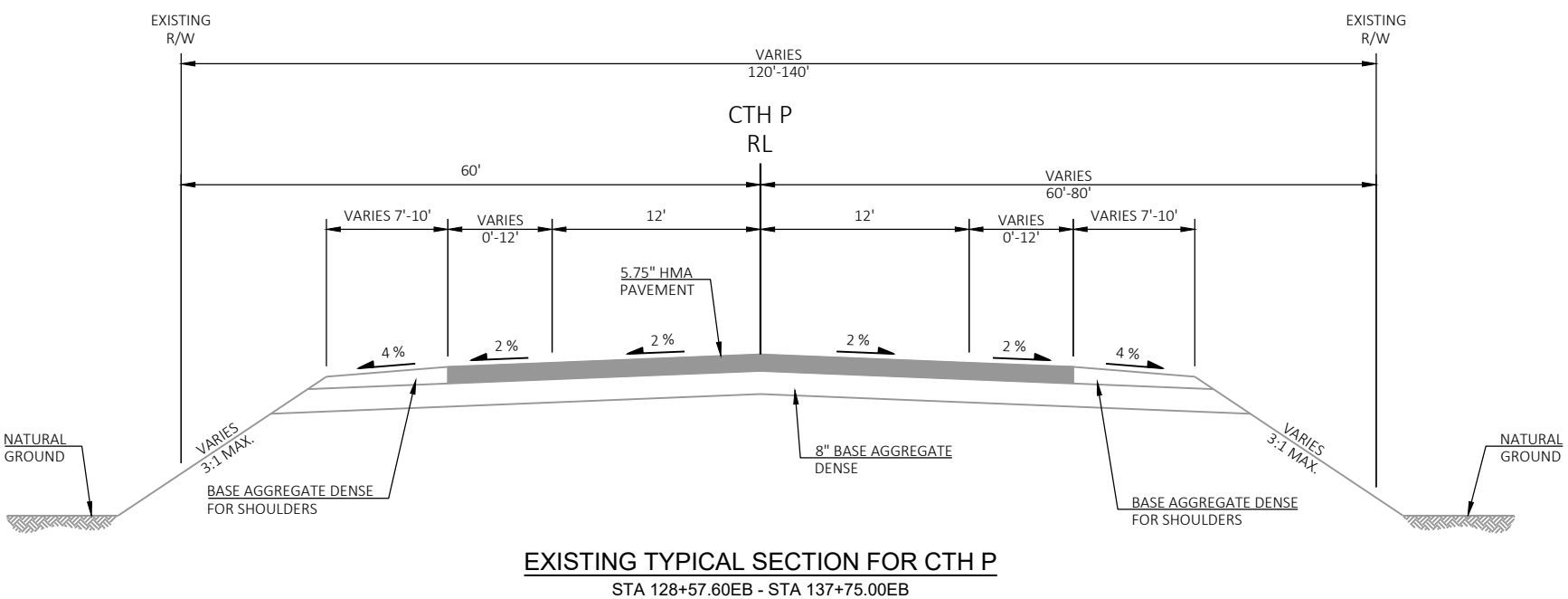
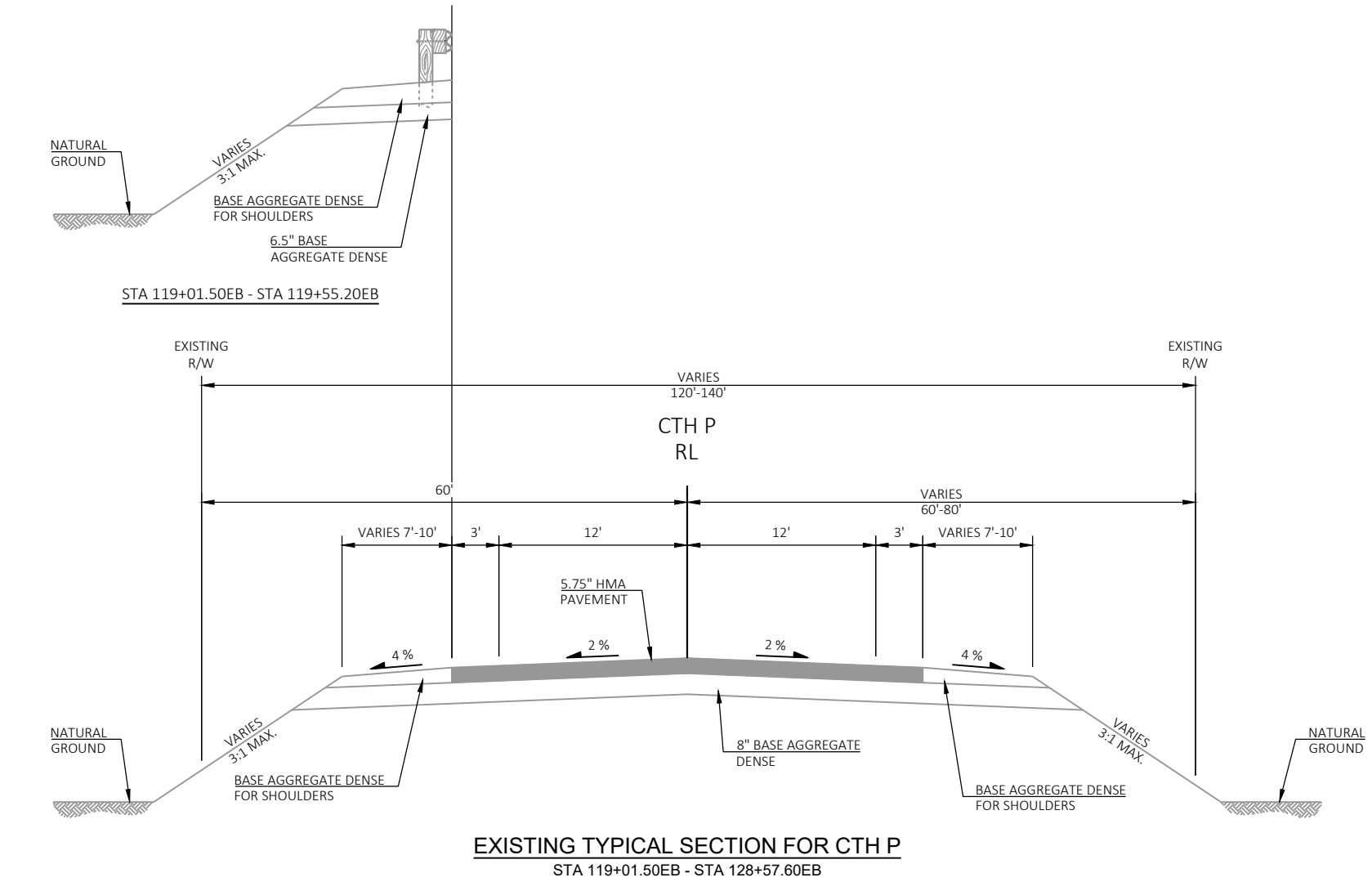
EXISTING TYPICAL SECTION FOR CTH P
STA 113+18.30EB - STA 115+98.40EB



EXISTING TYPICAL SECTION FOR CTH P
STA 115+98.40EB - STA 119+01.50EB

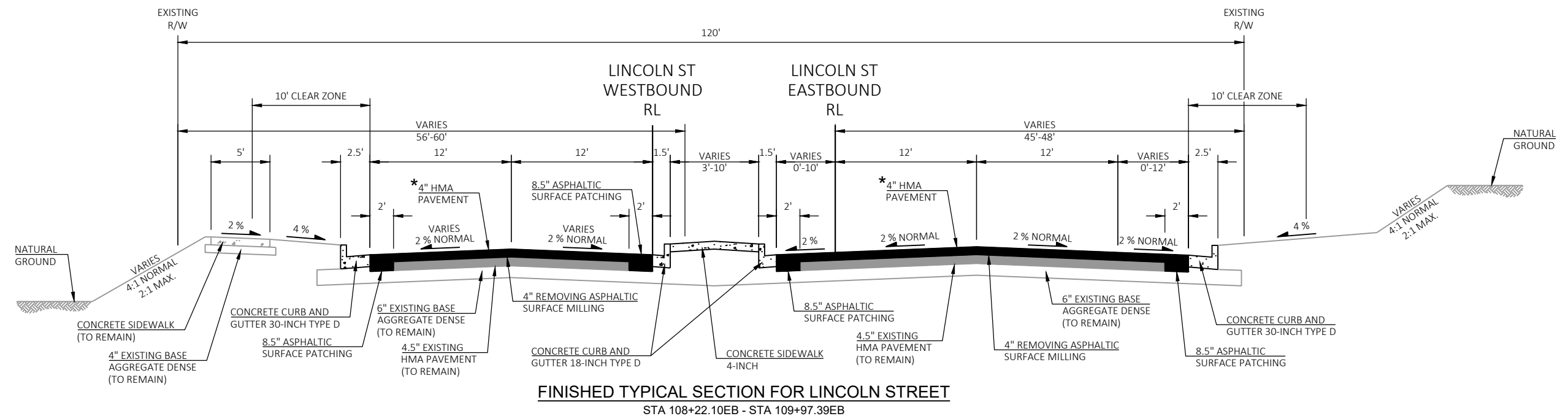
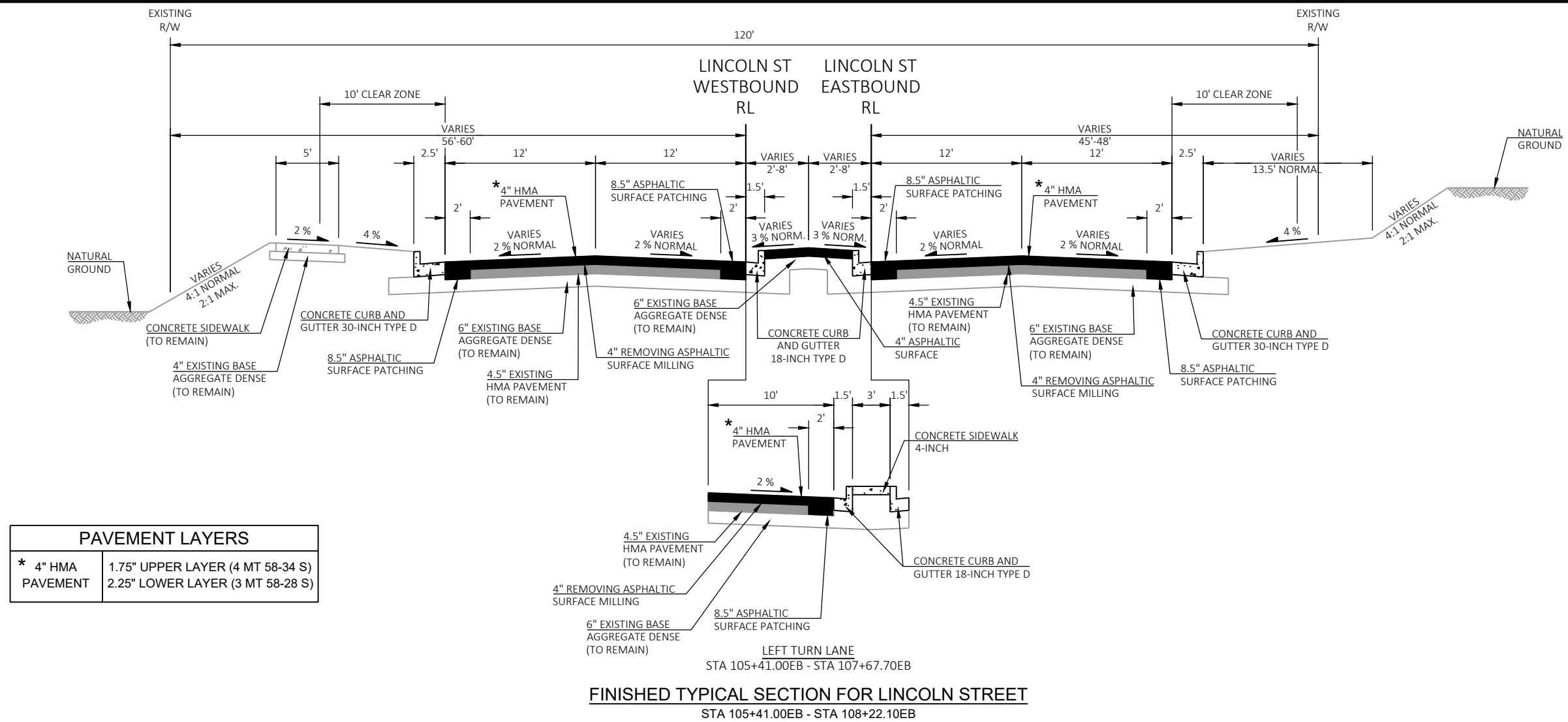
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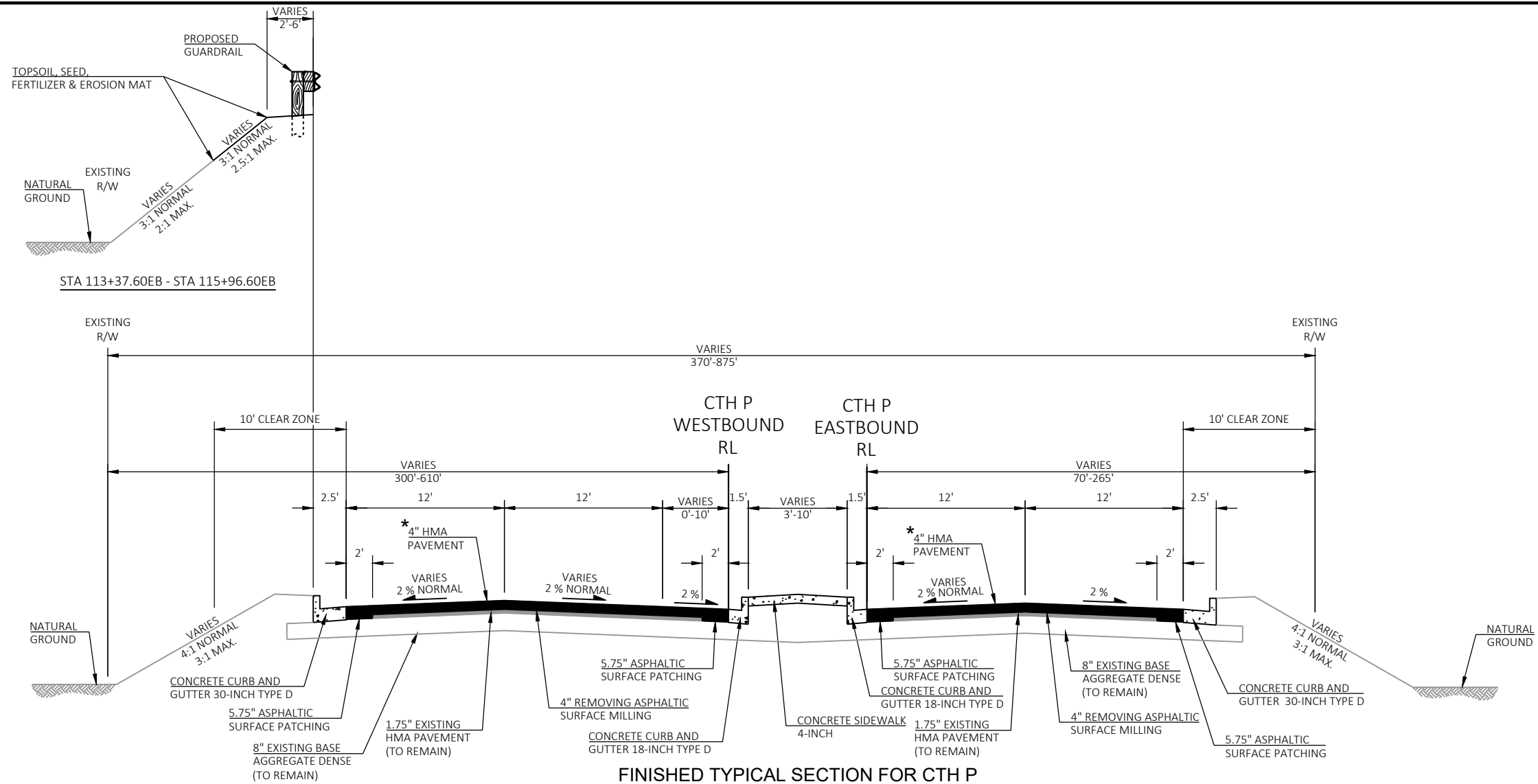
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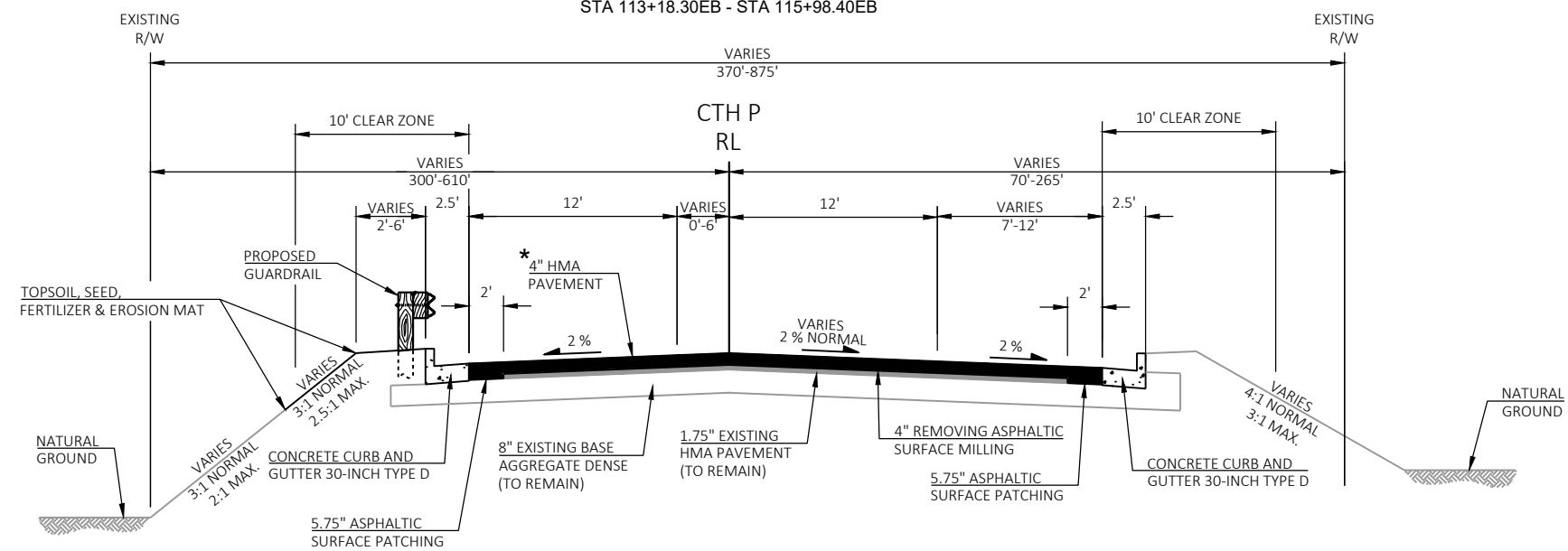
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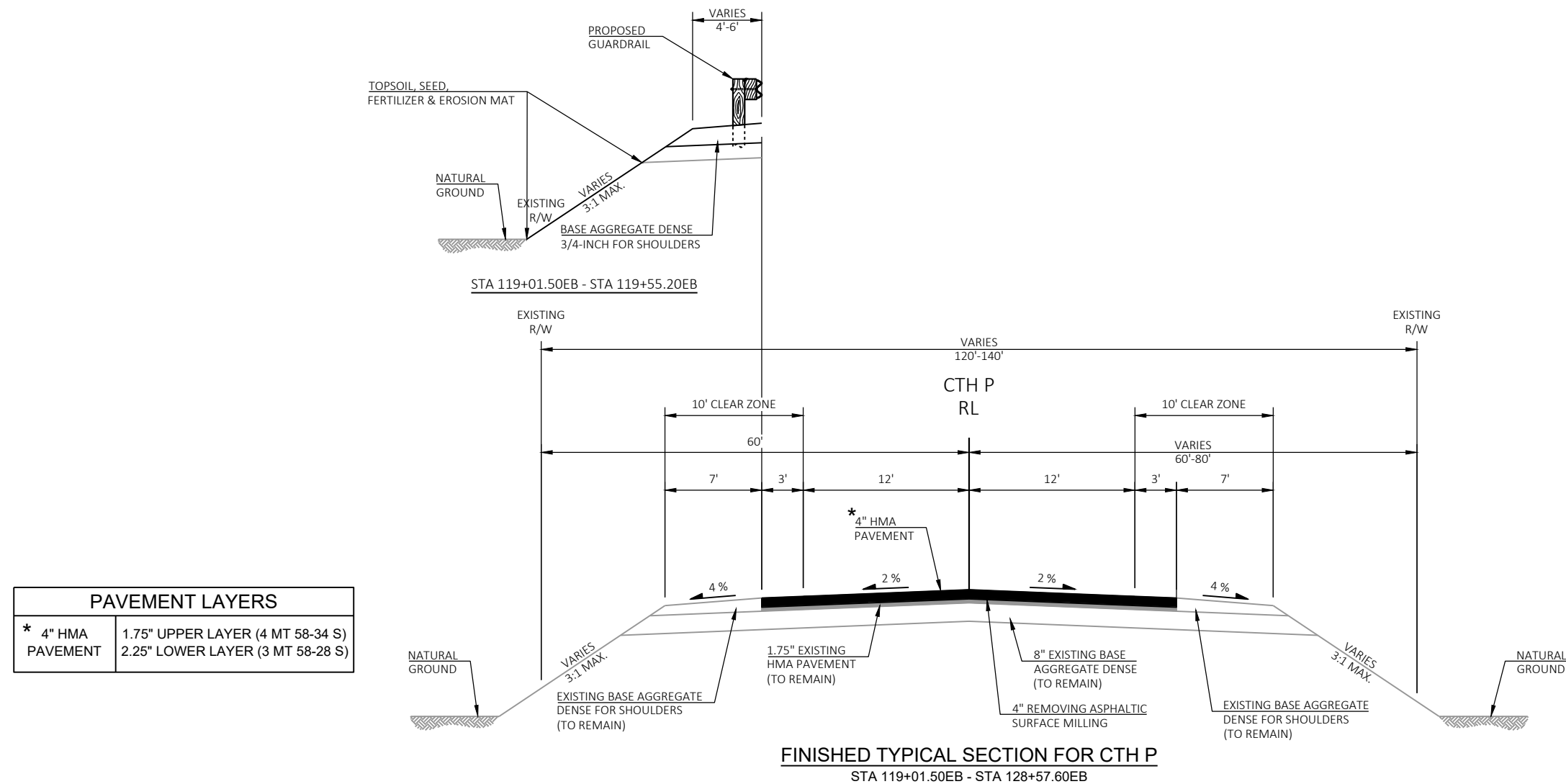
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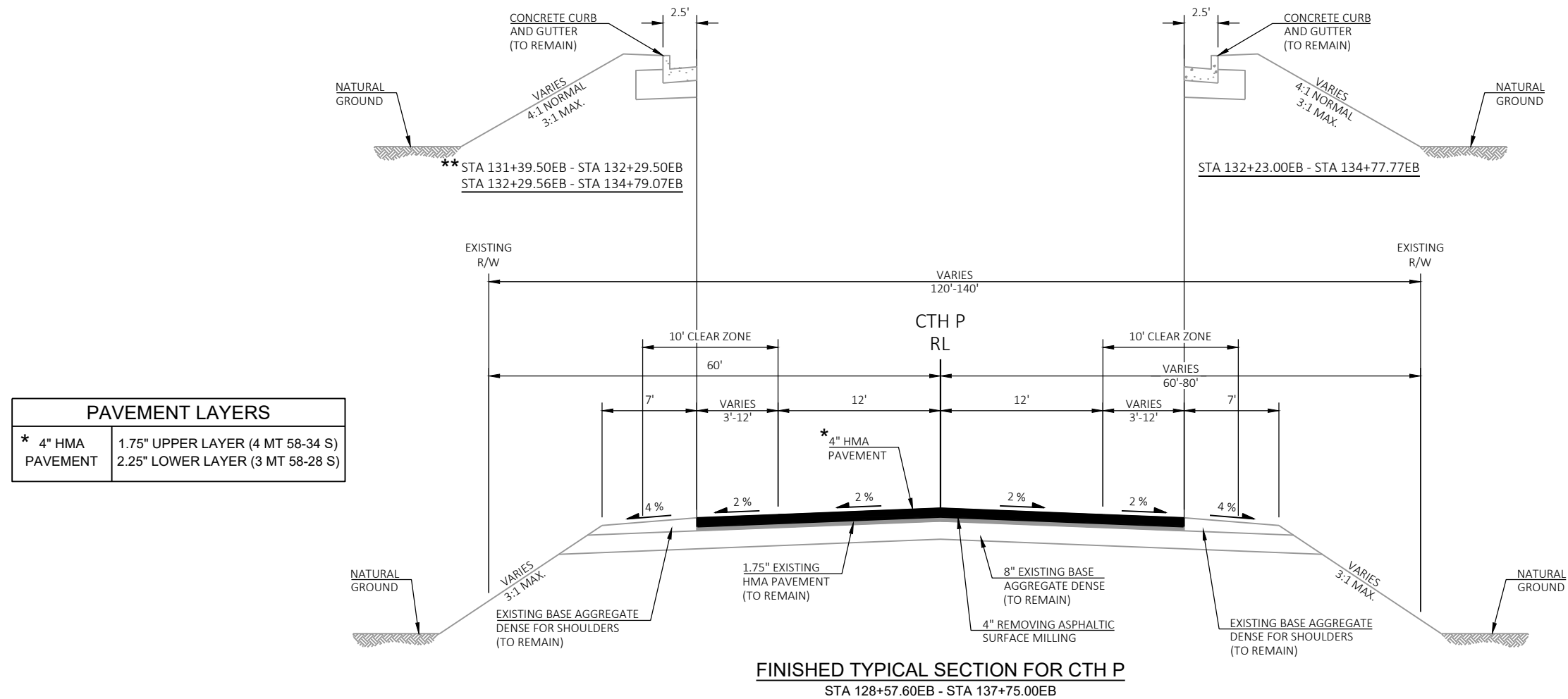


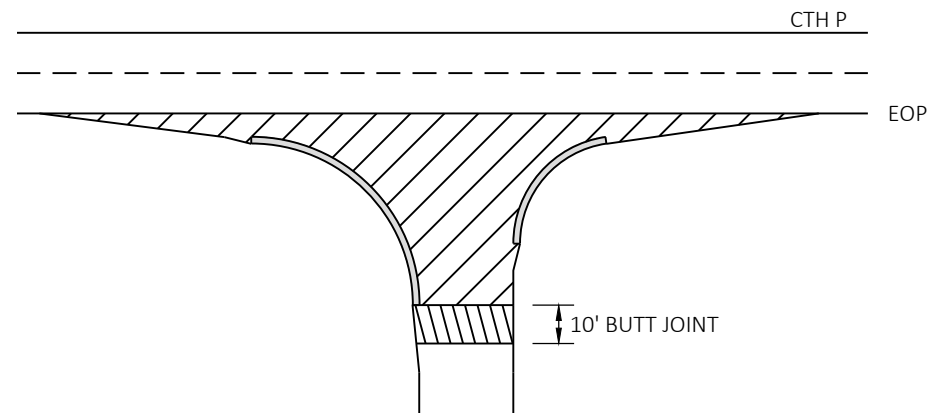
PAVEMENT LAYERS	
* 4" HMA PAVEMENT	1.75" UPPER LAYER (4 MT 58-34 S) 2.25" LOWER LAYER (3 MT 58-28 S)





** INSTALL CONCRETE CURB AND GUTTER 30-INCH TYPE D
AND MATCH INTO EXISTING



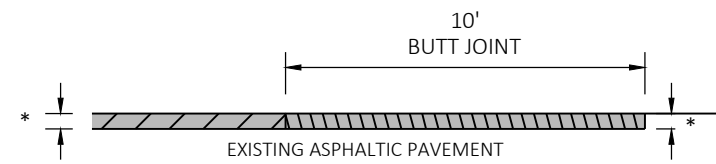


-  REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING ASPHALTIC SURFACE BUTT JOINTS
SEE BUTT JOINT DETAIL

SIDE ROADS

WITH CURB AND GUTTER

VAN NOCKER RD
OHLSON LN
FAUST LAKE RD

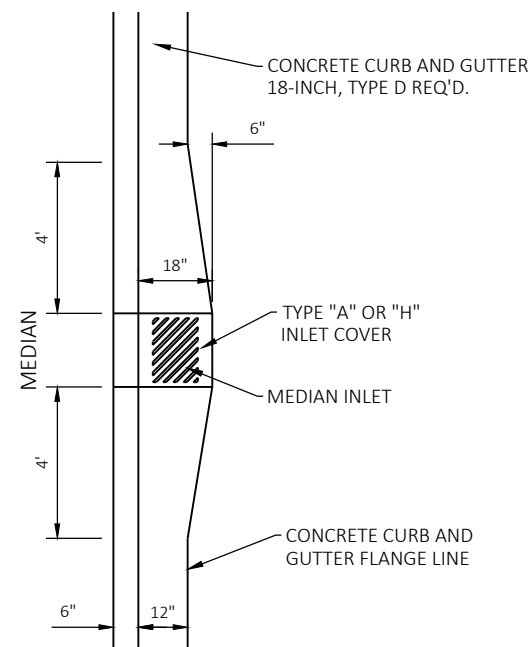


-  HMA PAVEMENT
-  REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING ASPHALTIC SURFACE BUTT JOINTS

* 4-INCH AT LINCOLN ST AND CTH P MAINLINE
1 3/4-INCH AT SIDE ROADS LOCATIONS (4 MT 58-34 S)

BUTT JOINT

MAINLINE AND SIDE ROADS

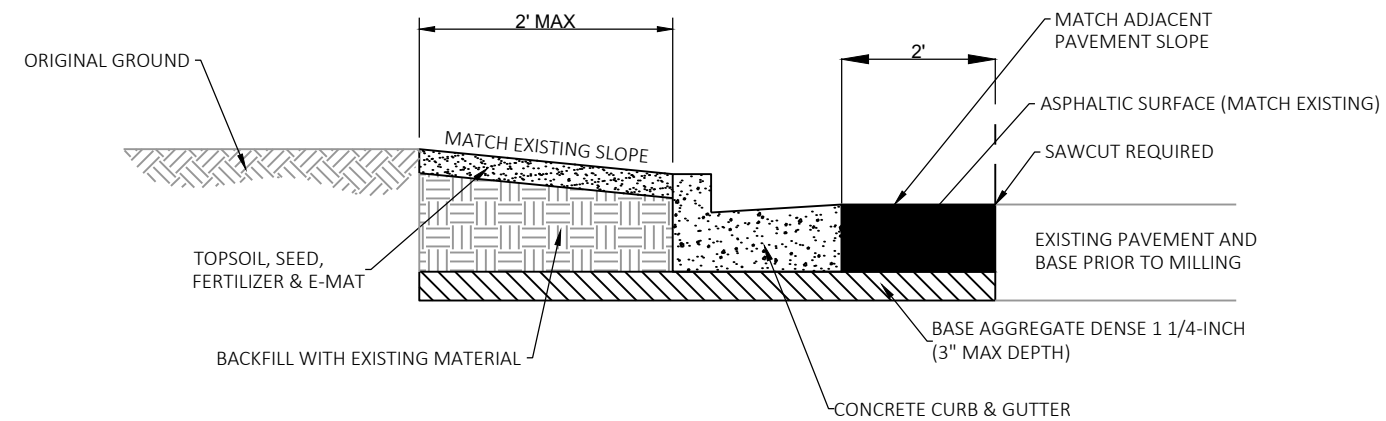
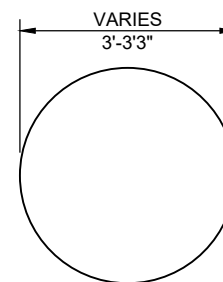


PLACEMENT OF INLET DETAIL WHEN CURB AND GUTTER IS 18-INCH AND MEDIAN WIDTH IS LESS THAN 8 FEET

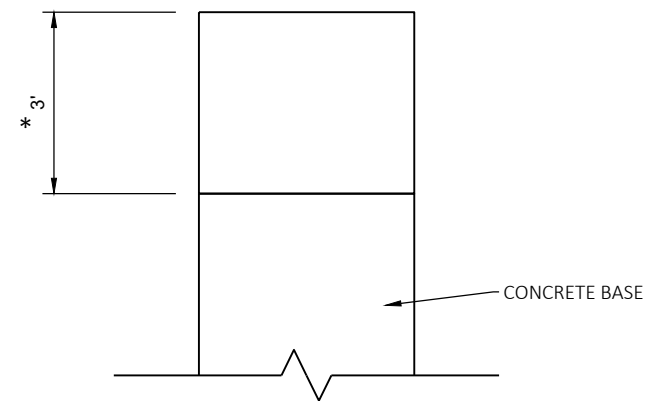
NOTES:

BASE COURSE BELOW PROPOSED CURB & GUTTER SHALL BE CONSTRUCTED TO PROVIDE A SUITABLE BASE AS DETERMINED BY THE ENGINEER IN THE FIELD

SEE MISCELLANEOUS QUANTITIES FOR FINISHING AND EROSION CONTROL ITEMS

DETAIL FOR CURB & GUTTER REPLACEMENT

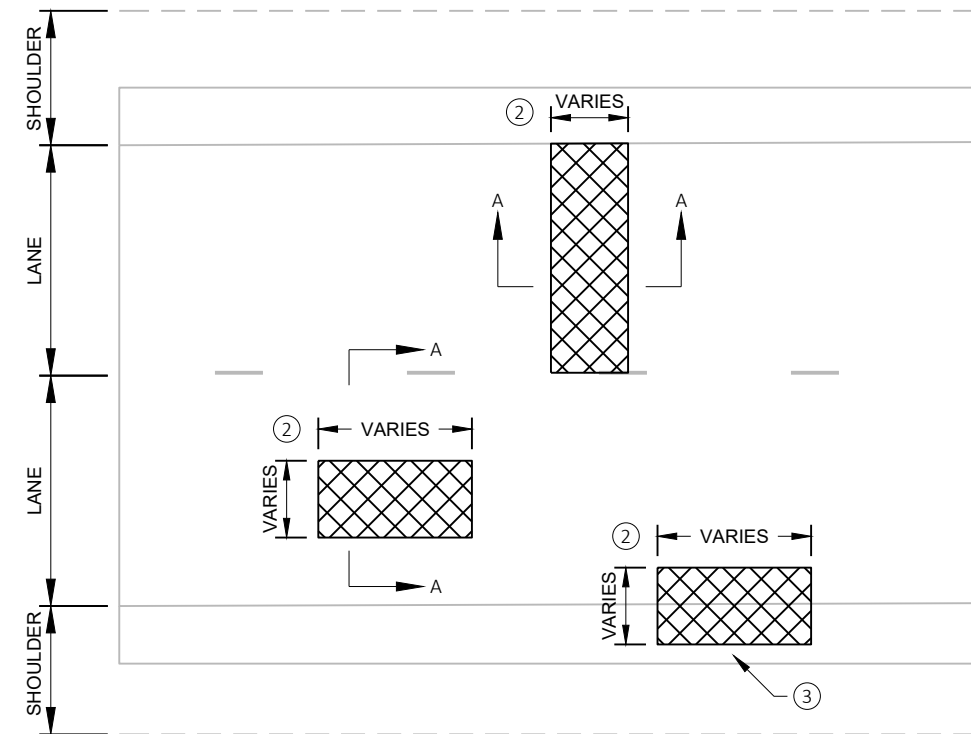
* REMOVE TOP 3' OF CONCRETE BASE

REMOVING CONCRETE BASE

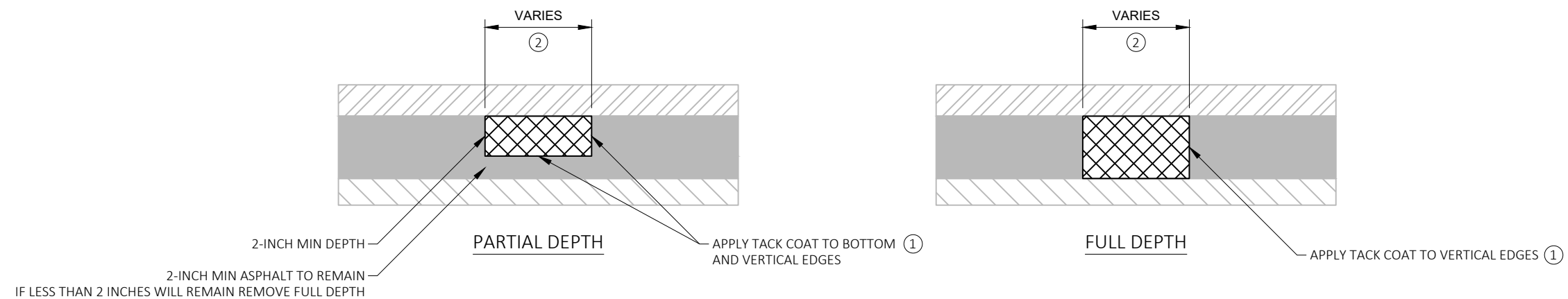
NOTES:

PERFORM REMOVING ASPHALTIC SURFACE MILLING PRIOR TO REMOVING DISTRESSED ASPHALTIC SURFACE MILLING

- ① MILLED VERTICAL EDGES ARE ACCEPTABLE, SAW CUTS ARE NOT REQUIRED.
- ② THE SMALLEST DIMENSION OF REMOVING DISTRESSED ASPHALTIC SURFACE MILLING IS 4 FEET IN ANY DIRECTION.
- ③ WHEN THE DISTANCE FROM THE EDGE OF PAVEMENT TO EDGE OF REMOVING DISTRESSED ASPHALTIC SURFACE MILLING IS LESS THAN 1-FOOT, EXTEND THE REMOVING DISTRESSED ASPHALTIC SURFACE MILLING TO THE EDGE OF PAVEMENT.



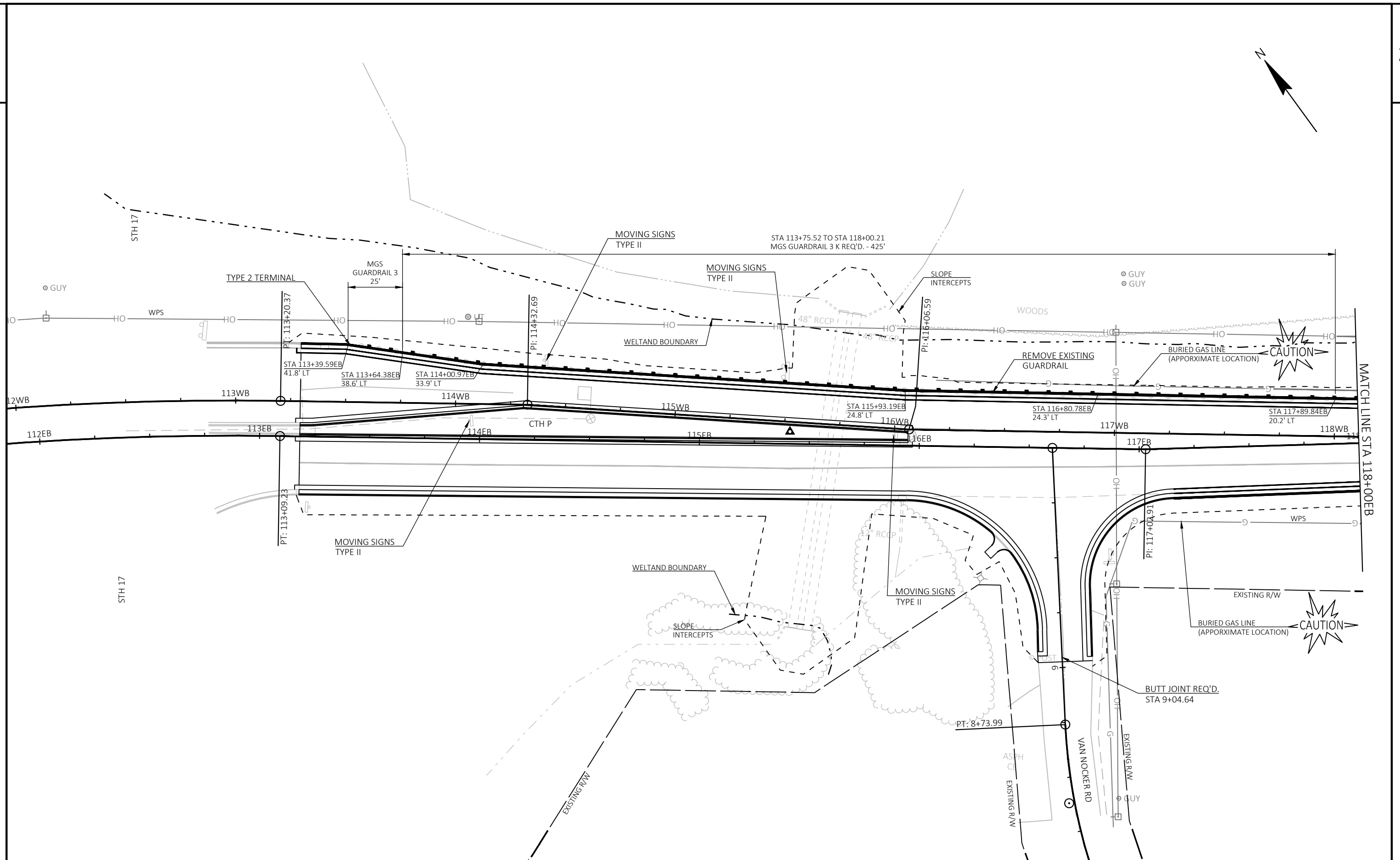
PLAN VIEW

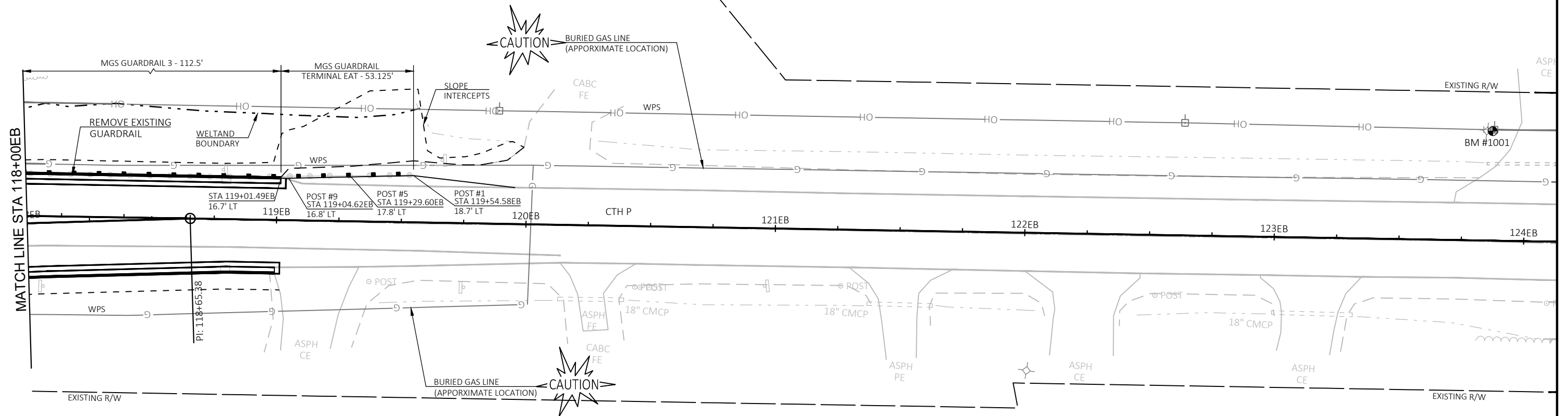


SECTION A-A

-  REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING DISTRESSED ASPHALTIC SURFACE MILLING
ASPHALTIC SURFACE PATCHING
-  EXISTING ASPHALT
-  EXISTING BASE COURSE

REMOVING DISTRESSED ASPHALTIC SURFACE MILLING
LOCATIONS AND LIMITS DETERMINED BY THE ENGINEER IN THE FIELD





2

LEGEND

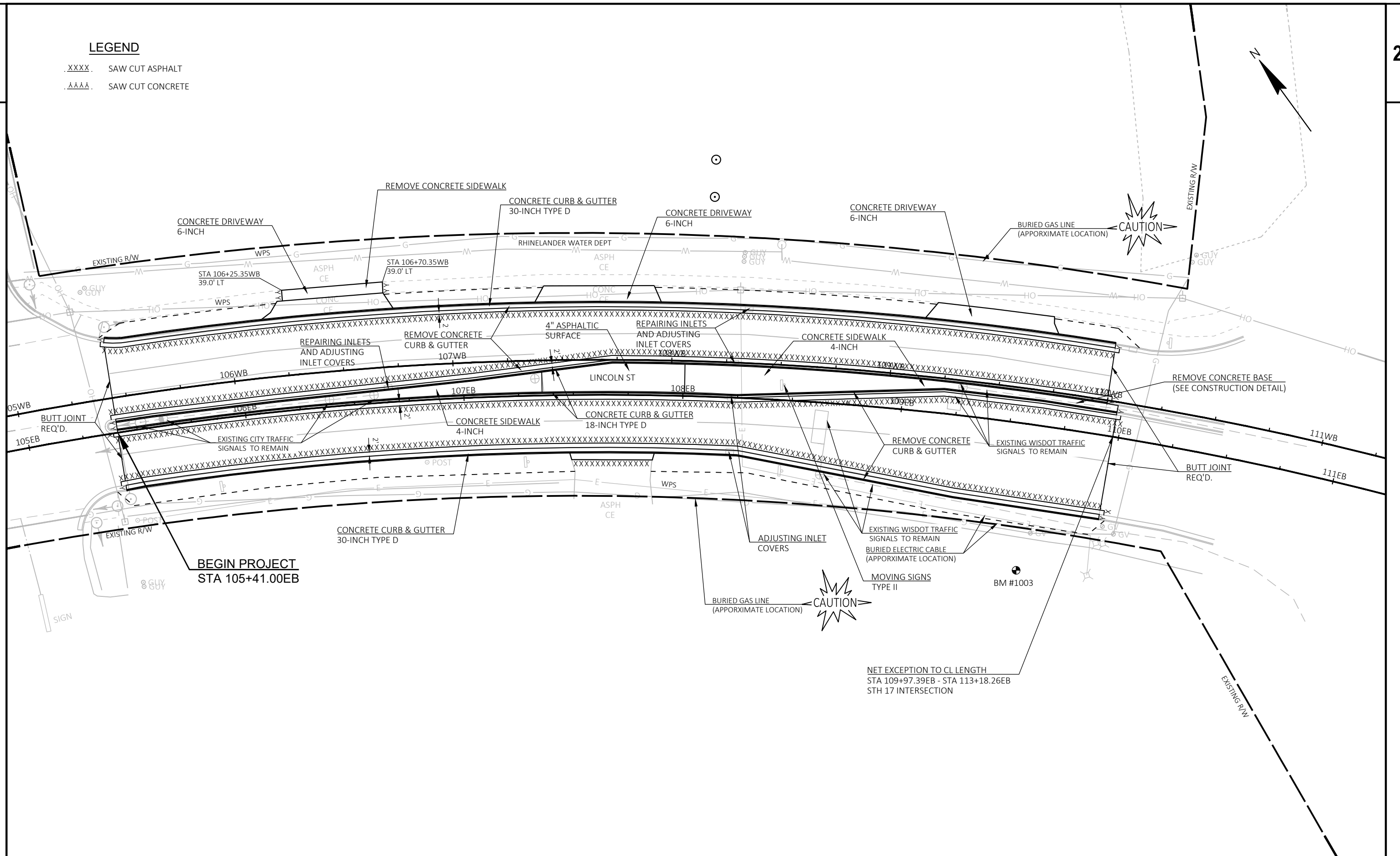
.XXXX. SAW CUT ASPHALT

.LLLLL. SAW CUT CONCRETE

. λλλλ . SAW CUT CONCRETE

. λλλλ . SAW CUT CONCRETE

2



PROJECT NO:	9877-00-72
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HWY: CTH P

COUNTY: ONEIDA

PLAN DETAILS - CURB AND GUTTER REPLACEMENT

SHEET 16 E

FILE NAME : I:\45\450650 ONEIDA P\C3D\SHEETS\021202-PD.DWG
LAYOUT NAME - 021203-pd

PLOT DATE : 9/21/2026 9:33 AM

PLOT BY : WILKE, CASSANDRA

PLOT NAME : _____

PLOT SCALE : 1 IN:40 FT

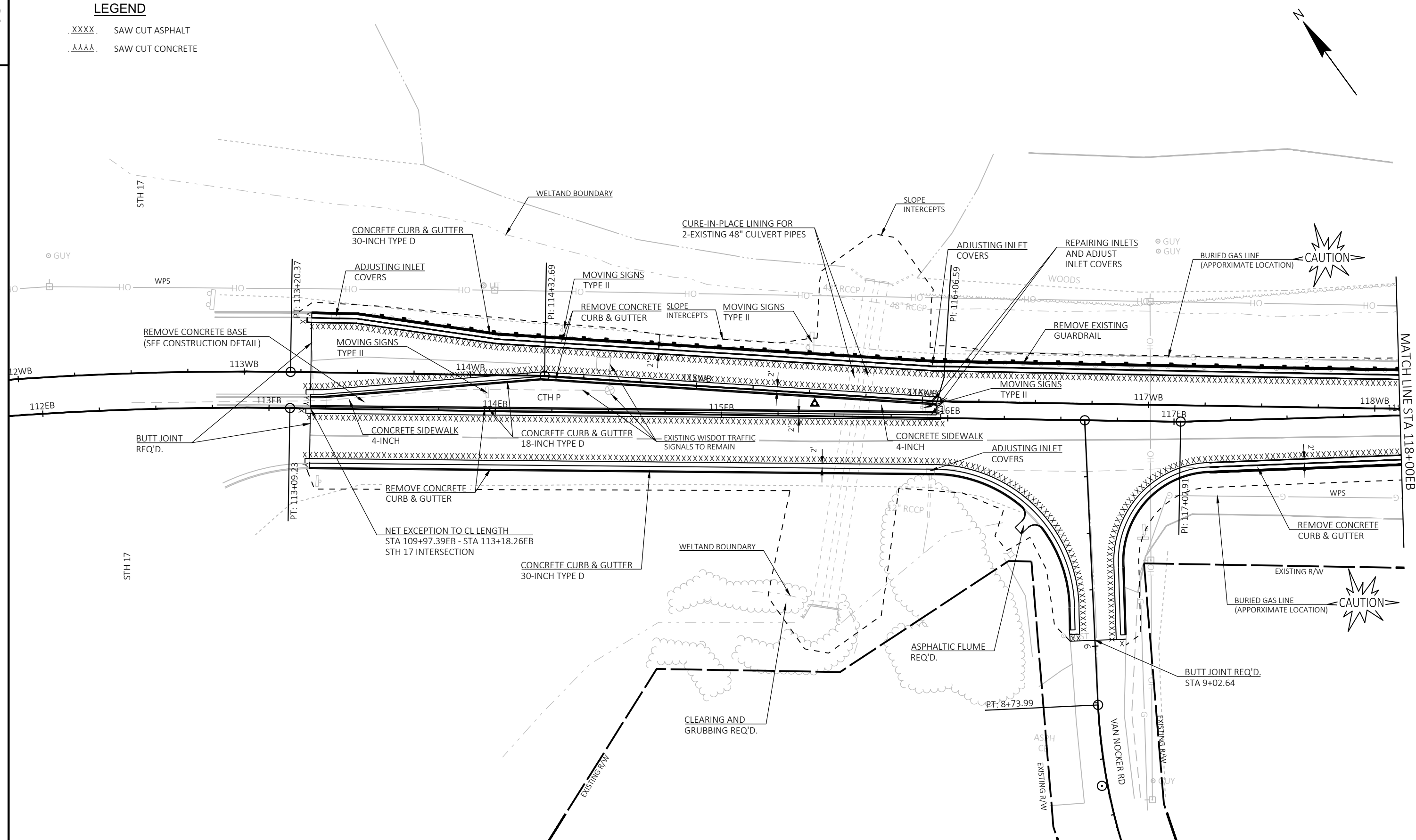
WISDOT/CADDS SHEET 42

2

LEGEND

.XXXX. SAW CUT ASPHALT
.LLLL. SAW CUT CONCRETE

2



PROJECT NO:	9877-00-72
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HWY: CTH P

COUNTY: ONEIDA

PLAN DETAILS - CURB AND GUTTER REPLACEMENT

SHEET

17

E

FILE NAME : I:\45\450650 ONEIDA P\C3D\SHEETS\021202-PD.DWG
LAYOUT NAME - 021204-pd

PLOT DATE : 9/21/2026 9:34 AM

PLOT BY : WILKE, CASSANDRA

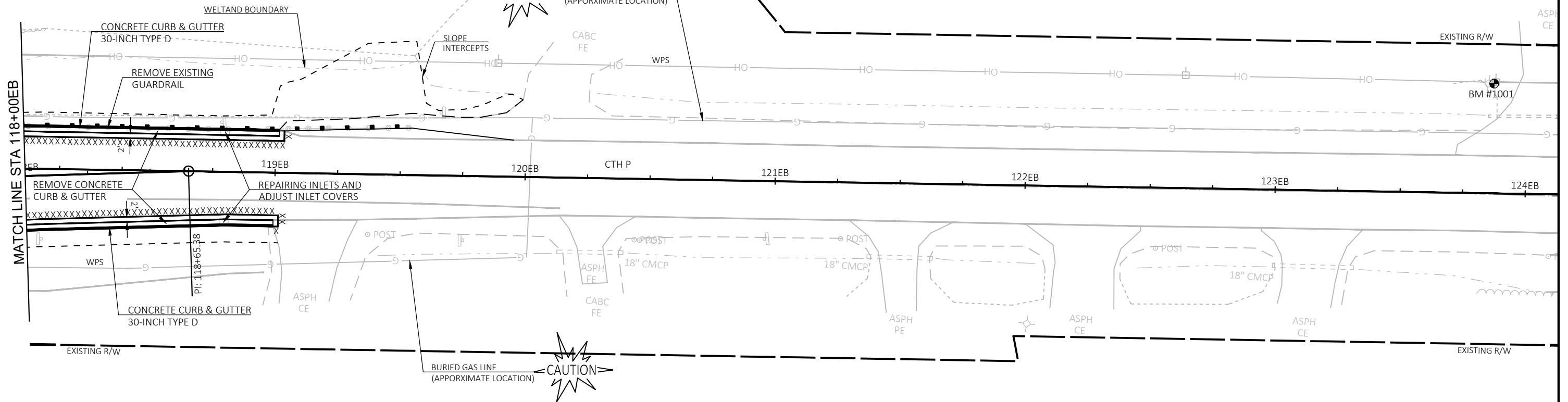
PLOT NAME :

PLOT SCALE : 1 IN:40 FT

WISDOT/CADDS SHEET 42

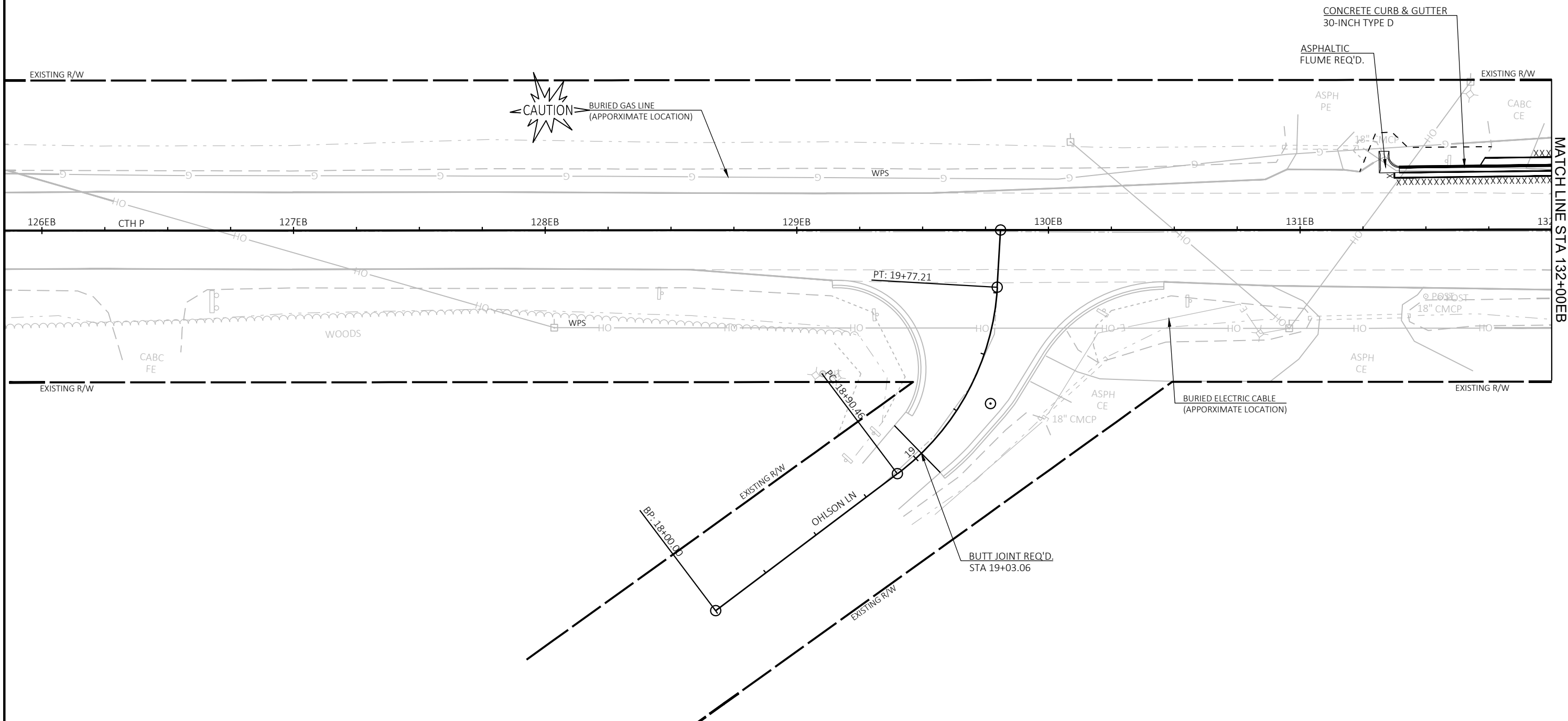
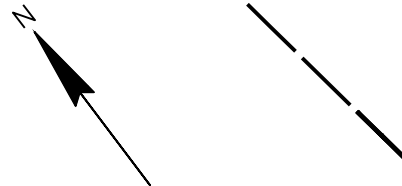
LEGEND

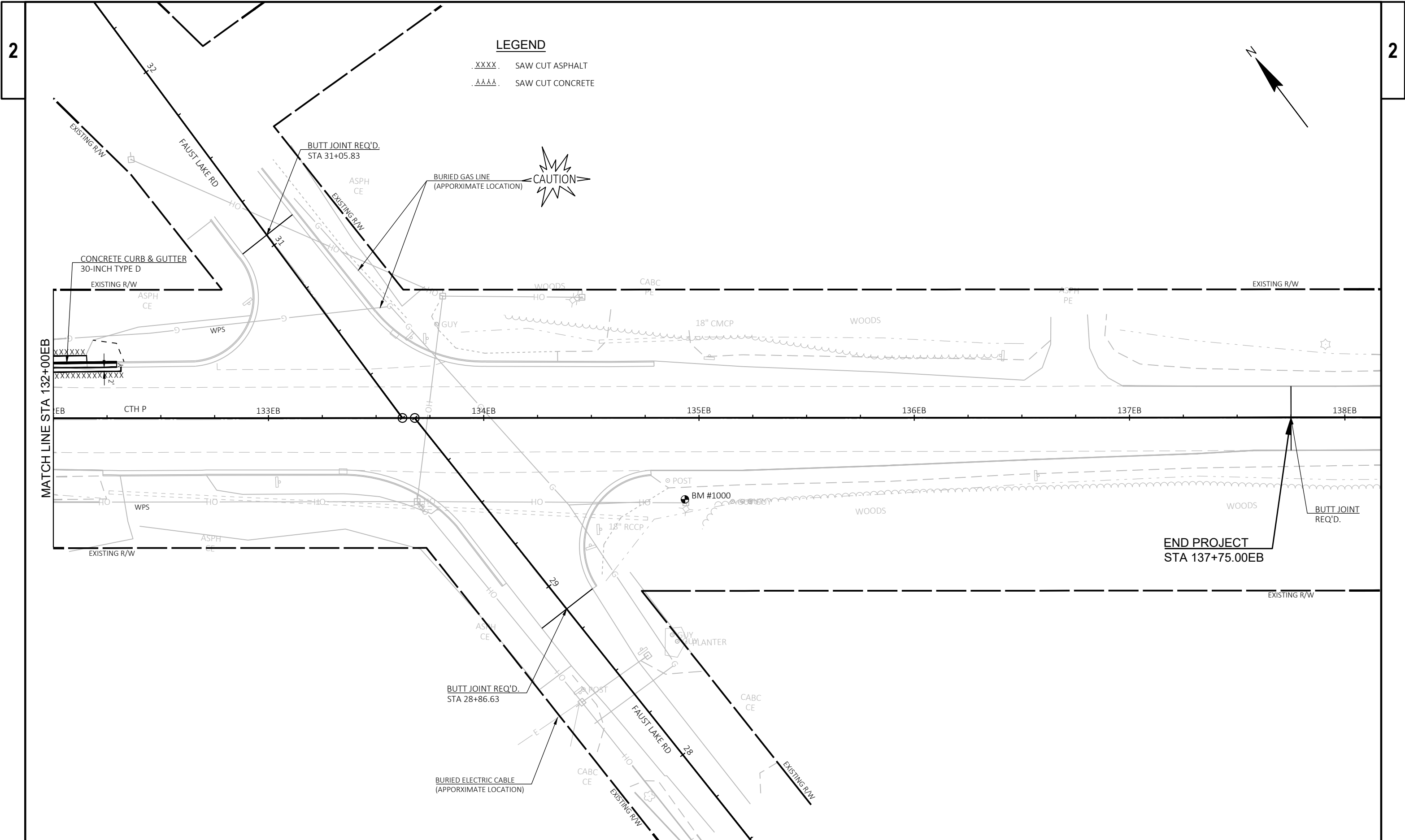
.XXXX. SAW CUT ASPHALT
.AAAA. SAW CUT CONCRETE



LEGEND

- .XXXX. SAW CUT ASPHALT
- .AAAA. SAW CUT CONCRETE

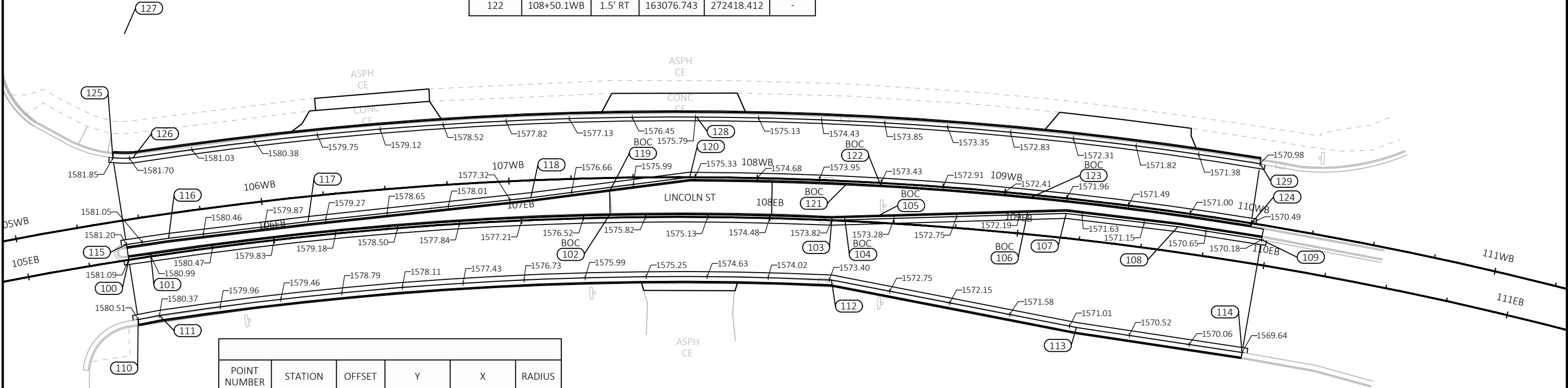
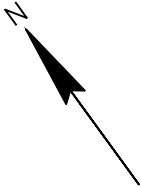




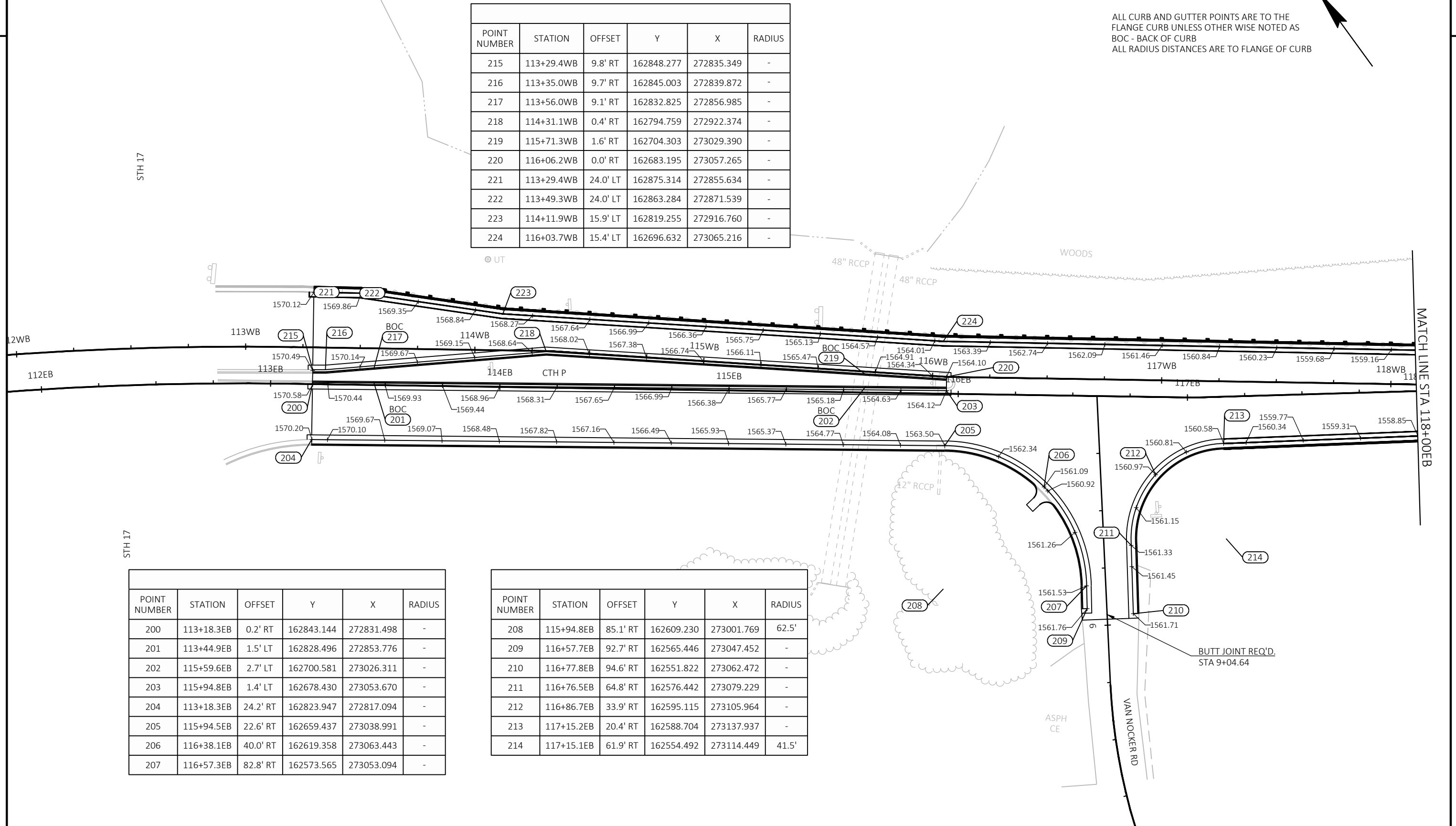
POINT NUMBER	STATION	OFFSET	Y	X	RADIUS
115	105+43.5WB	9.8' RT	163132.887	272118.778	-
116	105+60.8WB	9.8' RT	163130.943	272135.808	-
117	106+17.8WB	10.1' RT	163122.908	272191.831	-
118	107+08.5WB	7.0' RT	163109.000	272280.926	-
119	107+40.4WB	5.4' RT	163103.261	272312.284	-
120	107+72.8WB	0.0'	163100.379	272344.898	-
121	108+35.8WB	1.5' RT	163081.134	272404.865	-
122	108+50.1WB	1.5' RT	163076.743	272418.412	-

POINT NUMBER	STATION	OFFSET	Y	X	RADIUS
123	109+09.8WB	1.5' RT	163056.878	272474.737	-
124	110+00.0WB	0.0'	163023.935	272558.607	-
125	105+43.5WB	25.6' LT	163168.091	272122.537	-
126	105+51.3WB	24.3' LT	163165.922	272130.270	-
127	105+55.2WB	74.1' LT	163214.945	272139.847	49.9'
128	107+75.5WB	24.3' LT	163123.083	272353.879	-
129	109+99.6WB	24.3' LT	163046.230	272568.192	-

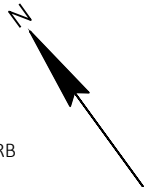
ALL CURB AND GUTTER POINTS ARE TO THE FLANGE CURB UNLESS OTHER WISE NOTED AS BOC - BACK OF CURB
ALL RADIUS DISTANCES ARE TO FLANGE OF CURB



POINT NUMBER	STATION	OFFSET	Y	X	RADIUS
100	105+41.0EB	0.1' LT	163126.865	272118.134	-
101	105+50.0EB	0.0'	163125.763	272127.068	-
102	107+35.7EB	1.5' LT	163094.426	272310.098	-
103	108+25.0EB	0.0'	163068.834	272395.678	-
104	108+30.0EB	1.9' LT	163069.108	272401.032	-
105	108+44.1EB	3.0' LT	163065.844	272414.820	-
106	109+03.2EB	9.4' LT	163052.088	272472.936	-
107	109+18.6EB	9.9' LT	163047.080	272487.580	-
108	109+63.6EB	10.2' LT	163030.260	272529.628	-
109	109+97.5EB	10.1' LT	163016.461	272560.838	-
110	105+41.0EB	24.4' RT	163102.507	272115.533	-
111	105+49.9EB	24.0' RT	163101.929	272124.247	-
112	108+25.9EB	24.0' RT	163045.681	272389.298	-
113	109+27.9EB	35.3' RT	163001.632	272479.665	-
114	109+97.1EB	36.0' RT	162974.643	272541.479	-

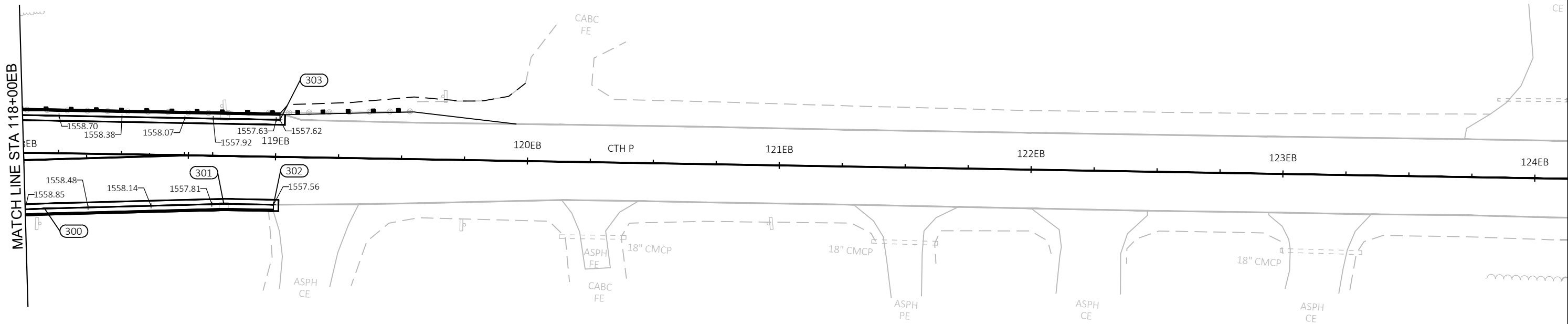
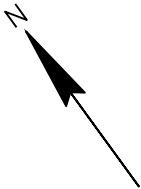


ALL CURB AND GUTTER POINTS ARE TO THE
FLANGE CURB UNLESS OTHER WISE NOTED AS
BOC - BACK OF CURB
ALL RADIUS DISTANCES ARE TO FLANGE OF CURB



POINT NUMBER	STATION	OFFSET	Y	X	RADIUS
300	118+07.7EB	19.5' RT	162537.252	273214.830	-
301	118+79.7EB	19.0' RT	162496.929	273273.456	-
302	118+99.5EB	19.0' RT	162485.062	273289.224	-
303	119+01.5EB	14.7' LT	162510.822	273311.134	-

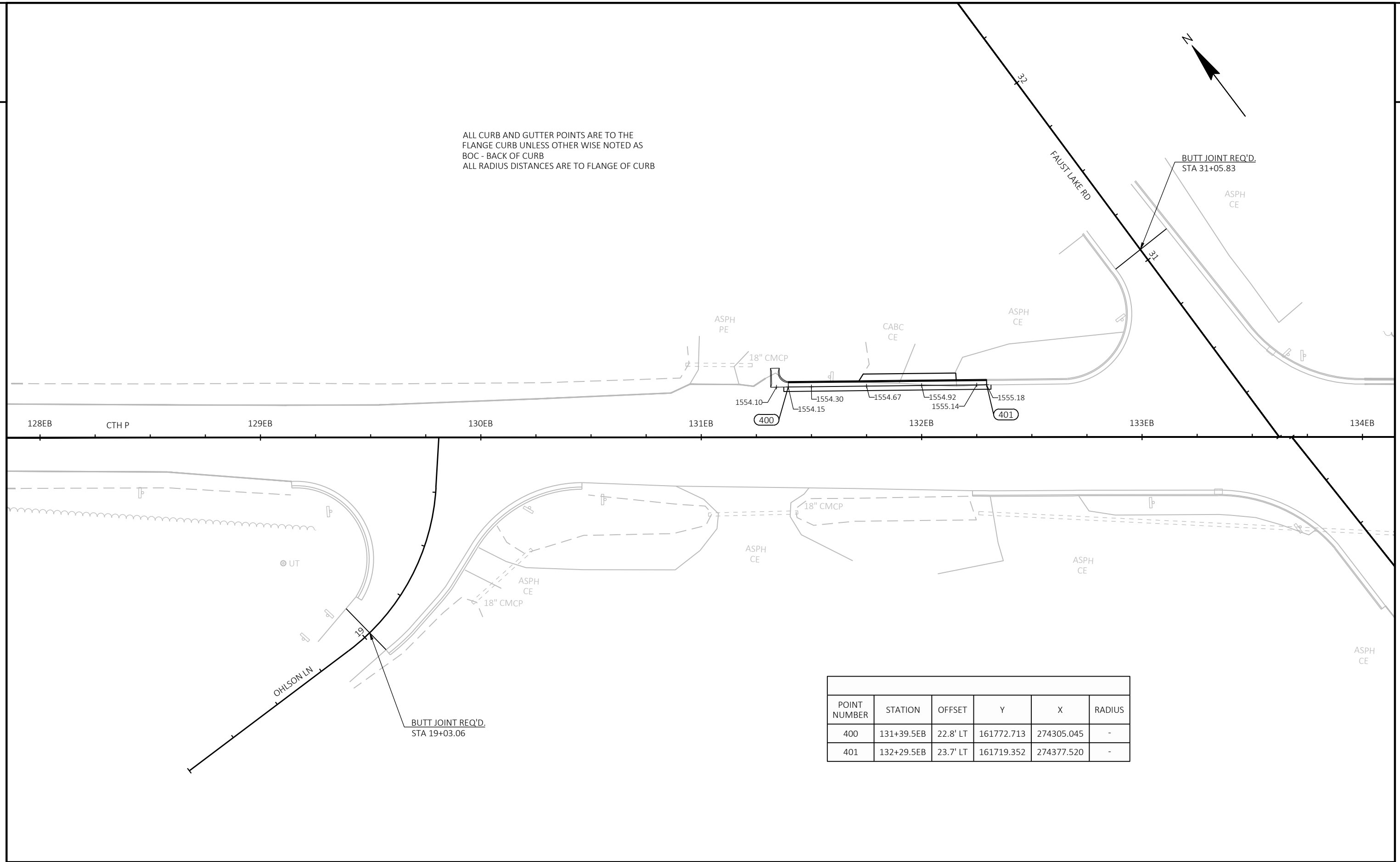
ALL CURB AND GUTTER POINTS ARE TO THE
FLANGE CURB UNLESS OTHER WISE NOTED AS
BOC - BACK OF CURB
ALL RADIUS DISTANCES ARE TO FLANGE OF CURB



2

2

ALL CURB AND GUTTER POINTS ARE TO THE
FLANGE CURB UNLESS OTHER WISE NOTED AS
BOC - BACK OF CURB
ALL RADIUS DISTANCES ARE TO FLANGE OF CURB

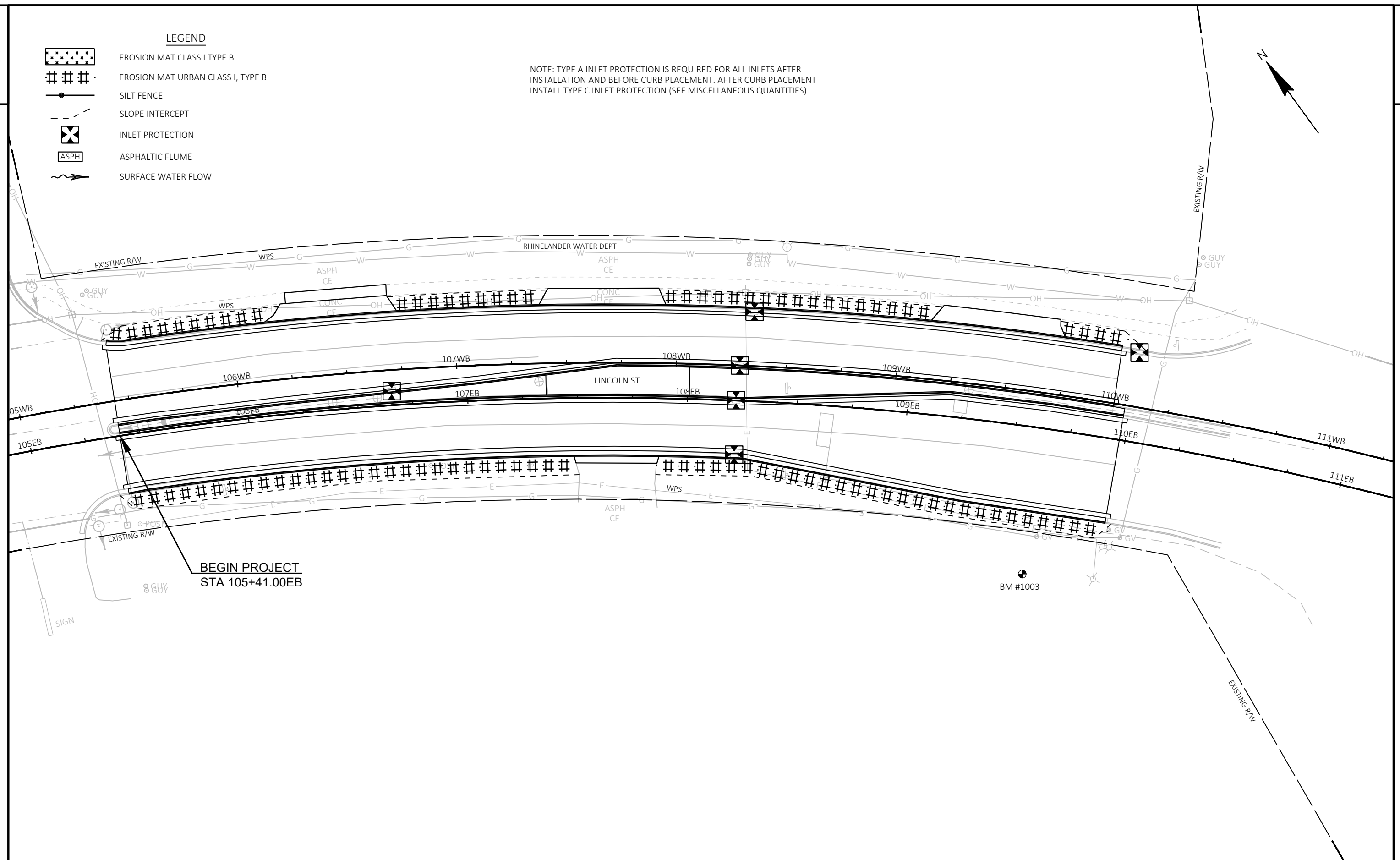


POINT NUMBER	STATION	OFFSET	Y	X	RADIUS
400	131+39.5EB	22.8' LT	161772.713	274305.045	-
401	132+29.5EB	23.7' LT	161719.352	274377.520	-

2

	EROSION MAT CLASS I TYPE B
	EROSION MAT URBAN CLASS I, TYPE B
	SILT FENCE
	SLOPE INTERCEPT
	INLET PROTECTION
	ASPHALTIC FLUME
	SURFACE WATER FLOW

NOTE: TYPE A INLET PROTECTION IS REQUIRED FOR ALL INLETS AFTER INSTALLATION AND BEFORE CURB PLACEMENT. AFTER CURB PLACEMENT INSTALL TYPE C INLET PROTECTION (SEE MISCELLANEOUS QUANTITIES)



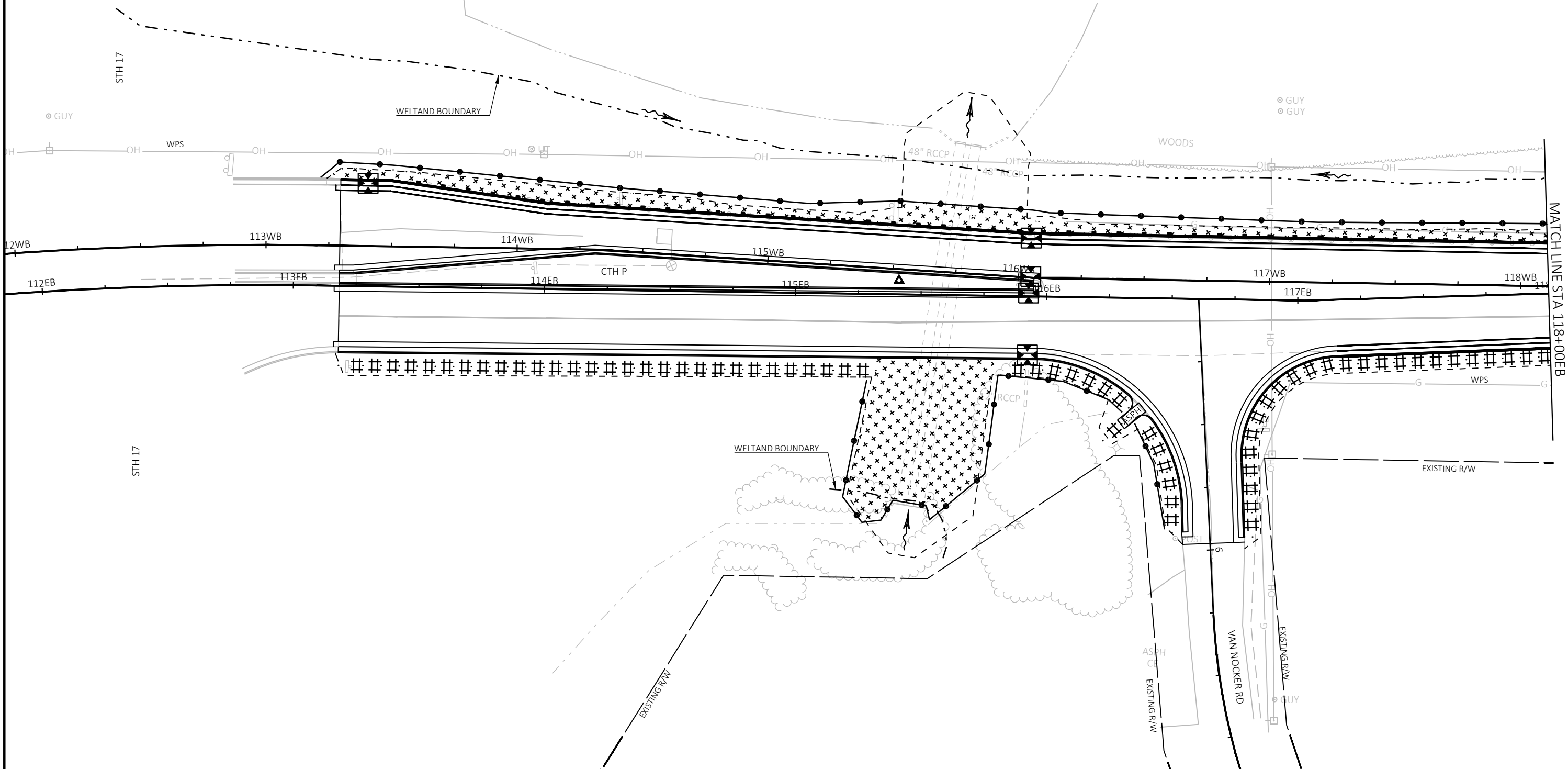
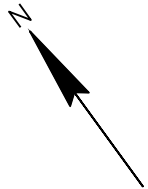
25

WISDOT/CADDS SHEET 42

LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- INLET PROTECTION
- ASPHALTIC FLUME
- SURFACE WATER FLOW

NOTE: TYPE A INLET PROTECTION IS REQUIRED FOR ALL INLETS AFTER INSTALLATION AND BEFORE CURB PLACEMENT. AFTER CURB PLACEMENT INSTALL TYPE C INLET PROTECTION (SEE MISCELLANEOUS QUANTITIES)



PROJECT NO: 9877-00-72

HWY: CTH P

COUNTY: ONEIDA

EROSION CONTROL

SHEET

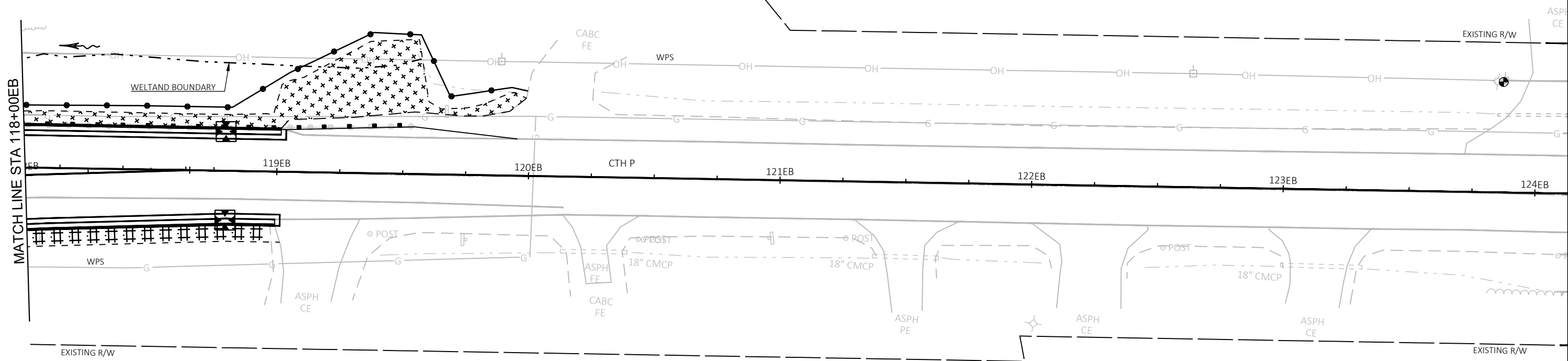
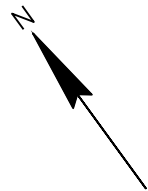
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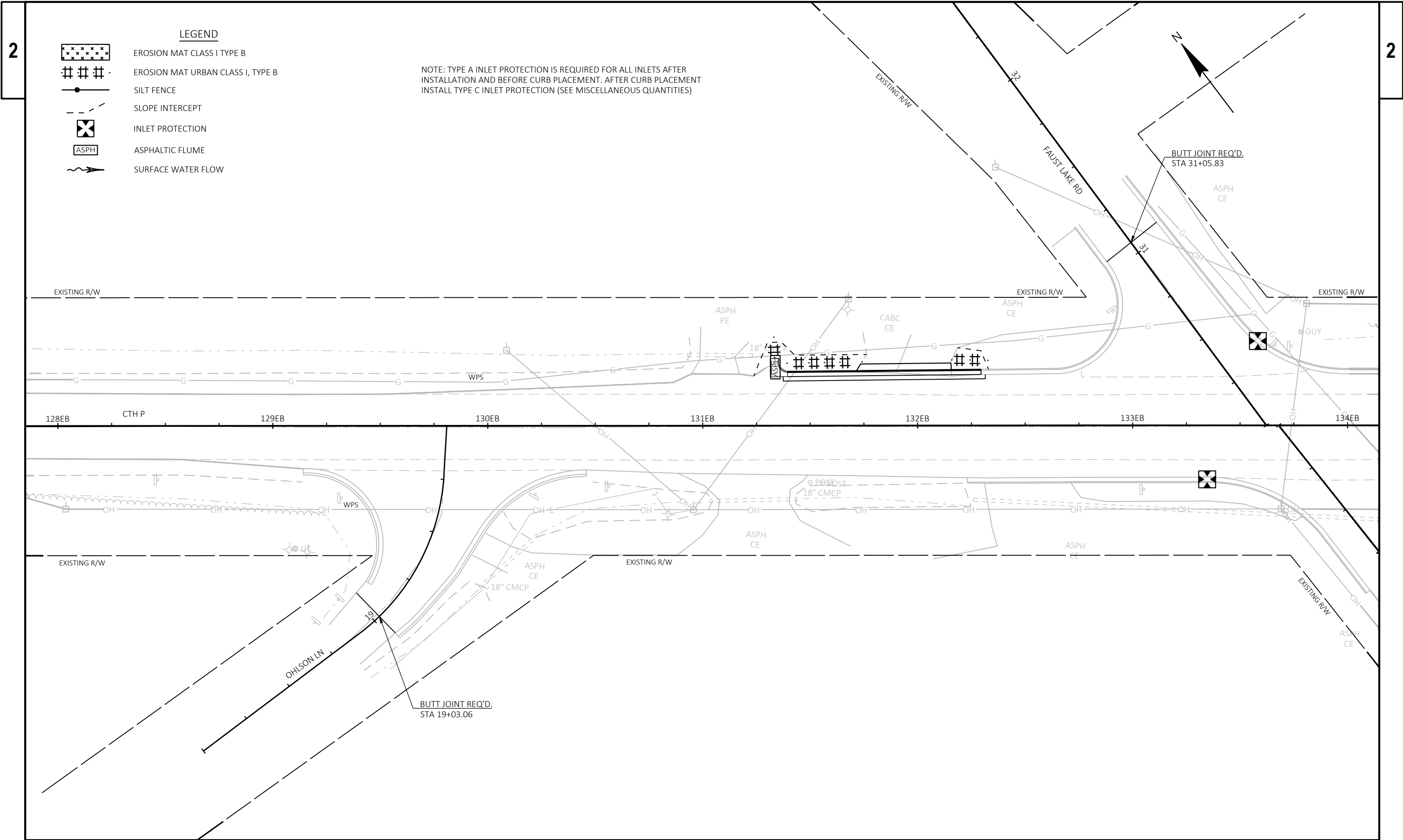
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LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- INLET PROTECTION
- ASPHALTIC FLUME
- SURFACE WATER FLOW

NOTE: TYPE A INLET PROTECTION IS REQUIRED FOR ALL INLETS AFTER INSTALLATION AND BEFORE CURB PLACEMENT. AFTER CURB PLACEMENT INSTALL TYPE C INLET PROTECTION (SEE MISCELLANEOUS QUANTITIES)

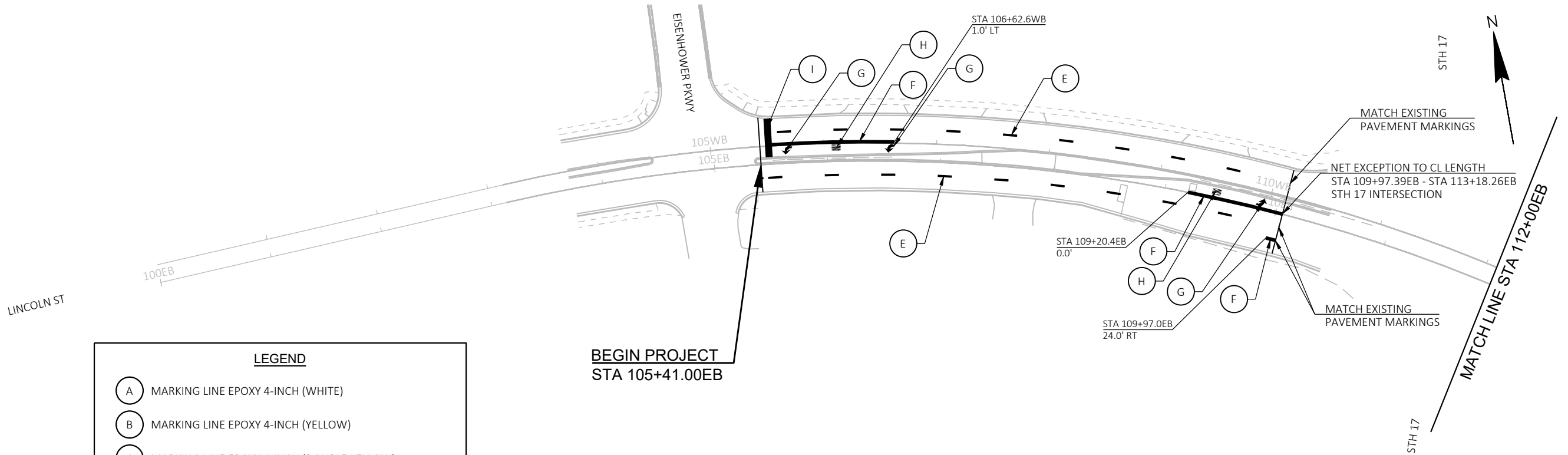




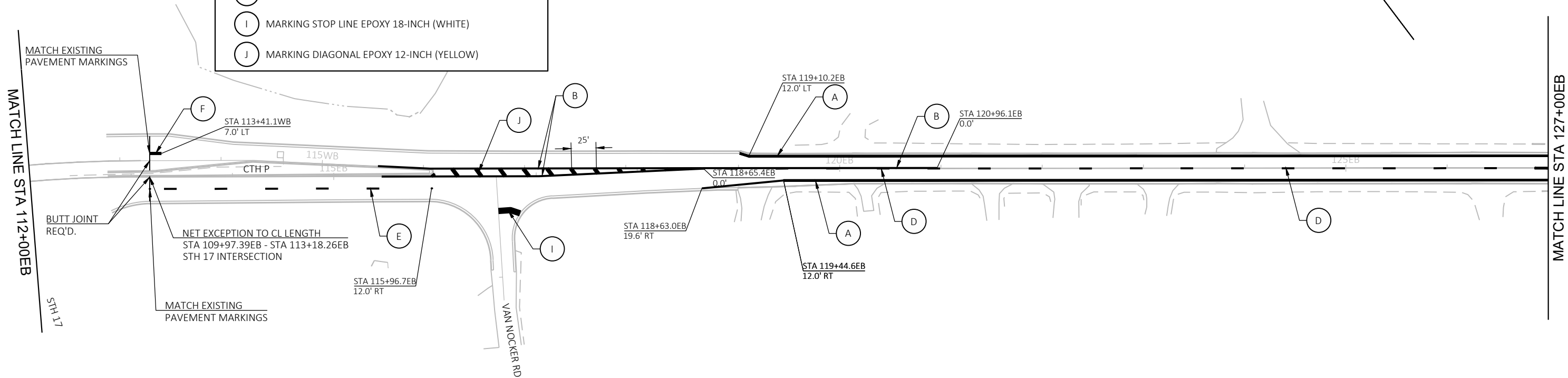
NOTE: TYPE A INLET PROTECTION IS REQUIRED FOR ALL INLETS AFTER
INSTALLATION AND BEFORE CURB PLACEMENT. AFTER CURB PLACEMENT
INSTALL TYPE C INLET PROTECTION (SEE MISCELLANEOUS QUANTITIES)

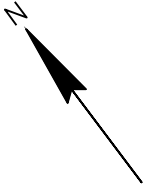
LEGEND

- EROSION MAT CLASS I TYPE B
- EROSION MAT URBAN CLASS I, TYPE B
- SILT FENCE
- SLOPE INTERCEPT
- INLET PROTECTION
- ASPHALTIC FLUME
- SURFACE WATER FLOW



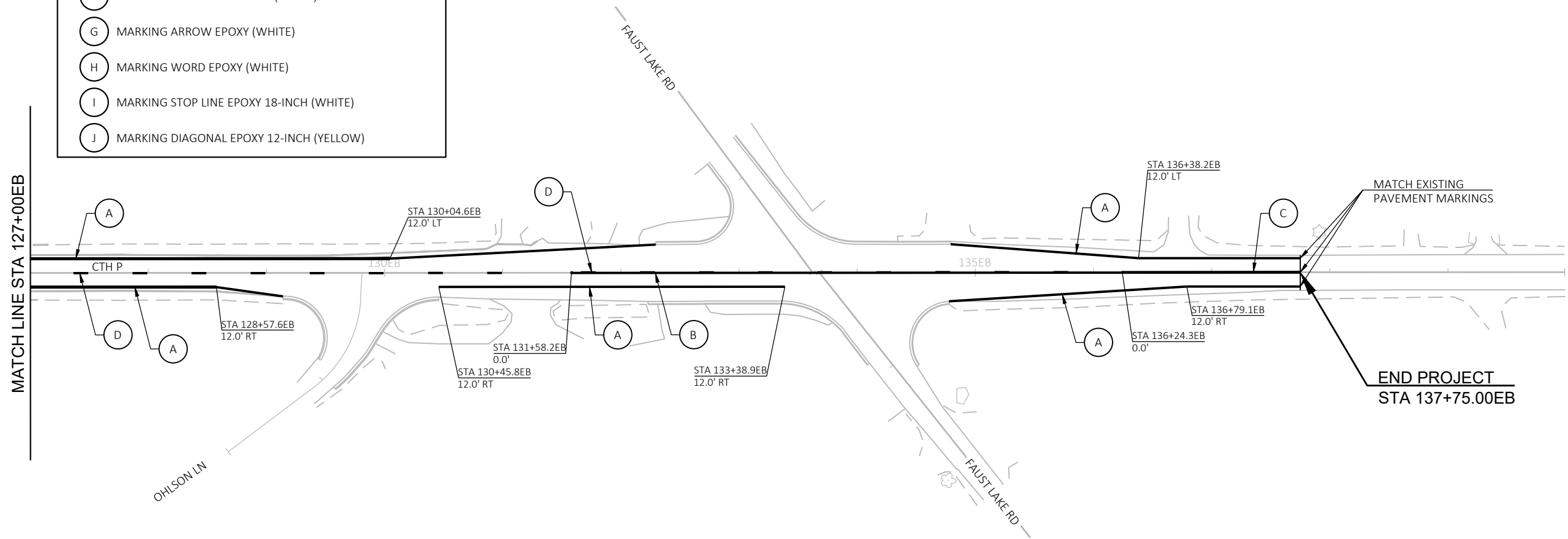
LEGEND	
(A)	MARKING LINE EPOXY 4-INCH (WHITE)
(B)	MARKING LINE EPOXY 4-INCH (YELLOW)
(C)	MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
(D)	MARKING LINE EPOXY 4-INCH (YELLOW) 12.5' LINE 37.5' GAP
(E)	MARKING LINE EPOXY 4-INCH (WHITE) 12.5' LINE 37.5' GAP
(F)	MARKING LINE EPOXY 8-INCH (WHITE)
(G)	MARKING ARROW EPOXY (WHITE)
(H)	MARKING WORD EPOXY (WHITE)
(I)	MARKING STOP LINE EPOXY 18-INCH (WHITE)
(J)	MARKING DIAGONAL EPOXY 12-INCH (YELLOW)

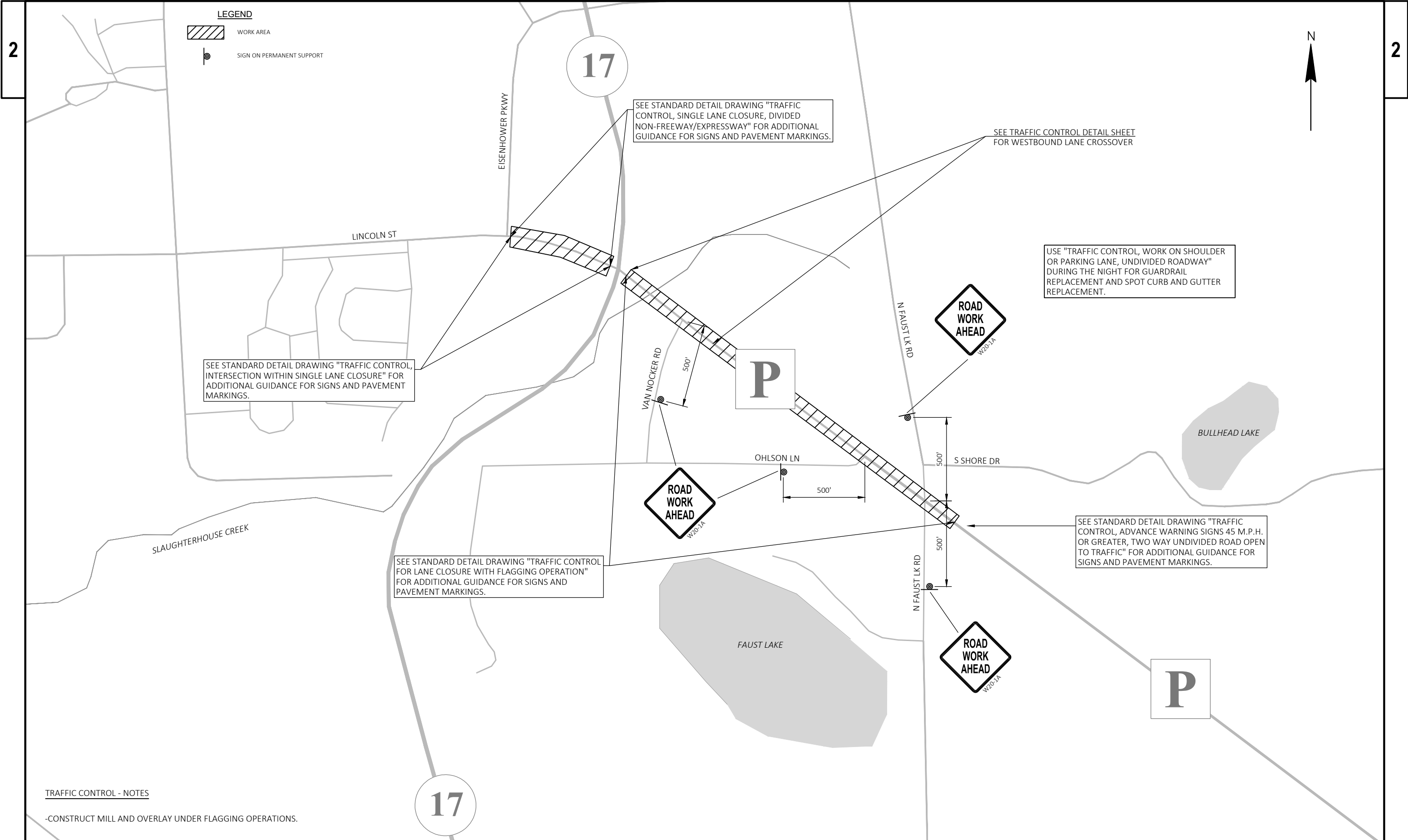




LEGEND

- (A) MARKING LINE EPOXY 4-INCH (WHITE)
- (B) MARKING LINE EPOXY 4-INCH (YELLOW)
- (C) MARKING LINE EPOXY 4-INCH (DOUBLE YELLOW)
- (D) MARKING LINE EPOXY 4-INCH (YELLOW) 12.5' LINE 37.5' GAP
- (E) MARKING LINE EPOXY 4-INCH (WHITE) 12.5' LINE 37.5' GAP
- (F) MARKING LINE EPOXY 8-INCH (WHITE)
- (G) MARKING ARROW EPOXY (WHITE)
- (H) MARKING WORD EPOXY (WHITE)
- (I) MARKING STOP LINE EPOXY 18-INCH (WHITE)
- (J) MARKING DIAGONAL EPOXY 12-INCH (YELLOW)





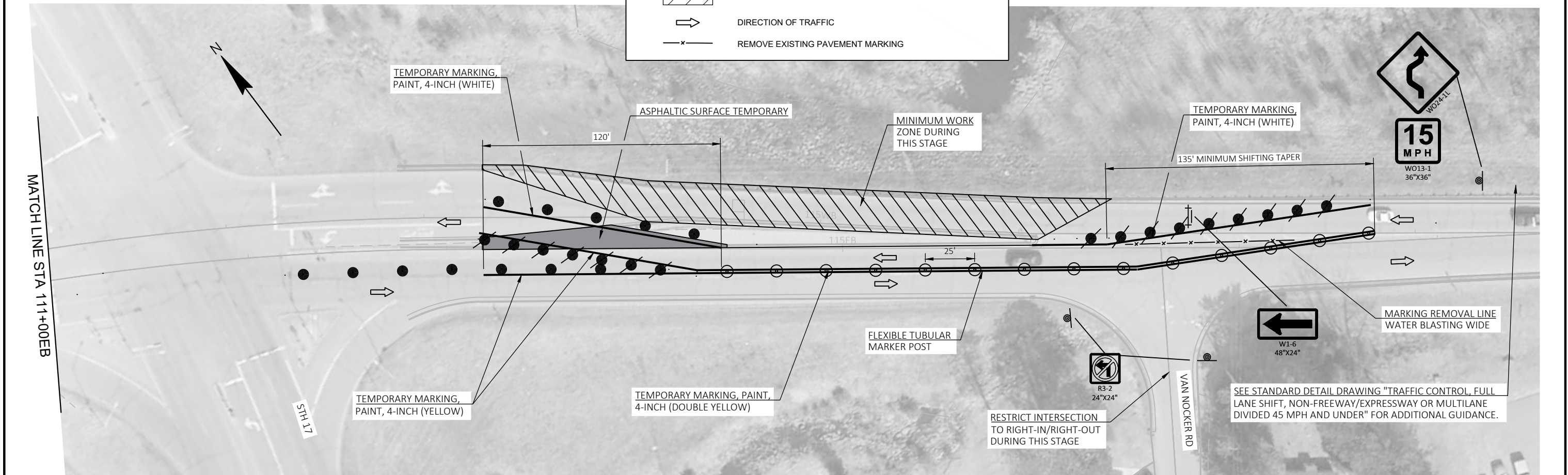
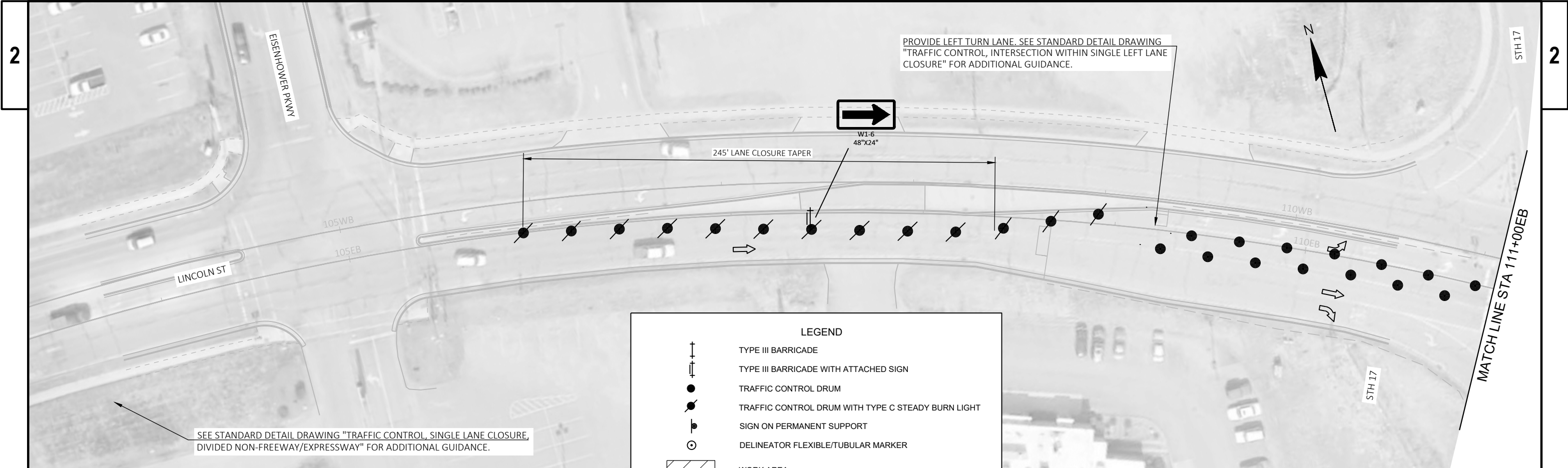
LEGEND

 WORK AREA

 SIGN ON PERMANENT SUPPORT

TRAFFIC CONTROL - NOTES

-CONSTRUCT MILL AND OVERLAY UNDER FLAGGING OPERATIONS.



Estimate Of Quantities

9877-00-72					
Line	Item	Item Description	Unit	Total	Qty
0002	201.0105	Clearing	STA	1.000	1.000
0004	201.0205	Grubbing	STA	1.000	1.000
0006	204.0110	Removing Asphaltic Surface	SY	1,410.000	1,410.000
0008	204.0115	Removing Asphaltic Surface Butt Joints	SY	370.000	370.000
0010	204.0120	Removing Asphaltic Surface Milling	SY	14,400.000	14,400.000
0012	204.0150	Removing Curb & Gutter	LF	3,630.000	3,630.000
0014	204.0155	Removing Concrete Sidewalk	SY	650.000	650.000
0016	204.0165	Removing Guardrail	LF	620.000	620.000
0018	204.0195	Removing Concrete Bases	EACH	2.000	2.000
0020	205.0100	Excavation Common	CY	33.000	33.000
0022	208.0100	Borrow	CY	15.000	15.000
0024	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 9877-00-72	EACH	1.000	1.000
0026	213.0100	Finishing Roadway (project) 01. 9877-00-72	EACH	1.000	1.000
0028	305.0110	Base Aggregate Dense 3/4-Inch	TON	420.000	420.000
0030	305.0120	Base Aggregate Dense 1 1/4-Inch	TON	360.000	360.000
0032	455.0605	Tack Coat	GAL	2,110.000	2,110.000
0034	460.2000	Incentive Density HMA Pavement	DOL	2,180.000	2,180.000
0036	460.6223	HMA Pavement 3 MT 58-28 S	TON	1,900.000	1,900.000
0038	460.6244	HMA Pavement 4 MT 58-34 S	TON	1,500.000	1,500.000
0040	465.0105	Asphaltic Surface	TON	370.000	370.000
0042	465.0110	Asphaltic Surface Patching	TON	120.000	120.000
0044	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	90.000	90.000
0046	465.0125	Asphaltic Surface Temporary	TON	25.000	25.000
0048	465.0315	Asphaltic Flumes	SY	10.000	10.000
0050	601.0407	Concrete Curb & Gutter 18-Inch Type D	LF	1,470.000	1,470.000
0052	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	2,244.000	2,244.000
0054	602.0405	Concrete Sidewalk 4-Inch	SF	4,290.000	4,290.000
0056	602.0810	Concrete Driveway 6-Inch	SY	170.000	170.000
0058	611.8115	Adjusting Inlet Covers	EACH	12.000	12.000
0060	614.2300	MGS Guardrail 3	LF	137.500	137.500
0062	614.2330	MGS Guardrail 3 K	LF	425.000	425.000
0064	614.2610	MGS Guardrail Terminal EAT	EACH	1.000	1.000
0066	614.2620	MGS Guardrail Terminal Type 2	EACH	1.000	1.000
0068	618.0100	Maintenance and Repair of Haul Roads (project) 01. 9877-00-72	EACH	1.000	1.000
0070	619.1000	Mobilization	EACH	1.000	1.000
0072	624.0100	Water	MGAL	16.000	16.000
0074	625.0100	Topsoil	SY	1,450.000	1,450.000
0076	628.1504	Silt Fence	LF	1,300.000	1,300.000
0078	628.1520	Silt Fence Maintenance	LF	2,600.000	2,600.000
0080	628.1905	Mobilizations Erosion Control	EACH	4.000	4.000
0082	628.1910	Mobilizations Emergency Erosion Control	EACH	3.000	3.000
0084	628.2004	Erosion Mat Class I Type B	SY	990.000	990.000
0086	628.2008	Erosion Mat Urban Class I Type B	SY	460.000	460.000
0088	628.7005	Inlet Protection Type A	EACH	20.000	20.000
0090	628.7015	Inlet Protection Type C	EACH	20.000	20.000
0092	629.0210	Fertilizer Type B	CWT	10.000	10.000
0094	630.0120	Seeding Mixture No. 20	LB	46.000	46.000
0096	630.0140	Seeding Mixture No. 40	LB	23.000	23.000
0098	630.0500	Seed Water	MGAL	300.000	300.000

Estimate Of Quantities

9877-00-72					
Line	Item	Item Description	Unit	Total	Qty
0100	634.0612	Posts Wood 4x6-Inch x 12-FT	EACH	5.000	5.000
0102	634.0616	Posts Wood 4x6-Inch x 16-FT	EACH	1.000	1.000
0104	638.2102	Moving Signs Type II	EACH	5.000	5.000
0106	638.3000	Removing Small Sign Supports	EACH	6.000	6.000
0108	642.5001	Field Office Type B	EACH	1.000	1.000
0110	643.0300	Traffic Control Drums	DAY	8,000.000	8,000.000
0112	643.0420	Traffic Control Barricades Type III	DAY	300.000	300.000
0114	643.0500	Traffic Control Flexible Tubular Marker Posts	EACH	14.000	14.000
0116	643.0600	Traffic Control Flexible Tubular Marker Bases	EACH	14.000	14.000
0118	643.0705	Traffic Control Warning Lights Type A	DAY	600.000	600.000
0120	643.0715	Traffic Control Warning Lights Type C	DAY	2,000.000	2,000.000
0122	643.0810	Traffic Control Connected Arrow Boards	DAY	70.000	70.000
0124	643.0900	Traffic Control Signs	DAY	1,800.000	1,800.000
0126	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0128	643.3105	Temporary Marking Line Paint 4-Inch	LF	17,290.000	17,290.000
0130	643.3205	Temporary Marking Line Paint 8-Inch	LF	870.000	870.000
0132	643.3805	Temporary Marking Stop Line Paint 18-Inch	LF	108.000	108.000
0134	643.5000	Traffic Control	EACH	1.000	1.000
0136	646.1020	Marking Line Epoxy 4-Inch	LF	5,360.000	5,360.000
0138	646.3020	Marking Line Epoxy 8-Inch	LF	290.000	290.000
0140	646.5020	Marking Arrow Epoxy	EACH	4.000	4.000
0142	646.5120	Marking Word Epoxy	EACH	2.000	2.000
0144	646.6120	Marking Stop Line Epoxy 18-Inch	LF	36.000	36.000
0146	646.7120	Marking Diagonal Epoxy 12-Inch	LF	80.000	80.000
0148	646.9210	Marking Removal Line Water Blasting Wide	LF	140.000	140.000
0150	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	3,714.000	3,714.000
0152	650.8000	Construction Staking Resurfacing Reference	LF	2,914.000	2,914.000
0154	650.9500	Construction Staking Sidewalk (project) 01. 9877-00-72	EACH	1.000	1.000
0156	650.9911	Construction Staking Supplemental Control (project) 01. 9877-00-72	EACH	1.000	1.000
0158	650.9920	Construction Staking Slope Stakes	LF	671.000	671.000
0160	690.0150	Sawing Asphalt	LF	4,110.000	4,110.000
0162	690.0250	Sawing Concrete	LF	160.000	160.000
0164	740.0440	Incentive IRI Ride	DOL	940.000	940.000
0166	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	1,200.000	1,200.000
0168	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	600.000	600.000
0170	SPV.0060	Special 01. Repairing Inlets and Manholes	EACH	7.000	7.000
0172	SPV.0090	Special 01. UV GRP CIPP 48-Inch	LF	292.000	292.000
0174	SPV.0180	Special 01. Removing Distressed Asphaltic Surface Milling	SY	700.000	700.000

<u>CLEARING AND GRUBBING</u>						
STATION	TO	STATION	LOCATION	201.0105	201.0205	REMARKS
				CLEARING	GRUBBING	
				STA	STA	
115+00	-	116+00	CTH P EB	1	1	PIPE LINING
TOTAL 0010				1	1	

REMOVING ASPHALTIC SURFACE					
STATION	TO	STATION	LOCATION	204.0110	REMARKS
				REMOVING ASPHALTIC SURFACE	
				SY	
105+41	-	109+98	CTH P EB, LT	102	CURB & GUTTER REPLACEMENT
105+41	-	109+98	CTH P EB, RT	100	CURB & GUTTER REPLACEMENT
107+36	-	108+00	CTH P EB, LT	90	MEDIAN REPLACEMENT
107+48	-	107+87	CTH P EB, RT	16	DRIVEWAY
113+18	-	115+95	CTH P EB, LT	62	CURB & GUTTER REPLACEMENT
113+18	-	116+55	CTH P EB, RT	85	CURB & GUTTER REPLACEMENT
116+78	-	118+99	CTH P EB, RT	62	CURB & GUTTER REPLACEMENT
118+65	-	119+00	CTH P EB, LT	10	CURB & GUTTER REPLACEMENT
118+99	-	119+33	CTH P EB, RT	49	DRIVEWAY
120+13	-	120+44	CTH P EB, RT	29	DRIVEWAY
121+30	-	121+70	CTH P EB, RT	40	DRIVEWAY
122+00	-	122+46	CTH P EB, RT	55	DRIVEWAY
122+94	-	123+35	CTH P EB, RT	50	DRIVEWAY
123+71	-	124+55	CTH P EB, LT	114	DRIVEWAY
130+88	-	131+48	CTH P EB, RT	70	DRIVEWAY
130+94	-	131+17	CTH P EB, LT	32	DRIVEWAY
131+90	-	132+16	CTH P EB, LT	6	DRIVEWAY
136+50	-	136+97	CTH P EB, LT	48	DRIVEWAY
105+43	-	110+00	CTH P WB, LT	104	CURB & GUTTER REPLACEMENT
105+43	-	110+00	CTH P WB, RT	102	CURB & GUTTER REPLACEMENT
113+29	-	118+76	CTH P WB, LT	122	CURB & GUTTER REPLACEMENT
113+29	-	116+06	CTH P WB, RT	62	CURB & GUTTER REPLACEMENT
TOTAL 0010				1,410	

REMOVING CURB & GUTTER				
				204.0150
				REMOVING
				CURB & GUTTER
STATION	TO	STATION	LOCATION	LF
105+41	-	109+98	CTH P EB, LT	460
105+41	-	109+98	CTH P EB, RT	450
113+18	-	115+95	CTH P EB, LT	278
113+18	-	116+55	CTH P EB, RT	380
116+78	-	118+99	CTH P EB, RT	277
118+65	-	119+00	CTH P EB, LT	37
105+43	-	110+00	CTH P WB, LT	466
105+43	-	110+00	CTH P WB, RT	456
113+29	-	118+76	CTH P WB, LT	548
113+29	-	116+06	CTH P WB, RT	278
TOTAL 0010				3,630

REMOVING ASPHALTIC SURFACE MILLING							
STATION	TO	STATION	LOCATION	204.0115	204.0120	SPV.0180.01	REMARKS
				REMOVING ASPHALTIC SURFACE BUTT JOINTS	REMOVING ASPHALTIC SURFACE MILLING	REMOVING DISTRESSED ASPHALTIC SURFACE MILLING	
				SY	SY	SY	
105+41	-	109+98	CTH P EB	80	1,429	-	MAINLINE
113+18	-	137+75	CTH P EB	100	10,147	-	MAINLINE
105+43	-	110+00	CTH P WB	68	1,388	-	MAINLINE
9+04	-	9+77	VAN NOCKER RD	26	269	-	SIDEROAD
18+93	-	19+79	OHLSON LN	30	370	-	SIDEROAD
28+77	-	29+67	S FAUST LAKE RD	33	403	-	SIDEROAD
30+28	-	31+15	N FAUST LAKE RD	33	394	-	SIDEROAD
UNDISTRIBUTED				-	-	700	
TOTAL 0010				370	14,400	700	

REMOVING CONCRETE SIDEWALK					
204.0155					
REMOVING CONCRETE					
SIDEWALK					
STATION	TO	STATION	LOCATION	SY	REMARKS
105+41	-	107+36	CTH P EB, LT	92	MEDIAN
108+00	-	109+98	CTH P EB, LT	150	MEDIAN
113+18	-	115+95	CTH P EB, LT	236	MEDIAN
106+14	-	106+75	CTH P WB, LT	73	DRIVEWAY
107+37	-	107+94	CTH P WB, LT	47	DRIVEWAY
109+13	-	109+73	CTH P WB, LT	52	DRIVEWAY
TOTAL 0010				650	

REMOVING GUARDRAIL				
STATION	TO	STATION	LOCATION	204.0165
				LF
113+39	-	119+55	CTH P EB, LT	620
TOTAL 0010				620

ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED

DIVISION	FROM/TO STATION	LOCATION	205.0100 EXCAVATION COMMON (1)	SALVAGED/UNUSABLE PAVEMENT MATERIAL (4)	AVAILABLE MATERIAL (5)	UNEXPANDED FILL	EXPANDED FILL (13)	MASS ORDINATE +/- (14)	WASTE	208.0100 BORROW	COMMENT
			CUT (2)				FACTOR 1.30				
1	113+39 - 119+95	CTH P	33	0	33	37	48	-15	0	15	
GRAND TOTAL			33	0	33	37	48	-15	0	15	
TOTAL COMMON EXC			33								

NOTES:
(1) COMMON EXCAVATION IS THE SUM OF THE CUT AND EBS EXCAVATION COLUMNS. ITEM NUMBER 205.0100
(2) SALVAGED/UNSUABLE PAVEMENT MATERIAL IS INCLUDED IN CUT.
(4) SALVAGED/UNUSABLE PAVEMENT MATERIAL
5) AVAILABLE MATERIAL = CUT - SALVAGED/UNUSUABLE PAVEMENT MATERIAL
(13) EXPANDED FILL FACTOR = 1.30 EXPANDED FILL = UNEXPANDED FILL * FILL FACTOR
(14) THE MASS ORDINATE + OR - QTY CALCULATED FOR THE DIVISION. PLUS QUANTITY INDICATES AN EXCESS OF MATERIAL WITHIN THE DIVISION. MINUS INDICATES A SHORTAGE OF MATERIAL WITHIN THE DIVISION.

REMOVING CONCRETE BASES

204.0195			
STATION	LOCATION	EACH	REMARKS
109+80	CTH P EB, LT	1	MEDIAN
113+30	CTH P EB, LT	1	MEDIAN
TOTAL 0010		2	

BASE AGGREGATE DENSE

				305.0110	305.0120	624.0100	REMARKS
				BASE AGGREGATE	BASE AGGREGATE		
				DENSE 3/4-INCH	DENSE 1 1/4-INCH	WATER	
STATION	TO	STATION	LOCATION	TON	TON	MGAL	
105+41	-	109+98	CTH P EB, LT	-	23	0.5	CURB & GUTTER REPLACEMENT
105+41	-	109+98	CTH P EB, RT	-	26	0.5	CURB & GUTTER REPLACEMENT
113+18	-	115+95	CTH P EB, LT	-	15	0.3	CURB & GUTTER REPLACEMENT
113+18	-	116+55	CTH P EB, RT	-	23	0.5	CURB & GUTTER REPLACEMENT
116+78	-	118+99	CTH P EB, RT	-	17	0.4	CURB & GUTTER REPLACEMENT
118+65	-	119+00	CTH P EB, LT	-	4	0.1	CURB & GUTTER REPLACEMENT
118+99	-	119+33	CTH P EB, RT	-	16	0.3	DRIVEWAY
119+00	-	137+75	CTH P EB	420	-	8.2	SHOULDERS
120+13	-	120+44	CTH P EB, RT	-	10	0.2	DRIVEWAY
121+30	-	121+70	CTH P EB, RT	-	14	0.3	DRIVEWAY
122+00	-	122+46	CTH P EB, RT	-	17	0.4	DRIVEWAY
122+94	-	123+35	CTH P EB, RT	-	16	0.4	DRIVEWAY
123+71	-	124+55	CTH P EB, LT	-	35	0.7	DRIVEWAY
130+88	-	131+48	CTH P EB, RT	-	22	0.5	DRIVEWAY
130+94	-	131+17	CTH P EB, LT	-	10	0.2	DRIVEWAY
131+39	-	132+29	CTH P EB, LT	-	6	0.2	CURB & GUTTER REPLACEMENT
136+50	-	136+97	CTH P EB, LT	-	15	0.3	DRIVEWAY
105+43	-	110+00	CTH P WB, LT	-	24	0.5	CURB & GUTTER REPLACEMENT
105+43	-	110+00	CTH P WB, RT	-	22	0.5	CURB & GUTTER REPLACEMENT
113+29	-	118+76	CTH P WB, LT	-	31	0.7	CURB & GUTTER REPLACEMENT
113+29	-	116+06	CTH P WB, RT	-	14	0.3	CURB & GUTTER REPLACEMENT
TOTAL 0010				420	360	16	

HMA PAVEMENT

455.0605 460.6223 460.6244 465.0110								
HMA PAVEMENT HMA PAVEMENT ASPHALTIC								
TACK COAT 3 MT 58-28 S 4 MT 58-34 S SURFACE								
STATION	TO	STATION	LOCATION	GAL	TON	TON	TON	REMARKS
105+41	-	109+98	CTH P EB	218	196	156	-	MAINLINE
113+18	-	137+75	CTH P EB	1,435	1,328	1,050	-	MAINLINE
105+43	-	110+00	CTH P WB	201	186	145	-	MAINLINE
8+94	-	9+77	VAN NOCKER RD	41	38	30	-	SIDEROAD
18+93	-	19+79	OHLSON LN	52	48	38	-	SIDEROAD
28+77	-	29+67	S FAUST LAKE RD	57	53	41	-	SIDEROAD
30+28	-	31+15	N FAUST LAKE RD	56	51	40	-	SIDEROAD
UNDISTRIBUTED				50	-	-	120	DISTRESSED PAVEMENT
TOTAL 0010				2,110	1,900	1,500	120	

ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED

GUARDRAIL							
				614.2300	614.2330	614.2610	614.2620
				MGS	MGS	MGS GUARDRAIL	MGS GUARDRAIL
				GUARDRAIL 3	GUARDRAIL 3 K	TERMINAL EAT	TERMINAL TYPE 2
STATION	TO	STATION	LOCATION	LF	LF	EACH	EACH
113+39	-	119+55	CTH P EB, LT	137.5	425	1	1
TOTAL 0010				137.5	425	1	1

LANDSCAPING											
				625.0100	628.2004	628.2008	629.0210	630.0120	630.0140	630.0500	
				EROSION MAT	EROSION MAT URBAN	FERTILIZER	SEEDING MIXTURE	SEEDING MIXTURE	SEED		
				TOPSOIL	CLASS I TYPE B	CLASS I TYPE B	TYPE B	NO. 20	NO. 40	WATER	
STATION	TO	STATION	LOCATION	SY	SY	SY	CWT	LB	LB	MGAL	REMARKS
105+41	-	109+98	CTH P EB, RT	100	-	100	0.7	-	5	21	CURB & GUTTER REPLACEMENT
113+18	-	116+55	CTH P EB, LT	85	-	85	0.6	-	4	18	CURB & GUTTER REPLACEMENT
115+35	-	115+80	CTH P EB, RT	329	329	-	2.1	15	-	67	PIPE LINING
116+78	-	118+99	CTH P EB, RT	62	-	62	0.4	-	3	13	CURB & GUTTER REPLACEMENT
131+39	-	132+29	CTH P EB, LT	15	-	15	0.1	-	1	3	CURB & GUTTER REPLACEMENT
105+43	-	110+00	CTH P WB, LT	104	-	104	0.7	-	5	21	CURB & GUTTER REPLACEMENT
113+29	-	115+55	CTH P WB, LT	119	119	-	0.8	6	-	25	GUARDRAIL REPLACEMENT
115+55	-	115+95	CTH P WB, LT	35	35	-	0.3	2	-	7	PIPE LINING
115+95	-	120+00	CTH P WB, LT	303	303	-	2.0	14	-	62	GUARDRAIL REPLACEMENT
UNDISTRIBUTED				298	204	94	2.3	9	5	63	
TOTAL 0010				1,450	990	460	10	46	23	300	

MOBILIZATIONS EROSION CONTROL					
			628.1905	628.1910	
			MOBILIZATIONS	MOBILIZATIONS	
			EROSION	EMERGENCY	
			CONTROL	EROSION CONTROL	
STATION	TO	STATION	LOCATION	EACH	EACH
105+41	-	137+75	PROJECT	4	3
TOTAL 0010				4	3

SILT FENCE						
				628.1504	628.1520	
				SILT FENCE	SILT FENCE	
				LF	MAINTENANCE	
STATION	TO	STATION	LOCATION	LF	LF	REMARKS
113+39	-	120+00	CTH P EB, LT	772	1,544	GUARDRAIL AND PIPE LINING
115+35	-	116+45	CTH P EB, RT	265	530	PIPE LINING
UNDISTRIBUTED				263	526	
TOTAL 0010				1,300	2,600	

ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED

INLET PROTECTION			
STATION	LOCATION	628.7005	628.7015
		INLET	INLET
		PROTECTION TYPE A	PROTECTION TYPE C
		EACH	EACH
108+22	CTH P EB, RT	1	1
108+22	CTH P EB, LT	1	1
115+92	CTH P EB, RT	1	1
115+92	CTH P EB, LT	1	1
118+80	CTH P EB, RT	1	1
118+80	CTH P EB, LT	1	1
133+35	CTH P EB, RT	1	1
133+58	CTH P EB, LT	1	1
106+70	CTH P WB, RT	1	1
108+28	CTH P WB, RT	1	1
108+34	CTH P WB, LT	1	1
110+08	CTH P WB, LT	1	1
113+40	CTH P WB, LT	1	1
116+04	CTH P WB, LT	1	1
116+05	CTH P WB, RT	1	1
UNDISTRIBUTED		5	5
TOTAL 0010		20	20

MOVING SIGNS						
STATION	LOCATION	634.0612	634.0616	638.2102	638.3000	REMARKS
		POSTS WOOD 4X6-	POSTS WOOD 4X6-	MOVING SIGNS	REMOVING SMALL	
		INCH X 12-FT	INCH X 16-FT	TYPE II	SIGN SUPPORTS	
		EACH	EACH	EACH	EACH	
108+45	CTH P EB, LT	1	-	1	1	LEFT TURN ONLY LEFT LANE
113+95	CTH P EB, LT	1	-	1	1	LEFT TURN ONLY LEFT LANE
115+88	CTH P EB, LT	1	-	1	1	KEEP RIGHT
114+38	CTH P WB, LT	1	-	1	1	STOP LIGHT AHEAD
115+48	CTH P WB, LT	1	1	1	2	HIGHWAY DIRECTIONAL SIGNS
TOTAL 0010		5	1	5	6	

TRAFFIC CONTROL

LOCATION	APPROXIMATE SERVICE PERIOD	643.0300		643.0420		643.0500		643.0600		643.0705		643.0715		643.0810		643.0900		643.1050		REMARKS
		TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL FLEXIBLE		TRAFFIC CONTROL FLEXIBLE		TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL		
		DRUMS		BARRICADES TYPE III		TUBULAR MARKER POSTS		TUBULAR MARKER BASES		WARNING LIGHTS TYPE A		WARNING LIGHTS TYPE C		CONNECTED ARROW BOARDS		SIGNS		SIGNS PCMS		
		NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	EACH	EACH	NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	NO. IN SERVICE	DAY	EACH	DAY	
MAINLINE ADVANCED WARNING	74	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	14	MAINLINE ADVANCED SIGNING	
SIDEROADS DURING PROJECT WORK	74	-	-	-	-	-	-	-	-	-	-	-	-	-	4	296	-	-	ROAD WORK AHEAD ON ALL SIDEROADS	
PIPE LINING	4	12	48	-	-	-	-	-	-	-	-	-	-	-	1	4	-	-	SHOULDER CLOSURE	
WEST OF EISENHOWER PARKWAY	70	17	1,190	1	70	-	-	2	140	5	350	1	70	4	280	-	-	-	MAINLINE ADVANCED SIGNING AND LANE CLOSURE	
EISENHOWER PARKWAY TO STH 17	70	24	1,680	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	LANE CLOSURE	
STH 17 TO VAN NOCKER ROAD	70	44	3,080	2	140	14	14	4	280	22	1,540	-	-	6	420	-	-	-	TEMPORARY CROSSOVER	
EAST OF N FAUST LAKE ROAD	74	-	-	-	-	-	-	-	-	-	-	-	-	3	222	-	-	-	MAINLINE ADVANCED SIGNING	
MILLING AND PAVING	40	-	-	-	-	-	-	-	-	-	-	-	-	8	320	-	-	-	MILLED SURFACE AND UNEVEN LANE SITUATIONS	
SHOULDER WORK	30	50	1,500	-	-	-	-	-	-	-	-	-	-	8	240	-	-	-	SHOULDER DROP-OFFS	
UNDISTRIBUTED	-	-	502	-	90	-	-	-	180	-	110	-	-	-	18	-	-	-		
TOTAL 0010			8,000		300	14	14		600		2,000		70		1,800		14			

ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED

TEMPORARY PAVEMENT MARKING

STATION	TO	STATION	LOCATION	643.3105	643.3205	643.3805	646.9210	REMARKS
				TEMPORARY MARKING LINE PAINT 4-INCH (YELLOW) LF	TEMPORARY MARKING LINE PAINT 4-INCH (WHITE) LF	TEMPORARY MARKING LINE PAINT 8-INCH LF	TEMPORARY MARKING STOP LINE PAINT 18-INCH LF	
105+39	-	110+06	CTH P EB	-	570	870	108	THREE APPLICATIONS
113+18	-	137+75	CTH P EB	5,580	9,930	-	-	THREE APPLICATIONS
113+18	-	117+68	CTH P EB	910	300	-	-	TEMPORARY CROSSOVER
TOTAL 0010				17,290		870	108	140

PAVEMENT MARKING

STATION	TO	STATION	LOCATION	646.1020	646.3020	646.5020	646.5120	646.6120	646.7120	
				MARKING LINE	MARKING LINE					
				EPOXY 4-INCH (YELLOW)	EPOXY 4-INCH WHITE	MARKING LINE EPOXY 8-INCH	MARKING ARROW EPOXY	MARKING WORD EPOXY	MARKING STOP LINE EPOXY 18-INCH	MARKING DIAGONAL EPOXY 12-INCH
				LF	LF	LF	EACH	EACH	LF	LF
105+39	-	110+06	CTH P EB	-	190	290	4	2	36	-
113+18	-	137+75	CTH P EB	1,860	3,310	-	-	-	-	80
TOTAL 0010				5,360	290	4	2	36	80	

CONSTRUCTION STAKING

STATION	TO	STATION	LOCATION	650.5500	650.8000	650.9500.01	650.9911.01	650.9920
				CONSTRUCTION STAKING CURB GUTTER AND CURB & GUTTER LF	CONSTRUCTION STAKING RESURFACING REFERENCE LF	CONSTRUCTION STAKING SIDEWALK 9877-00-72 EACH	CONSTRUCTION STAKING SUPPLEMENTAL CONTROL 9877-00-72 EACH	CONSTRUCTION STAKING SLOPE STAKES LF
105+41	-	109+98	CTH P EB	-	457	-	-	-
113+18	-	137+75	CTH P EB	-	2,457	-	-	-
113+29	-	120+00	CTH P WB	-	-	-	-	671
PROJECT				3,714	-	1	1	-
TOTAL 0010				3,714	2,914	1	1	671

ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED

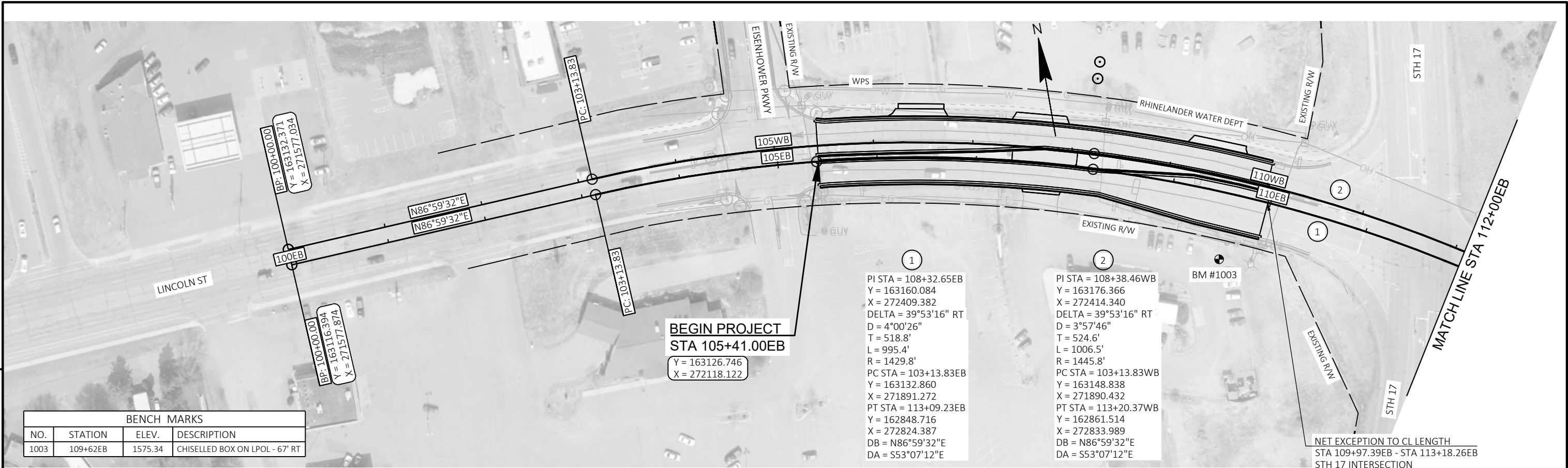
SAWING						
				690.0150	690.0250	
				SAWING	SAWING	
				ASPHALT	CONCRETE	
STATION	TO	STATION	LOCATION	LF	LF	REMARKS
105+41	-	109+98	CTH P EB, RT	466	6	CURB & GUTTER REPLACEMENT
105+41	-	109+98	CTH P EB, RT	457	5	CURB & GUTTER REPLACEMENT
107+48	-	107+87	CTH P EB, RT	37	-	DRIVEWAY
113+18	-	115+95	CTH P EB, RT	286	6	CURB & GUTTER REPLACEMENT
113+18	-	116+55	CTH P EB, RT	396	5	CURB & GUTTER REPLACEMENT
116+78	-	118+99	CTH P EB, RT	299	-	CURB & GUTTER REPLACEMENT
118+65	-	119+00	CTH P EB, LT	43	-	CURB & GUTTER REPLACEMENT
118+99	-	119+33	CTH P EB, RT	24	-	DRIVEWAY
120+13	-	120+44	CTH P EB, RT	11	-	DRIVEWAY
121+30	-	121+70	CTH P EB, RT	16	-	DRIVEWAY
122+00	-	122+46	CTH P EB, RT	24	-	DRIVEWAY
122+94	-	123+35	CTH P EB, RT	23	-	DRIVEWAY
123+71	-	124+55	CTH P EB, LT	49	-	DRIVEWAY
130+88	-	131+48	CTH P EB, RT	34	-	DRIVEWAY
130+94	-	131+17	CTH P EB, LT	23	-	DRIVEWAY
131+39	-	132+30	CTH P EB, LT	102	-	CURB & GUTTER REPLACEMENT
131+90	-	132+16	CTH P EB, LT	24	-	DRIVEWAY
136+50	-	136+97	CTH P EB, LT	20	-	DRIVEWAY
105+43	-	110+00	CTH P WB, LT	473	5	CURB & GUTTER REPLACEMENT
105+43	-	110+00	CTH P WB, LT&RT	465	6	CURB & GUTTER REPLACEMENT
106+14	-	106+75	CTH P WB, LT	-	10	DRIVEWAY
107+37	-	107+94	CTH P WB, LT	-	51	DRIVEWAY
109+13	-	109+73	CTH P WB, LT	-	55	DRIVEWAY
113+29	-	118+76	CTH P WB, LT	552	5	CURB & GUTTER REPLACEMENT
113+29	-	116+06	CTH P WB, LT&RT	286	6	CURB & GUTTER REPLACEMENT
TOTAL 0010				4,110	160	

REPAIRING INLETS		
SPV.0060.01		
STATION	LOCATION	EACH
115+92	CTH P EB, LT	1
118+80	CTH P EB, LT	1
118+80	CTH P EB, RT	1
106+70	CTH P WB, RT	1
108+28	CTH P WB, RT	1
108+34	CTH P WB, LT	1
116+04	CTH P WB, RT	1
TOTAL 0010		7

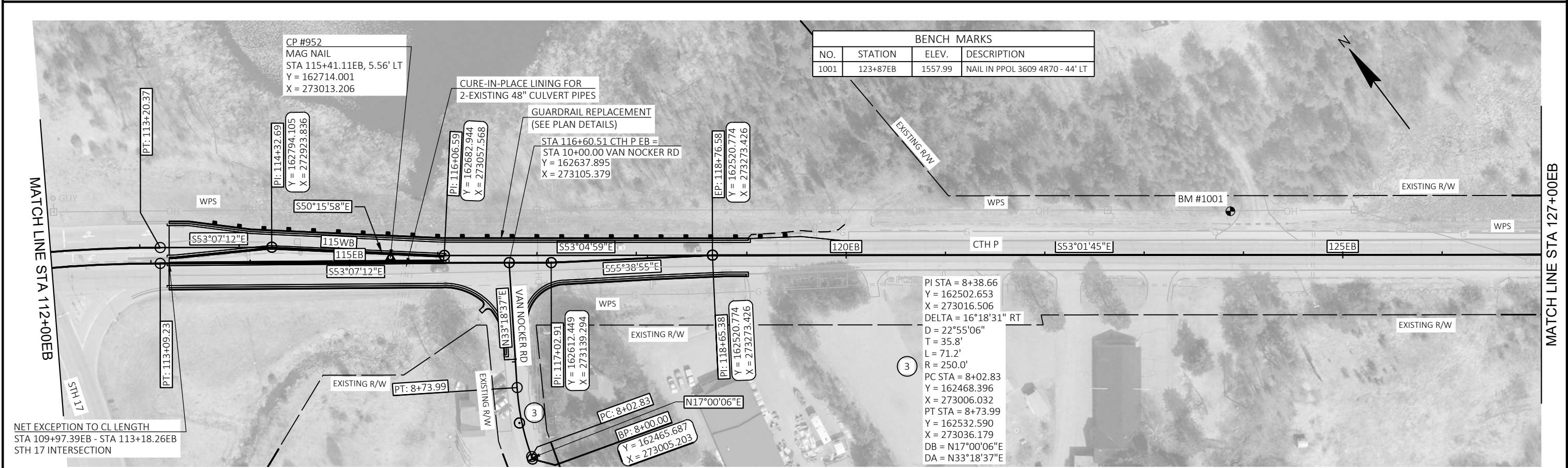
UV GRP CIPP 48-INCH			
SPV.0090.02			
STATION	LOCATION	LF	REMARKS
115+55	CTH P EB	146	EXISTING 48-INCH RCCP
115+62	CTH P EB	146	EXISTING 48-INCH RCCP
TOTAL 0010		292	

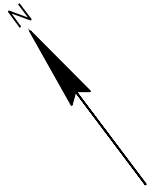
ALL ITEMS ARE CATEGORY 0010 UNLESS NOTED

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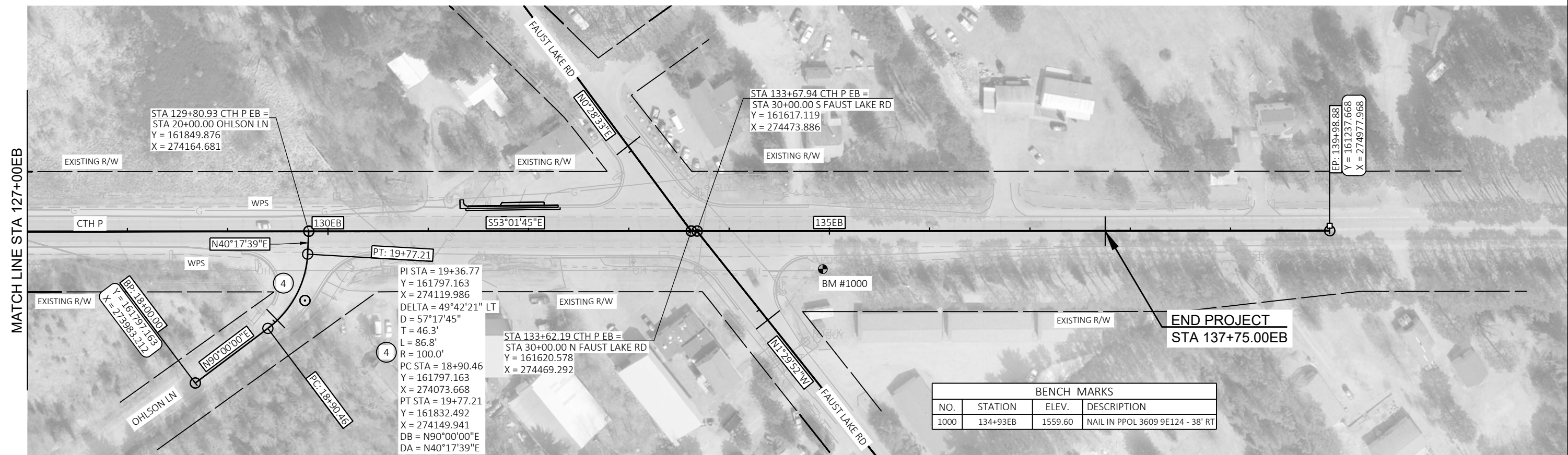


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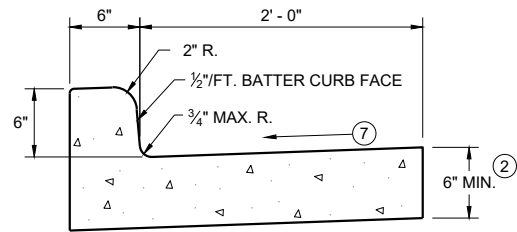
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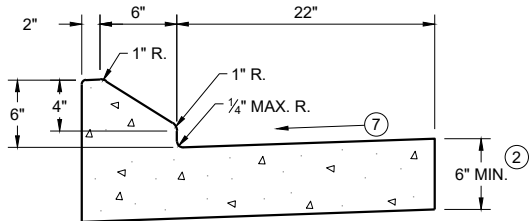
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Standard Detail Drawing List

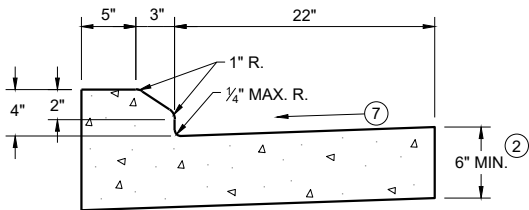
08D01-24A	CONCRETE CURB AND GUTTER
08D01-24B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D04-07	CONCRETE SURFACE DRAINS AND ASPHALTIC FLUMES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPES A, B, C AND D
09A15-01	DRIVEWAYS WITHOUT CURB AND GUTTER RESURFACING PROJECTS RURAL
13C19-03	HMA LONGITUDINAL JOINTS
14B29-01	SAFETY EDGE
14B42-07A	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07B	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07C	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B42-07D	MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL
14B44-04A	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04B	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B44-04C	MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)
14B47-06A	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06B	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06C	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06D	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06E	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06F	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
14B47-06G	MIDWEST GUARDRAIL SYSTEM (MGS) TYPE 2 TERMINAL
15A04-08E	DELINEATOR POST WITH REFLECTIVE SHEETING
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C05-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C07-16B	PAVEMENT MARKING WORDS
15C07-16C	PAVEMENT MARKING ARROWS
15C08-24A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-24B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C11-11A	CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST
15C11-11B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C33-05	STOP LINE AND CROSSWALK PAVEMENT MARKING
15D20-12A	TRAFFIC CONTROL, SINGLE LANE CLOSURE, DIVIDED NON-FREEWAY/EXPRESSWAY
15D21-07A	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE RIGHT LANE CLOSURE
15D21-07B	TRAFFIC CONTROL, INTERSECTION WITHIN SINGLE LEFT LANE CLOSURE
15D28-06	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D39-03	TRAFFIC CONTROL, DROP-OFF SIGNING



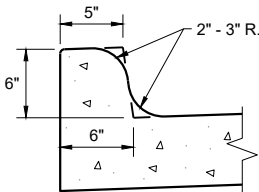
TYPES A^① & D



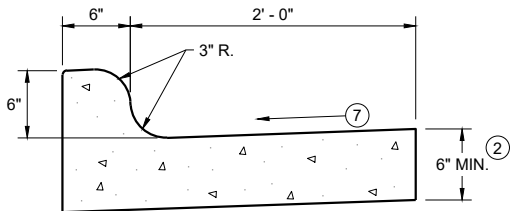
6" SLOPED CURB TYPES G^① & J



4" SLOPED CURB TYPES G^① & J

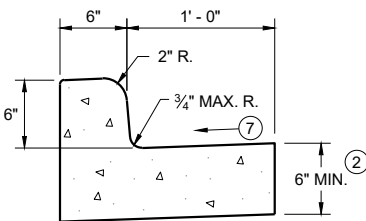


TYPES K^① & L
(OPTIONAL CURB SHAPE)



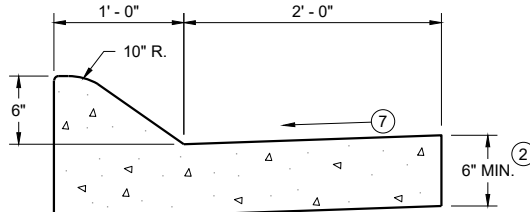
TYPES K^① & L

CONCRETE CURB AND GUTTER 30"

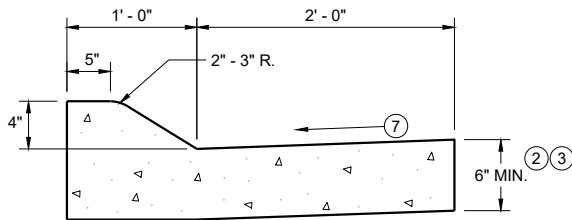


TYPES A^① & D

CONCRETE CURB AND GUTTER 18"

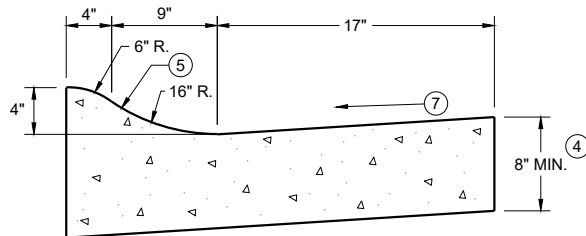


6" SLOPED CURB TYPES A^① & D



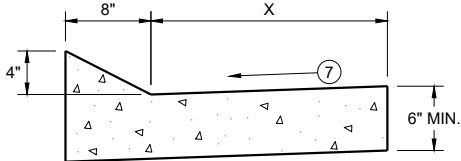
4" SLOPED CURB TYPES A^① & D

CONCRETE CURB AND GUTTER 36"



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

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

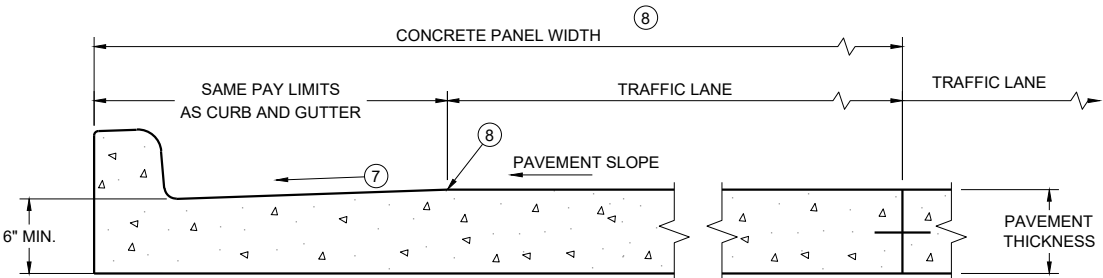


TYPES TBT & TBTT^①

CONCRETE CURB AND GUTTER

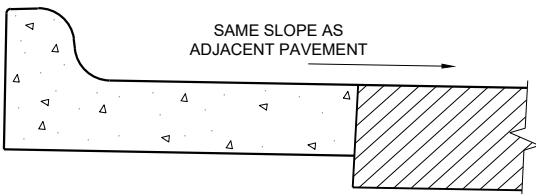
PAVEMENT THICKNESS
AND MAXIMUM CONCRETE
PANEL WIDTH TABLE

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

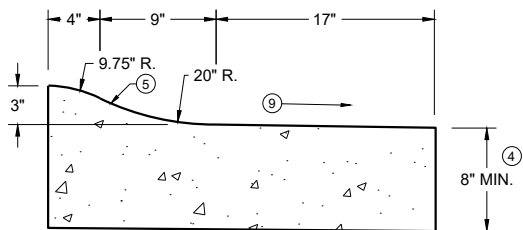


PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB AND GUTTER

* BIKE LANE IS NOT SHOWN



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



3" SLOPED CURB TYPES R^① & T

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

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

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

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

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



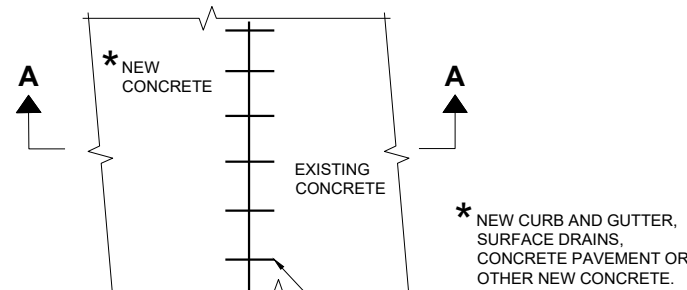
GENERAL NOTES

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

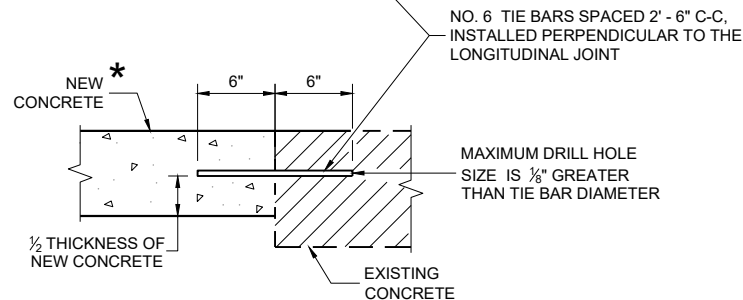
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

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



PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT



CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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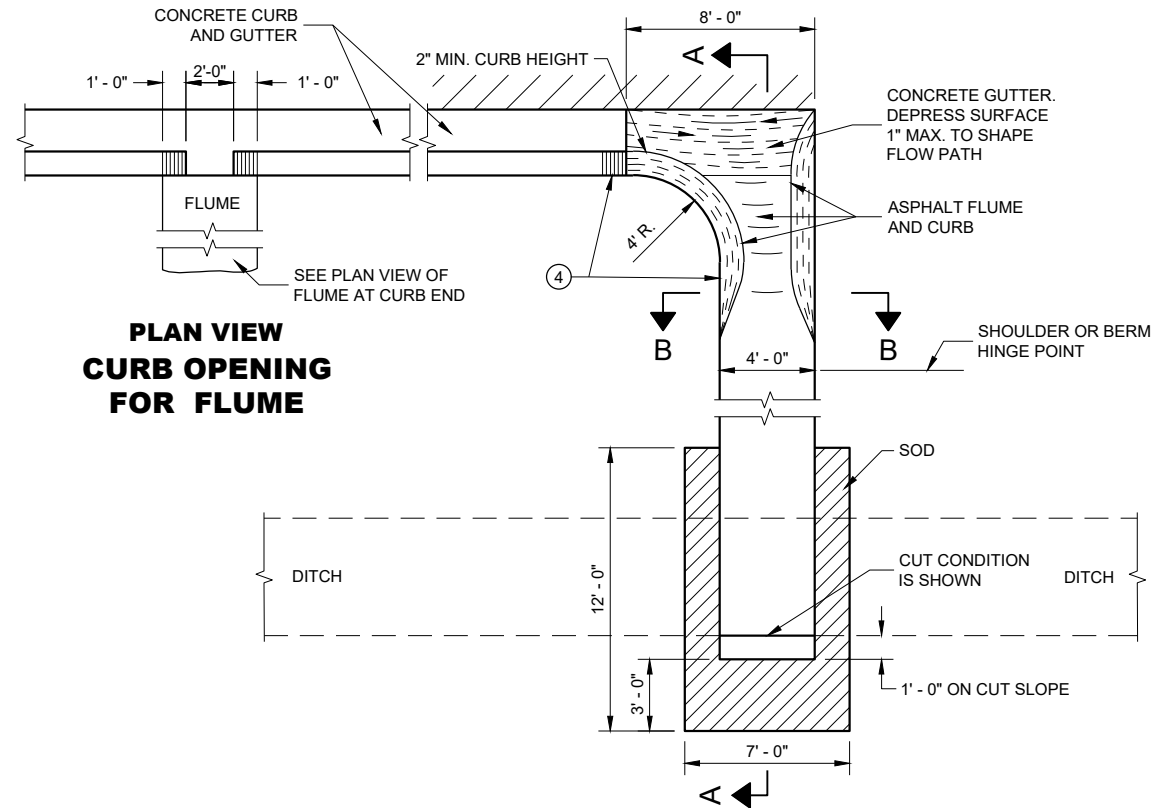
February 2025
DATE

/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT
UNIT SUPERVISOR

FHVW

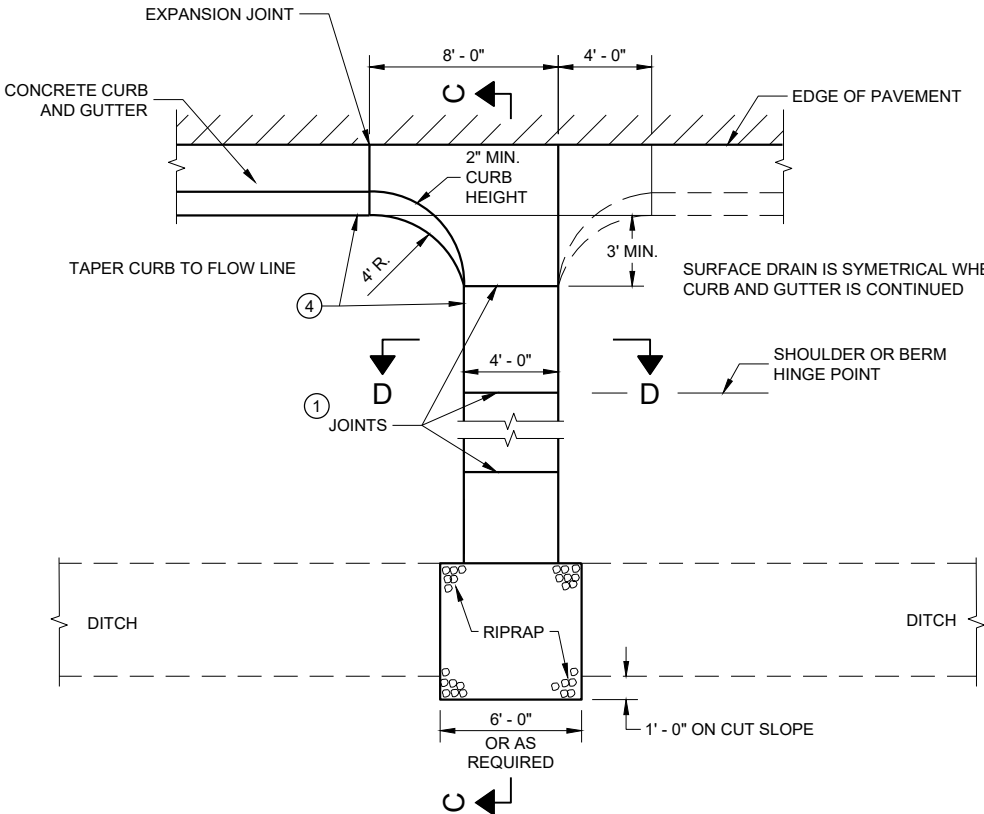
NOTE: TAPER CURB ENDS TO GUTTER IN 1' - 0"

ASPHALTIC FLUME



PLAN VIEW
CURB OPENING
FOR FLUME

PLAN VIEW
FLUME AT CURB END



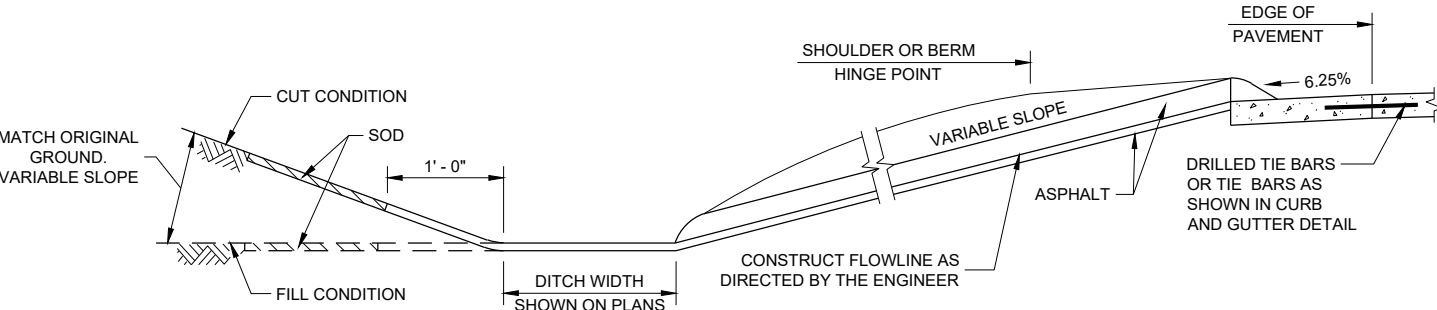
PLAN VIEW
CONCRETE SURFACE DRAIN

GENERAL NOTES

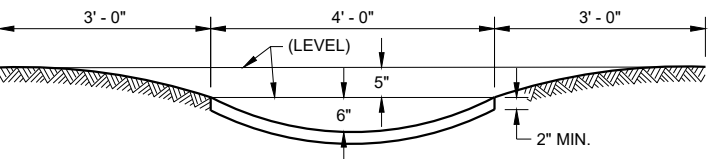
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

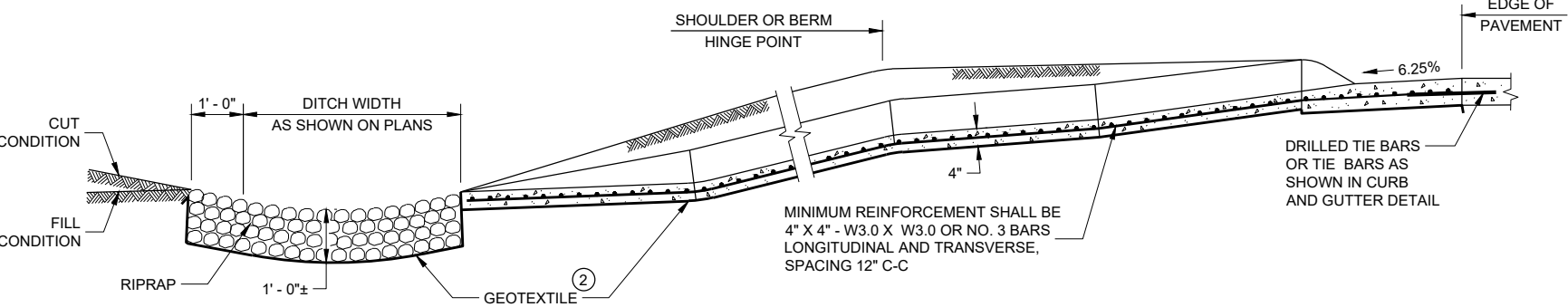
- ① JOINTS SHALL BE 1/8" TO 1/4" WIDE BY 1 1/2" DEEP AND SPACED AT UNIFORM INTERVALS OF APPROXIMATELY 4 FEET.
- ② GEOTEXTILE TYPE "R" SHALL UNDERLAY THE FULL LENGTH AND WIDTH OF THE CONCRETE SURFACE DRAIN AND RIPRAP.
- ③ CONCRETE SURFACE DRAIN WITHOUT CURB AND GUTTER MAY BE USED ON BACKSLOPES WHEN SPECIFIED.
- ④ ANGLE OF FLUME IN RELATION TO BACK OF CURB TO BE CONSTRUCTED PER THE PLAN DETAILS OR AS DIRECTED BY THE ENGINEER. ANGLE OF FLUME MAY BE OTHER THAN 90 DEGREES AS SHOWN.



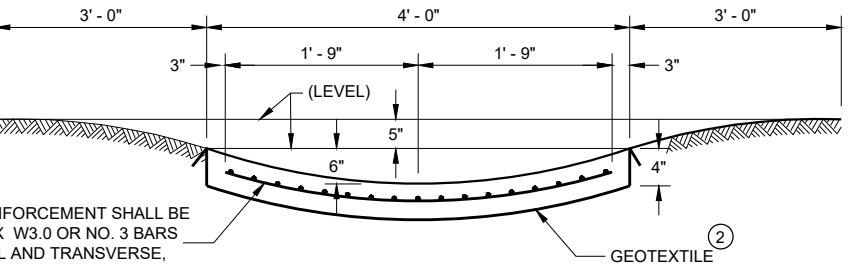
SECTION A - A



SECTION B - B



SECTION C - C



SECTION D - D

CONCRETE SURFACE
DRAINS AND
ASPHALTIC FLUMES

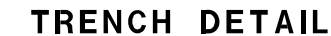
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2023
DATE
/S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT ENGINEER
47

FHWA



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

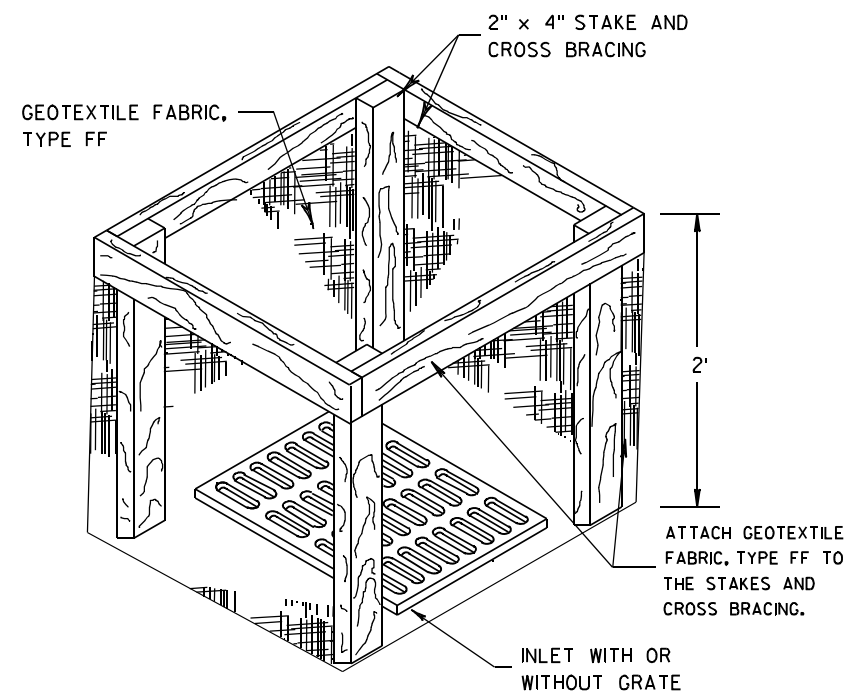
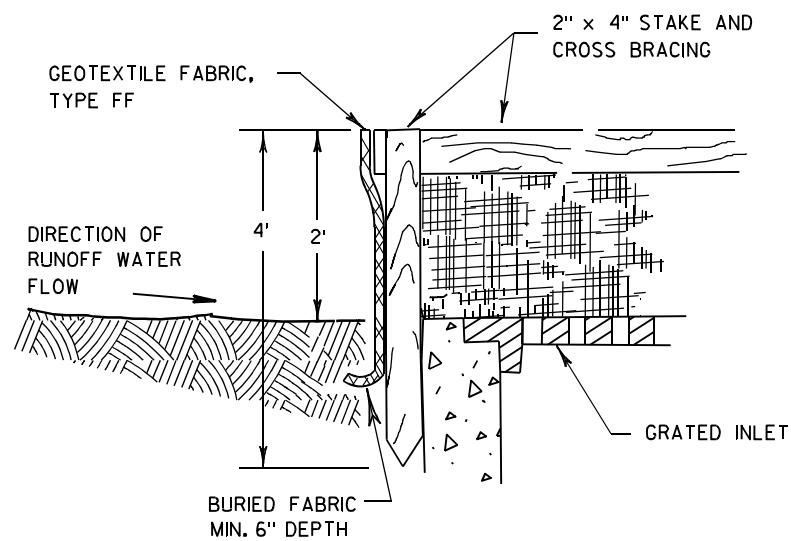


SILT FENCE

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
4-29-05
DATE _____ /S/ Beth Cannata _____
CHIEF ROADWAY DEVELOPMENT 48 INCHES

FHWA



INLET PROTECTION, TYPE A

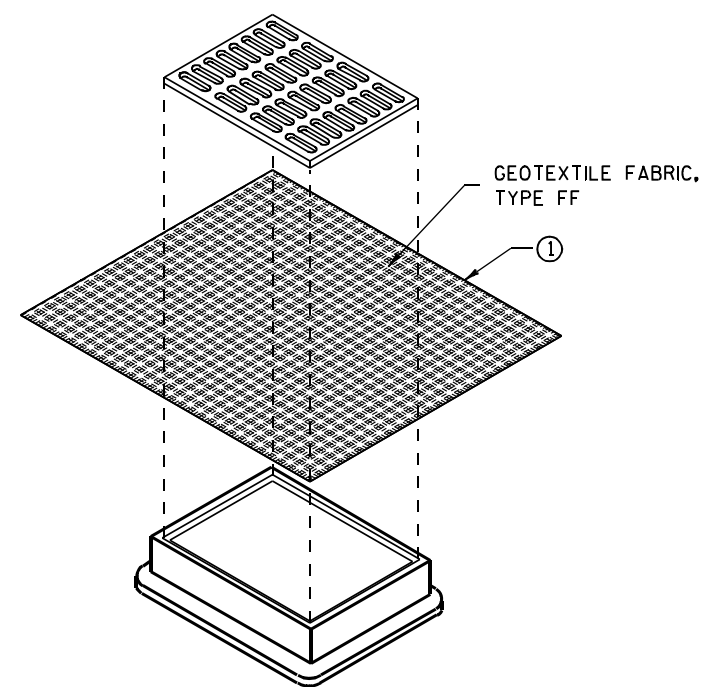
GENERAL NOTES

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

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

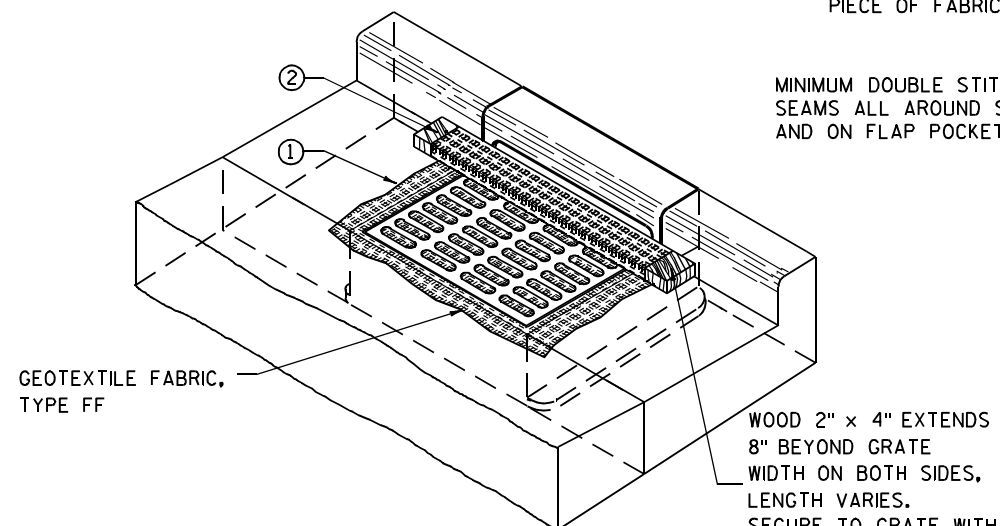
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

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



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

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



INLET PROTECTION, TYPE C (WITH CURB BOX)

INSTALLATION NOTES

TYPE B & C

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

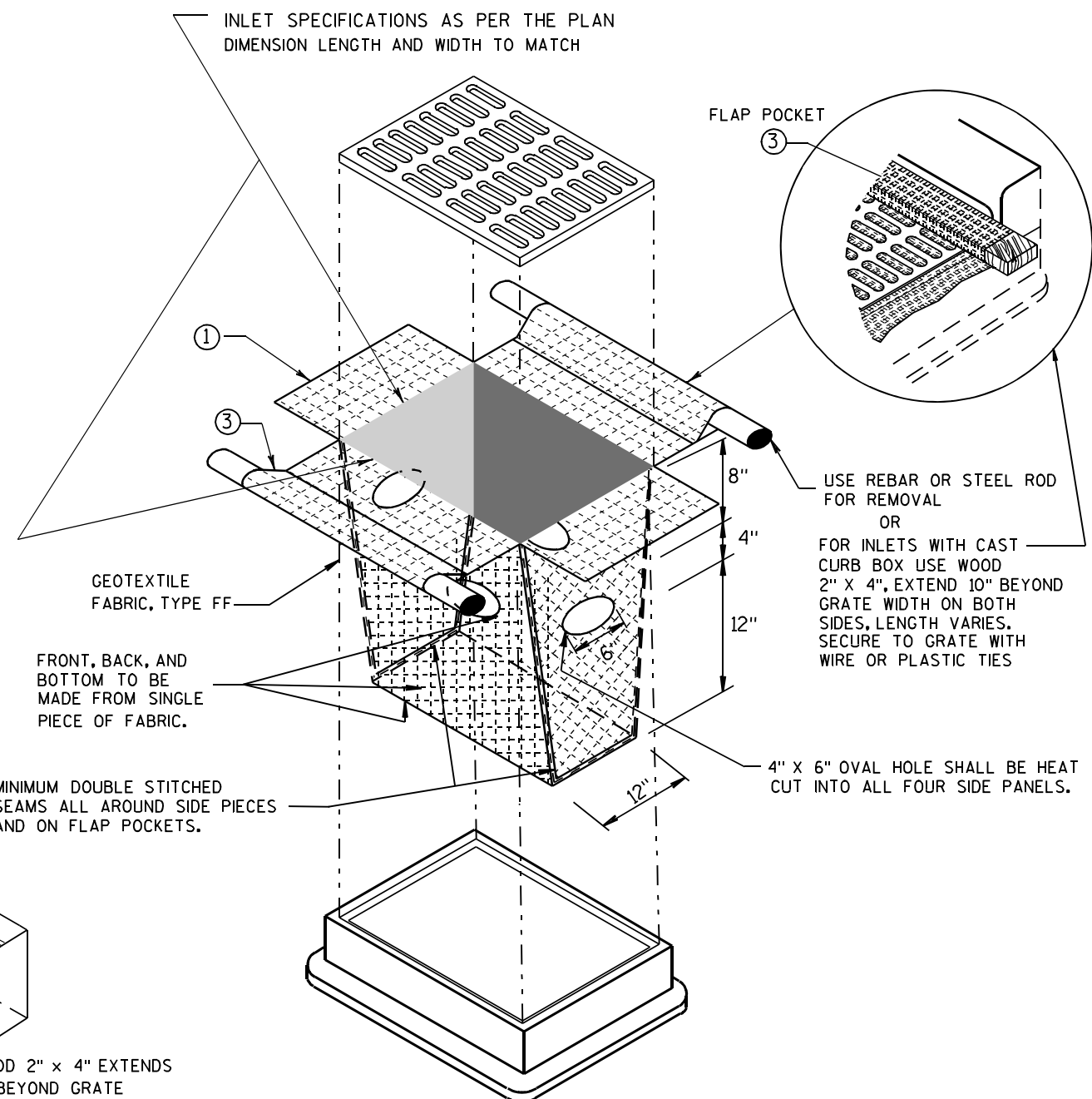
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D

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

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

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



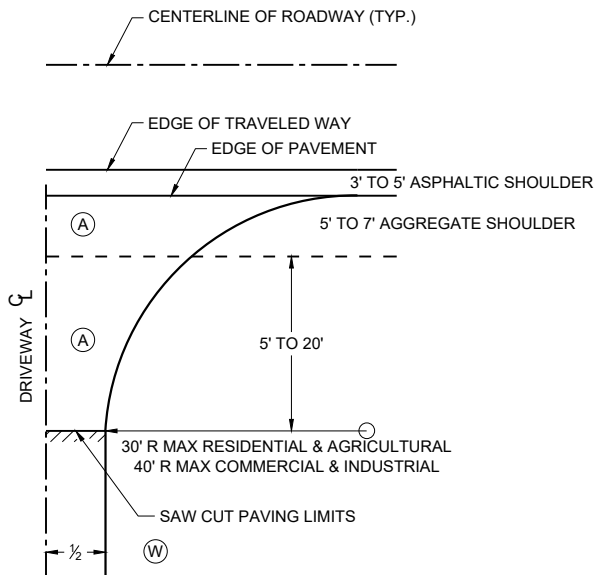
INLET PROTECTION, TYPE D

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

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

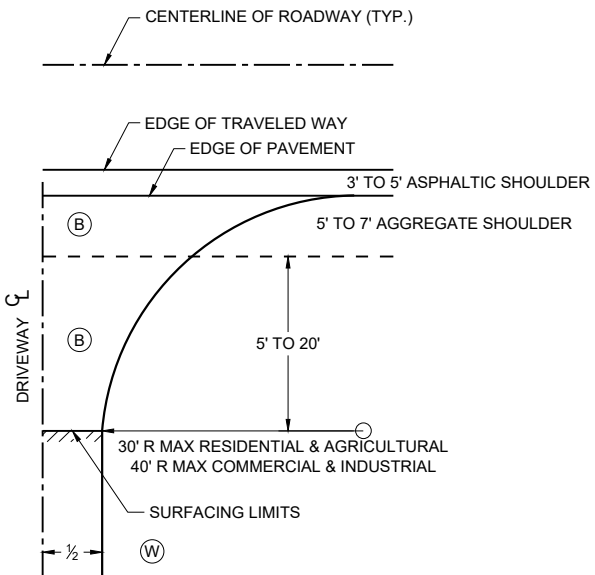
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
10/16/02 /S/ Beth Connolly
DATE 49
FHWA CHIEF ROADWAY DEVELOPMENT ENGINEER

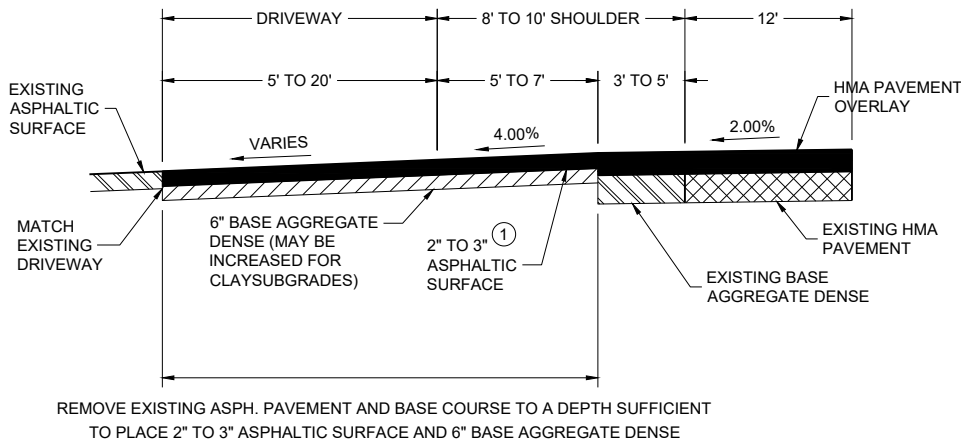


PLAN VIEW
HALF SECTION

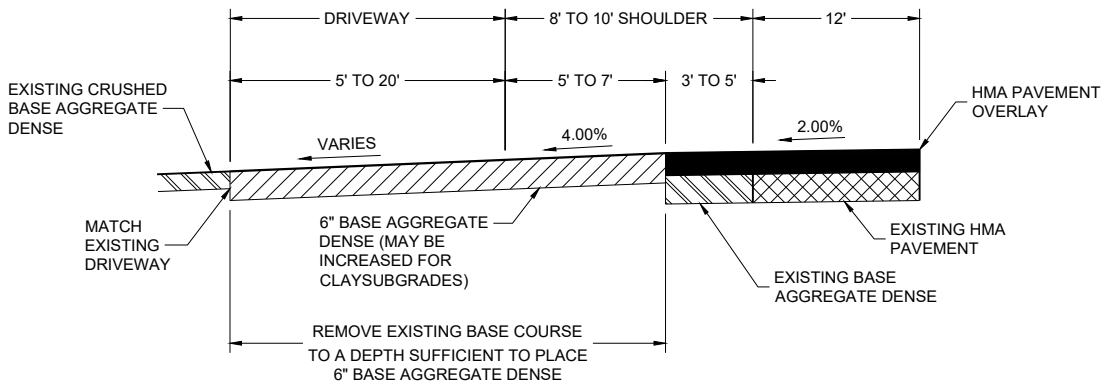
- (A) : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)
- (B) : PAID FOR AS BASE AGGREGATE DENSE 1 1/4" (TON)
- (W) : DRIVEWAY WIDTHS (MEASURED AT ROW LINE)
~ COMMERCIAL & INDUSTRIAL 16' MIN. - 35' MAX.
~ RESIDENTIAL & AGRICULTURAL 16' MIN. - 24' MAX. (NONCOMMERCIAL)



PLAN VIEW
HALF SECTION



PROFILE VIEW
RURAL ENTRANCE
WITH ASPHALTIC SURFACE
RESURFACING PROJECTS



PROFILE VIEW
RURAL ENTRANCE
WITH AGGREGATE SURFACE
6" BASE AGGREGATE DENSE
RESURFACING PROJECTS

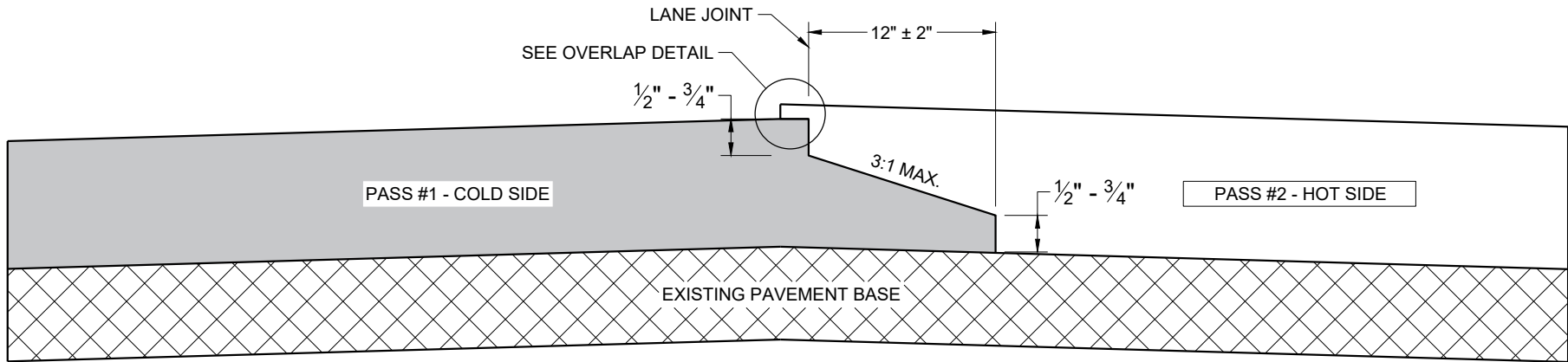
GENERAL NOTES

- ① DESIGN WILL DETERMINE FINAL DRIVEWAY ASPHALTIC THICKNESS BASED ON TYPE OF USAGE AND LOADINGS.

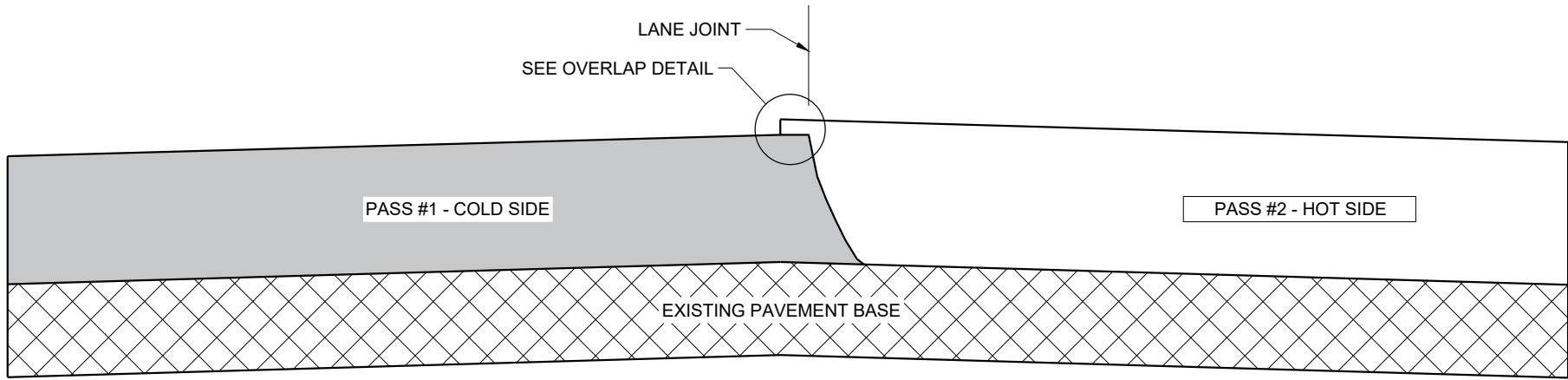
DRIVEWAYS WITHOUT CURB
AND GUTTER RESURFACING
PROJECTS RURAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

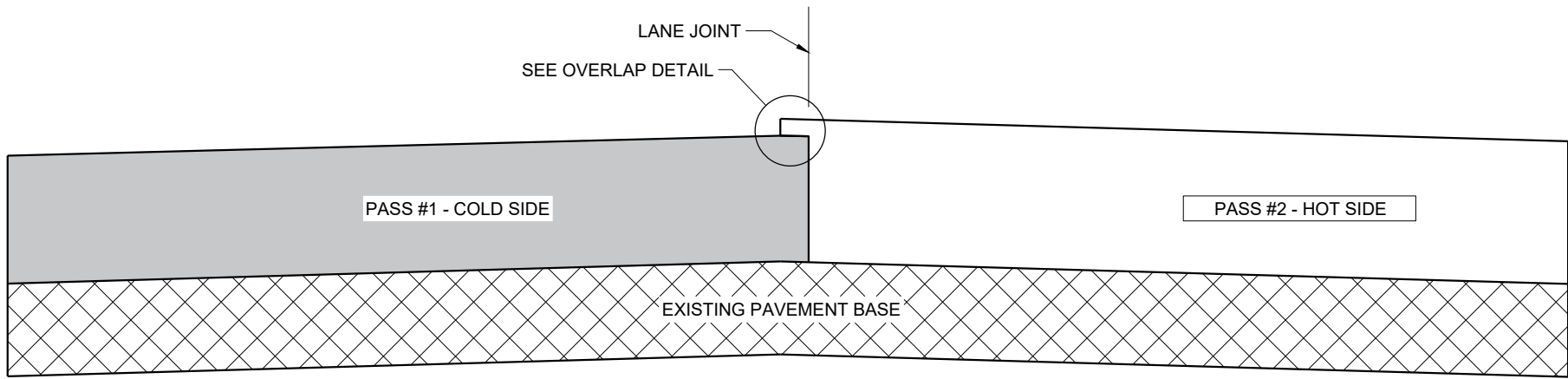
APPROVED
November 2025 /S/ Rodney Taylor
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA



TYPICAL PAVEMENT CROSS SECTION
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION
VERTICAL JOINT (MILLED)

GENERAL NOTES

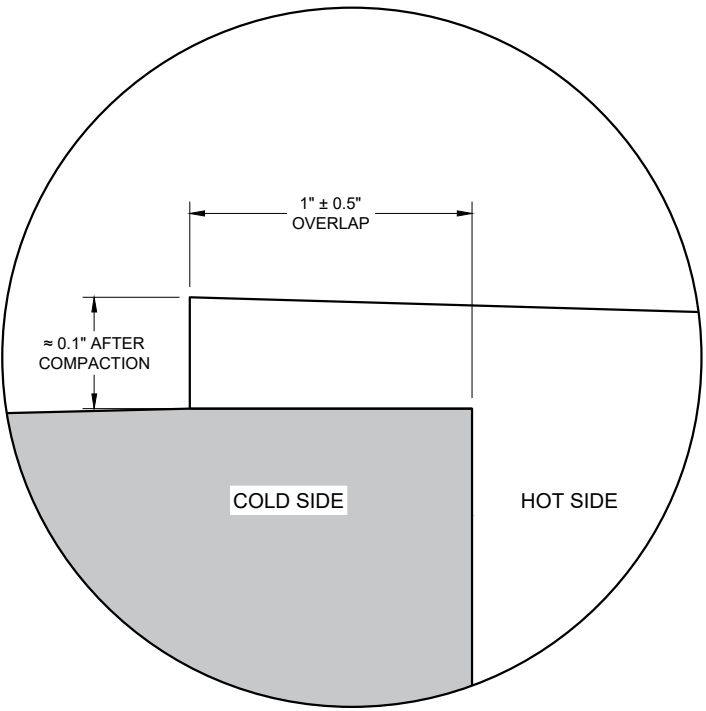
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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

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

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

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



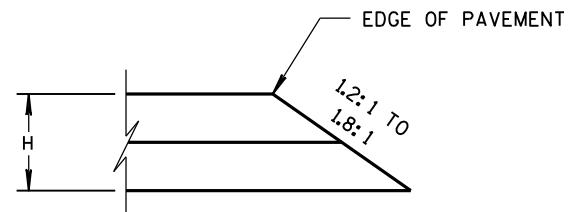
OVERLAP DETAIL (TYPICAL)

HMA LONGITUDINAL JOINTS

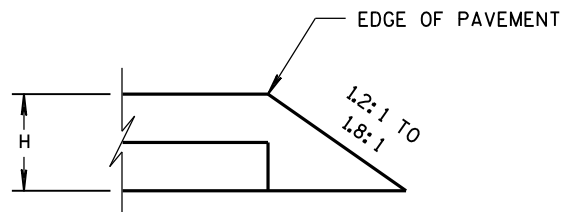
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2020 /S/ Steven Hefel
DATE HMA PAVEMENT ENGIN 51

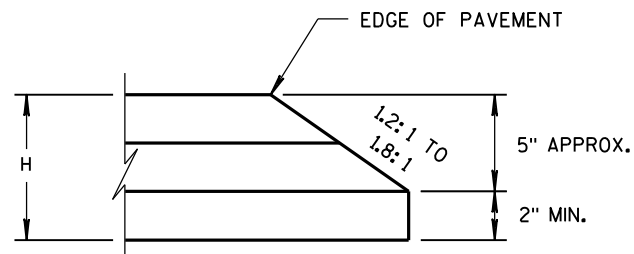
FHWA



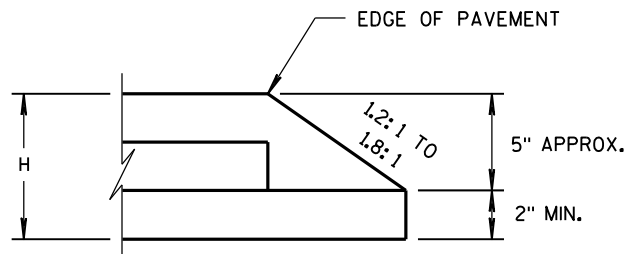
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

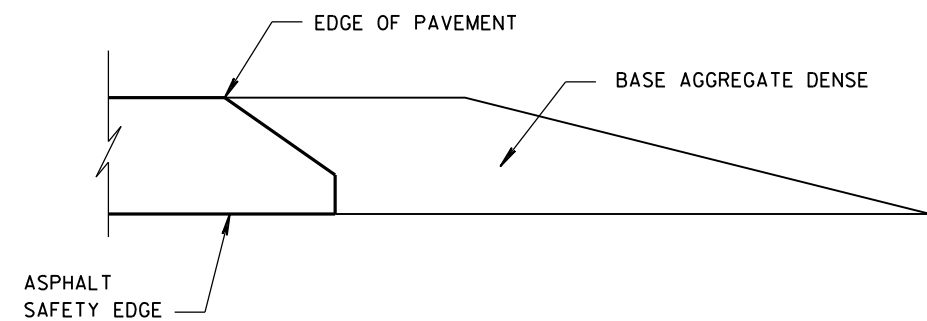


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

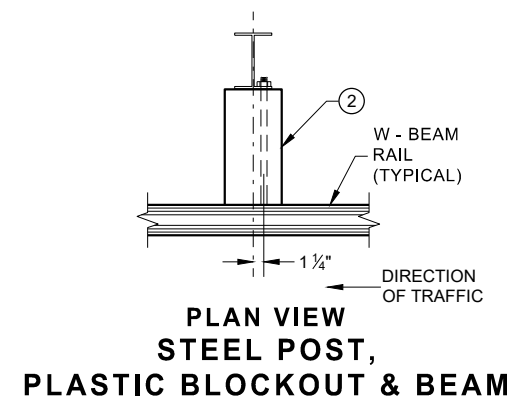
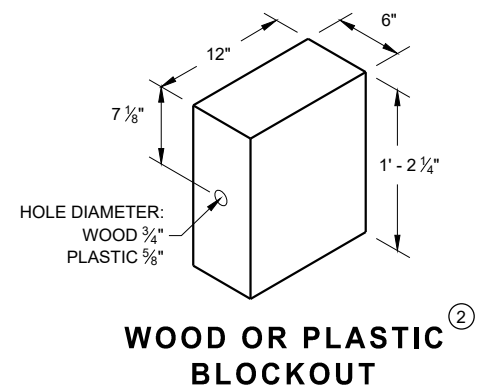
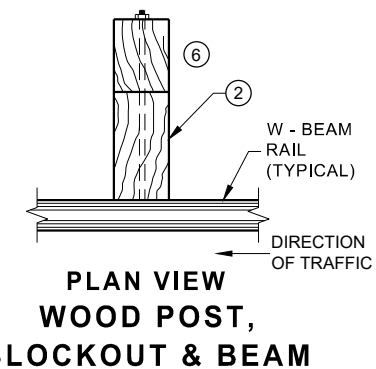
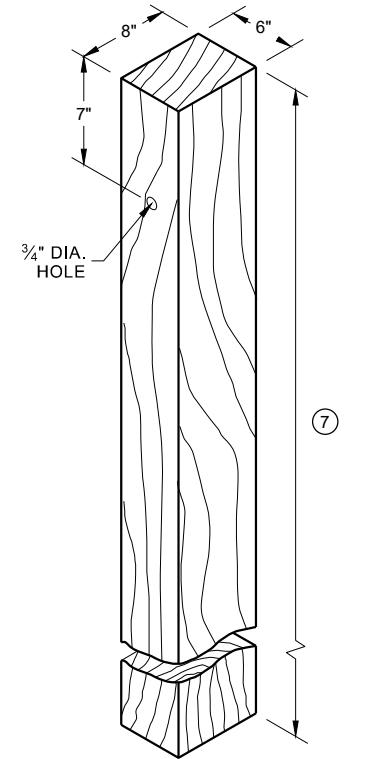
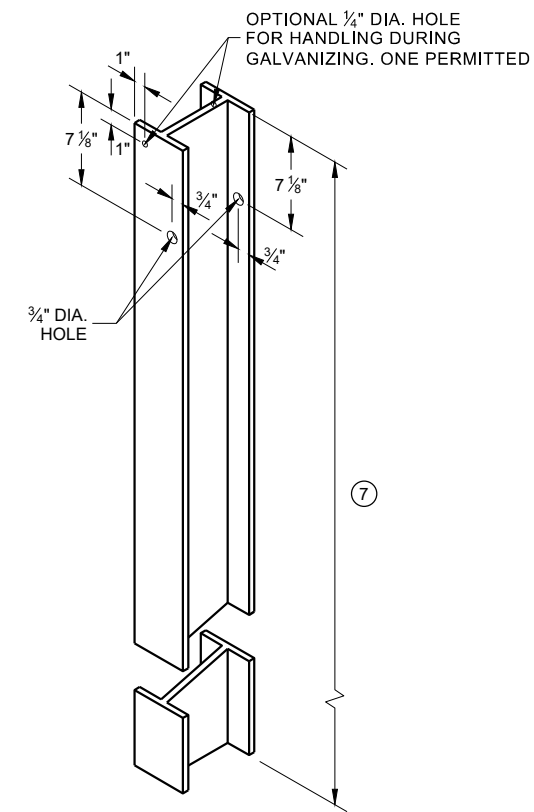
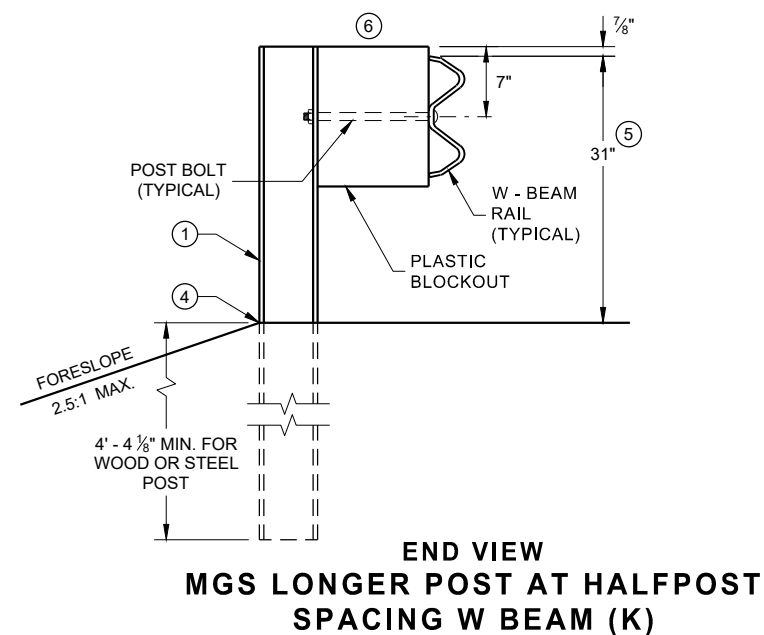
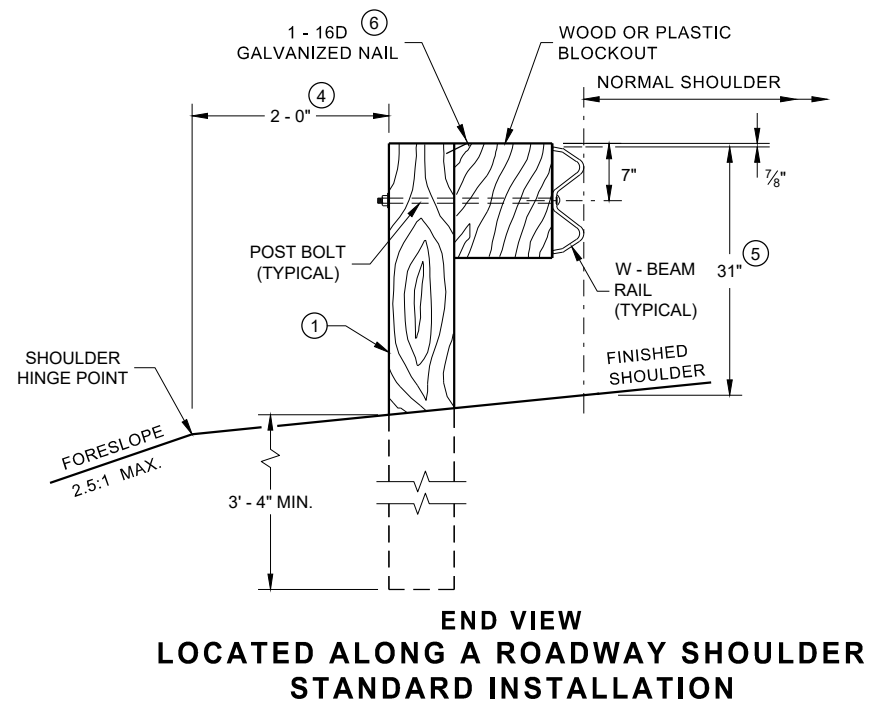
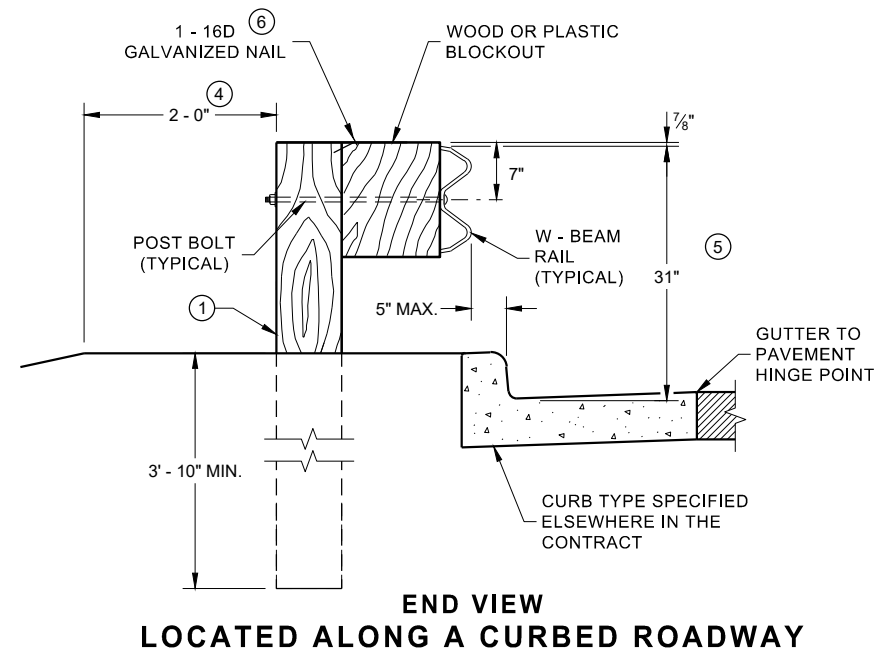
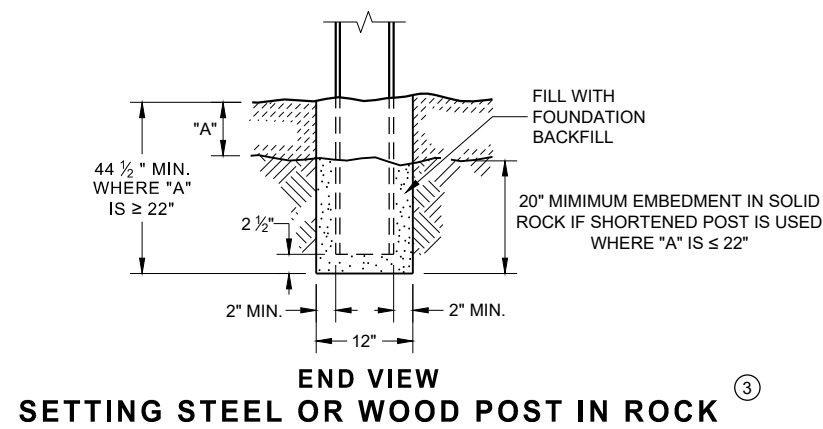
FHWA

/s/ Jerry H. Zoog
ROADWAY STANDARDS
ENGINEER

52

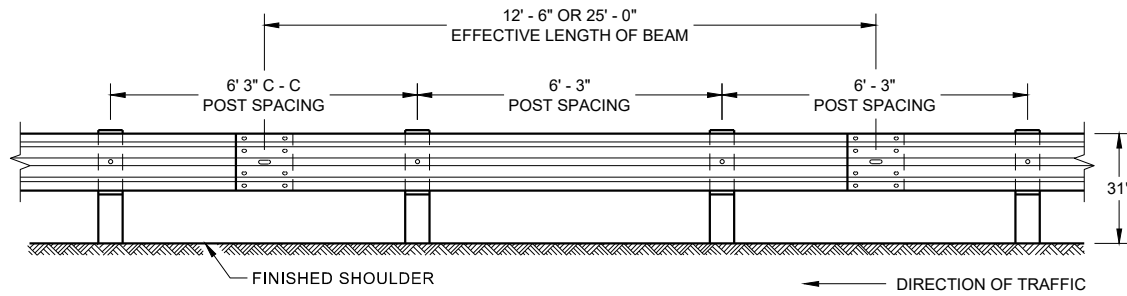
ENT

- 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".

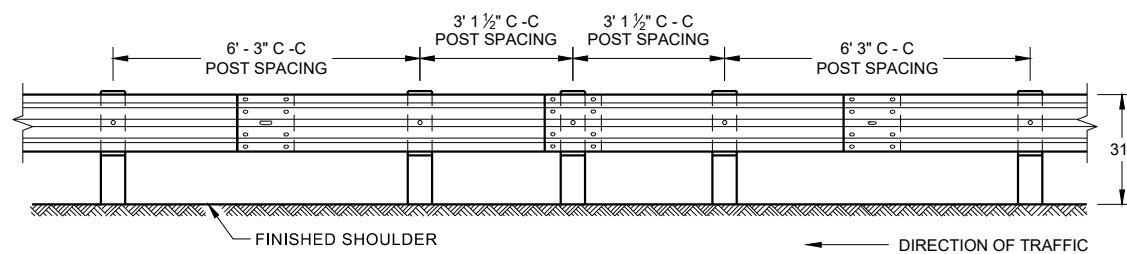


**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

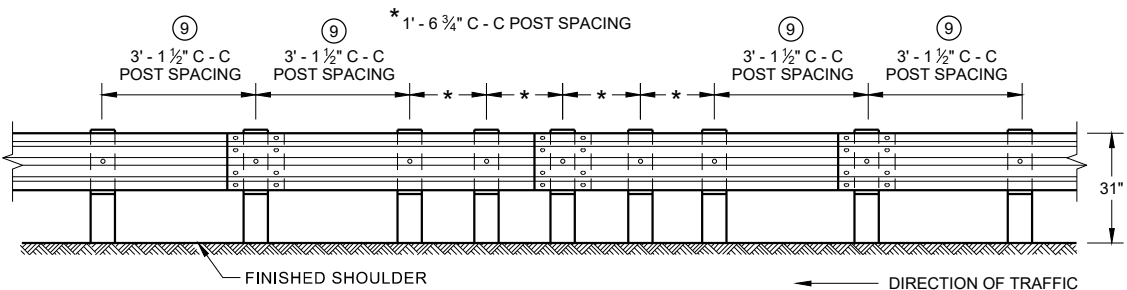
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 53



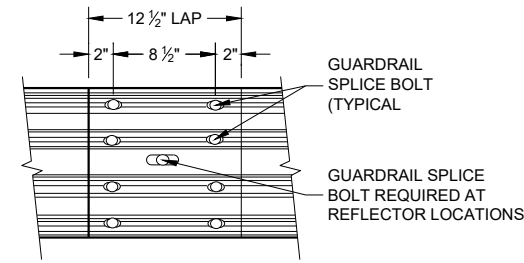
**FRONT VIEW
POST SPACING STANDARD INSTALLATION**



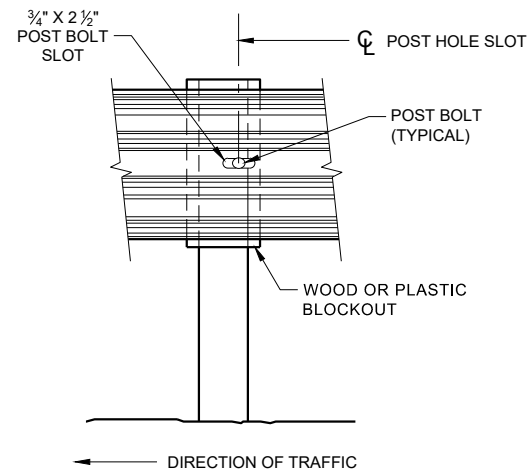
**FRONT VIEW
HALF POST SPACING (HS) AND
HALF POST SPACING WITH LONGER POSTS (K)**



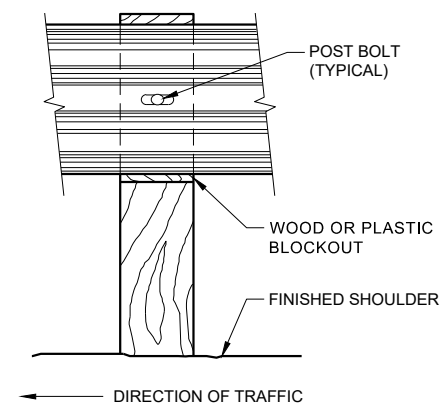
**FRONT VIEW
QUARTER POST SPACING (QS)**



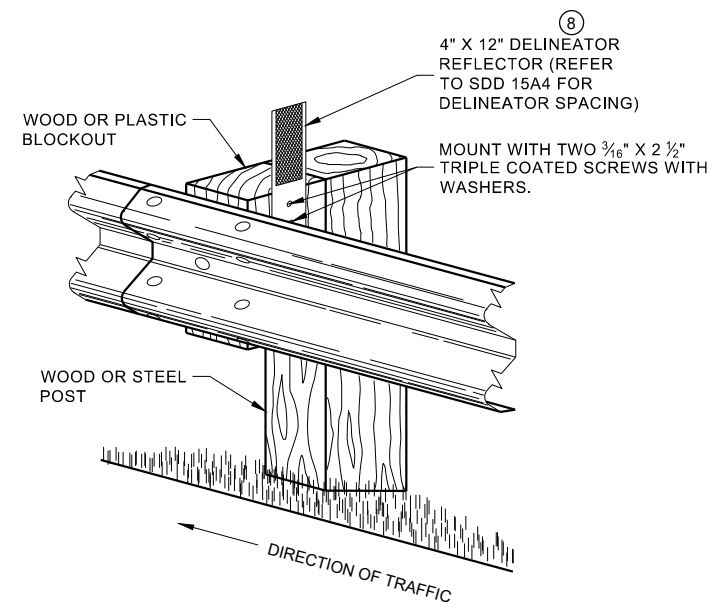
**FRONT VIEW
MID-SPAN BEAM SPLICE**



FRONT VIEW AT STEEL POST



FRONT VIEW AT WOOD POST



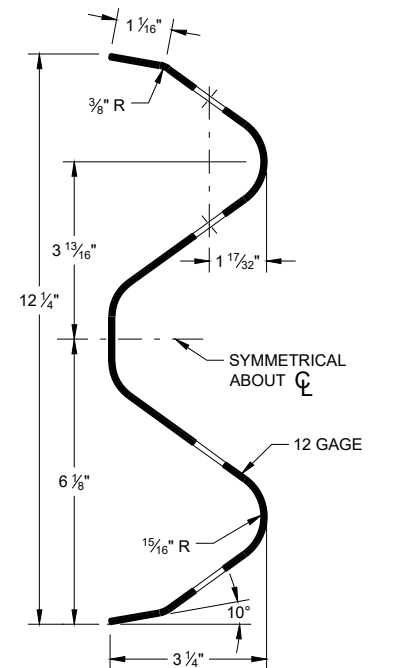
**ONE SIDED REFLECTOR DETAIL
AND TYPICAL INSTALLATION**

GENERAL NOTES

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

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

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



SECTION THRU W-BEAM RAIL

**MIDWEST GUARDRAIL SYSTEM
(MGS) GUARDRAIL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



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.

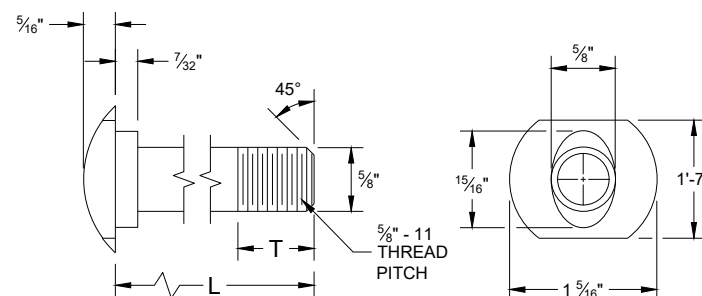


NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.

DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

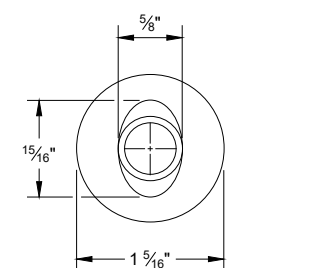
NOTE:

1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF $\frac{3}{16}$ ".
2. IF THE BOLT EXTENDS MORE THAN $\frac{1}{4}$ " FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

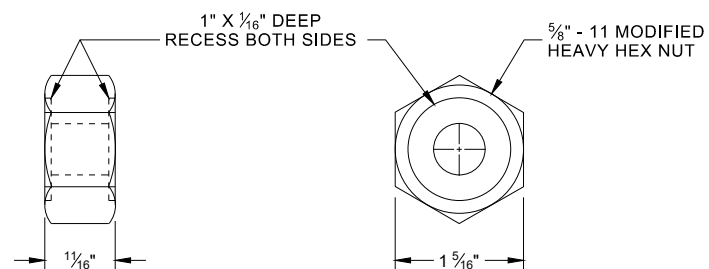


POST BOLT TABLE

L	T (MIN.)
1 ¼"	1 ½"
2"	1 ¾"
10"	4"
14"	4 ⅙"
18"	4"
21"	4 ⅙"
25"	4"

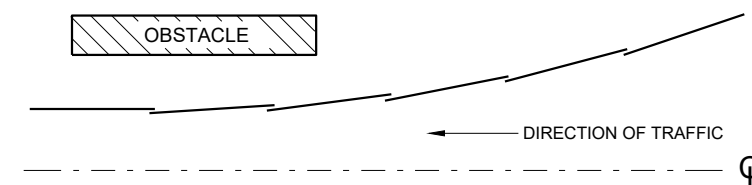


ALTERNATE BOLT HEAD

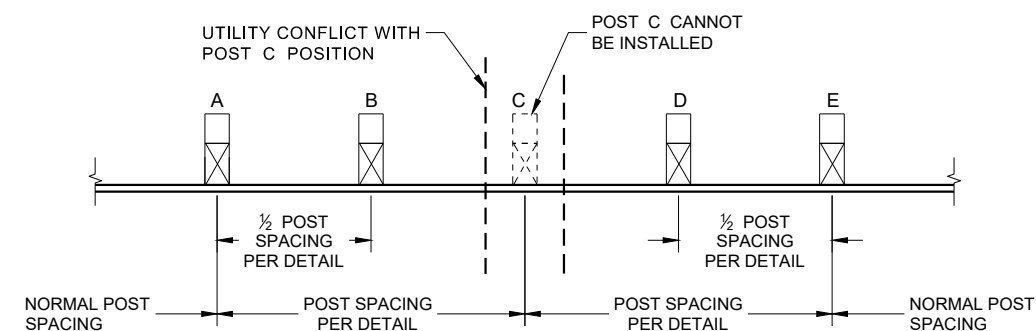


POST BOLT, SPLICE BOLT AND RECESS NUT

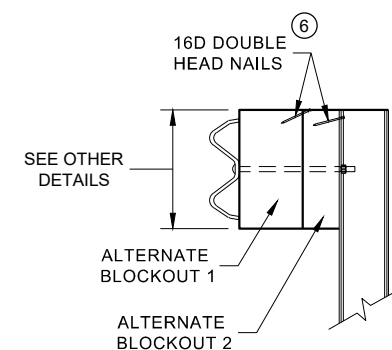
⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



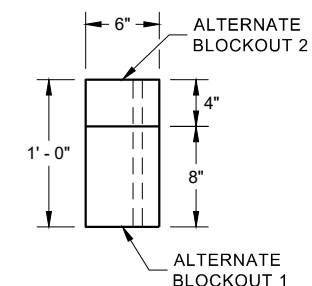
**PLAN VIEW
BEAM LAPPING DETAIL**



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW

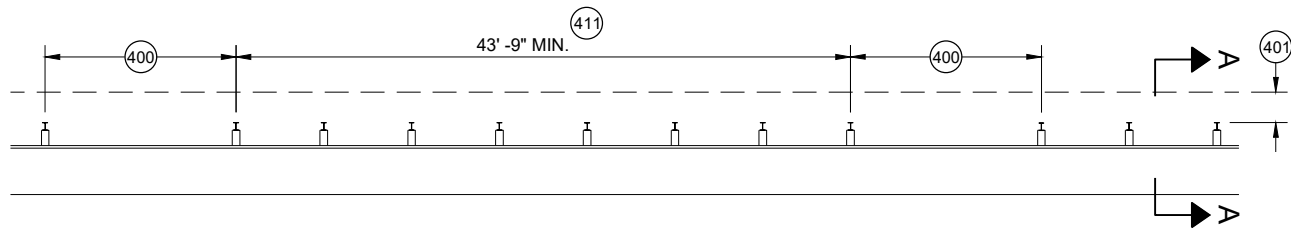


PLAN VIEW

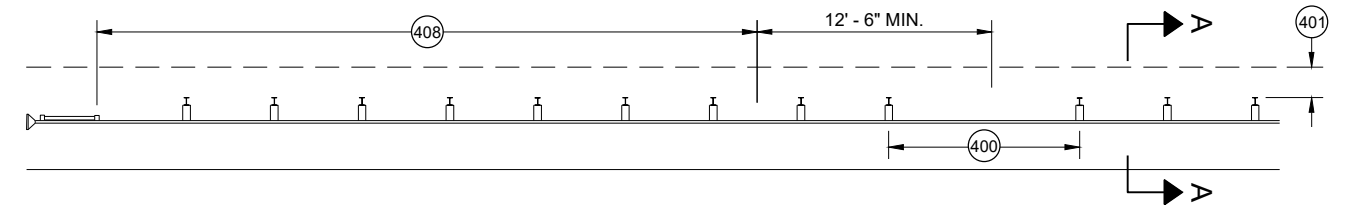
ALTERNATE WOOD BLOCKOUT DETAIL

MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL

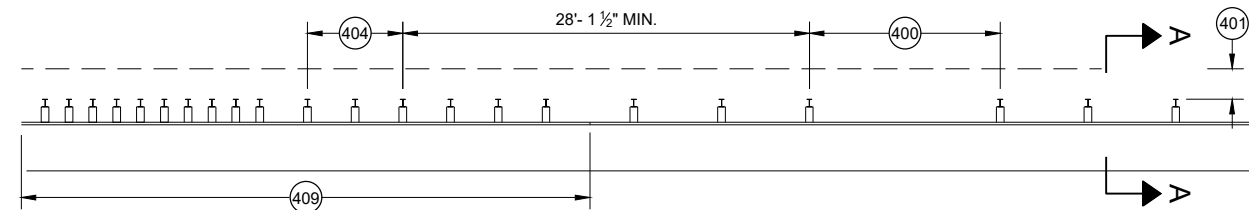
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 55



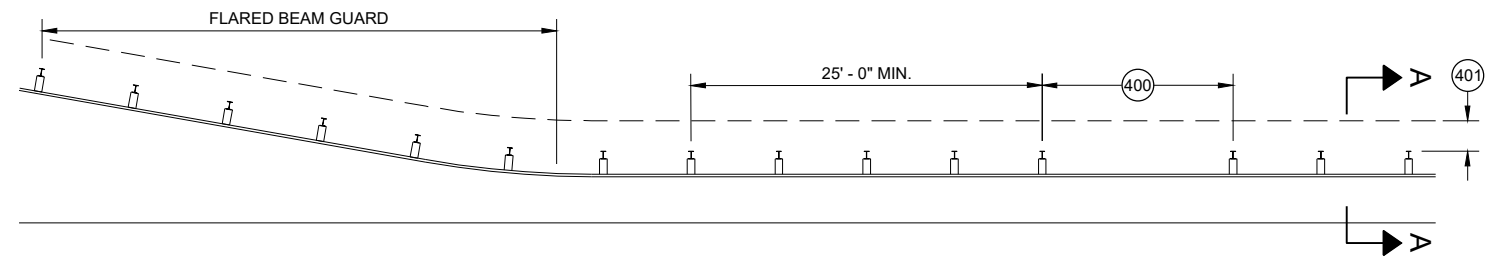
MISSING POST IN MGS GUARDRAIL



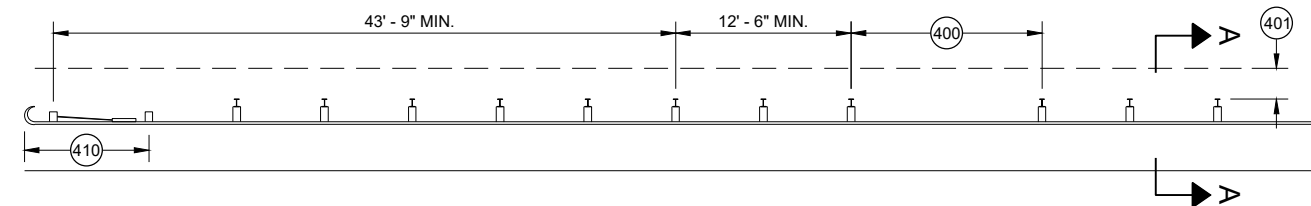
MISSING POST IN MGS GUARDRAIL NEAR EAT



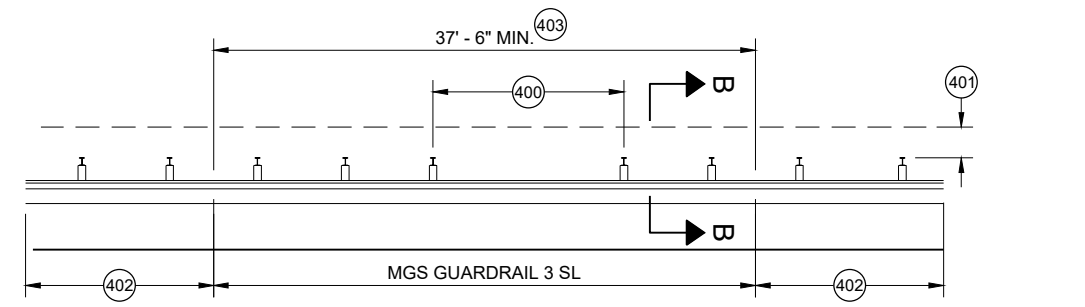
MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION



MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD

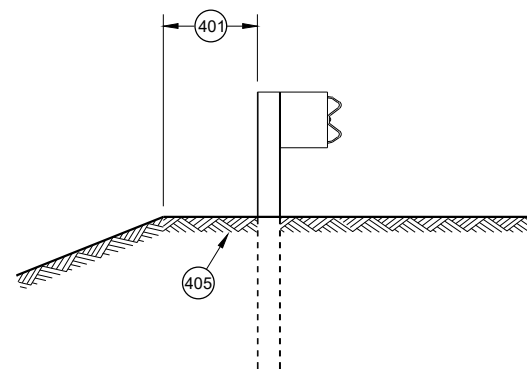


MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL

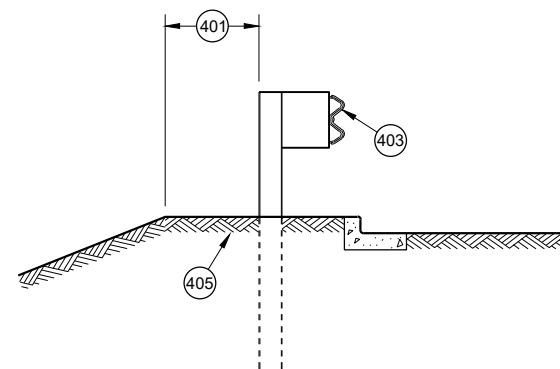


MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)

- (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	56

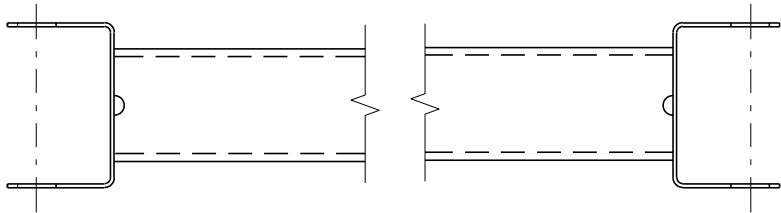
- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS.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

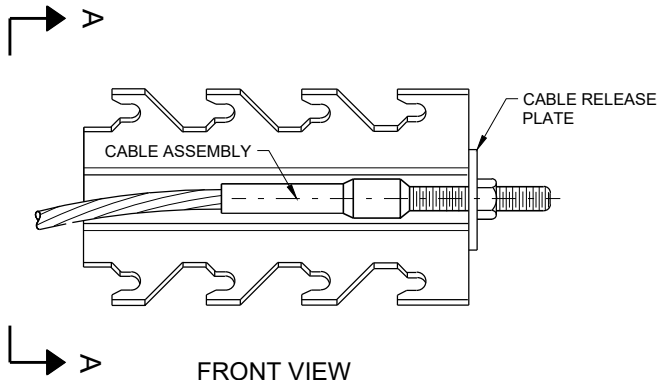


STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 57

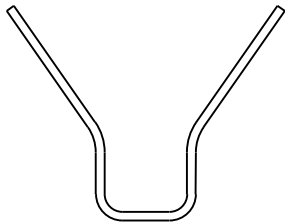


GENERIC GROUND STRUT⁹ ^E

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

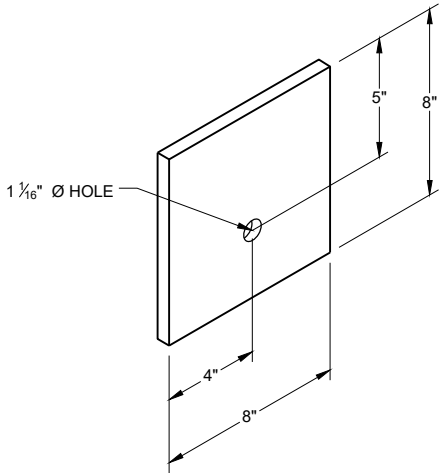


FRONT VIEW

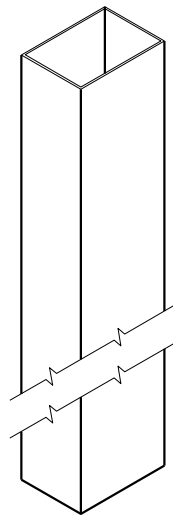


SECTION A - A

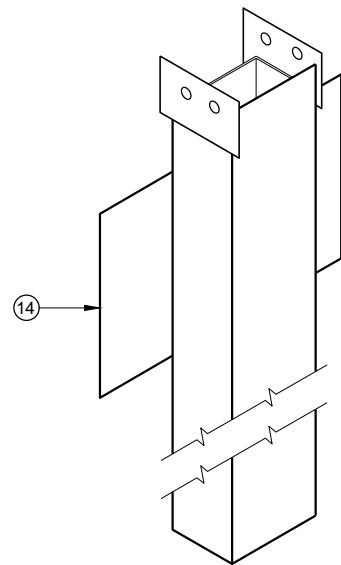
GENERIC ANCHOR CABLE BOX⁹ ^E



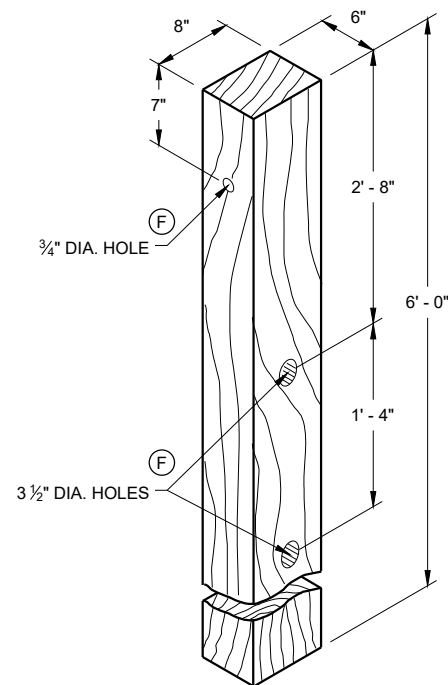
BEARING PLATE⁶ ^E



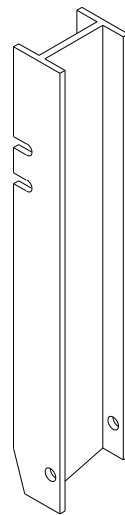
UPPER POST NO. 1 ⁽¹⁾ (E)



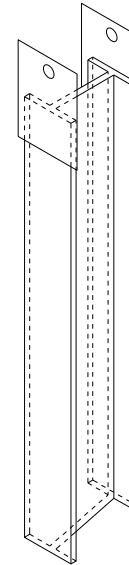
LOWER POST NO. 1 ⁽²⁾ (E)



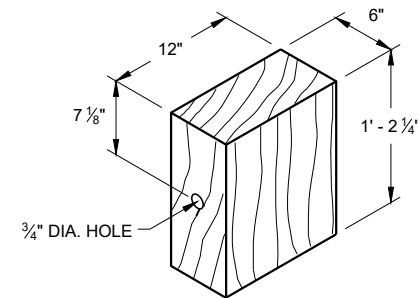
WOOD CRT POST ⁽³⁾ (E)
POSTS NUMBER 3-9



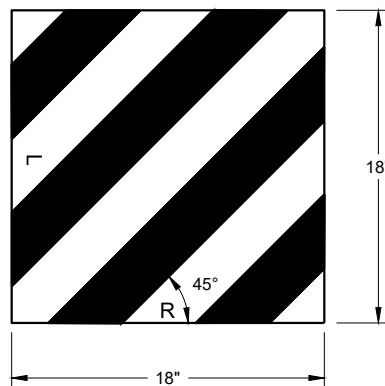
UPPER POST NO. 2 ⁽¹⁵⁾ (E)



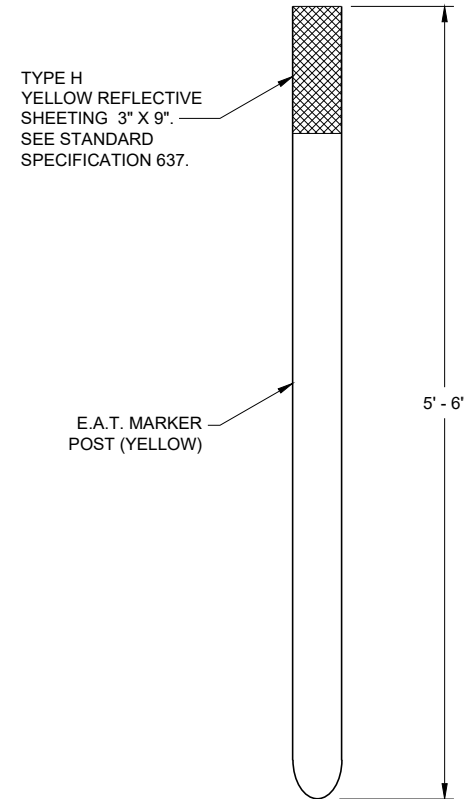
LOWER POST NO. 2 ⁽¹⁶⁾ (E)



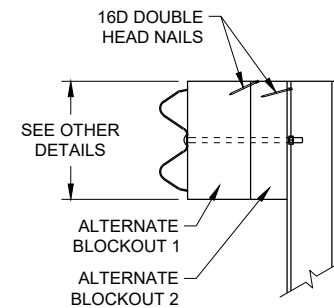
WOOD BLOCKOUT ⁽⁴⁾
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



REFLECTIVE SHEETING DETAIL ^(E)

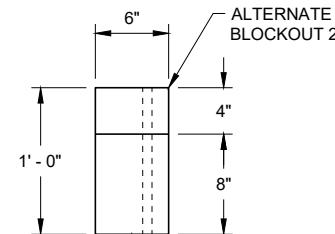


E.A.T. MARKER POST ⁽¹³⁾



SIDE VIEW

ALTERNATE WOOD
BLOCKOUT DETAIL

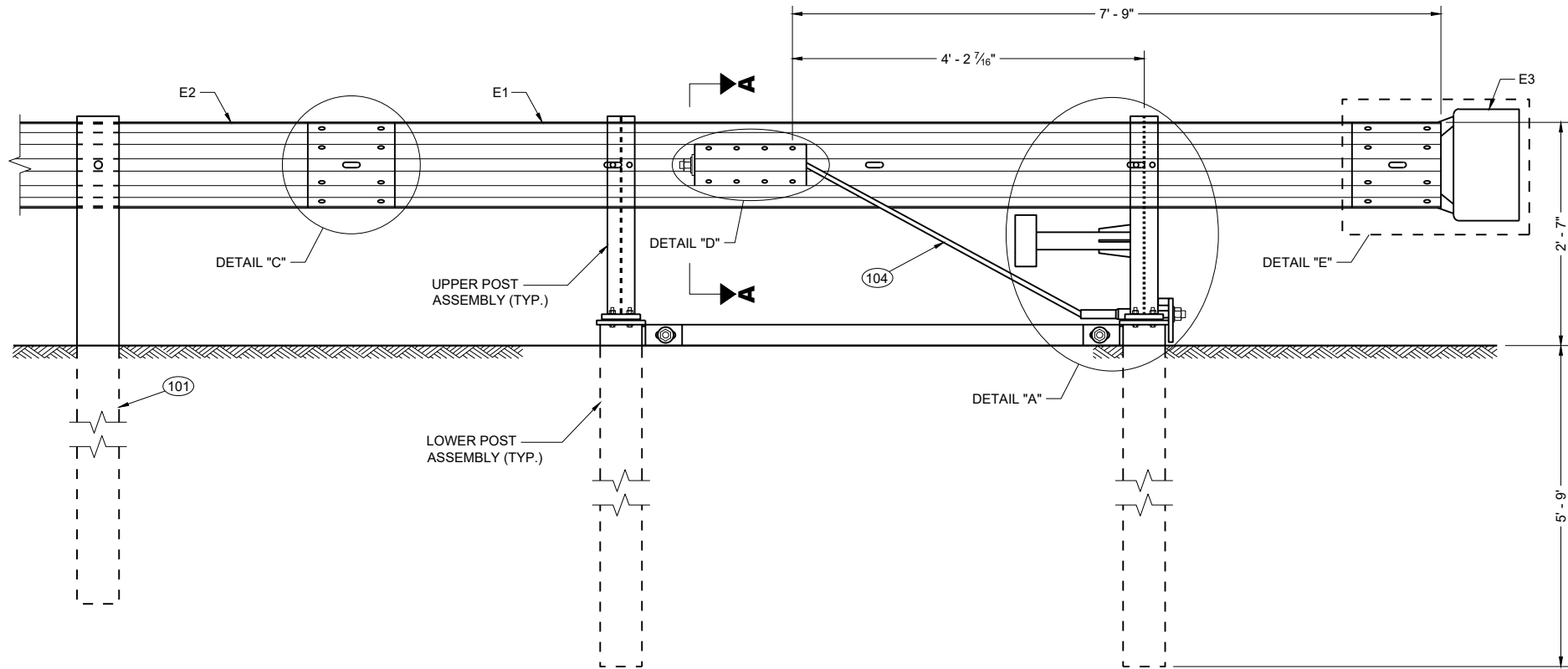


TOP VIEW

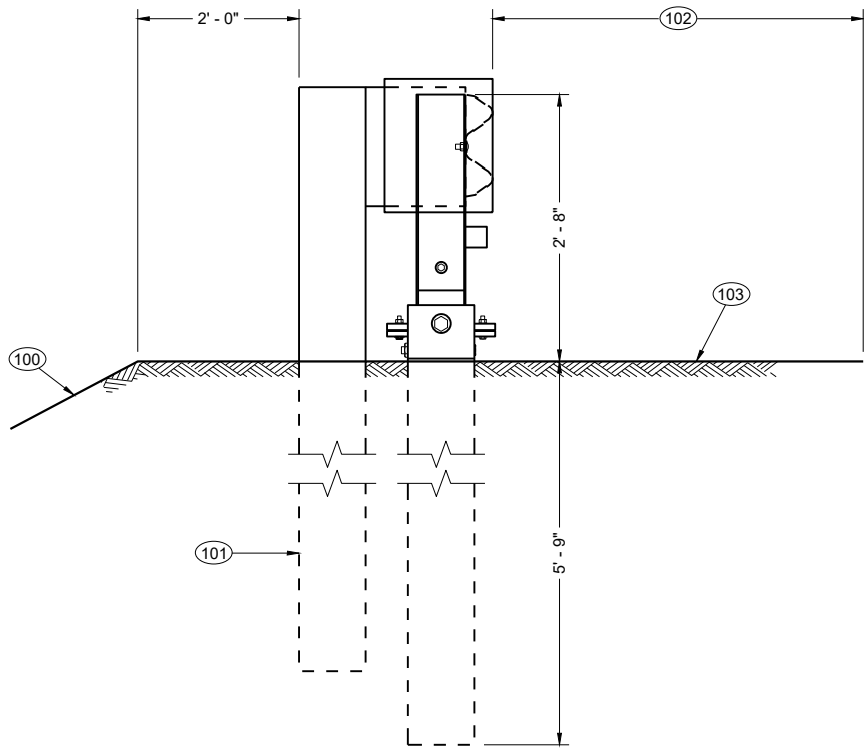
**MIDWEST GUARDRAIL SYSTEM
ENERGY ABSORBING TERMINAL
(MGS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

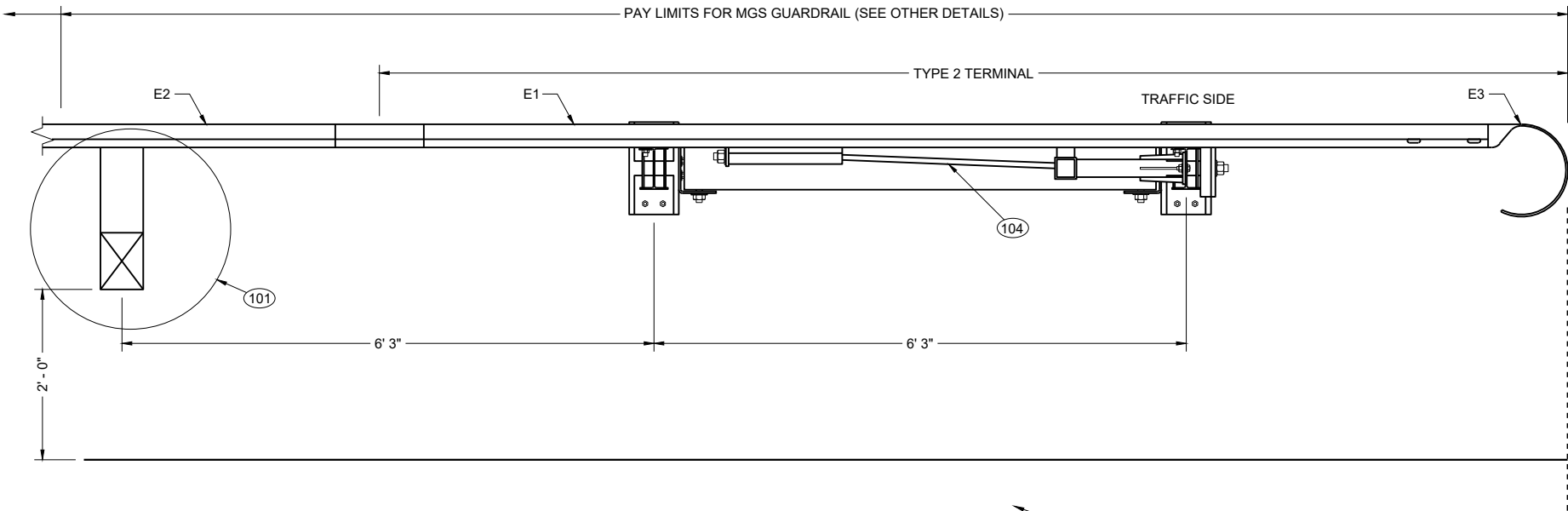
APPROVED
7/2018 DATE /S/ Rodney Taylor
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA



BACK VIEW
TYPE 2 TERMINAL



SIDE VIEW
TYPE 2 TERMINAL



TOP VIEW
TYPE 2 TERMINAL

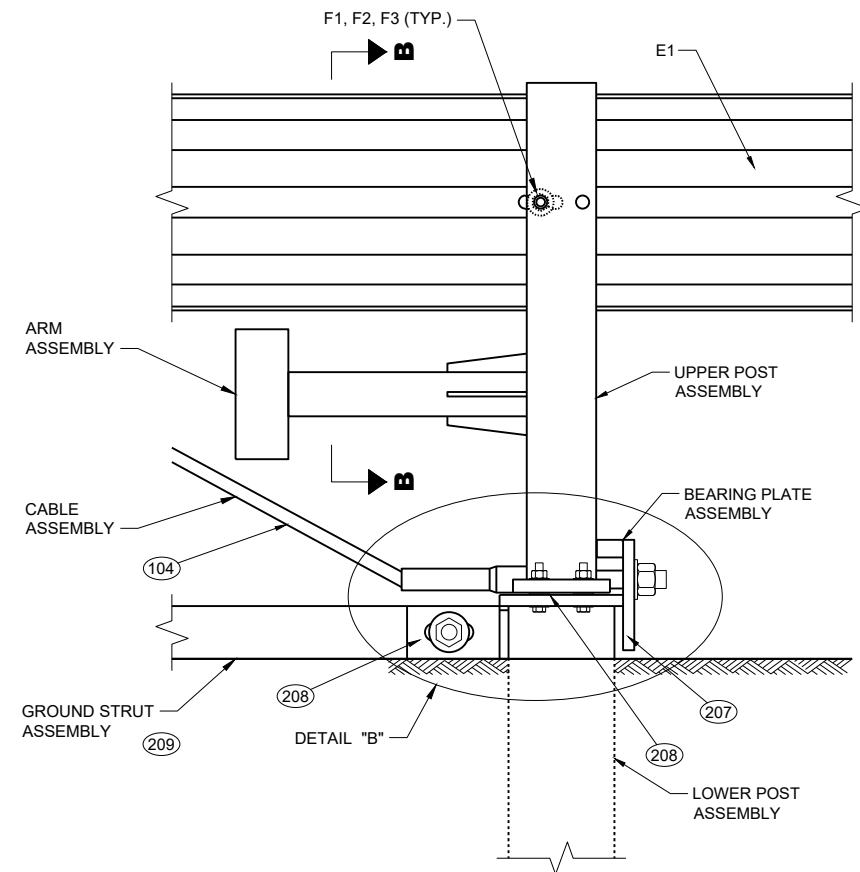
GENERAL NOTES

SEE SDD 14B42 FOR MORE INFORMATION

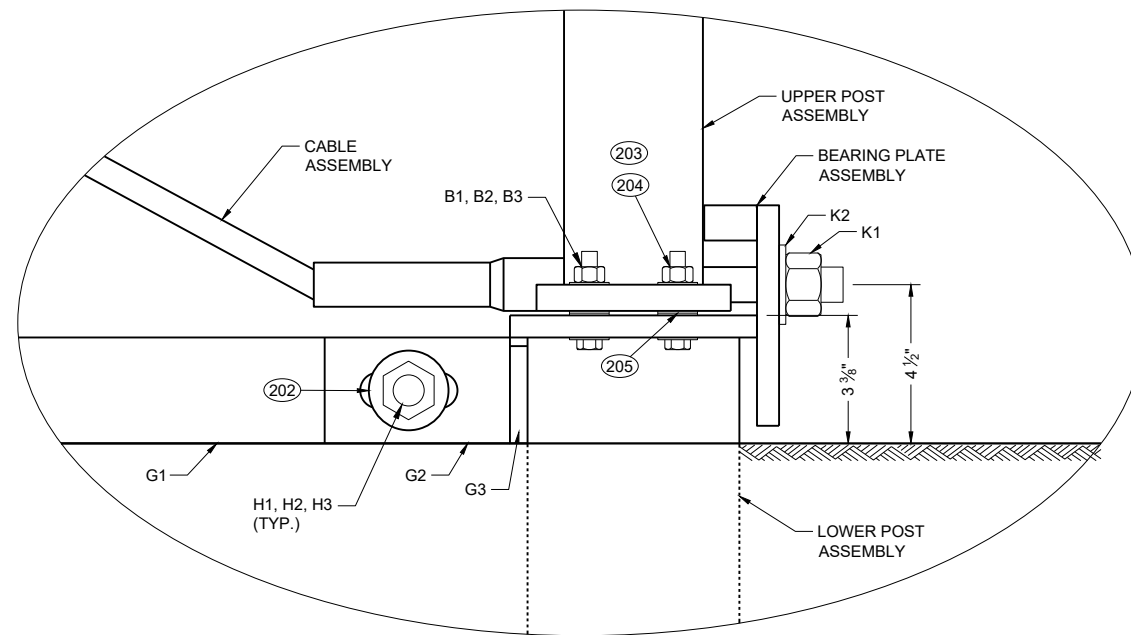
- 100 MAXIMUM SLOPE IS 2.5:1.
- 101 SEE SDD 14B42 FOR MORE INFORMATION.
- 102 SHOULDER
- 103 MAXIMUM SLOPE IS 10:1.
- 104 AFTER ASSEMBLY, CABLE IS TO BE TIGHTENED WITHOUT TWISTING THE CABLE.

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

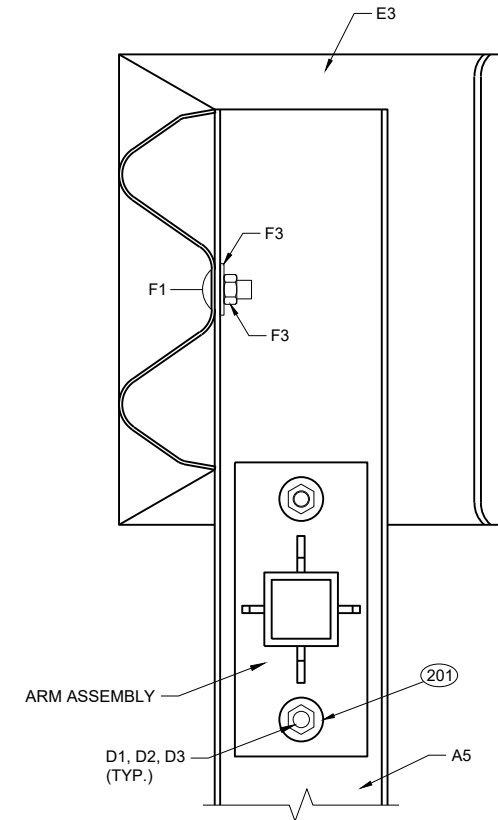
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



DETAIL "A"



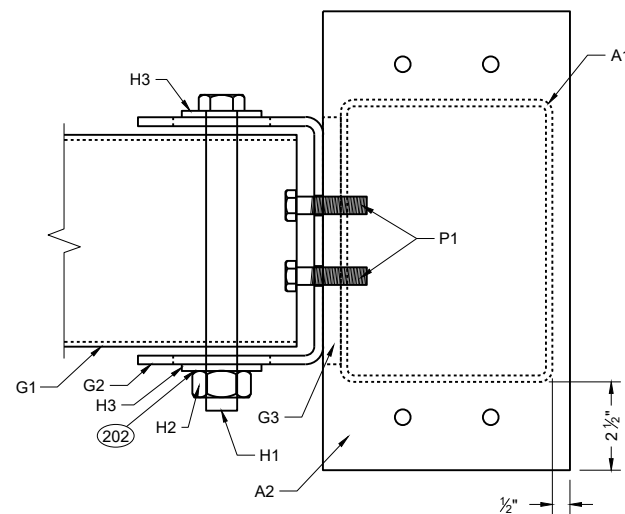
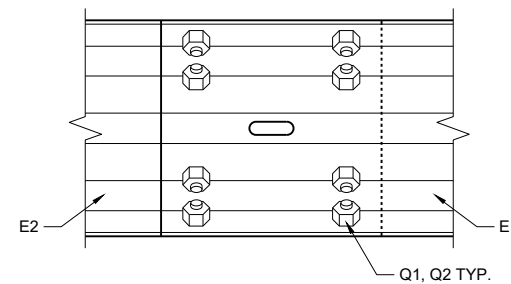
DETAIL "B"



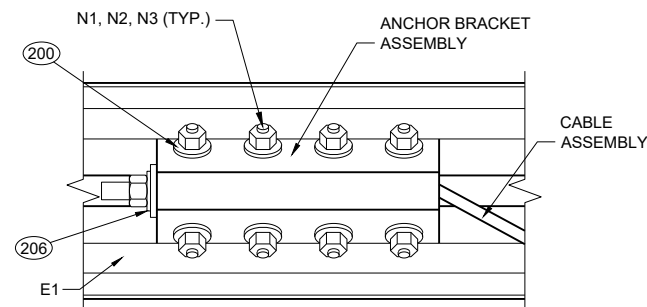
SECTION B - B

GENERAL NOTES

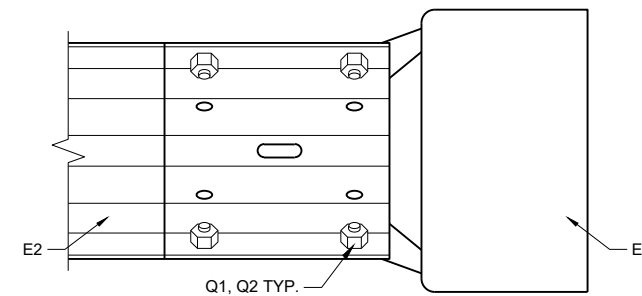
- (200) INSTALL ONE WASHER UNDER BOLT HEAD AND RAIL AND ON WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.
- (201) INSTALL ONE WASHER UNDER BOLT HEAD AND UPPER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND ARM PLATE.
- (202) INSTALL ONE WASHER UNDER BOLT HEAD AND GROUND STRUT CONNECTOR AND ONE WASHER BETWEEN NUT AND GROUND STRUT CONNECTOR.
- (203) INSTALL ONE WASHER UNDER BOLT HEAD AND LOWER POST ASSEMBLY AND ONE WASHER BETWEEN NUT AND UPPER POST ASSEMBLY.
- (204) TORQUE VALUE IS BETWEEN 60 - 75 FT-LB.
- (205) TWO WASHERS BETWEEN UPPER AND LOWER POST ASSEMBLY.
- (206) INSTALL ONE WASHER BETWEEN NUT AND ANCHOR BRACKET ASSEMBLY.
- (207) NO MATERIAL IS TO BE PLACED AGAINST THE VERTICAL FACES OF BEARING PLATE.
- (208) PREVENT OR REMOVE MATERIALS THAT BLOCK ACCESS TO BOLTS FOR POST ASSEMBLIES AND GROUND STRUT.
- (209) PREVENT OR REMOVE MATERIALS THAT IMPEDE REMOVAL OF GROUND STRUT.

TOP VIEW
GROUND STRUT
CONNECTION DETAIL

DETAIL "C"

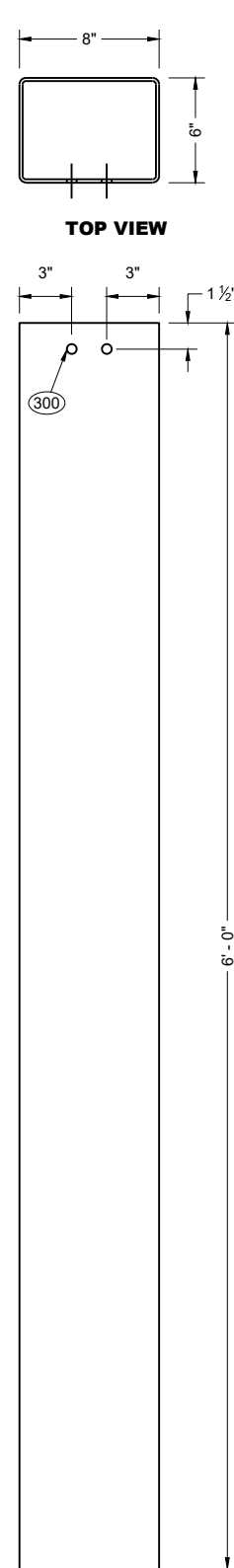


DETAIL "D"

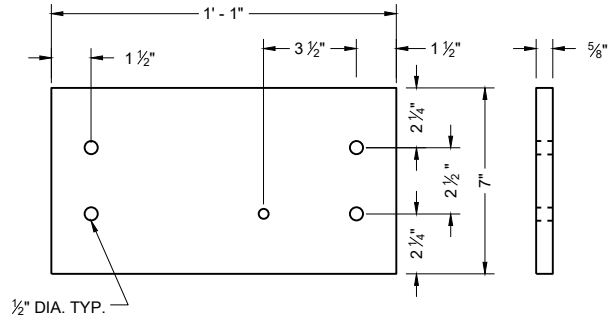


DETAIL "E"

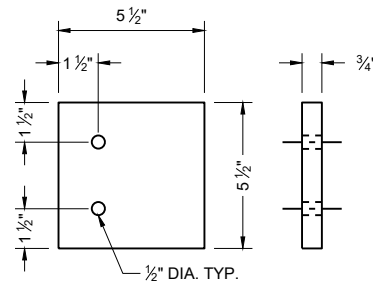
MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINALSTATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



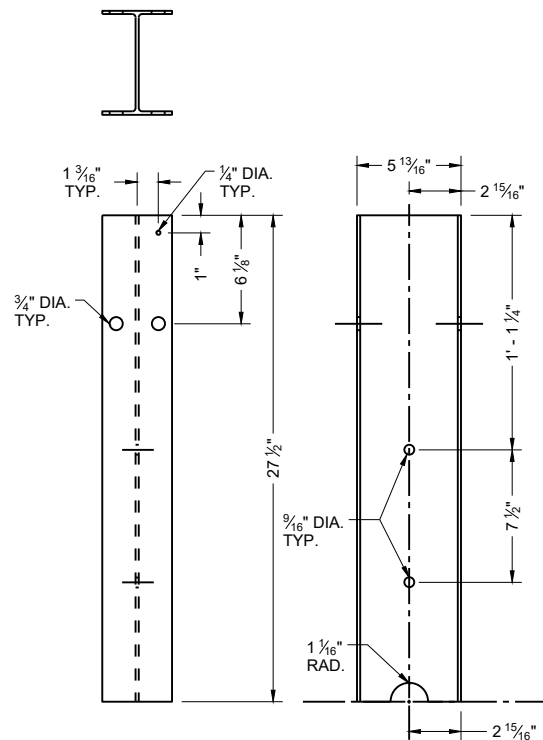
FOUNDATION
TUBE (A1)



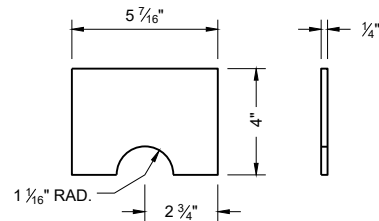
LOWER PLATE (A2)



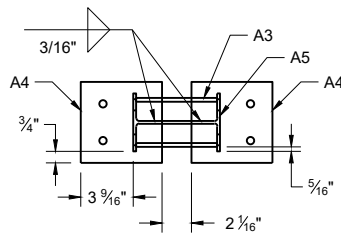
UPPER PLATE (A4)



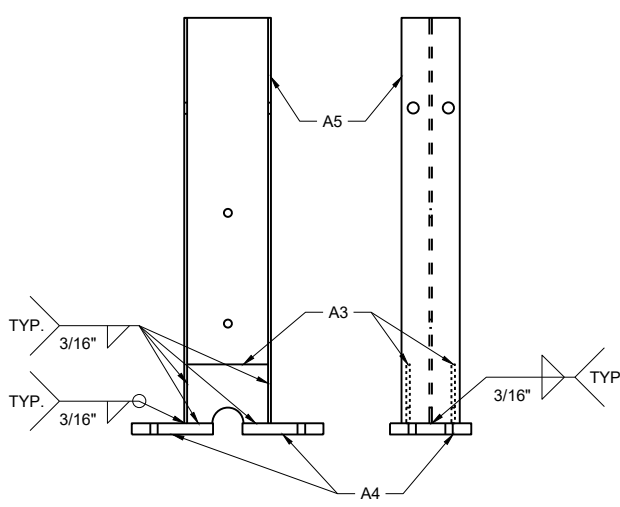
TYPE 2 POST (A5)



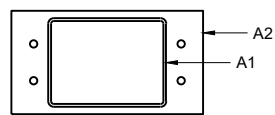
POST GUSSET (A3)



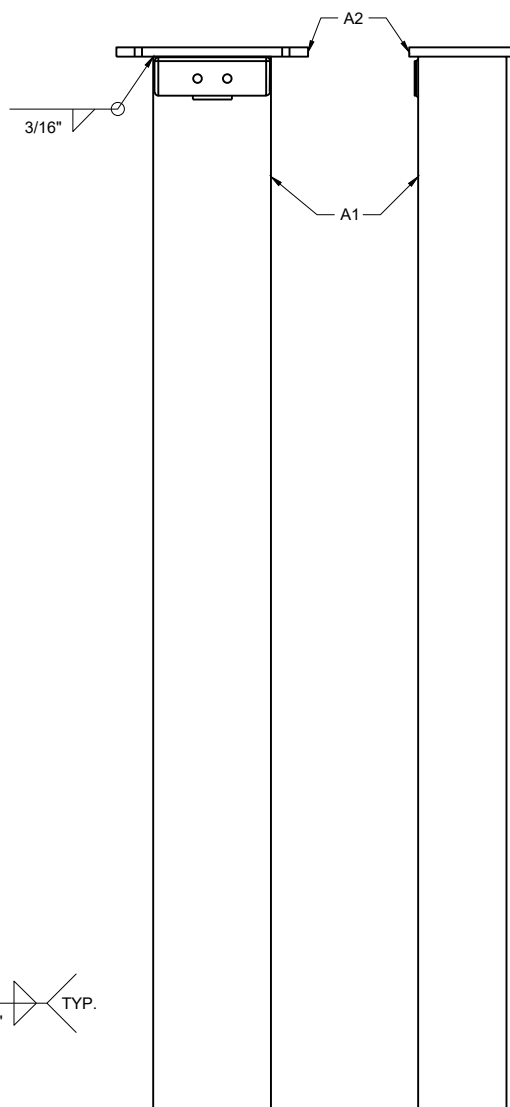
PLAN VIEW



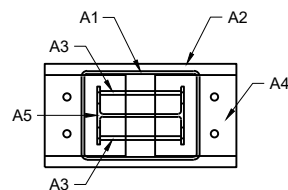
UPPER POST ASSEMBLY



PLAN VIEW



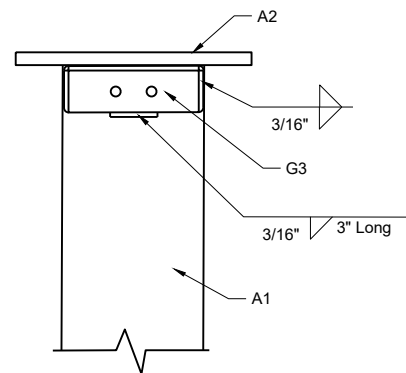
LOWER POST ASSEMBLY



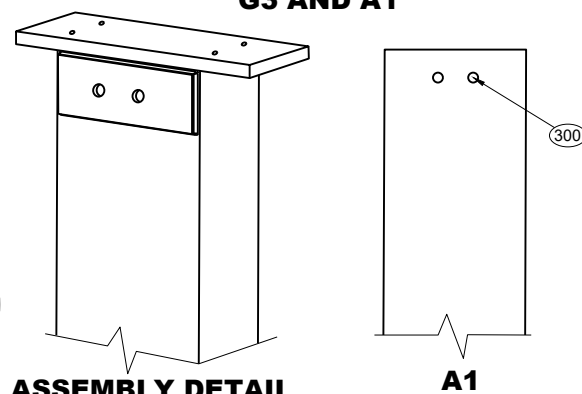
ASSEMBLED POST

GENERAL NOTES

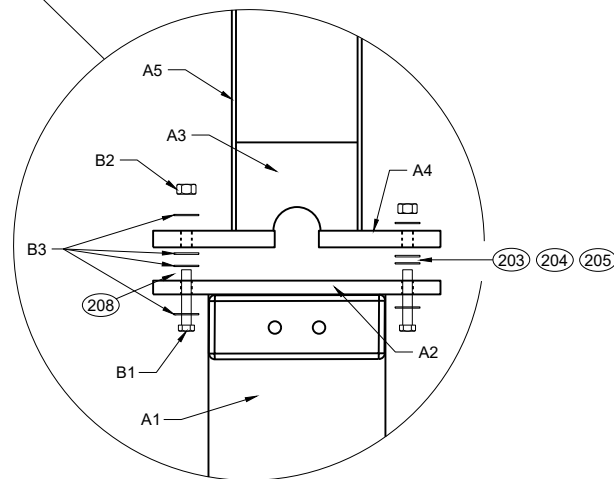
(300) TAP FOR 1/2" AFTER GALVANIZATION



WELDING DETAIL
G3 AND A1



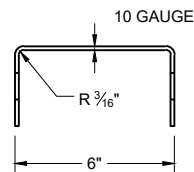
ASSEMBLY DETAIL
ISOMETRIC



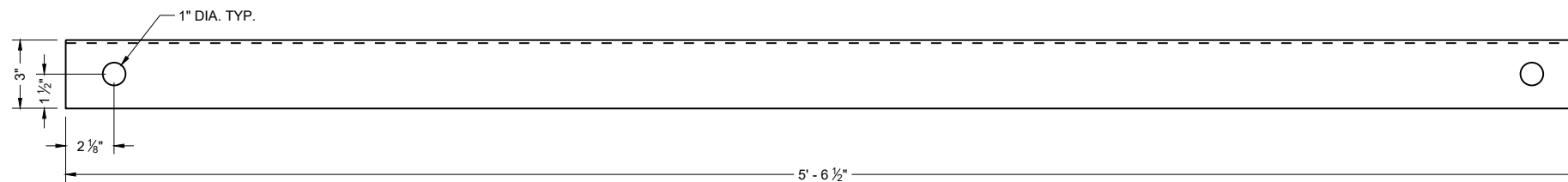
POST CONNECTION DETAIL

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

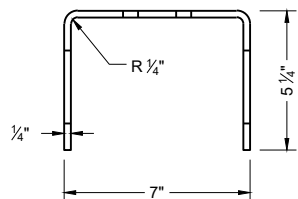


SIDE VIEW

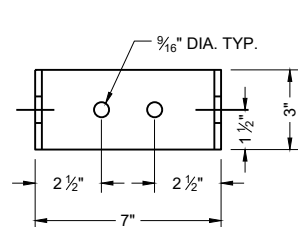


FRONT VIEW

GROUND STRUT CHANNEL (G1)

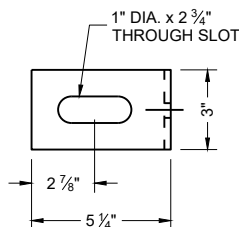


TOP VIEW



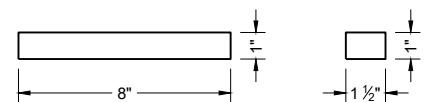
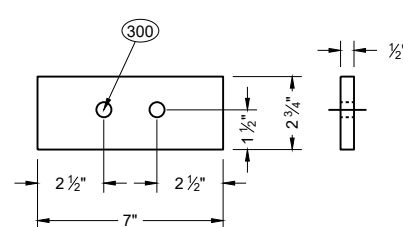
FRONT VIEW

GROUND STRUT CONNECTOR (G2)

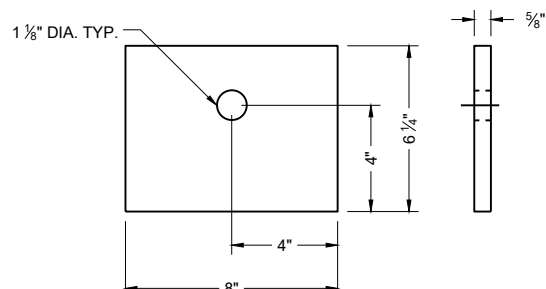


SIDE VIEW

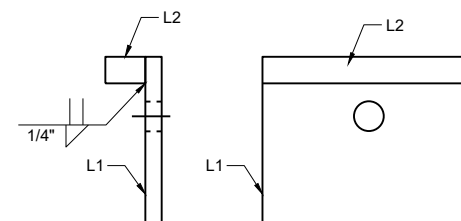
GROUND STRUT PLATE (G3)



BEARING PLATE FLANGE (L2)



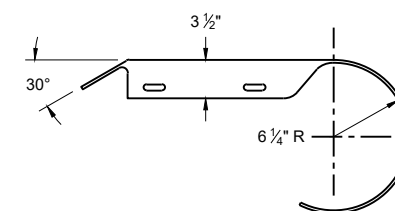
BEARING PLATE (L1)



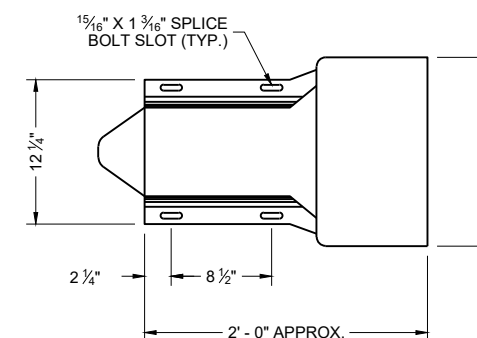
SIDE VIEW

FRONT VIEW

BEARING PLATE ASSEMBLY

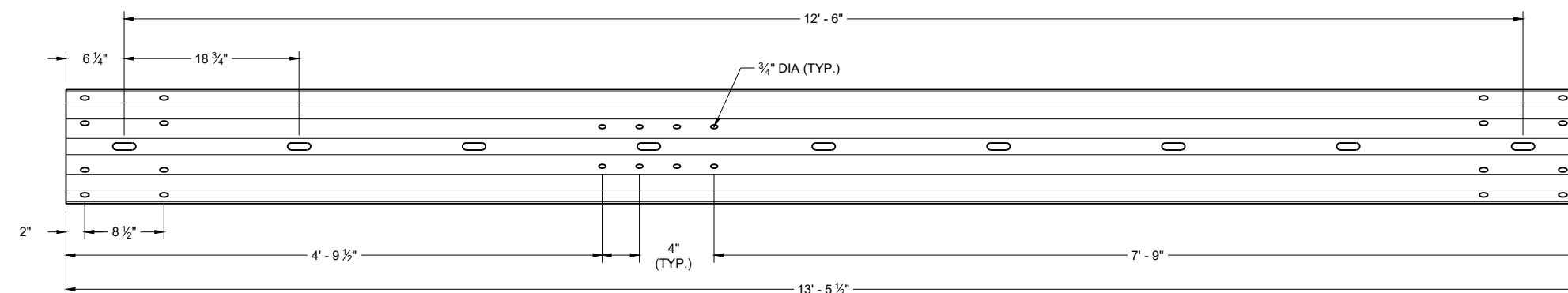


PLAN VIEW

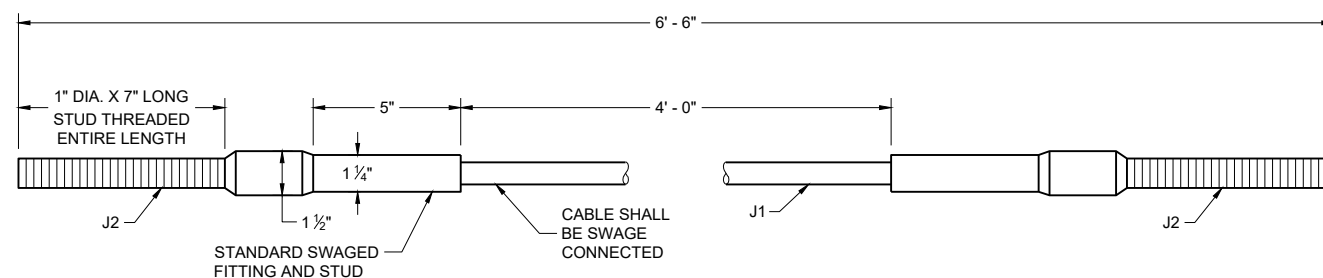


ELEVATION VIEW

ROUNDED BUFFER END (E3)



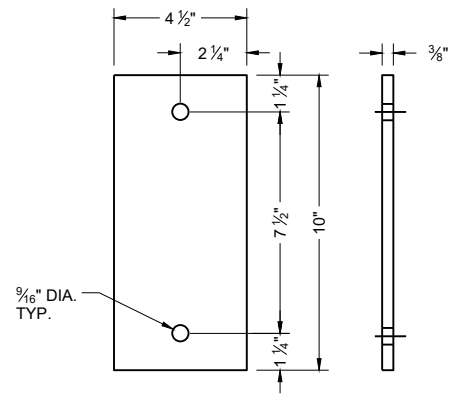
TYPE 2 GUARDRAIL (E1)



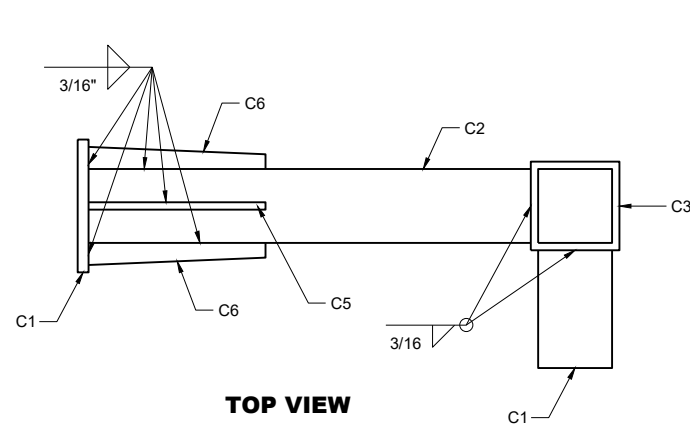
CABLE ASSEMBLY

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

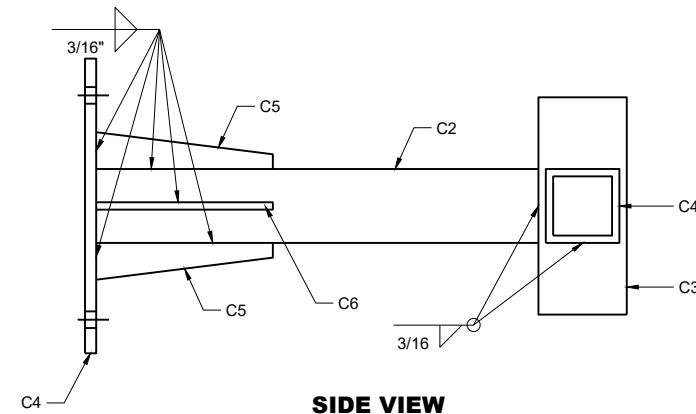
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



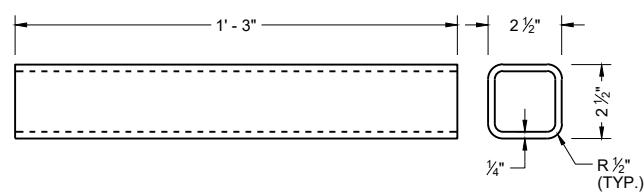
ARM PLATE (C1)



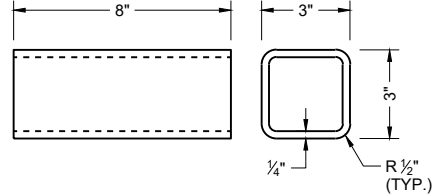
**TOP VIEW
ARM ASSEMBLY**



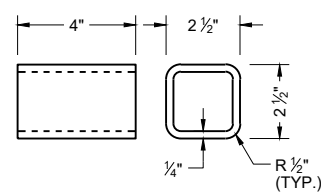
**SIDE VIEW
ARM ASSEMBLY**



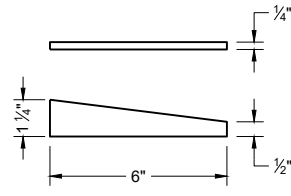
ARM TUBE 1 (C2)



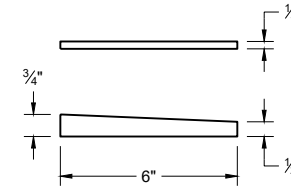
ARM TUBE 2 (C3)



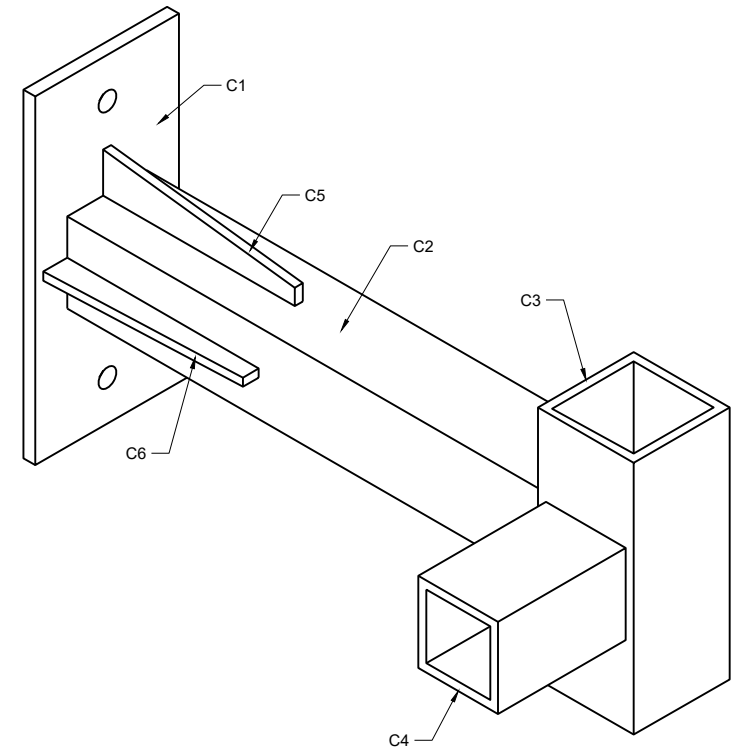
ARM TUBE 3 (C4)



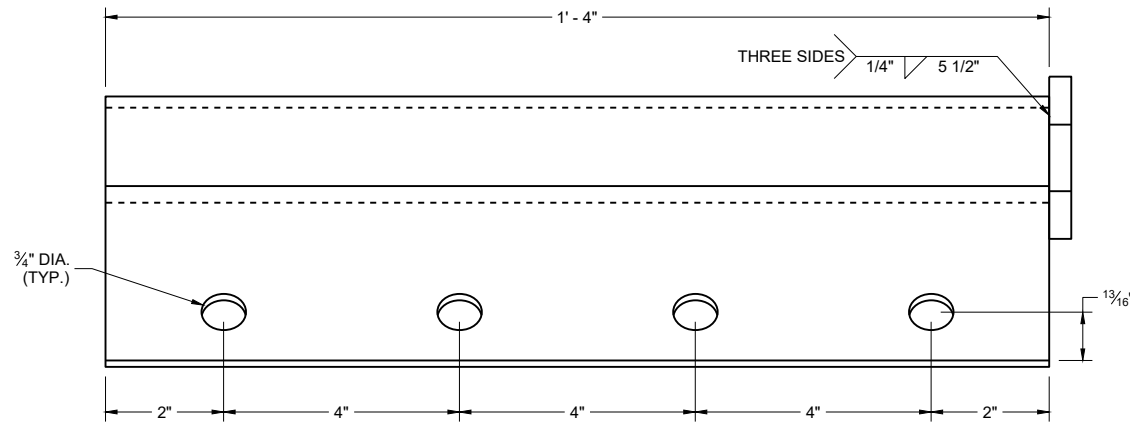
**ARM GUSSET
PLATE 1 (C5)**



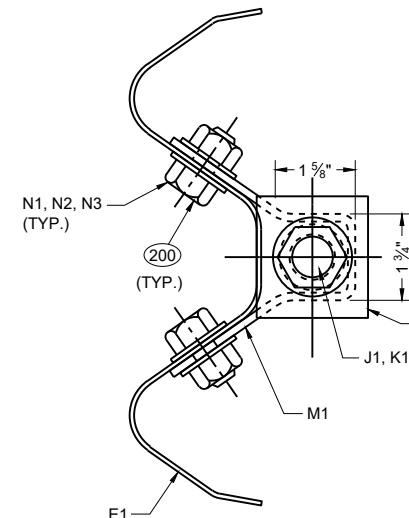
**ARM GUSSET
PLATE 2 (C6)**



**ISOMETRIC VIEW
ARM ASSEMBLY**

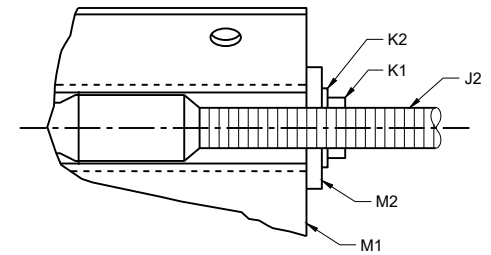


ANCHOR BRACKET (M1, M2)



ANCHOR BRACKET BEARING PLATE (M2)

SECTION A - A



**MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
A1	TYPE 2 FOUNDATION TUBE	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 8" x 6" x $\frac{3}{16}$ "
A2	LOWER PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{5}{8}$ " THICKNESS
A3	POST GUSSET	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{4}$ " THICKNESS
A4	UPPER PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{3}{4}$ " THICKNESS
A5	TYPE 2 POST	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI, w6x9 or w6x8.5	
B1	BREAKAWAY BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM F3125 GRADE A325 TYPE 1 HEAVY HEX HEAD OR SAE J429 GRADE 5 HEAVY HEX HEAD / ASTM A449 TYPE 1 HEAVY HEX HEAD. BOLTS MAY BE FULLY THREADED . PROVIDE ENOUGH THREADING FOR PROPER TIGHTENING OF BOLT.	$\frac{7}{16}$ " DIA.
B2	BREAKAWAY BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{7}{16}$ " DIA.
B3	BREAKAWAY BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
C1	ARM ASSEMBLY PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{3}{8}$ " THICKNESS
C2	ARM ASSEMBLY TUBE 1	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 8" x 6" x $\frac{3}{16}$ "
C3	ARM ASSEMBLY TUBE 2	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 3" x 3" x $\frac{1}{4}$ "
C4	ARM ASSEMBLY TUBE 3	AASHTO M111 / ASTM A123 ASTM A500 GRADE B OR ASTM A-501	TS 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " X $\frac{1}{4}$ "
C5	ARM ASSEMBLY GUSSET PLATE 1	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{4}$ " THICKNESS
C6	ARM ASSEMBLY GUSSET PLATE 2	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{4}$ " THICKNESS
D1	ARM ASSEMBLY BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	$\frac{1}{2}$ " DIA.
D2	ARM ASSEMBLY WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{1}{2}$ " DIA.
D3	ARM ASSEMBLY NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	$\frac{1}{2}$ " DIA.
E1	TYPE 2 GUARD RAIL	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
E2	BEAM GUARD RAIL	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
E3	BEAM GUARD ROUNDED BUFFER END	AASHTO M180 CLASS A TYPE 2 12 GAUGE APPROVED PRODUCER	
F1	POST BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	$\frac{5}{8}$ " DIA.
F2	POST BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	$\frac{5}{8}$ " DIA.
F3	POST BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291/ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
G1	GROUND STRUT CHANNEL	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{2}$ " x 11 $\frac{3}{4}$ " x 10 GAUGE
G2	GROUND STRUT CONNECTOR	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{4}$ " THICKNESS
G3	GROUND STRUT PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	$\frac{1}{2}$ " THICKNESS

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

BILL OF MATERIALS - TYPE 2 TERMINAL (MGS)

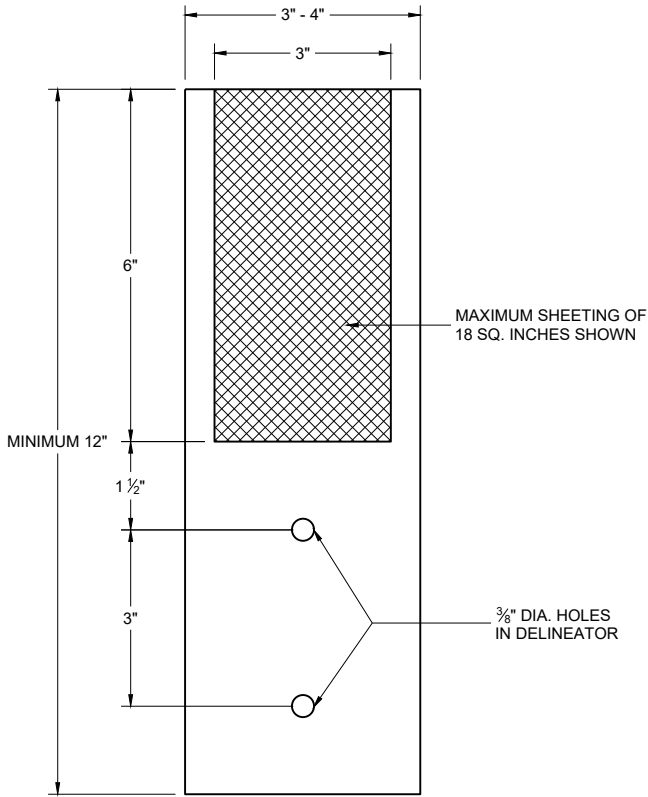
PART	DESCRIPTION	MATERIALS SPECIFICATIONS	NOTES
H1	GROUND STRUT BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	7/8" DIA.
H2	GROUND STRUT BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	7/8" DIA.
H3	GROUND STRUT BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC HEAVY HEX HEAD 5/8" ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	
J1	BCT CABLE	AASHTO M30 / ASTM A741 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS), 6 x 19 INDEPENDENT WIRE CORE (IWRC) IMPROVED PLOW STEEL (IPS) TYPE II OR IIC, CLASS C ZINC COATED MIN. BREAKING STRENGTH OF 42.7 KIPS	3/4" DIA.
J2	BCT CABLE	UNC 1" ASTM A576 GRADE 1035 SWAGE FITTINGS ARE TO BE FACTORY SWEDGED. MIN BREAKING STRENGTH OF 42.7 KIPS ASME B30.26 "FORGED, CAST, OR DIE STAMPED WITH THE FOLLOWING IN TO CONNECTION: NAME OF MANUFACTURE OR TRADEMARK OF CONNECTION'S MANUFACTURER, SIZE OR RATED LOAD, GRADE FOR ALLOY EYEBOLTS."	
K1	CABLE ASSEMBLY NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1" DIA.
K2	CABLE ASSEMBLY WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1	1" DIA.
L1	BEARING PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	5/8" THICKNESS
L2	BEARING PLATE FLANGE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	1" THICKNESS
M1	BEAM GUARD ANCHOR BRACKET	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	
M2	BEAM GUARD ANCHOR END PLATE	AASHTO M111 / ASTM A123 ASTM A36 MIN. STRENGTH 36 KSI, OR ASTM A529 MAX. STRENGTH 50 KSI, OR ASTM A572 MAX STRENGTH 50 KSI, OR ASTM A709 MAX STRENGTH 50 KSI, OR ASTM A992 MAX STRENGTH 50 KSI	3/8" THICKNESS
N1	ANCHOR BRACKET BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	5/8" DIA.
N2	ANCHOR BRACKET BOLT WASHER	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 F436 TYPE 1 (HARDEN WASHER ONLY)	5/8" DIA.
N3	ANCHOR BRACKET BOLT NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	
P1	FOUNDATION TUBE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1/ ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	1/2" DIA.
Q1	SPLICE BOLT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC AASHTO M180 HEAD ASTM A307 GRADE B OR SAE J429 GRADE 2 OR ASTM F1554 GRADE 36	
Q2	SPLICE NUT	HOT DIP AASHTO M232 CLASS / ASTM A153 CLASS C / ASTM F2329 C OR MECHANICAL GAL. TO AASHTO M298 CLASS 50 TYPE 1 / ASTM B695 CLASS 50 TYPE 1 UNC OVER TAP NUTS AS SPECIFIED IN AASHTO 291 / ASTM A 563 AASHTO M180 RECESSED HEAVY HEX HEAD ASTM A563DH OR SAE J995 GRADE 5	5/8" DIA.

MIDWEST GUARDRAIL
SYSTEM (MGS)
TYPE 2 TERMINAL

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2025 /S/ Rodney Taylor
DATE <position>

FHWA



4" x 12" DELINEATOR
WITH REFLECTIVE SHEETING

REFLECTOR SPACING TABLE

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

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

FHWA

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.

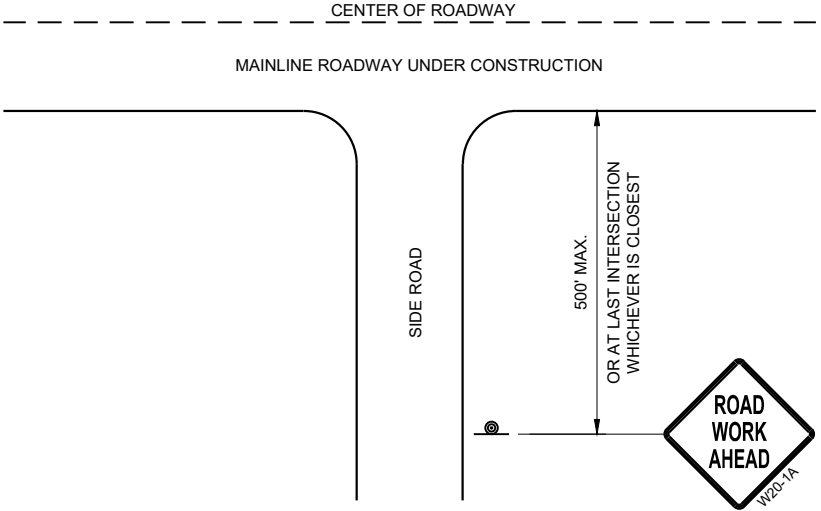
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

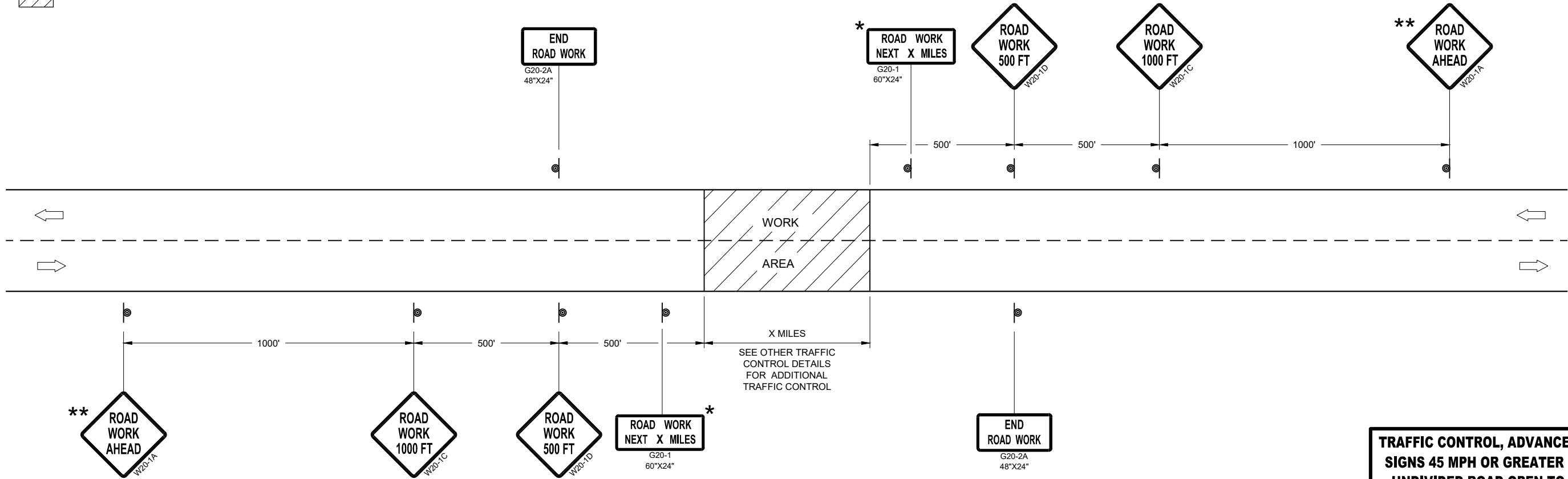
- * OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- ** PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 68

FHWA

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. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

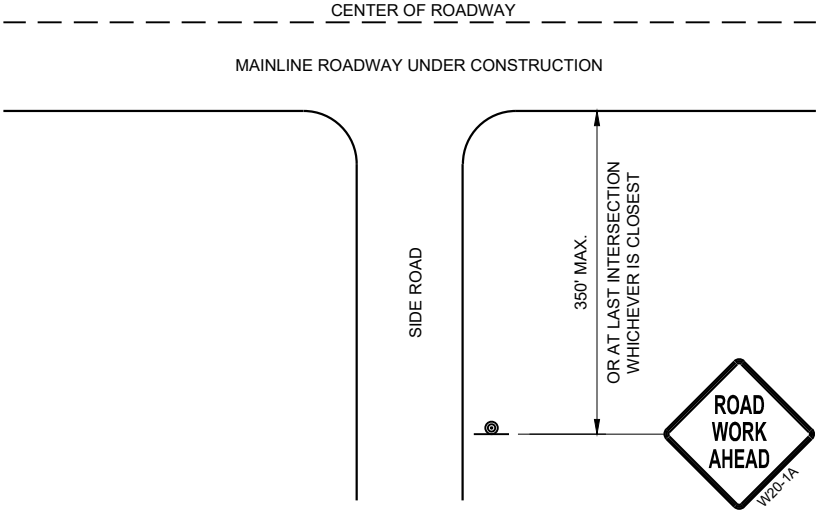
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

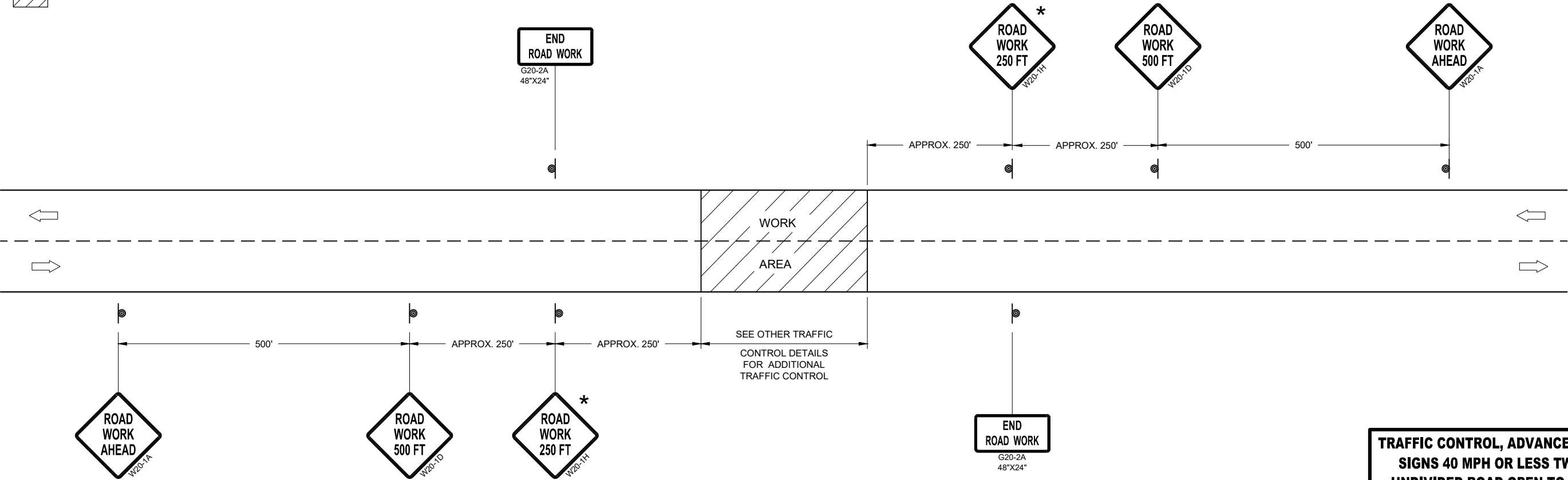
* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



TYPICAL SIDE ROAD APPROACH
WARNING SIGN DETAIL

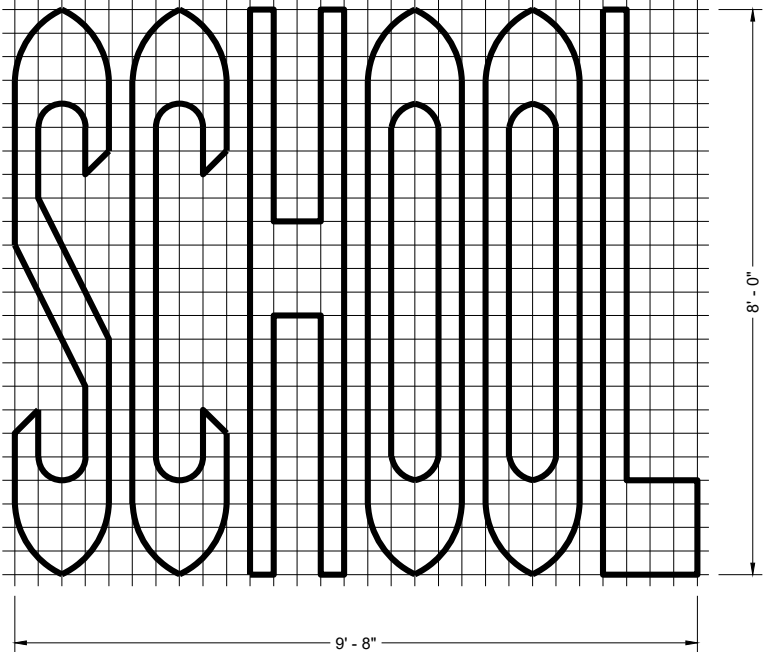
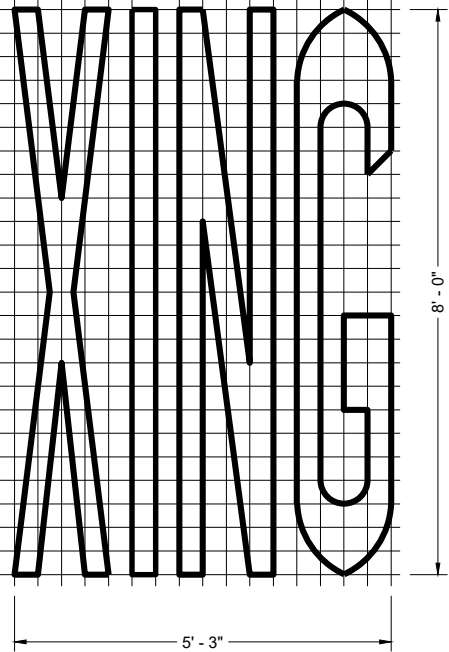
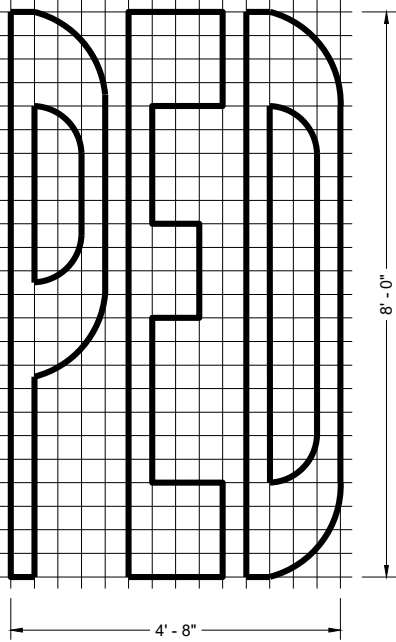
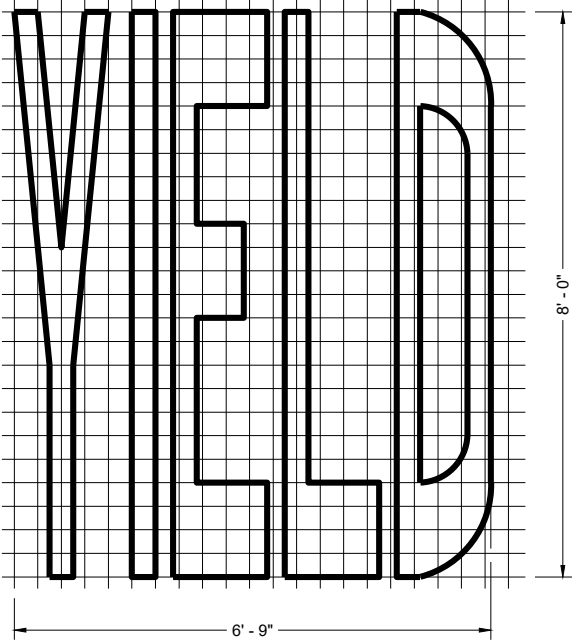
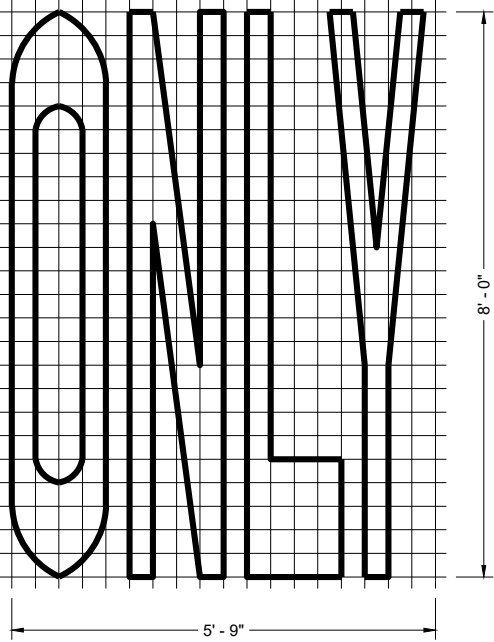
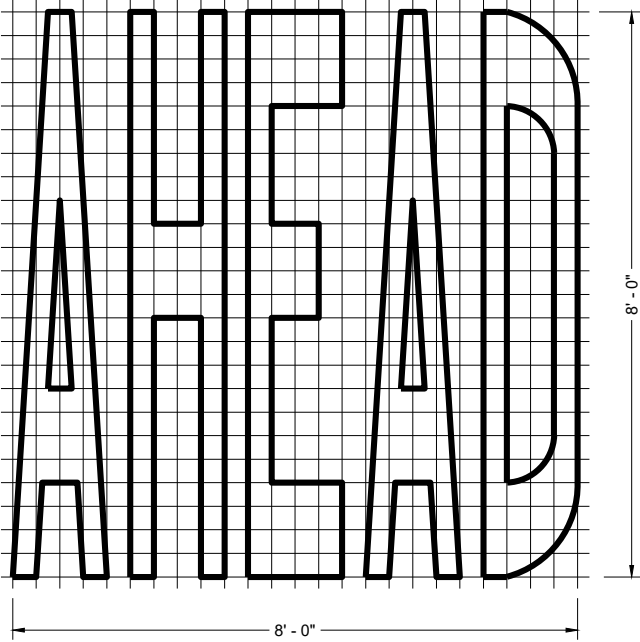
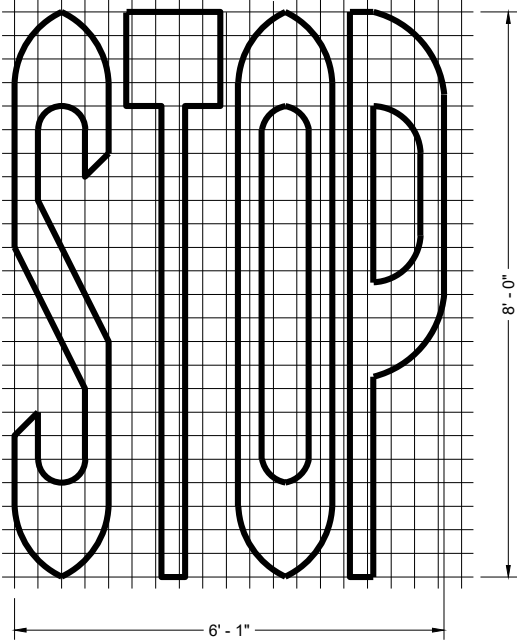


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

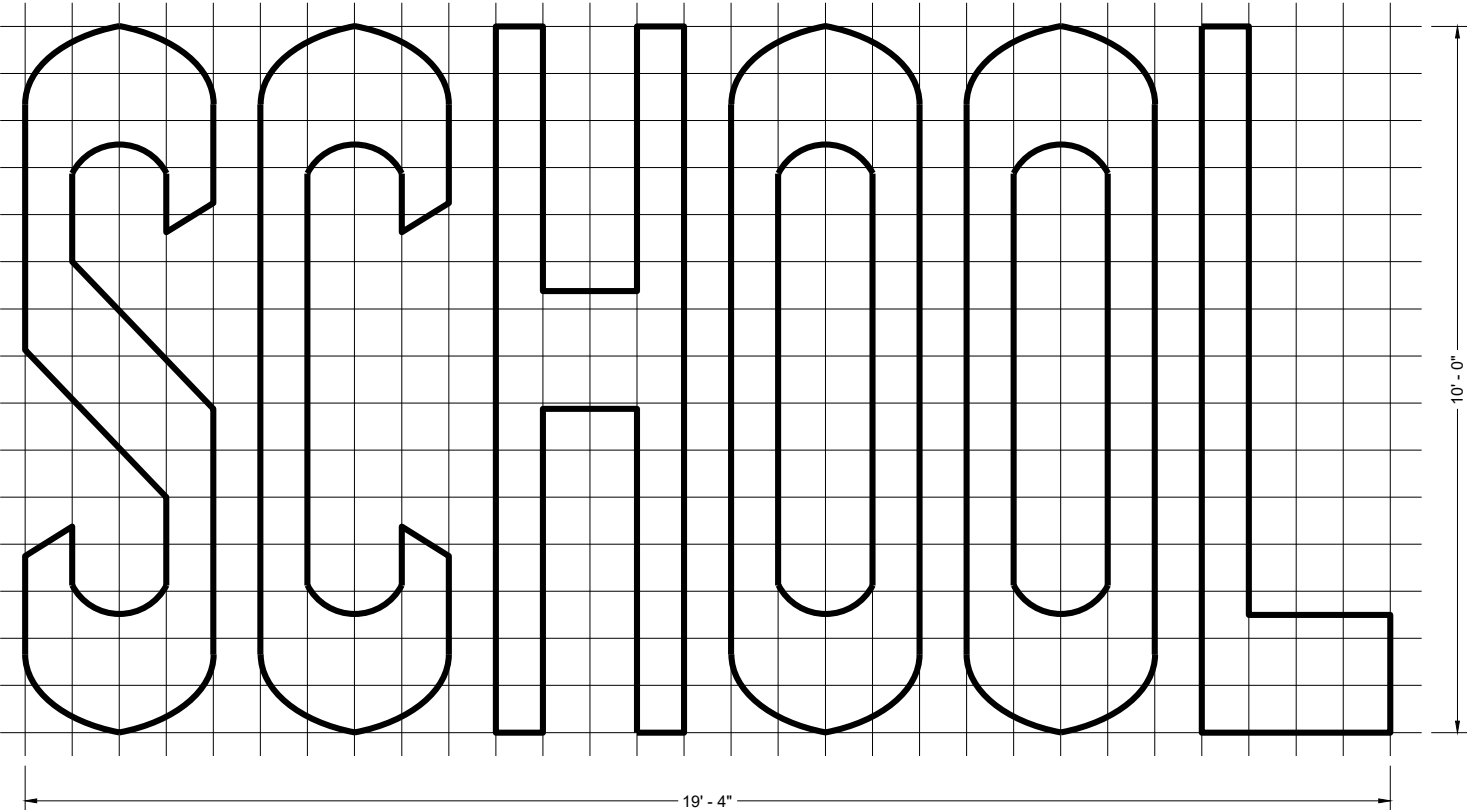
TRAFFIC CONTROL, ADVANCE WARNING
SIGNS 40 MPH OR LESS TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
July 2018 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 69
FHWA



SINGLE LANE

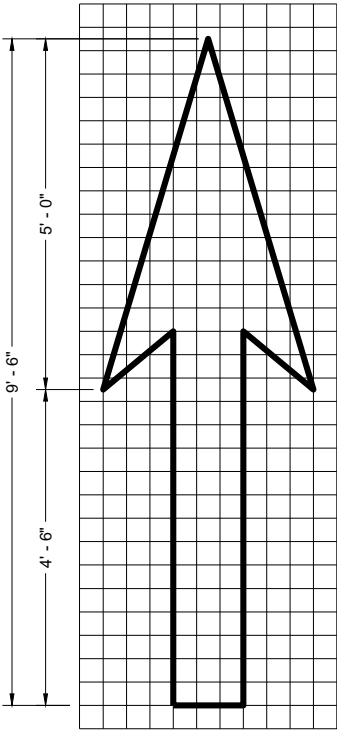


TWO - LANE

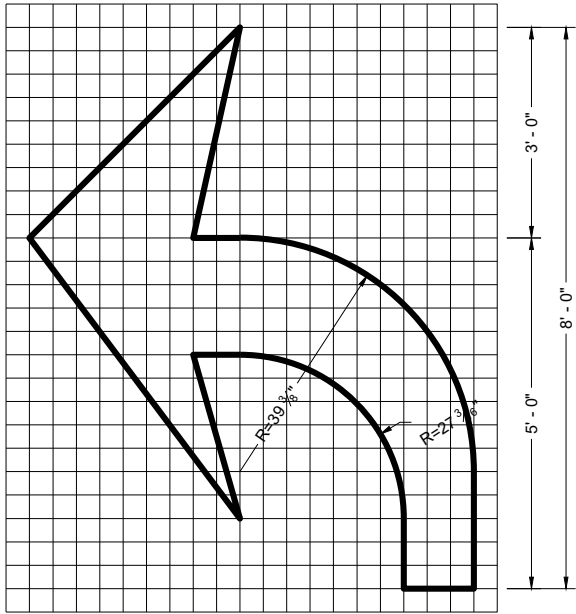
GENERAL NOTES

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

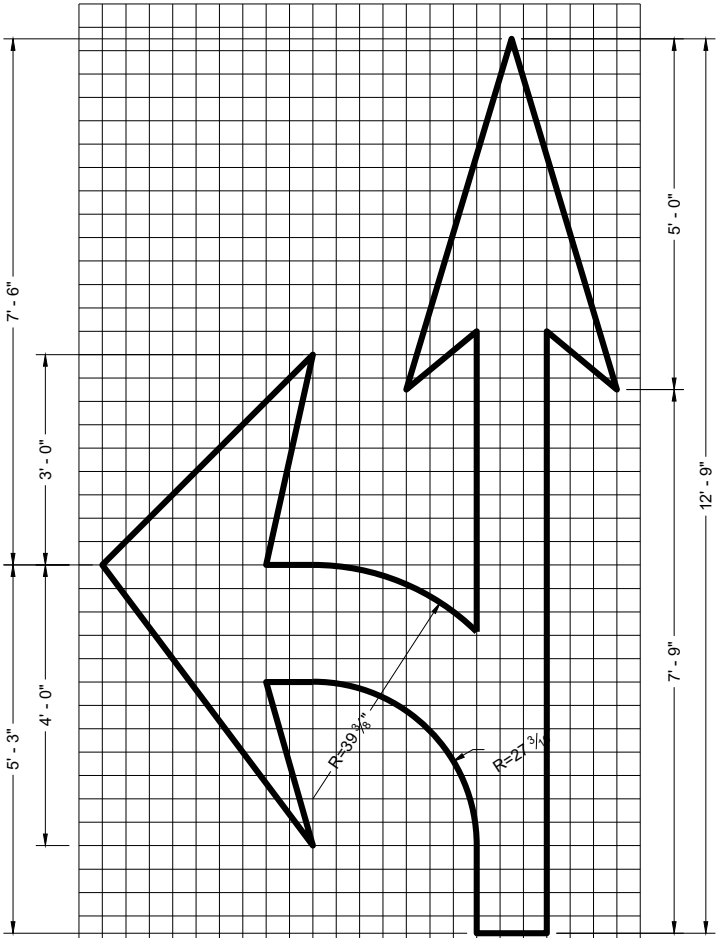
PAVEMENT MARKING WORDS	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2024 DATE	/S/ Jeannie Silver STATE SIGNING AND MARKING ENGINEER
FHWA	70



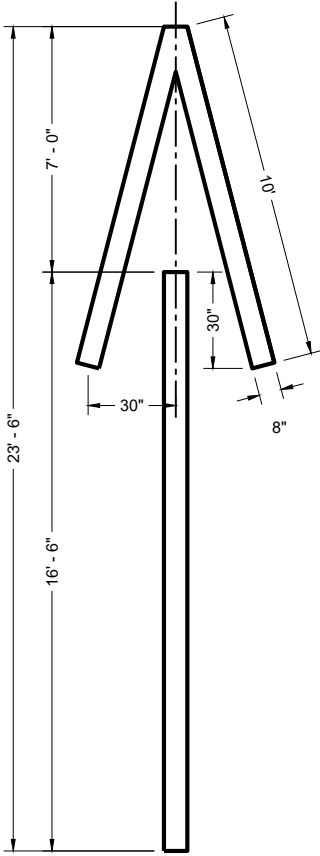
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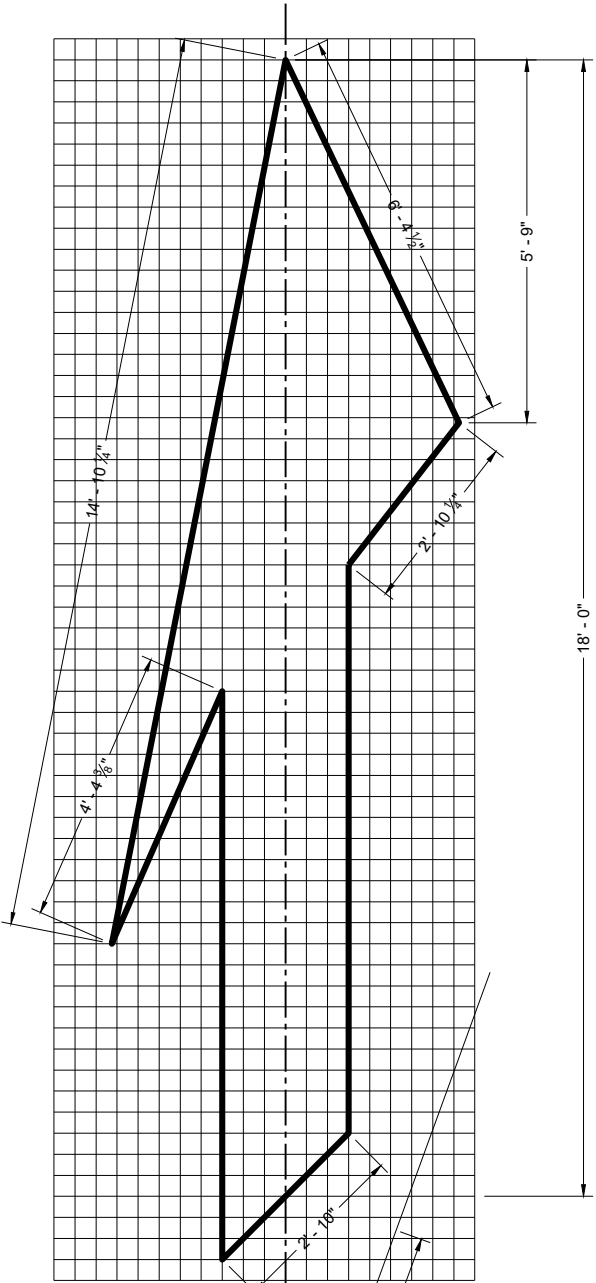
TYPE 2



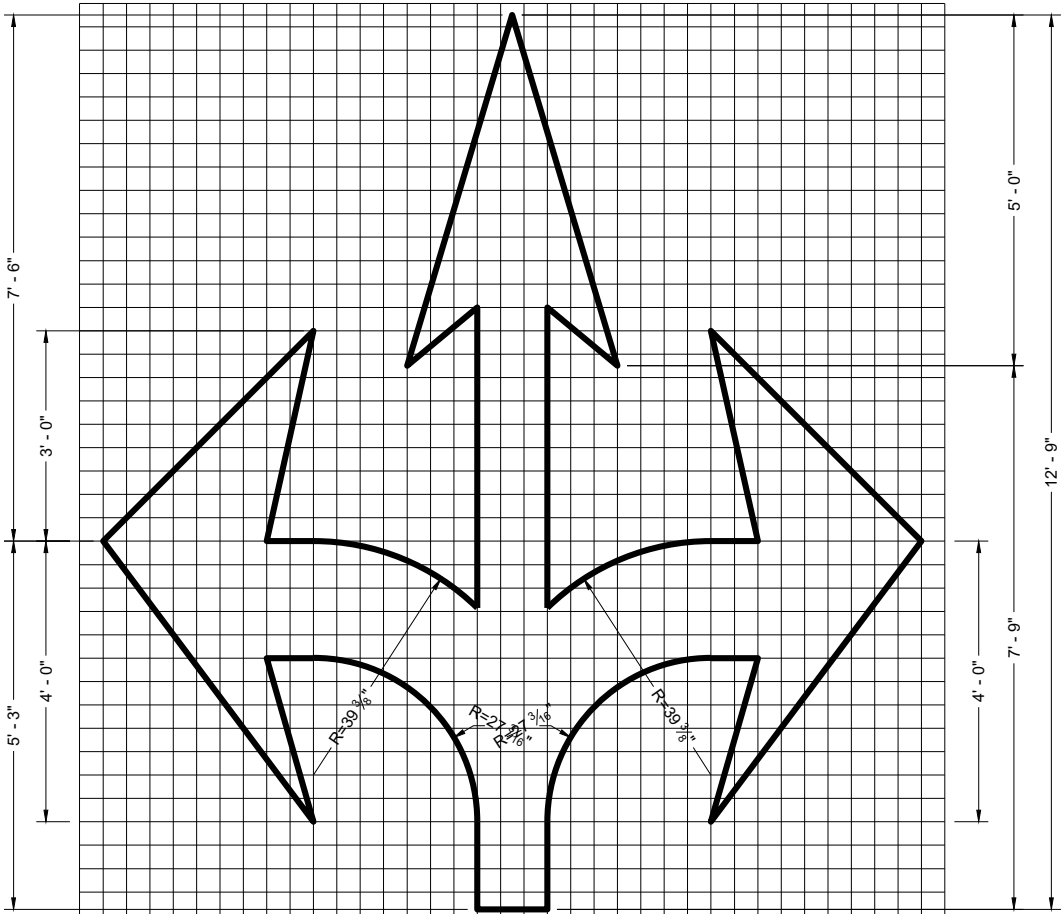
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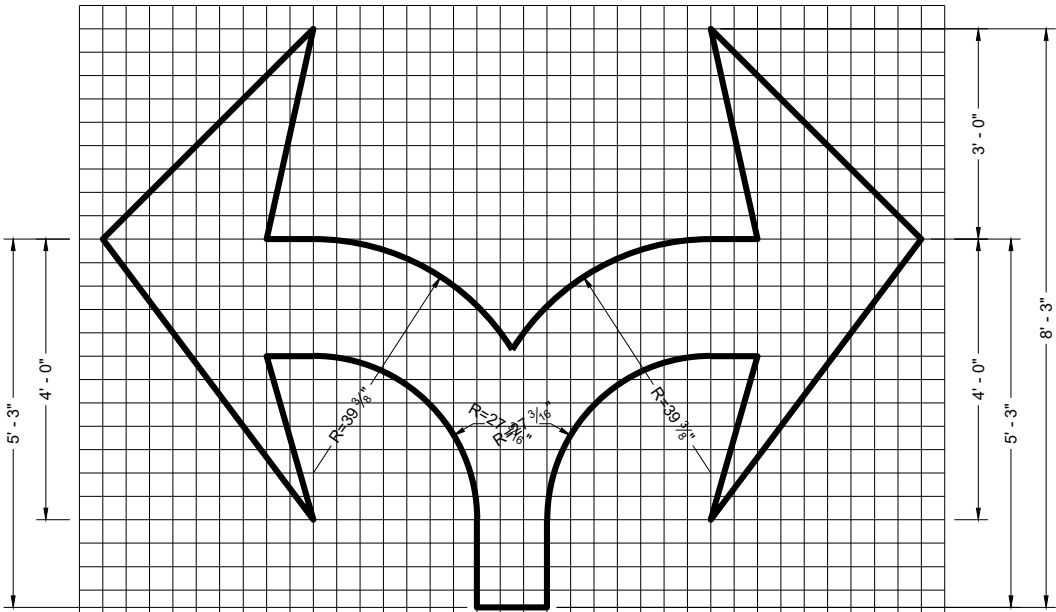
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

GENERAL NOTES

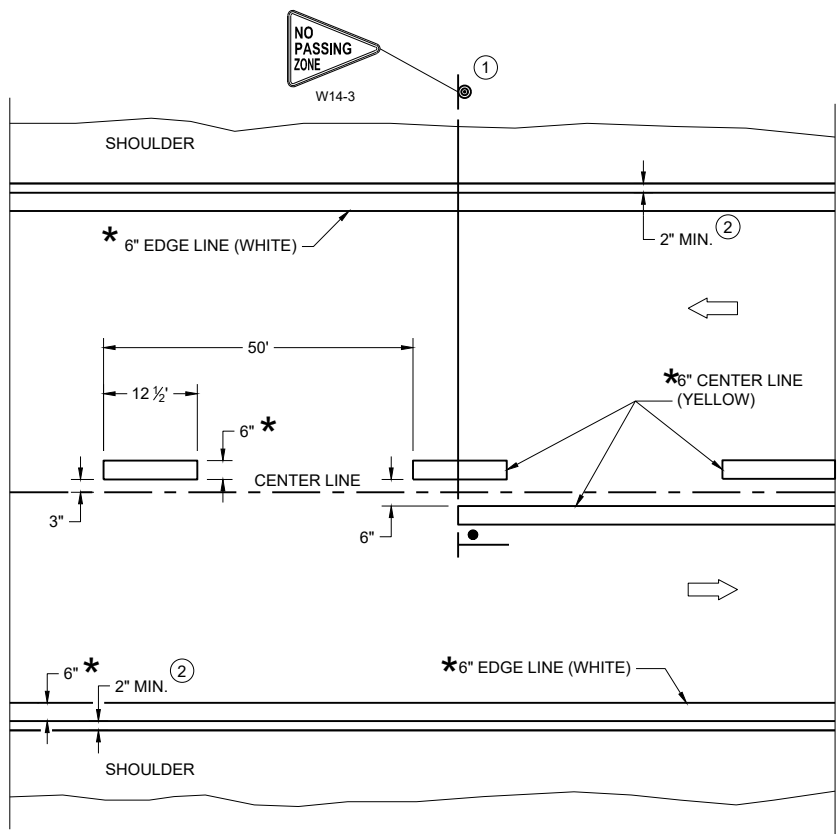
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PAVEMENT MARKING ARROWS

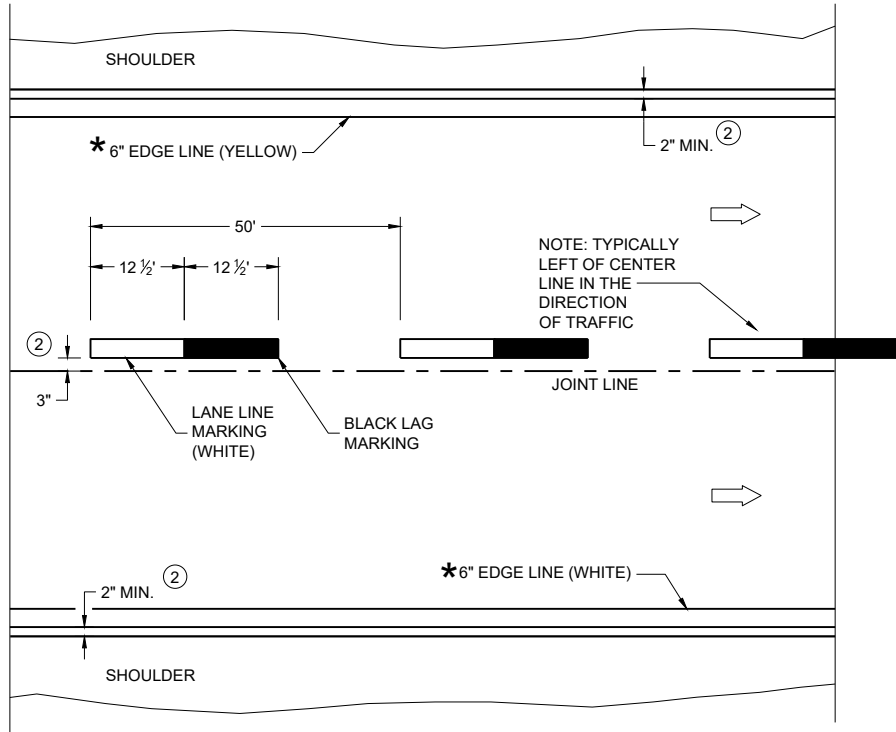
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
November 2024
DATE /S/ Jeannie Silver
STATE SIGNING AND MARKING ENGINEER

FHWA



TWO WAY TRAFFIC



ONE WAY TRAFFIC

PERMANENT PAVEMENT MARKING

*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

GENERAL NOTES

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

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

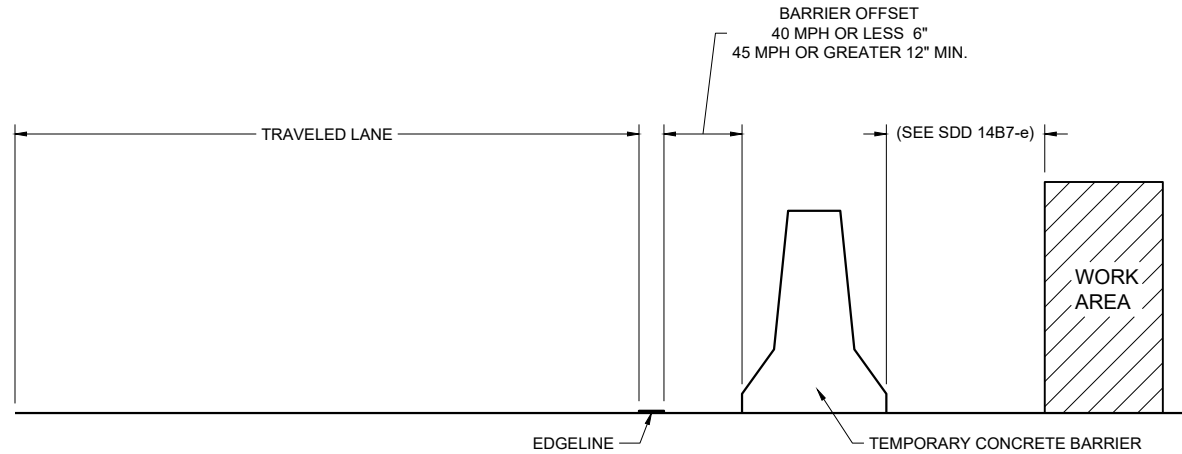
LEGEND

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

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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



TEMPORARY BARRIER OFFSET FROM EDGE LINE

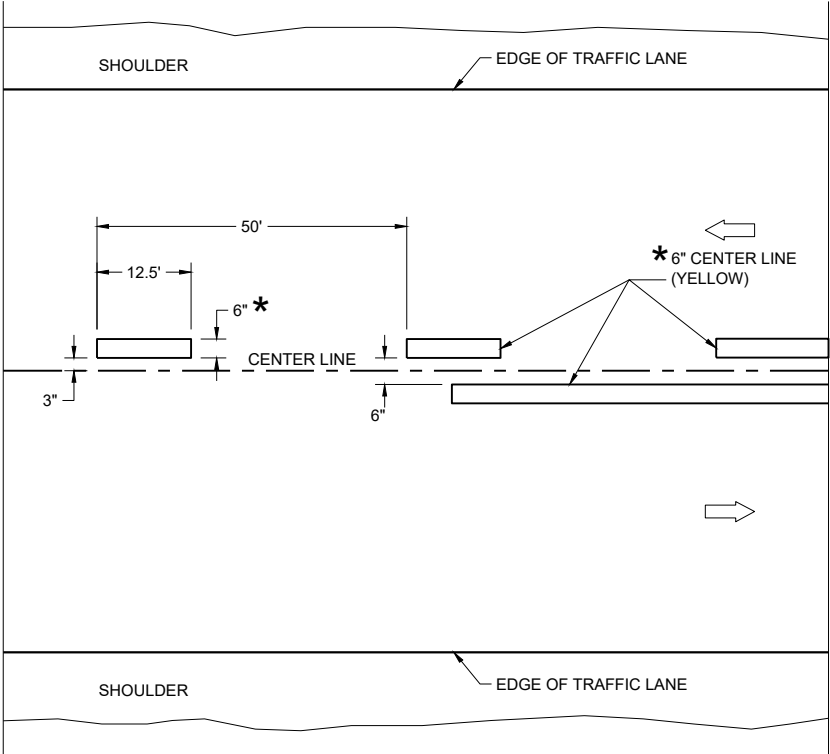
GENERAL NOTES

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

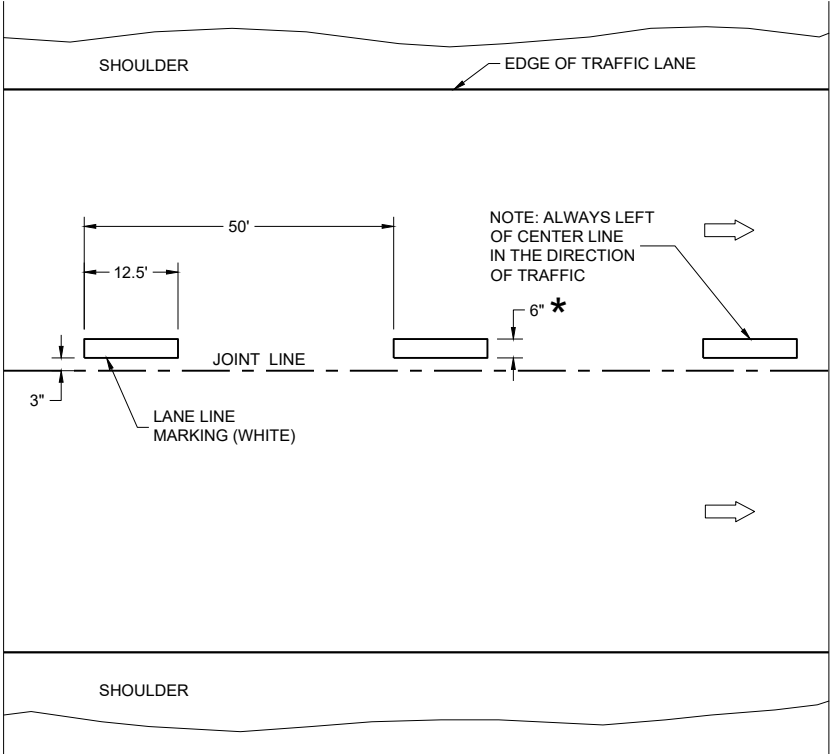
LEGEND

➡ DIRECTION OF TRAFFIC

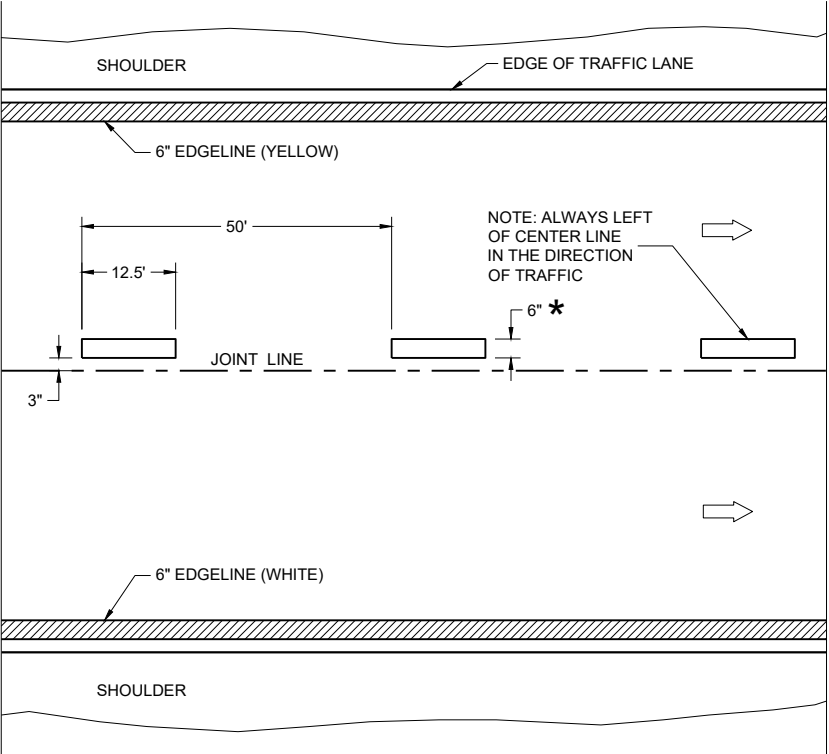
* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



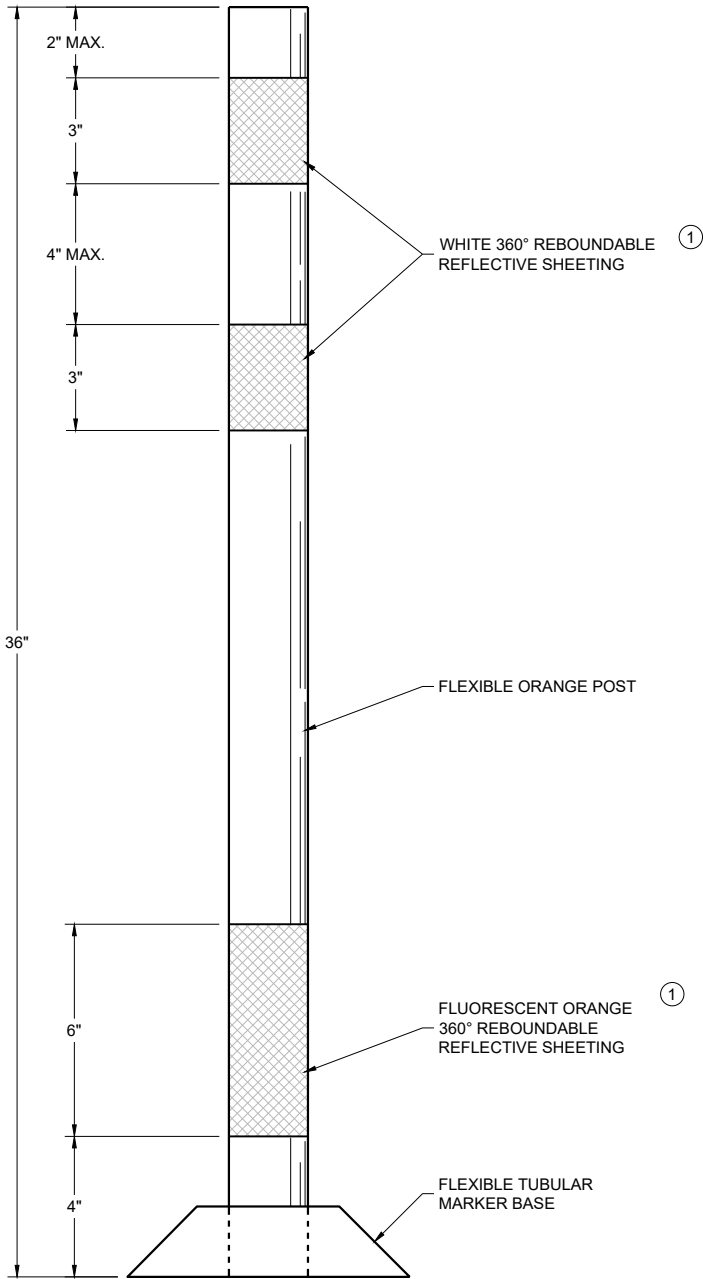
ONE WAY TRAFFIC



FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

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



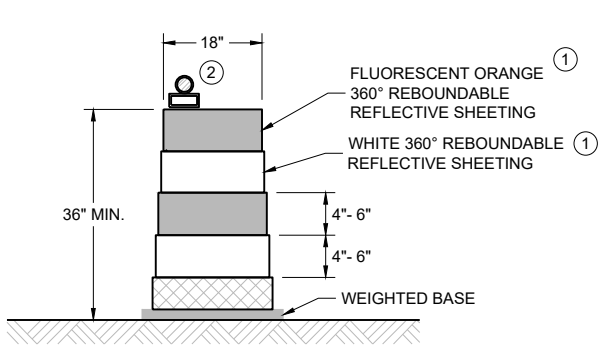
**FLEXIBLE TUBULAR
MARKER POST
WORK ZONE**

GENERAL NOTES

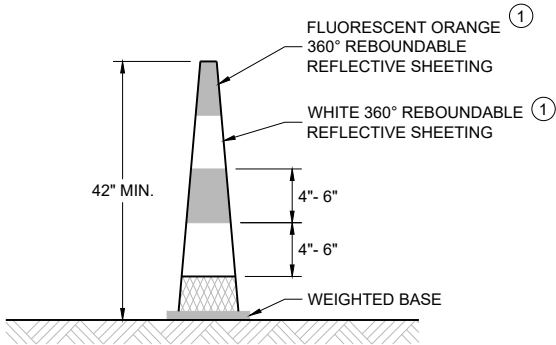
- DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.
- SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.
- THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.
- ① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

**CHANNELIZING DEVICES
FLEXIBLE TUBULAR
MARKER POST**

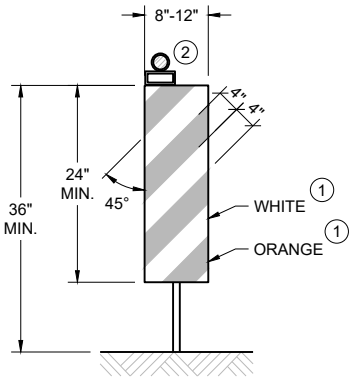
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



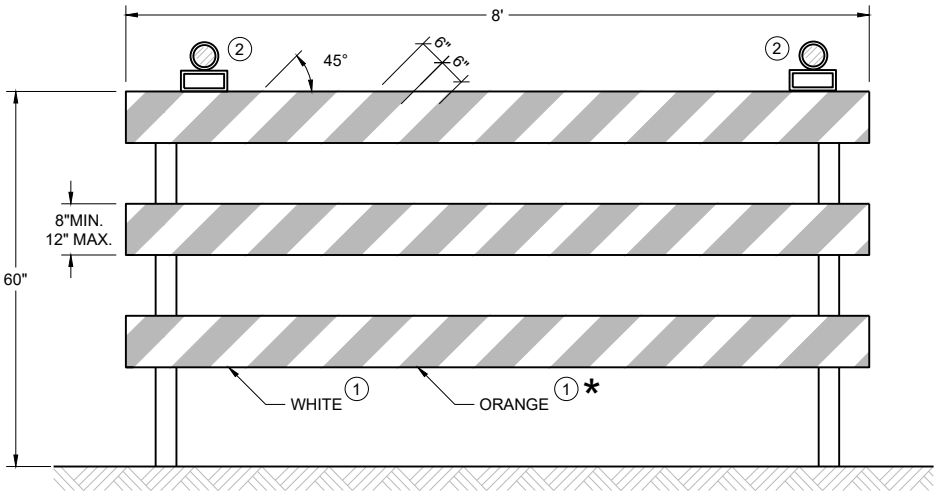
DRUM
BALLAST WIDTHS
RANGE FROM 24"-36"



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



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



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

GENERAL NOTES

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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

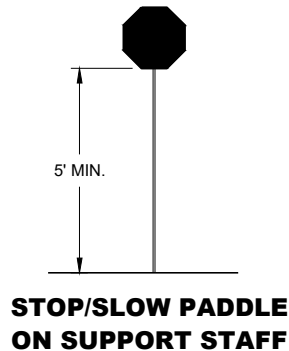
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

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

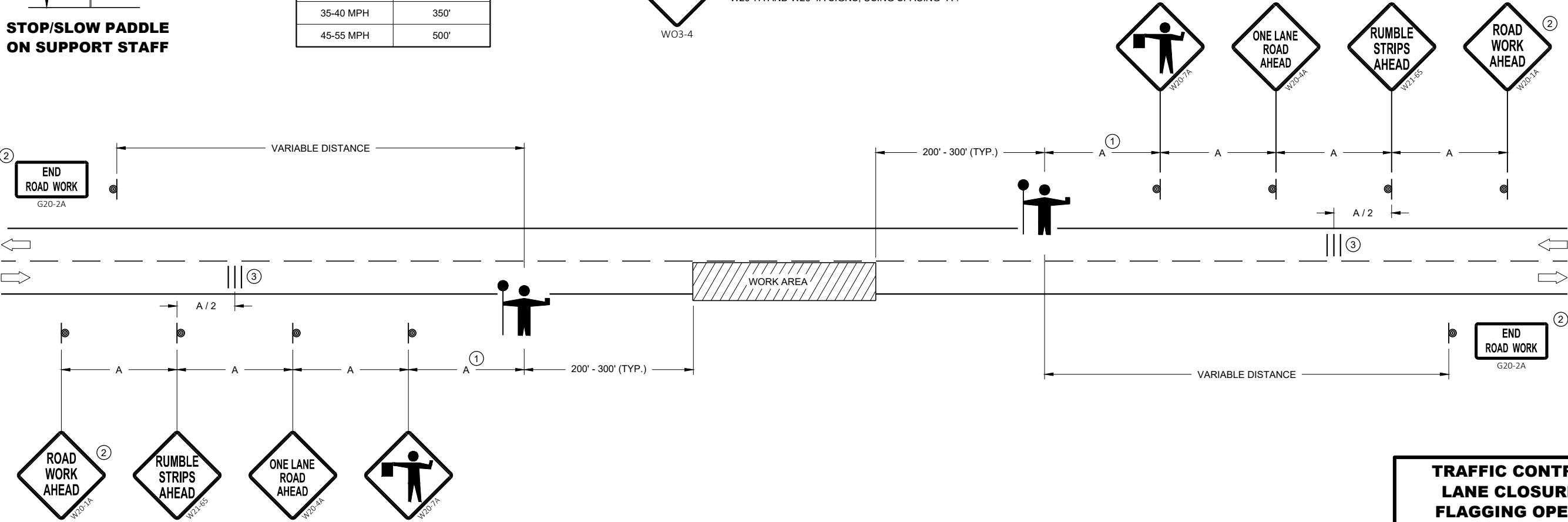


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

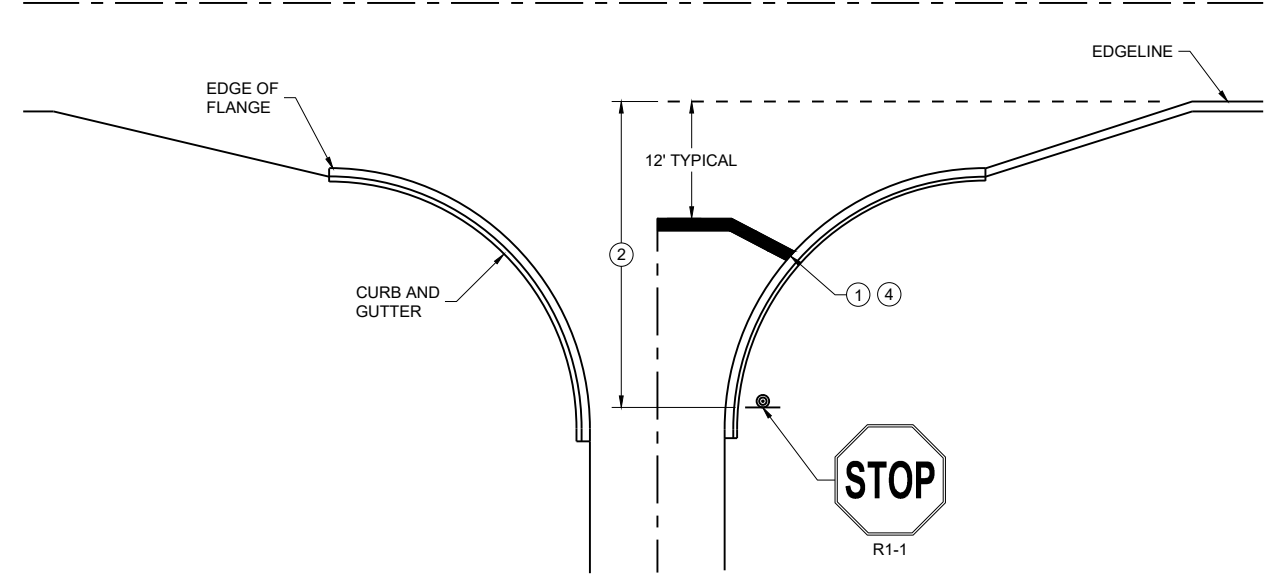
SPEED LIMIT	SPACING "A"
25-30 MPH	200'
35-40 MPH	350'
45-55 MPH	500'



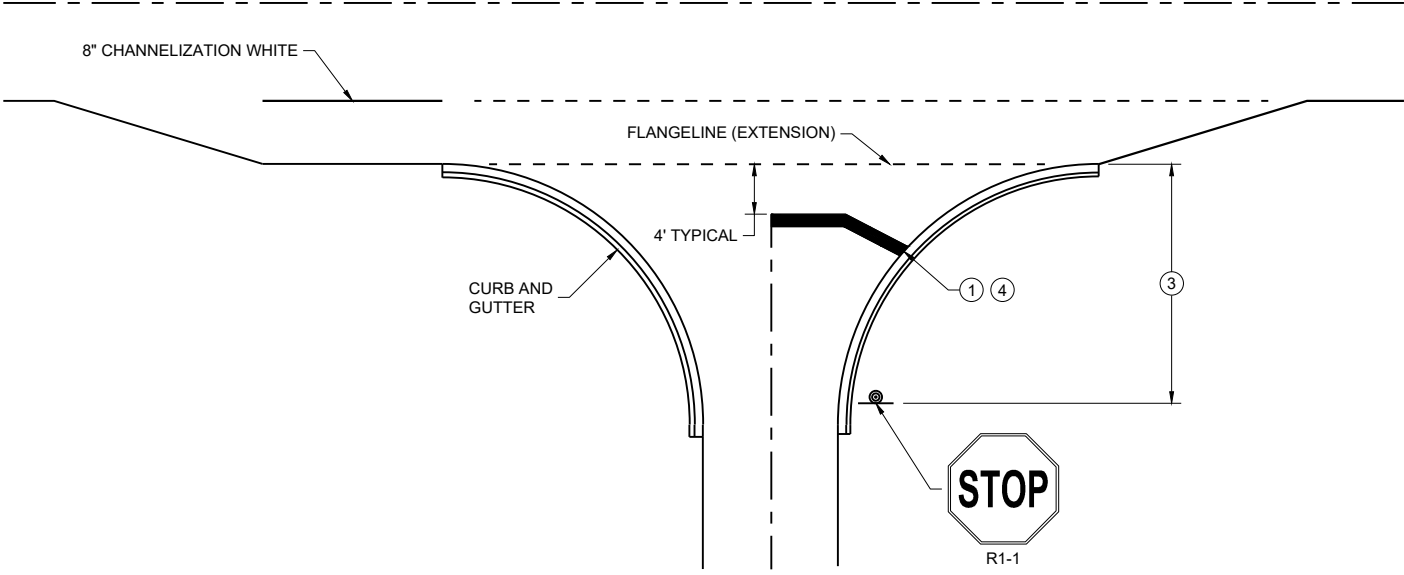
USE OF W03-4 SIGN IS OPTIONAL. WHEN USED, THIS SIGN SHALL BE LOCATED BETWEEN THE W20-7A AND W20-4A SIGNS, USING SPACING "A".



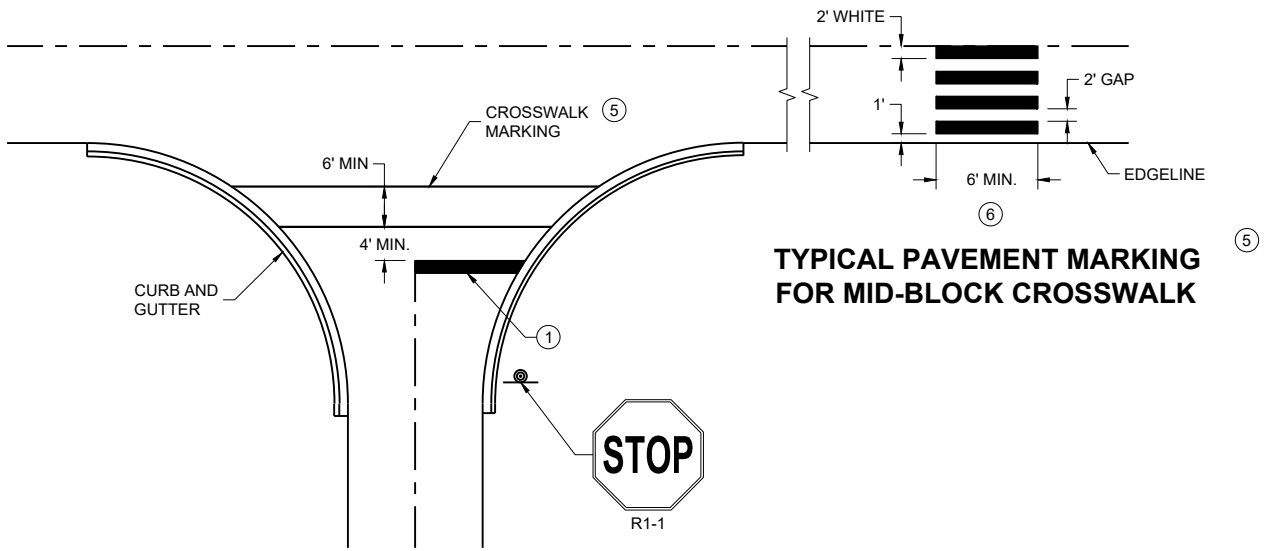
TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2022 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER 76
FHWA	



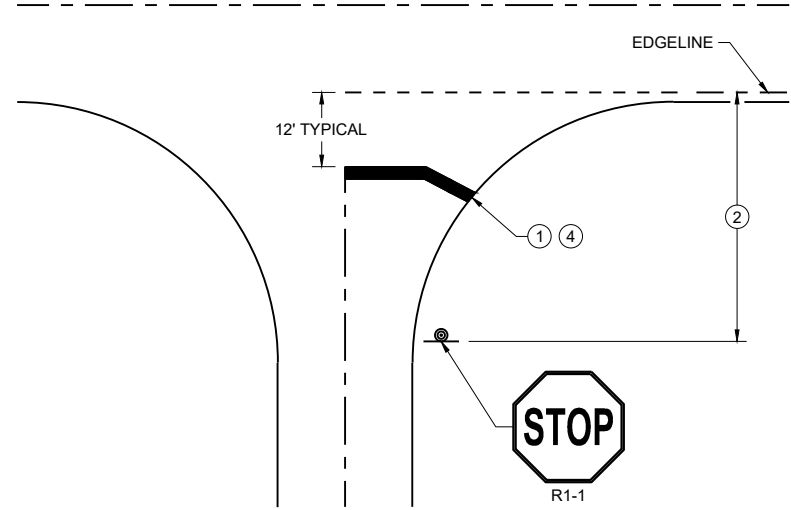
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



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



TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

GENERAL NOTES

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

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES.
- ⑥ POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS

STOP LINE AND CROSSWALK PAVEMENT MARKING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED March 2024 DATE	/S/ Matthew Rauch STATE SIGNING AND MARKING ENGINEER

FHWA 77

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

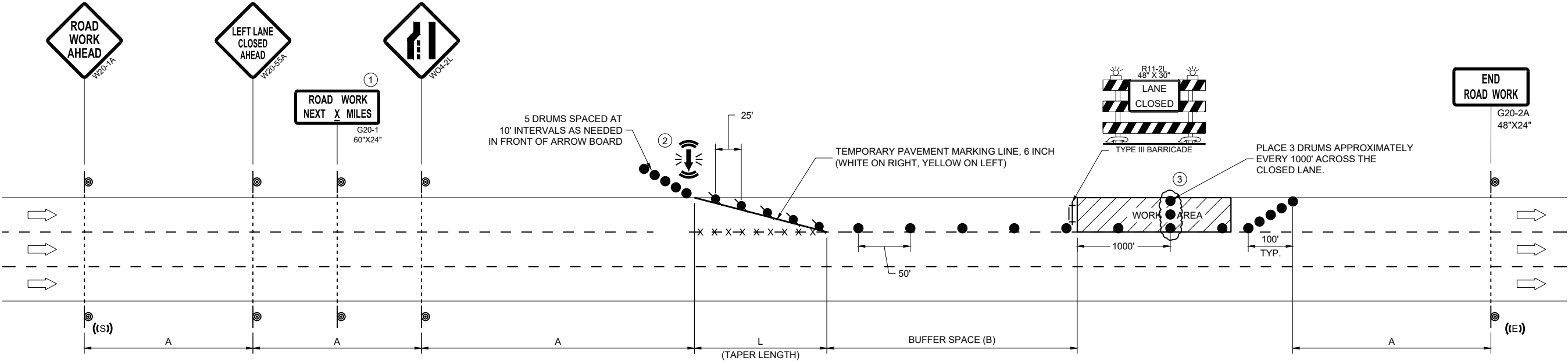
PLACE FOR 4 OR MORE CONTINUOUS DAYS AND NIGHTS.

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

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

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

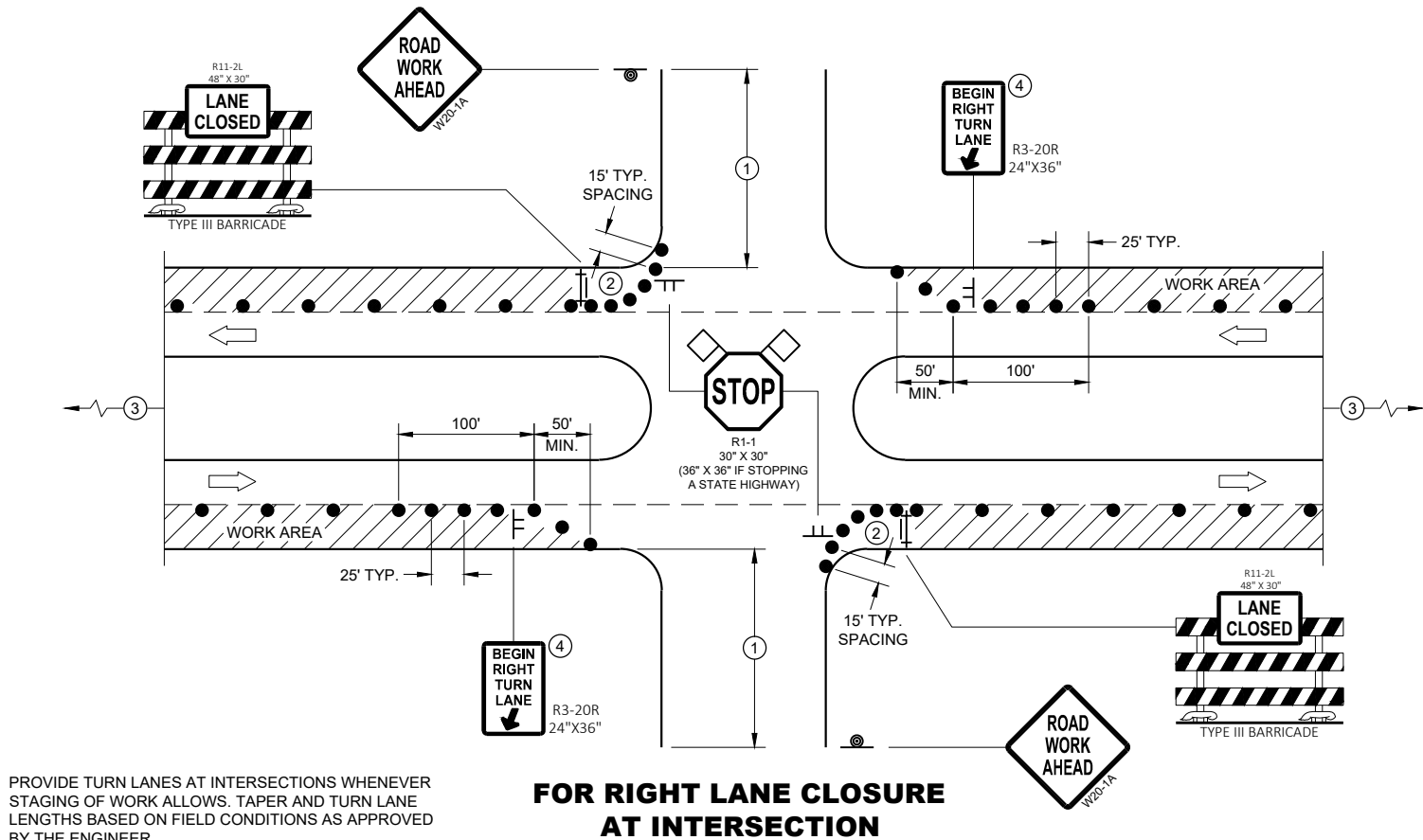
- ① OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.
- ② WHERE THE SHOULDER OR TERRACE HAS INSUFFICIENT SPACE TO PLACE THE ARROW BOARD AS SHOWN, PLACE THE ARROW BOARD AT THE END OF THE TAPER.
- ③ DRUMS IN A CLOSED LANE THAT MUST BE MOVED FOR A WORK OPERATION SHALL BE IMMEDIATELY REESTABLISHED UPON COMPLETION OF THE OPERATION, OR FOR CONTINUING OPERATIONS, AT THE END OF EACH WORKING DAY.



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

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

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



GENERAL NOTES

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

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

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

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

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

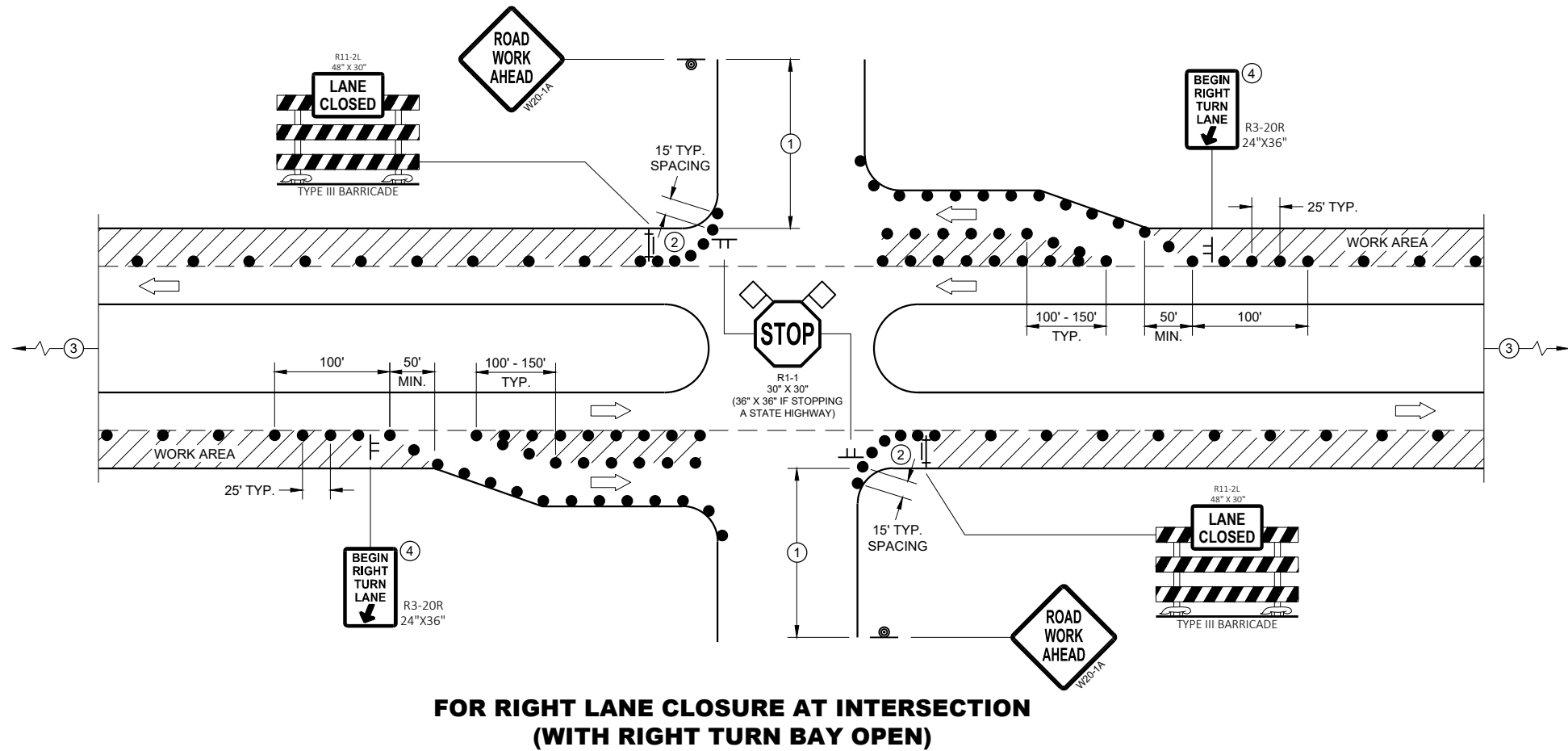
SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE FHWA'S MANUAL OF STANDARD HIGHWAY SIGNS OR THE WISCONSIN STANDARD SIGN PLATES.

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

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

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

- ① 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.
- ② ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS
- ③ SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.
- ④ MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.

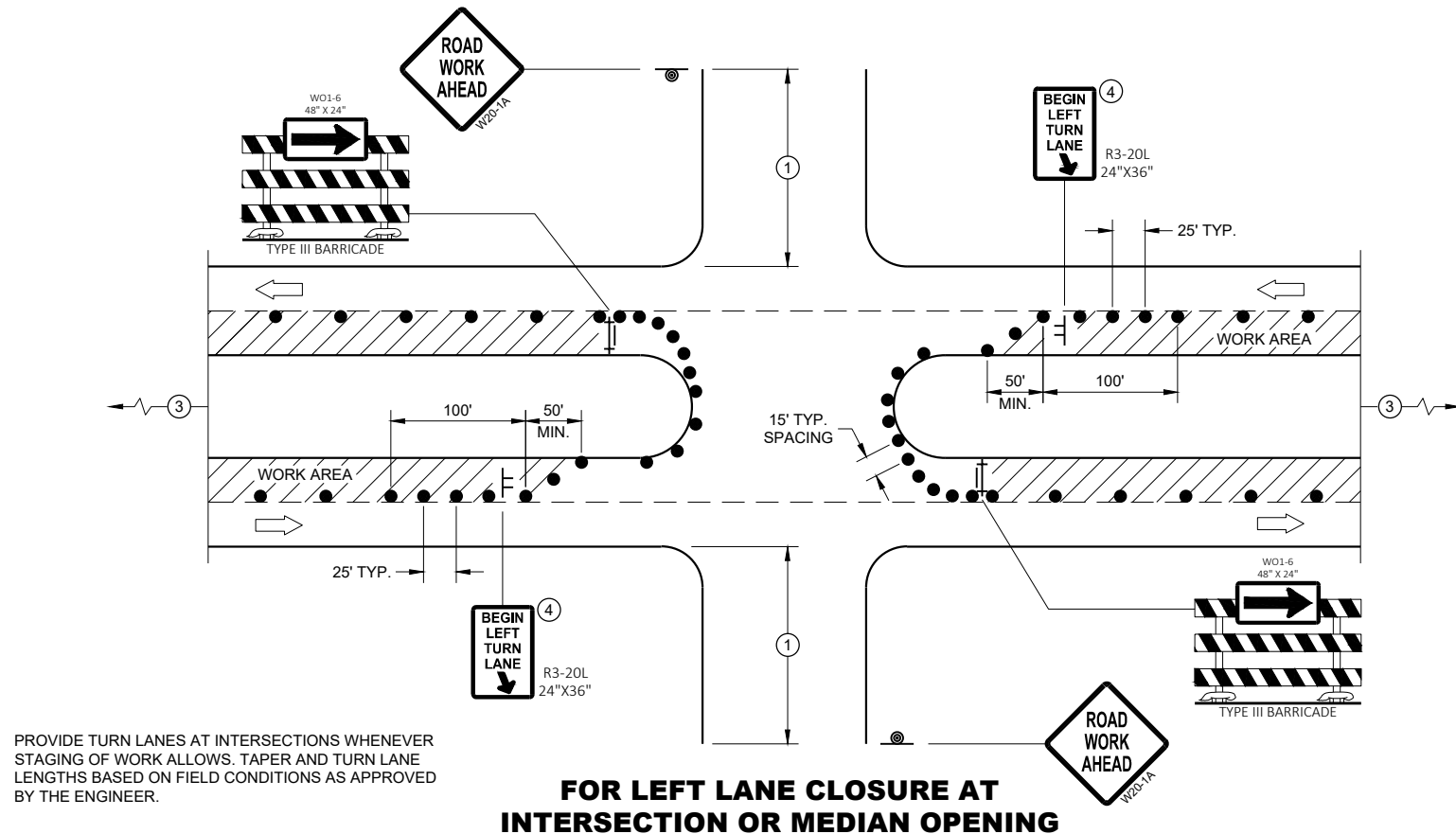


LEGEND

- SIGN ON TEMPORARY SUPPORT
- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- DIRECTION OF TRAFFIC
- ◇ ◇ FLAGS, 16" X 16" MIN., ORANGE
- ▨ WORK AREA

**TRAFFIC CONTROL,
INTERSECTION WITHIN SINGLE
RIGHT LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION 79

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

- 500' TYPICAL OR AT LAST INTERSECTION, WHICHEVER IS CLOSER.
350' IF 35 - 40 MPH.
200' IF 25 - 30 MPH.
- ALSO USE BARRICADE AND 15 FOOT TYPICAL DRUM SPACING AT COMMERCIAL DRIVEWAYS
- SEE SEPARATE LANE CLOSURE DETAIL FOR ADDITIONAL TRAFFIC CONTROL.
- MINIMUM MOUNTING HEIGHT OF 5 FEET FROM EDGE OF PAVEMENT (AT EDGE LINE LOCATION) TO BOTTOM OF SIGN.

LEGEND

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

**FOR LEFT LANE CLOSURE AT INTERSECTION
OR MEDIAN OPENING (WITH LEFT TURN BAY OPEN)****TRAFFIC CONTROL,
INTERSECTION WITHIN SINGLE
LEFT LANE CLOSURE**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
August 2020 /S/ Andrew Heidtke
DATE WORK ZONE ENGINEER 80
FHWA

LEGEND

- SIGN ON PERMANENT SUPPORT
- TRAFFIC CONTROL DRUM
- DIRECTION OF TRAFFIC
- WORK ZONE

GENERAL NOTES

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

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

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

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

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

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

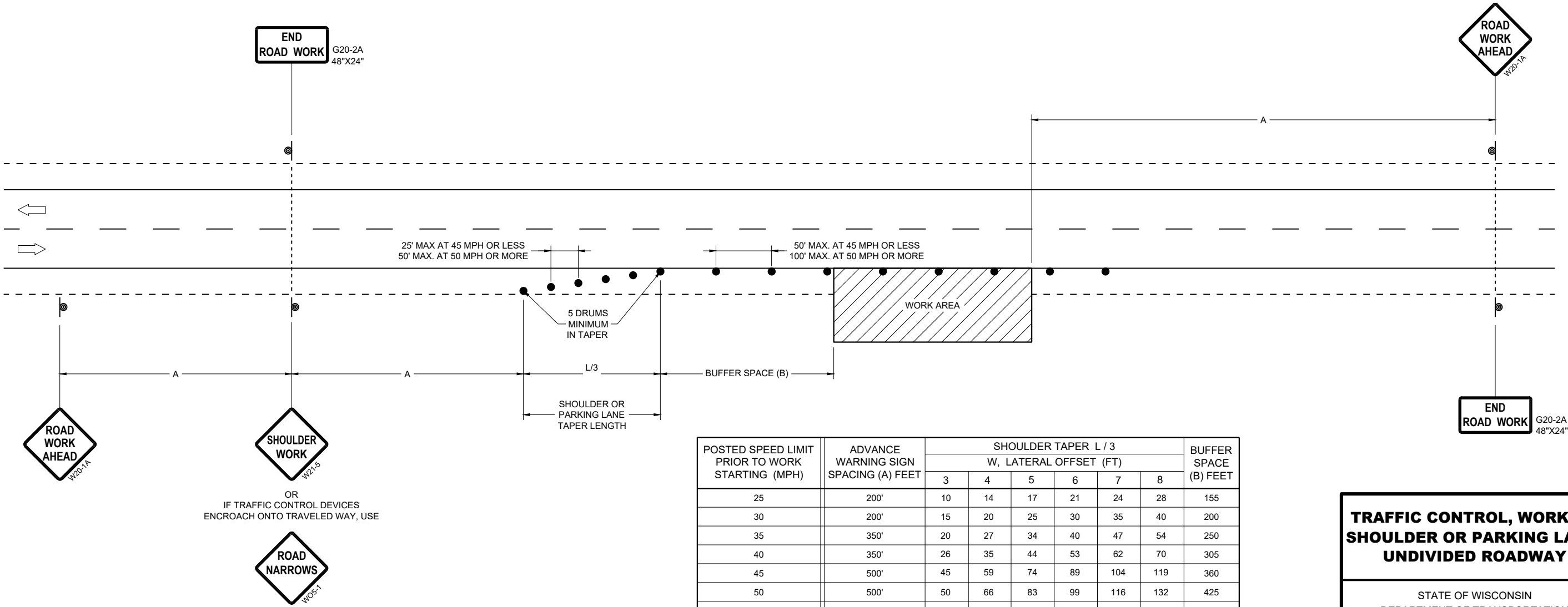
W20-1A AND G20-2A SIGNS ARE NOT REQUIRED IF THE WORK AREA IS WITHIN A LARGER WORK ZONE WHERE THESE SIGNS ARE ALREADY PRESENT.

6

6

SDD 15D28-06

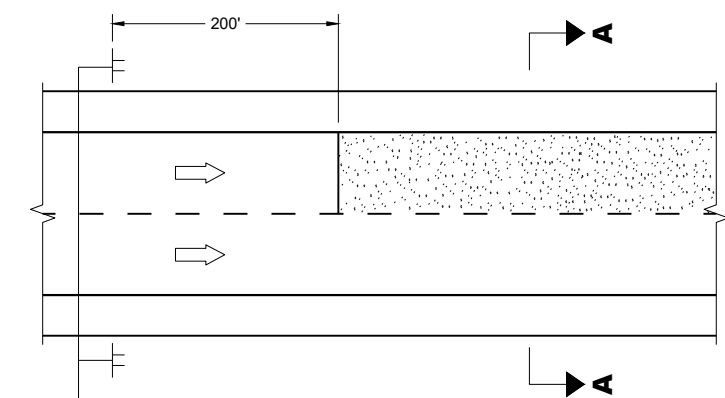
SDD 15D28-06



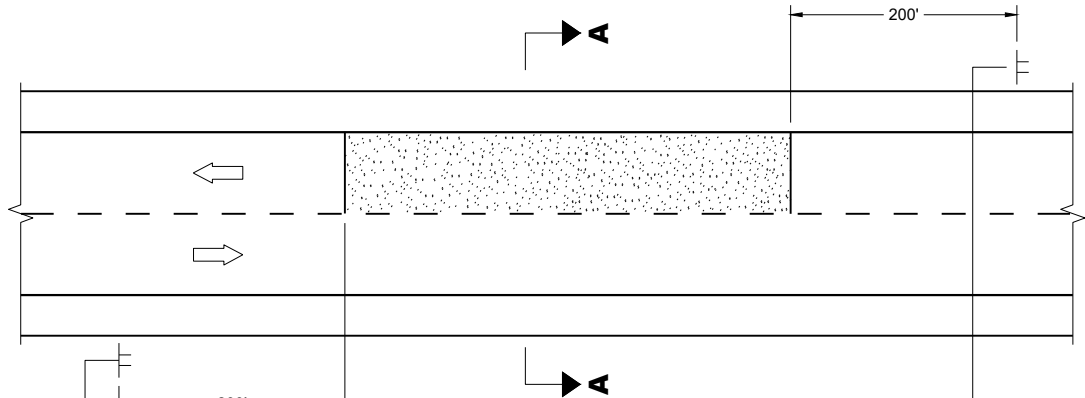
TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
May 2026 /S/ ANDREW HEIDTKE
DATE STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA



MULTI-LANE

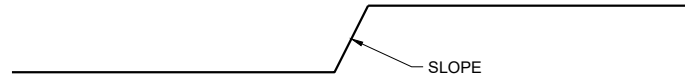


TWO-WAY TWO LANE

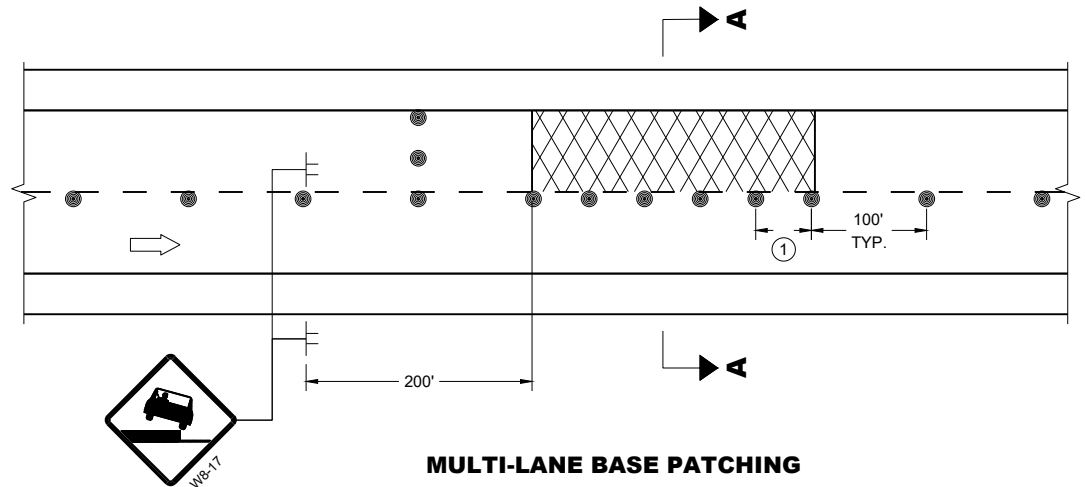


SECTION A - A

OR



SECTION A - A



MULTI-LANE BASE PATCHING

ADJACENT LANE DROP-OFFS

GENERAL NOTES

FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.

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

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

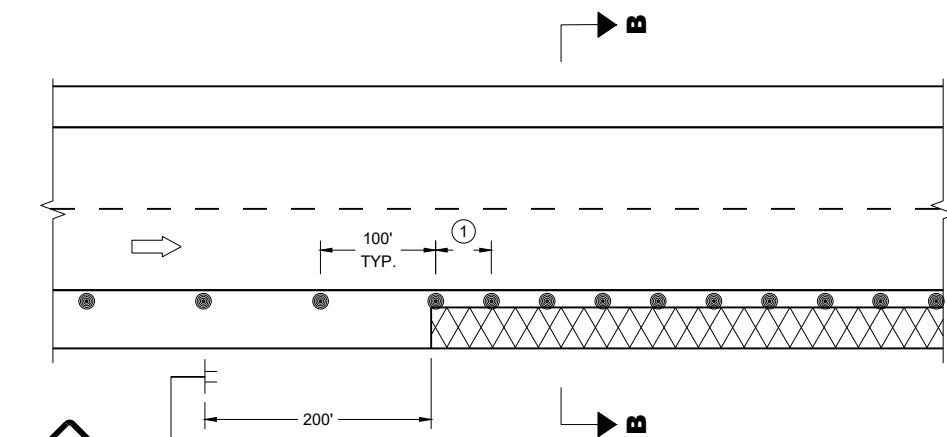
WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.

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

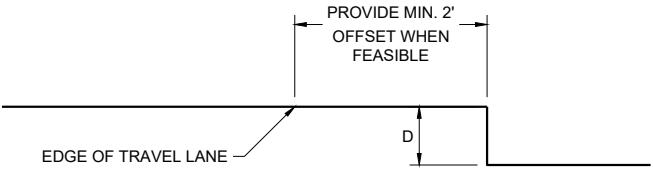
① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

LEGEND

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



SHOULDER DROP-OFFS



SECTION B - B

D	SIGN ③
< 2" WITH A SLOPE STEEPER THAN 3:1	LOW SHOULDER WO8-9
2" < 6" WITH A SLOPE STEEPER THAN 3:1	SHOULDER DROP - OFF W8-9A
PROVIDE A 3:1 OR FLATTER SLOPE OF MATERIAL ADJACENT TO THE PAVEMENT	

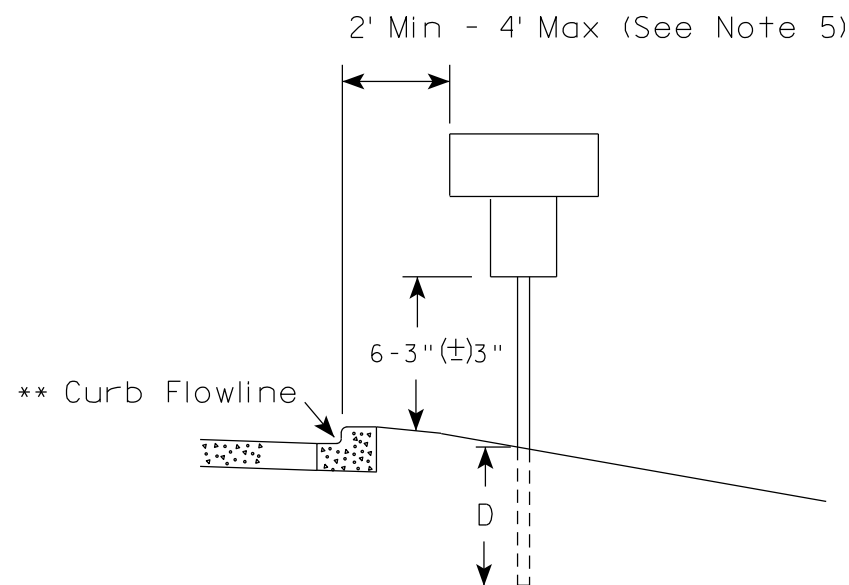
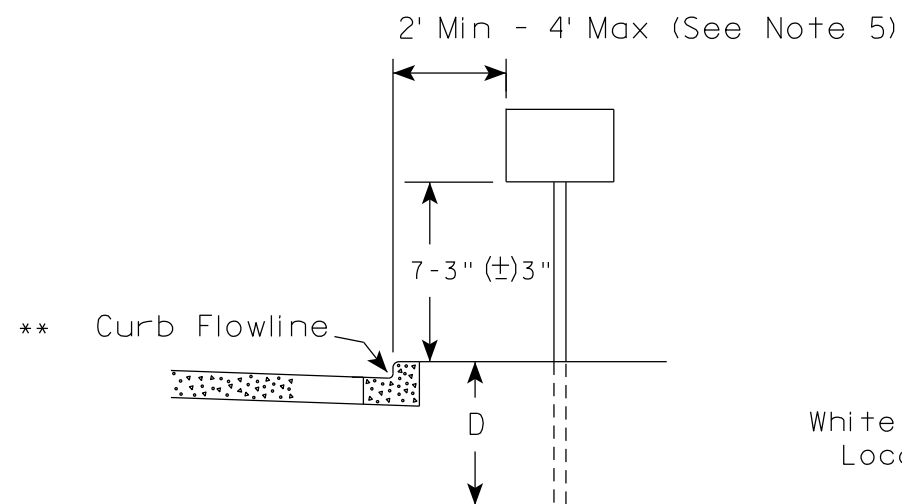
TRAFFIC CONTROL,
DROP-OFF SIGNING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

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

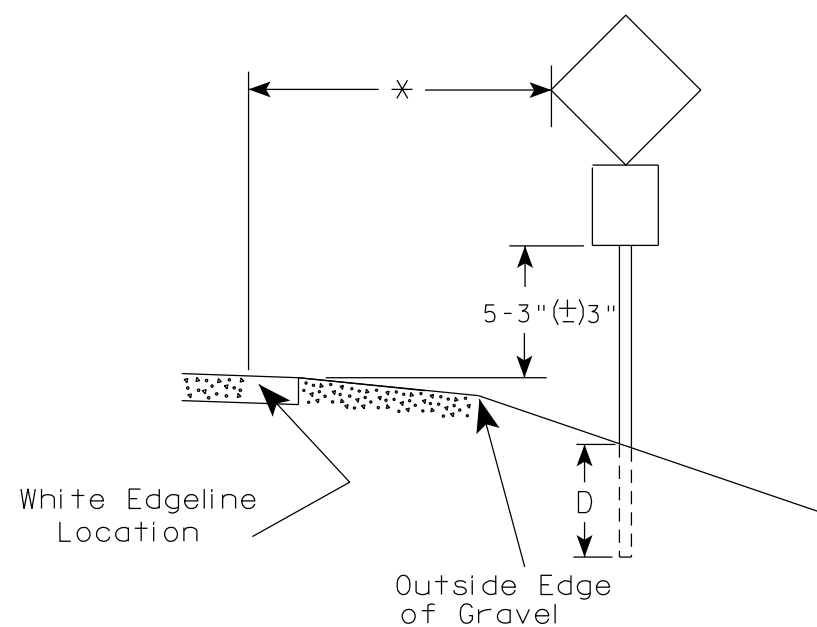
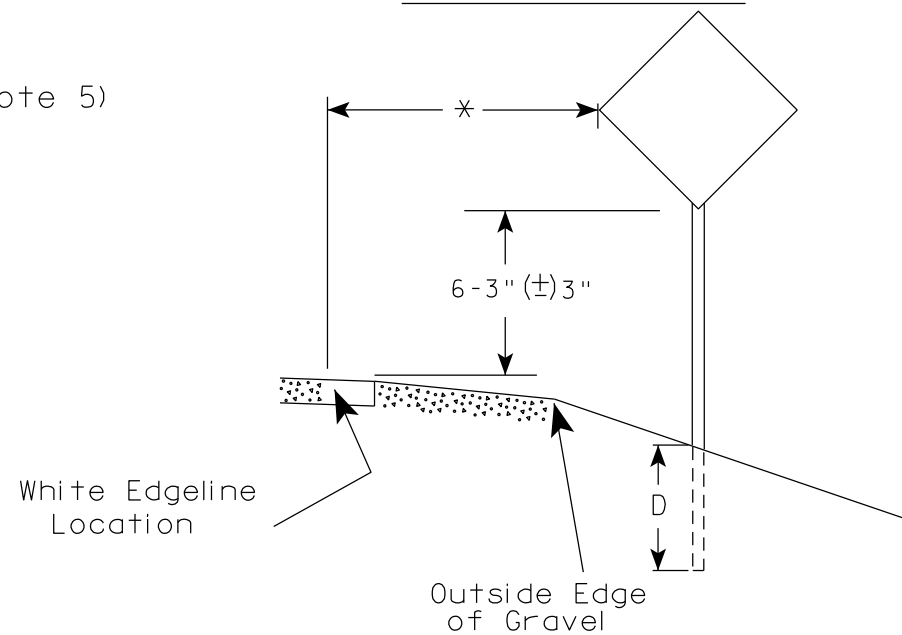
FHWA

URBAN AREA



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

RURAL AREA (See Note 2)



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

GENERAL NOTES

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF PERMANENT TYPE II
SIGNS ON SINGLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

Matthew R. Rauch
for State Traffic Engineer

DATE 12/6/23

PLATE NO. A4-3.23

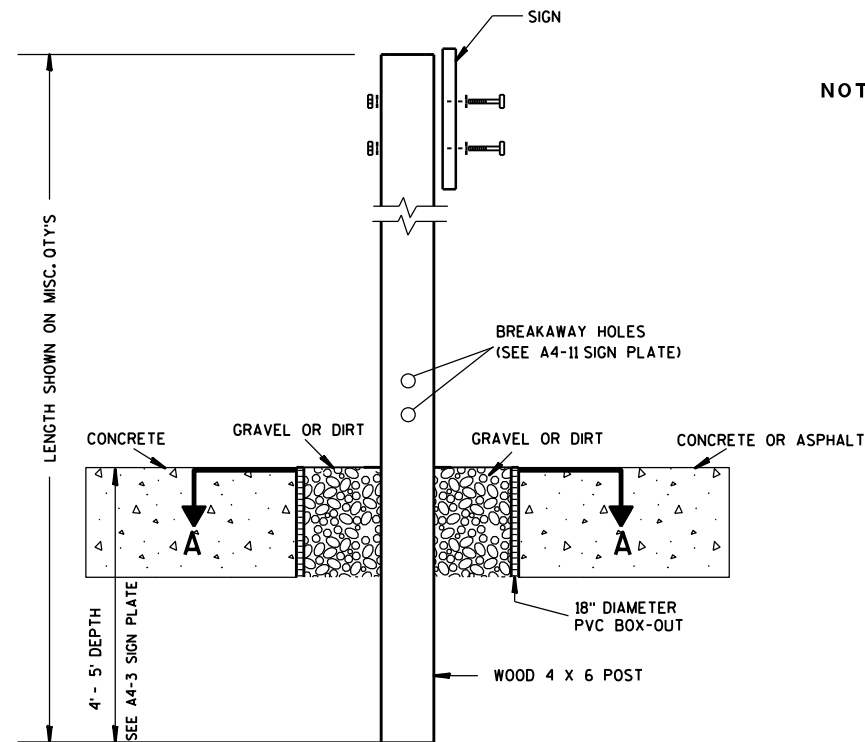
PROJECT NO:

HWY:

COUNTY:

SHEET NO: 83

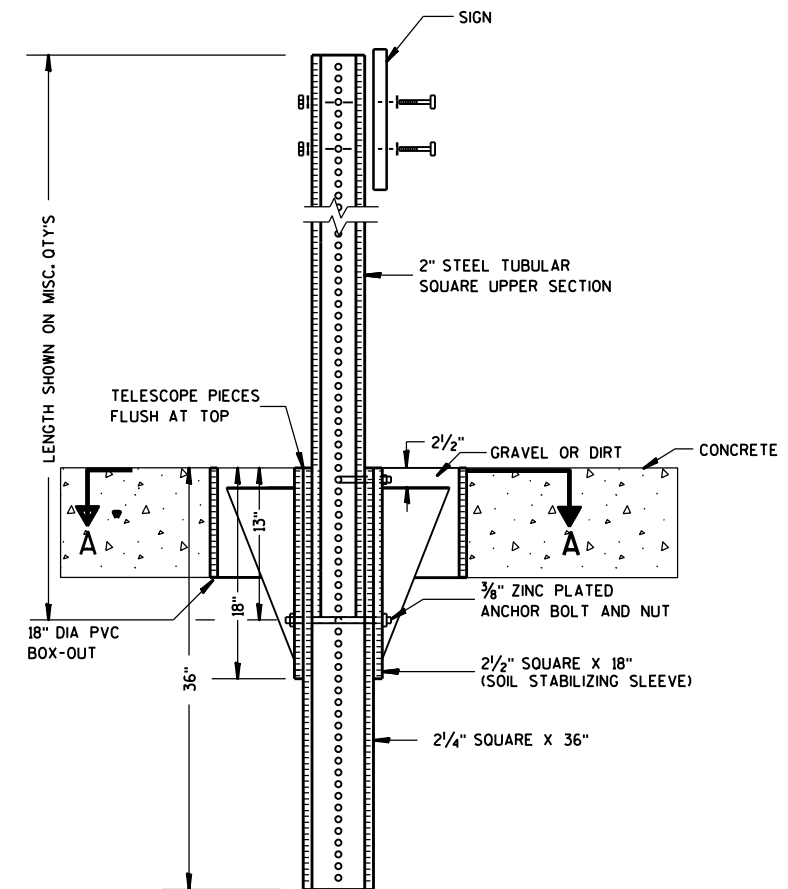
E



ELEVATION VIEW

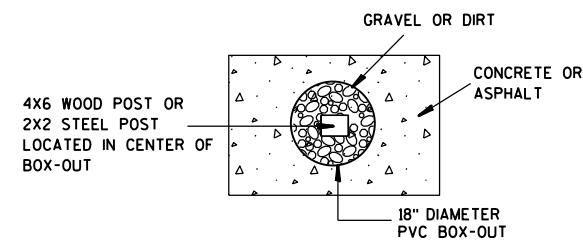
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

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



ELEVATION VIEW

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



PLAN VIEW

FOR NEW CONCRETE/ASPHALT INSTALLATIONS

SIGN POST
BOX-OUTS
A4-3B

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 1/27/14 PLAT 84 A4-3B.1

PROJECT NO:

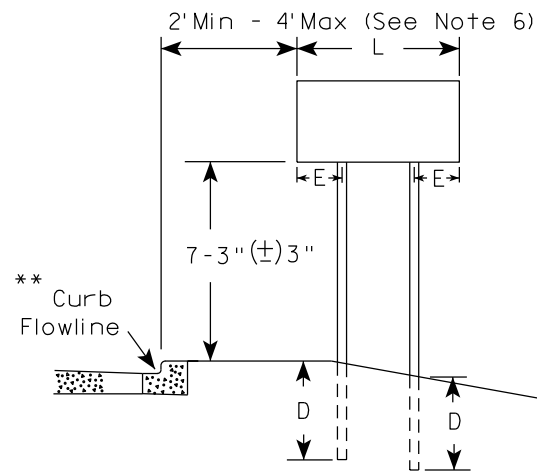
HWY:

COUNTY:

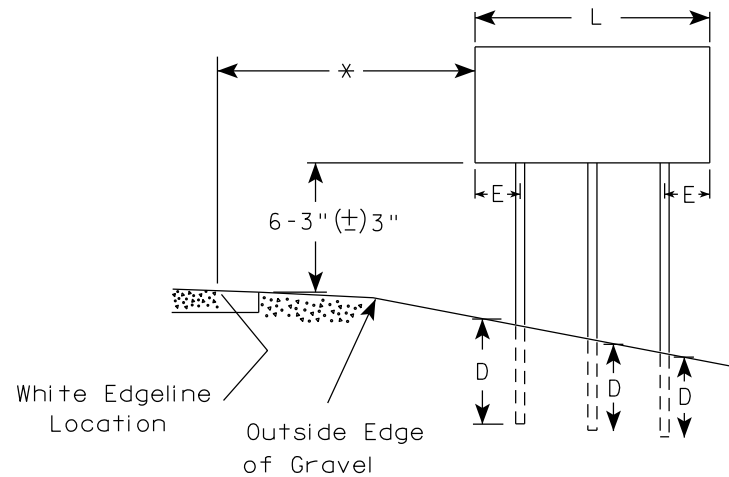
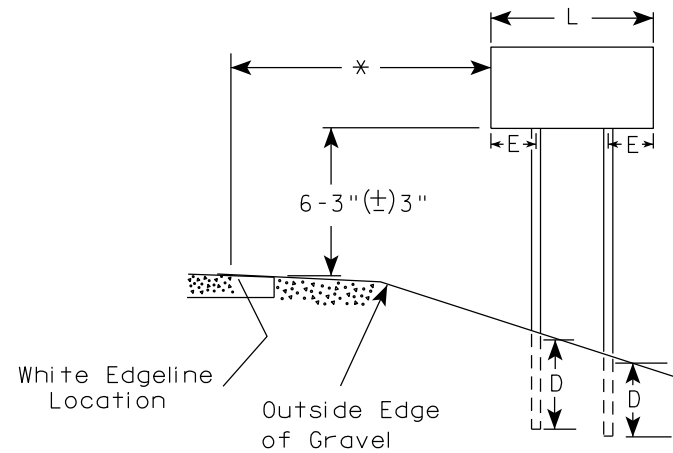
SHEET NO:

E

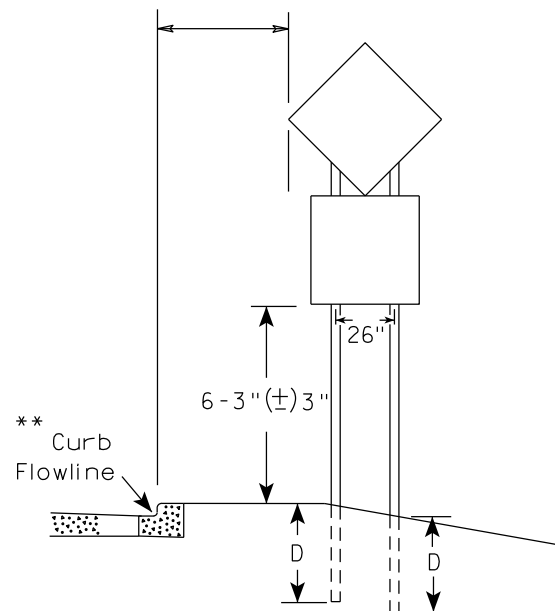
URBAN AREA



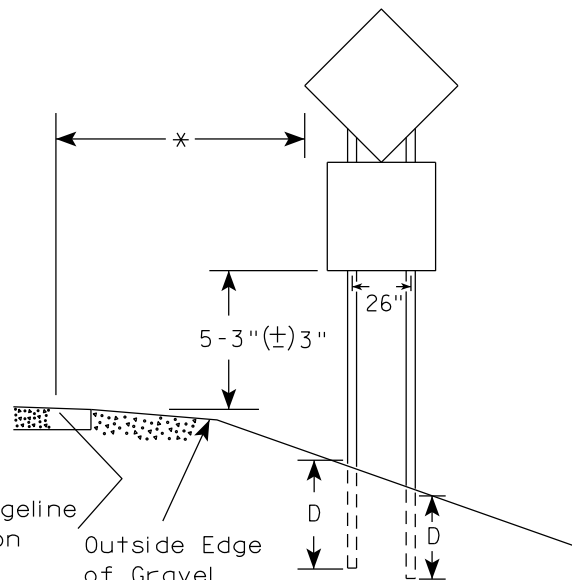
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

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

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

POST EMBEDMENT DEPTH

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

TYPICAL INSTALLATION
OF TYPE II SIGNS
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION	
APPROVED	<i>Matthew R. Rauch</i> for State Traffic Engineer
DATE 12/6/23	PLATE NO. A4-4.16

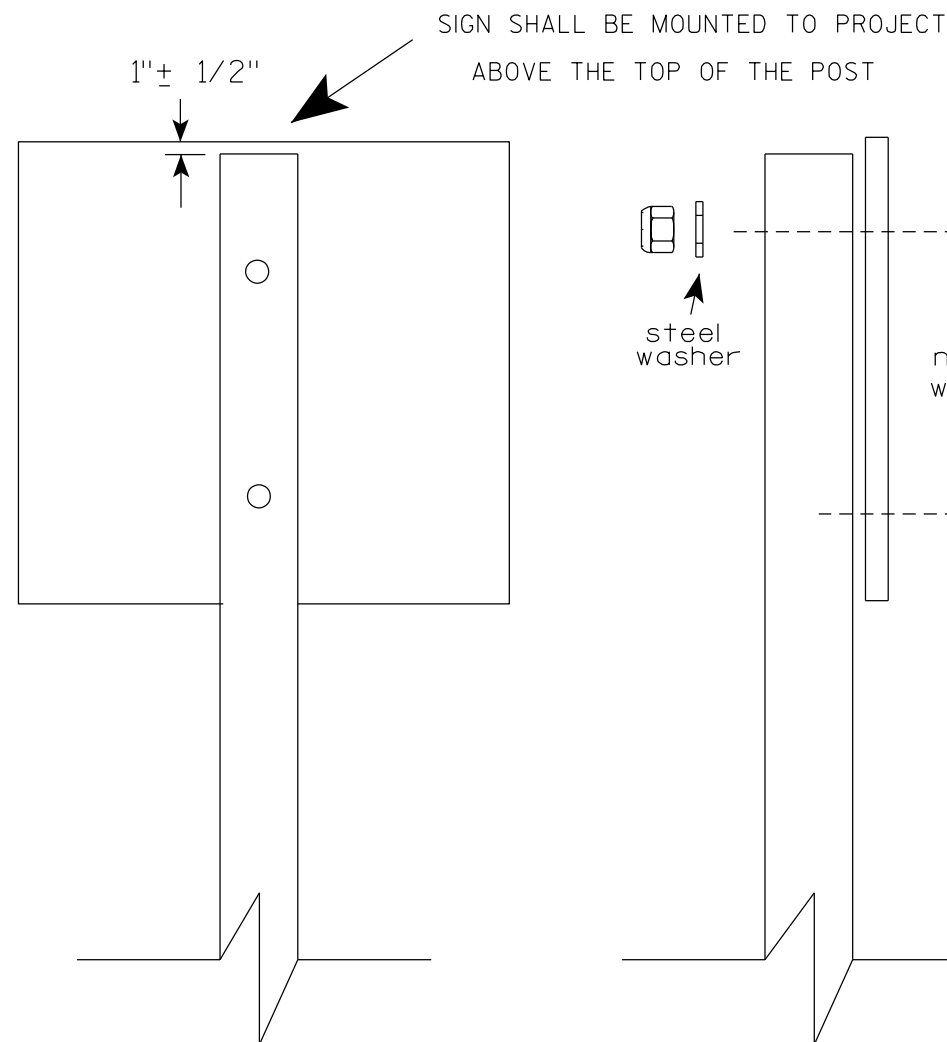
GENERAL NOTES

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

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

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

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



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

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

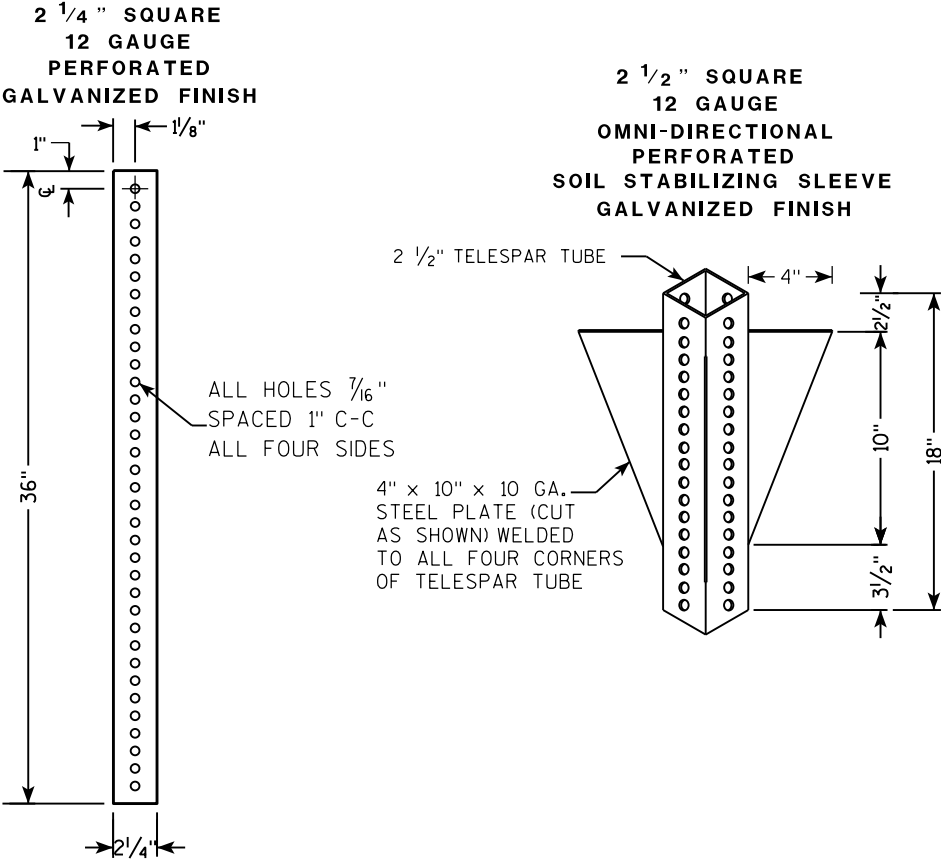
Threads on bolts and nuts shall be manufactured with sufficient allowance for the cadmium plate or galvanized coating to permit the nuts to run freely on the bolts.

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

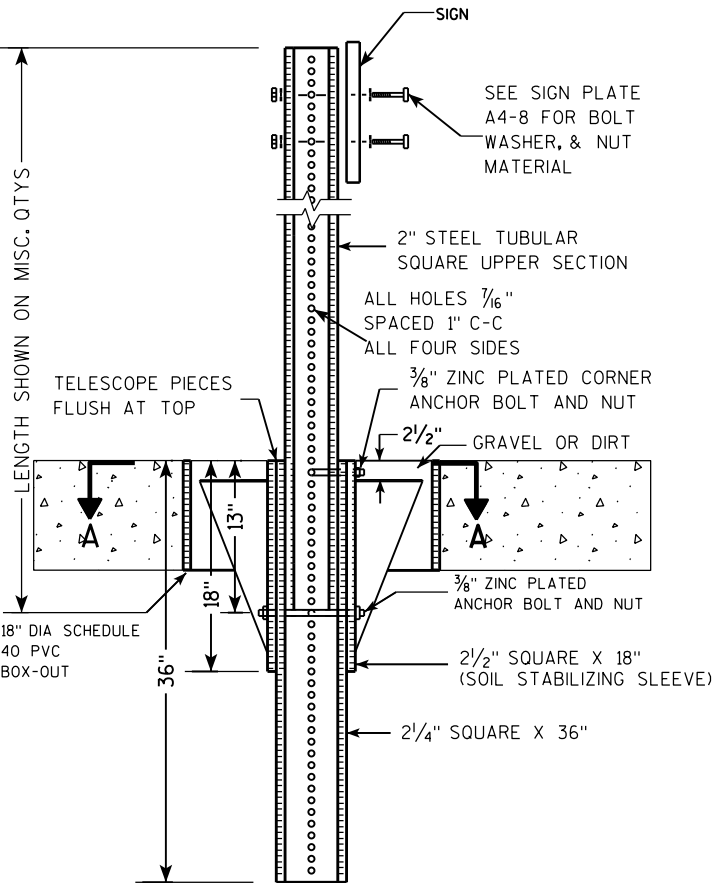
* Two different fastening systems are shown for illustration purposes. On any individual sign, either one or the other system shall be used. Actual number of fasteners per sign varies with the sign area, but normally there are two. For a single post installation, all signs greater than 9 sq. ft. require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

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

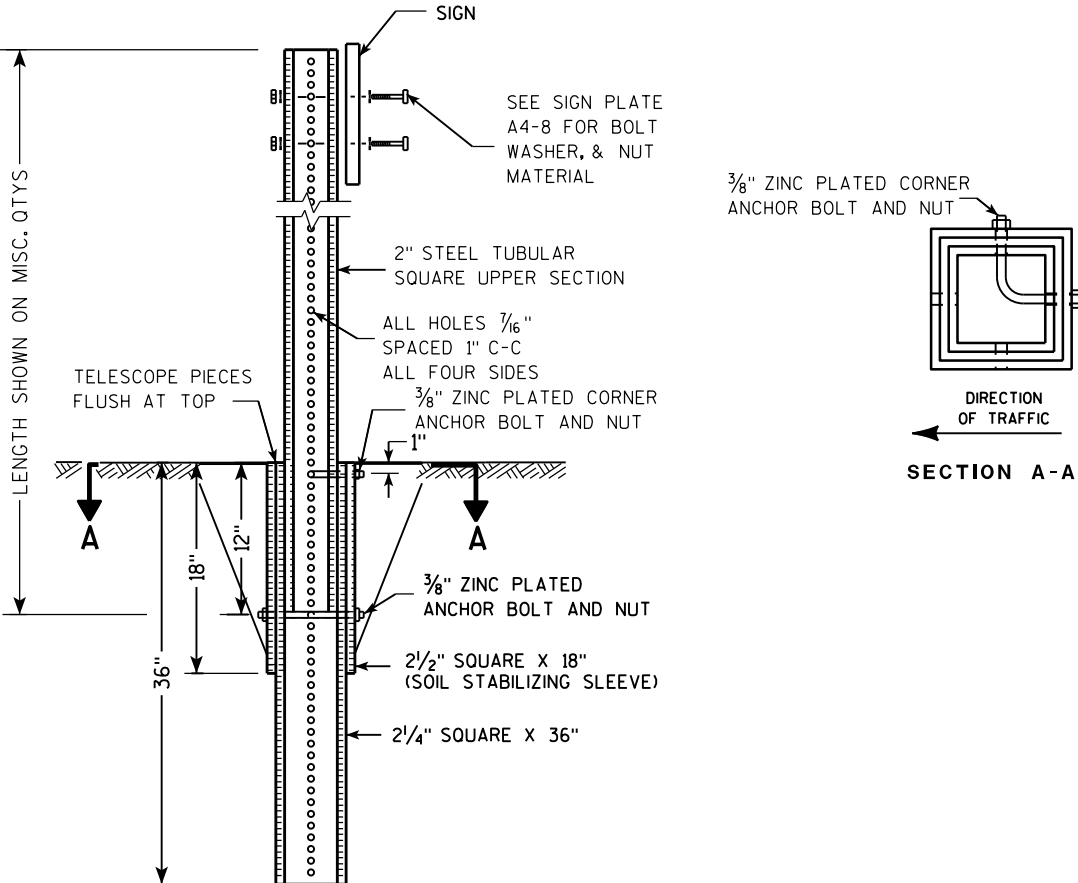
TELESCOPIC TUBING ANCHORS
TWO PIECE SYSTEM



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



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



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

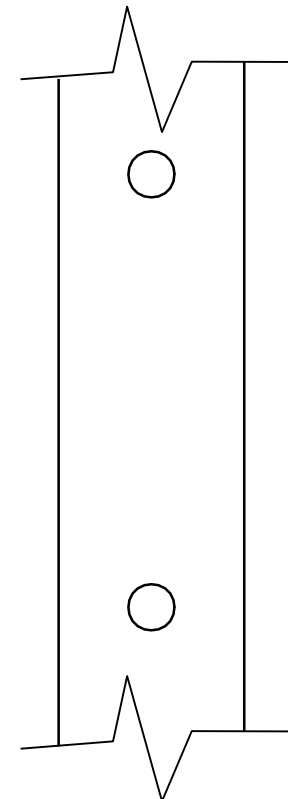
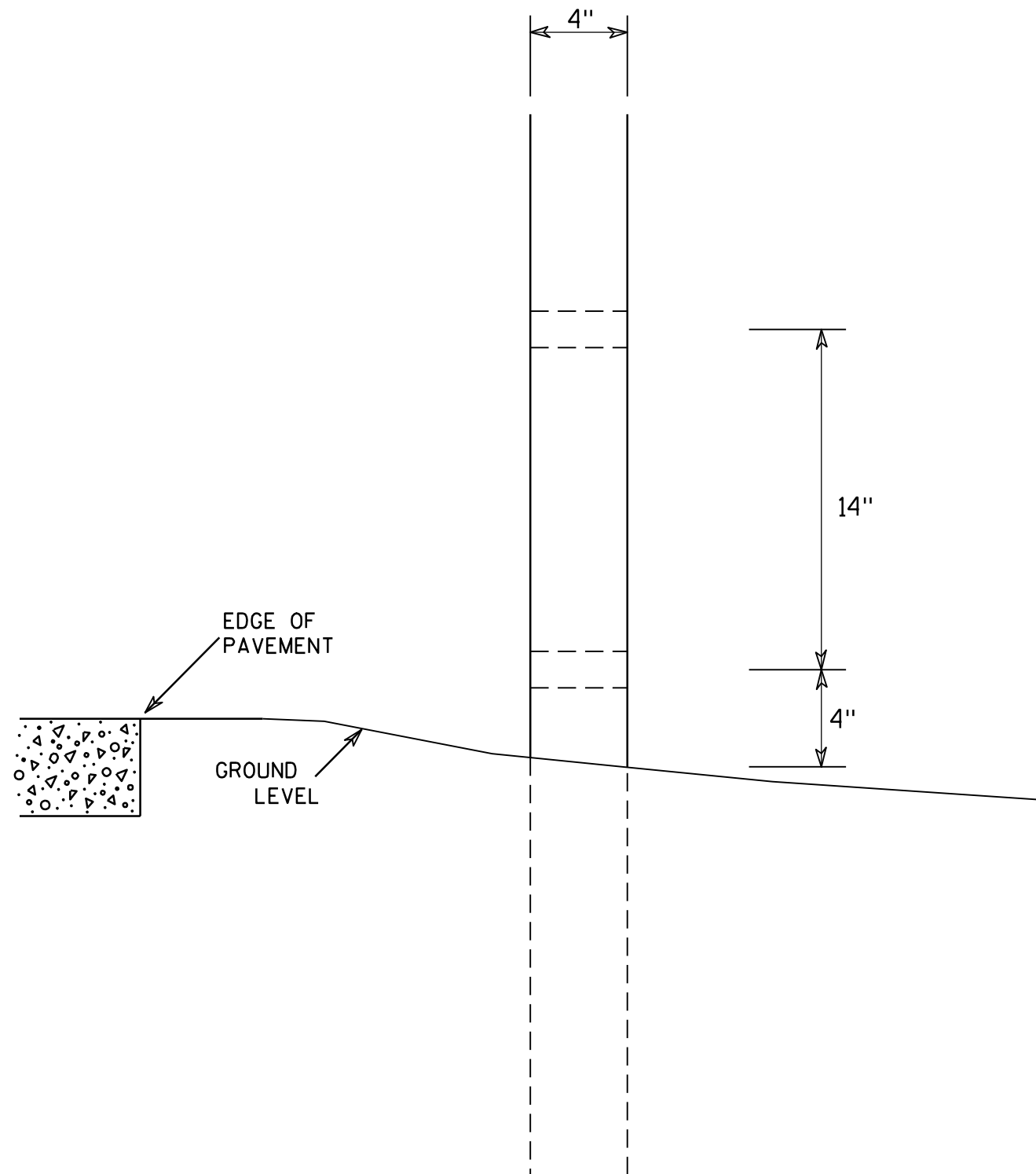
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL
SIGN POST
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
for State Traffic Engineer

DATE 2/05/15 PLAT 87 14-9.9



SIDE VIEW

GENERAL NOTES

1. All 4 x 6 Wood Posts shall be modified by having two 1½" 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:

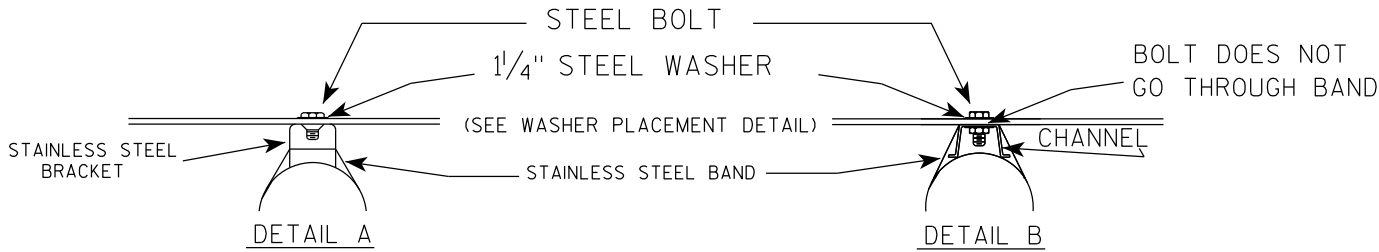
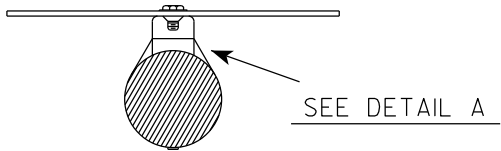
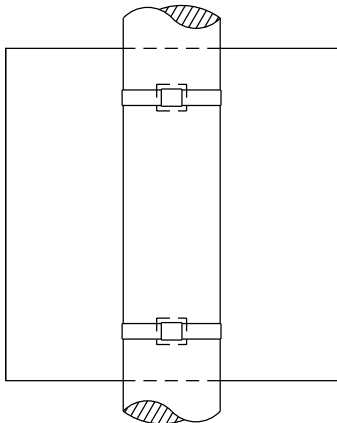
COUNTY:

SHEET NO: 88

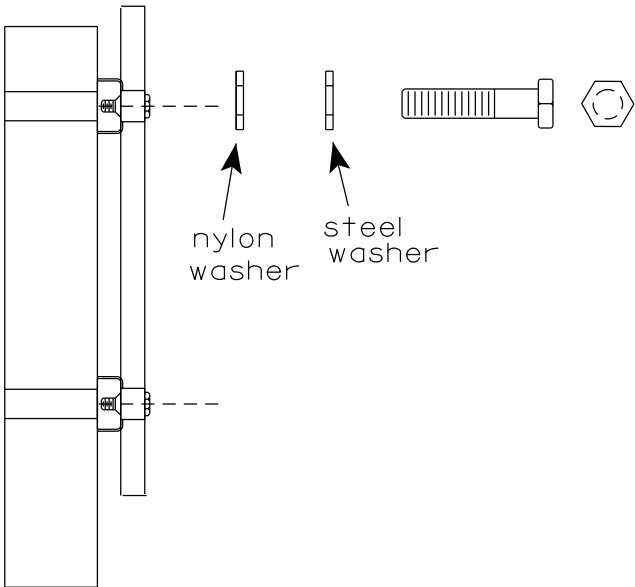
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

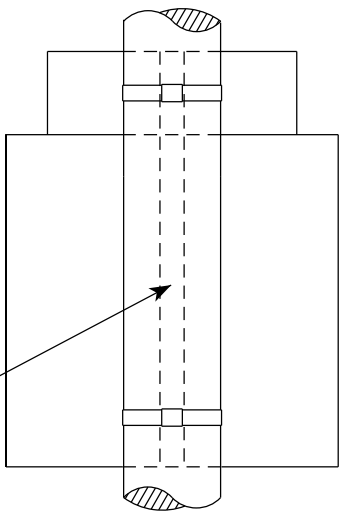


WASHERS (ALL POSTS) -
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL
1-1/4" O.D. X 3/8" I.D. X .080 NYLON
FOR ALL TYPE H SIGNS

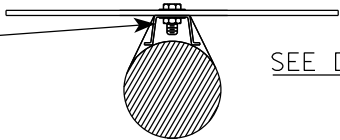
GENERAL NOTES

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



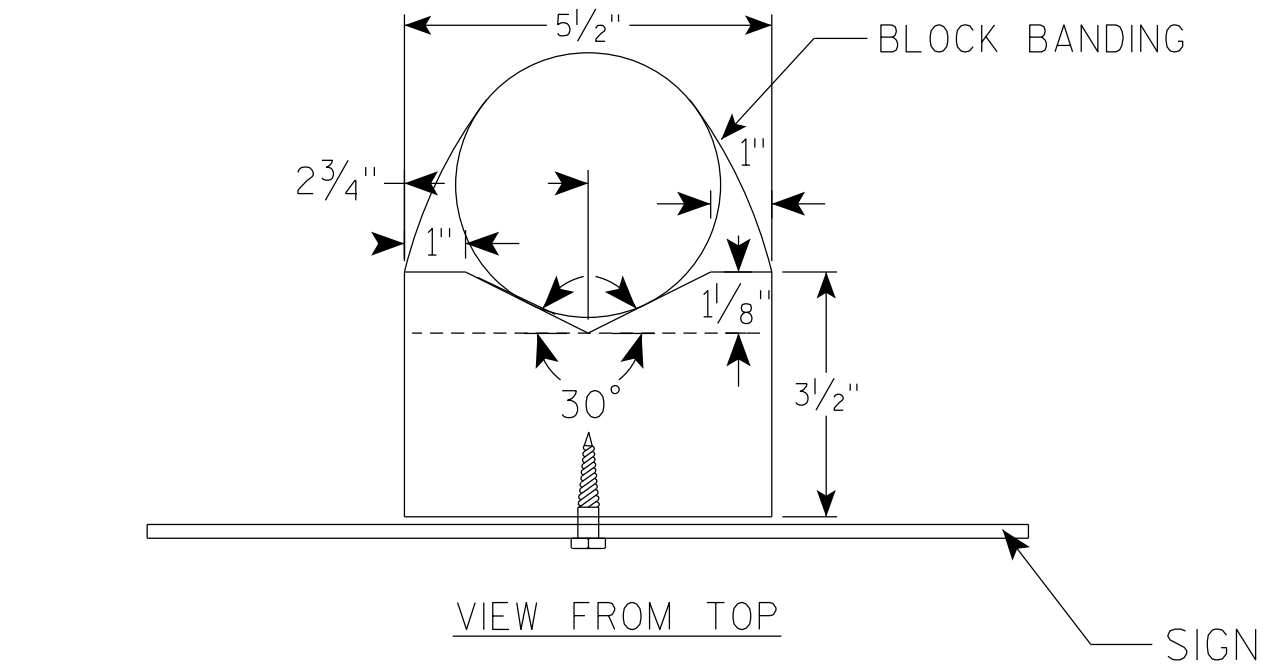
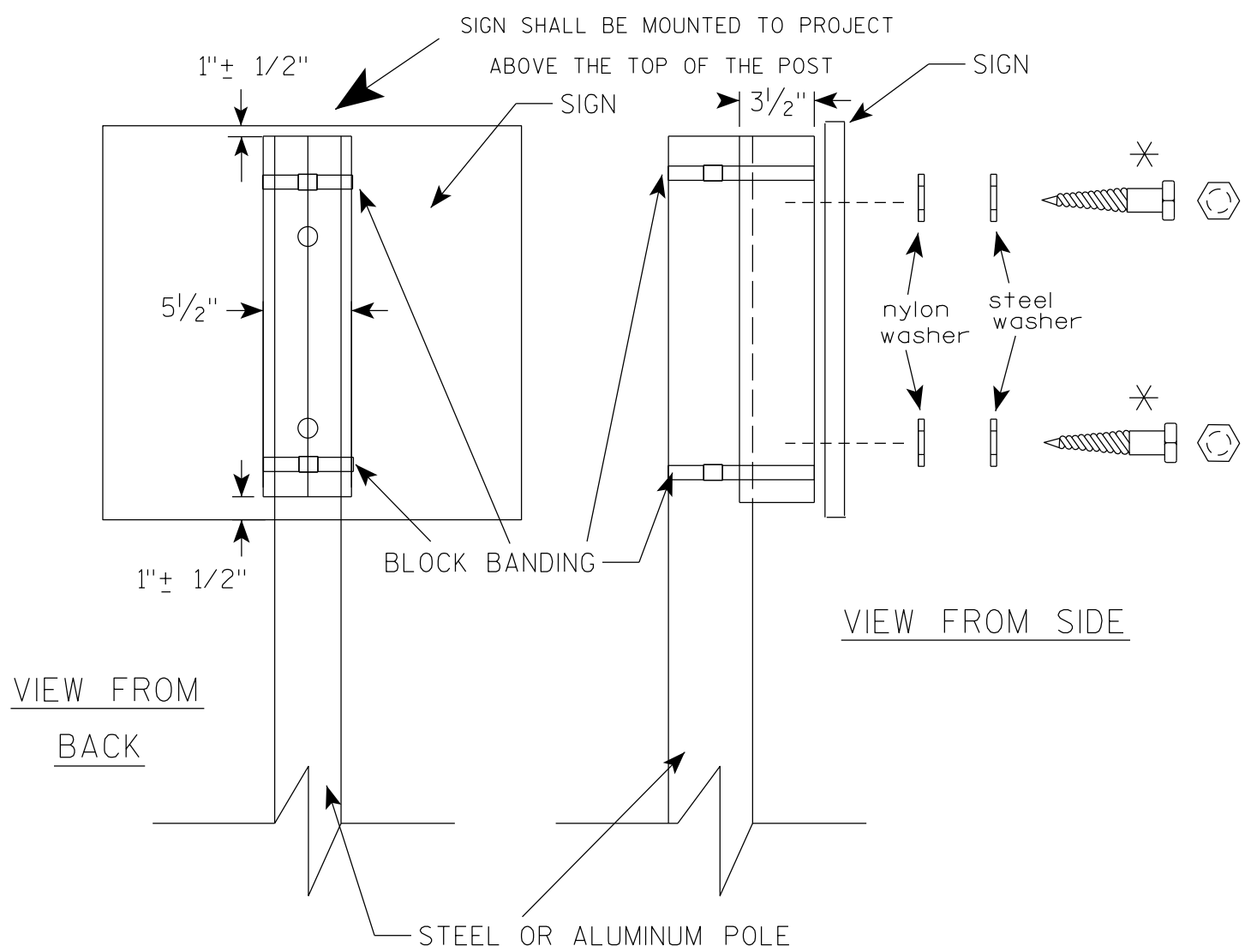
CHANNEL
SEE TYPICAL PANEL
INSTALLATION SHEET



STANDARD SIGN
SIGN BANDING DETAILS

WISCONSIN DEPT OF TRANSPORTATION

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

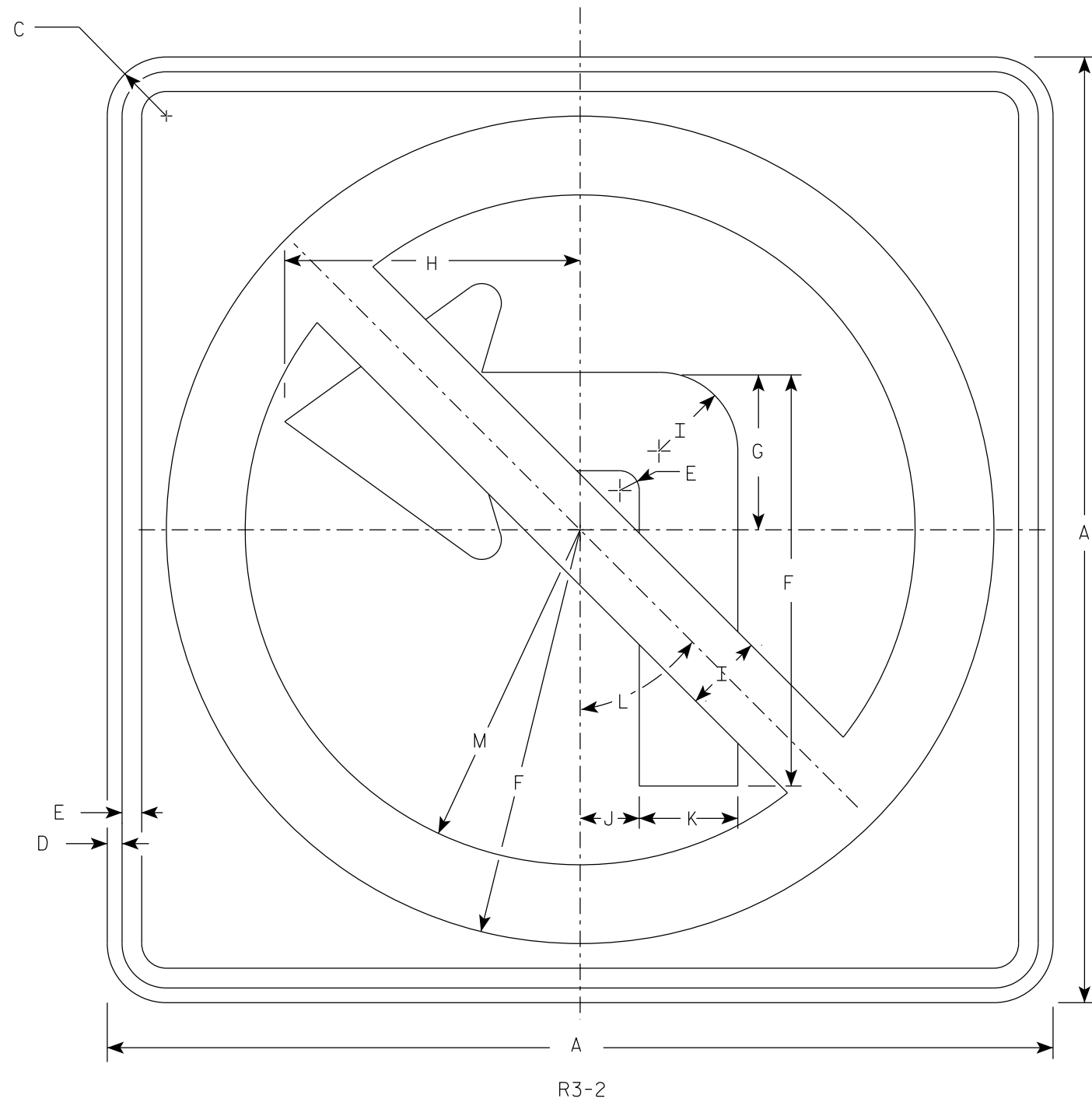


GENERAL NOTES

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

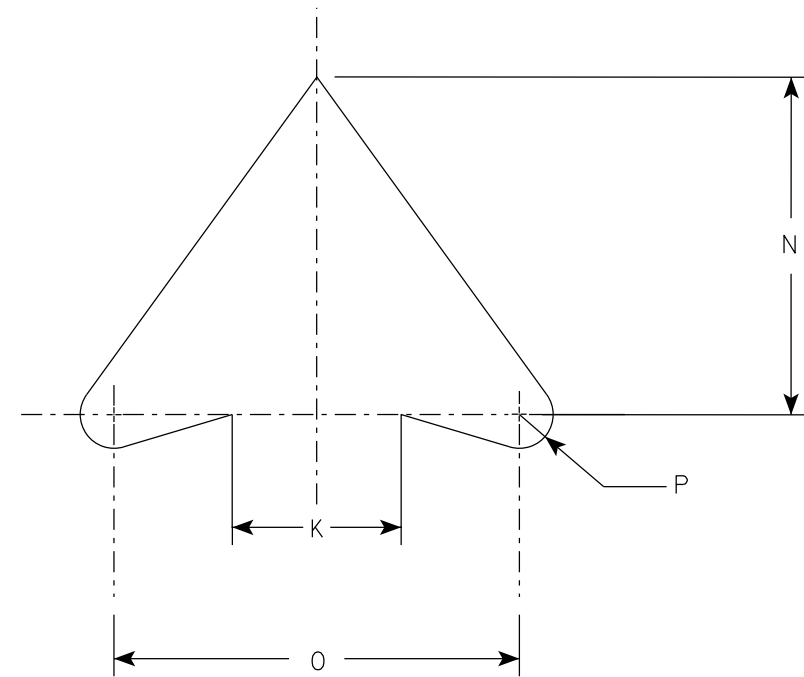
✱ LAG BOLTS SHALL BE $\frac{3}{8}$ " X $2\frac{1}{2}$ "

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



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

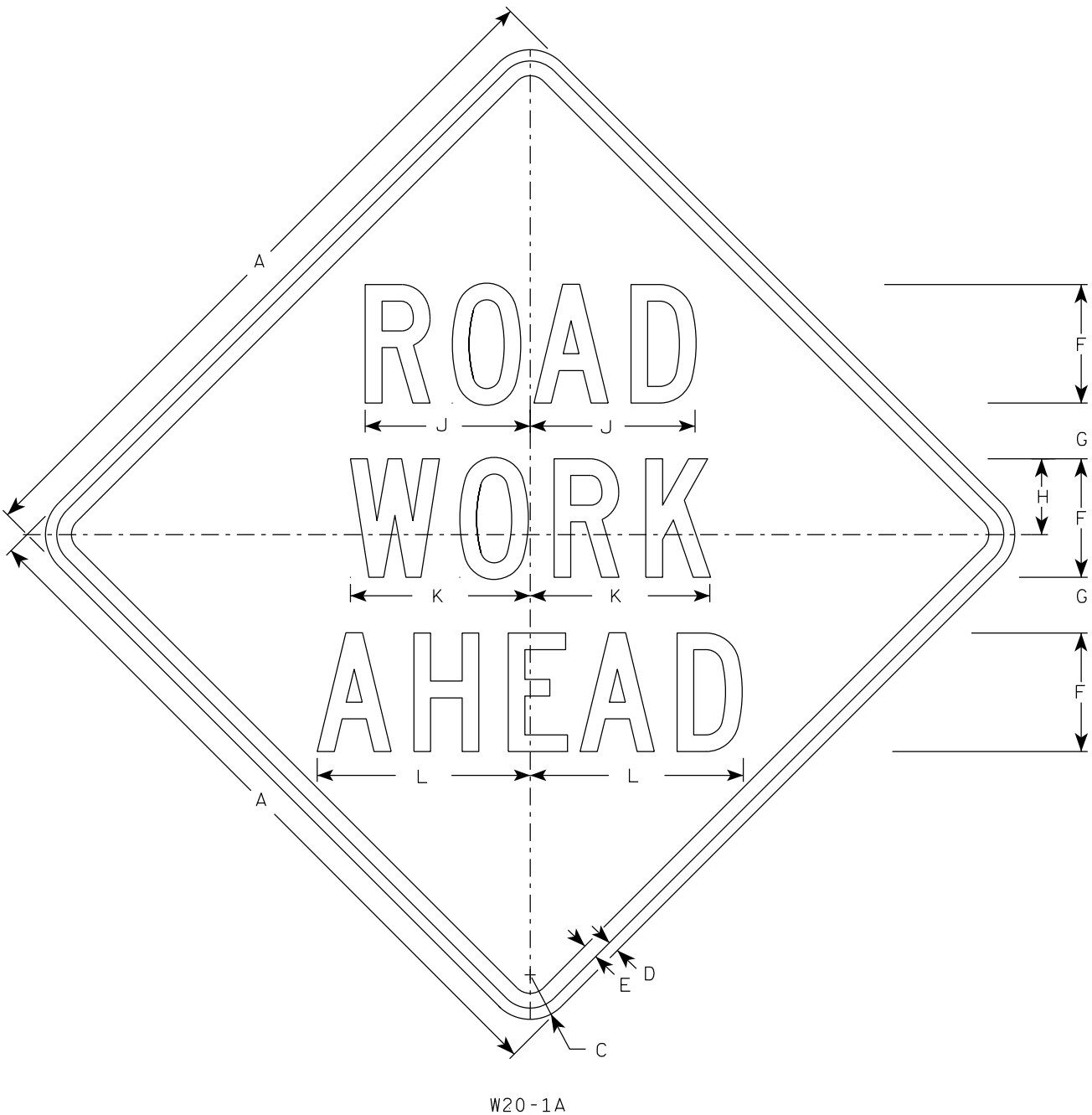
PROJECT NO:

HWY:

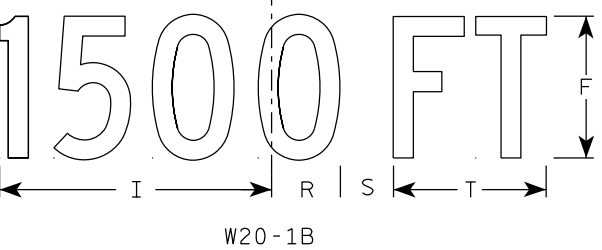
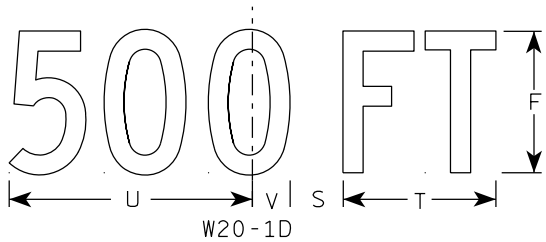
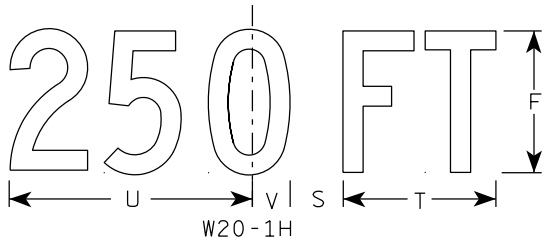
COUNTY:

SHEET NO: 91

E

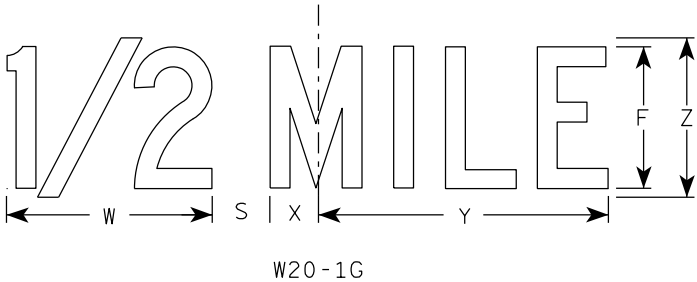


W20-1A

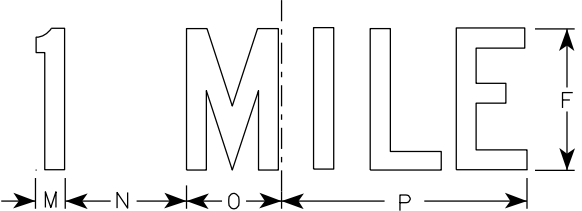


W20-1B

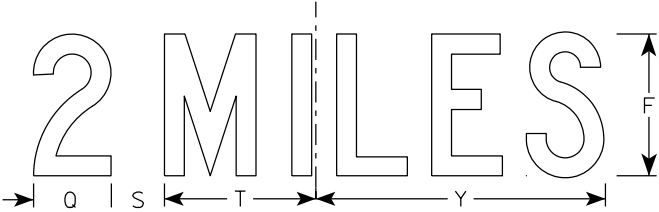
- NOTES
- 1. Sign is Type II - Type F Reflective
 - 2. Color:
Background - Orange
Message - Black
 - 3. Message Series - C
 - 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.



W20-1G



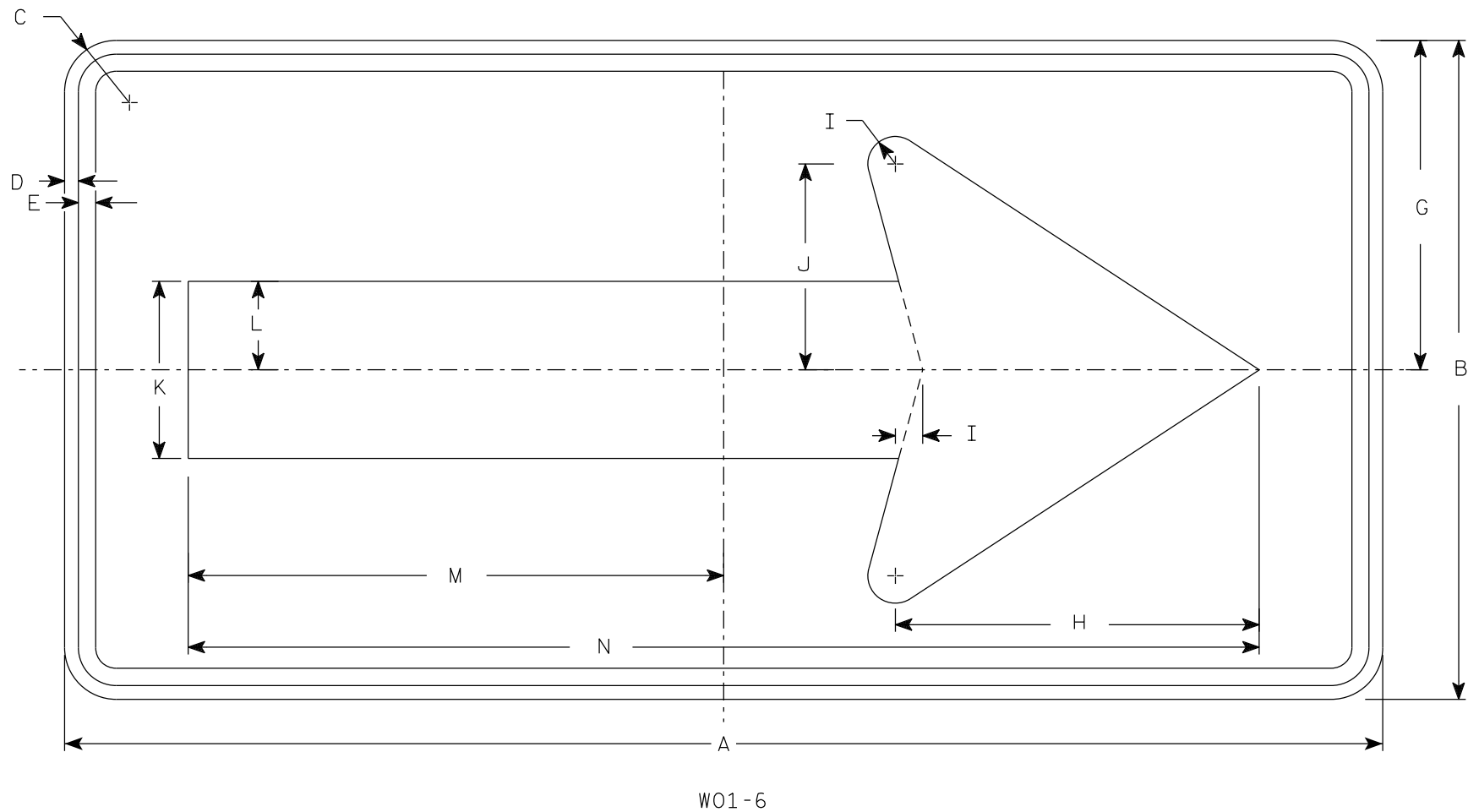
W20-1F



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

7



NOTES

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

7

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1																											
2S	48	24	1 7⁄8	1⁄2	5⁄8		12	13 1⁄4	1	7 1⁄2	6 1⁄2	3 1⁄4	19 1⁄2	39													8.0
2M	48	24	1 7⁄8	1⁄2	5⁄8		12	13 1⁄4	1	7 1⁄2	6 1⁄2	3 1⁄4	19 1⁄2	39													8.0
3	60	30	1 7⁄8	1⁄2	5⁄8		15	16 1⁄4	1 1⁄4	9 1⁄4	8	4	24 3⁄8	48 3⁄4													12.5
4	60	30	1 7⁄8	1⁄2	5⁄8		15	16 1⁄4	1 1⁄4	9 1⁄4	8	4	24 3⁄8	48 3⁄4													12.5
5	60	30	1 7⁄8	1⁄2	5⁄8		15	16 1⁄4	1 1⁄4	9 1⁄4	8	4	24 3⁄8	48 3⁄4													12.5

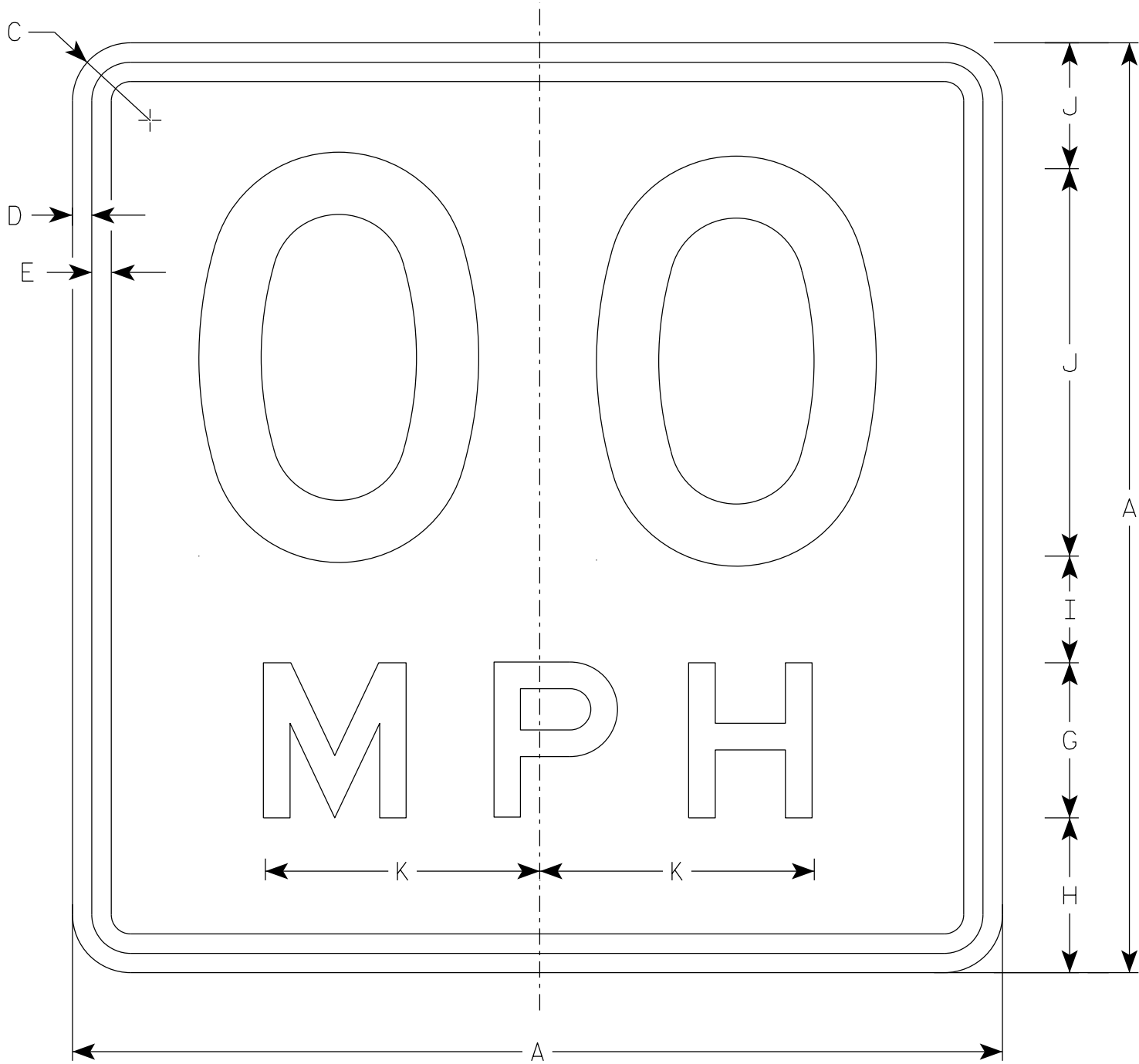
STANDARD SIGN
W01-6

WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 1/24/2024 PLATE NO. W01-6.2

7



W013-1

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
 - Background - Orange
 - Message - Black
- 3. Message Series - See Note 6
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- 5. Substitute appropriate numerals and optically space about centerline to achieve proper balance.
- 6. Line 1 is Series D
Line 2 is Series E

7

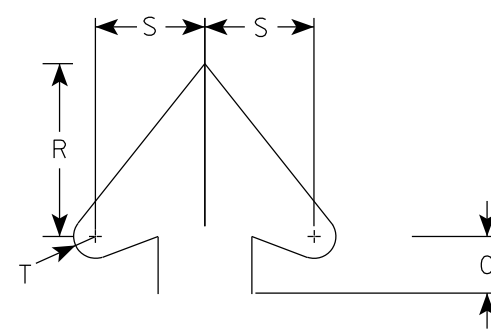
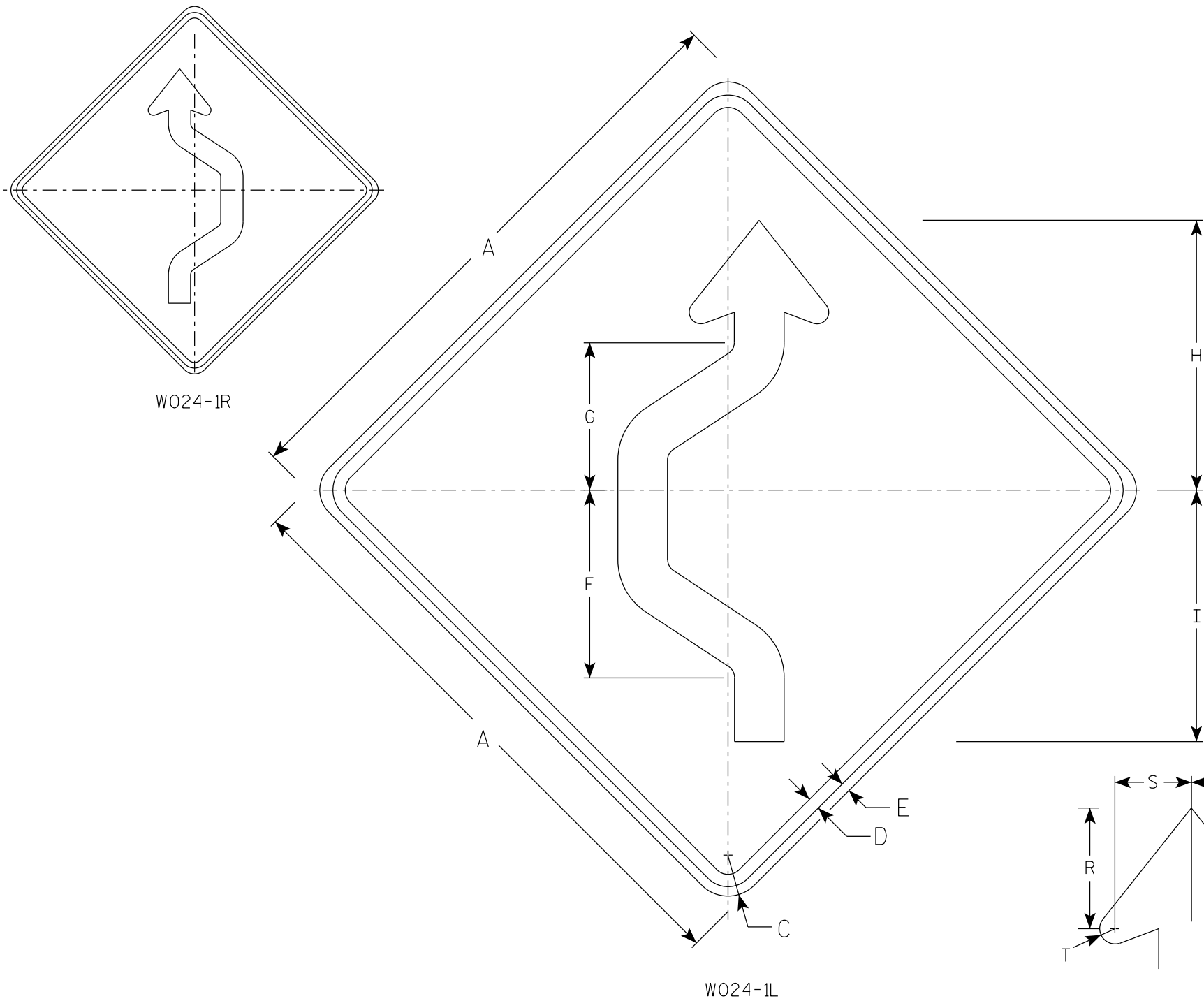
SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	Area sq. ft.
1	24		1 1/2	3/8	1/2	10	4	4	2 3/4	3 1/4	7 1/8																4.0
2S	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0
2M	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4 1/2	10 5/8																9.0
3	36		2 1/4	5/8	3/4	16	6	5 1/2	4	4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

STANDARD SIGN
W013-1

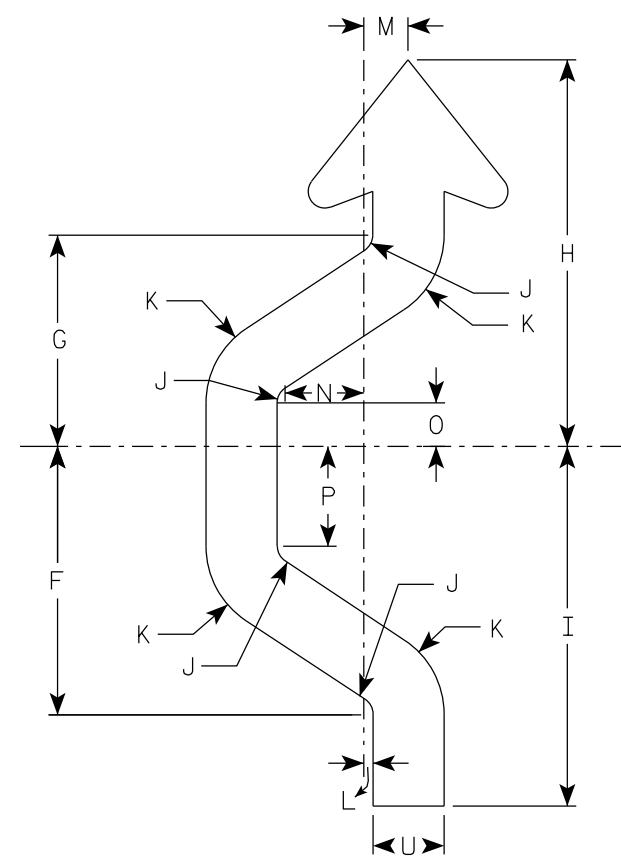
WISCONSIN DEPT OF TRANSPORTATION

APPROVED
Matthew R. Rauch
for State Traffic Engineer

DATE 2/1/2024 PLATE NO. W013-1.2



Arrowhead Detail



Arrow Detail

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. W024-1R is the same as W024-1L except 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	1/2	11 3/8	8 7/8	16 3/8	15 1/4	3/4	3 3/4	3/8	2	3 3/8	1 7/8	4 1/4		5 1/2	3 1/2	5/8	3						9.0
2S	48		3	1	3/4	15 1/8	11 7/8	21 3/4	20 1/4	1	5	1/2	2 1/2	4 3/8	2 3/8	5 5/8		7 3/8	4 3/4	7/8	4						16.0
2M	48		3	1	3/4	15 1/8	11 7/8	21 3/4	20 1/4	1	5	1/2	2 1/2	4 3/8	2 3/8	5 5/8		7 3/8	4 3/4	7/8	4						16.0
3	48		3	1	3/4	15 1/8	11 7/8	21 3/4	20 1/4	1	5	1/2	2 1/2	4 3/8	2 3/8	5 5/8		7 3/8	4 3/4	7/8	4						16.0
4	48		3	1	3/4	15 1/8	11 7/8	21 3/4	20 1/4	1	5	1/2	2 1/2	4 3/8	2 3/8	5 5/8		7 3/8	4 3/4	7/8	4						16.0
5	48		3	1	3/4	15 1/8	11 7/8	21 3/4	20 1/4	1	5	1/2	2 1/2	4 3/8	2 3/8	5 5/8		7 3/8	4 3/4	7/8	4						16.0

STANDARD SIGN
W024-1 L & R

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*
For State Traffic Engineer

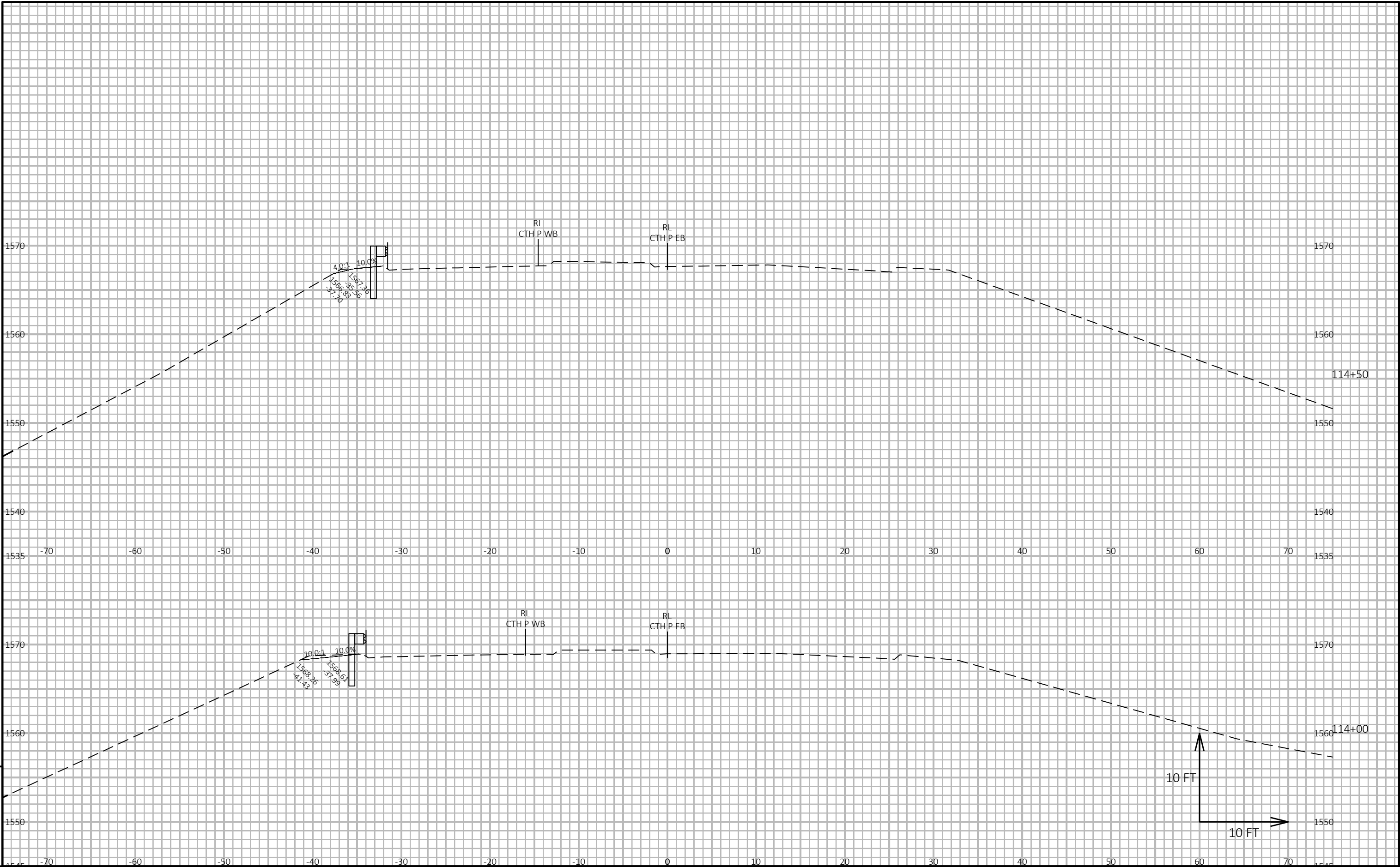
DATE 2/1/2024 PLATE NO. W024-1.2

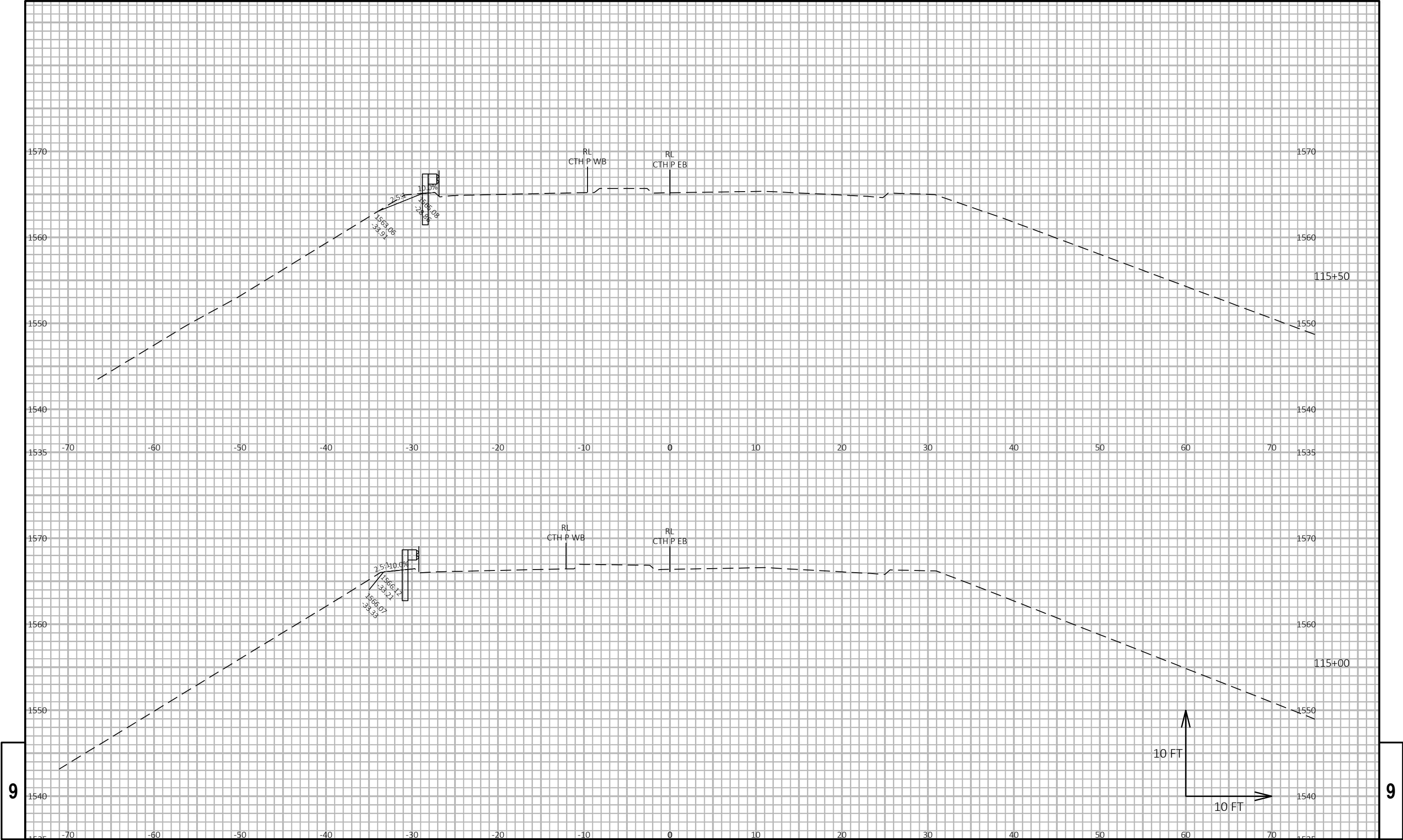
PROJECT NO: HWY: COUNTY: SHEET NO: 95 E

DIVISION - CTY-P-EB									
STATION	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	1.00	1.30	NOTE 8
							NOTE 1		
113+39.59	0	0	0	0	0	0	0	0	0
113+50.00	0	0	0	0	0	0	0	0	0
114+00.00	1	0	0	1	0	0	1	0	1
114+50.00	0	0	0	2	0	0	3	0	3
115+00.00	0	0	0	0	0	0	3	0	3
115+50.00	2	0	0	2	0	0	5	0	5
116+00.00	2	0	0	4	0	0	9	0	9
116+50.00	1	0	0	2	0	0	11	0	11
117+00.00	1	0	0	1	0	0	12	0	12
117+50.00	0	0	0	1	0	0	13	0	13
118+00.00	1	0	0	1	0	0	14	0	14
118+50.00	1	0	0	1	0	0	15	0	15
119+00.00	1	0	0	2	0	0	17	0	17
119+04.62	5	0	0	1	0	0	18	0	18
119+29.60	3	0	0	4	0	0	22	0	22
119+50.00	1	0	28	2	0	10	24	13	11
119+54.58	1	0	29	0	0	5	24	20	5
119+95.42	11	0	0	9	0	22	33	48	-15

33 0 37

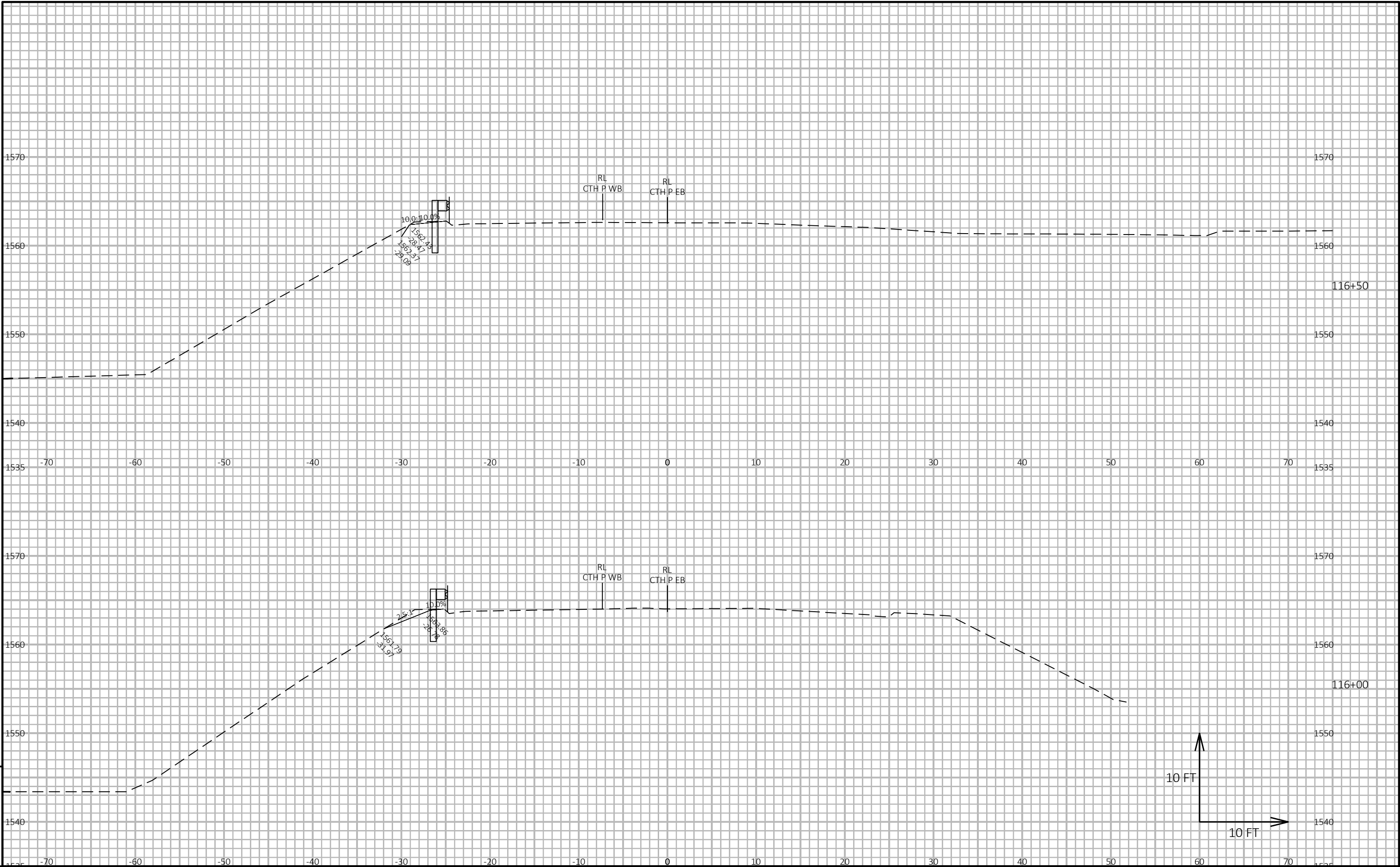
NOTES:	
1 - CUT	CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL
2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL	THIS DOES NOT SHOW UP IN CROSS SECTIONS
3 - FILL	DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME
8 - MASS ORDINATE	CUT - SALVAGED PAVT - (FILL * FILL FACTOR)





9

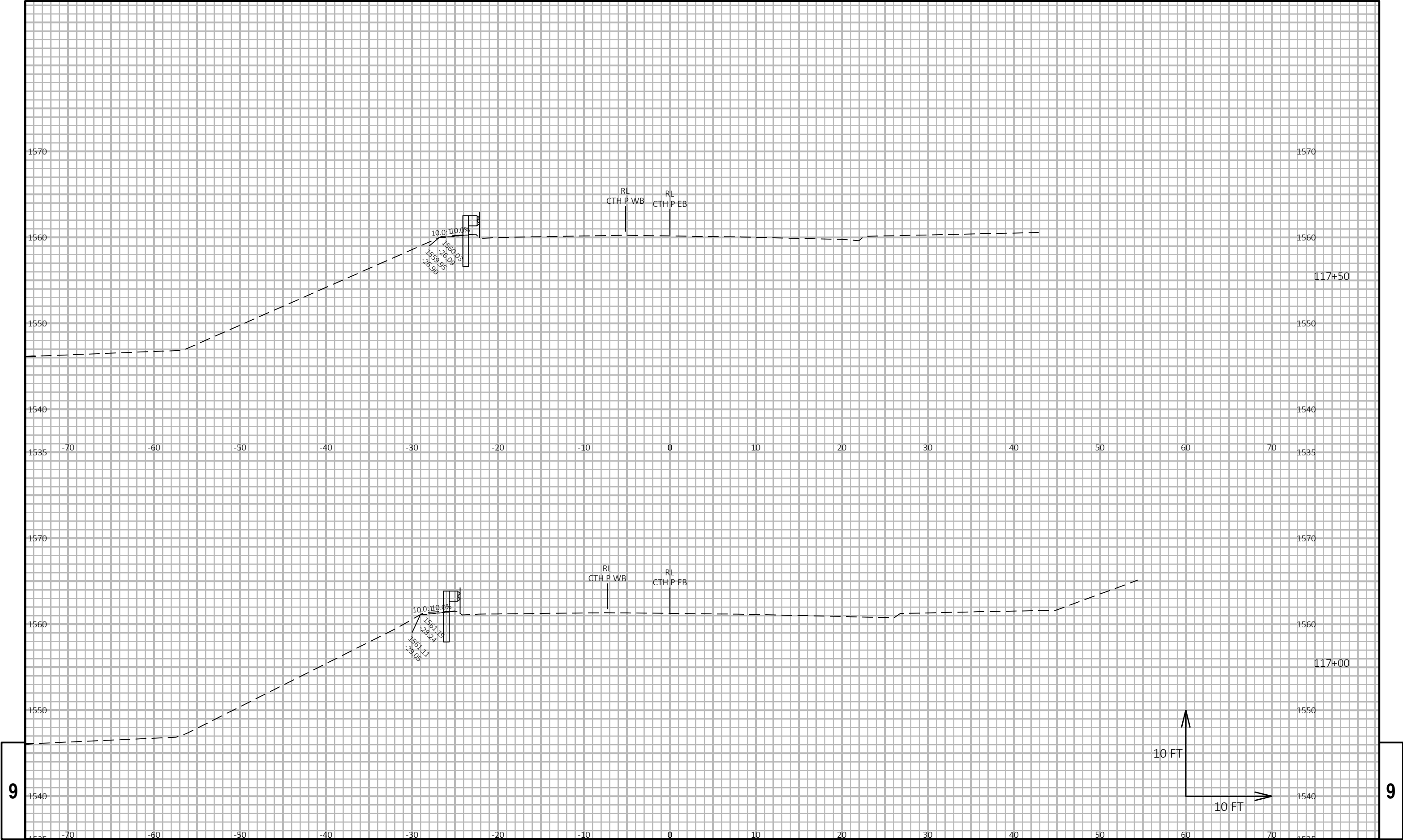
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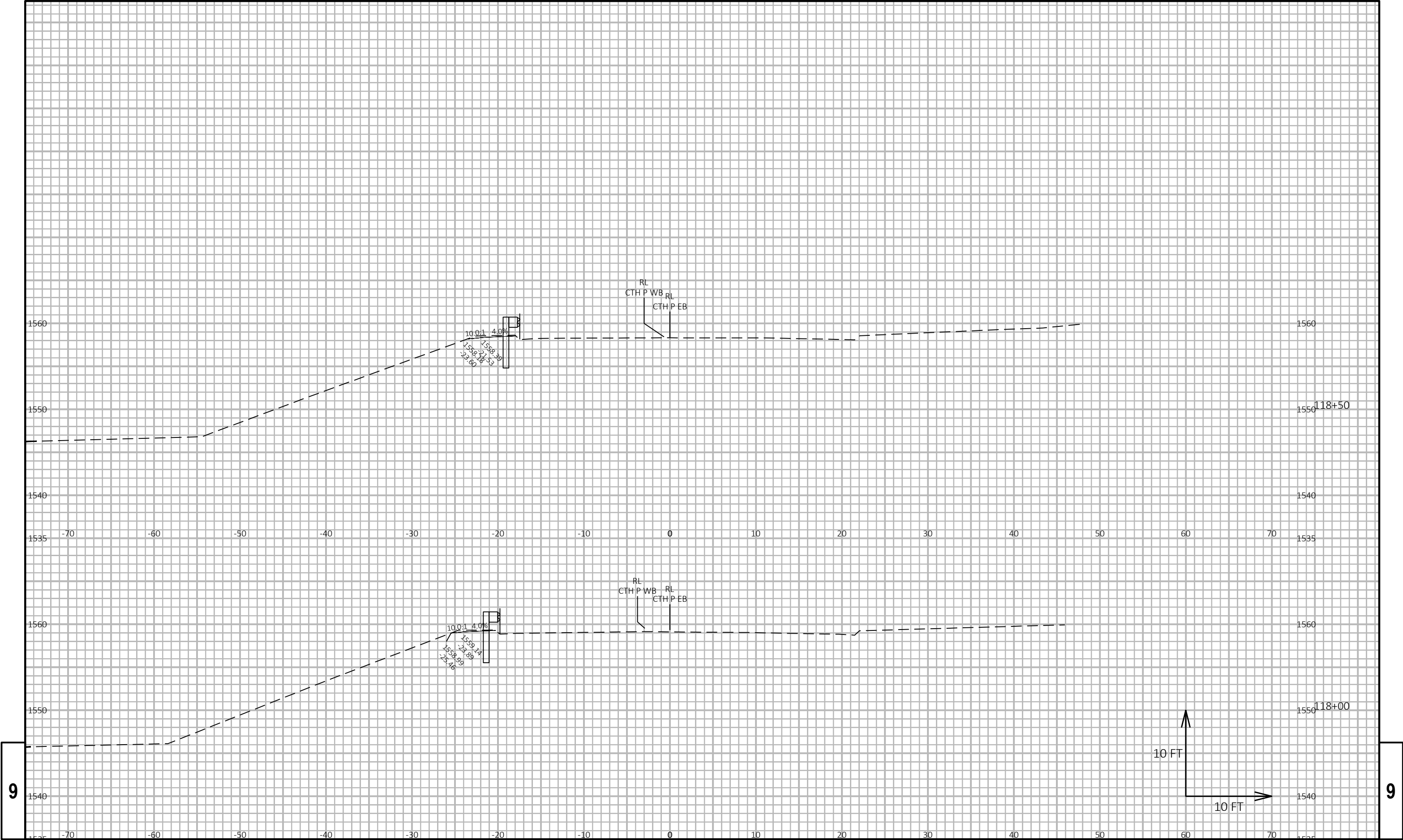


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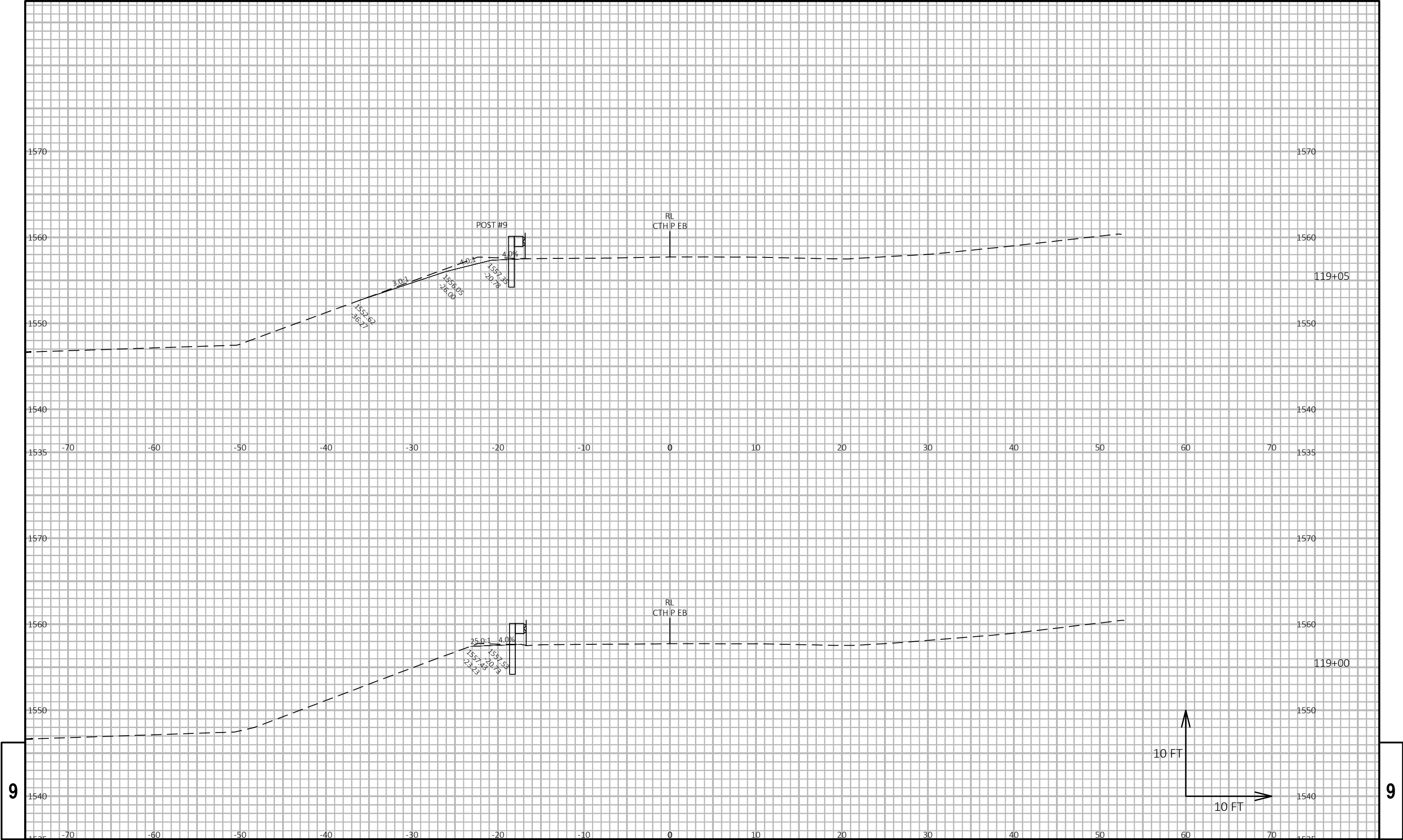
PROJECT NO: 9877-00-72	HWY: CTH P	COUNTY: ONEIDA	CROSS SECTIONS: GUARDRAIL	SHEET 100	E
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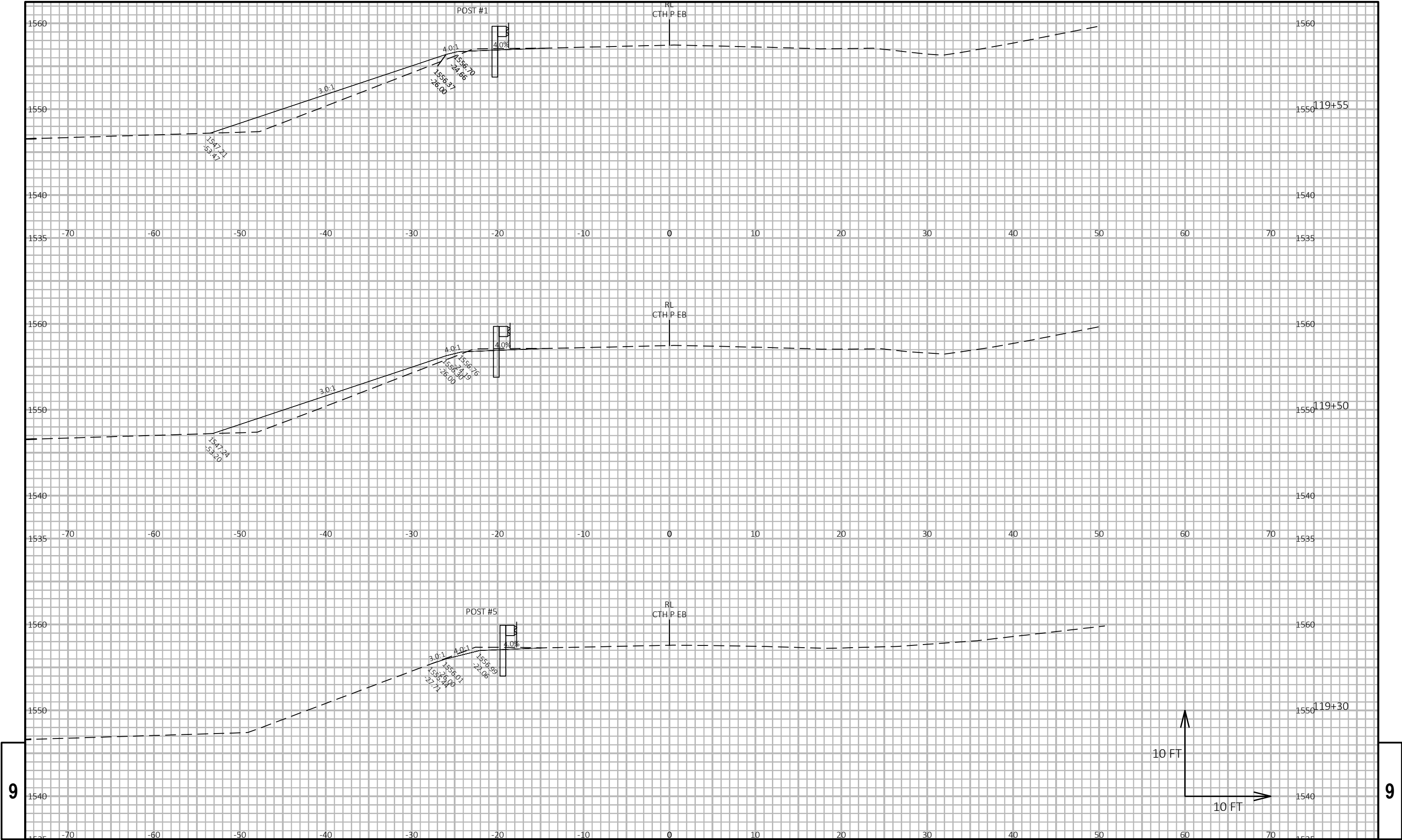
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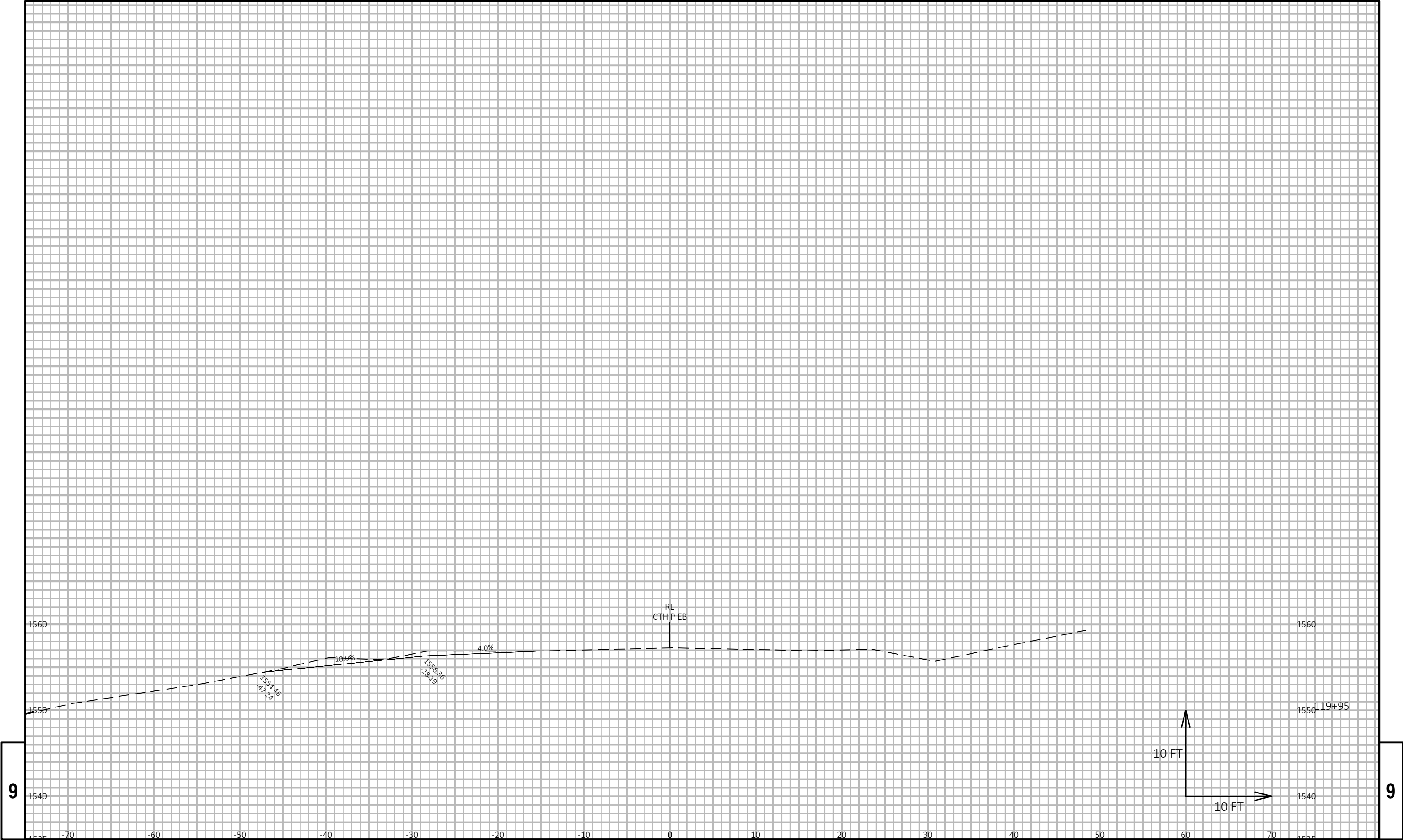
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9



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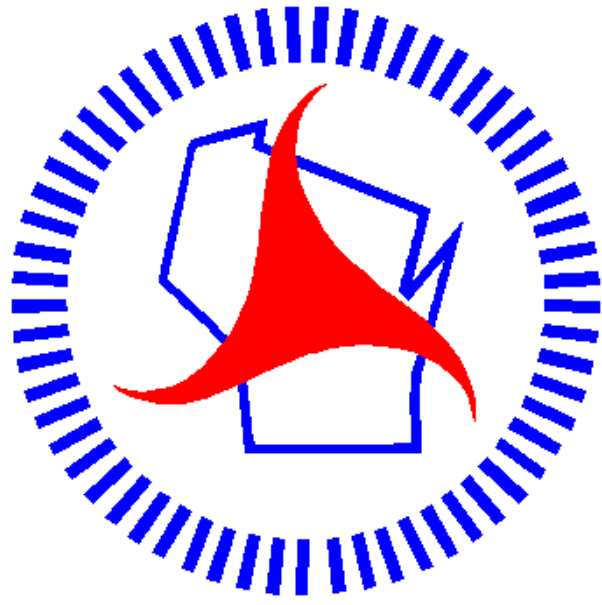
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9

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PROJECT NO: 9877-00-72	HWY: CTH P	COUNTY: ONEIDA	CROSS SECTIONS: GUARDRAIL	SHEET 105	E
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Wisconsin Department of Transportation

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