

MAD

Apr 12, 2022

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 = 48

PROJECT ID: 1706-06-70, 5235-03-71

COUNTY: GRANT

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

DUBUQUE - SHULLSBURG

V HAZEL GREEN N LIMIT TO STH 80

STH 11 GRANT COUNTY

STATE PROJECT NUMBER 1706-06-70

HAZEL GREEN - PLATTEVILLE

E JCT STH 11 TO CUBA CITY S LIMIT

STH 80 GRANT COUNTY

STATE PROJECT NUMBER 5235-03-71

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
1706-06-70		
5235-03-71	WISC 2022284	1



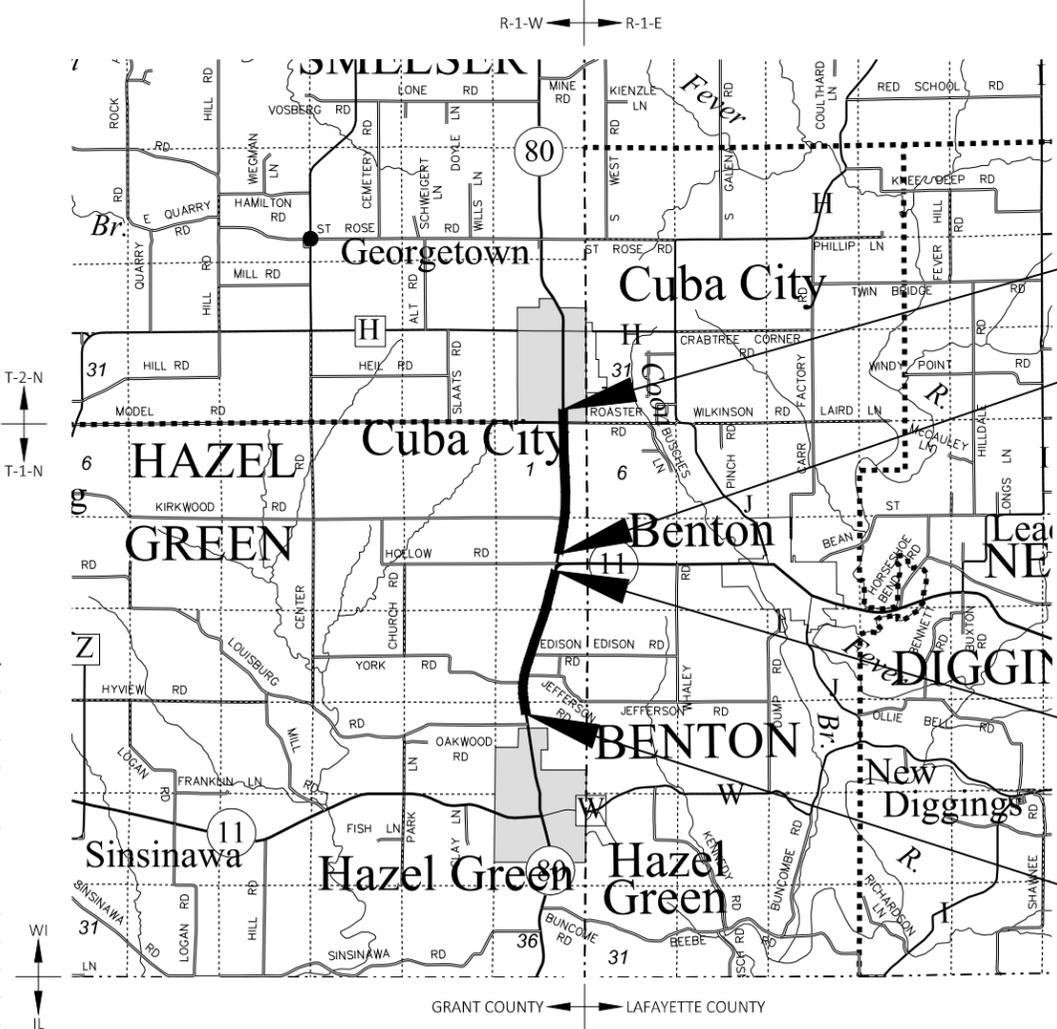
DESIGN DESIGNATION

A.A.D.T.	2022	=	5,200
A.A.D.T.	2042	=	5,200
D.H.V.		=	846
D.D.		=	60/40
T.		=	20.2%
DESIGN SPEED		=	60 MPH
ESALS		=	1,800,000

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

PROFILE	
GRADE LINE	
ORIGINAL GROUND	
MARSH OR ROCK PROFILE (To be noted as such)	
SPECIAL DITCH	
GRADE ELEVATION	
CULVERT (Profile View)	
UTILITIES	
ELECTRIC	
FIBER OPTIC	
GAS	
SANITARY SEWER	
STORM SEWER	
TELEPHONE	
WATER	
UTILITY PEDESTAL	
POWER POLE	
TELEPHONE POLE	



END PROJECT 5235-03-71 STA 438+59.44

BEGIN PROJECT 5235-03-71 STA 360+51.52 X=894275.06 Y=424824.20

END PROJECT 1706-06-70 STA 335+48.02

BEGIN PROJECT 1706-06-70 STA 259+33.81 X=892232.24 Y=415020.14

LAYOUT SCALE 0 2 MI NET LENGTH OF CENTERLINE 1706-06-70= 1.441 MILES NET LENGTH OF CENTERLINE 5235-03-71= 1.479 MILES TOTAL NET LENGTH OF CENTERLINE = 2.920 MILES

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

ORIGINAL PLANS PREPARED BY

DATE: 11/29/2021

(Professional Engineer Signature)

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

PREPARED BY	Surveyor	JT ENGINEERING, INC.
Designer	BRADLEY R. GROH, PE	
Project Manager	DEREK POTTER, PE	
Regional Examiner	SW REGION	
Regional Supervisor	SCOTT SCHOENMANN, PE	

APPROVED FOR THE DEPARTMENT DATE: Derek Potter (Signature)

E

GENERAL NOTES

HMA PAVEMENT 4 MT 58-28 S SHALL BE PLACED IN EQUAL 1.75" LAYERS.

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.

TACK COAT APPLICATION RATES ARE BASED ON 0.07 GAL/SY ON MILLED SURFACES AND 0.05 GAL/SY BETWEEN LAYERS OF HMA PAVEMENT.

EROSION CONTROL ITEMS IN THE MISCELLANEOUS QUANTITIES ARE SUGGESTED. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER IN THE FIELD. MAINTAIN EROSION CONTROL ITEMS UNTIL SUCH A TIME AS THE ENGINEER DETERMINES THE MEASURE IS NO LONGER NECESSARY. PROTECT WETLANDS AND OTHER WATERWAYS THAT ARE PRESENT WITHIN THE PROJECT LIMITS.

NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLAN ARE APPROXIMATE. THERE MAY BE OTHER INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

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.

STORAGE OF ANY EQUIPMENT OR MATERIAL WILL NOT BE PERMITTED IN ENVIRONMENTALLY SENSITIVE AREAS, WETLANDS, OR WATERWAYS.

ENVIRONMENTAL CONTACTS

WISDOT - SW REGION  
JENNIFER GRIMES  
2101 WRIGHT STREET  
MADISON, WI 53704  
PHONE: 608-246-3853  
EMAIL: JENNIFER.GRIMES@DOT.WI.GOV

DESIGN CONTACTS

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EMAIL: DEREK.POTTER@DOT.WI.GOV

ORDER OF DETAIL SHEETS

GENERAL NOTES  
PROJECT OVERVIEW  
TYPICAL SECTIONS  
CONSTRUCTION DETAILS

WISCONSIN DNR  
ANDY BARTA  
3911 FISH HATCHERY ROAD  
FITCHBURG, WI 53711  
PHONE: 608-275-3308  
EMAIL: ANDREW.BARTA@WISCONSIN.GOV

JT ENGINEERING, INC.  
BRAD GROH, PE  
6325 ODANA ROAD, SUITE 2  
MADISON, WI 53719  
PHONE: 608-204-0909  
EMAIL: BRADG@JT-ENGINEERING.COM

UTILITY CONTACTS

ALLIANT ENERGY - ELECTRICITY & GAS/PETROLEUM  
MATTHEW HOSLER  
900 PRAIRIE DRIVE  
SPRING GREEN WI, 53901  
PHONE: (608) 963-3655  
EMAIL: MATTHEWHOSLER@ALLIANTENERGY.COM

MEDIACOM WISCONSIN LLC - COMMUNICATION  
CHRIS MINARD  
6925 GARDEN PRAIRIE RD  
GARDEN PRAIRIE, IL 61038  
PHONE: (815) 597-5103  
EMAIL: CMINARD@MEDIACOMCC.COM

CENTURYLINK - COMMUNICATION  
DOUG MCGOWAN  
135 N BONSON ST  
PLATTEVILLE, WI 53530  
PHONE: (608) 482-5377  
EMAIL: DOUG.MCGOWAN1@LUMEN.COM

SCENIC RIVERS ENERGY COOPERATIVE - ELECTRICITY  
CHAD OLMSTEAD  
231 N SHERIDAN STREET  
LANCASTER, WI 53813  
PHONE: (608) 723-2121  
EMAIL: COLMSTEAD@SREC.NET

CUBA CITY ELECTRIC & WATER UTILITY - ELECTRICITY & WATER  
GEORGE MORRISSEY  
108 N MAIN ST  
CUBA CITY, WI 53807  
PHONE: (608) 744-2152  
EMAIL: GMORRISSEY@WPPIENERGY.ORG

VILLAGE OF HAZEL GREEN - ELECTRICITY & WATER  
JOHN BERNING  
1610 FAIRPLAY STREET P.O. BOX 367  
HAZEL GREEN, WI 53811-0367  
PHONE: (608) 854-2953  
DPW@VILLAGEOFHAZELGREEN.ORG

CUBA CITY TELEPHONE EXCHANGE COMPANY - COMMUNICATION  
JERRY CULLEN  
121 N WASHINGTON ST  
CUBA CITY, WI 53807  
PHONE: (608) 778-2293  
EMAIL: JERRY@CSTECH.COM

WE ENERGIES - GAS/PETROLEUM  
ADAM MARING  
N3025 14TH AVE  
MONROE, WI 53566  
PHONE: (608) 426-1715  
EMAIL: ADAM.MARING@WE-ENERGIES.COM



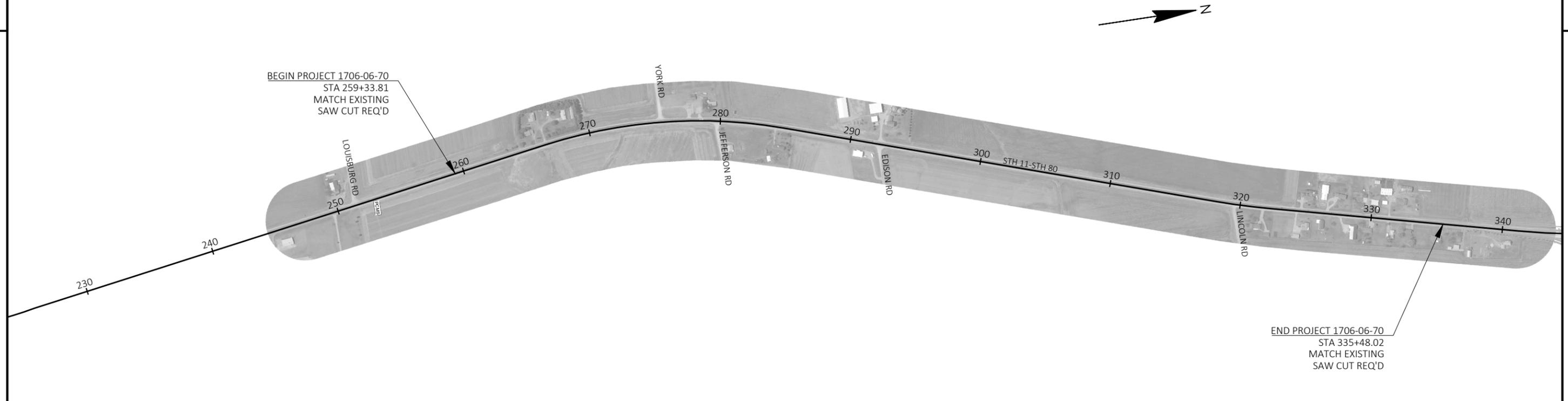
**RUNOFF COEFFICIENT TABLE**

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

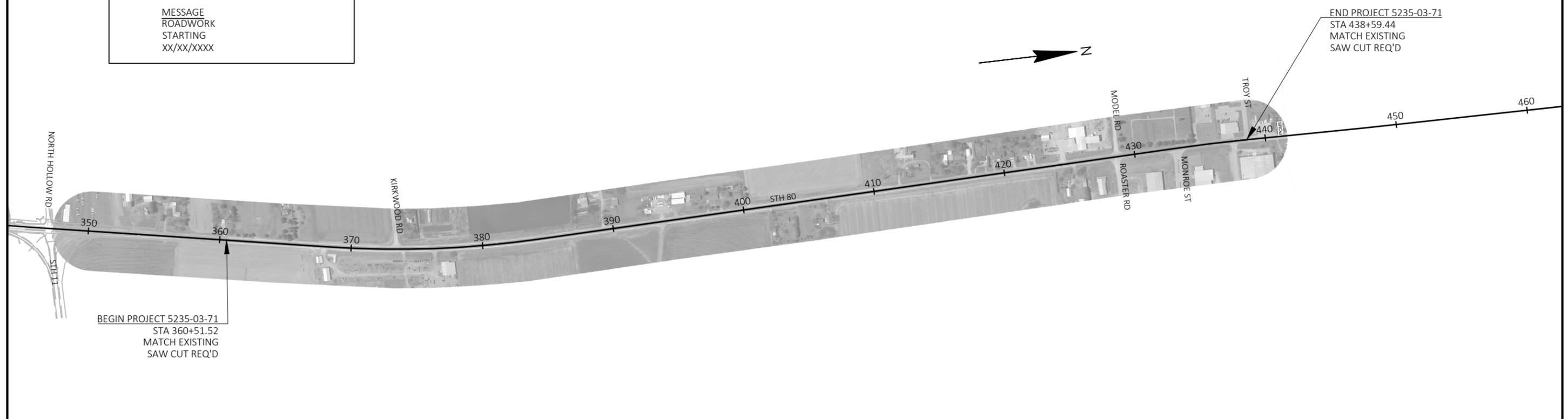
TOTAL PROJECT AREA = 35.41 ACRES  
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.01 ACRES

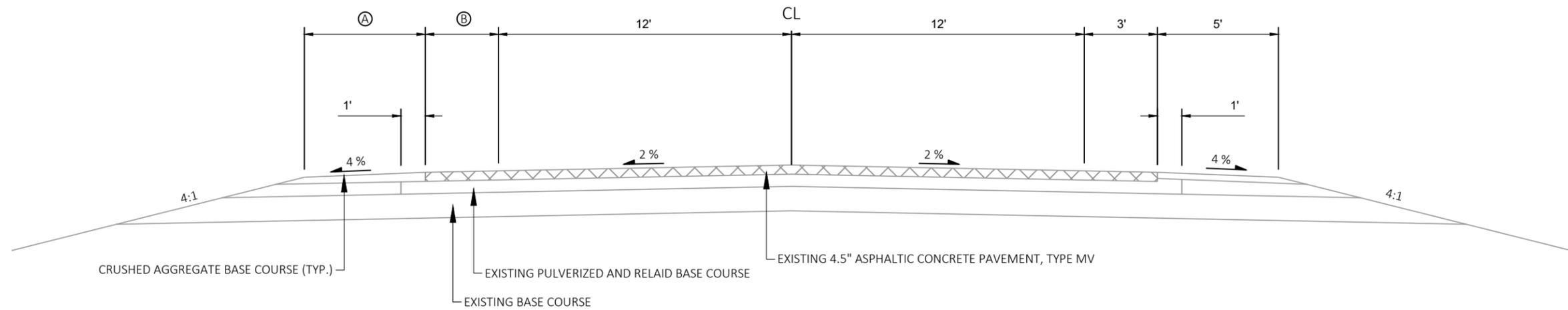
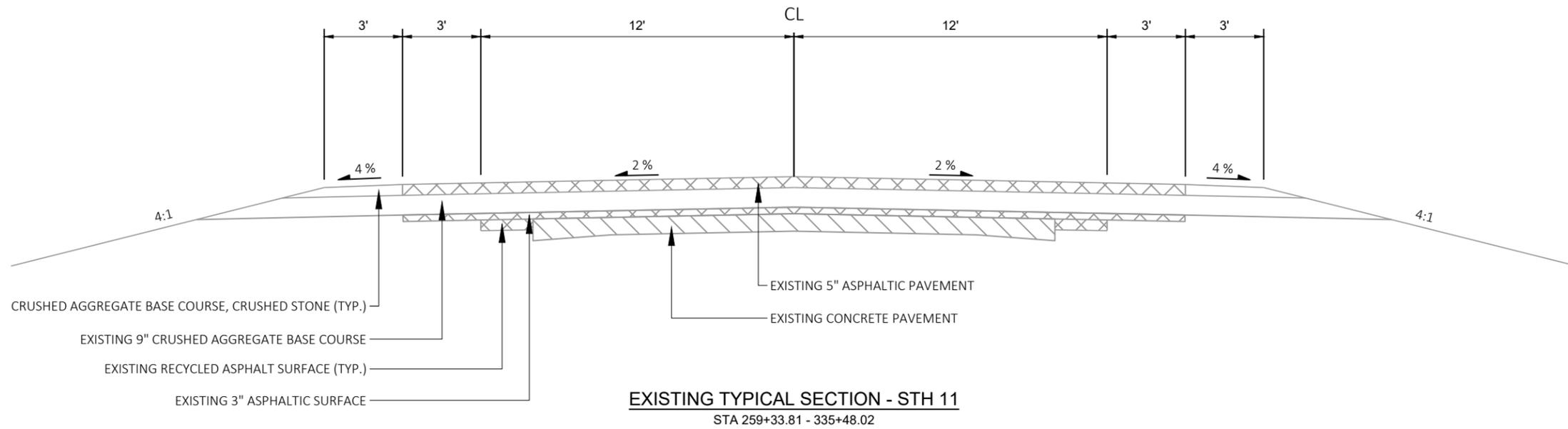
STANDARD ABBREVIATIONS

AC	ACRE	ESALS	EQUIVALENT SINGLE AXLE LOADS	R/L	REFERENCE LINE
AGG	AGGREGATE	EXC	EXCAVATION	RCCP	REINFORCED CONCRETE CULVERT PIPE
<	ANGLE	EXIST	EXISTING	REQ'D	REQUIRED
AE, AEW	APRON ENDWALL	FF	FACE TO FACE	RT	RIGHT
ASPH	ASPHALTIC	FERT	FERTILIZER	R/W	RIGHT OF WAY
ADT	AVERAGE DAILY TRAFFIC	FE	FIELD ENTRANCE	RD	ROAD
AADT	ANNUAL AVERAGE DAILY TRAFFIC	F/L, FL	FLOW LINE	SHLD	SHOULDER(S)
BAD	BASE AGGREGATE DENSE	GALV	GALVANIZE	S	SOUTH
BF	BACK FACE	HS	HIGH STRENGTH	SB	SOUTHBOUND
BM	BENCHMARK	CWT	HUNDRED WEIGHT	SF	SQUARE FOOT (FEET)
BTWN	BETWEEN	INL	INLET	SDD	STANDARD DETAIL DRAWING(S)
CTR	CENTER	INTER	INTERSECTION	STH	STATE TRUNK HIGHWAYS
C/L	CENTERLINE	JT	JOINT	SS	STORM SEWER
Δ	CENTRAL ANGLE OR DELTA	LT	LEFT	SSD	STOPPING SIGHT DISTANCE
CE	COMMERCIAL ENTRANCE	L	LENGTH OF CURVE	STA	STATION
CONST	CONSTRUCTION	LF	LINEAR FOOT (FEET)	SE	SUPERELEVATION
CMCP	CORRUGATED METAL CULVERT PIPE	LC	LONG CHORD	S/L	SURVEY LINE
CMP	CORRUGATED METAL PIPE	LS	LUMP SUM	SYM	SYMMETRICAL
CO	COUNTY	MP	MARKER POST	T	TRUCKS (PERCENT OF)
CTH	COUNTY TRUNK HIGHWAYS	MGAL	1000 GALLONS	TEL	TELEPHONE
CY	CUBIC YARD	NC	NORMAL CROWN	TEMP	TEMPORARY
CP	CONTROL POINT OR CULVERT PIPE	N	NORTH	TLE	TEMPORARY LIMITED EASEMENT
C&G	CURB AND GUTTER	NB	NORTH BOUND	TOC	TOP OF CURB
D	DEGREE OF CURVE	NOR	NORMAL	TYP	TYPICAL
DHV	DESIGN HOUR VOLUME	NO	NUMBER	UNCL	UNCLASSIFIED
DIA	DIAMETER	PAV'T	PAVEMENT	UG	UNDERGROUND
DD	DIRECTIONAL DISTRIBUTION	PLE	PERMANENT LIMITED EASEMENT	VAR	VARIABLE
DISCH	DISCHARGE	PC	POINT OF CURVATURE	VC	VERTICAL CURVE
DMS	DYNAMIC MESSAGE SIGN	PI	POINT OF INTERSECTION	VPC	VERTICAL POINT OF CURVATURE
EA	EACH	PT	POINT OF TANGENCY	VPI	VERTICAL POINT OF INTERSECTION
E	EAST	PCC	PORTLAND CEMENT CONCRETE	VPT	VERTICAL POINT OF TANGENCY
EB	EASTBOUND	PE	PRIVATE ENTRANCE	WT	WEIGHT
ELEC	ELECTRIC(AL), ELEC. CABLE	PGL	PROFILE GRADE LINE	W	WEST
EL, ELEV	ELEVATION	PL	PROPERTY LINE	WB	WEST BOUND
		R	RADIUS OR RANGE		

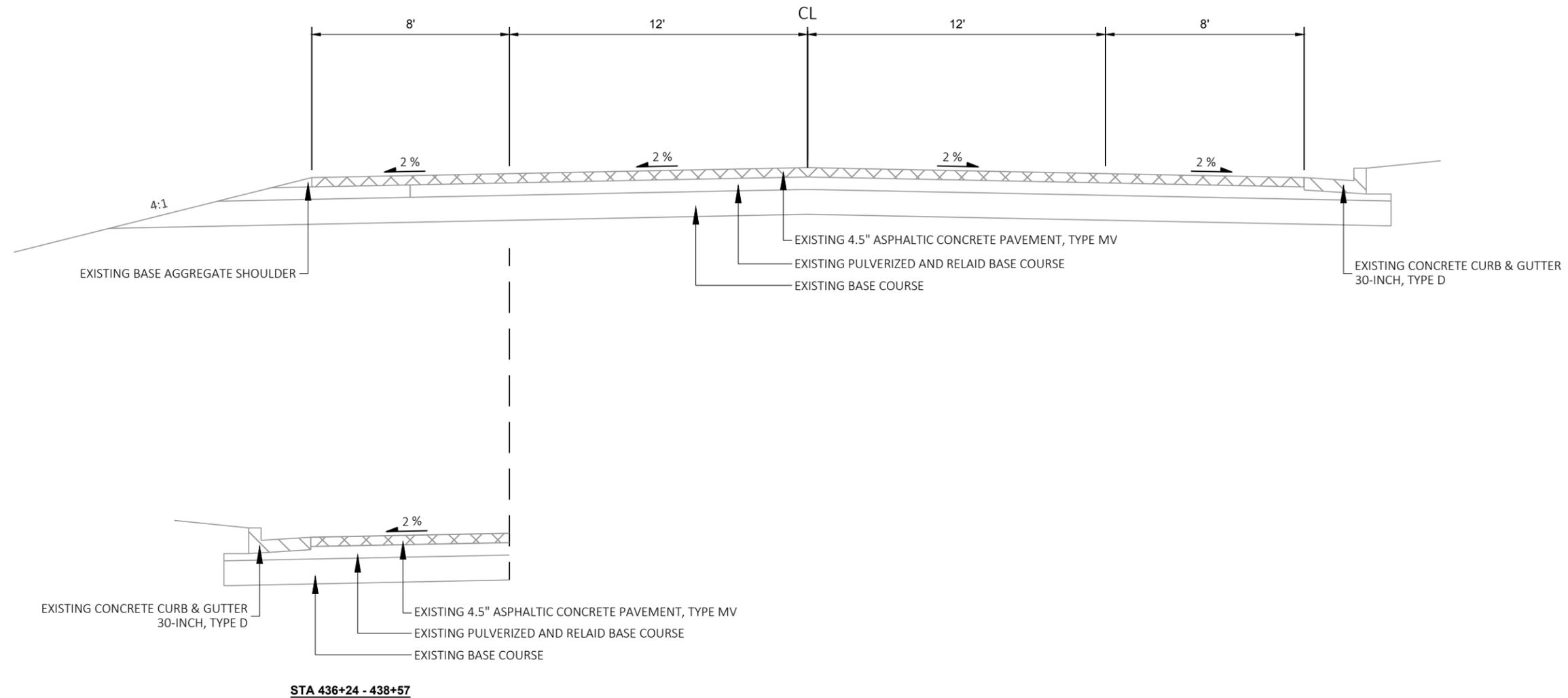


**PCMS** PORTABLE CHANGEABLE MESSAGE SIGN  
 MESSAGE  
 ROADWORK  
 STARTING  
 XX/XX/XXXX

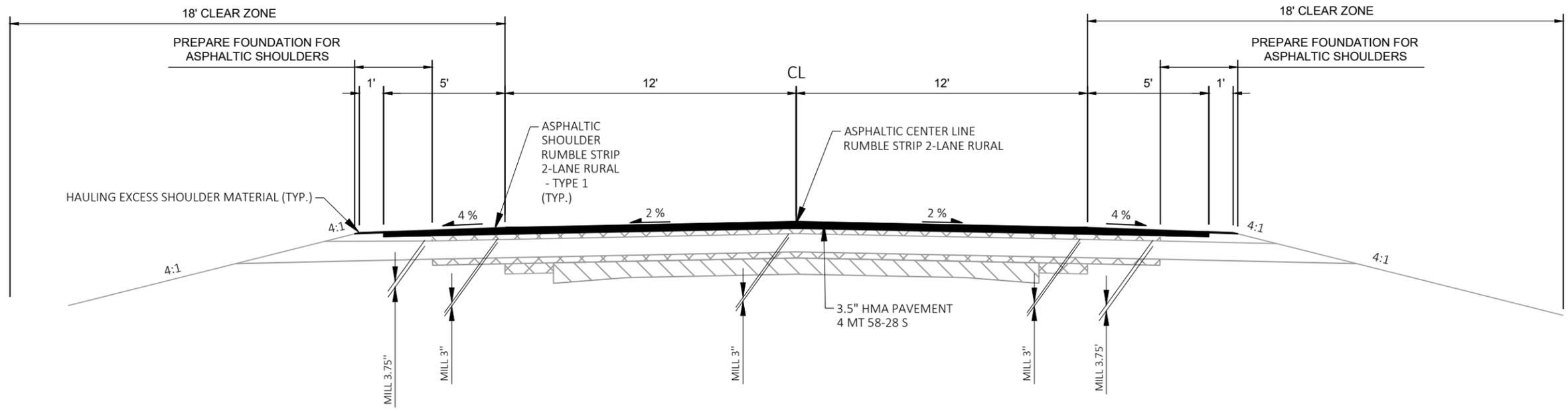




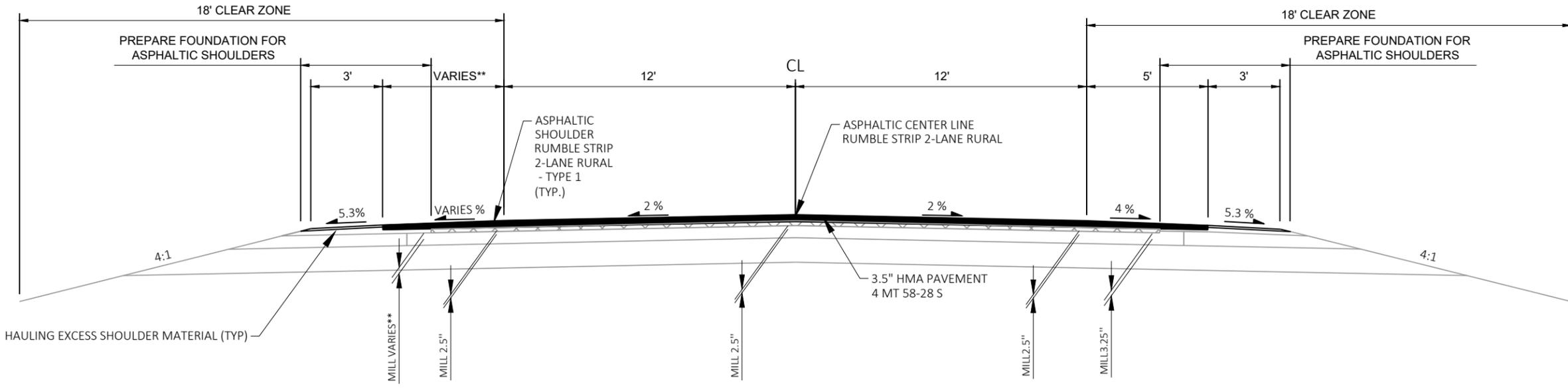
- Ⓐ 5' AT STA. 360+48 TO STA. 411+64  
2' AT STA. 411+64 TO STA. 416+05  
0' AT STA. 416+05 TO STA. 422+05  
2' AT STA. 422+05 TO STA. 427+90
- Ⓑ 3' AT STA. 360+48 TO STA. 411+64  
6' AT STA. 411+64 TO STA. 416+05  
8' AT STA. 416+05 TO STA. 422+05  
6' AT STA. 422+05 TO STA. 427+90



**EXISTING TYPICAL SECTION - STH 80**  
 STA 427+90 - 438+59.44

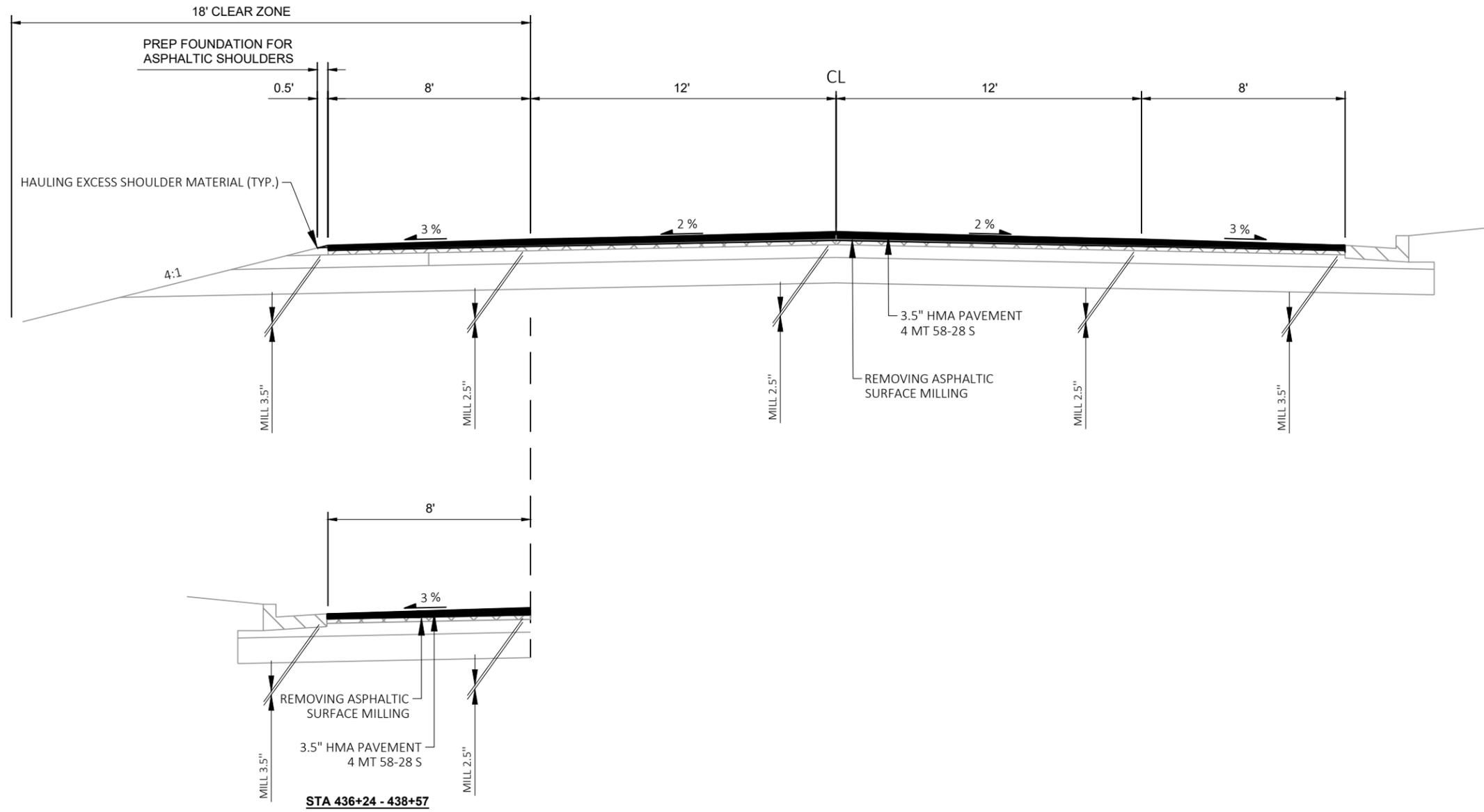


**PROPOSED TYPICAL SECTION - STH 11**  
 STA 259+33.81 - 335+48.02

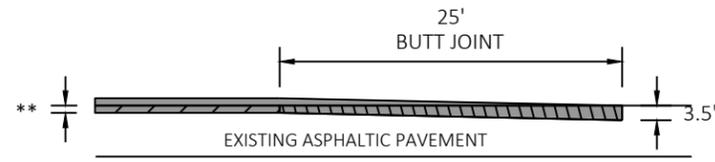


**PROPOSED TYPICAL SECTION - STH 80**  
 STA 360+51.52 - 427+90

- ⊕ 15' LT @ 3.25" MILL DEPTH AT STA. 360+48 TO STA. 411+64 5' PAVED SHOULDER
- 18' LT @ 3.50" MILL DEPTH AT STA. 411+64 TO STA. 427+90 6' PAVED SHOULDER
- 20' LT @ 3.50" MILL DEPTH AT STA. 416+05 TO STA. 422+05 8' PAVED SHOULDER
- 18' LT @ 3.50" MILL DEPTH AT STA. 422+05 TO STA. 427+90 6' PAVED SHOULDER

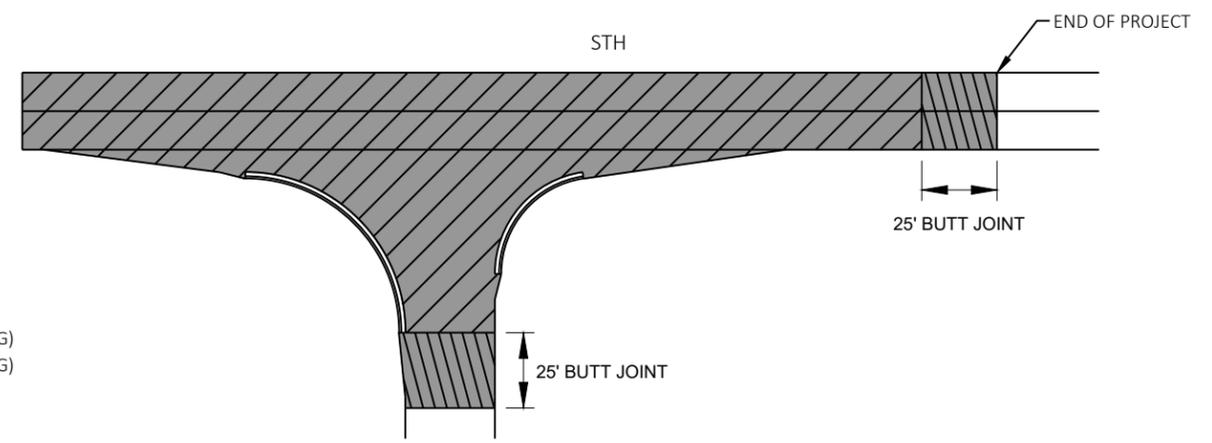


**PROPOSED TYPICAL SECTION - STH 80**  
 STA 427+90 - 438+59.44



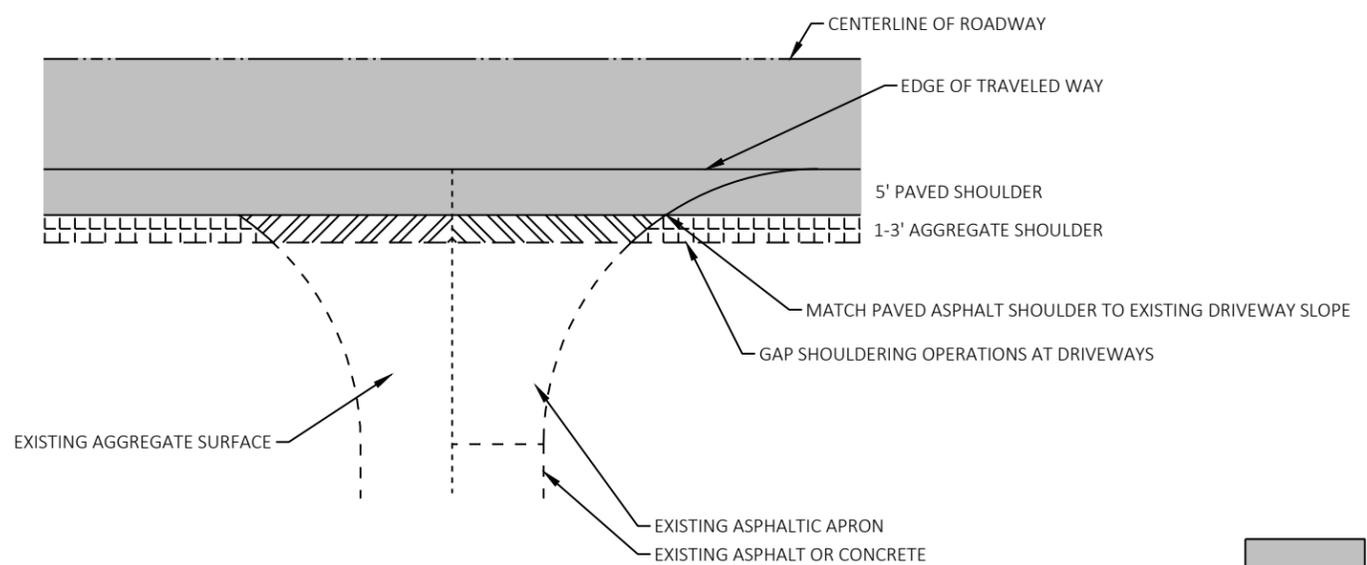
PROFILE VIEW

-  3.5" HMA PAVEMENT 4 MT 58-28 S
-  REMOVING ASPHALTIC SURFACE MILLING
-  REMOVING ASPHALTIC SURFACE BUTT JOINTS
- \*\* STA. 259+33.81 - 335+48.02: REMOVE 3.0" ASPHALTIC SURFACE (MILLING)
- \*\* STA. 360+51.52 - 438+59.44: REMOVE 2.5" ASPHALTIC SURFACE (MILLING)



PLAN VIEW

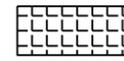
BUTT JOINT DETAIL



RURAL ENTRANCE WITH AGGREGATE SURFACE

RURAL ENTRANCE WITH ASPHALTIC SURFACE OR CONCRETE SURFACE WITH ASPHALTIC APRON

RURAL ENTRANCE DETAIL

-  PAID FOR AS HMA PAVEMENT 4 MT 58-28 S (TON)
-  PAID FOR AS PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS (STA)
-  PAID FOR AS BASE AGGREGATE DENSE 3/4-INCH (TON)
-  PAID FOR AS ASPHALTIC SURFACE DRIVEWAYS AND FIELD ENTRANCES (TON)



SAWCUT, REMOVE AND REPLACE APPROX. 17 LF 6-INCH SLOPED 36-INCH TYPE D CURB AND GUTTER.

SAWCUT, REMOVE AND REPLACE AT CURB CUT

SAWCUT, REMOVE AND REPLACE APPROX. 10 LF 30-INCH TYPE D CURB AND GUTTER

FIELD LOCATE CURB REPLACEMENT EXTENT AT CONC. CURB JOINT

REMOVE AND REPLACE DAMAGED EXISTING TYPE A CURB BOX WITH INLET COVER TYPE H

END OF CONSTRUCTION STA. 10'MO'+82.66 MATCH EXISTING SAWCUT REQUIRED

END OF CONSTRUCTION STA. 9'MO'+07.76 MATCH EXISTING SAWCUT REQUIRED

MODEL ROAD

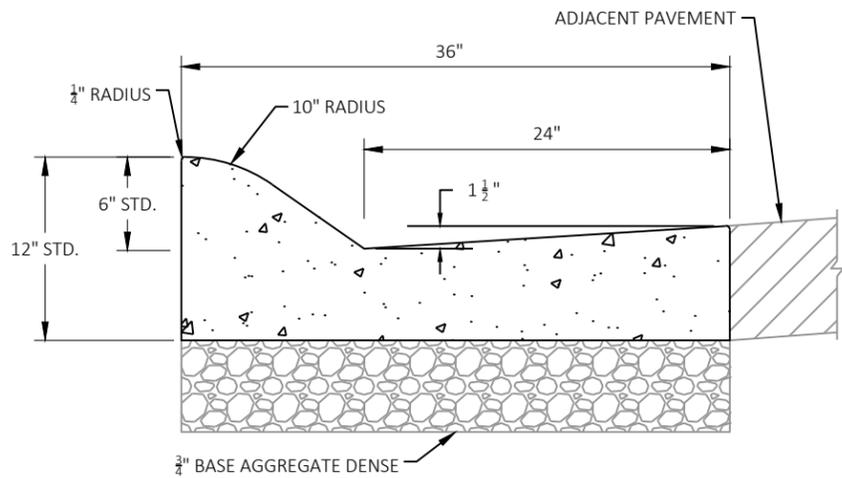
ROASTER ROAD

10'MO'

STA. 428+59.35 = STA. 10'MO'+00

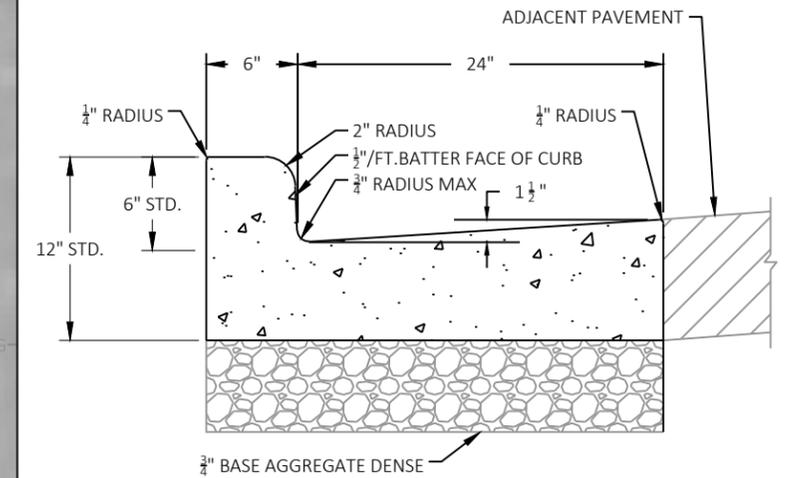
STH 80

428



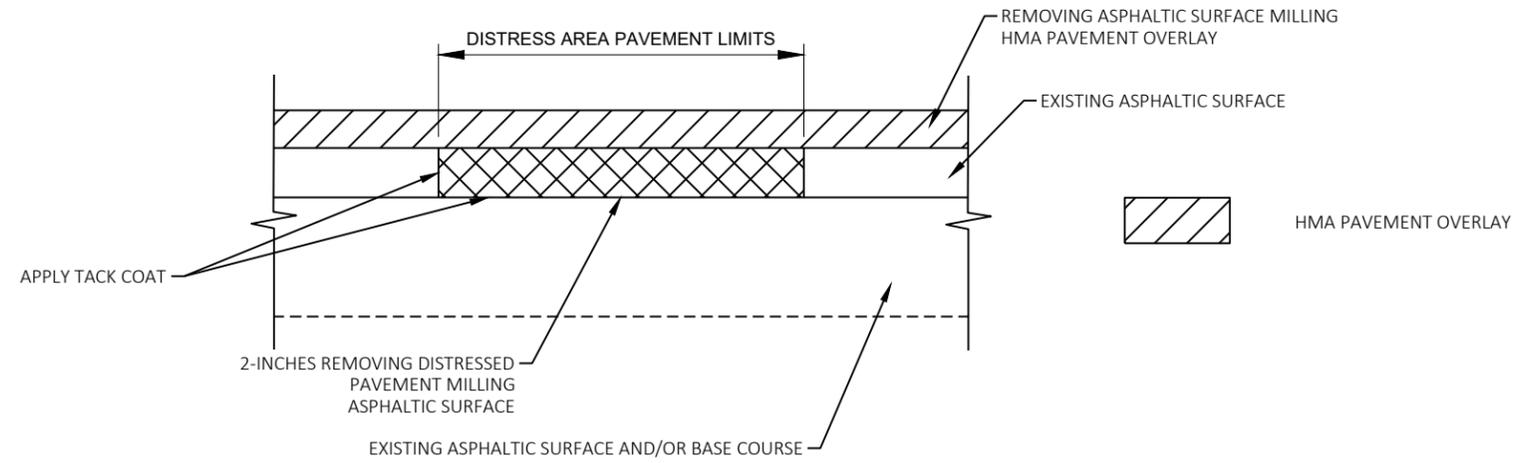
6-INCH SLOPED 36-INCH TYPE D CONCRETE CURB AND GUTTER

NOT TO SCALE

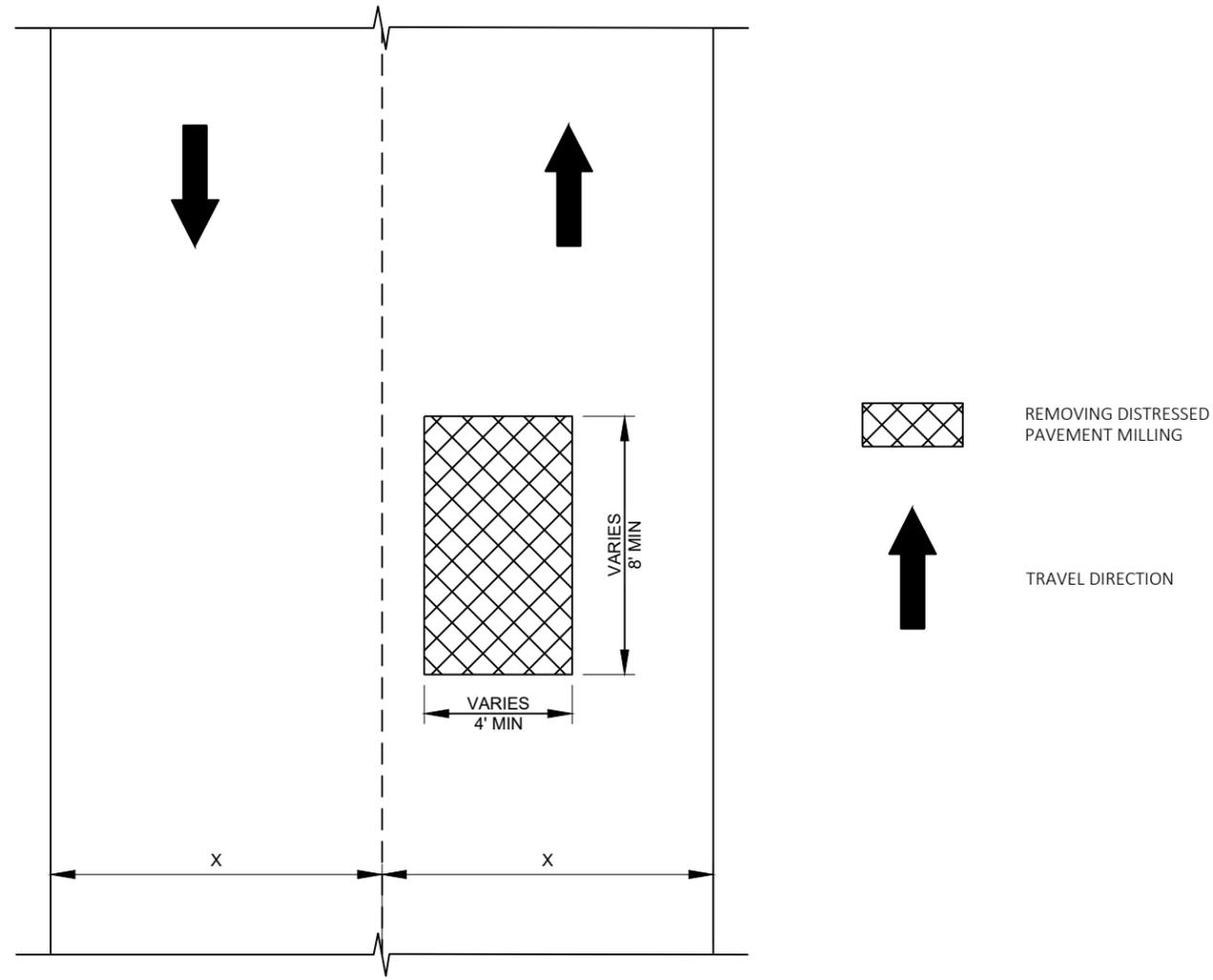


30-INCH TYPE D CONCRETE CURB AND GUTTER

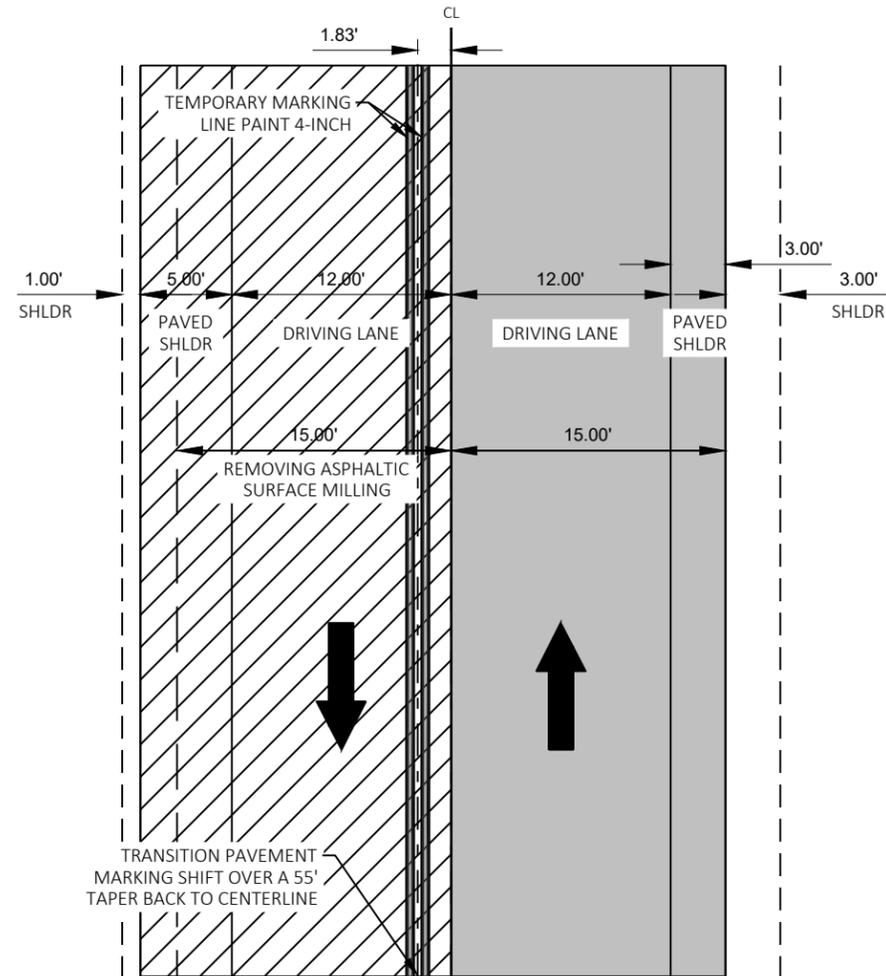
NOT TO SCALE



**REMOVING DISTRESS PAVEMENT MILLING  
SECTION A-A**



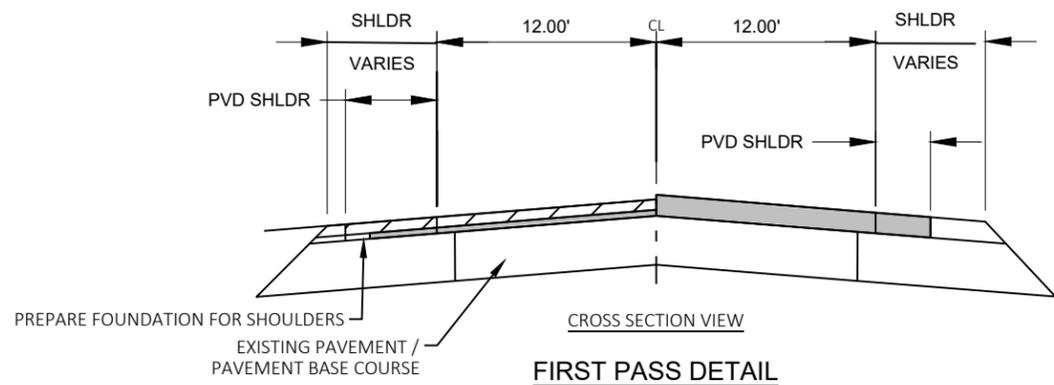
EXACT LOCATION AND LIMITS OF REMOVING DISTRESSED PAVEMENT MILLING TO BE DETERMINED BY THE ENGINEER IN THE FIELD



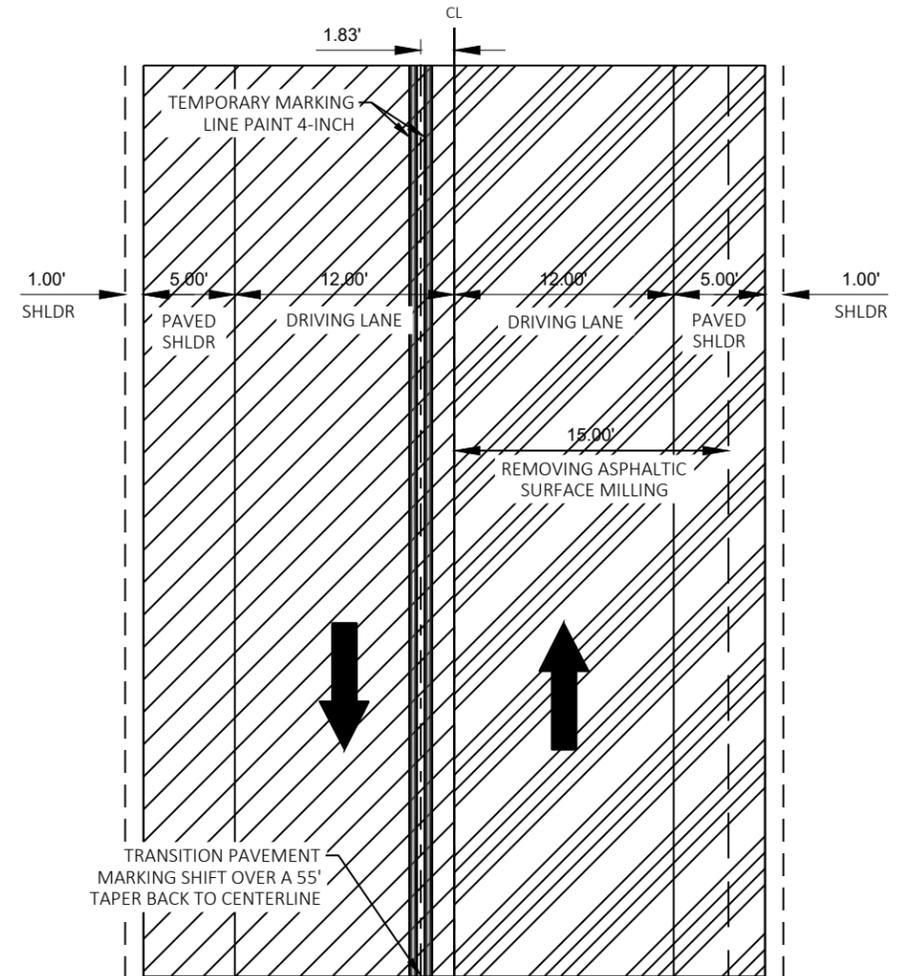
PLAN VIEW

- EXISTING ASPHALTIC SURFACE
- \*FIRST PASS 1 3/4" HMA PAVEMENT 4 MT 58-28 S PAVING LIMITS (LOWER LAYER)

\*FIRST PASS MUST BE PAVED SAME DAY AS ANY EXISTING MAINLINE SURFACE MILLING



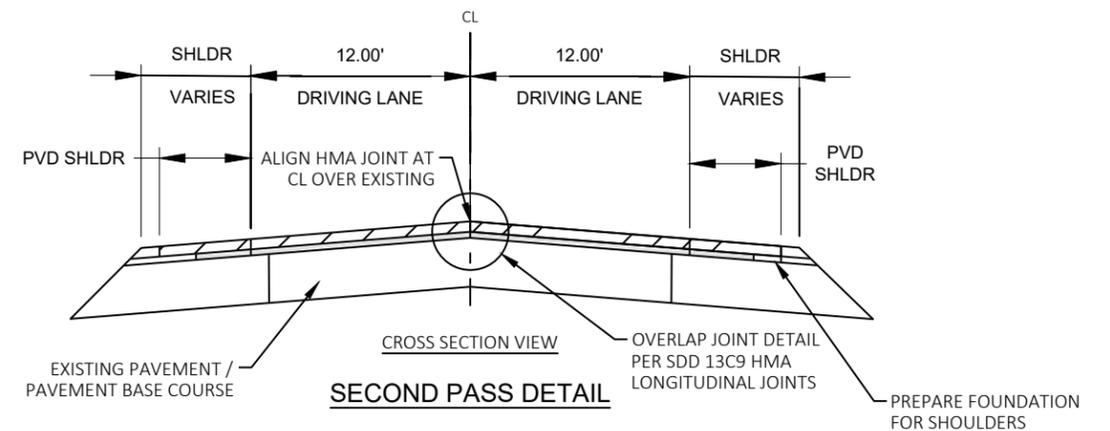
FIRST PASS DETAIL



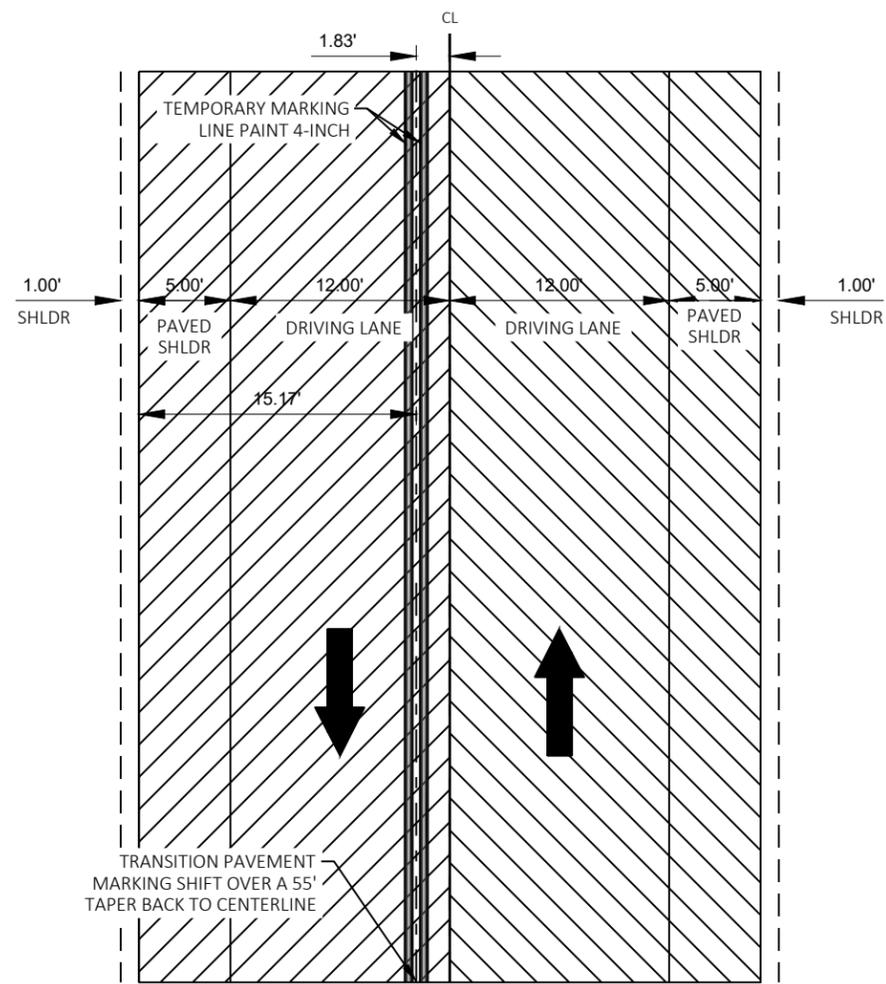
PLAN VIEW

- EXISTING ASPHALTIC SURFACE
- FIRST PASS 1 3/4" HMA PAVEMENT 4 MT 58-28 S PAVING LIMITS (LOWER LAYER)
- \*\*SECOND PASS 1 3/4" HMA PAVEMENT 4 MT 58-28 S PAVING LIMITS (LOWER LAYER)

\*\*SECOND PASS MUST BE PAVED SAME DAY AS ANY EXISTING MAINLINE SURFACE MILLING

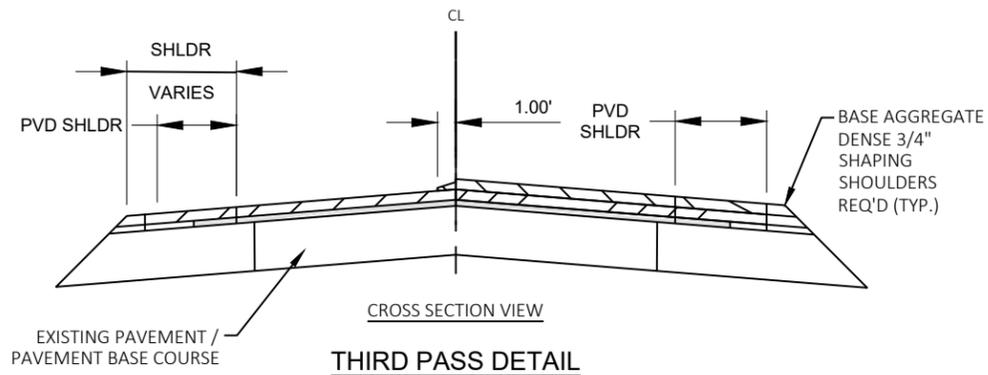


SECOND PASS DETAIL

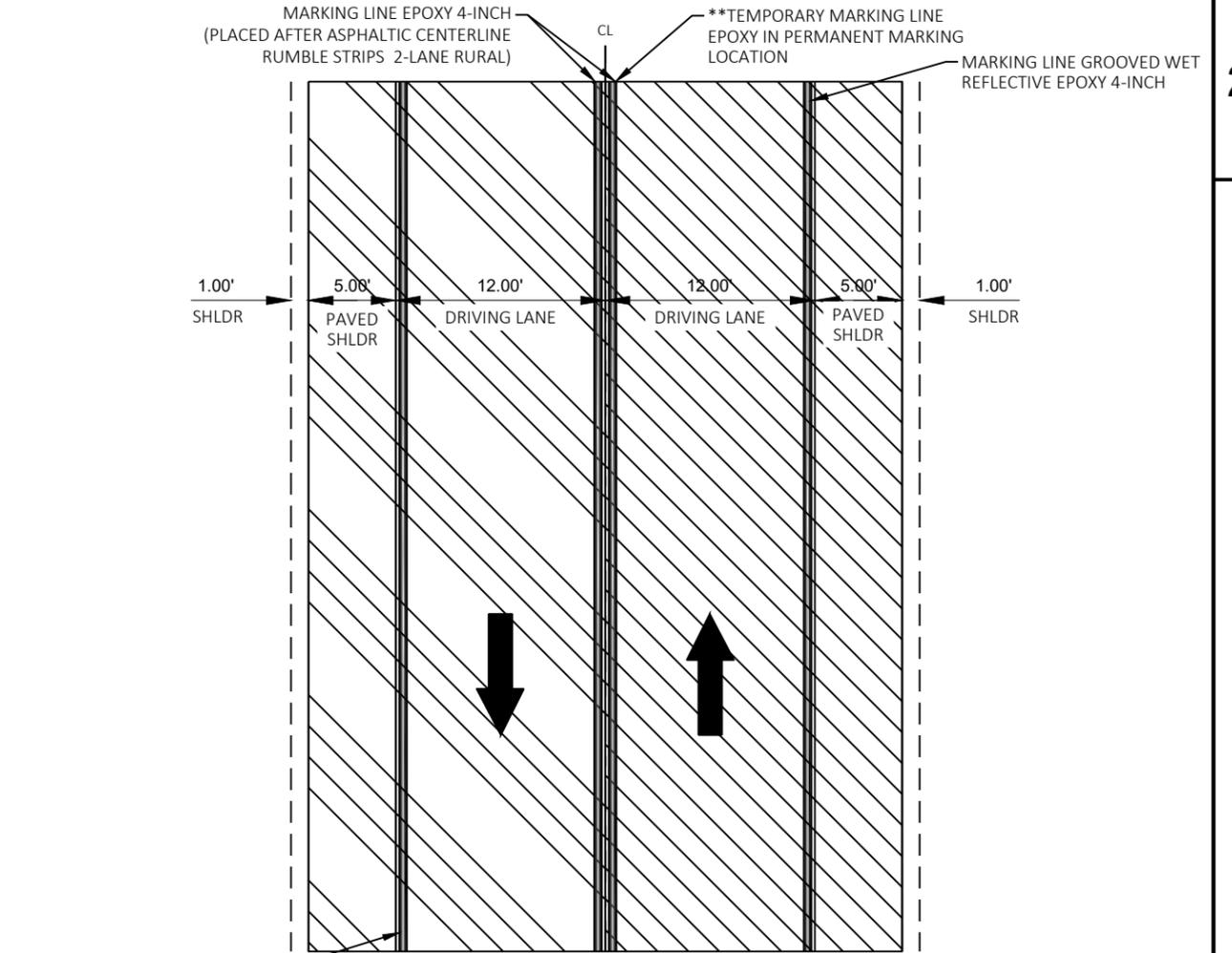


PLAN VIEW

- FIRST PASS 1 3/4" HMA PAVEMENT 4 MT 58-28 S PAVING LIMITS (LOWER LAYER)
- SECOND PASS 1 3/4" HMA PAVEMENT 4 MT 58-28 S PAVING LIMITS (LOWER LAYER)
- THIRD PASS 1 3/4" HMA PAVEMENT 4 MT 58-28 S PAVING LIMITS (UPPER LAYER)



THIRD PASS DETAIL

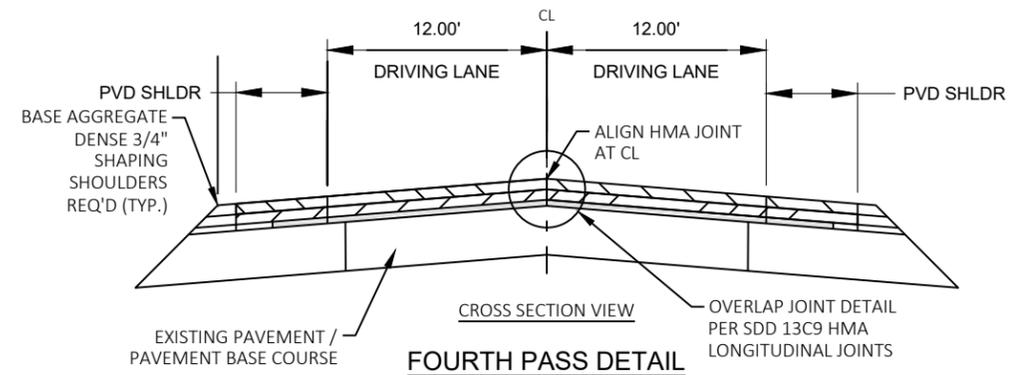


PLAN VIEW

MARKING LINE GROOVED WET REFLECTIVE EPOXY 4-INCH

- SECOND PASS 1 3/4" HMA PAVEMENT 4 MT 58-28 S PAVING LIMITS (LOWER LAYER)
- THIRD PASS 1 3/4" HMA PAVEMENT 4 MT 58-28 S PAVING LIMITS (UPPER LAYER)
- FOURTH PASS 1 3/4" HMA PAVEMENT 4 MT 58-28 S PAVING LIMITS (UPPER LAYER)

\*\*TEMPORARY MARKING LINE EXPOXY APPLIED SAME DAY AS FOURTH PASS



FOURTH PASS DETAIL

## Estimate Of Quantities

Line	Item	Item Description	Unit	1706-06-70		5235-03-71	
				Total	Qty	Qty	Qty
0002	204.0115	Removing Asphaltic Surface Butt Joints	SY	375.000	190.000	185.000	
0004	204.0120	Removing Asphaltic Surface Milling	SY	55,696.000	26,884.000	28,812.000	
0006	204.0150	Removing Curb & Gutter	LF	27.000		27.000	
0008	204.9060.S	Removing (item description) 01. Inlet Cover	EACH	1.000		1.000	
0010	204.9180.S	Removing (item description) 01. Distressed Pavement Milling	SY	2,613.000	117.000	2,496.000	
0012	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 1706-06-70	LS	1.000	1.000		
0014	211.0100	Prepare Foundation for Asphaltic Paving (project) 02. 5235-03-71	LS	1.000		1.000	
0016	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	270.000	152.000	118.000	
0018	213.0100	Finishing Roadway (project) 01. 1706-06-70	EACH	1.000	1.000		
0020	213.0100	Finishing Roadway (project) 02. 5235-03-71	EACH	1.000		1.000	
0022	305.0110	Base Aggregate Dense 3/4-Inch	TON	736.000	233.000	503.000	
0024	305.0504.S	Hauling Excess Shoulder Material	CY	384.000	281.000	103.000	
0026	450.4000	HMA Cold Weather Paving	TON	1,500.000	750.000	750.000	
0028	455.0605	Tack Coat	GAL	7,581.000	3,626.000	3,955.000	
0030	460.0105.S	HMA Percent Within Limits (PWL) Test Strip Volumetrics	EACH	1.000	0.500	0.500	
0032	460.0110.S	HMA Percent Within Limits (PWL) Test Strip Density	EACH	2.000	1.000	1.000	
0034	460.2005	Incentive Density PWL HMA Pavement	DOL	8,061.000	3,980.000	4,081.000	
0036	460.2007	Incentive Density HMA Pavement Longitudinal Joints	DOL	12,337.000	6,091.000	6,246.000	
0038	460.2010	Incentive Air Voids HMA Pavement	DOL	11,497.000	5,909.000	5,588.000	
0040	460.6224	HMA Pavement 4 MT 58-28 S	TON	12,084.000	5,909.000	6,175.000	
0042	465.0105	Asphaltic Surface	TON	293.000	13.000	280.000	
0044	465.0120	Asphaltic Surface Driveways and Field Entrances	TON	12.000	6.000	6.000	
0046	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	23,754.000	12,940.000	10,814.000	
0048	465.0475	Asphalt Centerline Rumble Strips 2-Lane Rural	LF	11,521.000	6,013.000	5,508.000	
0050	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	10.000		10.000	
0052	601.0557	Concrete Curb & Gutter 6-Inch Sloped 36-Inch Type D	LF	17.000		17.000	
0054	611.0624	Inlet Covers Type H	EACH	1.000		1.000	
0056	618.0100	Maintenance And Repair of Haul Roads (project) 01. 1706-06-70	EACH	1.000	1.000		
0058	618.0100	Maintenance And Repair of Haul Roads (project) 02. 5235-03-71	EACH	1.000		1.000	
0060	619.1000	Mobilization	EACH	1.000	0.500	0.500	
0062	625.0100	Topsoil	SY	10.000		10.000	
0064	627.0200	Mulching	SY	10.000		10.000	
0066	629.0210	Fertilizer Type B	CWT	0.500		0.500	
0068	630.0110	Seeding Mixture No. 10	LB	1.000		1.000	
0070	630.0500	Seed Water	MGAL	0.200		0.200	
0072	642.5201	Field Office Type C	EACH	1.000	0.500	0.500	
0074	643.0300	Traffic Control Drums	DAY	168.000		168.000	
0076	643.0900	Traffic Control Signs	DAY	894.000	405.000	489.000	
0078	643.1050	Traffic Control Signs PCMS	DAY	28.000	14.000	14.000	
0080	643.5000	Traffic Control	EACH	1.000	0.500	0.500	
0082	646.1020	Marking Line Epoxy 4-Inch	LF	20,345.000	7,899.000	12,446.000	
0084	646.1040	Marking Line Grooved Wet Ref Epoxy 4-Inch	LF	28,342.000	14,923.000	13,419.000	
0086	646.6464	Cold Weather Marking Epoxy 4-Inch	LF	17,077.000	7,680.000	9,397.000	
0088	648.0100	Locating No-Passing Zones	MI	2.920	1.440	1.480	
0090	649.0105	Temporary Marking Line Paint 4-Inch	LF	30,842.000	15,228.000	15,614.000	
0092	649.0120	Temporary Marking Line Epoxy 4-Inch	LF	19,621.000	7,899.000	11,722.000	
0094	650.8000	Construction Staking Resurfacing Reference	LF	15,616.000	7,808.000	7,808.000	
0096	650.9910	Construction Staking Supplemental Control (project) 01. 1706-06-70	LS	1.000	1.000		
0098	650.9910	Construction Staking Supplemental Control (project) 02. 5235-03-71	LS	1.000		1.000	

Estimate Of Quantities

1706-06-70 5235-03-71

Line	Item	Item Description	Unit	Total	Qty	Qty
0100	690.0150	Sawing Asphalt	LF	344.000	177.000	167.000
0102	690.0250	Sawing Concrete	LF	71.000		71.000
0104	740.0440	Incentive IRI Ride	DOL	15,421.000	7,614.000	7,807.000

**REMOVING ASPHALTIC SURFACE MILLING**

STATION	STATION	HWY	LOCATION	204.0120 REMOVING ASPHALTIC SURFACE MILLING SY	204.0115 REMOVING ASPHALTIC SURFACE BUTT JOINTS SY	204.9180.S.01 REMOVING DISTRESSED PAVEMENT MILLING SY	Remarks
<b>1706-06-70</b>							
259+34	- 274+75	STH 11	SOUTH PROJECT LIMIT TO YORK RD	5,343	90	--	
274+75	- 279+05	STH 11	YORK RD TO JEFFERSON RD	1,684	25	--	
279+05	- 291+36	STH 11	JEFFERSON RD TO EDISON RD	4,325	24	--	
291+36	- 318+14	STH 11	EDISON RD TO LINCOLN RD	9,206	21	--	
318+14	- 335+48	STH 11	LINCOLN RD TO NORTH PROJECT LIMIT	6,326	30	--	
UNDISTRIBUTED				--	--	117	
<b>1706-06-70 SUBTOTAL</b>				<b>26,884</b>	<b>190</b>	<b>117</b>	
<b>5235-03-71</b>							
360+52	- 373+46	STH 80	SOUTH PROJECT LIMIT TO KIRKWOOD RD	4,626	93	--	
373+46	- 427+90	STH 80	KIRKWOOD RD TO MODEL RD/ROASTER RD	19,374	65	--	
427+90	- 438+59	STH 80	MODEL RD/ROASTER RD TO NORTH PROJECT LIMIT	4,812	27	--	
UNDISTRIBUTED				--	--	2,496	
<b>5235-03-71 SUBTOTAL</b>				<b>28,812</b>	<b>185</b>	<b>2,496</b>	
<b>TOTAL</b>				<b>55,696</b>	<b>375</b>	<b>2,613</b>	

**PREPARE FOUNDATION**

CATEGORY	PROJECT	LS	STA	REMARKS
0010	1706-06-70	1	152	
0010	5235-03-71	1	--	
0020	5235-03-71	--	118	
<b>TOTAL</b>		<b>2</b>	<b>270</b>	

**CURB AND GUTTER REMOVAL**

LOCATION	204.0150 REMOVING CURB & GUTTER LF	204.9060.S.01 REMOVING INLET COVER EACH	REMARKS
<b>1706-06-70</b>			
---			
<b>5235-03-71</b>			
MODEL RD INTERSECTION NE QUADRANT	10	1	
MODEL RD INTERSECTION NW QUADRANT	17	--	
<b>5235-03-71 PROJECT SUBTOTAL</b>		<b>1</b>	
<b>TOTAL</b>		<b>27</b>	<b>1</b>

**FINISHING ROADWAY**

PROJECT	EACH	REMARKS
1706-06-70	1	
5235-03-71	1	
<b>TOTAL</b>		<b>2</b>

BASE AGGREGATE SUMMARY

CATEGORY	STATION	STATION	LOCATION	305.0110	305.0504.S	REMARKS
				BASE AGGREGATE DENSE 3/4-INCH	HAULING EXCESS SHOULDER	
				TON	CY	
<b>1706-06-70</b>						
0010	259+34	- 275+48	STH 11 SOUTH PROJECT LIMIT TO YORK RD	--	60	
0010	275+48	- 279+65	STH 11 YORK RD TO JEFFERSON RD	--	15	
0010	279+65	- 292+20	STH 11 JEFFERSON RD TO EDISON RD	--	46	
0010	292+20	- 319+51	STH 11 EDISON RD TO LINCOLN RD	--	101	
0010	319+51	- 335+48	STH 11 LINCOLN RD TO NORTH PROJECT LIMIT	--	59	
0010			STH 11 DRIVEWAYS	233	--	
<b>1706-06-70 SUBTOTAL</b>				<b>233</b>	<b>281</b>	
<b>5235-03-71</b>						
0010	427+90	- 438+59	STH 80 MODEL RD/ROASTER RD TO NORTH PROJECT LIMIT	--	--	
0010			STH 80 DRIVEWAYS	503	--	
<b>CATEGORY 0010 SUBTOTAL</b>				<b>503</b>	<b>--</b>	
0020	360+51	- 373+46	STH 80 SOUTH PROJECT LIMIT TO KIRKWOOD RD	-	26	
0020	373+46	- 427+90	STH 80 KIRKWOOD RD TO MODEL RD/ROASTER RD	--	77	
<b>CATEGORY 0020 SUBTOTAL</b>				<b>--</b>	<b>--</b>	
<b>5235-03-71 SUBTOTAL</b>				<b>503</b>	<b>103</b>	
<b>TOTAL</b>				<b>736</b>	<b>384</b>	

ASPHALT PAVEMENT SUMMARY

CATEGORY	STATION	STATION	HWY	LOCATION	AREA SY	LOWER LAYER DEPTH IN	UPPER LAYER DEPTH IN	TACK GAL	COAT	HMA PAVEMENT 4 MT 58-28 S	ASPHALTIC SURFACE TON	ASPHALTIC DRIVEWAYS AND FIELD ENTRANCES TON	HMA COLD WEATHER PAVING TON	ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL ** LF	ASPHALT CENTER LINE RUMBLE STRIPS 2-LANE RURAL LF	REMARKS
<b>1706-06-70</b>																
0010	259+34 -	274+75	STH 11	SOUTH PROJECT LIMIT TO YORK RD	5,822	1.75	1.75	699		1,141	--	0.9	--	2,887	1,411	
0010	274+75 -	279+05	STH 11	YORK RD TO JEFFERSON RD	1,887	1.75	1.75	226		370	--	0.9	--	521	13	
0010	279+05 -	291+36	STH 11	JEFFERSON RD TO EDISON RD	4,940	1.75	1.75	593		968	--	0.5	--	2,195	851	
0010	291+36 -	318+14	STH 11	EDISON RD TO LINCOLN RD	10,433	1.75	1.75	1,252		2,045	--	0.5	--	5,028	2,342	
0010	318+14 -	335+48	STH 11	LINCOLN RD TO NORTH PROJECT LIMIT	7,065	1.75	1.75	848		1,385	--	3.2	--	2,309	1,396	
0010	AREAS OF REMOVING DISTRESSEED PAVEMENT MILLING				--	--	--	8		--	13	--	--	--	--	
0010	UNDISTRIBUTED				--	--	--	--		--	--	--	750	--	--	
<b>1706-06-70 SUBTOTAL</b>					<b>30,147</b>			<b>3,626</b>		<b>5,909</b>	<b>13</b>	<b>6</b>	<b>750</b>	<b>12,940</b>	<b>6,013</b>	
<b>5235-03-71</b>																
0010	360+52 -	373+46	STH 80	SOUTH PROJECT LIMIT TO KIRKWOOD RD	4,315	1.75	1.75	518		846	--	0.5	--	--	1,095	
0010	373+46 -	427+90	STH 80	KIRKWOOD RD TO MODEL RD/ROASTER RD	18,553	1.75	1.75	2,226		3,636	--	4.1	--	--	4,413	
0010	427+90 -	438+59	STH 80	MODEL RD/ROASTER RD TO NORTH PROJECT LIMIT	5,642	1.75	1.75	677		1,106	--	1.4	--	--	--	
0010	AREAS OF REMOVING DISTRESSEED PAVEMENT MILLING				--	--	--	175		--	280	--	--	--	--	
0010	UNDISTRIBUTED				--	--	--	--		--	--	--	750	--	--	
<b>CATEGORY 0010 SUBTOTAL</b>								<b>3,596</b>		<b>5,588</b>	<b>280</b>	<b>6</b>	<b>750</b>	<b>0</b>	<b>5,508</b>	
0020	360+52 -	373+46	STH 80	SOUTH PROJECT LIMIT TO KIRKWOOD RD	575	1.75	1.75	69		113	--	--	--	2,243	--	
0020	373+46 -	427+90	STH 80	KIRKWOOD RD TO MODEL RD/ROASTER RD	2,420	1.75	1.75	290		474	--	--	--	8,571	--	
<b>CATEGORY 0020 SUBTOTAL</b>								<b>359</b>		<b>587</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10,814</b>	<b>--</b>	
<b>5235-03-70 SUBTOTAL</b>					<b>28,509</b>			<b>3,955</b>		<b>6,175</b>	<b>280</b>	<b>6</b>	<b>750</b>	<b>10,814</b>	<b>5,508</b>	
<b>TOTAL</b>					<b>58,656</b>			<b>7,581</b>		<b>12,084</b>	<b>293</b>	<b>12.0</b>	<b>1,500</b>	<b>23,754</b>	<b>11,521</b>	

\*\*TYPE 1 - SEE SDD 13A10-A 2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING - TYPE 1

<b>PWL MIXTURE USE TABLE</b>								
THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT:								
LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEMS	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
<b>FIRST LIFT</b>								
NB 5' SHOULDER	STA 259+34 TO STA 279+05 STA 280+22 TO STA 291+36 STA 293+09 TO STA 318+04 STA 320+78 TO STA 335+44 STA 360+48 TO STA 427+26	LOWER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	745	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
NB 12' DRIVING LANE	STA 259+34 TO STA 335+48 STA 360+52 TO STA 438+57	LOWER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	2,004	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
SB 12' DRIVING LANE	STA 259+34 TO STA 335+48 STA 360+52 TO STA 438+57	LOWER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	2,004	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
SB 5' SHOULDER	STA 259+34 TO STA 274+75 STA 276+07 TO STA 335+48 STA 360+52 TO STA 372+45 STA 374+67 TO STA 427+59	LOWER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	757	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
NB 8' SHOULDER	STA 429+02 TO STA 438+59	LOWER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	82	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
SB 8' SHOULDER	STA 429+48 TO STA 438+59	LOWER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	78	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
YORK RD JEFFERSON RD EDISON RD LINCOLN RD KIRKWOOD RD MODEL RD ROASTER RD TROY RD	9'YO'+17 TO 9'YO'+87 10'JR'+12 TO 10'JR'+86 10'ER'+13 TO 10'ER'+97 10'LI'+12 TO 11'LI'+07 9'KI'06 TO 9'KI'+87 9'MO'+08 TO 9'MO'+88 10'MO'+12 TO 10'MO'+83 9'TR'+39 TO 9'TR'+79	LOWER LAYER	MILLED EXISTING HMA SURFACE	4 MT 58-28 S	314	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE

PWL MIXTURE USE TABLE CONT'D								
THE FOLLOWING ACCEPTANCE CRITERIA ARE APPLICABLE FOR THIS PROJECT:								
LOCATION	STATION	MIXTURE USE	UNDERLYING SURFACE	BID ITEMS	TONS	THICKNESS	QUALITY MANAGEMENT PROGRAM TO BE USED FOR:	
							MIXTURE ACCEPTANCE	DENSITY ACCEPTANCE
<i>SECOND LIFT</i>								
NB 5' SHOULDER	STA 259+34 TO STA 279+05 STA 280+22 TO STA 291+36 STA 293+09 TO STA 318+04 STA 320+78 TO STA 335+44 STA 360+48 TO STA 427+26	UPPER LAYER	4 MT 58-28 S	4 MT 58-28 S	745	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
NB 12' DRIVING LANE	STA 259+34 TO STA 335+48 STA 360+52 TO STA 438+57	UPPER LAYER	4 MT 58-28 S	4 MT 58-28 S	2,004	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
SB 12' DRIVING LANE	STA 259+34 TO STA 335+48 STA 360+52 TO STA 438+57	UPPER LAYER	4 MT 58-28 S	4 MT 58-28 S	2,004	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	INCENTIVE DENSITY PWL HMA PAVEMENT 460.2005
SB 5' SHOULDER	STA 259+34 TO STA 274+75 STA 276+07 TO STA 335+48 STA 360+52 TO STA 372+45 STA 374+67 TO STA 427+59	UPPER LAYER	4 MT 58-28 S	4 MT 58-28 S	757	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
NB 8' SHOULDER	STA 429+02 TO STA 438+59	UPPER LAYER	4 MT 58-28 S	4 MT 58-28 S	82	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
SB 8' SHOULDER	STA 429+48 TO STA 438+59	UPPER LAYER	4 MT 58-28 S	4 MT 58-28 S	78	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE
YORK RD JEFFERSON RD EDISON RD LINCOLN RD KIRKWOOD RD MODEL RD ROASTER RD TROY RD	9'YO'+17 TO 9'YO'+87 10'JR'+12 TO 10'JR'+86 10'ER'+13 TO 10'ER'+97 10'LI'+12 TO 11'LI'+07 9'KI'+06 TO 9'KI'+87 9'MO'+08 TO 9'MO'+88 10'MO'+12 TO 10'MO'+83 9'TR'+39 TO 9'TR'+79	UPPER LAYER	4 MT 58-28 S	4 MT 58-28 S	314	1.75"	PWL INCENTIVE AIR VOIDS HMA PAVEMENT 460.2010	ACCEPTANCE TESTING BY THE DEPARTMENT; NOT ELIGIBLE FOR INCENTIVE



**PAVEMENT MARKING SUMMARY**

	646.1020	646.1020	646.1040	649.0120	648.0100	646.6464	
	MARKING LINE EPOXY 4-INCH (YELLOW)	MARKING LINE EPOXY 4-INCH (WHITE)	MARKING LINE GROOVED WET REF EPOXY 4-INCH (WHITE)	TEMPORARY MARKING LINE EPOXY 4-INCH (YELLOW)	LOCATING NO-PASSING ZONES	COLD WEATHER MARKING EPOXY 4-INCH	

STATION	STATION	LOCATION	LF	LF	LF	LF	MI	LF	REMARKS
<b>1706-06-70</b>									
259+34	-	270+42	STH 11	1385	--	2216	1385	0.21	--
270+42	-	289+90	STH 11	3896	--	3693	3896	0.37	--
289+90	-	300+86	STH 11	1370	--	2090	1370	0.21	--
300+86	-	331+66	STH 11	770	--	6160	770	0.58	--
331+66	-	335+48	STH 11	478	--	764	478	0.07	--
UNDISTRIBUTED				--	--	--	--	7680	
<b>1706-06-70 SUBTOTAL</b>				7,899		14,923	7,899	1.44	7,680
<b>5235-03-71</b>									
360+52	-	368+00	STH 80	187	--	1496	187	0.14	--
368+00	-	380+57	STH 80	1571	--	2413	1571	0.24	--
380+57	-	386+57	STH 80	1200	--	1200	1200	0.11	--
386+57	-	397+58	STH 80	1376	--	2202	1376	0.21	--
397+58	-	408+44	STH 80	1358	--	2172	1358	0.21	--
408+44	-	438+59	STH 80	6030	724	3936	6030	0.57	--
UNDISTRIBUTED				--	--	--	--	9397	
<b>5235-03-71 SUBTOTAL</b>				12,446		13,419	11,722	1.48	9,397
<b>TOTAL</b>				20,345		28,342	19,621	2.92	17,077

**SAWING PAVEMENT SUMMARY**

	690.0150	690.0250
	SAWING ASPHALT	SAWING CONCRETE

LOCATION	LF	LF	REMARKS
<b>1706-06-70</b>			
259+34	35	--	
YORK RD	26	--	
JEFFERSON RD	26	--	
EDISON RD	24	--	
LINCOLN RD	32	--	
335+48	34	--	
<b>1706-06-70 SUBTOTAL</b>		177	--
<b>5235-03-71</b>			
360+52	34	--	
KIRKWOOD RD	31	--	
MODEL RD/ROASTER RD	72	11	
438+59	30	60	NORTH LIMIT/TROY ST
<b>5235-03-71 SUBTOTAL</b>		167	71
<b>TOTAL</b>		344	71

**TEMPORARY PAVEMENT MARKING**

649.0105  
TEMPORARY  
MARKING LINE  
PAINT 4-INCH  
CENTERLINE  
(DOUBLE  
YELLOW)

STATION	STATION	LOCATION	LF	REMARKS*
<b>1706-06-70</b>				
259+34	-	335+48	STH 11	15,228
<b>1706-06-70 SUBTOTAL</b>			15,228	
<b>5235-03-71</b>				
360+52	-	438+59	STH 80	15,614
<b>5235-03-71 SUBTOTAL</b>			15,614	

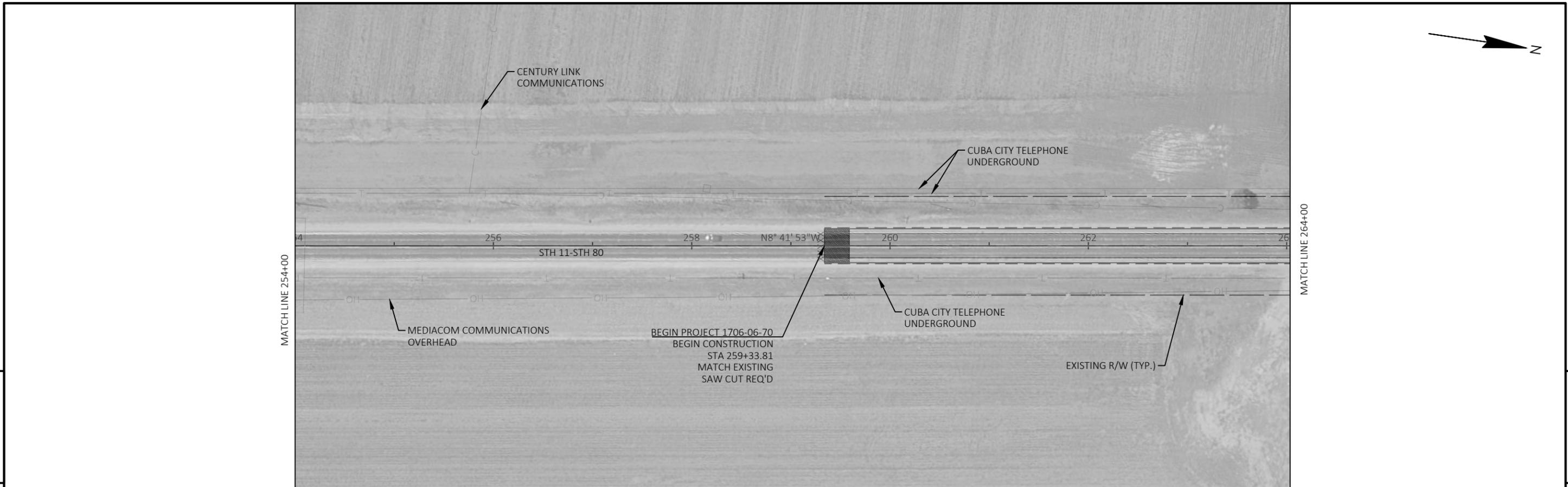
**TOTAL 30,842**

\*SEE CONSTRUCTION DETAILS FOR ANTICIPATED PAVING PASSES AND SEQUENCE

**TRAFFIC CONTROL SUMMARY**

	643.0300	643.0900	643.5000	643.1050
	EST. TRAFFIC CONTROL DRUMS	TRAFFIC CONTROL SIGNS	TRAFFIC CONTROL EACH	TRAFFIC CONTROL SIGNS PCMS
LOCATION	EST. SERVICE PERIOD DAYS	NO DAY	NO DAY	NO DAY

LOCATION	EST. SERVICE PERIOD DAYS	NO DAY	NO DAY	NO DAY	REMARKS
<b>1706-06-70</b>					
ADVANCE WARNING	45	--	--	5 225	0.5 14
SIDE ROADS	45	--	--	4 180	-- --
<b>1706-06-70 SUBTOTAL</b>		--	--	405	0.5 14
<b>5235-03-71</b>					
ADVANCED WARNING	45	--	--	5 225	0.5 14
SIDE ROADS	45	--	--	4 180	-- --
MODEL RD	14	12	168	6 84	-- --
<b>5235-03-71 SUBTOTAL</b>		168	489	0.5	14
<b>TOTAL</b>		168	894	1	28



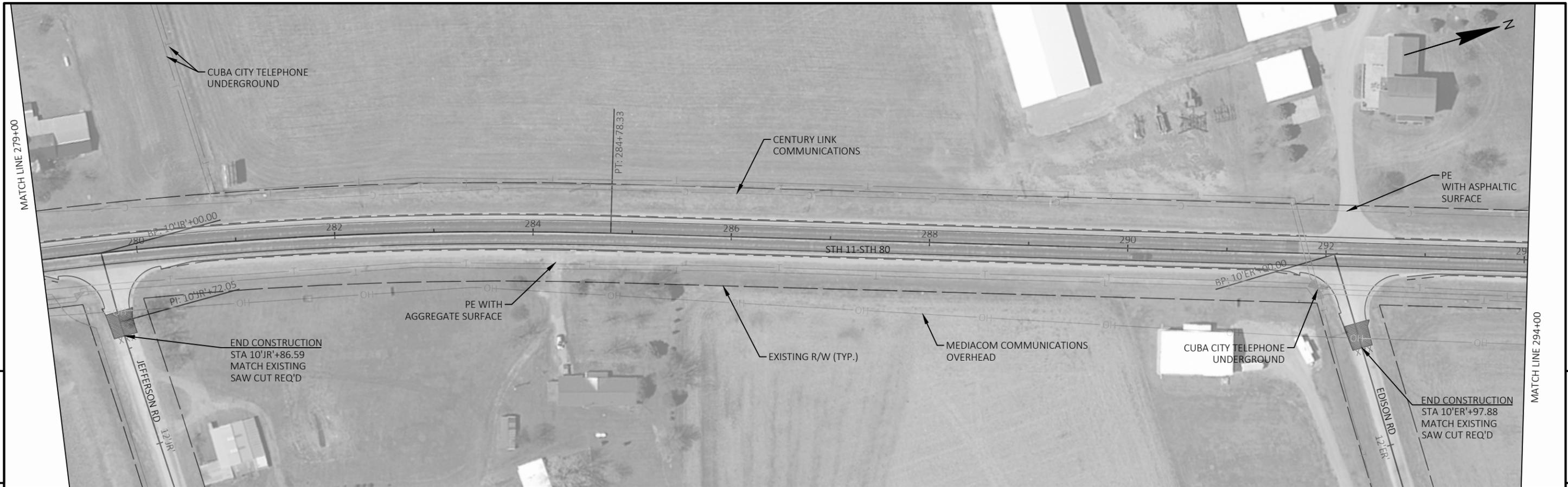
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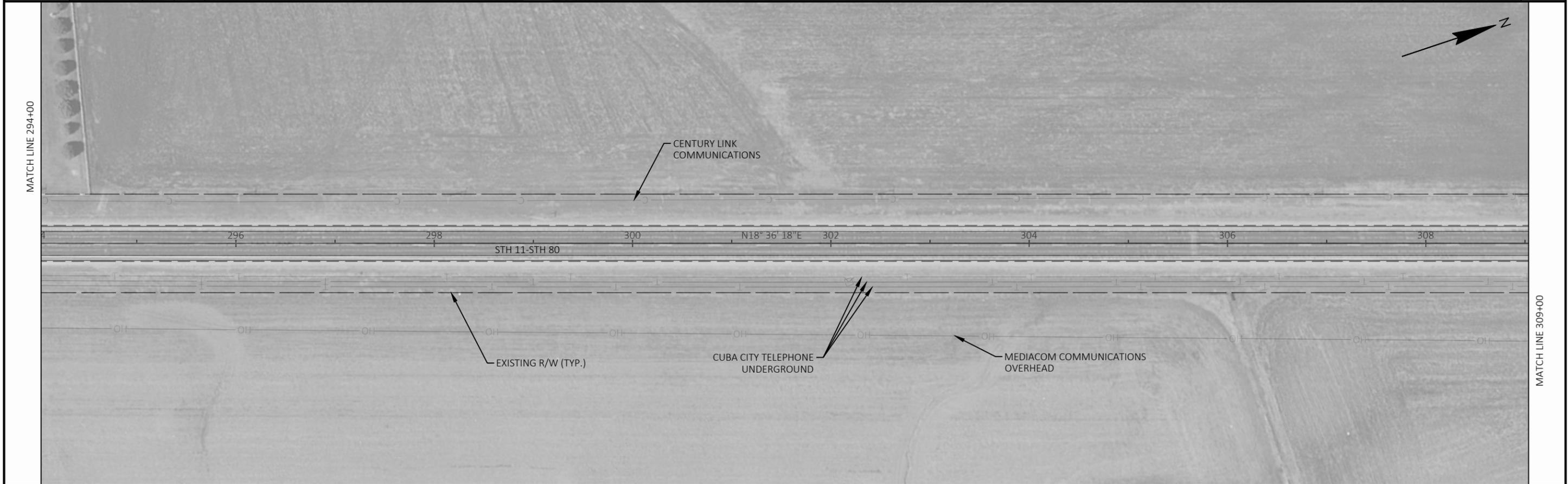
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 Y = 416653.11  
 X = 891982.41  
 DELTA = 27.30°  
 D = 1.50°  
 T = 927.79'  
 L = 1820.35'  
 R = 3820.00'  
 PC STA = 266+57.42'  
 Y = 415735.98  
 X = 892122.72  
 PT STA = 684+77.77'  
 Y = 417532.42  
 X = 892278.42  
 BK = N08°41'53"W  
 AH = N18°36'18"E  
 SE = 3.37%  
 RO = --

PROJECT NO: 1706-06-70/5235-03-71	HWY: STH 11/STH 80	COUNTY: GRANT	PLAN SHEETS	SHEET	E
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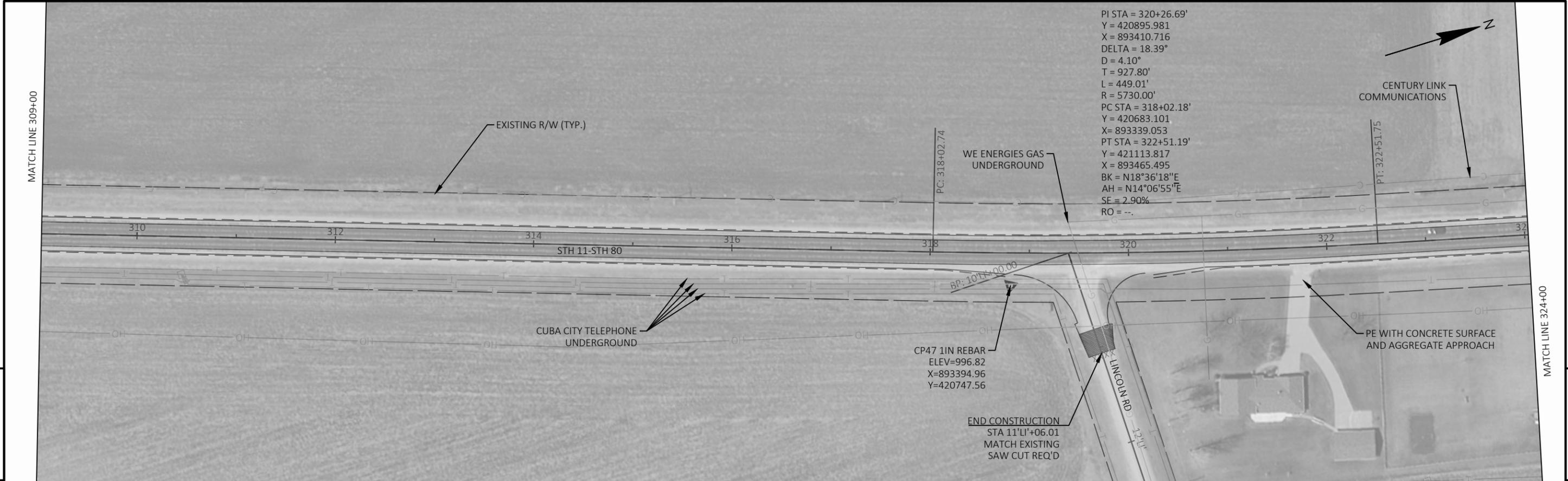


5

5

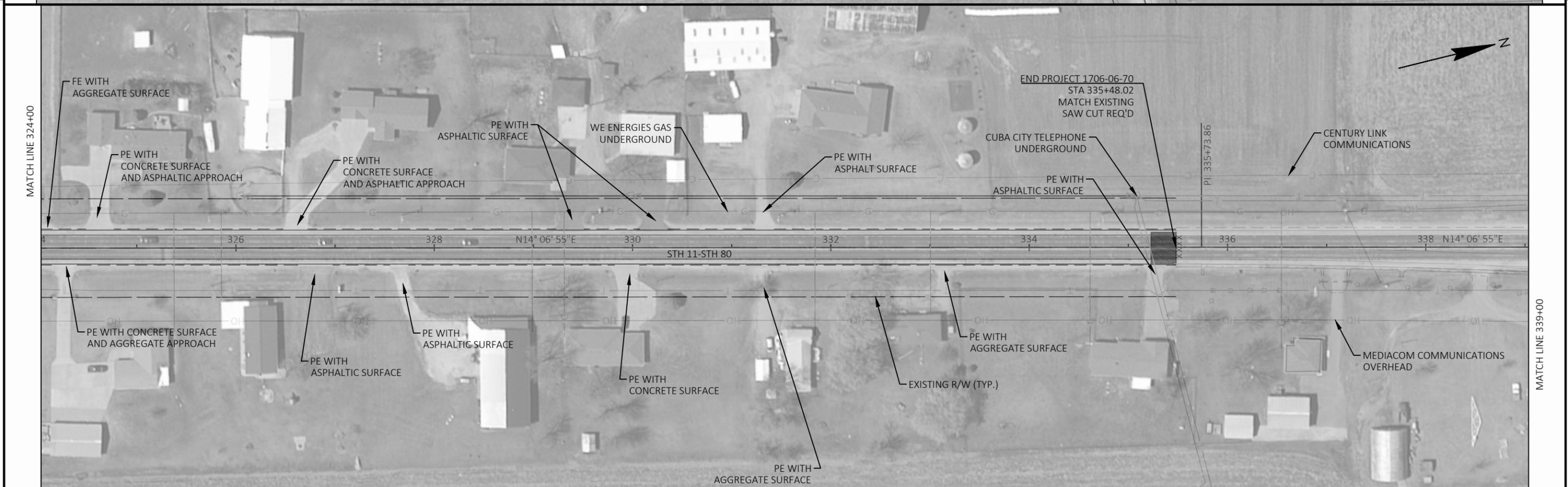


PROJECT NO: 1706-06-70/5235-03-71	HWY: STH 11/STH 80	COUNTY: GRANT	PLAN SHEETS	SHEET	<b>E</b>
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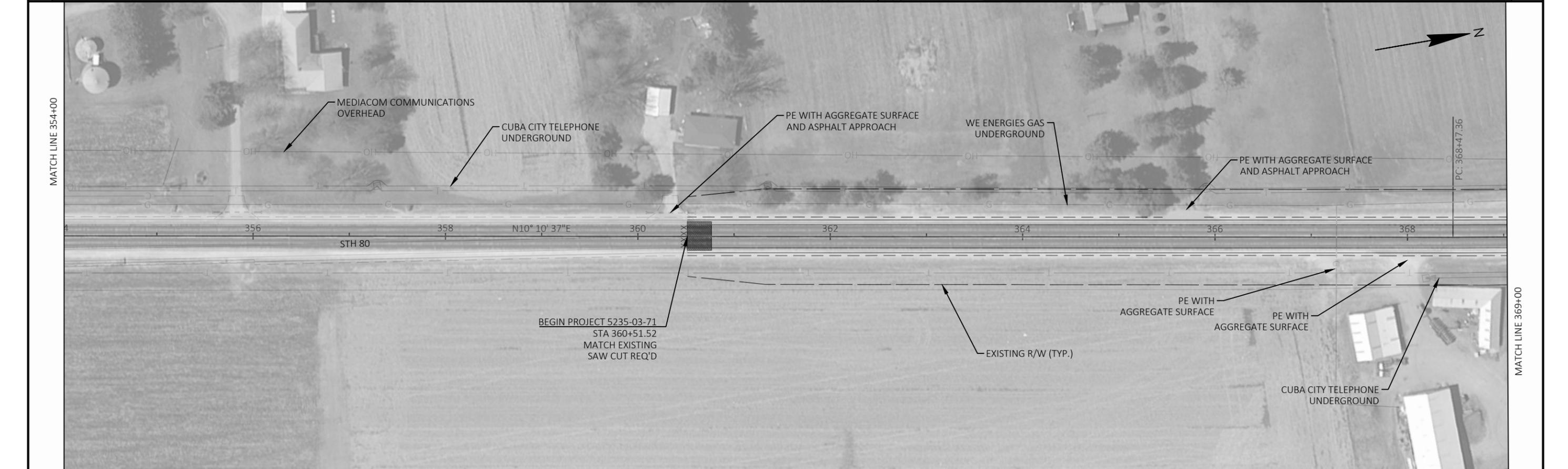
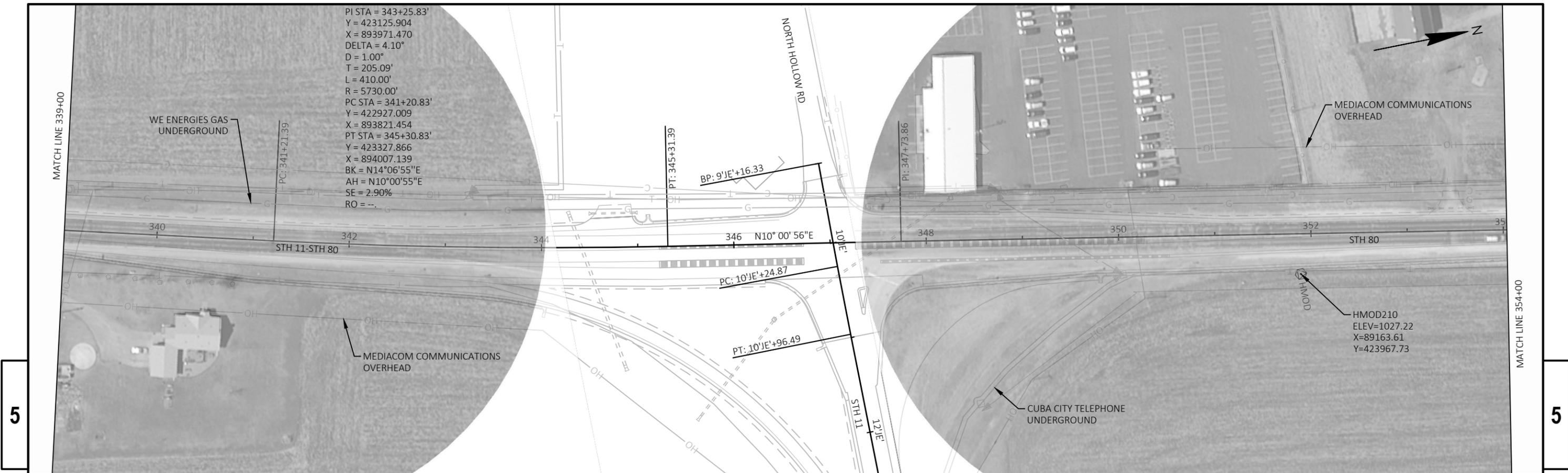


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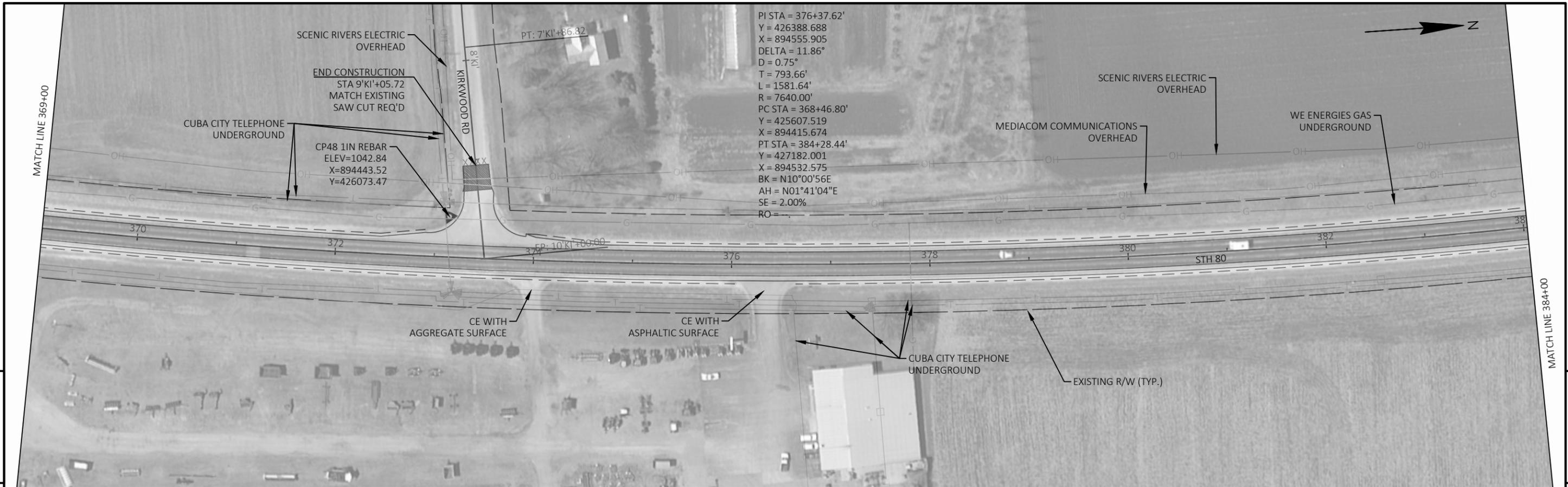
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PROJECT NO: 1706-06-70/5235-03-71	HWY: STH 11/STH 80	COUNTY: GRANT	PLAN SHEETS	SHEET	E
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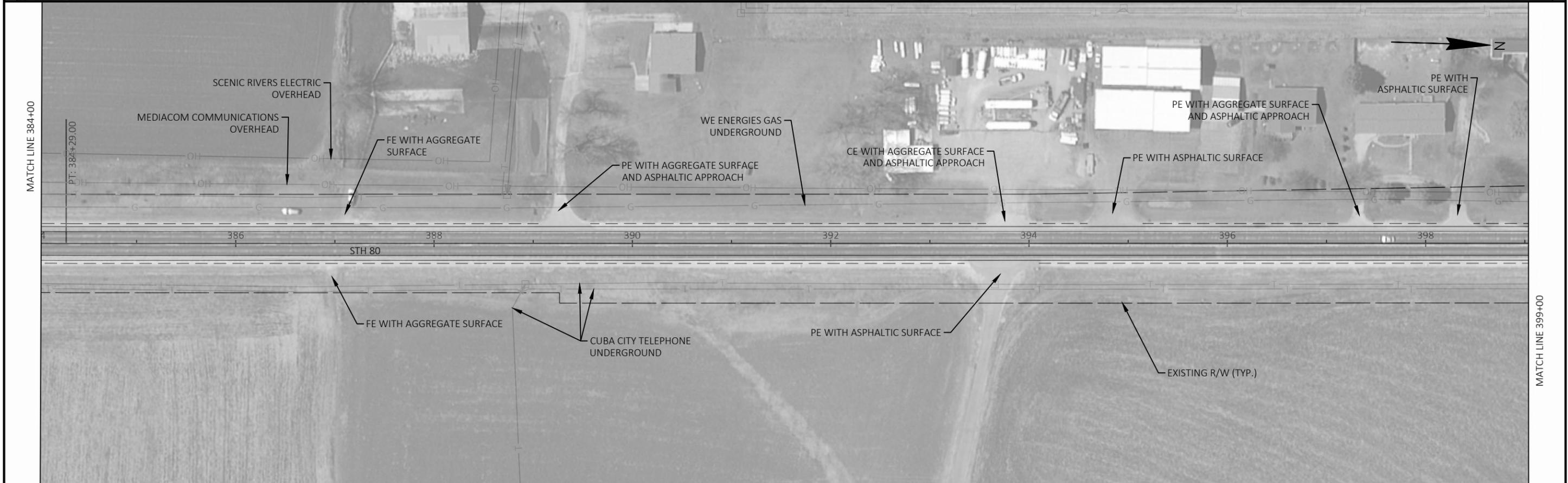


PROJECT NO: 1706-06-70/5235-03-71	HWY: STH 11/STH 80	COUNTY: GRANT	PLAN SHEETS	SHEET	<b>E</b>
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5

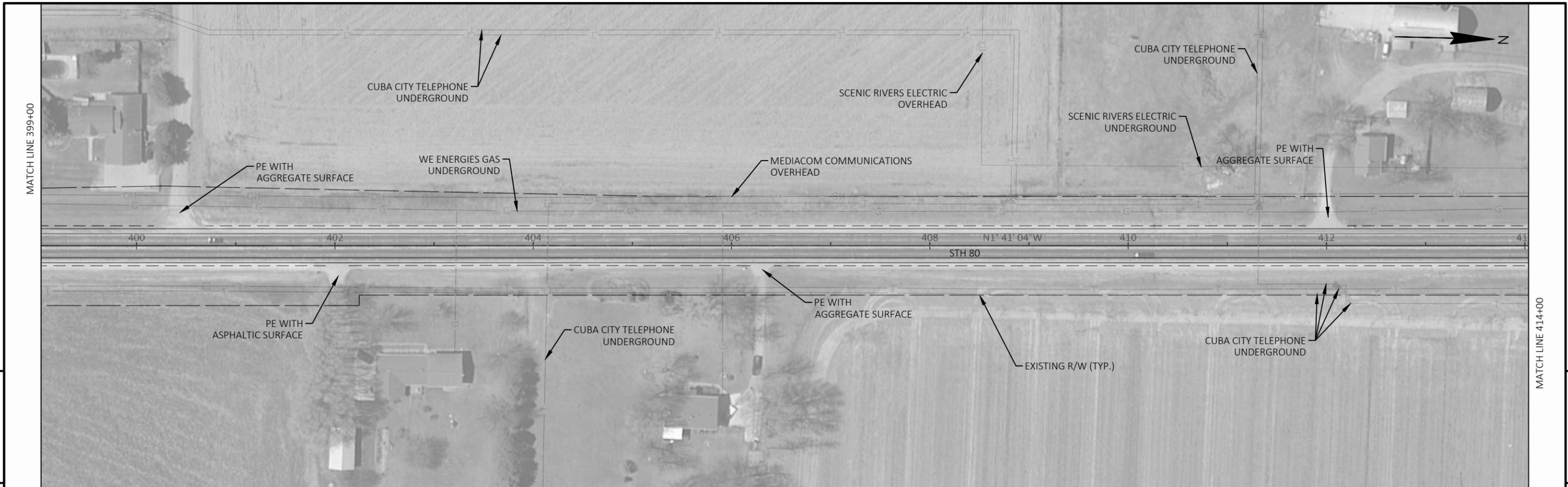
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MATCH LINE 384+00

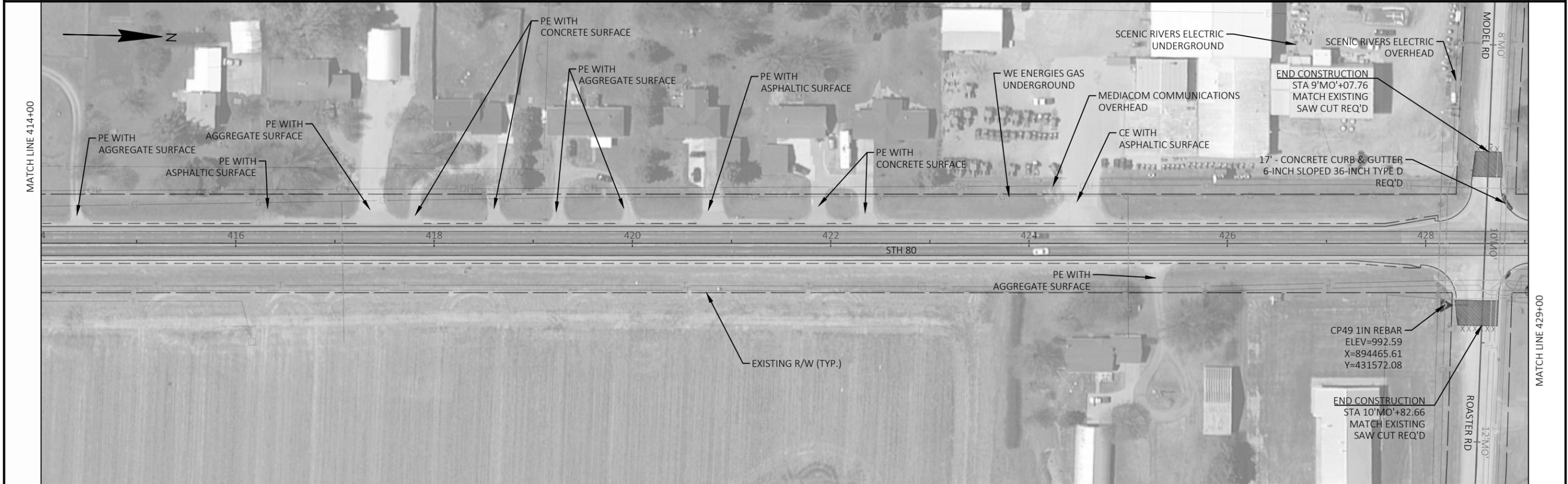
MATCH LINE 399+00

PROJECT NO: 1706-06-70/5235-03-71	HWY: STH 11/STH 80	COUNTY: GRANT	PLAN SHEETS	SHEET	E
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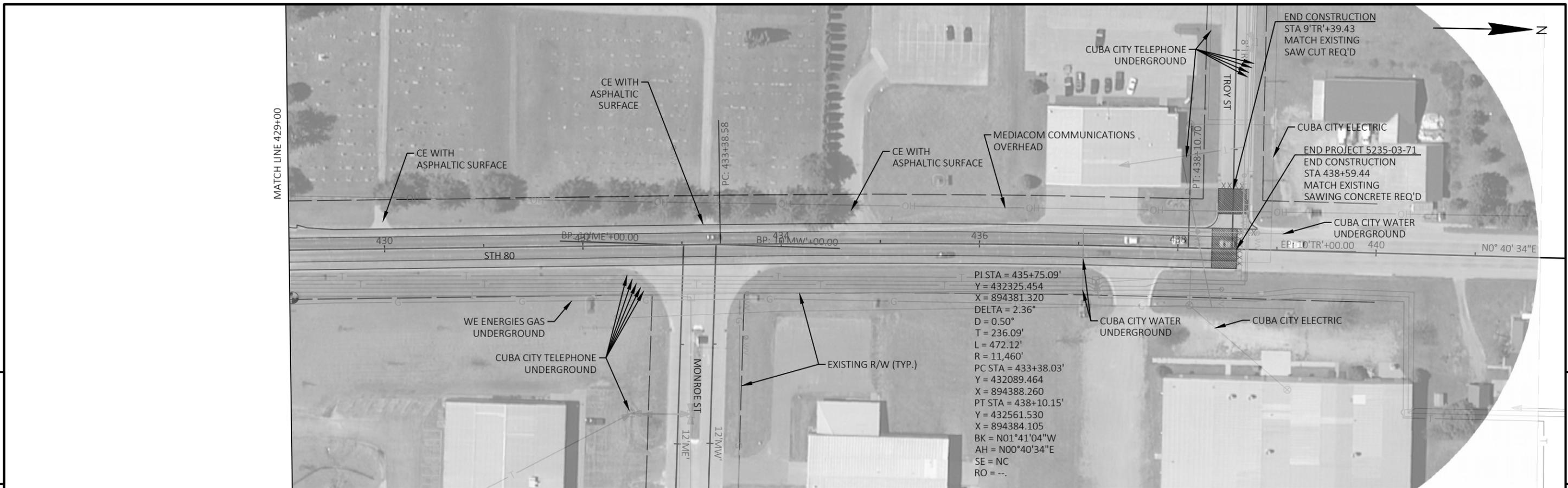


5

5

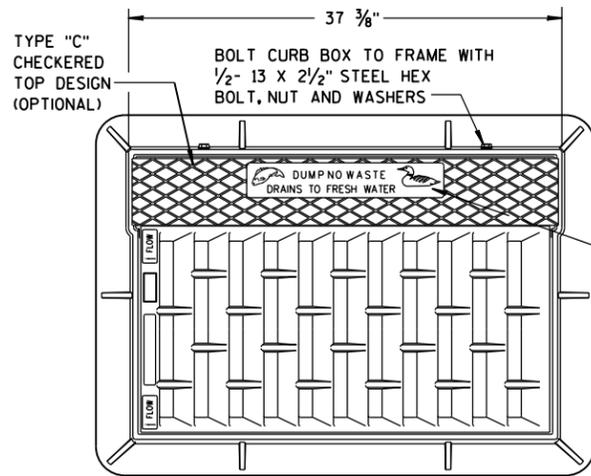


PROJECT NO: 1706-06-70/5235-03-71	HWY: STH 11/STH 80	COUNTY: GRANT	PLAN SHEETS	SHEET	E
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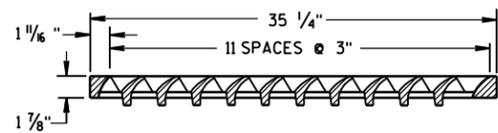
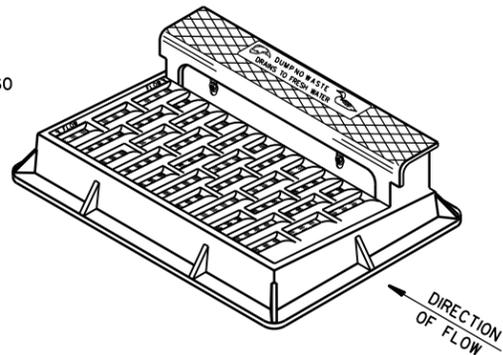


## Standard Detail Drawing List

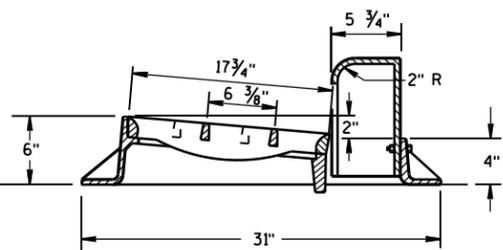
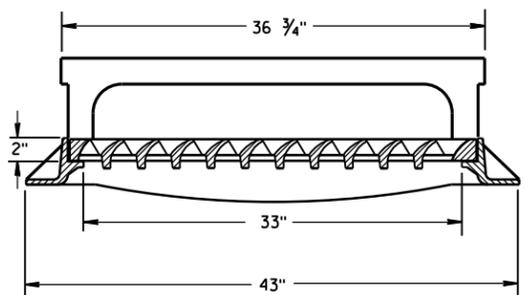
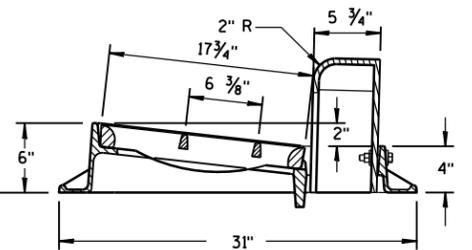
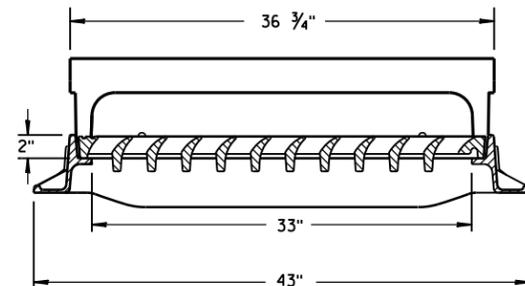
08A05-19A	INLET COVERS TYPE A, H, A-S, H-S & Z
08D01-22A	CONCRETE CURB & GUTTER
08D01-22B	CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS
08D22-01	DRIVEWAYS WITHOUT CURB & GUTTER RESURFACING PROJECTS RURAL
13A10-02A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-02C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
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
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)
15C11-09B	CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS
15C12-07	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
15D51-01	TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY



**NOTE:  
GRATE IS REVERSIBLE.**

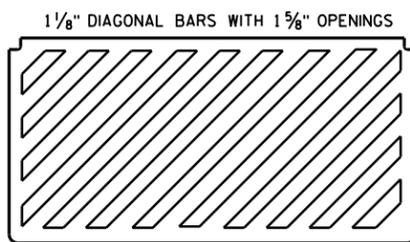


**NOTE: CURB BOX HEIGHT ADJUSTABLE 6" TO 9"**

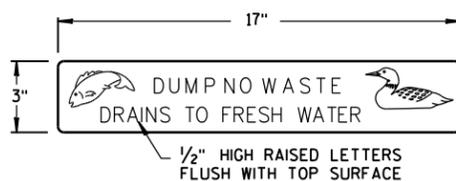


**TYPE "H"**

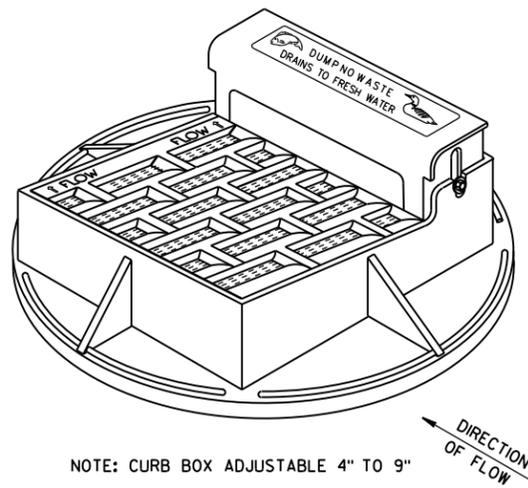
**NOTE: EITHER CASTING IS ACCEPTABLE**



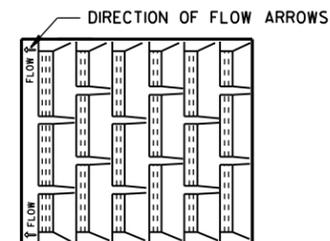
**SPECIAL GRATE FOR  
TYPE "H" COVER**  
(MEASURES 35 1/4" X 17 3/4" X 2")  
(NOTED AS TYPE H-S ON DRAINAGE TABLE)



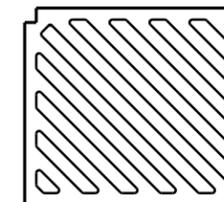
**LOGO DETAIL**



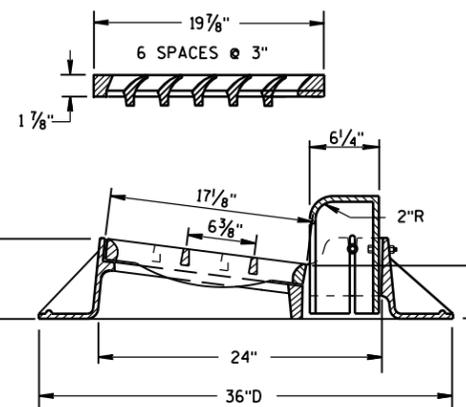
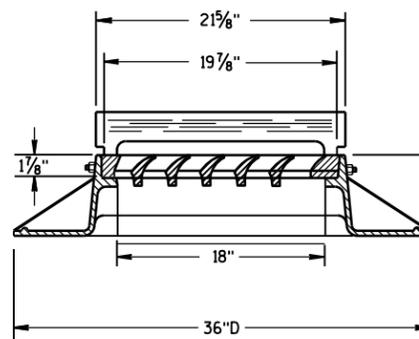
**NOTE:  
GRATE IS REVERSIBLE.**



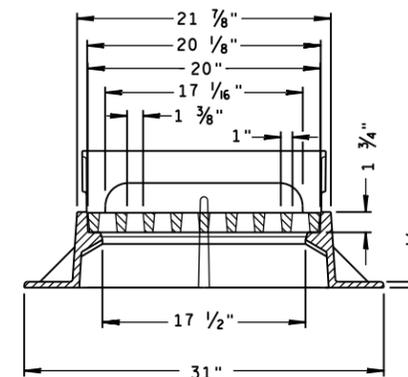
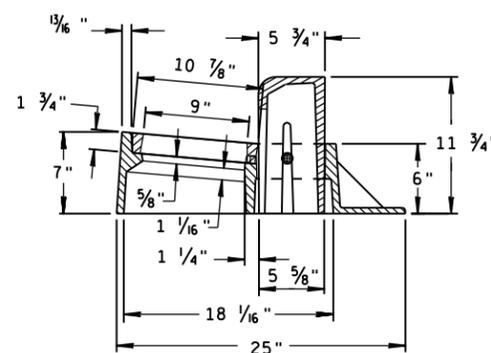
**1" DIAGONAL BARS  
WITH 1 1/2" OPENINGS**



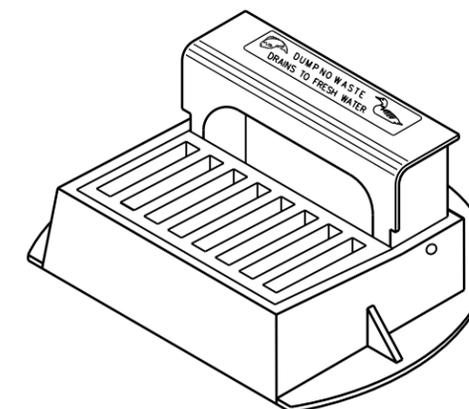
**SPECIAL GRATE FOR  
TYPE "A" COVER**  
(MEASURES 19 3/4" X 17" X 1 1/8")  
(NOTED AS TYPE A-S ON DRAINAGE TABLE)



**TYPE "A"**



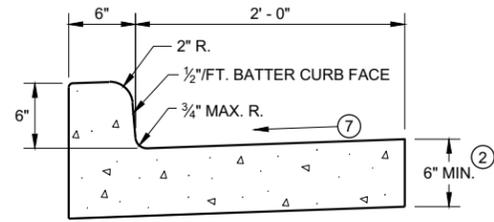
**TYPE "Z"**



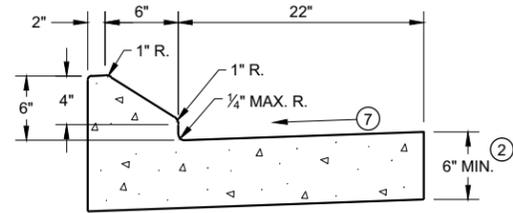
**INLET COVERS  
TYPE A, H, A-S, H-S & Z**

**STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION**

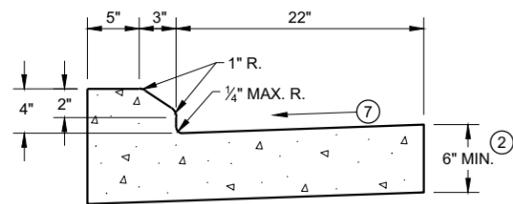
**APPROVED**  
DATE: 11-27-13  
DATE: /S/ Jerry H. Zogg  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER  
FHWA



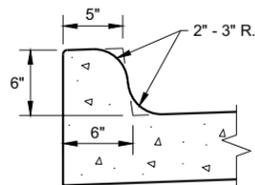
TYPES A<sup>1</sup> & D



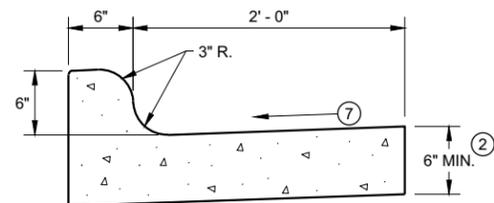
6" SLOPED CURB TYPES G<sup>1</sup> & J



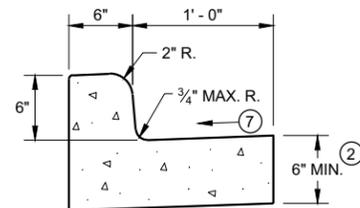
4" SLOPED CURB TYPES G<sup>1</sup> & J



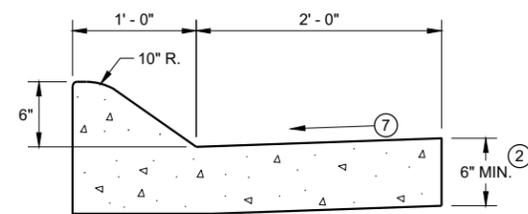
TYPES K<sup>1</sup> & L  
(OPTIONAL CURB SHAPE)



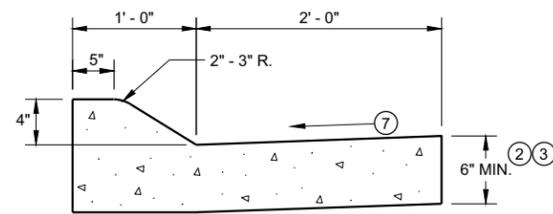
TYPES K<sup>1</sup> & L  
CONCRETE CURB AND GUTTER 30"



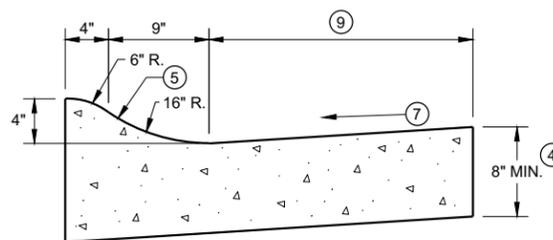
TYPES A<sup>1</sup> & D  
CONCRETE CURB AND GUTTER 18"



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

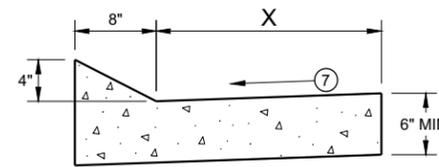


4" SLOPED CURB TYPES A<sup>1</sup> & D  
CONCRETE CURB AND GUTTER 36"



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

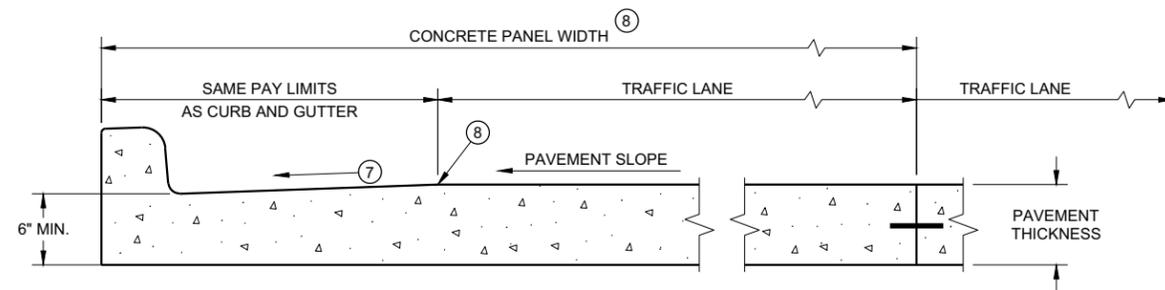
TBT & TBTT	X
30"	22"
36"	28"



TYPES TBT & TBTT<sup>1</sup>  
CONCRETE CURB AND GUTTER

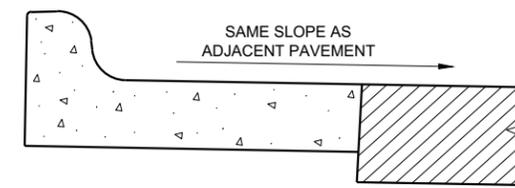
PAVEMENT THICKNESS  
AND MAXIMUM CONCRETE  
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT \*  
WITH INTEGRAL CURB AND GUTTER

\* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

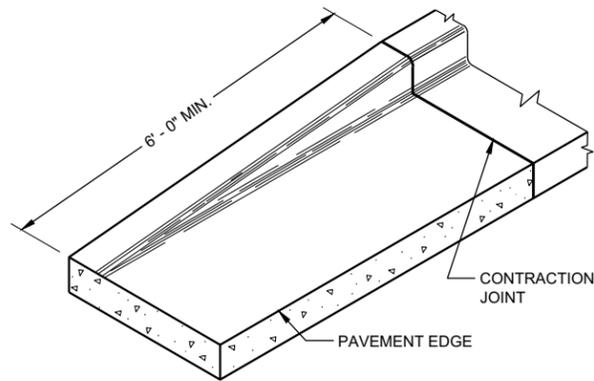
DETAILS OF CONSTRUCTION AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

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

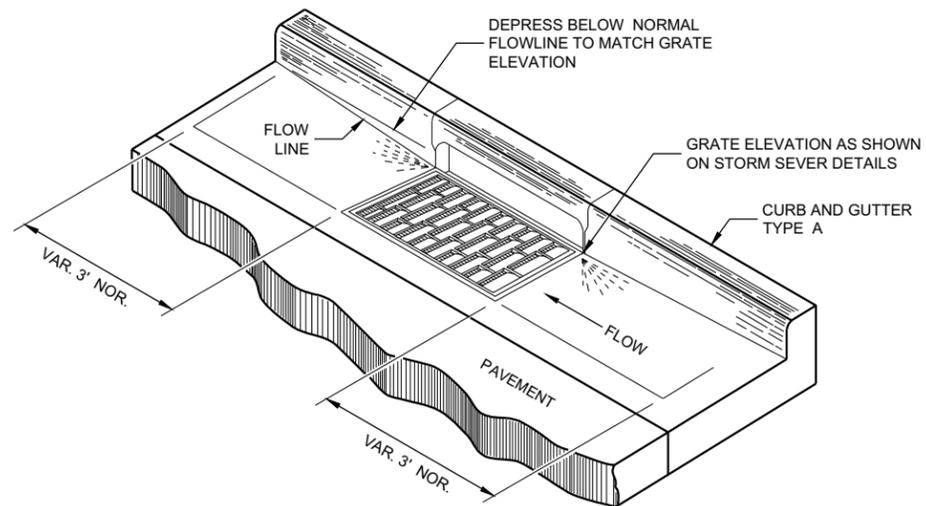
INTEGRAL CURB AND GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB AND GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE.

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

- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ③ USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- ④ THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑤ UNLESS OTHERWISE NOTED, FOR STAKING PURPOSES THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- ⑥ WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.
- ⑦ USE 4% GUTTER CROSS SLOPE UNLESS OTHERWISE NOTED IN THE PLANS.
- ⑧ INCLUDE LONGITUDINAL JOINT AND TIE BARS ALONG LANE EDGE WHEN CONCRETE PANEL WIDTH EXCEEDS THE MAXIMUM WIDTH PER TABLE BELOW. LONGITUDINAL JOINT(S) ARE NOT ALLOWED WITHIN TRAFFIC LANES AND BIKE LANES. LONGITUDINAL JOINT MAY BE SAWED.
- ⑨ CONCRETE CURB AND GUTTER 4-INCH SLOPED 30-INCH TYPE "R" AND "T" = 17 INCHES  
CONCRETE CURB AND GUTTER 4-INCH SLOPED 36-INCH TYPE "R" AND "T" = 23 INCHES



**END SECTION CURB AND GUTTER**



**DETAIL OF CURB AND GUTTER AT INLETS**  
(TYPICAL H INLET COVER SHOWN)

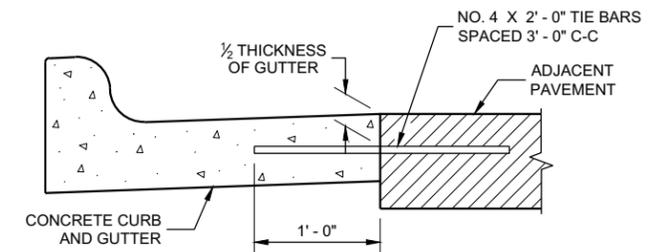
**GENERAL NOTES**

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

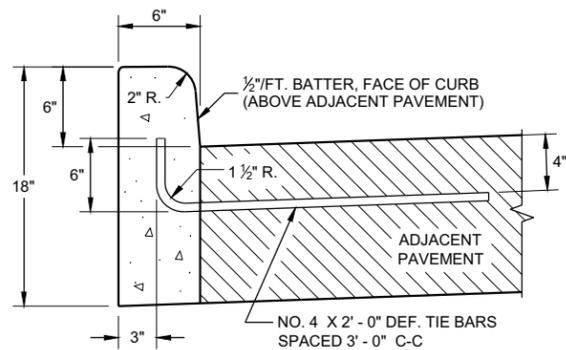
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

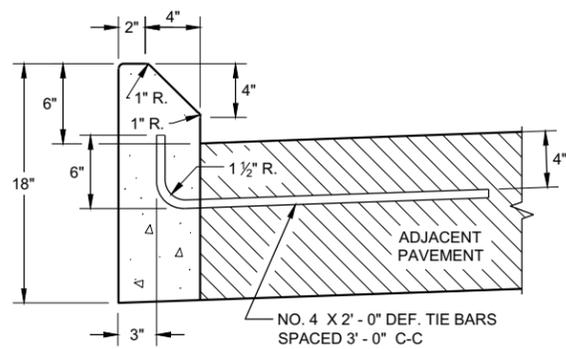
- ① TIE BARS ARE REQUIRED FOR CURB AND GUTTERS TYPES A, G, K, R, AND TBTT.
- ② THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- ⑨ REFER TO SDD 08D18 AND 08D19 FOR ADDITIONAL DRIVEWAY ENTRANCE CURB DETAILS.



**TYPICAL TIE BAR LOCATION** ①

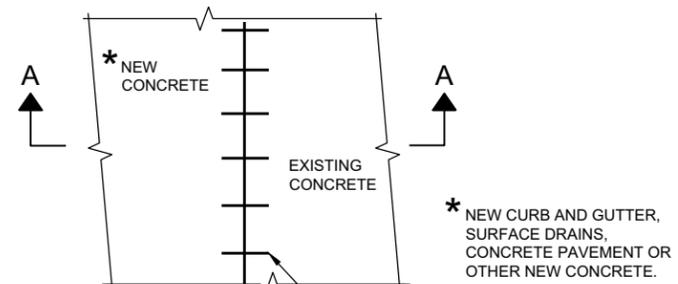


**TYPES A ① & D**

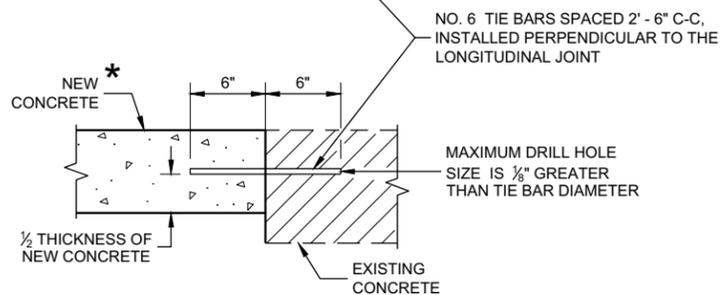


**TYPES G ① & J**

**CONCRETE CURB**

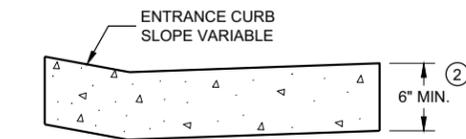


**PLAN VIEW**



**SECTION A - A**

**TIE BARS DRILLED INTO EXISTING PAVEMENT**



**DRIVEWAY ENTRANCE CURB** ⑨  
(WHEN DIRECTED BY THE ENGINEER)

**CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS**

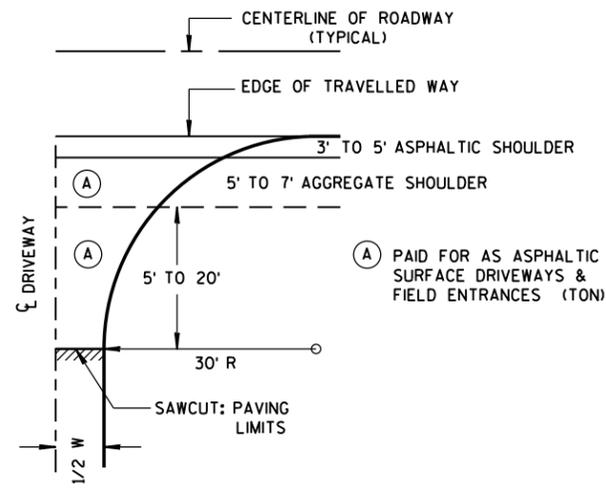
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021 /S/ Rodney Taylor  
DATE ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

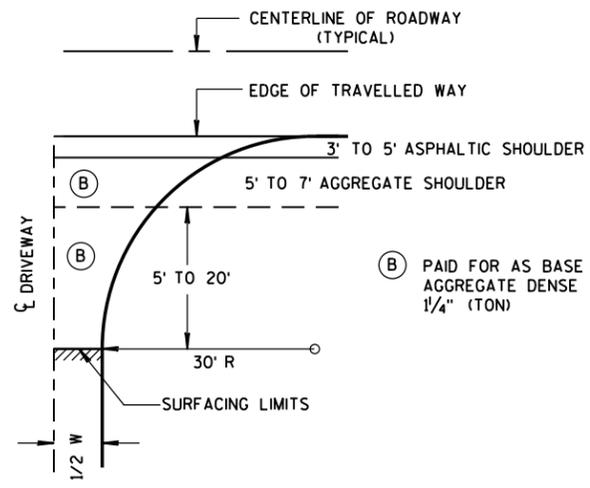
FHWA

**GENERAL NOTES**

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

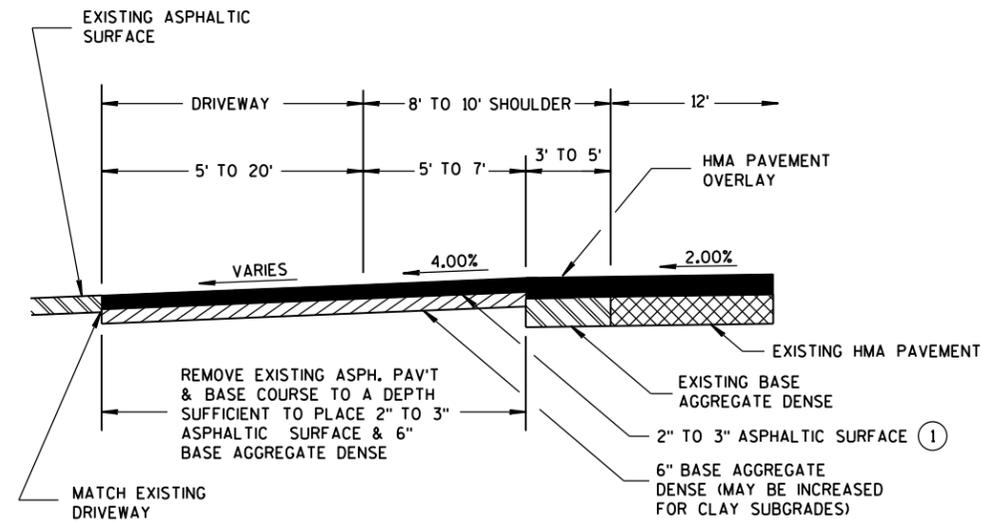


W MIN. = 16'  
W MAX. = 24'

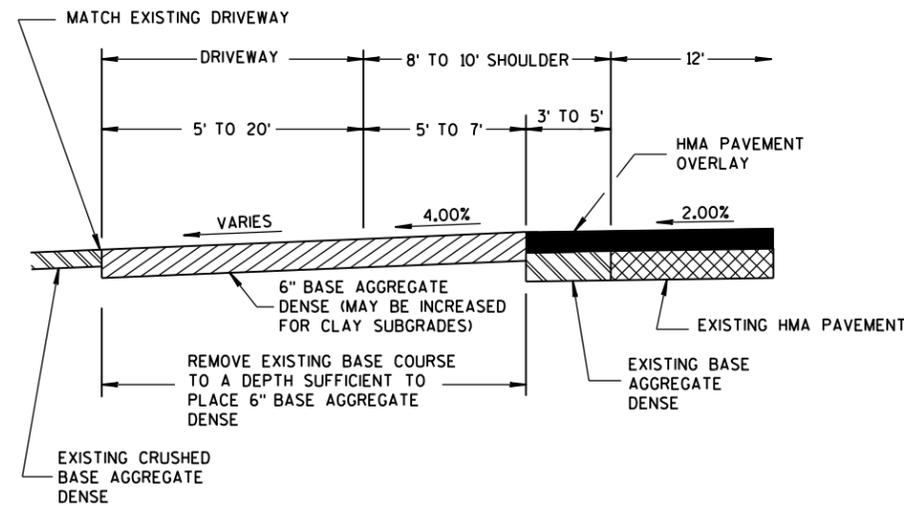


**PLAN VIEW  
HALF SECTION**

**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**

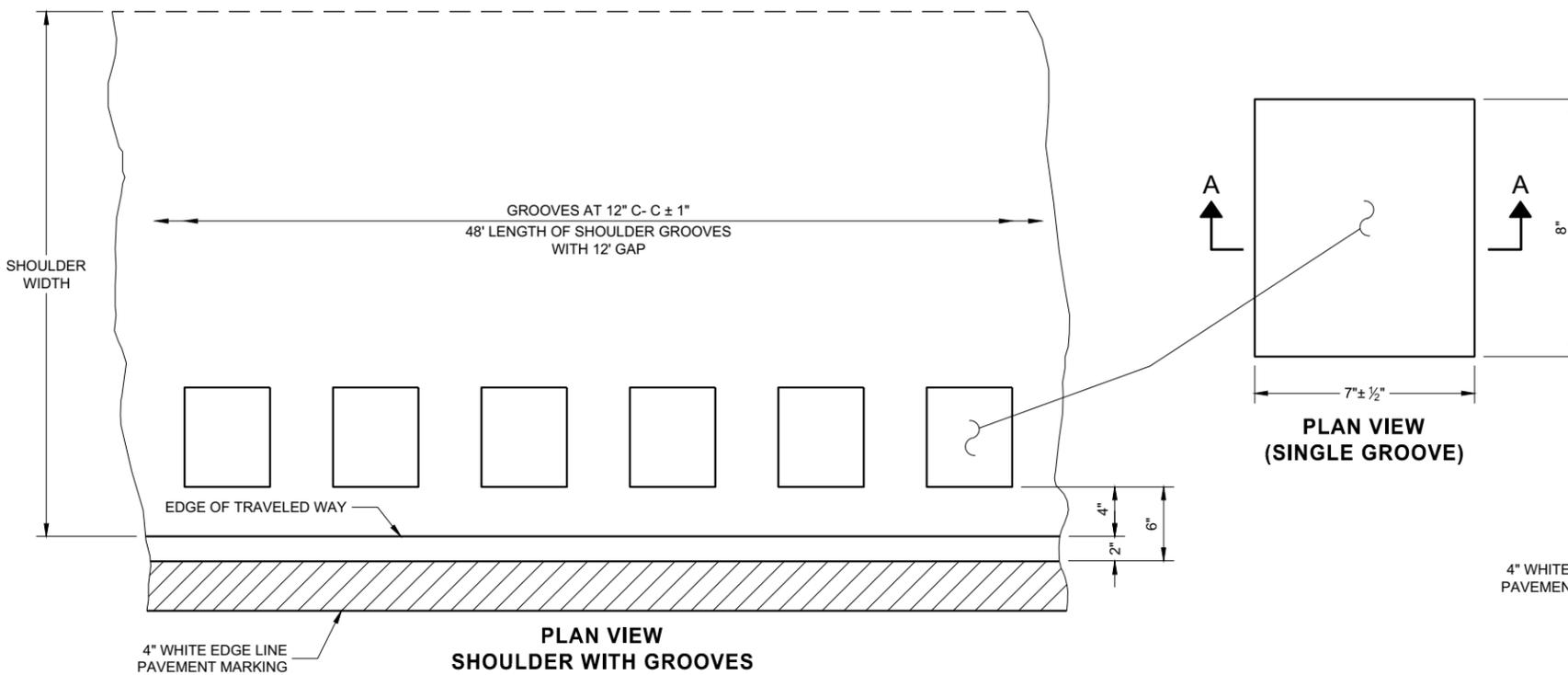
6

6

S.D.D. 8 D 22-1

S.D.D. 8 D 22-1

<b>DRIVEWAYS WITHOUT CURB &amp; GUTTER RESURFACING PROJECTS RURAL</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED December, 2016	/s/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR
DATE	FHWA



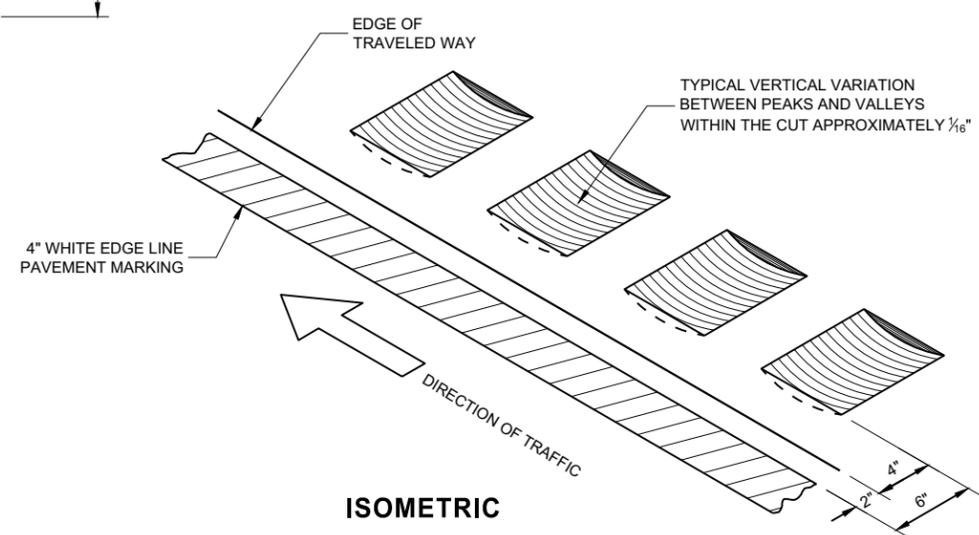
PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP

**GENERAL NOTES**

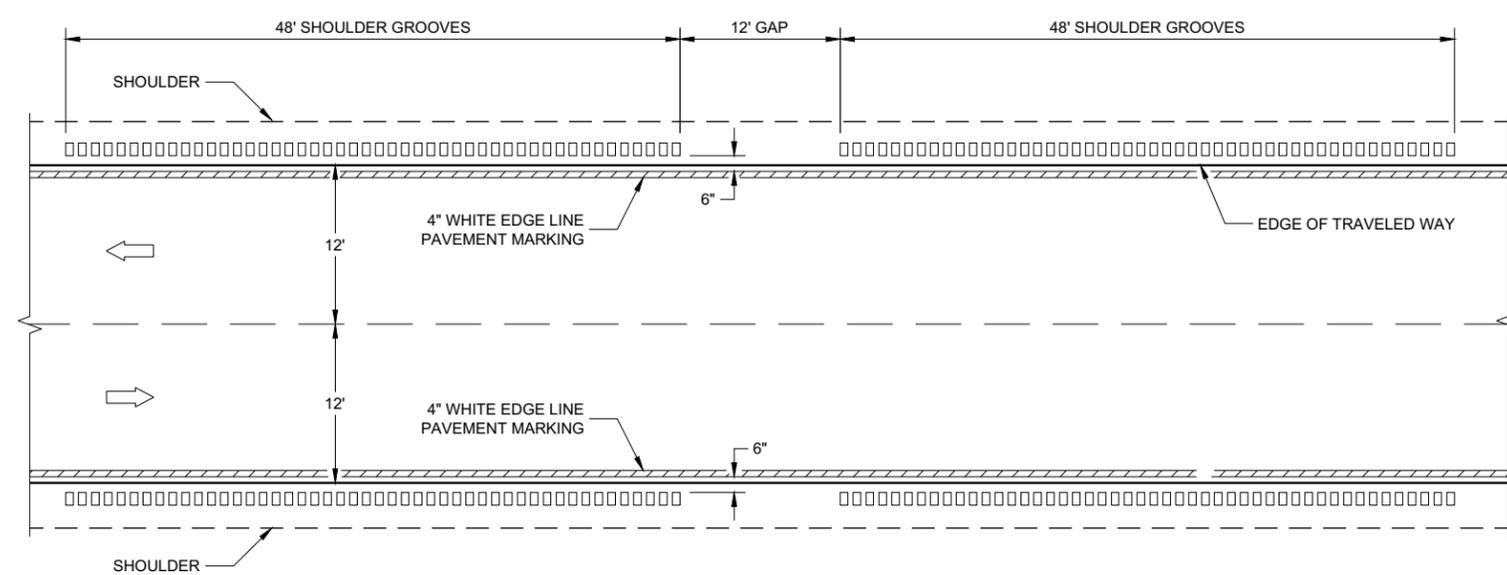
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

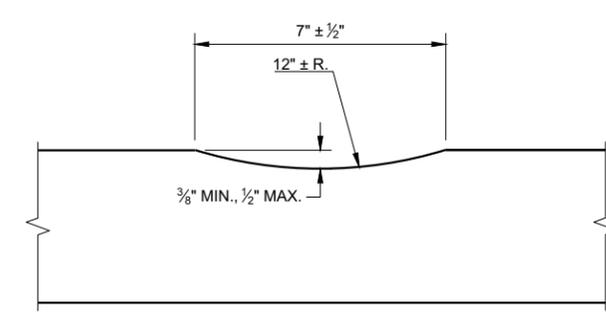
- ① SHOULDER GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



ISOMETRIC



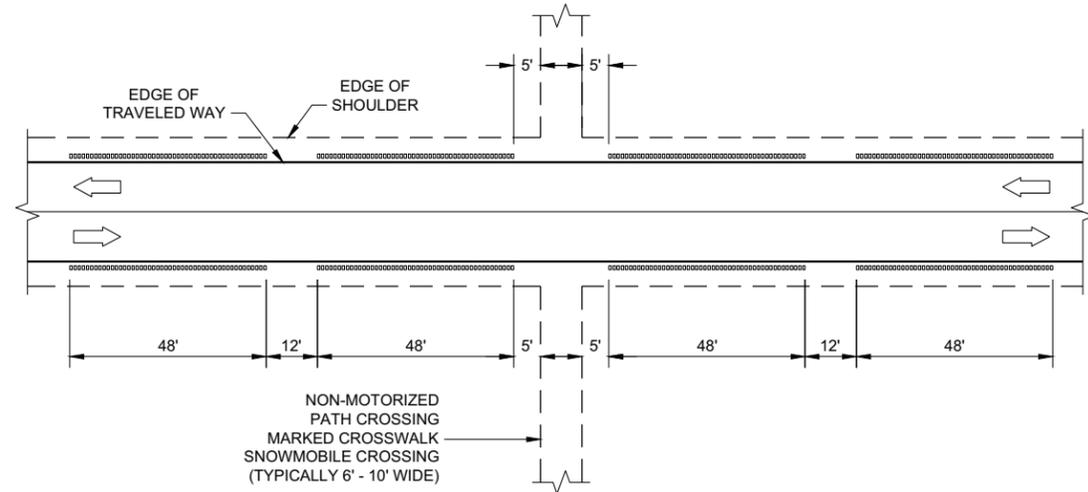
TYPE 1  
2 - LANE SHOULDER RUMBLE STRIP



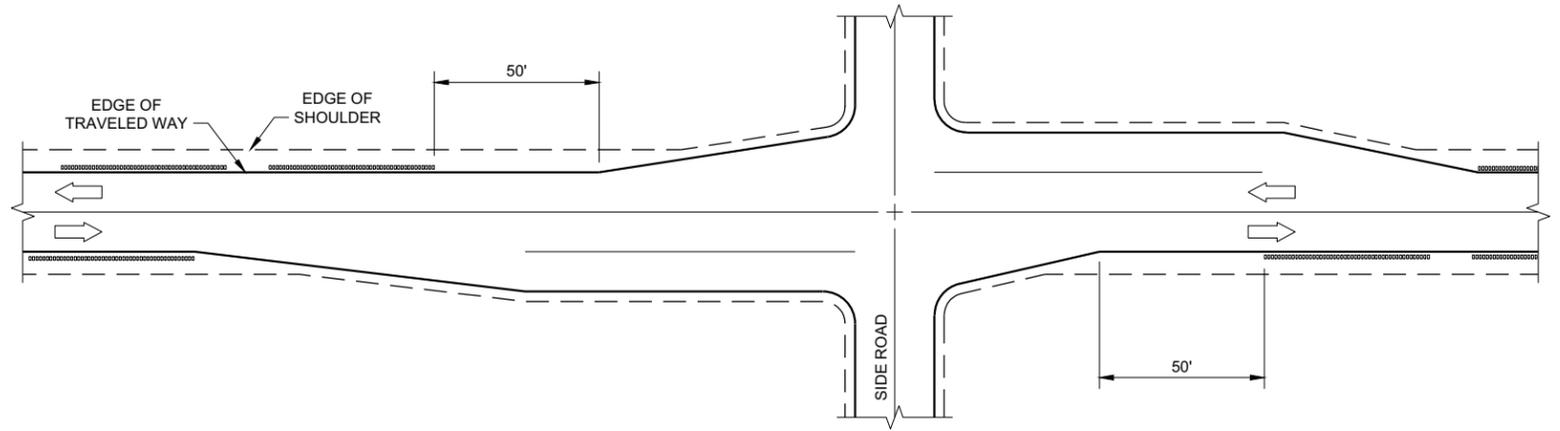
SECTION A - A

**2-LANE RURAL SHOULDER  
RUMBLE STRIP, MILLING**

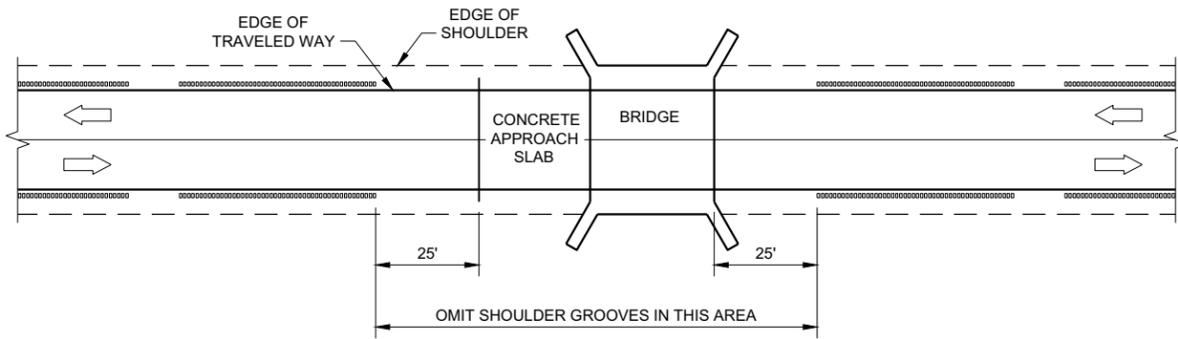
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



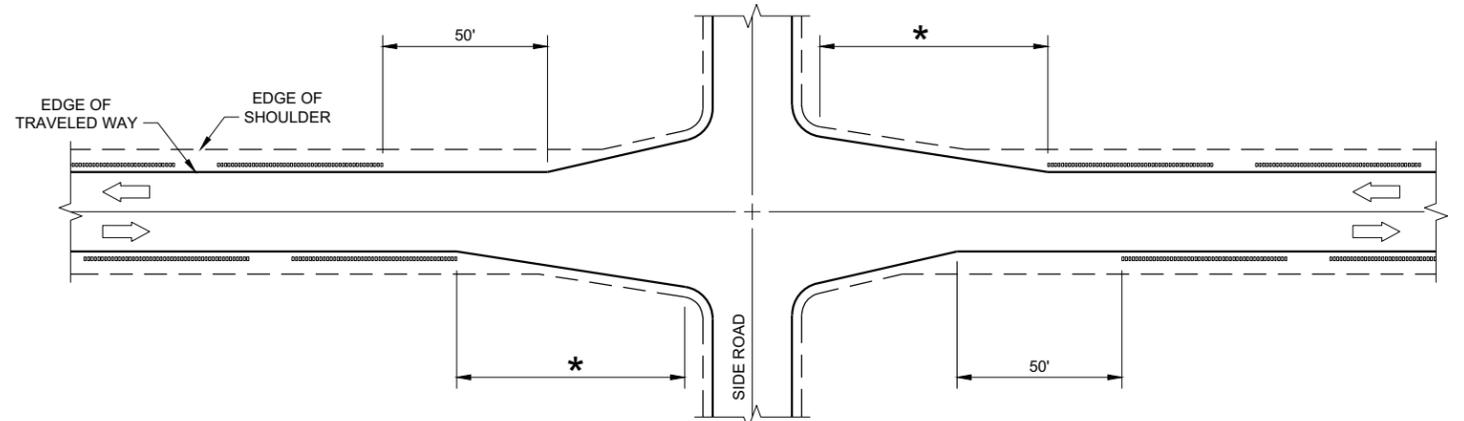
**SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS**



**SHOULDER GROOVES AT RIGHT TURN LANE**

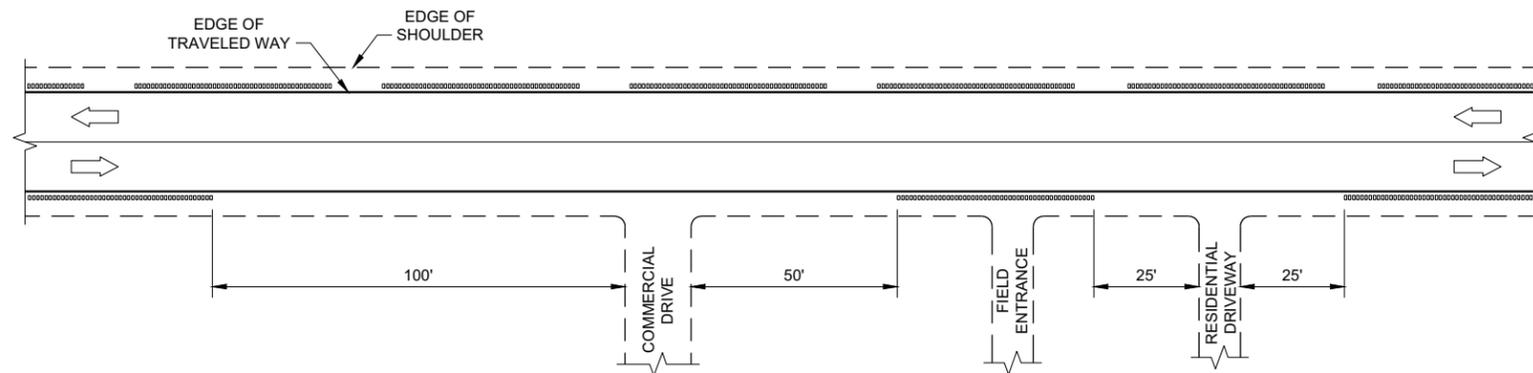


**SHOULDER GROOVES AT BRIDGES**



\* GREATER OF 100' OR APPROACH TAPER LENGTH

**SHOULDER GROOVES AT INTERSECTIONS WITH APPROACH TAPER**



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

**GENERAL NOTES**

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

**2-LANE RURAL SHOULDER  
RUMBLE STRIP, MILLING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

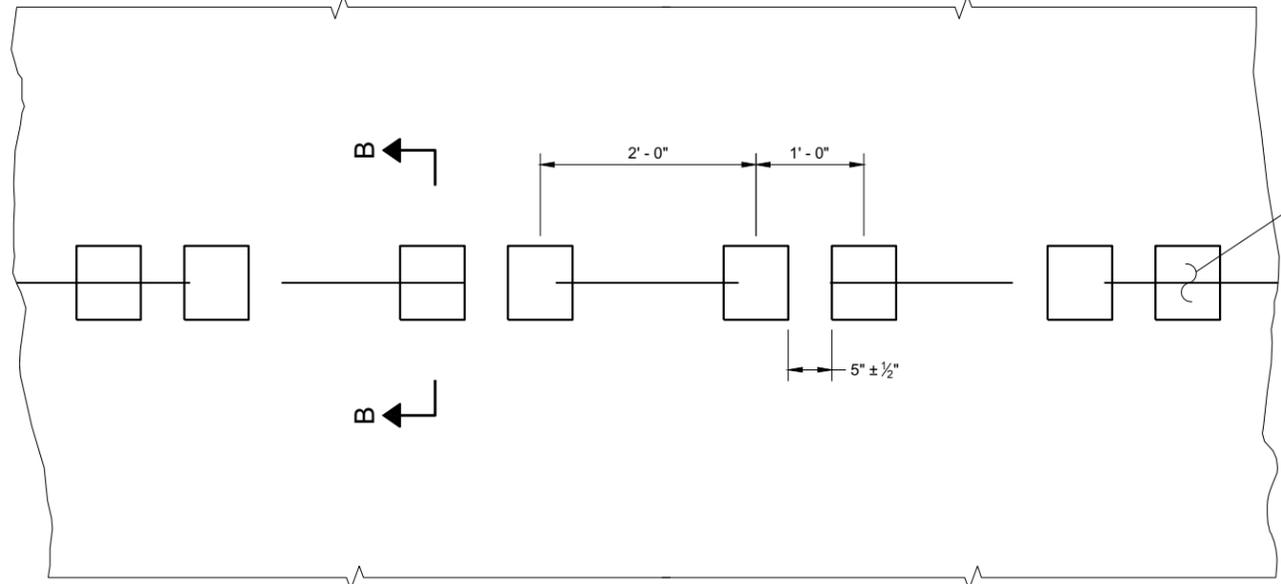
DETAILS OF CONSTRUCTION NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

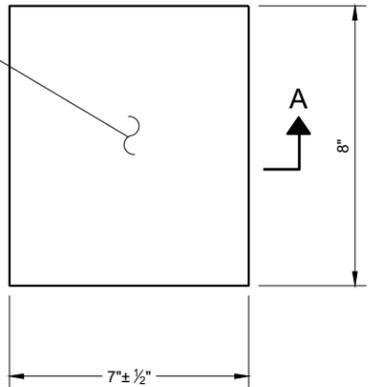
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

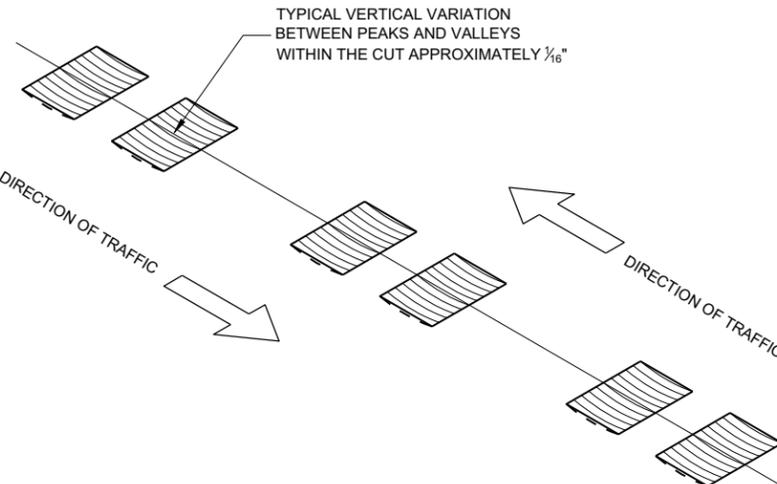
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS. WHEN DIRECTED BY THE ENGINEER.



**PLAN VIEW  
SHOULDER WITH GROOVES**

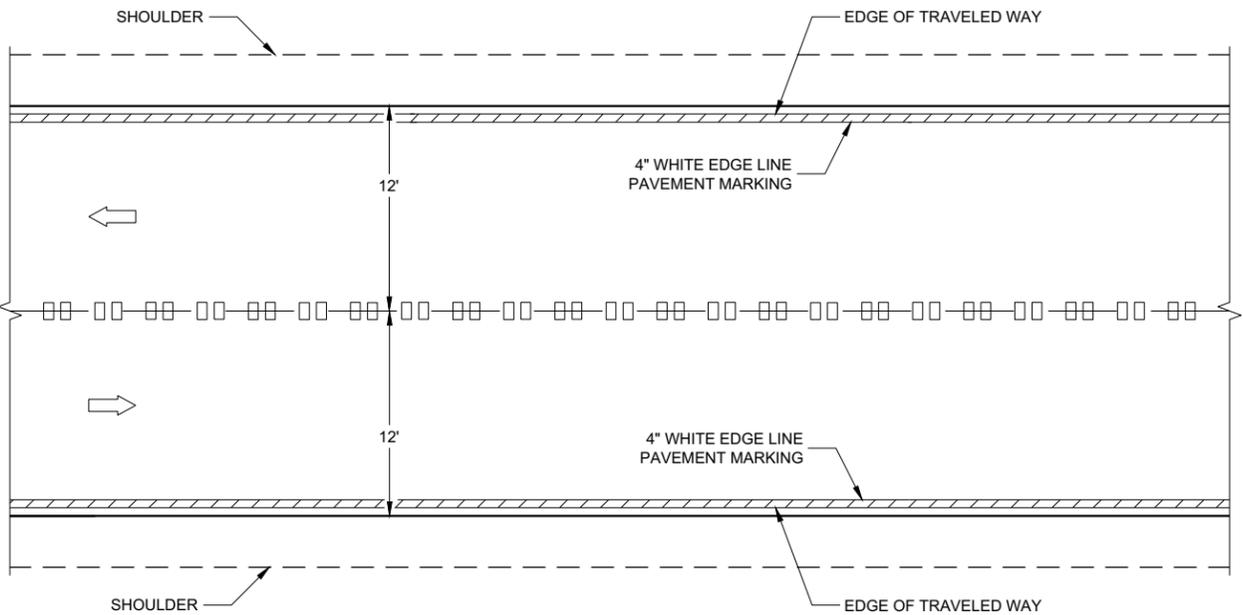


**PLAN VIEW  
(SINGLE GROOVE)**

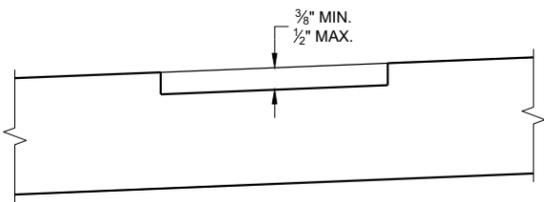


**ISOMETRIC**

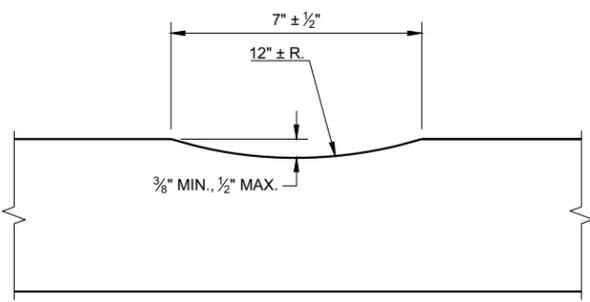
**PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP**



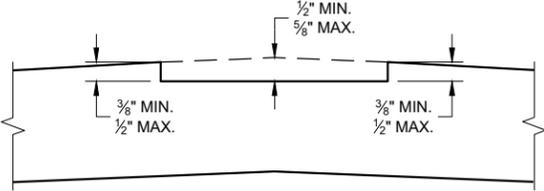
**CENTERLINE GROOVES ON TWO-WAY ROADWAYS**



**SECTION B - B  
SUPERELEVATED ROADWAY**



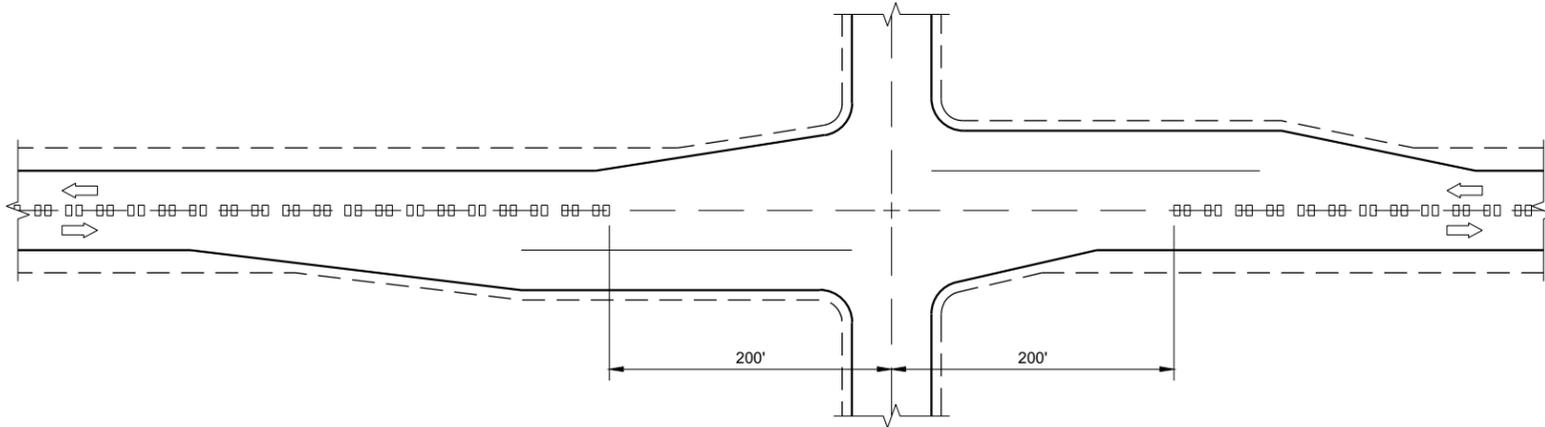
**SECTION A - A**



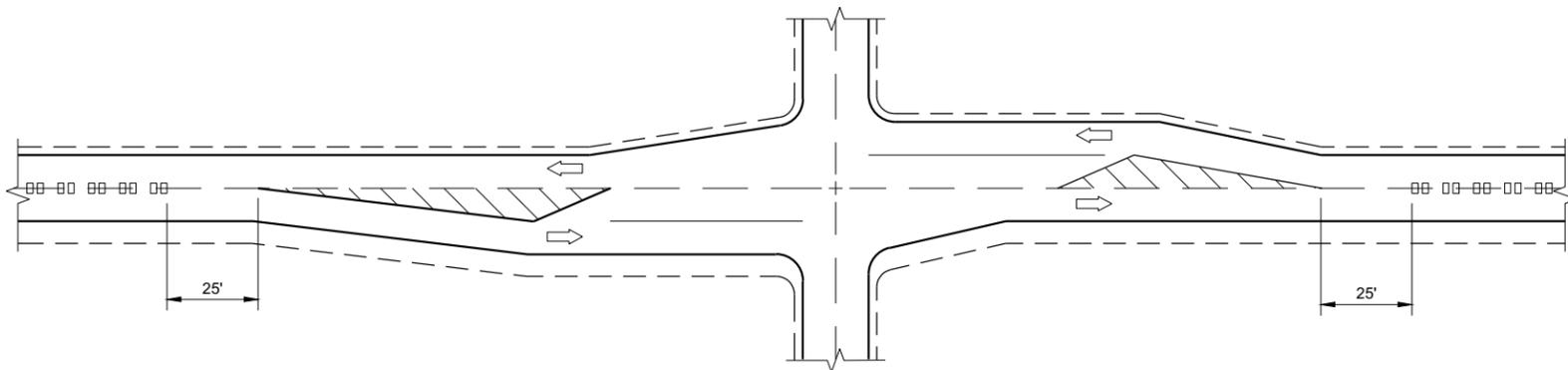
**SECTION B - B  
CROWNED ROADWAY**

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

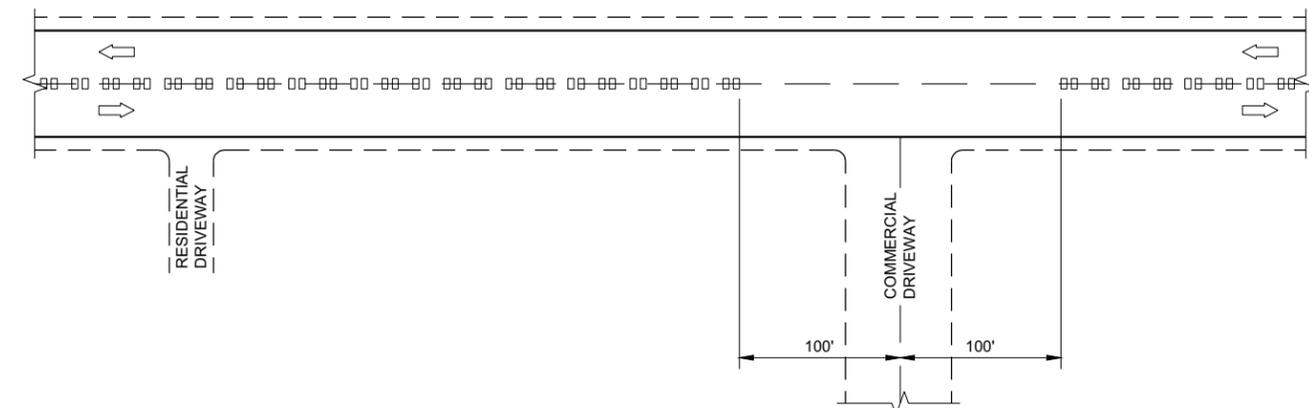
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



**CENTERLINE GROOVES AT INTERSECTIONS**



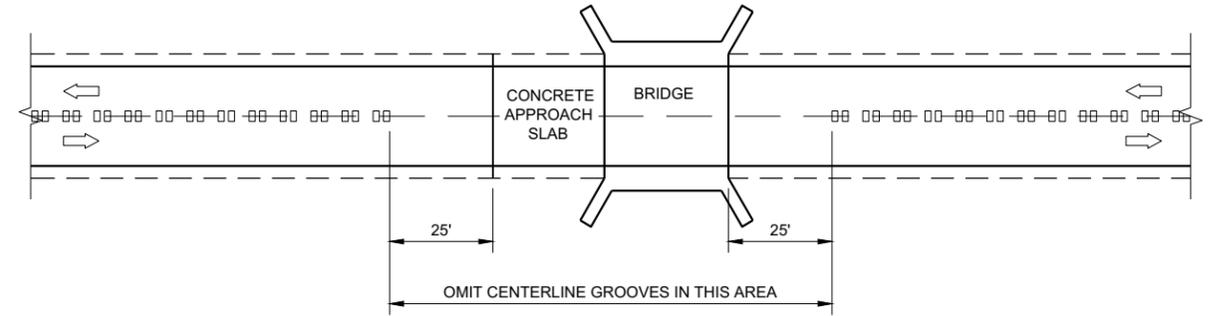
**CENTERLINE GROOVES AT INTERSECTIONS  
(WITH LEFT TURN LANES)**



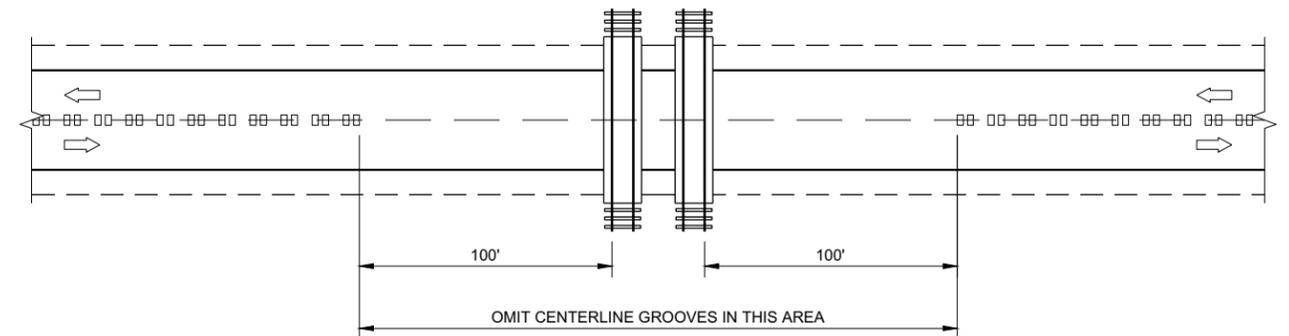
**CENTERLINE GROOVES AT DRIVEWAYS<sup>①</sup>**

**GENERAL NOTES**

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



**CENTERLINE GROOVES AT BRIDGES**

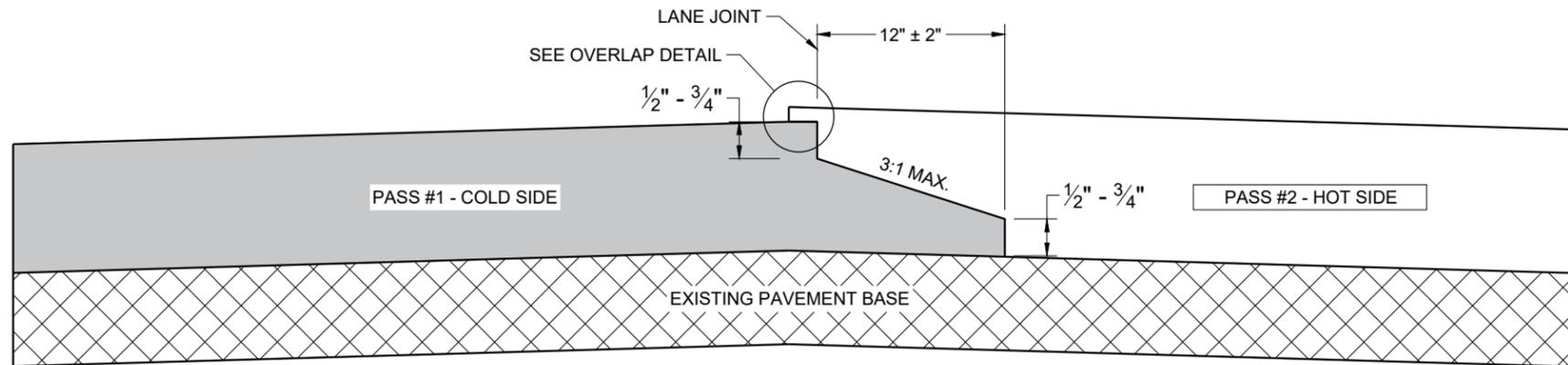


**CENTERLINE GROOVES AT RAILROADS**

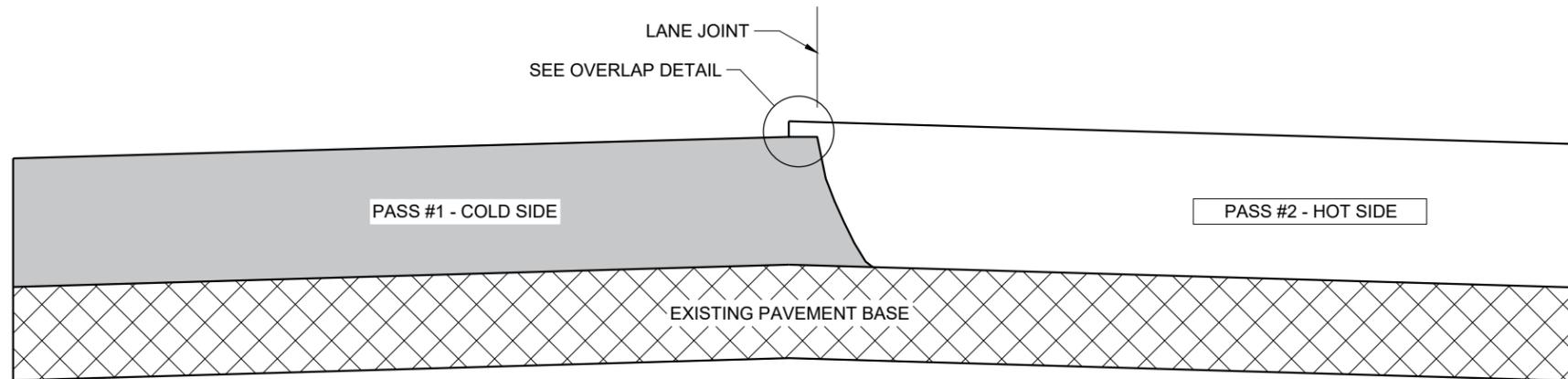
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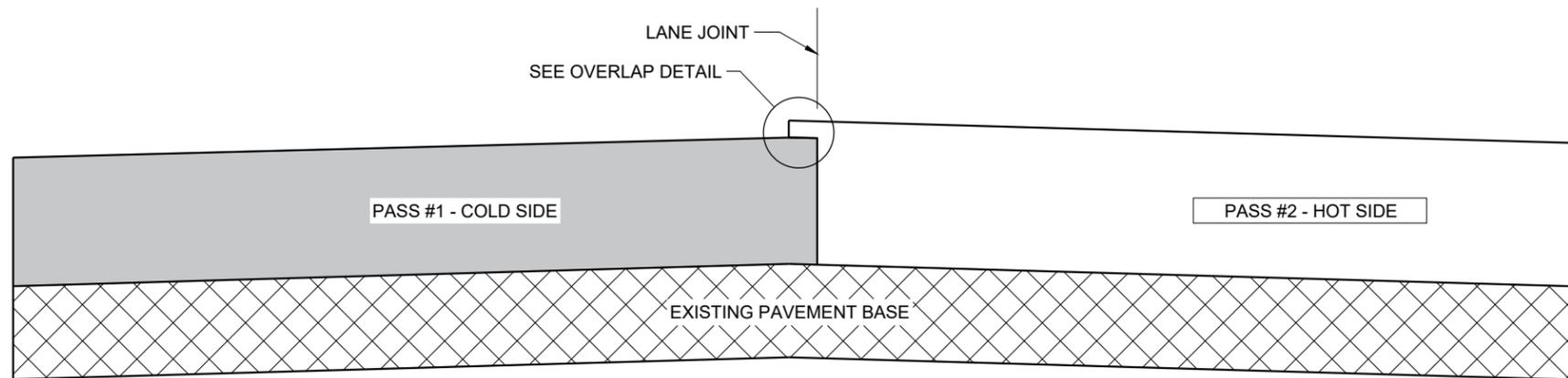
<b>2-LANE RURAL CENTERLINE RUMBLE STRIP, MILLING</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 7/2018 DATE	/S/ Rodney Taylor ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



**TYPICAL PAVEMENT CROSS SECTION NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION VERTICAL JOINT**



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

**GENERAL NOTES**

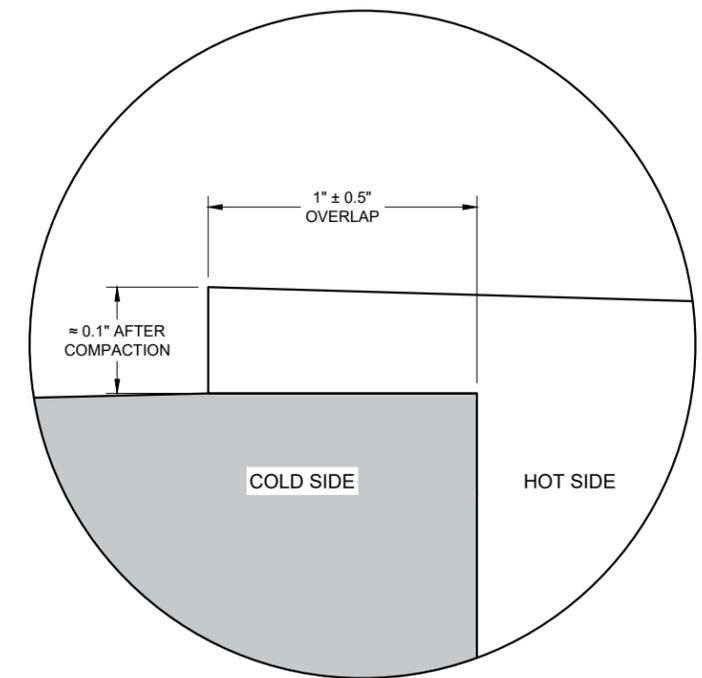
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

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	

**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.

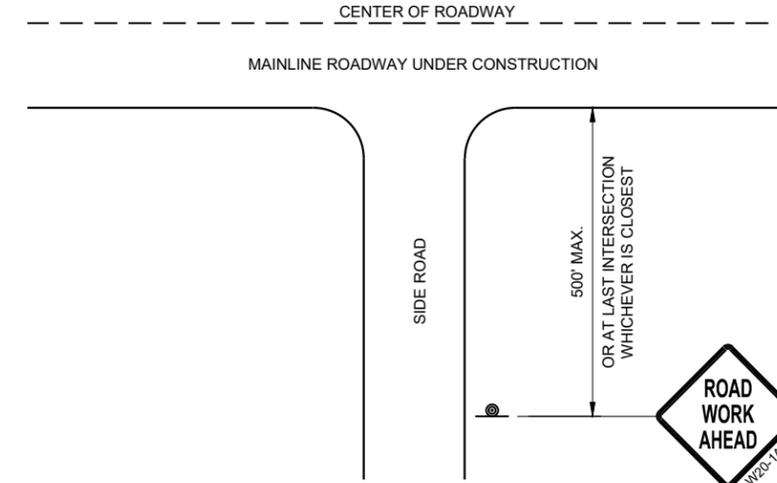
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

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.

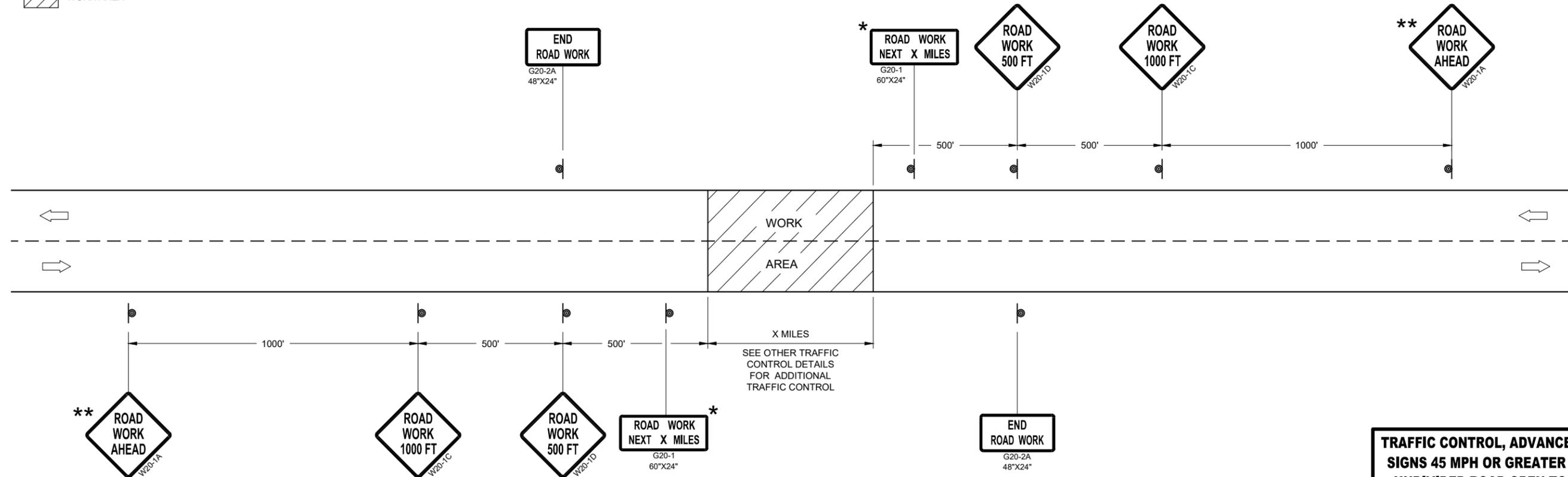
- \* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS
- \*\* PLACE AN ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.

**LEGEND**

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



**TYPICAL SIDE ROAD APPROACH WARNING SIGN DETAIL**



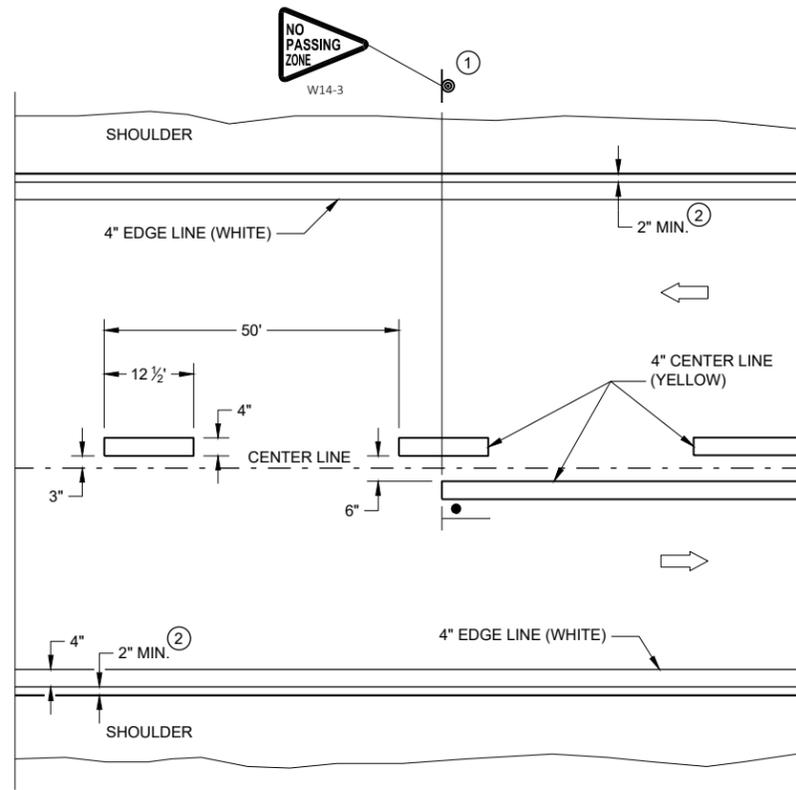
**TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45MPH OR GREATER**

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

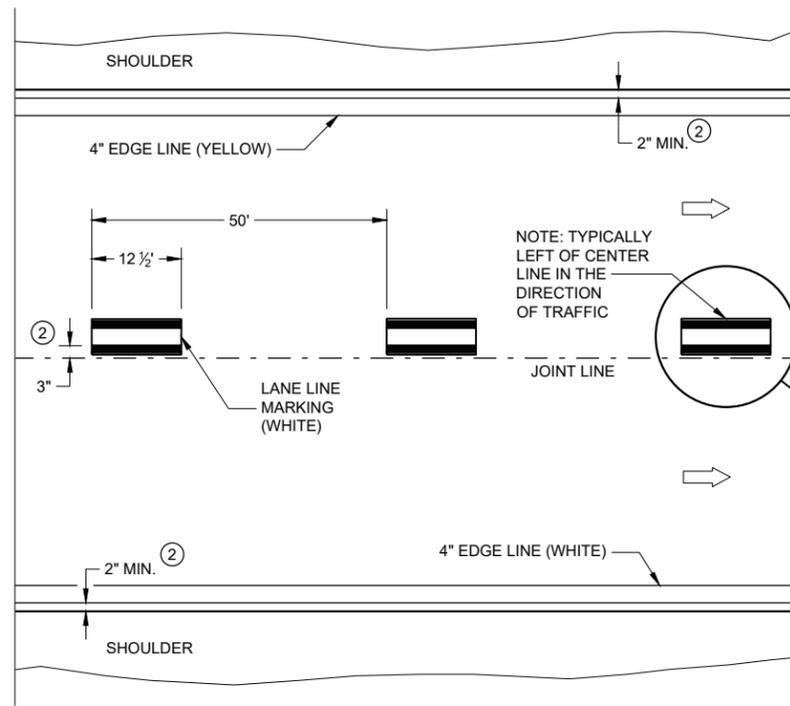
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA

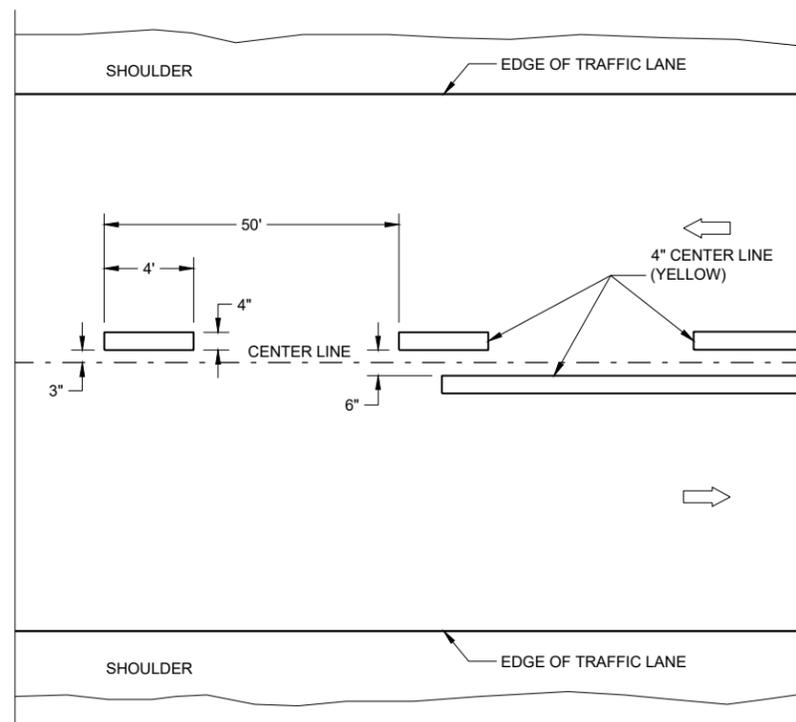


**TWO WAY TRAFFIC**

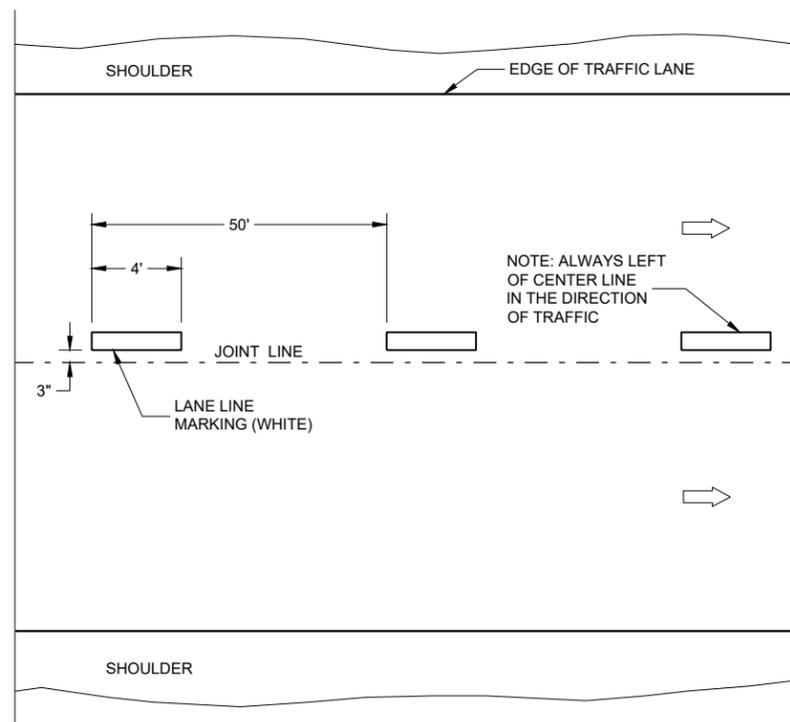


**ONE WAY TRAFFIC**

**PERMANENT PAVEMENT MARKING**



**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

**TEMPORARY PAVEMENT MARKING**

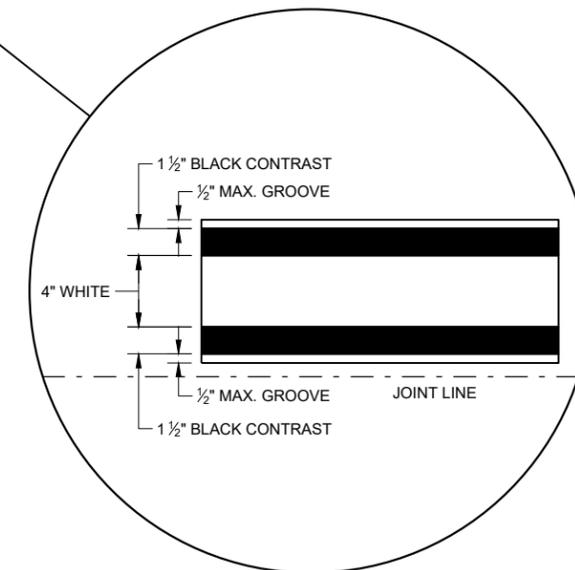
**GENERAL NOTES**

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**

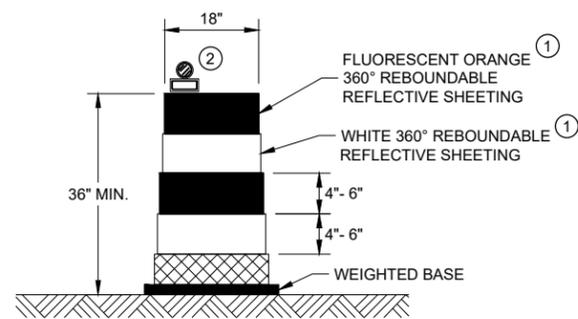
- "T" MARKING
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC



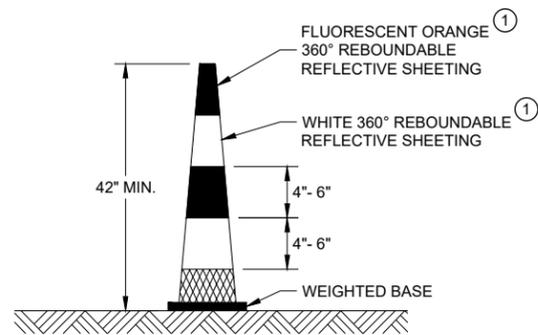
**LONGITUDINAL MARKING  
(MAINLINE)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

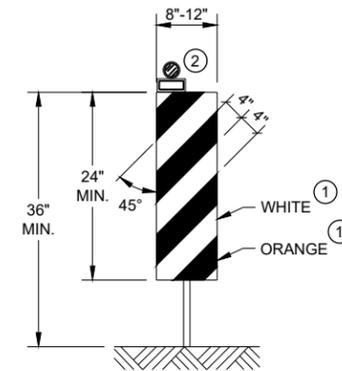


**DRUM**



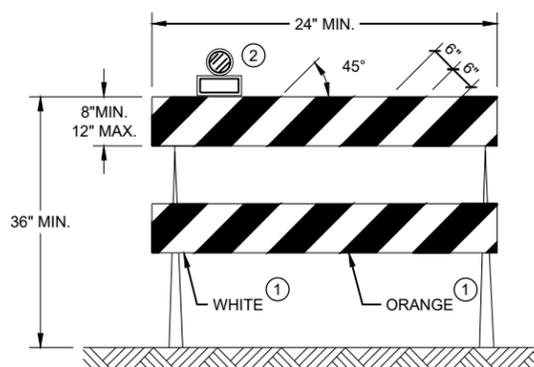
**42" CONE**

DO NOT USE IN TAPERS  
½ SPACING OF DRUMS



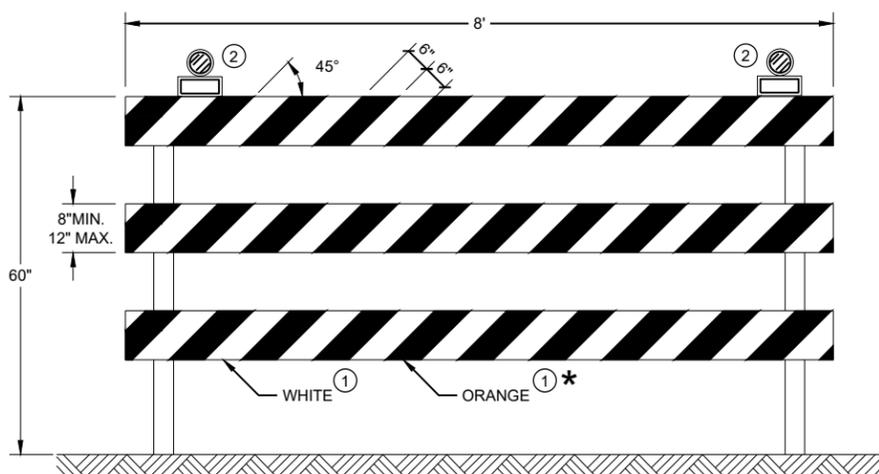
**VERTICAL PANEL**

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



**TYPE II BARRICADE**

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



**TYPE III BARRICADE**

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

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

**GENERAL NOTES**

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

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2021 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

FHWA

**LEGEND**

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

**GENERAL NOTES**

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

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

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

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

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

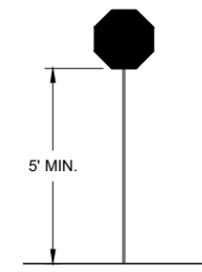
WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

**FLAGGING**

- FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES. THEY SHALL BE EQUIPPED WITH STOP/SLOW PADDLES FASTENED ON SUPPORT STAFFS. WHEN THE FLAGGING OPERATION IS NOT IN EFFECT REMOVE TEMPORARY PORTABLE RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.
- ① FOR MOVING WORK OPERATIONS, POST ADDITIONAL W20-7A FLAGGER SIGNS AT APPROXIMATELY 3,500' INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
  - ② SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

**TEMPORARY PORTABLE RUMBLE STRIPS**

- UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.
- ③ EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.
- ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FOR 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.



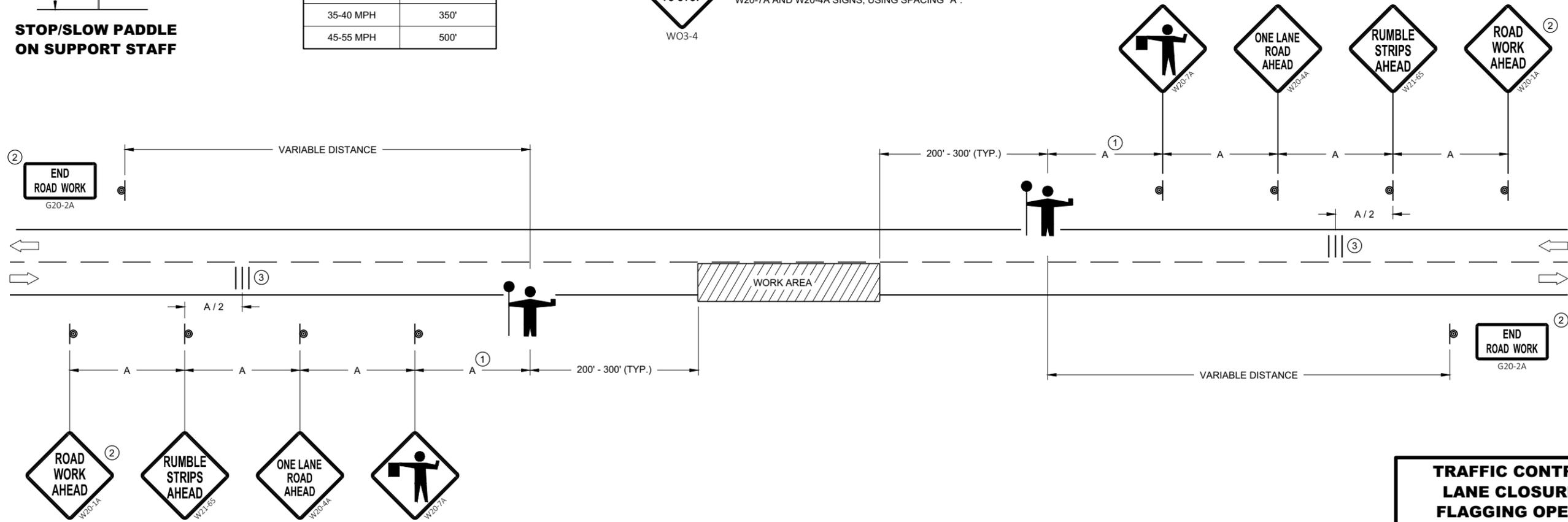
**STOP/SLOW PADDLE ON SUPPORT STAFF**

**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**

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE: May 2019 /S/ Andrew Heidtke  
WORK ZONE ENGINEER

FHWA

**LEGEND**

- V1 LEAD VEHICLE
- V2 MARKING VEHICLE
- V3 SHADOW VEHICLE
-  TRUCK MOUNTED ATTENUATOR (TMA)
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  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.

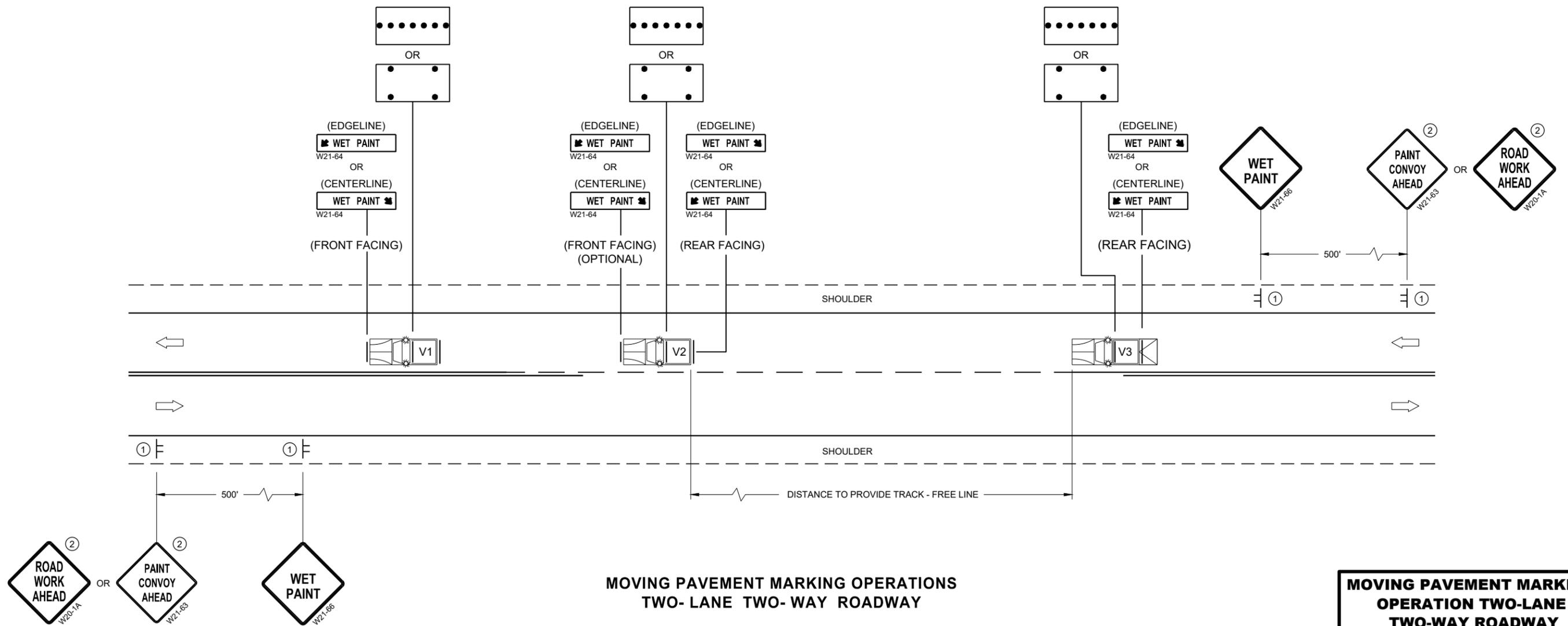
CONES SHOULD BE USED BETWEEN THE MARKING AND SHADOW VEHICLE AT 100 FOOT SPACING. CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.

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	

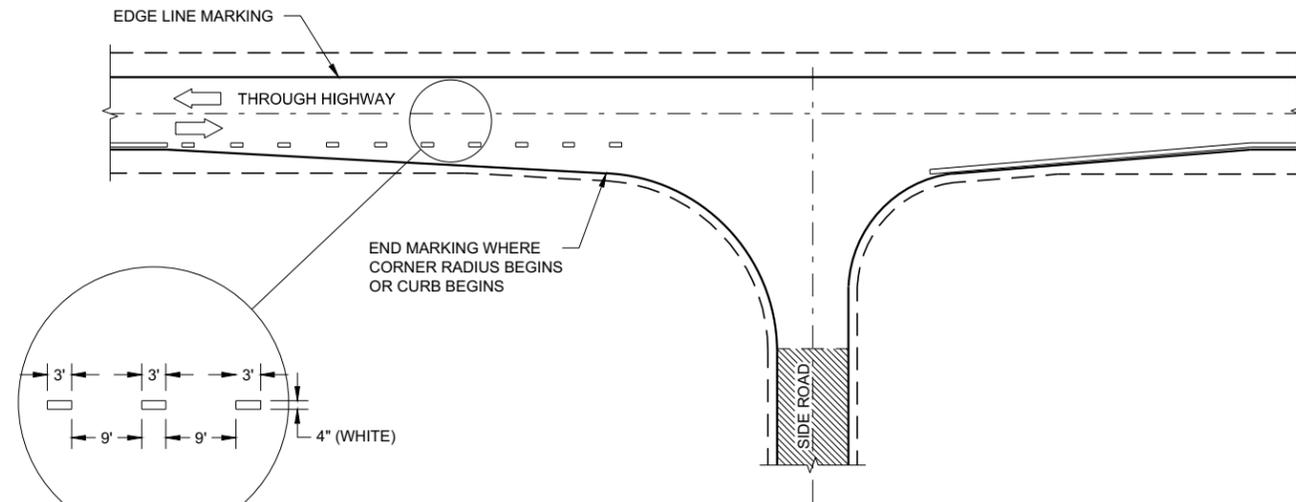
**GENERAL NOTES**

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

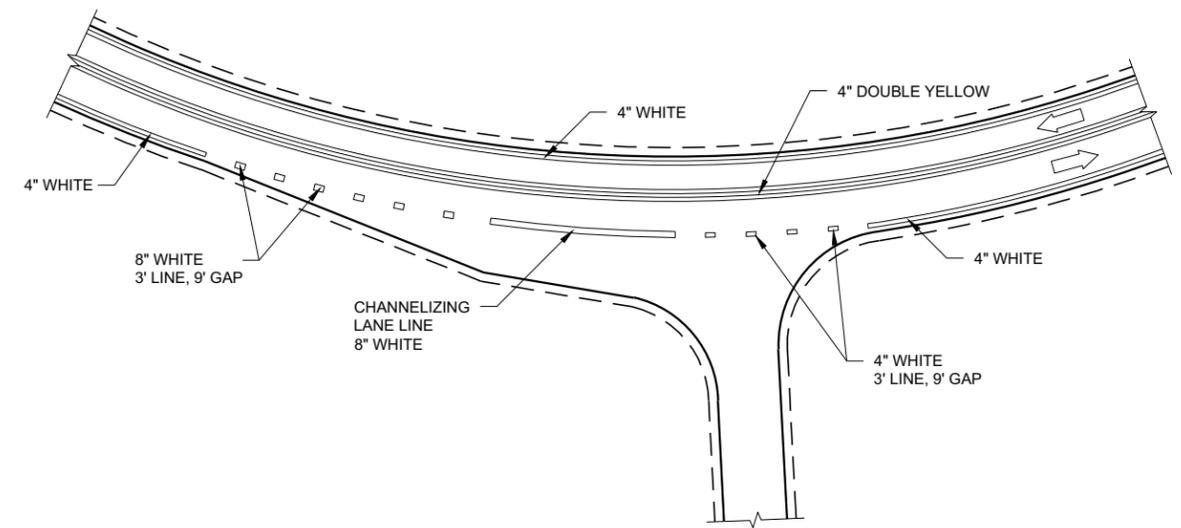
- ① WHEN DISTANCE "A" IS LESS THAN 250 FEET, OMIT LANE LINE.
- ② WHEN DISTANCE "B" IS LESS THAN 100 FEET, OMIT CHANNELIZING LANE LINE.
- ③ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT / SURFACE EDGE EXTENSION.
- ④ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.

**LEGEND**

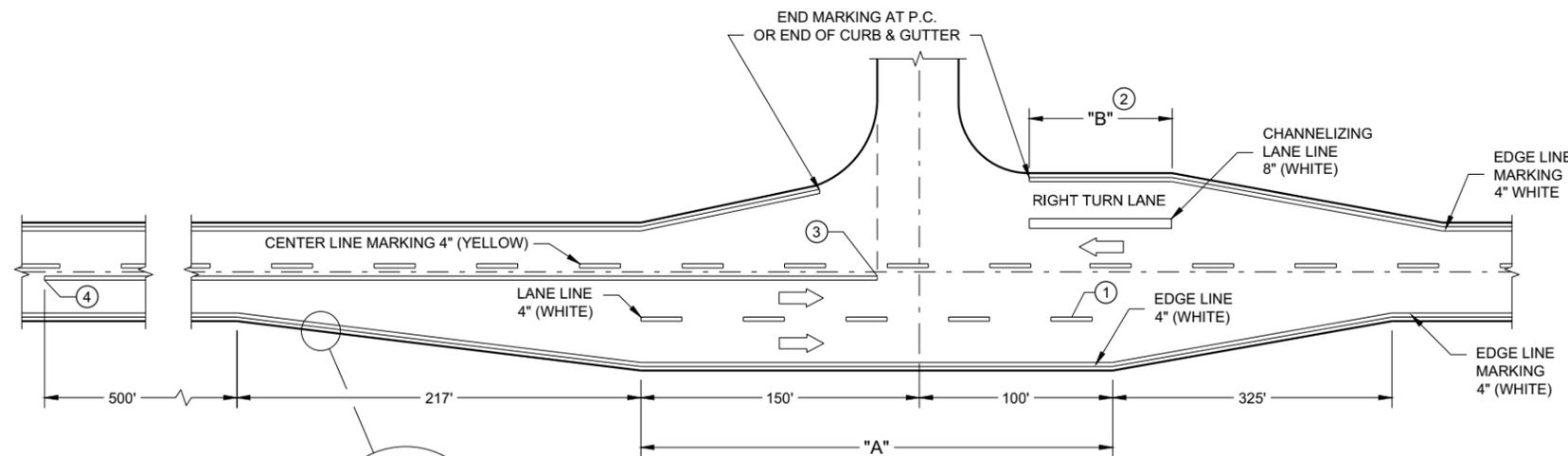
➡ DIRECTION OF TRAVEL



**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.

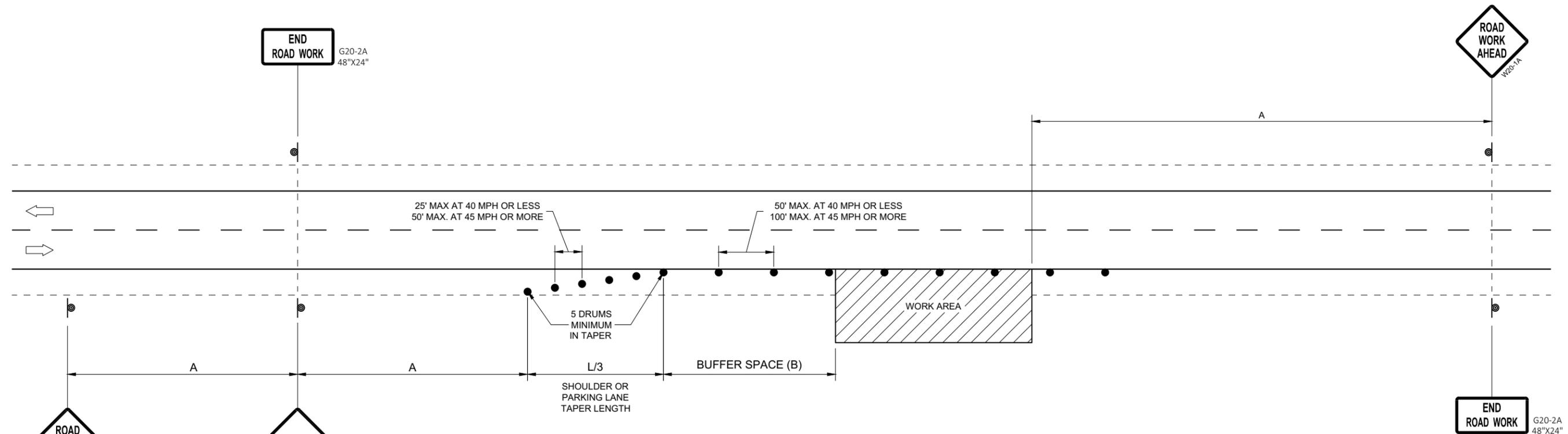
CHANNELIZING DEVICES PLACED ADJACENT TO WORK AREA SHALL BE PULLED BACK FROM THE TRAVEL LANE WHEN WORK IS NOT IN PROGRESS.

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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OR  
IF TRAFFIC CONTROL DEVICES  
ENCROACH ONTO TRAVELED WAY, USE

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**

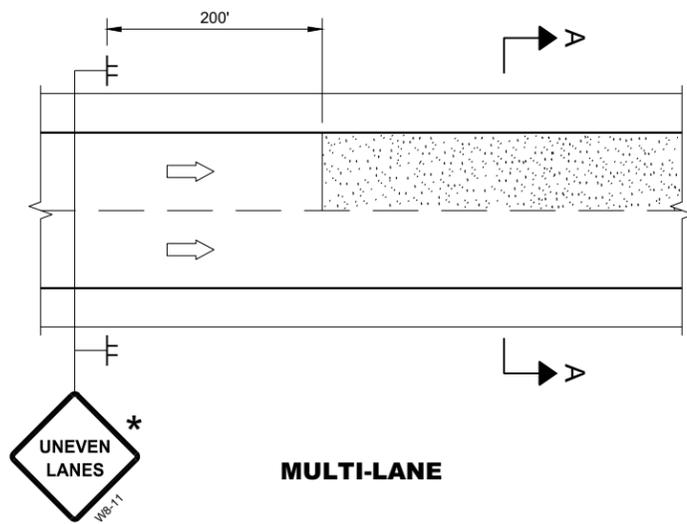
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

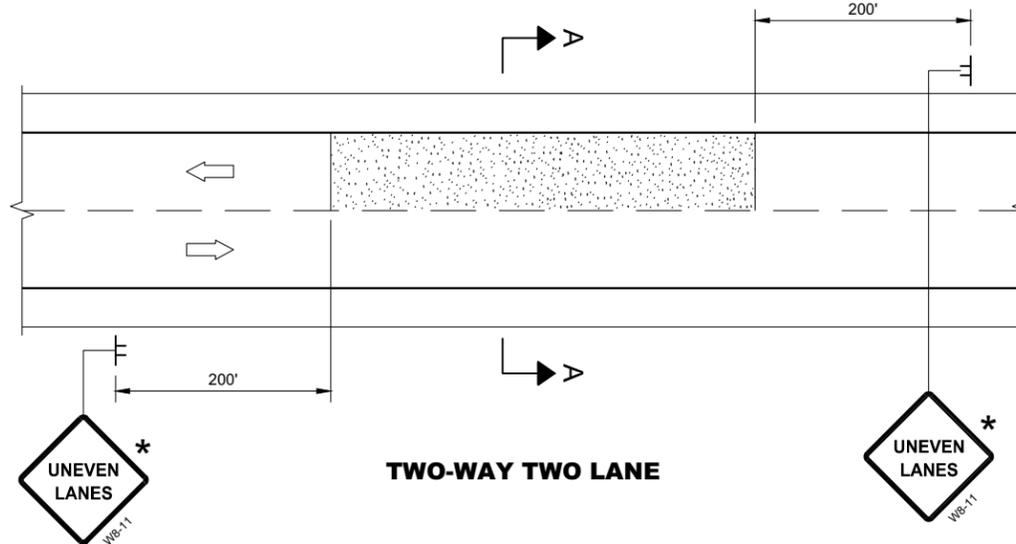
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SDD 15D28 - 04

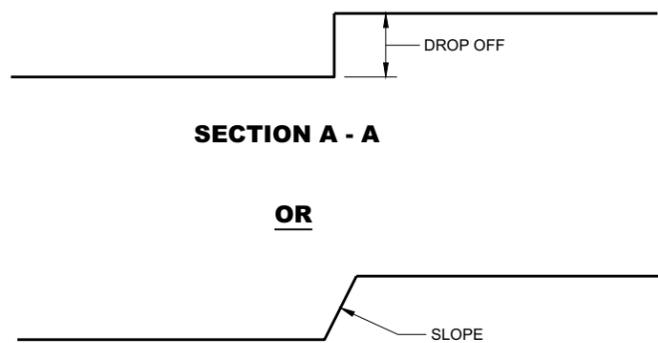
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**MULTI-LANE**



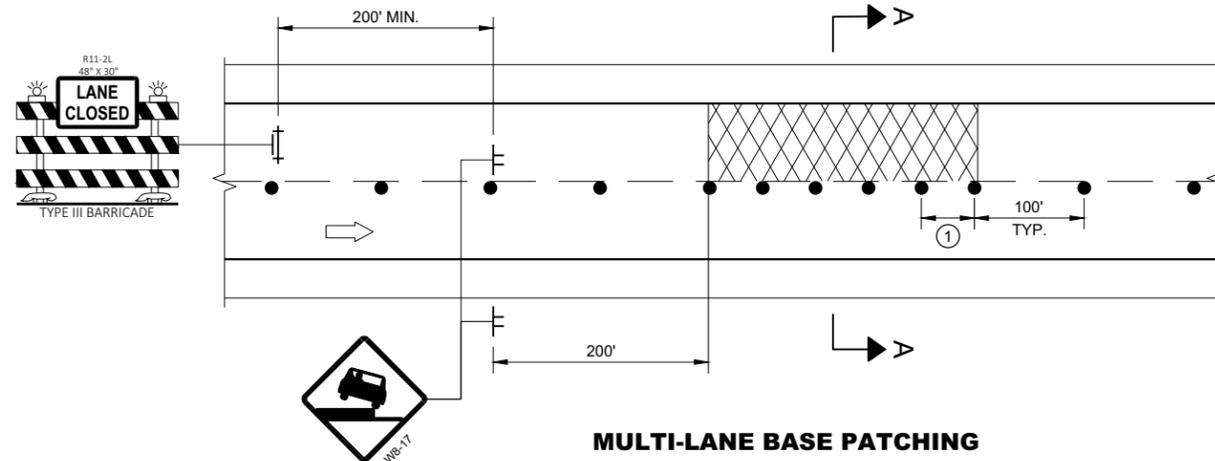
**TWO-WAY TWO LANE**



**SECTION A - A**

**OR**

**SECTION A - A**



**MULTI-LANE BASE PATCHING**

**ADJACENT LANE DROP-OFFS**

**GENERAL NOTES**

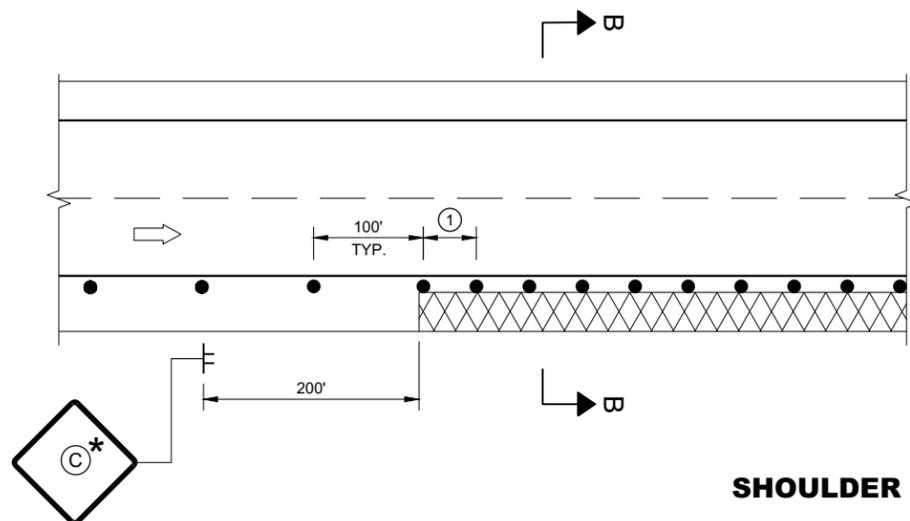
- FOR SPOT LOCATIONS USE ENGINEERING JUDGEMENT WHEN PLACING ADDITIONAL SIGNS.
- ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.
- "WO" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.
- WARNING LIGHTS ARE NOT REQUIRED IF THE LANE CLOSURE IS A DAYTIME ONLY OPERATION.
- \* IF THE DROP-OFF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

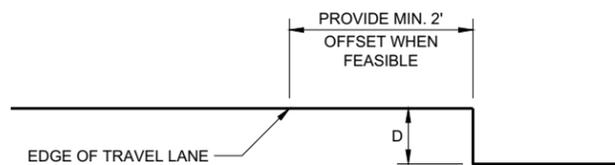
- SIGN ON TEMPORARY SUPPORT
- TRAFFIC CONTROL DRUM
- TYPE III BARRICADE WITH ATTACHED SIGN
- TYPE "A" WARNING LIGHT (FLASHING)
- DIRECTION OF TRAFFIC
- WORK AREA WITH DROP-OFF
- MILLED SURFACE

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**SHOULDER DROP-OFFS**



**SECTION B - B**

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

SDD 15D39 - 02

SDD 15D39 - 02

**TRAFFIC CONTROL,  
DROP-OFF SIGNING**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
March 2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER

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**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.

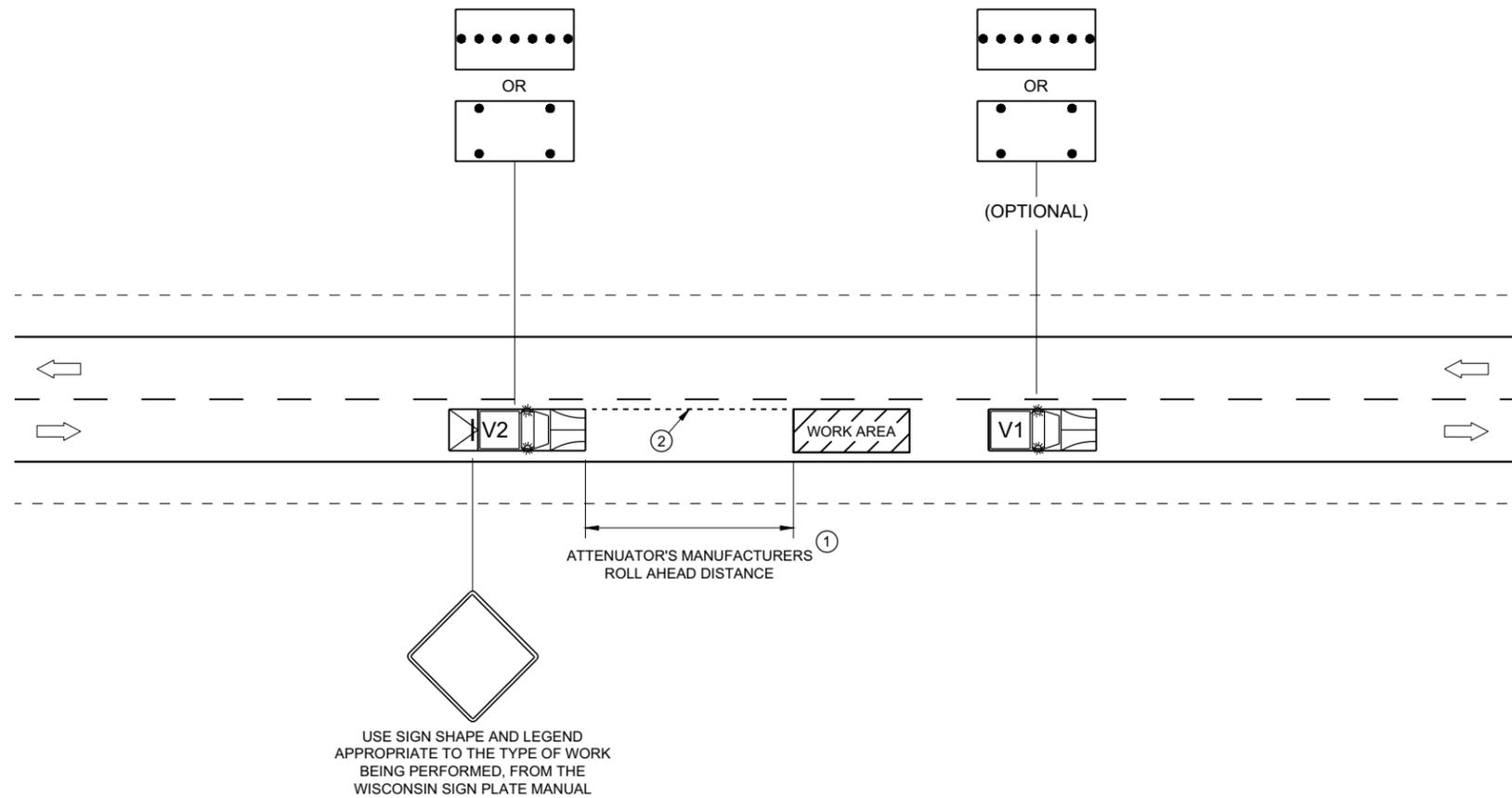
MOBILE IS WORK THAT MOVES CONTINUOUSLY OR MOVES AT LEAST THE DECISION SIGHT DISTANCE EVERY 15 MINUTES.

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

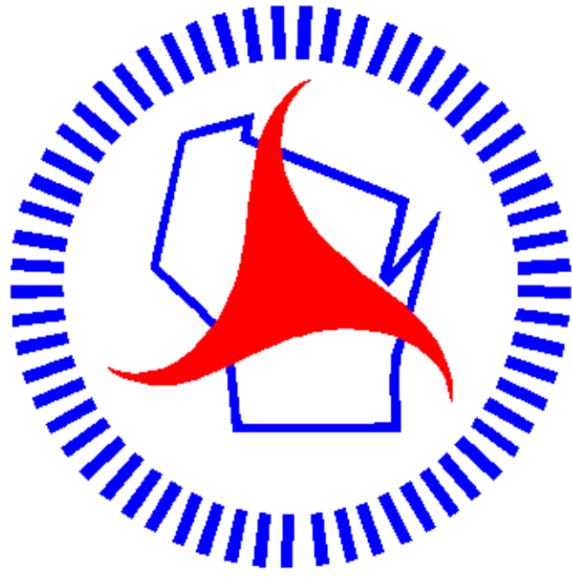
SDD 15D51 - 01

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

FHWA



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