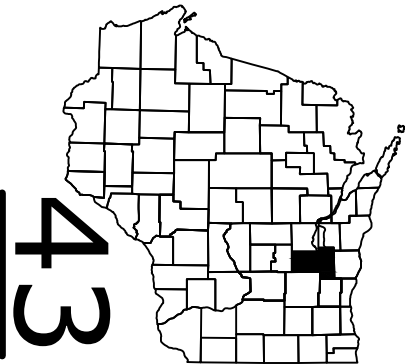


GRE PROJECT ID: 6090-14-71 WITH: N/A COUNTY: FOND DU LAC

MAY 2025  
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.	0	Cross Sections

TOTAL SHEETS = 86



DESIGN DESIGNATION

A.A.D.T.	=	2,090 (2027)
A.A.D.T.	=	2,120 (2047)
D.H.V.	=	271
D.D.	=	60-40
T.	=	15.2%
DESIGN SPEED	=	55 MPH
ESALS	=	620,000

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

BRANDON-RIPON

WVL BRANDON-STH 23

STH 49

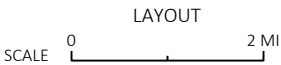
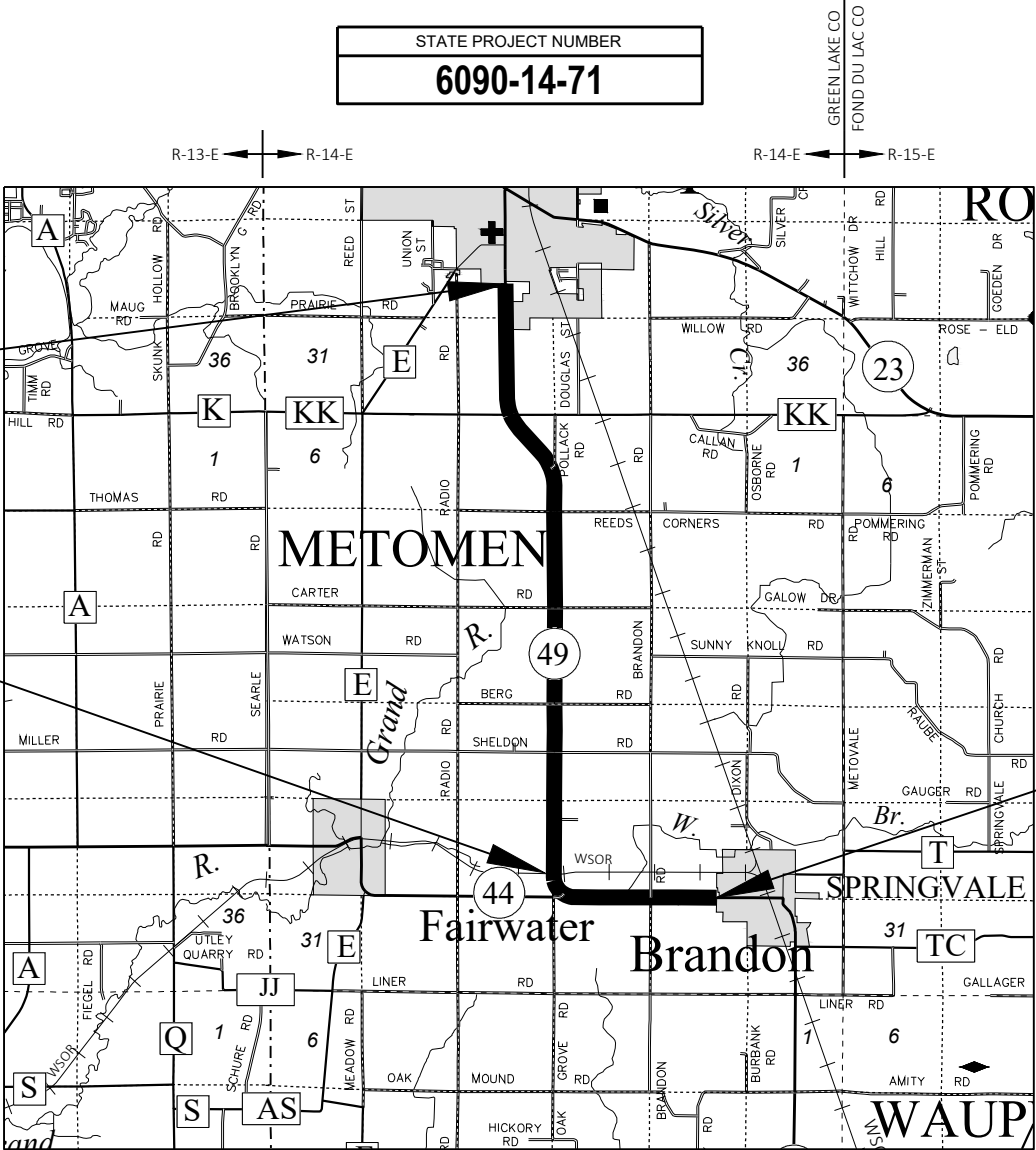
FOND DU LAC COUNTY

STATE PROJECT NUMBER
6090-14-71

END PROJECT  
STA 912+13.00  
Y = 404,900.454  
X = 714,308.564

NET EXCEPTION TO CL LENGTH  
STA 570+96 - STA 571+04

BEGIN PROJECT  
STA 473+58.01  
Y = 370,308.621  
X = 725,943.940



TOTAL NET LENGTH OF CENTERLINE = 8.299 MILES

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), FOND DU LAC COUNTY, NAD83 ( 2011 ), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES. ELEVATIONS ARE REFERENCED TO NAVD 88 ( 2012 ). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6090-14-71	WISC 2025508	1

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
PREPARED BY	NE REGION
Surveyor	E. HOEFFERLE
Designer	R. ERDMANN
Project Manager	
Regional Examiner	
Regional Supervisor	R. WAGNER
APPROVED FOR THE DEPARTMENT	
DATE: 10/30/24	

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.

BEARINGS SHOWN ARE BASED ON THE COUNTY COORDINATE SYSTEM.

CURVE DATA IS BASED ON THE ARC DEFINITION.

RADIUS DIMENSIONS FOR THE CURB AND GUTTER ARE TO THE FLANGE LINE UNLESS OTHERWISE NOTED.

CURB AND GUTTER PLAN GRADES ARE AT THE FLANGE LINE UNLESS OTHERWISE NOTED.

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

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

THE EXACT LOCATION AND WIDTH OF DRIVEWAYS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD. DRIVEWAYS SHALL BE REPLACED IN KIND UNLESS DIRECTED BY THE ENGINEER OR AS SHOWN IN THE PLANS.

THE PROPOSED SHOULDER WIDTH SHOWN IN THE TYPICAL SECTIONS ARE MINIMUM WIDTH. PERPETUATE EXISTING SHOULDERS THAT ARE WIDER THAN WHAT IS SHOWN IN THE TYPICAL SECTIONS.

PRIOR TO PLACEMENT OF BEAM GUARD THE SHOULDERS SHALL BE IN PLACE, SHAPED AND COMPACTED.

CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES EXCEPT WHEN PAVING OR PIPE LAYING OPERATIONS REQUIRE THE DRIVEWAY TO BE CLOSED. ACCESS TO DRIVEWAYS SHALL BE RE-ESTABLISHED IMMEDIATELY AFTER OPERATIONS ARE COMPLETED. ACCESS SHALL BE PROVIDED DURING ALL NON-WORKING HOURS.

DO NOT DRIVE OR STORE EQUIPMENT, OR STORE CONSTRUCTION MATERIALS IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS, FLOODPLAINS, OR WATERWAYS.

ORDER OF SECTION 2 DETAIL SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- CURB RAMP DETAILS
- EROSION CONTROL
- TRAFFIC CONTROL

CONTACTS

WISCONSIN DNR LIAISON

MARTY DILLENBURG  
625 E COUNTY ROAD Y, SUITE 70  
OSHKOSH, WI 54901-9731  
(920) 410-7428  
marty.dillenburg@wisconsin.gov

FOND DU LAC COUNTY HIGHWAY COMMISSIONER

THOMAS JANKE  
1820 SOUTH HICKORY STREET  
FOND DU LAC, WI 54937  
(920) 929-3488  
tom.janke@fdlco.wi.gov

NE REGION SURVEY COORDINATOR

MICHAEL ANDRASCHKO, PLS  
944 VANDERPERREN WAY  
GREEN BAY, WI 54304  
(920) 492-4166  
michael.andraschko@dot.wi.gov

NE REGION DESIGN PROJECT MANAGER

RYAN ERDMANN, PE  
944 VANDERPERREN WAY  
GREEN BAY, WI 54304  
(920) 370-2642  
ryand.erdmann@dot.wi.gov

UTILITY CONTACTS

CHRIS DAILEY  
ATC MANAGEMENT, INC. - COMMUNICATION LINE  
P.O. BOX 47  
WAUKESHA, WI 43187  
(262) 506-6884  
cdailey@atcllc.com

CHRIS DAILEY  
ATC MANAGEMENT, INC. - ELECTRICITY-TRANSMISSION  
P.O. BOX 47  
WAUKESHA, WI 43187  
(262) 506-6884  
cdailey@atcllc.com

DONNA HILBERT  
ALLIANT ENERGY - ELECTRICITY  
506 FENTON ST.  
RIPON, WI 54971  
(920) 748-4012  
donna.hilbert@AlliantEnergy.com

DONNA HILBERT  
ALLIANT ENERGY - GAS/PETROLEUM  
506 FENTON ST.  
RIPON, WI 54971  
(920) 748-4012  
donna.hilbert@AlliantEnergy.com

JOSEPH MONFELI  
BRIGHTSPEED OF EASTERN WISCONSIN, LLC - COMMUNICATION LINE  
224 INDUSTRIAL DR.  
NORTH PRAIRIE, WI 53153  
(847) 732-2905  
jmonfeli@congruex.com

JOSEPH MONFELI  
BRIGHTSPEED OF WESTERN WISCONSIN, LLC - COMMUNICATION LINE  
224 INDUSTRIAL DR.  
NORTH PRAIRIE, WI 53153  
(847) 732-2905  
jmonfeli@congruex.com

DUSTIN TEAFF  
BUG TUSSEL WIRELESS, LLC - COMMUNICATION LINE  
1262 CAMBER CT.  
DEPERE, WI 54115  
(920) 254-3539  
Dustin.Teaff@kesexcavating.com

ALLYN DANNHOFF  
CITY OF RIPON - SEWER  
100 JACKSON STREET  
RIPON, WI 54971-1396  
(920) 748-4908  
adannhoff@cityofripon.com

ALLYN DANNHOFF  
CITY OF RIPON - WATER  
100 JACKSON STREET  
RIPON, WI 54971-1396  
(920) 748-4908  
adannhoff@cityofripon.com

CODY NELSEN  
FLINT HILLS RESOURCES, LC - GAS/PETROLEUM  
E 3660 SPRUCE ROAD  
ELEVA, WI 54738  
CELL: (660) 251-1981  
Cody.Nelsen@fhr.com

TODD HILDEBRANDT  
SPECTRUM - COMMUNICATION LINE  
3545 PLANK RD.  
APPLETON, WI 54915  
OFFICE: (920) 831-9255  
Todd.Hildebrandt@charter.com

RUNOFF COEFFICIENT TABLE

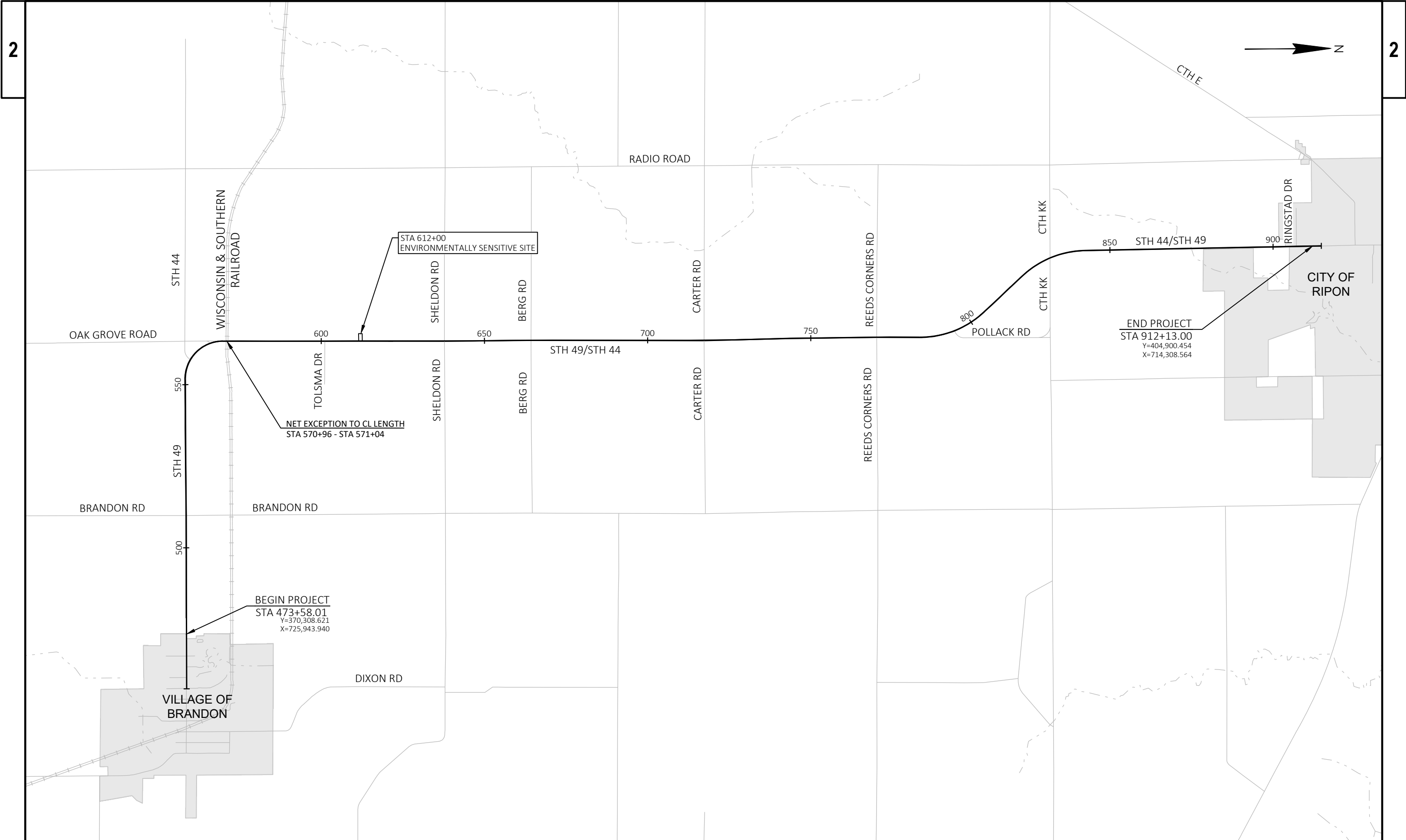
LAND USE:	HYDROLOGIC SOIL GROUP											
	A			B			C			D		
	SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)			SLOPE RANGE (PERCENT)		
	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER	0-2	2-6	6 & OVER
ROW CROPS:	.08	.16	.22	.12	.20	.27	.15	.24	.33	.19	.28	.38
	.22	.30	.38	.26	.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 = 33 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.013 ACRES

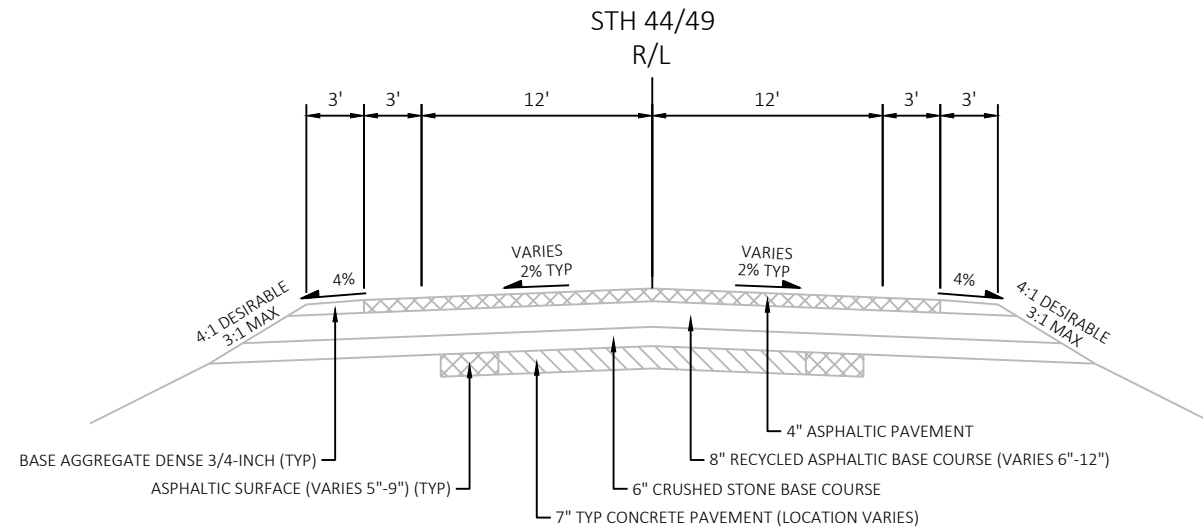
DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

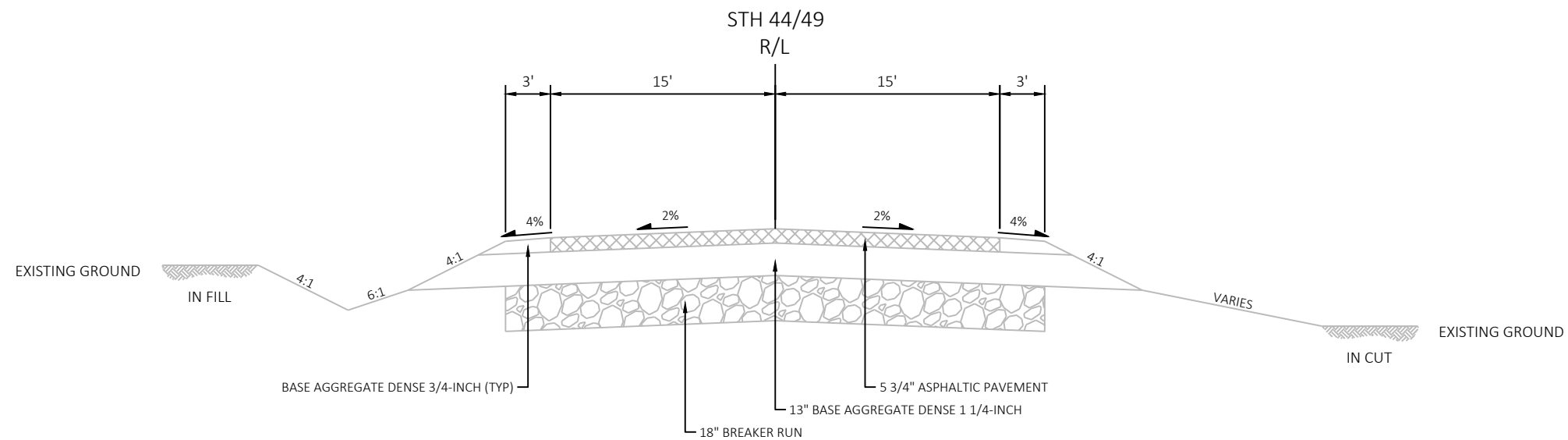


PROJECT NO: 6090-14-71	HWY: STH 49	COUNTY: FOND DU LAC	PROJECT OVERVIEW	SHEET	E
------------------------	-------------	---------------------	------------------	-------	---



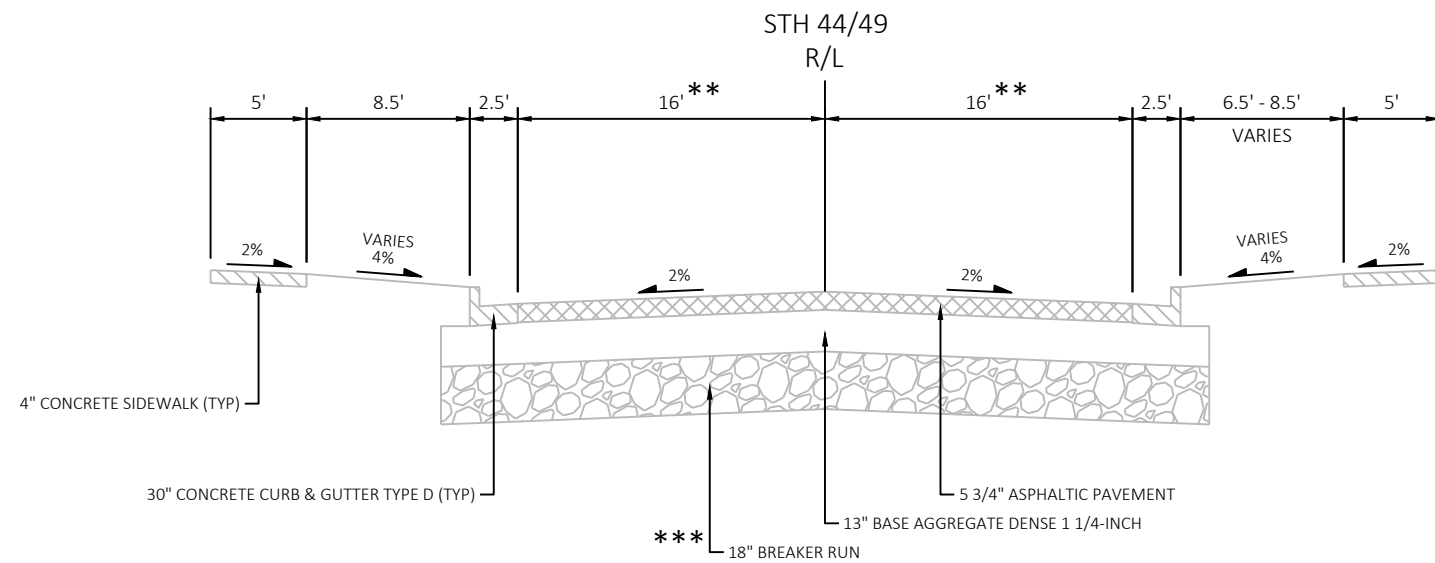
EXISTING TYPICAL SECTION STH 44/49

STA 473+58 TO STA 905+00



EXISTING TYPICAL SECTION STH 44/49

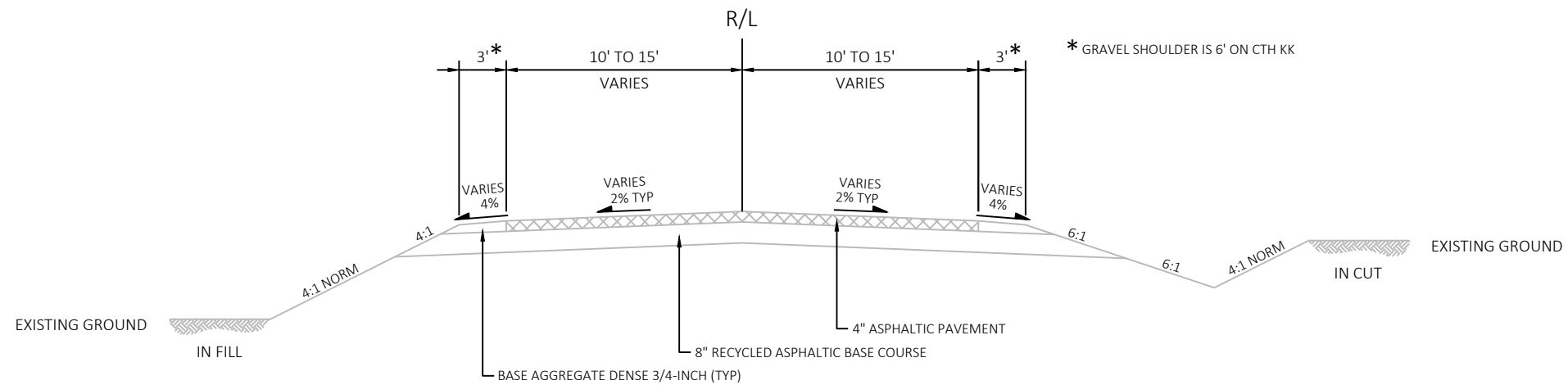
STA 905+00 TO STA 906+59.57



\*\* 24' FROM STA 906+59.57 TO STA 910+00 VARIES FROM STA 910+00 TO STA 911+59.85  
\*\*\* 30" FROM STA 951+00 TO STA 954+38.62

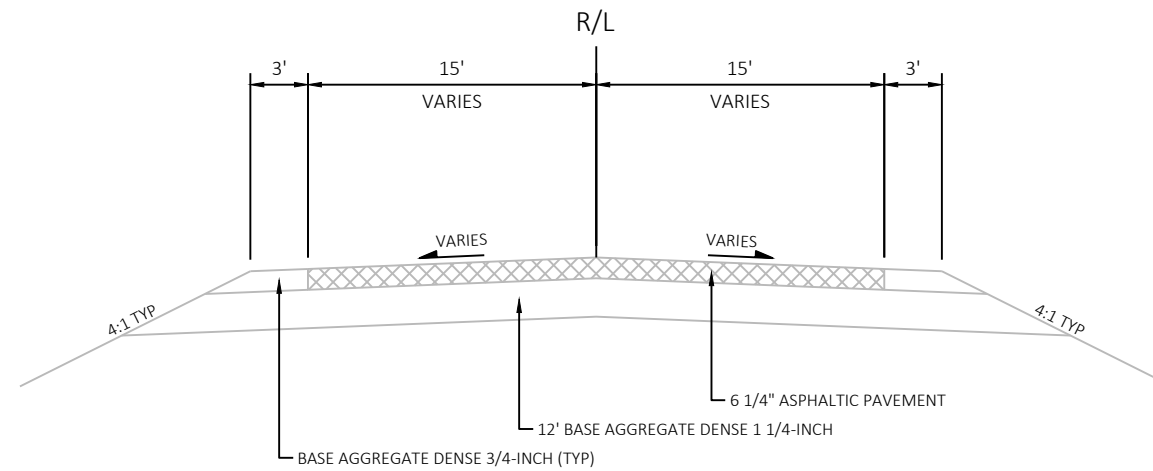
EXISTING TYPICAL SECTION STH 44/49

STA 906+59.57 TO STA 912+13.00

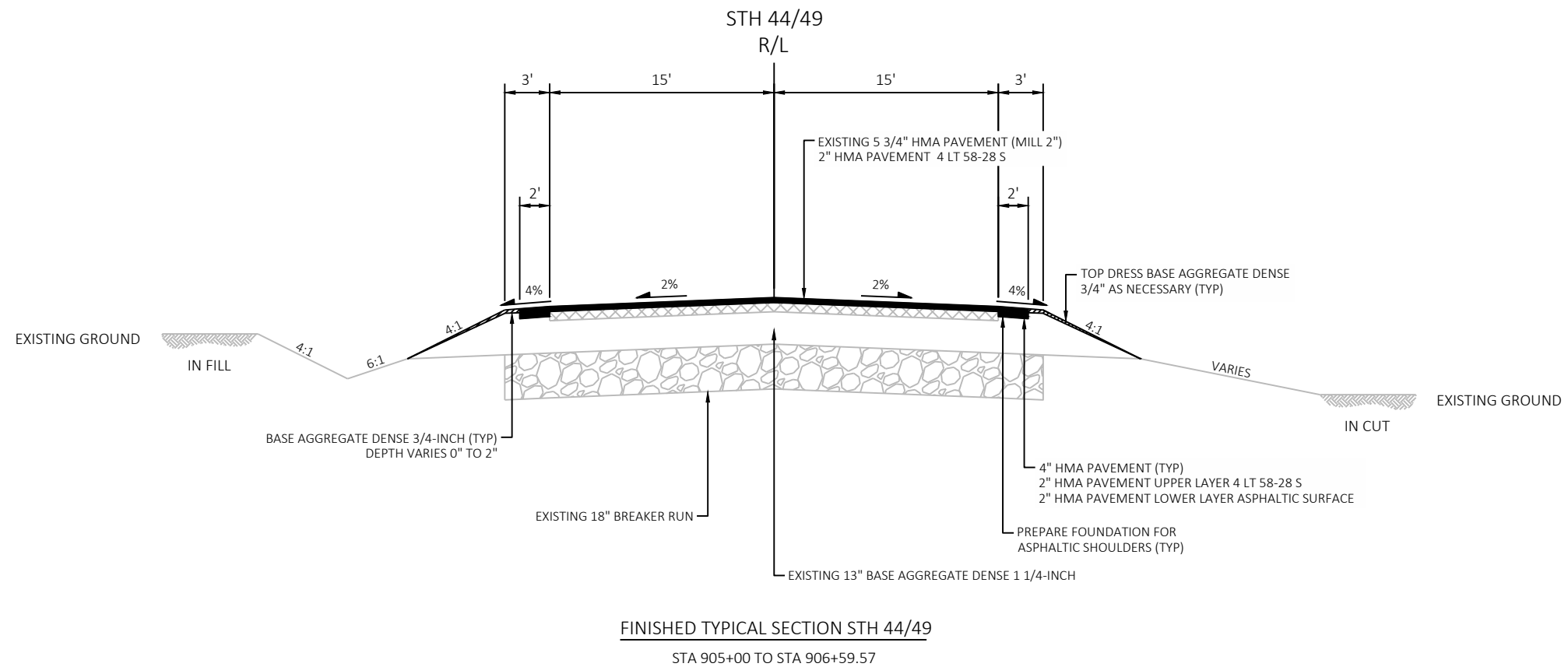


EXISTING TYPICAL SECTION

BRANDON ROAD  
STH 44  
SHELDON ROAD  
BERG ROAD  
CARTER ROAD  
REEDS CORNERS ROAD  
POLLACK ROAD  
CTH KK

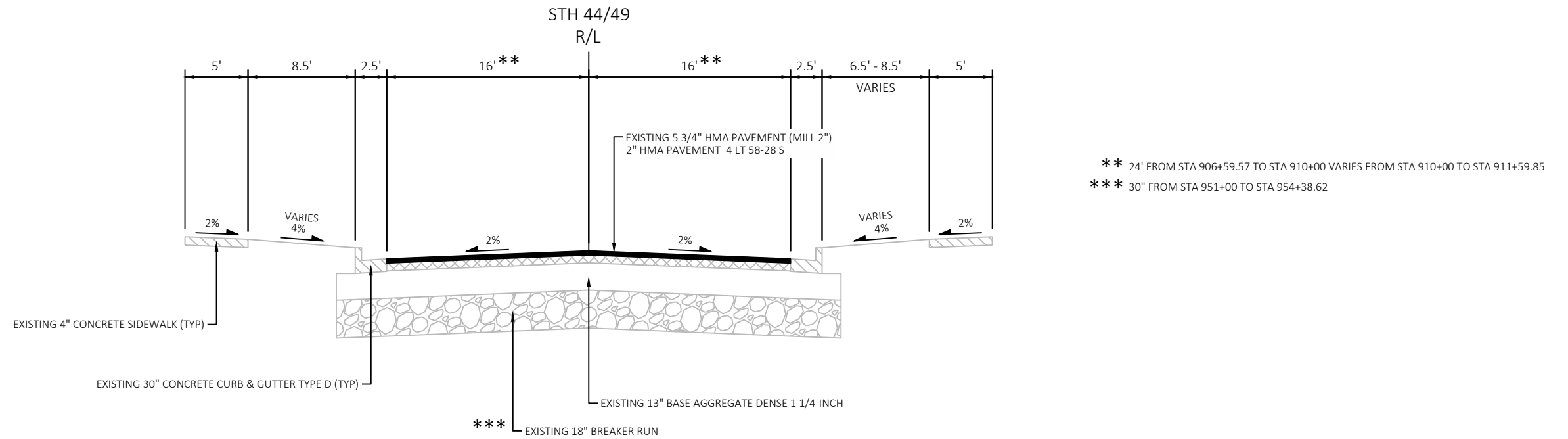


# 2

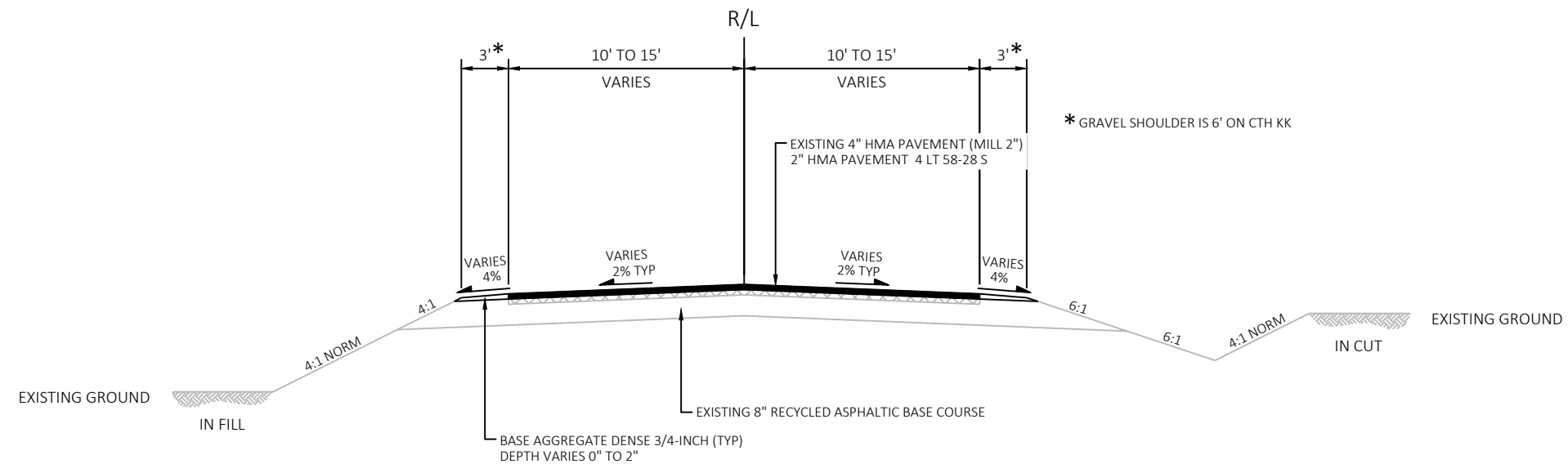


2

2

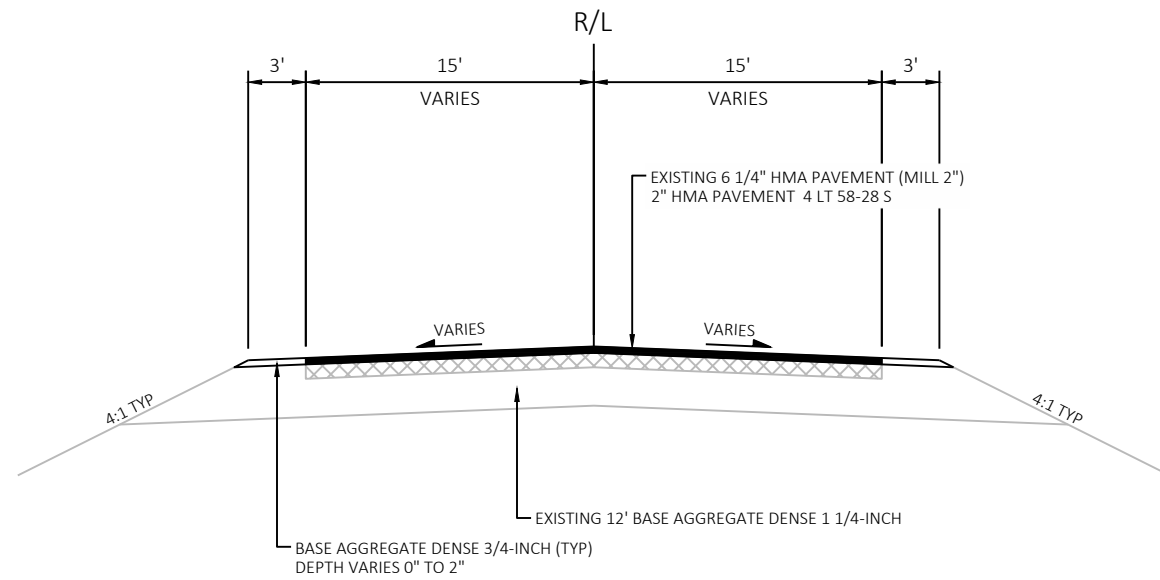


FINISHED TYPICAL SECTION STH44/49  
STA 906+59.57 TO STA 912+13.00

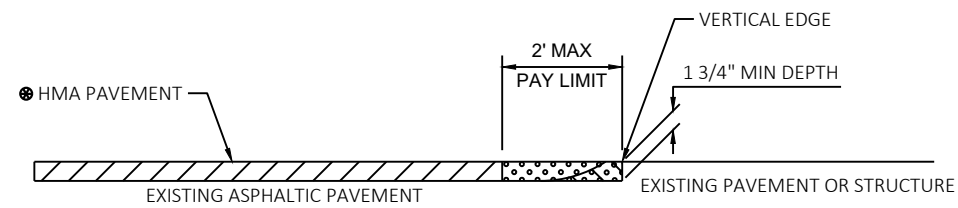


**FINISHED TYPICAL SECTION**




BRANDON ROAD  
STH 44  
SHELDON ROAD  
BERG ROAD  
CARTER ROAD  
REEDS CORNERS ROAD  
POLLACK ROAD  
CTH KK



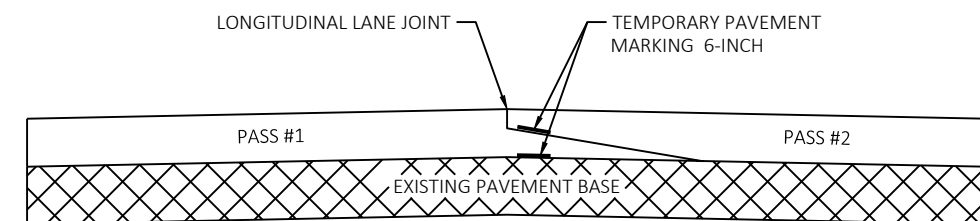
FINISHED TYPICAL SECTION  
OAK GROVE ROAD



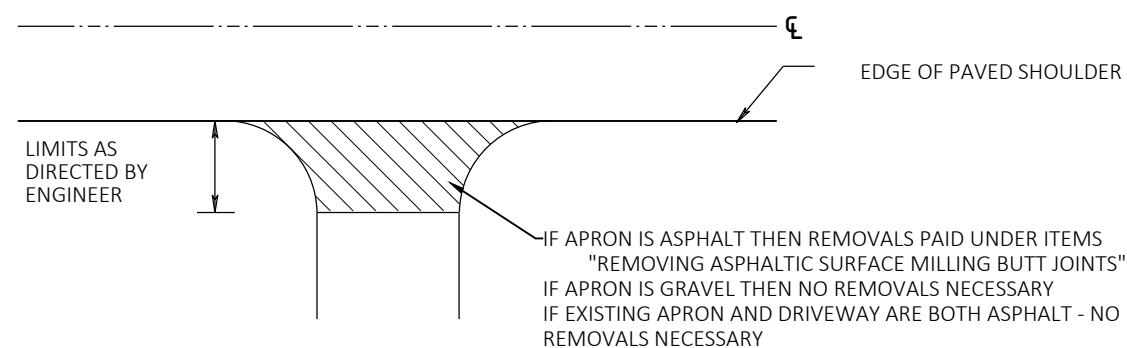
⊗ SEE TYPICAL CROSS SECTION FOR PAVEMENT TYPE AND THICKNESS OF INDIVIDUAL LAYERS

-  REMOVING ASPHALTIC SURFACE, MILLING
-  REMOVING ASPHALTIC SURFACE, BUTT JOINTS
-  REMOVE ASPHALTIC SURFACE WEDGE AT BUTT JOINT TO CREATE VERTICAL EDGE

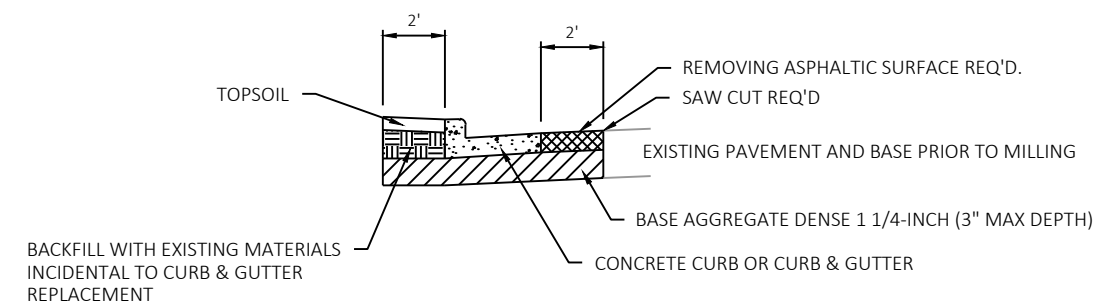
BUTT JOINT DETAIL FOR ASPHALTIC PAVEMENTS (NO PROFILE CHANGE)



PAVEMENT MARKING DETAIL FOR TAPERED OVERLAPPING JOINTS IN HMA PAVEMENTS



RURAL DRIVEWAY DETAIL - NO GRADE CHANGE



NOTES:

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

IN LOCATIONS WHERE SIDEWALK IS PROPOSED BEHIND THE BACK OF CURB & GUTTER, A MAXIMUM OF 3" BASE AGGREGATE DENSE 1 1/4-INCH SHALL BE USED FOR A SUITABLE BASE

CONCRETE CURB & GUTTER REPLACEMENT DETAIL



Ringstad_NW					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
1	907+28.74	65.97' LT	976.03	404415.53	714247.60
2	907+29.85	56.20' LT	975.60	404416.75	714257.36
3	907+31.63	50.47' LT	975.33	404418.59	714263.06
4	907+33.93	45.53' LT	975.11	404420.94	714267.98
5	907+37.39	40.21' LT	975.05	404424.46	714273.27
6	907+40.09	37.01' LT	974.81	404427.19	714276.44
7	907+46.07	31.71' LT	974.50	404433.22	714281.68
8	907+51.15	28.53' LT	974.27	404438.33	714284.81
9	907+56.63	26.10' LT	974.04	404443.84	714287.18
10	907+30.74	65.97' LT	975.95	404417.53	714247.58
11	907+31.80	56.66' LT	975.52	404418.69	714256.88
12	907+33.49	51.20' LT	975.25	404420.44	714262.32
13	907+35.69	46.49' LT	975.03	404422.69	714267.00
14	907+38.98	41.42' LT	974.97	404426.03	714272.04
15	907+41.56	38.38' LT	974.73	404428.64	714275.06
16	907+47.25	33.33' LT	974.42	404434.38	714280.05
17	907+52.09	30.29' LT	974.19	404439.26	714283.03
18	907+57.31	27.98' LT	973.96	404444.50	714285.29
19	907+31.24	65.96' LT	976.45	404418.03	714247.58
20	907+32.28	56.77' LT	976.02	404419.18	714256.76
21	907+33.96	51.38' LT	975.75	404420.90	714262.13

EXISTING R/W

Ringstad_NW					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
22	907+36.13	46.73' LT	975.03	404423.12	714266.76
23	907+39.38	41.73' LT	974.97	404426.43	714271.73
24	907+41.92	38.72' LT	975.23	404428.99	714274.71
25	907+47.55	33.73' LT	974.92	404434.68	714279.64
26	907+52.32	30.74' LT	974.69	404439.49	714282.59
27	907+57.48	28.45' LT	974.46	404444.66	714284.82
28	907+39.39	46.73' LT	975.04	404426.39	714266.73
29	907+45.38	41.72' LT	975.03	404432.43	714271.68
30	907+49.90	39.59' LT	974.98	404436.97	714273.76
31	907+54.43	37.47' LT	974.91	404441.52	714275.83
32	907+58.96	35.35' LT	974.82	404446.07	714277.91
33	907+60.39	34.68' LT	974.76	404447.51	714278.56
34	907+61.50	39.67' LT	974.94	404448.57	714273.55
35	907+61.08	39.87' LT	974.92	404448.15	714273.36
36	907+56.56	42.00' LT	974.97	404443.60	714271.28
37	907+52.03	44.12' LT	975.05	404439.05	714269.21
38	907+47.50	46.24' LT	975.10	404434.50	714267.13
39	907+45.39	46.72' LT	975.10	404432.38	714266.68

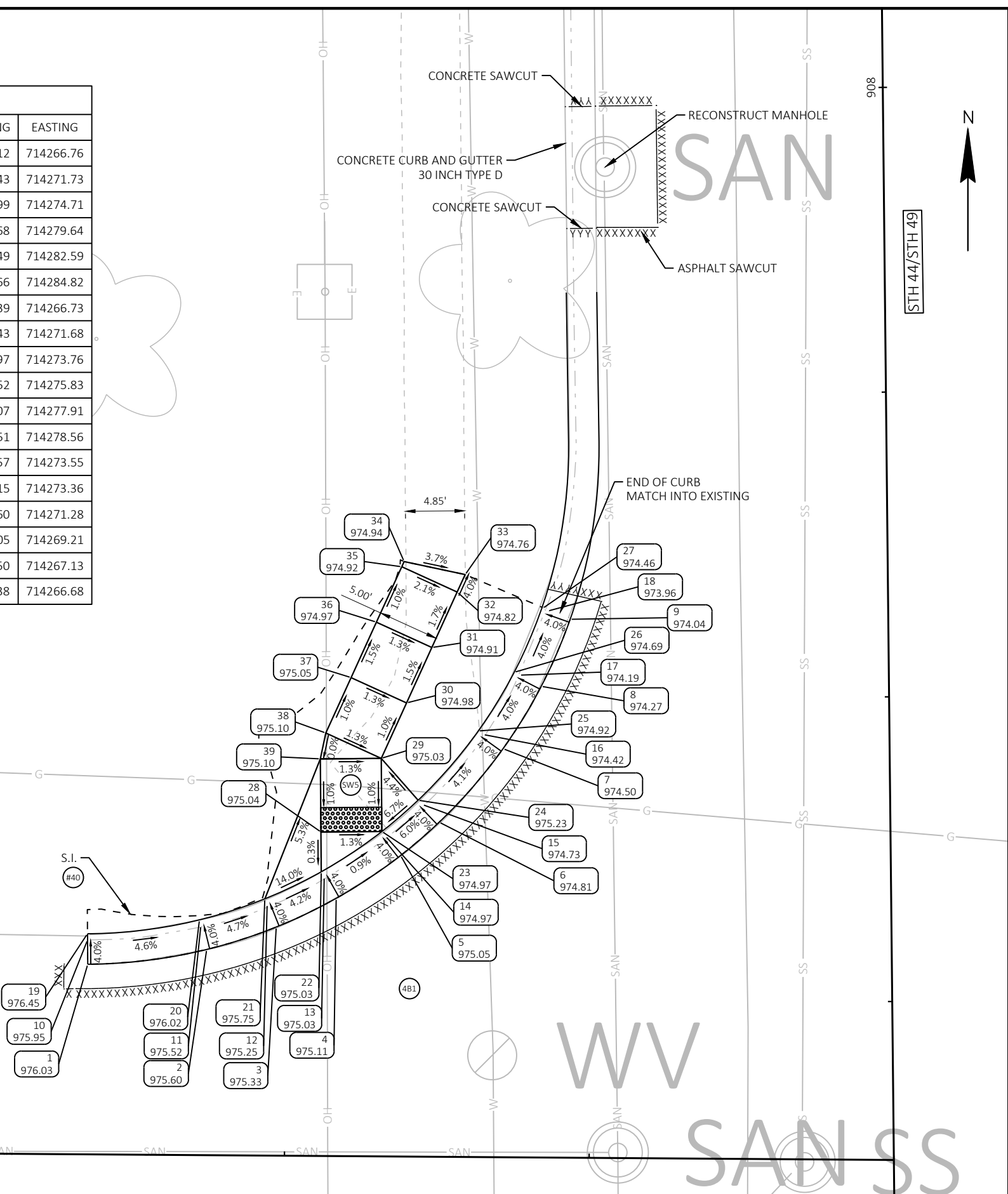
NOTES:

1. CONTRACTOR TO FIELD VERIFY ELEVATION, GRADES, SLOPES, LENGTHS AND MATCH POINTS PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION
2. THE ENGINEER MAY ADJUST ELEVATIONS TO FIT FIELD CONSTRUCTION
3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS
4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS
5. ALL STATION AND OFFET INFORMATION REFERENCE STH 44/STH 49 R/L

LEGEND

- (X) CURB RAMP TYPE
- (#40) WISDOT #40 Seed
- (SW5) CONCRETE SIDEWALK 5-INCH
- XXX  
XXX.XX POINT NUMBER & ELEVATION

RINGSTAD DR



PROJECT NO: 6090-14-71

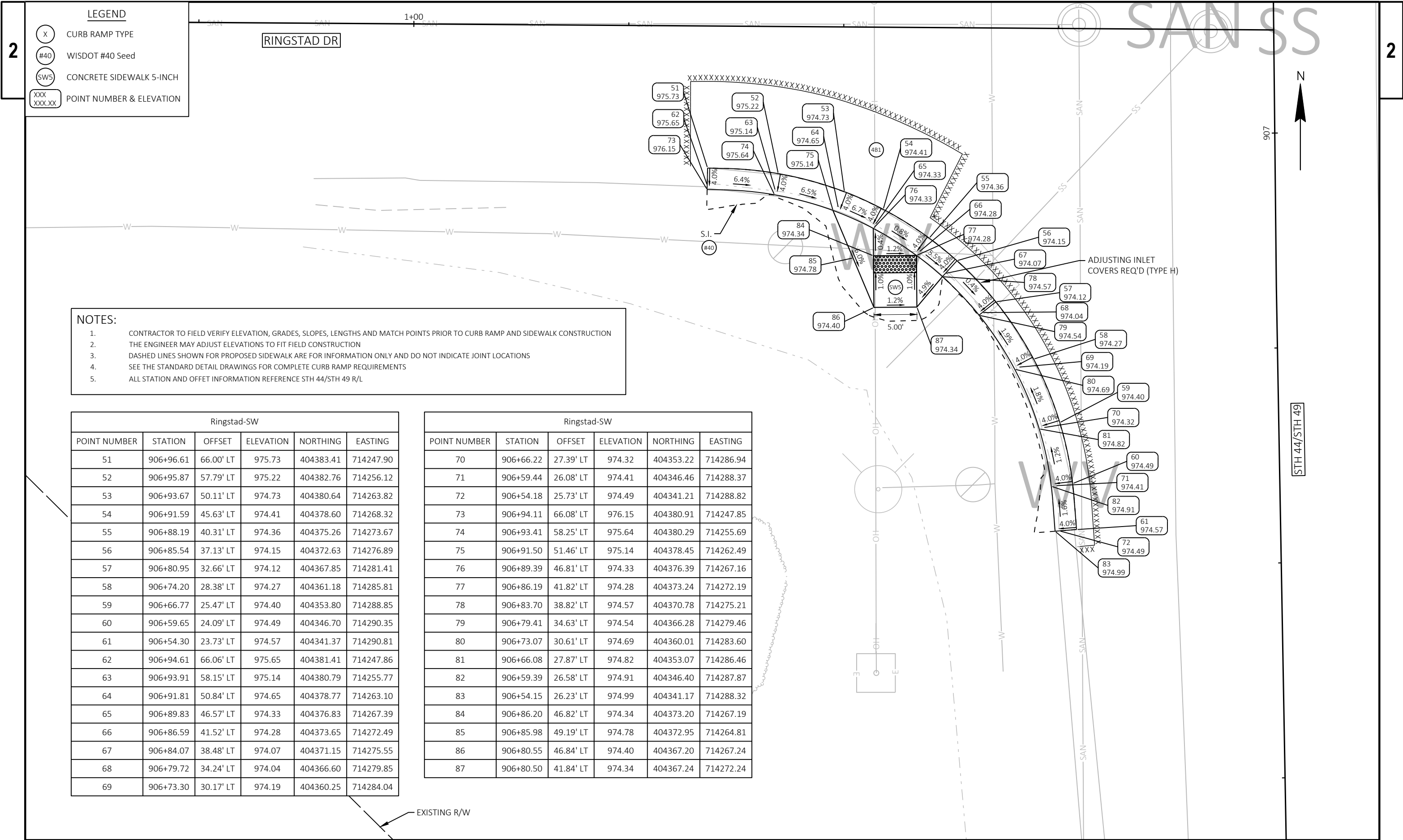
HWY: STH 49

COUNTY: FOND DU LAC

CURB RAMP DETAILS

SHEET

E

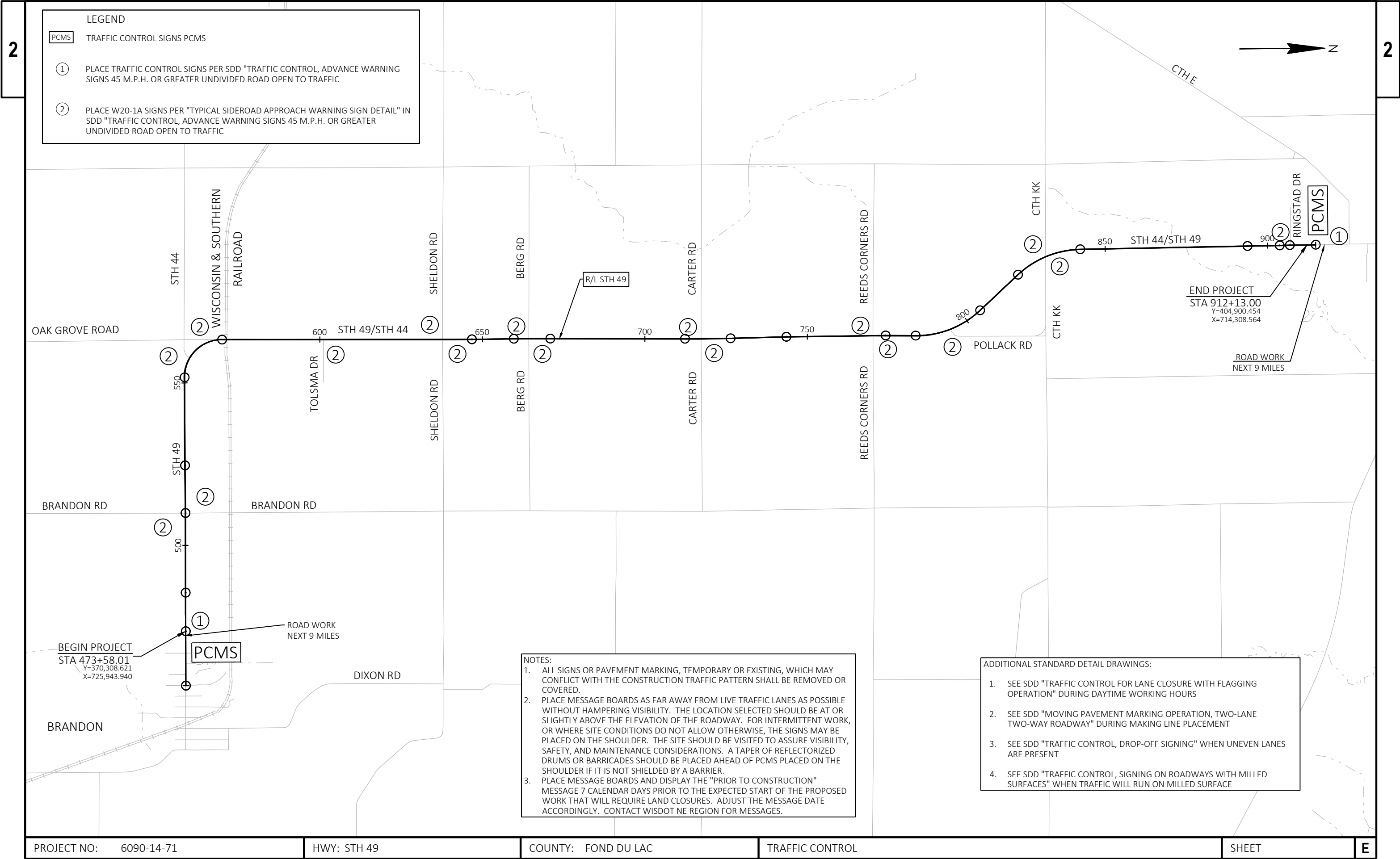


- NOTES:
1. CONTRACTOR TO FIELD VERIFY ELEVATION, GRADES, SLOPES, LENGTHS AND MATCH POINTS PRIOR TO CURB RAMP AND SIDEWALK CONSTRUCTION
  2. THE ENGINEER MAY ADJUST ELEVATIONS TO FIT FIELD CONSTRUCTION
  3. DASHED LINES SHOWN FOR PROPOSED SIDEWALK ARE FOR INFORMATION ONLY AND DO NOT INDICATE JOINT LOCATIONS
  4. SEE THE STANDARD DETAIL DRAWINGS FOR COMPLETE CURB RAMP REQUIREMENTS
  5. ALL STATION AND OFFET INFORMATION REFERENCE STH 44/STH 49 R/L

Ringstad-SW					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
51	906+96.61	66.00' LT	975.73	404383.41	714247.90
52	906+95.87	57.79' LT	975.22	404382.76	714256.12
53	906+93.67	50.11' LT	974.73	404380.64	714263.82
54	906+91.59	45.63' LT	974.41	404378.60	714268.32
55	906+88.19	40.31' LT	974.36	404375.26	714273.67
56	906+85.54	37.13' LT	974.15	404372.63	714276.89
57	906+80.95	32.66' LT	974.12	404367.85	714281.41
58	906+74.20	28.38' LT	974.27	404361.18	714285.81
59	906+66.77	25.47' LT	974.40	404353.80	714288.85
60	906+59.65	24.09' LT	974.49	404346.70	714290.35
61	906+54.30	23.73' LT	974.57	404341.37	714290.81
62	906+94.61	66.06' LT	975.65	404381.41	714247.86
63	906+93.91	58.15' LT	975.14	404380.79	714255.77
64	906+91.81	50.84' LT	974.65	404378.77	714263.10
65	906+89.83	46.57' LT	974.33	404376.83	714267.39
66	906+86.59	41.52' LT	974.28	404373.65	714272.49
67	906+84.07	38.48' LT	974.07	404371.15	714275.55
68	906+79.72	34.24' LT	974.04	404366.60	714279.85
69	906+73.30	30.17' LT	974.19	404360.25	714284.04

Ringstad-SW					
POINT NUMBER	STATION	OFFSET	ELEVATION	NORTHING	EASTING
70	906+66.22	27.39' LT	974.32	404353.22	714286.94
71	906+59.44	26.08' LT	974.41	404346.46	714288.37
72	906+54.18	25.73' LT	974.49	404341.21	714288.82
73	906+94.11	66.08' LT	976.15	404380.91	714247.85
74	906+93.41	58.25' LT	975.64	404380.29	714255.69
75	906+91.50	51.46' LT	975.14	404378.45	714262.49
76	906+89.39	46.81' LT	974.33	404376.39	714267.16
77	906+86.19	41.82' LT	974.28	404373.24	714272.19
78	906+83.70	38.82' LT	974.57	404370.78	714275.21
79	906+79.41	34.63' LT	974.54	404366.28	714279.46
80	906+73.07	30.61' LT	974.69	404360.01	714283.60
81	906+66.08	27.87' LT	974.82	404353.07	714286.46
82	906+59.39	26.58' LT	974.91	404346.40	714287.87
83	906+54.15	26.23' LT	974.99	404341.17	714288.32
84	906+86.20	46.82' LT	974.34	404373.20	714267.19
85	906+85.98	49.19' LT	974.78	404372.95	714264.81
86	906+80.55	46.84' LT	974.40	404367.20	714267.24
87	906+80.50	41.84' LT	974.34	404367.24	714272.24





2

2

E

Estimate Of Quantities

6090-14-71

Line	Item	Item Description	Unit	Total	Qty
0002	202.0110	Roadside Clearing	SY	115.000	115.000
0004	204.0110	Removing Asphaltic Surface	SY	65.000	65.000
0006	204.0115	Removing Asphaltic Surface Butt Joints	SY	96.000	96.000
0008	204.0120	Removing Asphaltic Surface Milling	SY	156,284.000	156,284.000
0010	204.0150	Removing Curb & Gutter	LF	136.000	136.000
0012	204.0155	Removing Concrete Sidewalk	SY	57.000	57.000
0014	211.0101	Prepare Foundation for Asphaltic Paving (project) 01. 6090-14-71	EACH	1.000	1.000
0016	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	738.000	738.000
0018	213.0100	Finishing Roadway (project) 01. 6090-14-71	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	782.000	782.000
0022	450.4000	HMA Cold Weather Paving	TON	5,260.000	5,260.000
0024	455.0605	Tack Coat	GAL	10,924.000	10,924.000
0026	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0028	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	1.000	1.000
0030	460.2005	Incentive Density PWL HMA Pavement	DOL	14,270.000	14,270.000
0032	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	8,780.000	8,780.000
0034	460.2010	Incentive Air Voids HMA Pavement	DOL	21,040.000	21,040.000
0036	460.5224	HMA Pavement 4 LT 58-28 S	TON	21,053.000	21,053.000
0038	465.0105	Asphaltic Surface	TON	2,199.000	2,199.000
0040	465.0520	Asphaltic Rumble Strips, Shoulder	LF	73,808.000	73,808.000
0042	465.0560	Asphaltic Rumble Strips, Centerline	LF	36,904.000	36,904.000
0044	465.0580	Asphaltic Rumble Strips, Transverse	SY	158.000	158.000
0046	520.8700	Cleaning Culvert Pipes	EACH	1.000	1.000
0048	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	131.000	131.000
0050	602.0410	Concrete Sidewalk 5-Inch	SF	225.000	225.000
0052	602.0505	Curb Ramp Detectable Warning Field Yellow	SF	20.000	20.000
0054	611.0420	Reconstructing Manholes	EACH	2.000	2.000
0056	611.0535	Manhole Covers Type J-Special	EACH	1.000	1.000
0058	611.8115	Adjusting Inlet Covers	EACH	1.000	1.000
0060	618.0100	Maintenance and Repair of Haul Roads (project) 01. 6090-14-71	EACH	1.000	1.000
0062	619.1000	Mobilization	EACH	1.000	1.000
0064	624.0100	Water	MGAL	16.000	16.000
0066	625.0100	Topsoil	SY	83.000	83.000
0068	628.1504	Silt Fence	LF	30.000	30.000
0070	628.1520	Silt Fence Maintenance	LF	15.000	15.000
0072	628.1905	Mobilizations Erosion Control	EACH	1.000	1.000
0074	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0076	628.2008	Erosion Mat Urban Class I Type B	SY	83.000	83.000
0078	628.7015	Inlet Protection Type C	EACH	3.000	3.000
0080	628.7570	Rock Bags	EACH	25.000	25.000
0082	629.0210	Fertilizer Type B	CWT	0.040	0.040
0084	630.0140	Seeding Mixture No. 40	LB	2.000	2.000
0086	630.0500	Seed Water	MGAL	0.500	0.500
0088	633.5200	Markers Culvert End	EACH	3.000	3.000
0090	642.5001	Field Office Type B	EACH	1.000	1.000
0092	643.0300	Traffic Control Drums	DAY	542.000	542.000
0094	643.0420	Traffic Control Barricades Type III	DAY	20.000	20.000
0096	643.0705	Traffic Control Warning Lights Type A	DAY	40.000	40.000
0098	643.0900	Traffic Control Signs	DAY	1,834.000	1,834.000

Estimate Of Quantities

6090-14-71

Line	Item	Item Description	Unit	Total	Qty
0100	643.1050	Traffic Control Signs PCMS	DAY	28.000	28.000
0102	643.1055.S	Truck or Trailer Mounted Attenuator	DAY	8.000	8.000
0104	643.3165	Temporary Marking Line Paint 6-Inch	LF	41,500.000	41,500.000
0106	643.5000	Traffic Control	EACH	1.000	1.000
0108	644.1810	Temporary Pedestrian Barricade	LF	6.000	6.000
0110	646.2040	Marking Line Grooved Wet Ref Epoxy 6-Inch	LF	129,059.000	129,059.000
0112	646.4040	Marking Line Grooved Wet Ref Epoxy 10-Inch	LF	695.000	695.000
0114	646.5020	Marking Arrow Epoxy	EACH	8.000	8.000
0116	646.5120	Marking Word Epoxy	EACH	1.000	1.000
0118	646.5320	Marking Railroad Crossing Epoxy	EACH	2.000	2.000
0120	646.6120	Marking Stop Line Epoxy 18-Inch	LF	270.000	270.000
0122	646.6466	Cold Weather Marking Epoxy 6-Inch	LF	32,265.000	32,265.000
0124	646.6470	Cold Weather Marking Epoxy 10-Inch	LF	59.000	59.000
0126	646.7120	Marking Diagonal Epoxy 12-Inch	LF	95.000	95.000
0128	650.5500	Construction Staking Curb Gutter and Curb & Gutter	LF	126.000	126.000
0130	650.8000	Construction Staking Resurfacing Reference	LF	43,867.000	43,867.000
0132	650.9000	Construction Staking Curb Ramps	EACH	2.000	2.000
0134	650.9911	Construction Staking Supplemental Control (project) 01. 6090-14-71	EACH	1.000	1.000
0136	690.0150	Sawing Asphalt	LF	219.000	219.000
0138	690.0250	Sawing Concrete	LF	8.000	8.000
0140	740.0440	Incentive IRI Ride	DOL	66,480.000	66,480.000
0142	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
0144	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,200.000	1,200.000
0146	SPV.0060	Special 01. Adjust Water Valve	EACH	1.000	1.000

REMOVAL SUMMARY

				202.0110	204.0115	204.0120	204.0150	204.0155	REMARKS
				ROADSIDE	REMOVING	REMOVING	REMOVING	REMOVING	
				CLEARING	ASPHALTIC	ASPHALTIC	CURB &	CONCRETE	
				SY	BUTT	SURFACE	GUTTER	SIDEWALK	
STATION	TO	STATION	LOCATION	SY	JOINTS	MILLING	LF	SY	
473+58	-	473+58			8				PROJECT START BUTT JOINT
473+58	-	507+05				11,192			PROJECT START TO BRANDON RD
507+05	-	512+80				3,252			BRANDON RD INT.
509+75	-	510+07	RT		7				BRANDON RD INT.
509+78	-	510+11	LT		7				BRANDON RD INT.
512+80	-	554+33				13,830			BRANDON RD TO 44 INT.
554+26	-	569+90				6,868			44 INT.
557+95	-	558+33	LT		9				44 INT.
565+60	-	565+92	LT		8				44 INT.
567+09	-	567+18	LT		6				44 INT.
569+89	-	600+74				10,282			44 INT. TO TOLSMA DR.
569+30	-	570+00	RT	108					AT RR CROSSING
570+94	-	570+96			7				SOUTH OF RAILROAD TRACK
571+06	-	571+04			7				NORTH OF RAILROAD TRACKS
600+74	-	601+51				378			TOLSMA DR. INT.
601+11	-	601+28	RT		4				TOLSMA DR. INT.
601+51	-	635+36				11,286			TOLSMA DR. TO SHELDON RD
613+10	-	-	LT	7					AT CULVERT ENDWALL
635+36	-	640+44				2,845			SHELDON RD INT.
637+70	-	638+02	RT		7				SHELDON RD INT.
637+74	-	638+06	LT		7				SHELDON RD INT.
640+43	-	663+05				7,562			SHELDON RD TO BERG RD
663+05	-	666+50				2,287			BERG RD INT.
664+20	-	664+52	RT		7				BERG RD INT.
664+27	-	664+58	LT		7				BERG RD INT.
666+50	-	715+29				16,265			BERG RD TO CARTER RD
715+29	-	719+50				2,559			CARTER RD INT.
717+21	-	717+53	RT		7				CARTER RD INT.
717+25	-	717+57	LT		7				CARTER RD INT.
719+50	-	767+41				15,968			CARTER RD TO REEDS CORNERS RD
767+40	-	773+17				3,259			REEDS CORNERS RD INT.
770+10	-	770+42	RT		7				REEDS CORNERS RD INT.
770+16	-	770+47	LT		7				REEDS CORNERS RD INT.
773+17	-	792+65				6,476			REEDS CORNERS RD TO POLLACK RD
792+56	-	796+00				1,623			POLLACK RD INT.
794+25	-	794+59	RT		8				POLLACK RD INT.
795+87	-	829+83				11,277			POLLACK RD TO KK
829+70	-	832+78				954			KK INT. MAINLINE ONLY
832+67	-	905+03				24,156			KK INT TO RINGSTAD DR
905+02	-	912+17				3,835			RINGSTAD DR INT. TO PROJECT END
906+55	-	906+81	LT				54		RINGSTAD CURB SOUTH
906+94	-	907+31	LT		8				RINGSTAD INT.
907+29	-	907+63	LT				67		RINGSTAD CURB NORTH
907+85	-	907+88	LT				5		SAN. MH. 907+87. 25' 1t
907+40	-	908+38	LT					57	RINGSTAD CURB RAMP
912+17	-	912+17			8				PROJECT END
TOTAL 0010				115	96	156,156	126	57	

(\*) = ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PROJECT TOTAL 0010 = PROJECT CATEGAORY

BASE AGGREGATE SUMMARY

305.0110      624.0100

BASE  
AGGREGATE  
DENSE 3/4-

STATION	TO	STATION	LOCATION	INCH TON	WATER MGAL	REMARKS
473+58	-	509+05	STH 49	33	1	RT SHOULDER W/O INTERSECTION
473+58	-	509+28	STH 49	33	1	LT SHOULDER W/O INTERSECTION
510+46	-	558+03	STH 49	44	1	RT SHOULDER W/O INTERSECTION
510+77	-	557+43	STH 49	43	1	LT SHOULDER W/O INTERSECTION
558+03	-	565+50	STH 44/49	7	0	RT SHOULDER W/O INTERSECTION
559+00	-	565+50	STH 44/49	6	0	LT SHOULDER W/O INTERSECTION
565+50	-	600+70	STH 44/49	33	1	RT SHOULDER W/O INTERSECTION
567+00	-	601+18	STH 44/49	32	1	LT SHOULDER W/O INTERSECTION
601+54	-	637+00	STH 44/49	33	1	RT SHOULDER W/O INTERSECTION
601+18	-	637+27	STH 44/49	33	1	LT SHOULDER W/O INTERSECTION
638+50	-	663+50	STH 44/49	23	0	RT SHOULDER W/O INTERSECTION
638+75	-	663+77	STH 44/49	23	0	LT SHOULDER W/O INTERSECTION
665+05	-	716+52	STH 44/49	48	1	RT SHOULDER W/O INTERSECTION
665+10	-	716+74	STH 44/49	48	1	LT SHOULDER W/O INTERSECTION
718+00	-	769+50	STH 44/49	48	1	RT SHOULDER W/O INTERSECTION
715+25	-	769+65	STH 44/49	50	1	LT SHOULDER W/O INTERSECTION
770+89	-	793+57	STH 44/49	21	0	RT SHOULDER W/O INTERSECTION
771+17	-	794+38	STH 44/49	21	0	LT SHOULDER W/O INTERSECTION
795+00	-	830+48	STH 44/49	33	1	RT SHOULDER W/O INTERSECTION
794+38	-	830+81	STH 44/49	34	1	LT SHOULDER W/O INTERSECTION
832+12	-	906+43	STH 44/49	69	1	RT SHOULDER W/O INTERSECTION
832+42	-	905+72	STH 44/49	68	1	LT SHOULDER W/O INTERSECTION
TOTAL 0010				782	16	

PROJECT TOTAL 0010 = PROJECT CATEGAORY

HMA SUMMARY

				450.4000	455.0605	460.0105.s	460.0110.s	460.5224	465.0105		
				HMA COLD	TACK COAT	HMA PERCENT	HMA PERCENT	*	*		
				WEATHER		WITHIN	WITHIN				
				PAVING		LIMITS (PWL)	LIMITS (PWL)	HMA PAVEMENT	ASPHALTIC		
						TEST STRIP	TEST STRIP	4 LT 58-28 S	SURFACE		
				TON	GAL	VOLUMETRICS	DENSITY	TON	TON		
STATION	TO	STATION	LOCATION			EACH	EACH			REMARKS	
473+58	-	912+17	Project Limits	3567	8187	1	1	14269		PROJECT LIMIT	
473+58	-	508+57	LT	58	82			231	95	PAVED SHOULDER	
473+58	-	507+05	RT	54	76			216	91	PAVED SHOULDER	
473+58	-	474+61	RT	1	3			6		PROJECT START	
506+68	-	511+47	RT	25	57			99		BRANDON ROAD INT.	
508+37	-	513+18	LT	25	57			100		BRANDON ROAD INT.	
511+27	-	554+82	RT	71	101			284	118	PAVED SHOULDER	
512+80	-	556+69	LT	72	102			287	119	PAVED SHOULDER	
554+32	-	562+32	RT	25	58			101		44 49 PASSING LANE	
556+49	-	561+00	LT	26	60			104		44 49 INT.	
560+61	-	564+82	LT	6	9			25	11	PAVED SHOULDER	
561+57	-	600+84	RT	64	91			256	106	PAVED SHOULDER	
564+61	-	569+06	LT	16	37			64		44 49 INT.	
568+79	-	636+53	LT	111	157			443	184	PAVED SHOULDER	
600+74	-	601+63	RT	5	10			18		TOLSMA DR INT.	
601+51	-	635+78	RT	54	75			215	93	PAVED SHOULDER	
635+36	-	639+42	RT	21	49			85		SHELDON RD INT.	
636+33	-	640+43	LT	21	49			86		SHELDON RD INT.	
639+23	-	662+28	RT	37	53			150	62	PAVED SHOULDER	
639+98	-	663+05	LT	37	53			150	63	PAVED SHOULDER	
661+90	-	665+90	RT	20	46			80		BERG RD INT.	
662+85	-	666+95	LT	22	51			89		BERG RD INT.	
665+74	-	715+29	RT	81	115			324	134	PAVED SHOULDER	
666+50	-	716+04	LT	84	123			338	134	PAVED SHOULDER	
713+96	-	720+45	RT	23	54			94		CARTER RD INT.	
715+90	-	719+91	LT	20	46			79		CARTER RRD INT.	
718+73	-	767+40	RT	79	113			318	132	PAVED SHOULDER	
719+50	-	768+94	LT	81	115			323	134	PAVED SHOULDER	
767+03	-	771+83	RT	25	57			100		REEDS CORNERS INT.	
768+74	-	773+54	LT	25	58			100		REEDS CORNERS INT.	
771+63	-	792+56	RT	34	49			138	57	PAVED SHOULDER	
773+17	-	830+90	LT	94	134			377	157	PAVED SHOULDER	
792+23	-	795+87	RT	18	41			72		POLLACK RD	
795+73	-	830+51	RT	56	80			226	94	PAVED SHOULDER	
832+39	-	903+84	RT	117	166			467	194	PAVED SHOULDER	
832+41	-	905+03	LT	119	169			475	197	PAVED SHOULDER	
903+34	-	905+02	RT	3	7			12		ROAD WIDENING	
903+84	-	905+02	RT	1	1			5	3	PAVED SHOULDER	
905+02	-	911+78	RT	30	70			121		RINGSTAD PASSING LANE	
905+03	-	911+78	LT	28	63			111		RINGSTAND INT.	
905+03	-	906+54	LT	1	2			4		PAVED SHOULDER	
TOTAL 0010				5,260	10,924	1	1	21,038	2,178		

PROJECT TOTAL 0010 = PROJECT CATEGAORY = ADDITIONAL QUANTITIES SHOWN ELSEWH

PWL MIX TABLE

Location	Station	to	Station	Mixture Use:	Underlying Surface	Bid Item	Tons	Thickness	Quality Management Program to be used for:	
									Mixture Acceptance	Density Acceptance
Mainline NB, 12' Driving Lanes	473+58	-	912+17	Upper Layer	Milled Existing HMA Surface	4 LT 58-28S	7134	2"	PWL Incentive Air Voids HMA Pavement 460.2010	PWL Incentive Density HMA Pavement 460.2005
Mainline SB, 12' Driving Lanes	473+58	-	912+17	Upper Layer	Milled Existing HMA Surface	4 LT 58-28S	7134	2"	PWL Incentive Air Voids HMA Pavement 460.2010	PWL Incentive Density HMA Pavement 460.2005
5' Paved Shoulder	473+58	-	906+54	Upper Layer	Milled Existing HMA Surface	4 LT 58-28S	5245	2"	PWL Incentive Air Voids HMA Pavement 460.2010	Accpetance testing by department: Not eligble for incentive
2' Paved Shoulder Widening	473+58	-	905+02	Lower Layer	Recycled Asphaltic Base Course	Asphaltic Surface	2178	2"	QMP as per SS 465	Acceptance by ordinary compaction

PWL MIX TABLE - CONTINUED

Location	Station	to	Station	Mixture Use:	Underlying Surface	Bid Item	Tons	Thickness	Quality Management Program to be used for:	
									Mixture Acceptance	Density Acceptance
Intersections Various	506+68	-	795+87	Upper Layer	Milled Existing HMA Surface	4 LT 58-28S	1281	2"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department: Not eligble for incentive
BEGIN PROJECT LIMIT	473+58	-	474+61	Upper Layer	Milled Existing HMA Surface	4 LT 58-28S	6	2"	PWL Incentive Air Voids HMA Pavement 460.2010	Acceptance testing by department: Not eligble for incentive
44 49 Passing Lane	554+32	-	562+32				101			
width Transiton Section	903+34	-	905+02				12			
Ringstad Passing Lane	905+02	-	911+78				121			

PROJECT TOTAL 0010 = PROJECT CATEGAORY

MUNICIPAL WORK SUMMARY

				204.0110	204.0120	204.0150	460.5224	465.0105	601.0411	611.0420	690.0150	690.0250	SPV 0060.01		
				*	*	*	*	*	*						
				REMOVING	REMOVING	REMOVING	HMA		CONCRETE						
				ASPHALTIC	ASPHALTIC	CURB &	PAVEMENT	ASPHALTIC	GUTTER 30-	RECONSTRUCTING	SAWING	SAWING	ADJUSTING		
				SURFACE	SURFACE	GUTTER	4 LT 58-	SURFACE	INCH TYPE	MANHOLES	ASPHALT	CONCRETE	WATER		
					MILLING		28 S		D				VALVE		
STATION	TO	STATION	LOCATION	SY	SY	LF	TON	TON	LF	EACH	LF	LF	EACH	REMARKS	
907+88	-	907+95	STH 44/49	6		10		1	10	1	50	5		SAN. MH - AT CURB LINE	
911+78	-	912+13	STH 44/49		128		15			1			1	SAN. MH. AT 912+00 LT	
PROJECT TOTAL 0020				6	128	10	15	1	10	2	50	5	1		

(\*) = ADDITIONAL QUANTITIES SHOWN ELSEWHERE

CONCRETE & DRAINAGE SUMMARY

				465.0105	204.0110	601.0411	602.0410	602.0505	611.0535	611.8115	690.0150	690.0250			
				*	*	*									
				ASPHALTIC	REMOVING	CONCRETE		CURB RAMP	MANHOLE						
				SURFACE	ASPHALTIC	GUTTER 30-	CONCRETE	DETECTABLE	COVERS	ADJUSTING	SAWING	SAWING			
					SURFACE	INCH TYPE	SIDEWALK 5-	WARNING	TYPE J-	INLET COVER	ASPHALT	CONCRETE			
				TON	SY	D	INCH	FIELD	SPECIAL	EACH	LF	LF			
STATION	TO	STATION	LOCATION	TON	SY	LF	SF	SF	EACH	EACH	LF	LF	REMARKS		
907+29	-	907+63	LT	5	14	54	156	10			63	3	NW QUADRANT AT RINGSTAD DR		
906+55	-	906+81	LT	15	45	67	69	10		1	98		SW QUADRANT AT RINGSTAD DR		
911+60	-	911+63	LT						1		8		SS.MH 911+61, 6' LT		
TOTAL 0010				20	59	121	225	20	1	1	169	3			

(\*) = ADDITIONAL QUANTITIES SHOWN ELSEWHERE

PROJECT TOTAL 0020 = PROJECT CATEGAORY

LANDSCAPING SUMMARY

				625.0100	628.2008		629.0210	630.0140	630.0500	REMARKS
				TOPSOIL	EROSION CLASS I	MAT TYPE B	FERTILIZER TYPE B	SEEDING MIXTURE NO. 40	SEED WATER	
STATION	TO	STATION	LOCATION	SY	SY		CWT	LB	MGAL	
1+48	-	1+78	RINGSTAD DR LT	39	39		0.02	0.7	0.2	NEW SIDEWAK/CURB RAMP
1+48	-	1+78	RINGSTAD DR RT	44	44		0.02	0.8	0.3	NEW SIDEWAK/CURB RAMP
TOTAL 0010				83	83		0.04	2.0	0.5	

RUMBLE STRIPS

				465.0520	465.0580	465.0560
				ASPHALTIC RUMBLE STRIPS, SHOULDER	ASPHALTIC RUMBLE STRIPS, TRANSVERSE	ASPHALTIC RUMBLE STRIPS, CENTERLINE
STATION	TO	STATION	LOCATION	LF	SY	LF
473+58	-	508+00	STH 44/49	6,884		3,442
512+00	-	550+00	STH 44/49	7,600		3,800
552+00	-	556+00	STH 44/49	800		400
560+00	-	564+00	STH 44/49	800		400
572+00	-	577+00	STH 44/49	1,000		500
579+00	-	599+00	STH 44/49	4,000		2,000
603+00	-	617+00	STH 44/49	2,800		1,400
619+00	-	636+00	STH 44/49	3,400		1,700
640+00	-	662+50	STH 44/49	4,500		2,250
666+50	-	714+00	STH 44/49	9,500		4,750
719+50	-	768+20	STH 44/49	9,740		4,870
772+20	-	780+00	STH 44/49	1,560		780
782+00	-	792+40	STH 44/49	2,080		1,040
796+40	-	804+00	STH 44/49	1,520		760
806+00	-	829+40	STH 44/49	4,680		2,340
821+03			STH 44/49		26	
824+79			STH 44/49		26	
827+04			STH 44/49		26	
835+79			STH 44/49		26	
838+04			STH 44/49		26	
841+80			STH 44/49		26	
833+40	-	859+00	STH 44/49	5,120		2,560
861+00	-	900+12	STH 44/49	7,824		3,912
TOTAL 0010				73,808	158	36,904

CULVERT WORK SUMMARY

STATION	LOCATION	520.8700	633.5200	628.7570	633.5200
		CLEANING CULVERT PIPES EACH	MARKERS CULVERT END EACH	ROCK BAGS EACH	MARKERS CULVERT END EACH
603+44	STH 44/49 RT		1		1
613+10	STH 44/49 LT	1		25	
663+69	STH 44/49 LT		1		1
695+54	STH 44/49 LT		1		1
TOTAL 0010		1	3	25	3

EROSION CONTROL SUMMARY

STATION	TO	STATION	LOCATION	628.1504	628.1520	628.1905	628.1910	628.7015
				SILT FENCE LF	SILT FENCE MAINTENANC E LF	MOBILIZATIONS EROSION CONTROL EACH	MOBILIZATIONS EMERGENCY EROSION CONTROL EACH	INLET PROTECTION TYPE C EACH
473+58	-	912+17	PROJECT WIDE			1	1	
1+48	-	1+78	RINGSTADT DR LT					
1+48	-	1+78	RINGSTADT DR RT	30	15			
	-	909+95	STH 44/49 RT & LT					3
TOTAL 0010				30	15	1	1	3

PAVEMENT MARKINGS

STATION TO	STATION	LOCATION	646.2040	646.2040	646.4040	646.5020	646.5120	646.5320	646.6120	646.6466	646.6468	643.3165	646.7120	REMARKS
			MARKING LINE GROOVED WET REF EPOXY 6- INCH YELLOW LF	MARKING LINE GROOVED WET REF EPOXY 6- INCH WHITE LF	MARKING LINE GROOVED WET REF EPOXY 10- INCH LF	MARKING ARROW EPOXY EACH	MARKING WORD EPOXY EACH	MARKING RAILROAD CROSSINGS EPOXY EACH	MARKING STOP LINE EPOXY 18- INCH LF	COLD WEATHER MARKING EPOXY 6- INCH LF	COLD WEATHER MARKING EPOXY 10- INCH LF	TEMPORARY MARKING LINE PAINT 6-INCH LF	MARKING DIAGONAL EPOXY 12- INCH LF	
473+58	-	912+17	STH 44/49		81,059	695				32,265	59			EDGELINES & TURNLANES
473+58	-	912+17	STH 44/49	48,000								41,500		CENTERLINE
473+58	-	912+17	STH 44/49				8	1						SIDE ROADS AND TURN LANES
473+58	-	912+17	STH 44/49						270				95	INTERSECTION AT STH 44/49
473+58	-	912+17	STH 44/49					2						STH 44/49 AT THE RR CROSSING
TOTAL 0010			48,000	81,059	695	8	1	2	270	32,265	59	41,500	95	
			129,059											

PROJECT TOTAL 0010 = PROJECT CATEGAORY

TRAFFIC CONTROL

ROADWAY	LOCATION	DURATION DAYS	643.0300		643.0420		643.0705		643.0900		643.1050		643.1055.S		644.1810	REMARKS
			TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL		TRAFFIC CONTROL		TRAILER		TEMPORARY	
			DRUMS		BARRICADES TYPE		WARNING LIGHTS		TRAFFIC CONTROL		TRAFFIC CONTROL		MOUNTED		PEDESTRIAN	
			EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	EACH	DAY	LF	
STH 49/44	NB & SB LIMITS	14	4	56							2	14				PCMS ADVANCED NOTICE
STH 49/44	MAJOR SIDE ROADS	14	4	56							2	14				PCMS ADVANCED NOTICE
STH 49/44	MAINLINE /PROJECT LIMITS	40							22	880						ADVANCED WARNING/FLAGGING
STH 49/44	SIDE ROADS TO PROJECT	40							22	880						ADVANCED WARNING/FLAGGING
STH 49/44	WITHIN PROJECT LIMITS	8							2	16			1	8		MOVING OPERATIONS- MARKINGS/RUMBLES
STH 49/44	STA 569+00 - STA 573+00	14	20	280					2	28						RR CROSSING UPGRADE
STH 49/44	STA 907+20 - STA 908+00	10	15	150	2	20	4	40	3	30					6	CURB RAMP REPLACEMENT
TOTAL 0010			542		20		40		1,834		28		8		6	

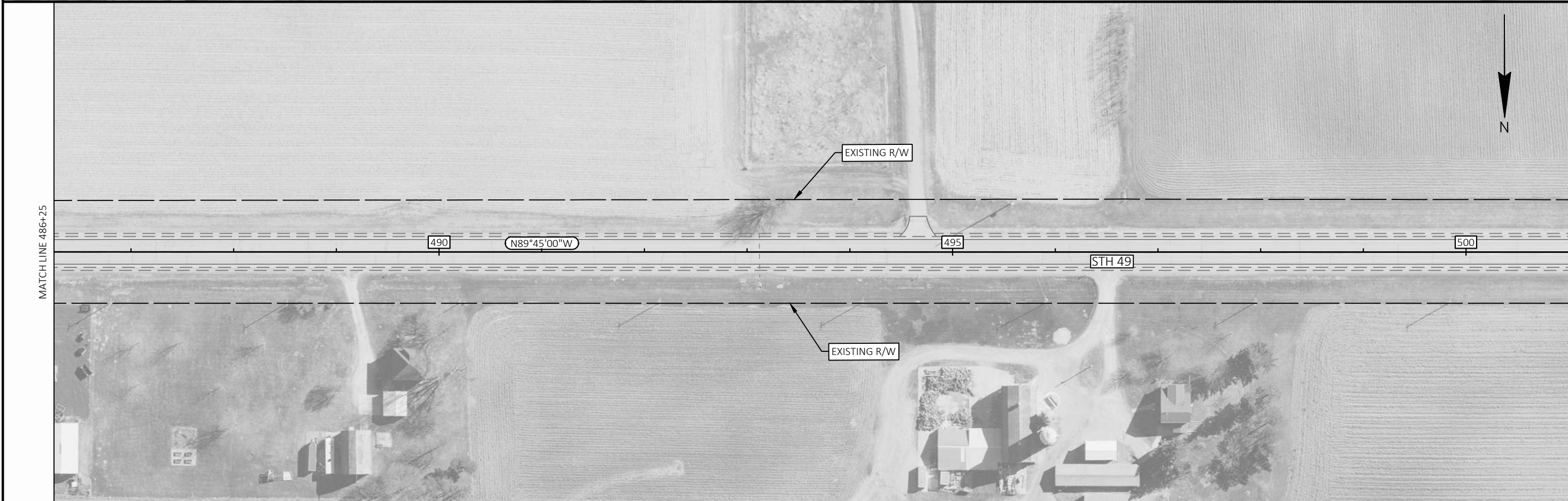
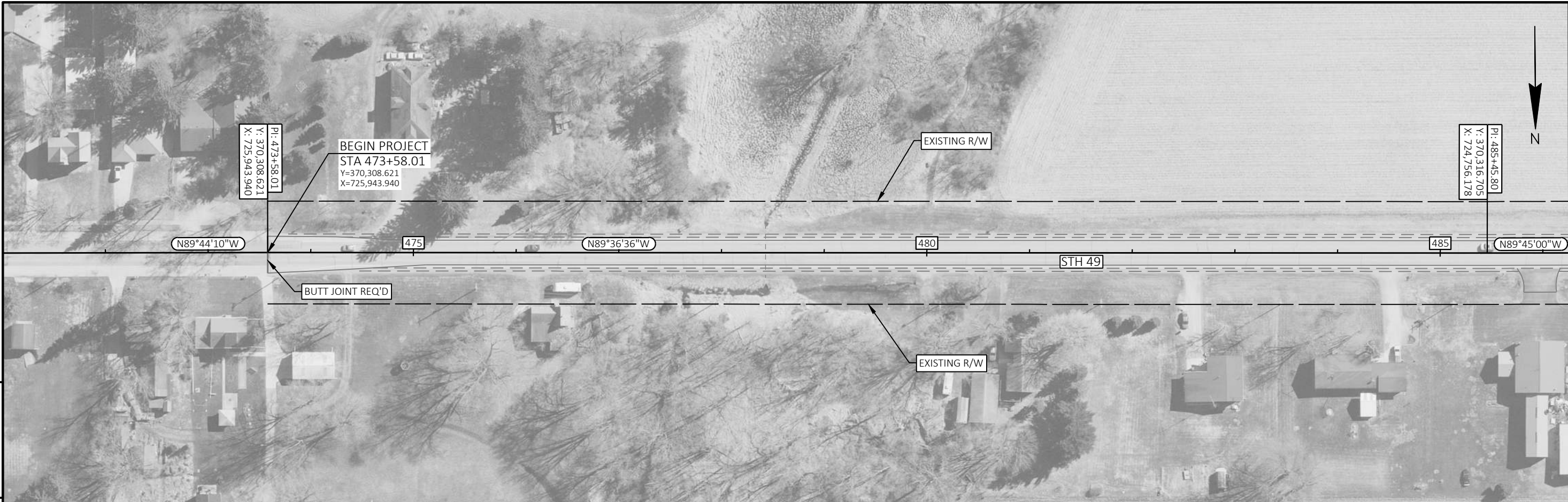
STAKING ITEMS

STATION	TO	STATION	LOCATION	650.5500	650.8000	650.9000	650.9910.01	REMARKS
				CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	CONSTRUCTION	
				STAKING CURB	STAKING	STAKING CURB	STAKING	
				GUTTER AND	RESURFACING	RAMPS	SUPPLEMENTAL	
				CURB & GUTTER	REFERENCE		(6090-14-71)	
				LF	LF	EACH	LS	
473+58	-	912+17	STH 44/49		43,867		1	
907+20	-	908+00	STH 44/49	126		2		AT RINGSTAD DR.
TOTAL 0010				126	43,867	2	1	

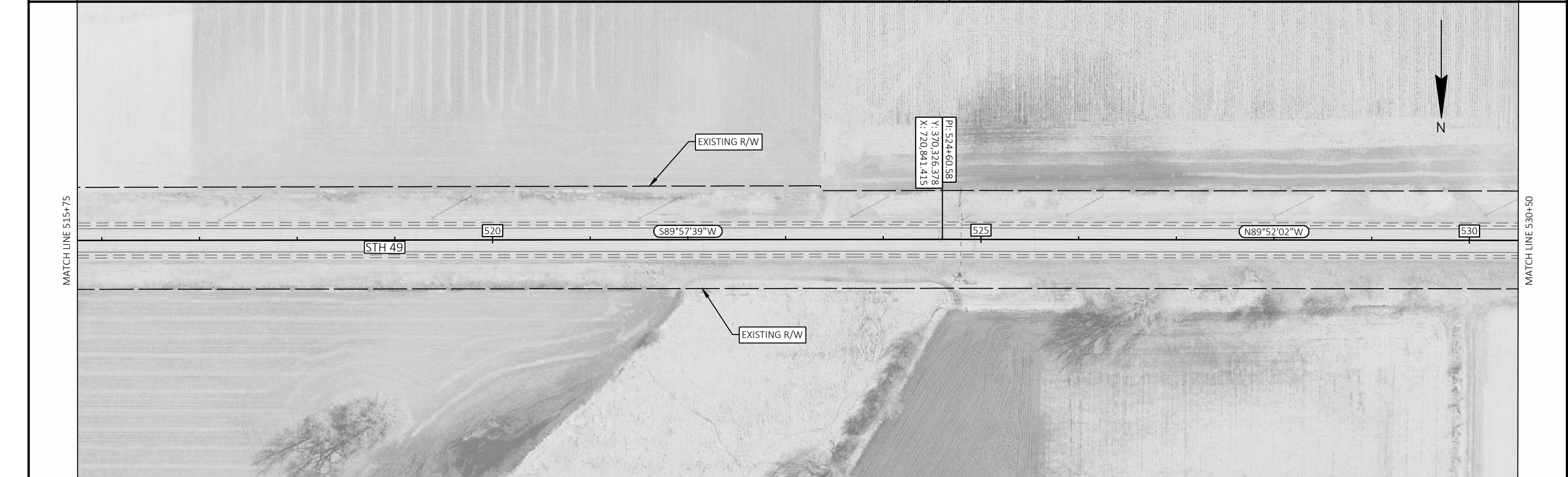
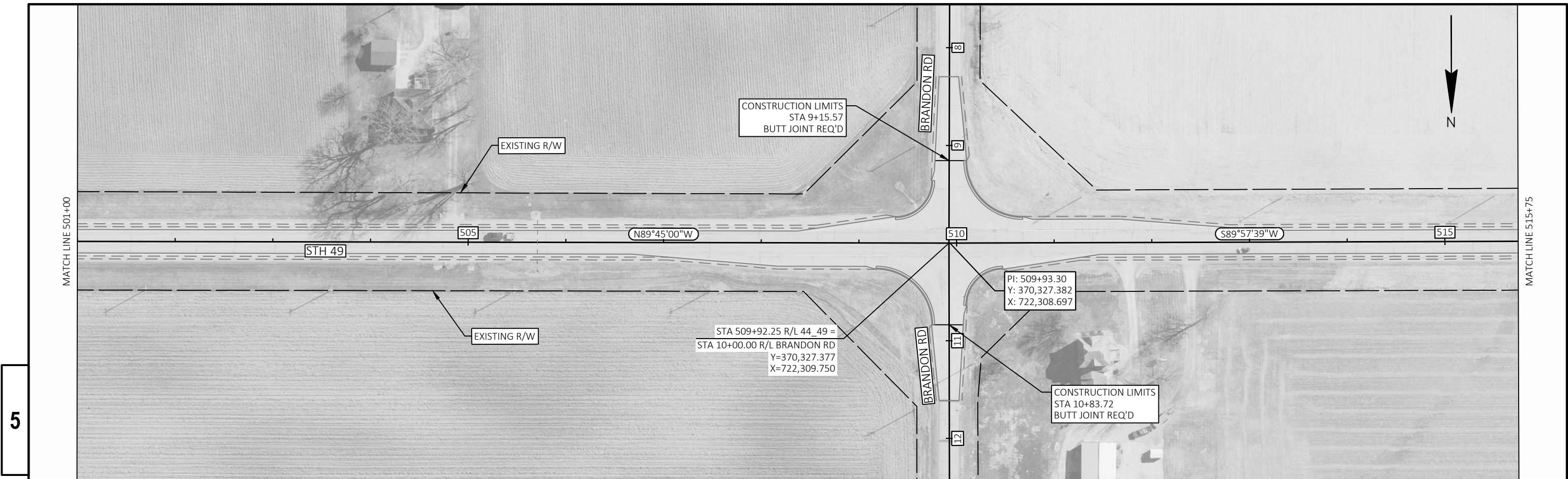
MISCELLANEOUS ITEMS

STATION	TO	STATION	LOCATION	211.0400	213.0100.01	618.0100.01	619.1000	642.5001
				PREPARE	FINISHING	MAINTENANCE		
				FOUNDATION	ROADWAY	OF HAUL		
				FOR	(PROJECT)	ROADS		
				ASPHALTIC	(01. TBD)	(PROJECT)		
				SHOULDERS		(01. TBD)	MOBILIZATION	FIELD OFFICE
								TYPE B
				STA	EACH	EACH	EACH	EACH
473+58	-	912+17	STH 44/49	738	1	1	1	1
TOTAL 0010				738	1	1	1	1

PROJECT TOTAL 0010 = PROJECT CATEGAORY

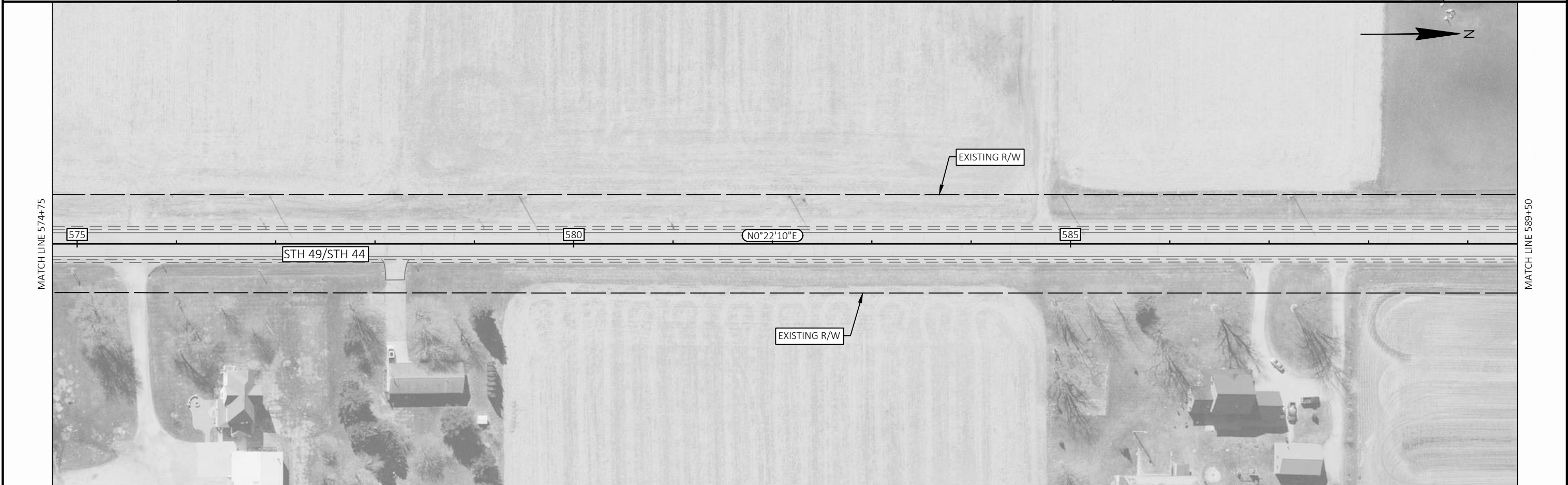
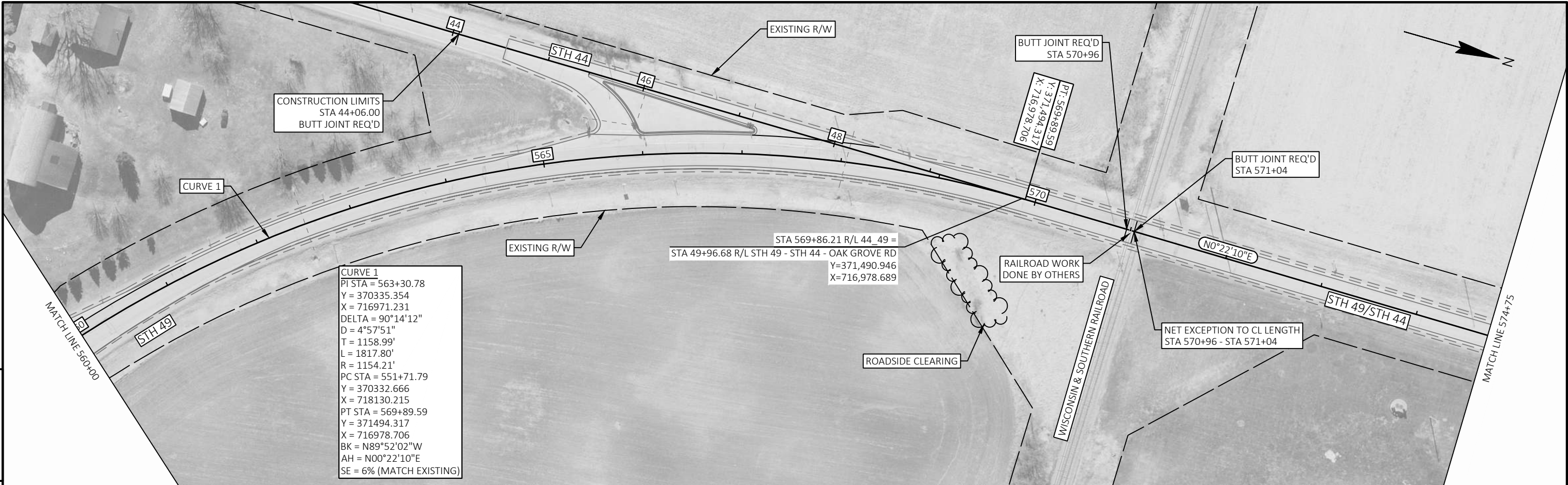


PROJECT NO: 6090-14-71	HWY: STH 49	COUNTY: FOND DU LAC	PLAN SHEETS	SHEET	E
------------------------	-------------	---------------------	-------------	-------	---



PROJECT NO: 6090-14-71	HWY: STH 49	COUNTY: FOND DU LAC	PLAN SHEETS	SHEET	E
------------------------	-------------	---------------------	-------------	-------	---



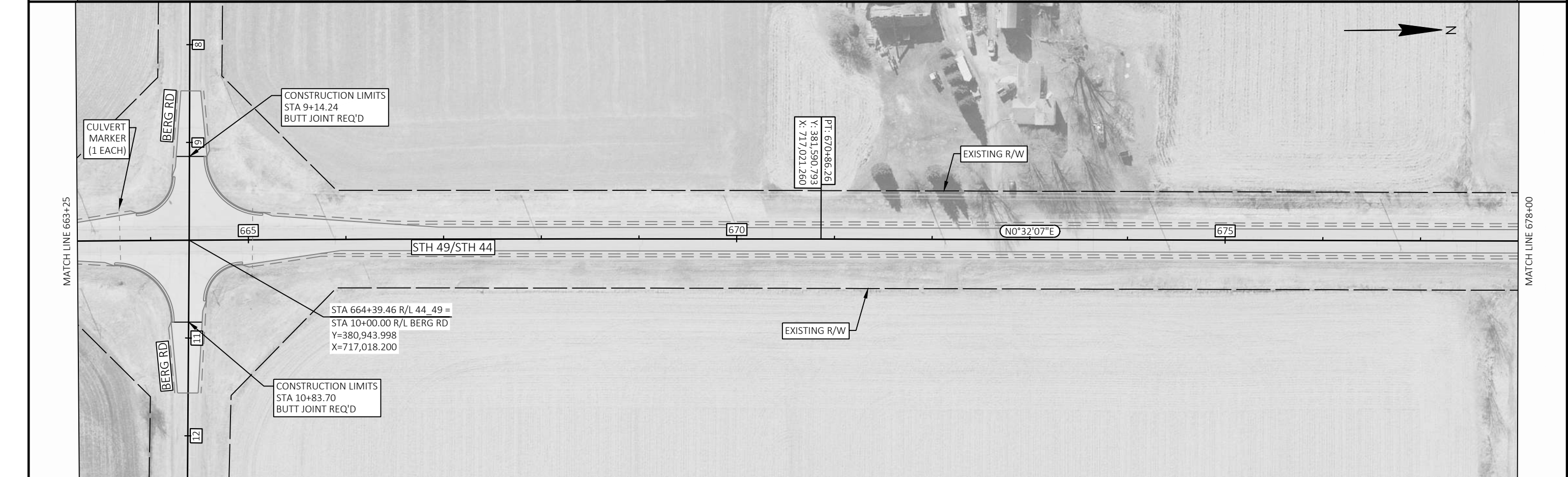


PROJECT NO: 6090-14-71	HWY: STH 49	COUNTY: FOND DU LAC	PLAN SHEETS	SHEET	E
------------------------	-------------	---------------------	-------------	-------	---



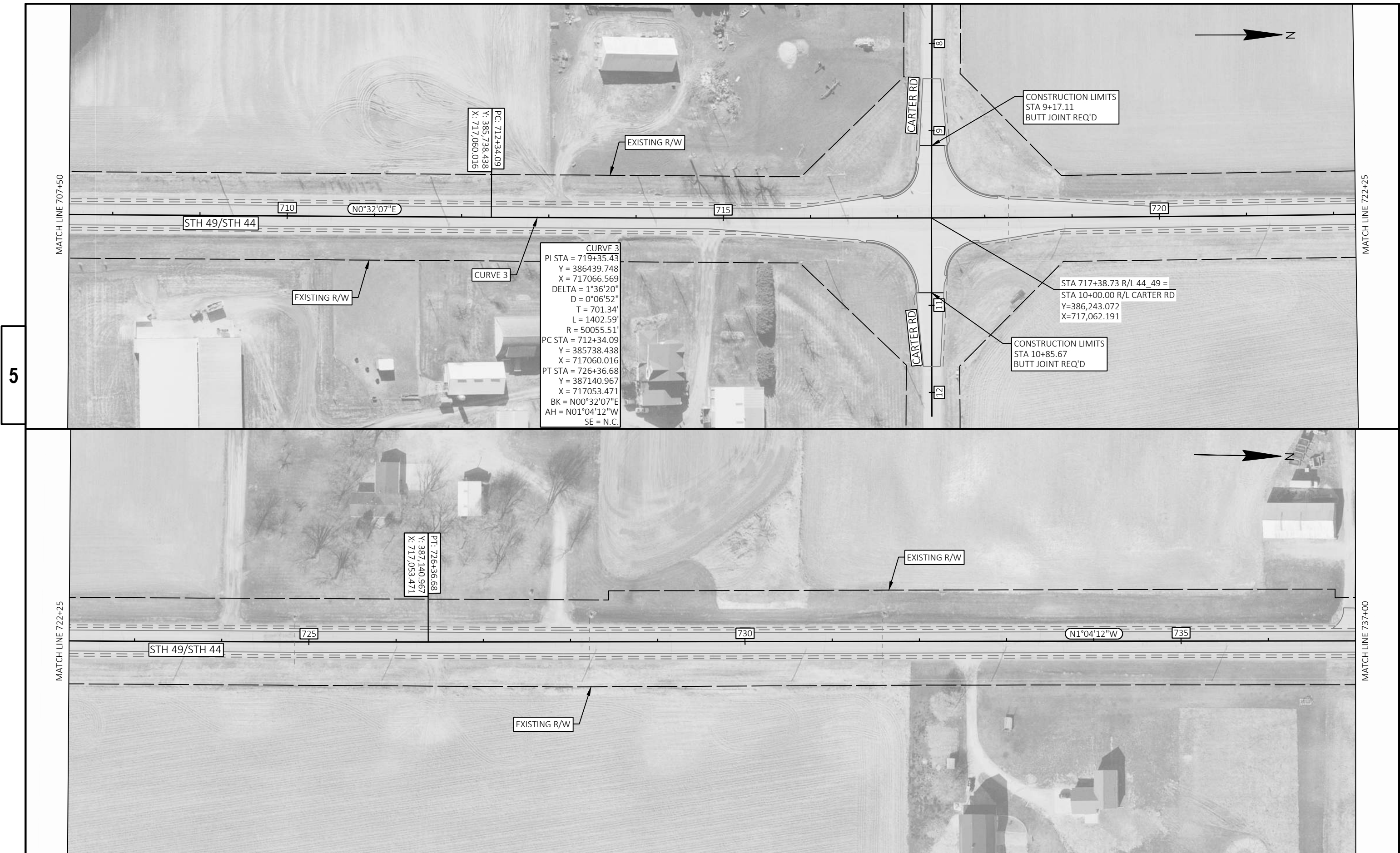
PROJECT NO: 6090-14-71	HWY: STH 49	COUNTY: FOND DU LAC	PLAN SHEETS	SHEET	E
------------------------	-------------	---------------------	-------------	-------	---





PROJECT NO: 6090-14-71	HWY: STH 49	COUNTY: FOND DU LAC	PLAN SHEETS	SHEET	E
------------------------	-------------	---------------------	-------------	-------	---

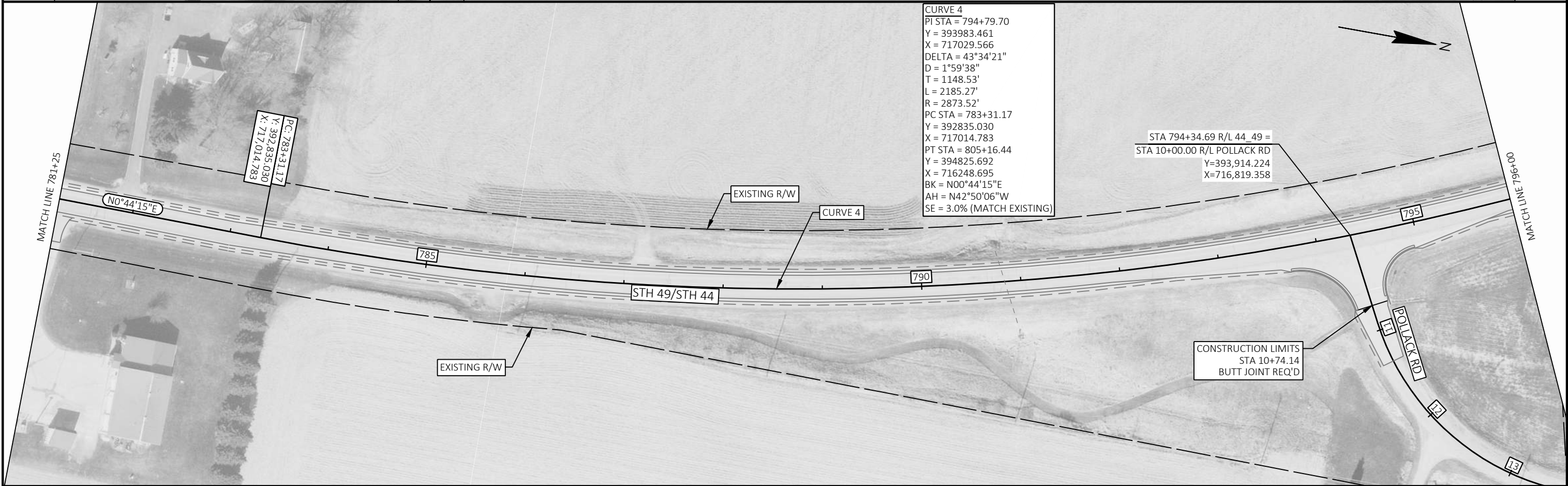
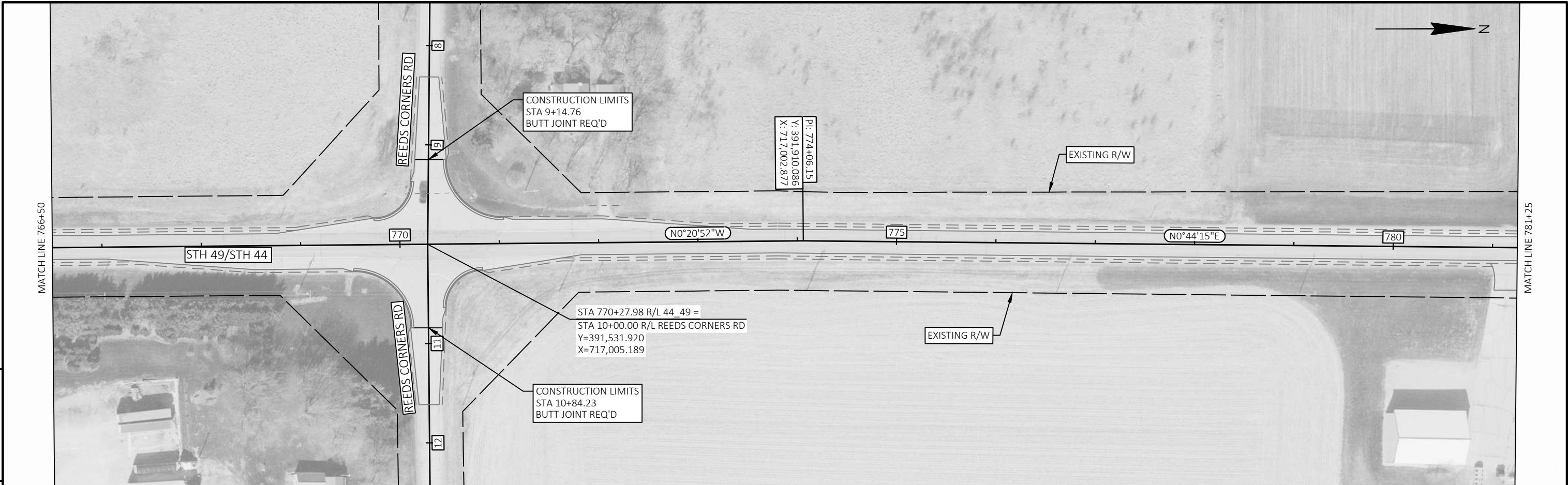




PROJECT NO: 6090-14-71	HWY: STH 49	COUNTY: FOND DU LAC	PLAN SHEETS	SHEET	E
------------------------	-------------	---------------------	-------------	-------	---

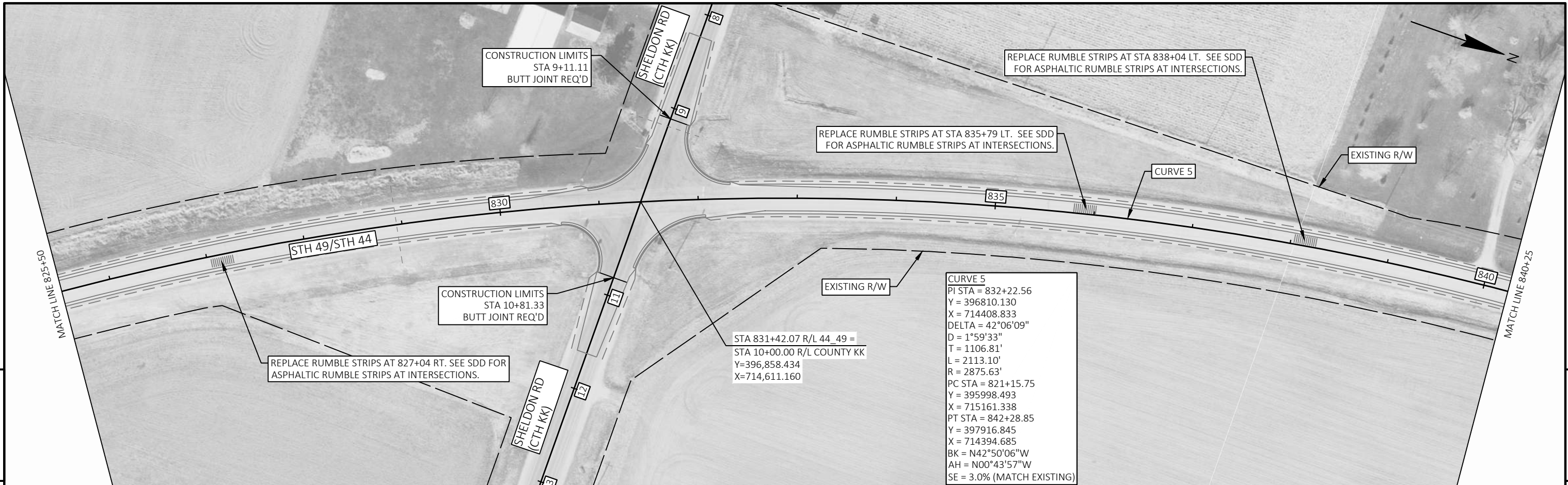


PROJECT NO: 6090-14-71	HWY: STH 49	COUNTY: FOND DU LAC	PLAN SHEETS	SHEET	E
------------------------	-------------	---------------------	-------------	-------	---



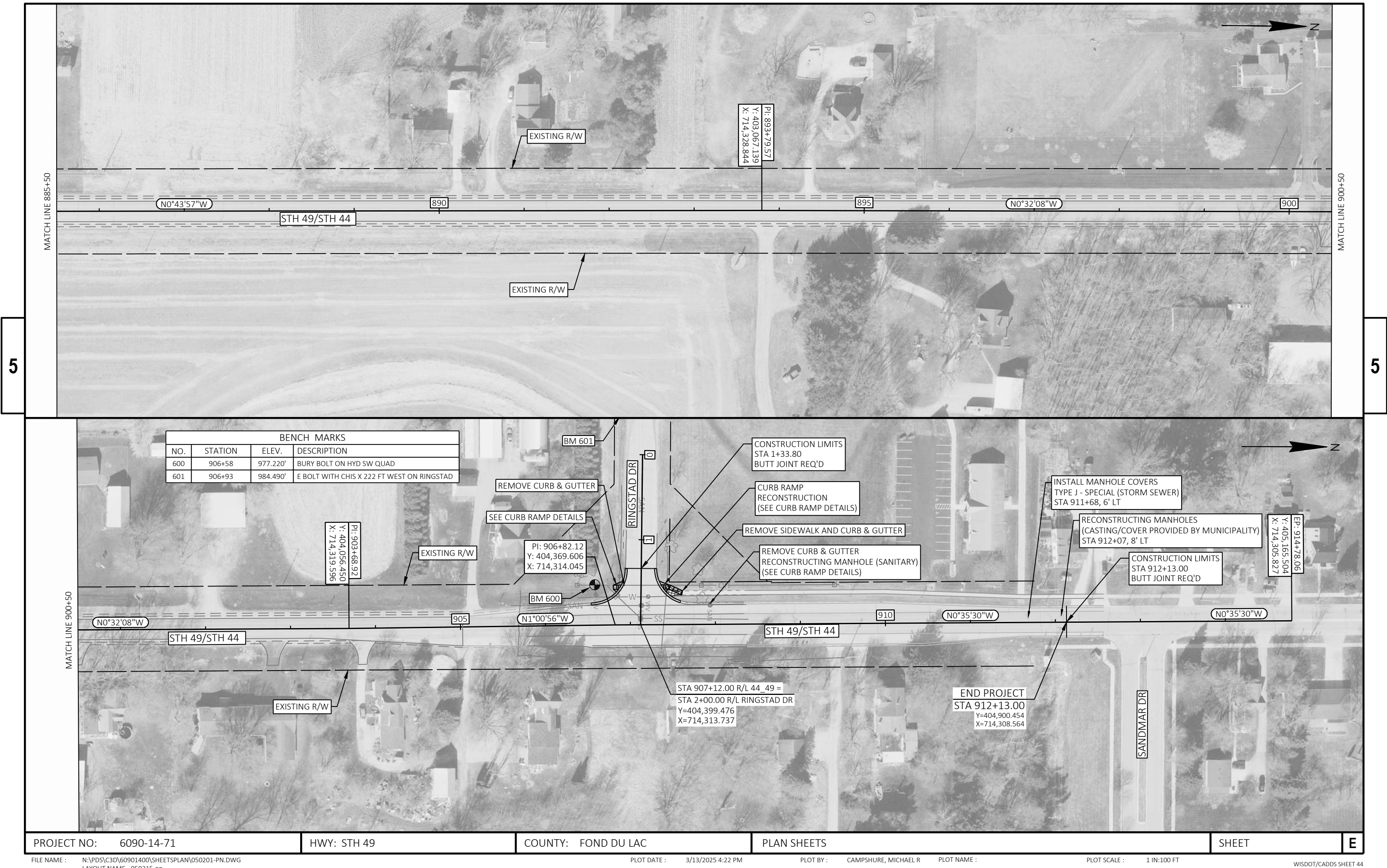
PROJECT NO: 6090-14-71	HWY: STH 49	COUNTY: FOND DU LAC	PLAN SHEETS	SHEET	E
------------------------	-------------	---------------------	-------------	-------	---







PROJECT NO: 6090-14-71	HWY: STH 49	COUNTY: FOND DU LAC	PLAN SHEETS	SHEET	E
------------------------	-------------	---------------------	-------------	-------	---



Standard Detail Drawing List

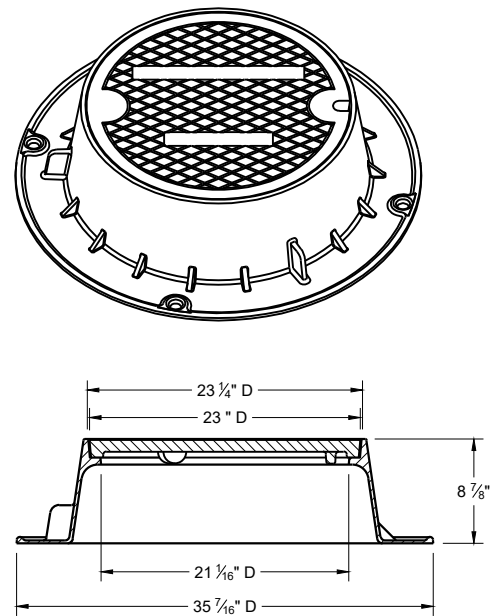
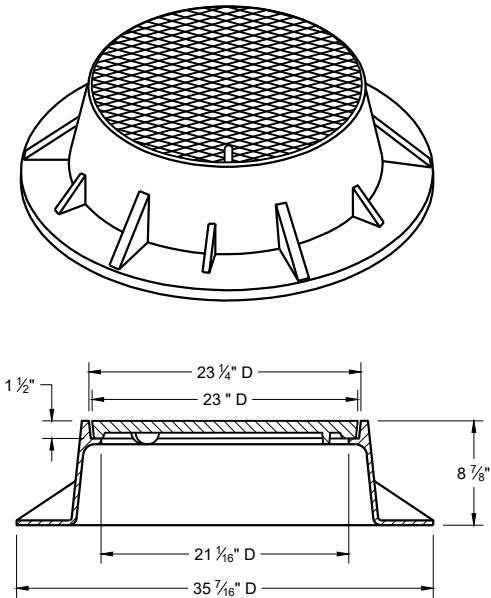
08A05-21E	INLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08D01-23A	CONCRETE CURB & GUTTER
08D01-23B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D05-21D	CURB RAMPS TYPE 4B AND 4B1
08D05-21G	CURB RAMPS RECTANGULAR AND RADIAL DETECTABLE WARNING PLATES
08D16-11	CONCRETE GUTTER, CURB AND GUTTER AND PAVEMENT TIES
08E09-06	SILT FENCE
08E10-02	INLET PROTECTION TYPE A, B, C AND D
13A08-02	TRANSVERSE RUMBLE STRIPS, ASPHALTIC
13A10-03A	SHOULDER RUMBLE STRIPS - ASPHALT
13A10-03G	SHOULDER AND EDGE LINE RUMBLE STRIPS - CROSSINGS, INTERSECTIONS, BRIDGES, DRIVEWAYS
13A10-03H	SHOULDER AND EDGE LINE RUMBLE STRIPS - RAILROAD, PASSING, CLIMBING AND BYPASS LANES
13A11-04A	CENTERLINE RUMBLE STRIPS - ASPHALT
13A11-04D	CENTERLINE RUMBLE STRIPS - INTERSECTIONS, DRIVEWAYS, BRIDGES, RAILROADS
13C19-03	HMA LONGITUDINAL JOINTS
15A03-02A	FLEXIBLE MARKER POST FOR CULVERT END
15A03-02B	FLEXIBLE MARKER POST FOR CULVERT END
15C02-09B	BARRICADES AND SIGNS FOR VARIOUS CLOSURES
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
15C07-16B	PAVEMENT MARKING WORDS
15C07-16C	PAVEMENT MARKING ARROWS
15C08-23A	PERMANENT LONGITUDINAL PAVEMENT MARKINGS
15C08-23B	TEMPORARY LONGITUDINAL PAVEMENT MARKING
15C08-23D	PAVEMENT MARKING (TURN LANES)
15C09-13A	SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD-HIGHWAY GRADE CROSSINGS
15C11-10B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-09A	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-09A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C33-05	STOP LINE AND CROSSWALK PAVEMENT MARKING
15C35-06A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D43-02	TRAFFIC CONTROL, SHORT DURATION MOBILE OPERATIONS
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY

GENERAL NOTES

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

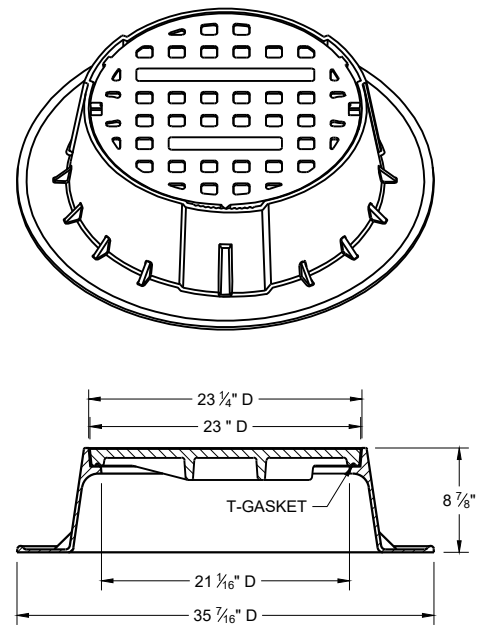
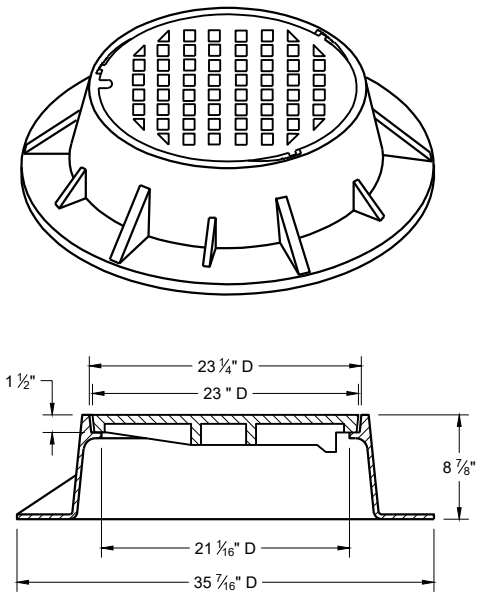
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR MANHOLE COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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



TYPE "J"

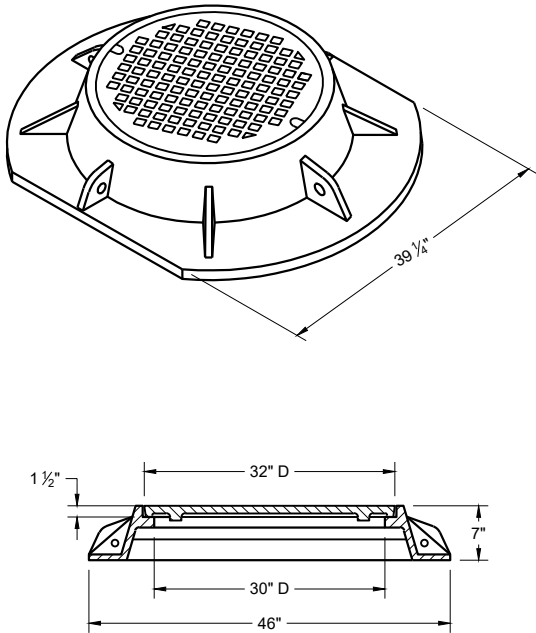
NOTE: EITHER CASTING IS ACCEPTABLE



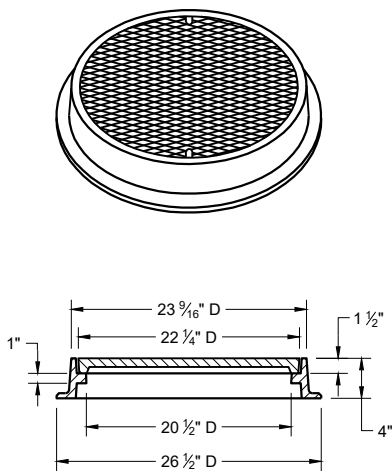
TYPE "J" SPECIAL

TYPE "B" NON-ROCKING SELF-SEAL LID  
(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

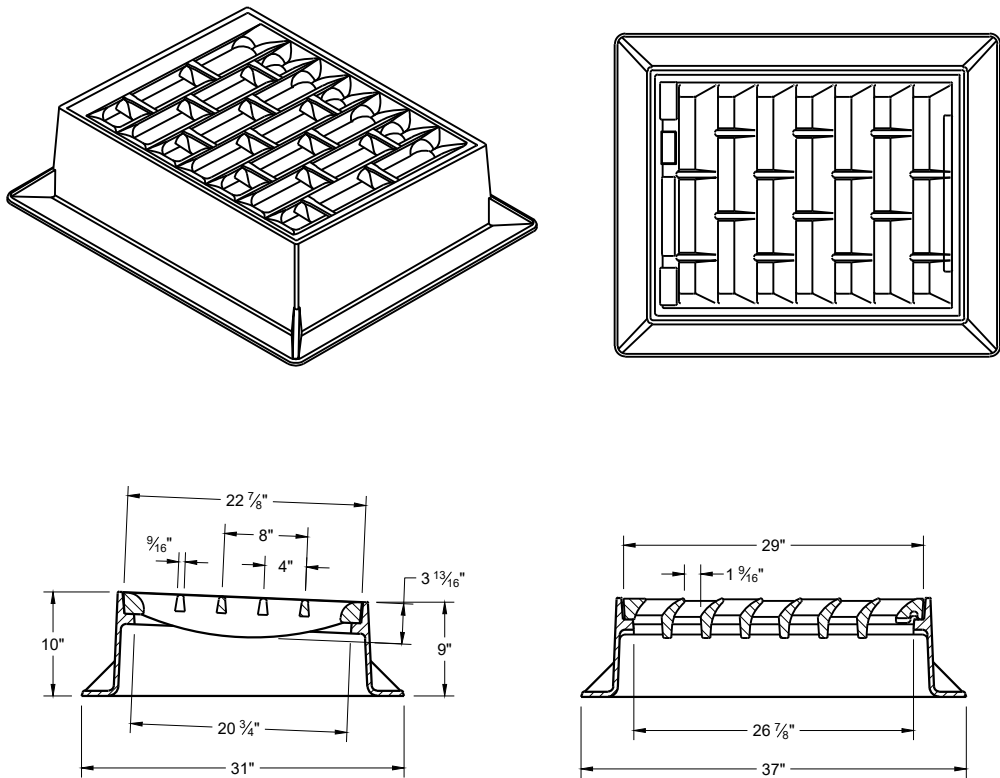
NOTE: EITHER CASTING IS ACCEPTABLE



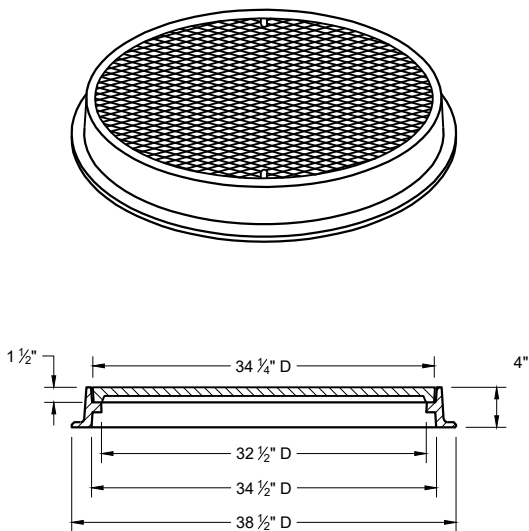
TYPE "K"



TYPE "L"



INLET COVER TYPE "BW"

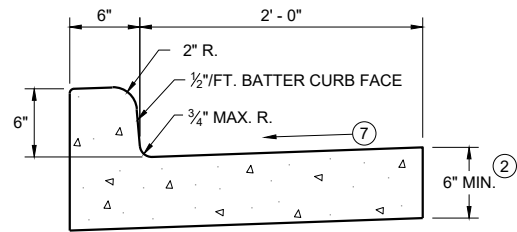


TYPE "M"

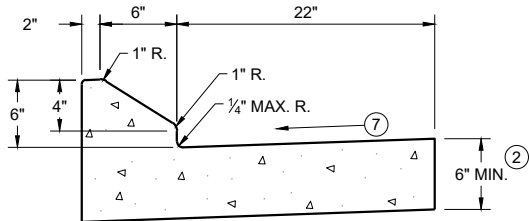
INLET COVERS TYPES BW  
MANHOLE COVERS TYPES K,  
J, J-S, L, AND M

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

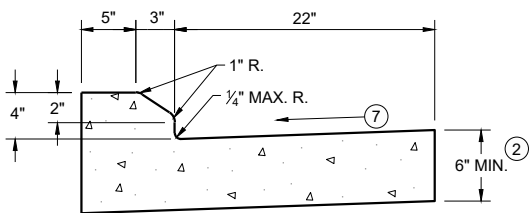
APPROVED  
December 2023 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR



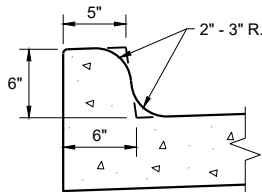
TYPES A<sup>①</sup> & D



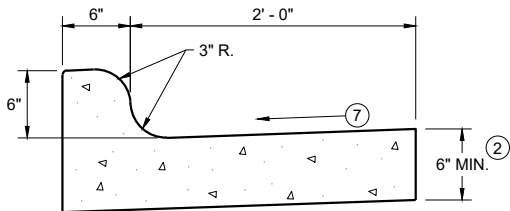
6" SLOPED CURB TYPES G<sup>①</sup> & J



4" SLOPED CURB TYPES G<sup>①</sup> & J

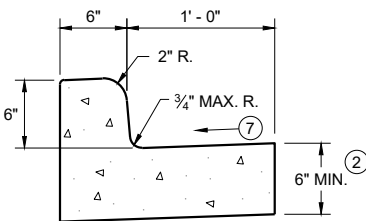


TYPES K<sup>①</sup> & L  
(OPTIONAL CURB SHAPE)



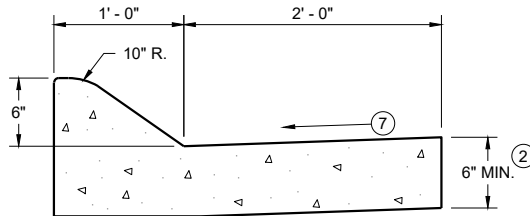
TYPES K<sup>①</sup> & L

CONCRETE CURB AND GUTTER 30"

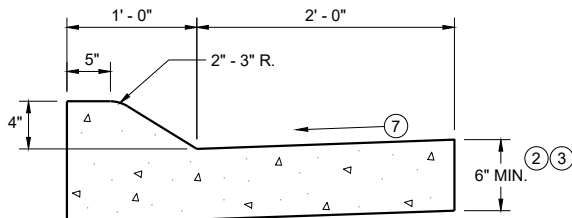


TYPES A<sup>①</sup> & D

CONCRETE CURB AND GUTTER 18"

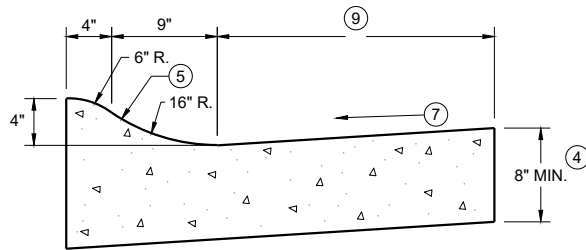


6" SLOPED CURB TYPES A<sup>①</sup> & D



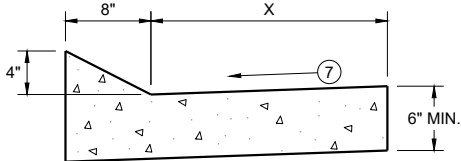
4" SLOPED CURB TYPES A<sup>①</sup> & D

CONCRETE CURB AND GUTTER 36"



4" SLOPED CURB TYPES R<sup>①</sup> & T

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

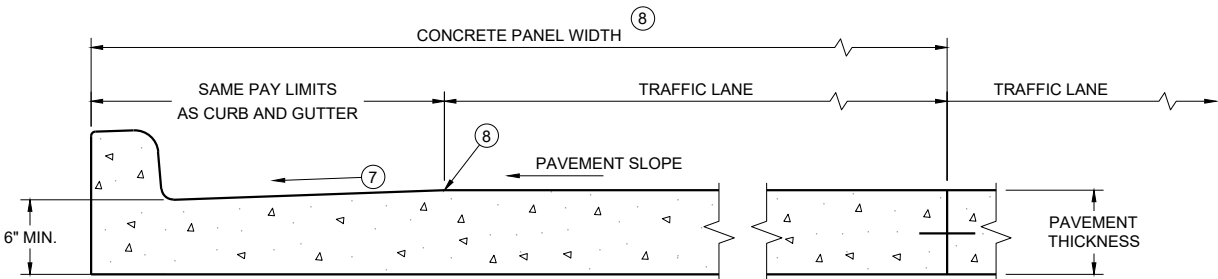


TYPES TBT & TBTT<sup>①</sup>

CONCRETE CURB AND GUTTER

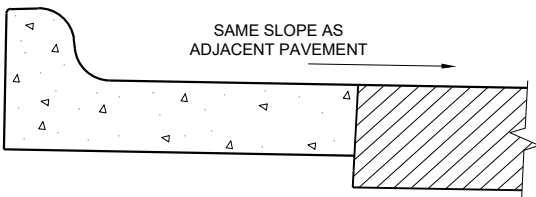
PAVEMENT THICKNESS  
AND MAXIMUM CONCRETE  
PANEL WIDTH TABLE

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<sup>⑥</sup>  
(TYPICAL FOR ALL CURB & GUTTER TYPES)

CONCRETE CURB AND GUTTER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

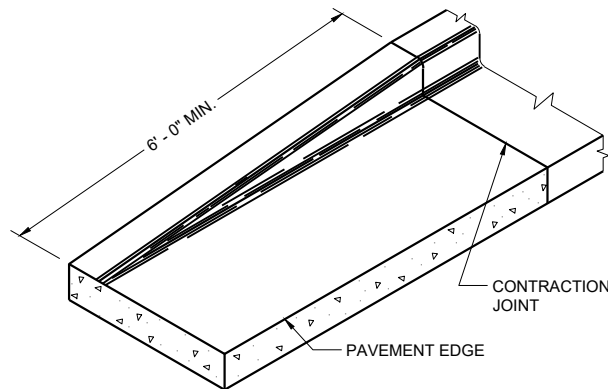
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

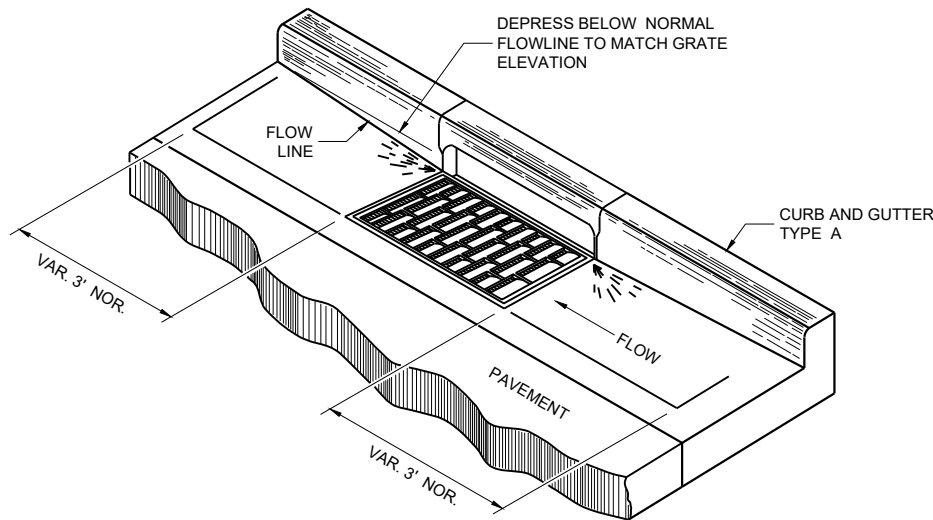
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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 CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES  
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES

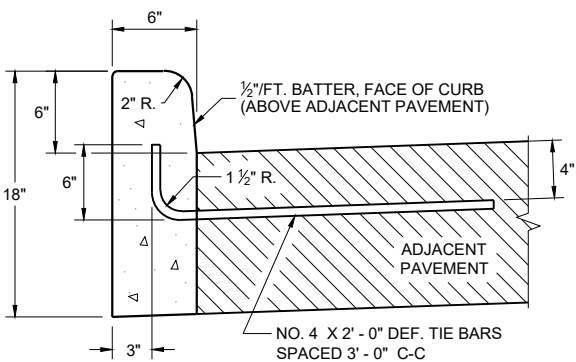


END SECTION CURB AND GUTTER

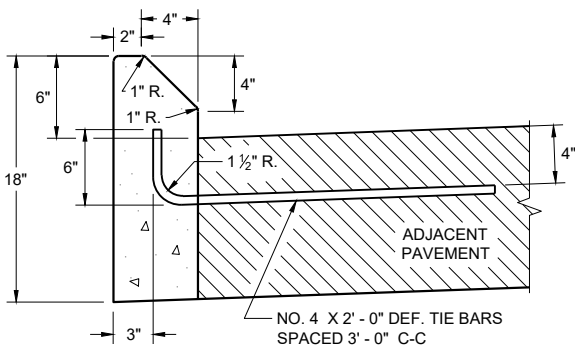


DETAIL OF CURB AND GUTTER AT INLETS

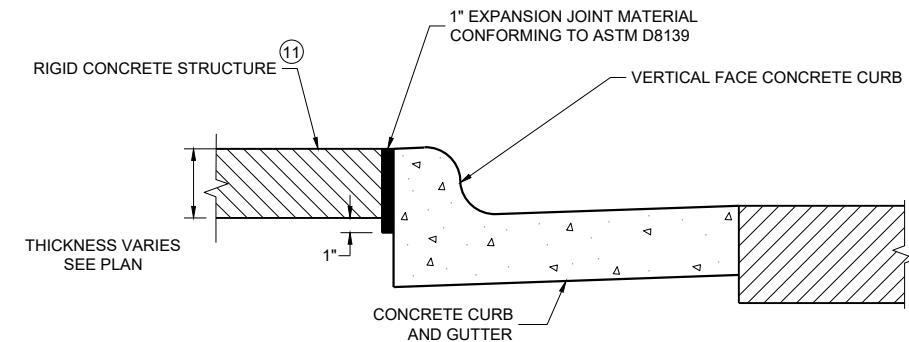
(TYPICAL H INLET COVER SHOWN)



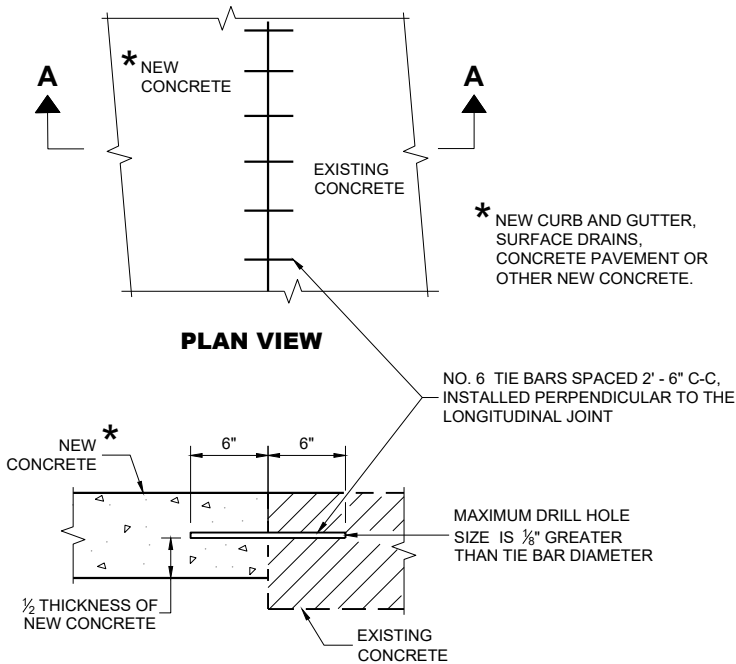
TYPES A<sup>①</sup> & D



TYPES G<sup>①</sup> & J  
CONCRETE CURB



EXPANSION JOINT DETAIL FOR VERTICAL CURB ABUTTING A RIGID STRUCTURE<sup>⑪</sup>



SECTION A - A  
TIE BARS DRILLED INTO EXISTING PAVEMENT

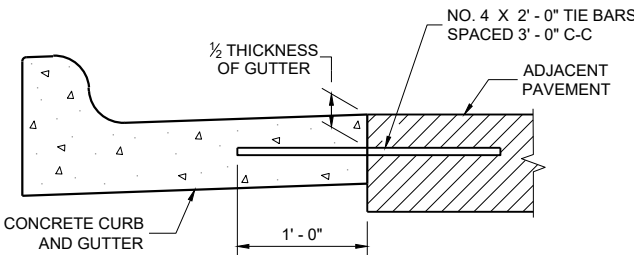
GENERAL NOTES

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

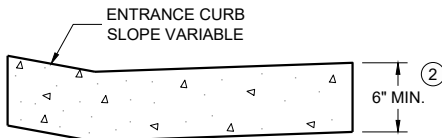
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

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



TYPICAL TIE BAR LOCATION<sup>①</sup>

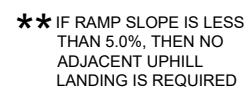


DRIVEWAY ENTRANCE CURB<sup>⑩</sup>  
(WHEN DIRECTED BY THE ENGINEER)

CONCRETE CURB, TIES  
AND CURB AND GUTTER  
APPLICATIONS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



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

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



++ CONSTRUCT 6" WEDGE TO  
AVOID CONCRETE BREAKAGE

## GENERAL NOTES

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

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

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

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

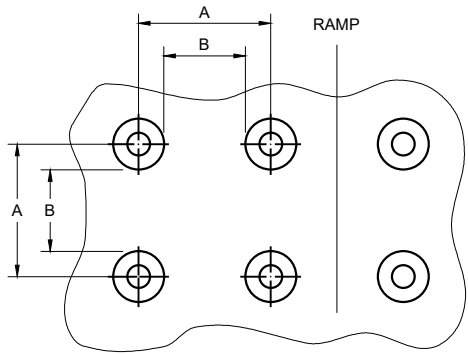


## CURB RAMPS TYPE 4B AND 4B1

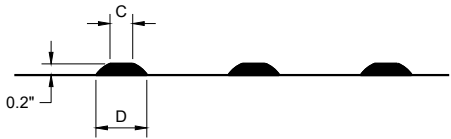
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

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

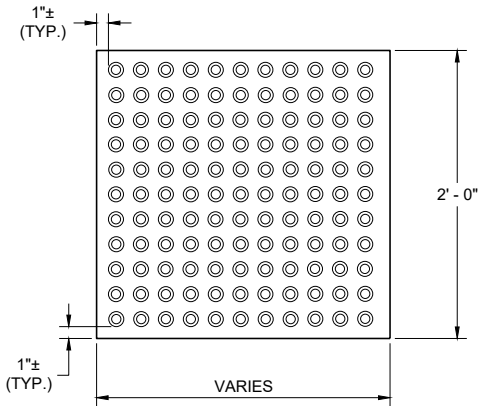


PLAN VIEW

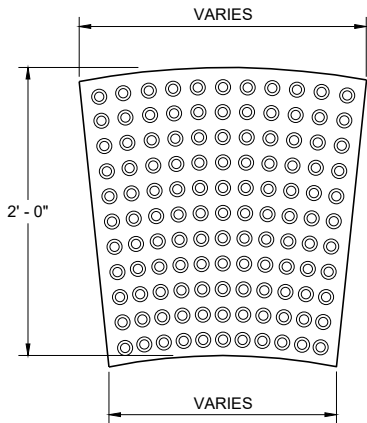


ELEVATION VIEW

TRUNCATED DOMES  
DETECTABLE WARNING PATTERN DETAIL

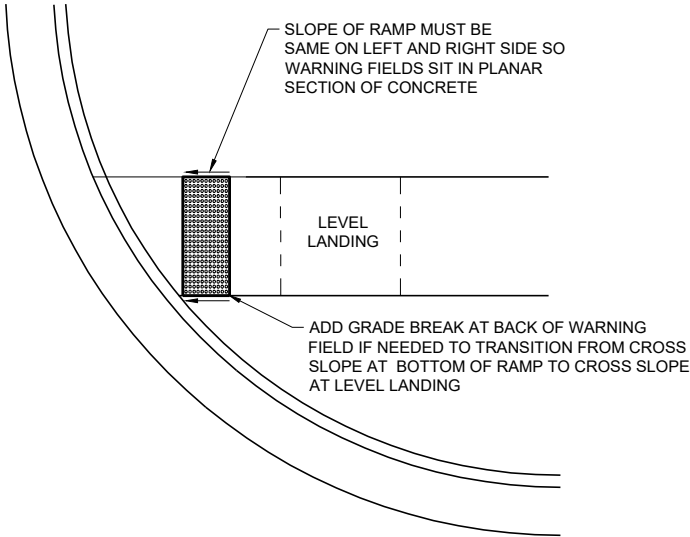


RECTANGULAR  
PLATES

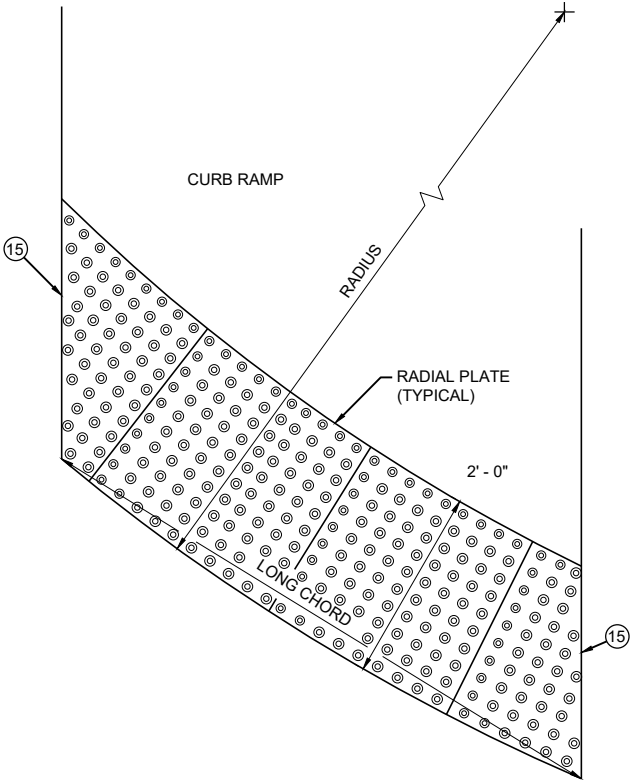


RADIAL  
PLATES

PLAN VIEW  
DETECTABLE WARNING FIELDS (TYPICAL)



DETECTABLE WARNING FIELD  
PLANAR INSTALLATION



PLAN VIEW  
RADIAL DETECTABLE  
WARNING FIELD ATTRIBUTES

GENERAL NOTES

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

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

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

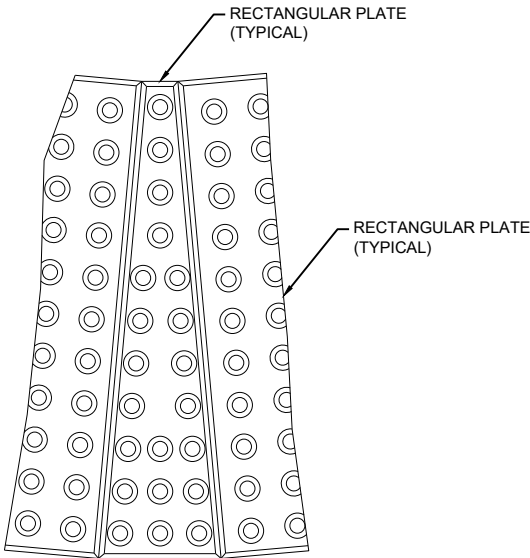
DETERMINE FINAL RADIAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS. PERFORM PRE-LAYOUT PRIOR TO PLACEMENT IN PLASTIC CONCRETE. FOLLOW MANUFACTURER'S PRODUCT LIST AND INSTALLATION RECOMMENDATIONS.

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

REFER TO CONTRACT AND STANDARD SPECIFICATIONS FOR FIELD CUTTING REQUIREMENTS.

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

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

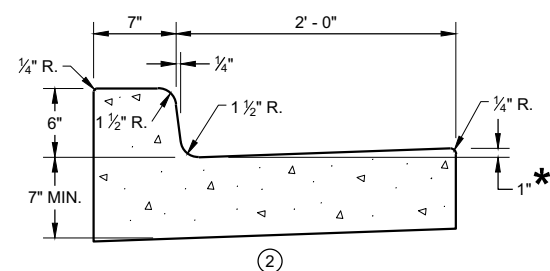


PLAN VIEW  
RADIAL WEDGE PLATE  
CONNECTION DETAIL

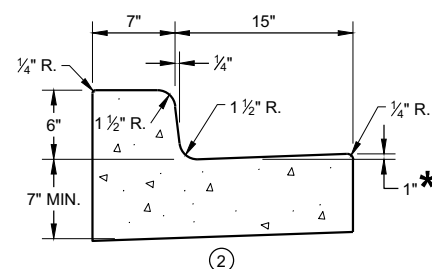
CURB RAMPS  
RECTANGULAR AND RADIAL  
DETECTABLE WARNING PLATES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

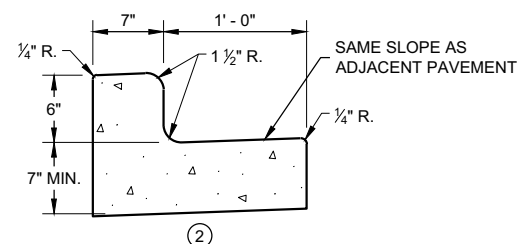
APPROVED  
July 2023 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
FHWA UNIT SUPERVISOR



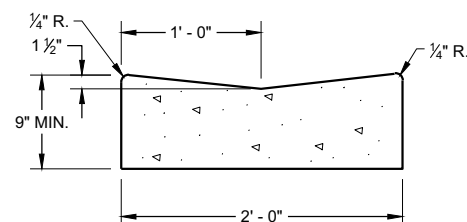
**CONCRETE CURB AND GUTTER 31"**



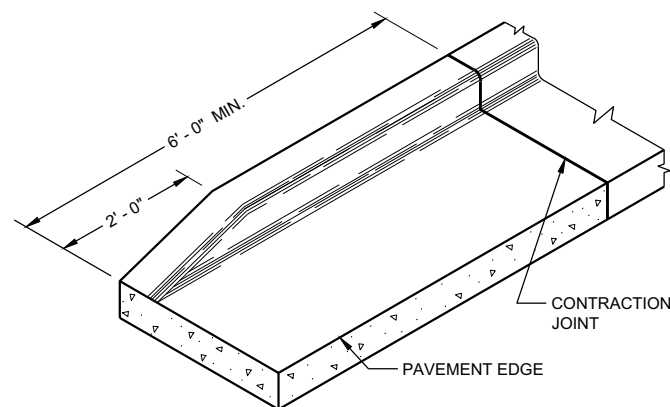
**CONCRETE CURB AND GUTTER 22"** <sup>①</sup>



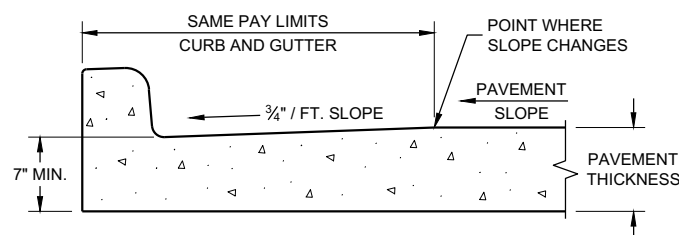
**CONCRETE CURB AND GUTTER 19"** <sup>①</sup>



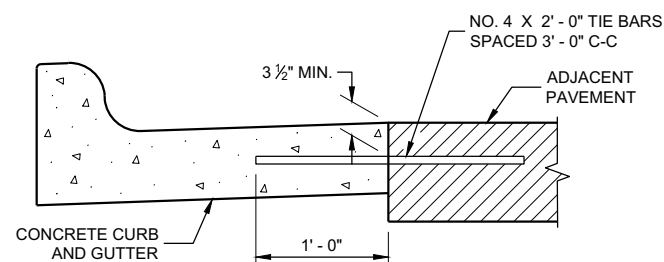
**CONCRETE GUTTER 24"** <sup>①</sup>



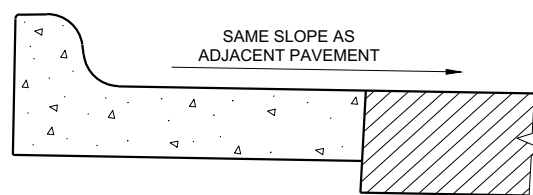
**END SECTION CURB AND GUTTER**



### PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB AND GUTTER



### TYPICAL TIE BAR LOCATION <sup>①</sup>



### **HIGH SIDE SECTION** <sup>③</sup> (TYPICAL FOR ALL CURB & GUTTER TYPES)

## GENERAL NOTES

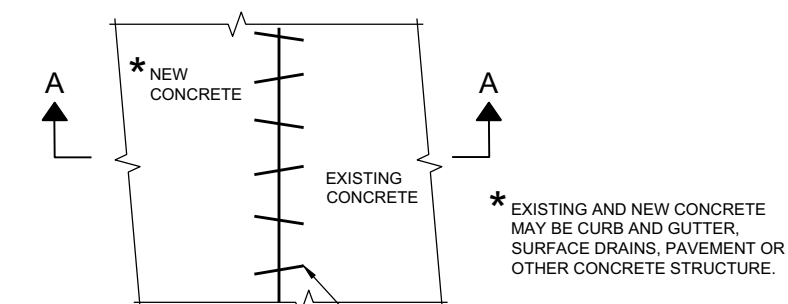
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

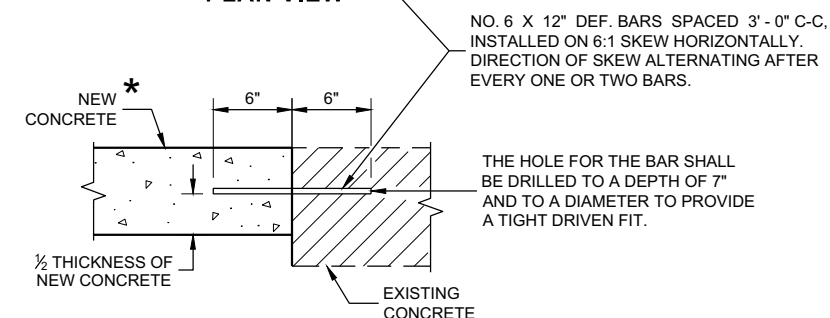
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

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

- ① WHEN PLACED ADJACENT TO NEW CONCRETE, THE BARS ARE REQUIRED FOR CURB AND GUTTER 31", 22", 19" AND CONCRETE GUTTER 24".
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE COURSE PROVIDED A 7" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ WHEN HIGH SIDE CURB SECTION IS REQUIRED, THE LOCATION(S) WILL BE NOTED ON THE PLANS



### PLAN VIEW



**SECTION A - A**

## PAVEMENT TIES

**CONCRETE GUTTER,  
CURB AND GUTTER AND  
PAVEMENT TIES**

**For Optional use in Milwaukee Co. Only)**

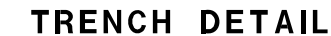
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020  
DATE

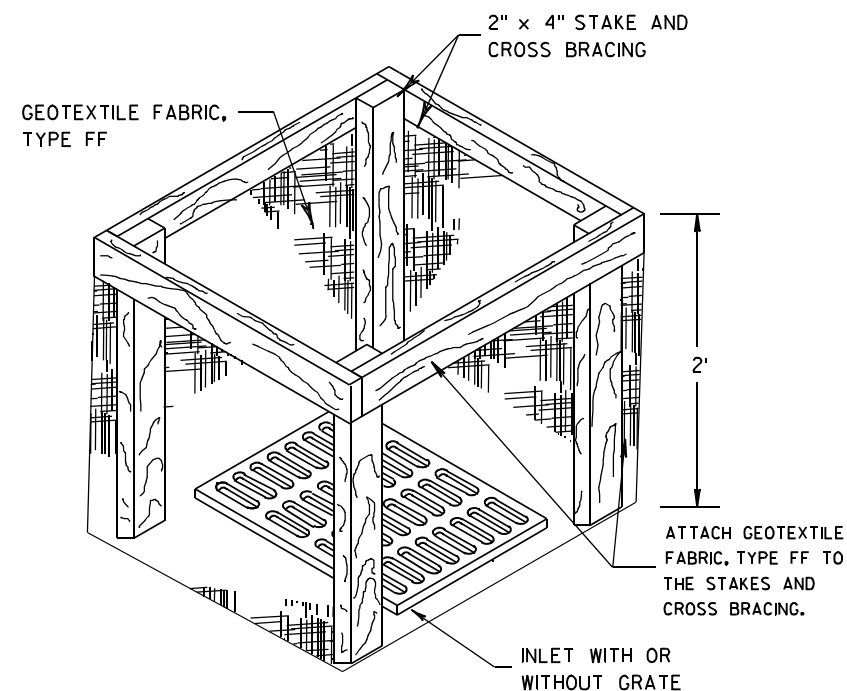
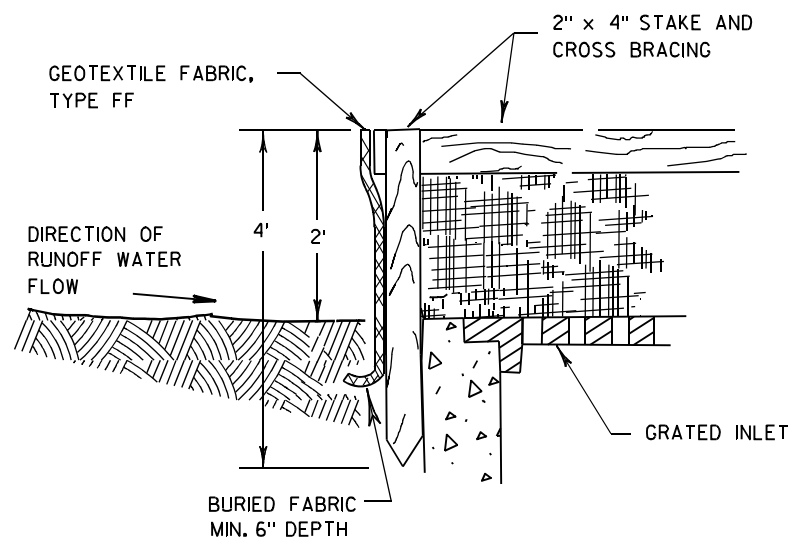
/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER



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



<p style="text-align: center;"><b>SILT FENCE</b></p>	
<p style="text-align: center;"><b>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</b></p>	
<p><b>APPROVED</b></p> <p><u>4-29-05</u></p> <p><u>DATE</u></p>	<p><u>/S/ Beth Canestra</u></p> <p><b>CHIEF ROADWAY DEVELOPMENT ENGINEER</b></p>



**INLET PROTECTION, TYPE A**

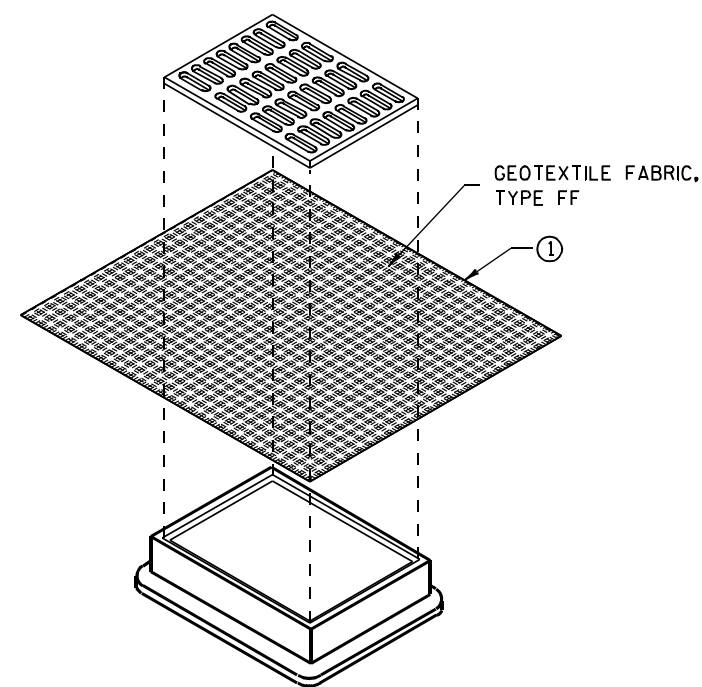
**GENERAL NOTES**

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.

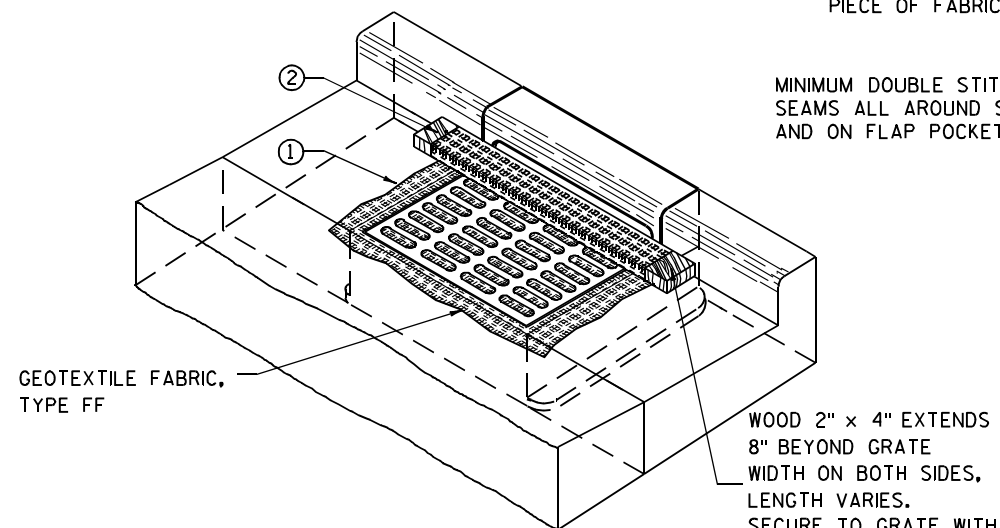
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- 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.

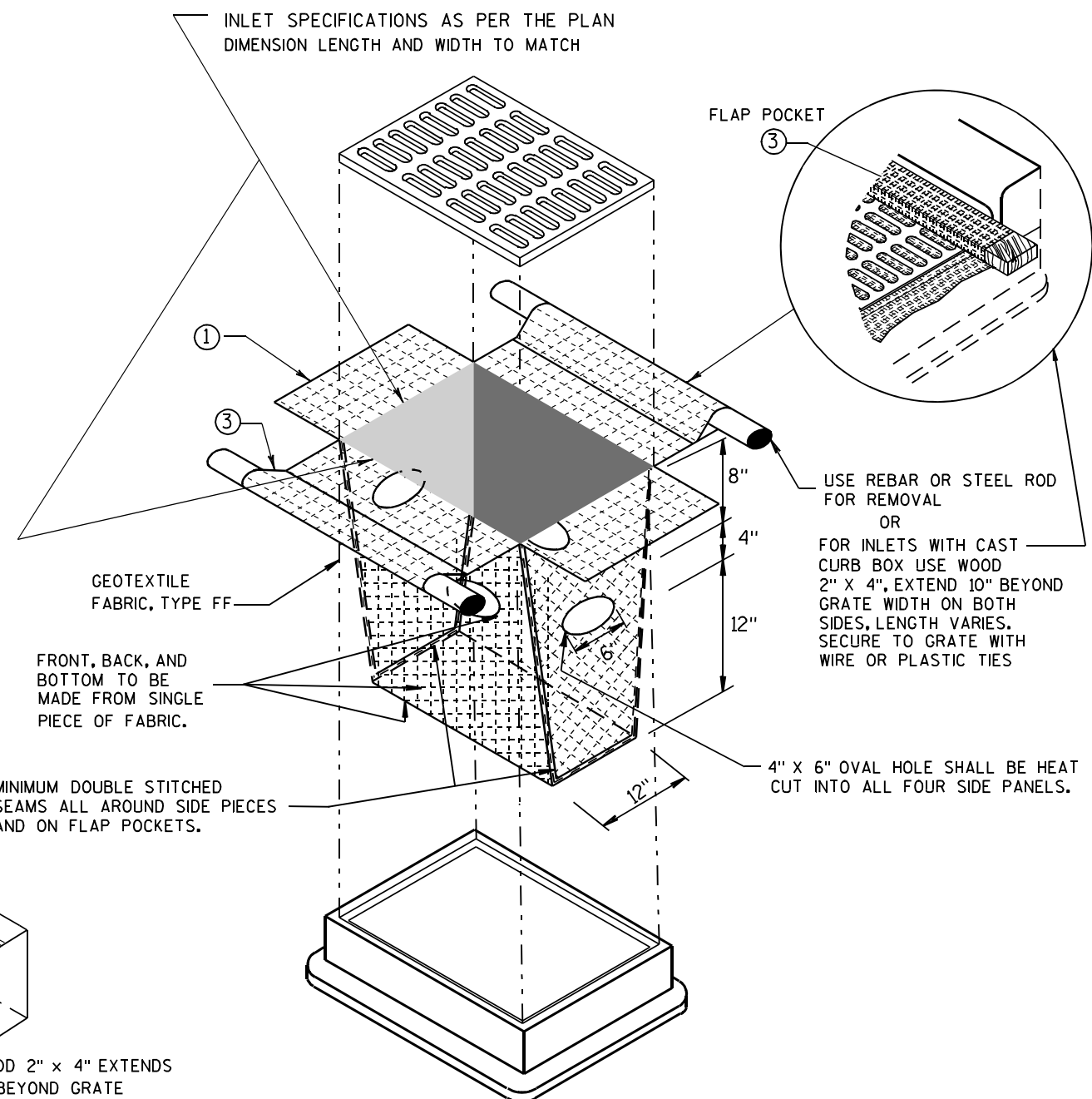
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**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)

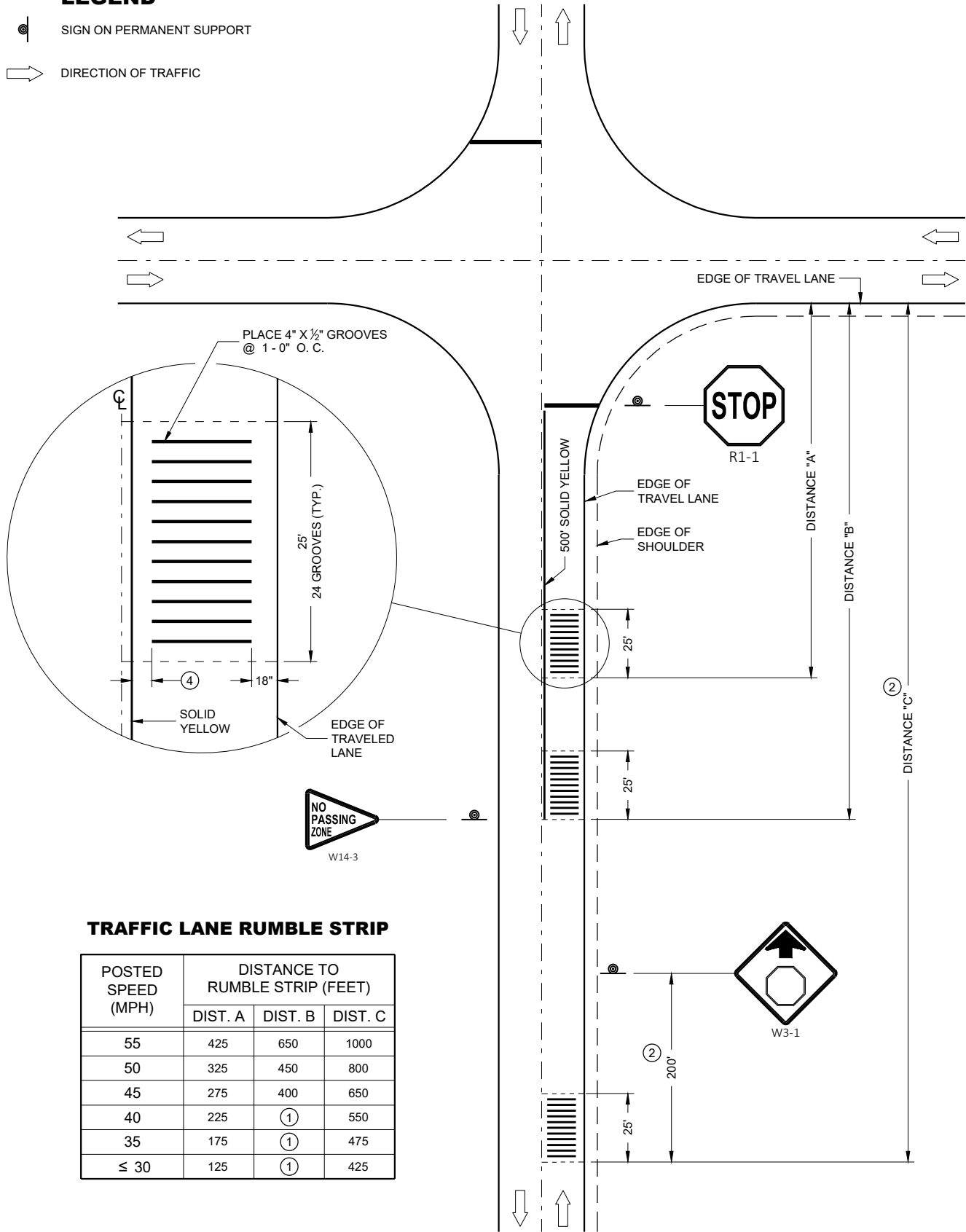
**INLET PROTECTION  
TYPE A, B, C, AND D**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

LEGEND

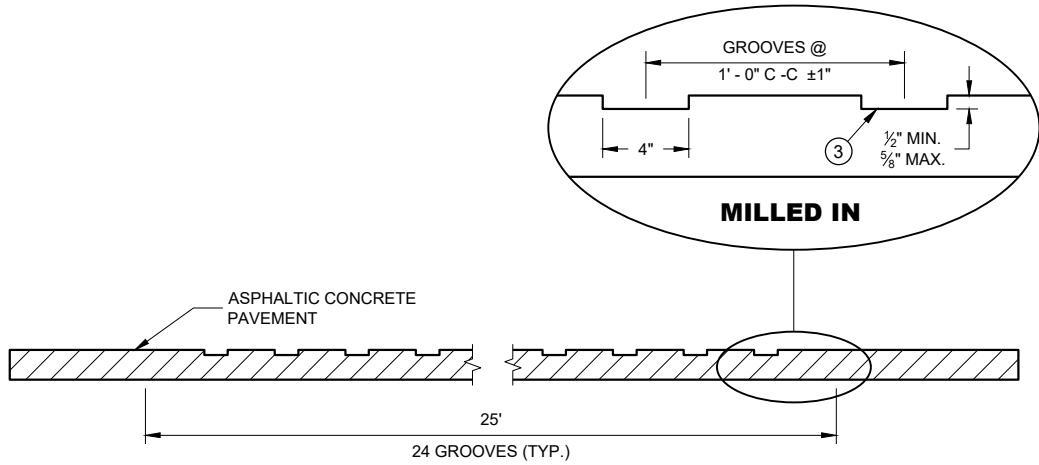
-  SIGN ON PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC



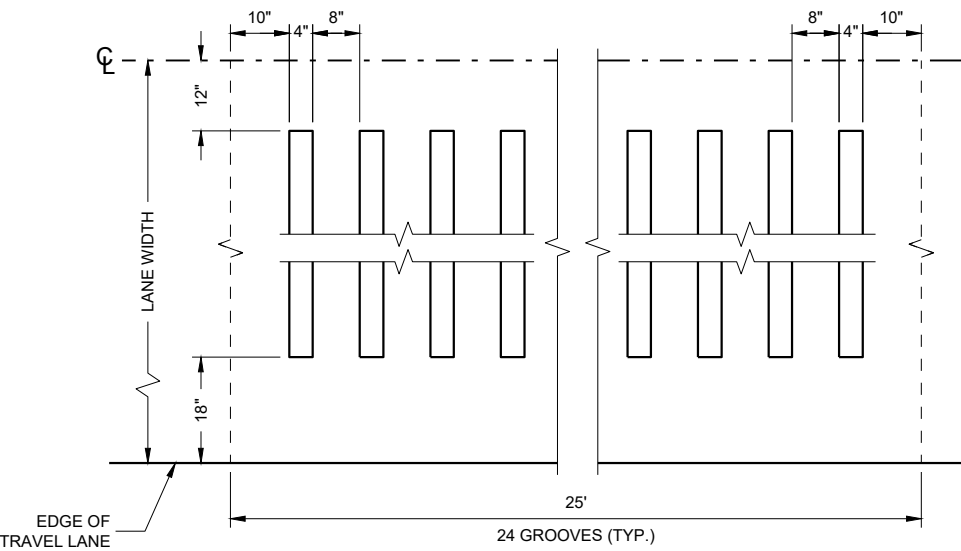
RUMBLE STRIP LOCATION

GENERAL NOTES

- CONTRACTOR SHALL CONFIRM RUMBLE STRIP LOCATION WITH THE ENGINEER PRIOR TO INSTALLATION. THE ENGINEER MAY MODIFY THE RUMBLE STRIP LOCATION AS FIELD CONDITIONS DICTATE.
- WHEN ASPHALTIC PAVEMENT IS NEW IN THE RUMBLE AREA, THE CONTRACTOR SHALL ALLOW THE PAVEMENT TO CURE A MINIMUM OF 7 DAYS PRIOR TO RUMBLE INSTALLATION.
- PAVEMENT MARKING AND SIGNING DETAILS AND SPECIFICATIONS ARE PROVIDE ELSEWHERE IN THE CONTRACT.
- ① ELIMINATE THE MIDDLE SET OF RUMBLE STRIPS.
  - ② LOCATE RUMBLE STRIP 200 FEET IN ADVANCE OF W3-1 SIGN AS SHOWN. IF W3-1 IS NOT IN PLACE, USE DISTANCE "C".
  - ③ TYPICAL VERTICAL VARIATION BETWEEN PEAKS AND VALLEYS WITHIN THE CUT APPROXIMATELY  $\frac{1}{16}$ ".
  - ④ 12 INCH CLEAR BETWEEN THE SOLID YELLOW LINE AND THE EDGE OF THE RUMBLE.



ELEVATION VIEW



PLAN VIEW  
ASPHALTIC PAVEMENT MILLED IN

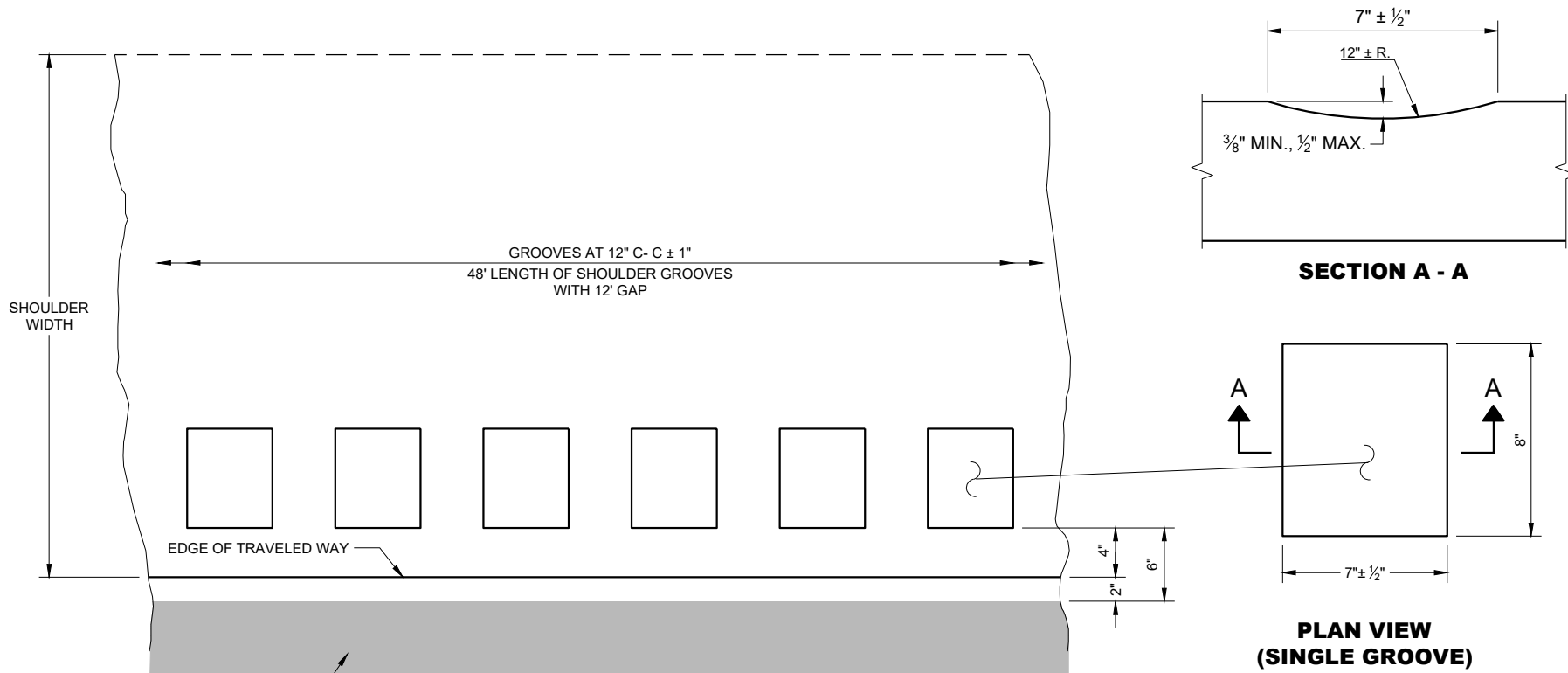
**TRANSVERSE RUMBLE STRIPS, ASPHALTIC**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023  
DATE

/S/ Rodney Taylor  
ROADWAY DESIGN STANDARDS  
UNIT SUPERVISOR

FHWA

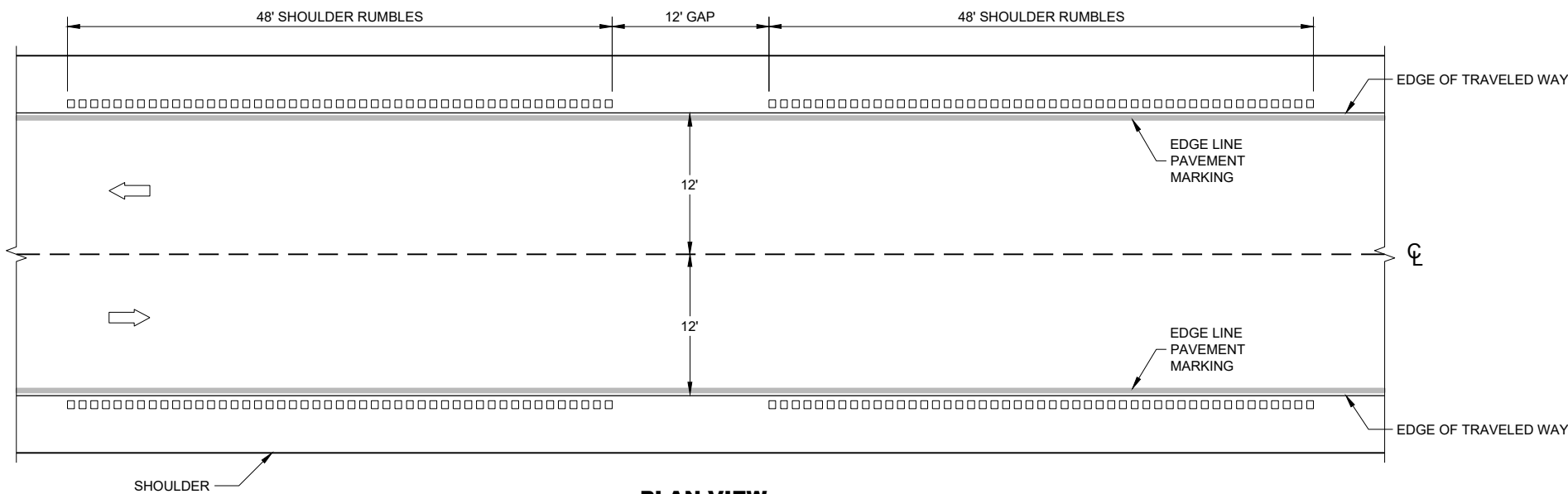
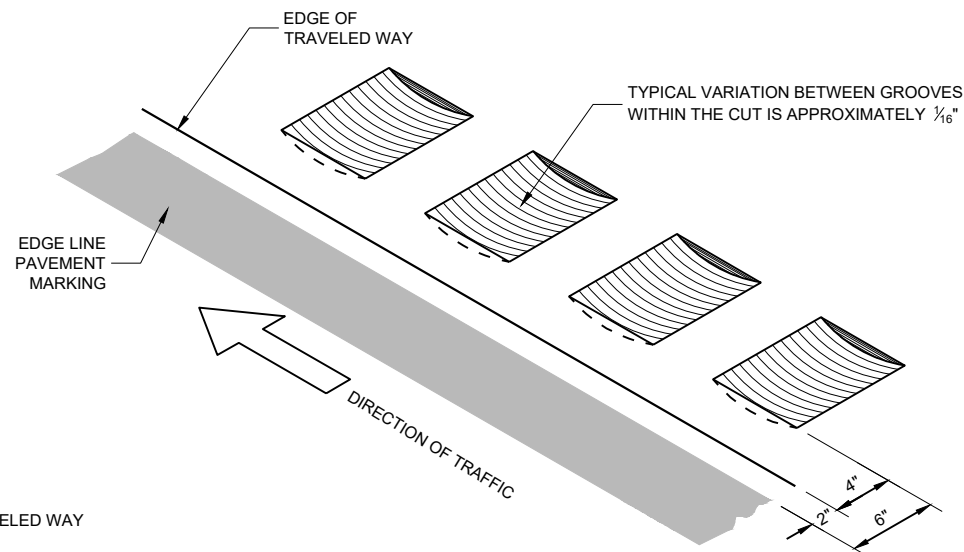


PLAN DETAIL VIEW  
SHOULDER WITH GROOVES

**GENERAL NOTES**

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

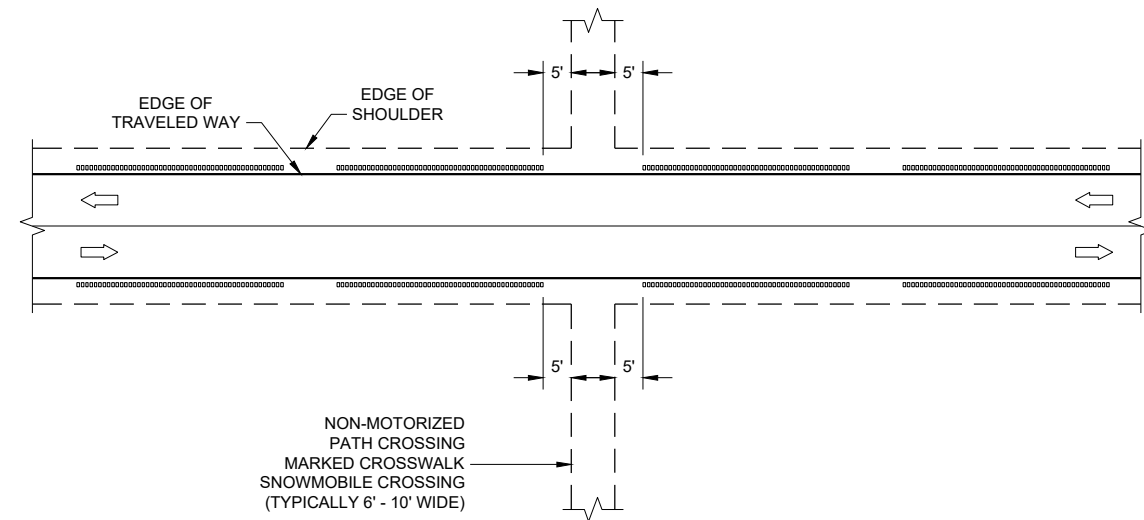
SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS WHEN DIRECTED BY THE ENGINEER.



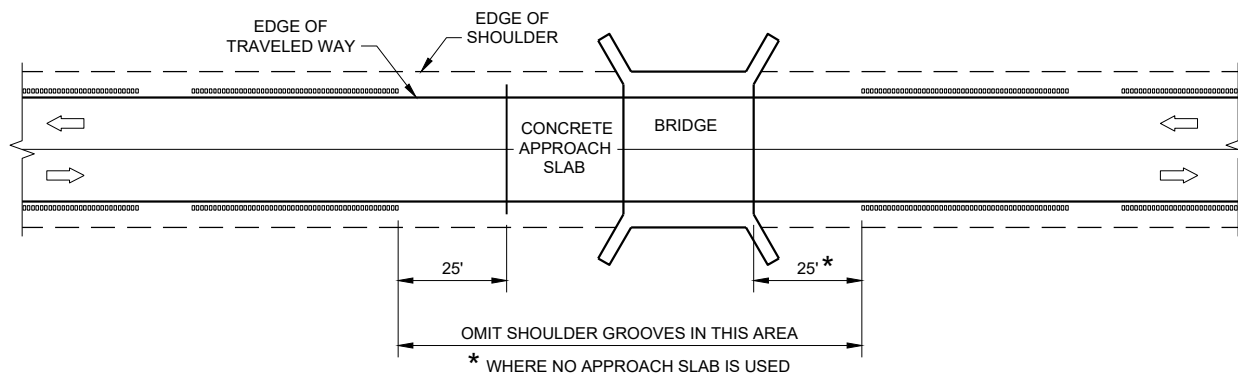
SHOULDER RUMBLE STRIPS - ASPHALT

**SHOULDER RUMBLE  
STRIPS ASPHALT**

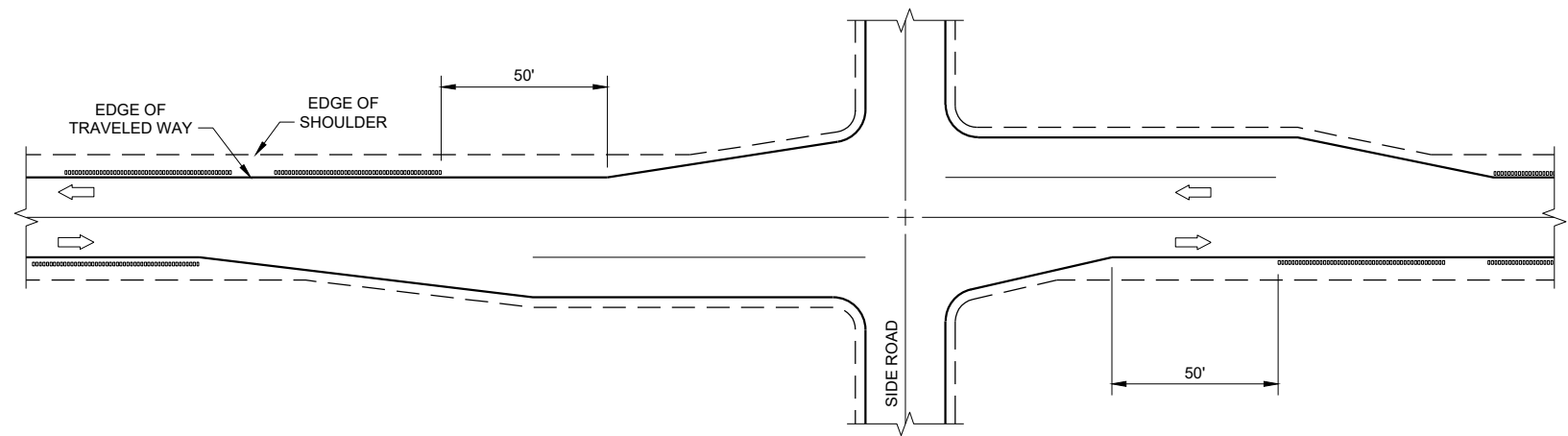
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



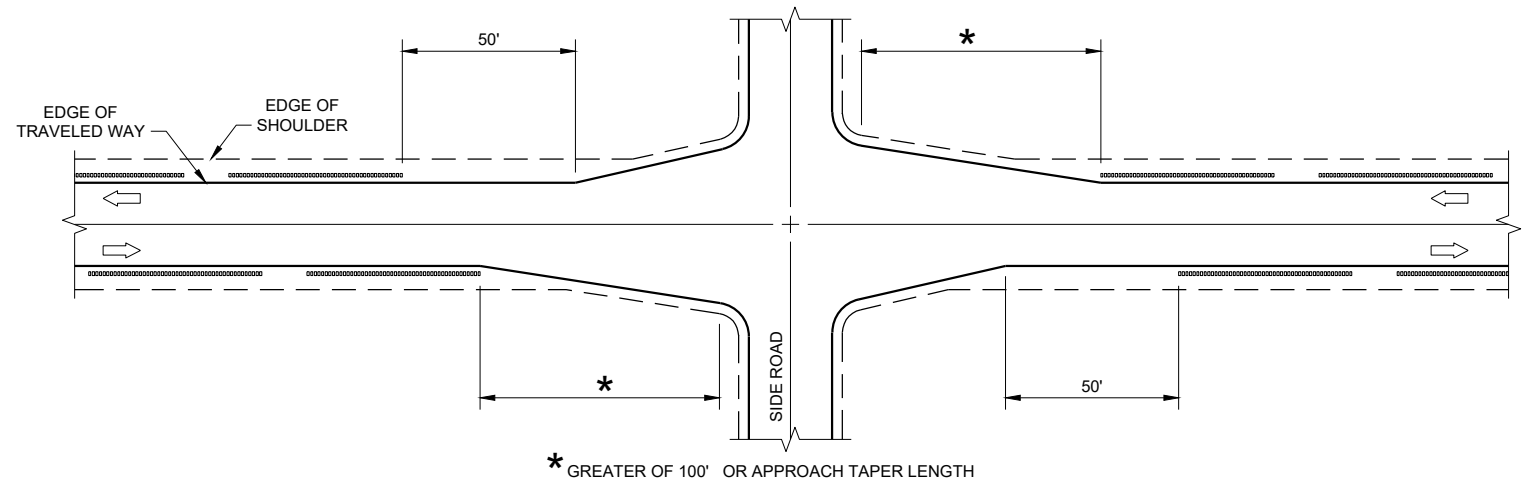
GROOVES AT MISCELLANEOUS CROSSINGS



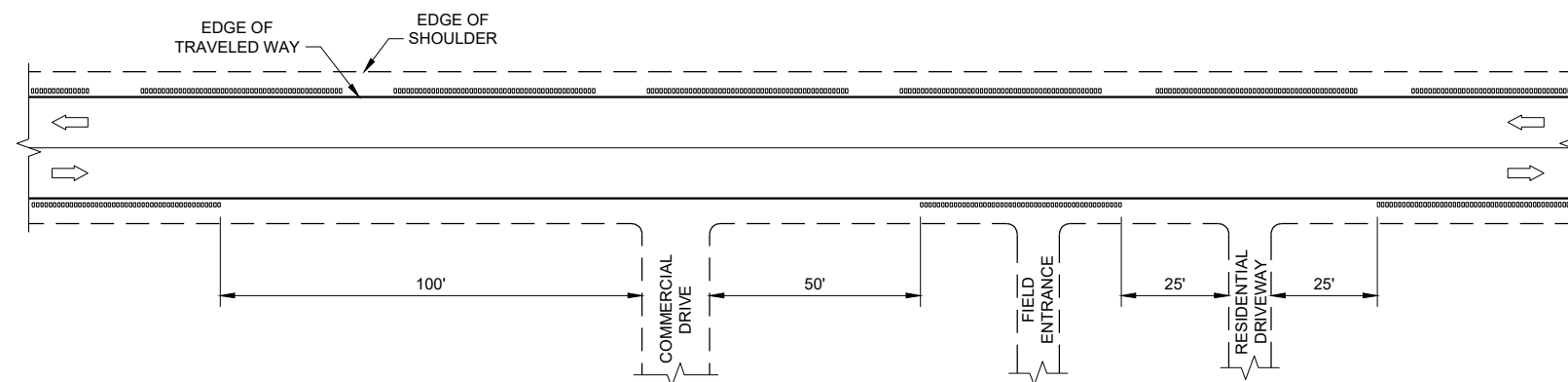
GROOVES AT BRIDGES



GROOVES AT RIGHT TURN LANE



GROOVES AT INTERSECTIONS WITH APPROACH TAPER



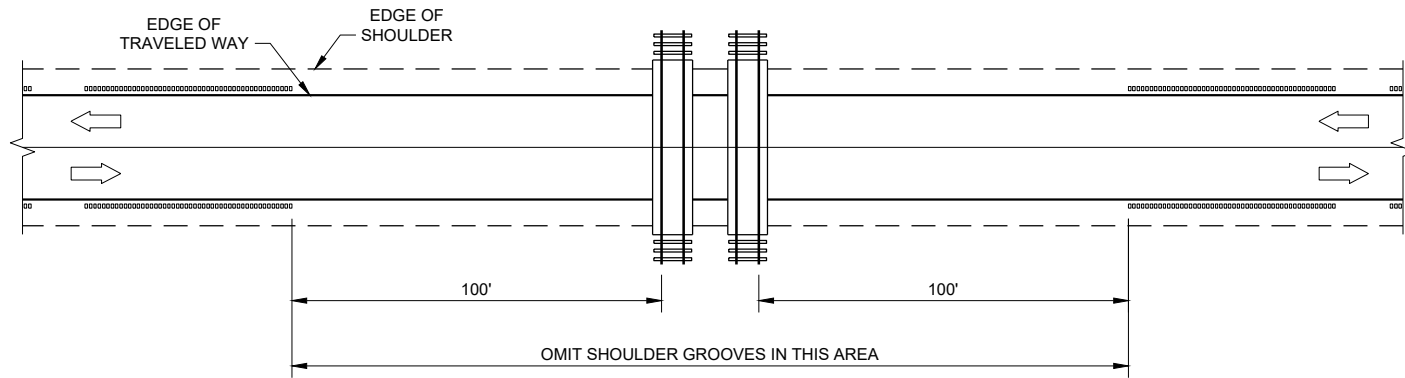
GROOVES AT DRIVEWAYS

## GENERAL NOTES

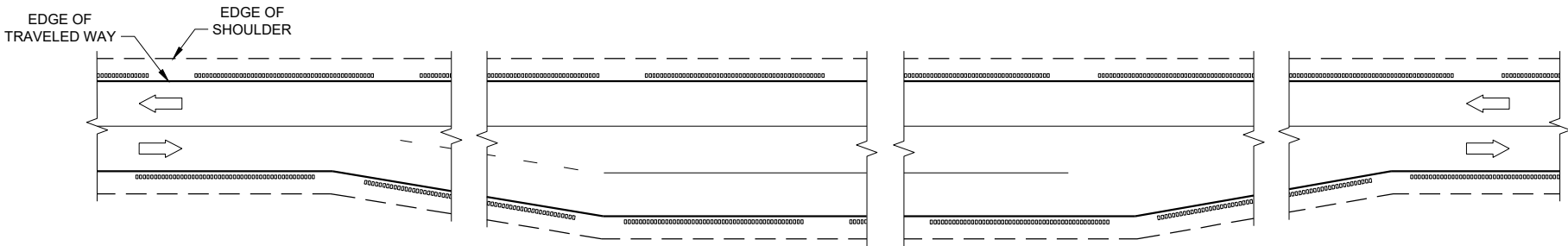
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.

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

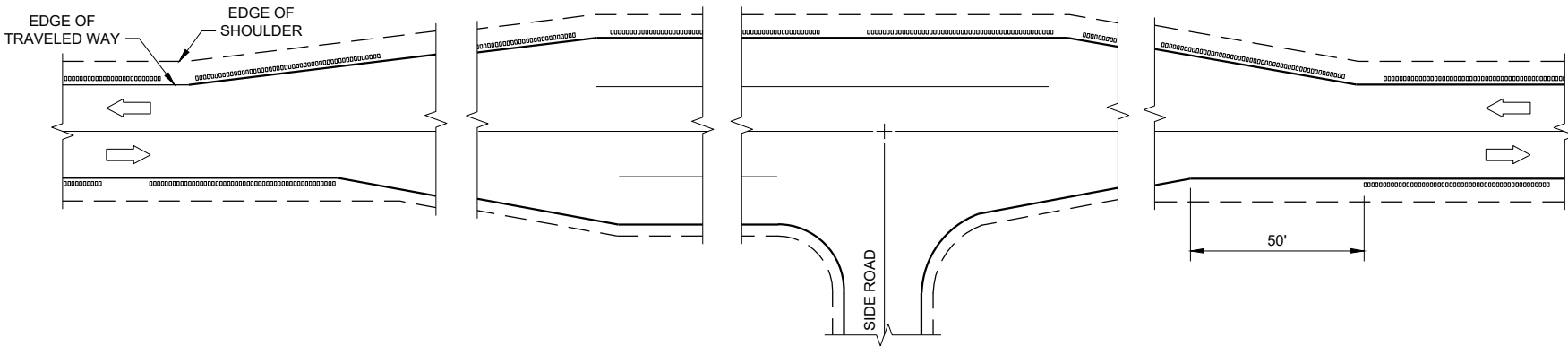
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



GROOVES AT RAILROADS



GROOVES AT PASSING AND CLIMBING LANES



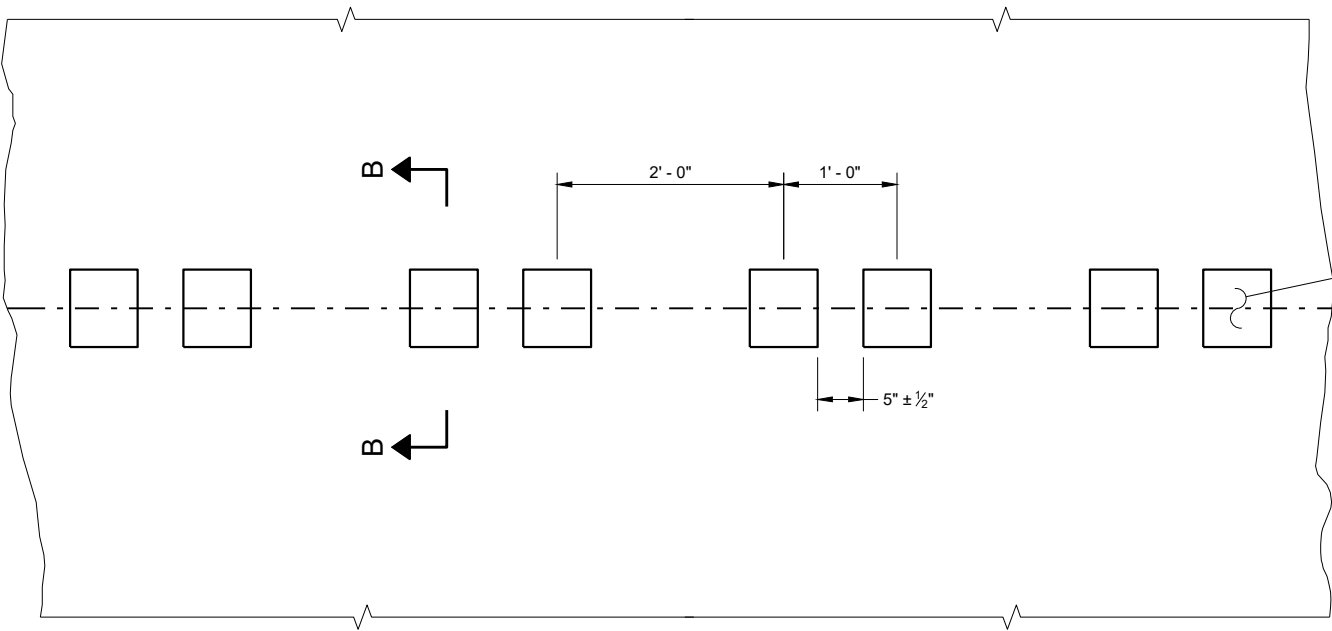
GROOVES AT BYPASS LANES

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

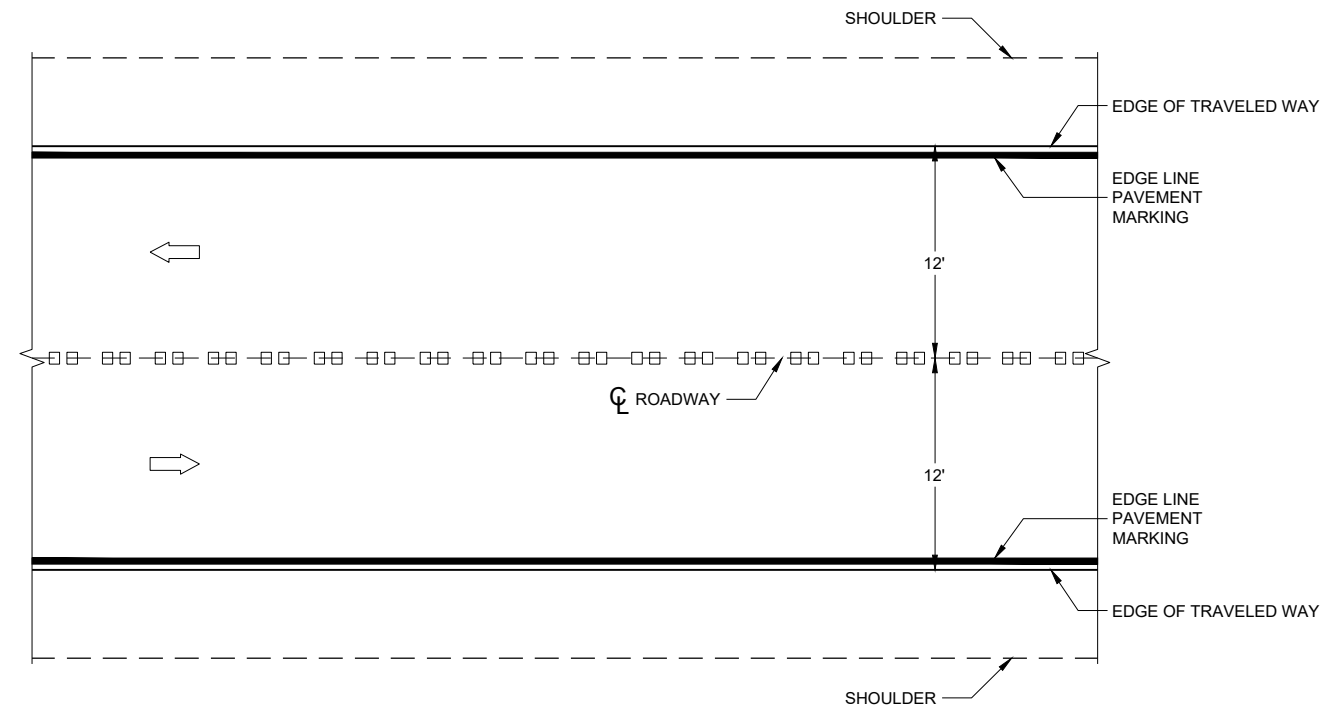
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

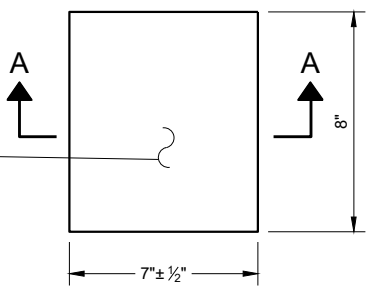


PLAN DETAIL VIEW

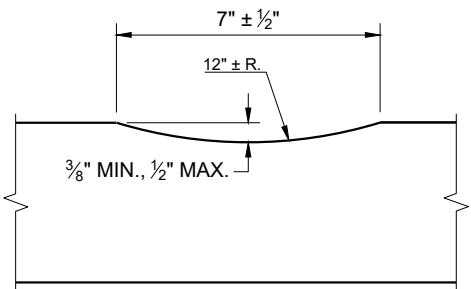


PLAN VIEW

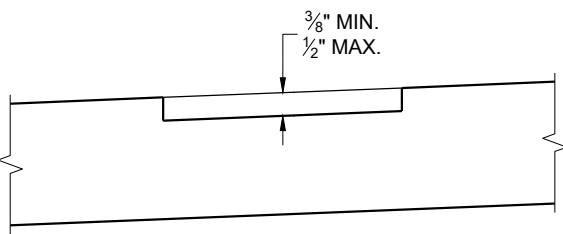
CENTERLINE RUMBLE STRIPS - ASPHALT



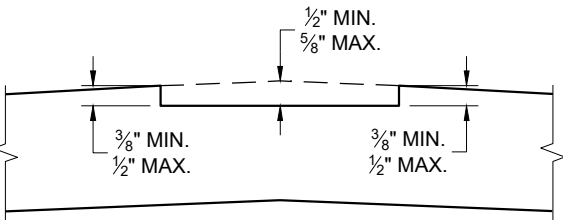
PLAN VIEW  
(SINGLE GROOVE)



SECTION A - A



SECTION B - B  
SUPERELEVATED ROADWAY

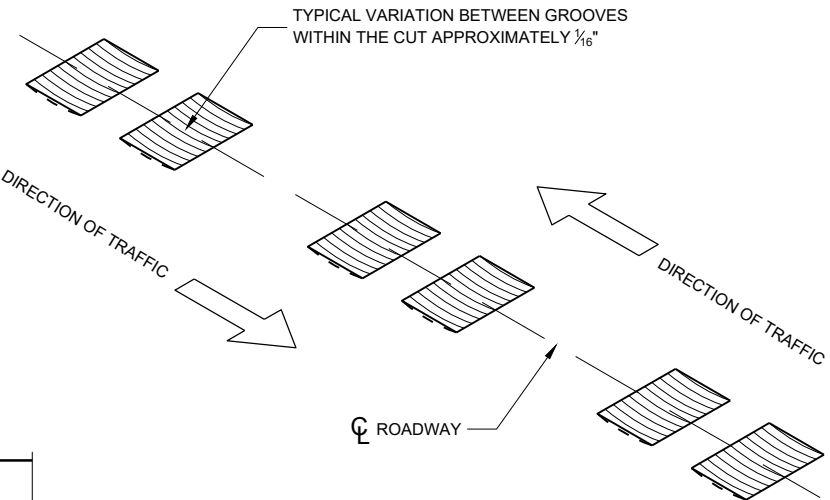


SECTION B - B  
CROWNED ROADWAY

GENERAL NOTES

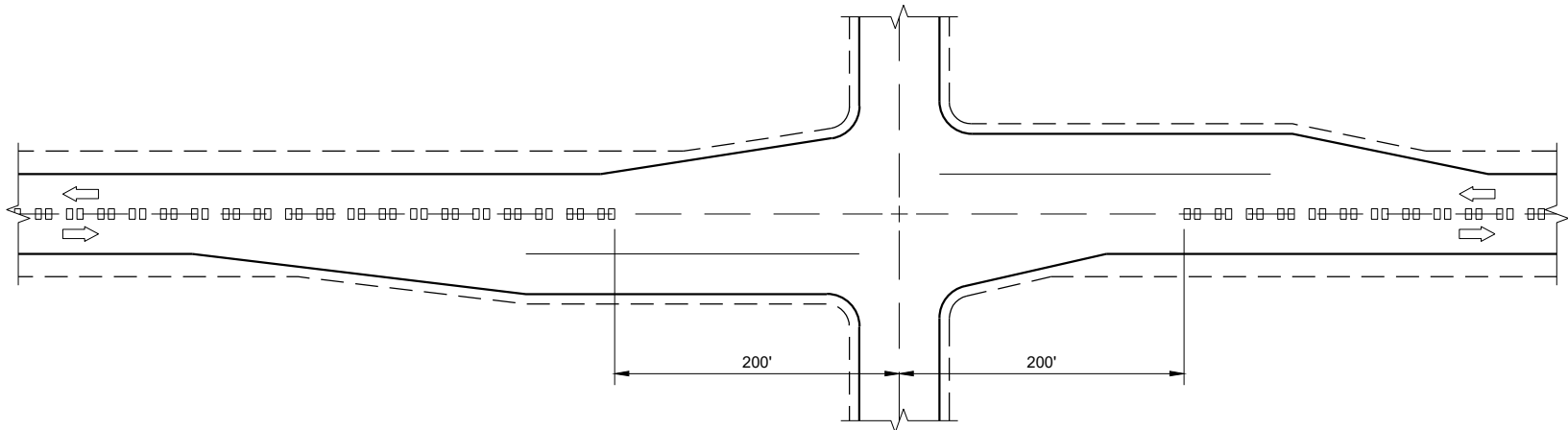
DO NOT MILL SHOULDER GROOVES THROUGH INTERSECTIONS, MARKED CROSSWALKS, NON-MOTORIZED PATH CROSSINGS, ETC. REFER TO SDD 13A11 SHEETS "d" AND "e".

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

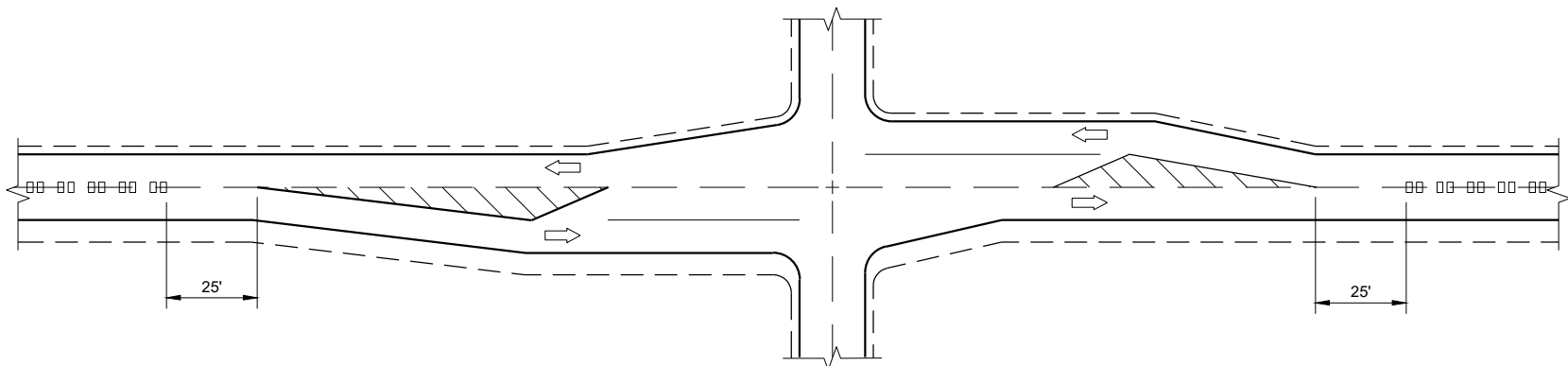


CENTERLINE RUMBLE STRIPS - ASPHALT

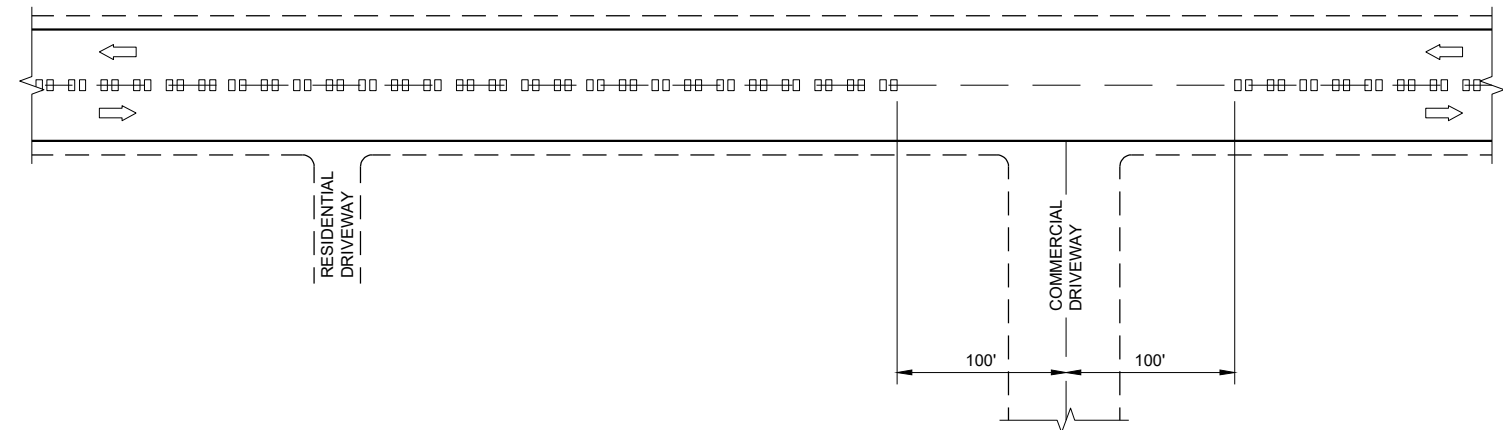
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



CENTERLINE GROOVES AT INTERSECTIONS



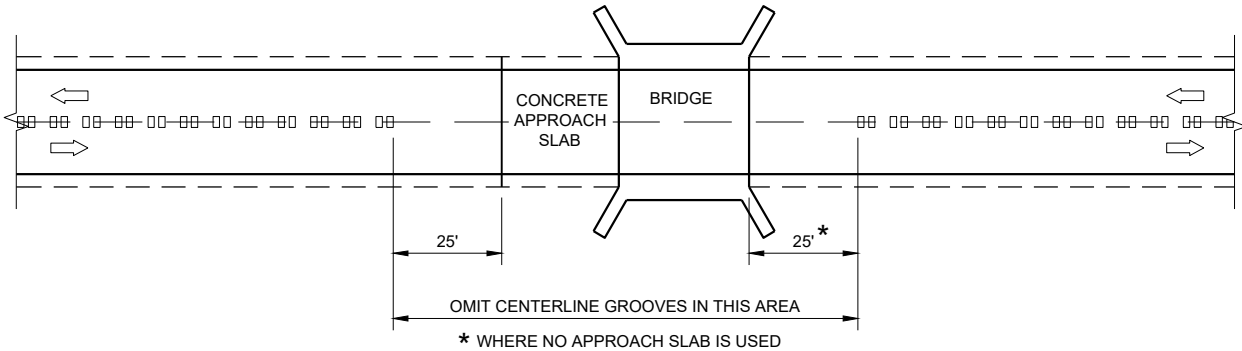
CENTERLINE GROOVES AT INTERSECTIONS  
(WITH LEFT TURN LANES)



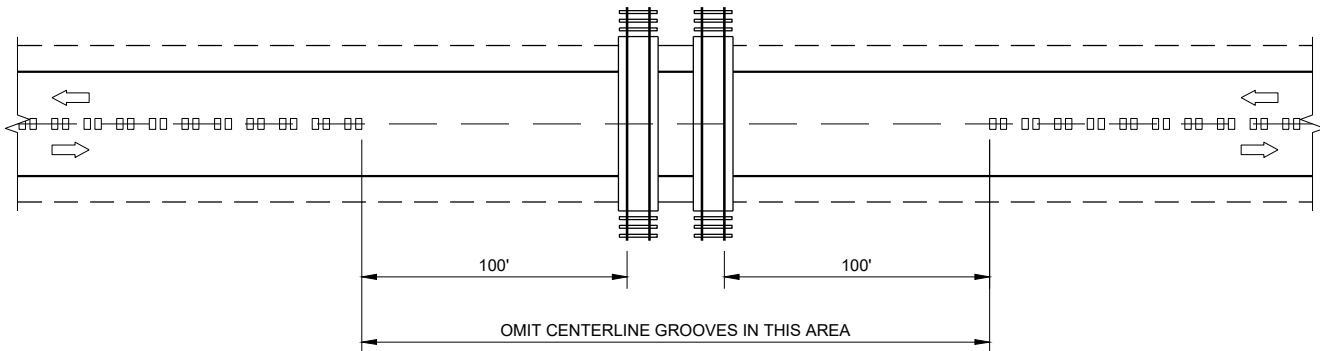
CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>

GENERAL NOTES

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



CENTERLINE GROOVES AT BRIDGES

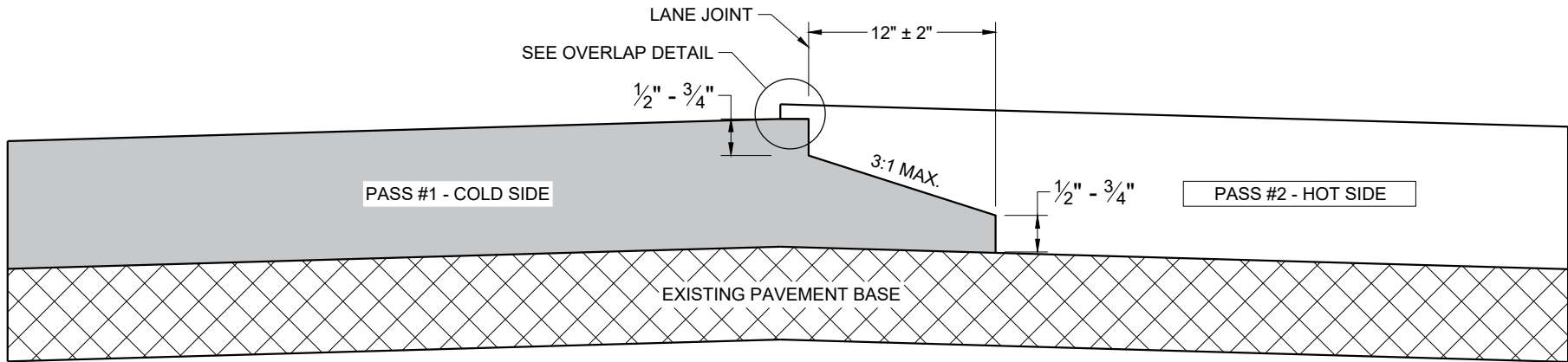


CENTERLINE GROOVES AT RAILROADS

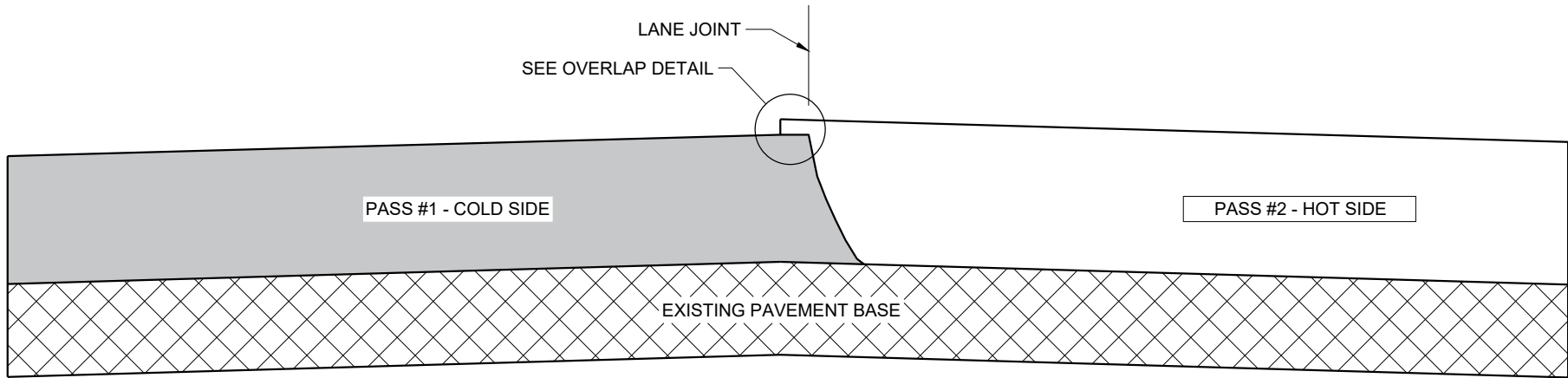
CENTER LINE  
RUMBLE STRIPS -  
INTERSECTIONS, DRIVEWAYS,  
BRIDGES, RAIL ROADS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

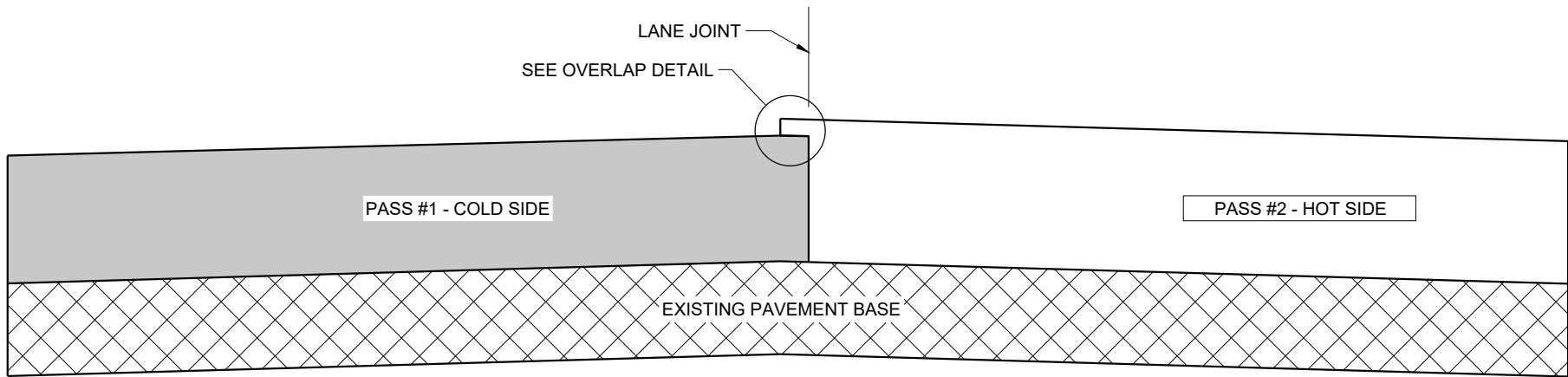
APPROVED  
May 2023  
DATE  
/S/ John Jenkins  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT



TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT



TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)

GENERAL NOTES

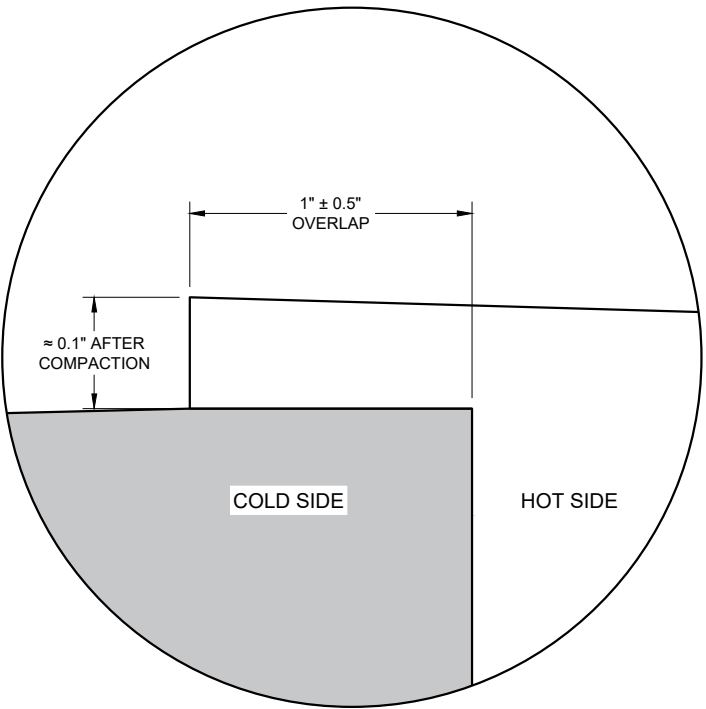
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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.

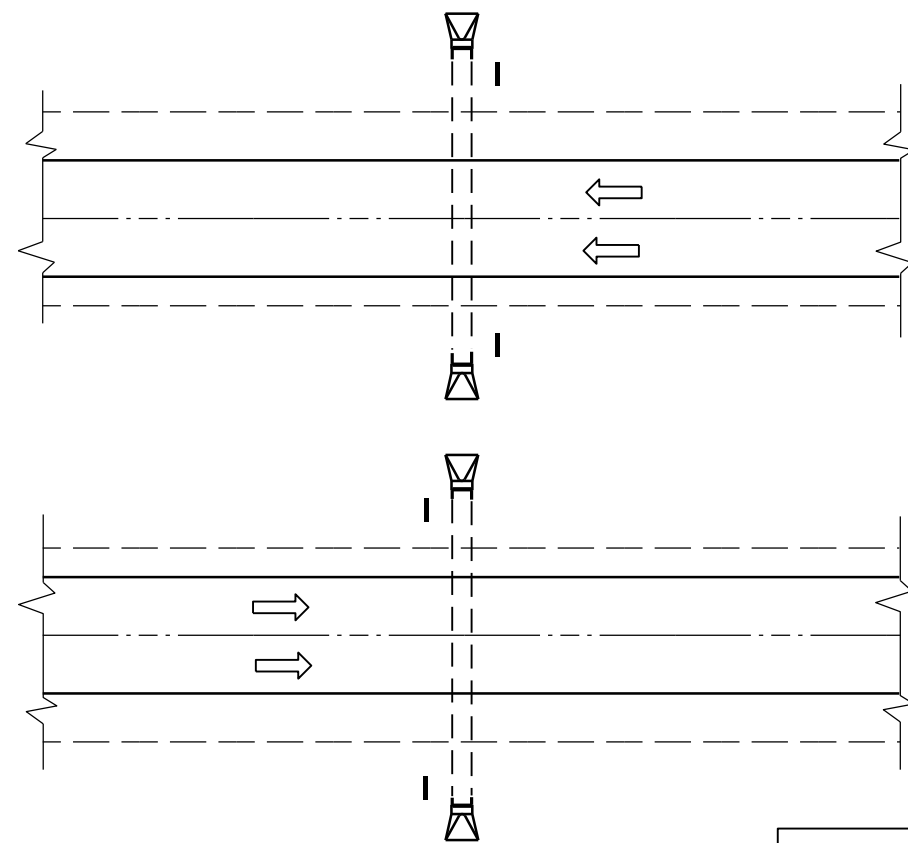


OVERLAP DETAIL (TYPICAL)

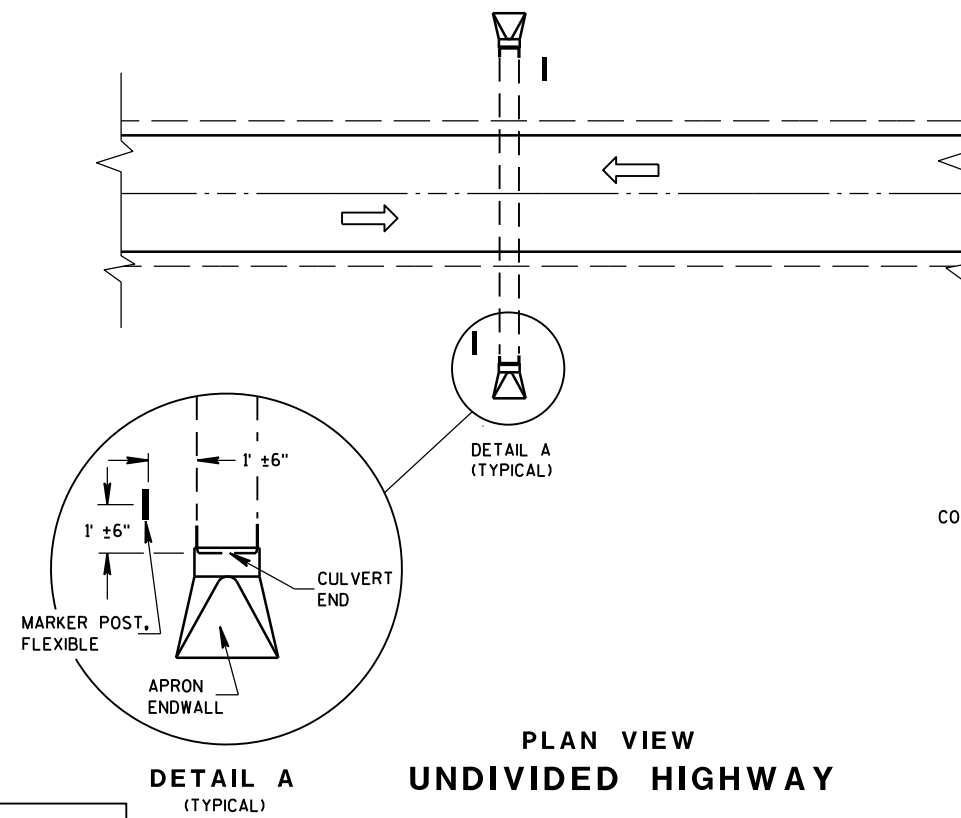
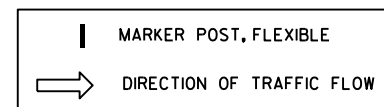
HMA LONGITUDINAL JOINTS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2020 /S/ Steven Hefel  
DATE HMA PAVEMENT ENGINEER  
FHWA



PLAN VIEW  
DIVIDED HIGHWAY

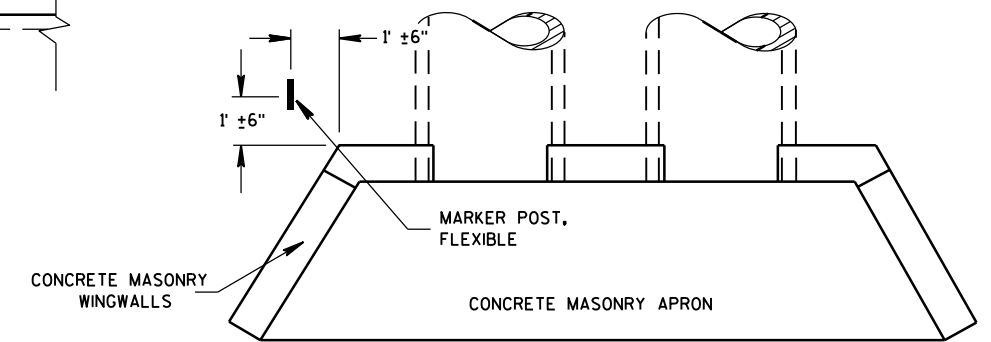


PLAN VIEW  
UNDIVIDED HIGHWAY

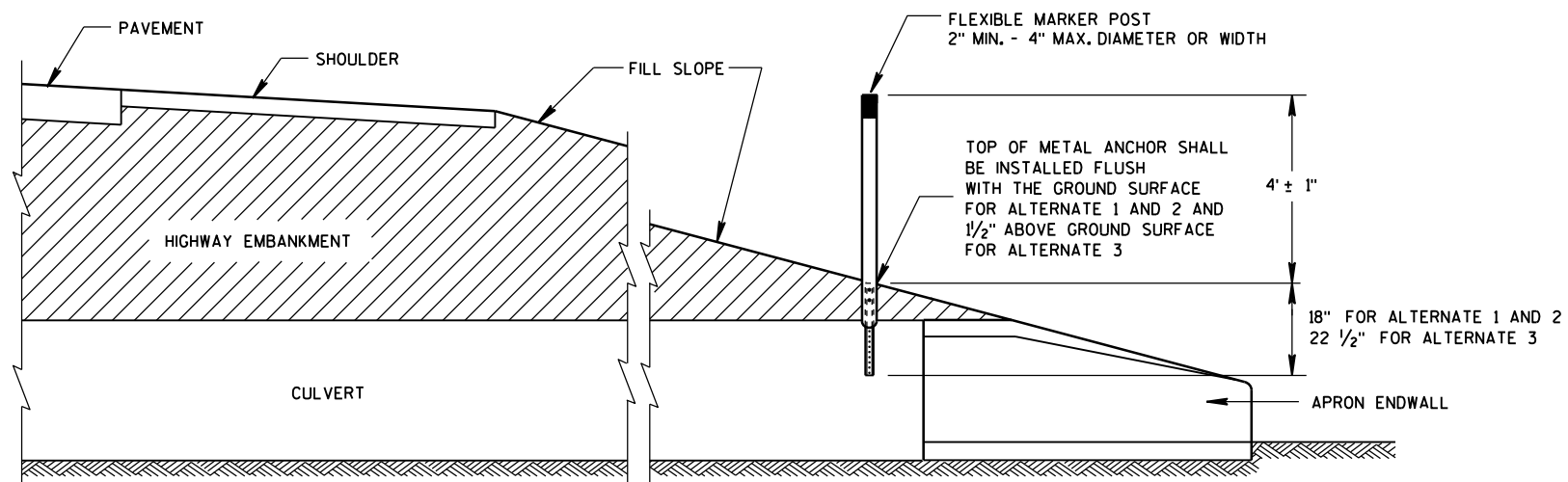
### FLEXIBLE MARKER POST LOCATION

### GENERAL NOTES

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



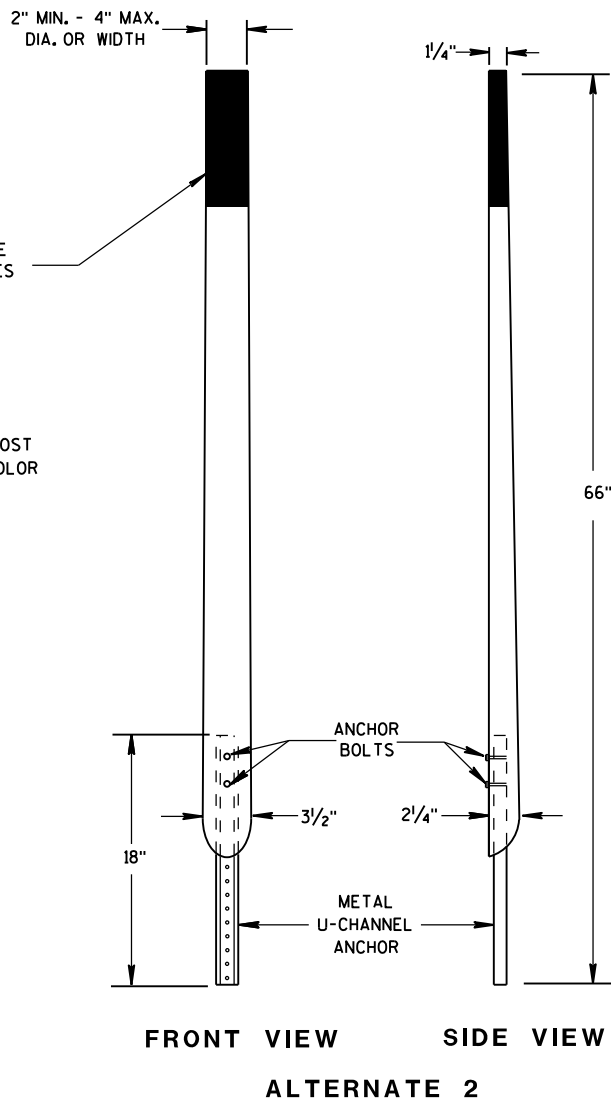
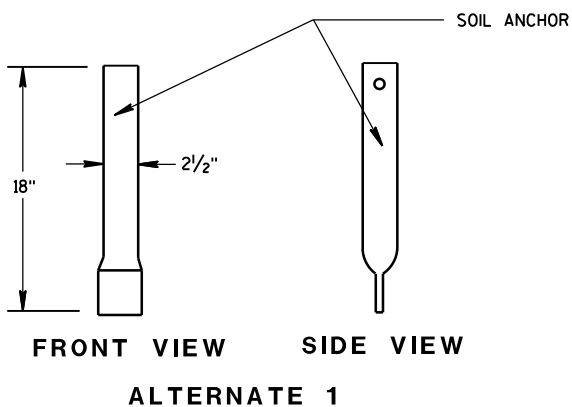
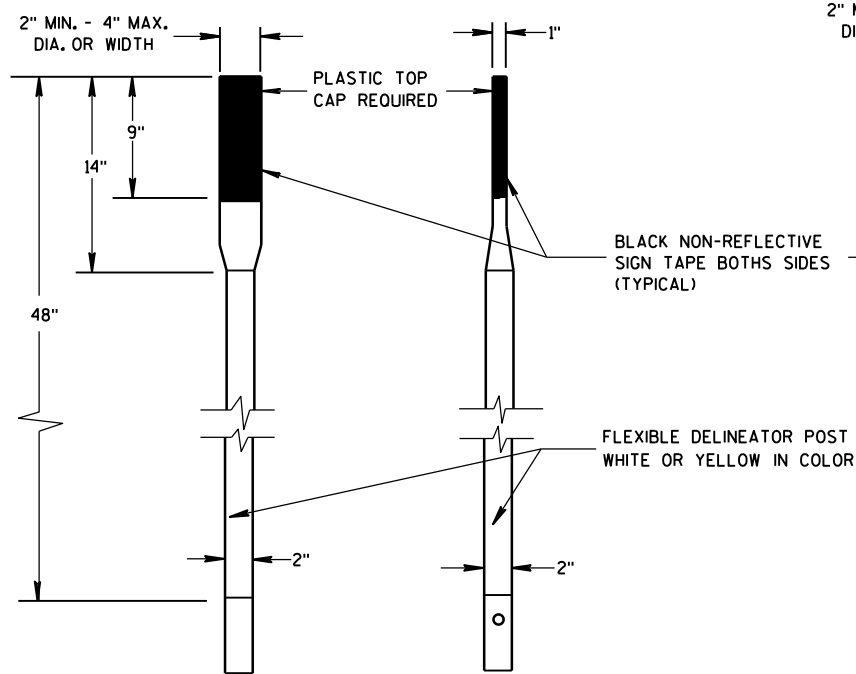
PLAN VIEW  
CONCRETE MASONRY ENDWALLS FOR  
CULVERT PIPE AND PIPE ARCH



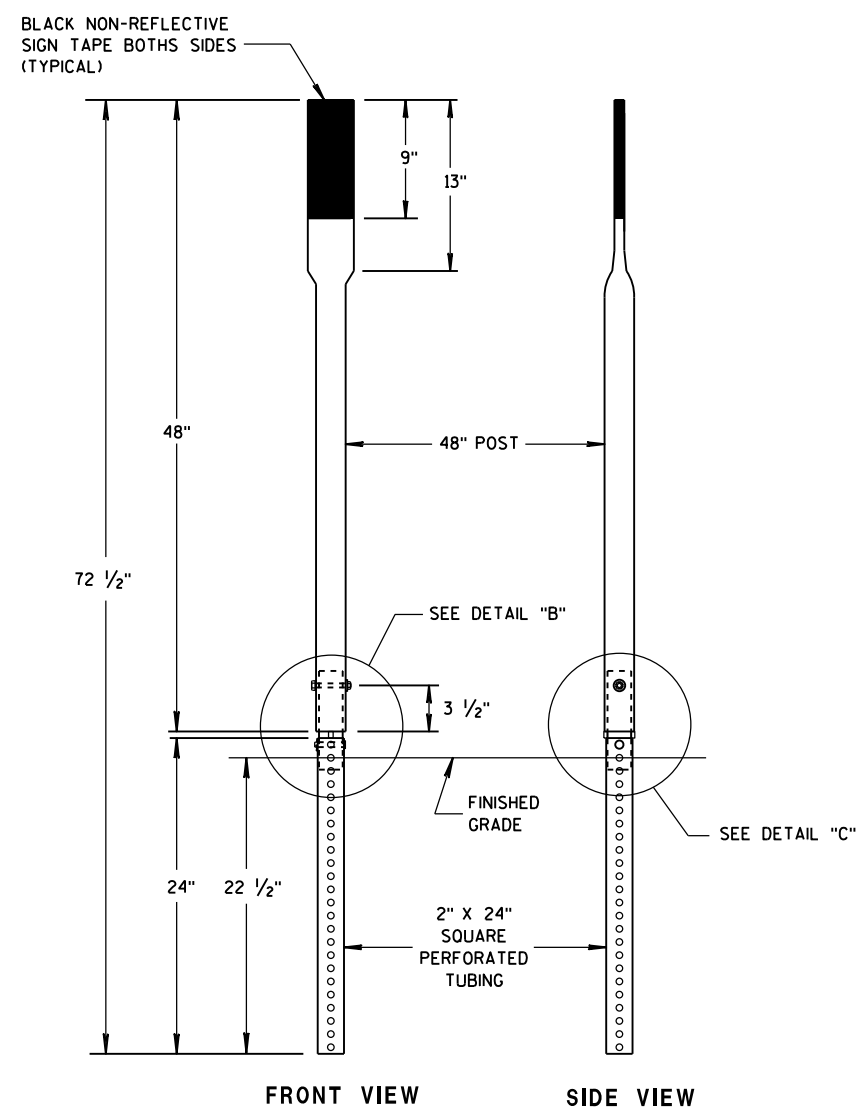
CROSS SECTION  
FLEXIBLE MARKER POST

FLEXIBLE MARKER POST  
FOR CULVERT END

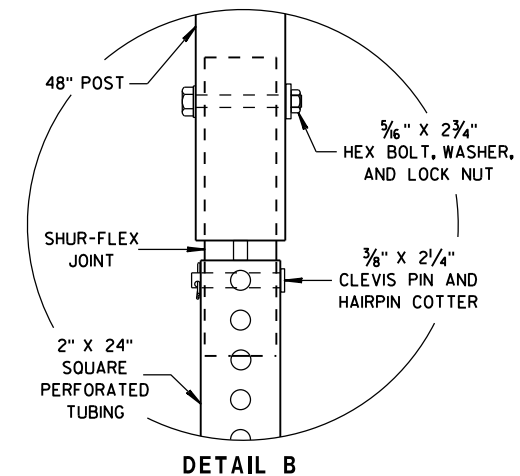
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



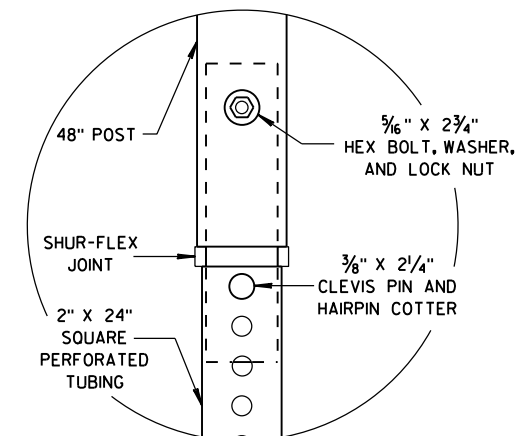
FLEXIBLE MARKER POSTS



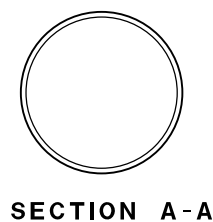
ALTERNATE 3



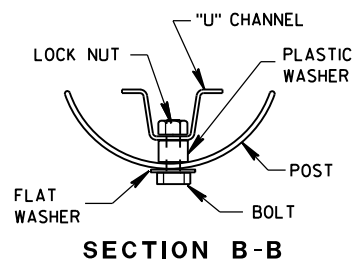
DETAIL B



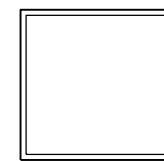
DETAIL C



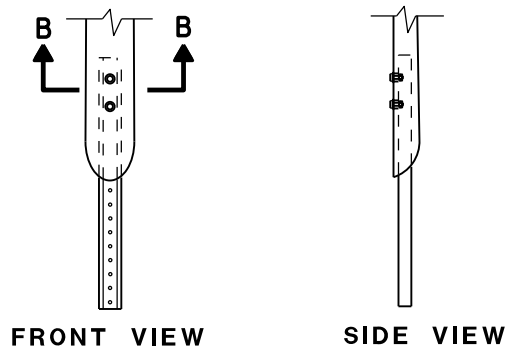
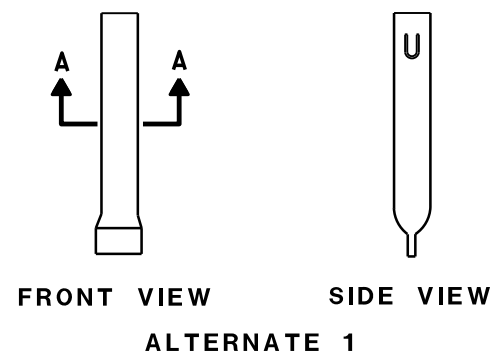
SECTION A-A



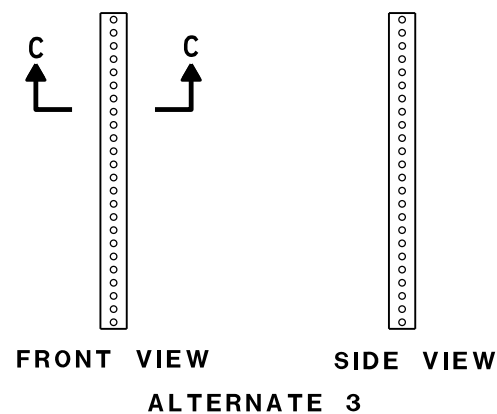
SECTION B-B



SECTION C-C



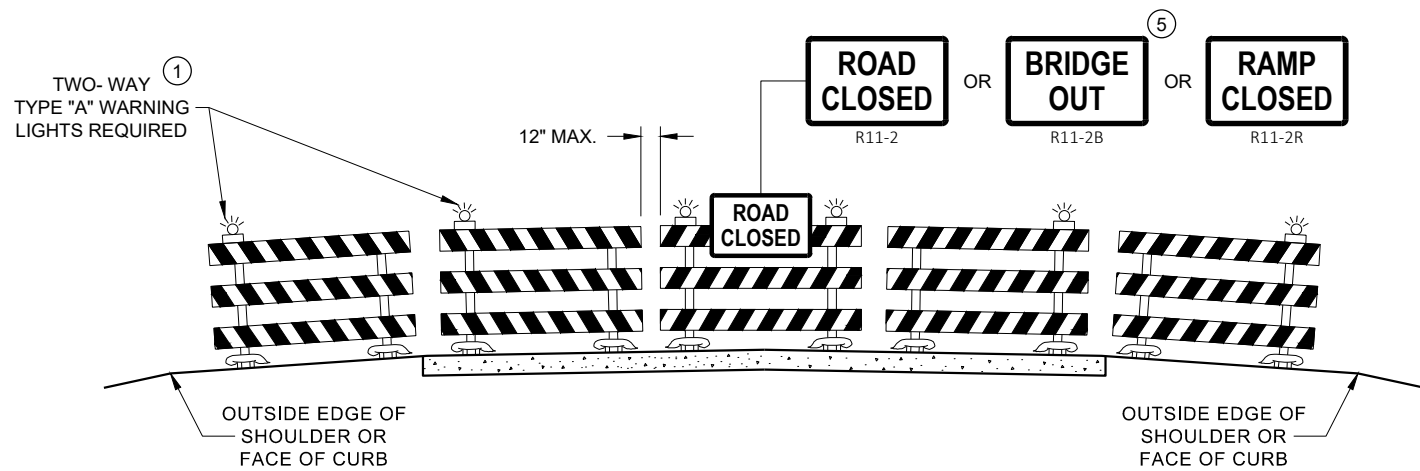
FLEXIBLE MARKER POST ANCHORS



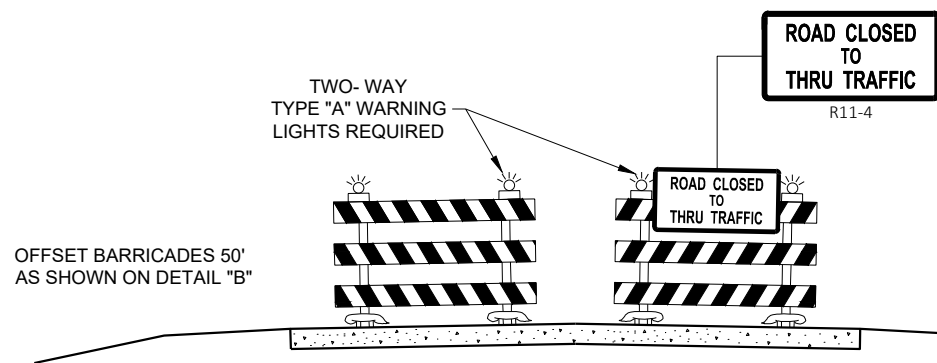
FLEXIBLE MARKER POST  
FOR CULVERT END

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
10/1/2012 /S/ Travis Feltes  
DATE STATE TRAFFIC ENGINEER OF DESIGN  
FHWA



**DETAIL D  
ROAD CLOSURE BARRICADE DETAIL  
APPROACH VIEW**



**DETAIL E  
LANE CLOSURE BARRICADE DETAIL  
APPROACH VIEW**

SEE SDD 15C2 - SHEET "a" FOR LEGEND

## GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

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

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

## BARRICADES AND SIGNS FOR VARIOUS CLOSURES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

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.

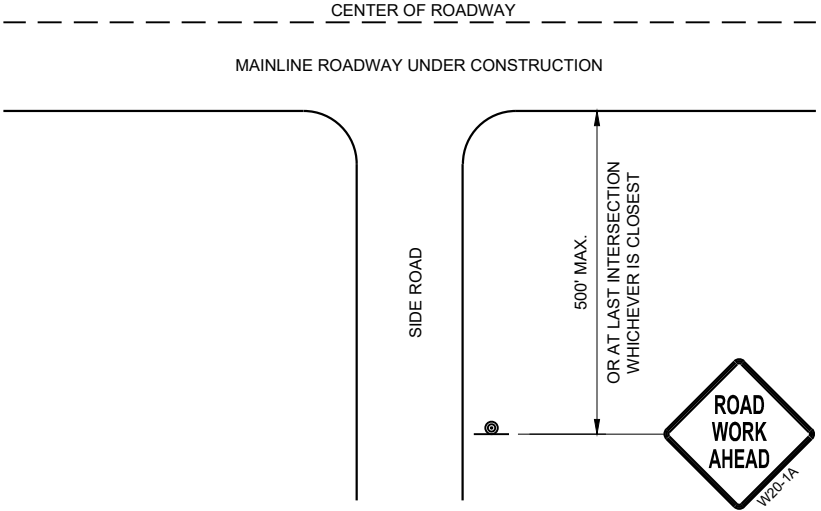
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

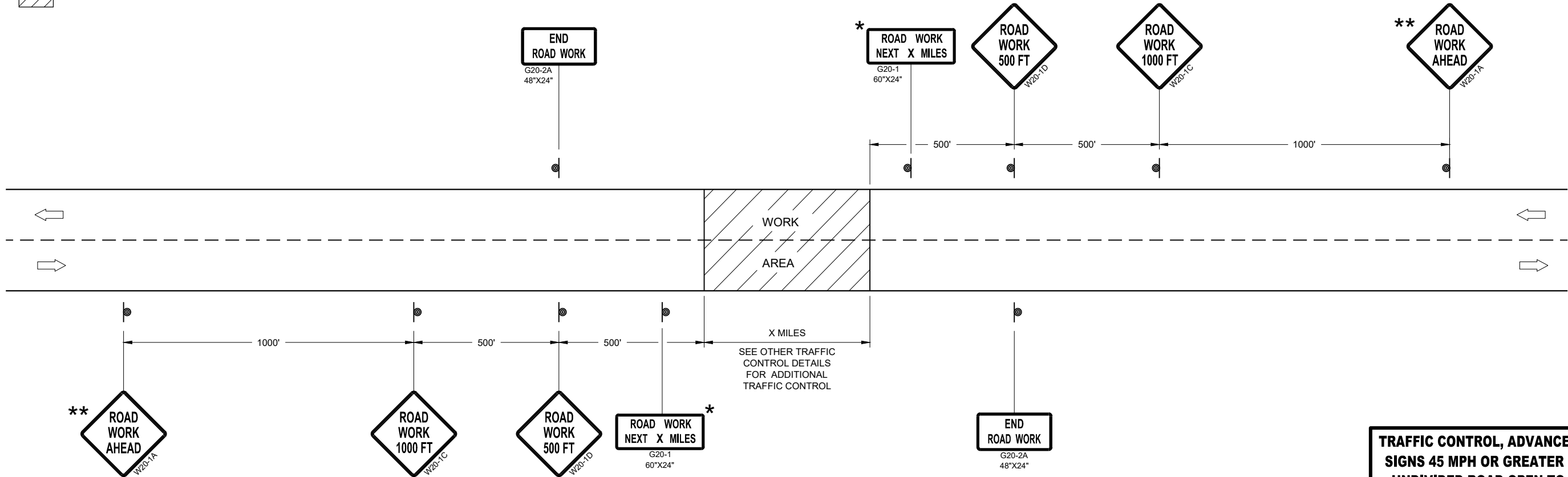
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

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  
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.

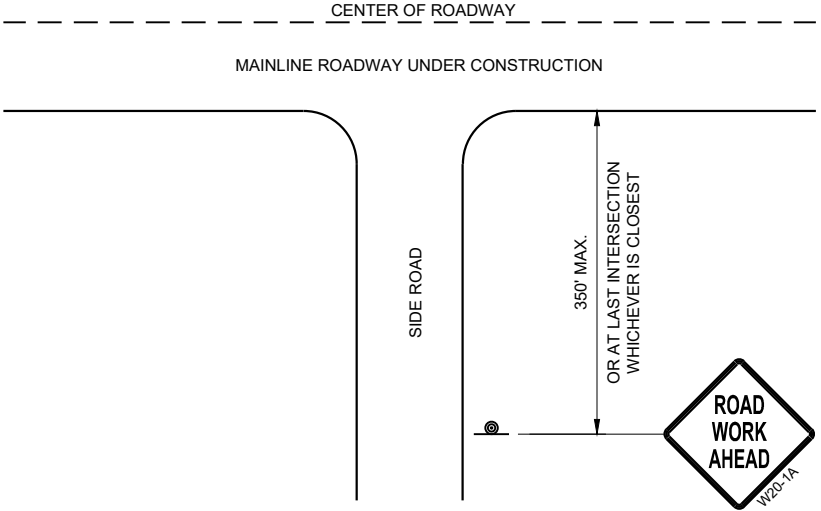
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

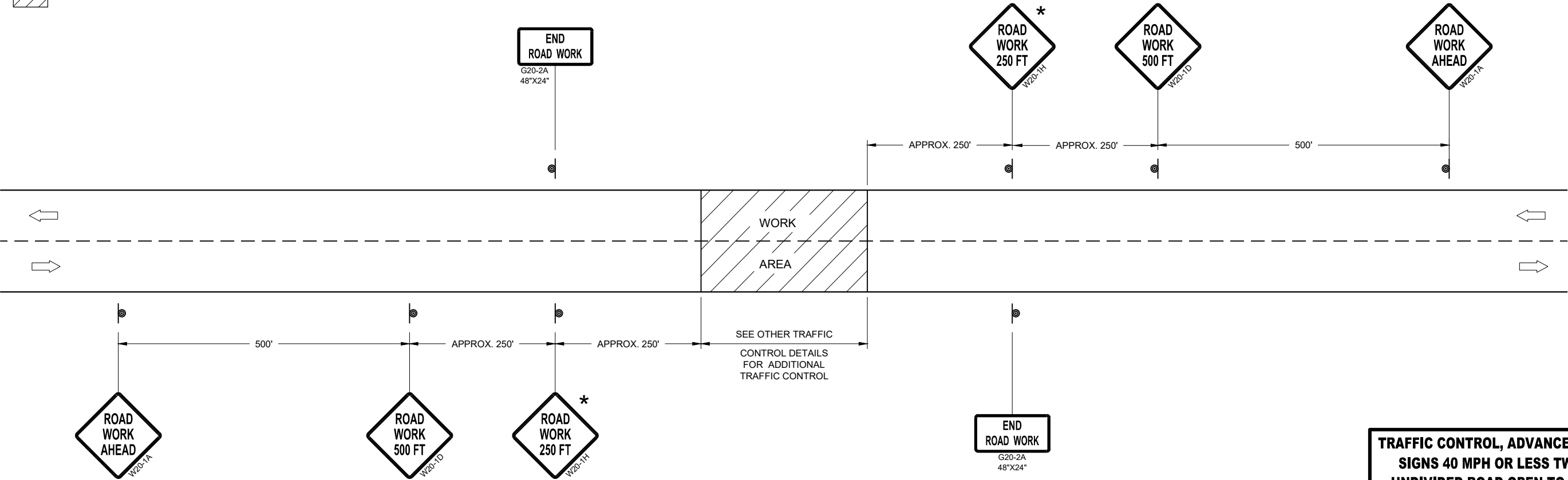
\* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL

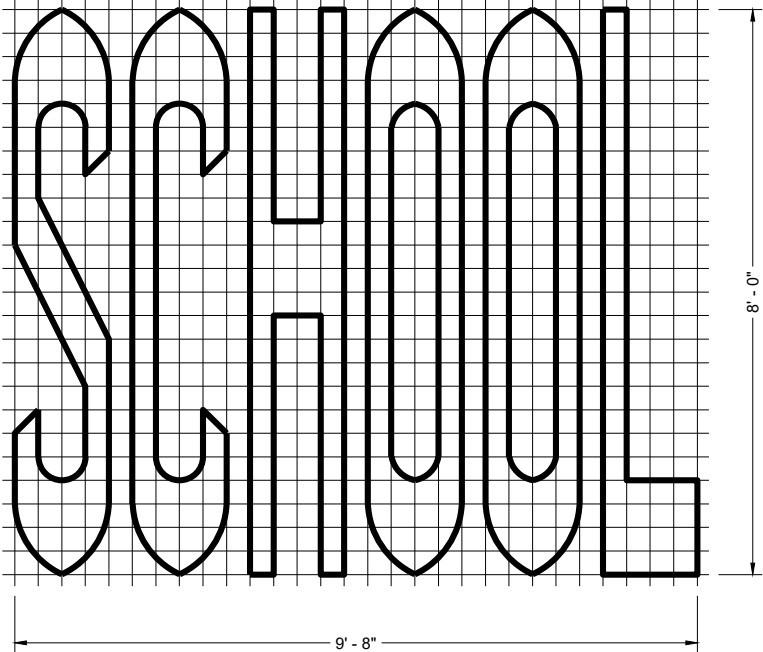
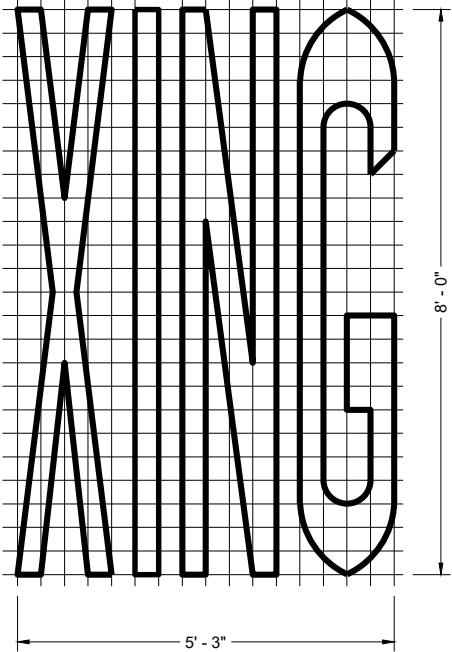
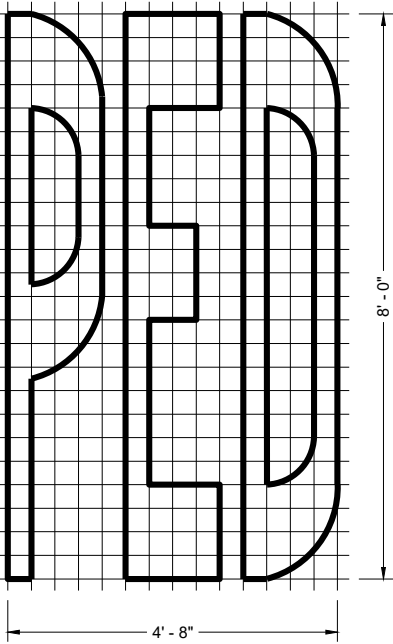
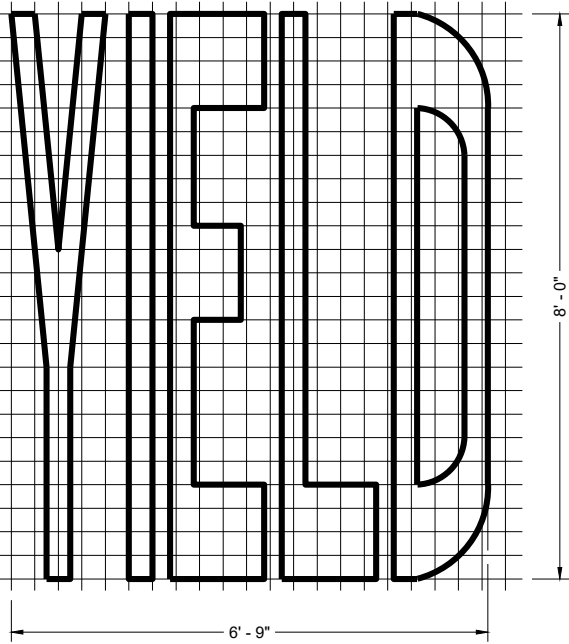
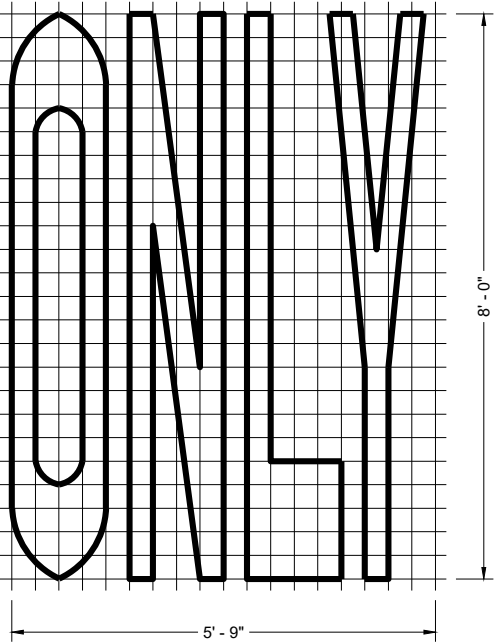
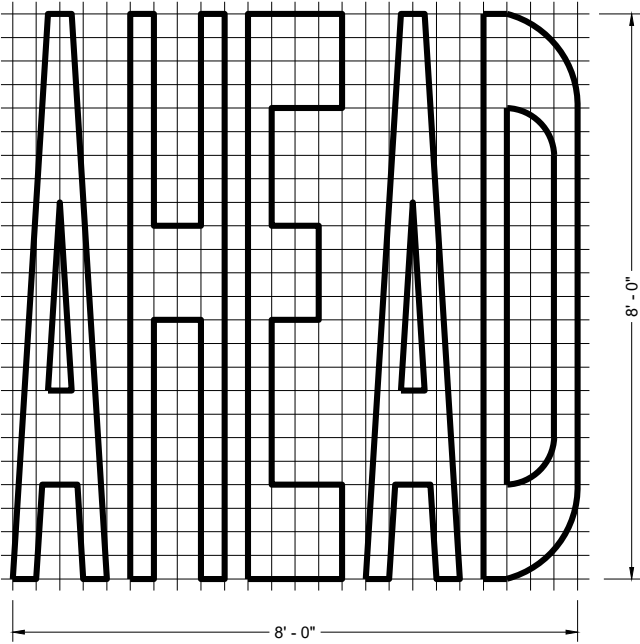
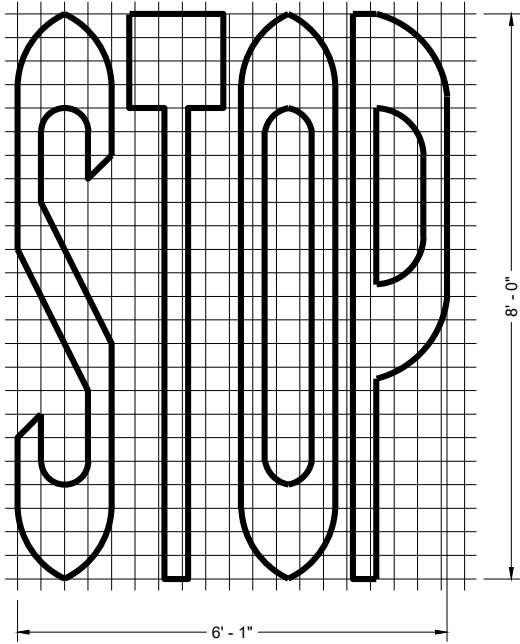


TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

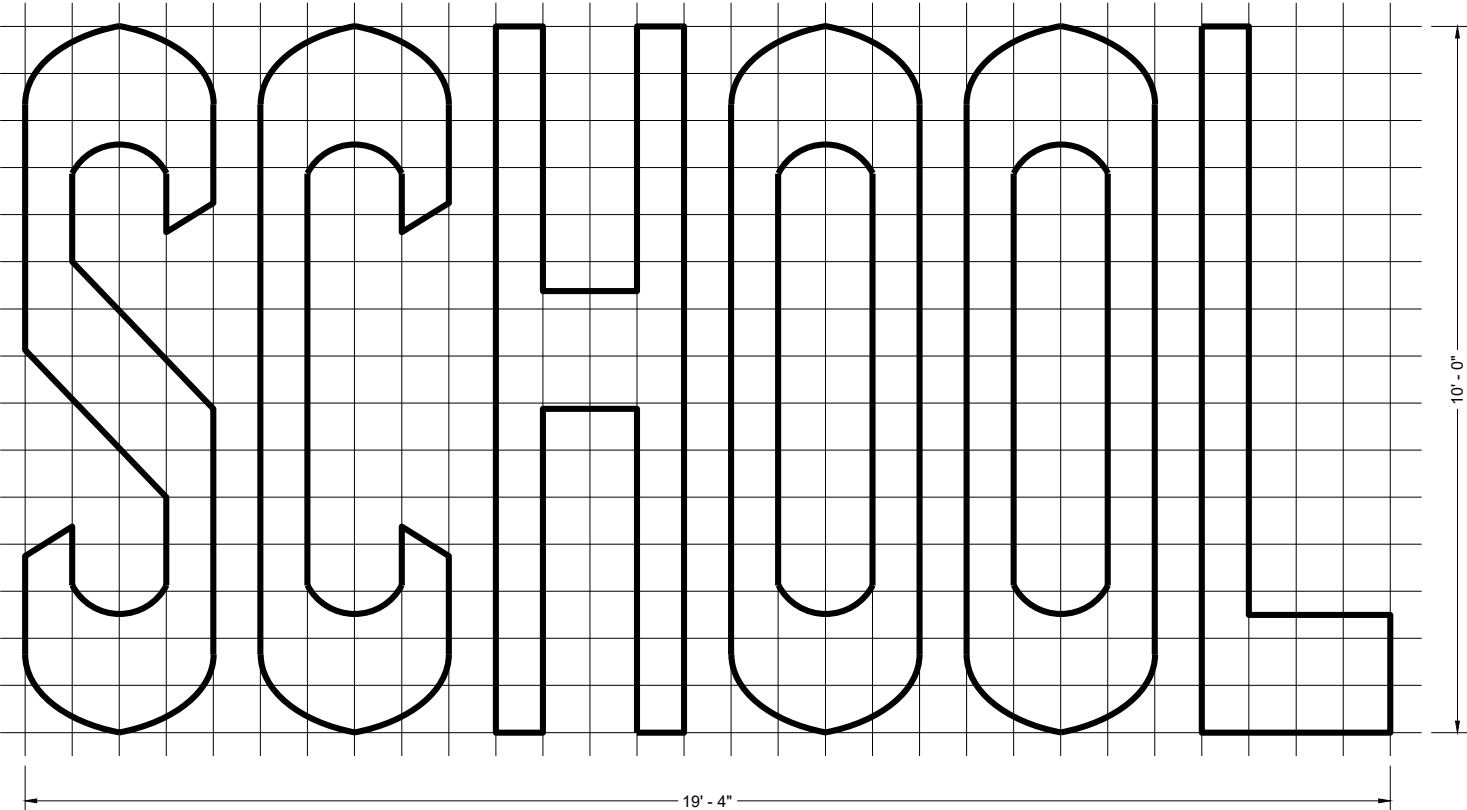
TRAFFIC CONTROL, ADVANCE WARNING  
SIGNS 40 MPH OR LESS TWO-WAY  
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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



SINGLE LANE

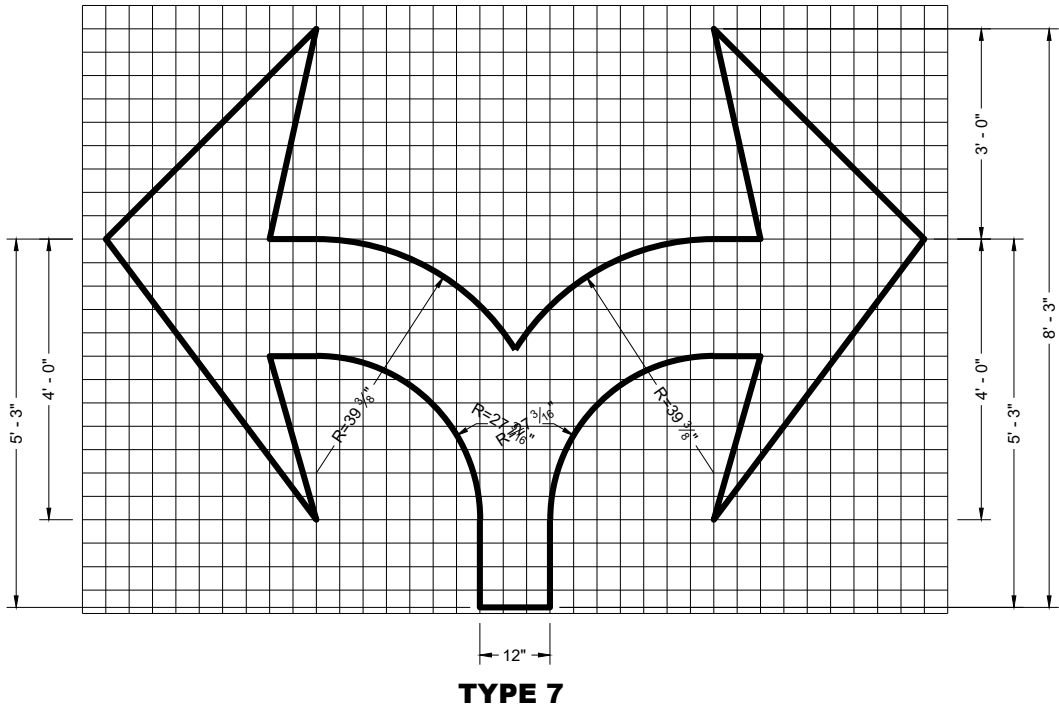
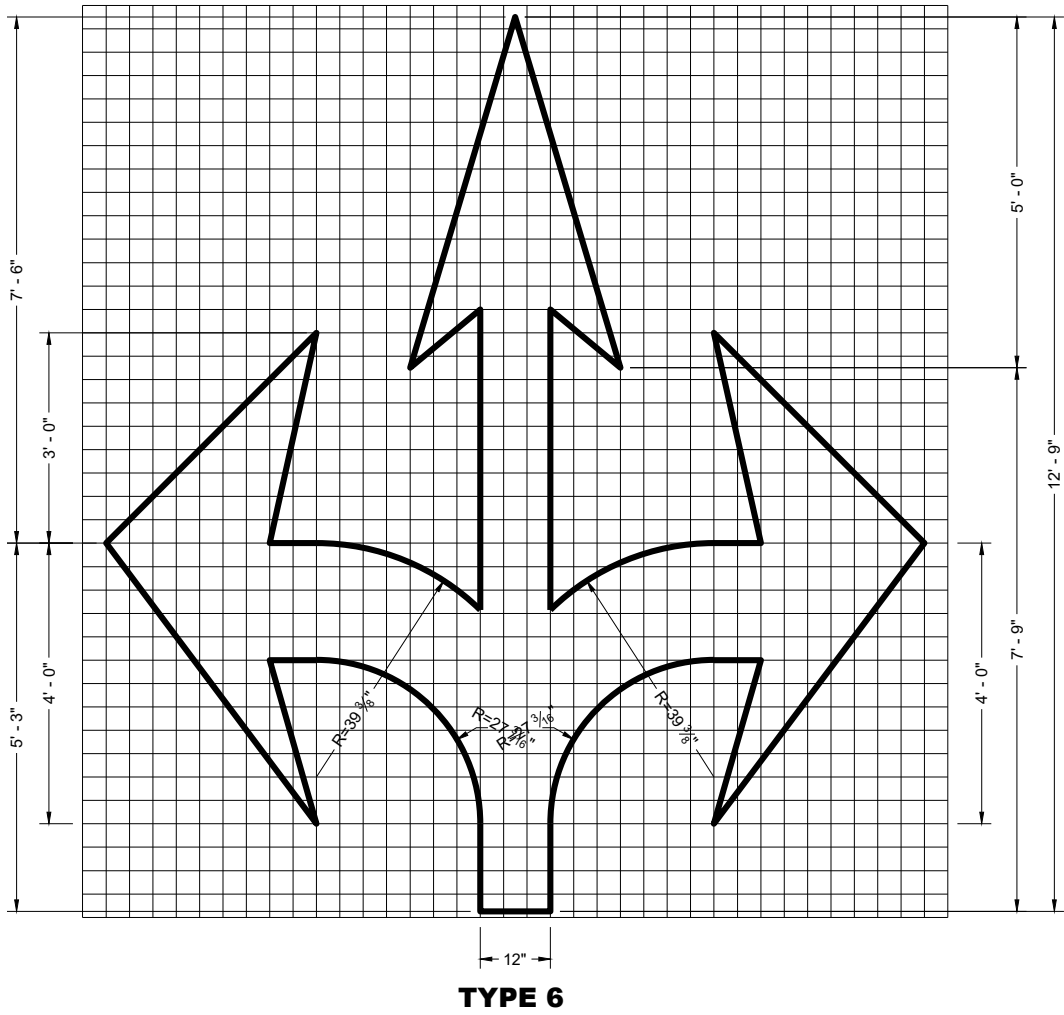
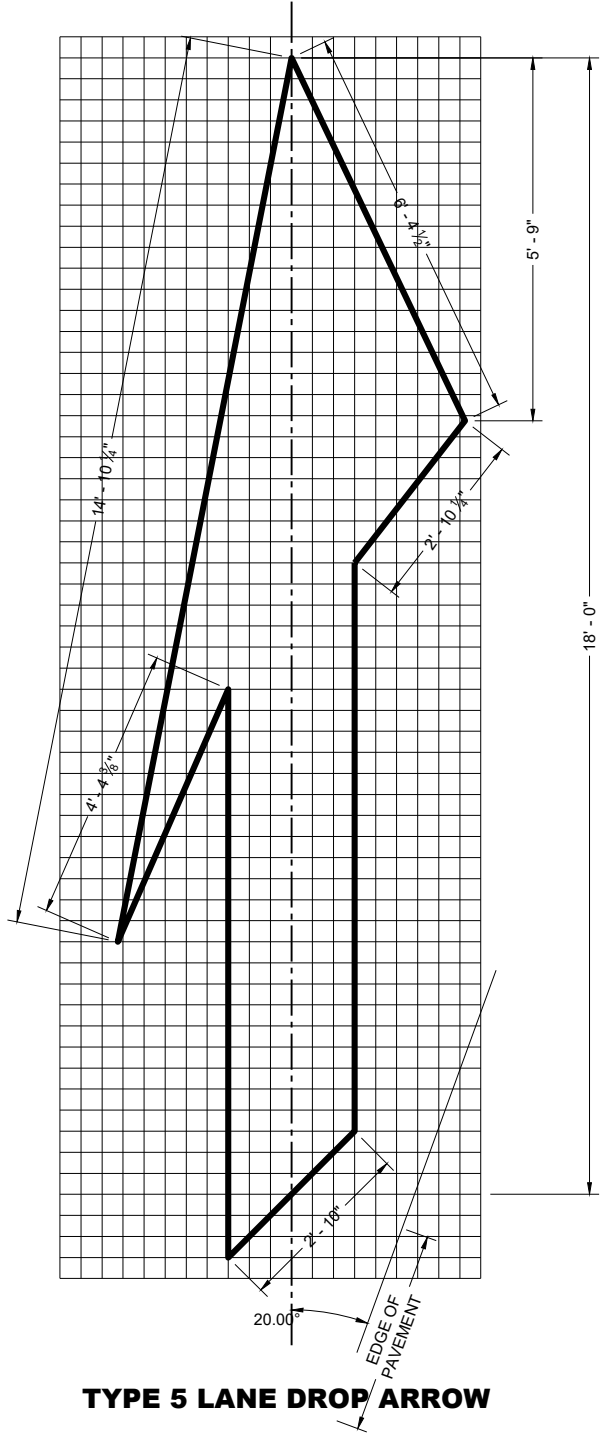
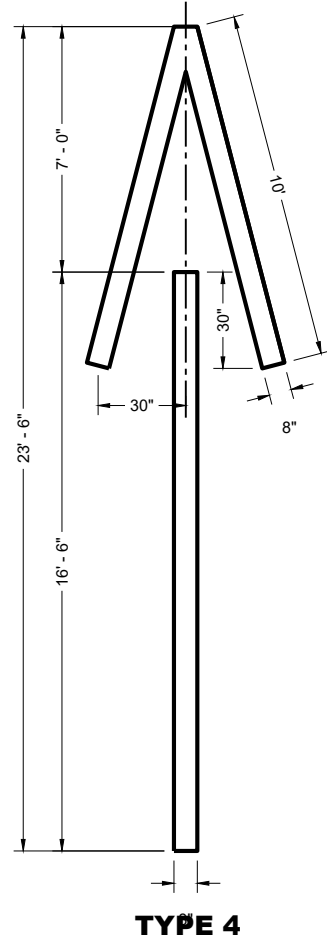
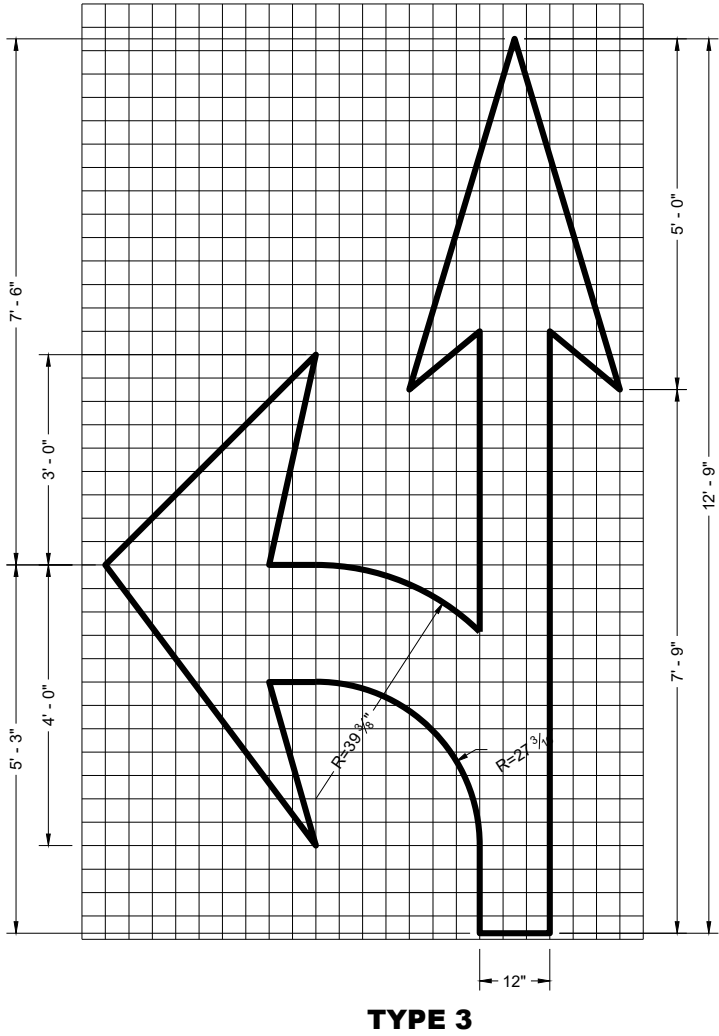
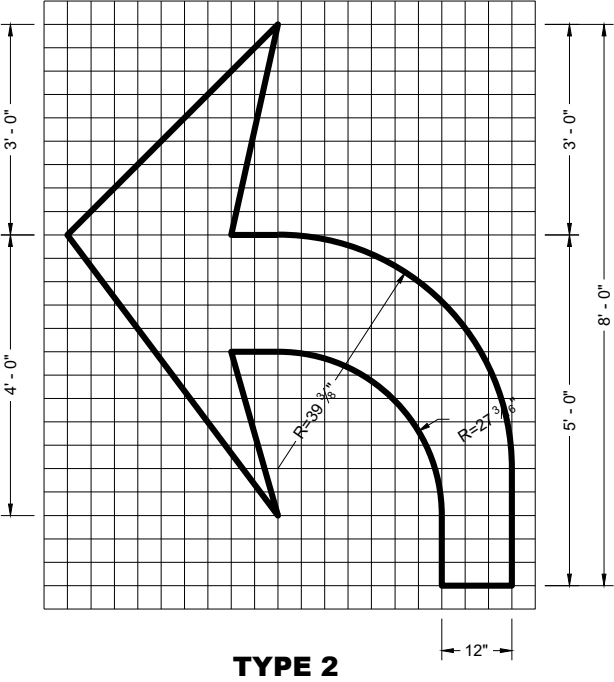
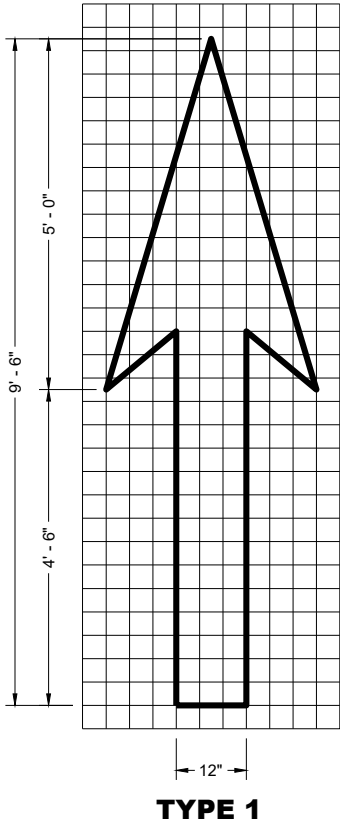


TWO - LANE

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/ Matthew Rauch STATE SIGNING AND MARKING ENGINEER
FHWA	



GENERAL NOTES

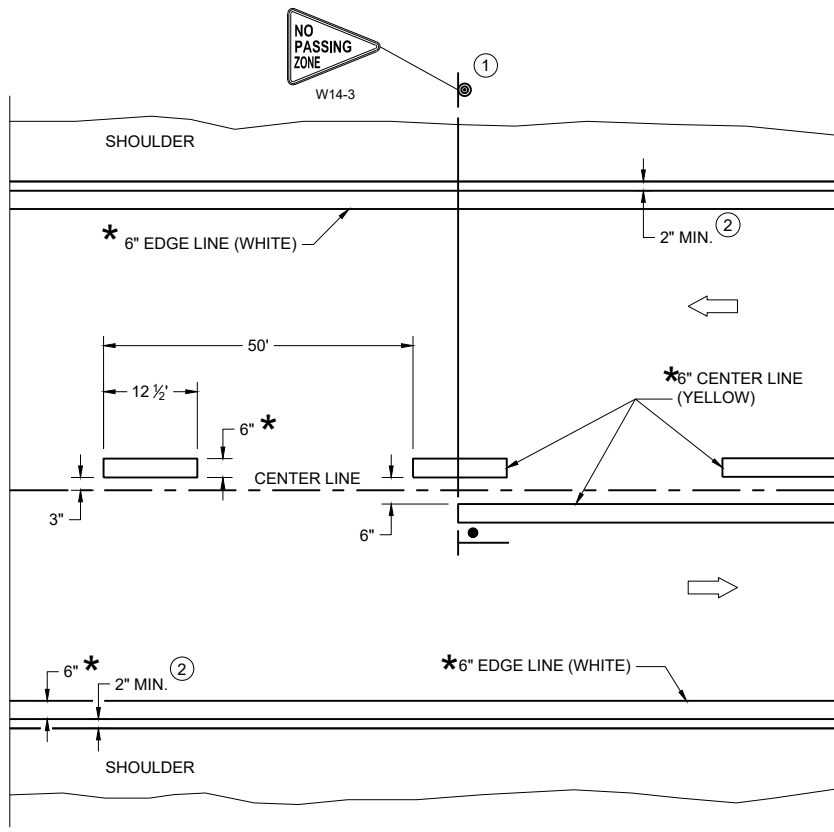
DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

PAVEMENT MARKING ARROWS

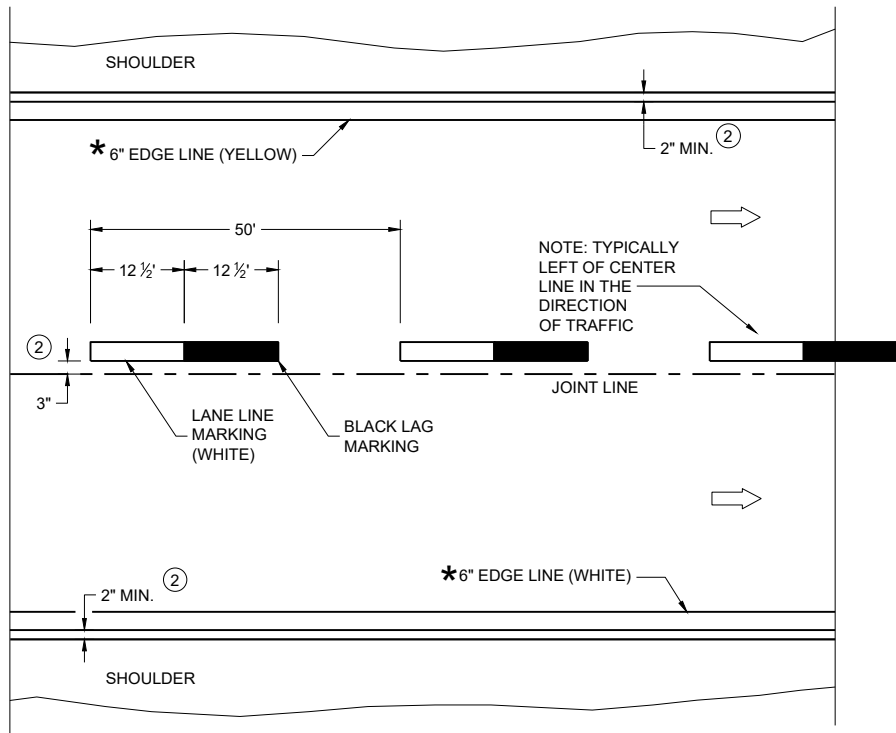
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2024 /S/ Matthew Rauch  
DATE 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

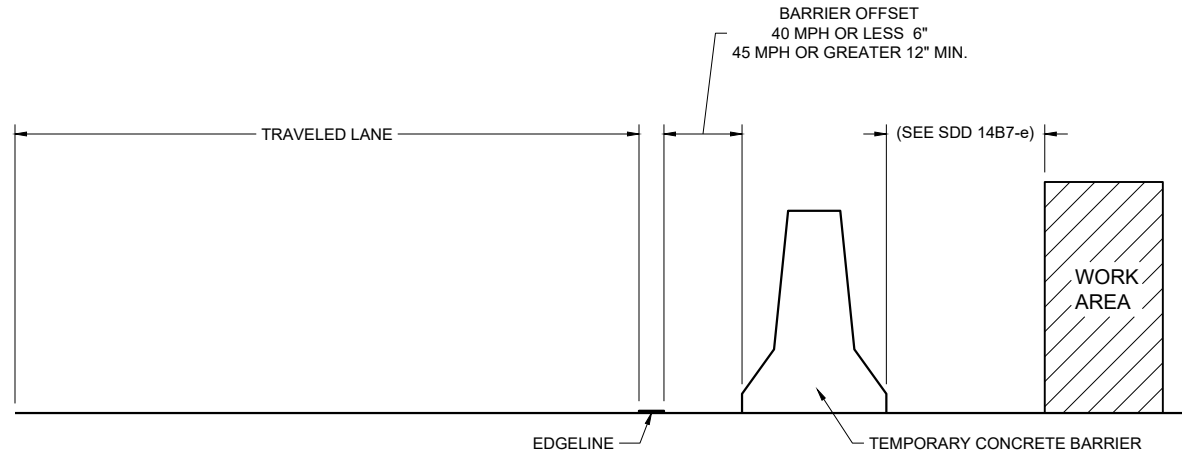
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC

PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Jeannie Silver  
DATE Statewide Pavement Marking Engineer

FHWA



TEMPORARY BARRIER OFFSET FROM EDGE LINE

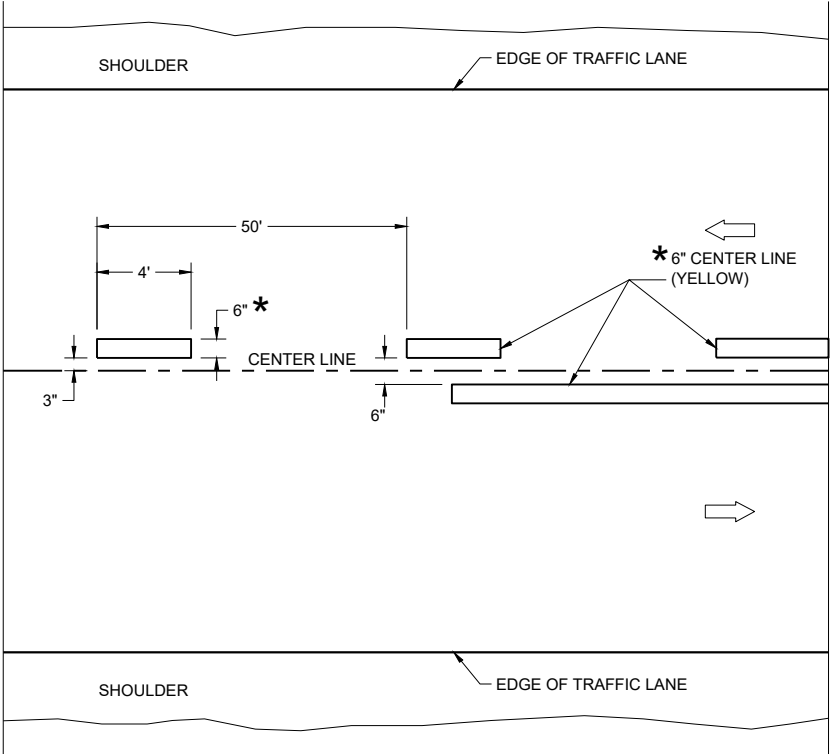
GENERAL NOTES

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

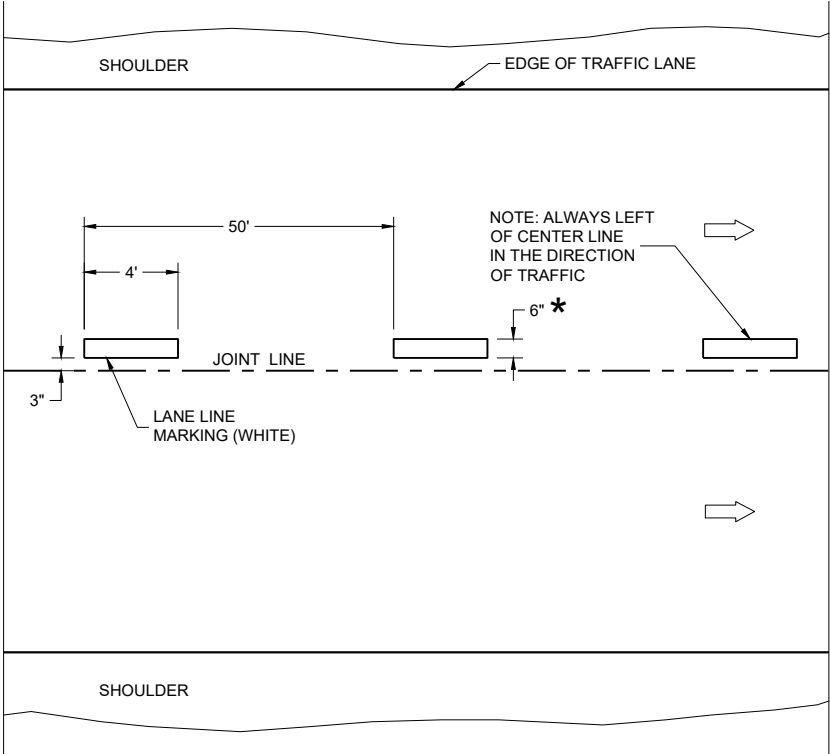
LEGEND

DIRECTION OF TRAFFIC

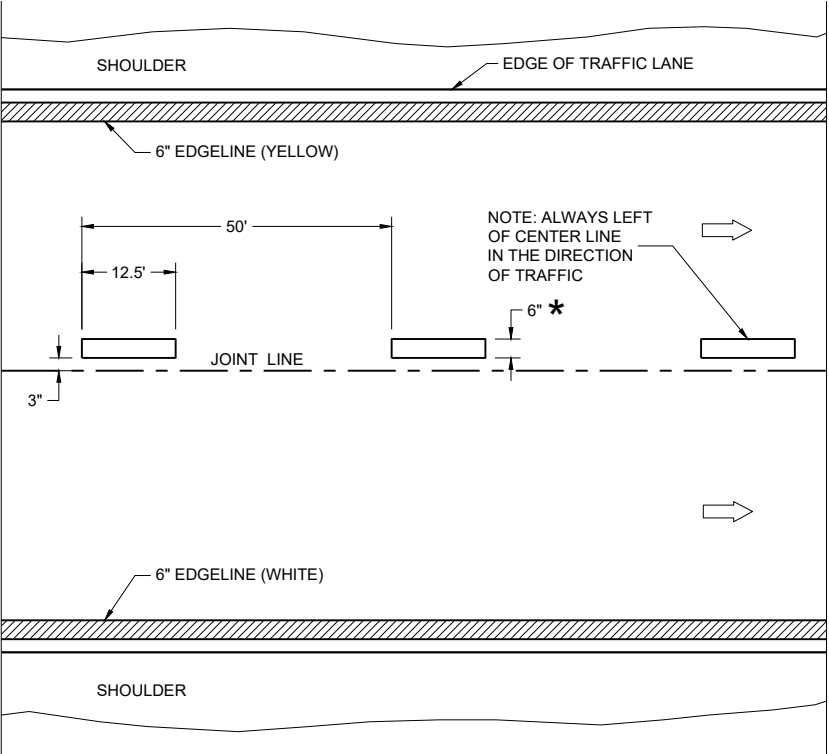
\* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



TWO WAY TRAFFIC



ONE WAY TRAFFIC



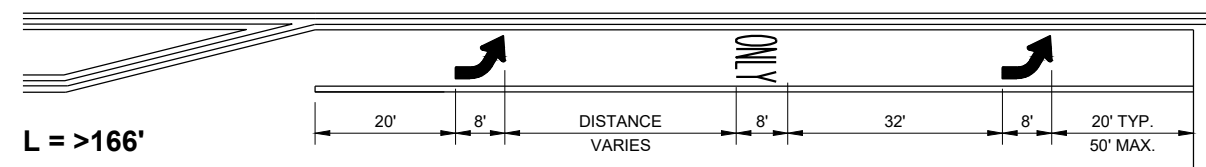
FREEWAYS AND EXPRESSWAYS

TEMPORARY PAVEMENT MARKING

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



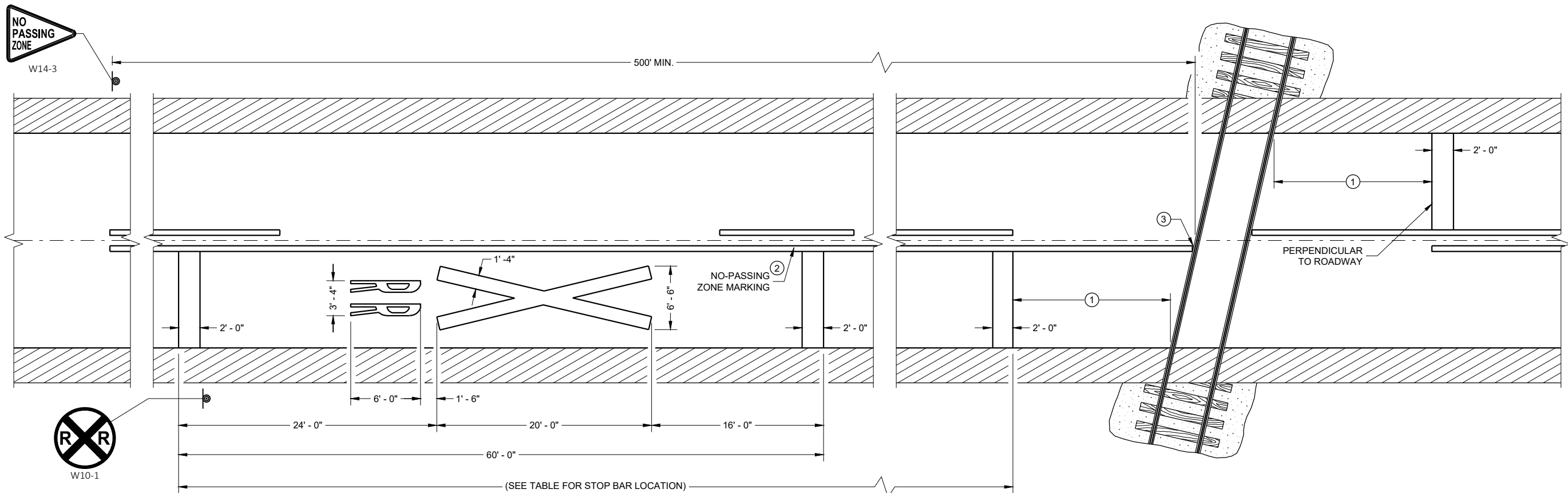
LENGTH OF TURN BAY ( **L** ) OF 0 - 47' DOES NOT  
REQUIRE PAVEMENT MARKING ARROWS OR WORDS



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

**L** = LENGTH OF TURN BAY

\* CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES



PAVEMENT MARKING

LEGEND

⦿ SIGN ON PERMANENT SUPPORT

GENERAL NOTES

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

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

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

TRACE EXISTING SYMBOL WHERE EXISTING SYMBOLS ARE PLACED.

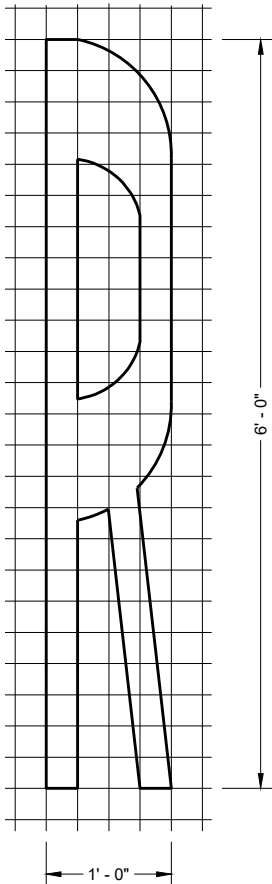
- ① PLACE STOP BAR APPROXIMATELY 8 FEET IN ADVANCE OF THE GATE (IF PRESENT), BUT NO CLOSER THAN 15 FEET IN ADVANCE OF THE NEAREST RAIL. FIELD-FIT STOP BAR TO MAXIMIZE VIEW OF APPROACHING TRAIN.
- ② 500' MINIMUM. MARKING LIMITS MAY BE EXTENDED AS DIRECTED BY THE ENGINEER TO MEET ADJACENT NO-PASSING ZONE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

DISTANCE TABLE

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

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

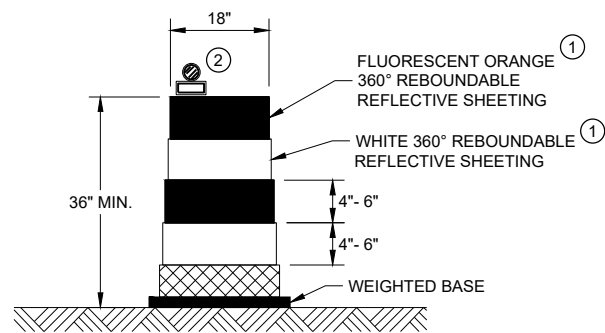
\* THE MINIMUM DISTANCES IN THE TABLE ARE DESIRABLE AND SHOULD BE USED. THE DISTANCES MAY BE INCREASED UP TO THE MAXIMUM TO ALLOW FOR FIELD CONDITIONS SUCH AS THE CLOSED PROXIMITY OF DRIVEWAYS, BRIDGES, SIDE ROADS OR OTHER FEATURES THAT WOULD PROHIBIT THE MINIMUM DISTANCES FROM BEING USED.



SIGNING AND PAVEMENT MARKING DETAILS FOR RAILROAD - HIGHWAY GRADE CROSSINGS

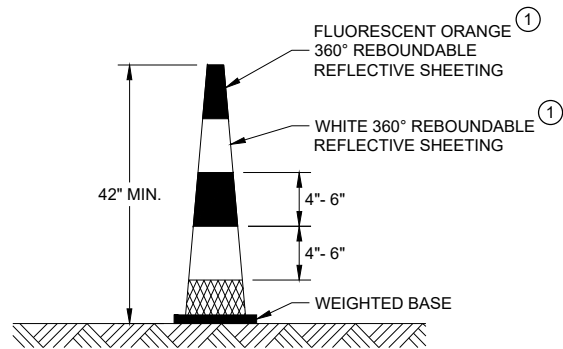
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023  
DATE  
/S/ Matthew R. Rauch  
STATE SIGNING AND MARKING  
ENGINEER  
FHWA



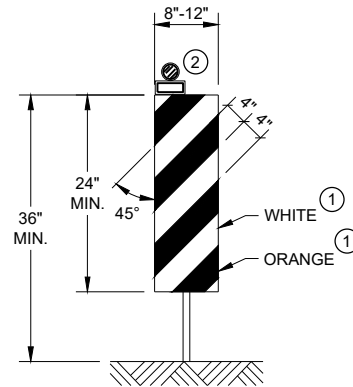
**DRUM**

BALLAST WIDTHS  
RANGE FROM 24"-36"



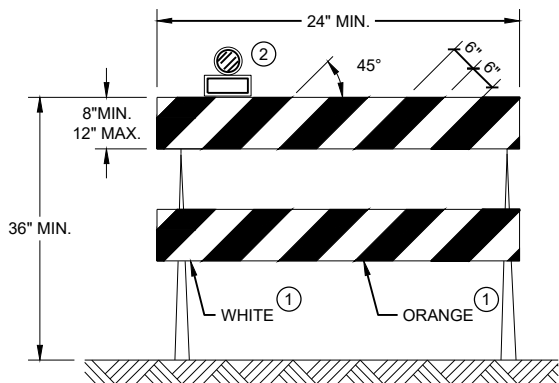
**42" CONE**

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



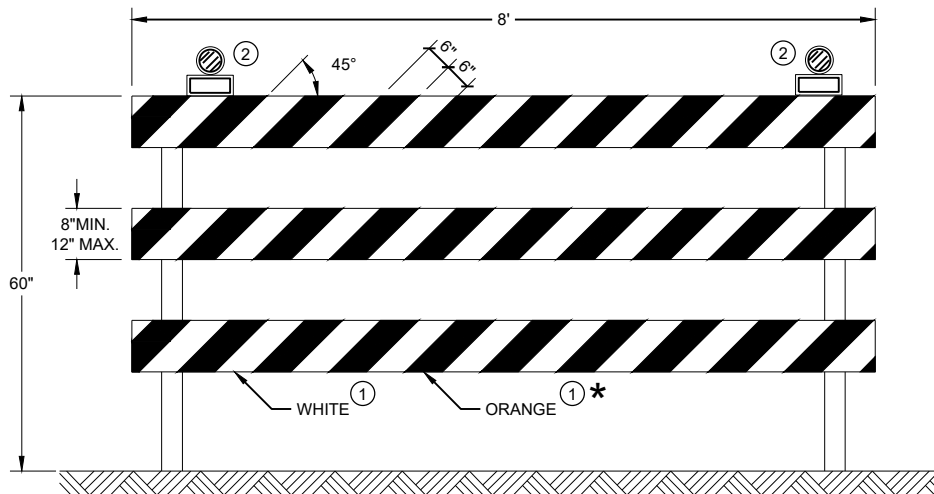
**VERTICAL PANEL**

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



**TYPE II BARRICADE**

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



**TYPE III BARRICADE**

IF SIGN MOUNTED, DO NOT COVER MORE THAN 50% OF THE TOP  
TWO RAILS OR 33% OF THE TOTAL AREA OF THE THREE RAILS.

\* IF USED FOR A PERMANENT APPLICATION USE RED SHEETING.

**GENERAL NOTES**

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






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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

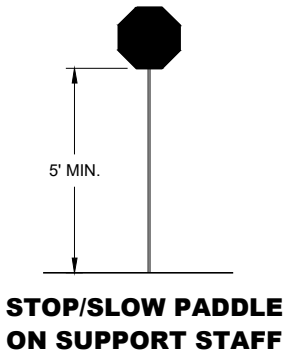
FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

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

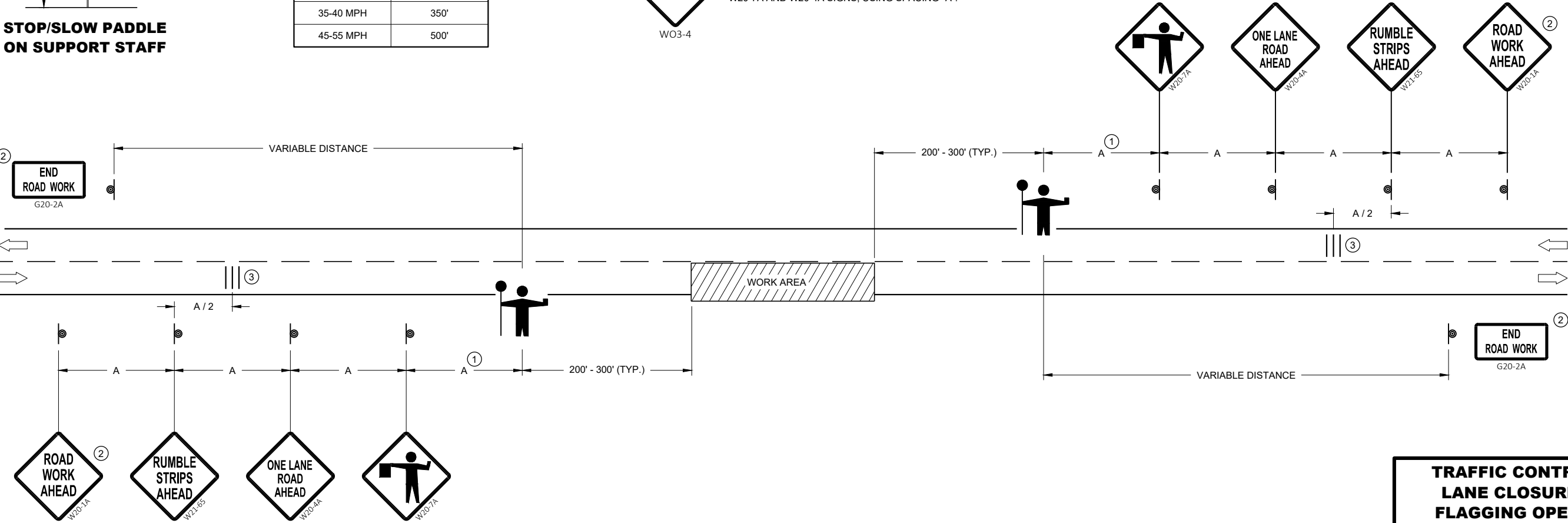


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



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

LEGEND

- V1

LEAD VEHICLE
- V2

MARKING VEHICLE
- V3

SHADOW VEHICLE
- TRUCK MOUNTED ATTENUATOR (TMA)
- SIGN ON TEMPORARY SUPPORT
- DIRECTION OF TRAFFIC

GENERAL NOTES

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

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

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

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

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

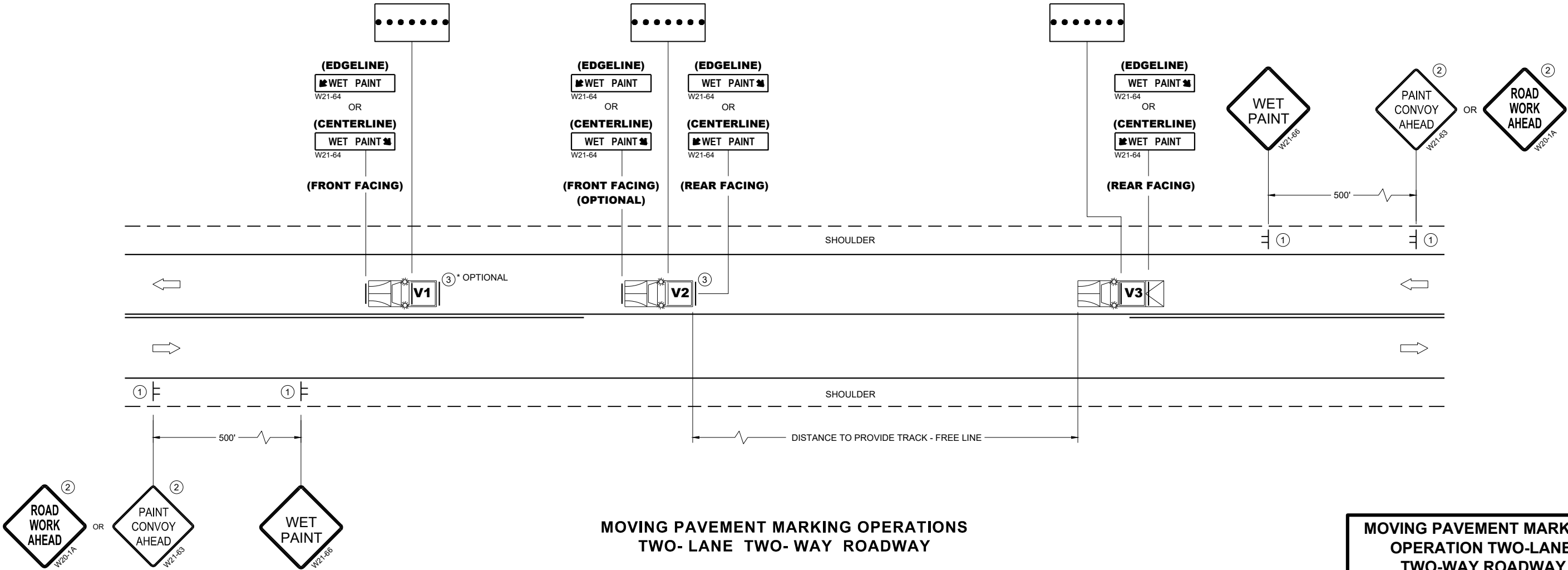
WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR LAY STATIONARY SIGNS AND SUPPORTS FLAT ON THE GRADE WITH

UPRIGHTS ORIENTED PARALLEL TO AND DOWNSTREAM FROM TRAFFIC.

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

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

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



MOVING PAVEMENT MARKING OPERATIONS  
TWO- LANE TWO- WAY ROADWAY

MOVING PAVEMENT MARKING  
OPERATION TWO-LANE  
TWO-WAY ROADWAY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

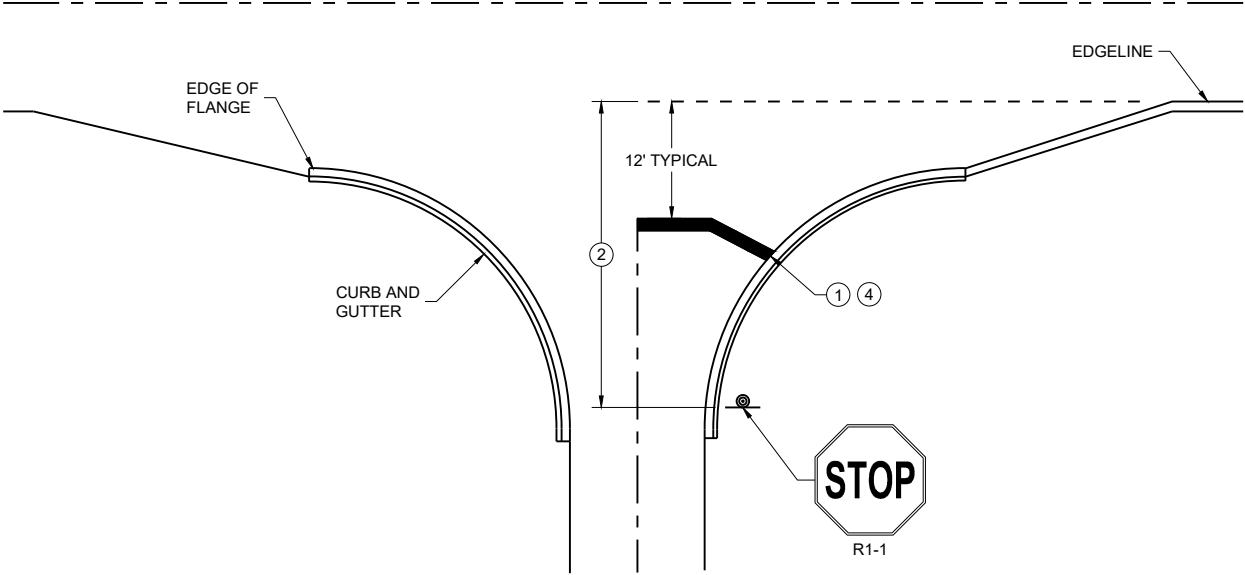
APPROVED  
March 2024 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

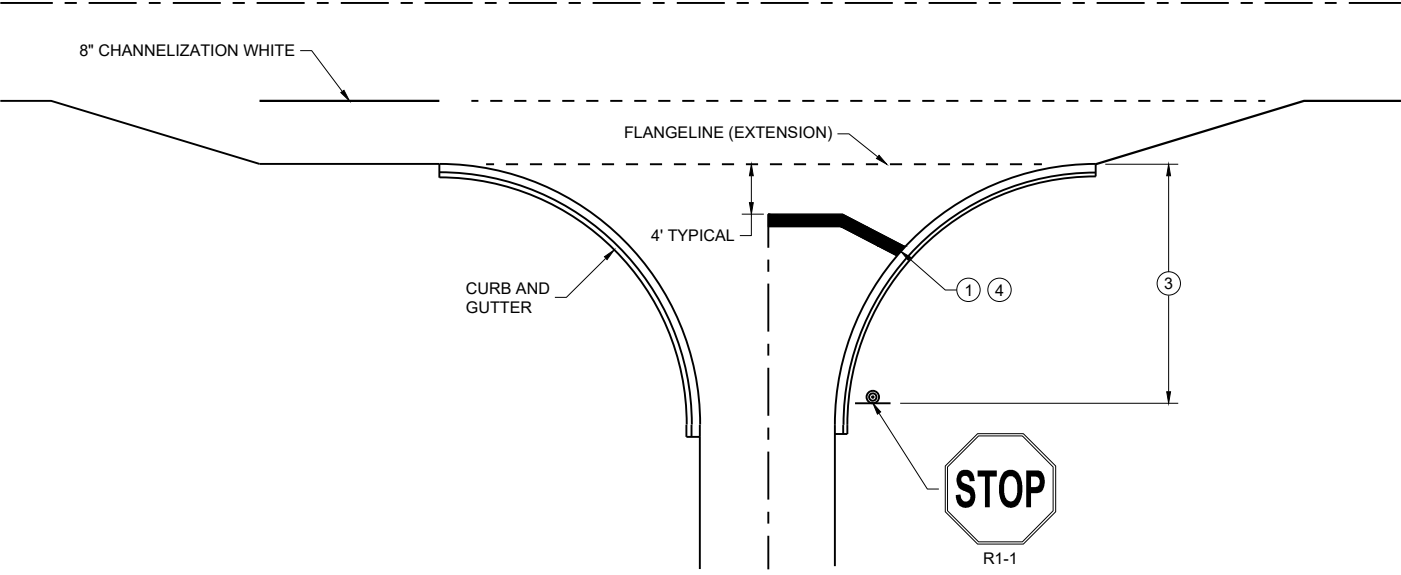
GENERAL NOTES

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

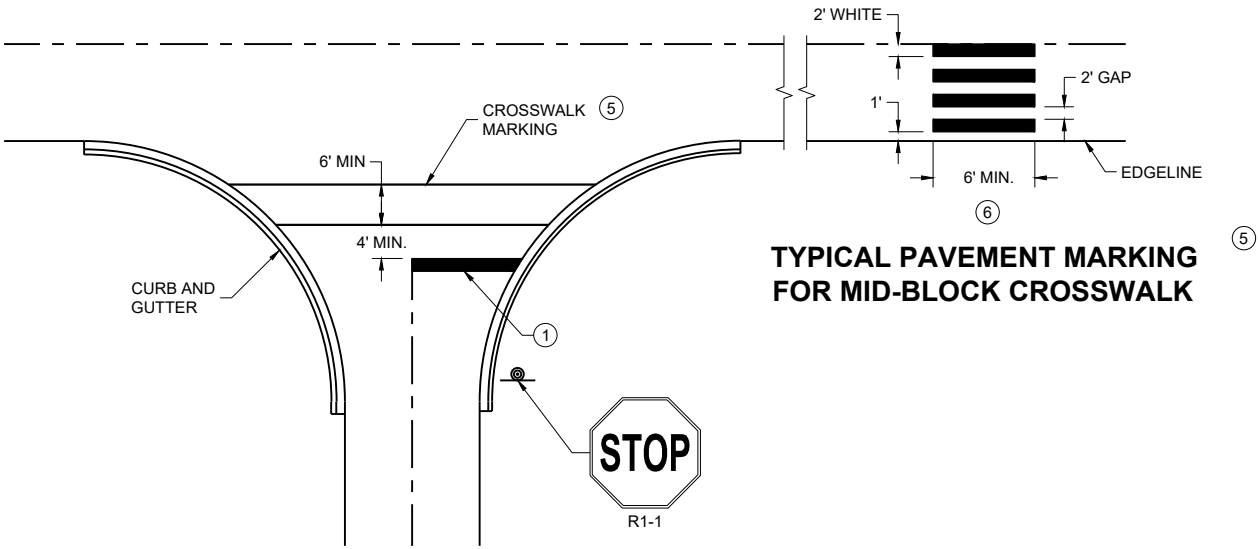
- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE 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



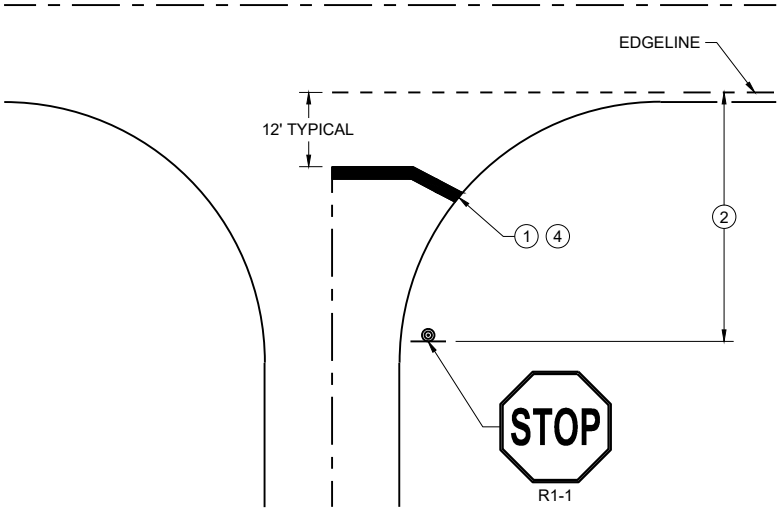
TYPICAL STOP LINE PAVEMENT MARKING WITH CURB AND GUTTER



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

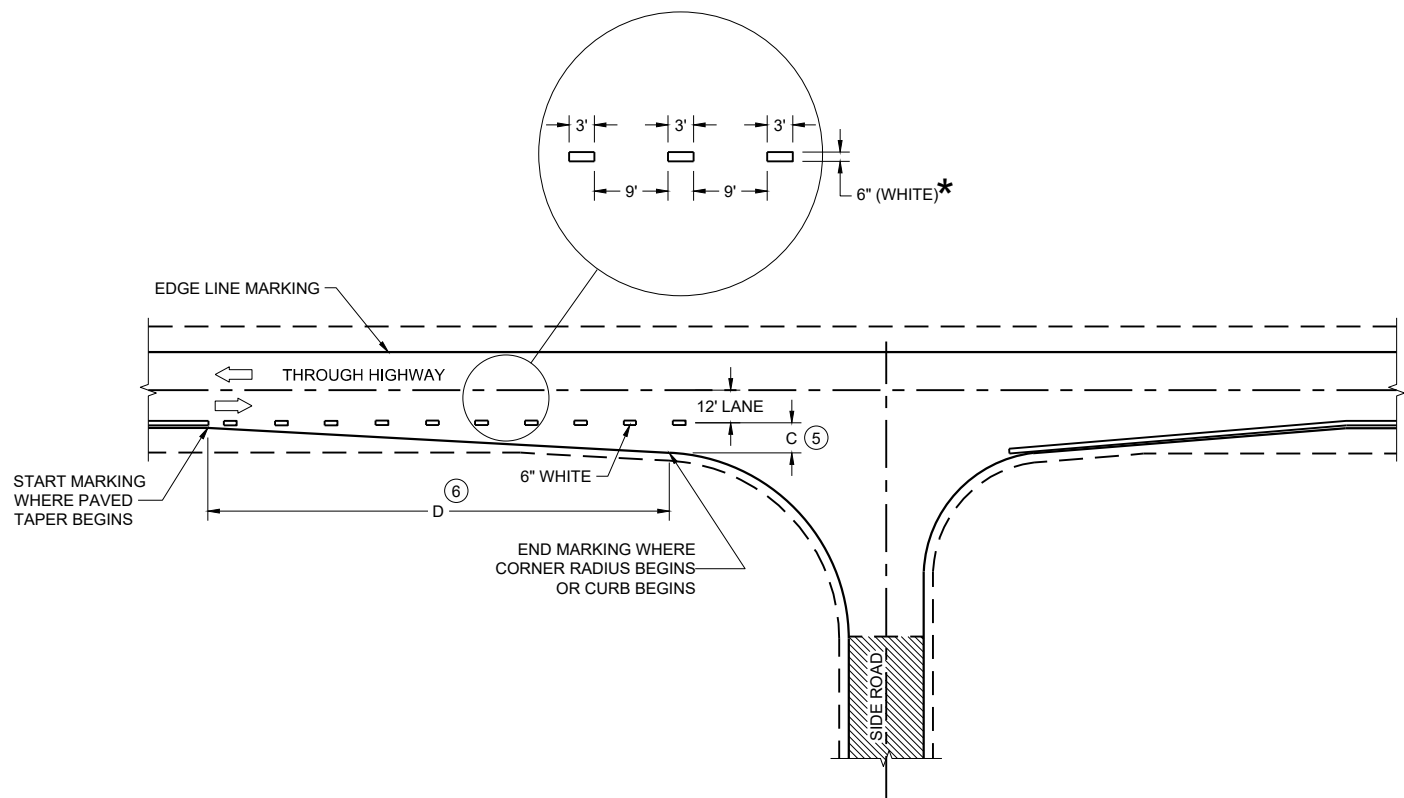


TYPICAL STOP LINE PAVEMENT MARKING FOR SIDE ROADS WITH CROSSWALK MARKING

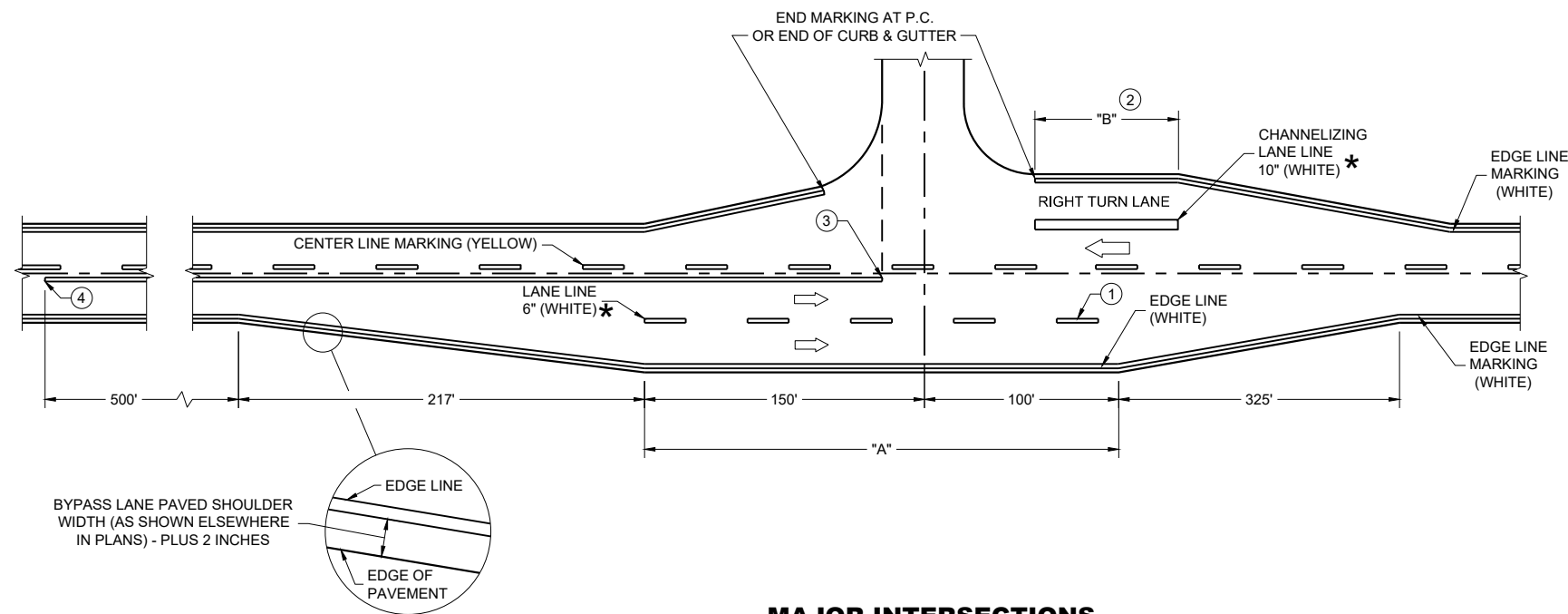


TYPICAL STOP LINE PAVEMENT MARKING WITHOUT CURB AND GUTTER

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



MINOR INTERSECTION



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

\*CONFIRM MARKING LINE WIDTH WITH THE MISCELLANEOUS QUANTITIES

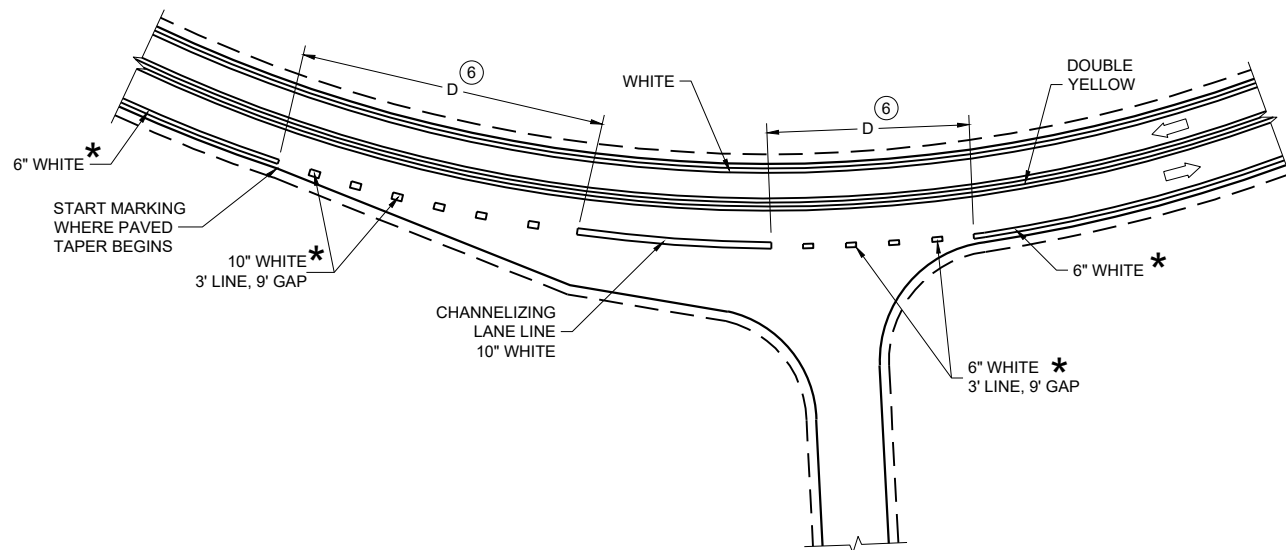
GENERAL NOTES

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

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

LEGEND

➡ DIRECTION OF TRAVEL







INTERSECTION ON OUTSIDE OF CURVE

PAVEMENT MARKING  
(INTERSECTIONS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

LEGEND

-  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.

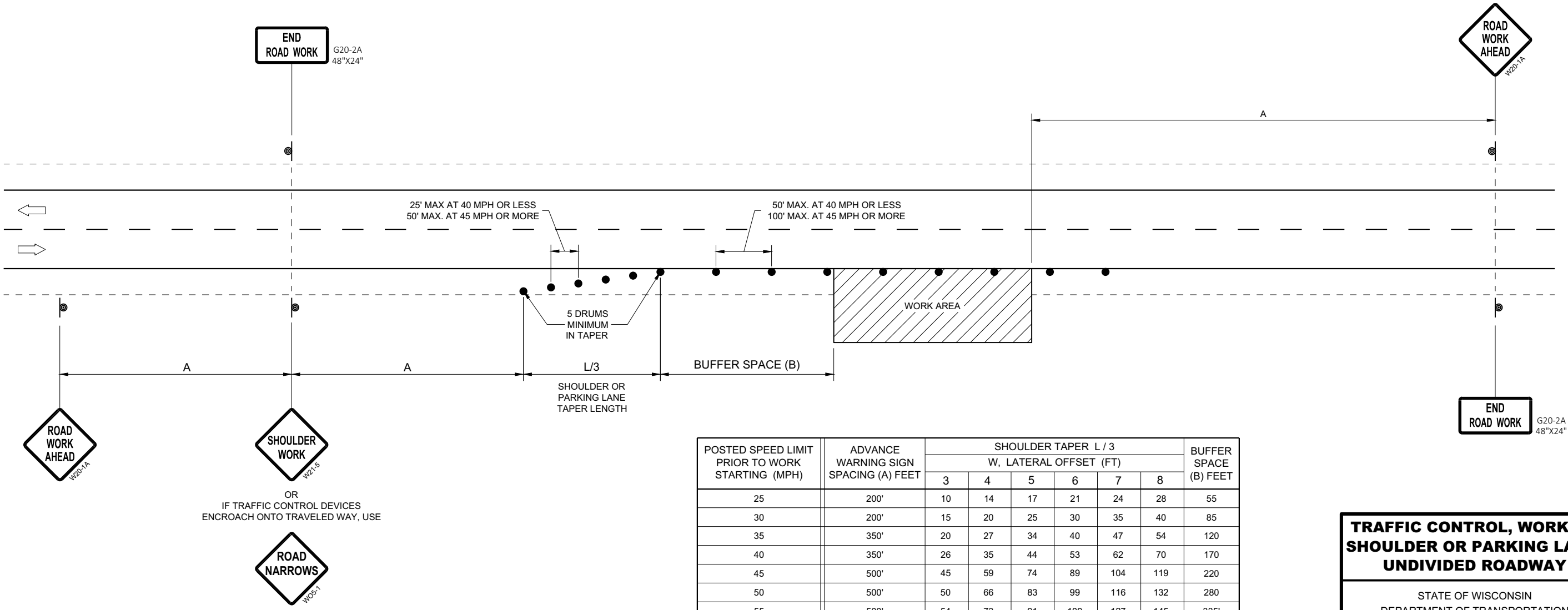
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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. G20-2A SIGNS MAY ALSO BE OMITTED IF DURATION OF WORK IS LESS THAN 7 CONTINUOUS DAYS AND NIGHTS.

6

6



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3						BUFFER SPACE (B) FEET
		W, LATERAL OFFSET (FT)						
		3	4	5	6	7	8	
25	200'	10	14	17	21	24	28	55
30	200'	15	20	25	30	35	40	85
35	350'	20	27	34	40	47	54	120
40	350'	26	35	44	53	62	70	170
45	500'	45	59	74	89	104	119	220
50	500'	50	66	83	99	116	132	280
55	500'	54	73	91	109	127	145	335'

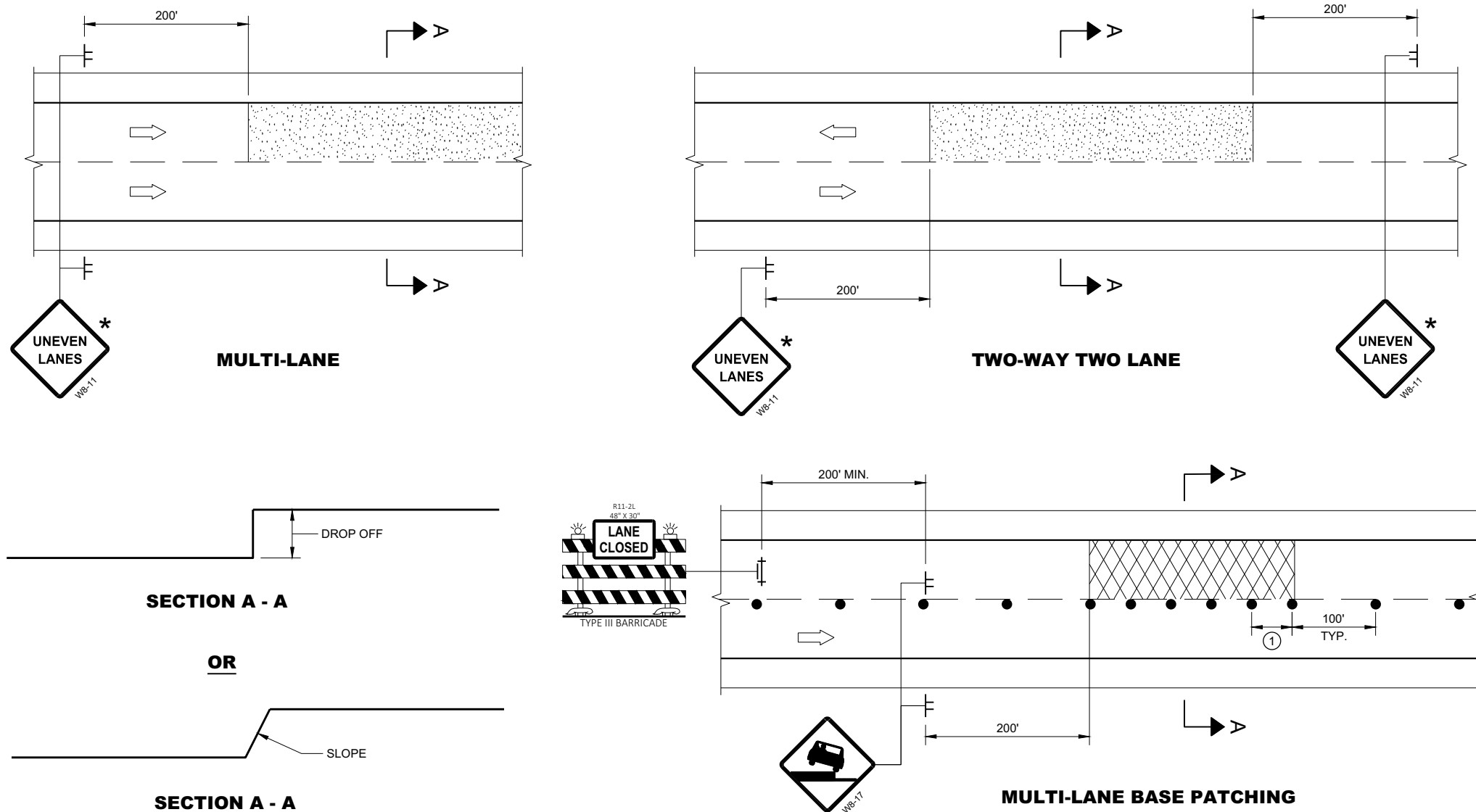
TRAFFIC CONTROL, WORK ON  
SHOULDER OR PARKING LANE,  
UNDIVIDED ROADWAY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2020  
DATE

/S/ Andrew Heidtke  
STATEWIDE WORK ZONE TRAFFIC  
SAFETY ENGINEER

FHWA



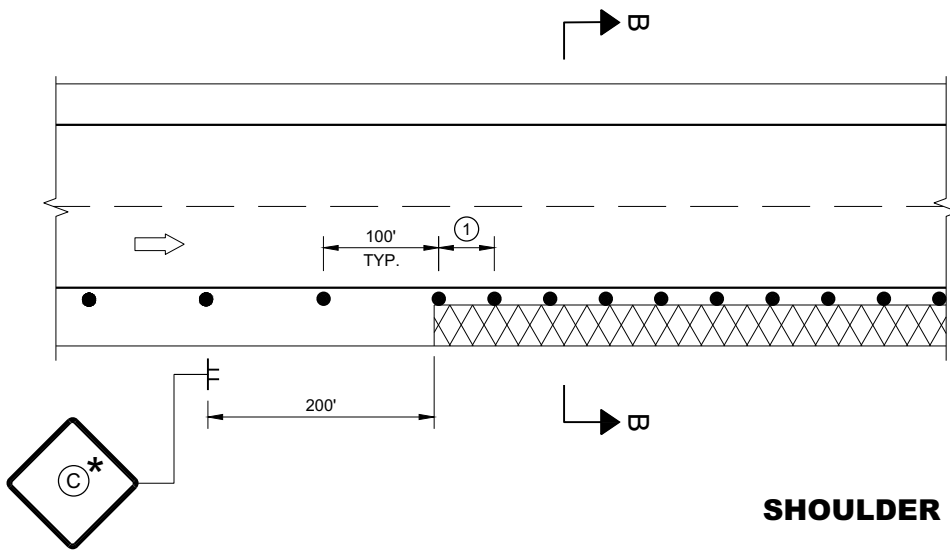
ADJACENT LANE DROP-OFFS

GENERAL NOTES

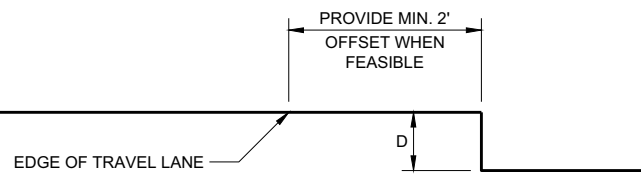
- FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- \* IF THE DROP-OFF 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 (C)
< 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

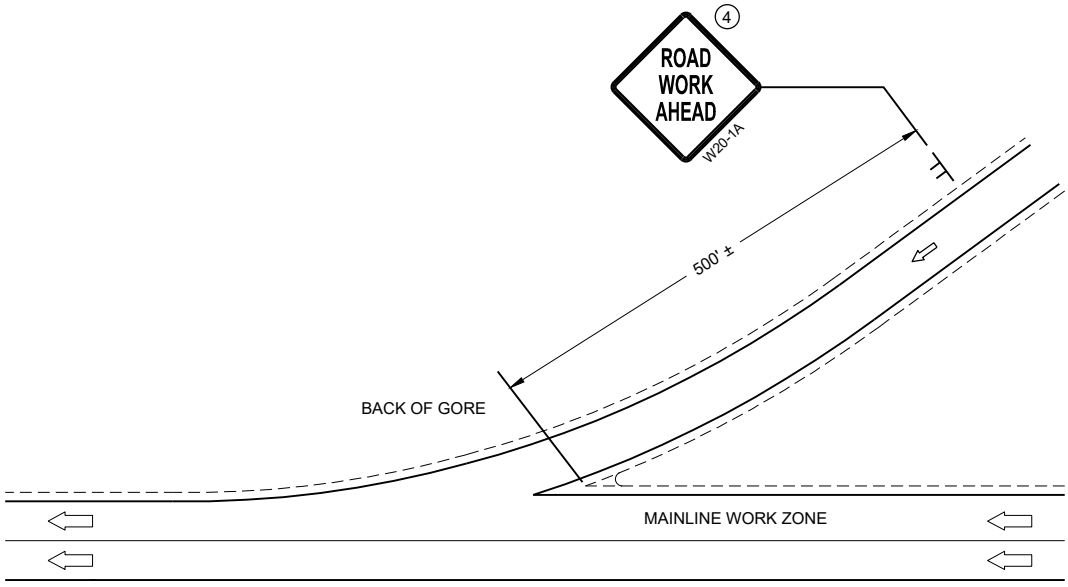
APPROVED  
March 2018  
DATE

/S/ Andrew Heidtke  
WORK ZONE ENGINEER

FHWA

LEGEND

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



GENERAL NOTES

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

DISTANCE BETWEEN VEHICLES MAY VARY ACCORDING TO TERRAIN, SIGHT DISTANCE AND OTHER FACTORS. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE REAR, SHADOW VEHICLES SHOULD MAINTAIN THE MINIMUM DISTANCE FROM THE WORK VEHICLE AND PROCEED AT THE SAME SPEED AS THE WORK VEHICLE. SHADOW VEHICLES SHOULD SLOW DOWN IN ADVANCE OF VERTICAL AND HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- 2

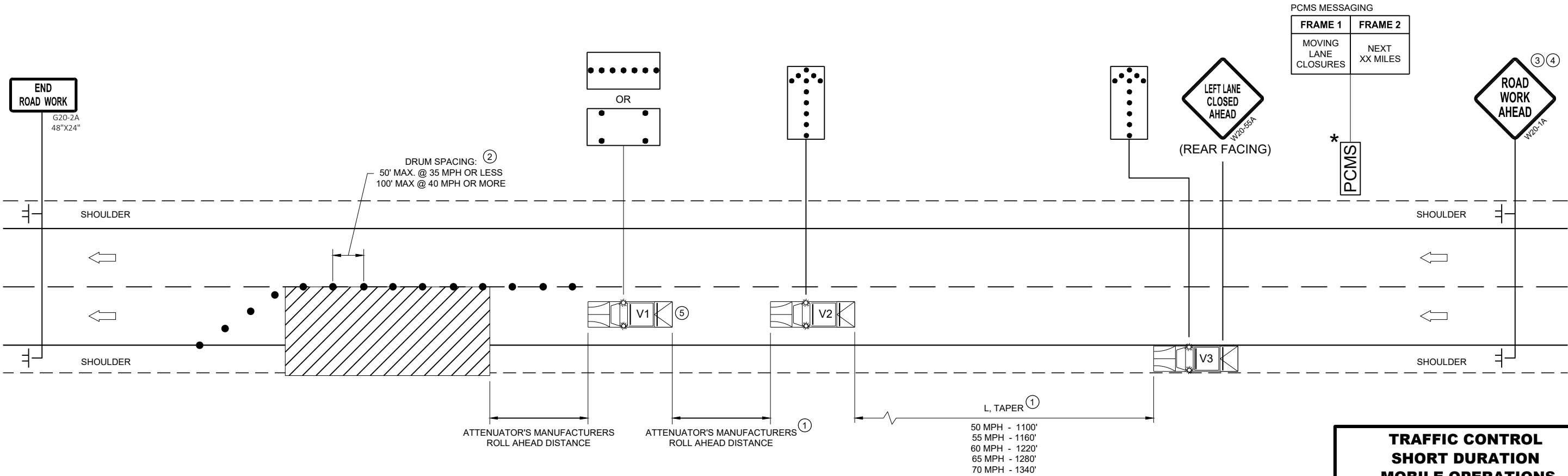
DRUMS ARE TO BE USED FOR BRIDGE DECK SEALING AND OTHER PROJECTS THAT REQUIRE DELINEATION.
- 3

WITHIN 5 MILES, RELOCATE SIGNS AS WORK PROGRESSES AND NECESSARY OR AS DIRECTED BY THE ENGINEER.
- 4

SIGN NOT REQUIRED IF MOVING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- 5

SHADOW VEHICLE 1 (V1) IS OPTIONAL

\* PCMS OPTIONAL



TRAFFIC CONTROL  
SHORT DURATION  
MOBILE OPERATIONS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
August 2021  
DATE

/S/ Andrew Heidtke  
WORK ZONE ENGINEER

FHWA

GENERAL NOTES

DRAWING NOT TO SCALE. ALL SIGNS AND POSTS ON THIS SHEET SHALL BE PAID FOR WITH 'TRAFFIC CONTROL SIGNS' BID ITEM. ALL SIDE ROADS WHICH ARE UNDER CONSTRUCTION OF CURB AND GUTTER AND/OR GRADING SHALL BE ADEQUATELY SIGNED.

ALL SIGNS AND DEVICES SHALL BE IN CONFORMANCE WITH THE WISCONSIN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (WMUTCD). SIGN LAYOUTS SHALL BE IN ACCORDANCE WITH THE WISDOT STANDARD SIGN PLATES.

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

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



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

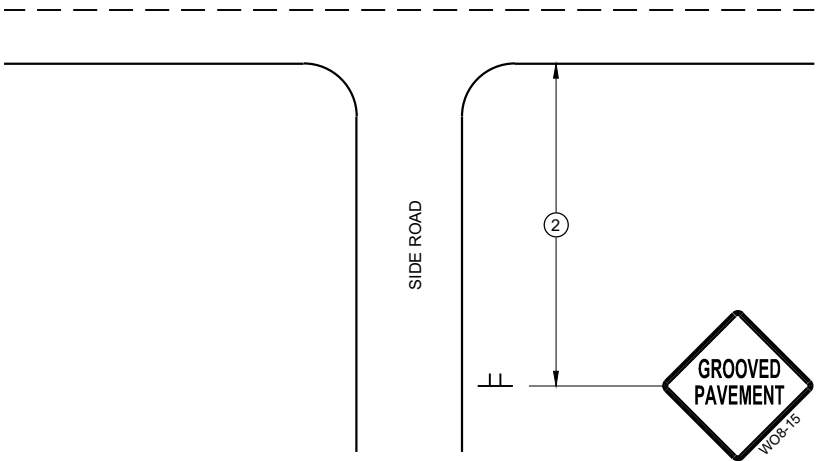
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

SEE 15C34 FOR ADDITIONAL TRAFFIC CONTROL SIGNING WHEN CENTERLINE PAVEMENT MAKINGS ARE MISSING. 'DO NOT PASS' SIGNS MUST BE INSTALLED ON THE SAME DAY AS MILLING OPERATIONS.

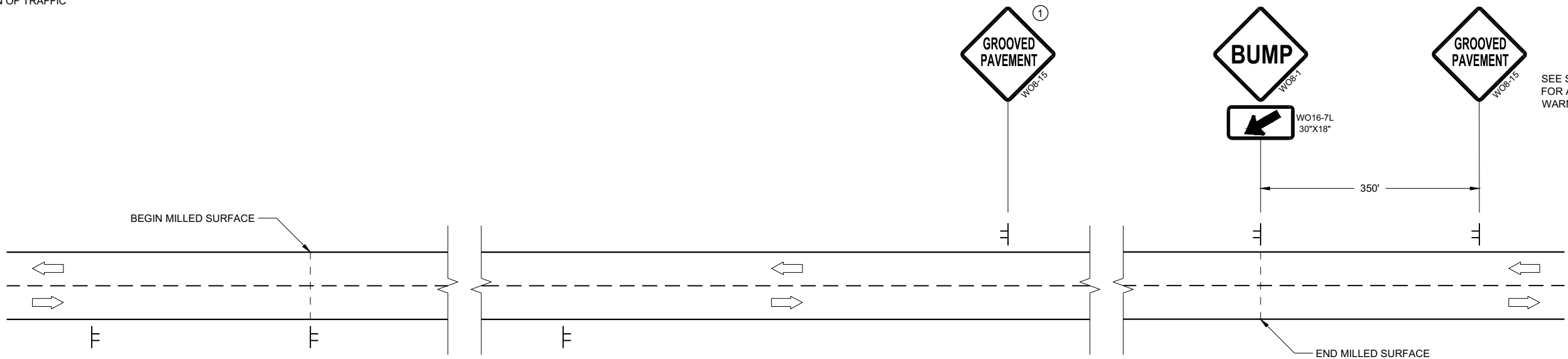
- 1 PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- 2 PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

LEGEND

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



TYPICAL SIDE ROAD APPROACH  
SIGN DETAIL



SEE SDD15C04  
FOR ADVANCE  
WARNING SIGNS

SEE SDD15C04  
FOR ADVANCE  
WARNING SIGNS

DETAIL FOR SIGNING ON MILLED SURFACES





TRAFFIC CONTROL,  
SIGNING ON ROADWAYS  
WITH MILLED SURFACES

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

LEGEND

- V1  
WORK VEHICLE
- V2  
SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  FLASHING ARROW PANEL (CAUTION)
-  WORK AREA
-  DIRECTION OF TRAFFIC

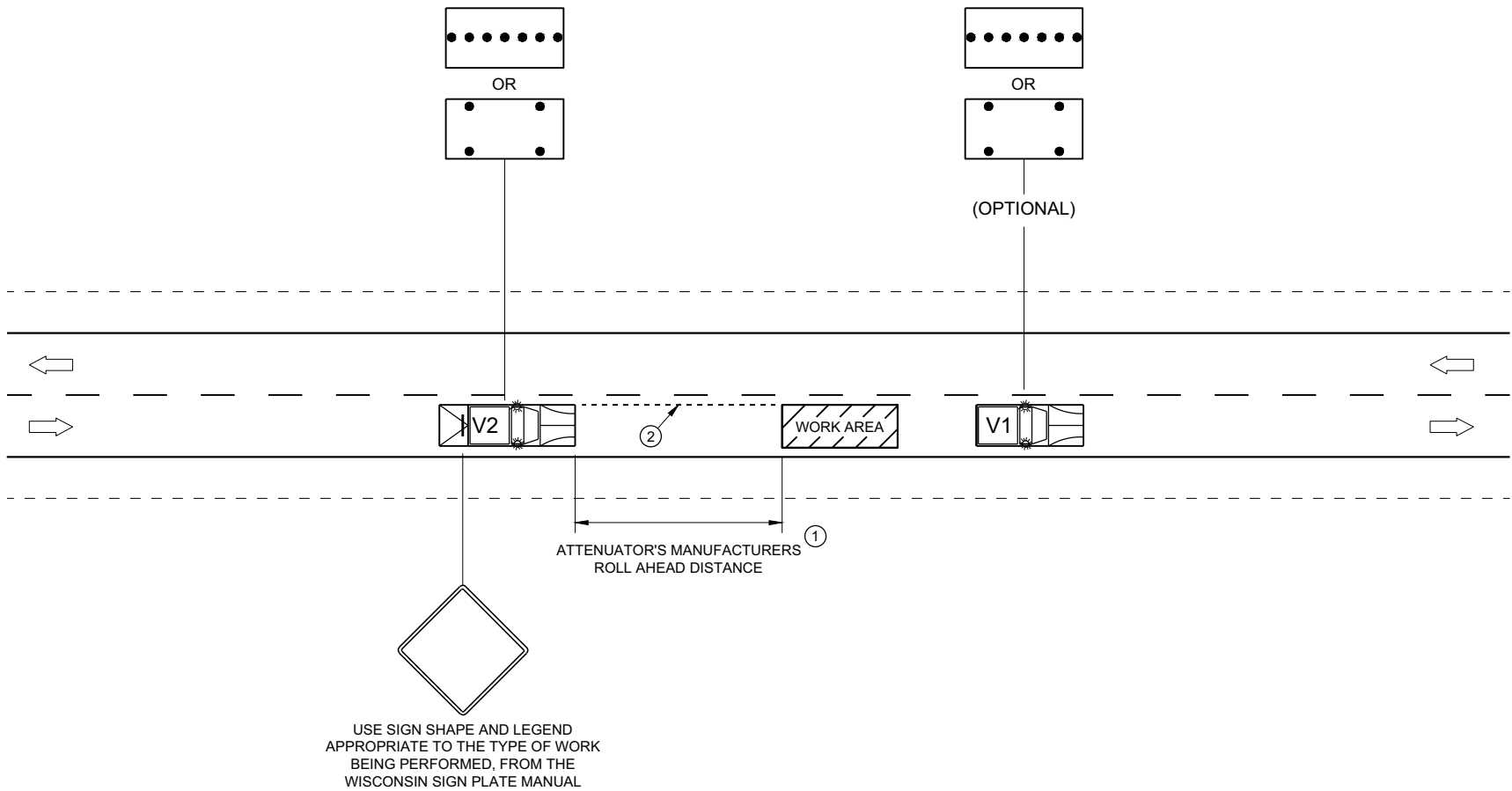
POSTED SPEED PRIOR TO WORK STARTING (MPH)	DECISION SIGHT DISTANCE (D)
0 - 25	550'
30	550'
35	700'
40	700'
45	900'
50	900'
55	1200'

GENERAL NOTES

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

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

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



TRAFFIC CONTROL,  
MOBILE OPERATIONS ON  
AN UNDIVIDED ROADWAY

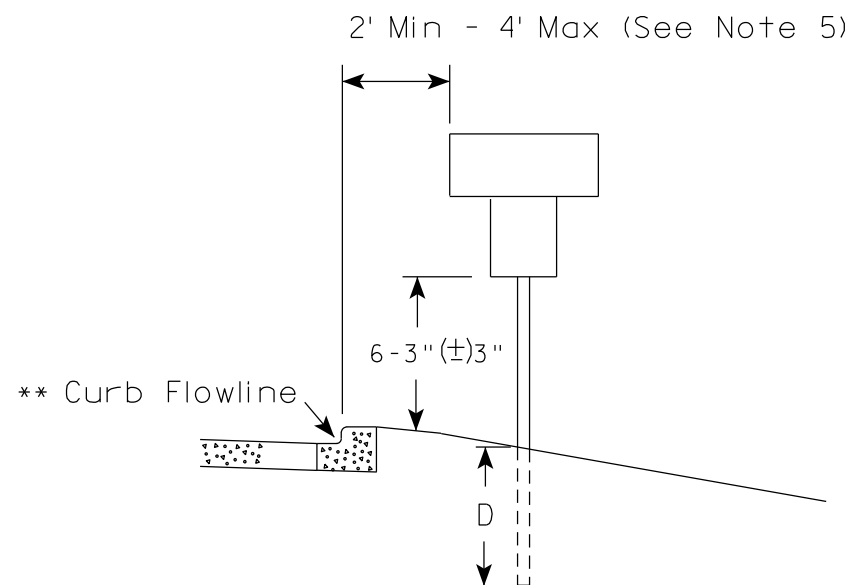
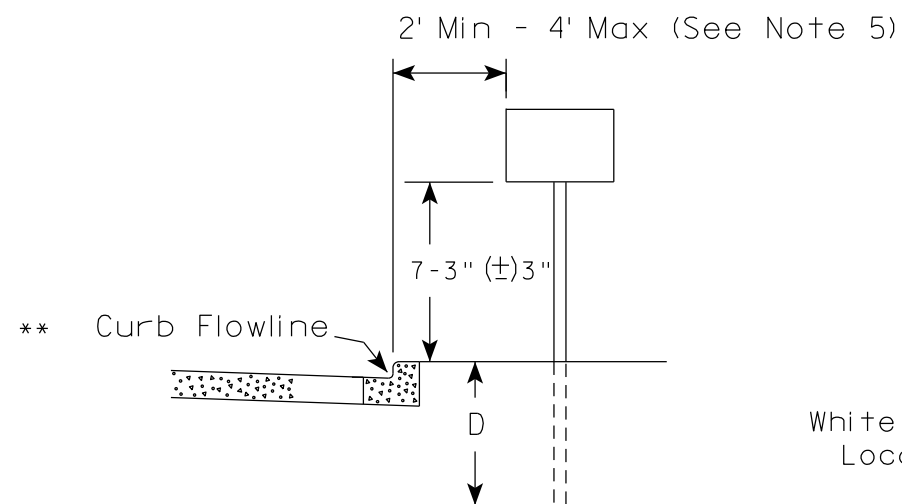
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021  
DATE

/S/ Andrew Heidtke  
STATEWIDE WORK ZONE TRAFFIC  
SAFETY ENGINEER

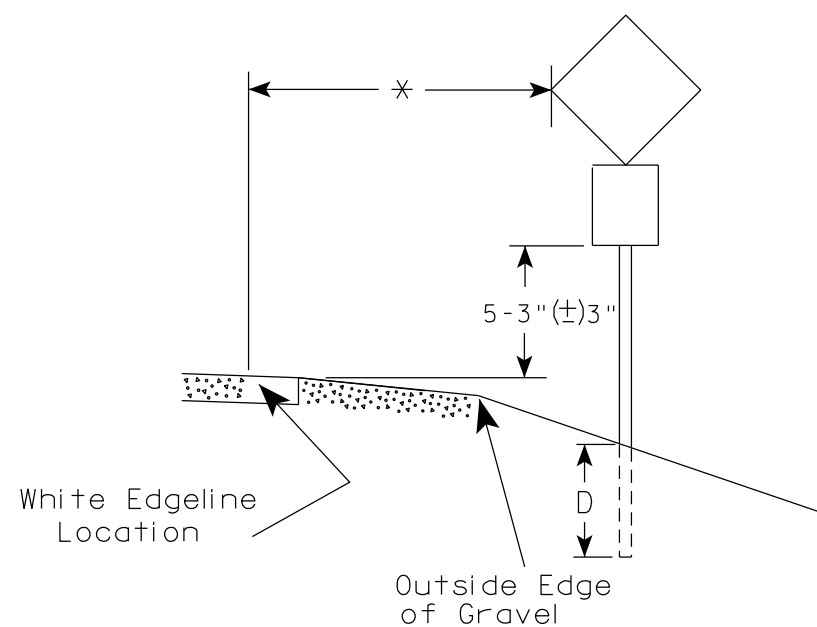
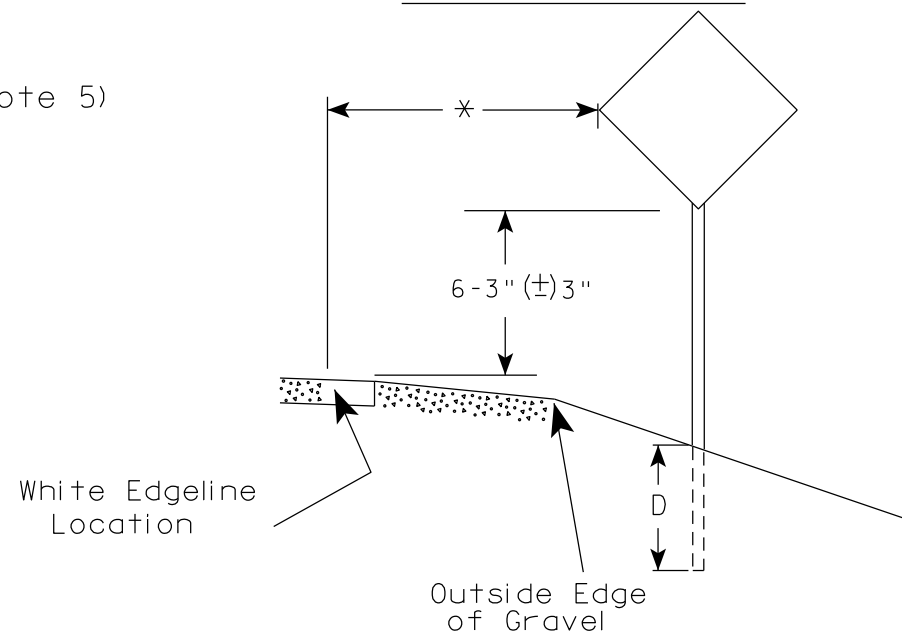
FHWA

## URBAN AREA



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

## RURAL AREA (See Note 2)



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

POST EMBEDMENT DEPTH

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

## GENERAL NOTES

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.

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

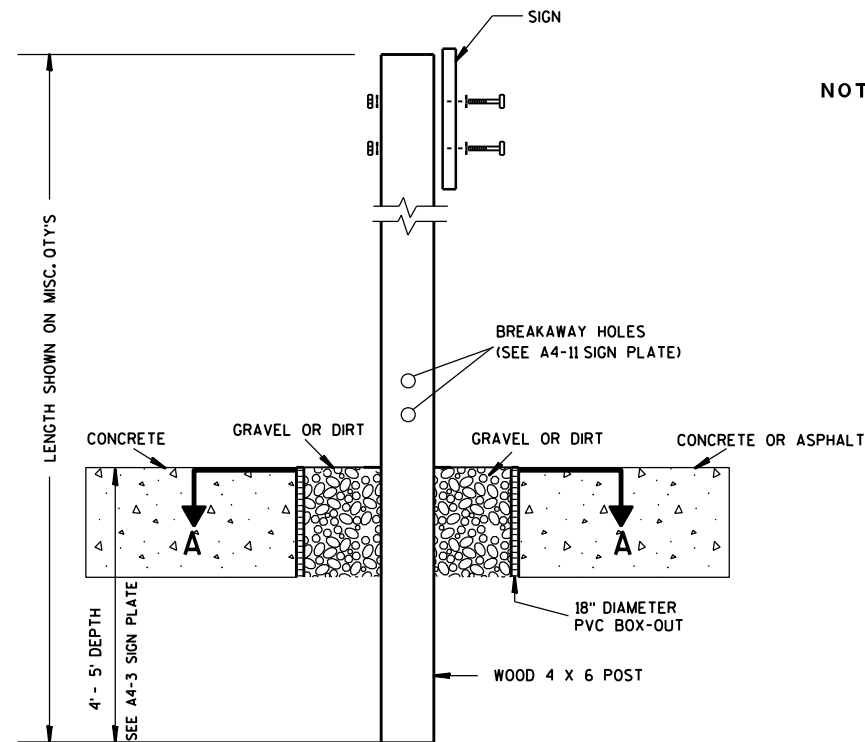
PROJECT NO:

HWY:

COUNTY:

SHEET NO:

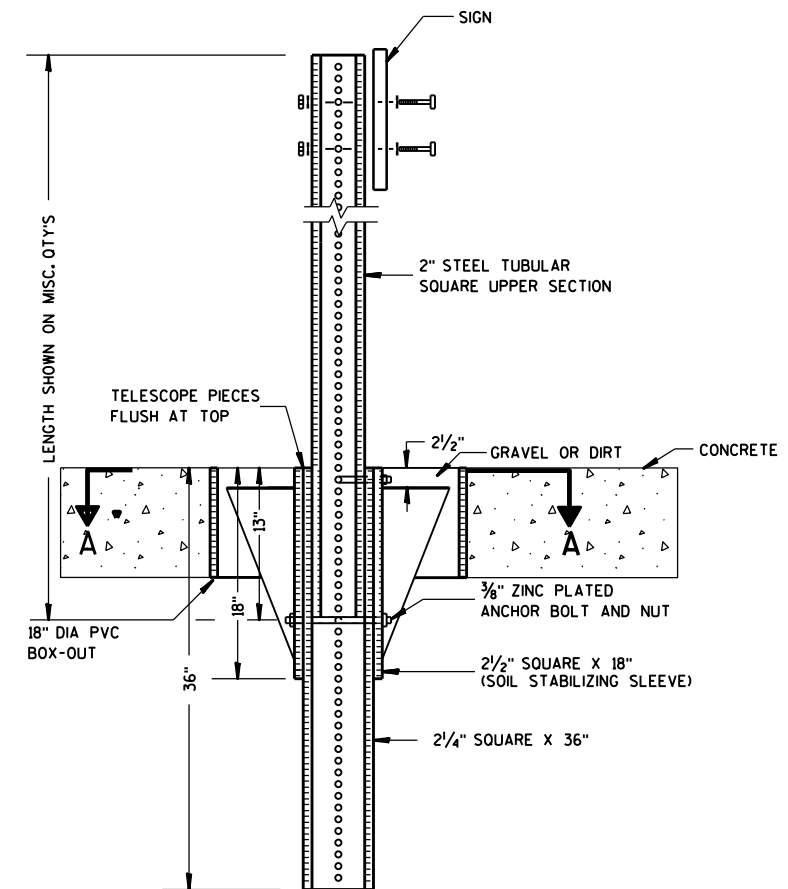
E



### ELEVATION VIEW

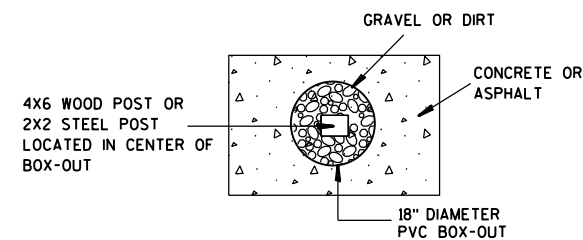
DETAIL OF WOOD 4 X 6 SIGN POST IN BOX-OUT

- 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 PLATE NO. A4-3B.1

PROJECT NO:

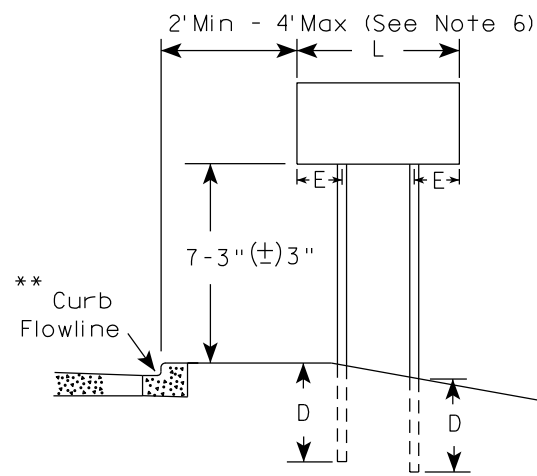
HWY:

COUNTY:

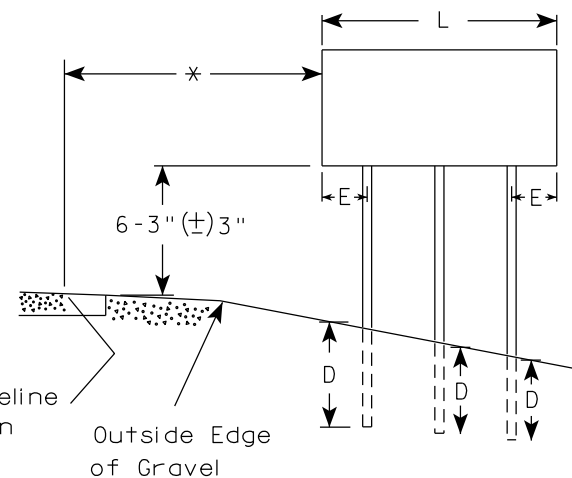
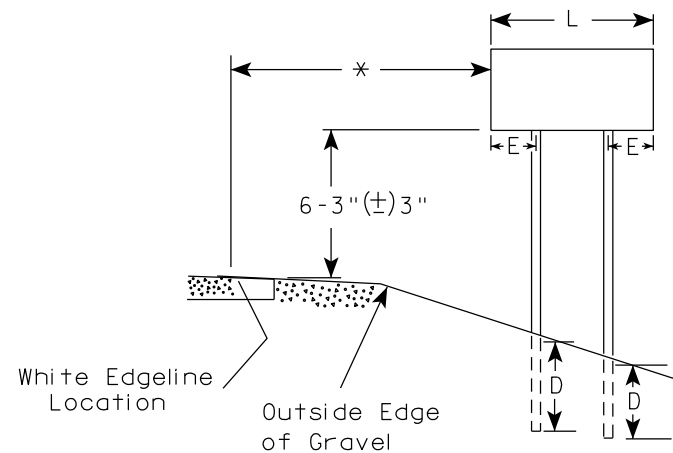
SHEET NO:

E

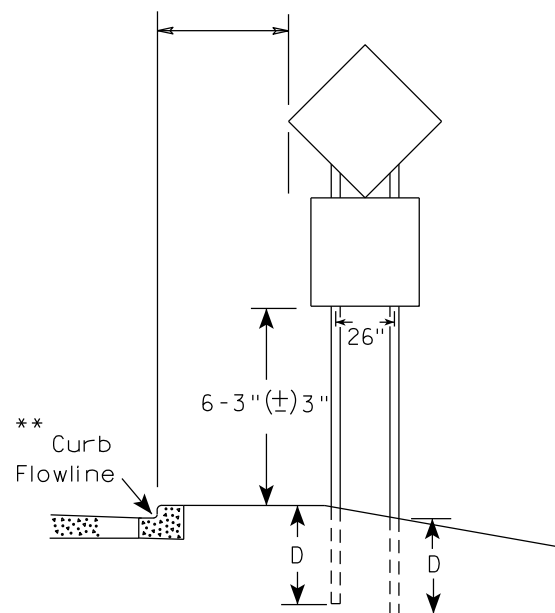
URBAN AREA



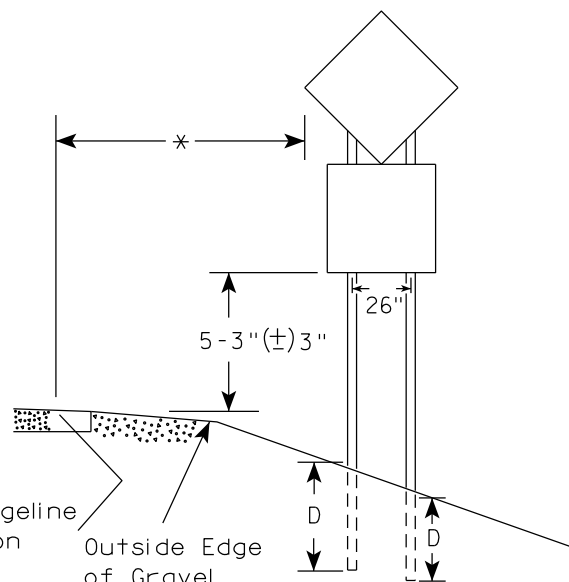
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

GENERAL NOTES

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

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

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

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

\*\*\*

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

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

POST EMBEDMENT DEPTH

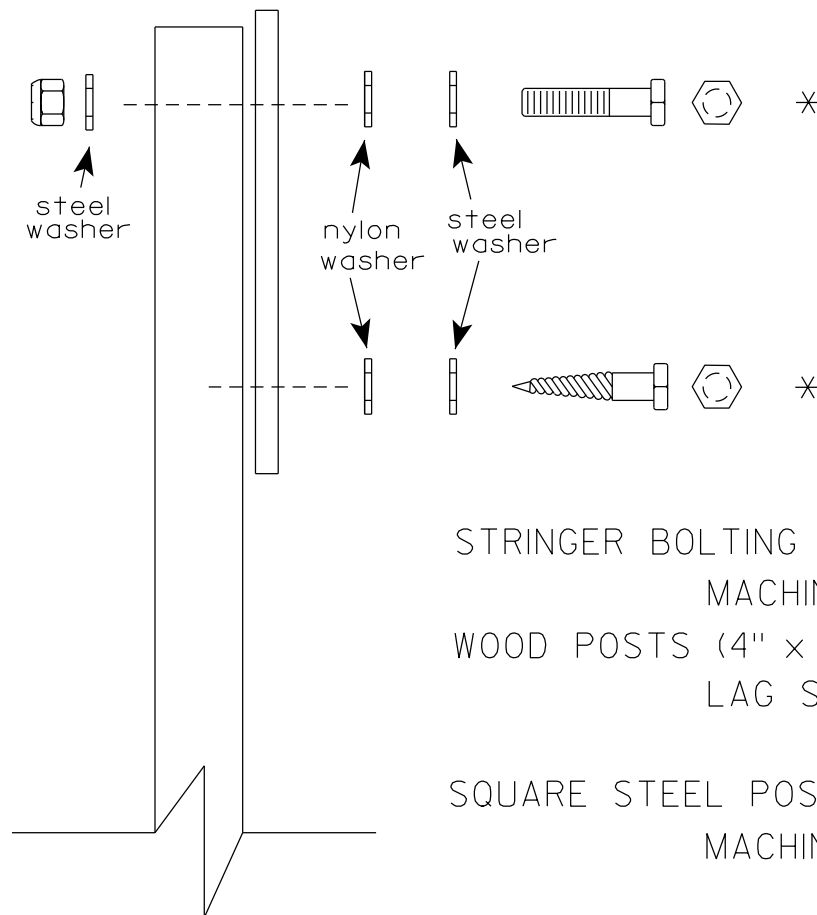
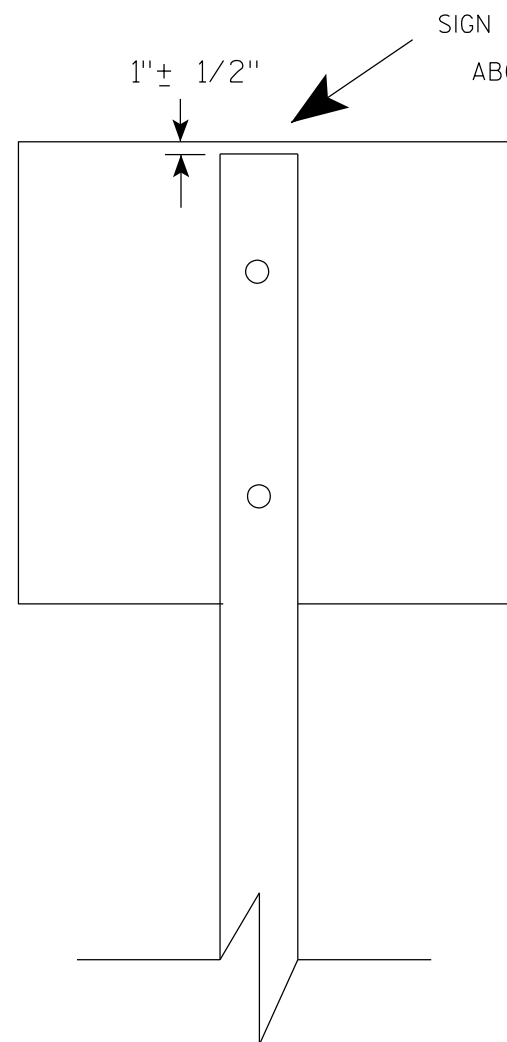
Area of Sign Installation ( Sq.Ft. )	D ( Min )
20 or Less	4'
Greater than 20	5'

TYPICAL INSTALLATION  
OF TYPE II SIGNS  
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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



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

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


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

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

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

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

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

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

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

Diagram illustrating the construction of a vertical antenna assembly. The assembly consists of a central vertical structure with a total height of 19 inches. The top section is a 2 1/2 inch Telespar Tube, which is 4 inches wide. The main body is a 4 inch x 10 inch x 10 GA. Steel Plate (cut as shown) welded to all four corners of the Telespar Tube. The main body is divided into three sections: a top section of 2 1/2 inches, a middle section of 10 inches, and a bottom section of 3 1/2 inches. The bottom section is a 3 1/2 inch wide base.

LENGTH SHOWN ON MISC. Q'TYS  
 18" DIA SCHEDULE 40 PVC BOX-OUT  
 TELESCOPE PIECES FLUSH AT TOP  
 36"  
 18"  
 13"  
 2 1/2"  
 2 1/4" SQUARE X 36"  
 2 1/2" SQUARE X 18" (SOIL STABILIZING SLEEVE)  
 3/8" ZINC PLATED ANCHOR BOLT AND NUT  
 3/8" ZINC PLATED CORNER ANCHOR BOLT AND NUT  
 ALL HOLES 7/16" SPACED 1" C-C ALL FOUR SIDES  
 2" STEEL TUBULAR SQUARE UPPER SECTION  
 SEE SIGN PLATE A4-8 FOR BOLT WASHER, & NUT MATERIAL  
 SIGN  
 2 1/2" GRAVEL OR DIRT

LENGTH SHOWN ON MISC. QTY'S

TELESCOPE PIECES FLUSH AT TOP

2" STEEL TUBULAR SQUARE UPPER SECTION

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

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

1"

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

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

2 1/4" SQUARE X 36"

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

SIGN

3/8" ZINC PLATED CORNER  
ANCHOR BOLT AND NUT

DIRECTION  
OF TRAFFIC

SECTION A-A

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

TUBULAR STEEL  
SIGN POST  
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED Matthieu R. Rauch

for State Traffic Engineer

DATE 2/05/15 PLATE NO. A4-9.9

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

FILE NAME : C:\CAEFiles\Projects\tr\_stdplate\A49.DGN

PLOT DATE : 05-FEB-2015 17:09

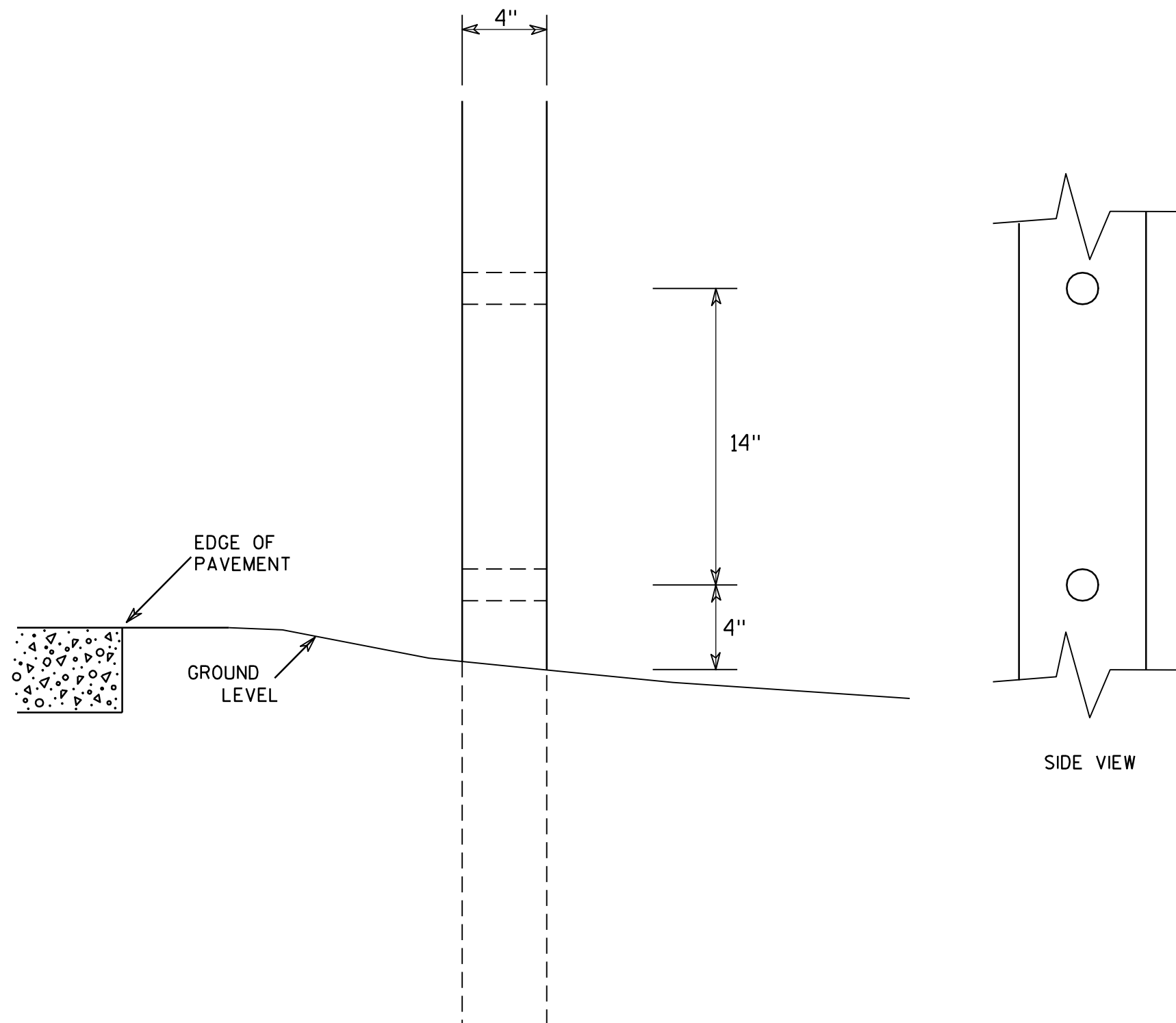
PLOT BY : mscs\_ja

PLOT NAME :

PLOT SCALE : 13.659812:1.000000

WISDOT/CADDS SHEET 42

7



### GENERAL NOTES

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

7

## 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

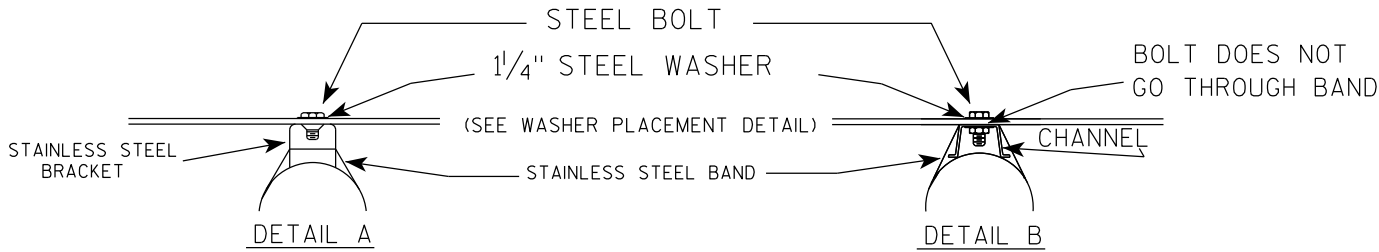
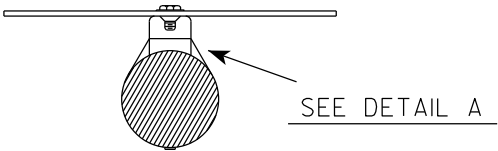
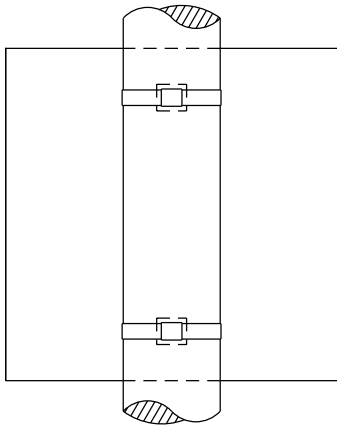
COUNTY:

SHEET NO:

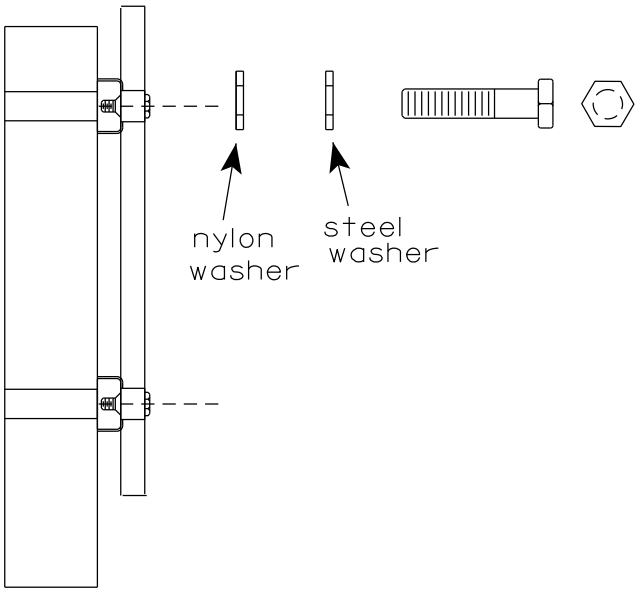
E

BANDING

SINGLE SIGN



WASHER PLACEMENT

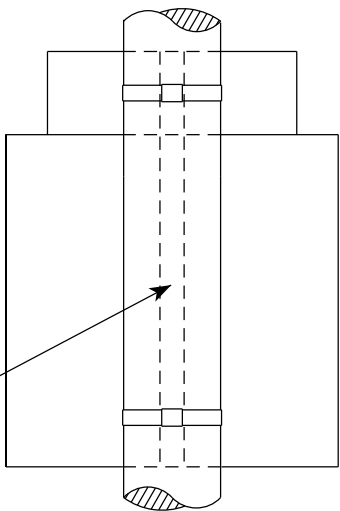


WASHERS (ALL POSTS) -  
1-1/4" O.D. X 3/8" I.D. X 1/16" STEEL  
1-1/4" O.D. X 3/8" I.D. X .080 NYLON  
FOR ALL TYPE H SIGNS

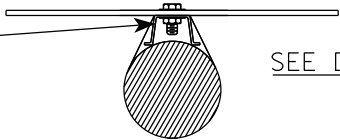
GENERAL NOTES

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



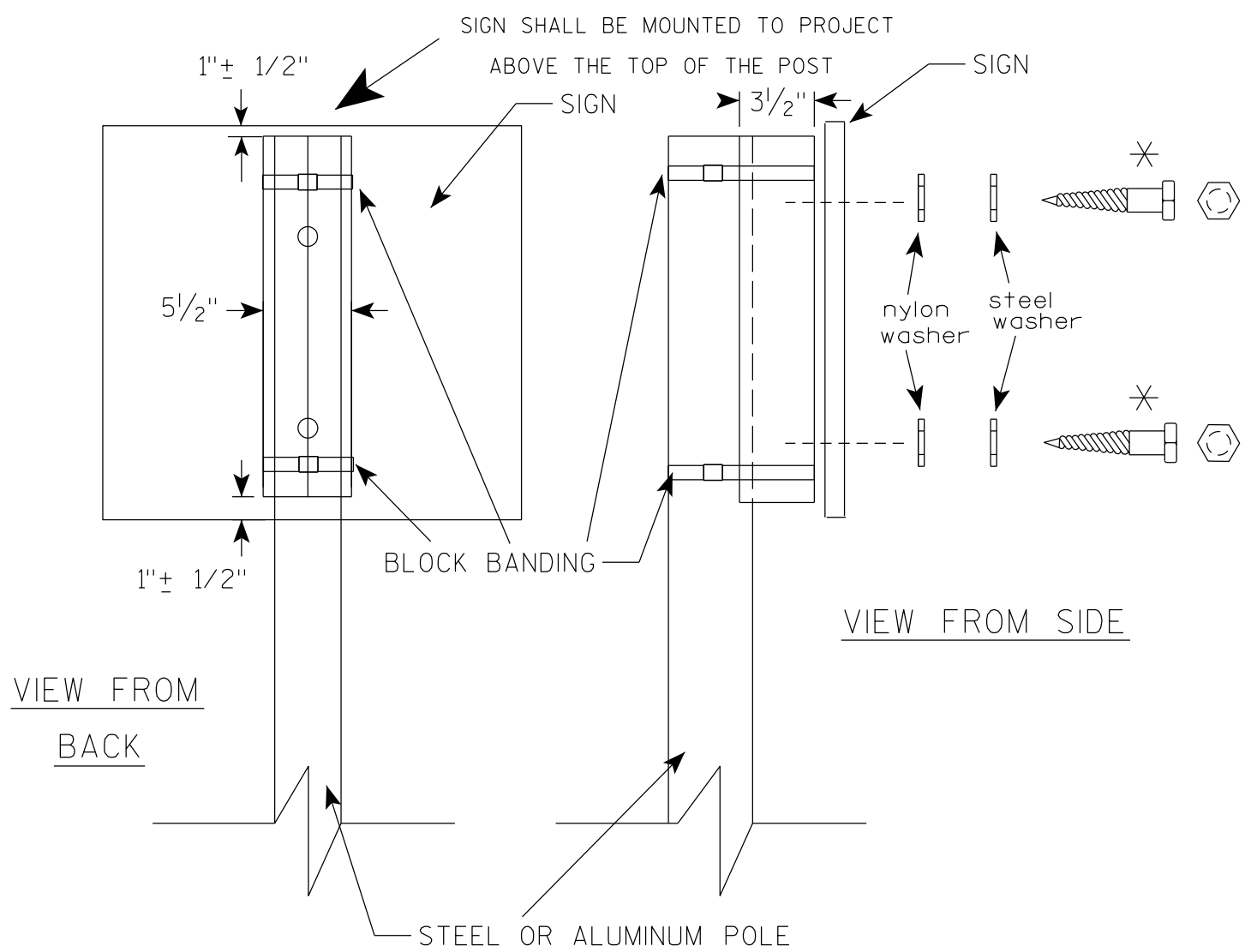
CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET



STANDARD SIGN  
SIGN BANDING DETAILS

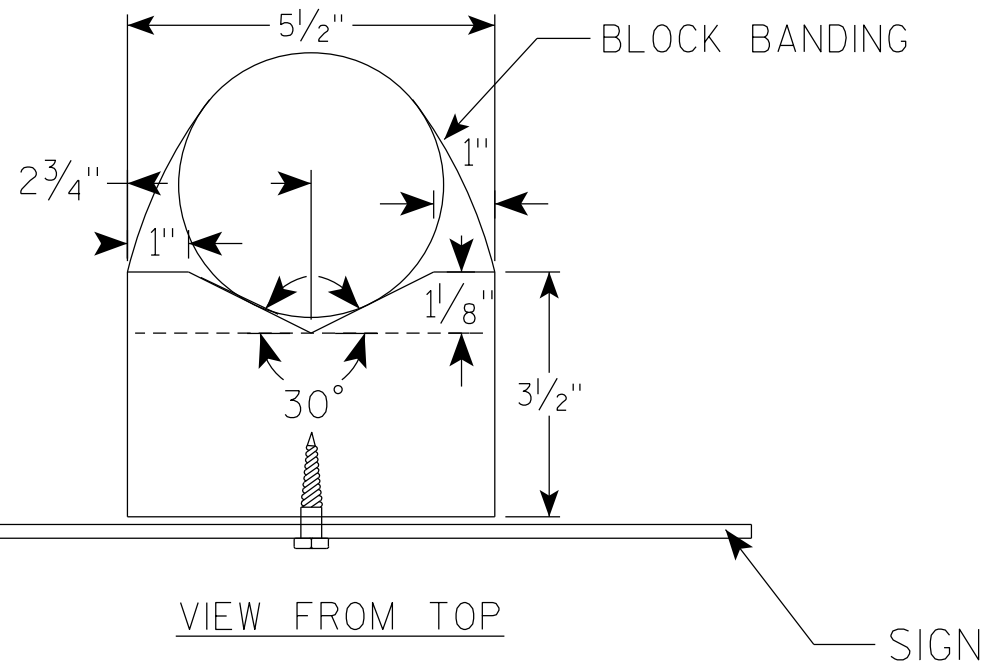
WISCONSIN DEPT OF TRANSPORTATION

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



VIEW FROM  
BACK

VIEW FROM SIDE



VIEW FROM TOP

## GENERAL NOTES

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

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

BLOCK BANDING DETAIL  
( V-BLOCK OPTION )

WISCONSIN DEPT OF TRANSPORTATION

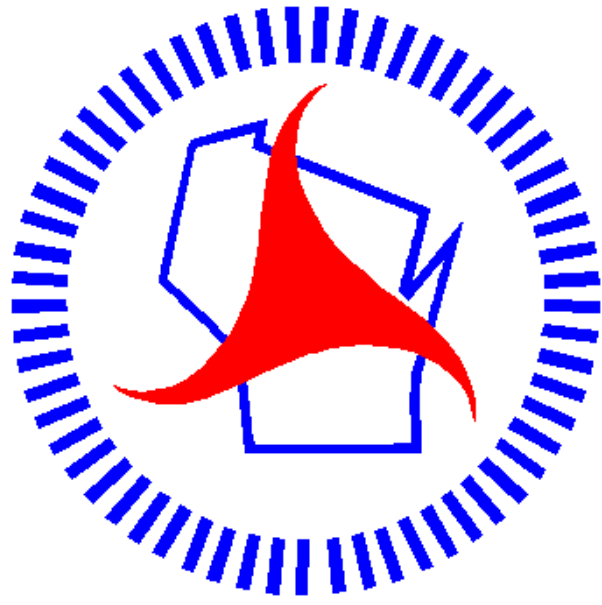
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

PROJECT NO:

SHEET NO:

E



## ***Wisconsin Department of Transportation***

Dedicated people creating transportation solutions  
through innovation and exceptional service.

<http://www.dot.wisconsin.gov>