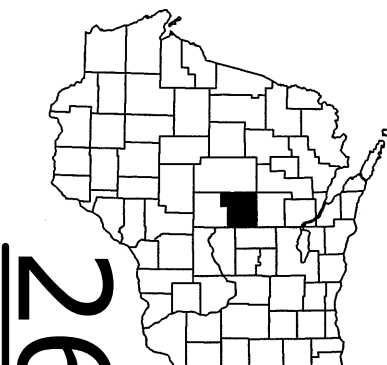


MAR 2016

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 Plot~~  
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 = 32



DESIGN DESIGNATION

A.A.D.T. 2016 = 1,400  
A.A.D.T. 2023 = 1,490  
D.H.V. = 13.7  
D.D. = 60/40  
T. = 11.5%  
DESIGN SPEED = 60 MPH  
ESALS = N/A

CONVENTIONAL SYMBOLS

PLAN  
CORPORATE LIMITS  
PROPERTY LINE  
LOT LINE  
LIMITED HIGHWAY EASEMENT  
EXISTING RIGHT OF WAY  
PROPOSED OR NEW R/W LINE

SLOPE INTERCEPT  
REFERENCE LINE

EXISTING CULVERT  
PROPOSED CULVERT  
(Box or Pipe)

COMBUSTIBLE FLUIDS

MARSH AREA

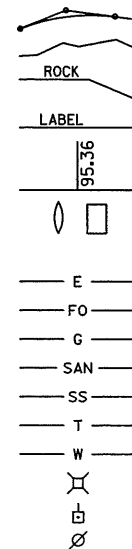
WOODED OR SHRUB AREA

PROFILE  
GRADE LINE  
ORIGINAL GROUND  
MARSH OR ROCK PROFILE  
(To be noted as such)  
SPECIAL DITCH

GRADE ELEVATION

CULVERT (Profile View)  
UTILITIES  
ELECTRIC  
FIBER OPTIC  
GAS  
SANITARY SEWER  
STORM SEWER  
TELEPHONE

WATER  
UTILITY PEDESTAL  
POWER POLE  
TELEPHONE POLE



STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

NORTHLAND - STH 29

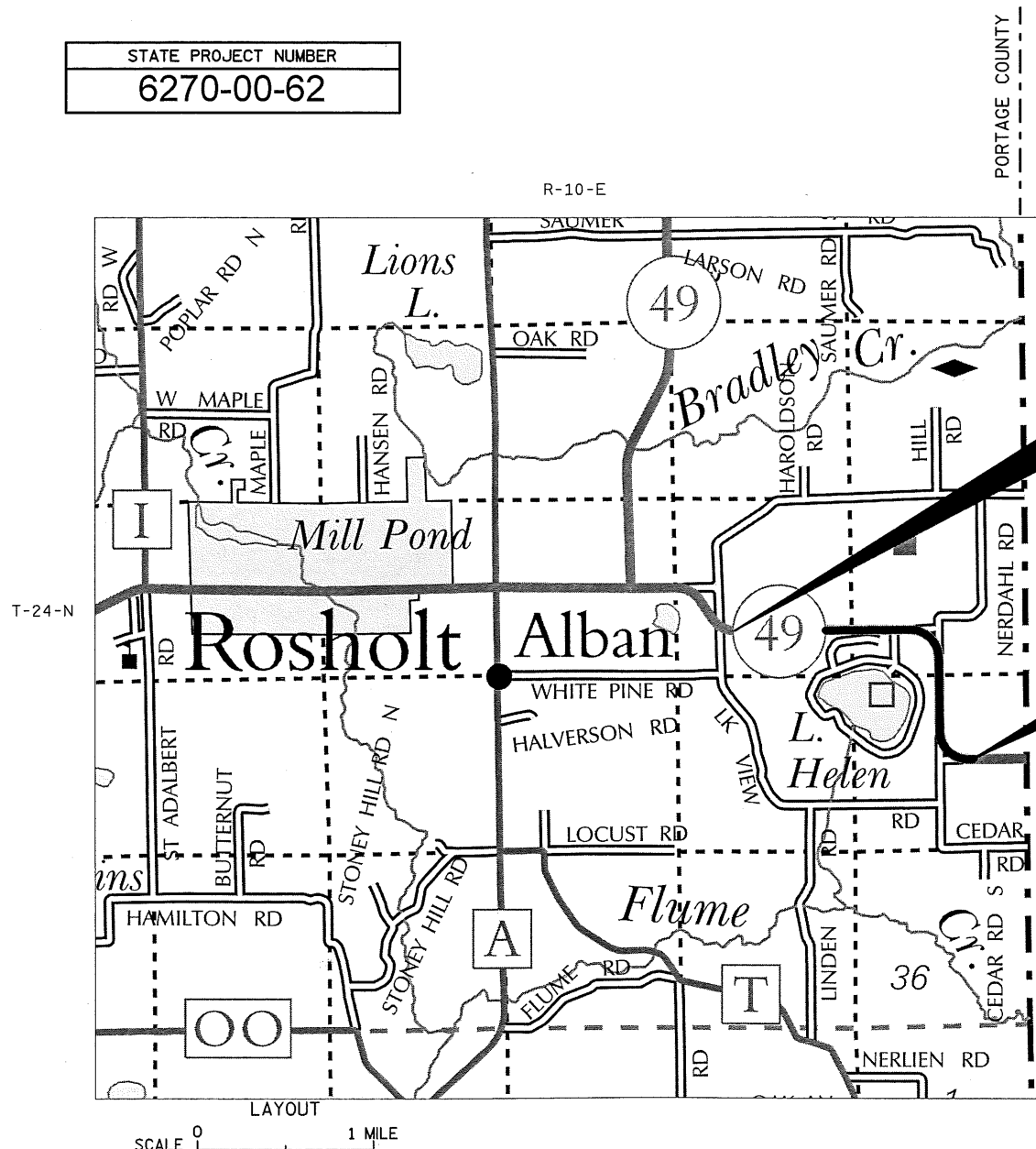
CEDAR ROAD TO LAKE VIEW ROAD

STH 49

PORTAGE COUNTY

STATE PROJECT NUMBER
6270-00-62

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
6270-00-62	WISC 2016068	1



END PROJECT

STA. 216+83  
Y = 239,800.145  
X = 248,482.060

BEGIN PROJECT

STA. 115+98  
Y = 235,895.470  
X = 255,400.289

TOTAL NET LENGTH OF CENTERLINE = 1.91 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, WCCS PORTAGE 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	QUEST CIVIL ENGINEERS, LLC
Designer	PRESTON BOHN
Project Manager	MARK STEIDL
Regional Examiner	CHERYL SIMON
Regional Supervisor	SHANNON RILEY
APPROVED FOR THE DEPARTMENT	
DATE: 10/21/15	

**GENERAL NOTES**

PURSUANT TO CHAPTER 59 OF THE WISCONSIN STATUTES, THE CONTRACTOR SHALL CAREFULLY MAKE A SEARCH FOR EVIDENCE OF A LANDMARK IN ALL AREAS WHERE SUCH A LANDMARK MAY EXIST.

THE CONTRACTOR IS TO WORK WITH UTMOST CARE AND PROTECT ALL SURVEY MARKERS. REMOVAL OF ANY SURVEY MARKER IS TO BE WITH THE APPROVAL OF THE ENGINEER.

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

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

**DNR LIASON**

WISCONSIN DEPARTMENT OF NATURAL RESOURCES  
473 GRIFFITH DRIVE  
WISCONSIN RAPIDS, WI 54494  
ATTN: MARC HERSHFEILD  
(715) 421-7867

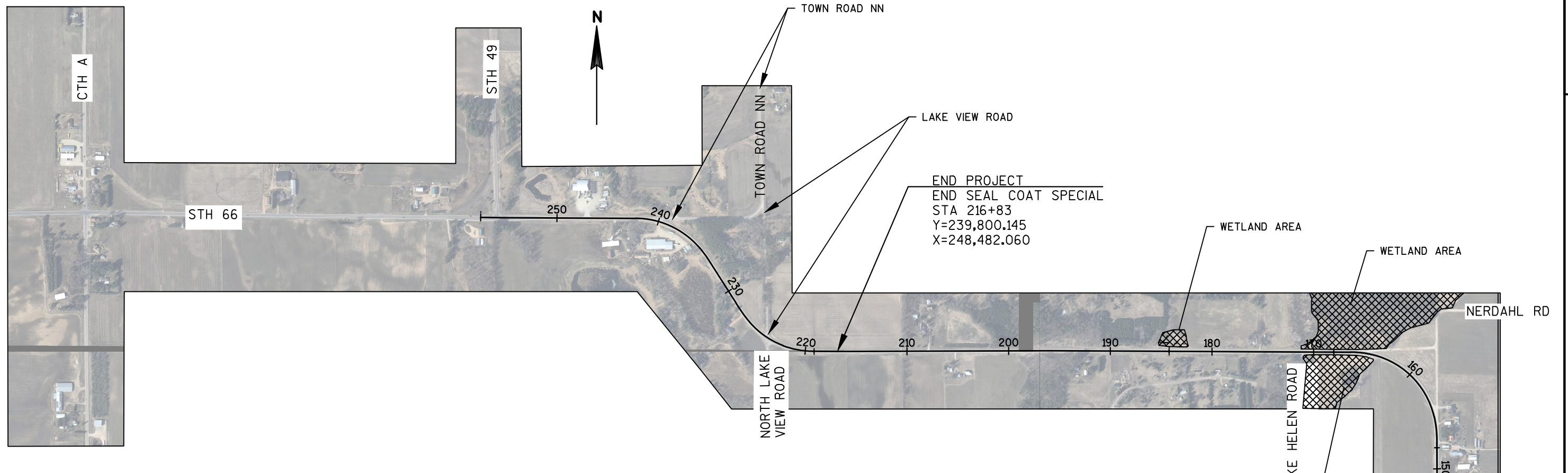
**UTILITY CONTACTS**

AMHERST TELEPHONE COMPANY - COMMUNICATION LINE  
P.O. BOX 279  
AMHERST, WI 54406  
ATTN: TOM IVERSON  
(715) 824-2006 office  
(715) 572-5630 cell  
TOMIVERSON@WI-NET.COM

CENTRAL WISCONSIN ELECTRIC COOPERATIVE - ELECTRICITY  
10401 LYSTUL ROAD  
ROSHOLT, WI 54473  
ATTN: JEFF RICE  
(715) 677-2211 office  
(715) 701-2038 cell  
JEFF.RICE@CWECOOP.COM



Dial  or (800)242-8511  
[www.DiggersHotline.com](http://www.DiggersHotline.com)



1/4 SECTION CORNER  
HARRISON C.I. MONUMENT  
PORTAGE COUNTY COORDINATES  
Y=238,494.600  
X=254,377.100

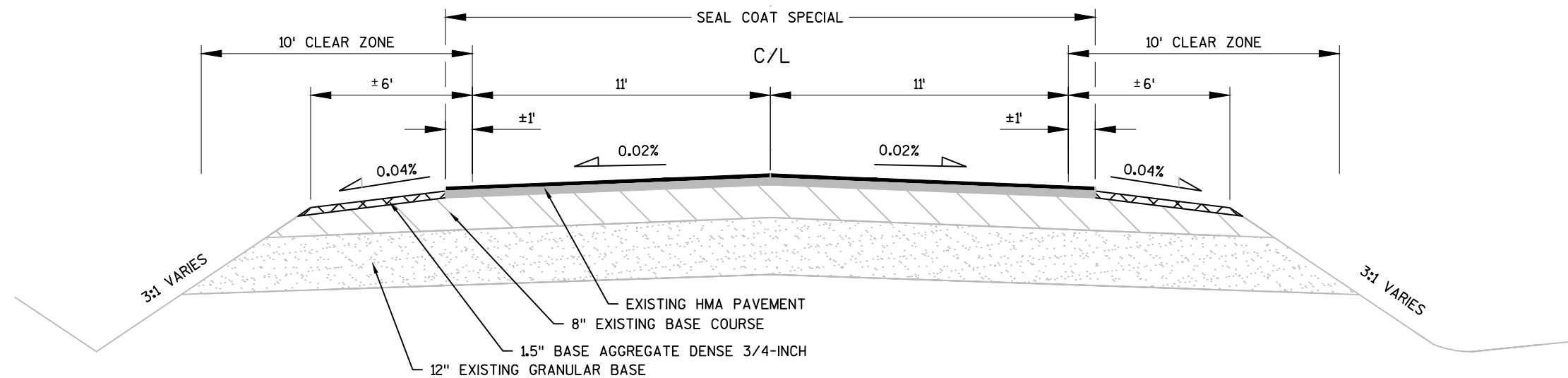
WISCONSIN DEPARTMENT OF TRANSPORTATION  
GEODETIC SURVEY CONTROL STATION  
5V04, 2005  
BRASS CAP IN CONCRETE  
PORTAGE COUNTY COORDINATE  
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X=254,422.3590

WETLAND AREA

WETLAND AREA

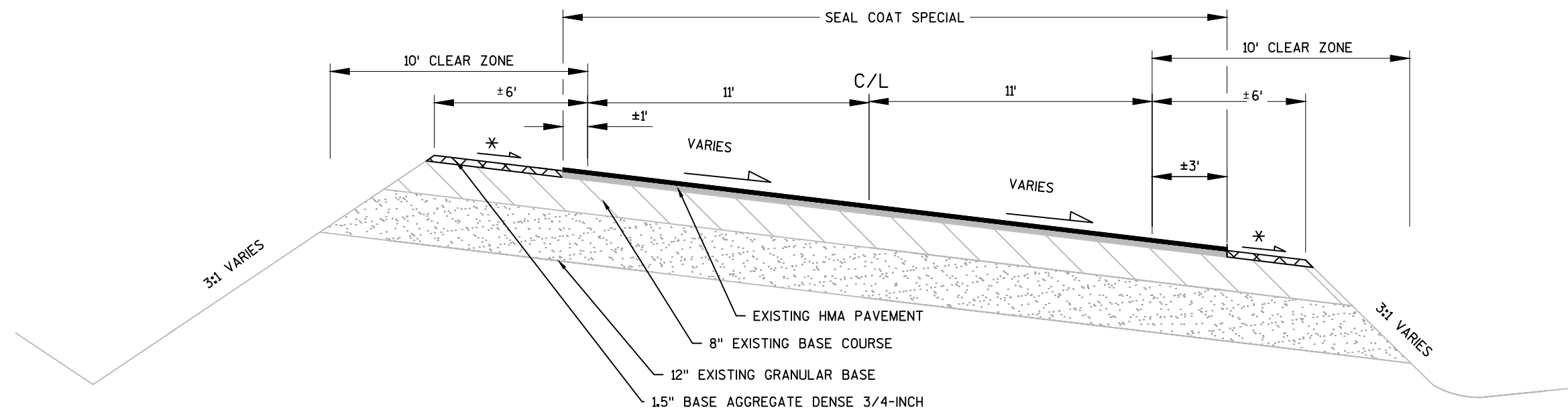
WETLAND AREA

BEGIN PROJECT  
BEGIN SEAL COAT SPECIAL  
STA 115+98  
Y=235,895.470  
X=255,400.289



TYPICAL SECTION STH 49

STA 115+98 TO STA 117+20  
 STA 132+00 TO STA 152+32  
 STA 166+76 TO STA 216+83

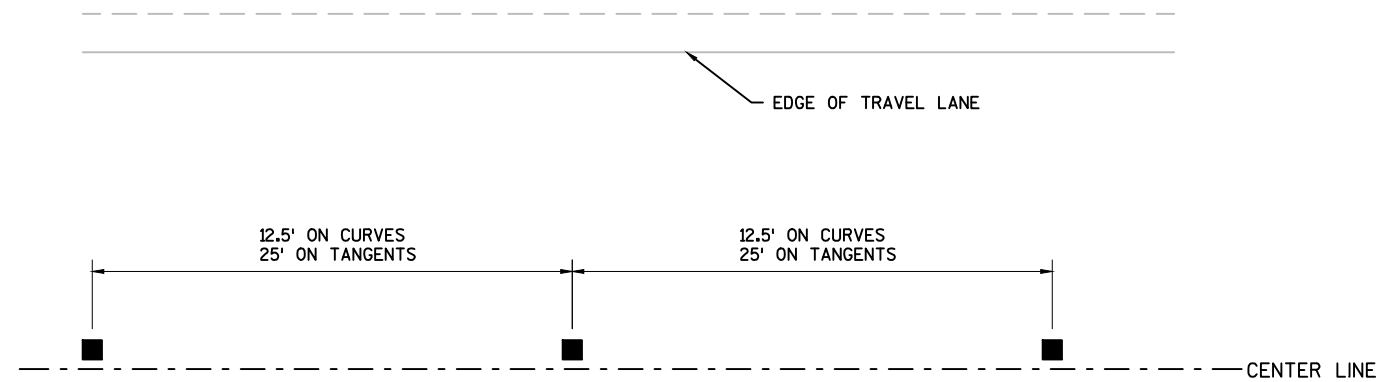


SUPERELEVATED CURVE

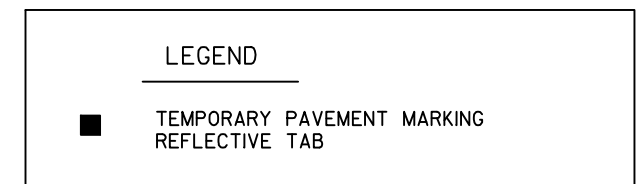
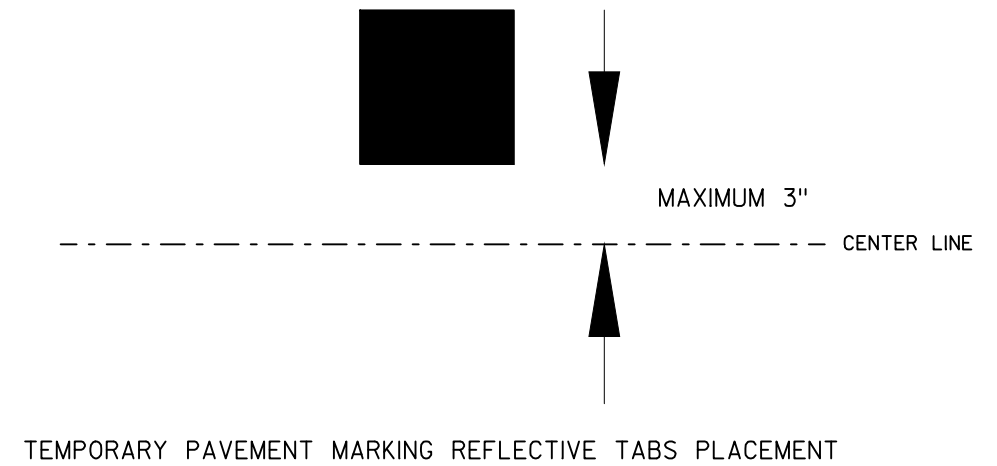
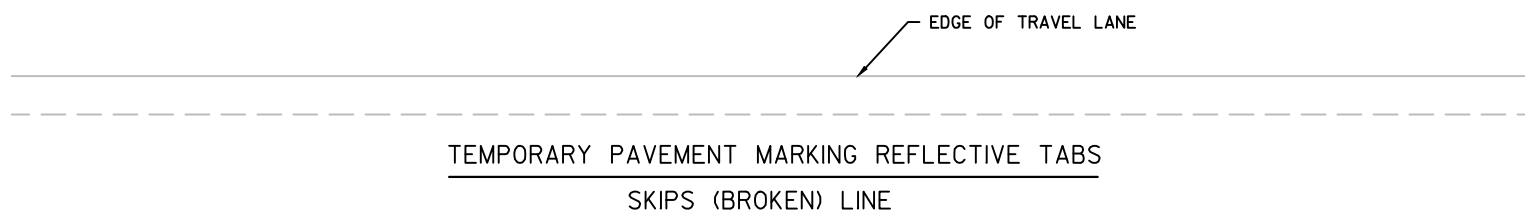
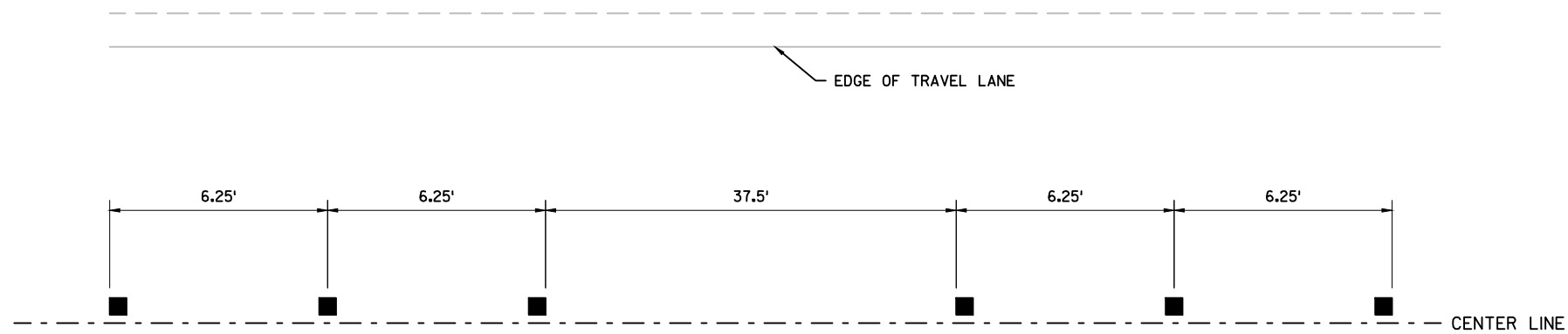
STA 117+20 TO STA 132+00  
 STA 152+32 TO STA 166+76

\* THE LOW SIDE SHOULDER SLOPE ON THE SUPERELEVATED SECTION EQUALS THE SUPERELEVATION RATE WHEN THE SUPERELEVATION RATE IS GREATER THAN 4%. IF THE SUPERELEVATION RATE IS LESS THAN OR EQUAL TO 4%, THE LOW SIDE SHOULDER SLOPE IS 4%. THE HIGH SIDE SHOULDER SLOPE ON SUPERELEVATED SECTIONS EQUALS THE SUPERELEVATION RATE.

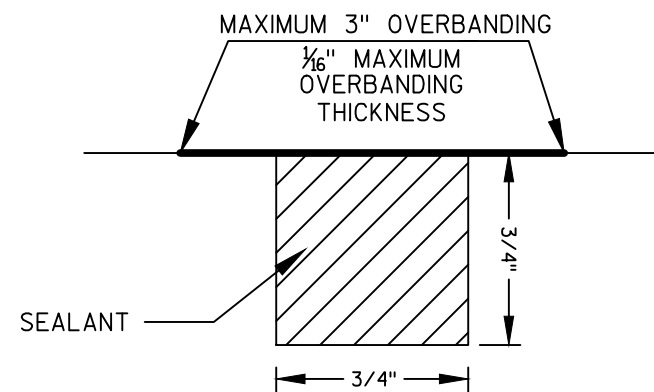




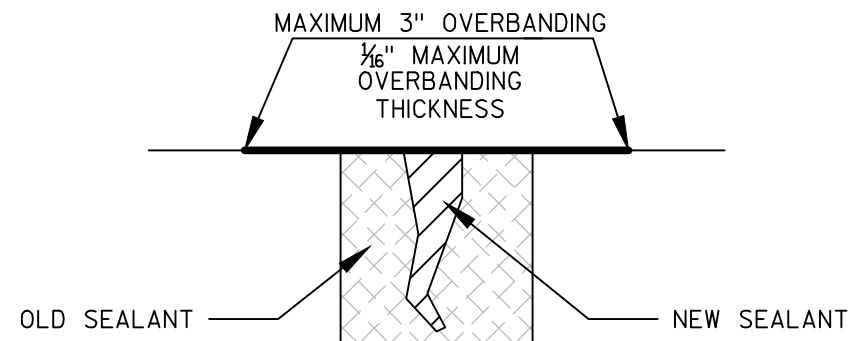
TEMPORARY PAVEMENT MARKING REFLECTIVE TABS  
SOLID (BARRIER) LINE



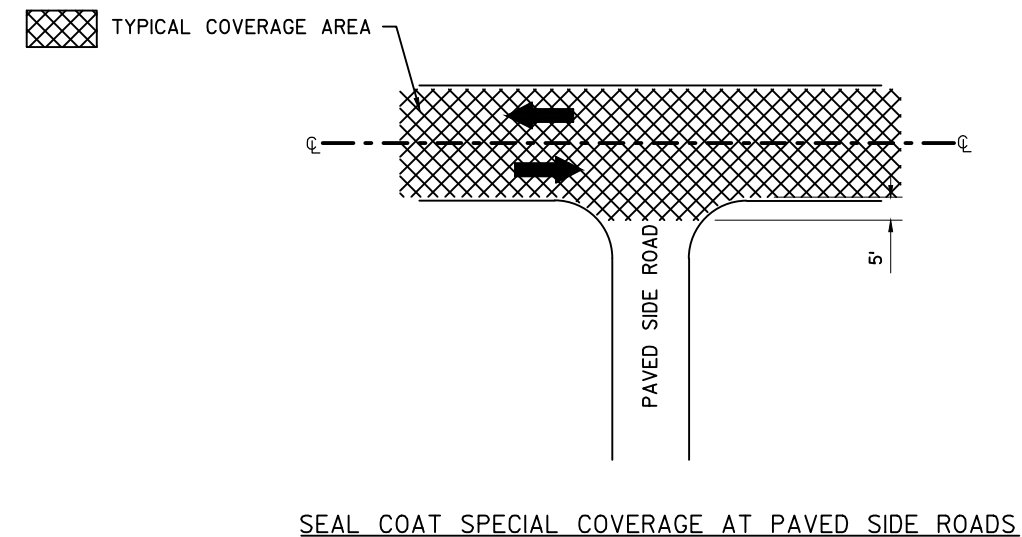
NOTE: TEMPORARY PAVEMENT MARKING REFLECTIVE TABS TO BE PLACED ON EITHER SIDE OF CENTERLINE BASED ON EXISTING CONDITIONS

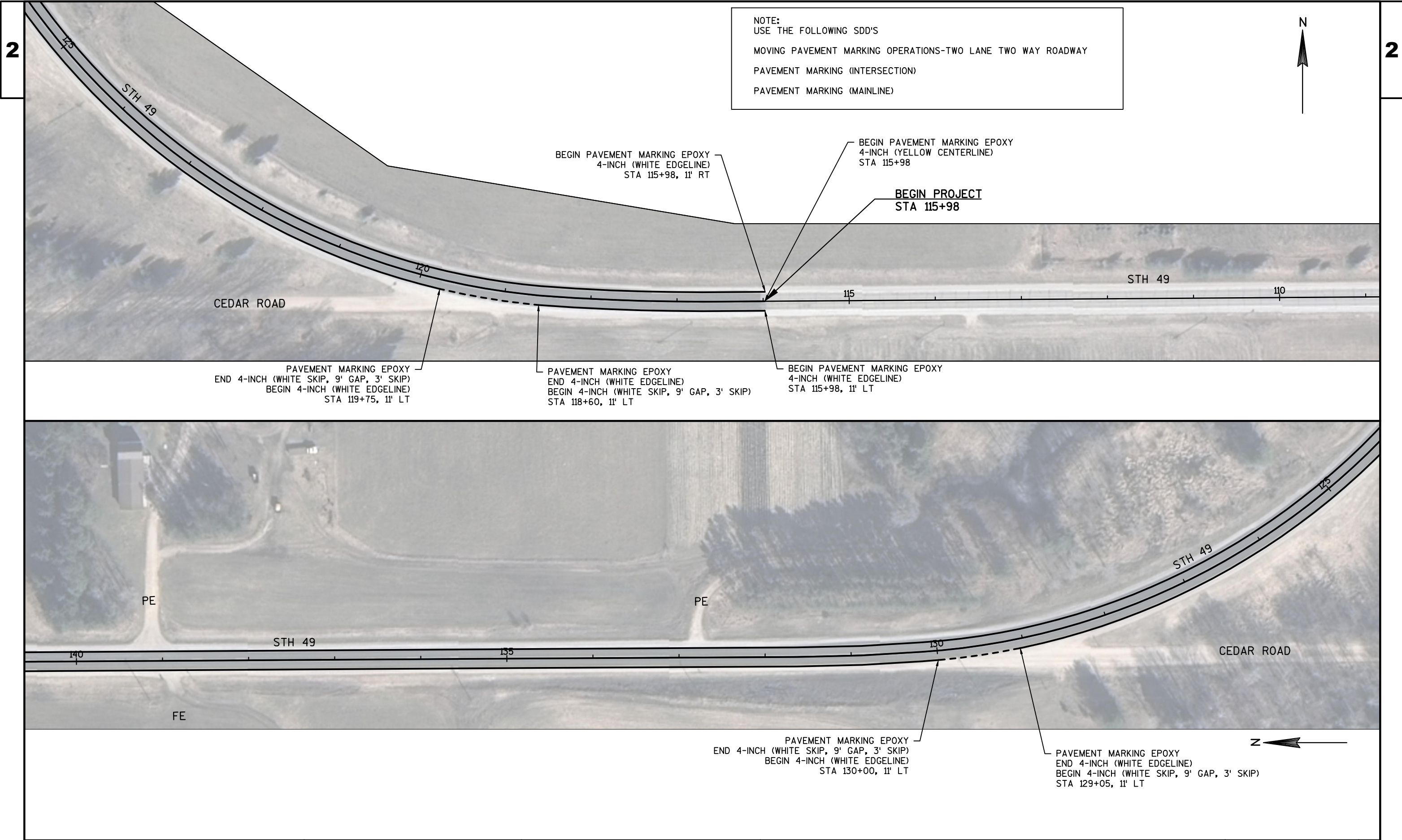


ROUT AND SEAL DETAIL

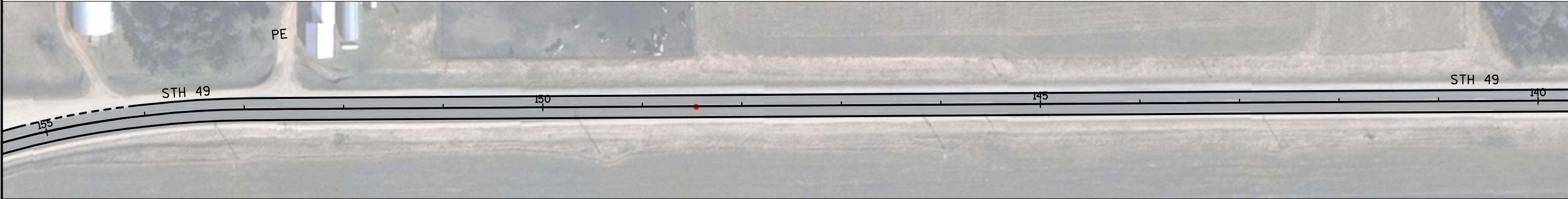


CRACK RE-SEAL DETAIL









PAVEMENT MARKING EPOXY  
END 4-INCH (WHITE SKIP, 9' GAP, 3' SKIP)  
BEGIN 4-INCH (WHITE EDGELINE)  
STA 155+25, 11' RT

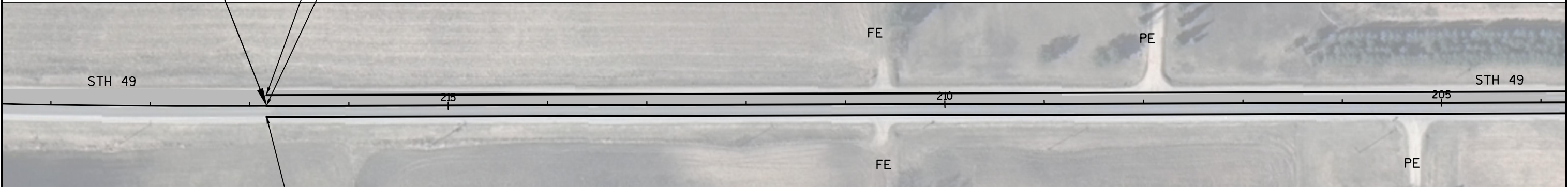
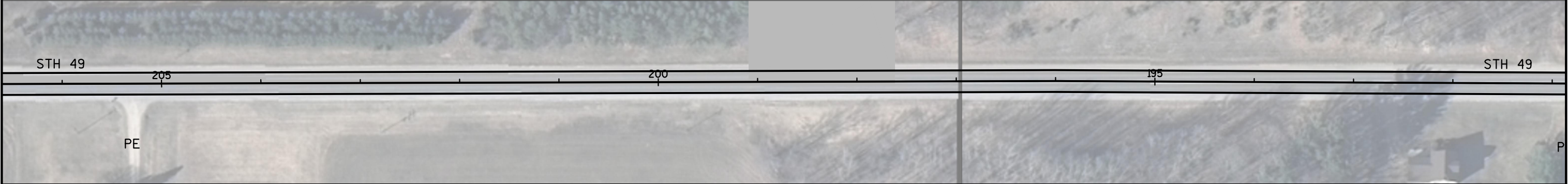
PAVEMENT MARKING EPOXY  
END 4-INCH (WHITE EDGELINE)  
BEGIN 4-INCH (WHITE SKIP, 9' GAP, 3' SKIP)  
STA 154+10, 11' RT









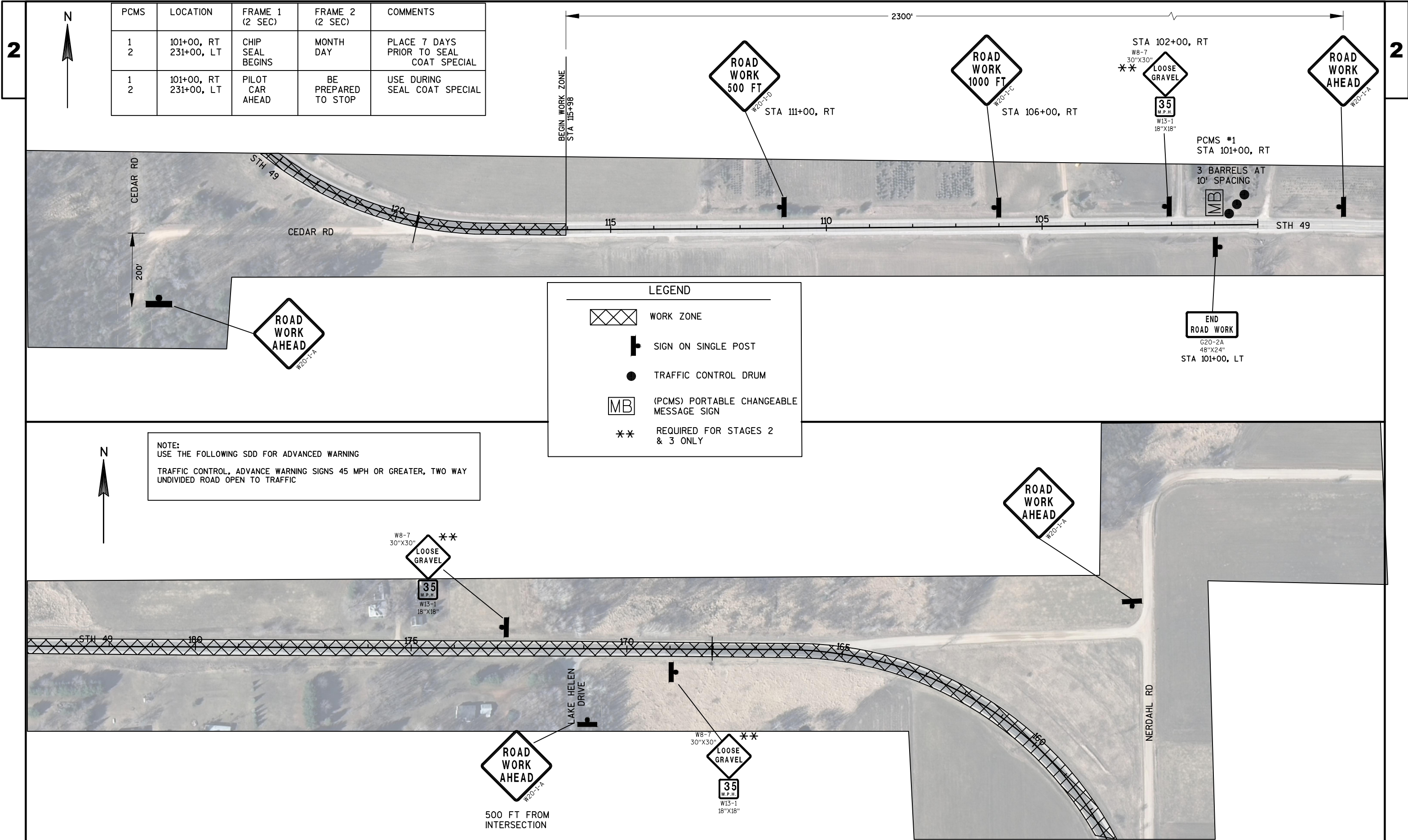


END PROJECT  
STA 216+83

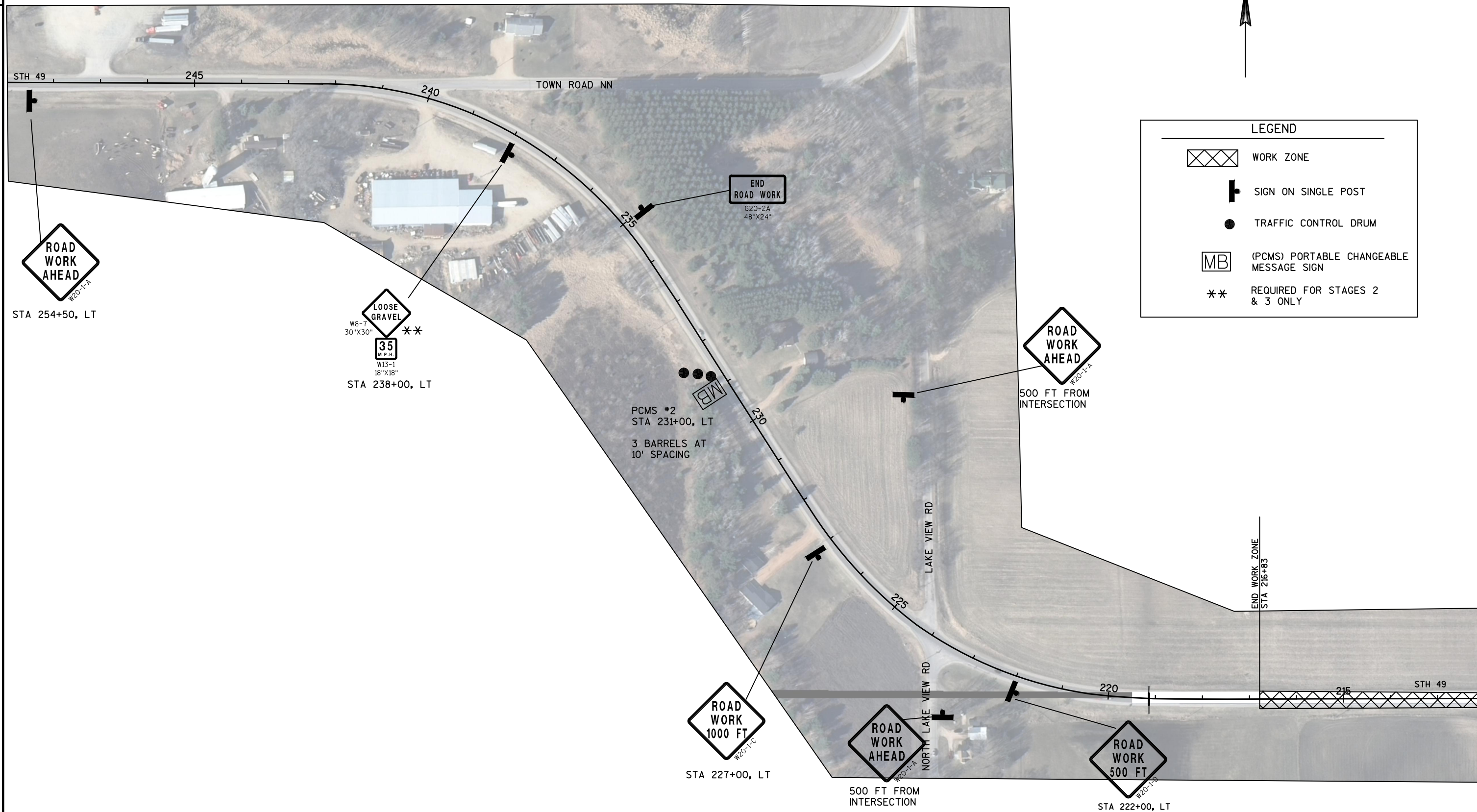
END PAVEMENT MARKING EPOXY  
4-INCH (WHITE EDGETLINE)  
STA 216+83, 11' RT

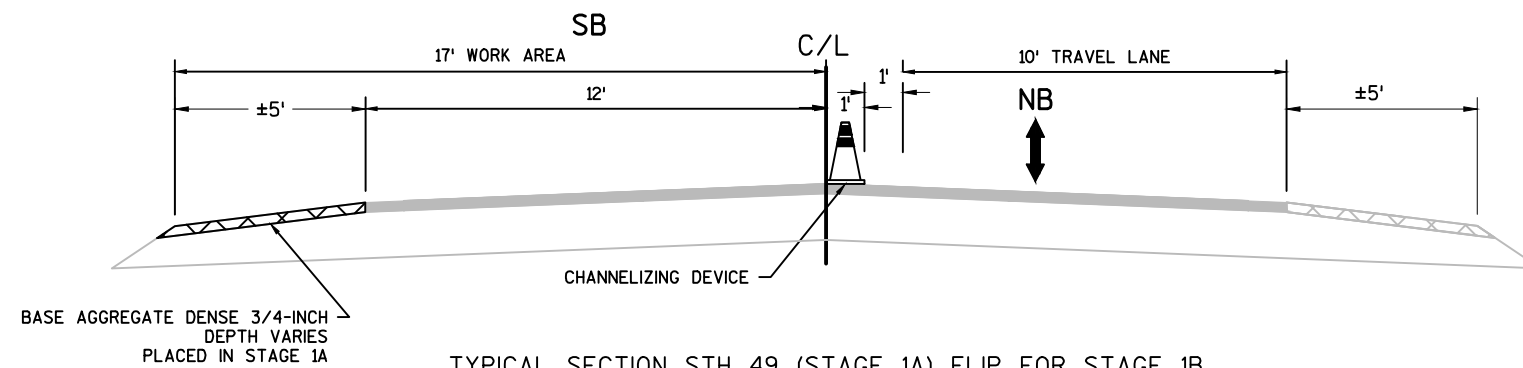
END PAVEMENT MARKING EPOXY  
4-INCH (YELLOW CENTERLINE)  
STA 216+83

END PAVEMENT MARKING EPOXY  
4-INCH (WHITE EDGETLINE)  
STA 216+83, 11' LT

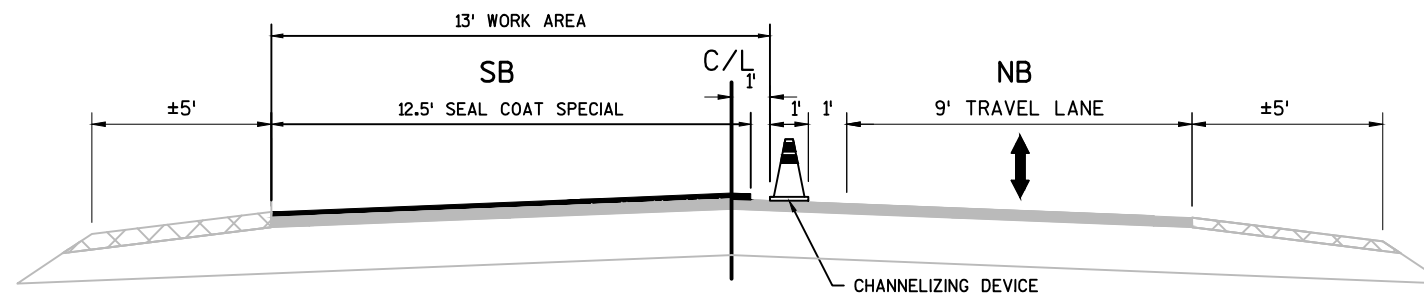




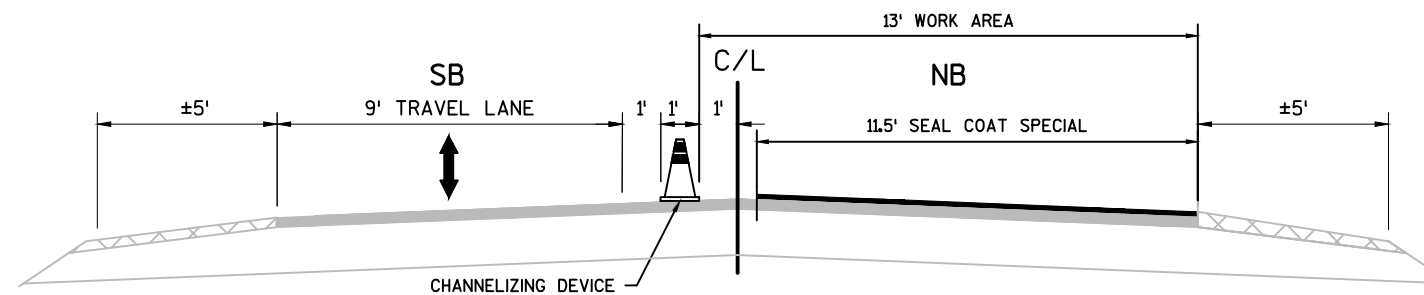




TYPICAL SECTION STH 49 (STAGE 1A) FLIP FOR STAGE 1B  
STA 115+98 TO STA 216+83



TYPICAL SECTION STH 49 (STAGE 2-SB)  
STA 115+98 TO STA 216+83



TYPICAL SECTION STH 49 (STAGE 2-NB)  
STA 115+98 TO STA 216+83

NOTE:

STAGE 1A & 1B (BASE AGGREGATE DENSE, ROUT & SEAL, & ASPHALTIC SURFACE PATCHING)

STAGE 2 & 3 (SEAL COAT SPECIAL)

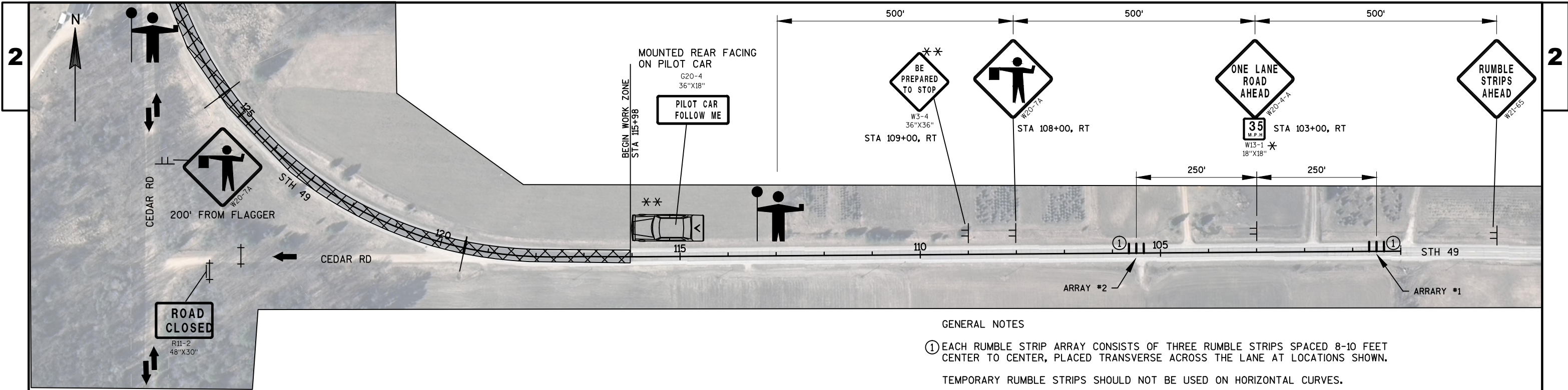
A MINIMUM 10' TRAVEL LANE MUST BE MAINTAINED AT ALL TIMES DURING STAGES 1A AND 1B. A MINIMUM 9' TRAVEL LANE MUST BE MAINTAINED AT ALL TIMES DURING STAGES 2 AND 3.

SPACE CHANNELIZING DEVICES AT 35 FEET TYP.

PLACE TEMPORARY PAVEMENT MARKING REFLECTIVE TABS OR PERMANENT PAVEMENT MARKING BEFORE REMOVING CHANNELIZING DEVICES.

USE THE FOLLOWING SDD FOR TRAFFIC CONTROL  
TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)





GENERAL NOTES

① EACH RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS SPACED 8-10 FEET CENTER TO CENTER, PLACED TRANSVERSE ACROSS THE LANE AT LOCATIONS SHOWN.

TEMPORARY RUMBLE STRIPS SHOULD NOT BE USED ON HORIZONTAL CURVES.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

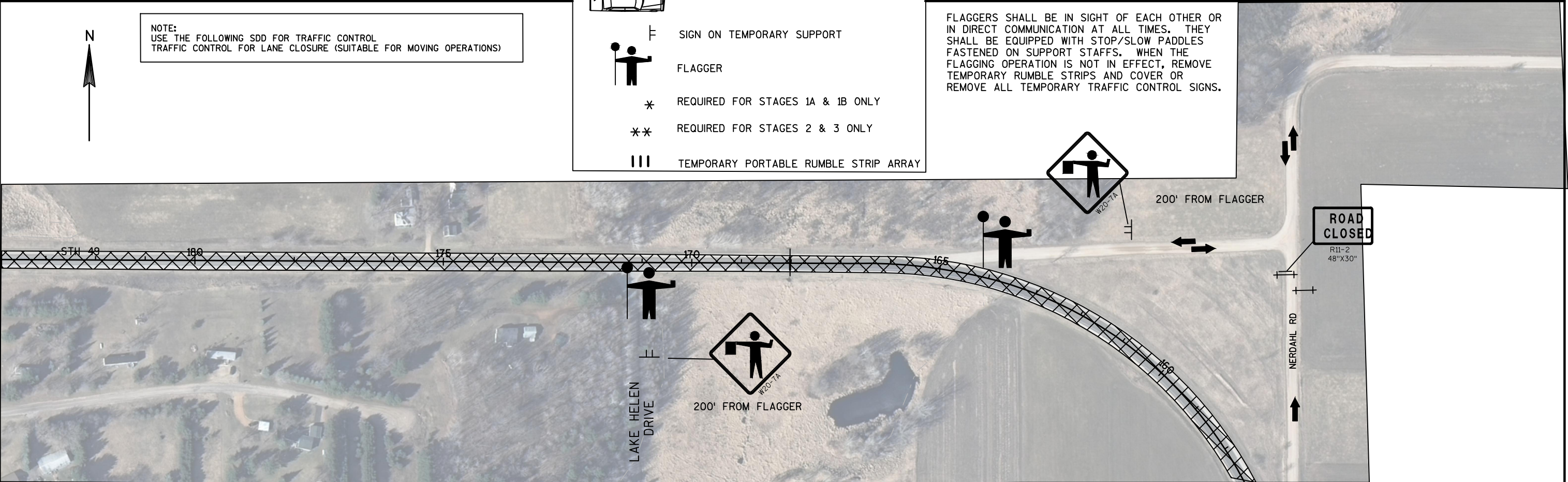
IF TRAFFIC IS OBSERVED TO BE QUEUING OR IS EXPECTED TO QUEUE BEYOND "RUMBLE ARRAY #1" THE W21-65 SIGN AND RUMBLE STRIP ARRAY #1 MAY BE RELOCATED UPSTREAM OF THE W20-1 SIGN AS NECESSARY TO PROVIDE NEEDED WARNING.

NOTE:  
USE THE FOLLOWING SDD FOR TRAFFIC CONTROL  
TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)

LEGEND

- WORK ZONE
- PILOT CAR
- SIGN ON TEMPORARY SUPPORT
- FLAGGER
- \* REQUIRED FOR STAGES 1A & 1B ONLY
- \*\* REQUIRED FOR STAGES 2 & 3 ONLY
- TEMPORARY PORTABLE RUMBLE STRIP ARRAY

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 AND COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.



PROJECT NO:6270-00-62

HWY:STH 49

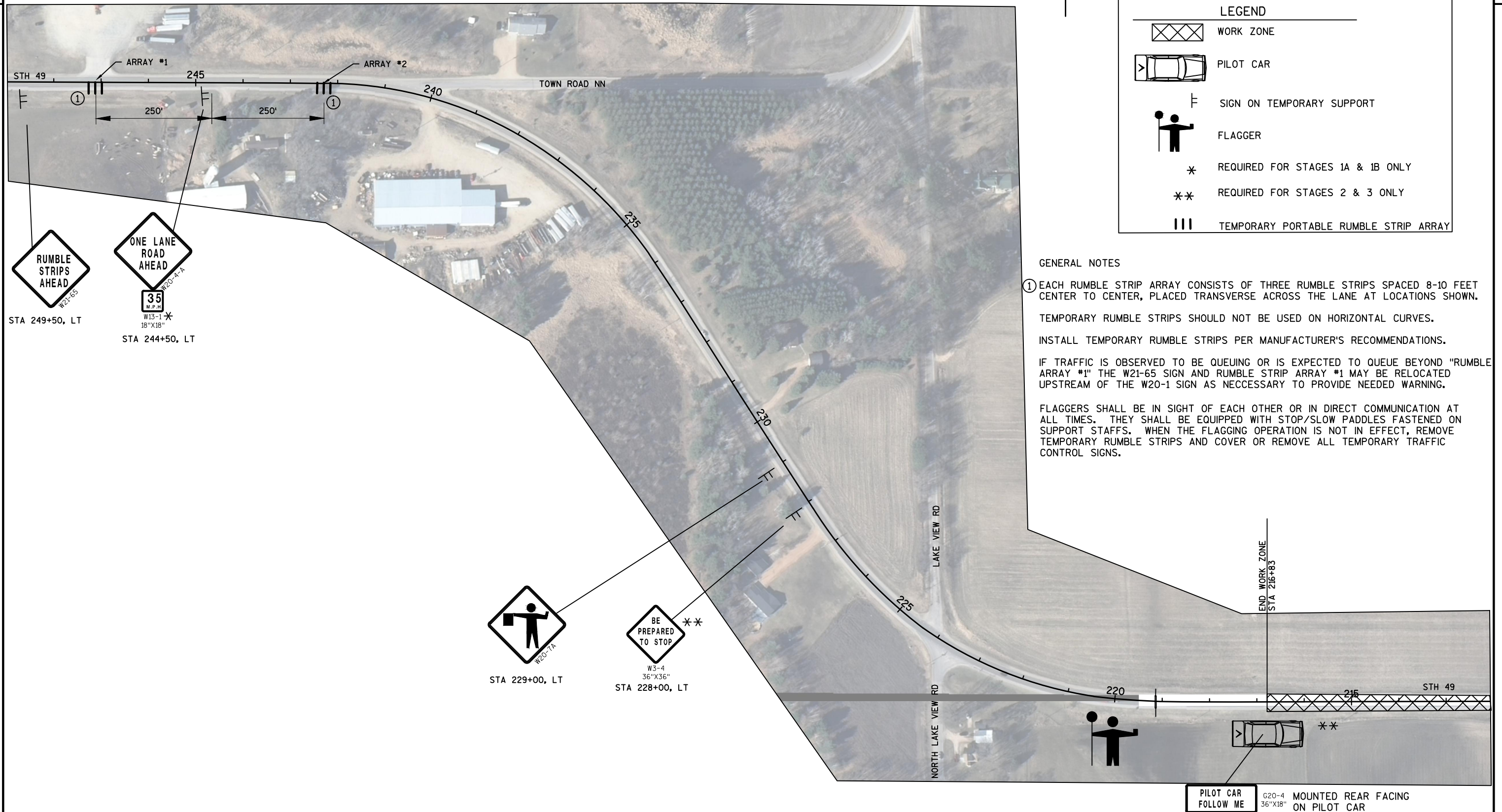
COUNTY:PORTAGE

TRAFFIC CONTROL

SHEET

E





DATE 08JAN16		E S T I M A T E O F Q U A N T I T I E S			
LINE					6270-00-62
NUMBER	ITEM	ITEM DESCRIPTION	UNIT	TOTAL	QUANTITY
0010	204.0110	Removing Asphaltic Surface	SY	730.000	730.000
0020	211.0500	Prepare Foundation for Base Aggregate	STA	101.000	101.000
0030	213.0100	Finishing Roadway (project) 01. 6270-00-62	EACH	1.000	1.000
0040	305.0110	Base Aggregate Dense 3/4-Inch	TON	720.000	720.000
0050	455.0605	Tack Coat	GAL	52.000	52.000
0060	465.0110	Asphaltic Surface Patching	TON	210.000	210.000
0070	618.0100	Maintenance And Repair of Haul Roads (project) 01. 6270-00-62	EACH	1.000	1.000
0080	619.1000	Mobilization	EACH	1.000	1.000
0090	624.0100	Water	MGAL	12.000	12.000
0100	643.0200	Traffic Control Surveillance and Maintenance (project) 01. 6270-00-62	DAY	34.000	34.000
0110	643.0300	Traffic Control Drums	DAY	2,172.000	2,172.000
0120	643.0420	Traffic Control Barricades Type III	DAY	20.000	20.000
0130	643.0705	Traffic Control Warning Lights Type A	DAY	40.000	40.000
0140	643.0900	Traffic Control Signs	DAY	501.000	501.000
0150	643.1050	Traffic Control Signs PCMS	DAY	32.000	32.000
0160	646.0106	Pavement Marking Epoxy 4-Inch	LF	32,495.000	32,495.000
0170	690.0150	Sawing Asphalt	LF	2,320.000	2,320.000
0180	SPV.0060	Special 01. Temporary Pavement Marking Reflective Tabs	EACH	2,700.000	2,700.000
0190	SPV.0060	Special 02. Temporary Portable Rumble Strip Array	EACH	20.000	20.000
0200	SPV.0125	Special 01. Prepare Existing Pavement For Seal Coat Special	MI	1.910	1.910
0210	SPV.0180	Special 01. Seal Coat Special **P**	SY	28,100.000	28,100.000

REMOVING ASPHALTIC SURFACE, TACK COAT, ASPHALTIC SURFACE PATCHING, SAWING ASPHALT

STATION	SIDE	204.0110	455.0605	465.0110	690.0150	REMARKS
		REMOVING ASHPALTIC SURFACE SY	TACK COAT GAL	ASPHALTIC SURFACE PATCHING TONS	SAWING ASPHALT LF	
116+45	SB	16.7	1.2	4.8	40	FULL DEPTH
133+70	SB	3.3	0.2	1.0	16	FULL DEPTH
135+08	SB	4.3	0.3	1.2	19	FULL DEPTH
136+30	SB	6.7	0.5	1.9	26	FULL DEPTH
144+25	SB	5.0	0.4	1.4	21	FULL DEPTH
147+00	SB	6.0	0.4	1.7	24	FULL DEPTH
148+22	NB	19.4	1.4	5.6	45	FULL DEPTH
148+50	SB	5.0	0.4	1.4	21	FULL DEPTH
149+75	NB	33.3	2.3	9.6	70	FULL DEPTH
151+07	NB	10.0	0.7	2.9	49	FULL DEPTH
151+37	SB	3.3	0.2	1.0	16	FULL DEPTH
151+57	NB	22.2	1.6	6.4	50	FULL DEPTH
153+00	NB	13.9	1.0	4.0	35	FULL DEPTH
168+22	NB	13.9	1.0	4.0	35	FULL DEPTH
169+27	NB AND SB	13.3	0.9	3.8	53	FULL DEPTH, OLD PAVEMENT JOINT
169+69	NB AND SB	13.3	0.9	3.8	53	FULL DEPTH, FULL PAVEMENT WIDTH
170+16	NB AND SB	10.7	0.7	3.1	52	FULL DEPTH, FULL PAVEMENT WIDTH
171+00	NB AND SB	8.0	0.6	2.3	51	FULL DEPTH, FULL PAVEMENT WIDTH
172+07	SB	48.9	3.4	14.0	118	FULL DEPTH
173+25	NB	4.4	0.3	1.3	18	FULL DEPTH
174+25	SB	13.3	0.9	3.8	46	FULL DEPTH
176+00	SB	6.7	0.5	1.9	26	FULL DEPTH
177+50	SB	16.7	1.2	4.8	56	FULL DEPTH
181+50	SB	46.7	3.3	13.0	146	FULL DEPTH
186+07	SB	11.7	0.8	3.4	41	FULL DEPTH
208+85	SB	2.8	0.2	0.8	15	FULL DEPTH
213+10	SB	2.2	0.2	0.6	14	FULL DEPTH
UNDISTRIBUTED		368.3	26.5	106.5	1164	FULL DEPTH
TOTAL		730	52	210	2320	

PREPARE FOUNDATION FOR BASE AGGREGATE

STATION - STATION	LOCATION	211.0500 STATION
115+98 TO 216+83	RIGHT/LEFT SHOULDER	101
TOTAL		101

FINISHING ROADWAY (PROJECT)

STATION - STATION	LOCATION	213.0100 EACH	REMARKS
115+98 TO 216+83	PROJECT	1	STH 49
TOTAL		1	

BASE AGGREGATE DENSE

STATION - STATION	LOCATION	305.0110 3/4-INCH TON	REMARKS
115+98 TO 216+83	RIGHT/LEFT SHOULDER	720	SHOULDER RESTORATION
TOTALS		720	

MAINTENANCE AND REPAIR OF HAUL ROADS

STATION - STATION	LOCATION	618.0100 EACH	REMARKS
115+98 TO 216+83	PROJECT	1	STH 49
TOTAL		1	

MOBILIZATION

STATION - STATION	LOCATION	619.1000 EACH
115+98 TO 216+83	PROJECT	1
TOTAL		1

WATER

STATION - STATION	LOCATION	624.0100 MGAL
115+98 TO 216+83	PROJECT	12
TOTAL		12

TRAFFIC CONTROL

(SEE TRAFFIC CONTROL SCHEDULE SHEETS FOR LOCATION AND QUANTITY BREAKDOWN)

	643.0200 TRAFFIC CONTROL SURVEILLANCE AND MAINTENANCE DAYS	643.0300 TRAFFIC CONTROL DRUM DAYS	643.0420 BARRICADES TYPE III DAYS	643.0705 TRAFFIC CONTROL WARNING LIGHTS TYPE A DAYS	643.0900 SIGNS DAYS	643.1050 TRAFFIC CONTROL SIGNS PCMS DAYS
STAGE 1A & 1B		777			44	
STAGE 2 SB & 2 NB	34	1395	20	40	457	32
TOTALS	34	2172	20	40	501	32

643.0300 TO BE USED FOR CHANNELIZING DEVICES  
REMOVE ALL TRAFFIC CONTROL BETWEEN STAGES 1B & 2

TEMPORARY PAVEMENT MARKING REFLECTIVE TABS

STATION - STATION	LOCATION	SPV.0060.01 EACH	REMARKS
115+98 TO 216+83	CENTERLINE	2700	YELLOW, MULTICOVER
	TOTAL	2700	

PAVEMENT MARKING EPOXY

STATION - STATION	LOCATION	646.0106 4-INCH EDGE LINE WHITE LF	646.0106 4-INCH NO PASSING YELLOW LF
115+98 TO 216+83	EDGE LINE	20510	0
115+98 TO 216+83	CENTERLINE	0	11985
	TOTAL	20510	11985
	PROJECT TOTAL		32495

TEMPORARY PORTABLE RUMBLE STRIP ARRAY

STAGE	SPV.0060.02 EACH
STAGE 2 SB AND 2 NB	20
TOTAL	20

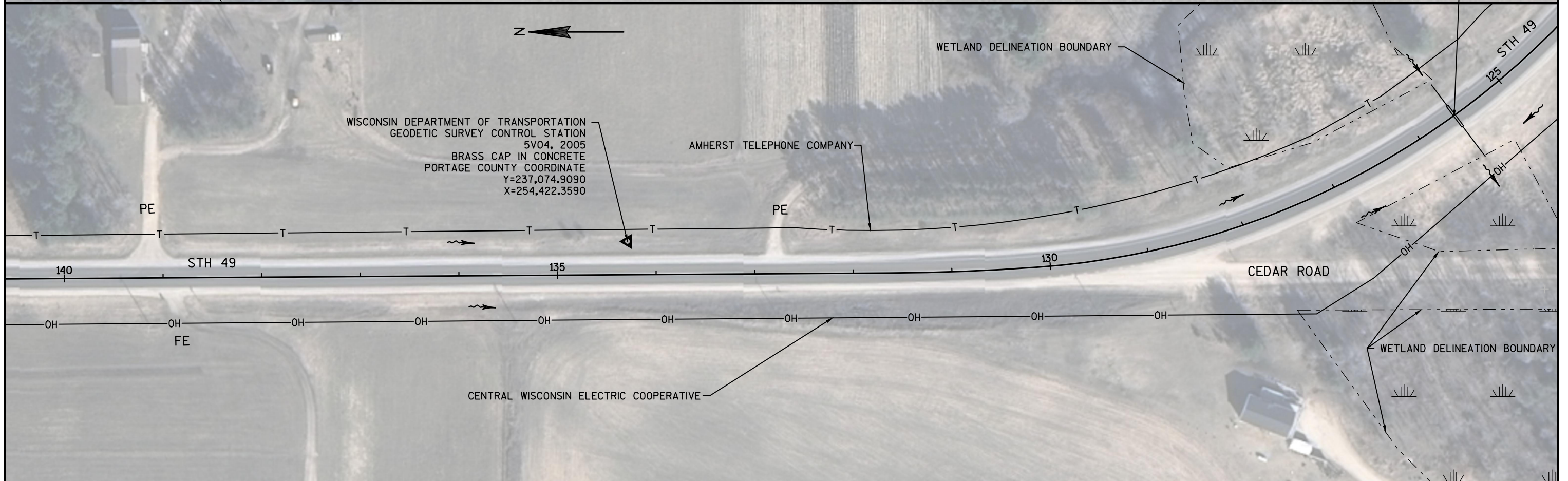
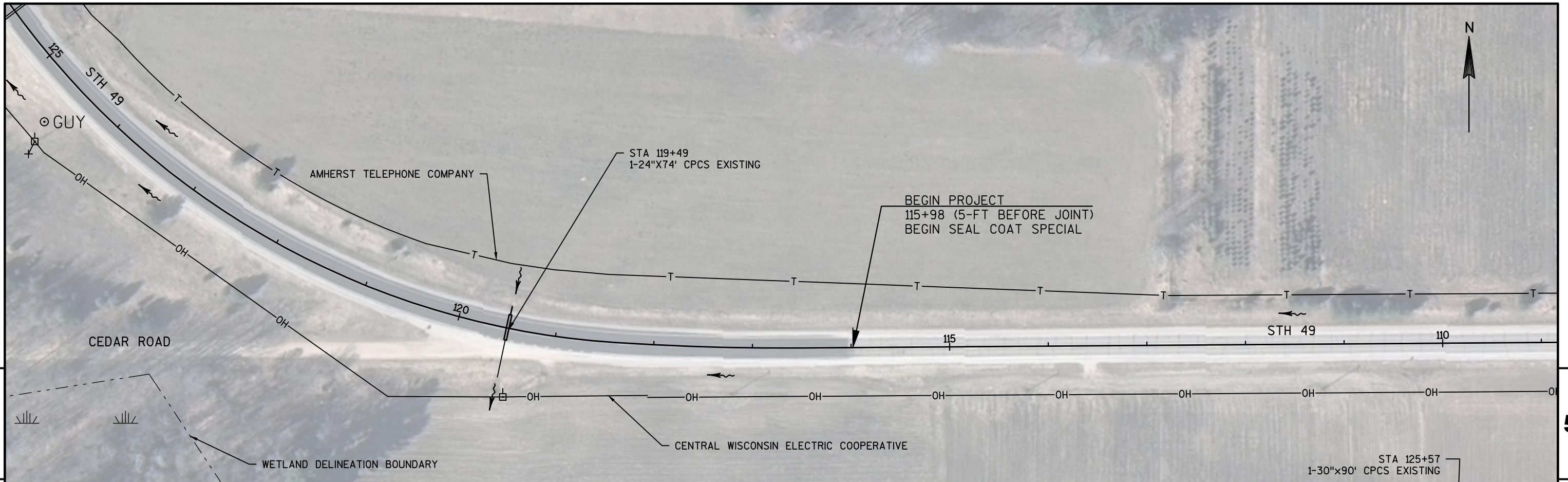
PREPARE EXSITING PAVEMENT FOR SEAL COAT SPECIAL

STATION - STATION	LOCATION	SPV.0125.01 MI
115+98 TO 216+83	PROJECT	1.91
	TOTAL	1.91

SEAL COAT SPECIAL

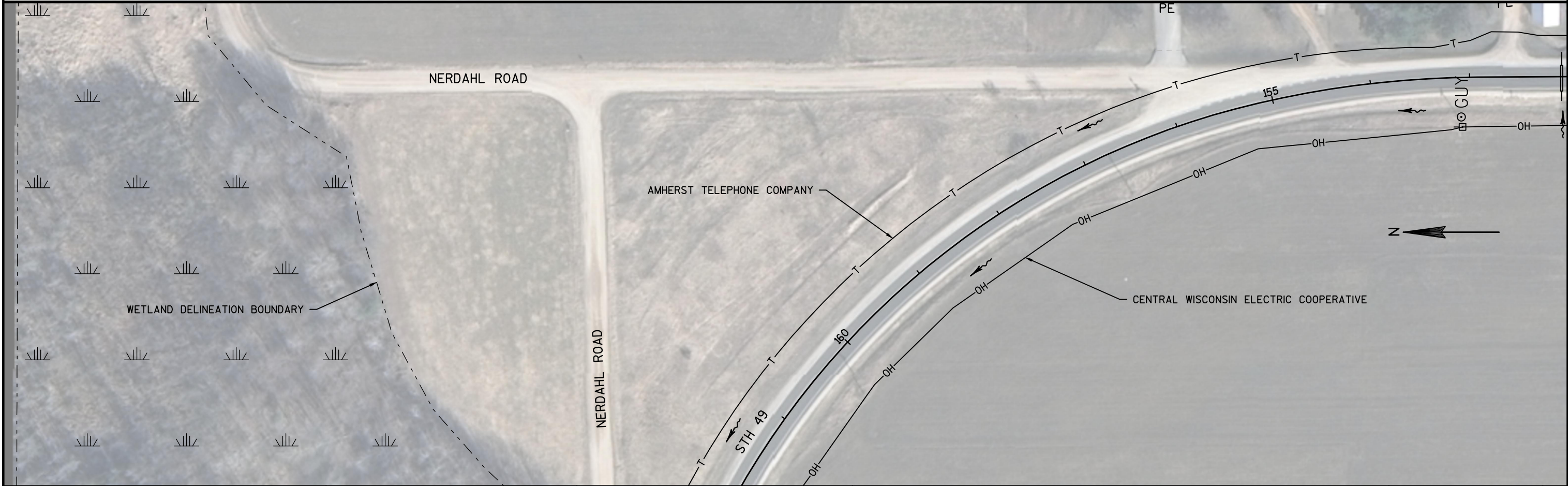
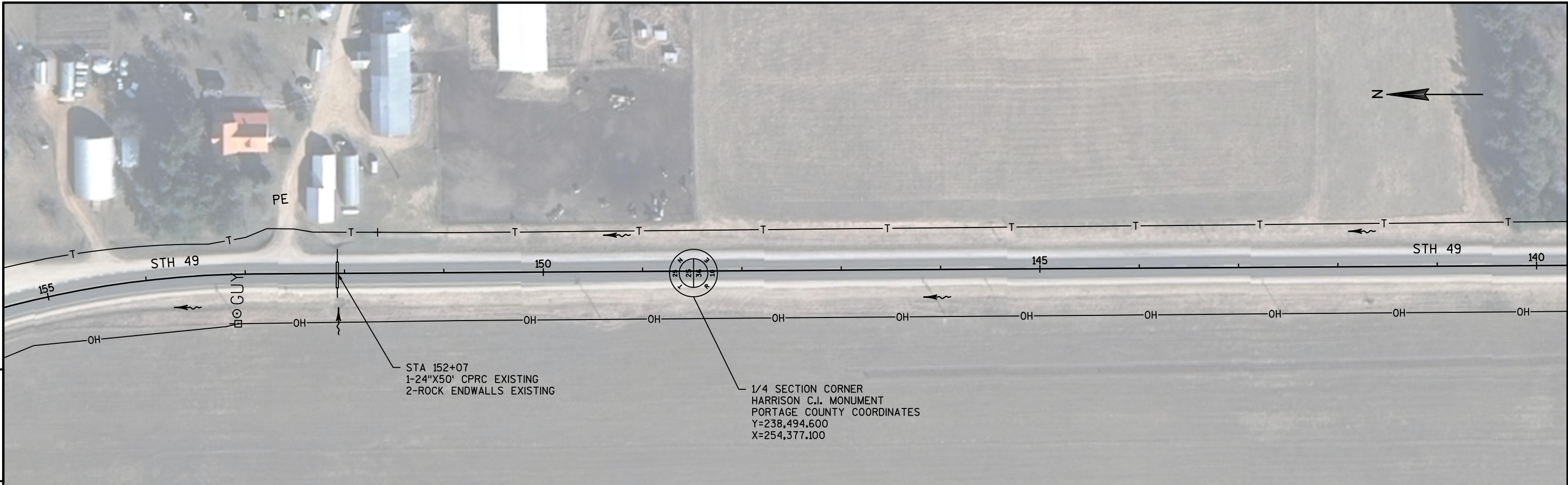
STATION - STATION	LOCATION	SPV.0180.01 SY
115+98 TO 216+83	PROJECT	28100
	TOTAL	28100





PROJECT NO:6270-00-62	HWY:STH 49	COUNTY:PORTAGE	PLAN DETAIL	SHEET	E
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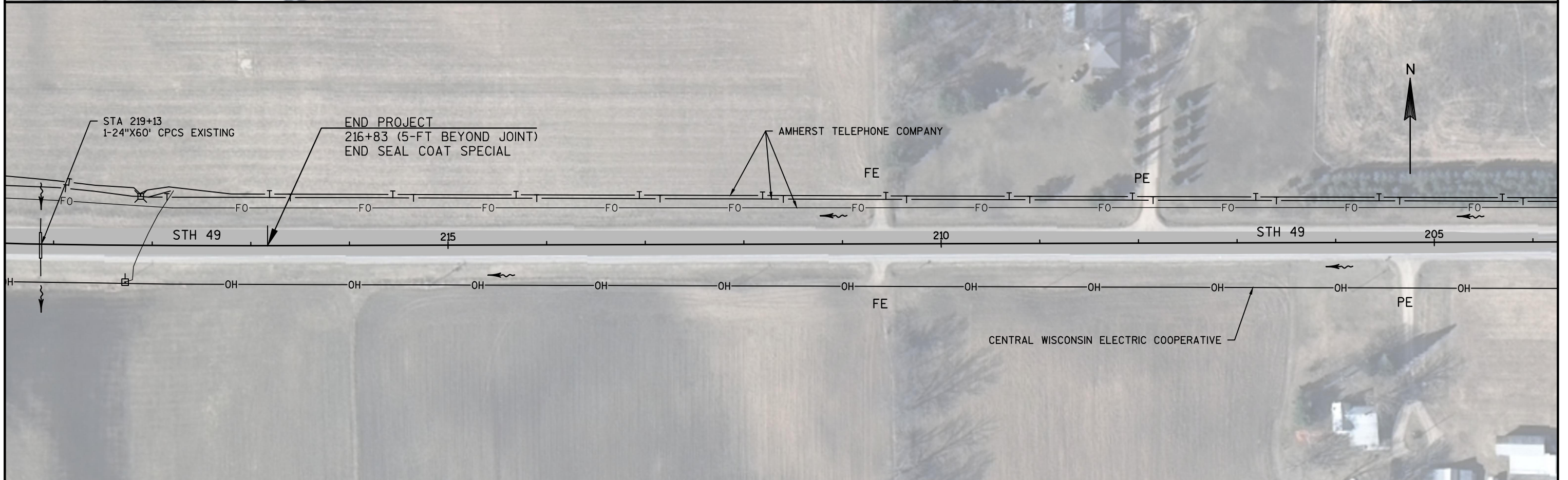
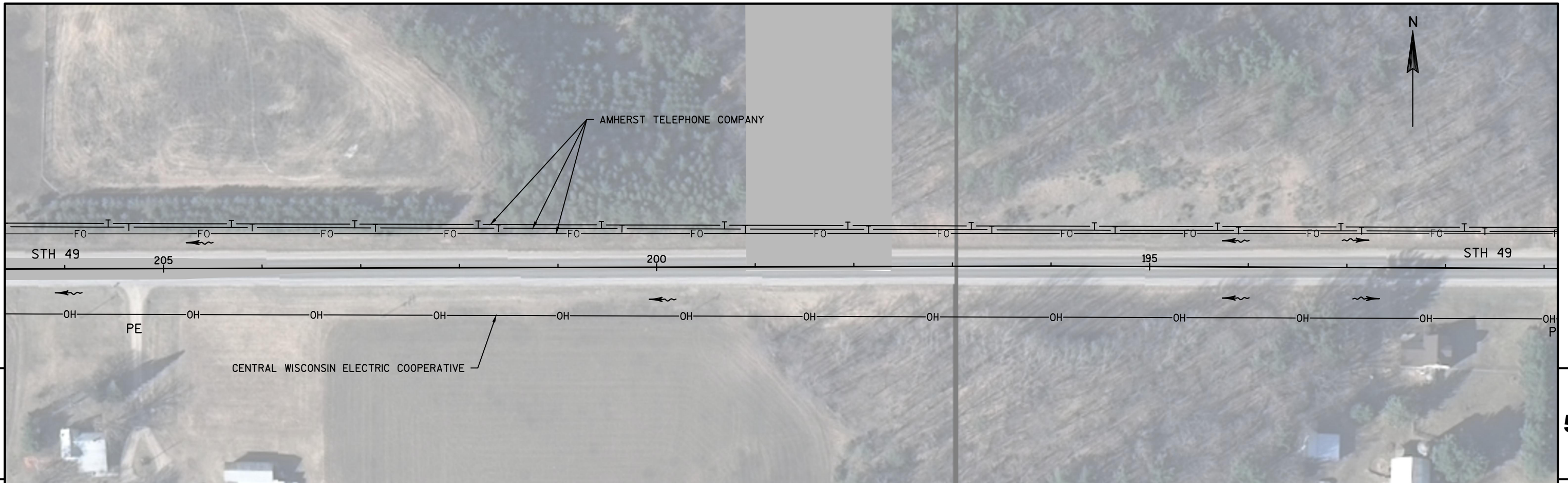








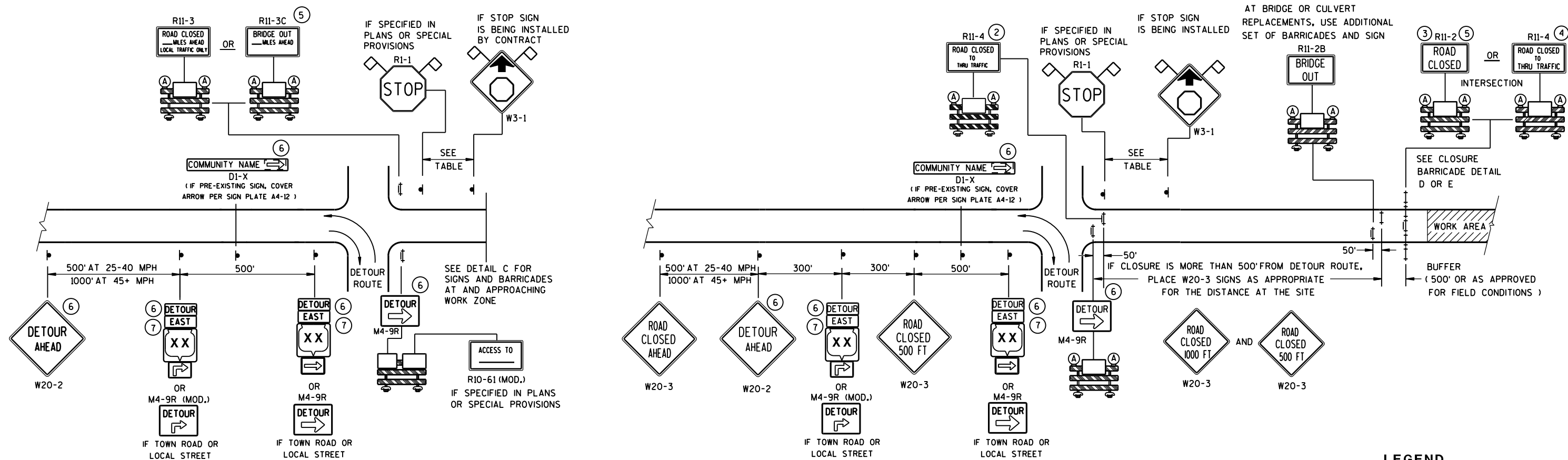




PROJECT NO:6270-00-62	HWY:STH 49	COUNTY:PORTAGE	PLAN DETAIL	SHEET	E
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Standard Detail Drawing List

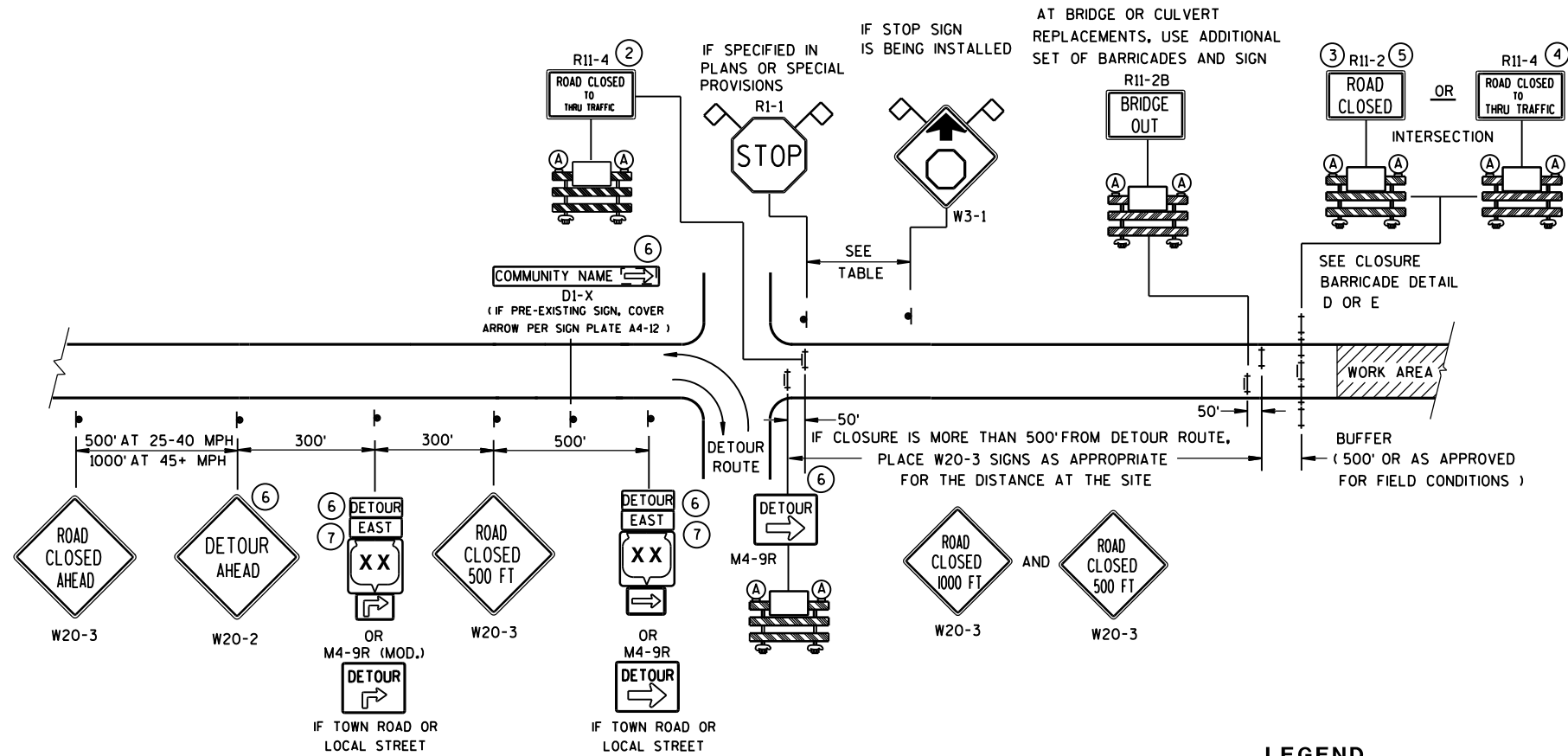
15C02-05A	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C02-05B	BARRICADES AND SIGNS FOR MAINLINE CLOSURES
15C03-02	BARRICADES AND SIGNS FOR SIDEROAD CLOSURES
15C04-02	TRAFFIC CONTROL, ADVANCE WARNING SIGNS 45 M. P. H. OR GREATER TWO-WAY UNDIVIDED ROAD OPEN TO TRAFFIC
15C08-16A	PAVEMENT MARKING (MAINLINE)
15C08-16B	PAVEMENT MARKING (INTERSECTIONS)
15C12-04	TRAFFIC CONTROL FOR LANE CLOSURE (SUITABLE FOR MOVING OPERATIONS)
15C19-02A	MOVING PAVEMENT MARKING OPERATION TWO-LANE TWO-WAY ROADWAY



DETAIL A

**MAINLINE CLOSURE WITH POSTED DETOUR**

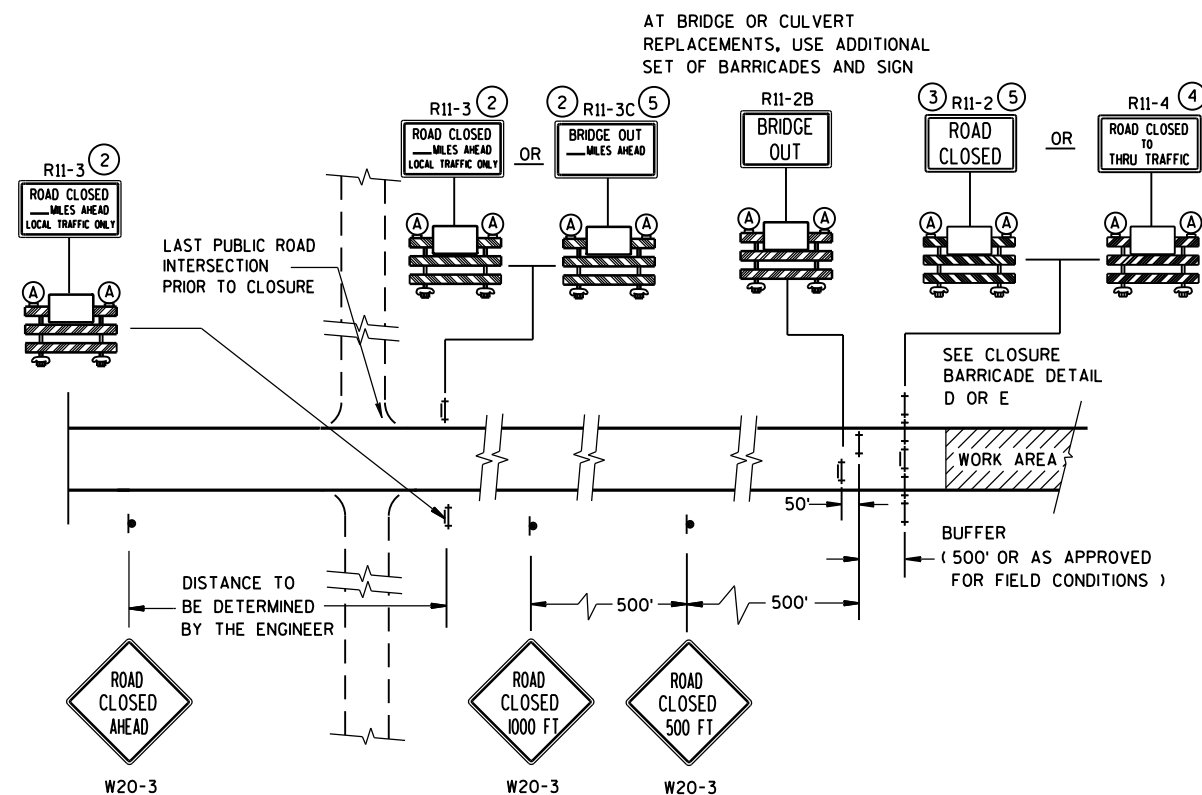
WORK ZONE GREATER THAN 1/2 MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )



DETAIL B














**MAINLINE CLOSURE WITH POSTED DETOUR**

WORK ZONE LESS THAN 1/2 MILE FROM DETOUR ROUTE ( 1000 FEET IF URBAN )



DETAIL C  
MAINLINE CLOSURE, NO POSTED DETOUR

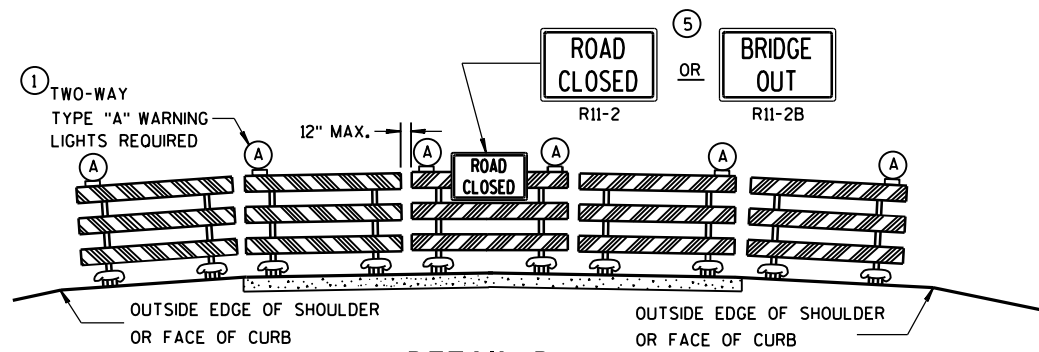
SPEED LIMIT (MPH)	"STOP AHEAD" ADVANCE WARNING DISTANCE (FT)
25	200
30	200
35	350
40	350
45	500
50	550
55	750

- # LEGEND
-  SIGN ON PERMANENT SUPPORT
-  TYPE III BARRICADE
-  TYPE III BARRICADE WITH ATTACHED SIGN
-  TYPE "A" WARNING LIGHT (FLASHING)
-  WORK AREA
-  M4-8  
 M3-X
-  M1-4 OR  M1-5A OR  M1-6
-  M05-1 OR  M06-1
-  FLAGS, 16" X 16" MIN., (ORANGE)

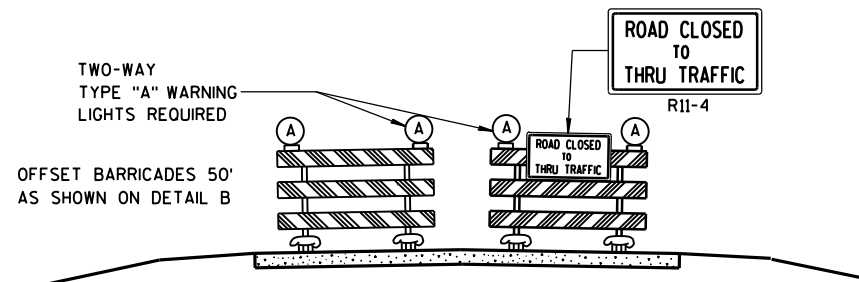
SEE SDD 15C2-SHEET "b"  
FOR GENERAL NOTES  
AND FOOTNOTES ① THROUGH ⑦

<b>BARRICADES AND SIGNS FOR MAINLINE CLOSURES</b>	
<b>STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION</b>	
<u>8/2013</u> DATE	<u>/S/ Travis Feltes</u> STATE TRAFFIC ENGINEER OF DESIGN





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



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

SEE SDD 15C2-SHEET "a" FOR LEGEND

### GENERAL NOTES

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

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

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

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

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-3, R11-4 AND R10-61 SHALL BE 60" X 30".

M4-9 SHALL BE 30" X 24".

M3-X SHALL BE 24" X 12". (36" X 18" IF NEEDED TO MATCH EXISTING SIGNS.)

M4-8 SHALL BE 24" X 12". (30" X 15" IF NEEDED TO MATCH EXISTING SIGNS.)

M1-4, M1-5A, AND M1-6 SHALL BE 24" X 24". (36" X 36" IF NEEDED TO MATCH EXISTING SIGNS.)

M05-1 AND M06-1 SHALL BE 21" X 21". (30" X 30" IF NEEDED TO MATCH EXISTING SIGNS.)

D1-X SHALL BE AS SHOWN ON SPECIFIC PROJECT SIGNING DETAIL SHEETS.

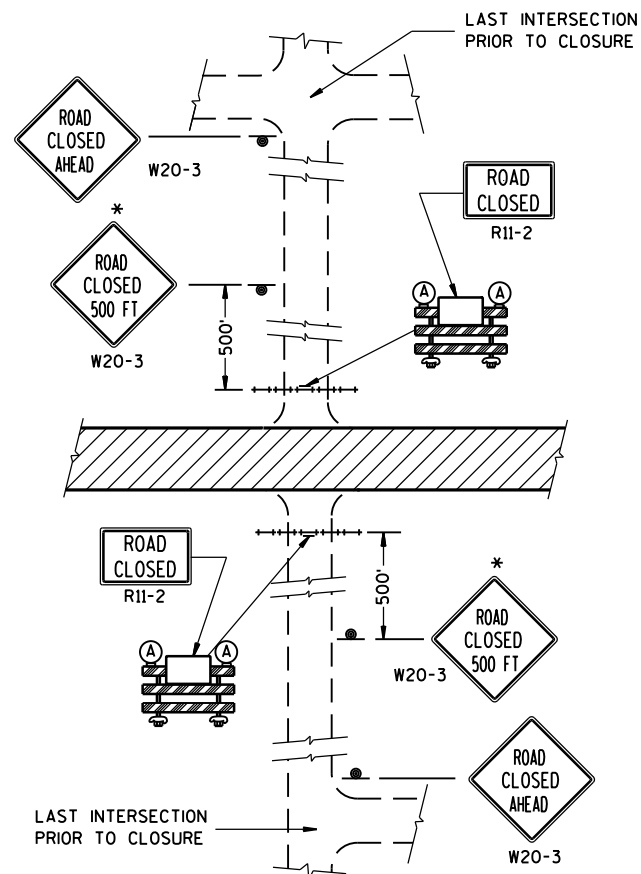
R1-1 SHALL BE 36" X 36".

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

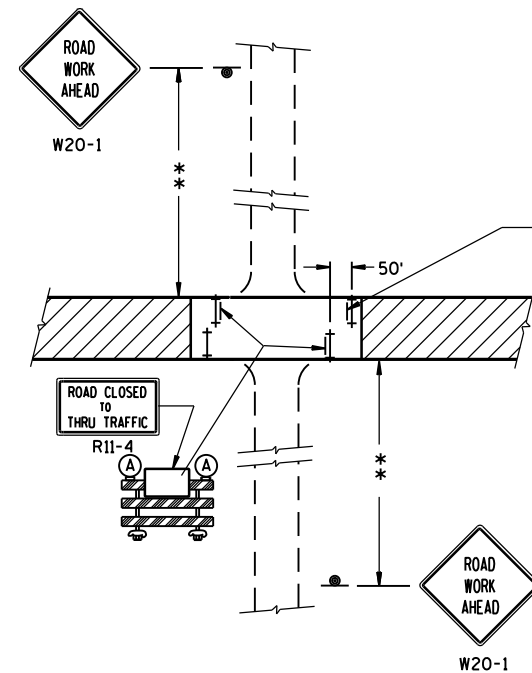
**BARRICADES AND SIGNS  
FOR  
MAINLINE CLOSURES**

**STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION**

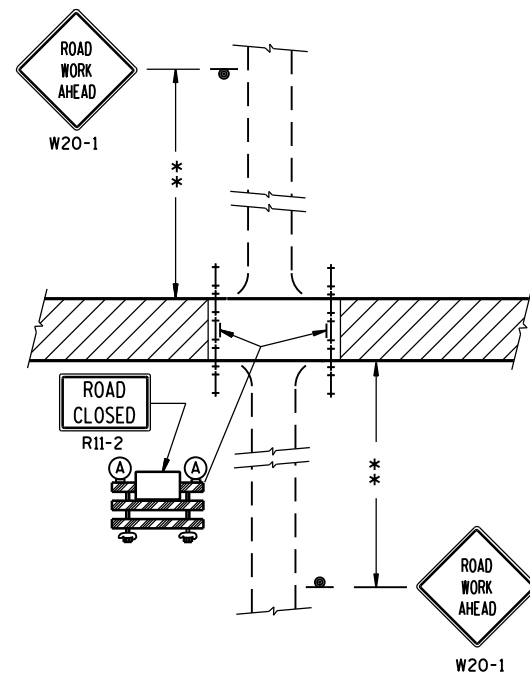
8/2013 /S/ Travis Feltes  
DATE STATE TRAFFIC ENGINEER OF DESIGN  
FHWA



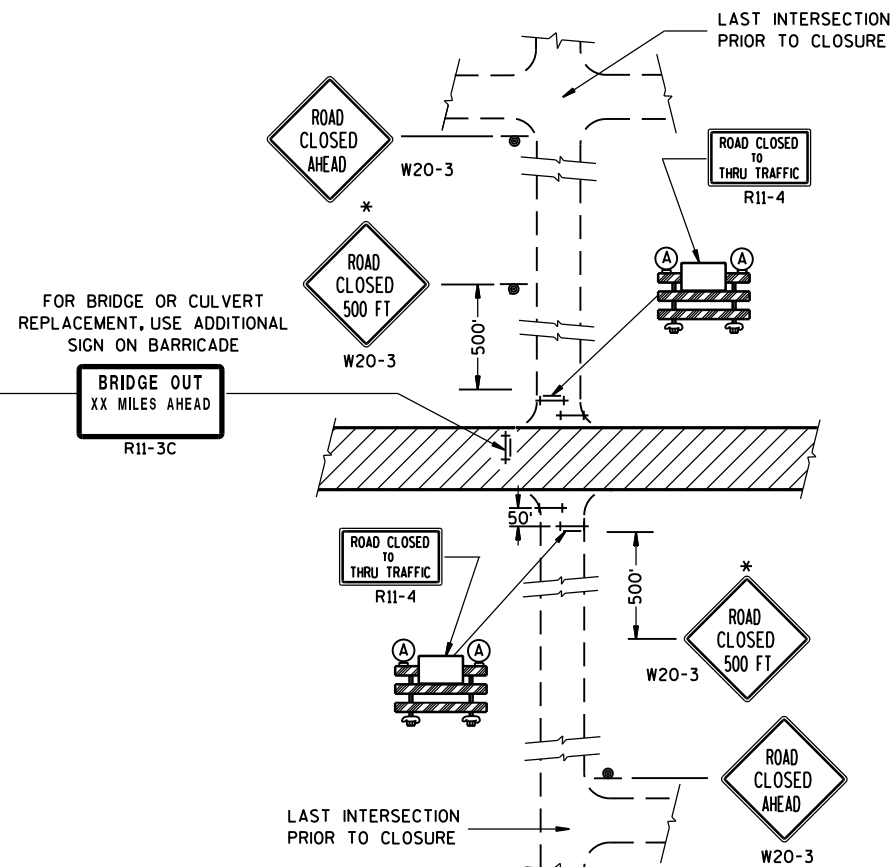
**DETAIL 1**  
(NO ACCESS TO PROJECT)



**DETAIL 3**  
(PUBLIC CROSS-TRAFFIC MAINTAINED. CONTRACTOR, LOCAL BUSINESS AND RESIDENT ACCESS).



**DETAIL 2**  
(PUBLIC CROSS-TRAFFIC MAINTAINED.  
NO ACCESS TO PROJECT).



**DETAIL 4**  
(CONTRACTOR, LOCAL BUSINESS AND  
RESIDENT ACCESS TO PROJECT)

## GENERAL NOTES

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

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

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

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.

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

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

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

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

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

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

R11-2 SHALL BE 48" X 30".

R11-4 AND R11-3 SHALL BE 60" X 30".

\*OMIT THE "ROAD CLOSED 500 FT." SIGN IF THE LAST INTERSECTION IS 500 FT. OR LESS FROM THE WORK ZONE.

\*\*500' MAX. OR AT LAST INTERSECTION WHICHEVER IS CLOSER.

## LEGEND

- ⊙ SIGN ON PERMANENT SUPPORT
- ⊥ TYPE III BARRICADE
- ⊥ TYPE III BARRICADE WITH ATTACHED SIGN
- (A) TYPE "A" WARNING LIGHT (FLASHING)
- ▨ WORK AREA

## BARRICADES AND SIGNS FOR SIDEROAD CLOSURES

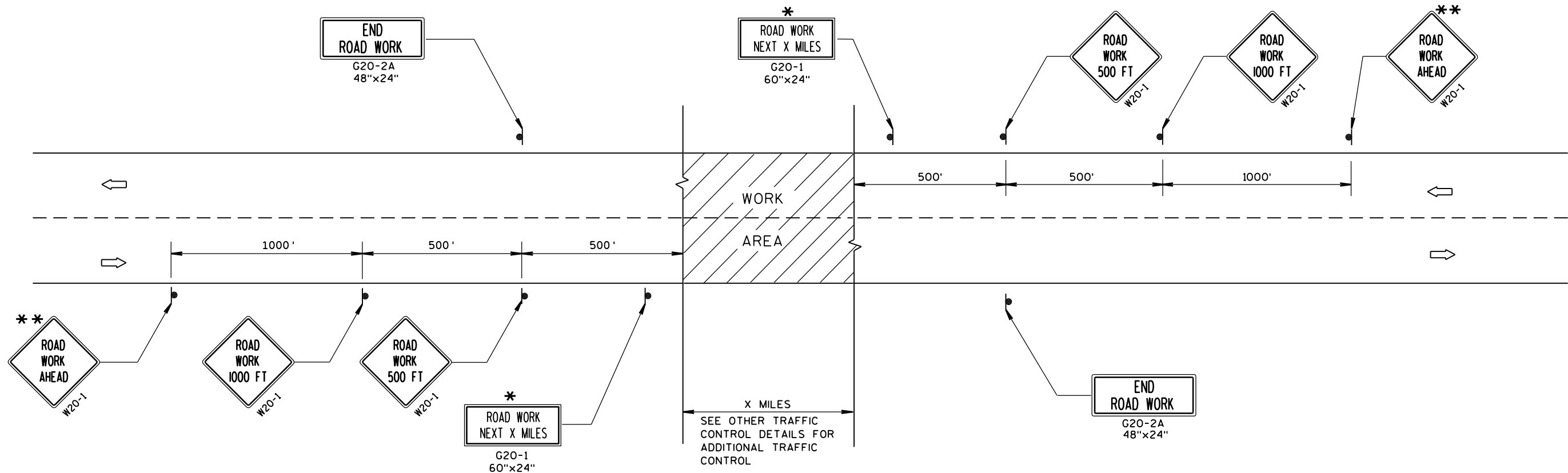
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

8/2013 /S/ Travis Feltes

DATE STATE TRAFFIC ENGINEER OF DESIGN

FHWA



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.

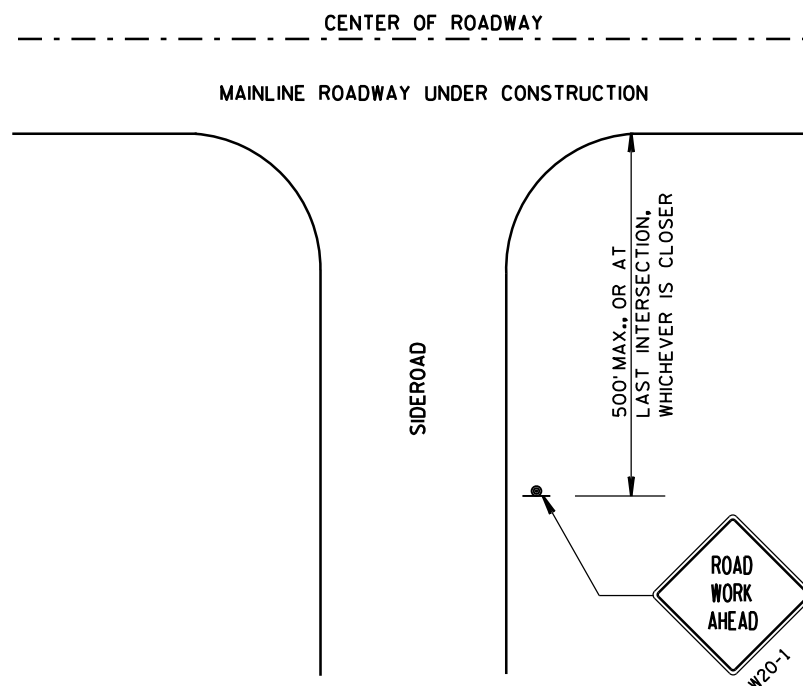
ALL SIGNS ARE 48"x48" UNLESS OTHERWISE NOTED.

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

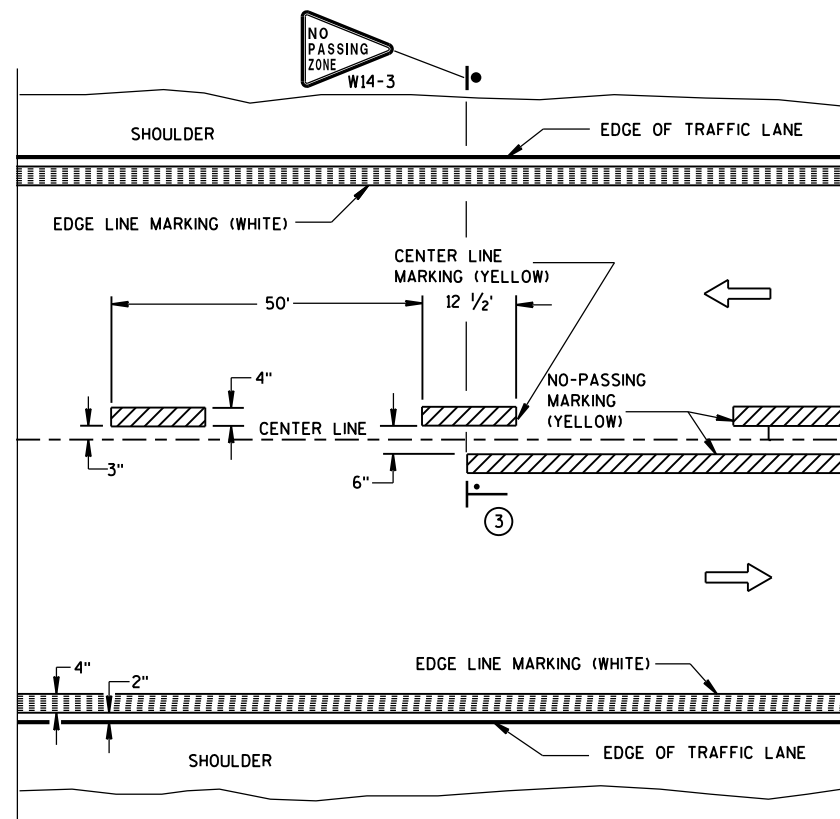


## LEGEND

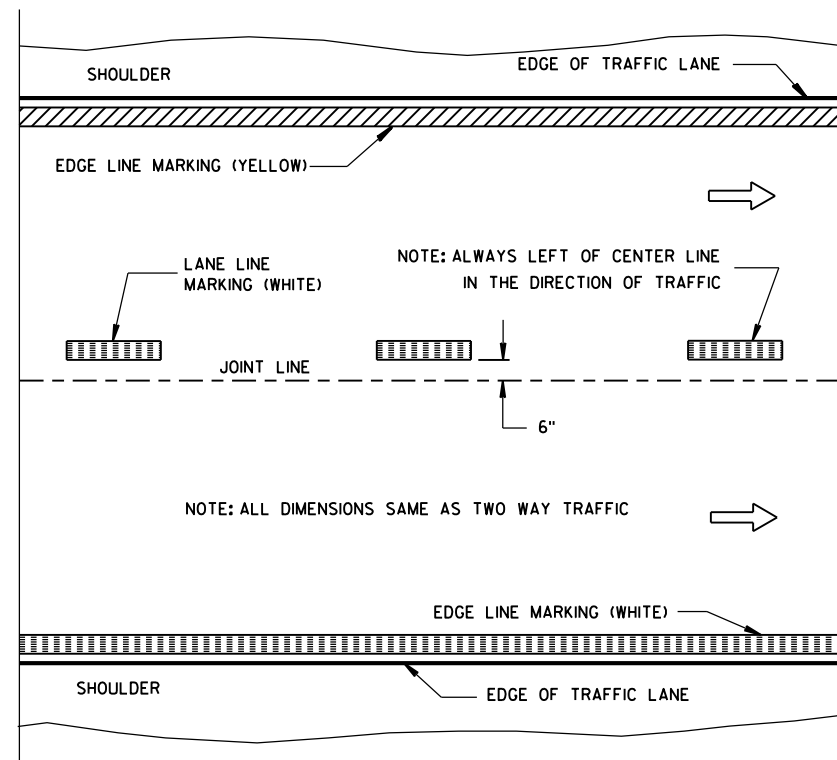
- SIGN ON PERMANENT SUPPORT
- DIRECTION OF TRAFFIC
- WORK AREA

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 8/2013 DATE	/S/ Travis Feltes STATE TRAFFIC ENGINEER OF DESIGN
FHWA	



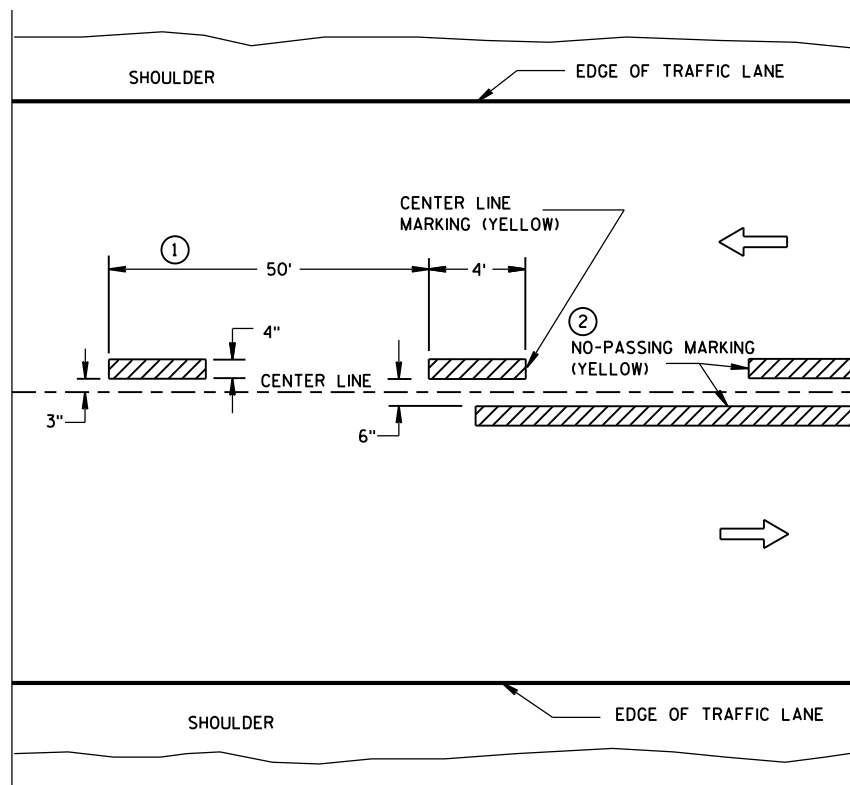


TWO WAY TRAFFIC

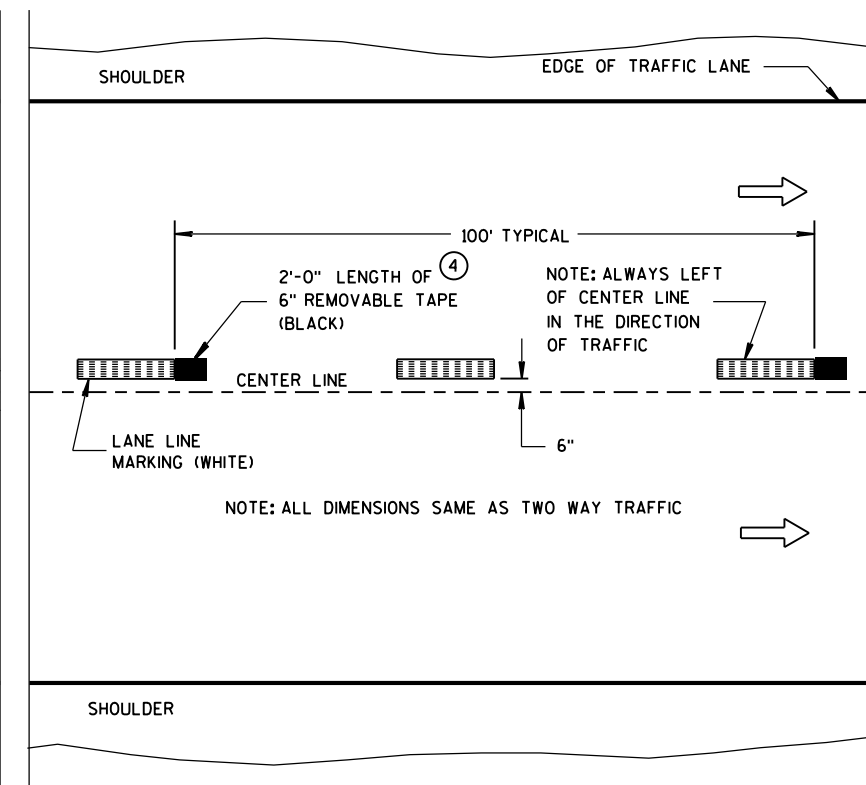


ONE WAY TRAFFIC

## PERMANENT PAVEMENT MARKING



TWO WAY TRAFFIC



ONE WAY TRAFFIC

TEMPORARY (INTERMEDIATE) PAVEMENT MARKING  
(SHOWS CYCLE FOR TEMPORARY CENTER LINE OR TEMPORARY LANE LINE MARKING)

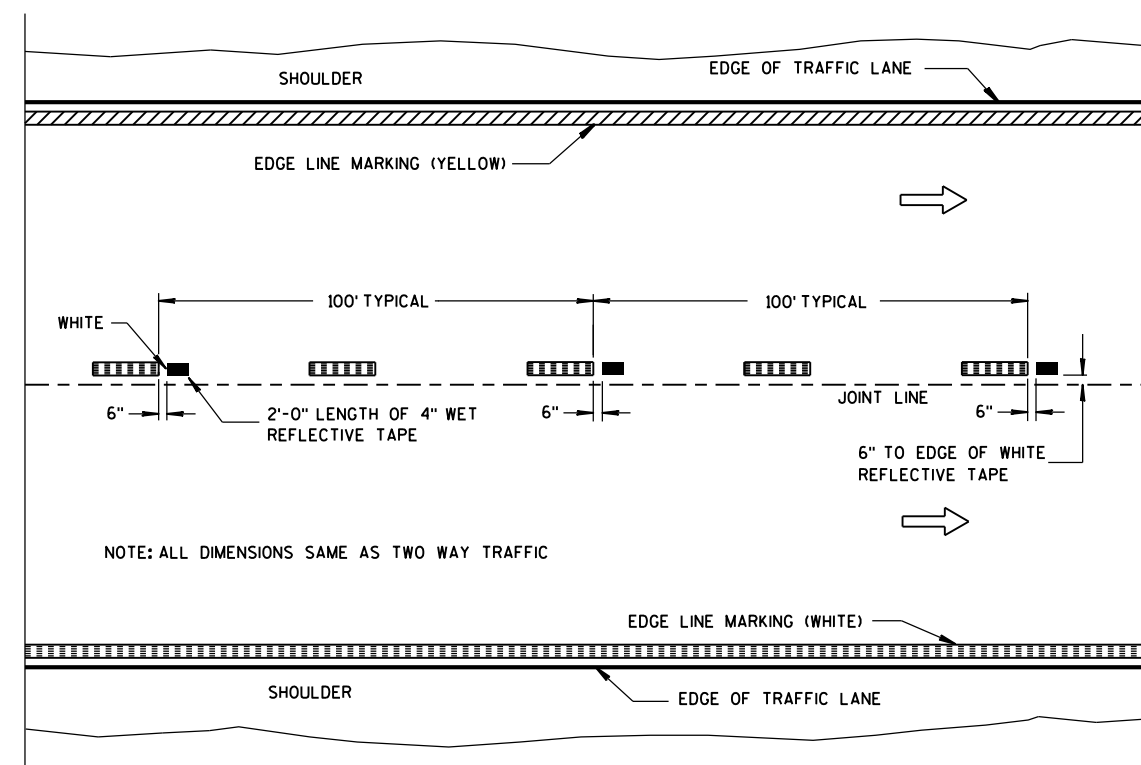
## GENERAL NOTES

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

- ① HALF CYCLE LENGTHS (25'±) WITH 2' MINIMUM STRIPE LENGTHS SHALL BE PROVIDED ON ROADWAYS (INCLUDING TEMPORARY TRAVELED WAYS) WITH REVERSE CURVATURE, CURVATURE OF OVER 5 DEGREES OR WHEN DIRECTED BY THE ENGINEER TO MARK UNUSUAL ALIGNMENT OF THE TRAVELED WAY.
- ② NO PASSING ZONE TEMPORARY PAVEMENT MARKING IS REQUIRED TO BE PLACED, WHERE APPROPRIATE, ALONG WITH CENTERLINE TEMPORARY PAVEMENT MARKING WHEN A SAME DAY PERMANENT PAVEMENT MARKING ITEM IS INCLUDED IN THE CONTRACT.
- ③ NO PASSING ZONE MARKINGS ARE PLACED ACCORDING TO "T" MARKINGS. IF EXISTING NO PASSING ZONE W14-3 SIGNS ARE BEYOND 50 FEET IN EITHER DIRECTION, THE SIGNS SHALL BE MOVED TO THE "T" MARKINGS.
- ④ CONCRETE ONLY.

## NOTE

ARROW SYMBOL (→) SHOWS DIRECTION OF TRAVEL



WET REFLECTIVE TAPE SUPPLEMENT TO  
SPRAYED OR NON WET REFLECTIVE TAPE LANE LINE

## LEGEND

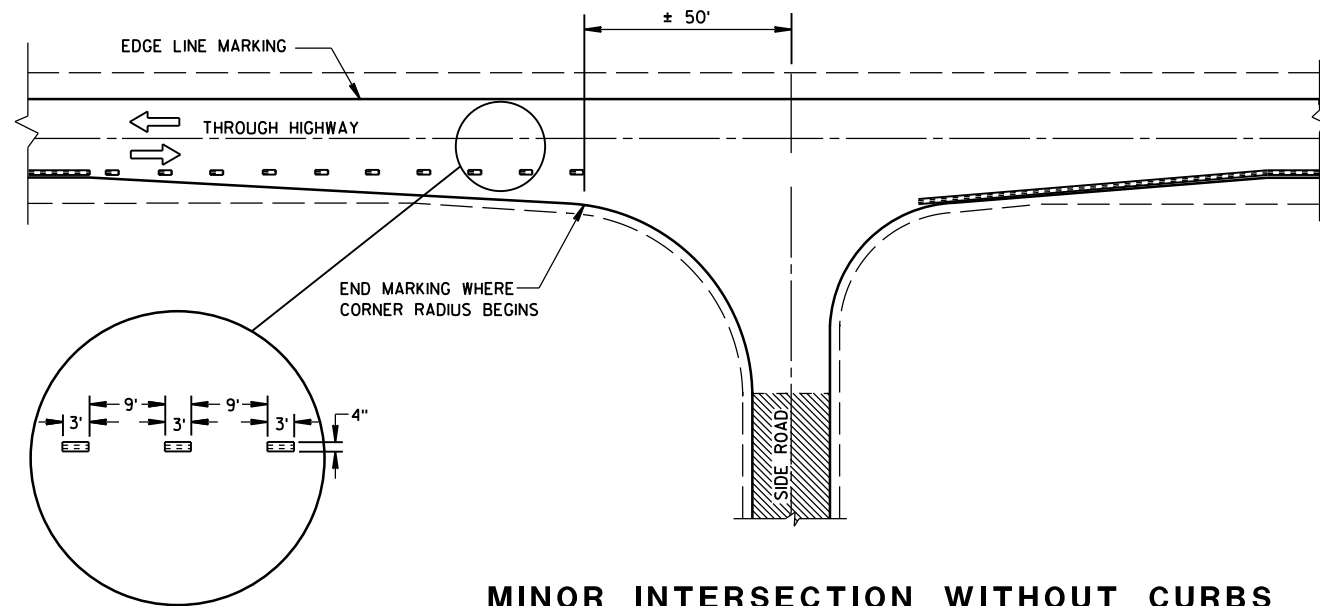
- "T" MARKING
- POST MOUNTED SIGN

PAVEMENT MARKING  
(MAINLINE)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
5-13-2013  
DATE  
FHWA

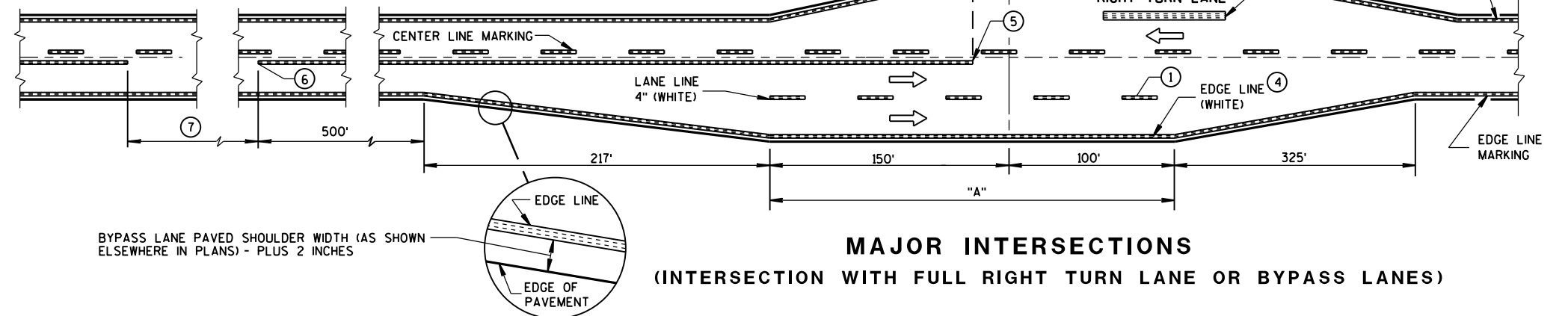
/S/ Travis Feltes  
STATE TRAFFIC ENGINEER



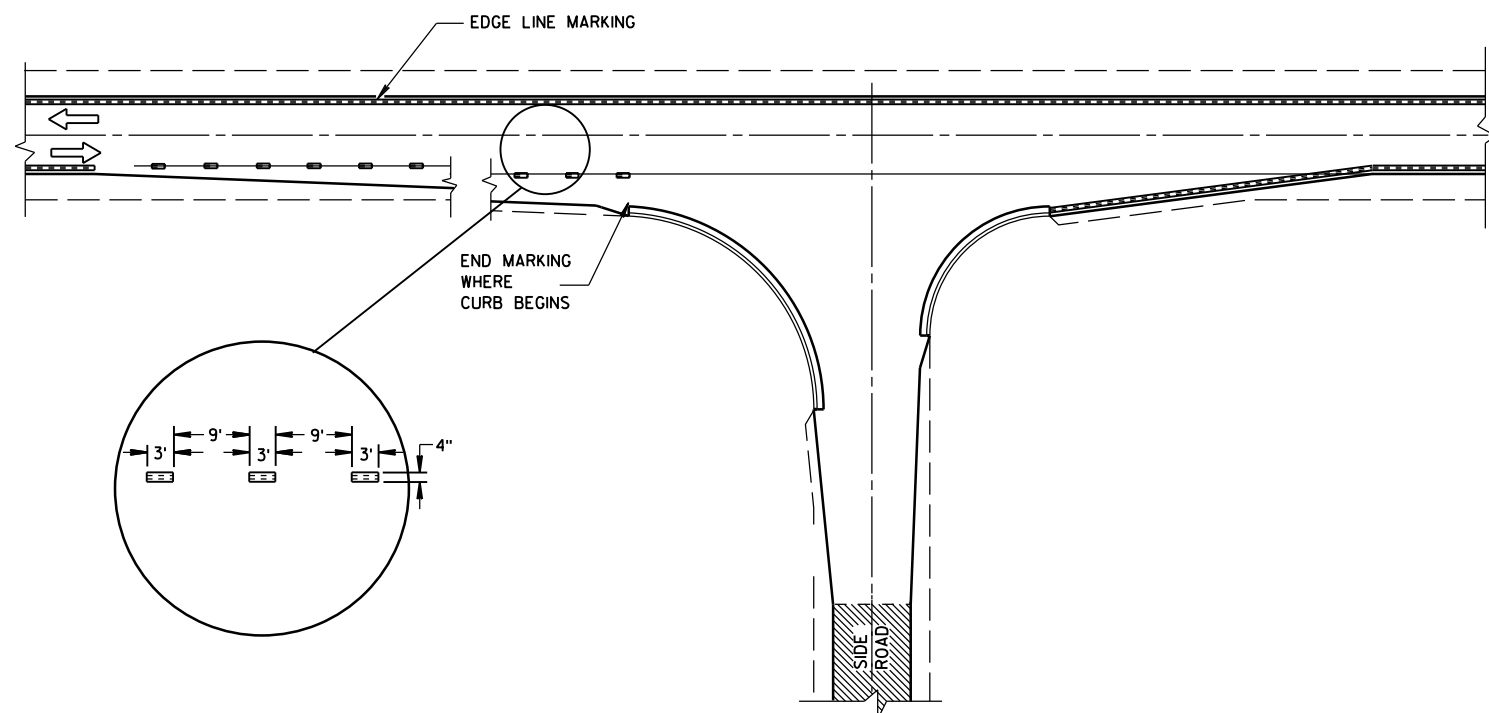
**MINOR INTERSECTION WITHOUT CURBS**

⑦

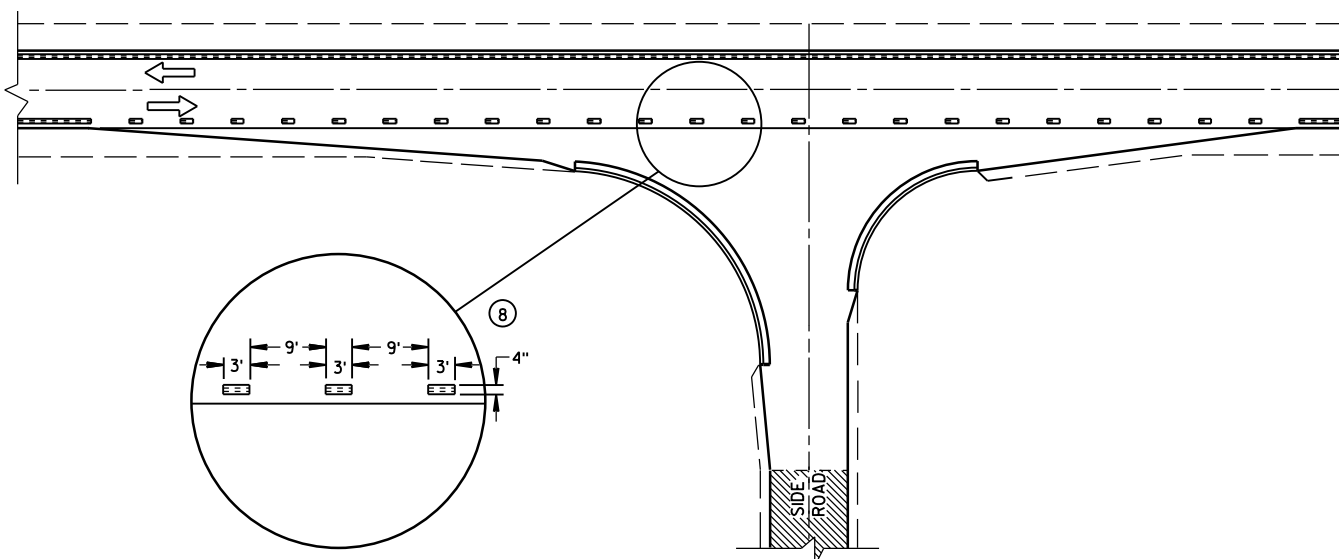
POSTED SPEED (MPH)	MINIMUM DISTANCE BETWEEN ZONES (FEET)
25 - 30	528
35 - 40	528
45 - 50	686
55	792



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



**MINOR INTERSECTION WITH CURBS**  
(TYPICAL MARKING)



**MINOR INTERSECTION WITH CURBS**  
③ (FOR SPECIAL CONDITIONS AS SPECIFIED)





**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 ALTERNATIVE MARKING SHALL BE PROVIDED WHEN SPECIFIED IN THE CONTRACT. TYPICAL SITUATIONS WHERE THIS MARKING MAY BE REQUIRED ARE WHERE THE INTERSECTION IS ON A SHARP HORIZONTAL CURVE OR CREST VERTICAL CURVE IN AN UNLIGHTED AREA SUCH THAT THE EDGE LINE MAY BE MISLEADING TO THE MOTORIST OR DISAPPEAR FROM SIGHT.
  - ④ THE EDGE LINE IN THE TAPER AREAS OF THE BYPASS LANE AND THE BYPASS LANE SHALL BE LOCATED 1-FOOT FROM EDGE OF PAVEMENT TO THE OUTSIDE EDGE OF EDGE LINE.
  - ⑤ BARRIER LINE ENDS AT SIDE ROAD PAVEMENT/SURFACE EDGE EXTENSION.
  - ⑥ BARRIER LINE STARTS 500 FEET PRIOR TO THE BYPASS TAPER.
  - ⑦ IF THE DISTANCE BETWEEN 2 SUCCESSIVE NO-PASSING ZONES IS LESS THAN THE MINIMUM DISTANCE BETWEEN ZONES, CONNECT THE 2 ZONES.
  - ⑧ 3' LINE 9' GAP, EXCEPT RETRACE THE EXISTING LINE - GAP PATTERN WHERE EXISTING MARKINGS ARE IN PLACE.
- ARROW SYMBOL ( → ) SHOWS DIRECTION OF TRAVEL

PAVEMENT MARKING  
(INTERSECTIONS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

LEGEND

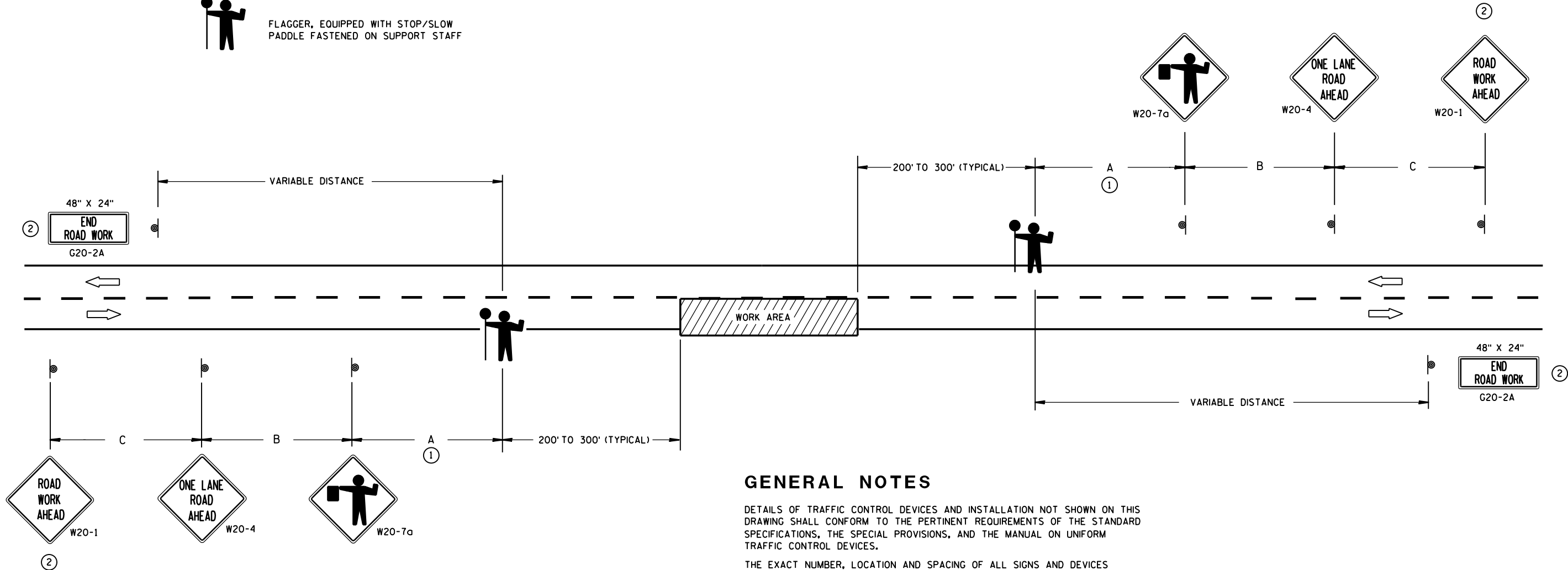
-  SIGN ON PORTABLE OR PERMANENT SUPPORT
-  DIRECTION OF TRAFFIC
-  WORK AREA
-  FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

SIGN SPACING TABLE

SPEED LIMIT	SIGN SPACING A,B,C
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 W20-4 SIGNS. A 500' TYPICAL SPACING SHALL BE PROVIDED BETWEEN THE SIGNS.



- ① FOR A MOVING WORK OPERATION, SIGNING FOR BOTH DIRECTIONS SHALL BE REESTABLISHED (AS SIMULTANEOUSLY AS PRACTICAL) AT APPROXIMATELY 3500 FOOT 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.

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.

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.

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, COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS.

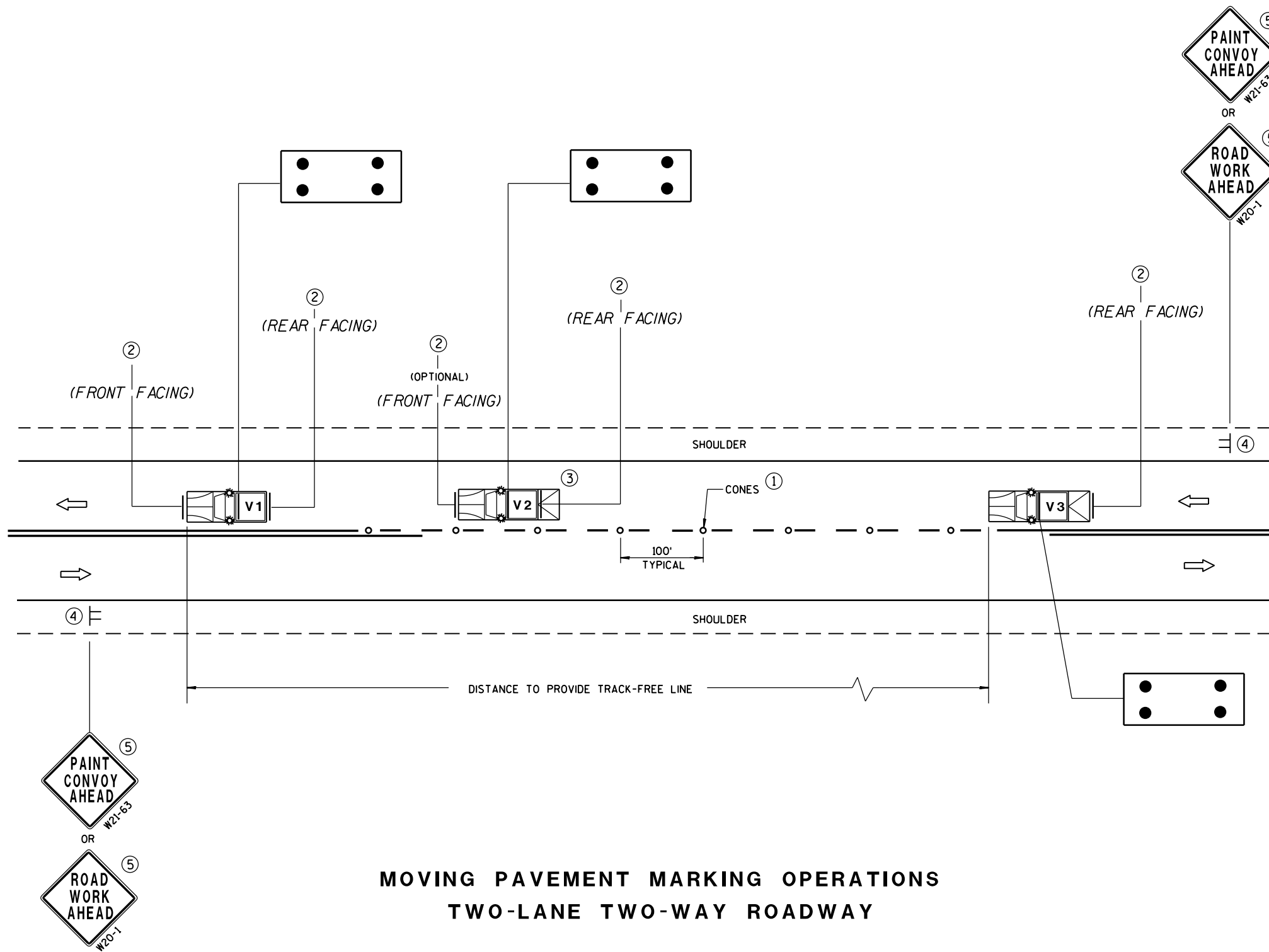
ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED.

TRAFFIC CONTROL FOR LANE  
CLOSURE (SUITABLE FOR  
MOVING OPERATIONS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
8/2013 /S/ Travis Feltes  
DATE STATE TRAFFIC ENGINEER OF DESIGN  
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.

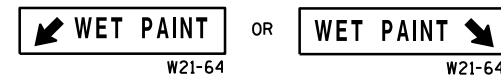
THE WORK AND SHADOW VEHICLES SHOULD PULL OVER PERIODICALLY TO ALLOW TRAFFIC TO PASS.

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.



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

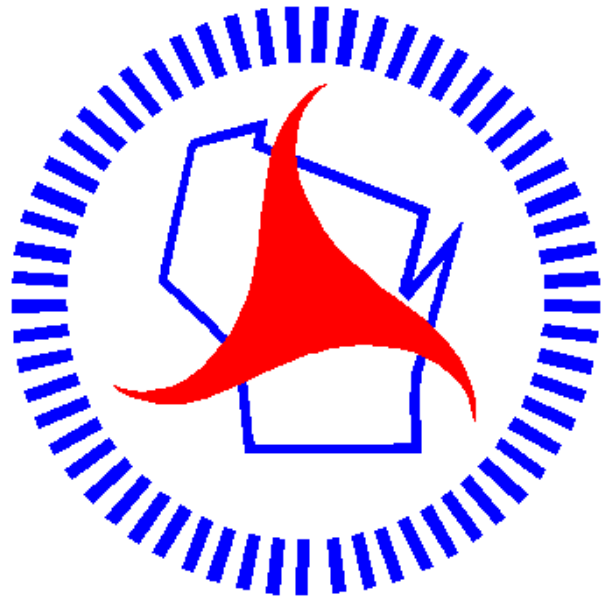
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED

5/3/2013  
DATE

/S/ Travis Feltes  
STATE TRAFFIC ENGINEER

FHWA



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

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