

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
5070-01-72	WISC 2022508	1

# STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

## PLAN OF PROPOSED IMPROVEMENT

# STH 58 - ROCK SPRINGS

STH 58 TO EAST COUNTY LINE

STH 154

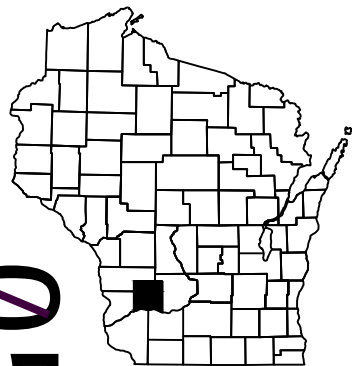
RICHLAND COUNTY

STATE PROJECT NUMBER  
**5070-01-72**

### ORDER OF SHEETS

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

TOTAL SHEETS = 56



**05**

### DESIGN DESIGNATION

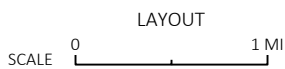
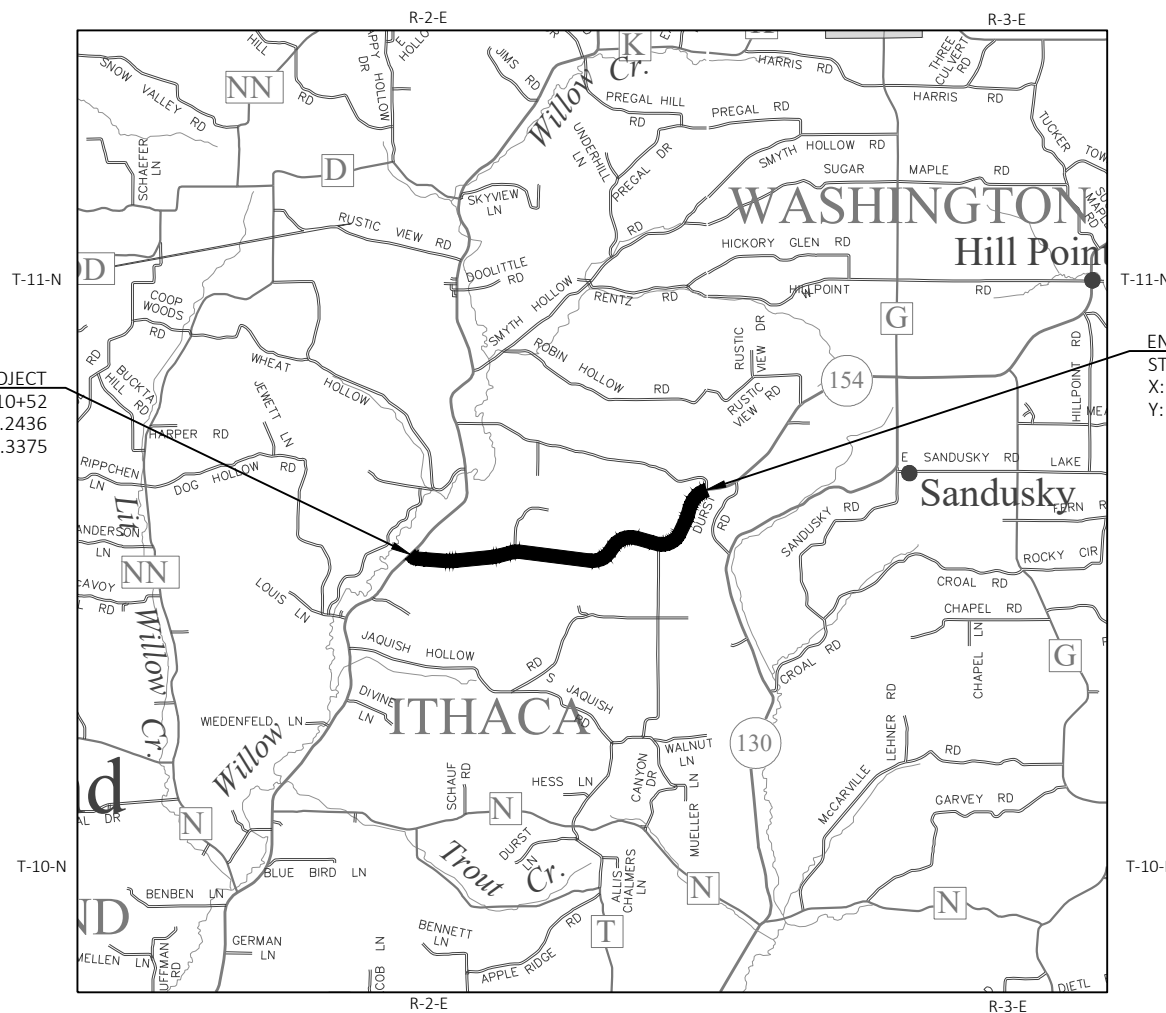
A.A.D.T.	2025	=	540
A.A.D.T.	2045	=	690
D.H.V.		=	18.1%
D.D.		=	60/40
T.		=	10.9%
DESIGN SPEED		=	60 MPH
ESALS		=	150,000

### CONVENTIONAL SYMBOLS

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

**BEGIN PROJECT**  
STA 10+52  
X: 711261.2436  
Y: 462365.3375

**END PROJECT**  
STA 197+68  
X: 727539.3259  
Y: 465986.5941



TOTAL NET LENGTH OF CENTERLINE = 3.545 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, RICHLAND COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

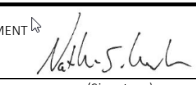
ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD88 (2012).

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WisDOT
Designer	KATHLEEN KLUDY
Project Manager	NATHAN SCHUMAKER
Regional Examiner	SW REGION
Regional Supervisor	DAN KLEINERTZ

APPROVED FOR THE DEPARTMENT

DATE: 5/1/2022   
(Signature)

**STANDARD ABBREVIATIONS**

AC	ACRE	LC.	LONG CHORD
AGG	AGGREGATE	LS	LUMP SUM
<	ANGLE	M.P.	MARKER POST
AE, AEW	APRON ENDWALL	MGAL	1000 GALLONS
ASPH.	ASPHALTIC	N.C.	NORMAL CROWN
A.D.T.	AVERAGE DAILY TRAFFIC	N	NORTH
A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC	NB	NORTHBOUND
B.F.	BACK FACE	NOR	NORMAL
BM	BENCHMARK	NO.	NUMBER
BTWN	BETWEEN	PAV'T	PAVEMENT
CTR.	CENTER	P.L.E	PERMANENT LIMITED EASEMENT
C/L	CENTER LINE	P.C.	POINT OF CURVATURE
Δ	CENTRAL ANGLE OR DELTA	P.I.	POINT OF INTERSECTION
C.E	COMMERCIAL ENTRANCE	P.T.	POINT OF TANGENCY
CONST.	CONSTRUCTION	PCC	PORTLAND CEMENT CONCRETE
CMCP	CORRUGATED METAL CULVERT PIPE	P.E	PRIVATE ENTRANCE
CMP	CORRUGATED METAL PIPE	PGL	PROFILE GRADE LINE
CO.	COUNTY	P.L.	PROPERTY LINE
CTH	COUNTY TRUNK HIGHWAY	R	RADIUS OR RANGE
CR.	CREEK	R/L	REFERENCE LINE
CABC	CRUSHED AGGREGATE BASE COURSE	R.C.C.P.	REINFORCED CONCRETE CULVERT PIPE
CY	CUBIC YARD	REQ'D	REQUIRED
CP	CONTROL POINT OR CULVERT PIPE	RT	RIGHT
C&G	CURB AND GUTTER	R.H.F.	RIGHT HAND FORWARD
D	DEGREE OF CURVE	R/W	RIGHT OF WAY
D.H.V.	DESIGN HOURLY VOLUME	RD.	ROAD
DIA.	DIAMETER	SHLD.	SHOULDER(S)
D.D.	DIRECTIONAL DISTRIBUTION	SHR.	SHRINKAGE
DISCH.	DISCHARGE	S	SOUTH
DMS	DYNAMIC MESSAGE SIGN	SB	SOUTHBOUND
EA	EACH	S.F.	SQUARE FOOT (FEET)
E	EAST	SDD	STANDARD DETAIL DRAWING(S)
EB	EASTBOUND	STH	STATE TRUNK HIGHWAY
ELEC.	ELECTRIC(A)L, ELEC. CABLE	STA.	STATION
EL., ELEV.	ELEVATION	S.E	SUPERELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS	S/L	SURVEY LINE
EXC.	EXCAVATION	SYM	SYMMETRICAL
EXIST	EXISTING	T.	PERCENT TRUCKS
F.F.	FACE TO FACE	TEL.	TELEPHONE
FERT.	FERTILIZER	TEMP.	TEMPORARY
F.E	FIELD ENTRANCE	T.L.E	TEMPORARY LIMITED EASEMENT
F/L, F.L.	FLOW LINE	T.O.C.	TOP OF CURB
GALV.	GALVANIZE	TYP	TYPICAL
H.S.	HIGH STRENGTH	UNCL.	UNCLASSIFIED
CWT	HUNDRED WEIGHT	U.G.	UNDERGROUND (CABLE)
INL	INLET	VAR	VARIABLE
INTER.	INTERSECTION	V.C.	VERTICAL CURVE
IH	INTERSTATE HIGHWAY	V.P.C.	VERTICAL POINT OF CURVATURE
JT.	JOINT	V.P.I.	VERTICAL POINT OF INTERSECTION
LT	LEFT	V.P.T.	VERTICAL POINT OF TANGENCY
L.H.F.	LEFT HAND FORWARD	Wt.	WEIGHT
L.	LENGTH OF CURVE	W	WEST
L.F.	LINEAR FOOT(FEET)	WB	WESTBOUND

**GENERAL NOTES**

- THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA THAT ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES THAT HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES ARE MEMBERS OF DIGGERS HOTLINE.
- APPLY TACK COAT AT A RATE OF 0.07 GAL/SY TO MILLED PAVEMENT SURFACES AND 0.05 GAL/SY BETWEEN LAYERS OF HMA
- HMA PAVEMENT WEIGHT CALCULATIONS ARE BASED ON 112 LB/SY/IN.
- THE CONTRACTOR'S PAVING OPERATIONS SHALL BE CONSISTENT WITH THE PLAN TYPICAL SECTIONS AND CONSTRUCTED TO PREVENT HMA LONGITUDINAL JOINTS FROM BEING LOCATED WITHIN A DRIVING, TURNING, PASSING OR PARKING LANE.



**UTILITY CONTACTS**

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 Russell.w.ryan@ftr.com

LARRY HALLETT  
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 lhallett@rec.coop

**DESIGN CONTACTS**

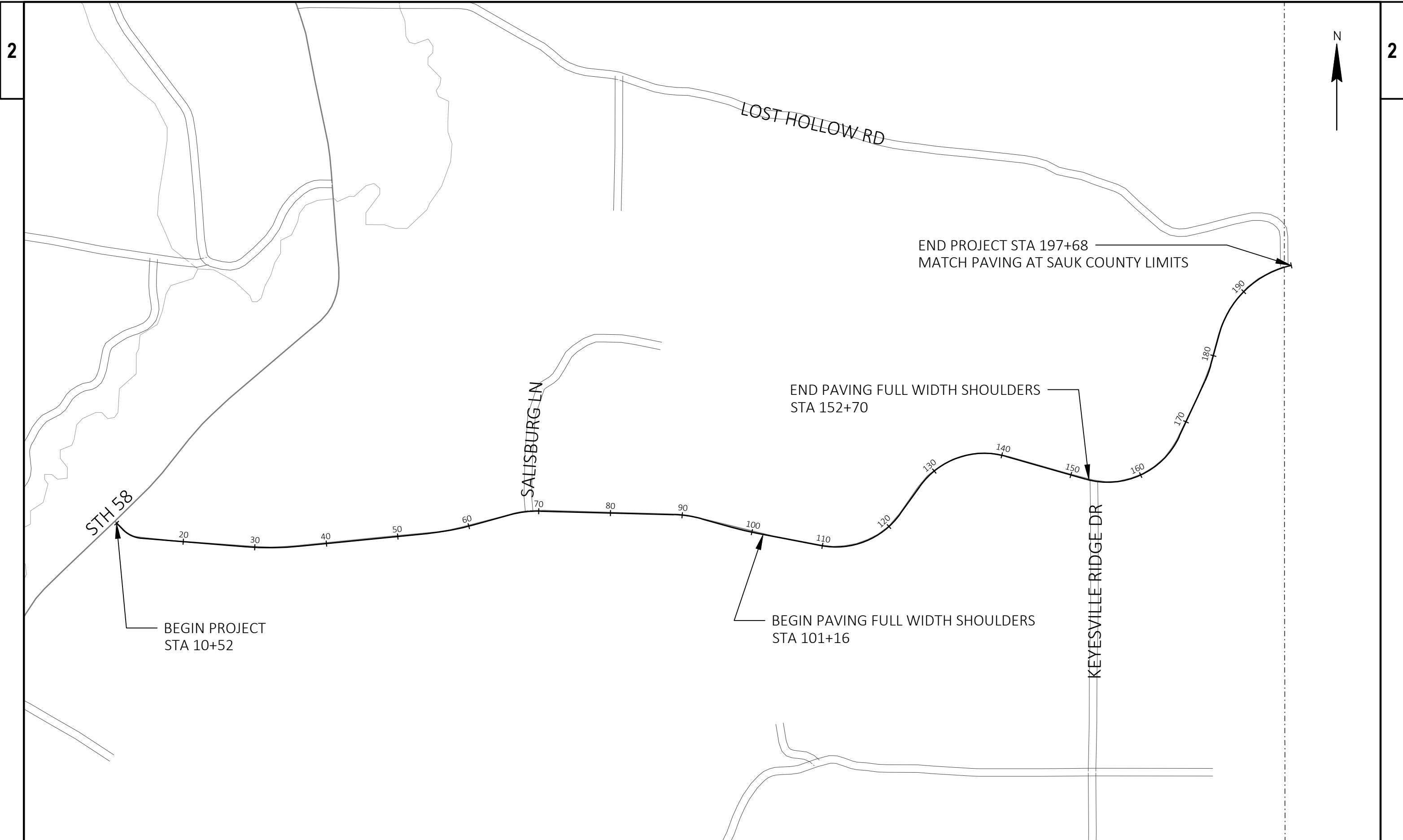
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**DNR LIAISON**

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PROJECT NO: 5070-01-72

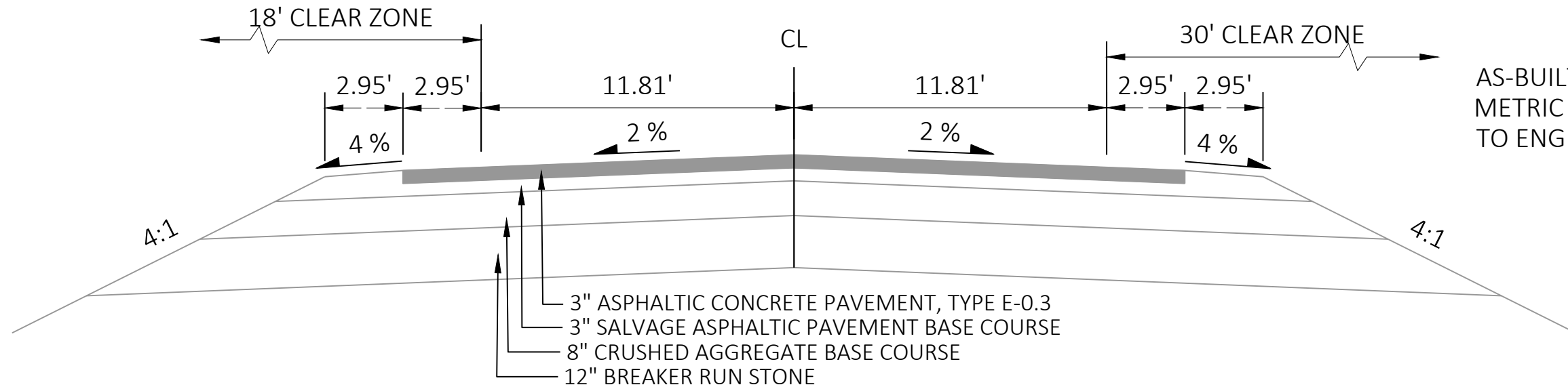
HWY: STH 154

COUNTY: RICHLAND

PROJECT OVERVIEW

SHEET

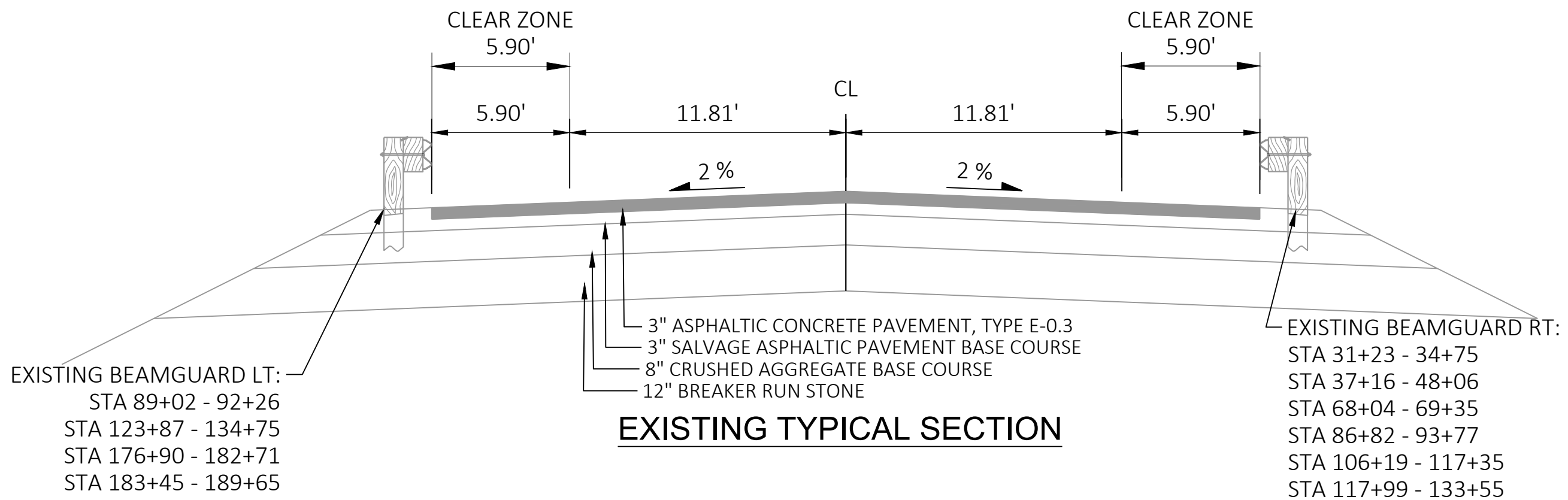
E



AS-BUILT PLANS WERE IN METRIC AND CONVERTED TO ENGLISH.

**EXISTING TYPICAL SECTION**

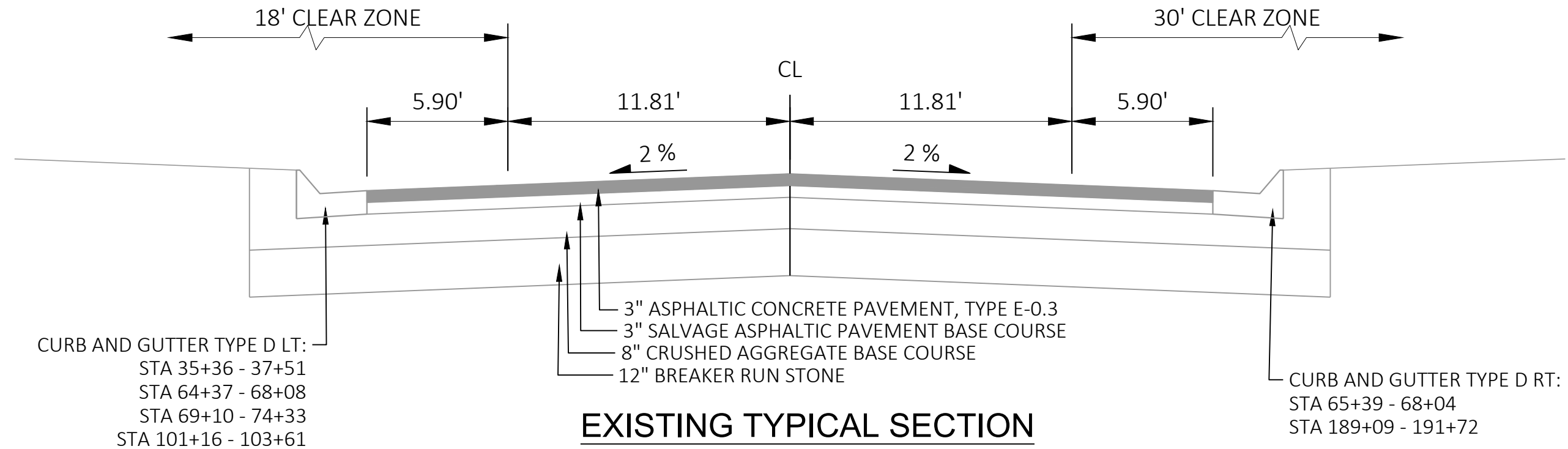
- STA 10+52 - 31+23
- STA 34+75 - 35+36
- STA 48+06 - 64+37
- STA 74+33 - 86+82
- STA 93+77 - 101+16
- STA 103+61 - 106+19
- STA 134+75 - 176+90
- STA 191+72 - 197+68

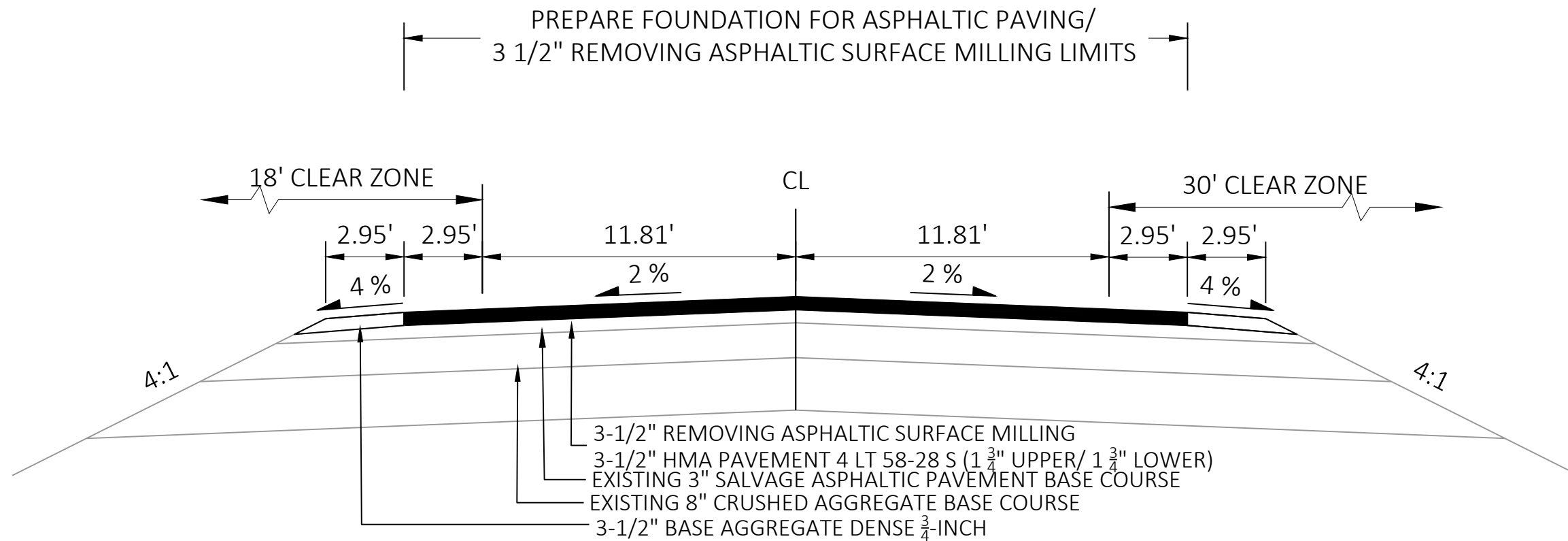


EXISTING BEAMGUARD LT:  
 STA 89+02 - 92+26  
 STA 123+87 - 134+75  
 STA 176+90 - 182+71  
 STA 183+45 - 189+65

EXISTING BEAMGUARD RT:  
 STA 31+23 - 34+75  
 STA 37+16 - 48+06  
 STA 68+04 - 69+35  
 STA 86+82 - 93+77  
 STA 106+19 - 117+35  
 STA 117+99 - 133+55

**EXISTING TYPICAL SECTION**

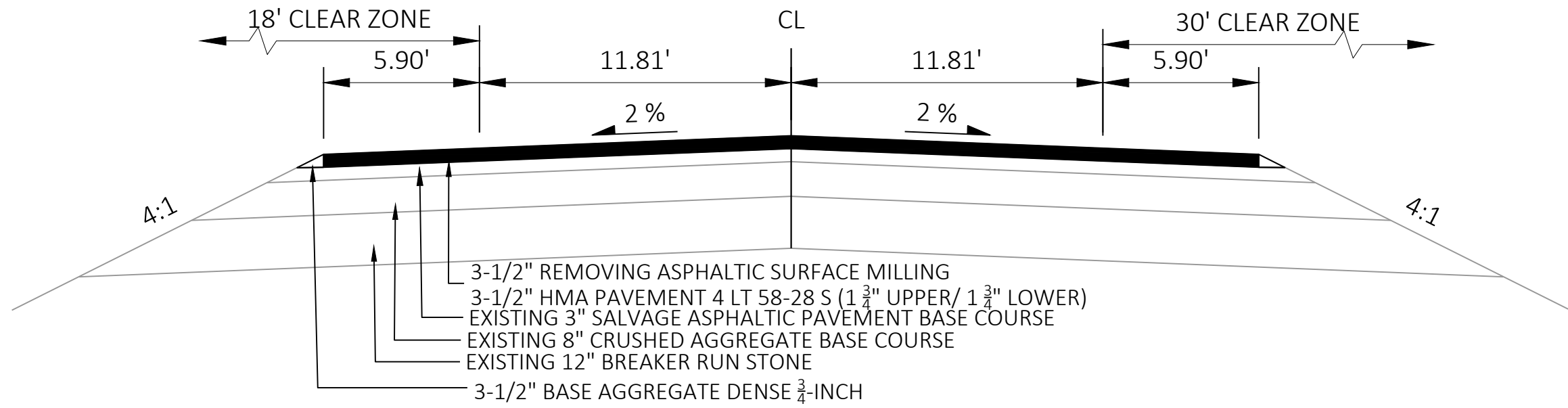




### FINISHED TYPICAL SECTION

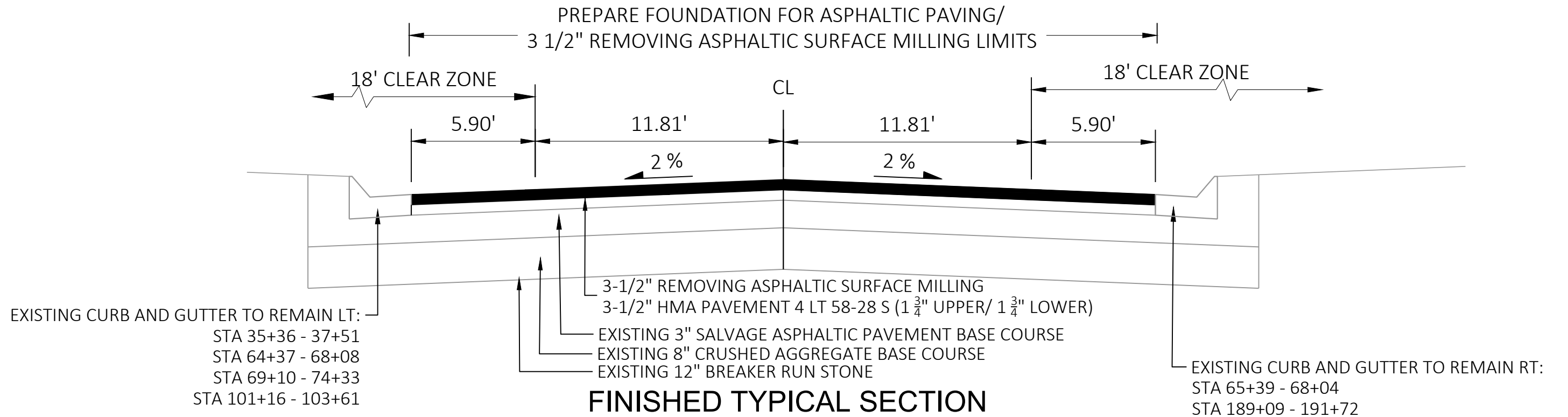
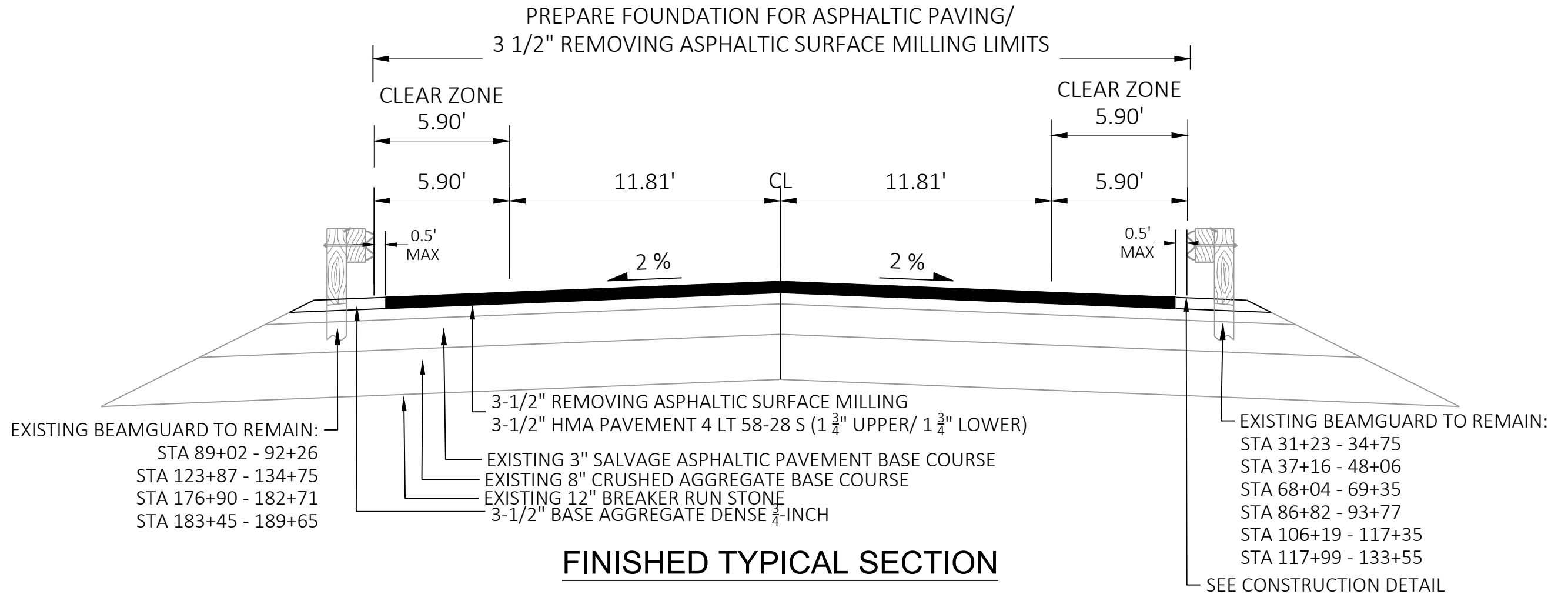
STA 10+52 - 31+23	STA 93+77 - 101+16
STA 34+75 - 35+36	STA 152+70 - 176+90
STA 48+06 - 64+37	STA 191+72 - 197+68
STA 74+33 - 86+82	

PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS      PREPARE FOUNDATION FOR ASPHALTIC PAVING/  
 3 1/2" REMOVING ASPHALTIC SURFACE MILLING LIMITS      PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS



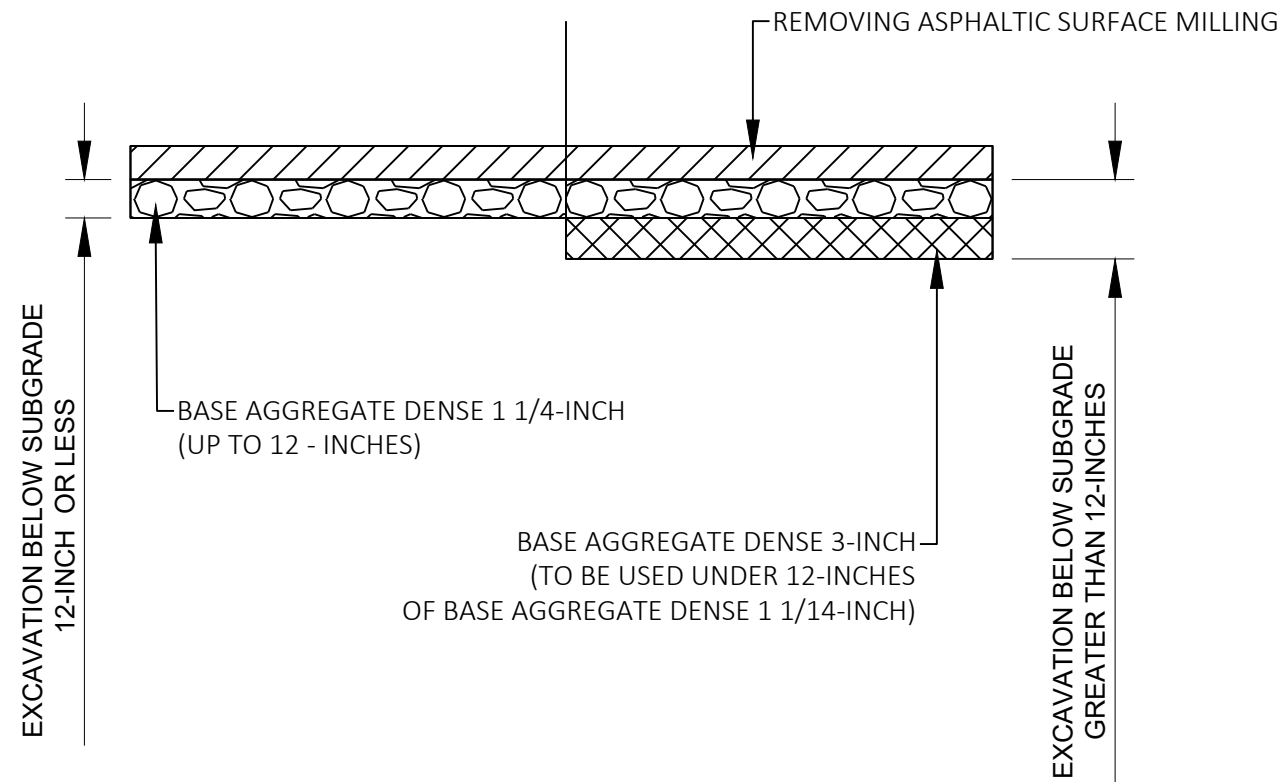
**FINISHED TYPICAL SECTION**

STA 101+16 - 152+70

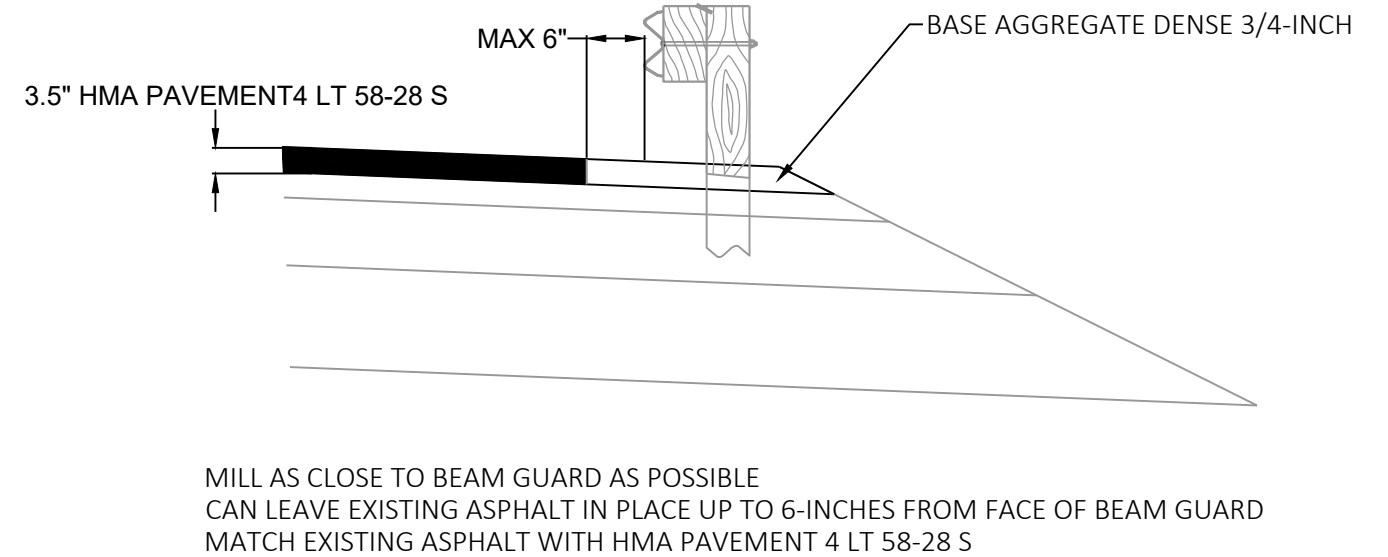




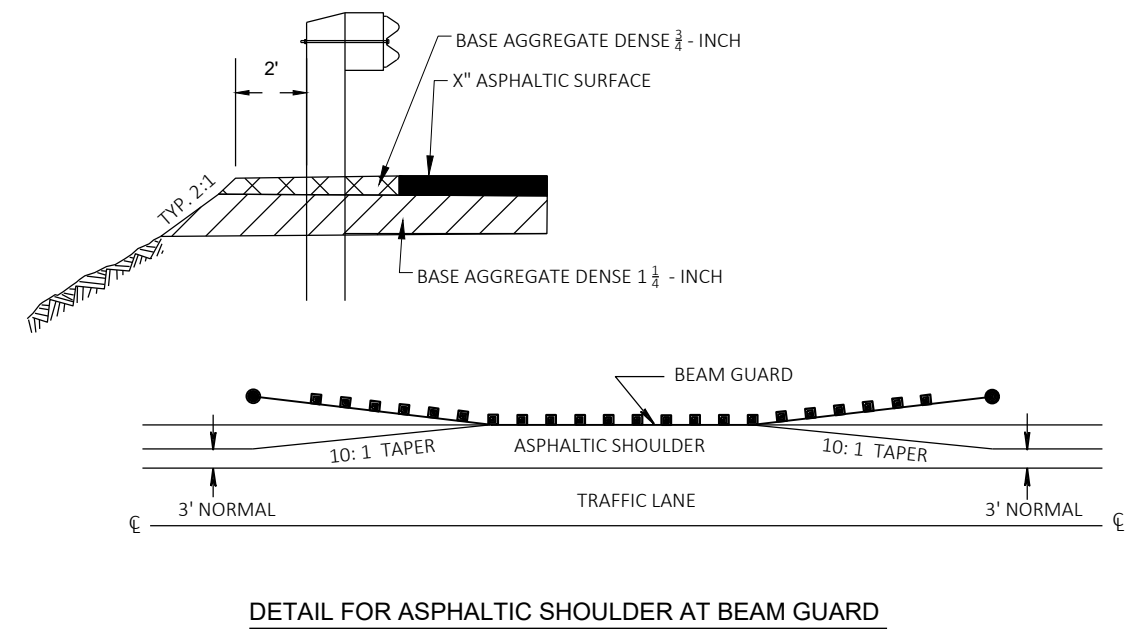
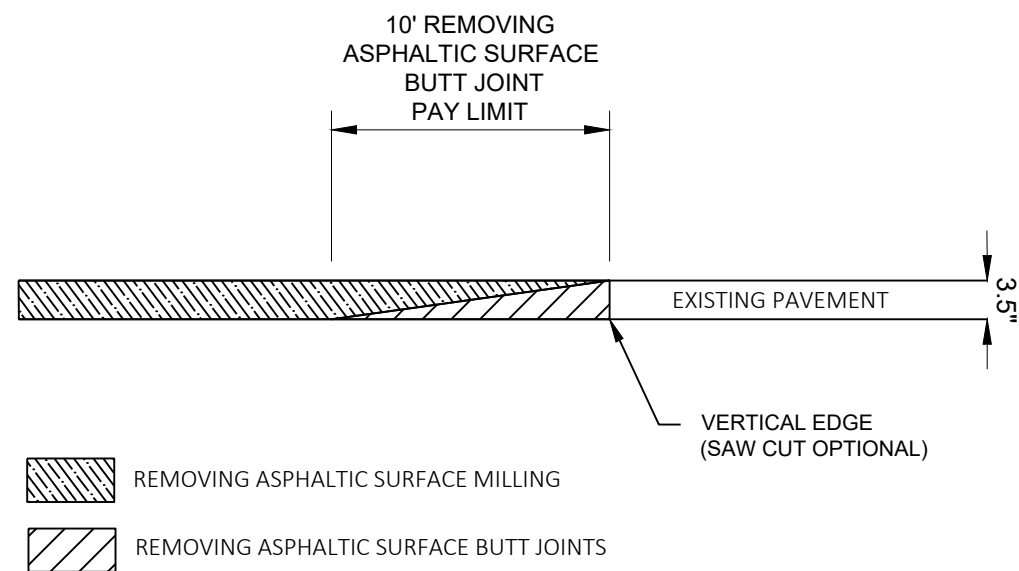
### EXCAVATION BELOW SUBGRADE DETAIL

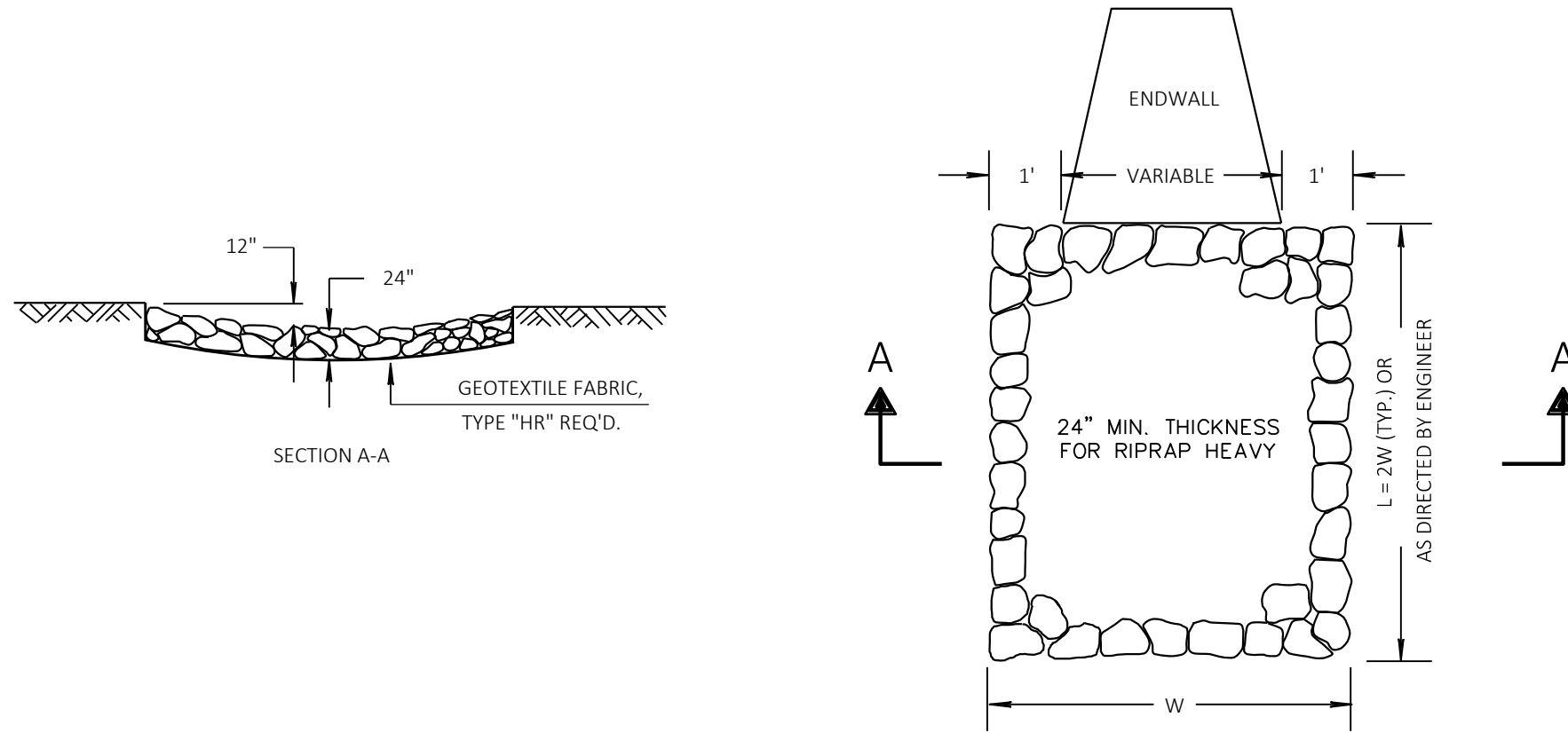


### PAVEMENT MILLING AT BEAM GUARD AREAS

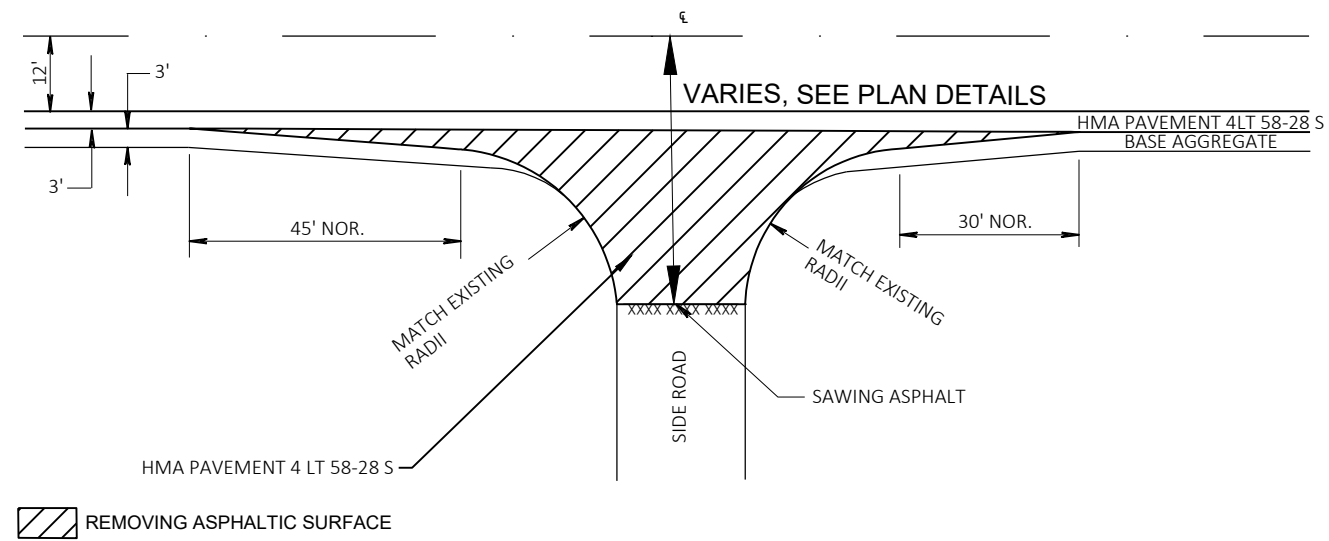


### REMOVING ASPHALTIC SURFACE BUTT JOINT DETAIL

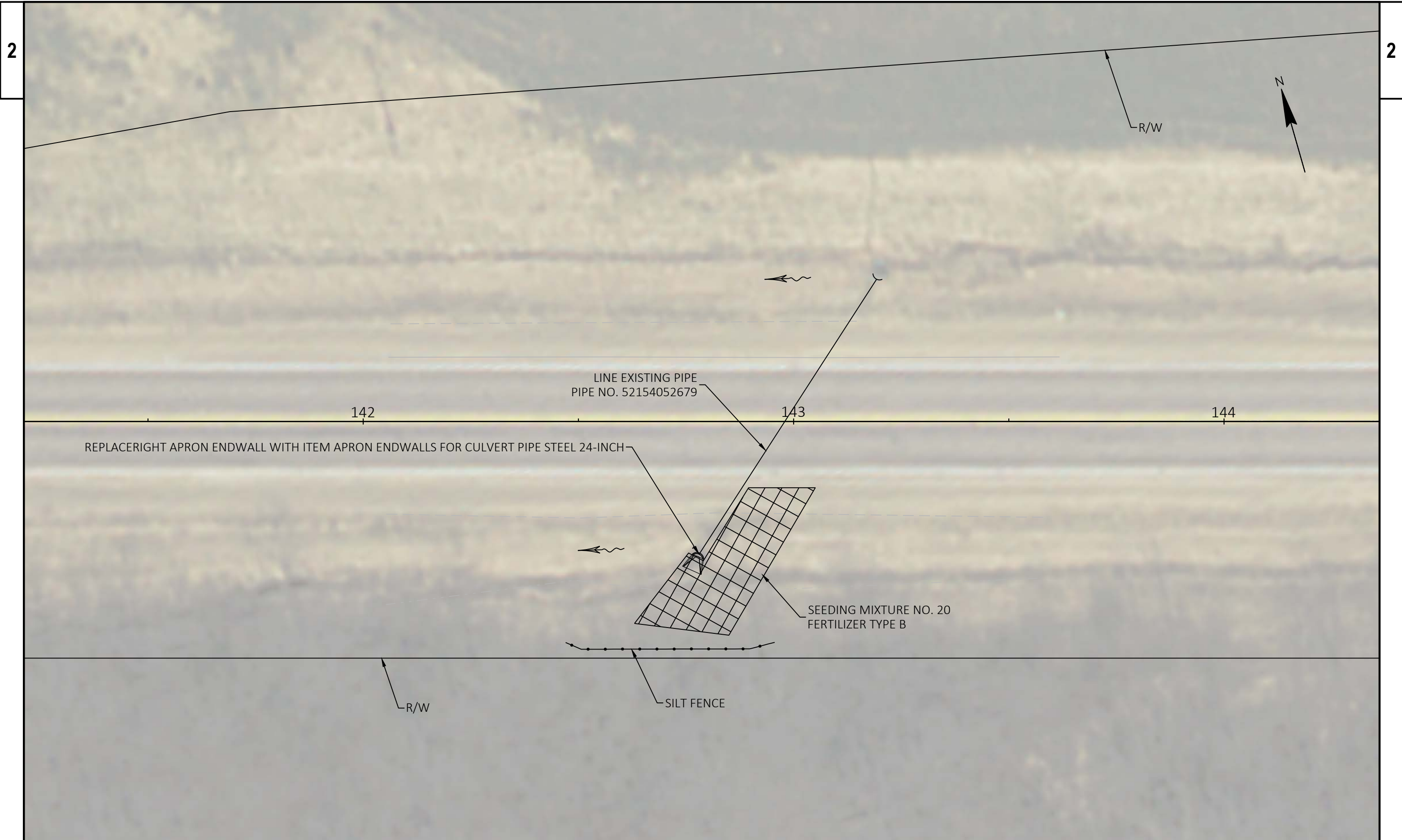




RIPRAP HEAVY TREATMENT AT CULVERTS



SIDE ROAD DETAIL

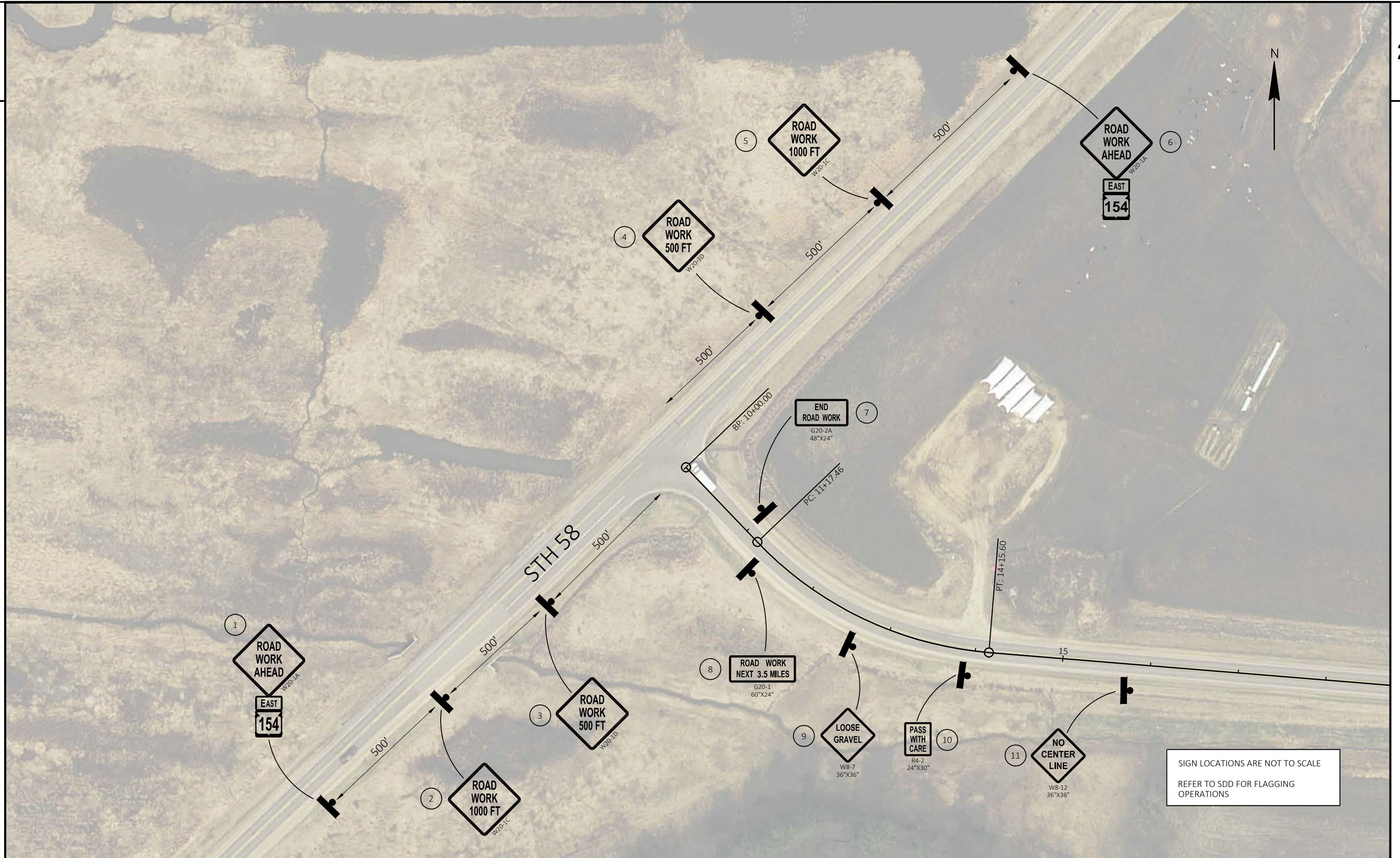


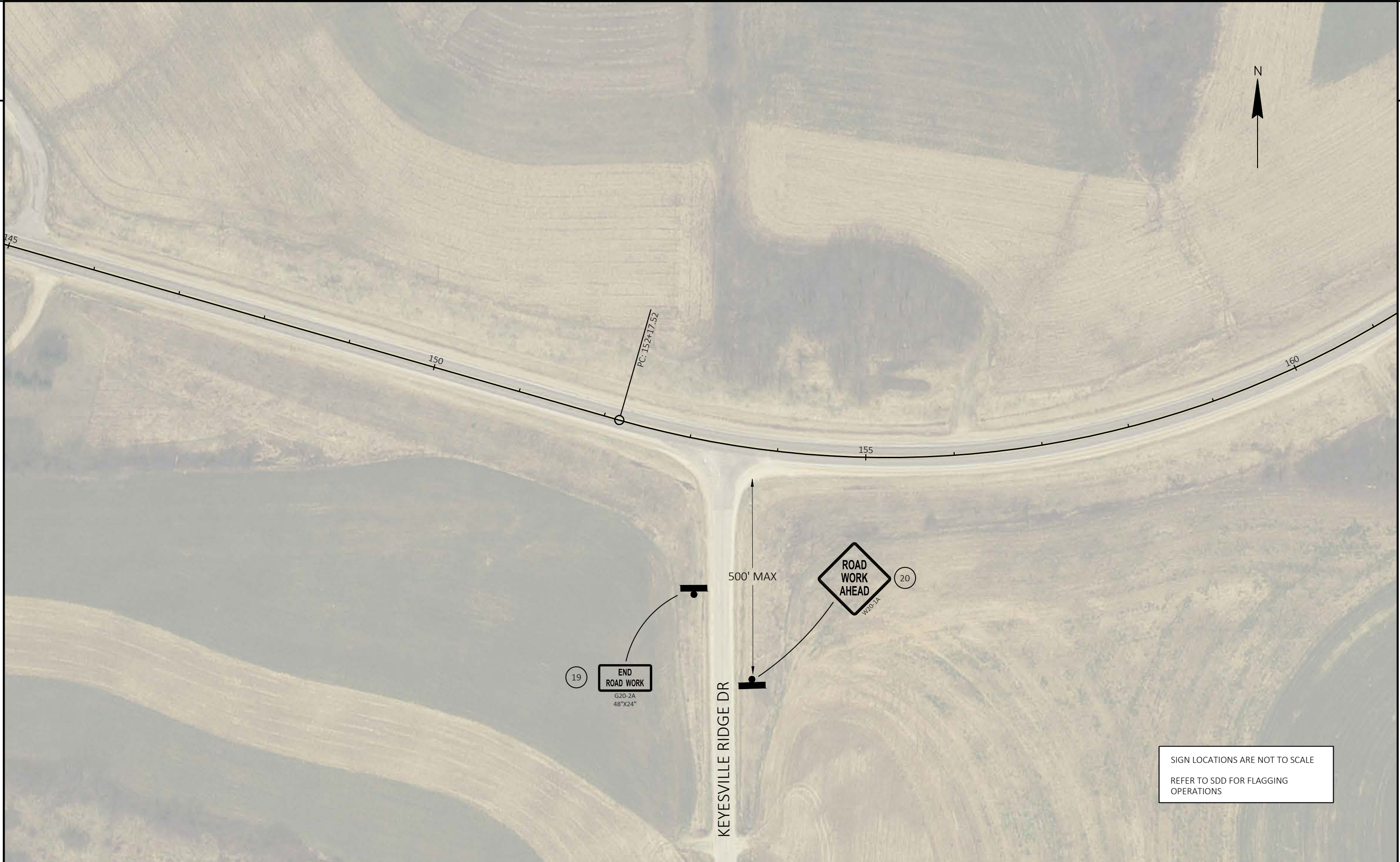
REPLACERIGHT APRON ENDWALL WITH ITEM APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH

LINE EXISTING PIPE  
PIPE NO. 52154052679

SEEDING MIXTURE NO. 20  
FERTILIZER TYPE B

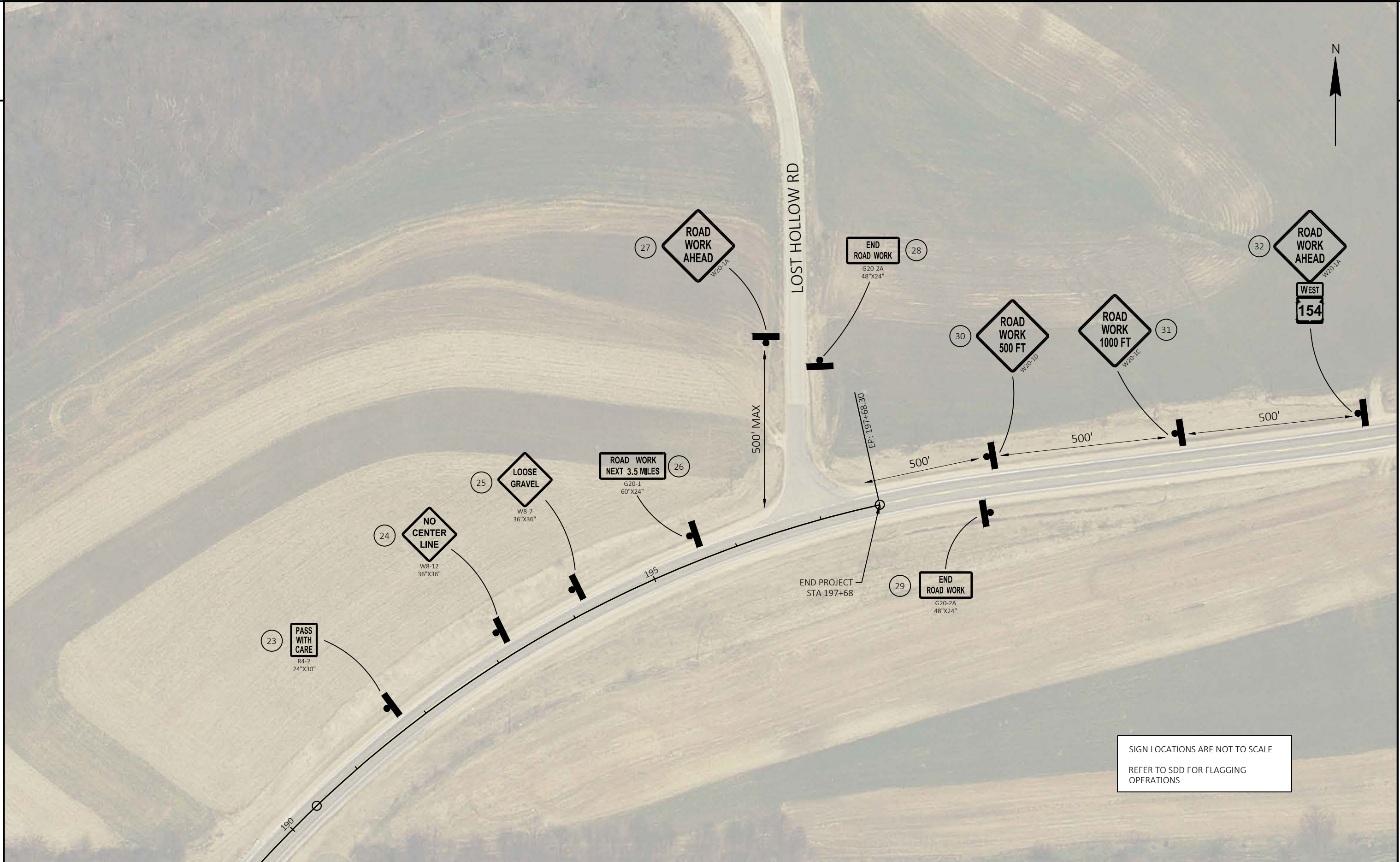
SILT FENCE





SIGN LOCATIONS ARE NOT TO SCALE  
REFER TO SDD FOR FLAGGING  
OPERATIONS

PROJECT NO: 5070-01-72	HWY: STH 154	COUNTY: RICHLAND	TRAFFIC CONTROL	SHEET	<b>E</b>
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SIGN LOCATIONS ARE NOT TO SCALE  
 REFER TO SDD FOR FLAGGING OPERATIONS

PROJECT NO: 5070-01-72	HWY: STH 154	COUNTY: RICHLAND	TRAFFIC CONTROL	SHEET	E
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## Estimate Of Quantities

5070-01-72

Line	Item	Item Description	Unit	Total	Qty
0002	204.0110	Removing Asphaltic Surface	SY	326.000	326.000
0004	204.0115	Removing Asphaltic Surface Butt Joints	SY	66.000	66.000
0006	204.0120	Removing Asphaltic Surface Milling	SY	64,779.000	64,779.000
0008	204.0180	Removing Delineators and Markers	EACH	2.000	2.000
0010	204.9060.S	Removing (item description) 01. Culvert Endwall	EACH	1.000	1.000
0012	205.0100	Excavation Common	CY	673.000	673.000
0014	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 5070-01-72	LS	1.000	1.000
0016	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	63.000	63.000
0018	213.0100	Finishing Roadway (project) 01. 5070-01-72	EACH	1.000	1.000
0020	305.0110	Base Aggregate Dense 3/4-Inch	TON	1,840.000	1,840.000
0022	305.0125	Base Aggregate Dense 1 1/4-Inch	CY	450.000	450.000
0024	305.0135	Base Aggregate Dense 3-Inch	CY	223.000	223.000
0026	455.0605	Tack Coat	GAL	3,365.000	3,365.000
0028	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	1.000
0030	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	2.000	2.000
0032	460.2005	Incentive Density PWL HMA Pavement	DOL	9,660.000	9,660.000
0034	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	9,390.000	9,390.000
0036	460.2010	Incentive Air Voids HMA Pavement	DOL	13,135.000	13,135.000
0038	460.5224	HMA Pavement 4 LT 58-28 S	TON	13,170.000	13,170.000
0040	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	11.000	11.000
0042	465.0450	Asphaltic Intersection Rumble Strips	SY	79.000	79.000
0044	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	18,100.000	18,100.000
0046	520.9700.S	Culvert Pipe Liners (size) 01. 24 - INCH	LF	75.000	75.000
0048	520.9750.S	Cleaning Culvert Pipes for Liner Verification	EACH	1.000	1.000
0050	521.1024	Apron Endwalls for Culvert Pipe Steel 24-Inch	EACH	1.000	1.000
0052	606.0300	Riprap Heavy	CY	19.000	19.000
0054	614.0400	Adjusting Steel Plate Beam Guard	LF	7,553.000	7,553.000
0056	614.0950	Replacing Guardrail Posts and Blocks	EACH	246.000	246.000
0058	614.0951	Replacing Guardrail Rail and Hardware	LF	768.000	768.000
0060	614.0952	Replacing Guardrail Reflectors	EACH	135.000	135.000
0062	618.0100	Maintenance And Repair of Haul Roads (project) 01. 5070-01-72	EACH	1.000	1.000
0064	619.1000	Mobilization	EACH	1.000	1.000
0066	624.0100	Water	MGAL	72.000	72.000
0068	627.0200	Mulching	SY	100.000	100.000
0070	628.1504	Silt Fence	LF	50.000	50.000
0072	628.1520	Silt Fence Maintenance	LF	10.000	10.000
0074	628.1905	Mobilizations Erosion Control	EACH	2.000	2.000
0076	628.1910	Mobilizations Emergency Erosion Control	EACH	1.000	1.000
0078	629.0210	Fertilizer Type B	CWT	0.080	0.080
0080	630.0120	Seeding Mixture No. 20	LB	3.000	3.000
0082	630.0500	Seed Water	MGAL	2.180	2.180
0084	633.5200	Markers Culvert End	EACH	2.000	2.000
0086	634.0614	Posts Wood 4x6-Inch X 14-FT	EACH	2.000	2.000
0088	638.2102	Moving Signs Type II	EACH	2.000	2.000
0090	638.3000	Removing Small Sign Supports	EACH	2.000	2.000
0092	642.5201	Field Office Type C	EACH	1.000	1.000
0094	643.0300	Traffic Control Drums	DAY	70.000	70.000
0096	643.0900	Traffic Control Signs	DAY	1,918.000	1,918.000
0098	643.1050	Traffic Control Signs PCMS	DAY	7.000	7.000

Estimate Of Quantities

5070-01-72

Line	Item	Item Description	Unit	Total	Qty
0100	643.5000	Traffic Control	EACH	1.000	1.000
0102	645.0120	Geotextile Type HR	SY	8.000	8.000
0104	646.1020	Marking Line Epoxy 4-Inch	LF	60,798.000	60,798.000
0106	648.0100	Locating No-Passing Zones	MI	3.530	3.530
0108	649.0105	Temporary Marking Line Paint 4-Inch	LF	21,399.000	21,399.000
0110	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	23,366.000	23,366.000
0112	650.8000	Construction Staking Resurfacing Reference	LF	18,639.000	18,639.000
0114	650.9910	Construction Staking Supplemental Control (project) 01. 5070-01-72	LS	1.000	1.000
0116	690.0150	Sawing Asphalt	LF	133.000	133.000
0118	740.0440	Incentive IRI Ride	DOL	14,220.000	14,220.000
0120	ASP.1T0A	On-the-Job Training Apprentice at \$5.00/HR	HRS	2,000.000	2,000.000
0122	ASP.1T0G	On-the-Job Training Graduate at \$5.00/HR	HRS	1,320.000	1,320.000



204.0110

204.0110  
REMOVING  
ASPHALTIC  
SURFACE

CATEGORY	STATION	LOCATION	SY	REMARKS
0010	68+70	LT	98	SALISBURG LN
0010	145+24	LT	52	PRIVATE ENTRANCE
0010	197+00	LT	176	LOST HOLLOW RD
TOTAL 0000			326	

204.0115

204.0115  
REMOVING  
ASPHALTIC  
SURFACE BUTT  
JOINTS

CATEGORY	STATION	LOCATION	SY	REMARKS
0010	10+52	CL	33	BEGIN PROJECT
0010	197+68	CL	33	END OF PROJECT
TOTAL 0010			66	

204.0120

204.0120  
REMOVING ASPHALTIC  
SURFACE MILLING

CATEGORY	STATION	TO	STATION	LOCATION	SY	REMARKS
0010	10+52	-	31+23	CL	6,963	
0010	31+23	-	34+75	CL	1272	BEAMGURAD RT
0010	34+75	-	35+36	CL	203	
0010	35+36	-	48+06	CL	4593	C&G LT, BEAMGUARD RT
0010	48+06	-	64+37	CL	5355	C&G LT/RT, BEAMGUARD RT
0010	64+37	-	74+33	CL	3,726	
0010	74+33	-	86+82	CL	4102	BEAMGURAD LT/RT
0010	86+82	-	93+77	CL	2,617	
0010	93+77	-	10+16	CL	2,427	C&G LT
0010	101+16	-	103+61	CL	884	
0010	103+61	-	106+19	CL	849	
0010	106+19	-	134+75	CL	10,632	BEAMGURAD LT/RT
0010	134+75	-	176+90	CL	13,829	
0010	176+90	-	191+72	CL	5369	C&G RT, BEAMGUARD LT
0010	191+72	-	197+68	CL	1,959	
TOTAL 0010					64,779	

211.0400

211.0400  
FOUNDATION  
FOR ASPHALTIC  
SHOULDERS

CATEGORY	STATION	TO	STATION	LOCATION	STA	REMARKS
0010	101+16	-	106+19	RT	5	
0010	103+61	-	123+87	LT	21	
0010	133+55	-	152+70	RT	19	
0010	134+75	-	152+70	LT	18	
TOTAL 0000					63	

305.0110

305.0110  
AGGREGATE  
624.0100  
WATER

CATEGORY	STATION	TO	STATION	LOCATION	TON	MGAL	REMARKS	FIRE NUMBER
0010	10+52	-	31+23	LT/RT	332	5	SHOULDER	
0010	20+51			LT	11	1	C.E.	
0010	25+25			LT	11	1	C.E.	31126
0010	26+34			RT	4	1	F.E.	
0010	28+60			LT	8	1	P.E.	31180
0010	31+23	-	34+75	LT	28	1	BEAMGUARD RT	
0010	34+72			LT	4	1	C.E.	31410
0010	34+75	-	35+36	LT/RT	10	1	SHOULDER	
0010	35+36	-	48+06	LT/RT	100	4	C&G LT, BEAMGUARD RT	
0010	36+78			RT	4	1	F.E.	
0010	44+44			LT	8	1	C.E.	31566
0010	48+06	-	64+37	LT/RT	261	4	SHOULDER	
0010	58+06			LT	8	1	P.E.	31806
0010	64+37	-	74+33	RT	48	3	C&G LT/RT, BEAMGUARD RT	
0010	71+00			RT	4	1	F.E.	
0010	74+33	-	86+82	LT/RT	200	3	SHOULDER	
0010	81+00			RT	4	1	F.E.	
0010	86+82	-	93+77	LT	30	2	BEAMGUARD LT/RT	
0010	93+77	-	101+16	LT/RT	118	2	SHOULDER	
0010	94+74			RT	4	1	F.E.	
0010	101+16	-	152+70	LT/RT	83	15	PAVE FULL WIDTH SHOULDERS	
0010	117+80			RT	4	1	F.E.	31911
0010	135+00			LT	4	1	F.E.	
0010	138+00			LT	15	1	P.E.	33224
0010	140+36			LT	11	1	F.E.	
0010	145+48			RT	8	1	F.E.	33351
0010	152+70	-	176+90	LT/RT	387	6	SHOULDER	
0010	160+73			RT	5	1	F.E.	
0010	175+14			LT	2	1	F.E.	
0010	176+90	-	191+72	LT/RT	114	4	C&G RT, BEAMGUARD LT	
0010	186+51			RT	4	1	F.E.	
0010	187+23			RT	5	1	F.E.	
0010	191+72	-	197+68	LT/RT	1	2	SHOULDER	
TOTAL 0010					1,840	72		

BASE AGGREGATE FOR EBS AREA

CATEGORY	STATION	TO	STATION	LOCATION	EXCAVATION COMMON CY	305.0125 BASE AGGREGATE DENSE 1 1/4- INCH CY	305.0135 BASE AGGREGATE DENSE 3-INCH CY	REMARKS
0010	10+52	-	197+68	CL	673	450	223	UNDISTRIBUTED EBS AREAS
TOTAL 0010					673	450	223	

HMA PERCENT WITHIN LIMITS SUMMARY

465.0120

465.0120  
ASPHALTIC  
SURFACE  
DRIVEWAYS AND  
FIELD  
ENTRANCES

CATEGORY	STATION TO STATION	LOCATION	HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP VOLUMETRICS EACH	HMA PERCENT WITHIN LIMITS (PWL) TEST STRIP DENSITY EACH	REMARKS
0010	10+52 - 197+68	CL	<u>1</u>	<u>2</u>	1 PER LIFT
		TOTAL 0000	1	2	

CATEGORY	STATION	LOCATION	TON	REMARKS	FIRE NUMBER
0010	145+24	LT	<u>11</u>	P.E. ASPH.	33342
		TOTAL 0010	11		

PWL MIXTURE USE TABLE

LOCATION	STATION TO STATION	LOCATION	MIXTURE USE:	UNDERLYING SURFACE	BID ITEM	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:		COMMENTS
								MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE	
11.81 FOOT DRIVING LANE	10+52 - 197+68	CL	UPPER LAYER	4 LT 58-28 S	4 LT 58-28 S	4,843	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005	
2.95 FOOT SHOULDER	TOTAL LENGTH 21,277 FT		UPPER LAYER	4 LT 58-28 S	4 LT 58-28 S	683	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE	
5.90 FOOT SHOULDER	TOTAL LENGTH 16,053 FT		UPPER LAYER	4 LT 58-28 S	4 LT 58-28 S	1,033	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE	
11.81 FOOT DRIVING LANE	10+52 - 197+68	CL	LOWER LAYER	BASE AGGREGATE	4 LT 58-28 S	4,843	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005	
2.95 FOOT SHOULDER	TOTAL LENGTH 21,277 FT		LOWER LAYER	BASE AGGREGATE	4 LT 58-28 S	683	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE	
5.90 FOOT SHOULDER	TOTAL LENGTH 16,053 FT		LOWER LAYER	BASE AGGREGATE	4 LT 58-28 S	1,033	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE	

PROJECT NO: 5070-01-72

HWY: STH 154

COUNTY: RICHLAND

MISCELLANEOUS QUANTITIES

SHEET

E

ASPHALT SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	455.0605	460.5224	REMARKS
					TACK COAT	HMA PAVEMENT 4 LT 58-28 S	
					GAL	TON	
0010	10+52	-	31+23	CL	350	1,365	
0010	31+23	-	34+75	CL	60	250	BEAMGUARD RT
0010	34+75	-	35+36	CL	10	40	
0010	35+36	-	48+06	CL	230	905	C&G LT, BEAMGUARD RT
0010	48+06	-	64+37	CL	270	1,050	
0010	64+37	-	74+33	CL	190	735	C&G LT/RT, BEAMGUARD RT
0010	68+70			LT	5	20	SALSBURG LN
0010	74+33	-	86+82	CL	210	805	
0010	86+82	-	93+77	CL	130	515	BEAMGUARD LT/RT
0010	93+77	-	101+16	CL	120	480	
0010	101+16	-	152+70	CL	1,010	3,975	FULL 6' SHOULDERS LT/RT
0010	152+70	-	176+90	CL	400	1,555	
0010	176+90	-	191+72	CL	270	1,055	C&G RT, BEAMGUARD LT
0010	191+72	-	197+68	CL	100	385	
0010	197+00			LT	10	35	LOST HOLLOW RD
TOTAL 0010					3,365	13,170	

465.0450

CATEGORY	STATION	TO	STATION	LOCATION	465.0450	REMARKS
					ASPHALTIC INTERSECTION RUMBLE STRIPS	
					SY	
0010	10+00	-	20+00	CL	79	
TOTAL 0000					79	

465.0475

CATEGORY	STATION	TO	STATION	LOCATION	465.0475	REMARKS
					ASPHALT CENTERLINE RUMBLE STRIPS 2-LANE RURAL	
					LF	
0010	10+00	-	151+35	CL	14,135	STH 58 TO KEYESVILLE RIDGE DR
0010	155+35	-	195+00	CL	3,965	KEYESVILLE RIDGE DR TO LOST HOLLOW RD
TOTAL 0000					18,100	

CULVERT PIPE SUMMARY

CATEGORY	STATION	LOCATION	204.0180	204.9060.S.01	520.9700.S.01	520.9750.S	521.1024	633.5200	REMARKS
			REMOVING DELINEATORS AND MARKERS	REMOVING (ITEM DESCRIPTION) (01. CULVERT ENDWALL)	CULVERT PIPE LINERS (SIZE) (01. 24-INCH)	CLEANING CULVERT PIPES FOR LINER VERIFICATION	APRON ENDWALLS FOR CULVERT PIPE STEEL 24-INCH	MARKERS CULVERT END	
			EACH	EACH	LF	EACH	EACH	EACH	
0010	143+00	CL	2		75	1		2	PIPE NO. 52154052679
0010	142+78	RT		1			1		CULVERT ENDWALL
TOTAL 0000			2	1	75	1	1	2	

BEAMGUARD SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	614.0400	614.0950	614.0951	614.0952	REMARKS
					ADJUSTING STEEL PLATE BEAM GUARD	REPLACING GUARDRAIL POSTS AND BLOCKS	REPLACING GUARDRAIL RAIL AND HARDWARE	REPLACING GUARDRAIL REFLECTORS	
					LF	EACH	LF	EACH	
0010	31+23	-	34+75	RT	352	12	36	5	
0010	37+16	-	48+06	RT	1,090	35	110	20	
0010	68+04	-	69+35	RT	131	5	15	1	
0010	86+82	-	93+77	RT	695	23	70	12	
0010	89+02	-	92+26	LT	324	11	35	5	
0010	106+19	-	117+35	RT	1,116	36	115	21	
0010	117+99	-	133+55	RT	1,556	50	155	30	
0010	123+87	-	134+75	LT	1,088	35	110	20	
0010	176+90	-	182+71	LT	581	19	60	10	
0010	183+45	-	189+65	LT	620	20	62	11	
TOTAL 0010					7,553	246	768	135	

NOTE: ITEM 614.0950 REPLACING GUARDRAIL POSTS AND BLOCKS IS BASED UPON 20% REPLACEMENT.  
 ITEM 614.0951 REPLACING GUARDRAIL AND HARDWARE IS BASED UPON 10% REPLACEMENT.  
 ITEM 614.0952 REPLACING GUARDRAIL REFLECTORS IS BASED UPON INSTALL ALL NEW REFLECTORS.

SILT FENCE SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	628.1504	628.1520	REMARKS
					SILT FENCE	SILT FENCE MAINTENANCE	
					LF	LF	
0010	142+25	-	143+12	RT	50	10	
TOTAL 0000					50	10	

EROSION CONTROL MOBILIZATION SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	628.1905	628.1910	REMARKS
					MOBILIZATIONS EROSION CONTROL	MOBILIZATIONS EMERGENCY EROSION CONTROL	
					EACH	EACH	
0010	10+52	-	197+68	STH 154	2	1	
TOTAL 0000					2	1	

MULCH, SEED, FERTILIZER AND SEED WATER SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	627.0200 MULCHING SY	629.0210 FERTILIZER TYPE B CWT	630.0120 SEEDING MIXTURE NO. 20 LB	630.0500 SEED WATER MGAL	REMARKS
0010	142+75	-	143+00	RT	70	0.05	2	1.18	EROSION CONTROL FOR CULVERT DISCHARGE
0010					30	0.03	1	1.00	UNDISTRIBUTED
				TOTAL 0000	100	0.08	3	2.18	

MOVING SIGNS SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	634.0614 POSTS WOOD 4X6-INCH X 14- FT EACH	638.2102 MOVING SIGNS TYPE II EACH	638.3000 REMOVING SMALL SIGN SUPPORTS EACH	REMARKS
0010	10+52	-	197+62	STH 154	2	2	2	NO PASSING ZONE
				TOTAL 0000	2	2	2	

TRAFFIC CONTROL DRUMS AND PCM SUMMARY

CATEGORY	LOCATION	643.0300 TRAFFIC CONTROL DRUMS DAY	643.1050 TRAFFIC CONTROL SIGNS PCMS DAY	REMARKS
0010	PROJECT	70	7	PCMS
	TOTAL 0000	70	7	

643.0900

CATEGORY	STATION	TO	STATION	LOCATION	643.0900 TRAFFIC CONTROL SIGNS DAY	REMARKS
0010	10+52	-	197+62	PROJECT	1,918	
				TOTAL 0000	1,918	

PAVEMENT MARKING SUMMARY

CATEGORY	STATION	TO	STATION	LOCATION	646.1020 MARKING LINE EPOXY 4-INCH LF	649.0105 TEMPORARY MARKING LINE PAINT 4-INCH LF	649.0120 TEMPORARY MARKING LINE EPOXY 4-INCH LF	REMARKS
0010	10+52	-	197+68	CL	37,432			WHITE EDGELINE
0010	10+52	-	197+68	CL		21,399		YELLOW CL BINDER LAYER
0010	10+52	-	197+68	CL			23,366	YELLOW CL SURFACE LAYER
0010	10+52	-	197+68	CL	23,366			YELLOW CL AFTER CL RUMBLE STRIPS
				TOTAL 0000	60,798	21,399	23,366	

SEE STANDARD DETAIL DRAWING 15C08-20A,B,C PAVEMENT MARKING, MAINLINE AND TURN LANES

RRIPRAP HEAVY AND GEOTEXTILE FABRIC TYPE HR

CATEGORY	STATION	TO	STATION	LOCATION	606.0300 RIPRAP HEAVY CY	645.0120 GEOTEXTILE TYPE HR SY	REMARKS
0010	142+78			RT	19	8	CULVERT PIPE
				TOTAL 0010	19	8	

648.0100

CATEGORY	STATION	TO	STATION	LOCATION	648.0100 LOCATING NO- PASSING ZONES MI	REMARKS
0010	10+52	-	197+68	CL	3.53	
				TOTAL 0000	3.53	

650.8000

CATEGORY	STATION	TO	STATION	LOCATION	650.8000 CONSTRUCTION STAKING RESURFACING LF	REMARKS
0010	10+52	-	197+62	CL	18,639	
				TOTAL 0000	18,639	

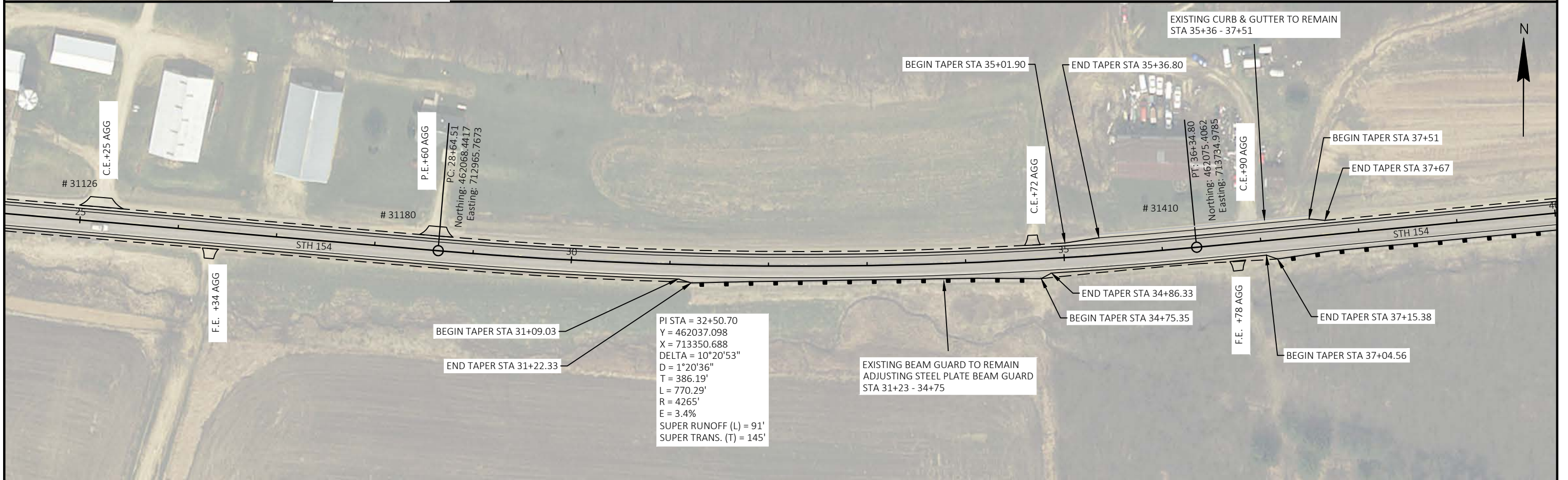
690.0150

CATEGORY	STATION	LOCATION	690.0150 SAWING ASPHALT LF	REMARKS
0010	10+52	CL	30	BEGIN PROJECT
0010	145+00	LT	31	PRIVATE ENTRANCE
0010	197+00	LT	42	LOST HOLLOW RD
0010	197+68	CL	30	END OF PROJECT
		TOTAL 0000	133	

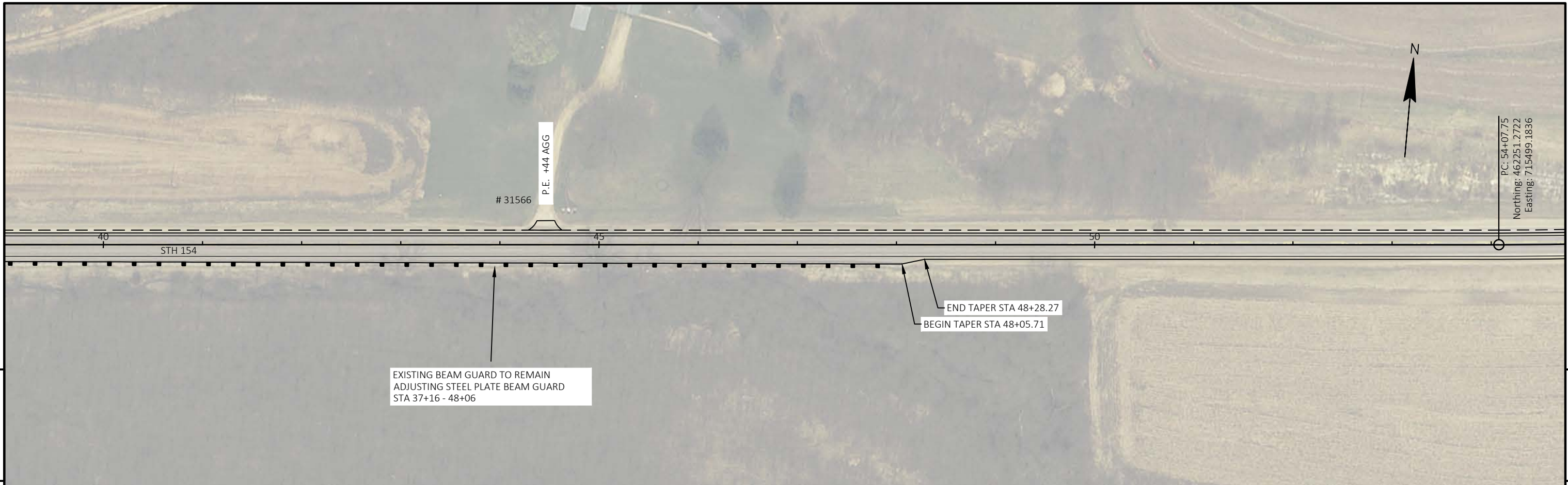


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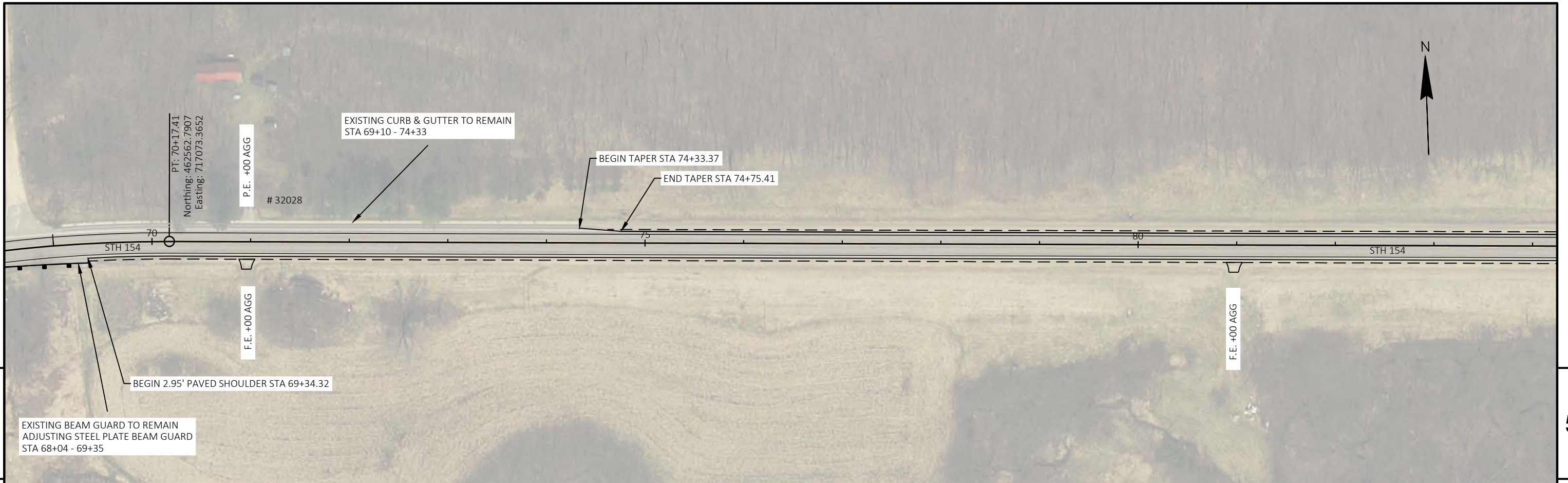
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PROJECT NO: 5070-01-72	HWY: STH 154	COUNTY: RICHLAND	PLAN DETAILS	SHEET	E
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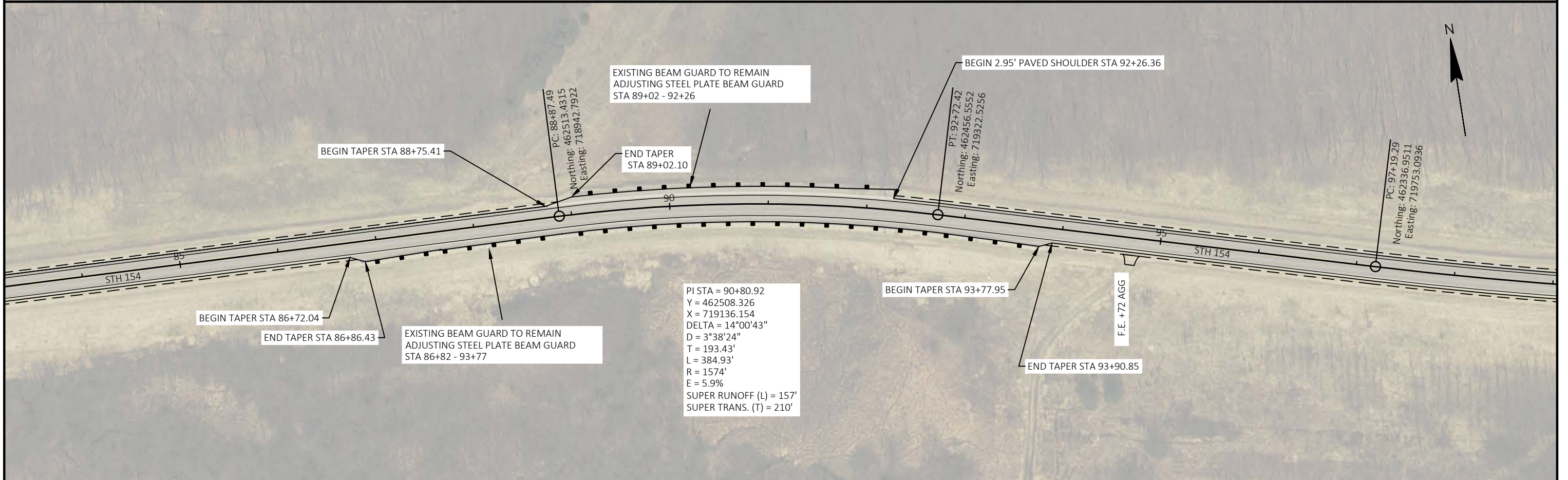


PROJECT NO: 5070-01-72	HWY: STH 154	COUNTY: RICHLAND	PLAN DETAILS	SHEET	E
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5



PROJECT NO: 5070-01-72	HWY: STH 154	COUNTY: RICHLAND	PLAN DETAILS	SHEET	E
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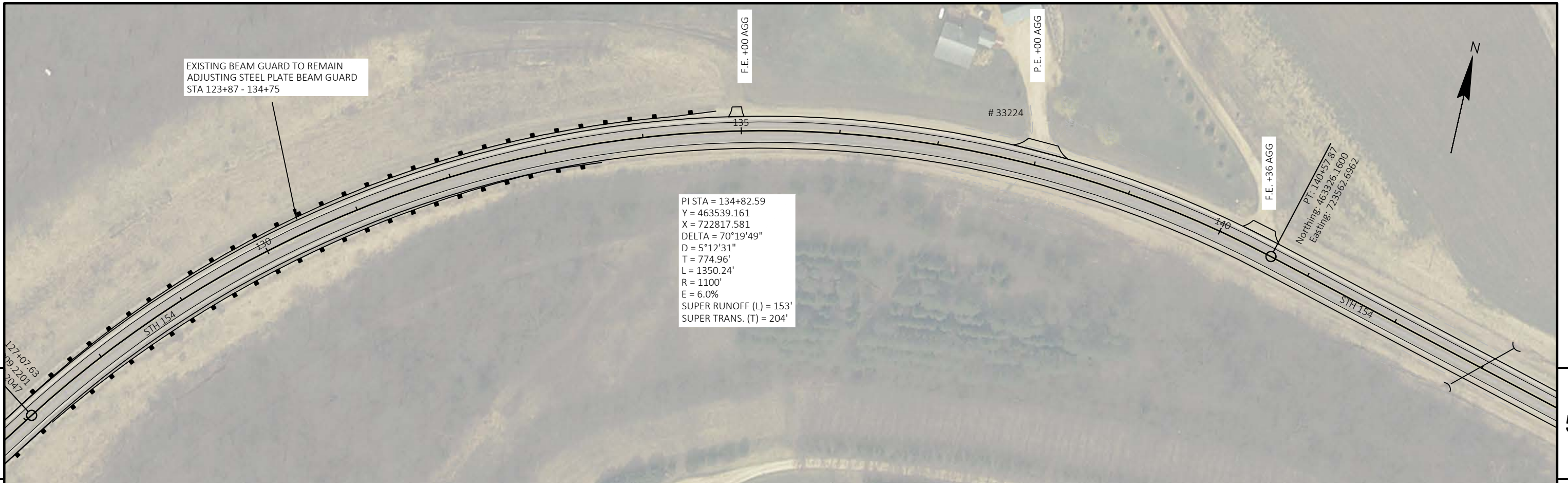
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PROJECT NO: 5070-01-72	HWY: STH 154	COUNTY: RICHLAND	PLAN DETAILS	SHEET	E
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PROJECT NO: 5070-01-72	HWY: STH 154	COUNTY: RICHLAND	PLAN DETAILS	SHEET	E
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PI STA = 161+57.72  
 Y = 462749.011  
 X = 725581.669  
 DELTA = 81°02'33"  
 D = 5°12'31"  
 T = 940.19'  
 L = 1555.90'  
 R = 1100'  
 E = 6.0%  
 SUPER RUNOFF (L) = 153'  
 SUPER TRANS. (T) = 204'

F.E. +73 AGG

P: 172+32.82  
 PI: 172+32.82  
 Northing: 464018.3850  
 Easting: 726171.1840

PI: 172+32.82  
 Northing: 464018.3850  
 Easting: 726171.1840

5

5

PI STA = 177+42.19  
 Y = 464480.369  
 X = 726385.736  
 DELTA = 9°42'20"  
 D = 4°00'54"  
 T = 121.15'  
 L = 241.72'  
 R = 1427'  
 E = 6.0%  
 SUPER RUNOFF (L) = 160'  
 SUPER TRANS. (T) = 213'

F.E. +14 AGG

PC: 176+21.04  
 Northing: 464370.4897  
 Easting: 726334.7062

BEGIN TAPER STA 176+62.84

END TAPER STA 176+90.75

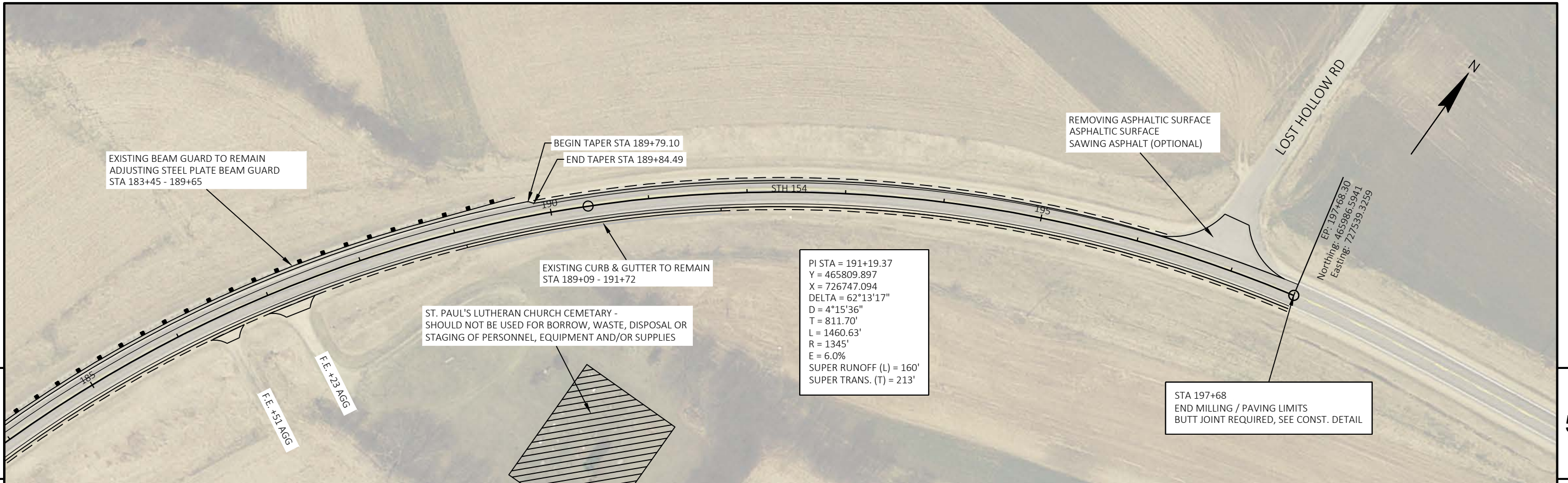
PT: 178+62.76  
 Northing: 464597.2785  
 Easting: 726417.5111

EXISTING BEAM GUARD TO REMAIN  
 ADJUSTING STEEL PLATE BEAM GUARD  
 STA 176+90 - 182+71

# 33830  
# 33832

P.E. +99 AGG

PC: 183+07.68  
 Northing: 465026.6157  
 Easting: 726534.2027



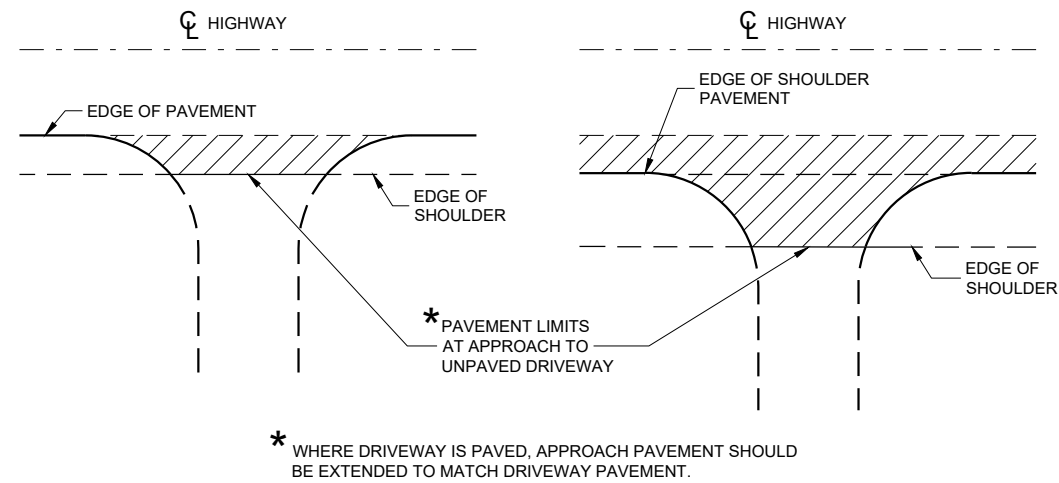
PI STA = 191+19.37  
 Y = 465809.897  
 X = 726747.094  
 DELTA = 62°13'17"  
 D = 4°15'36"  
 T = 811.70'  
 L = 1460.63'  
 R = 1345'  
 E = 6.0%  
 SUPER RUNOFF (L) = 160'  
 SUPER TRANS. (T) = 213'

EP: 197+68.30  
 Northing: 465986.5941  
 Easting: 727539.3259

STA 197+68  
 END MILLING / PAVING LIMITS  
 BUTT JOINT REQUIRED, SEE CONST. DETAIL

## Standard Detail Drawing List

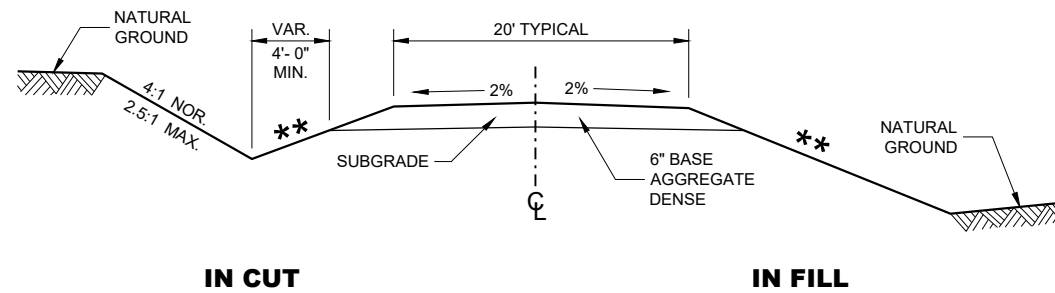
08D21-01	DRIVEWAYS WITHOUT CURB & GUTTER
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
08E09-06	SILT FENCE
08F01-11	APRON ENDWALLS FOR CULVERT PIPE
13A08-01	ASPHALTIC RUMBLE STRIPS AT INTERSECTION
13A11-03A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-03B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13C19-03	HMA LONGITUDINAL JOINTS
14B15-11A	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11B	STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATION & ELEMENTS
14B15-11C	STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION & ELEMENTS
14B18-06A	STEEL PLATE BEAM GUARD, CLASS "A" (AT BRIDGES, OBSTACLES AND SIDEROADS/DRIVEWAYS)
14B20-11A	STEEL THREE BEAM STRUCTURE APPROACH
14B20-11E	STEEL THREE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"
14B29-01	SAFETY EDGE
15C04-05	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M.P.H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-20A	LONGITUDINAL MARKING (MAINLINE)
15C08-20B	PAVEMENT MARKING (TURN LANES)
15C08-20C	PAVEMENT MARKING (TURN LANES)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-08	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-06A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-04A	PAVEMENT MARKING (INTERSECTIONS)
15D28-04	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY
15D39-02	TRAFFIC CONTROL, DROP-OFF SIGNING
15D44-02	TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY



**PLAN VIEW**  
(UNPAVED SHOULDER ON HIGHWAY)

**PLAN VIEW**  
(PAVED SHOULDER ON HIGHWAY)

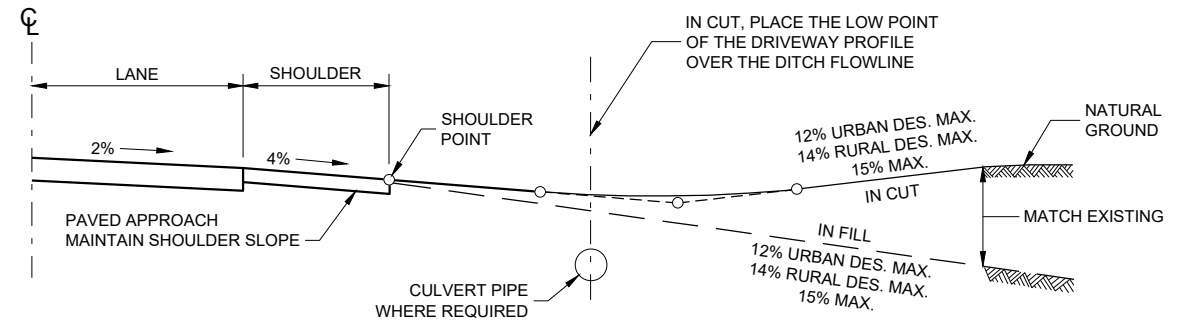
**RURAL DRIVEWAY INTERSECTION DETAIL  
(NO CURB AND GUTTER OR SIDEWALK)**



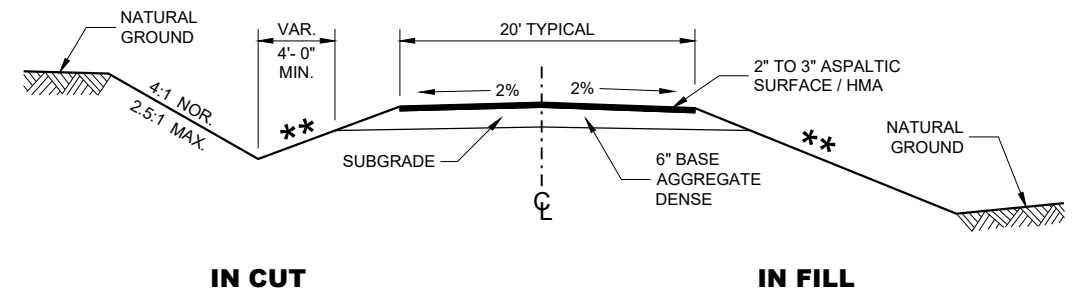
**TYPICAL CROSS SECTION FOR  
PRIVATE DRIVE OR FIELD ENTRANCE  
AGGREGATE SURFACE**

\*\* SLOPE CAN VARY WITH SPEED. SEE 11-45-30.6.2

POSTED SPEED MPH	MAX. SLOPE
<35	4:1
≥ 35 TO < 60	6:1
≥60	10:1



**TYPICAL DRIVEWAY PROFILES**



**TYPICAL CROSS SECTION FOR  
PRIVATE DRIVE OR FIELD ENTRANCE  
ASPHALTIC SURFACE**

**DRIVEWAYS WITHOUT CURB AND GUTTER**

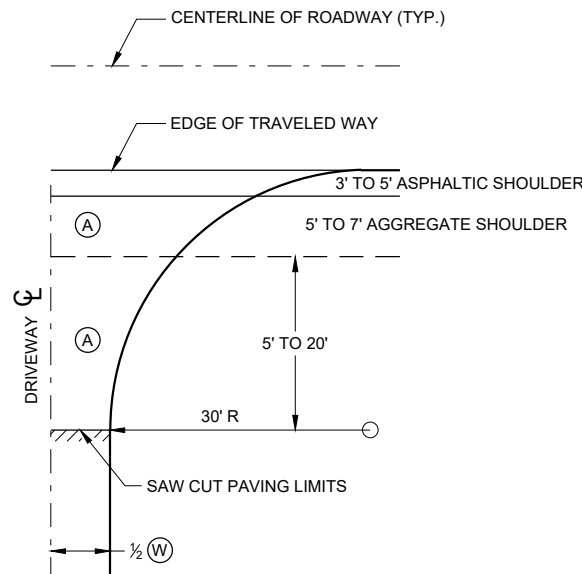
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
December 2017 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

FHWA

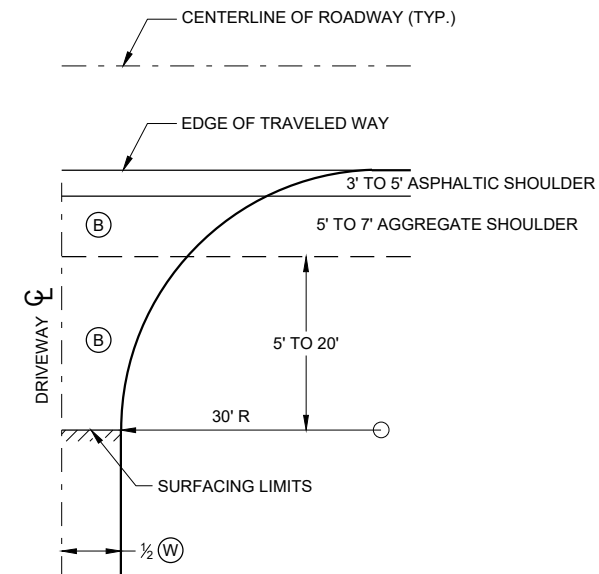
**GENERAL NOTES**

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

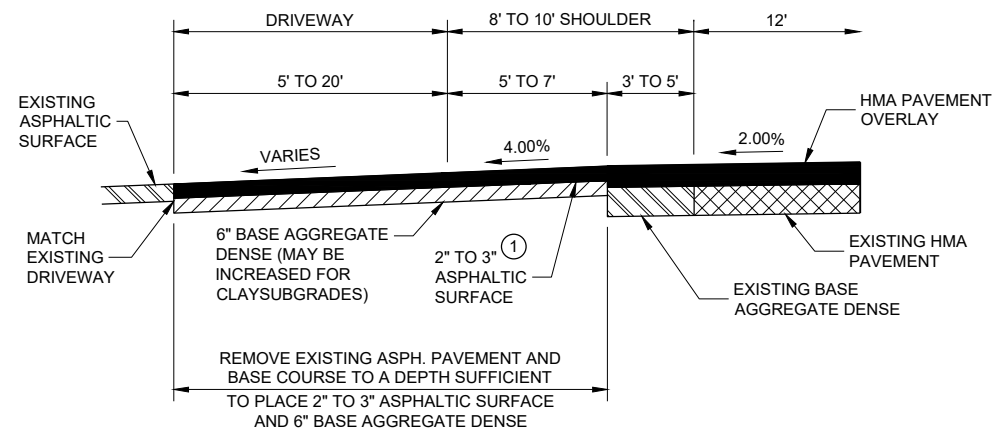


- (A) : PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES. (TON)
- (B) : PAID FOR AS BASE AGGREGATE DENSE 1 1/4" (TON)
- (W) : DRIVEWAY WIDTH 16' MIN. - 24' MAX.

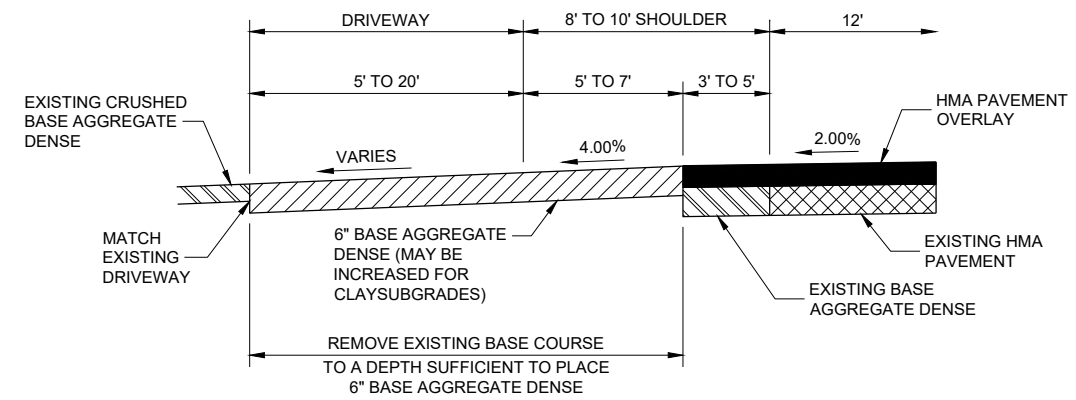
**PLAN VIEW  
HALF SECTION**



**PLAN VIEW  
HALF SECTION**



**PROFILE VIEW  
RURAL ENTRANCE  
WITH ASPHALTIC SURFACE  
RESURFACING PROJECTS**



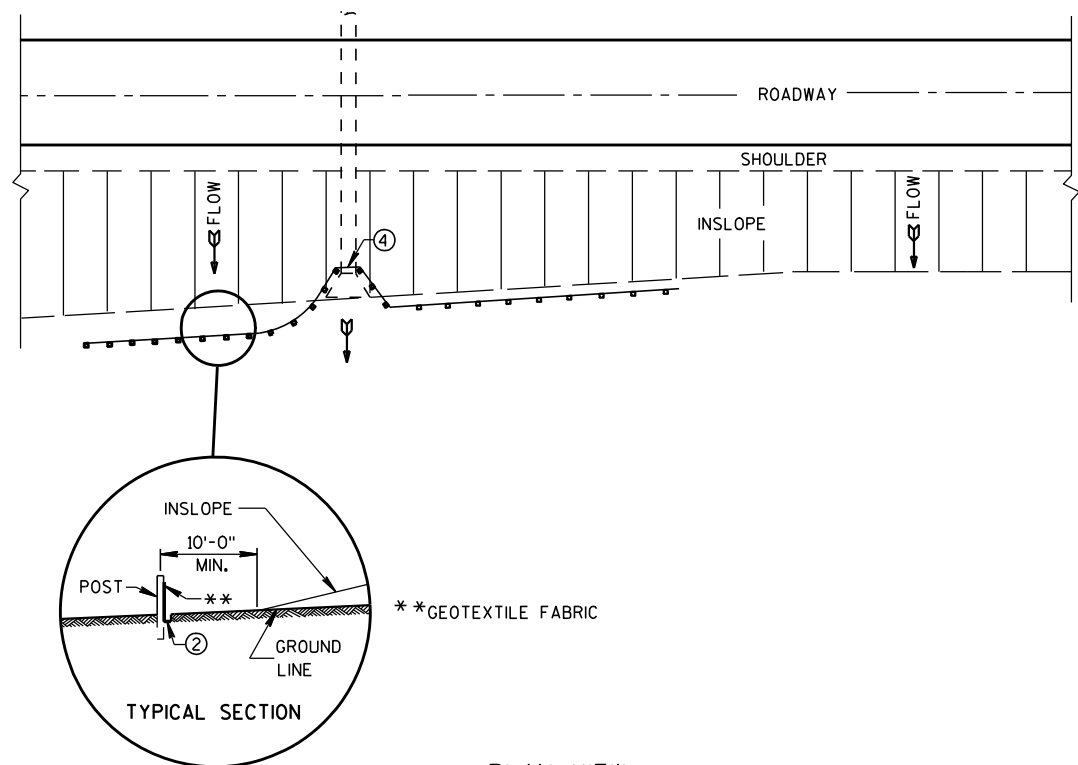
**PROFILE VIEW  
RURAL ENTRANCE  
WITH AGGREGATE SURFACE  
6" BASE AGGREGATE DENSE  
RESURFACING PROJECTS**

**DRIVEWAYS WITHOUT CURB  
AND GUTTER RESURFACING  
PROJECTS RURAL**

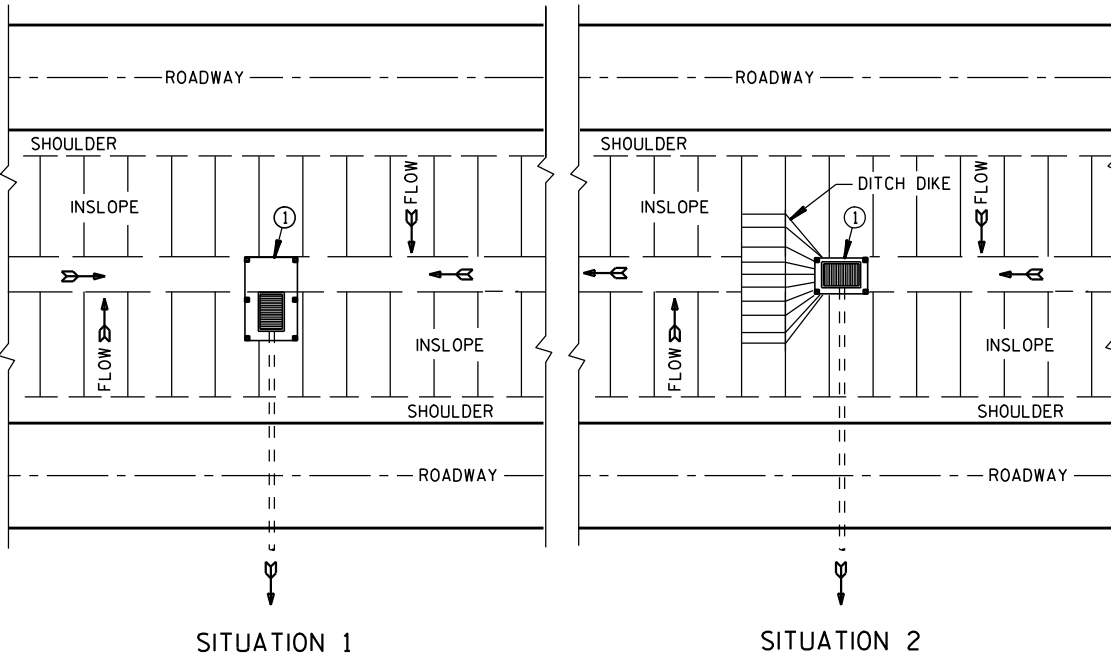
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
December 2016 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

FHWA



PLAN VIEW  
TYPICAL APPLICATION OF SILT FENCE

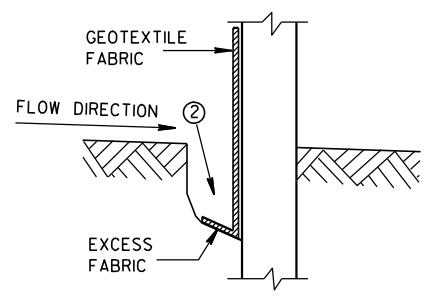


SITUATION 1 SITUATION 2  
PLAN VIEW  
SILT FENCE AT MEDIAN SURFACE DRAINS

**GENERAL NOTES**

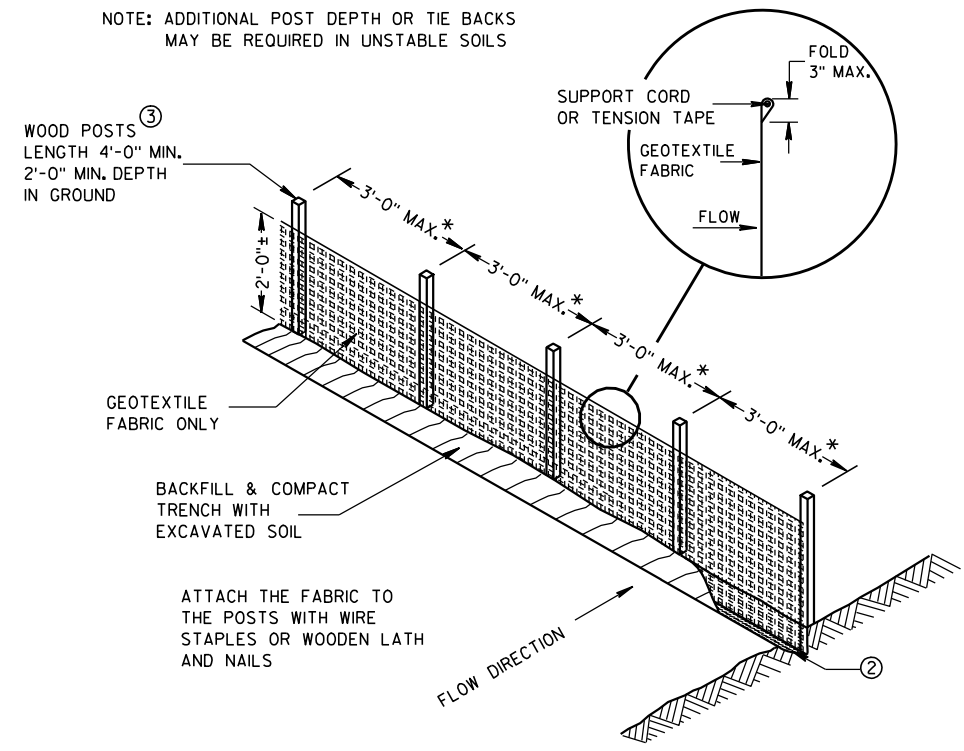
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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



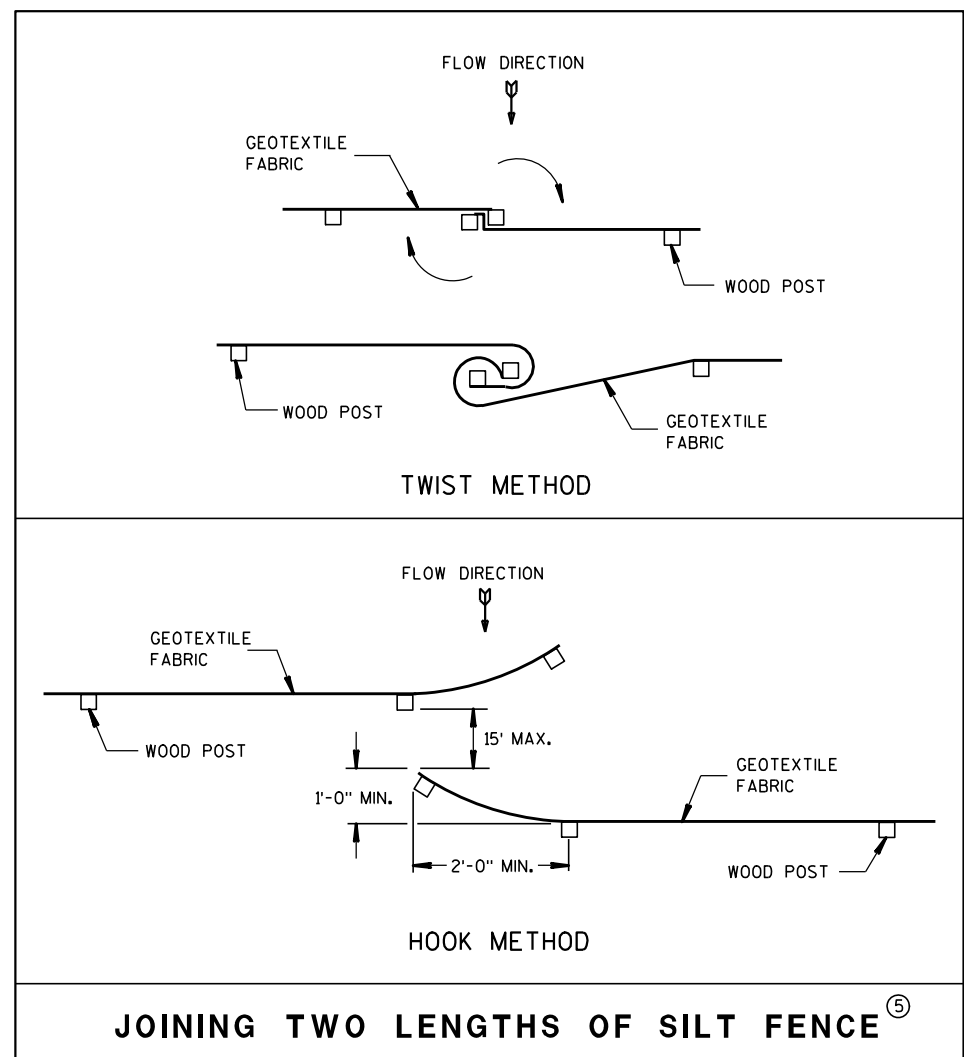
TRENCH DETAIL

NOTE: ADDITIONAL POST DEPTH OR TIE BACKS MAY BE REQUIRED IN UNSTABLE SOILS

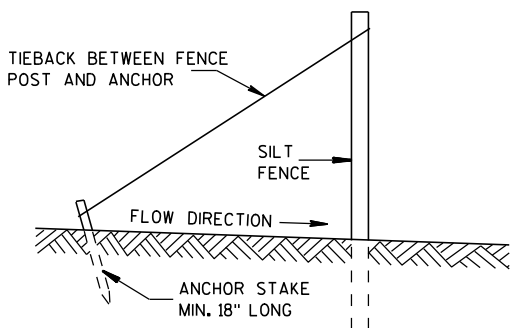


SILT FENCE

\* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



JOINING TWO LENGTHS OF SILT FENCE ⑤



SILT FENCE TIE BACK  
(WHEN REQUIRED BY THE ENGINEER)

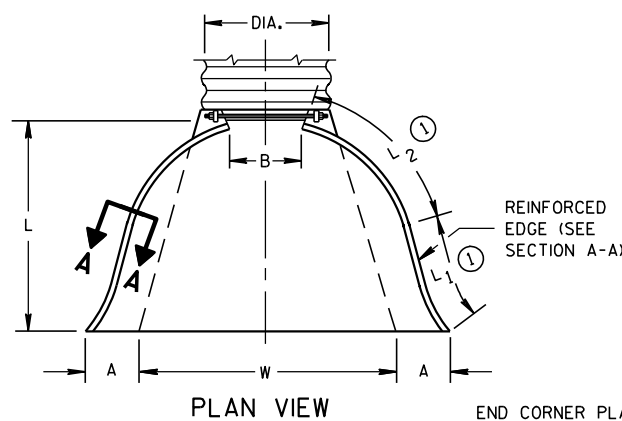
<b>SILT FENCE</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 4-29-05 DATE	/S/ Beth Canestra CHIEF ROADWAY DEVELOPMENT ENGINEER
FHWA	

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

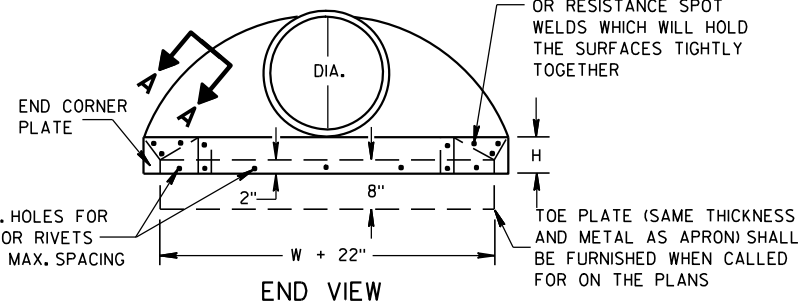
\* EXCEPT CENTER PANEL SEE GENERAL NOTES

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

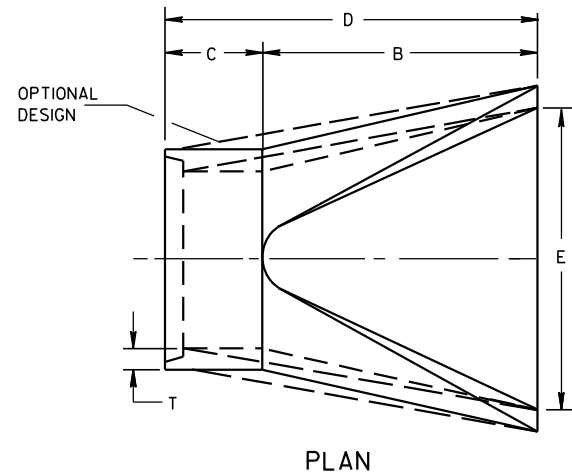
\* MINIMUM  
\*\* MAXIMUM



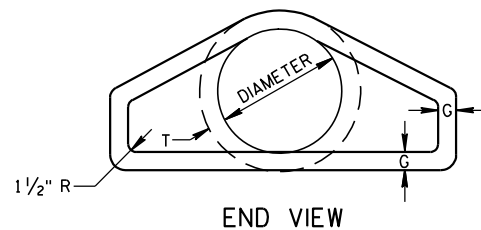
END CORNER PLATES MAY BE FASTENED TO APRON PROPER BY BOLTS, RIVETS, OR RESISTANCE SPOT WELDS WHICH WILL HOLD THE SURFACES TIGHTLY TOGETHER



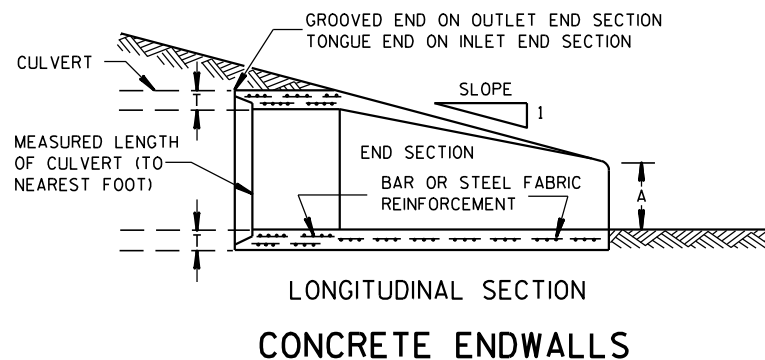
SIDE ELEVATION  
METAL ENDWALLS



PLAN

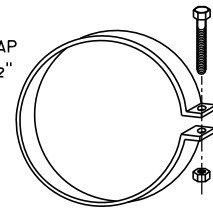


END VIEW

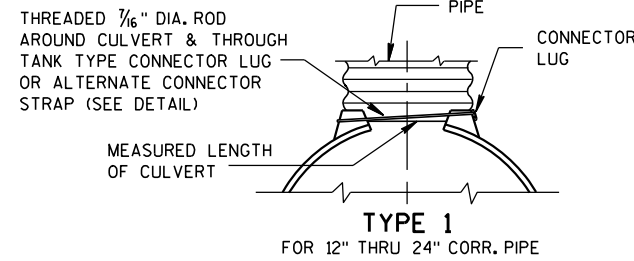


LONGITUDINAL SECTION  
CONCRETE ENDWALLS

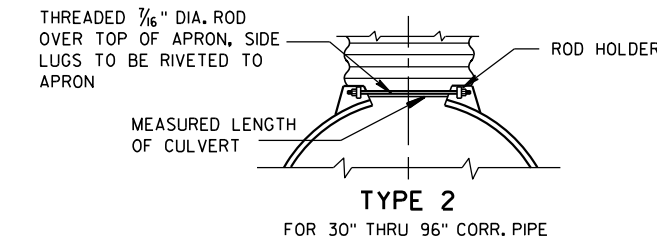
1" WIDE, 12 GA. (0.109" THICK) GALVANIZED STRAP WITH STANDARD 6" X 1/2" BAND BOLT AND NUT



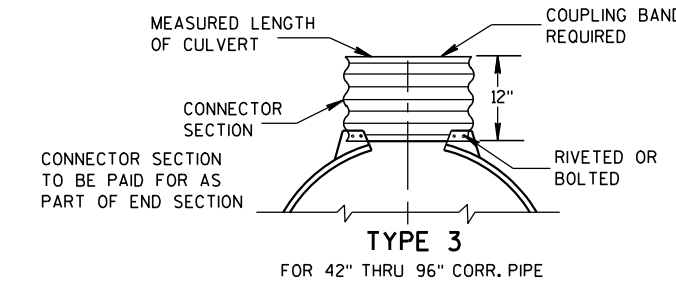
ALTERNATE FOR TYPE 1 CONNECTION  
END SECTION CONNECTOR STRAP



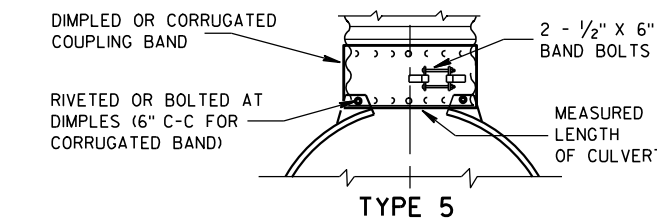
TYPE 1  
FOR 12" THRU 24" CORR. PIPE



TYPE 2  
FOR 30" THRU 96" CORR. PIPE



TYPE 3  
FOR 42" THRU 96" CORR. PIPE



ALTERNATE FOR:  
ALL SIZES CORRUGATED CIRCULAR PIPE

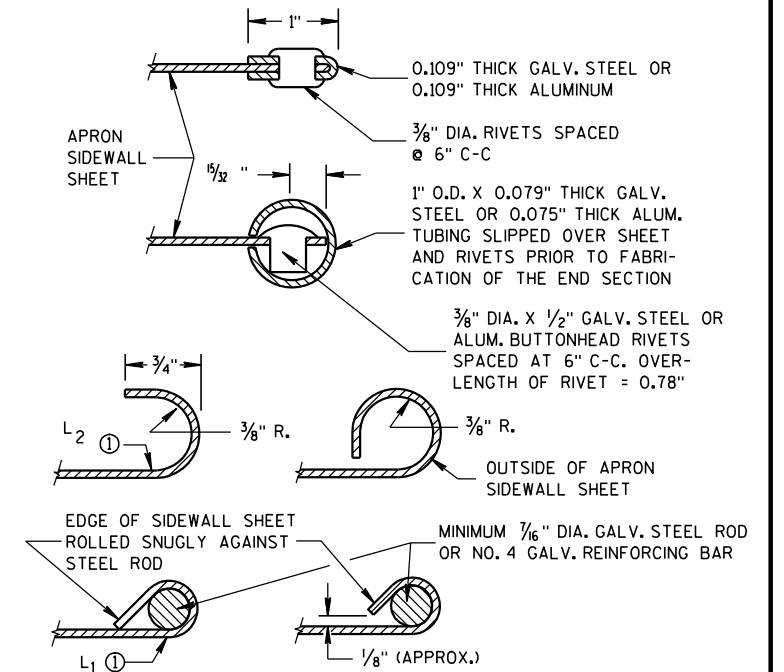
NOTE: DIMPLED BAND FITS OVER OUTSIDE OF ENDWALL, AND CORRUGATED BAND FITS INSIDE ENDWALL. DIMPLED BAND MAY BE USED WITH HELICALLY CORRUGATED PIPE.

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

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

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

CONNECTION DETAILS



SECTION A-A

GENERAL NOTES

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

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

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

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

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

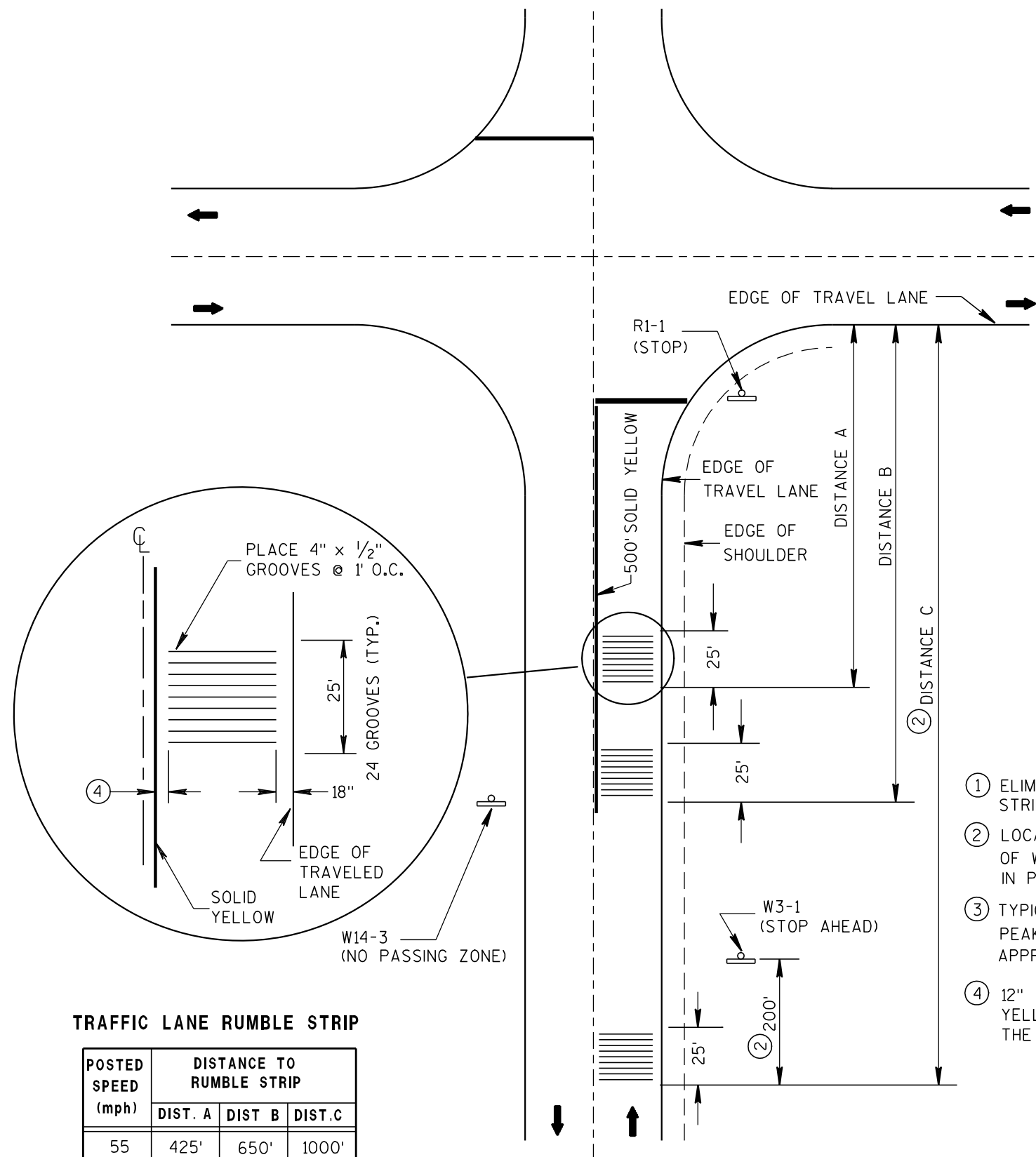
① FOR PIPE SIZES UP TO 60" DIAMETER, A 180° ROLLED EDGE MAY BE USED INSTEAD OF STEEL ROD REINFORCEMENT. SEE SECTION A-A.

APRON ENDWALLS FOR  
CULVERT PIPE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
11/30/94 DATE /S/ Rory L. Rhinesmith  
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER  
FHWA





**TRAFFIC LANE RUMBLE STRIP**

POSTED SPEED (mph)	DISTANCE TO RUMBLE STRIP		
	DIST. A	DIST. B	DIST. C
55	425'	650'	1000'
50	325'	450'	800'
45	275'	400'	650'
40	225'	①	550'
35	175'	①	475'
≤ 30	125'	①	425'

ARROW SYMBOL (➔) SHOWS DIRECTION OF TRAVEL

**PLAN VIEW  
RUMBLE STRIP LOCATION**

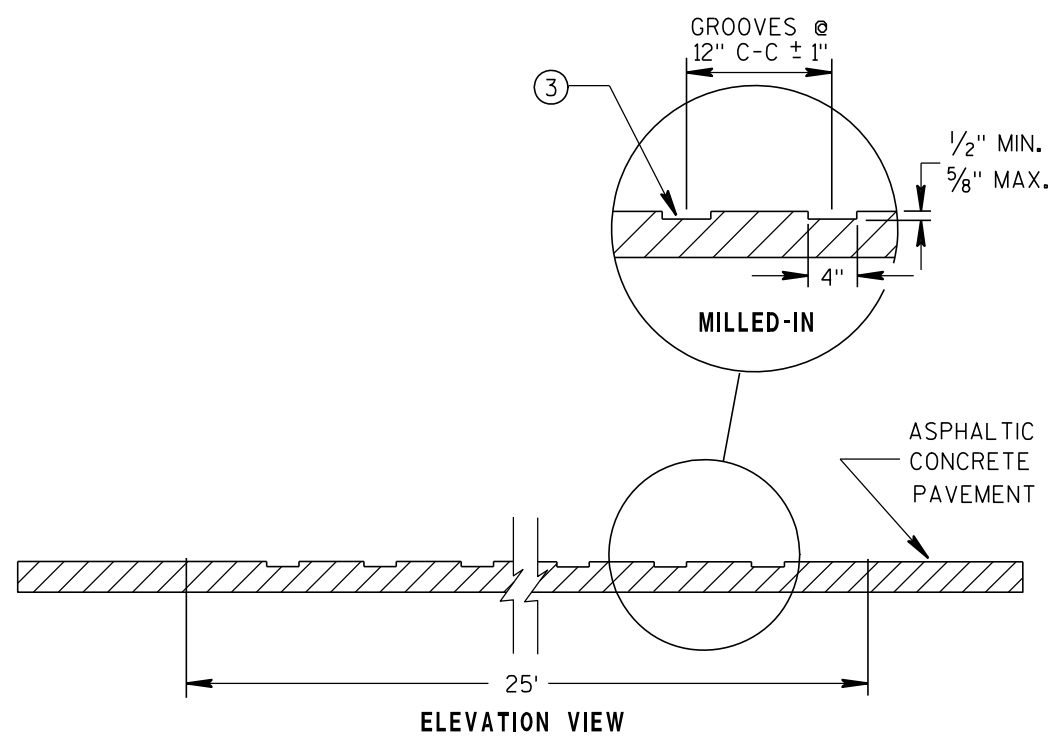
- ① ELIMINATE THE MIDDLE SET OF RUMBLE STRIPS.
- ② LOCATE RUMBLE STRIP 200' IN ADVANCE OF W3-1 SIGN AS SHOWN. IF W3-1 IS NOT IN PLACE, USE DISTANCE C.
- ③ TYPICAL VERTICAL VARIATION BETWEEN PEAKS AND VALLEYS WITHIN THE CUT APPROXIMATELY 1/16"
- ④ 12" CLEAR BETWEEN THE SOLID YELLOW LINE AND THE EDGE OF THE RUMBLE.

**GENERAL NOTES**

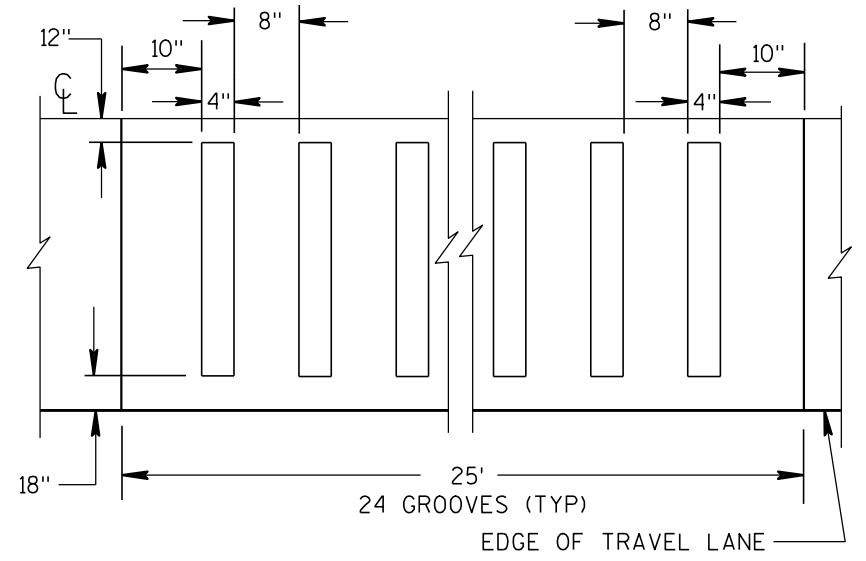
CONTRACTOR SHALL CONFIRM RUMBLE STRIP LOCATION WITH THE ENGINEER PRIOR TO INSTALLATION. THE ENGINEER MAY MODIFY THE RUMBLE STRIP LOCATION AS FIELD CONDITIONS DICTATE.

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 PROVIDED ELSEWHERE IN THE CONTRACT.



**ELEVATION VIEW**



**PLAN VIEW  
ASPHALTIC PAVEMENT  
MILLED-IN**

**ASPHALTIC RUMBLE STRIPS  
AT INTERSECTION**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
8/17/2011 DATE /S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT ENGINEER  
FHWA

**GENERAL NOTES**

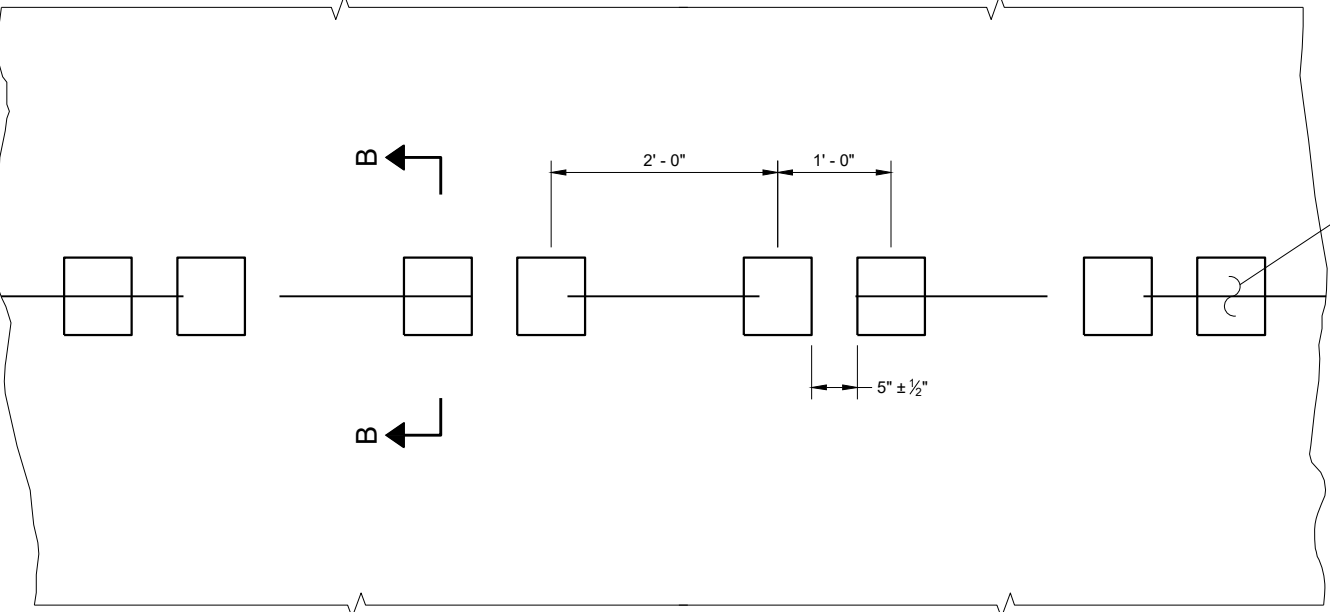
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

DO NOT MILL CENTERLINE GROOVES THROUGH ANY INTERSECTION, MARKED CROSSWALK, NON-MOTORIZED PATH CROSSING, OR SNOWMOBILE CROSSING.

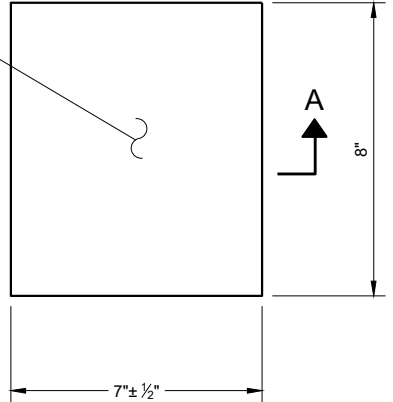
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

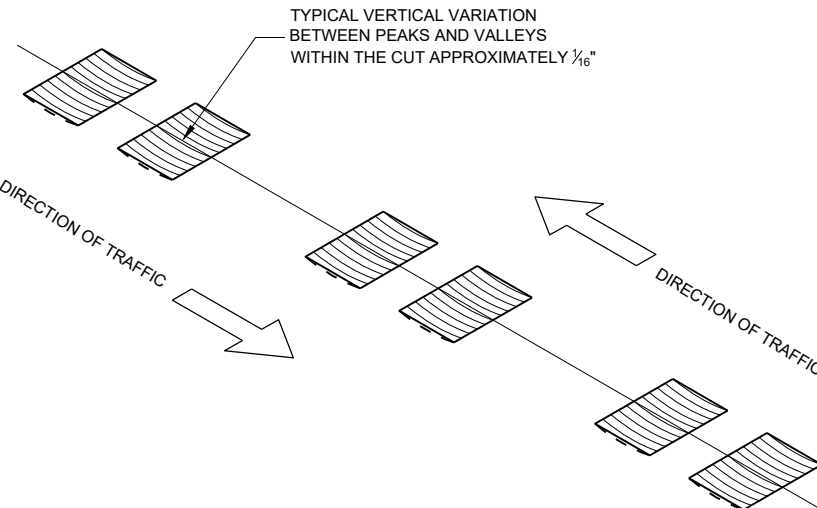
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



**PLAN VIEW  
SHOULDER WITH GROOVES**

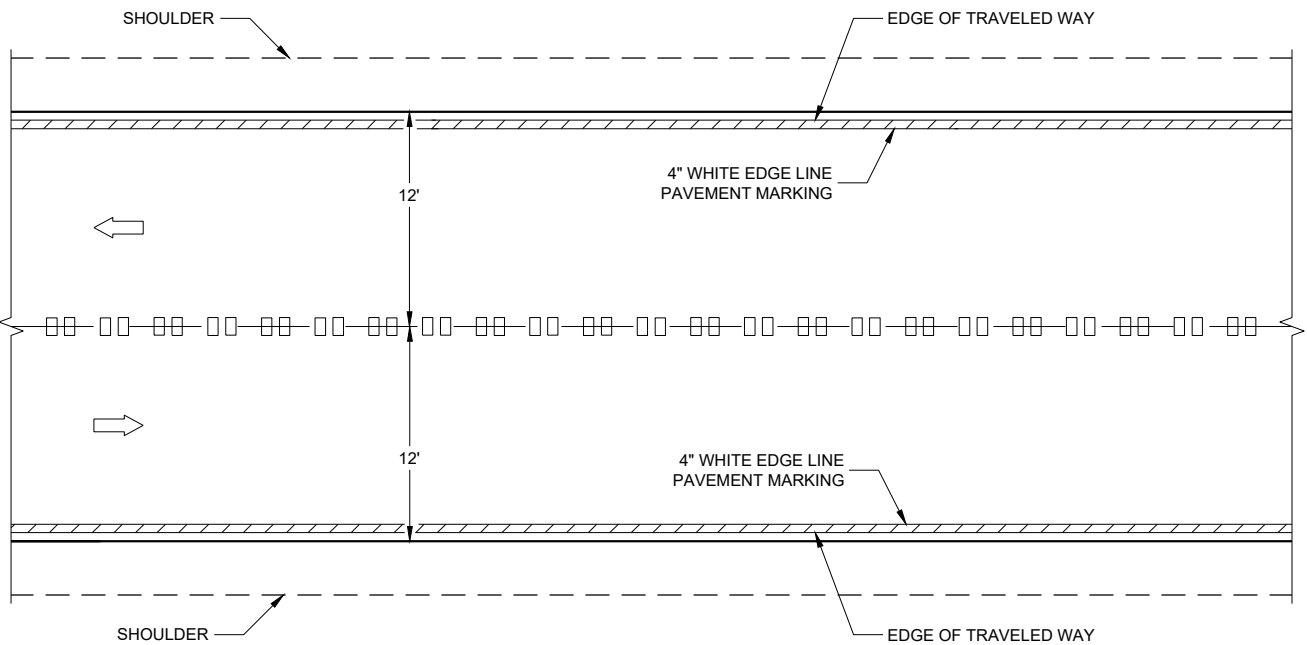


**PLAN VIEW  
(SINGLE GROOVE)**

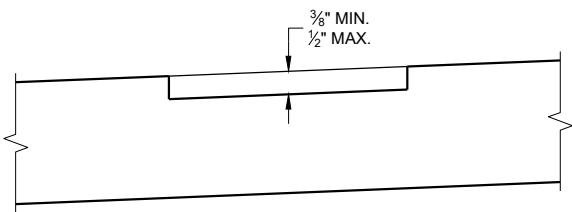


**ISOMETRIC**

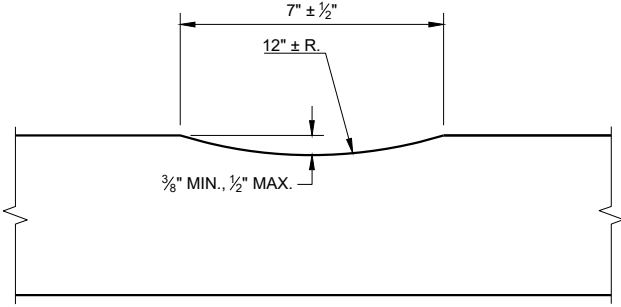
**PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP**



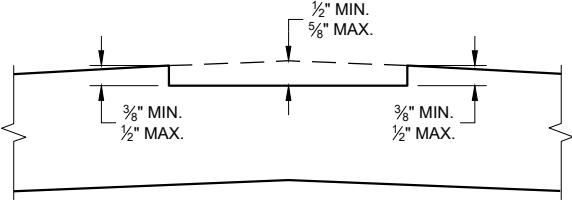
**CENTERLINE GROOVES ON TWO-WAY ROADWAYS**



**SECTION B - B  
SUPERELEVATED ROADWAY**



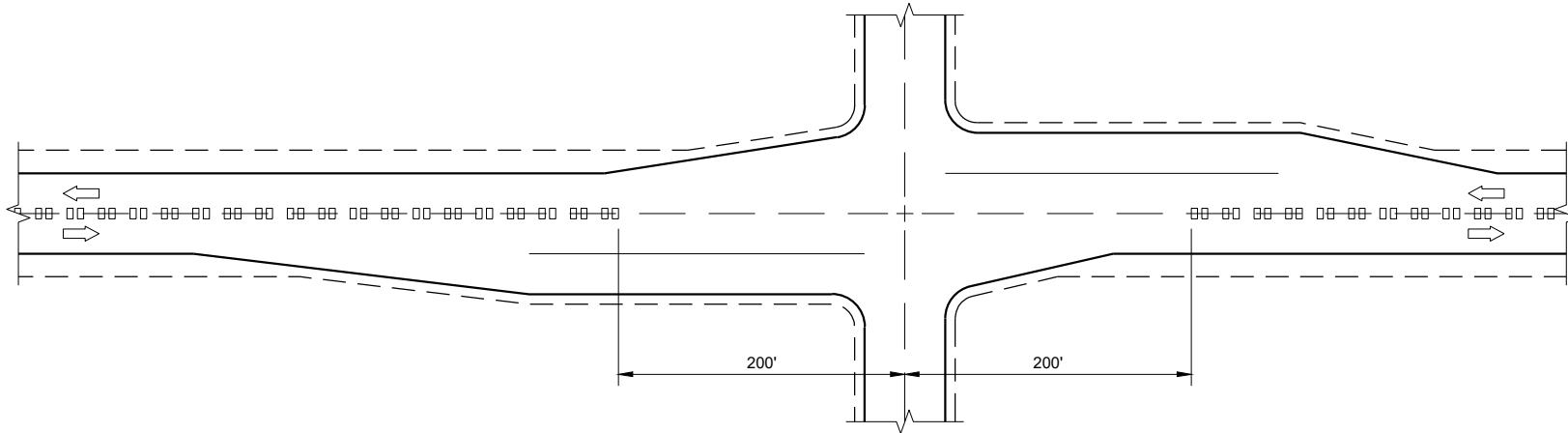
**SECTION A - A**



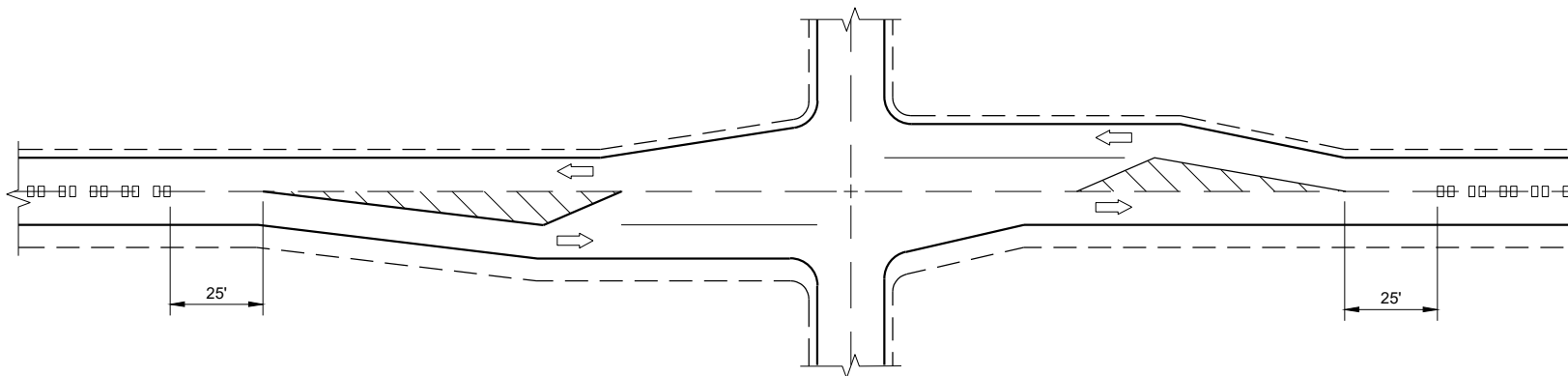
**SECTION B - B  
CROWNED ROADWAY**

**2-LANE RURAL  
CENTER LINE RUMBLE STRIP,  
MILLING**

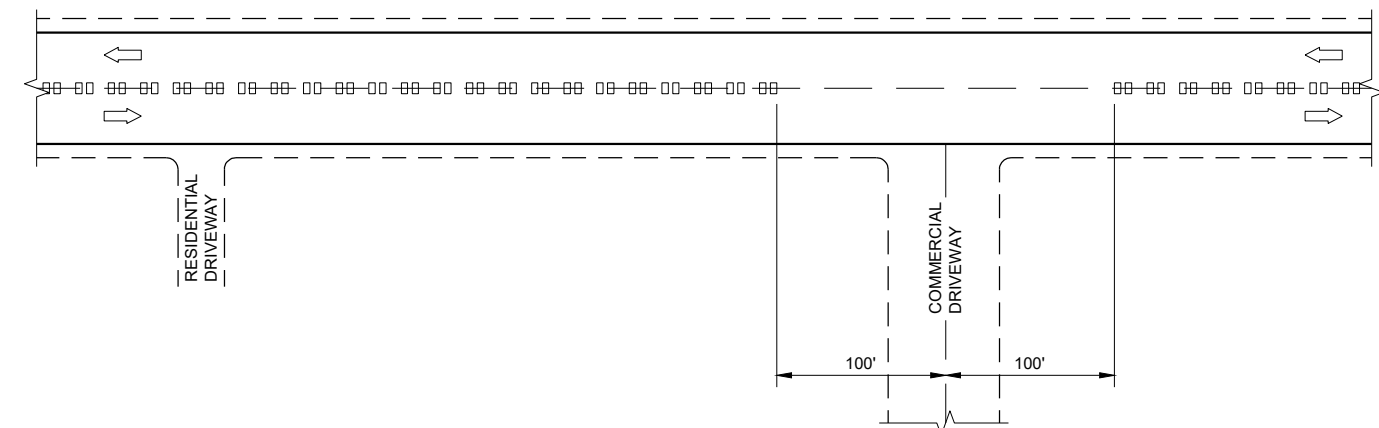
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**CENTERLINE GROOVES AT INTERSECTIONS**



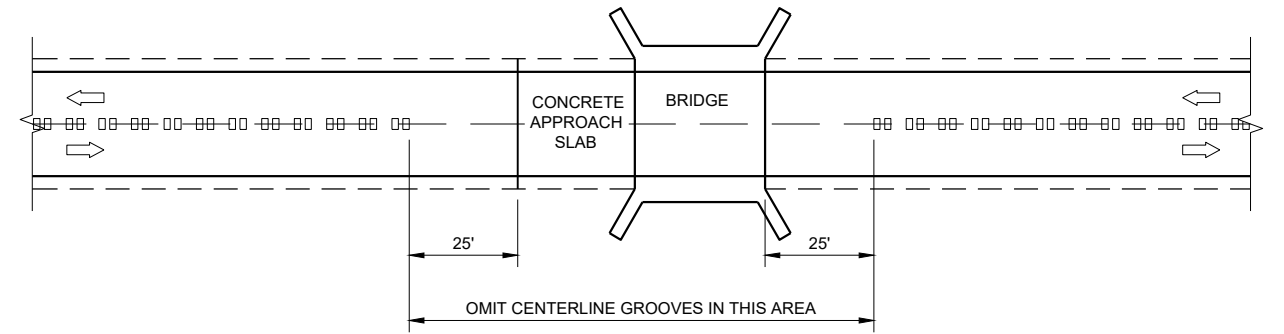
**CENTERLINE GROOVES AT INTERSECTIONS  
(WITH LEFT TURN LANES)**



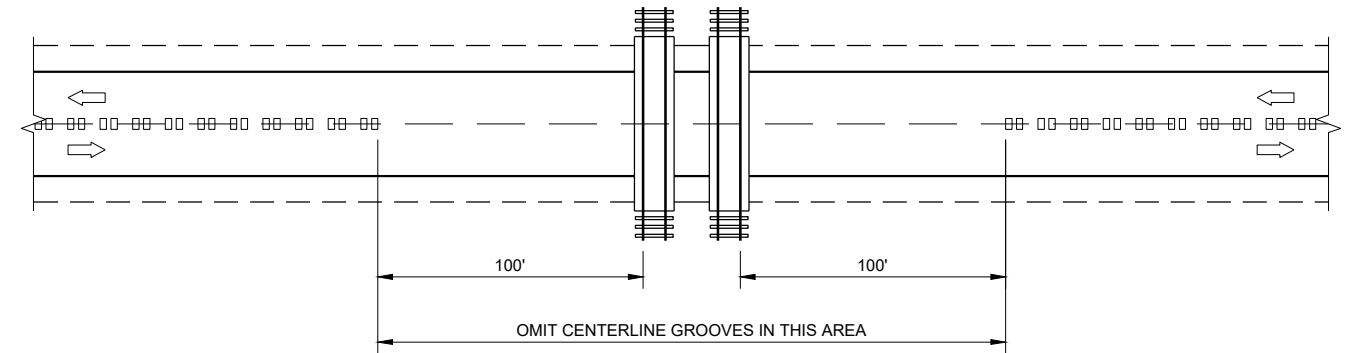
**CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>**

**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**

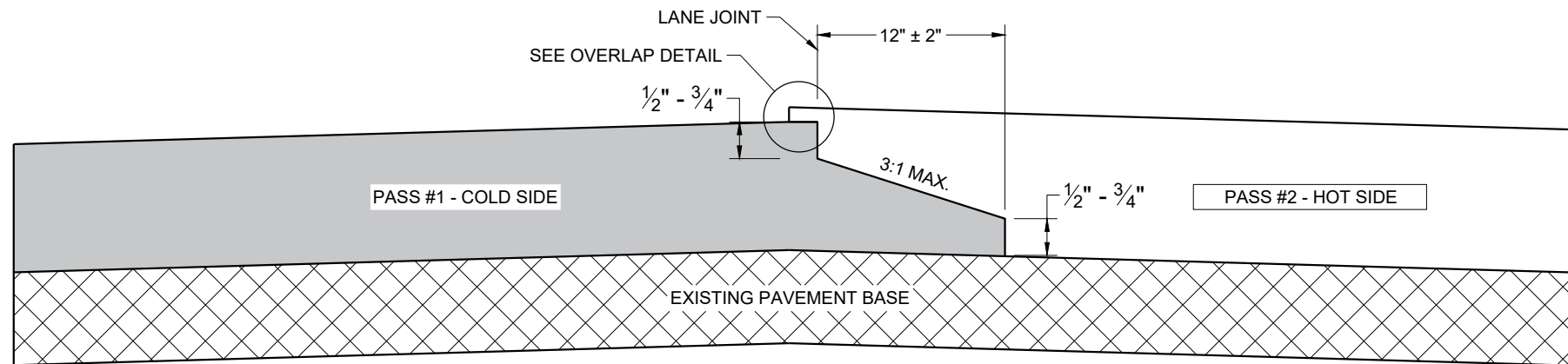
6

6

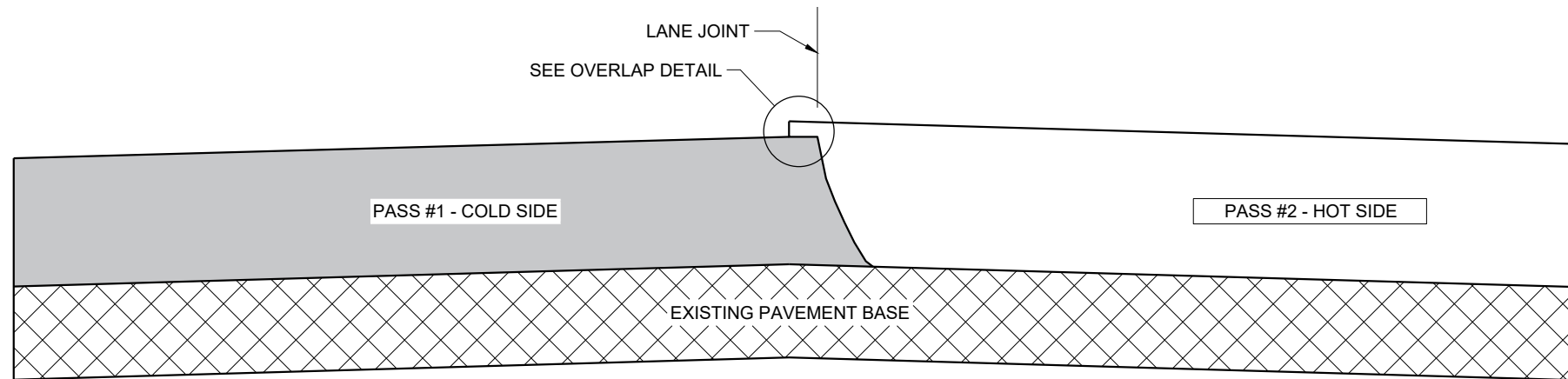
SDD 13A11 - 03b

SDD 13A11 - 03b

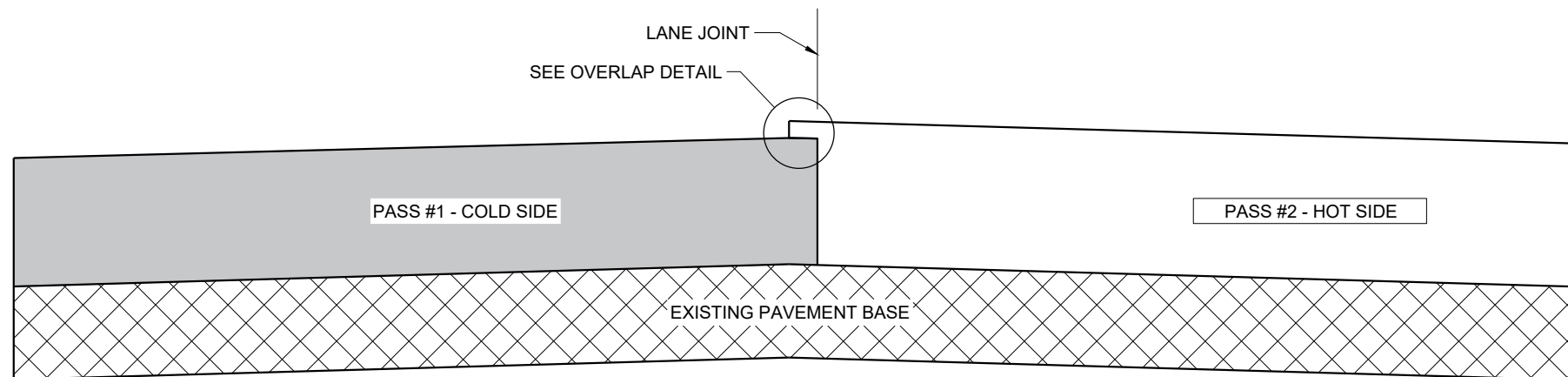
<b>2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 7/2018	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT (MILLED)**

**GENERAL NOTES**

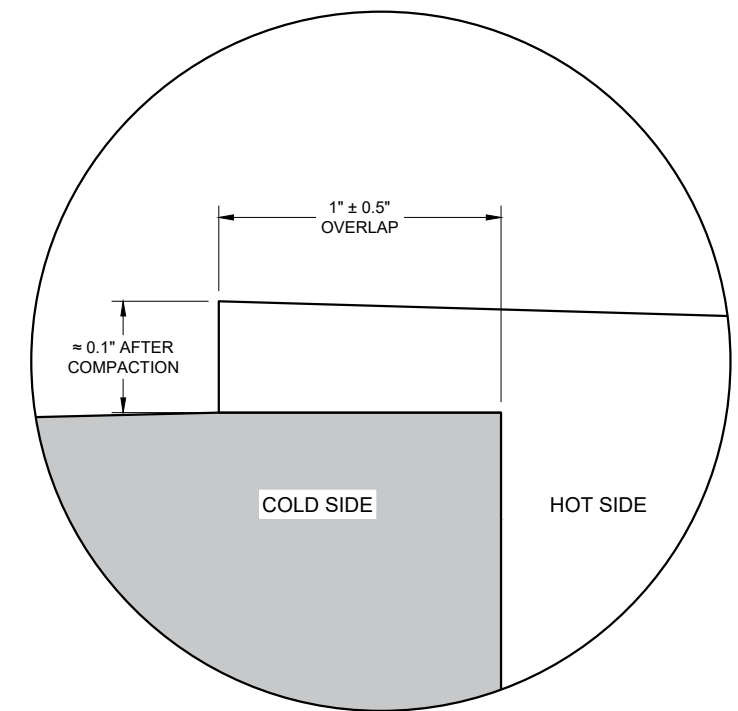
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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)**

6

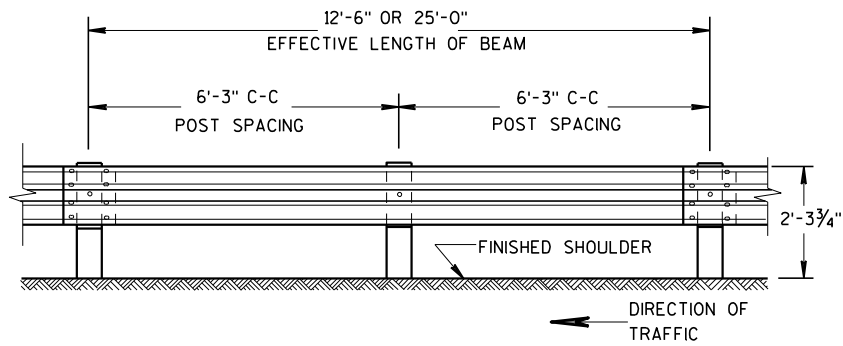
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SDD 13C19 - 03

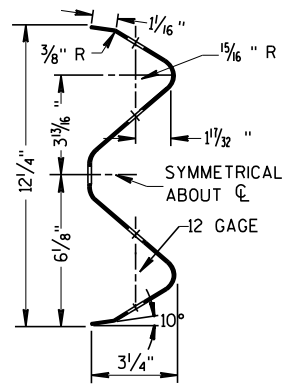
SDD 13C19 - 03

<b>HMA LONGITUDINAL JOINTS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2020 DATE	/S/ Steven Hefel HMA PAVEMENT ENGINEER
FHWA	

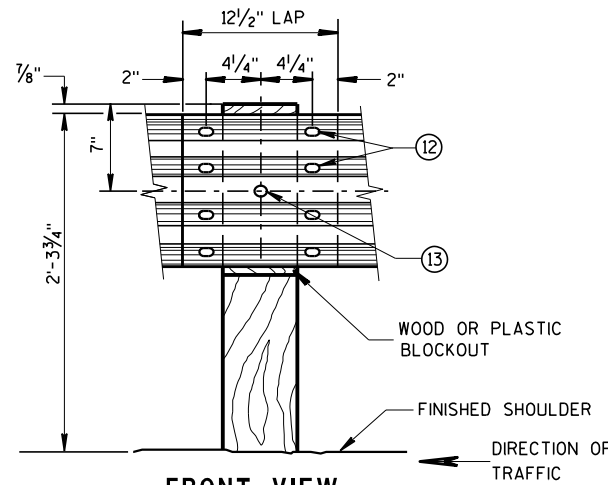




**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



**SECTION THRU W BEAM**

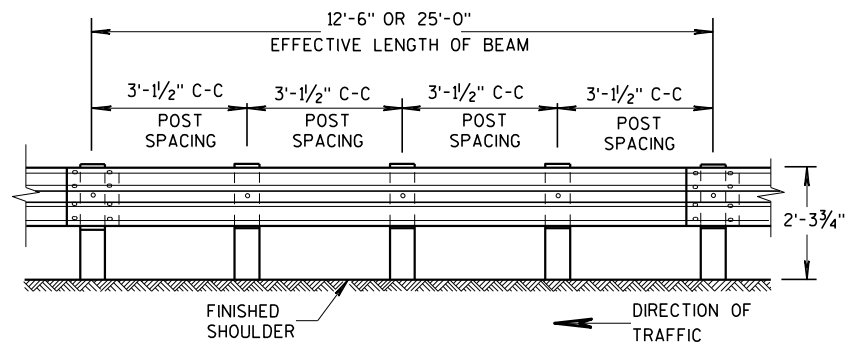


**FRONT VIEW  
BEAM SPLICE AT WOOD POST  
AND POST MOUNTING DETAIL**

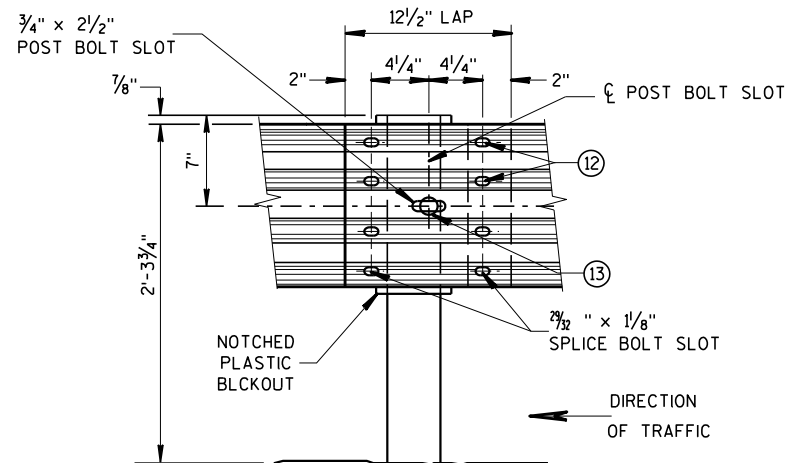
**GENERAL NOTES**

FURNISH GUARDRAIL DEFLECTORS FROM APPROVED PRODUCTS LIST.

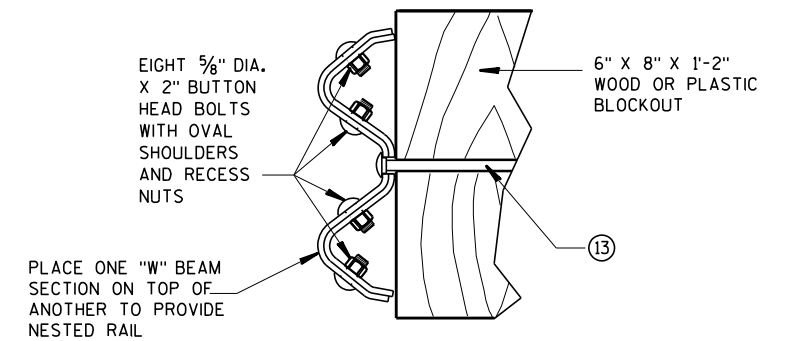
- ⑨ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINA. START REFLECTORS AT POST #9 AND SPACE EVENLY EVERY 100 FEET (MAX.) TO THE END OF GUARDRAIL RUN, USING A MINIMUM OF 3 REFLECTORS.
- ⑫ 8 - 5/8"  $\phi$  X 2" BUTTON HEAD BOLTS WITH OVAL SHOULDERS & RECESS NUTS.
- ⑬ 5/8" DIA. BUTTON HEAD BOLT AND RECESS NUT WITH 5/8" DIA. F844 FLAT WASHER UNDER NUT.



**FRONT VIEW  
POST SPACING FOR LONGER POST  
AT HALF POST SPACING W BEAM (LHW)**

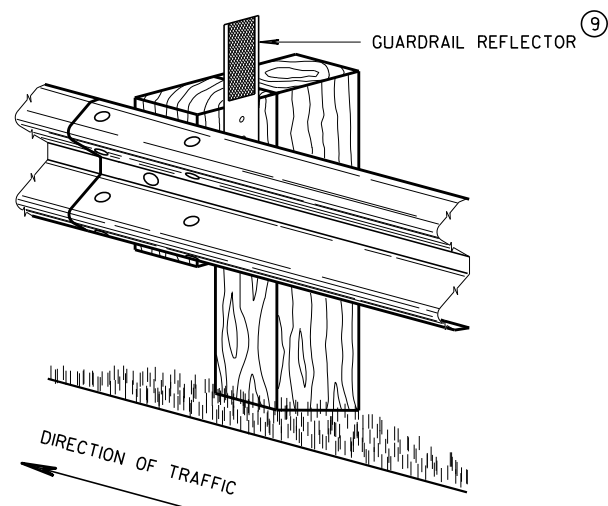


**FRONT VIEW  
BEAM SPLICE AT STEEL POST  
TYPICAL SPLICING DETAILS  
OF STEEL PLATE BEAM GUARD**

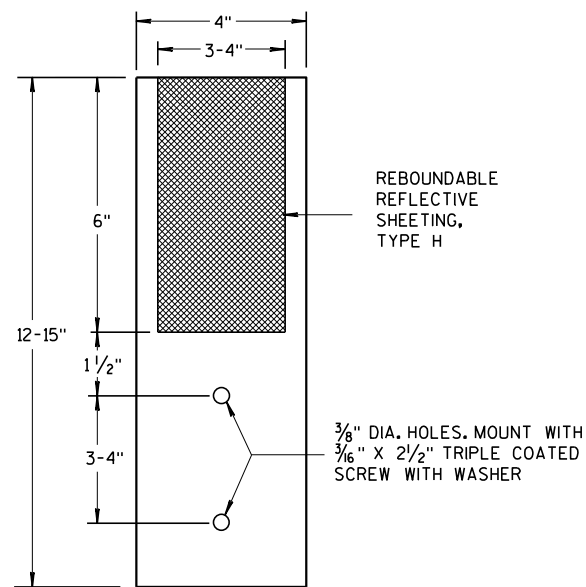


**NESTED W BEAM (NW)**  
USE ALL OTHER STANDARD BEAM GUARD DETAILS FOR  
CONSTRUCTING NESTED W BEAM (NW)

\* USE DOUBLE SIDED WHITE GUARDRAIL REFLECTORS ON ROADWAYS WITH BI-DIRECTIONAL TRAFFIC (NO MEDIAN). USE SINGLE SIDED WHITE (RIGHT SIDE) AND SINGLE SIDED YELLOW (LEFT SIDE) ON ROADWAYS WITH MEDIAN SEPARATION.



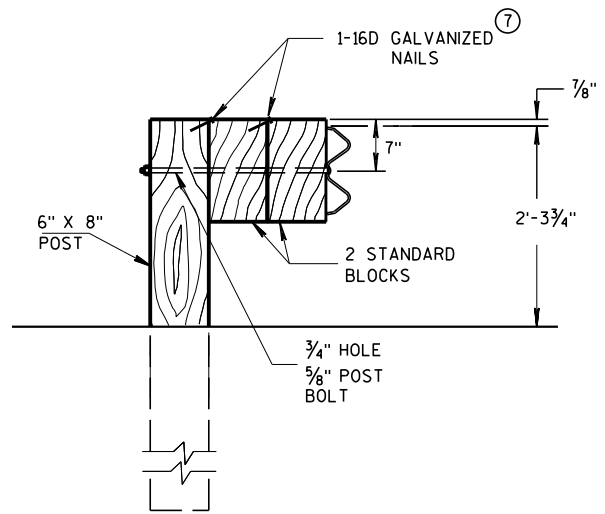
**4" X 12" GUARDRAIL REFLECTOR DETAIL  
AND TYPICAL INSTALLATION \***



**4" x 12" GUARDRAIL REFLECTOR**

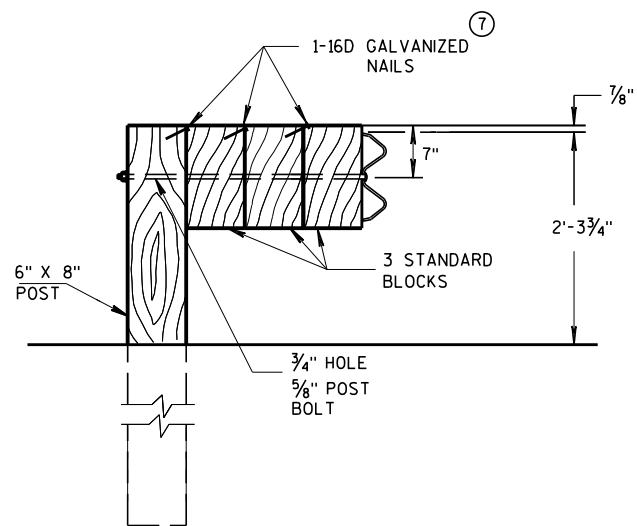
**STEEL PLATE BEAM GUARD,  
CLASS "A",  
INSTALLATION & ELEMENTS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**DETAIL FOR DOUBLE BLOCKS**

THE NUMBER OF DOUBLE BLOCK POSTS WITHIN A BARRIER RUN IS UNLIMITED

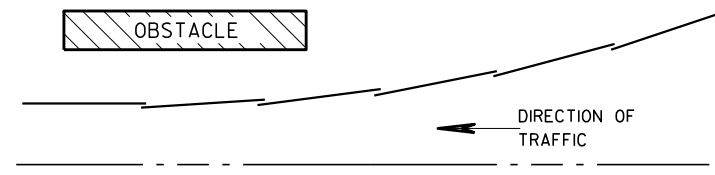


**DETAIL FOR TRIPLE BLOCKS**

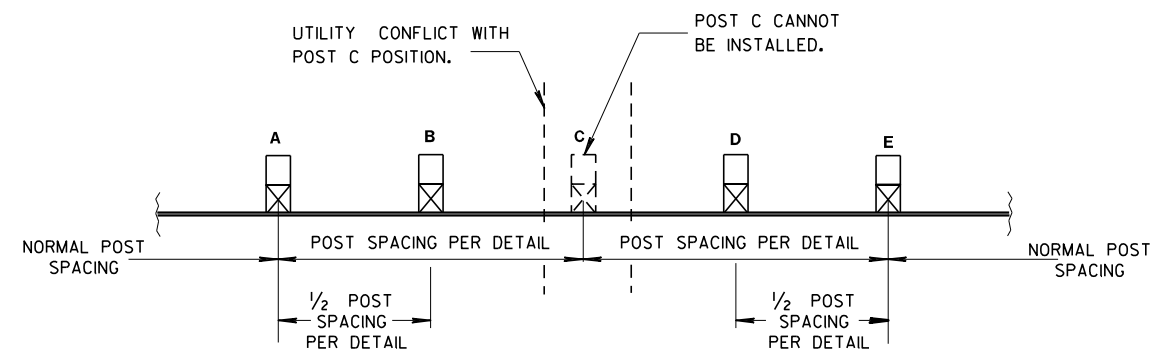
TRIPLE BLOCK DETAIL IS LIMITED TO ONE LOCATION WITHIN A BEAM GUARD RUN.

NOTES: USE DOUBLE OR TRIPLE BLOCKS WHEN UNDERGROUND OBSTACLES PREVENT THE POST FROM BEING INSTALLED.

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

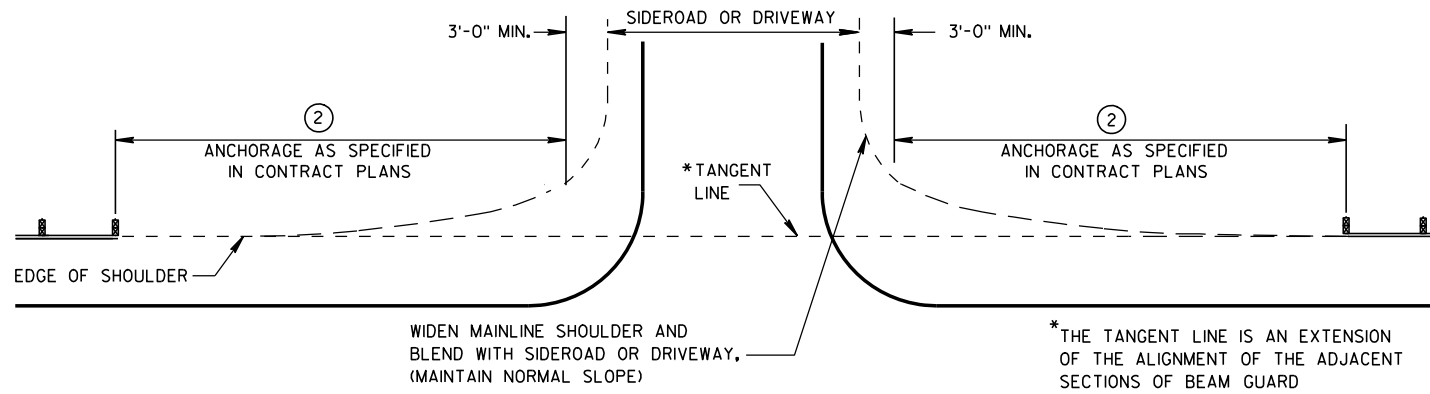


**PLAN VIEW  
BEAM LAPPING DETAIL**

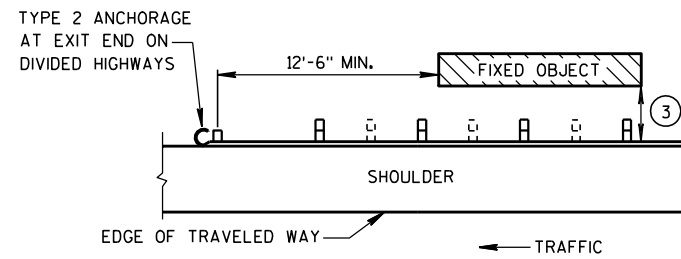


**POST DRIVING FOR CONTINUOUS  
UNDERGROUND OBSTRUCTION**

<b>STEEL PLATE BEAM GUARD, CLASS "A", INSTALLATION &amp; ELEMENTS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED June 2017	/s/ Rodney Taylor
DATE	ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
FHWA	



**BEAM GUARD AT SIDEROADS OR DRIVEWAYS**



**BEAM GUARD AT OBSTACLES  
EXIT END - ONE WAY TRAFFIC**

**GENERAL NOTES**

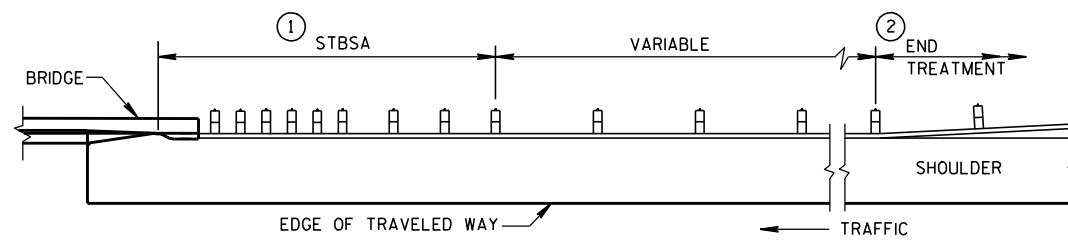
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE PERTINENT STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

W6 X 9 OR W6 X 8.5 STEEL POSTS WITH NOTCHED PLASTIC BLOCKOUTS ARE ACCEPTABLE ALTERNATIVES FOR 6" X 8" WOOD POSTS WITH WOOD OR PLASTIC BLOCKOUTS. USE APPROVED NOTCHED PLASTIC BLOCKOUTS WITH STEEL POSTS.

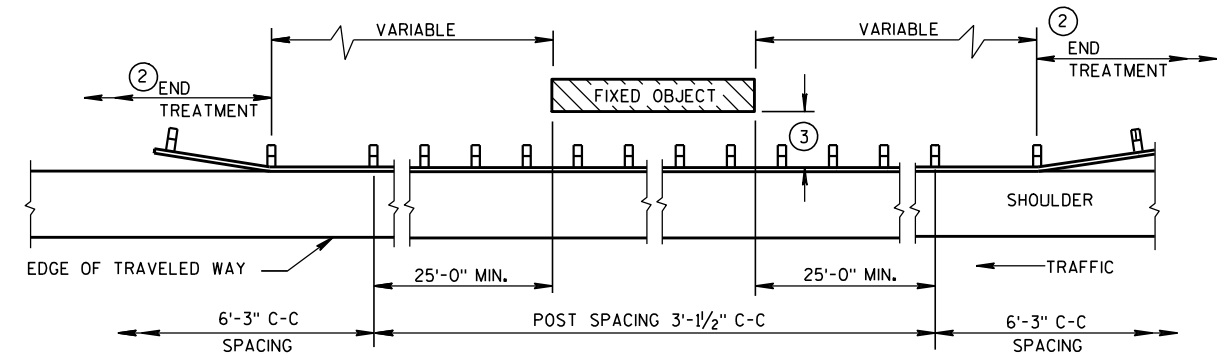
THE LOCATIONS AND LENGTHS OF BEAM GUARD ARE SHOWN ELSEWHERE IN THE PLAN.

- ① STEEL THRIE BEAM STRUCTURAL APPROACH (STBSA) - SEE CURRENT SDD 14B20.
- ② USE AN APPROVED END TREATMENT FOR THE TRAFFIC APPROACH SIDE OF BRIDGE/OBSTACLES. USE TYPE 2 ANCHORAGE ONLY AT THE DOWNSTREAM ENDS OF BEAM GUARD LOCATED ALONG ROADWAYS WITH ONE WAY TRAFFIC.

MINIMUM LATERAL DISTANCE FROM FACE OF BEAM GUARD TO FIXED OBJECT	POST SPACING
3'-6"	3' - 1 1/2"
4'-6"	6' - 3"



**BEAM GUARD AT FULL WIDTH BRIDGES**

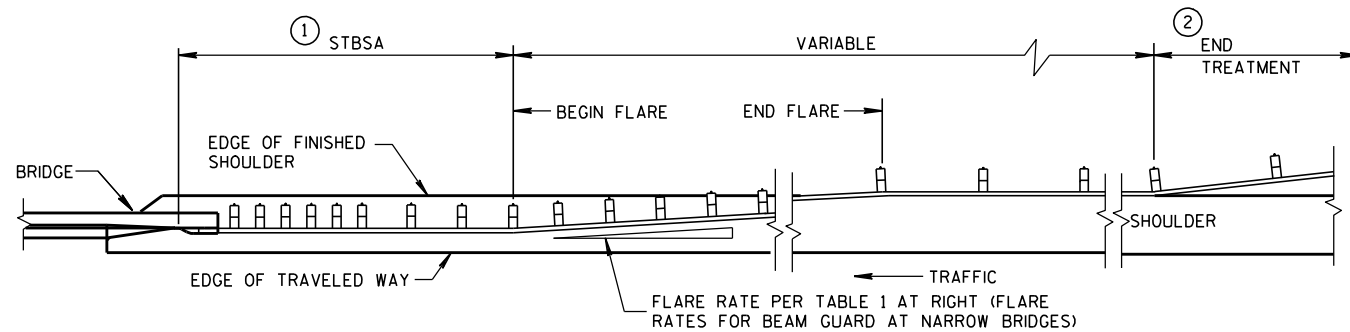


**BEAM GUARD AT OBSTACLES - TWO WAY TRAFFIC**

(RAIL TO OBSTACLE CLEARANCE 3'-6" TO 4'-6")

**TABLE 1  
FLARE RATES FOR BEAM  
GUARD AT NARROW BRIDGES**

POSTED SPEED (MPH)	FLARE RATE
25	13:1
30	15:1
35	16:1
40	18:1
45	21:1
50	24:1
55	26:1
65	30:1



**BEAM GUARD AT NARROW BRIDGES  
(FLARED TO SHOULDER EDGE, THEN PARALLEL TO ROADWAY)**

**STEEL PLATE BEAM GUARD  
CLASS "A"  
AT BRIDGES, OBSTACLES  
AND SIDEROADS/DRIVEWAYS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
8-21-07 /s/ Jerry H. Zogg  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



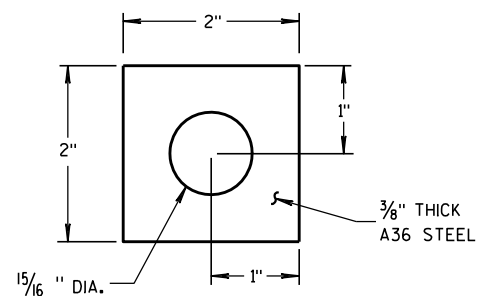
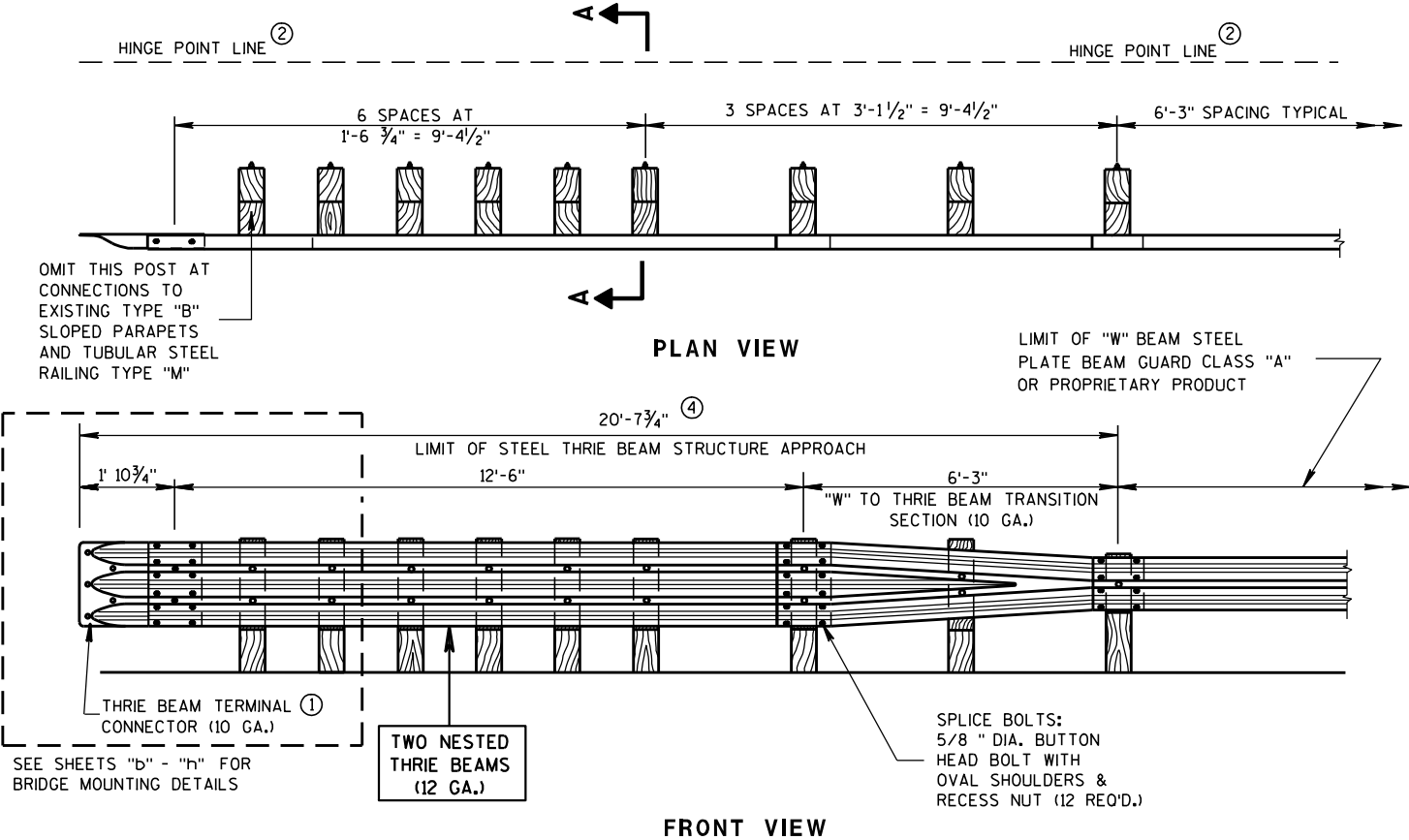
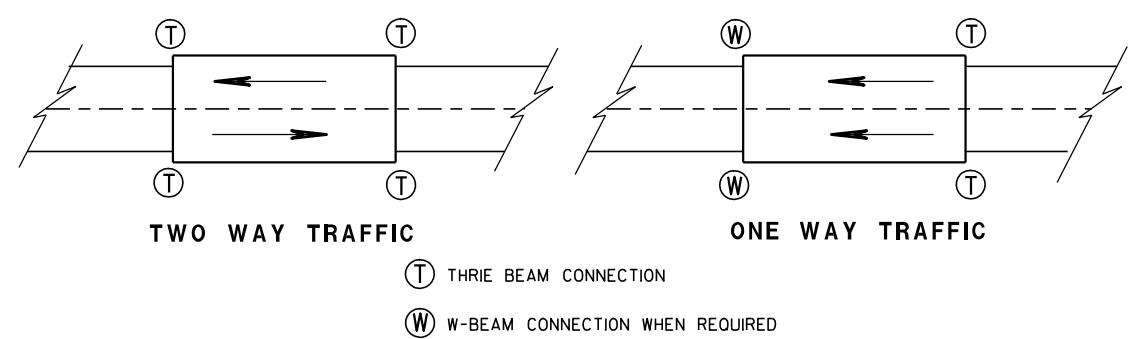


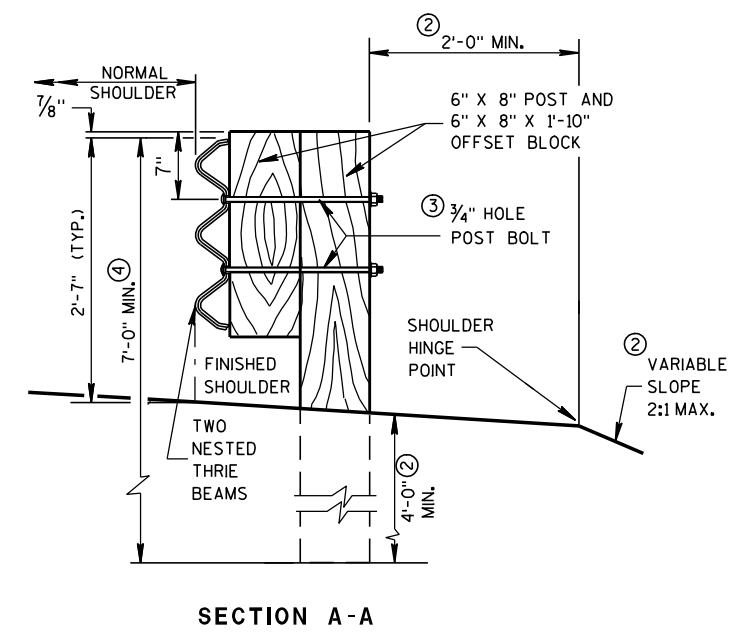
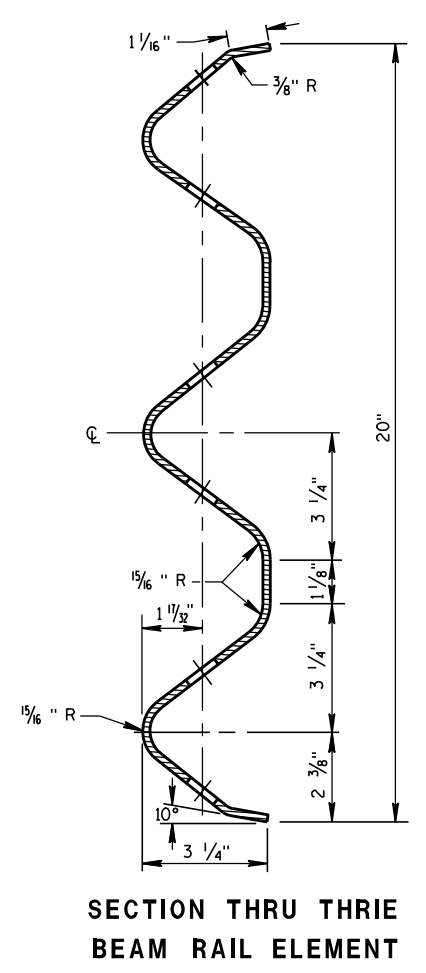
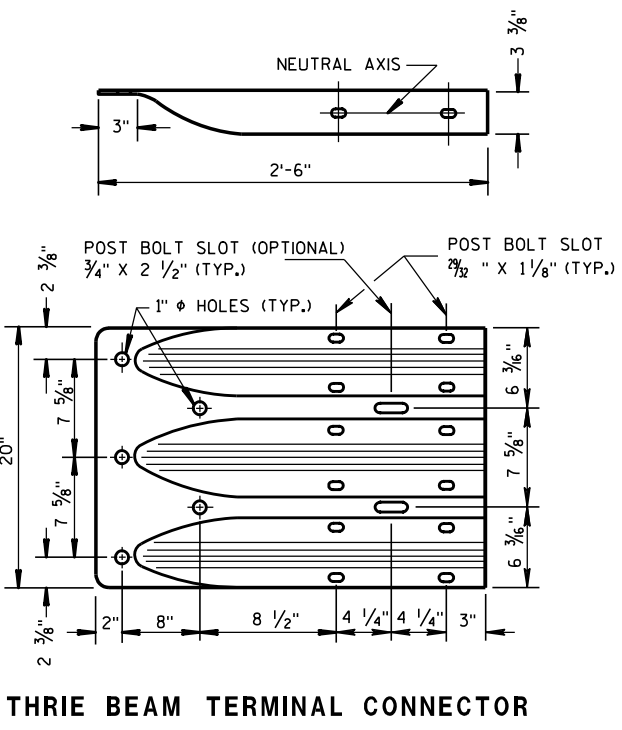
PLATE WASHER DETAIL

GENERAL NOTES

- BOLT THE THRIE BEAM TO ALL POSTS AND BLOCKOUTS, DRILL OR PUNCH BOLT HOLES IN THE BEAM IF THE POST SPACING IS LESS THAN 6'-3".
- DO NOT USE STEEL POSTS AND NOTCHED PLASTIC BLOCKOUTS IN THE STEEL THRIE BEAM STRUCTURAL APPROACH AND THE TRANSITION SECTION OF STEEL PLATE BEAM GUARD, CLASS "A" INSTALLATIONS.
- IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B15 FOR MORE DETAILS.
- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② MINIMUM EMBEDMENT SHALL BE 4'-0". WHERE EXISTING CONDITIONS DO NOT PERMIT THE APPROPRIATE EARTHWORK SHOWN ON THE PLAN TYPICAL SECTIONS OR DETAILS, THE ENGINEER MAY ALLOW THE REDUCTION OR ELIMINATION OF THE 2 FOOT DISTANCE TO THE HINGE POINT. OTHERWISE BUILD AS THE PLAN SHOWS OR AS THE ENGINEER DIRECTS. IF THE 2 FOOT DISTANCE TO THE HINGE POINT IS REDUCED OR ELIMINATED, INCREASE THE POST EMBEDMENT DEPTH TO 4'-6" OR MORE.
- ③ POST BOLTS ARE 5/8" DIAMETER ASTM A307 BUTTON HEAD BOLT. A POST BOLT REQUIRES A 5/8" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX AND A 5/8" DIAMETER F844 FLAT WASHER. LENGTH OF POST BOLT MAY VARY.
- ④ ALL WOOD POSTS MUST BE 6" X 8" AND AT LEAST 7'-0" LONG.



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

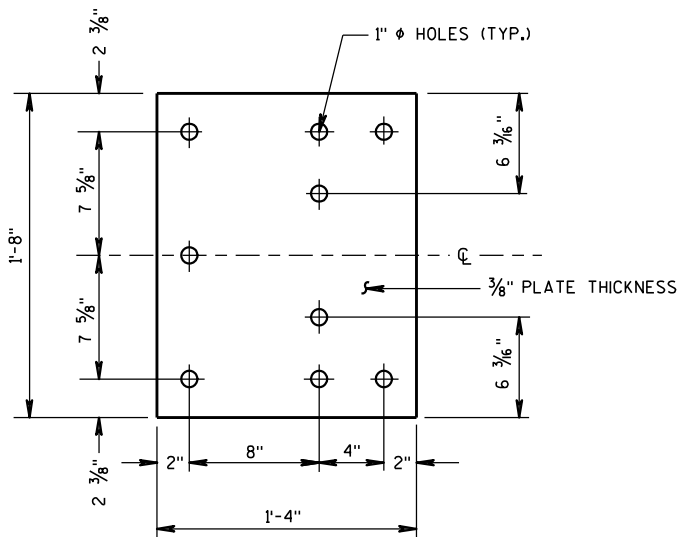


**STEEL THRIE BEAM STRUCTURE APPROACH**

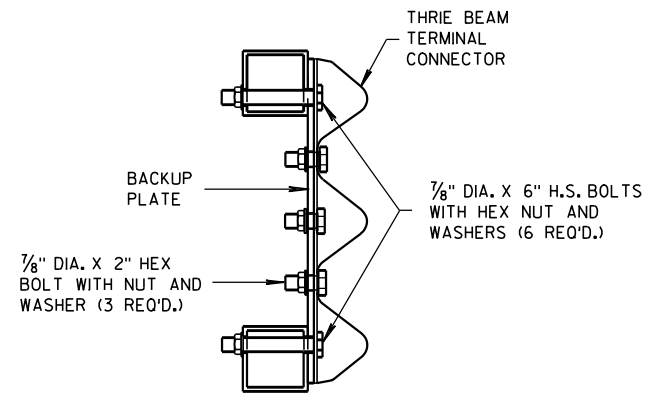
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

APPROVED 8/31/2012 DATE /S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER

FHWA



**BACK-UP PLATE DETAIL**

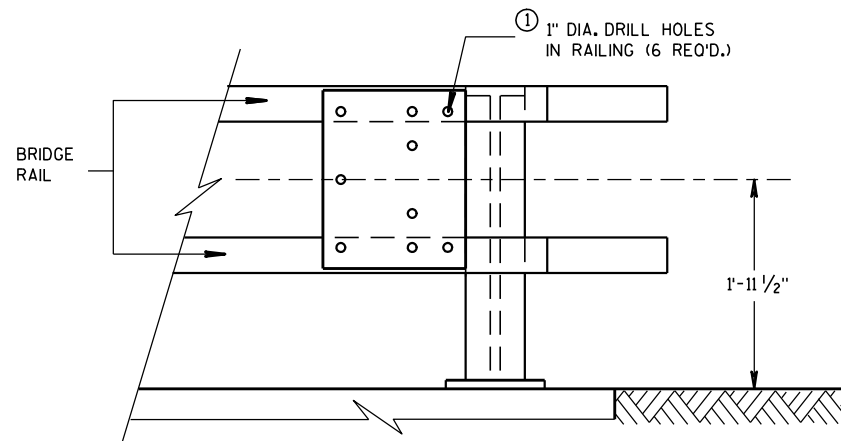


**SECTION G-G**

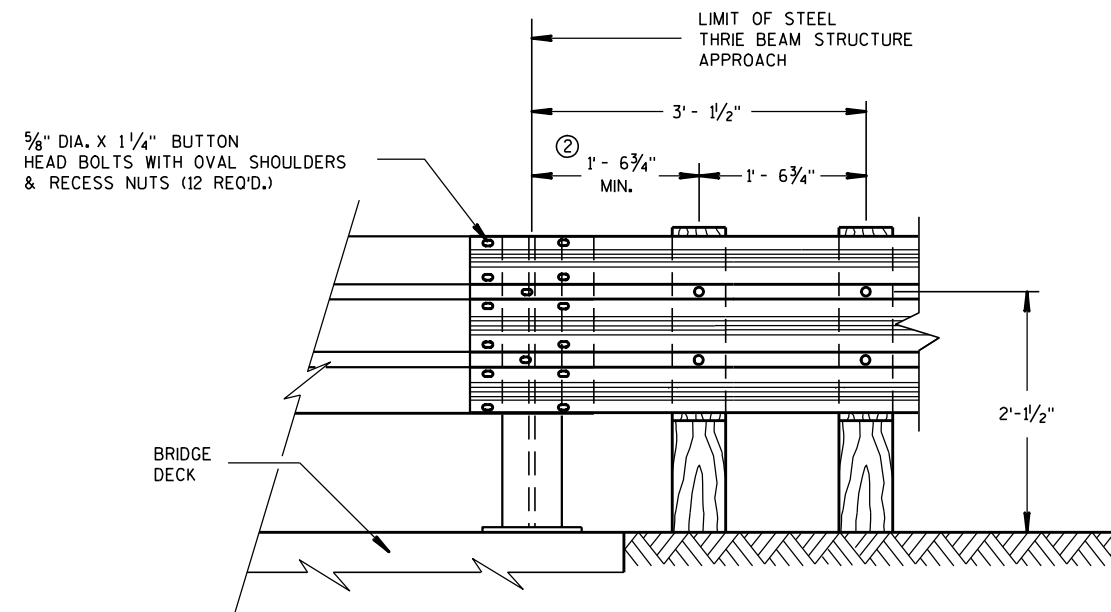
**GENERAL NOTES**

BOLTS, PLATES, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 325 AND BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

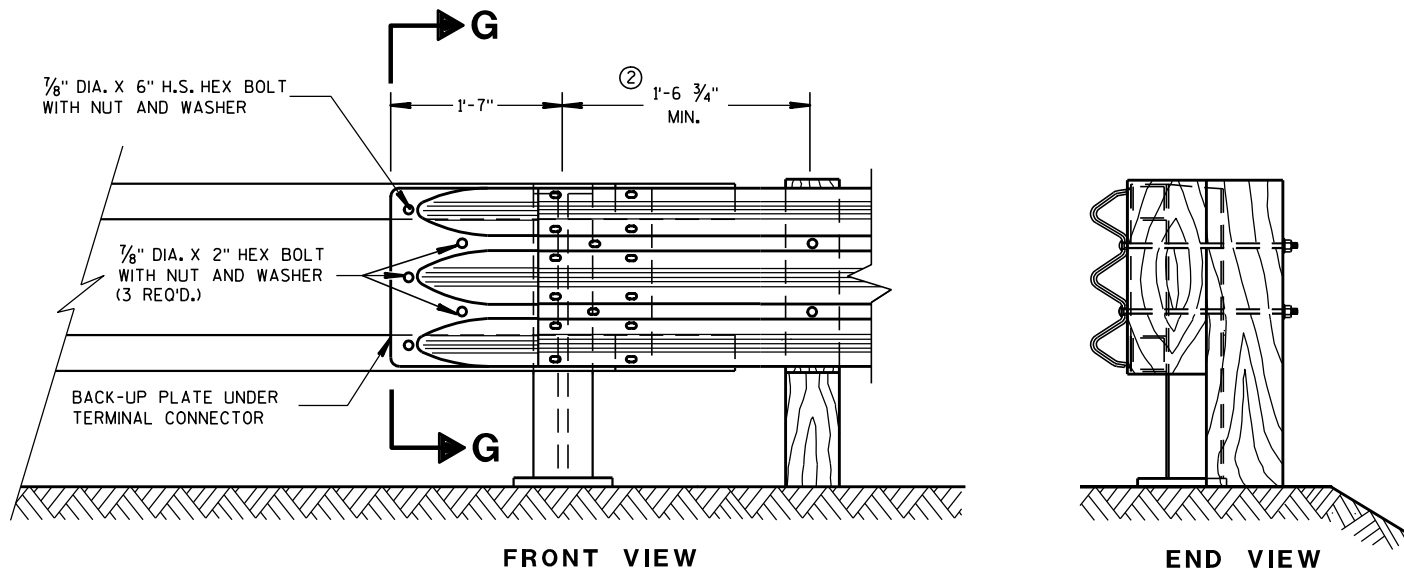
- ① DRILLING BOLT HOLES THROUGH THE PARAPET, BOLTS, NUTS, WASHERS AND REPAIRING DAMAGED CONCRETE ARE INCIDENTAL TO THE CONTRACT.
- ② VARY THIS DIMENSION DEPENDING ON ABUTMENT TYPE, WINGWALL DETAILS, AND ANGLE OF SKEW. PLACE THE FIRST WOOD POST OFF THE BRIDGE SHALL AS CLOSE AS FEASIBLE TO THE STEEL END POST.



**BACK-UP PLATE MOUNTING ONTO BRIDGE RAILING**



**FRONT VIEW  
THRIE BEAM CONNECTION TO  
STEEL RAILING TYPE "W"**



**FRONT VIEW**

**END VIEW**

**THRIE BEAM CONNECTION TO  
TUBULAR RAILING TYPE "F"**

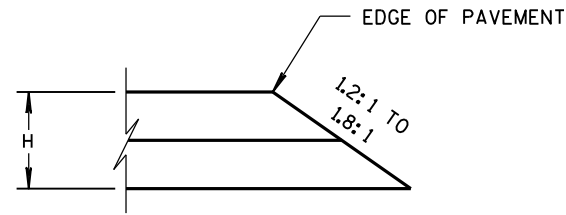
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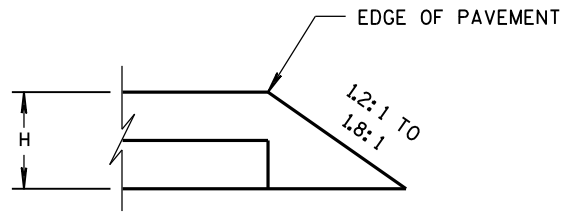
S.D.D. 14 B 20-11e

S.D.D. 14 B 20-11e

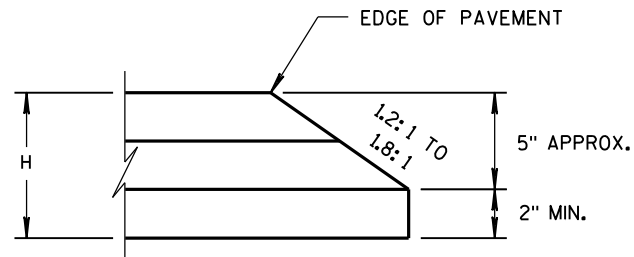
<b>STEEL THRIE BEAM STRUCTURE APPROACH, CONNECTION TO BRIDGE RAILING TYPES "F" AND "W"</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 8/31/2012 DATE	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



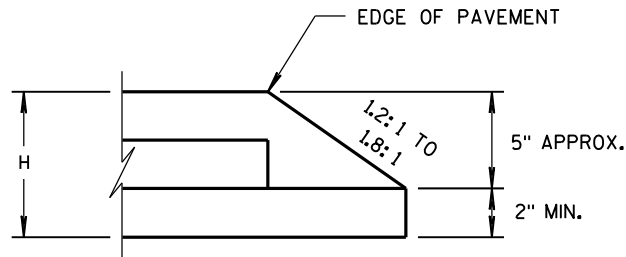
CONSTRUCTED WITH FINAL TWO LAYERS  
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER  
FOR H 5" OR LESS

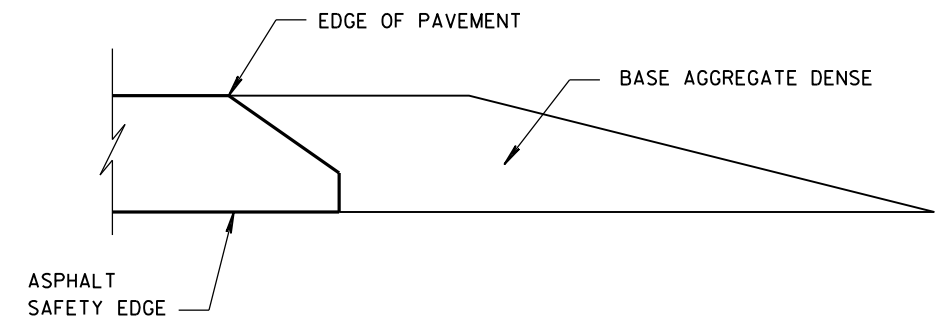


CONSTRUCTED WITH FINAL TWO LAYERS  
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER  
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

6

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S.D.D. 14 B 29-1

S.D.D. 14 B 29-1

SAFETY EDGE <sub>SM</sub>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED DATE 11/30/2012	/s/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT 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.

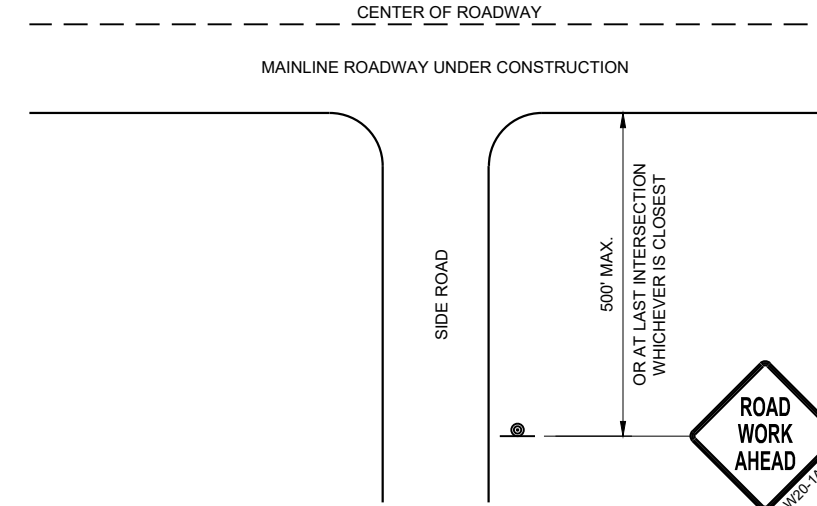
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

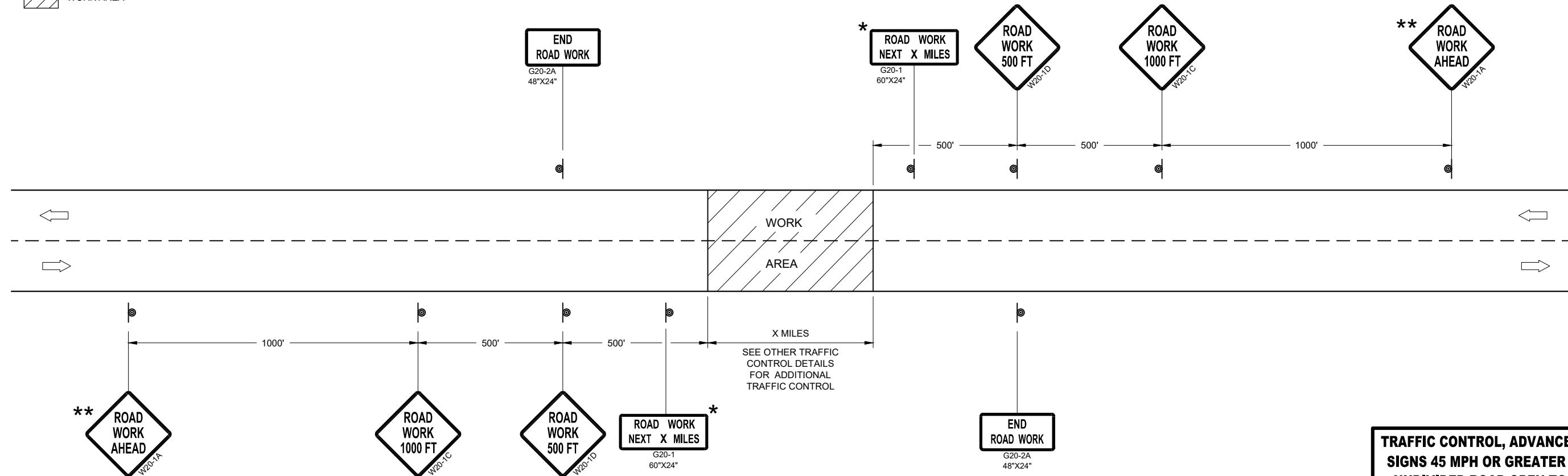
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

**LEGEND**

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



**TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL**



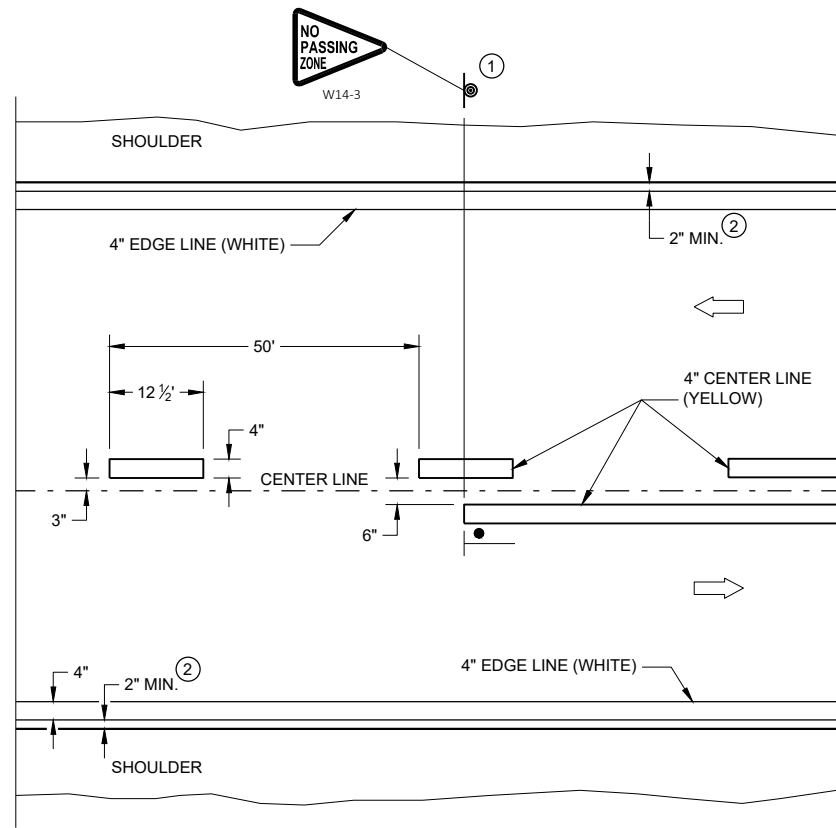
**TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER**

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

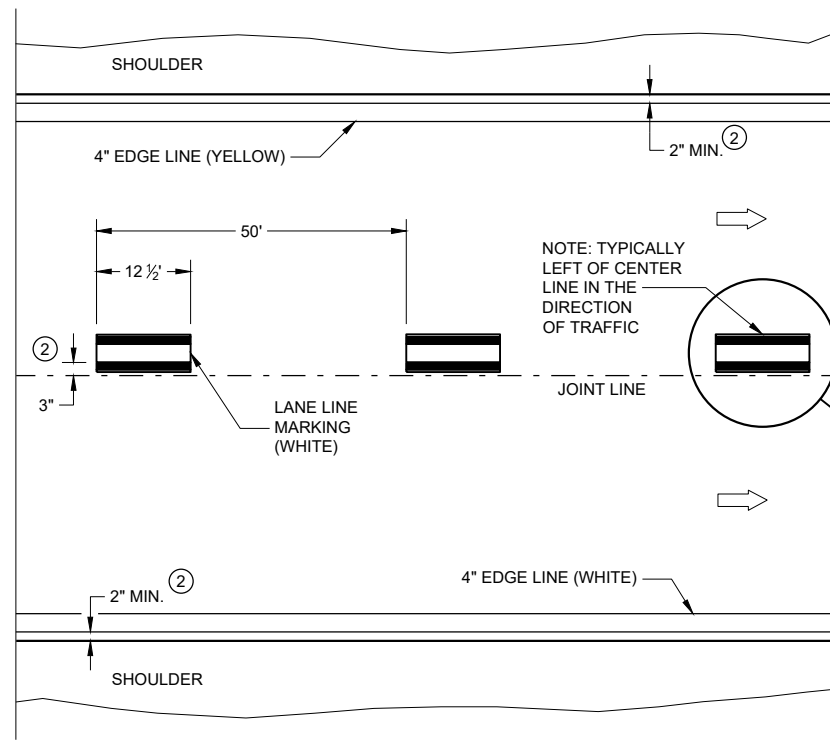
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED \_\_\_\_\_  
DATE July 2018 /S/ Andrew Heidtke  
WORK ZONE ENGINEER

FHWA

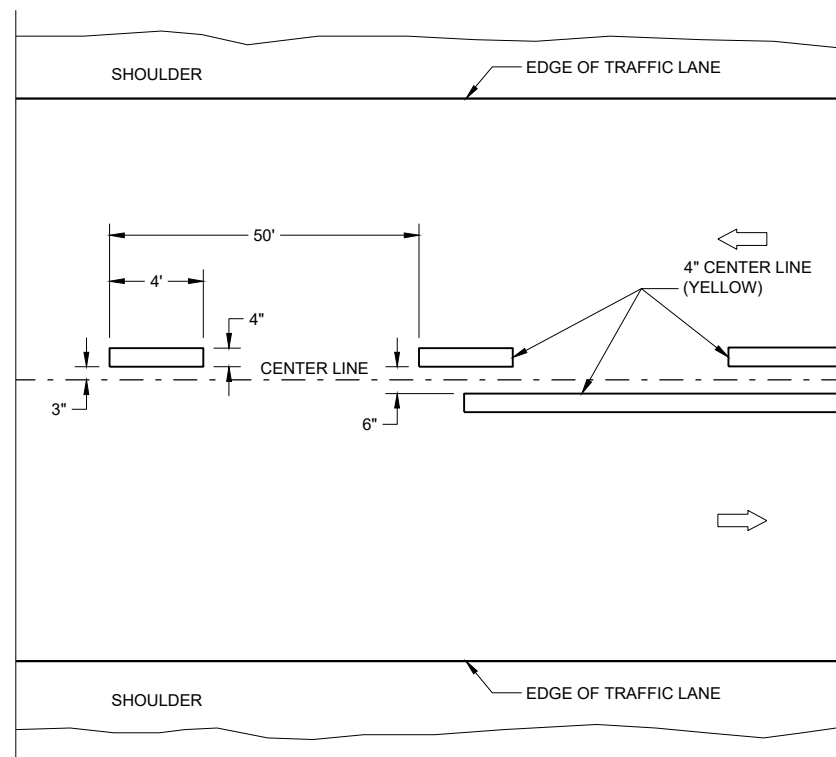


**TWO WAY TRAFFIC**

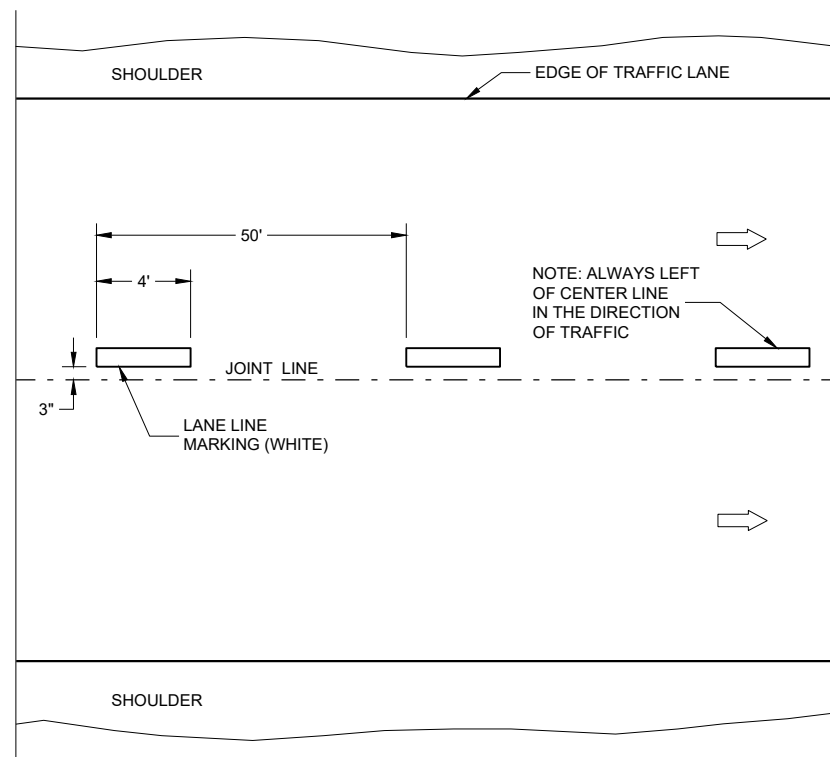


**ONE WAY TRAFFIC**

**PERMANENT PAVEMENT MARKING**



**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

**TEMPORARY PAVEMENT MARKING**

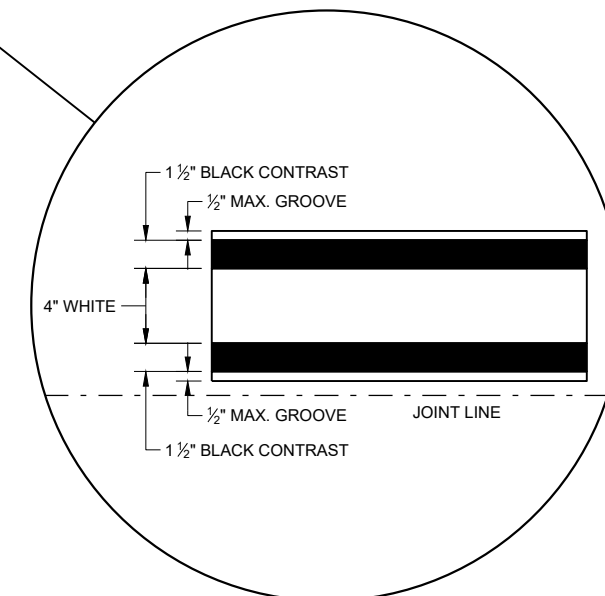
**GENERAL NOTES**

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



**LONGITUDINAL MARKING (MAINLINE)**

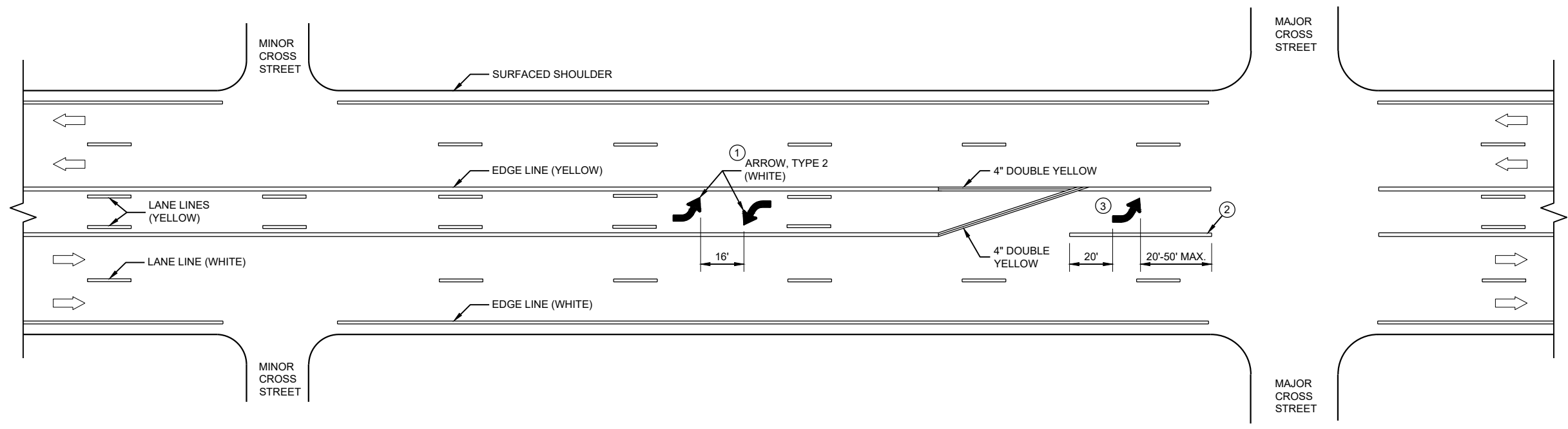
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2020 /S/ Matthew Rauch  
DATE STATEWIDE SIGNING AND MARKING  
ENGINEER

**GENERAL NOTES**

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

➡ DIRECTION OF TRAFFIC



**TWO WAY LEFT TURN LANE**

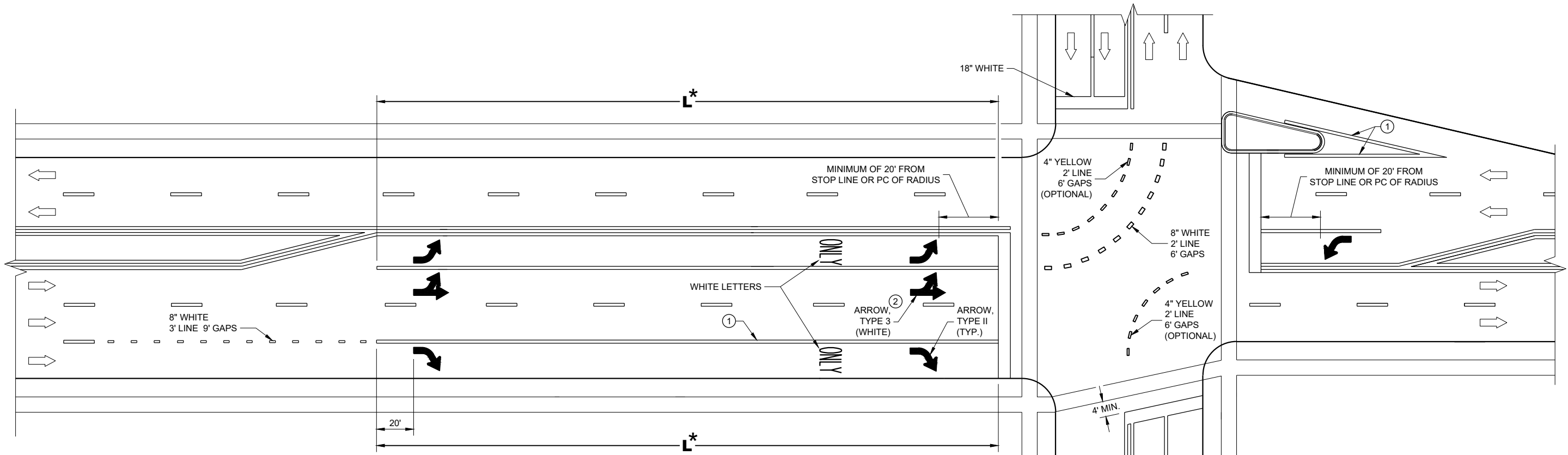
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SDD 15C08 - 20b

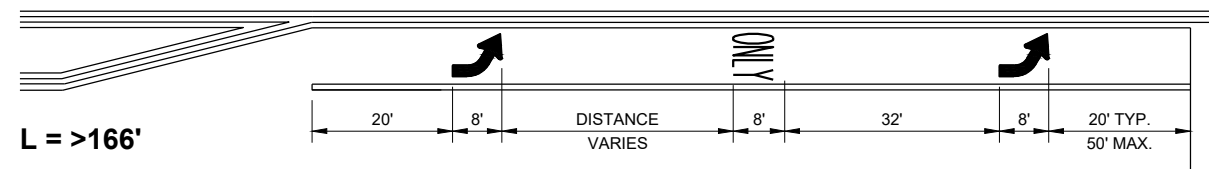
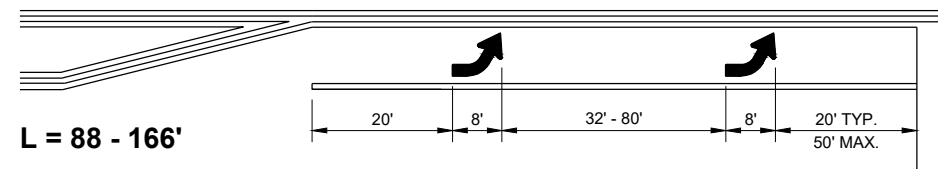
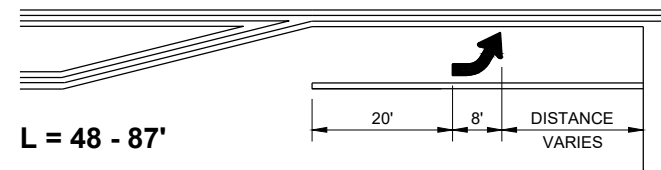
SDD 15C08 - 20b

<p><b>PAVEMENT MARKING (TURN LANES)</b></p>
<p>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</p>



**TURN LANE OPTIONS**

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



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

**GENERAL NOTES**

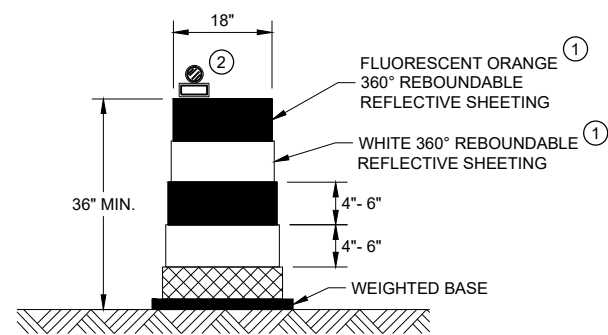
- ① 8" WHITE
- ② QUANTITY AND LOCATION OF TYPE 3 ARROWS ARE THE SAME AS THE TYPE II ARROWS IN THE ADJACENT TURN LANE. FOR TURN LANES WITH A PHYSICAL SEPARATION IN THE SAME DIRECTION OF TRAVEL, THE ARROWS AND "ONLY" MARKING MAY BE ELIMINATED.

➡ DIRECTION OF TRAFFIC

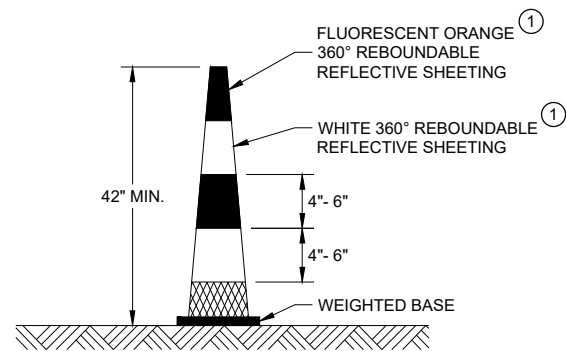
$L$  = LENGTH OF TURN BAY

**PAVEMENT MARKING (TURN LANES)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

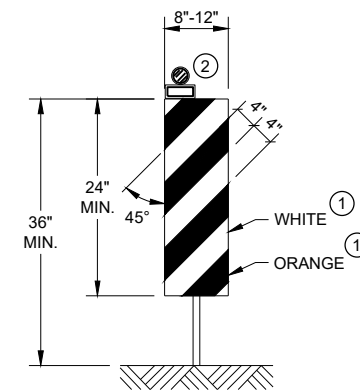


**DRUM**



**42" CONE**

DO NOT USE IN TAPERS  
½ SPACING OF DRUMS

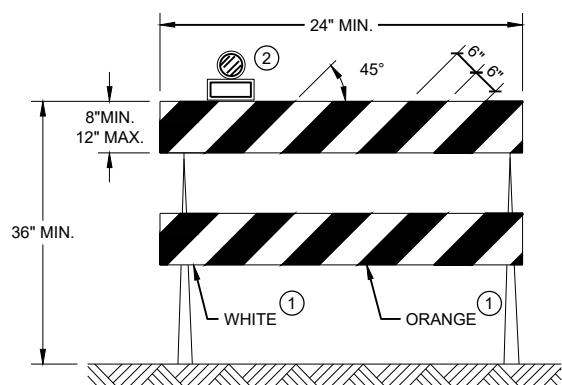


**VERTICAL PANEL**

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

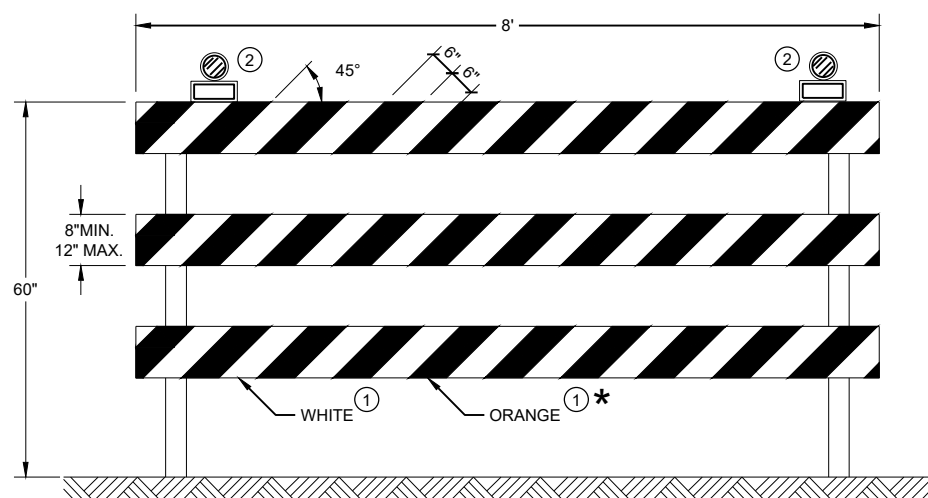
**GENERAL NOTES**

- 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.



**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.

<b>CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED May 2021 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	



**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.

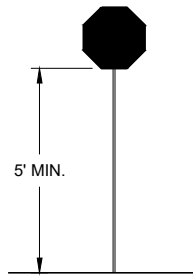
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

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.



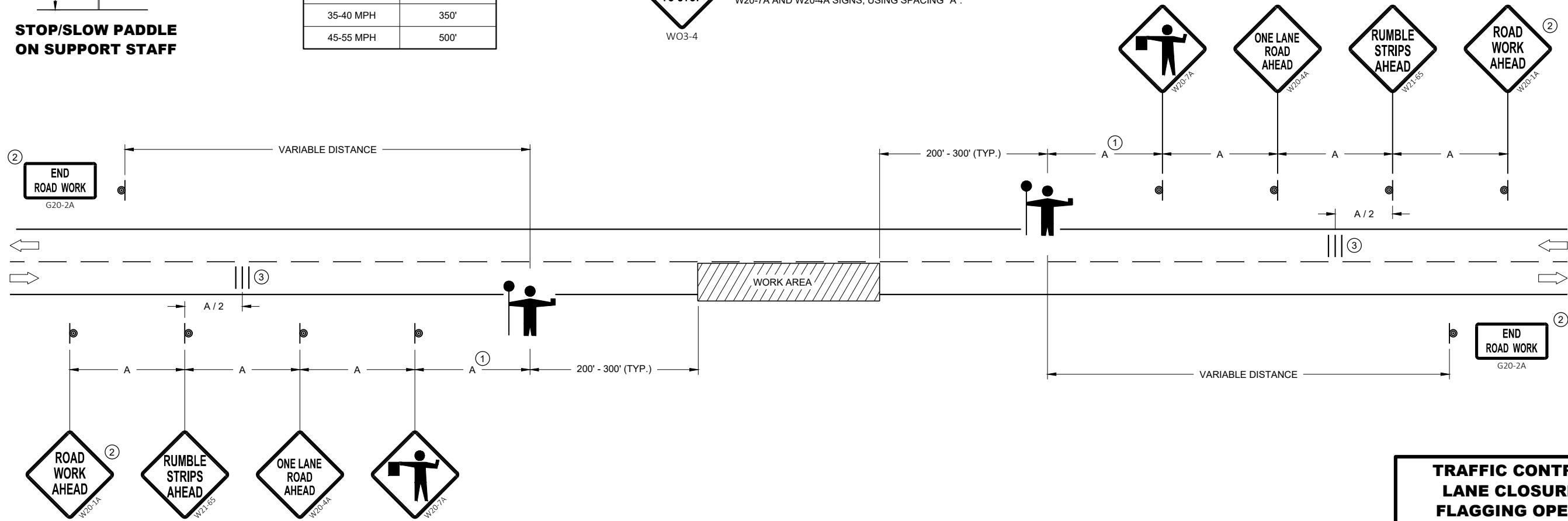
**STOP/SLOW PADDLE ON SUPPORT STAFF**

**SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE**

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



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







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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2021 /S/ Andrew Heidtke  
DATE 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
-  FLASHING ARROW PANEL (CAUTION)

**GENERAL NOTES**

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

ALL VEHICLES SHALL BE EQUIPPED WITH REAR FACING TYPE B OR C FLASHING ARROW PANEL 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.

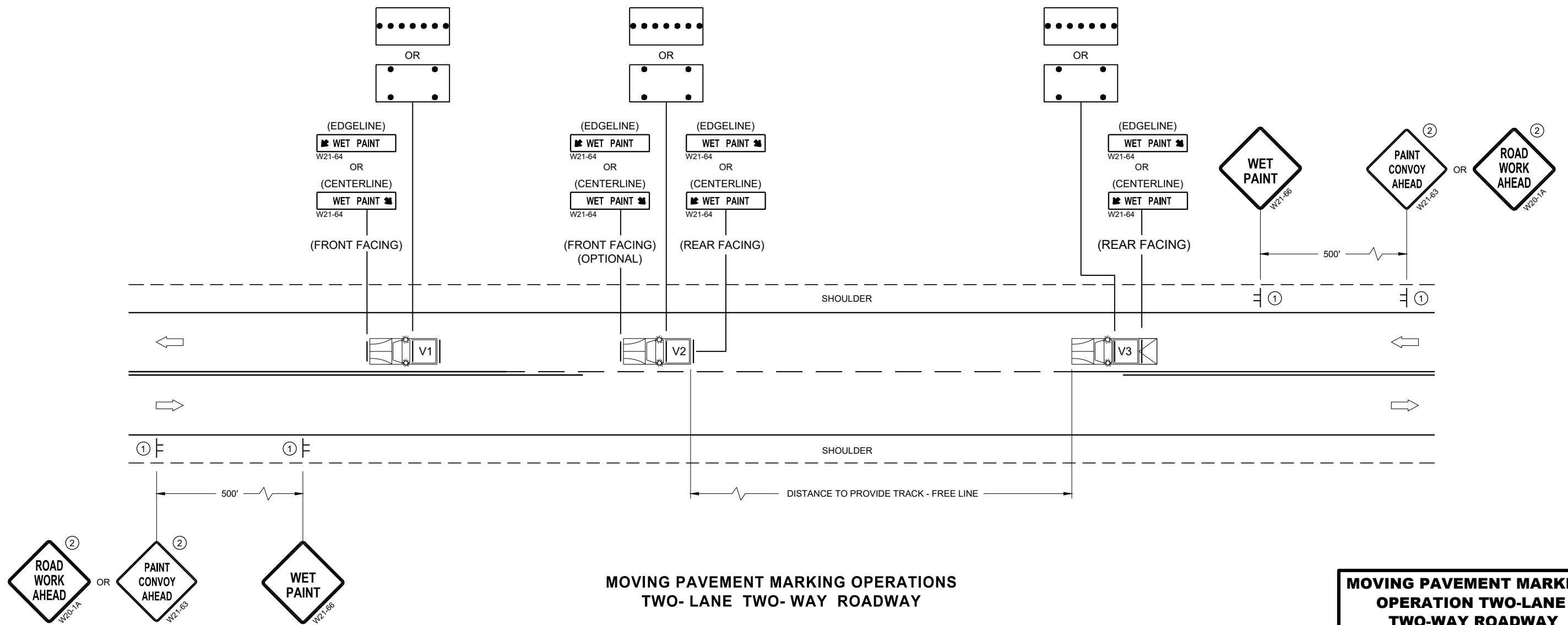
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

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

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

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**MOVING PAVEMENT MARKING OPERATIONS  
TWO-LANE TWO-WAY ROADWAY**

**SDD 15C19 - 06a**

**SDD 15C19 - 06a**

<b>MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED November 2019 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
FHWA	

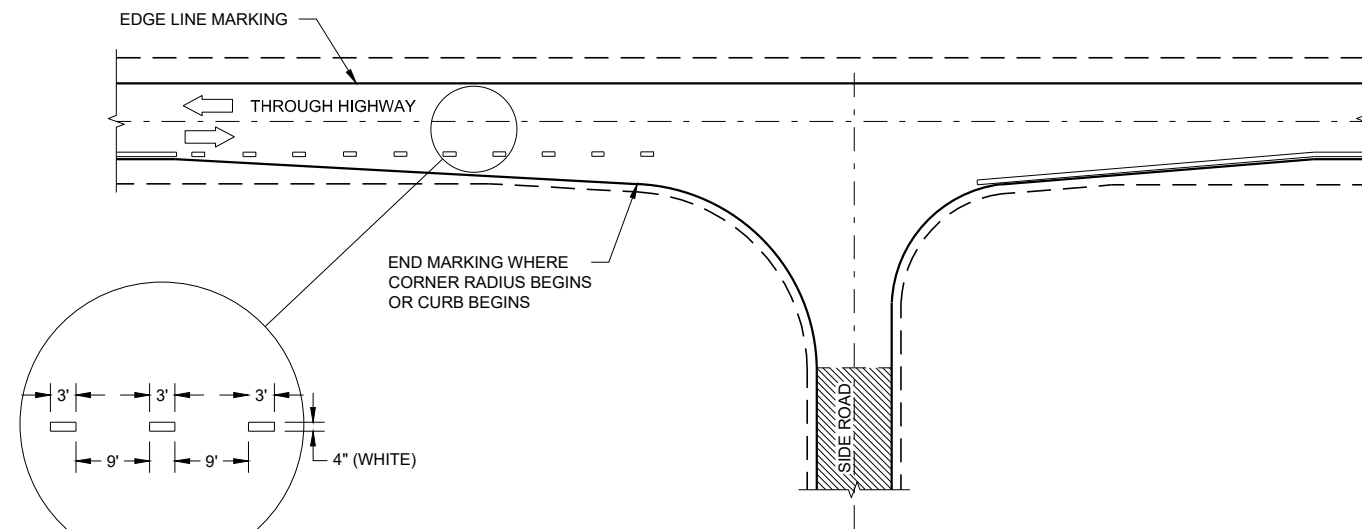
**GENERAL NOTES**

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

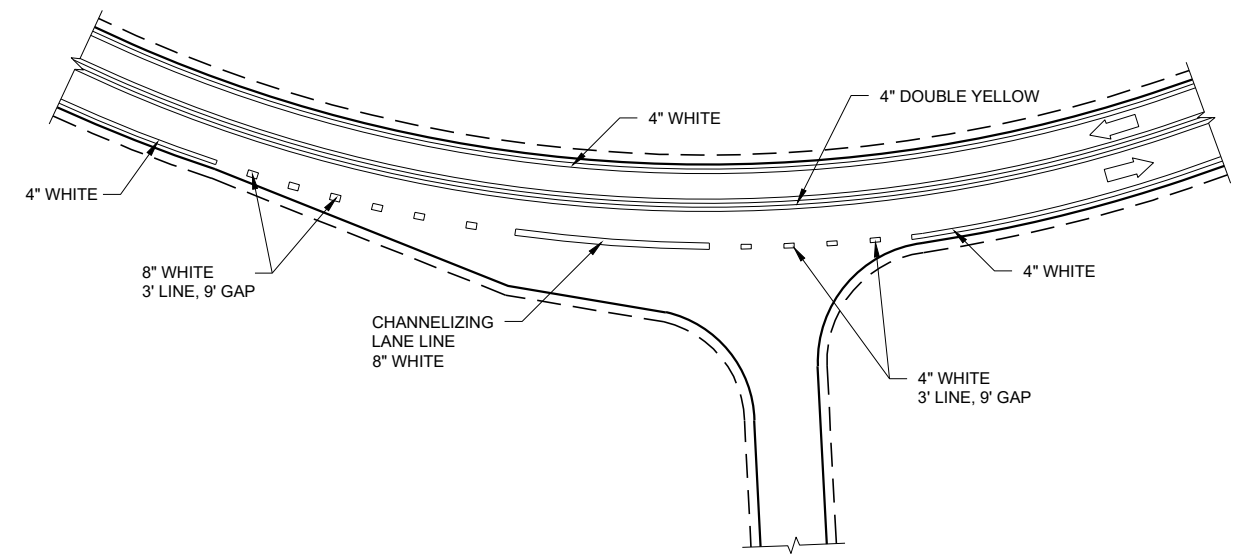
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

**LEGEND**

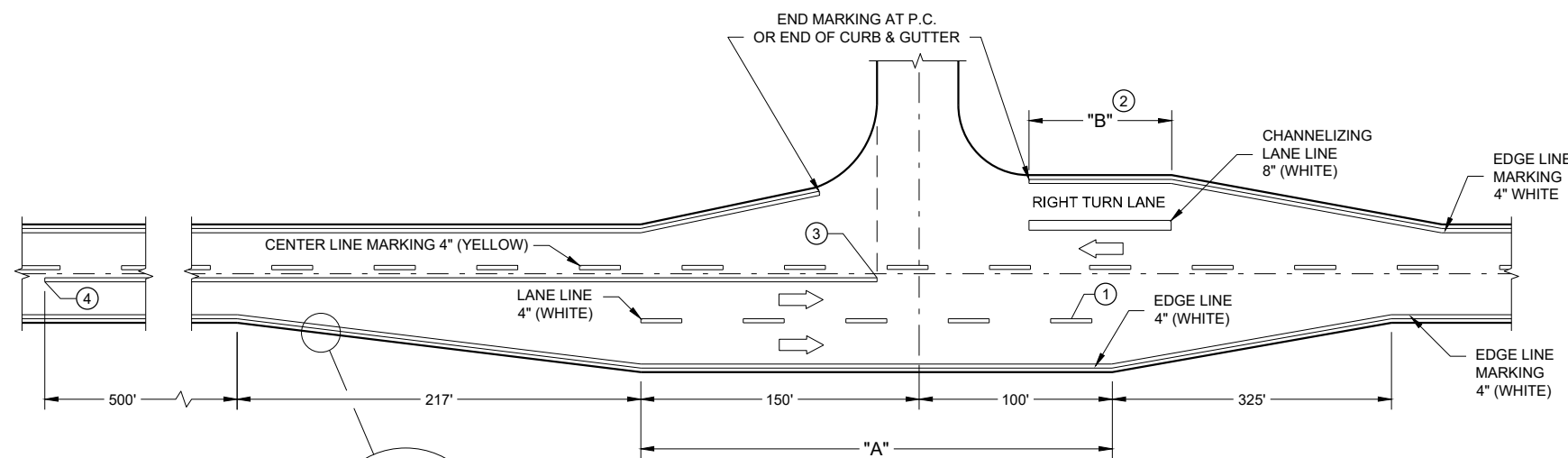
➔ DIRECTION OF TRAVEL



**MINOR INTERSECTION**



**INTERSECTION ON OUTSIDE OF CURVE**







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

**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.

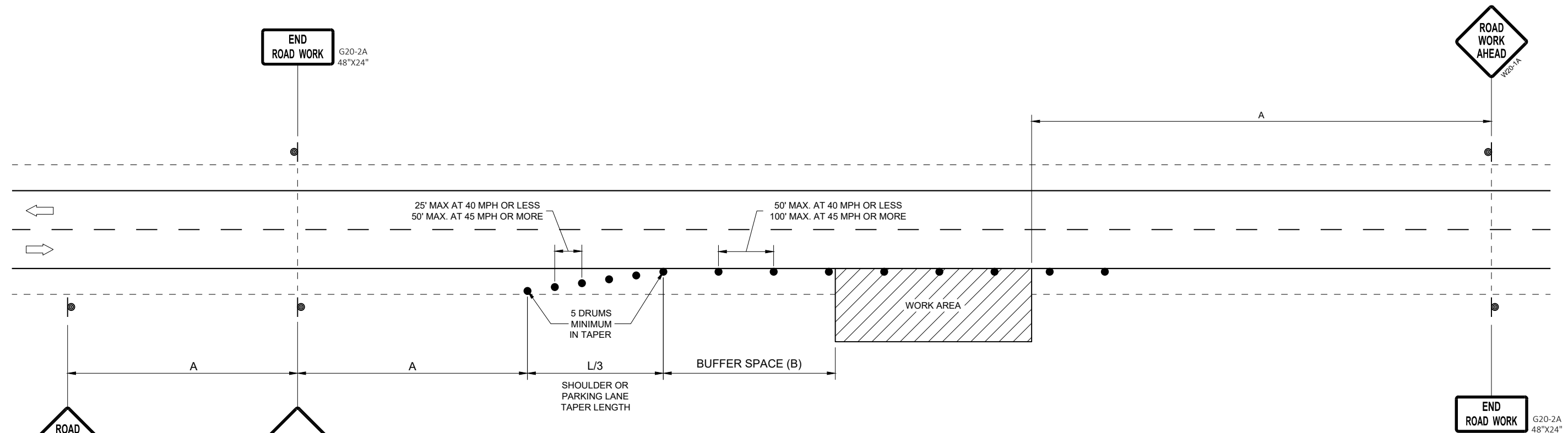
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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.

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POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	ADVANCE WARNING SIGN SPACING (A) FEET	SHOULDER TAPER L / 3 W, LATERAL OFFSET (FT)						BUFFER SPACE (B) FEET
		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**

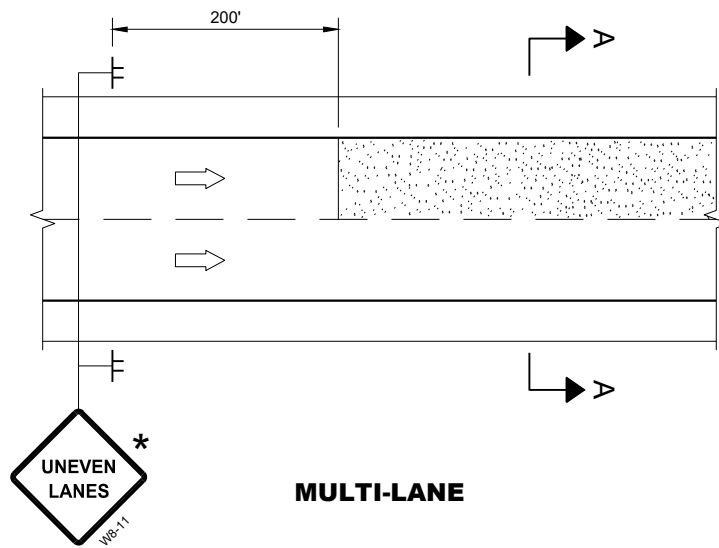
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2020 /S/ Andrew Heidtke  
DATE STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

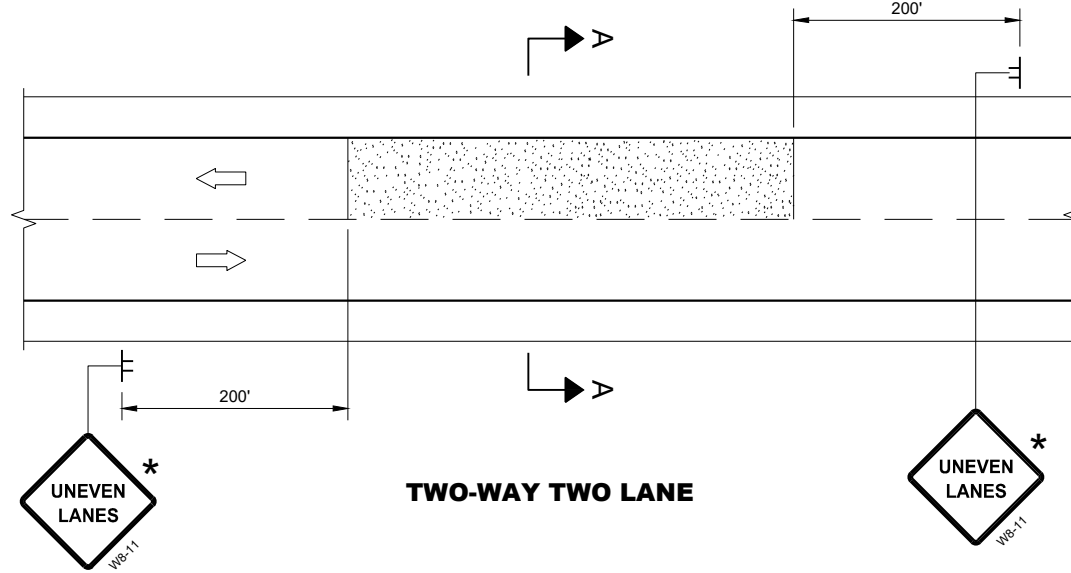
FHWA

SDD 15D28 - 04

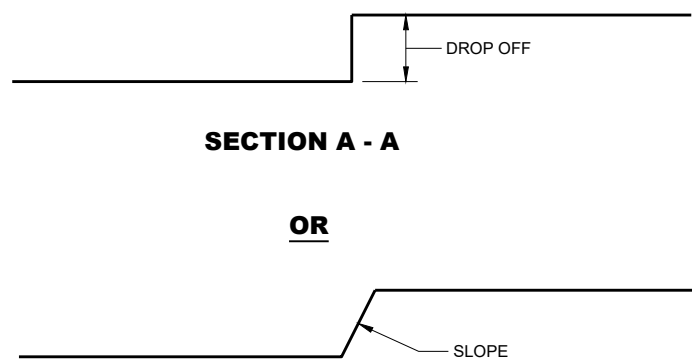
SDD 15D28 - 04



**MULTI-LANE**



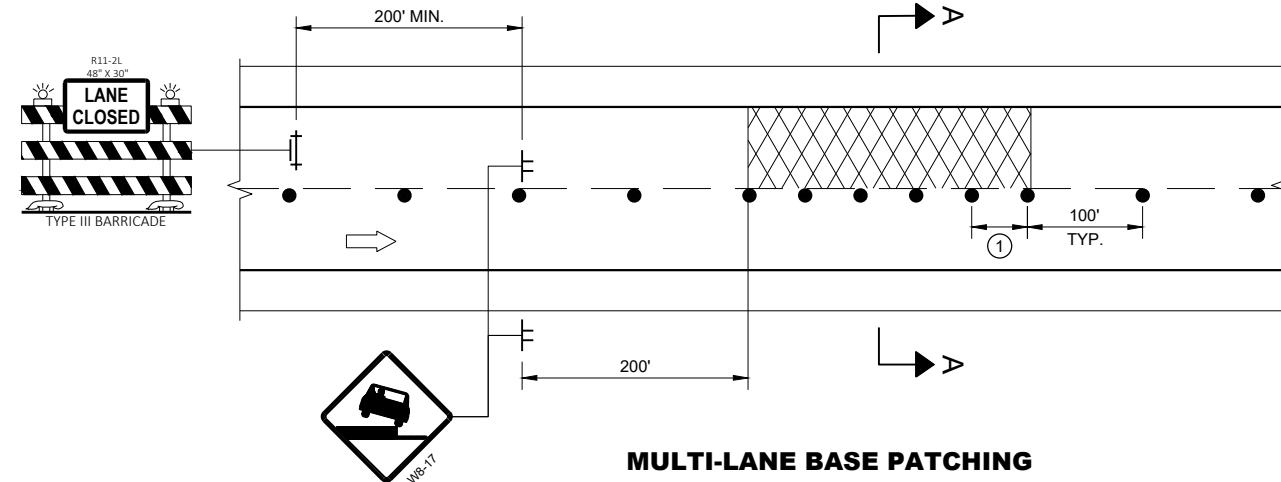
**TWO-WAY TWO LANE**



**SECTION A - A**

**OR**

**SECTION A - A**



**MULTI-LANE BASE PATCHING**

**ADJACENT LANE DROP-OFFS**

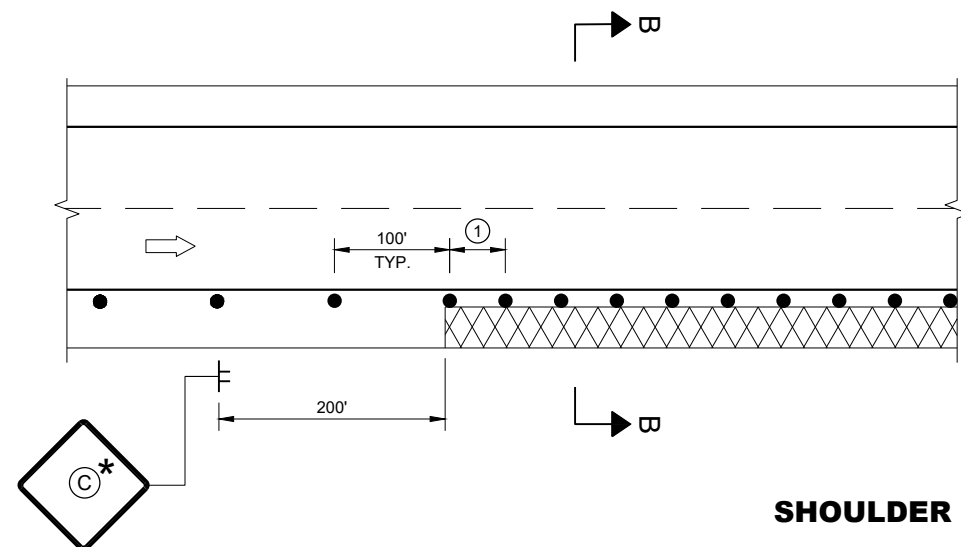
**GENERAL NOTES**

- FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- \* IF THE DROP-OFF IS CONTINUOUS ALONG THE PROJECT, PLACE ADDITIONAL SIGNS EVERY 1 MILE AND AFTER EVERY ENTRANCE RAMP.
- ① USE CLOSER SPACING WHEN DELINEATING DROP-OFF.

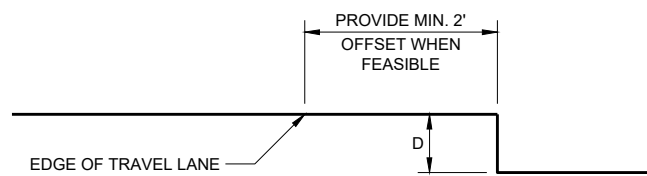
**LEGEND**

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

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



**SHOULDER DROP-OFFS**



**SECTION B - B**

**TRAFFIC CONTROL,  
DROP-OFF SIGNING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
March 2018 /S/ Andrew Heidtke  
DATE 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.

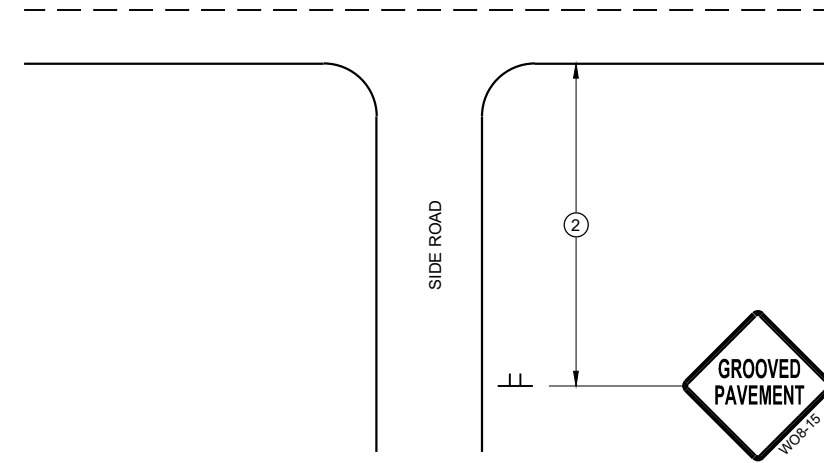
ALL SIGNS INAPPROPRIATE TO THE STATUS OF THE CONTROL ZONE, INCLUDING PRE-EXISTING SIGNS IN THE VICINITY, SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.

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.

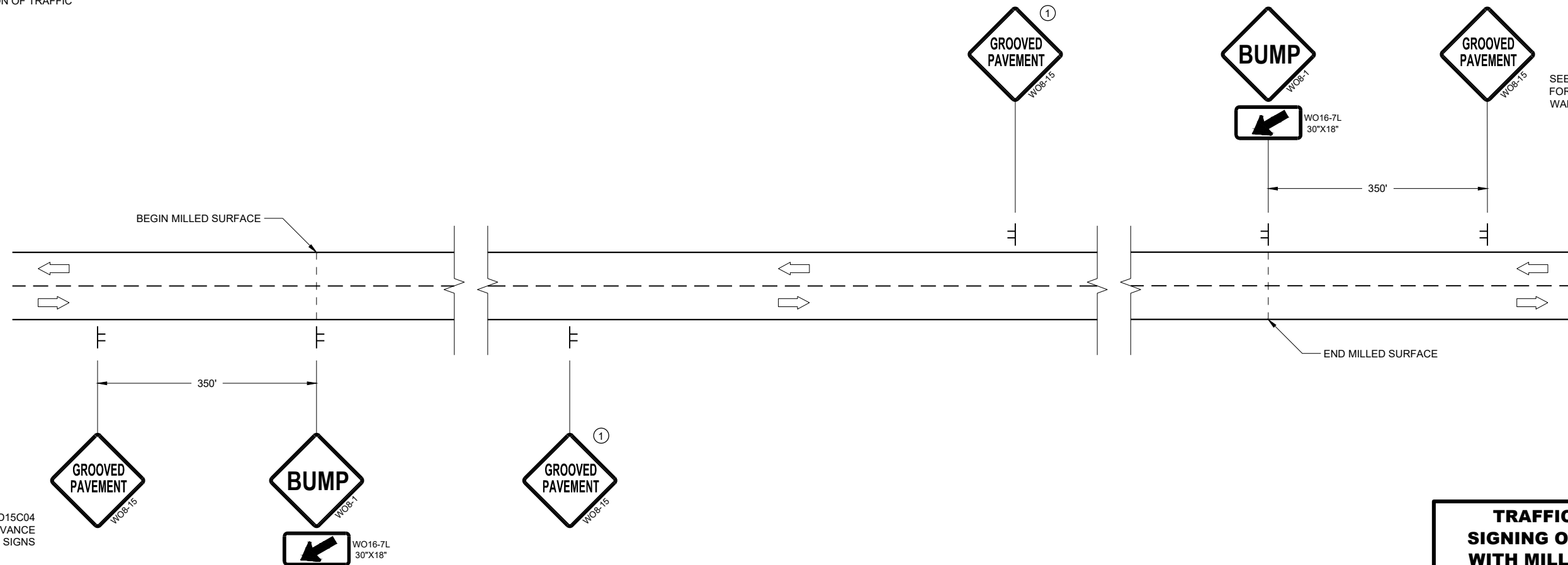
- ① PLACE SIGNS 350' IN ADVANCE OF MILLED SURFACES AND AT 1 MILE INTERVALS, OR AS DIRECTED BY THE ENGINEER.
- ② PLACE SIGN 200' MIN. FROM INTERSECTION AND 200' MIN. AFTER ADVANCE WARNING SIGN SHOWN IN SDD 15C04.

**LEGEND**

-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC



**TYPICAL SIDE ROAD APPROACH SIGN DETAIL**



**DETAIL FOR SIGNING ON MILLED SURFACES**

<b>TRAFFIC CONTROL, SIGNING ON ROADWAYS WITH MILLED SURFACES</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED February 2020 DATE	/S/ Andrew Heidtke WORK ZONE ENGINEER
<small>FHWA</small>	





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SDD 15D44 - 02

SDD 15D44 - 02

**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.

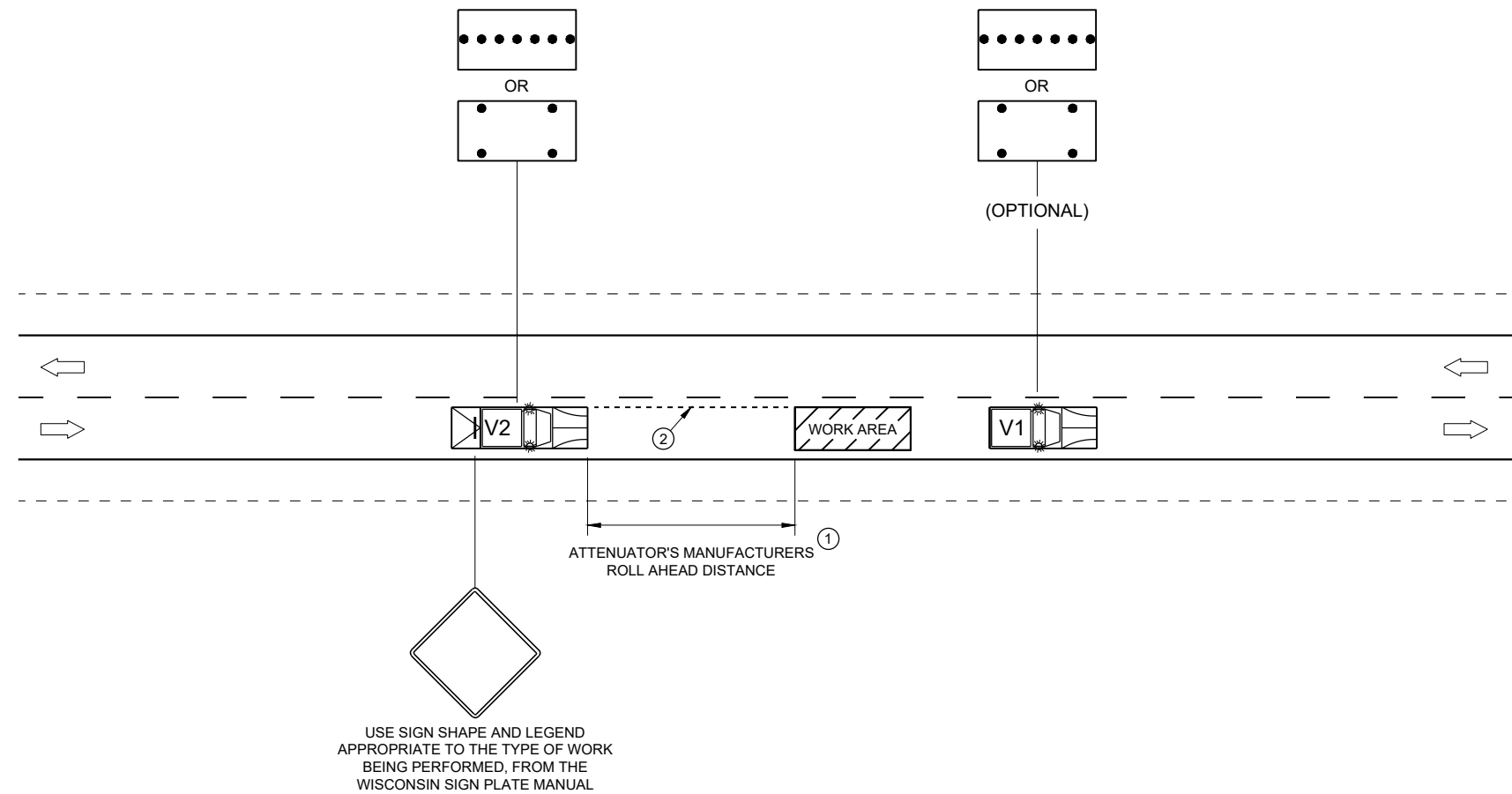
MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.

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.



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SDD 15D51 - 01

SDD 15D51 - 01

**TRAFFIC CONTROL,  
MOBILE OPERATIONS ON  
AN UNDIVIDED ROADWAY**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021 /S/ Andrew Heidtke  
DATE STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER

FHWA



## *Wisconsin Department of Transportation*

Dedicated people creating transportation solutions through innovation and exceptional service.

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