

GRE

WITH:

PROJECT ID:

4570-23-60

COUNTY:

SHEBOYGAN

JUNE 2017

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	Gross Sections

TOTAL SHEETS = 46

STATE OF WISCONSIN

DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

HOWARDS GROVE - KIEL

STH 42 - STH 32/57 SOUTH JUNCTION

STH 32

SHEBOYGAN

STATE PROJECT NUMBER

4570-23-60

STATE PROJECT

FEDERAL PROJECT

PROJECT

CONTRACT

4570-23-60



DESIGN DESIGNATION 4570-23-30

A.A.D.T.	2017	=	3600
A.A.D.T.	2037	=	4200
D.H.V.		=	440
D.D.		=	60-40
T.		=	7.0
DESIGN SPEED		=	55 MPH
ESALS		=	650,000

CONVENTIONAL SYMBOLS

PLAN

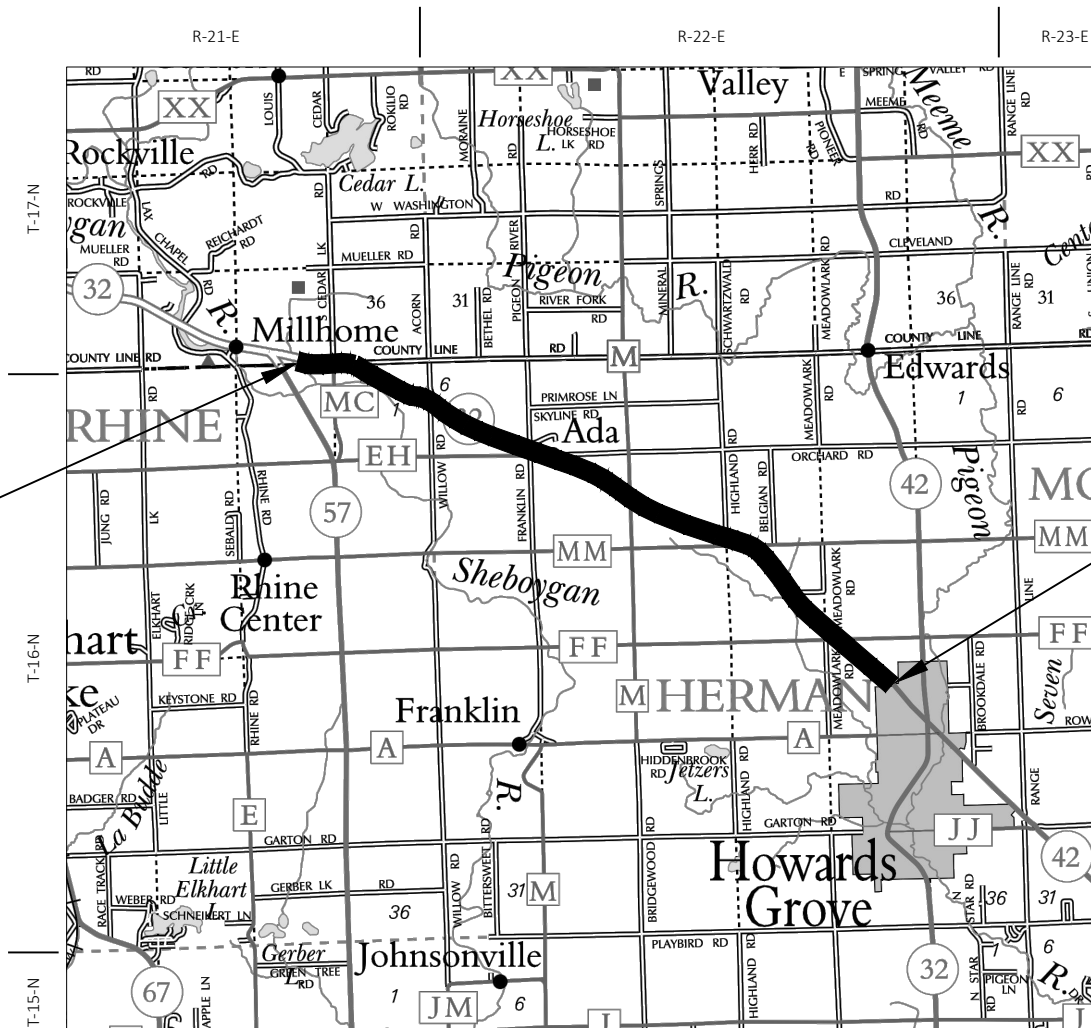
CORPORATE LIMITS	
PROPERTY LINE	
LOT LINE	
LIMITED HIGHWAY EASEMENT	
EXISTING RIGHT OF WAY	
PROPOSED OR NEW R/W LINE	
SLOPE INTERCEPT	
REFERENCE LINE	
EXISTING CULVERT	
PROPOSED CULVERT (Box or Pipe)	
COMBUSTIBLE FLUIDS	
MARSH AREA	
WOODED OR SHRUB AREA	

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
691+50

BEGIN PROJECT
307+75
Y = 209,601.67
X = 188,843.22



LAYOUT

SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 7.268 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, SHEBOYGAN 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.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	WISDOT NE REGION
Designer	E. DANKE
Project Manager	K. TREML
Regional Examiner	
Regional Supervisor	R. WAGNER

APPROVED FOR THE DEPARTMENT

DATE: 4-21-2017

(Signature)

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GENERAL NOTES

THERE ARE UTILITY FACILITIES WITHIN THE PROJECT AREA WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE HIS CONSTRUCTION ACTIVITIES WITH A CALL TO DIGGERS HOTLINE AND/OR A DIRECT CALL TO THE UTILITIES WHICH HAVE FACILITIES IN THE AREA. NOT ALL UTILITIES AREA MEMBERS OF DIGGERS HOTLINE.

CONTRACTOR WILL BE RESPONSIBLE FOR RESHAPING AND SEEDING ANY PREVIOUSLY GRASSED AREAS WHICH ARE DISTURBED BY HIS OPERATION OUTSIDE OF THE NORMAL CONSTRUCTION LIMITS.

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

UTILITIES

ALLIANT ENERGY - ELECTRICITY
SUITE 1000
4902 N BILTMORE LANE
MADISON, WI 53718
ATTN: JASON HOGAN
PHONE: 608-458-4871
E-MAIL: jasonhogan@alliantenergy.com

ANR PIPELINE CO - GAS/PETROLEUM
W3925 PIPELINE LANE
EDEN, WI 53019
ATTN: LAWRENCE HUBER
PHONE: 920-477-2235
E-MAIL: lawrence_huber@transcanada.com

ATC MANAGEMENT, INC - ELECTRICITY
801 O'KEEFE ROAD
PO BOX 6113
DE PERE, WI 54115-6113
ATTN: MIKE OLSEN
PHONE: 920-338-6582
E-MAIL: molsen@atcllc.com

FRONTIER COMMUNICATION OF WI LLC - COMMUNICATION LINE
521 4TH STREET
WAUSAU, WI 54403
ATTN: STUART NORMAN
PHONE: 715-847-1320
E-MAIL: stuart.norman@ftr.com

RHINE & PLYMOUTH SANITARY DISTRICT #1 - SEWER
N7400 CTH J
PLYMOUTH, WI 53073
ATTN: KEITH ABLER
PHONE: 920-876-2497
E-MAIL: kabler@wi.rr.com

TDS TELECOM - COMMUNICATION LINE
SUITE 218A
10 COLLEGE AVENUE
APPLETON, WI 54911
ATTN: STEVE JAKUBIEC
PHONE: 920-882-4166
E-MAIL: steve.jakubiec@tdstelecom.com

TIME WARNER CABLE - COMMUNICATION LINE
1320 N DR MARTIN LUTHER KING JR DRIVE
MILWAUKEE, WI 53212-4002
ATTN: STEVEN CRAMER
PHONE: 414-277-4045
E-MAIL: wis.engineering@twcable.com

WISCONSIN PUBLIC SERVICE CORPORATION - GAS/PETROLEUM
700 N ADAMS STREET
PO BOX 19001
GREEN BAY, WI 54307-9001
ATTN: LORI BUTRY
PHONE: 920-433-1703
E-MAIL: LAButry@integrysgroup.com

WE ENERGIES - ELECTRICITY
333 WEST EVERETT STREET, ROOM A299
MILWAUKEE, WI 53203
ATTN: LATROY BRUMFIELD
PHONE: 414-221-5417
E-MAIL: LaTroy.Brumfield@we-energies.com

WDNR LIAISON

JAY SCHIEFELBEIN
DNR NORTHEAST REGIONAL HQ
2984 SHAWANO AVENUE
GREEN BAY, WI 54313
OFFICE:(920) 360-3784
E-MAIL:jeremiah.schiefelbein@wisconsin.gov

SHEBOYGAN AND MANITOWOC
COUNTY COMMISSIONERS

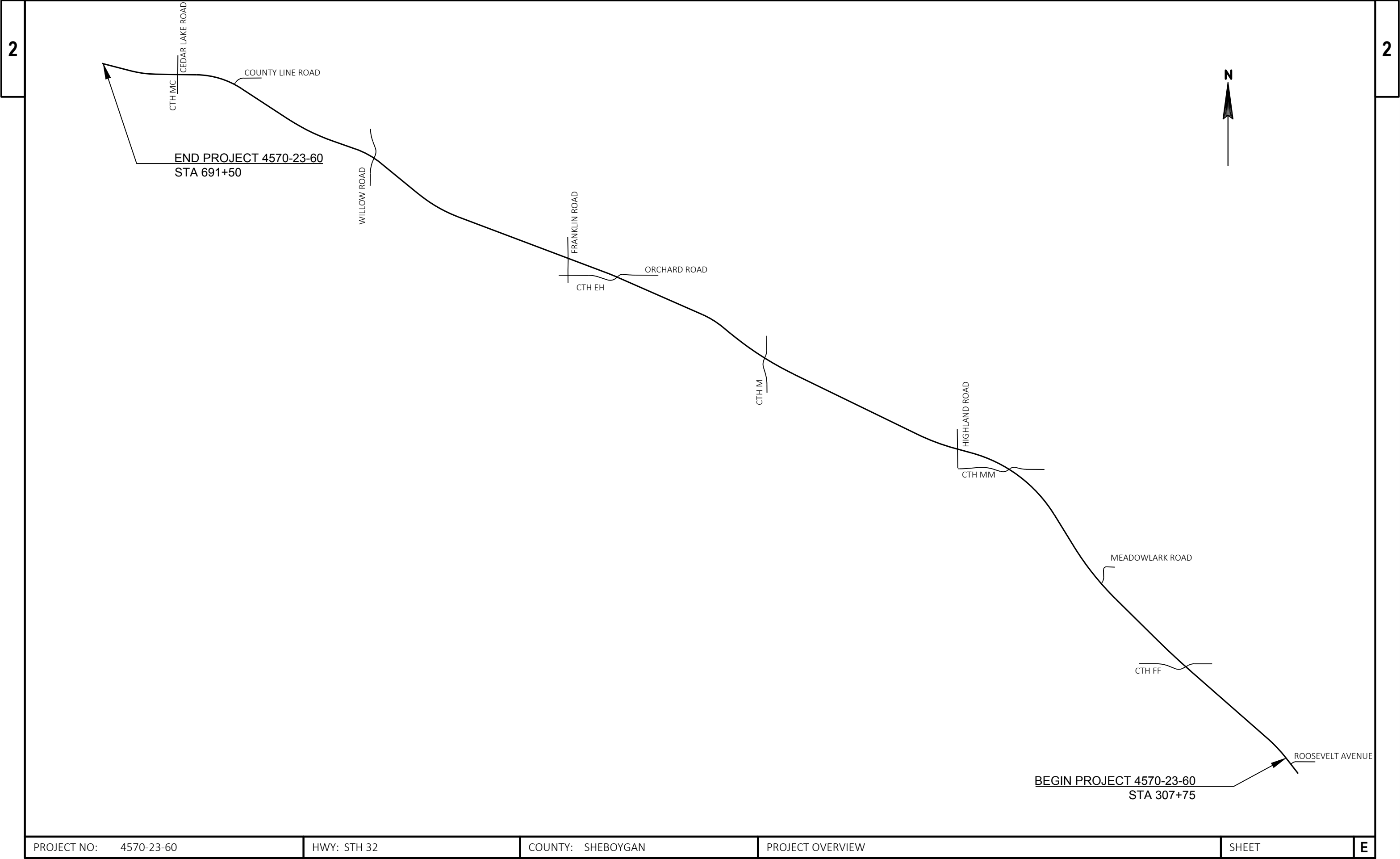
GREG SCHNELL
SHEBOYGAN COUNTY HIGHWAY COMMISSIONER
1211 N 23RD
SHEBOYGAN, WI 53081
TEL: (920) 459-3822
FAX: (920) 459-3831
E-MAIL: schnegfs@co.sheboygan.wi.us

MARC HOLSEN
MANITOWOC COUNTY HIGHWAY COMMISSIONER
3500 STH 310
MANITOWOC, WI 54220
TEL: (920) 683-4353
FAX: (920) 683-4366
E-MAIL: marcholsen@co.manitowoc.wi.us

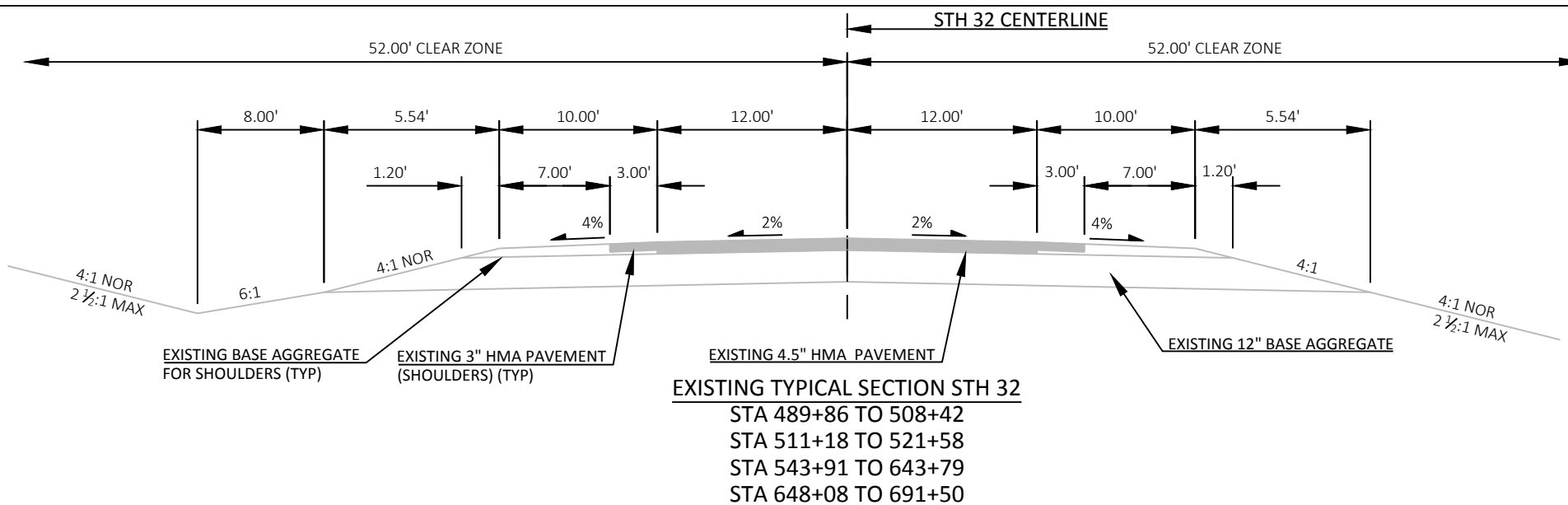
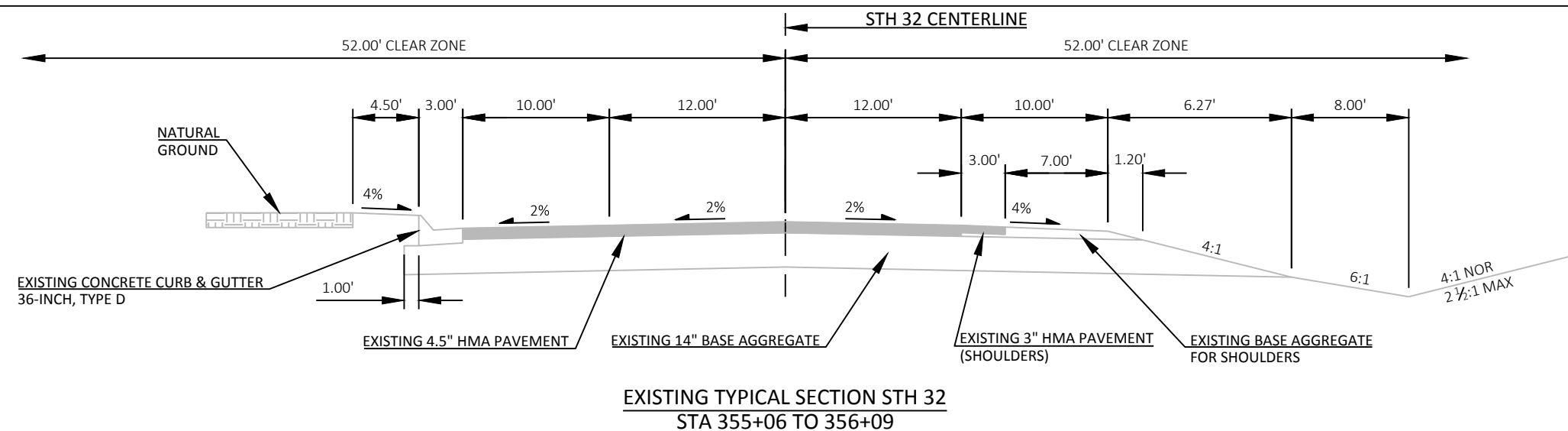
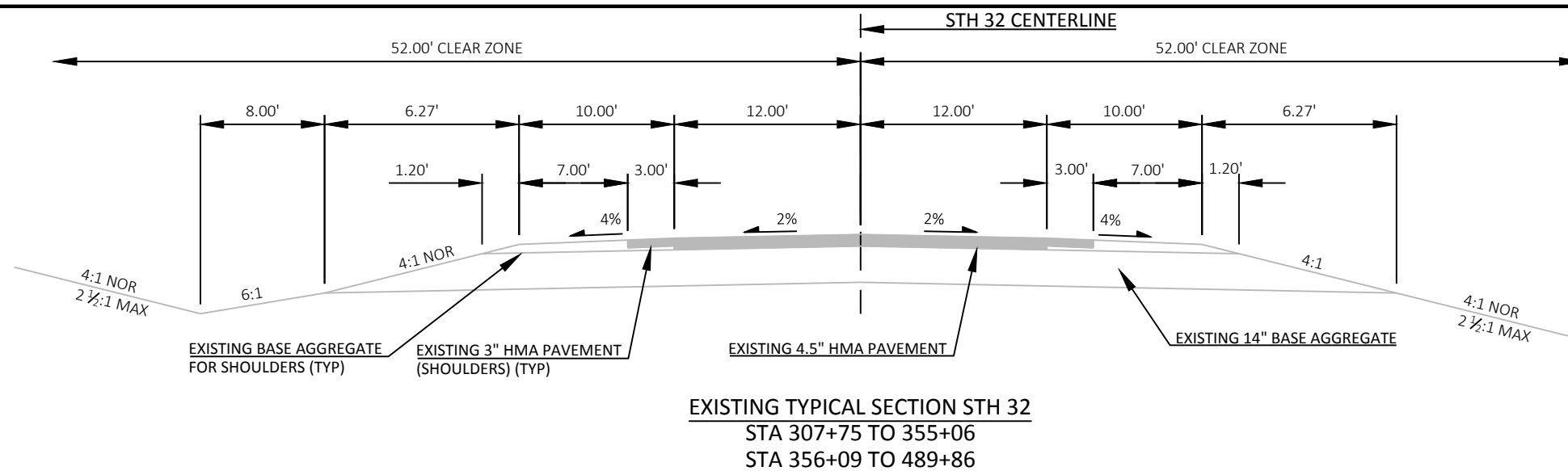
NE REGION SURVEY COORDINATOR

CORMAC MCINNIS, RLS
944 VANDERPERREN WAY
GREEN BAY, WI 54304
TEL: (920) 492-5638
TEM: E-MAIL: cormac.mcinnis@dot.wi.gov





PROJECT NO: 4570-23-60	HWY: STH 32	COUNTY: SHEBOYGAN	PROJECT OVERVIEW	SHEET	E
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PROJECT NO: 4570-23-60

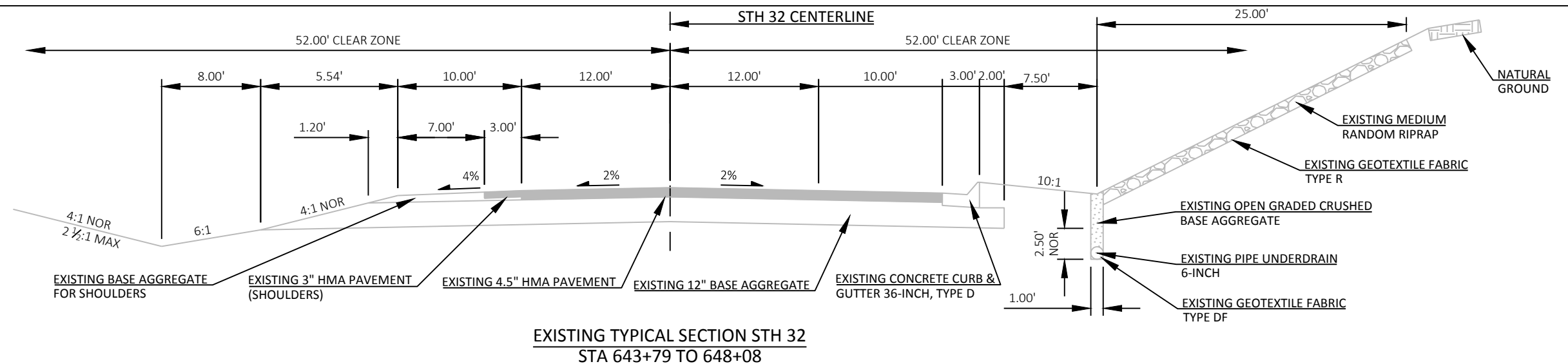
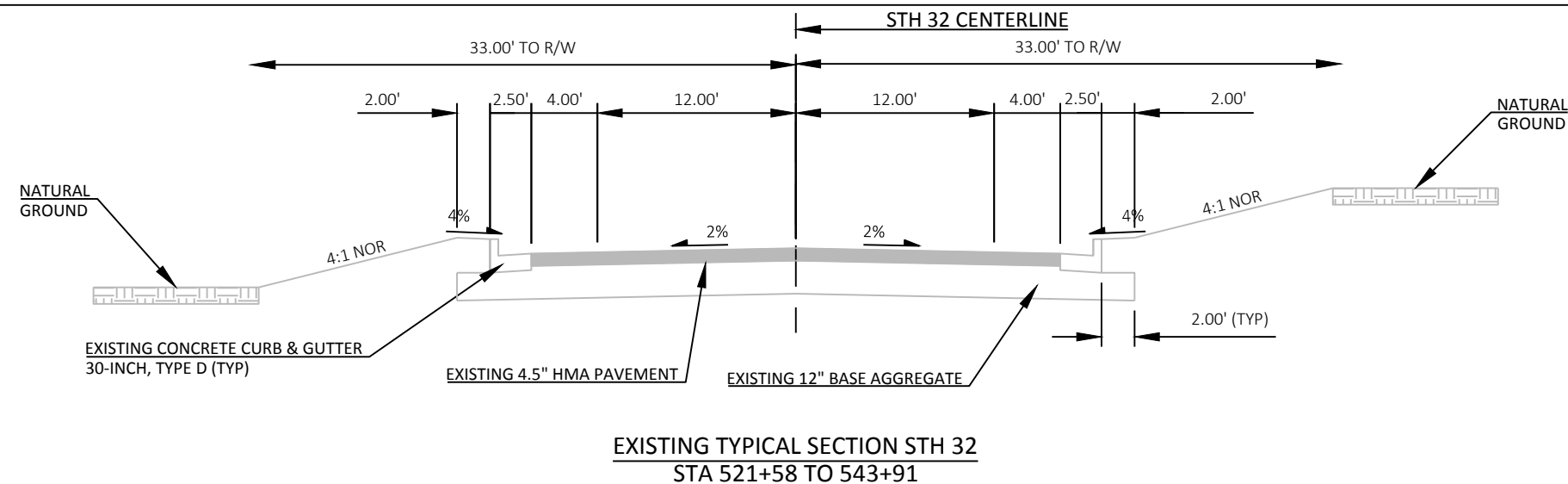
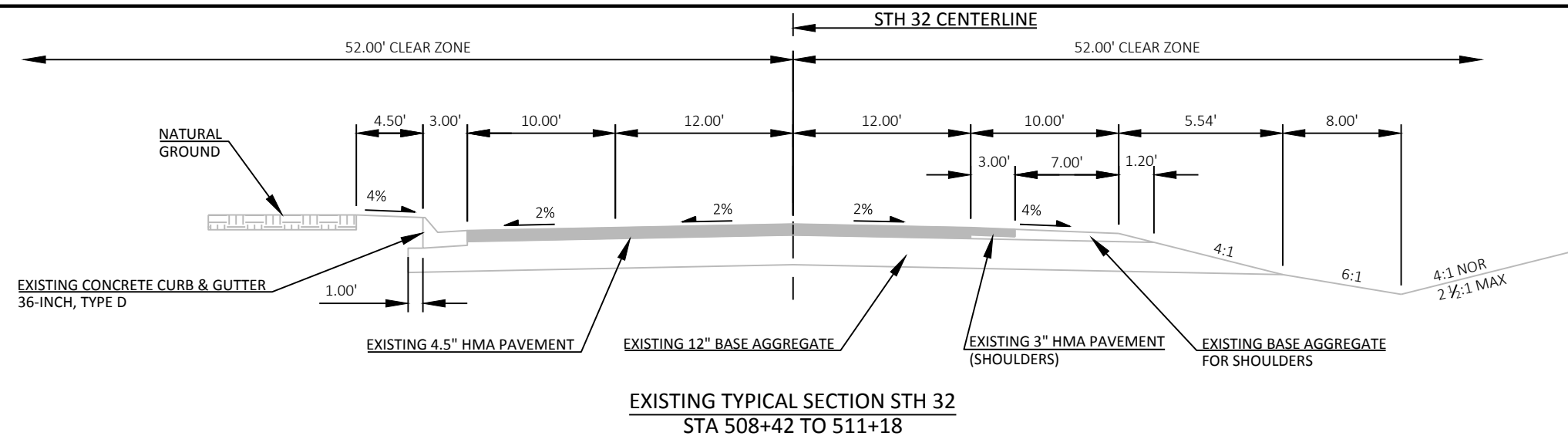
HWY: STH 32

COUNTY: SHEBOYGAN

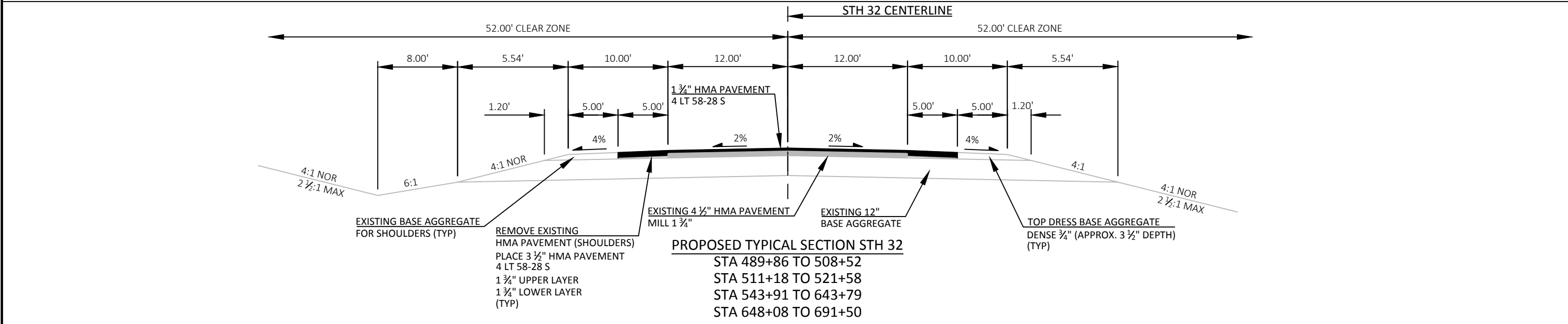
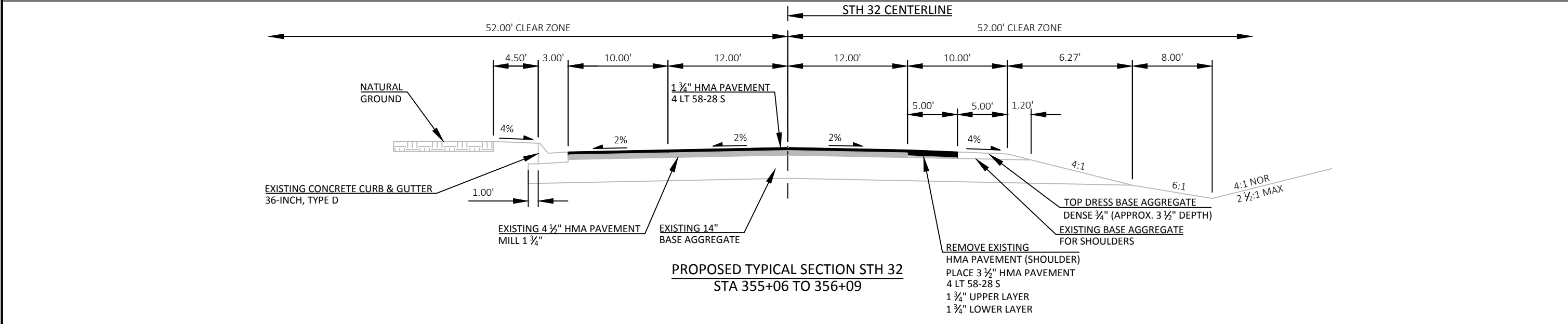
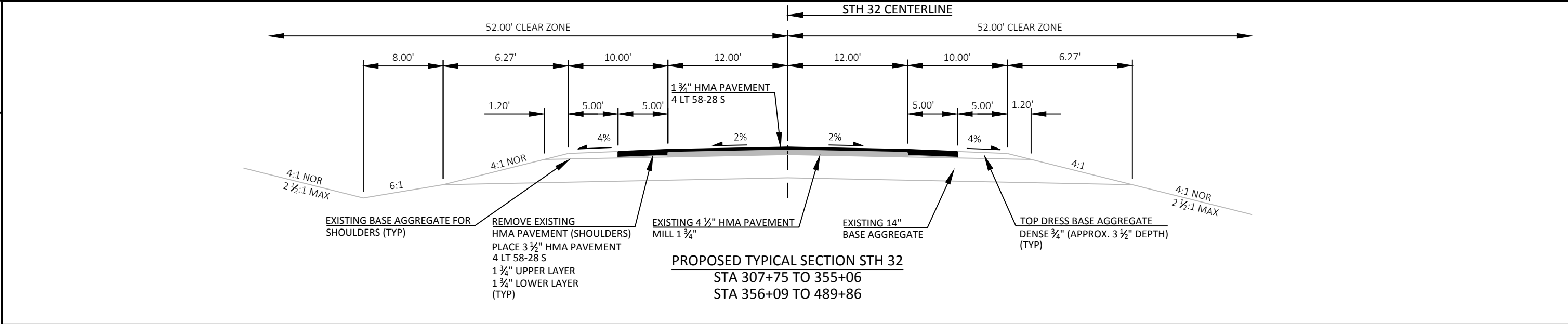
TYPICAL CROSS SECTIONS

SHEET

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2



PROJECT NO:	4570-23-60
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HWY: STH 32

COUNTY: SHEBOYGAN

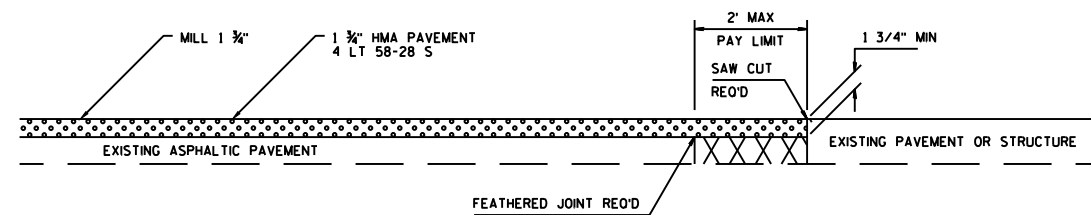
TYPICAL CROSS SECTIONS

SHEET

E

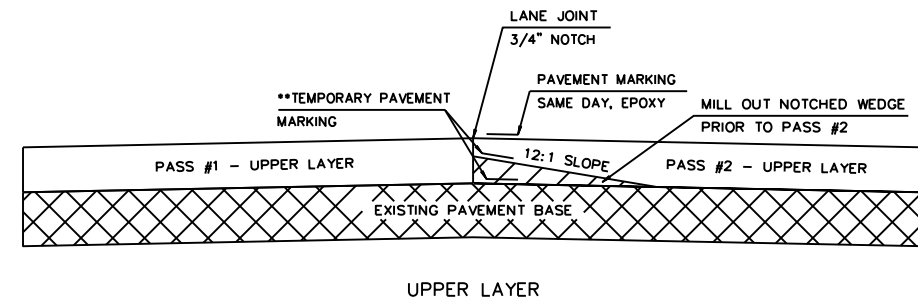
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- REMOVING ASPHALTIC SURFACE, MILLING
- REMOVING ASPHALTIC SURFACE, BUTT JOINTS (FULL DEPTH REMOVAL OPTIONAL)
- ASPHALTIC WEDGING (FULL DEPTH REMOVAL OPTION)

BUTT JOINT DETAIL FOR MILLED ASPHALTIC PAVEMENTS

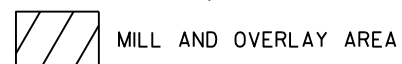
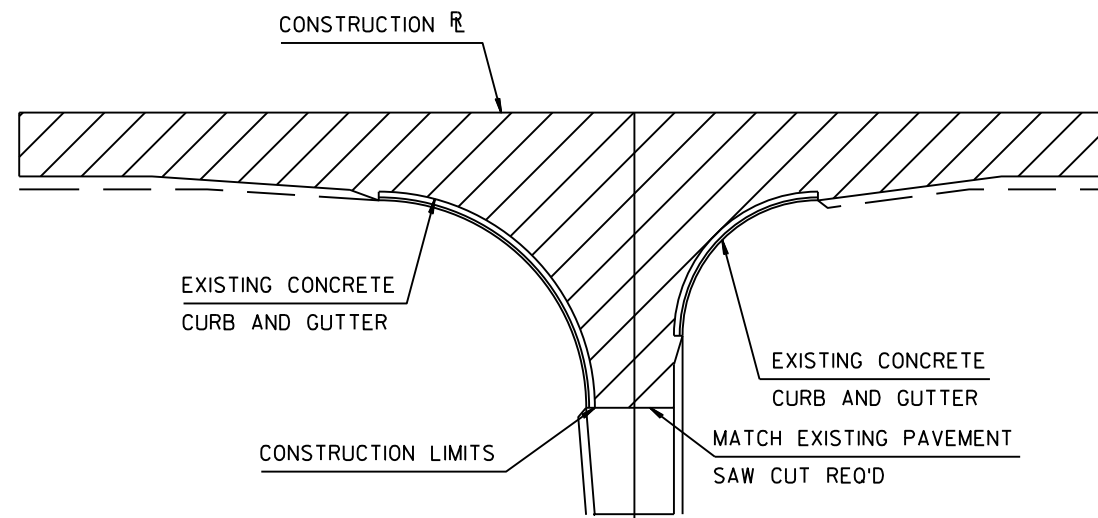


NOTE

SEE SPV.0090.01 "MILLING AND REMOVING TEMPORARY JOINT" FOR MILLING DETAILS

TYPICAL PAVEMENT CROSS SECTION AT NOTCHED WEDGE LONGITUDINAL JOINT

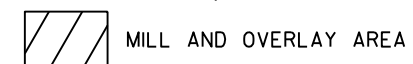
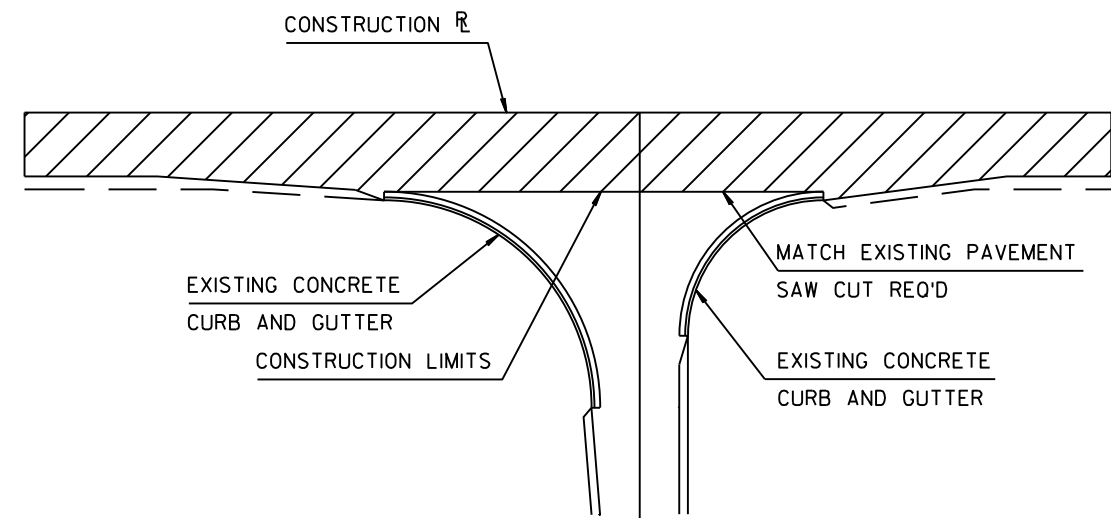
** - "PASS WITH CARE" SIGNS TO BE PLACED EVERY HALF-MILE OR AS DIRECTED BY THE ENGINEER AFTER PLACING TEMPORARY PAVEMENT MARKING



SIDE ROAD CONSTRUCTION LIMITS

CTH FF (NORTH) CTH FF (SOUTH)
HIGHLAND ROAD (NORTH) HIGHLAND ROAD (SOUTH)
CTH M (NORTH) CTH M (SOUTH)
CTH EH ORCHARD ROAD
CTH MC

*PAVED SHOULDER TO BE REMOVED WHEN LESS THAN 5' IN WIDTH. SEE PLAN SHEETS FOR SAWCUT AND REMOVAL LOCATIONS.



SIDE ROAD CONSTRUCTION LIMITS

MEADOWLARK ROAD CTH MM (NORTH)
CTH MM (SOUTH) FRANKLIN ROAD (NORTH)
FRANKLIN ROAD (SOUTH) WILLOW ROAD (NORTH)
WILLOW ROAD (SOUTH) COUNTY LINE ROAD
CEDAR LAKE ROAD

*PAVED SHOULDER TO BE REMOVED WHEN LESS THAN 5' IN WIDTH. SEE PLAN SHEETS FOR SAWCUT AND REMOVAL LOCATIONS.

PROJECT NO: 4570-23-60

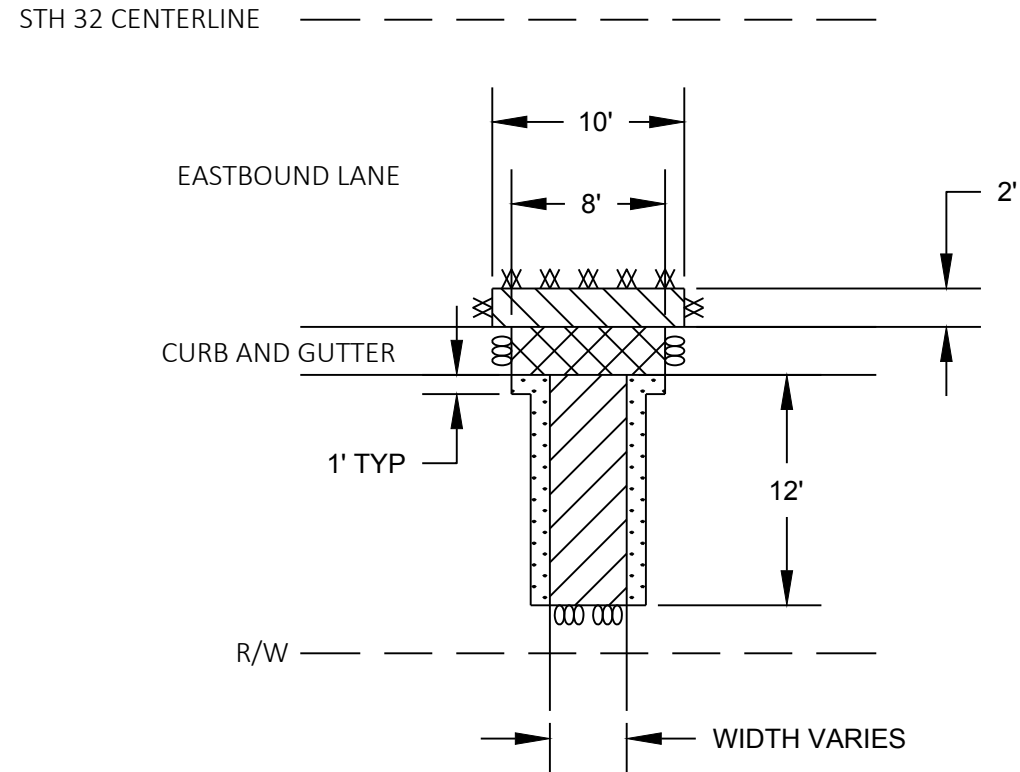
HWY: STH 32







COUNTY: SHEBOYGAN

CONSTRUCTION DETAILS

SHEET

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-  REMOVE EXISTING SIDEWALK AND REPLACE WITH CONCRETE SIDEWALK 4-INCH (IF APPLICABLE)
-  REMOVE EXISTING CURB CUT AND REPLACE WITH CONCRETE CURB & GUTTER 30-INCH TYPE D
-  REMOVE EXISTING ASPHALT PAVEMENT AND REPLACE WITH 4.5" HMA PAVEMENT 4 LT 58-28 S
-  RESTORE DISTURBED AREAS WITH TOPSOIL, FERTILIZER, SEED, AND MULCH
-  SAWING ASPHALT
-  SAWING CONCRETE

CURB CUT AND SIDEWALK REMOVAL AND REPLACE DETAIL

STA 524+82 RT
STA 529+61 LT
STA 530+79 LT
STA 532+22 LT

Estimate Of Quantities

4570-23-60					
Line	Item	Item Description	Unit	Total	Qty
0010	204.0110	Removing Asphaltic Surface	SY	22,084.000	22,084.000
0020	204.0115	Removing Asphaltic Surface Butt Joints	SY	328.000	328.000
0030	204.0120	Removing Asphaltic Surface Milling	SY	116,119.000	116,119.000
0040	204.0150	Removing Curb & Gutter	LF	32.000	32.000
0050	204.0155	Removing Concrete Sidewalk	SY	12.000	12.000
0060	211.0100	Prepare Foundation for Asphaltic Paving (project) 01. 4570-23-60	LS	1.000	1.000
0070	211.0400	Prepare Foundation for Asphaltic Shoulders	STA	710.000	710.000
0080	213.0100	Finishing Roadway (project) 01. 4570-23-60	EACH	1.000	1.000
0090	305.0110	Base Aggregate Dense 3/4-Inch	TON	2,222.000	2,222.000
0100	305.0500	Shaping Shoulders	STA	4.000	4.000
0110	440.4410	Incentive IRI Ride	DOL	29,080.000	29,080.000
0120	455.0605	Tack Coat	GAL	10,704.000	10,704.000
0130	460.2005	Incentive Density PWL HMA Pavement	DOL	10,960.000	10,960.000
0140	460.2010	Incentive Air Voids HMA Pavement	DOL	19,930.000	19,930.000
0150	460.4110.S	Reheating HMA Pavement Longitudinal Joints	LF	38,375.000	38,375.000
0160	460.5224	HMA Pavement 4 LT 58-28 S	TON	19,791.000	19,791.000
0170	465.0110	Asphaltic Surface Patching	TON	2,488.000	2,488.000
0180	465.0425	Asphaltic Shoulder Rumble Strips 2-Lane Rural	LF	57,886.000	57,886.000
0190	465.0475	Asphalt Center Line Rumble Strips 2-Lane Rural	LF	28,543.000	28,543.000
0200	601.0411	Concrete Curb & Gutter 30-Inch Type D	LF	32.000	32.000
0210	602.0405	Concrete Sidewalk 4-Inch	SF	104.000	104.000
0220	611.0535	Manhole Covers Type J-Special	EACH	1.000	1.000
0230	611.8110	Adjusting Manhole Covers	EACH	7.000	7.000
0240	618.0100	Maintenance And Repair of Haul Roads (project) 01. 4570-23-60	EACH	1.000	1.000
0250	619.1000	Mobilization	EACH	1.000	1.000
0260	624.0100	Water	MGAL	31.400	31.400
0270	625.0100	Topsoil	SY	10.000	10.000
0280	627.0200	Mulching	SY	10.000	10.000
0290	629.0210	Fertilizer Type B	CWT	0.040	0.040
0300	630.0140	Seeding Mixture No. 40	LB	0.400	0.400
0310	642.5001	Field Office Type B	EACH	1.000	1.000
0320	643.0100	Traffic Control (project) 01. 4570-23-60	EACH	1.000	1.000
0330	643.0300	Traffic Control Drums	DAY	300.000	300.000
0340	643.0310.S	Temporary Portable Rumble Strips	LS	1.000	1.000
0350	643.0715	Traffic Control Warning Lights Type C	DAY	75.000	75.000
0360	643.0900	Traffic Control Signs	DAY	1,219.000	1,219.000
0370	643.1050	Traffic Control Signs PCMS	DAY	14.000	14.000
0380	646.0406	Pavement Marking Same Day Epoxy 4-Inch	LF	76,680.000	76,680.000

Estimate Of Quantities

4570-23-60					
Line	Item	Item Description	Unit	Total	Qty
0390	646.2304.S	Pavement Marking Grooved Wet Reflective Epoxy 4-Inch	LF	69,540.000	69,540.000
0400	646.2308.S	Pavement Marking Grooved Wet Reflective Epoxy 8-Inch	LF	400.000	400.000
0410	648.0100	Locating No-Passing Zones	MI	7.300	7.300
0420	649.0402	Temporary Pavement Marking Paint 4-Inch	LF	6,990.000	6,990.000
0430	650.8000	Construction Staking Resurfacing Reference	LF	38,375.000	38,375.000
0440	650.9910	Construction Staking Supplemental Control (project) 01. 4570-23-60	LS	1.000	1.000
0450	690.0150	Sawing Asphalt	LF	67,972.000	67,972.000
0460	690.0250	Sawing Concrete	LF	29.000	29.000
0470	SPV.0060	Special 01. Hot Mix Asphalt Percent Within Limits (PWL) Test Strip	EACH	1.000	1.000
0480	SPV.0090	Special 01. Milling and Removing Temporary Joint	LF	38,375.000	38,375.000

REMOVING ASPHALTIC SURFACE BUTT JOINTS

STATION TO STATION		LOCATION	204.0115 SY	REMARKS
CATEGORY 0010				
307+75 - 307+77		STH 32	7	BEGINNING OF PROJECT
345+26 - 345+51		CTH FF	6	WEST OF STH 32
344+13 - 344+39		CTH FF	6	EAST OF STH 32
376+30 - 377+81		MEADOWLARK ROAD	33	EAST OF STH 32
416+53 - 417+81		CTH MM	28	EAST OF STH 32
417+19 - 418+48		CTH MM	28	WEST OF STH 32
432+40 - 432+66		HIGHLAND ROAD	6	WEST OF STH 32
432+81 - 433+08		HIGHLAND ROAD	6	EAST OF STH 32
490+69 - 491+03		CTH M	8	WEST OF STH 32
490+97 - 491+36		CTH M	8	EAST OF STH 32
536+06 - 536+19		ORCHARD ROAD	7	EAST OF STH 32
537+66 - 537+88		CTH EH	6	WEST OF STH 32
550+85 - 552+04		FRANKLIN ROAD	26	WEST OF STH 32
550+97 - 552+22		FRANKLIN ROAD	28	EAST OF STH 32
611+05 - 612+39		WILLOW ROAD	29	WEST OF STH 32
611+08 - 612+29		WILLOW ROAD	27	EAST OF STH 32
654+16 - 655+43		COUNTY LINE ROAD	28	EAST OF STH 32
670+18 - 671+39		CEDAR LAKE ROAD	27	EAST OF STH 32
670+75 - 671+06		CTH EH	7	WEST OF STH 32
691+48 - 691+50		STH 32	7	END OF PROJECT
TOTAL 0010			328	

REMOVING ASPHALTIC SURFACE MILLING

STATION TO STATION		LOCATION	204.0120 SY	REMARKS
CATEGORY 0010				
307+75 - 341+94		STH 32	9,117	BEGINNING OF PROJECT TO CTH FF INTERSECTION
341+94 - 347+22		STH 32	3,631	CTH FF INTERSECTION
347+22 - 375+15		STH 32	7,698	CTH FF INTERSECTION TO MEADOWLARK ROAD INTERSECTION
375+15 - 378+44		STH 32	1,191	MEADOWLARK ROAD INTERSECTION
378+44 - 413+78		STH 32	9,486	MEADOWLARK ROAD INTERSECTION TO CTH MM INTERSECTION
413+78 - 420+02		STH 32	2,337	CTH MM INTERSECTION
420+02 - 430+43		STH 32	2,795	CTH MM INTERSECTION TO HIGHLAND ROAD INTERSECTION
430+43 - 434+21		STH 32	2,114	HIGHLAND ROAD INTERSECTION
434+21 - 486+26		STH 32	13,886	HIGHLAND ROAD INTERSECTION TO CTH M INTERSECTION
486+26 - 497+58		STH 32	5,293	CTH M INTERSECTION
497+58 - 534+86		STH 32	11,453	CTH M INTERSECTION TO CTH EH/ORCHARD ROAD INTERSECTION
534+86 - 538+98		STH 32	2,953	CTH EH/ORCHARD ROAD INTERSECTION
538+98 - 549+78		STH 32	3,111	CTH EH/ORCHARD ROAD INTERSECTION TO FRANKLIN ROAD INTERSECTION
549+78 - 553+11		STH 32	1,433	FRANKLIN ROAD INTERSECTION
553+11 - 610+21		STH 32	15,228	FRANKLIN ROAD INTERSECTION TO WILLOW ROAD INTERSECTION
610+21 - 613+37		STH 32	1,415	WILLOW ROAD INTERSECTION
613+37 - 653+08		STH 32	11,238	WILLOW ROAD INTERSECTION TO COUNTY LINE ROAD INTERSECTION
653+08 - 656+11		STH 32	1,338	COUNTY LINE ROAD INTERSECTION
656+11 - 668+45		STH 32	3,298	COUNTY LINE ROAD INTERSECTION TO CTH MC/CEDAR LAKE ROAD INTERSECTION
668+45 - 672+68		STH 32	2,086	CTH MC/CEDAR LAKE ROAD INTERSECTION
672+68 - 691+50		STH 32	5,018	CTH MC/CEDAR LAKE ROAD INTERSECTION TO END OF PROJECT
TOTAL 0010			116,119	

CURB CUT REMOVAL SUMMARY

STATION TO STATION		LOCATION	*REMOVING ASPHALTIC SURFACE 204.0110 SY	REMOVING CURB & GUTTER 204.0150 LF	REMOVING CONCRETE SIDEWALK 204.0155 SY	*SAWING ASPHALT 690.0150 LF	SAWING CONCRETE 690.0250 LF
CATEGORY 0010							
524+77 - 524+87		STH 32, RT	2	8	5	14	9
529+56 - 529+66		STH 32, LT	2	8	3	14	7
530+74 - 530+84		STH 32, LT	2	8	0	14	5
532+17 - 532+27		STH 32, LT	2	8	4	14	8
TOTAL 0010			8	32	12	56	29

*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN

SHOULDER WORK SUMMARY

STATION TO	STATION	LOCATION	*REMOVING ASPHALTIC SURFACE 204.0110 SY	PREPARE FOUNDATION FOR ASPHALTIC SHOULDERS 211.0400 STA	BASE AGGREGATE DENSE 3/4-INCH 305.0110 TON	SHAPING SHOULDERS 305.0500 STA	WATER 624.0100 MGAL	*SAWING ASPHALT 690.0150 LF	REMARKS
CATEGORY 0010									
307+75 -	344+44	STH 32, LT	1,200	37	120		1.7	3,606	BEGINNING OF PROJECT TO CTH FF INTERSECTION
346+08 -	355+07	STH 32, LT	249	9	27		0.4	758	CTH FF INTERSECTION TO CURB AND GUTTER
356+08 -	417+20	STH 32, LT	2,001	62	198		2.8	6,014	CURB AND GUTTER TO CTH MM INTERSECTION
418+47 -	432+03	STH 32, LT	404	14	42		0.6	1,222	CTH MM INTERSECTION TO HIGHLAND ROAD INTERSECTION
433+28 -	490+25	STH 32, LT	1,874	57	183		2.6	5,631	HIGHLAND ROAD INTERSECTION TO CTH M INTERSECTION
491+52 -	508+42	STH 32, LT	401	17	48		0.7	1,212	CTH M INTERSECTION TO CURB AND GUTTER
511+17 -	522+04	STH 32, LT	341	11	34		0.5	1,033	CURB AND GUTTER TO VILLAGE OF ADA CURB AND GUTTER
538+21 -	550+85	STH 32, LT	395	13	40		0.6	1,195	CTH EH/ORCHARD ROAD INTERSECTION TO FRANKLIN ROAD INTERSECTION
552+03 -	611+06	STH 32, LT	1,920	60	189		2.6	5,770	FRANKLIN ROAD INTERSECTION TO WILLOW ROAD INTERSECTION
612+38 -	670+35	STH 32, LT	1,809	58	180		2.5	5,437	WILLOW ROAD INTERSECTION TO CTH MC/CEDAR LAKE ROAD INTERSECTION
671+63 -	691+50	STH 32, LT	641	20	64		0.9	1,927	CTH MC/CEDAR LAND ROAD INTERSECTION TO END OF PROJECT
307+75 -	343+53	STH 32, RT	1,152	36	117		1.6	3,461	BEGINNING OF PROJECT TO CTH FF INTERSECTION
345+15 -	376+31	STH 32, RT	991	32	99		1.4	2,983	CTH FF INTERSECTION TO MEADOWLARK ROAD INTERSECTION
377+80 -	416+54	STH 32, RT	1,225	39	122		1.7	3,686	MEADOWLARK ROAD INTERSECTION TO CTH MM INTERSECTION
417+80 -	432+17	STH 32, RT	405	15	44		0.6	1,225	CTH MM INTERSECTION TO HIGHLAND ROAD INTERSECTION
433+41 -	490+51	STH 32, RT	1,751	58	178		2.5	5,262	HIGHLAND ROAD INTERSECTION TO CTH M INTERSECTION
491+79 -	521+58	STH 32, RT	972	30	93		1.3	2,927	CTH M INTERSECTION TO VILLAGE OF ADA CURB AND GUTTER
543+90 -	550+98	STH 32, RT	198	8	21		0.3	605	VILLAGE OF ADA CURB AND GUTTER TO FRANKLIN ROAD INTERSECTION
552+21 -	611+08	STH 32, RT	1,919	59	188		2.6	5,766	FRANKLIN ROAD INTERSECTION TO WILLOW ROAD INTERSECTION
612+28 -	643+80	STH 32, RT	1,008	32	100		1.4	3,034	WILLOW ROAD INTERSECTION TO CURB AND GUTTER
648+07 -	654+17	STH 32, RT	153	7	16		0.2	469	CURB AND GUTTER TO COUNTY LINE ROAD
655+43 -	670+18	STH 32, RT	429	15	46		0.6	1,298	COUNTY LINE ROAD INTERSECTION TO CTH MC/CEDAR LAKE ROAD INTERSECTION
671+38 -	691+50	STH 32, RT	638	21	63		0.9	1,918	CTH MC/CEDAR LAND ROAD INTERSECTION TO END OF PROJECT
344+38 -	345+27	STH 32			7	1	0.1		CTH FF SHOULDERS
432+66 -	432+82	STH 32			1	1	0.1		HIGHLAND ROAD SHOULDERS
490+81 -	491+28	STH 32			1	1	0.1		CTH M SHOULDERS
670+69 -	670+76	STH 32			1	1	0.1		CTH MC SHOULDER
TOTAL 0010			22,076	710	2,222	4	31.4	66,439	

*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN

ASPHALTIC MATERIALS SUMMARY

STATION TO STATION	LOCATION	ASPHALTIC SURFACE PATCHING 465. 0110 TON	TACK COAT 455. 0605 GAL	REHEATING HMA PAVEMENT LONGITUDINAL JOINTS 460. 4110. S LF	*HMA PAVEMENT 4 LT 58-28 S 460. 5224 TON	ASPHALTIC SHOULDER RUMBLE STRIPS 2-LANE RURAL 465. 0425 LF	ASPHALTIC CENTERLINE RUMBLE STRIPS 2-LANE RURAL 465. 0475 LF	MILLING AND REMOVING TEMPORARY JOINT SPV. 0090. 01 LF	REMARKS
CATEGORY 0010									
307+75 - 341+94	STH 32		904	3, 419	1, 738	7, 012	3, 506	3, 419	BEGINNING OF PROJECT TO CTH FF INTERSECTION
341+94 - 347+22	STH 32		270	528	432			528	CTH FF INTERSECTION
347+22 - 375+15	STH 32		748	2, 793	1, 422	5, 676	2, 838	2, 793	CTH FF INTERSECTION TO MEADOWLARK ROAD INTERSECTION
375+15 - 378+44	STH 32		98	329	168	400		329	MEADOWLARK ROAD INTERSECTION
378+44 - 413+78	STH 32		939	3, 534	1, 803	7, 272	3, 636	3, 534	MEADOWLARK ROAD INTERSECTION TO CTH MM INTERSECTION
413+78 - 420+02	STH 32		186	624	314			624	CTH MM INTERSECTION
420+02 - 430+43	STH 32		277	1, 041	531	2, 232	1, 116	1, 041	CTH MM INTERSECTION TO HIGHLAND ROAD INTERSECTION
430+43 - 434+21	STH 32		158	378	254			378	HIGHLAND ROAD INTERSECTION
434+21 - 486+26	STH 32		1, 377	5, 205	2, 646	4, 868	2, 434	5, 205	HIGHLAND ROAD INTERSECTION TO CTH M INTERSECTION
486+26 - 497+58	STH 32		412	1, 132	683			1, 132	CTH M INTERSECTION
497+58 - 534+86	STH 32		974	3, 728	1, 716	4, 706	2, 353	3, 728	CTH M INTERSECTION TO CTH EH/ORCHARD ROAD INTERSECTION
534+86 - 538+98	STH 32		208	412	317			412	CTH EH/ORCHARD ROAD INTERSECTION
538+98 - 549+78	STH 32		282	1, 080	516	122	61	1, 080	CTH EH/ORCHARD ROAD INTERSECTION TO FRANKLIN ROAD INTERSECTION
549+78 - 553+11	STH 32		106	333	169			333	FRANKLIN ROAD INTERSECTION
553+11 - 610+21	STH 32		1, 510	5, 710	2, 903	11, 238	5, 619	5, 710	FRANKLIN ROAD INTERSECTION TO WILLOW ROAD INTERSECTION
610+21 - 613+37	STH 32		103	316	162			316	WILLOW ROAD INTERSECTION
613+37 - 653+08	STH 32		1, 074	3, 971	2, 024	7, 830	3, 915	3, 971	WILLOW ROAD INTERSECTION TO COUNTY LINE ROAD INTERSECTION
653+08 - 656+11	STH 32		98	303	155	400		303	COUNTY LINE ROAD INTERSECTION
656+11 - 668+45	STH 32		327	1, 234	628	2, 408	1, 204	1, 234	COUNTY LINE ROAD INTERSECTION TO CTH MC/CEDAR LAKE ROAD INTERSECTION
668+45 - 672+68	STH 32		155	423	249			423	CTH MC/CEDAR LAKE ROAD INTERSECTION
672+68 - 691+50	STH 32		498	1, 882	957	3, 722	1, 861	1, 882	CTH MC/CEDAR LAKE ROAD INTERSECTION TO END OF PROJECT
UNDI STRIBUTED	STH 32	2, 488							FOR ANY REPAIRS NECESSARY TO PAVEMENT AFTER MILLING OPERATIONS
TOTAL 0010		2, 488	10, 704	38, 375	19, 787	57, 886	28, 543	38, 375	

*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN

CURB CUT REPLACEMENT SUMMARY

			*HMA PAVEMENT 4 LT 58-28 S 460. 5224	CONCRETE CURB & GUTTER 30-INCH TYPE D 601. 0411	CONCRETE SIDEWALK 4-INCH 602. 0405	TOPSOIL 625. 0100	MULCHING 627. 0200	FERTILIZER TYPE B 629. 0210	SEEDING MIXTURE NO. 40 630. 0140		
STATION TO	STATION	LOCATION	TON	LF	SF	SY	SY	CWT	LB	REMARKS	
CATEGORY 0010											
524+77	- 524+87	STH 32, RT	1	8	46	3	3	0. 01	0. 1	HMA LOWER LAYER	
529+56	- 529+66	STH 32, LT	1	8	26	3	3	0. 01	0. 1	HMA LOWER LAYER	
530+74	- 530+84	STH 32, LT	1	8	0	1	1	0. 01	0. 1	HMA LOWER LAYER	
532+17	- 532+27	STH 32, LT	1	8	32	3	3	0. 01	0. 1	HMA LOWER LAYER	
TOTAL 0010			4	32	104	10	10	0. 04	0. 4		

*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN

SAWING ASPHALT

MANHOLE SUMMARY

STATION	OFFSET	LOCATION	MANHOLE COVERS TYPE J-SPECIAL 611. 0535	ADJUSTING MANHOLE COVERS 611. 8110	REMARKS
			EACH	EACH	
CATEGORY 0010					
527+00	14. 5' RT	STH 32		1	STORM SEWER IN VILLAGE OF ADA
528+62	13. 9' RT	STH 32		1	STORM SEWER IN VILLAGE OF ADA
529+90	14. 5' RT	STH 32		1	STORM SEWER IN VILLAGE OF ADA
530+52	14. 4' RT	STH 32		1	STORM SEWER IN VILLAGE OF ADA
531+12	13. 9' RT	STH 32	1	1	STORM SEWER IN VILLAGE OF ADA, REPLACE TYPE C COVER
531+81	14. 3' RT	STH 32		1	STORM SEWER IN VILLAGE OF ADA
533+90	13. 8' RT	STH 32		1	STORM SEWER IN VILLAGE OF ADA
TOTAL 0010			<u>1</u>	<u>7</u>	

STATION TO STATION		LOCATION	LF	REMARKS
CATEGORY 0010				
307+75 - 307+75	STH 32	30	BEGINNING OF PROJECT	
345+26 - 345+51	CTH FF	29	WEST OF STH 32	
344+13 - 344+39	CTH FF	29	EAST OF STH 32	
376+30 - 377+81	MEADOWLARK ROAD	150	EAST OF STH 32	
416+53 - 417+81	CTH MM	127	EAST OF STH 32	
417+19 - 418+48	CTH MM	127	WEST OF STH 32	
432+40 - 432+66	HIGHLAND ROAD	26	WEST OF STH 32	
432+81 - 433+08	HIGHLAND ROAD	26	EAST OF STH 32	
490+69 - 491+03	CTH M	34	WEST OF STH 32	
490+97 - 491+36	CTH M	38	EAST OF STH 32	
536+06 - 536+19	ORCHARD ROAD	31	EAST OF STH 32	
537+66 - 537+88	CTH EH	28	WEST OF STH 32	
550+85 - 552+04	FRANKLIN ROAD	118	WEST OF STH 32	
550+97 - 552+22	FRANKLIN ROAD	124	EAST OF STH 32	
611+05 - 612+39	WILLOW ROAD	131	WEST OF STH 32	
611+08 - 612+29	WILLOW ROAD	121	EAST OF STH 32	
654+16 - 655+43	COUNTY LINE ROAD	128	EAST OF STH 32	
670+18 - 671+39	CEDAR LAKE ROAD	120	EAST OF STH 32	
670+75 - 671+06	CTH EH	30	WEST OF STH 32	
691+50 - 691+50	STH 32	30	END OF PROJECT	
TOTAL 0010		1, 477		

*ADDITIONAL QUANTITIES LISTED ELSEWHERE IN PLAN

TRAFFIC CONTROL SUMMARY

LOCATION/STAGE	DRUMS 643. 0300 DAY	WARNI NG LI GHTS TYPE C 643. 0715 DAY	APPROX. SERVI CE PERI OD DAYS	NO	SI GNS 643. 0900 DAY	APPROX. SERVI CE PERI OD DAYS	NO	SI GNS PCMS 643. 1050 DAY	REMARKS
CATEGORY 0010									
ADVANCE WARNING									
MAINLINE									
SOUTH PROJECT LIMITS			43	5	215	7	1	7	INSTALL PCMS PRIOR TO START OF CONSTRUCTION
NORTH PROJECT LIMITS			43	5	215	7	1	7	INSTALL PCMS PRIOR TO START OF CONSTRUCTION
SIDEROADS									
CTH FF			43	2	86				
MEADOWLARK ROAD			43	1	43				
CTH MM			43	2	86				
HIGHLAND ROAD			43	2	86				
CTH M			43	2	86				
CTH EH			43	1	43				
ORCHARD ROAD			43	1	43				
FRANKLIN ROAD			43	2	86				
WILLOW ROAD			43	2	86				
COUNTY LINE ROAD			43	1	43				
CTH MC			43	1	43				
CEDAR LAKE ROAD			43	1	43				
TEMPORARY PAVEMENT MARKING									
"PASS WITH CARE"					15				
UNDISTRIBUTED	300	75							
TOTAL 0010	300	75			1,219			14	

PAVEMENT MARKING SUMMARY

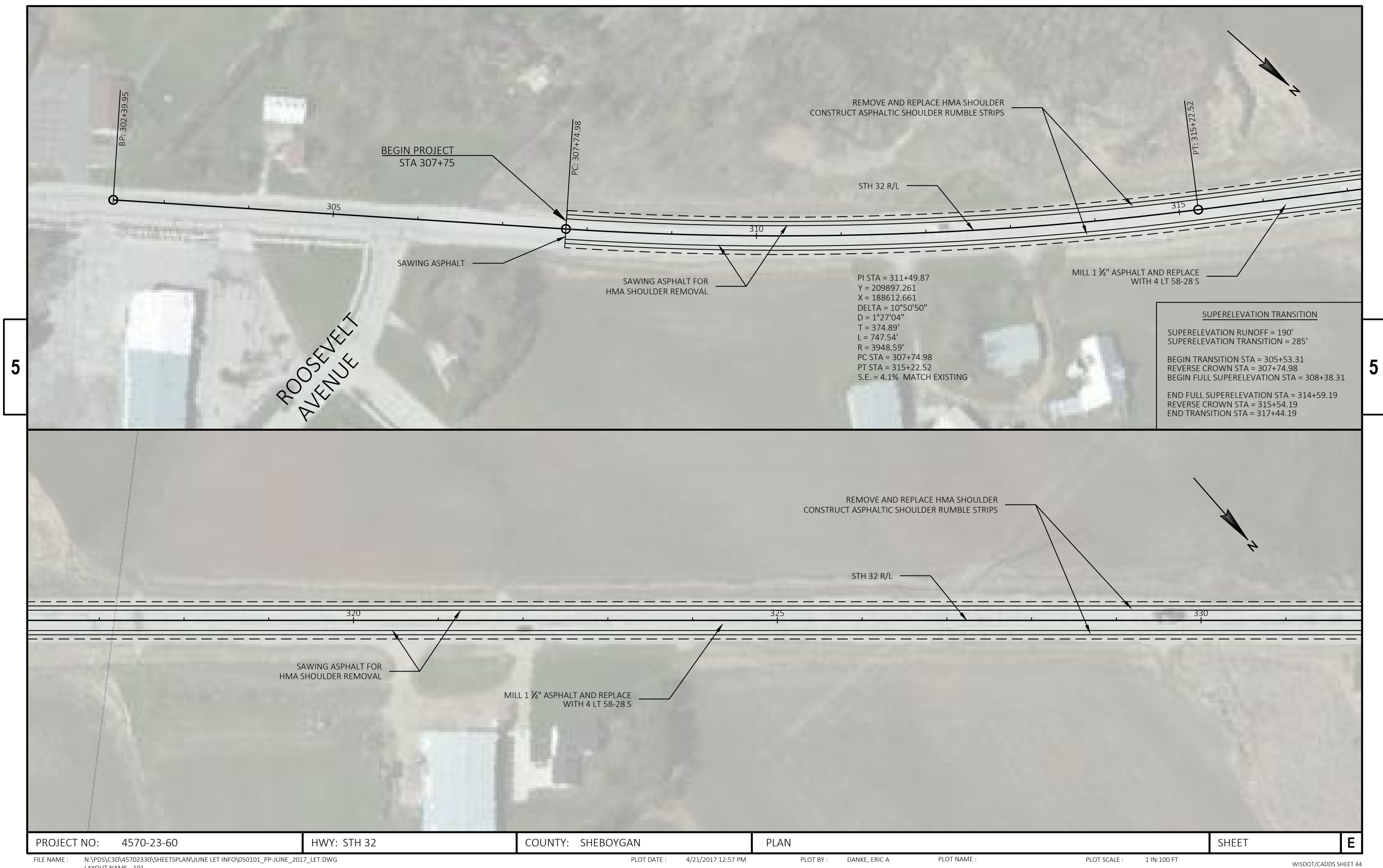
STATION TO STATION		LOCATION	SAME DAY EPOXY 4-INCH YELLOW 646. 0406 LF	GROOVED WET REFLECTIVE EPOXY 4-INCH WHI TE 646. 2304. S LF	8-INCH WHI TE 646. 2308. S LF	TEMPORARY PAINT 4-INCH (MI LLED SURFACE) 649. 0402 LF	REMARKS
CATEGORY 0010							
307+75 - 344+74		STH 32	3, 190	7, 140		600	BEGINNING OF PROJECT TO CTH FF
344+74 - 377+14		STH 32	1, 620	6, 070		520	CTH FF TO MEADOWLARK ROAD
377+14 - 417+49		STH 32	8, 350	7, 700		650	MEADOWLARK ROAD TO CTH MM
417+49 - 432+72		STH 32	4, 250	2, 570		240	CTH MM TO HIGHLAND ROAD
432+72 - 490+99		STH 32	3, 010	11, 380	220	930	HIGHLAND ROAD TO CTH M
490+99 - 537+14		STH 32	14, 270	6, 030	180	740	CTH M TO CTH EH/ORCHARD ROAD
537+14 - 551+47		STH 32	4, 230	1, 850		940	CTH EH/ORCHARD ROAD TO FRANKLIN ROAD
551+47 - 611+65		STH 32	11, 470	11, 660		970	FRANKLIN ROAD TO WILLOW ROAD
611+65 - 655+04		STH 32	10, 900	8, 320		700	WILLOW ROAD TO COUNTY LINE ROAD
655+04 - 670+90		STH 32	5, 800	2, 890		250	COUNTY LINE ROAD TO CTH MC/CEDAR LAKE ROAD
670+90 - 691+50		STH 32	8, 240	3, 930		330	CTH MC/CEDAR LAKE ROAD
		CTH FF	230			20	WEST OF STH 32
		CTH FF	200			20	EAST OF STH 32
		HI GHLAND ROAD	90			10	WEST OF STH 32
		HI GHLAND ROAD	90			10	EAST OF STH 32
		CTH M	120			10	WEST OF STH 32
		CTH M	120			10	EAST OF STH 32
		CTH EH	160			10	WEST OF STH 32
		ORCHARD ROAD	260			20	EAST OF STH 32
		CTH MC	80			10	WEST OF STH 32
TOTAL 0010			76, 680	69, 540	400	6, 990	

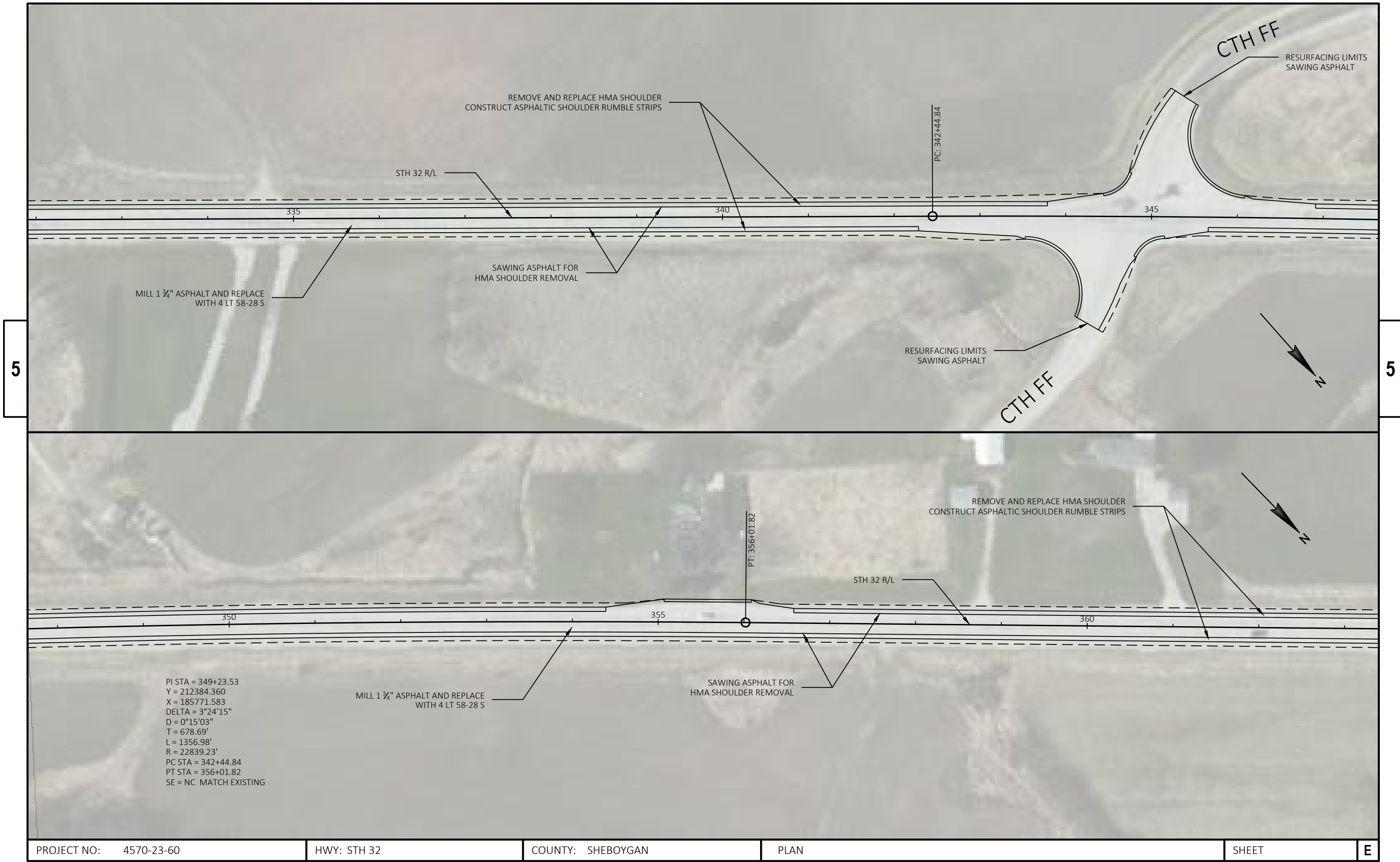
NOTE: SAME DAY EPOXY 4-INCH YELLOW IS FOR 2 LAYERS OF EPOXY. 15 MILS SHALL BE APPLIED FOR THE FIRST APPLICATION AND 20 MILS SHALL BE APPLIED FOR THE FINAL APPLICATION ON RUMBLE STRIP SURFACES.

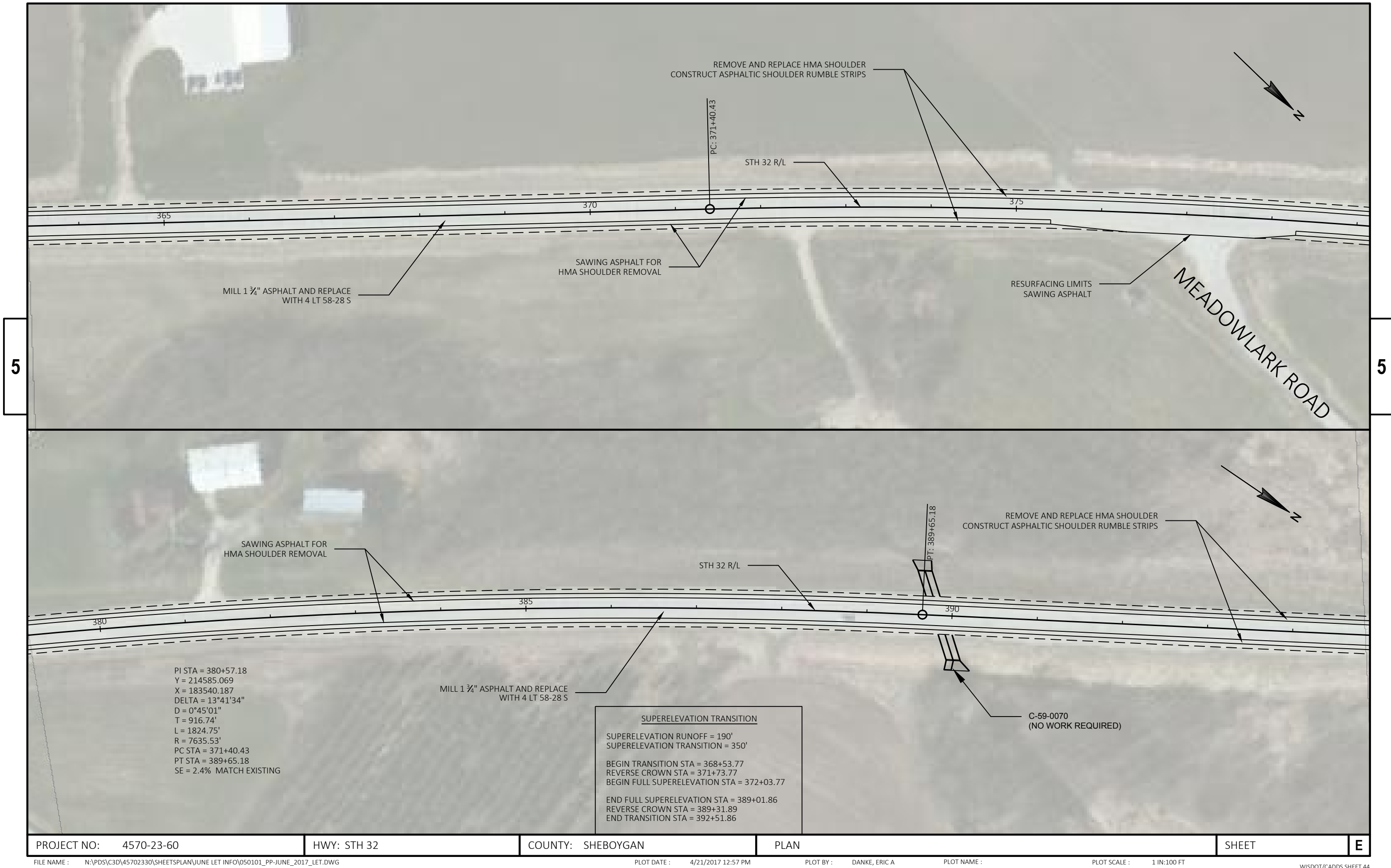
CONSTRUCTION STAKING SUMMARY

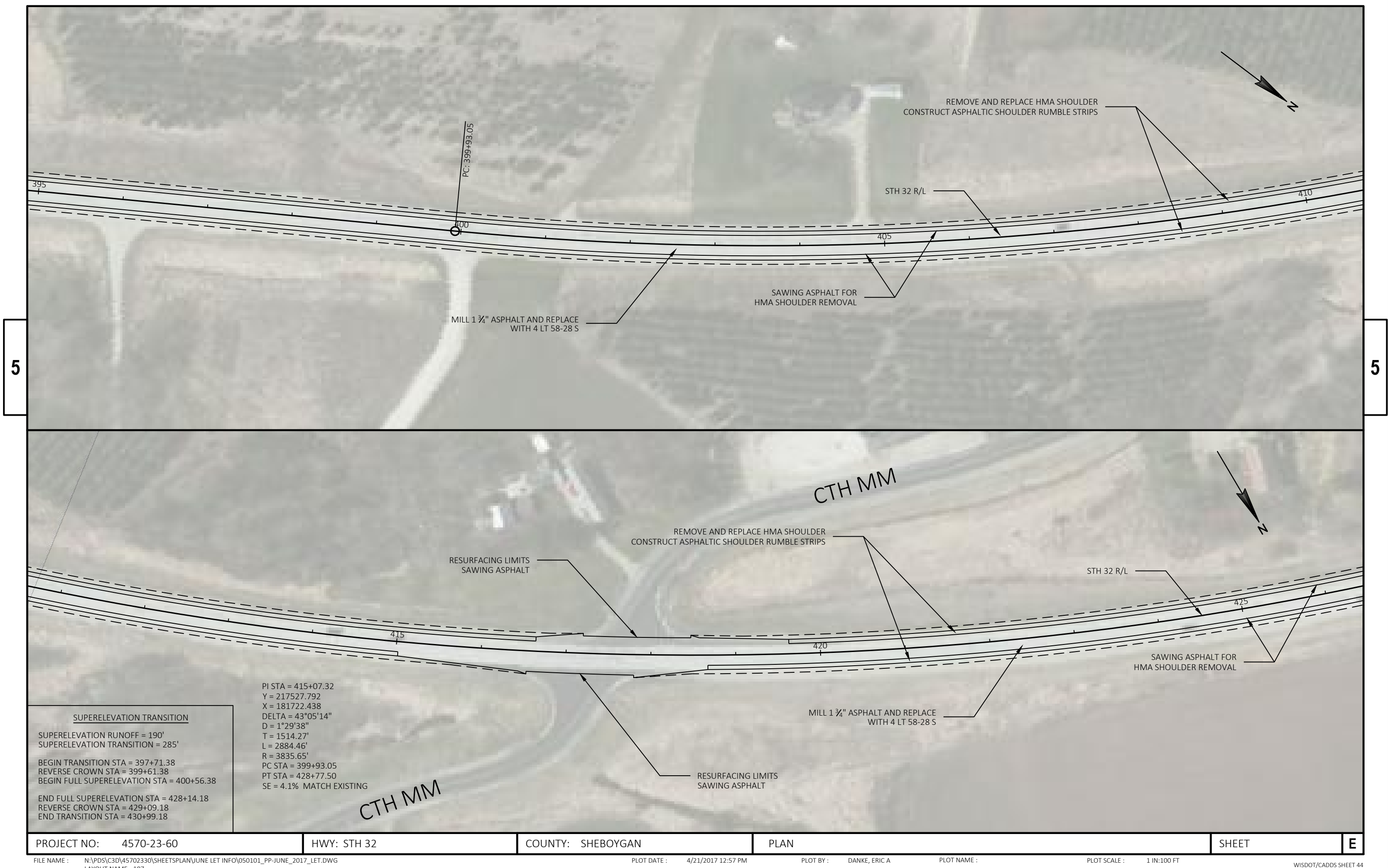
LOCATING NO-PASSING ZONES

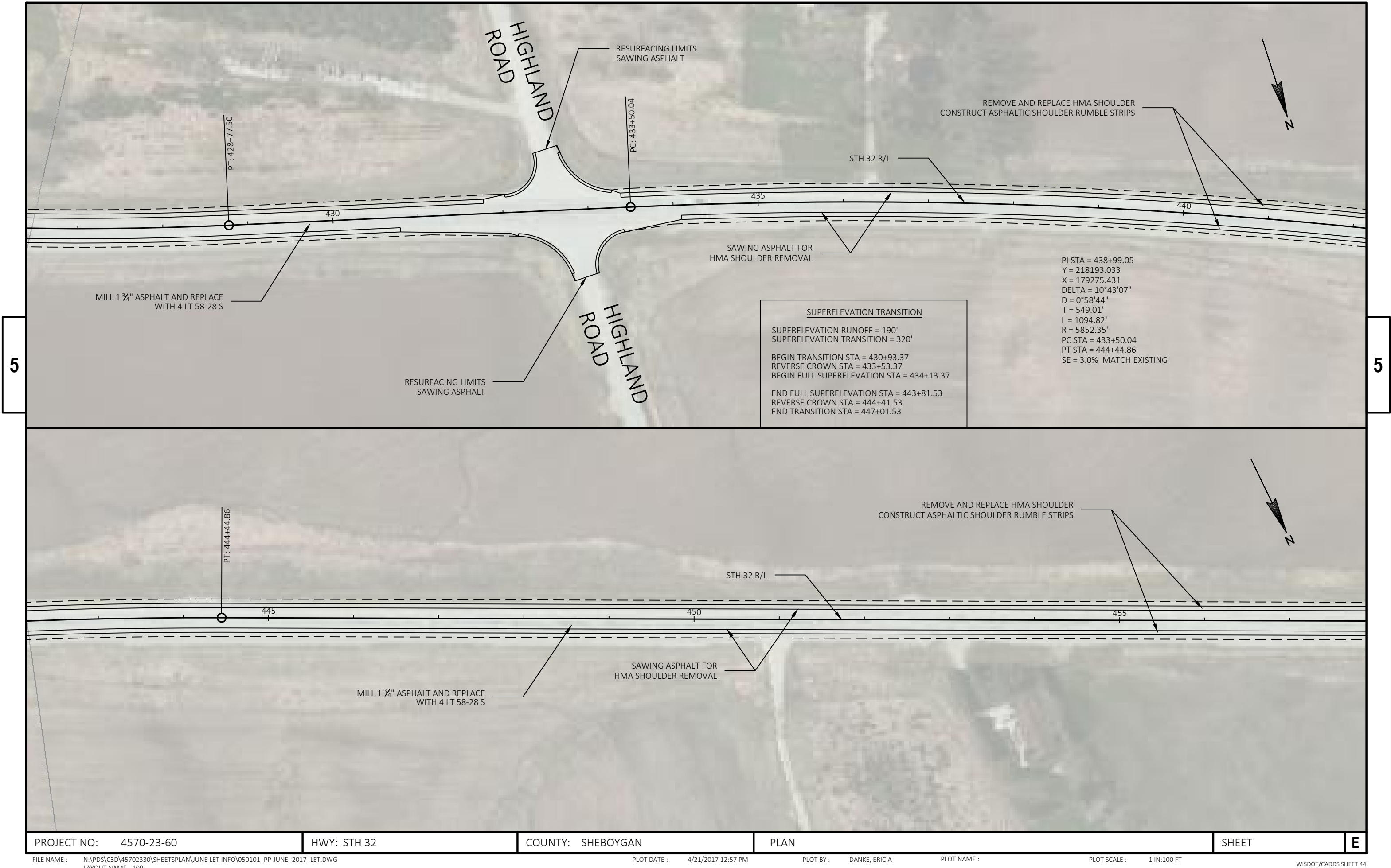
STATION TO STATION		LOCATION	648. 0100 MI	STATION TO STATION		LOCATION	RESURFACI NG REFERENCE 650. 8000 LF	SUPPLEMENTAL CONTROL 650. 9910 LS
CATEGORY 0010				CATEGORY 0010				
307+75 - 691+50		STH 32	7. 3	307+75 - 691+50		STH 32	38, 375	1
TOTAL 0010			7. 3	TOTAL 0010			38, 375	1

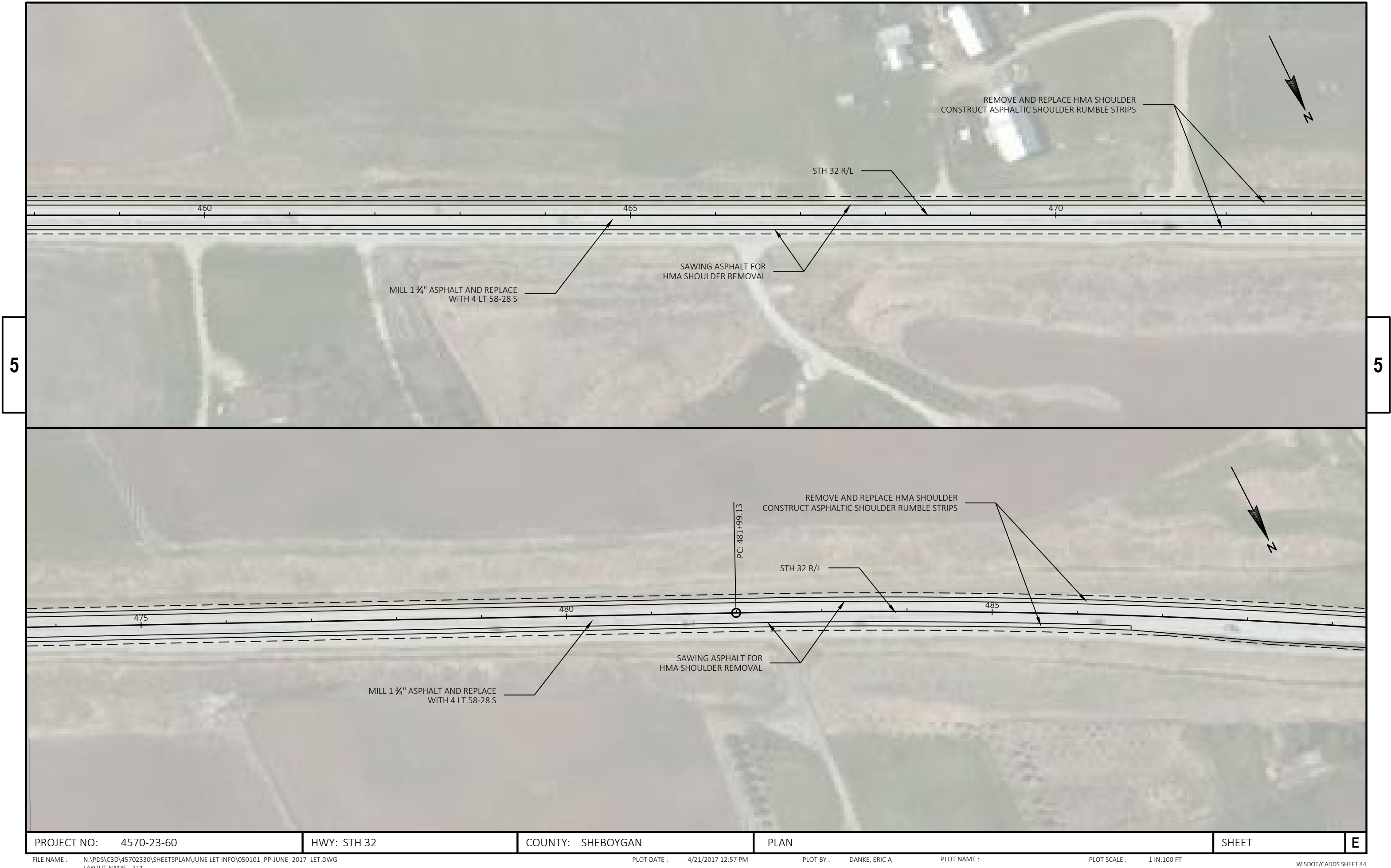


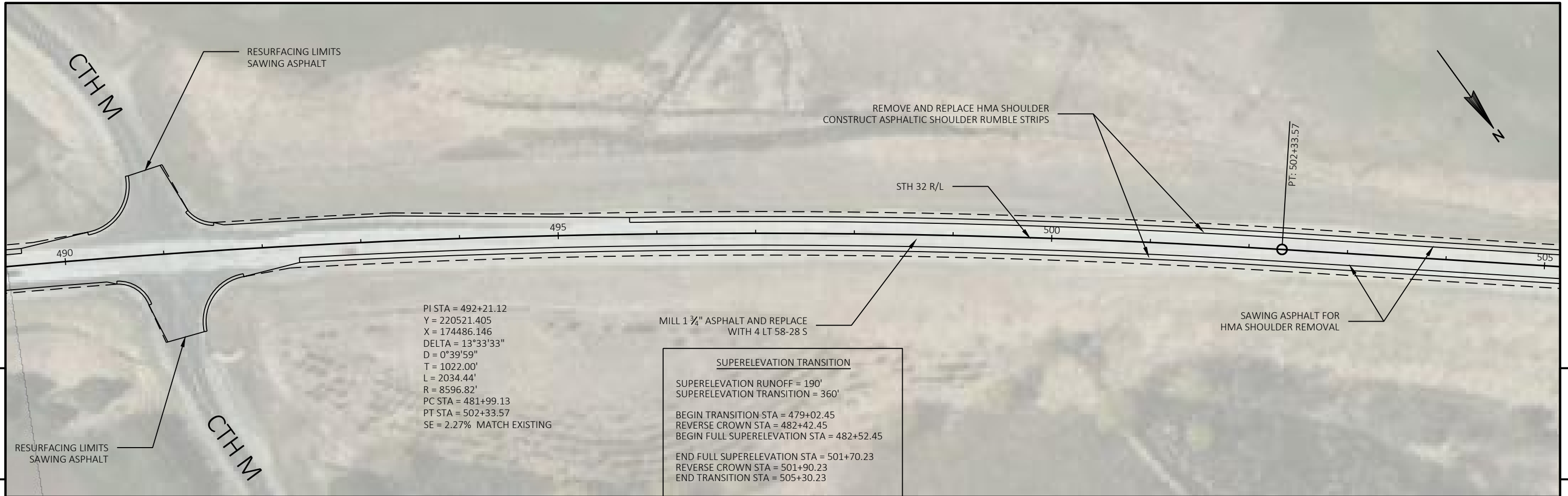




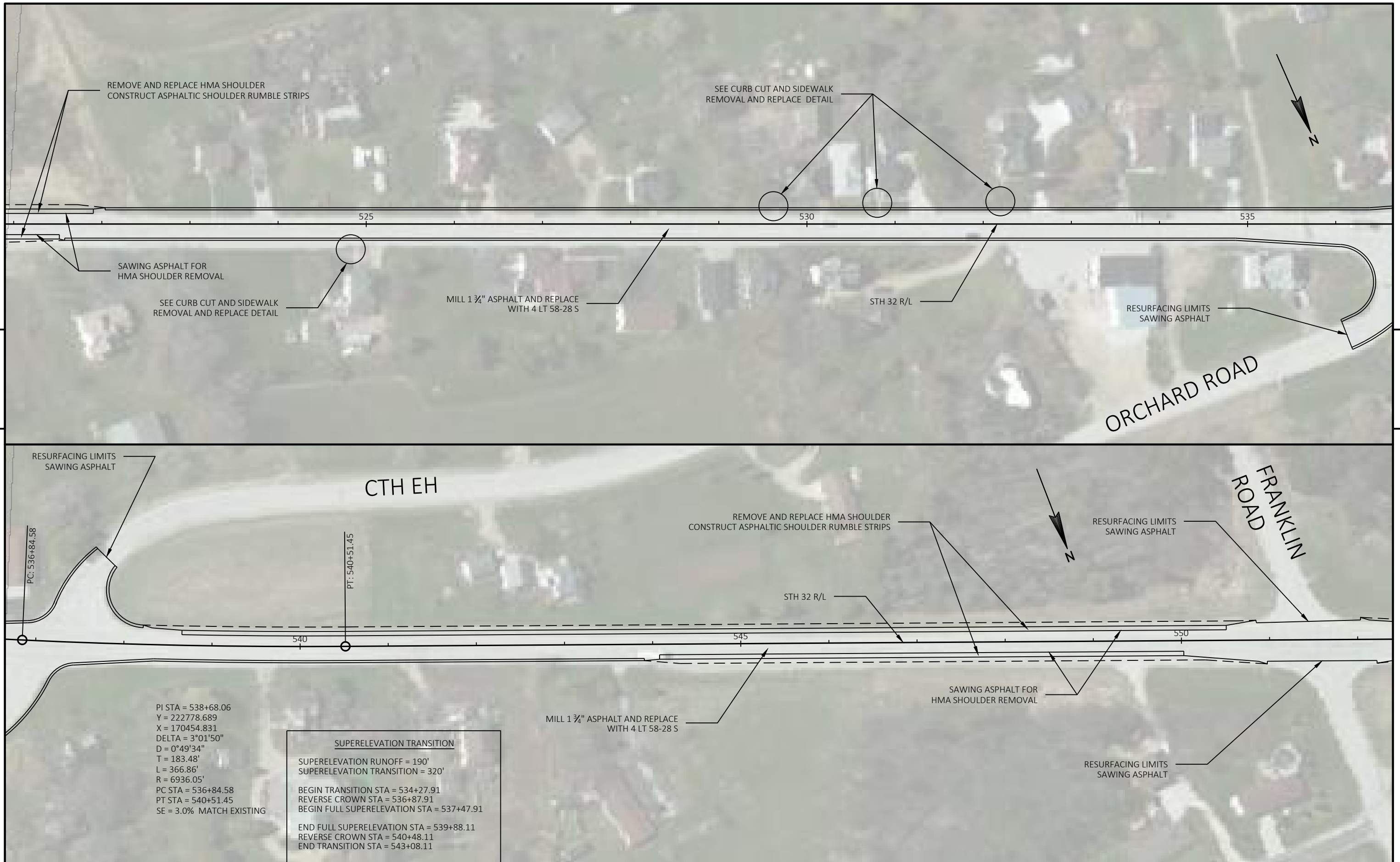




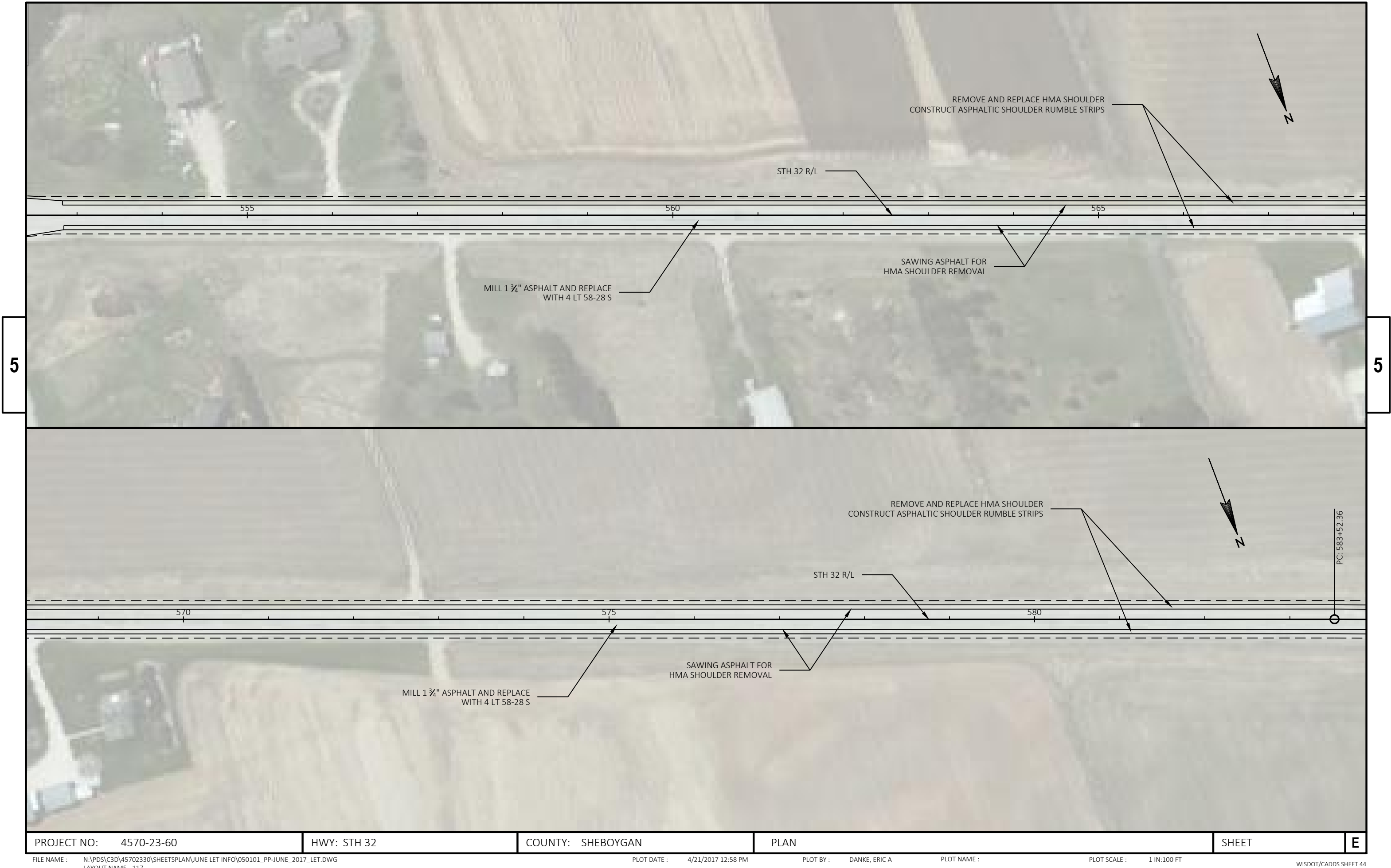




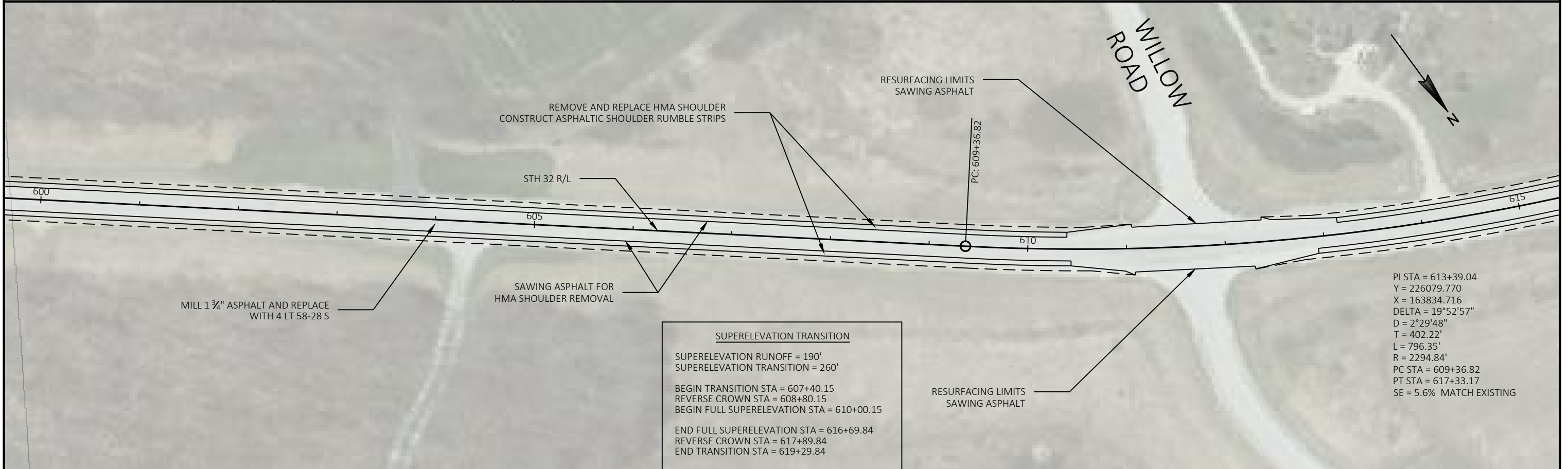
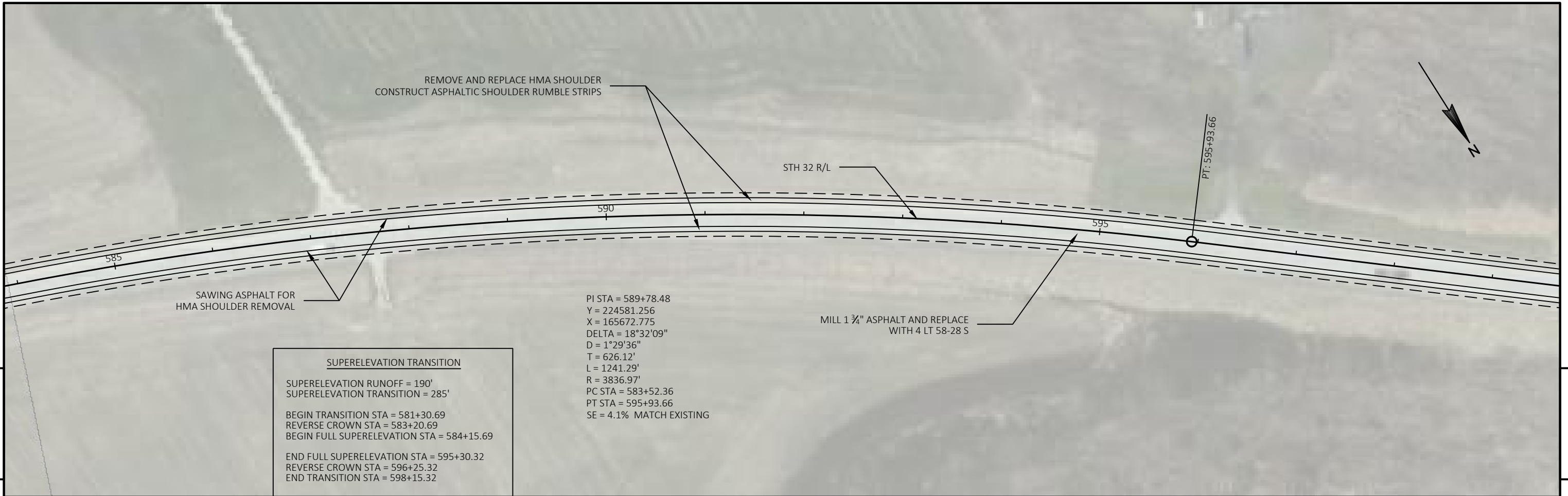
PROJECT NO: 4570-23-60	HWY: STH 32	COUNTY: SHEBOYGAN	PLAN	SHEET	E
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PROJECT NO: 4570-23-60	HWY: STH 32	COUNTY: SHEBOYGAN	PLAN	SHEET	E
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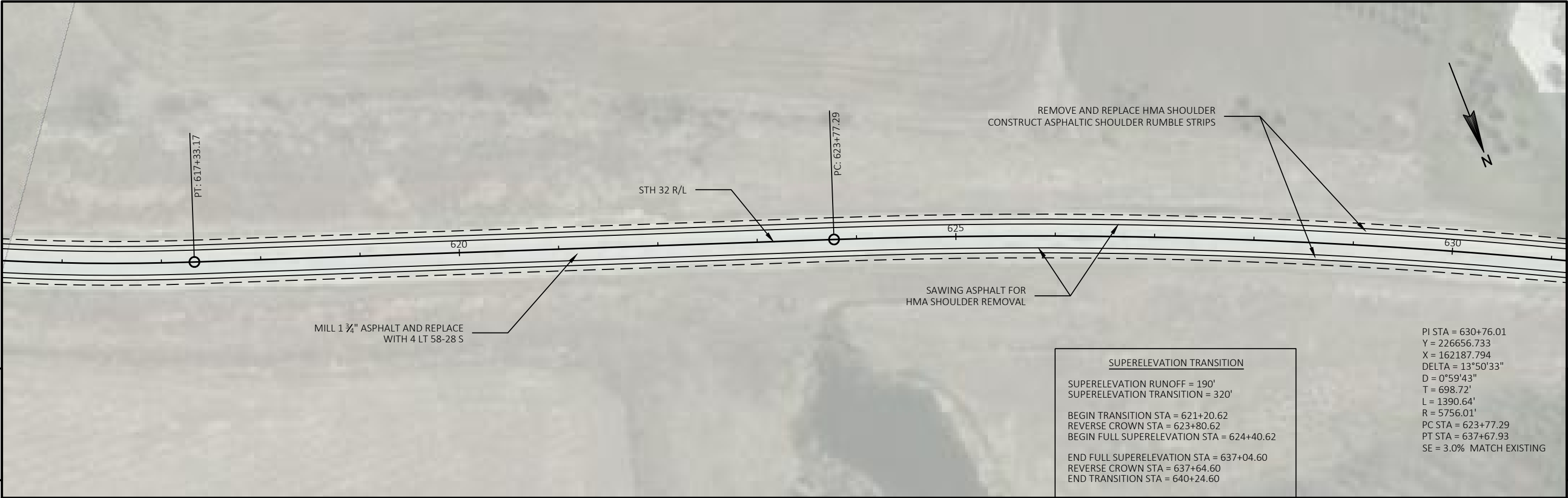


PROJECT NO: 4570-23-60	HWY: STH 32	COUNTY: SHEBOYGAN	PLAN	SHEET	E
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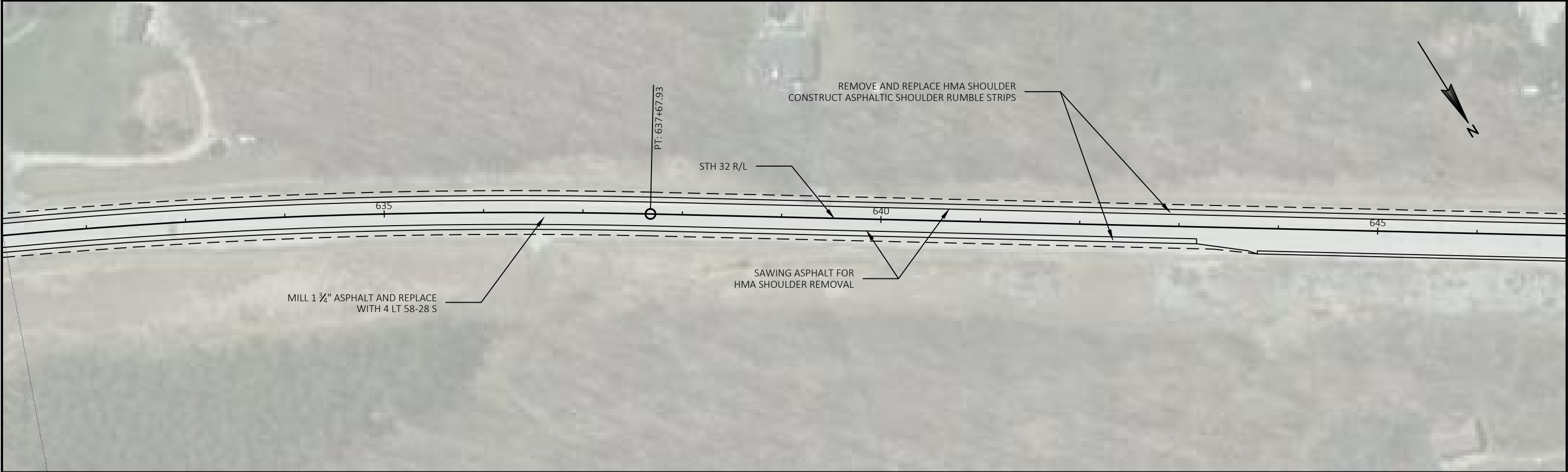


PROJECT NO: 4570-23-60	HWY: STH 32	COUNTY: SHEBOYGAN	PLAN	SHEET	E
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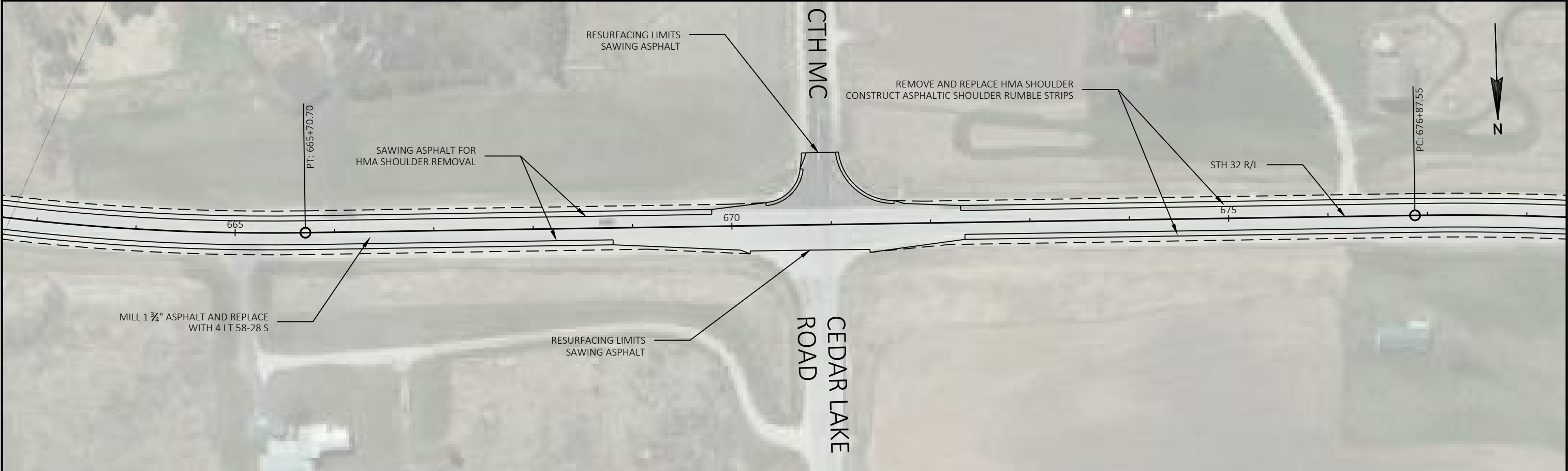


PROJECT NO: 4570-23-60	HWY: STH 32	COUNTY: SHEBOYGAN	PLAN	SHEET	E
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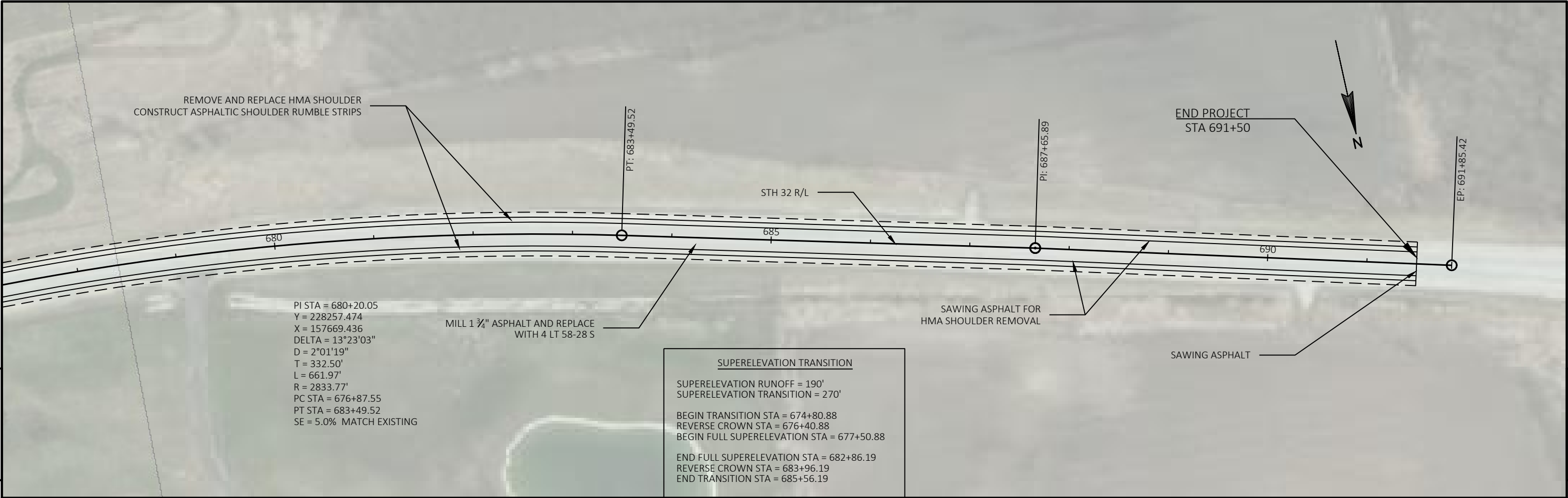


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PROJECT NO: 4570-23-60	HWY: STH 32	COUNTY: SHEBOYGAN	PLAN	SHEET	E
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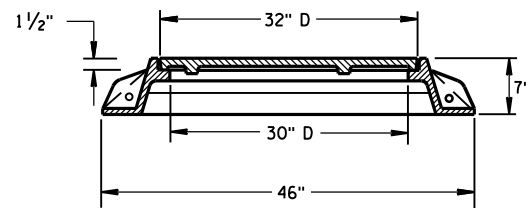
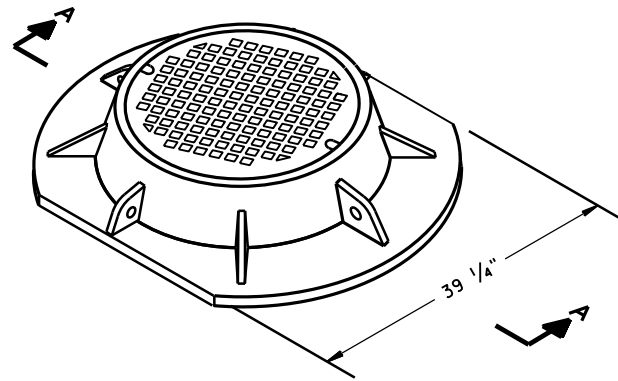


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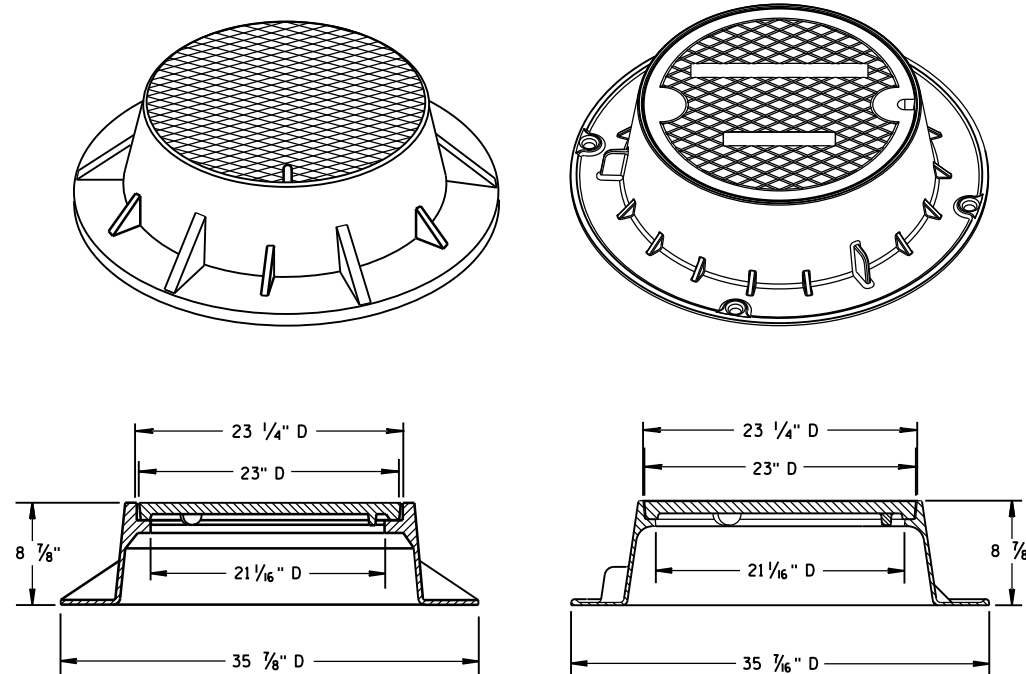
PROJECT NO: 4570-23-60	HWY: STH 32	COUNTY: SHEBOYGAN	PLAN	SHEET	E
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Standard Detail Drawing List

08A05-19D	I NLET COVER TYPE BW, MANHOLE COVERS, TYPE K, J, J-S, L & M
08D01-19	CONCRETE CURB, CONCRETE CURB AND GUTTER AND TIES
13A10-01A	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01C	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A10-01D	2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING
13A11-02A	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
13A11-02B	2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING
14B29-01	SAFETY EDGE
15C04-03	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-17A	LONGITUDINAL MARKING (MAINLINE)
15C12-05	TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION
15C19-04A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY
15C35-01A	PAVEMENT MARKING (INTERSECTIONS)
15D28-03	TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY

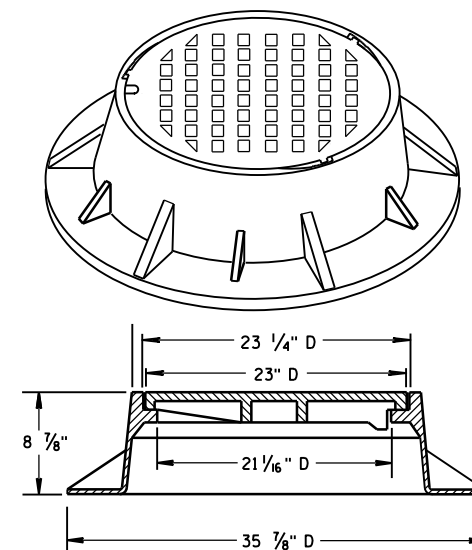
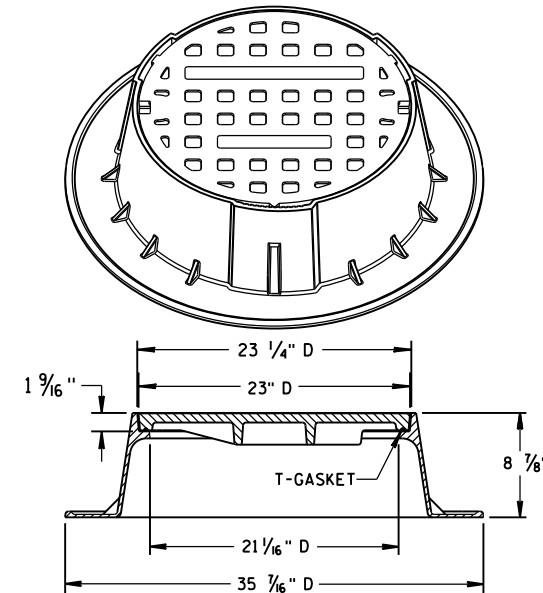


SECTION A-A
TYPE "K"



TYPE "J"

NOTE: EITHER CASTING IS ACCEPTABLE

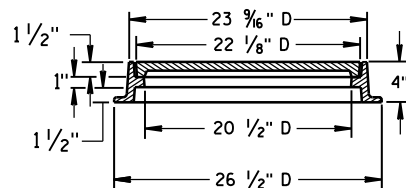
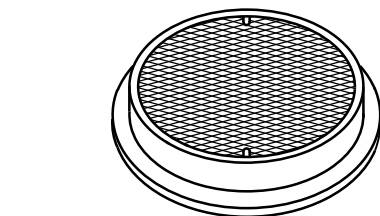


TYPE "J" SPECIAL

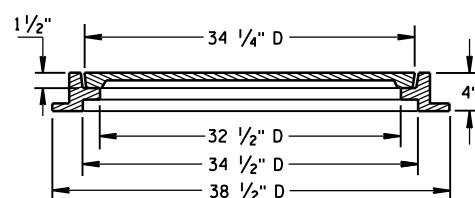
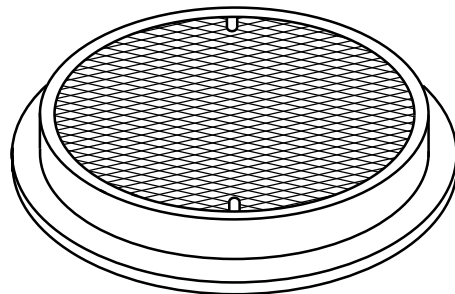
TYPE "B" NON-ROCKING SELF-SEAL LID

(NOTED AS TYPE J-S ON THE DRAINAGE TABLE)

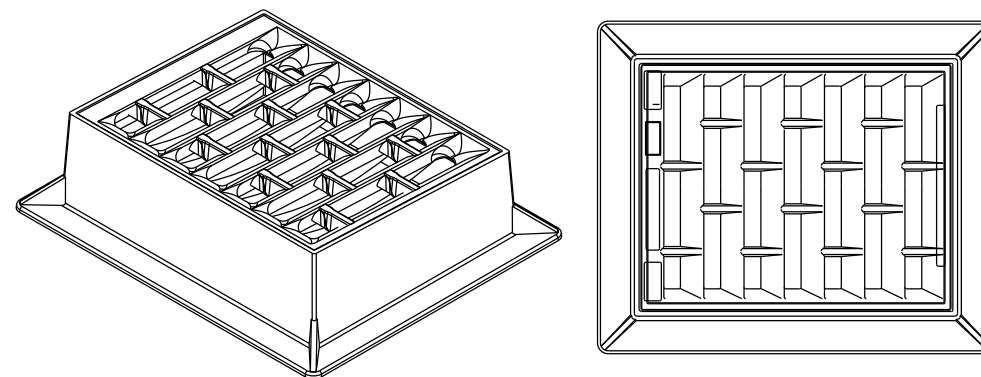
NOTE: EITHER CASTING IS ACCEPTABLE



TYPE "L"



TYPE "M"



INLET COVER TYPE "BW"

GENERAL NOTES

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

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

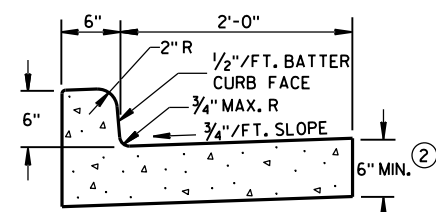
ROUND FRAMES AND COVERS SHALL HAVE CONTINUOUSLY MACHINED BEARING SURFACES TO PREVENT ROCKING AND RATTLING.

INLET COVER TYPE BW
MANHOLE COVERS, TYPE K,
J, J-S, L & M

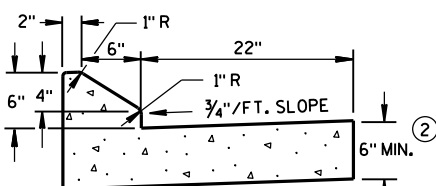
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
11/27/2013
DATE
FHWA

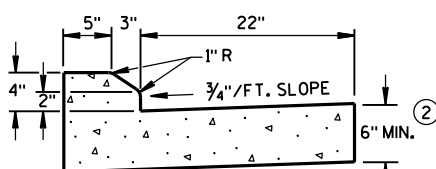
/S/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



TYPES A & D ①

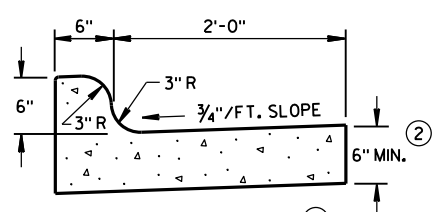


6" SLOPED CURB TYPES G & J ①



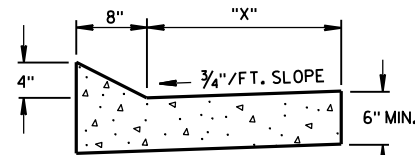
4" SLOPED CURB TYPES G & J ①

CONCRETE CURB & GUTTER 30"



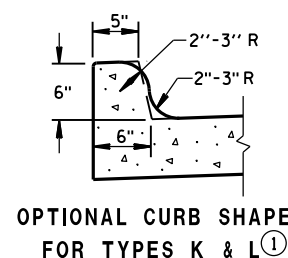
TYPES K & L ①

CONCRETE CURB & GUTTER 30"

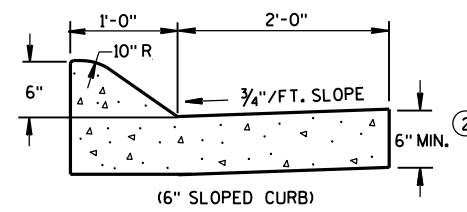


TYPES TBT & TBT ①
CONCRETE CURB & GUTTER

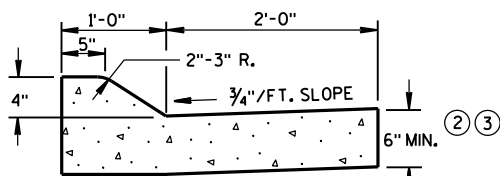
TBT & TBT	"X"
30"	22"
36"	28"



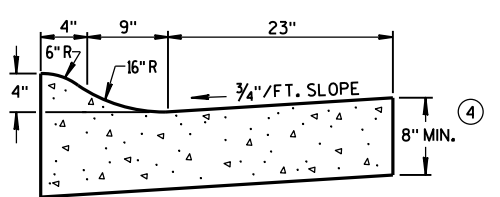
OPTIONAL CURB SHAPE
FOR TYPES K & L ①



(6" SLOPED CURB)



(4" SLOPED CURB)
TYPES A & D ①



4" SLOPED CURB TYPES R & T ① ⑤
CONCRETE CURB & GUTTER 36"

GENERAL NOTES

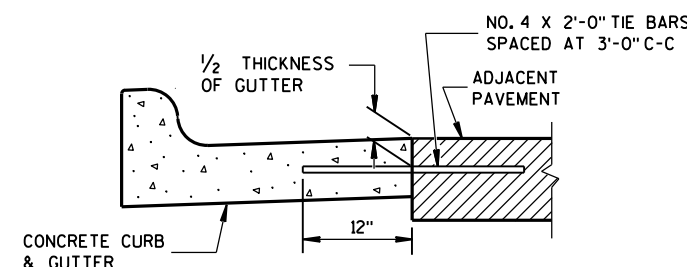
DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

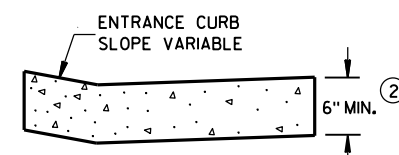
WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

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

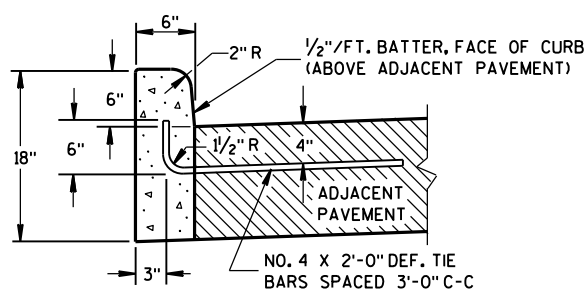
- TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K, R AND TBT.
- THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.
- USE 8" MINIMUM GUTTER THICKNESS WHEN USED WITH AN ADJACENT CONCRETE TRUCK APRON PLACED BEHIND BACK OF CURB.
- 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.
- THE FACE OF CURB IS 6" FROM THE BACK OF CURB.
- WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.



TYPICAL TIE BAR LOCATION ①

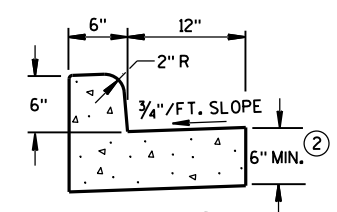


DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)

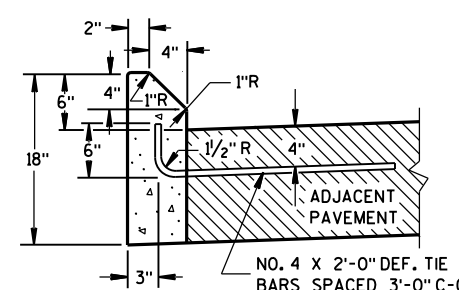


TYPES A & D ①

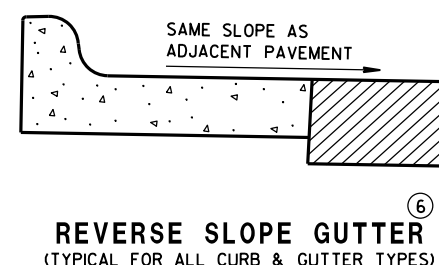
CONCRETE CURB



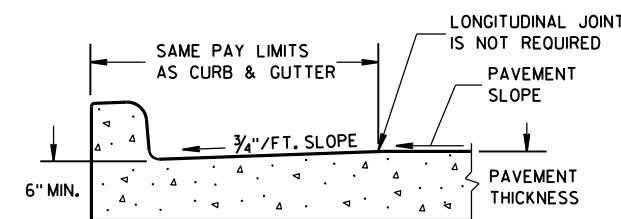
TYPES A & D
CONCRETE CURB & GUTTER 18"



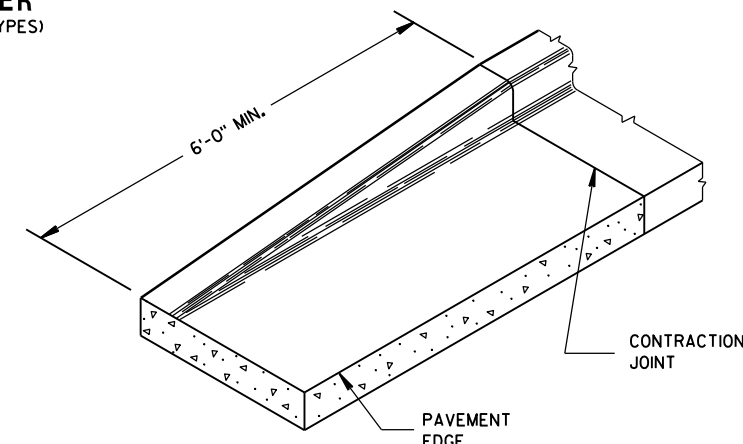
TYPES G & J ①



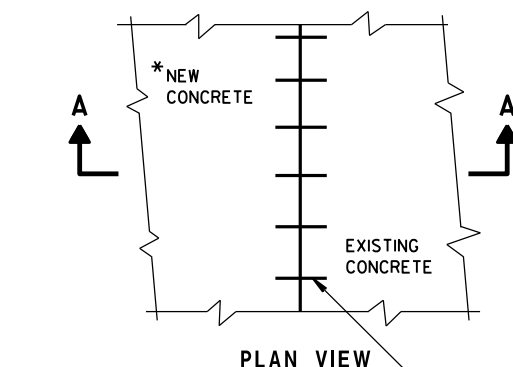
REVERSE SLOPE GUTTER
(TYPICAL FOR ALL CURB & GUTTER TYPES)



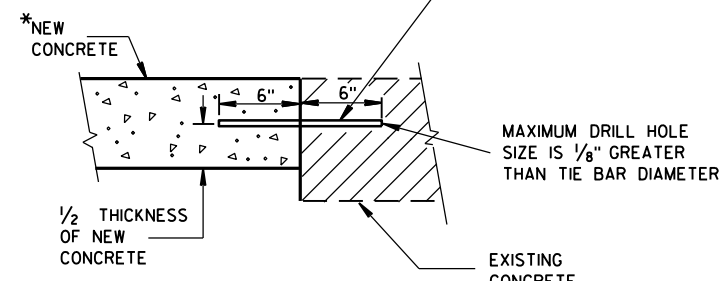
PARTIAL SECTION OF PAVEMENT
WITH INTEGRAL CURB & GUTTER



END SECTION CURB & GUTTER



PLAN VIEW



SECTION A-A
TIE BARS DRILLED
INTO EXISTING PAVEMENT

* NEW CURB & GUTTER,
SURFACE DRAINS,
CONCRETE PAVEMENT
OR OTHER NEW CONCRETE.

NO. 6 TIE BARS SPACED 2'-6" C-C,
INSTALLED PERPENDICULAR
TO THE LONGITUDINAL JOINT.

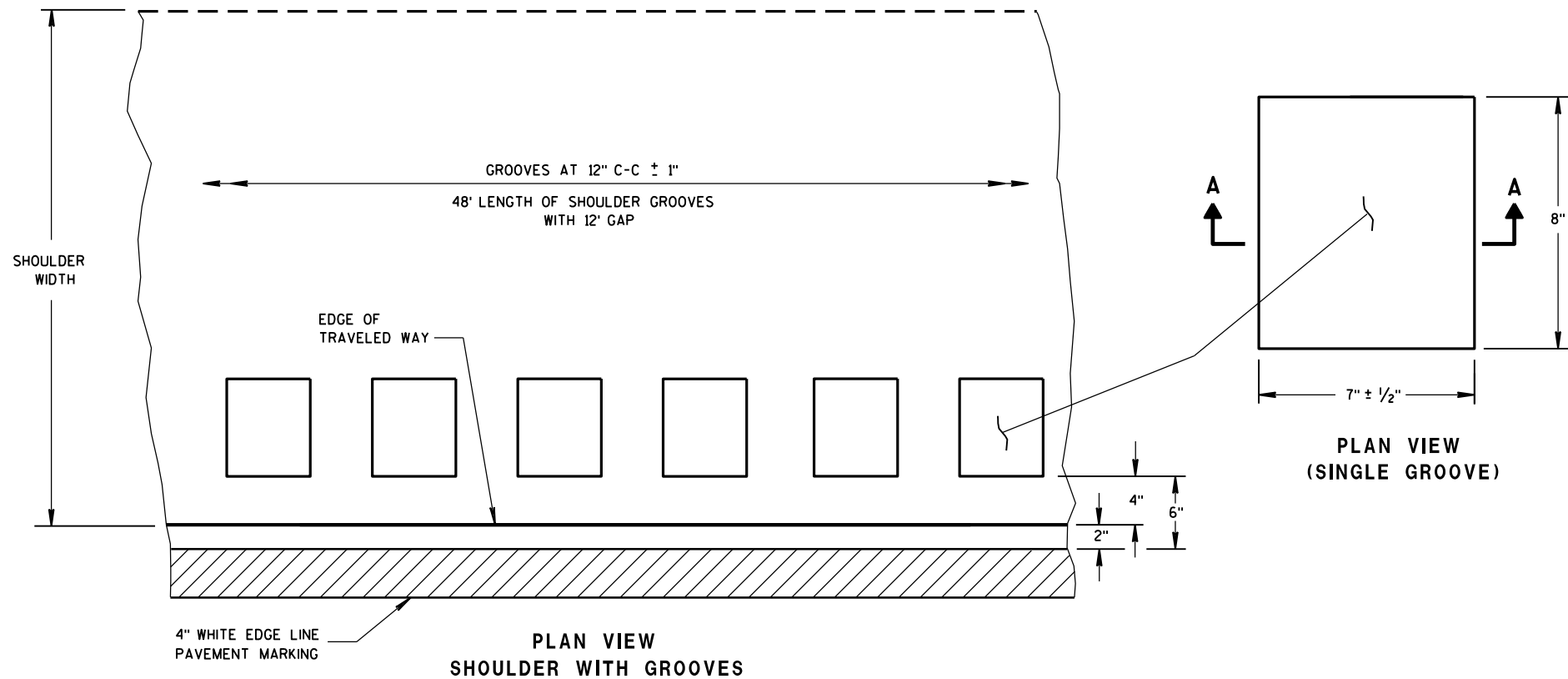
MAXIMUM DRILL HOLE
SIZE IS 1/8" GREATER
THAN TIE BAR DIAMETER

EXISTING CONCRETE

CONCRETE CURB, CONCRETE
CURB & GUTTER AND TIES

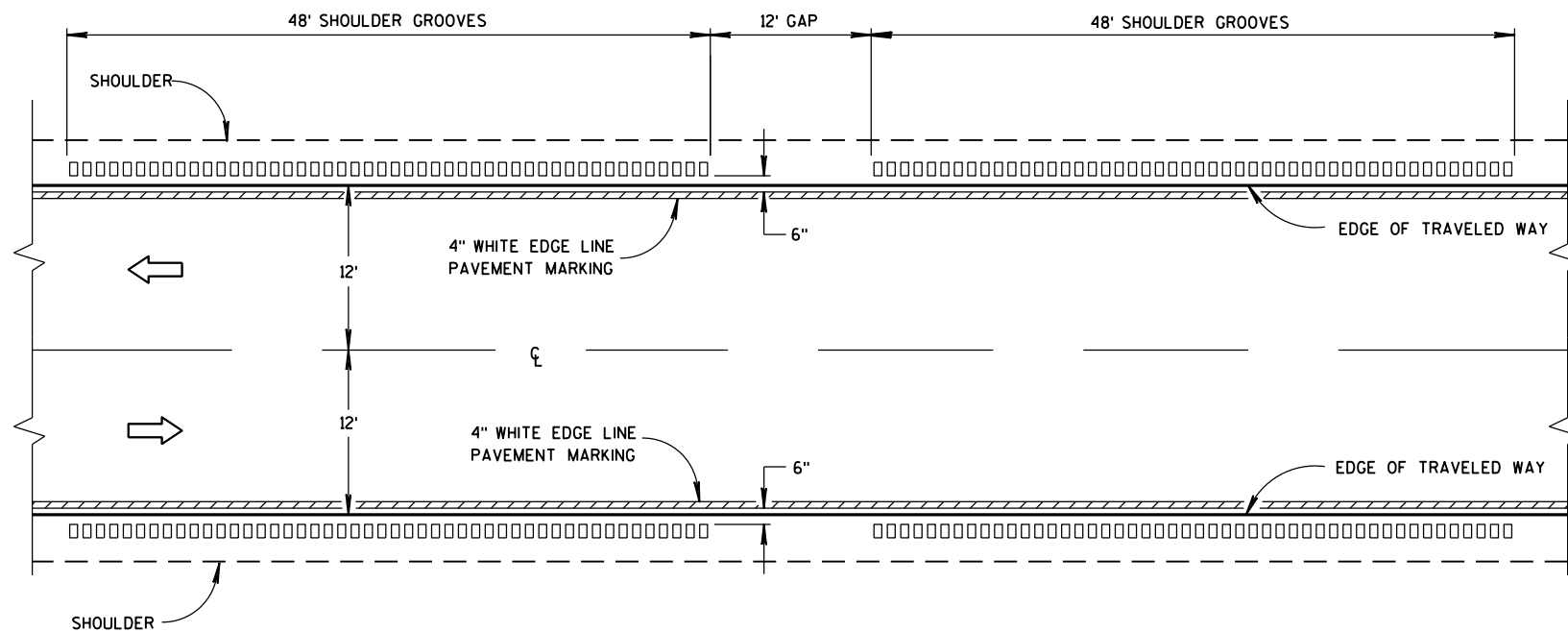
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June, 2016 /S/ Jerry H. Zogg
DATE ROADWAY STANDARDS DEVELOPMENT
ENGINEER
FHWA



6

PLACEMENT DETAIL FOR TYPE 1 MILLED RUMBLE STRIP



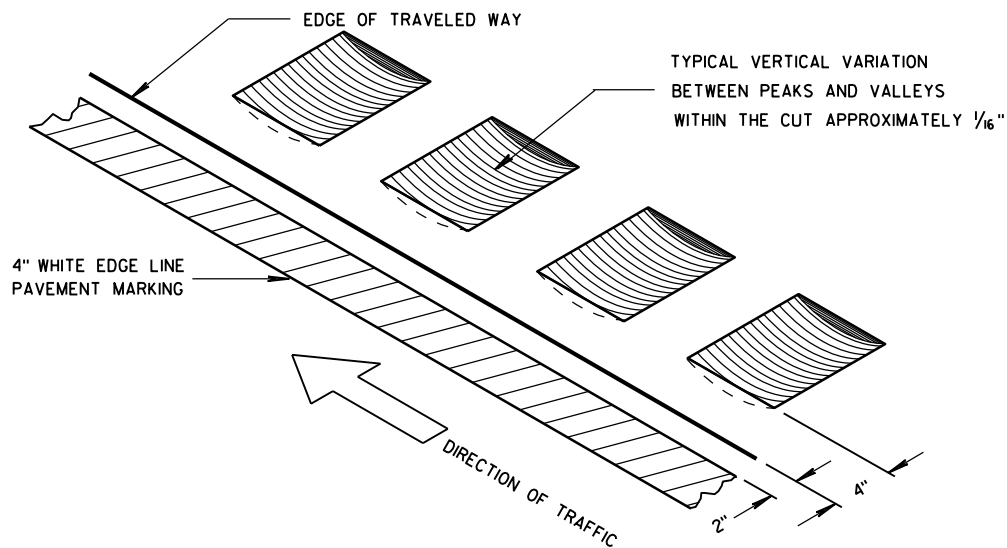
TYPE 1
2-LANE SHOULDER RUMBLE STRIP

GENERAL NOTES

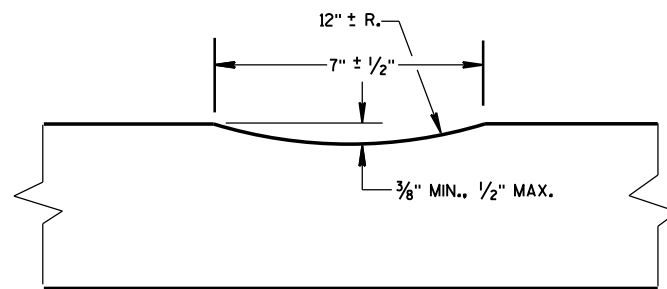
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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.



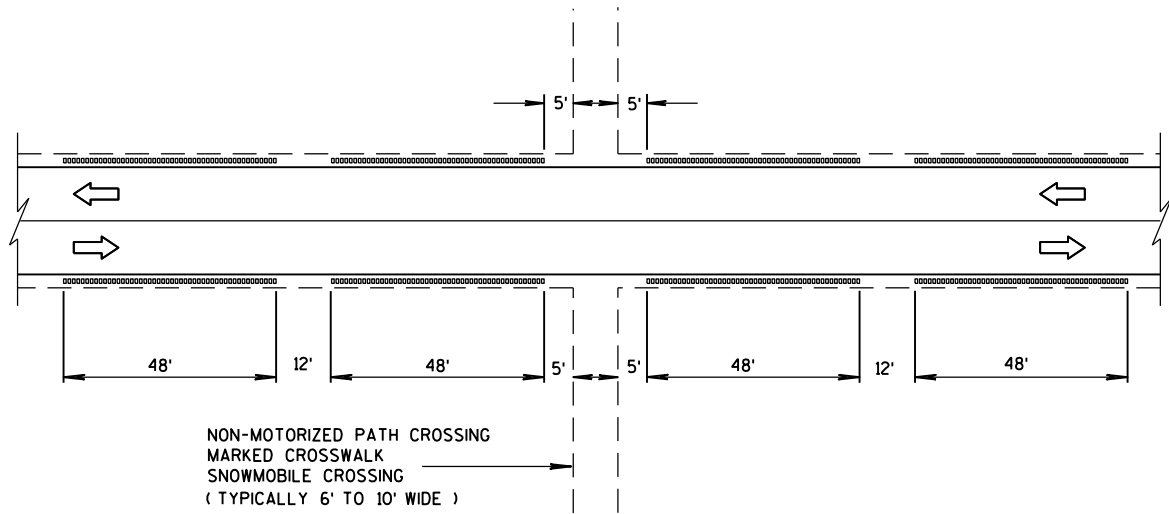
ISOMETRIC



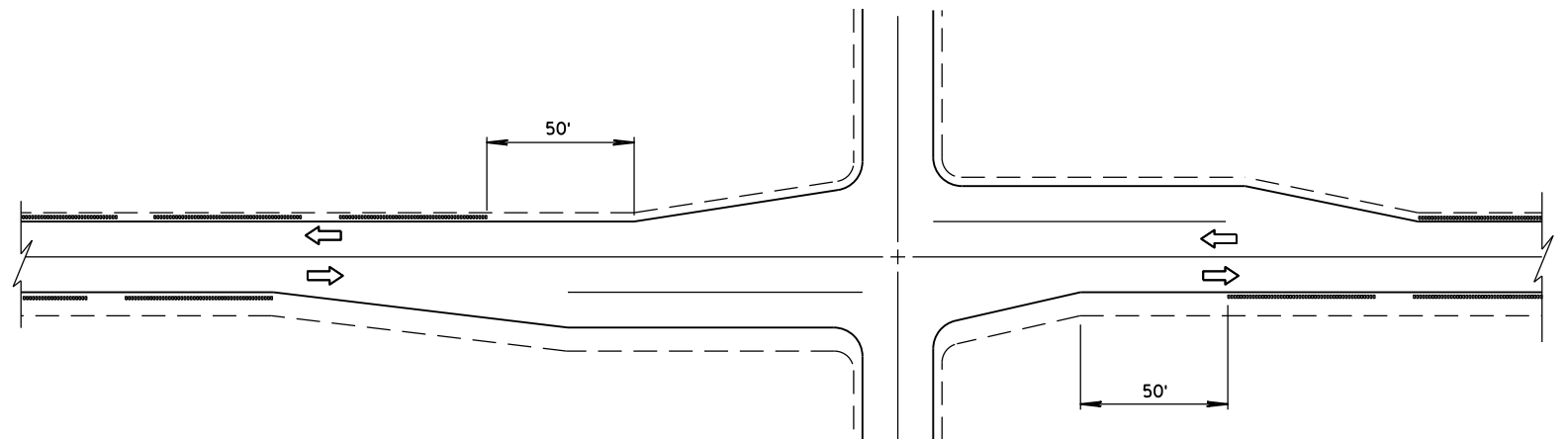
SECTION A-A

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

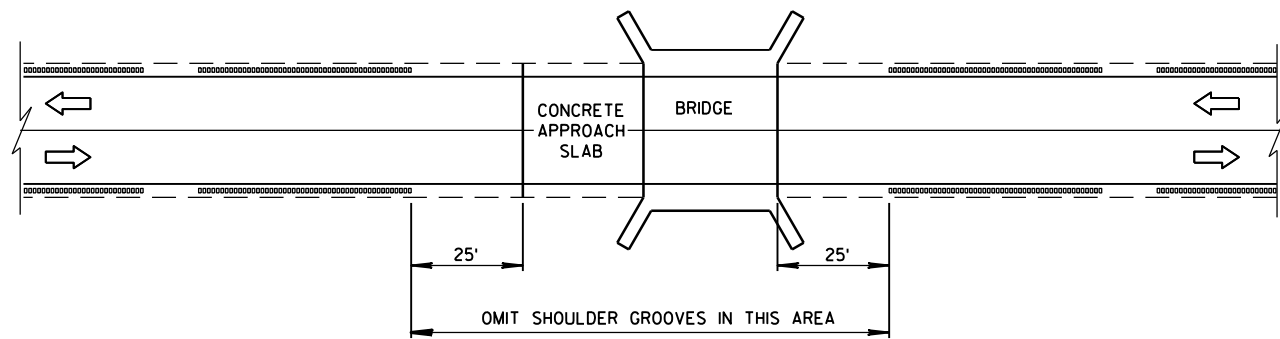
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



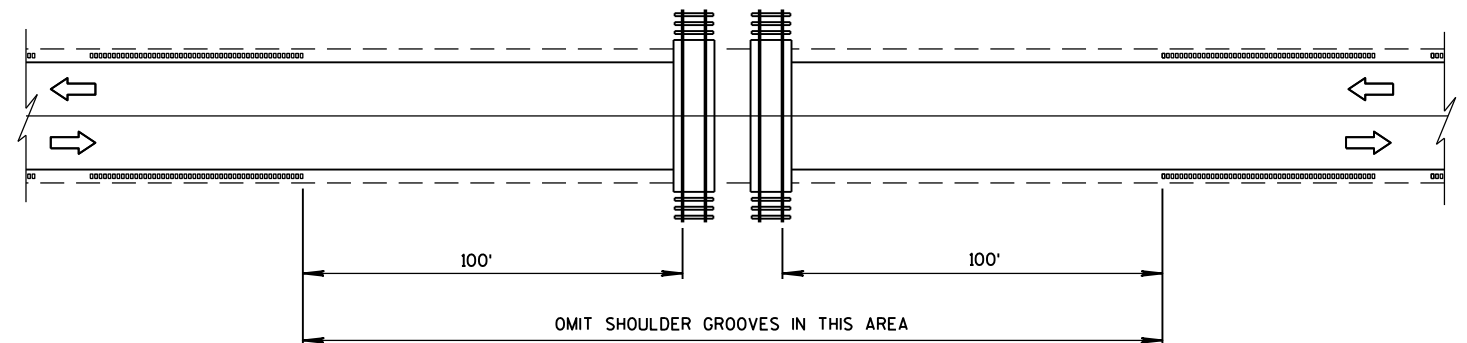
SHOULDER GROOVES AT MISCELLANEOUS CROSSINGS



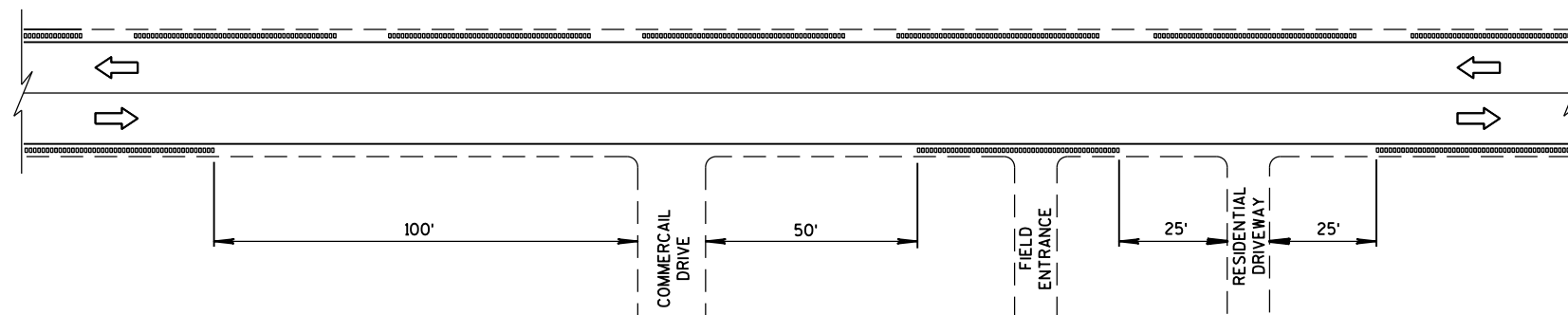
SHOULDER GROOVES AT INTERSECTIONS



SHOULDER GROOVES AT BRIDGES



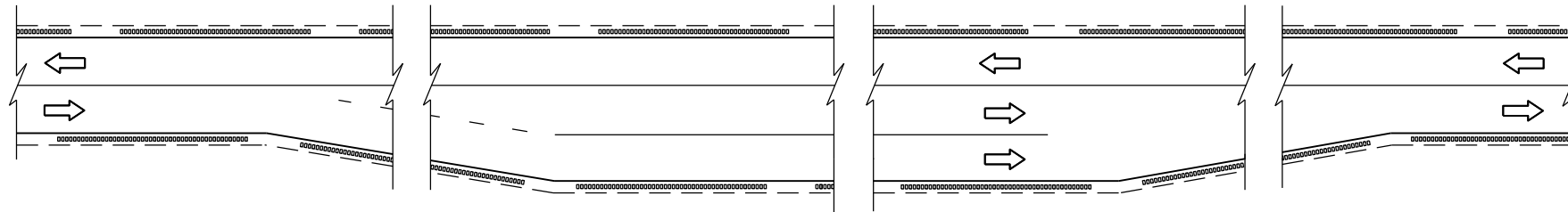
SHOULDER GROOVES AT RAILROADS



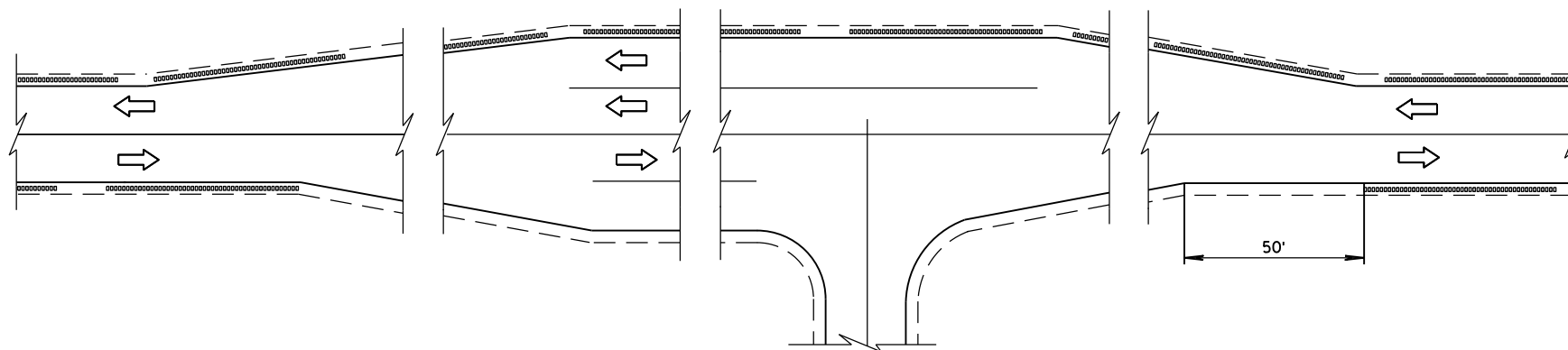
SHOULDER GROOVES AT DRIVEWAYS^①

2-LANE RURAL
SHOULDER RUMBLE STRIP, MILLING

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



SHOULDER GROOVES AT PASSING AND CLIMBING LANES



SHOULDER GROOVES AT BYPASS LANES

2-LANE RURAL SHOULDER RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 12/17/2012 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	

GENERAL NOTES

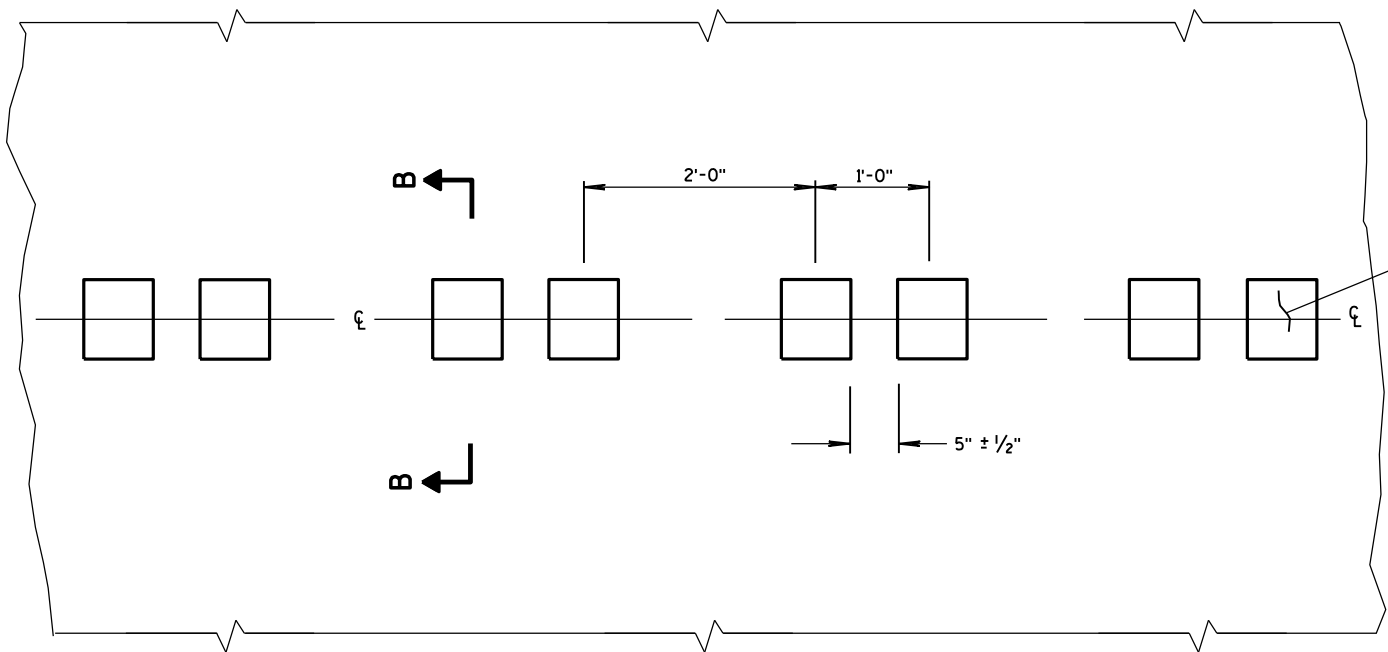
DETAILS OF CONSTRUCTION SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.

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

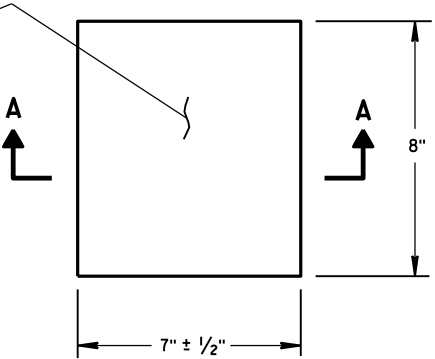
INSTALL PAVEMENT MARKING AFTER THE GROOVES ARE INSTALLED.

SEE SIGNING PLAN FOR SIGN REQUIREMENTS THAT MAY BE NEEDED.

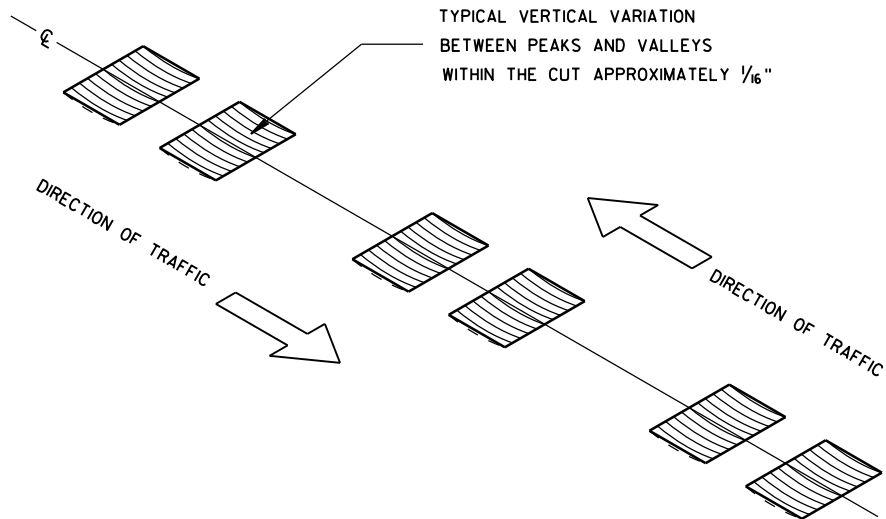
- ① CENTERLINE GROOVES MAY BE OMITTED IN AREAS WITH HIGH CONCENTRATIONS OF DRIVEWAYS, WHEN DIRECTED BY THE ENGINEER.



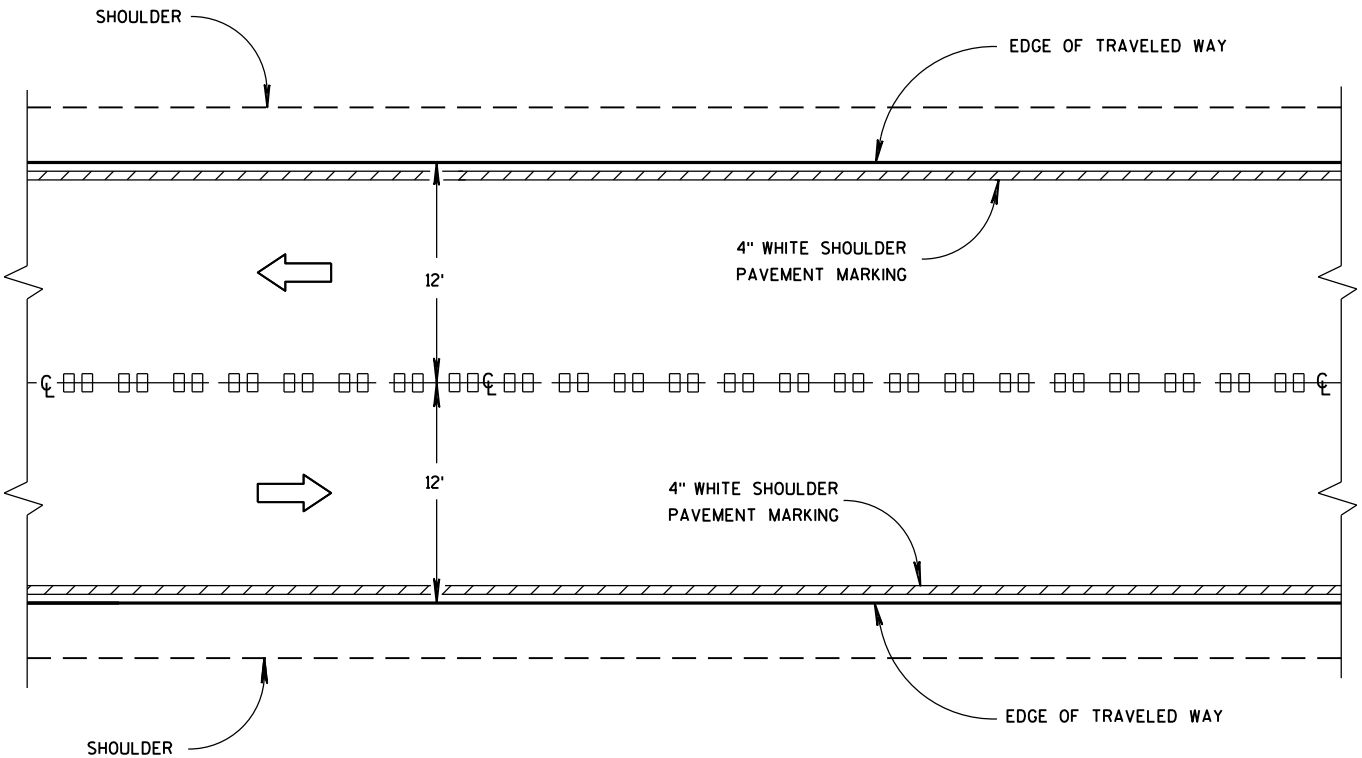
PLAN VIEW
CENTER LINE WITH GROOVES



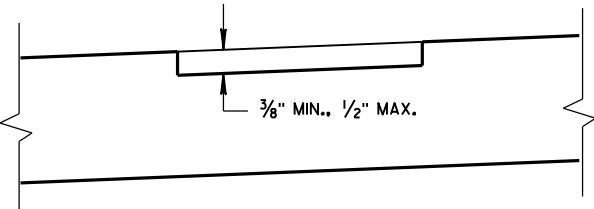
PLAN VIEW
(SINGLE GROOVE)



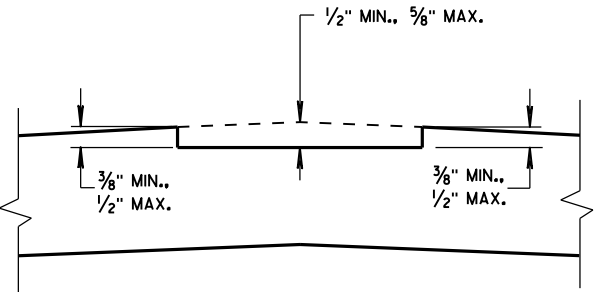
ISOMETRIC



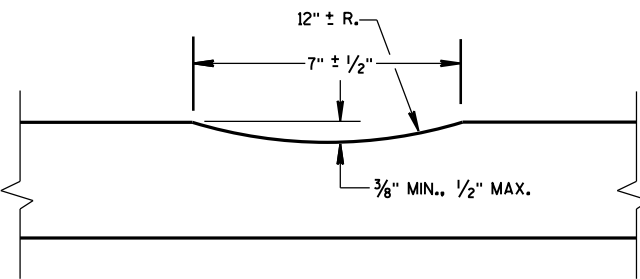
CENTER LINE GROOVES ON TWO-WAY ROADWAYS



SECTION B-B
SUPERELEVATED ROADWAY



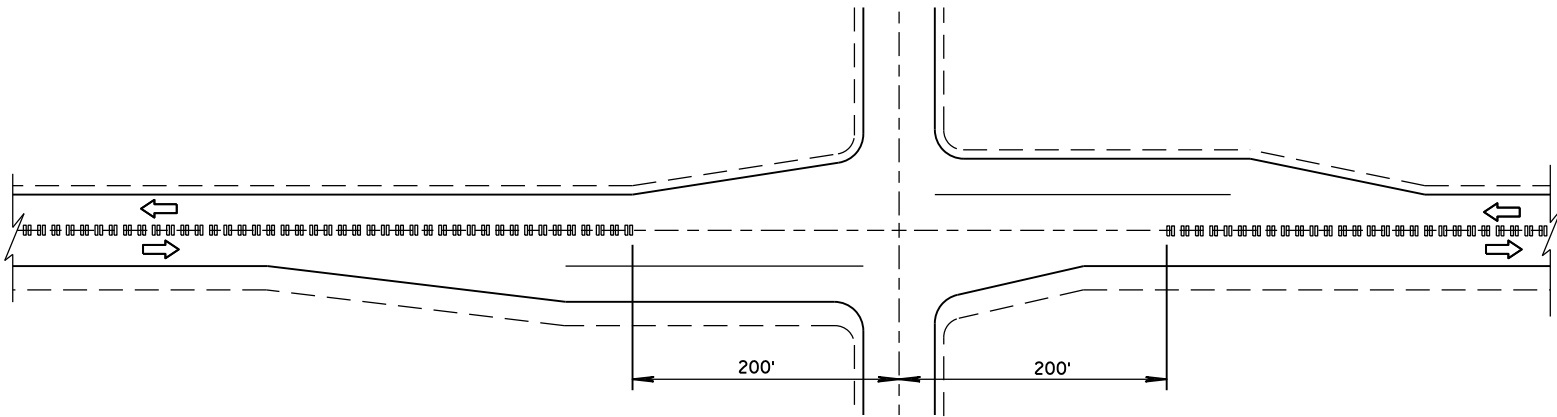
SECTION B-B
CROWNED ROADWAY



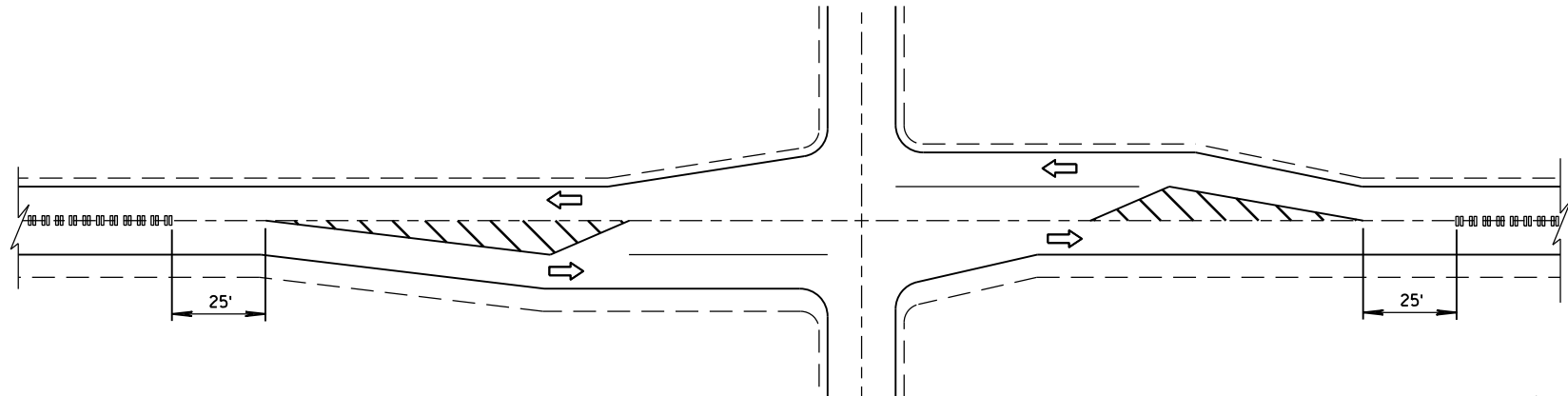
SECTION A-A

2-LANE RURAL
CENTER LINE RUMBLE STRIP,
MILLING

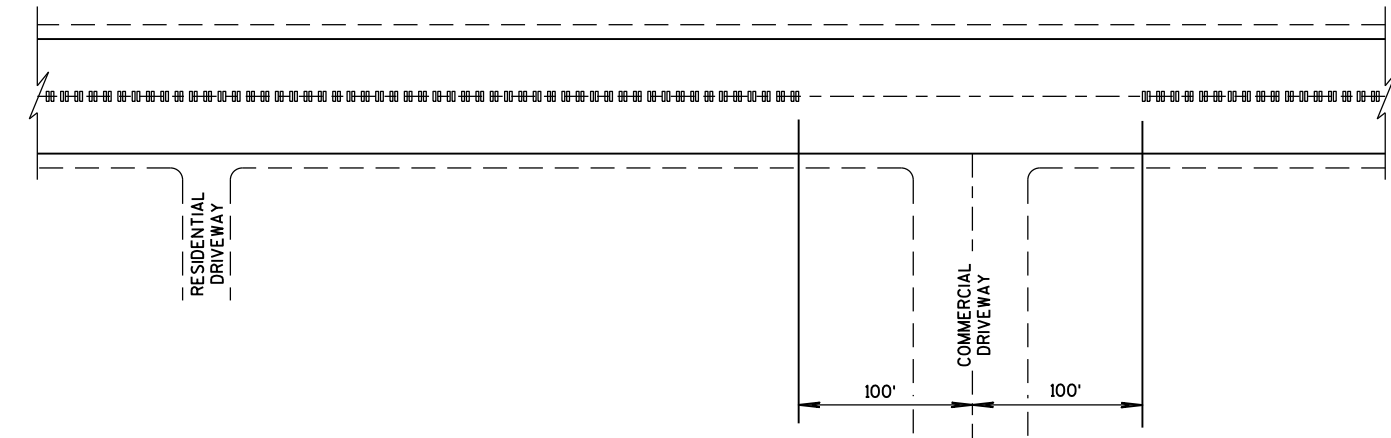
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



CENTER LINE GROOVES AT INTERSECTIONS

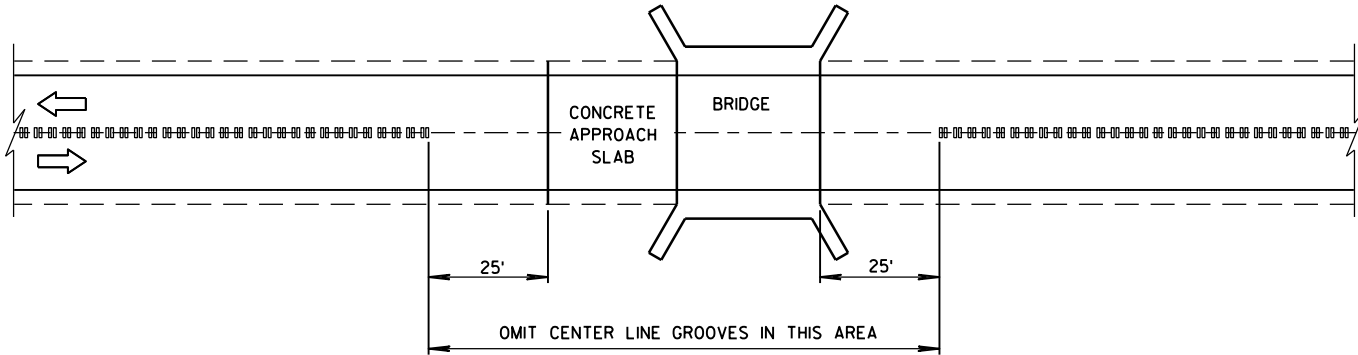


CENTER LINE GROOVES AT INTERSECTIONS
(WITH LEFT TURN LANES)

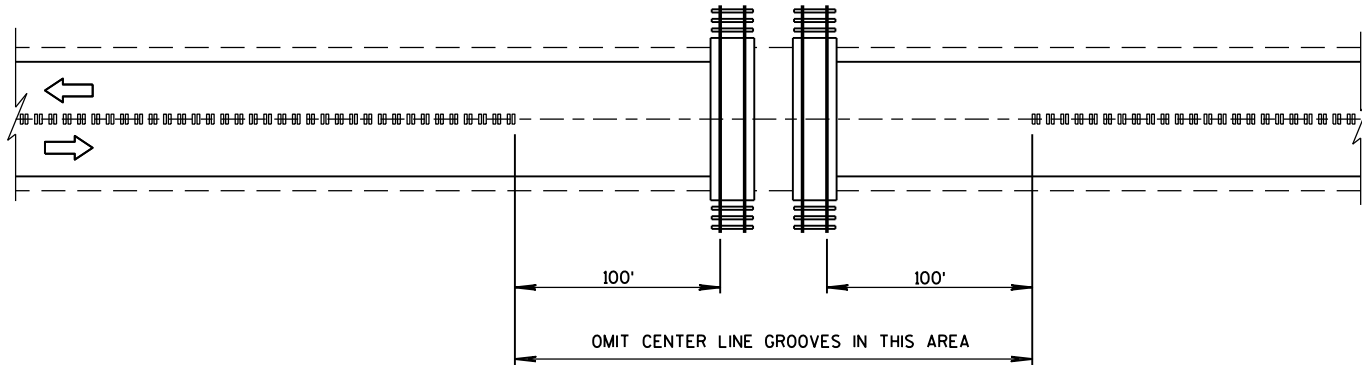


CENTER LINE GROOVES AT DRIVEWAYS^①

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

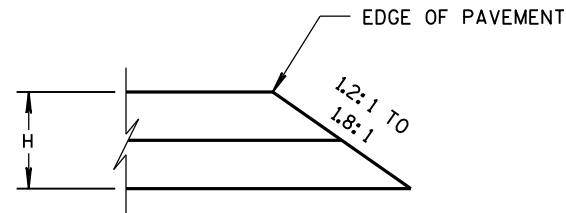


CENTER LINE GROOVES AT BRIDGES

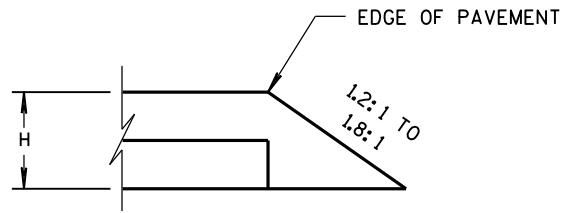


CENTER LINE GROOVES AT RAILROADS

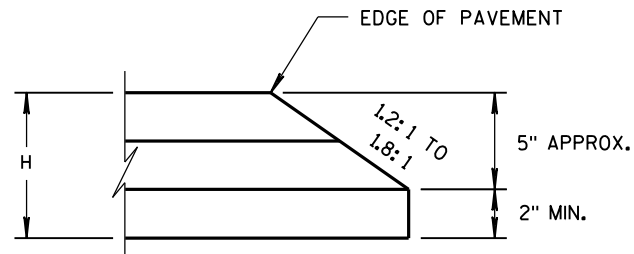
2-LANE RURAL CENTER LINE RUMBLE STRIP, MILLING	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED 5/15/2013 DATE	/S/ Jerry H. Zogg ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA	



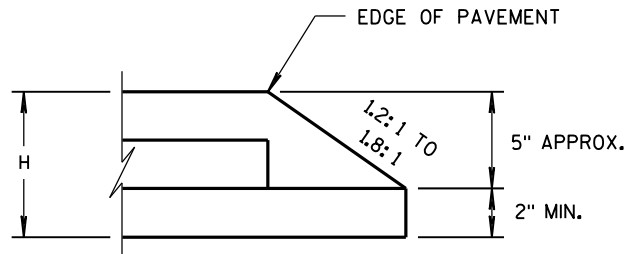
CONSTRUCTED WITH FINAL TWO LAYERS
FOR H 5" OR LESS



CONSTRUCTED WITH FINAL LAYER
FOR H 5" OR LESS

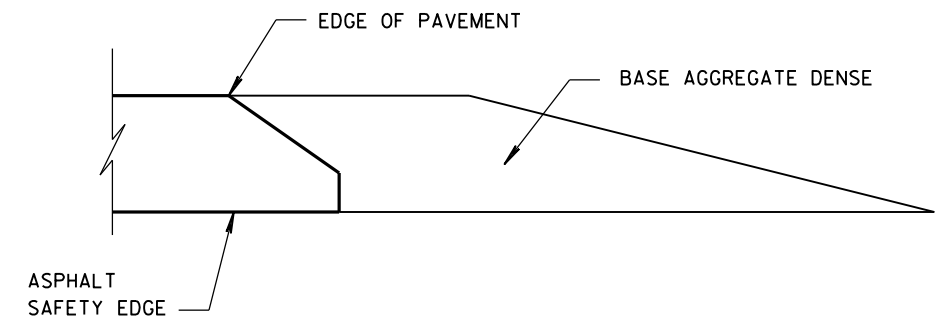


CONSTRUCTED WITH FINAL TWO LAYERS
FOR H GREATER THAN 5"



CONSTRUCTED WITH FINAL LAYER
FOR H GREATER THAN 5"

HMA PAVEMENT AND HMA OVERLAYS



FINISHED SHOULDER AGGREGATE PLACEMENT

SAFETY EDGE_{SM}

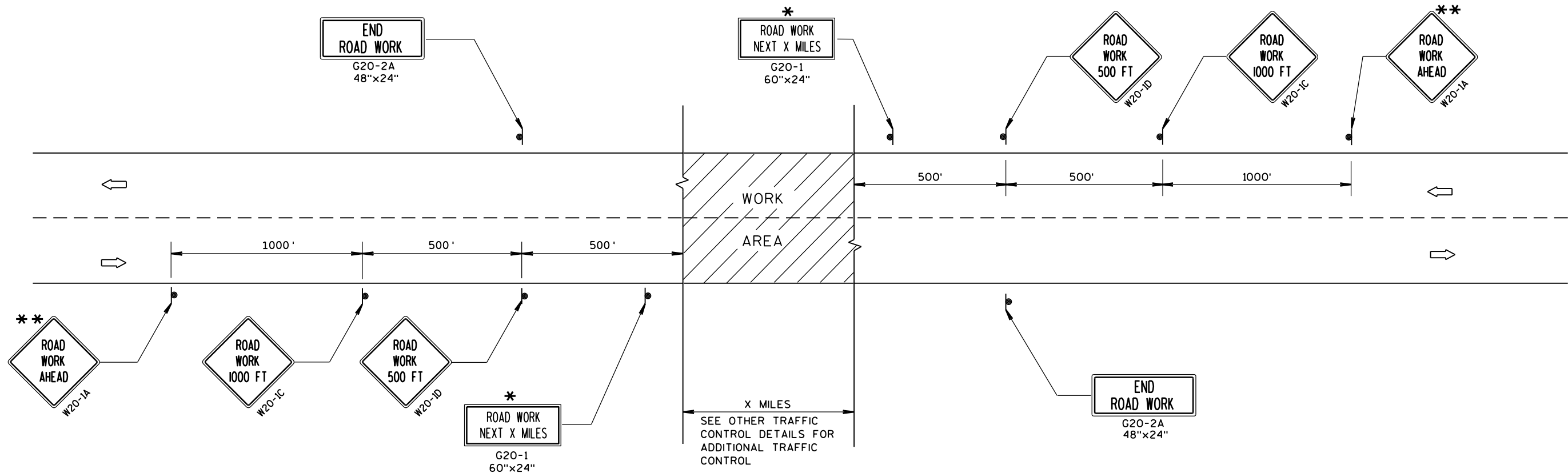
STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED

11/30/2012
DATE

FHWA

/s/ Jerry H. Zogg
ROADWAY STANDARDS DEVELOPMENT
ENGINEER



TYPICAL SIDEROAD APPROACH WARNING SIGN DETAIL

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.

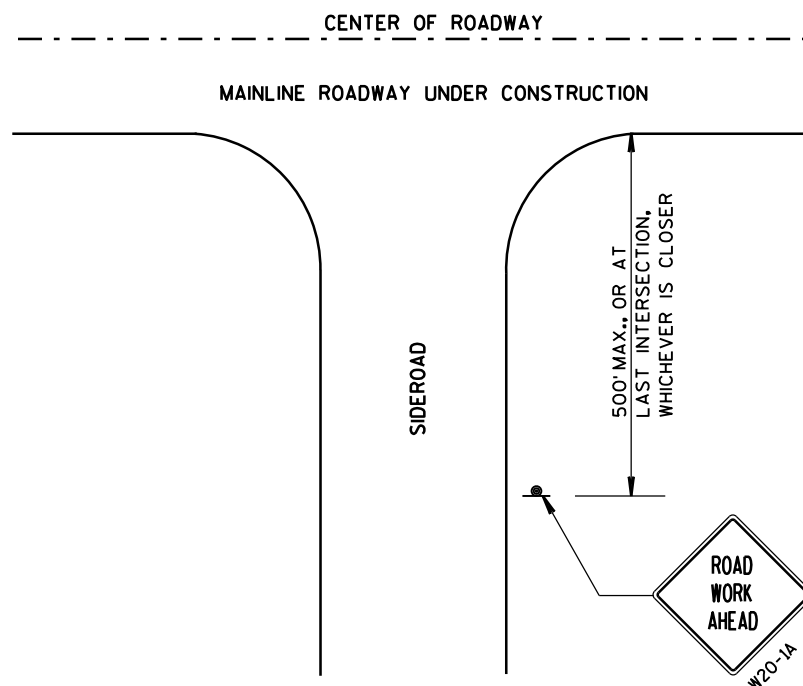
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

SIGNS THAT WILL BE IN PLACE LESS THAN 7 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 RE-ESTABLISHED.

* OMIT G20-1 SIGNS IF LENGTH OF WORK AREA IS 2 MILES OR LESS.

** PLACE ADDITIONAL W20-1A "ROAD WORK AHEAD" SIGN IF WORK AREA WITHIN THE PROJECT IS SEPARATED BY MORE THAN 2 MILES FROM PREVIOUS WORK AREA.



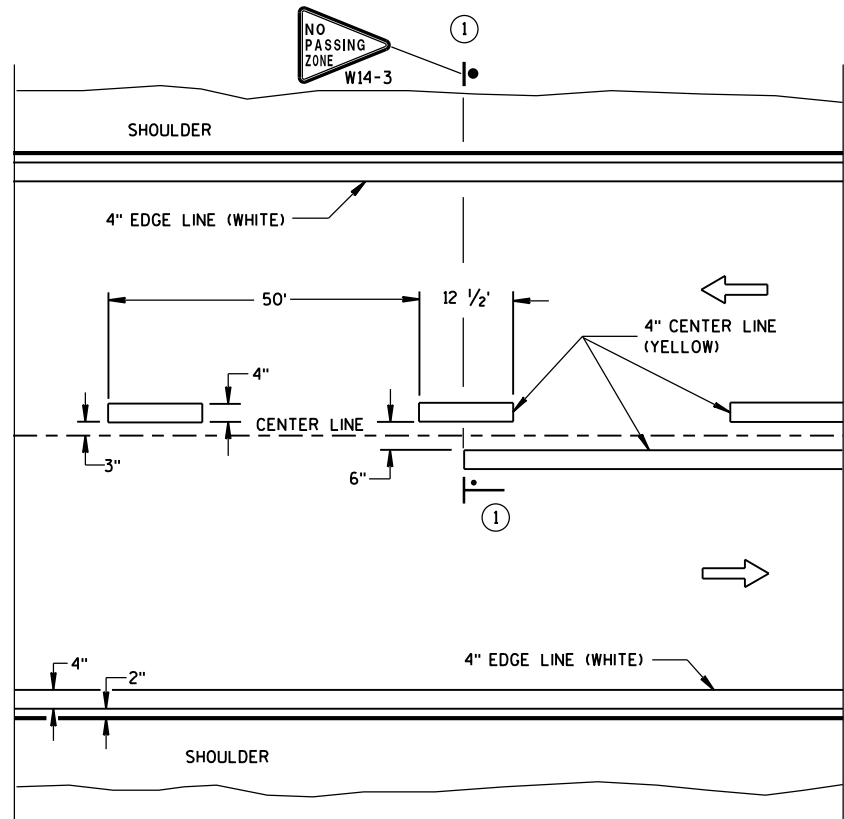
LEGEND

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

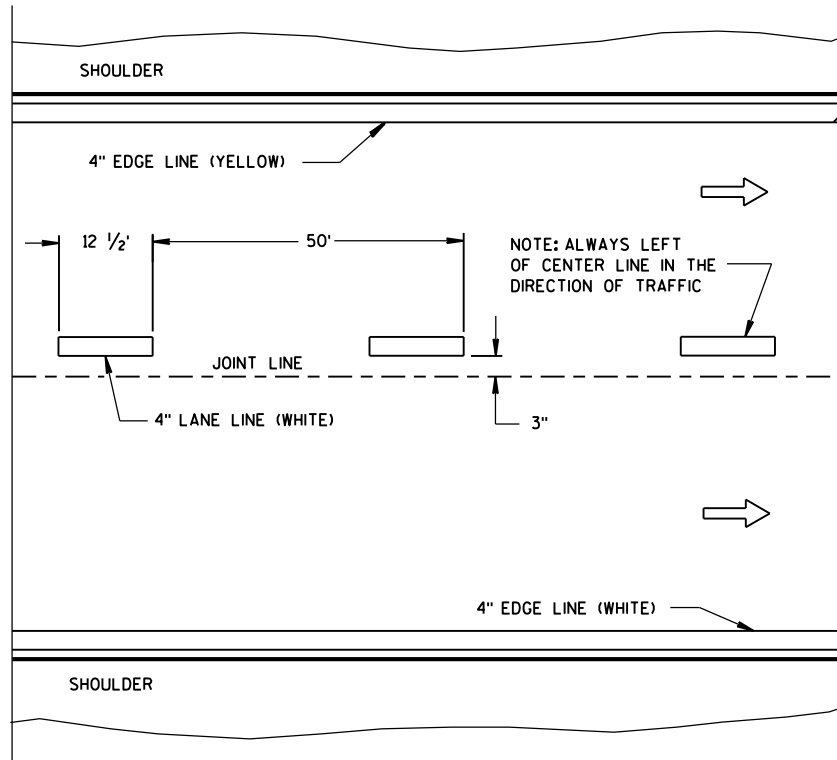
TRAFFIC CONTROL, ADVANCE
WARNING SIGNS 45 M.P.H.
OR GREATER TWO-WAY
UNDIVIDED ROAD OPEN TO TRAFFIC

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED	/S/ Peter Amokobe Atepe
DATE	STATEWIDE WORK ZONE TRAFFIC
FHWA	SAFETY ENGINEER

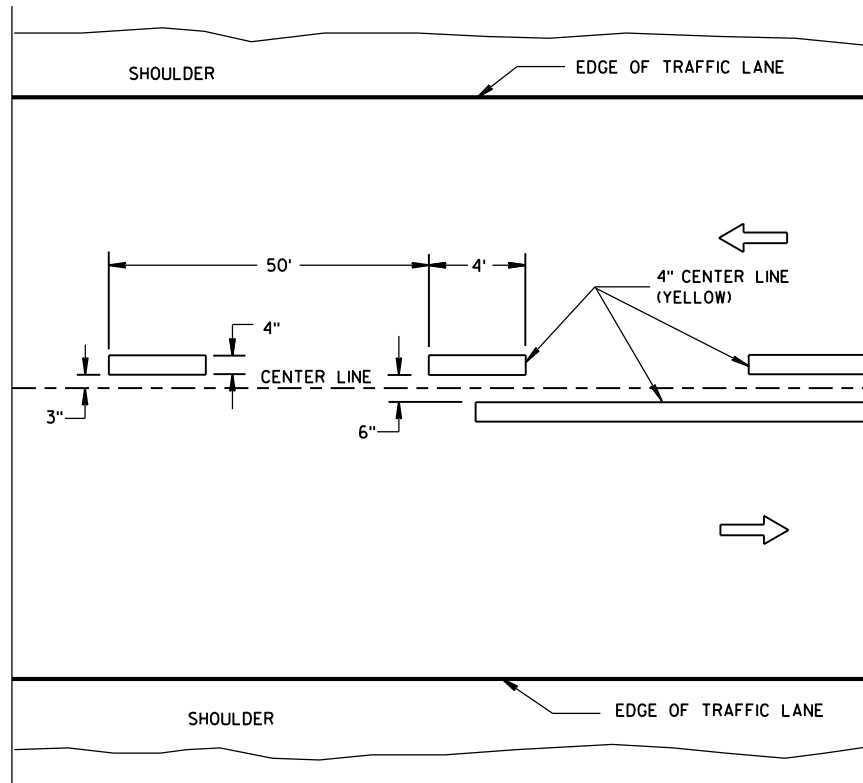


TWO WAY TRAFFIC

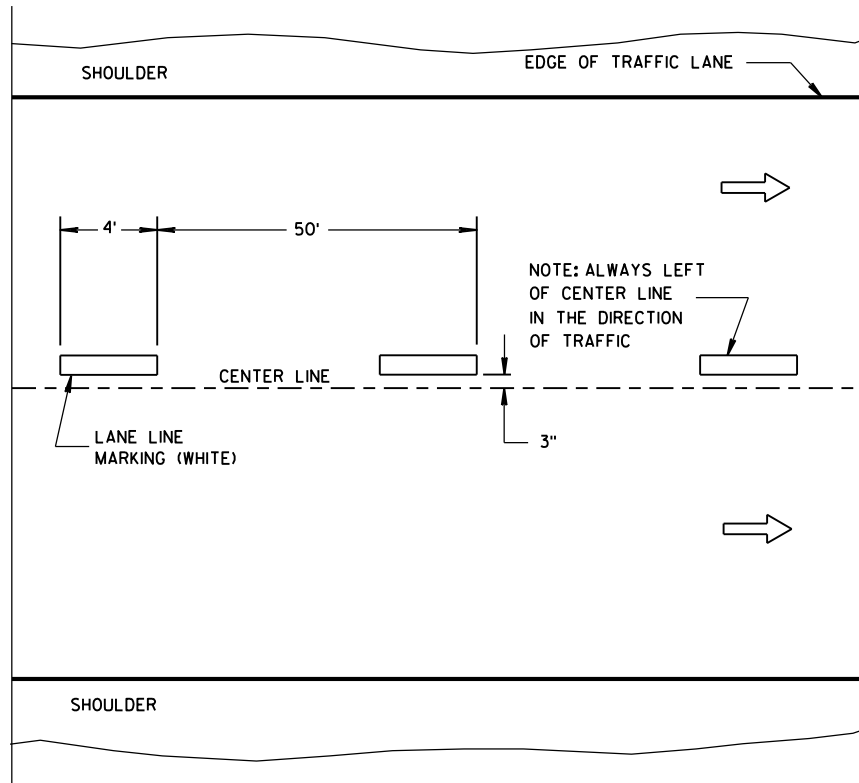


ONE WAY TRAFFIC

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 NO PASSING ZONE W14-3 SIGN SHALL BE LOCATED WITHIN 50 FEET OF THE "T" MARKING.

NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL

LEGEND

—●— "T" MARKING

● POST MOUNTED SIGN

LONGITUDINAL MARKING
(MAINLINE)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
Sept., 2016 /S/ Matthew R. Rauch
DATE STATE SIGNING AND MARKING ENGINEER
FHWA

LEGEND

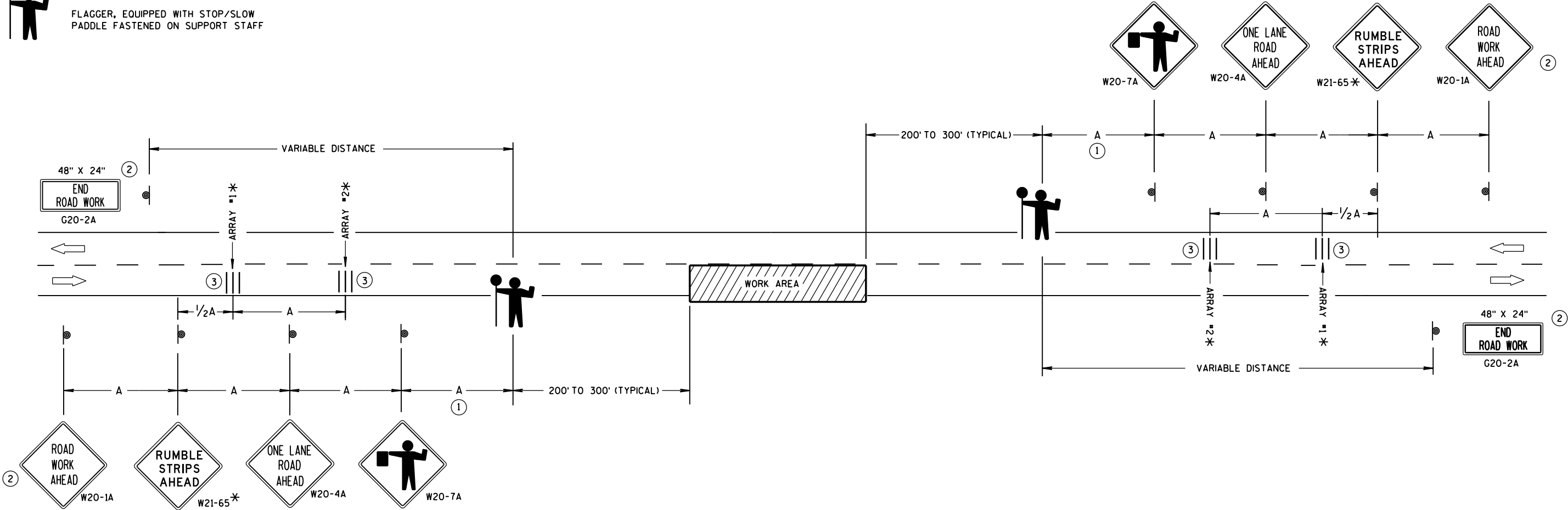
- SIGN ON PORTABLE OR PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



USE OF THE "BE PREPARED TO STOP" 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

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.

THE EXACT NUMBER, LOCATION AND SPACING OF ALL SIGNS AND DEVICES (AND THE 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.

"W0" SIGNS ARE THE SAME AS "W" SIGNS EXCEPT THE BACKGROUND IS ORANGE.

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.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS. PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

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

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 RUMBLE STRIPS PRIOR TO COVERING OR REMOVING ALL ADVANCE SIGNING.

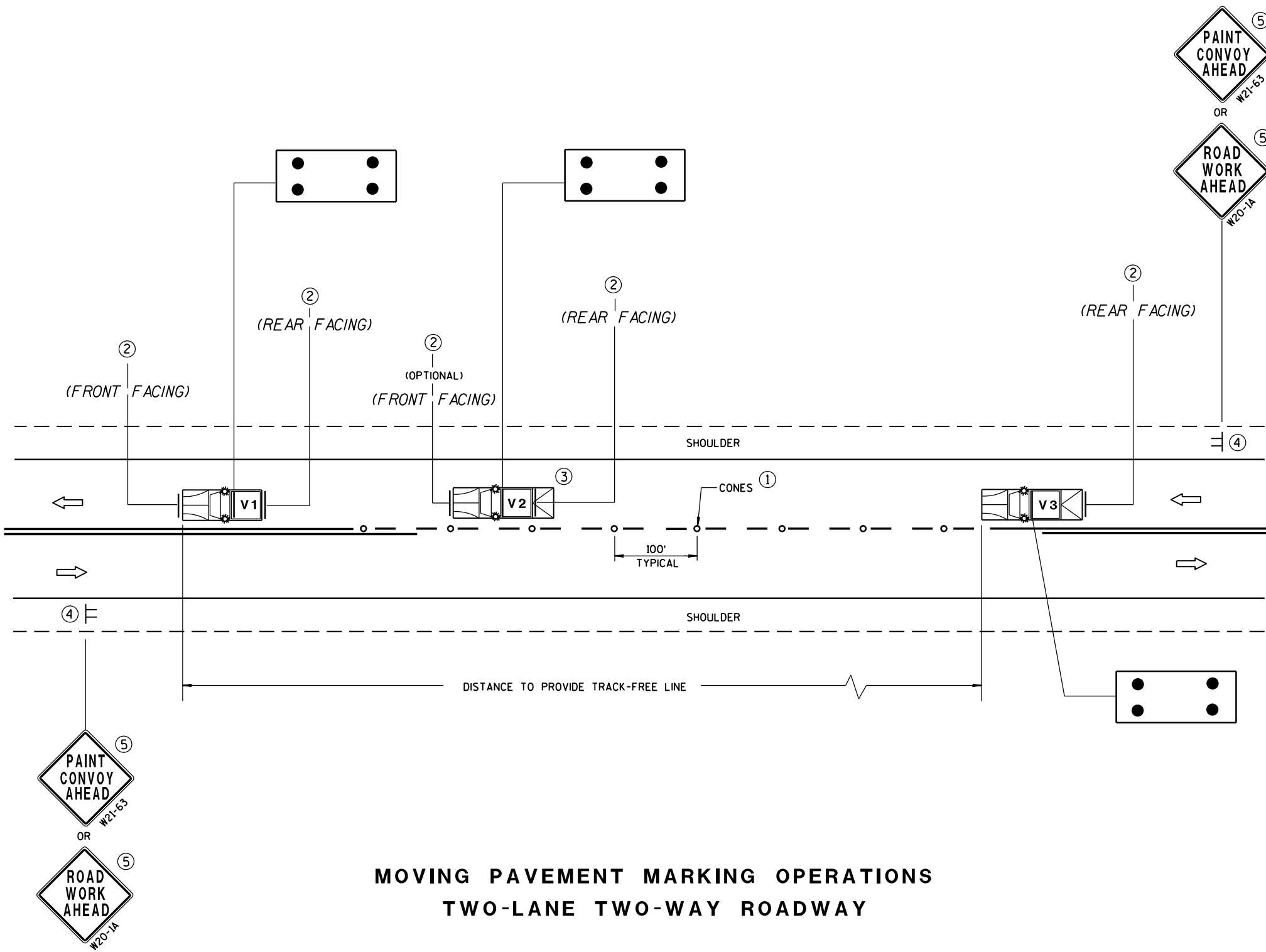
* UTILIZE TEMPORARY RUMBLE STRIPS WHEN FLAGGING OPERATION IS ANTICIPATED TO BE STATIONARY IN EXCESS OF TWO HOURS.

- FOR A MOVING WORK OPERATION, SIGNING AND TEMPORARY RUMBLE STRIPS (IF USED) SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3,500 FOOT INTERVALS IN THE MOVING WORK OPERATION OR AS APPROVED BY THE ENGINEER.
- SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- EACH TEMPORARY RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED ACCORDING TO MANUFACTURER'S RECOMMENDATION, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
December, 2016 /S/ Andrew Heldtke
DATE WORK ZONE ENGINEER
FHWA



MOVING PAVEMENT MARKING OPERATIONS
TWO-LANE TWO-WAY ROADWAY

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.

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.

IF SPEED LIMIT IS 40 MPH OR LESS STATIONARY SIGNS MAY BE OMITTED IF CONES ARE USED.



ALTERNATE SIGN MESSAGES, SUCH AS "PAINT CREW AHEAD" OR "ROAD PAINTING AHEAD" MAY BE USED.

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 OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.





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

THIS DRAWING SHALL BE USED FOR CENTERLINE OR EDGELINE MARKING.

WHEN NO WORK ACTIVITY IS TAKING PLACE, REMOVE OR TURN THE STATIONARY WARNING SIGNS AWAY FROM TRAFFIC.

- ① CONES MAY BE OMITTED ON PAINTED LINE IF APPROVED BY THE ENGINEER. CONSIDER PAVEMENT MARKING DRY OR CURE TIMES AND TRAFFIC VOLUME.
- ② USE STANDARD SIGN W21-64 WITH APPROPRIATE ARROW.
 OR 
W21-64 W21-64
- ③ OPTIONAL TRUCK-MOUNTED ATTENUATOR.
- ④ SIGNS SHALL BE REPEATED APPROXIMATELY EVERY THREE MILES.
- ⑤ IF CONSTRUCTION WORK ZONE SIGNS ARE IN PLACE, W20-1 OR W21-63 ARE NOT REQUIRED.

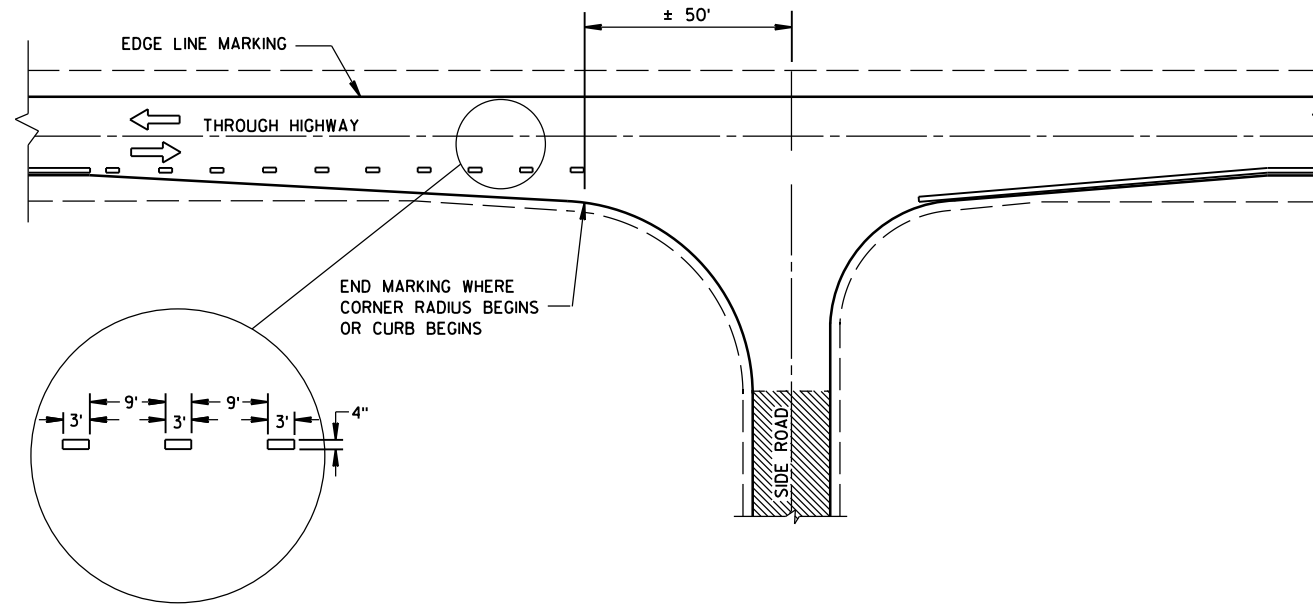
LEGEND

- V1** LEAD VEHICLE
- V2** SHADOW VEHICLE
- V3** TRAIL VEHICLE WITH TMA
- TMA** TRUCK-MOUNTED ATTENUATOR
-  SIGN ON TEMPORARY SUPPORT
-  DIRECTION OF TRAFFIC
-  CONES
-  FLASHING ARROW PANEL (CAUTION)

MOVING PAVEMENT MARKING
OPERATION
TWO-LANE TWO-WAY ROADWAY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
June 2016 /S/ Peter Amakobe Atepe
DATE STATEWIDE WORK ZONE TRAFFIC
FHWA SAFETY ENGINEER




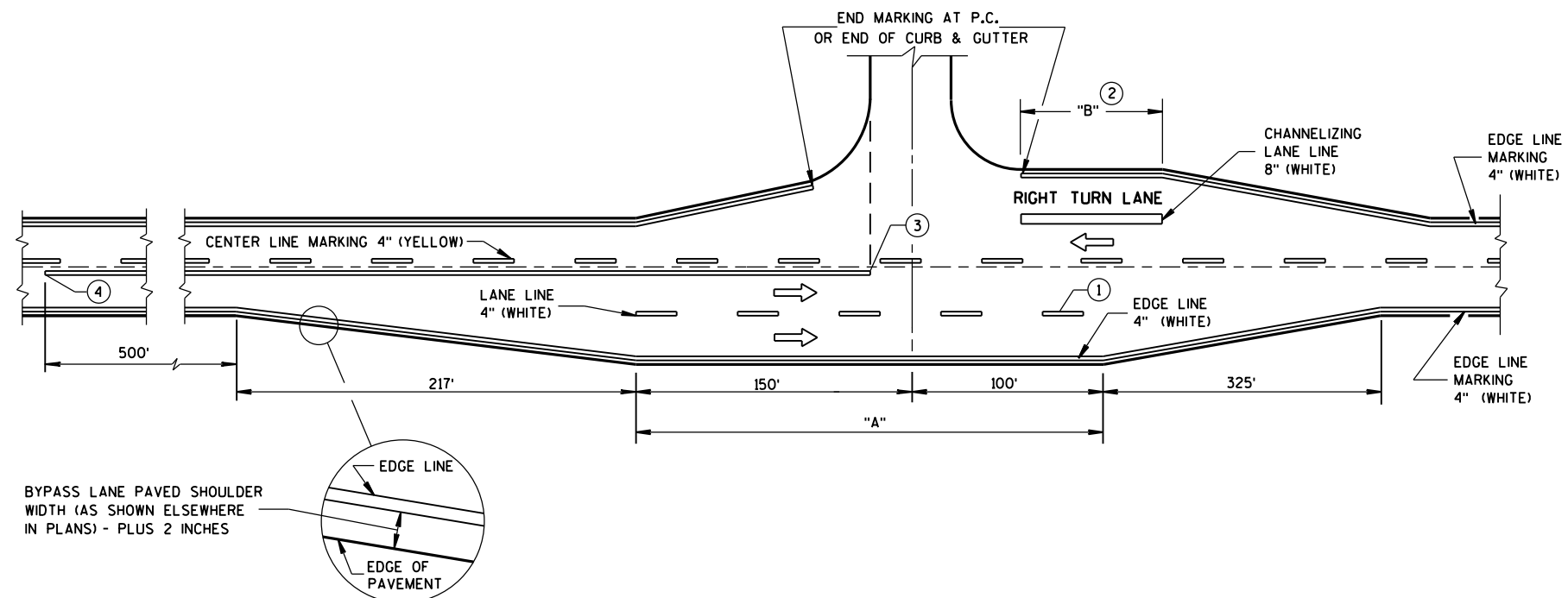
MINOR INTERSECTION WITHOUT CURBS

GENERAL NOTES

EDGE LINES SHALL BE OMITTED THROUGH INTERSECTIONS. EDGE LINES SHALL BE CONTINUED 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.

ARROW SYMBOL () SHOWS DIRECTION OF TRAVEL



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

**PAVEMENT MARKING
(INTERSECTIONS)**

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

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

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

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

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

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

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.

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

TABLE A

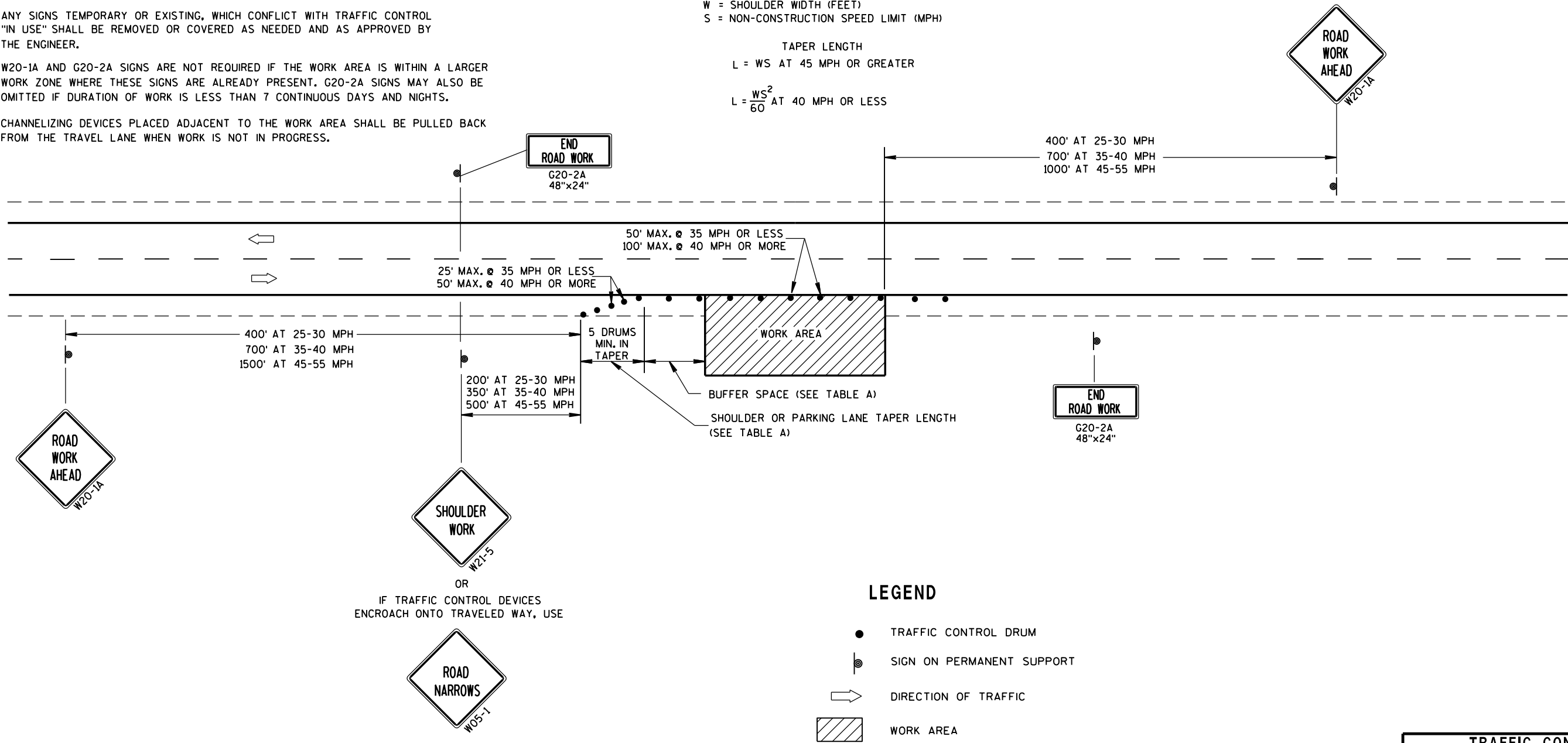
SHOULDER TAPER LENGTH (FEET)					BUFFER SPACE (FEET)
S \ W	4	6	8	10	
30	20	30	40	50	200
35	30	45	55	70	250
40	40	55	75	90	305
45	60	90	120	150	360
50	70	100	135	170	425
55	75	110	150	185	495

W = SHOULDER WIDTH (FEET)
S = NON-CONSTRUCTION SPEED LIMIT (MPH)

TAPER LENGTH
L = WS AT 45 MPH OR GREATER

$L = \frac{WS^2}{60}$ AT 40 MPH OR LESS

SHOULDER TAPER LENGTH = $\frac{1}{3}L$



LEGEND

- TRAFFIC CONTROL DRUM
- ⦿ SIGN ON PERMANENT SUPPORT
- ➡ DIRECTION OF TRAFFIC
- ▨ WORK AREA

TRAFFIC CONTROL, WORK ON SHOULDER OR PARKING LANE, UNDIVIDED ROADWAY	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
APPROVED July 14, 2015 DATE	/S/ Peter Amakobe Atepe STATEWIDE WORK ZONE TRAFFIC SAFETY ENGINEER
FHWA	



Wisconsin Department of Transportation

Dedicated people creating transportation solutions
through innovation and exceptional service.

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