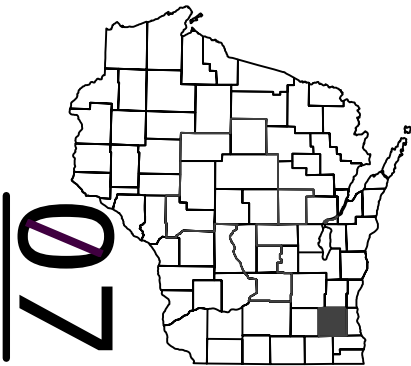


WKE PROJECT ID: 3310-07-71 WITH: N/A COUNTY: WAUKESHA

JUNE 2025
ORDER OF SHEETS

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

TOTAL SHEETS = 132



DESIGN DESIGNATION

A.A.D.T.	2028	=
A.A.D.T.	2048	=
D.H.V.		=
D.D.		=
T.		=
DESIGN SPEED		=
ESALS		=

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

STH 16 S. FRONTAGE ROAD - WISCONSIN AVE

PLANK RD TO BROWN ST, B-67-579

OFF SYSTEM
WAUKESHA COUNTY

STATE PROJECT NUMBER
3310-07-71

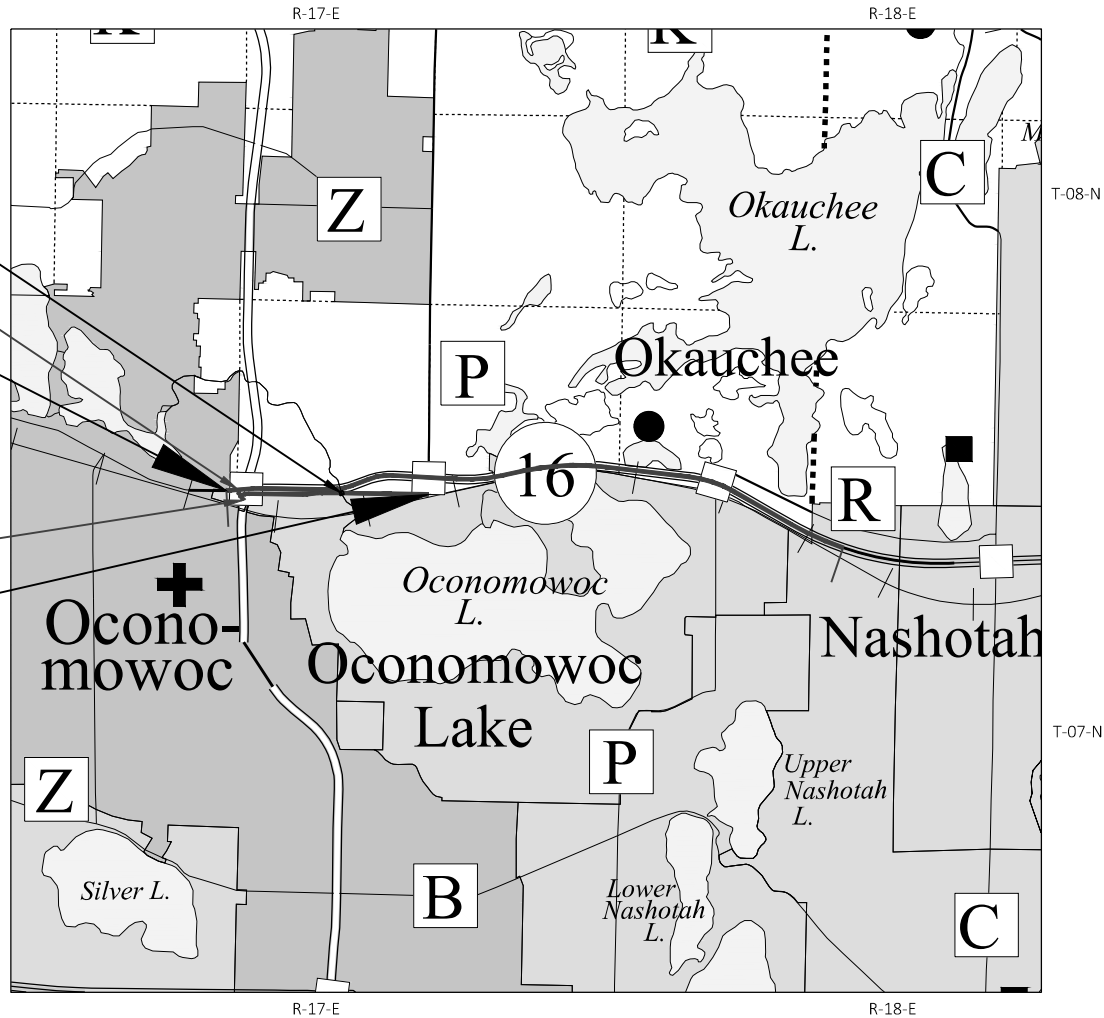
EXISTING STRUCTURE B-67-0579
PROPOSED STRUCTURE B-67-390
STA 37'SF'+34 - STA 38'SF'+25

END PLANK ROAD
STA 12'PL'+00

BEGIN PROJECT
STA 10'SF'+00
X=616,720.975
Y=195,863.198

START PLANK ROAD
STA 10'PL'+25

END PROJECT
STA 60'SF'+84



SCALE 0 1 MI
LAYOUT
TOTAL NET LENGTH OF CENTERLINE = 0.963 MI

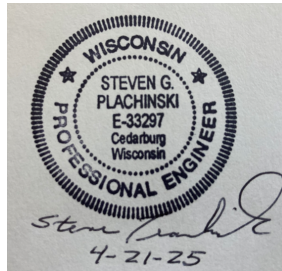
HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COORDINATE REFERENCE SYSTEM (WISCRS), WAUKESHA COUNTY, NAD83 (2011), IN U.S. SURVEY FEET. POSITIONS SHOWN ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES ARE THE SAME AS GROUND DISTANCES.

ELEVATIONS ARE REFERENCED TO NAVD 88 (2012). GPS DERIVED ELEVATIONS ARE BASED ON GEOID 12A.

STATE PROJECT	FEDERAL PROJECT	
	PROJECT	CONTRACT
3310-07-71		

ORIGINAL PLANS PREPARED BY

AECOM



DATE: (Professional Engineer Signature)

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	AECOM
Designer	AECOM
Project Manager	JONATHAN GILL
Regional Examiner	REGIONAL EXAMINER
Regional Supervisor	JANET CANNON

APPROVED FOR THE DEPARTMENT

DATE: 4/21/2025 (Signature)

E

GENERAL NOTES

1. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT THE APPROVAL OF THE ENGINEER.
2. EROSION CONTROL BMP'S ARE AT SUGGESTED LOCATIONS. THE ACTUAL LOCATIONS WILL BE DETERMINED BY THE CONTRACTORS ECIP AND BY THE ENGINEER. EROSION CONTROL BMP'S SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED OR UNTIL THE ENGINEER DETERMINES THAT THE BMP IS NO LONGER REQUIRED.
3. EROSION CONTROL DEVICES SHALL BE PLACED IN SEQUENCE WITH CONSTRUCTION OPERATIONS OR AS DETERMINED BY THE ENGINEER.
4. RE-TOPSOIL GRADED AREAS, AS DESIGNATED BY THE ENGINEER, IMMEDIATELY AFTER GRADING IS COMPLETE WITHIN THOSE AREAS. SEED AND FERTILIZE TOPSOILED AREAS, AS DESIGNATED BY THE ENGINEER, WITHIN FIVE (5) CALENDAR DAYS AFTER PLACEMENT OF TOPSOIL. IF GRADED AREAS ARE TO BE LEFT EXPOSED FOR MORE THAN FOURTEEN (14) CALENDAR DAYS, SEED THOSE AREAS WITH TEMPORARY SEED AND MULCH.
5. STOCKPILE EXCESS MATERIAL OR SPOILS ON UPLAND AREAS AWAY FROM WETLANDS, FLOODPLAINS, AND WATERWAYS. STOCKPILED SOIL SHALL BE PROTECTED AGAINST EROSION. IF STOCKPILED MATERIAL IS TO BE LEFT FOR MORE THAN FOURTEEN (14) DAYS, RESTORE THE STOCKPILE WITH TEMPORARY SEED AND MULCH.
6. RESHAPE, RESTORE, AND FINISH ALL PREVIOUSLY GRASSED AREAS DISTURBED OUTSIDE THE NORMAL CONSTRUCTION LIMITS AT NO EXPENSE TO THE DEPARTMENT.
7. THE LOCATIONS OF EXISTING UTILITY INSTALLATIONS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS IN THE AREA THAT ARE NOT SHOWN. THE CONTRACTOR SHALL NOTIFY DIGGERS HOTLINE AND AFFECTED UTILITIES PRIOR TO THE START OF WORK.
8. WHEN THE QUANTITY OF ITEMS OF BASE AGGREGATE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE THICKNESS OF THE COURSE SHOWN ON THE PLANS IS APPROXIMATE, AND THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF THE MATERIAL AS DIRECTED BY THE ENGINEER.
9. STATIONING, DISTANCES AND OFFSETS FOR SIGNS SHOWN ON THE PLANS ARE APPROXIMATE AND THE LOCATIONS OF SIGNS ARE TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
10. VERIFY EXISTING PAVEMENT ELEVATIONS AT ALL TIE-INS TO EXISTING PAVEMENT PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF A DISCREPANCY IS FOUND BETWEEN PROPOSED PLAN ELEVATIONS AND EXISTING PAVEMENT ELEVATIONS.
11. SAWCUT EXISTING ASPHALT AND CONCRETE PAVEMENT AT THE MATCHLINE INDICATED ON THE PLANS UNLESS OTHERWISE IDENTIFIED IN THE PLAN OR AS DIRECTED BY THE ENGINEER.
12. ALL OPENINGS OF HOLES BELOW SUBGRADE RESULTING FROM REMOVALS OR ABANDONMENTS SHALL BE BACKFILLED IN ACCORDANCE WITH SECTION 204 OF THE STANDARD SPECS ALL BACKFILL MATERIAL IS INCIDENTAL TO THE REMOVAL ITEM.
13. SIGNS IN CONFLICT WITH TRAFFIC CONTROL "IN USE" SHALL BE COVERED AS DIRECTED BY THE ENGINEER AND PAID FOR AS COVERING SIGNS TYPE 1 OR TYPE II. IN LIEU OF COVERING WOOD POST MOUNTED SIGNS, THE CONTRACTOR MAY CHOOSE TO REMOVE AND REINSTALL THEM.
14. ALL SIGN LOCATIONS SHALL BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.
15. CONTRACTOR MUST CONTACT THE ENGINEER AND SEWRPC CONSTRUCTION COORDINATOR AT LEAST TWO WEEKS PRIOR TO WORK NEAR ANY PUBLIC SURVEY MONUMENT.

STANDARD ABBREVIATIONS

AGG	AGGREGATE 3.75" LOWER 5 MT 58-28 S
AADT	ANNUAL AVERAGE DAILY TRAFFIC
ASPH	ASPHALT DRIVEWAY
AVG	AVERAGE
ADT	AVERAGE DAILY TRAFFIC
BM	BENCH MARK
CB	CATCH BASIN
C/L	CENTERLINE
CONC	CONCRETE
CO	COUNTY
CTH	COUNTY TRUNK HIGHWAY
CWT	HUNDREDWEIGHT
CY	CUBIC YARD
DHV	DESIGN HOUR VOLUME
DIA	DIAMETER
E	EAST
X	EAST GRID COORDINATE
ELEC	ELECTRIC
ELEV	ELEVATION
ESALS	EQUIVALENT SINGLE AXLE LOADS
ESTR	EXISTING SIGN TO REMAIN
EXC	EXCAVATION
EBS	EXCAVATION BELOW SUBGRADE
EXIST	EXISTING
FT	FOOT
GRVL	GRAVEL DRIVEWAY
HORIZ	HORIZONTAL
INL	INLET
INV	INVERT
JCT	JUNCTION
LT	LEFT
LF	LINEAR FOOT
LS	LUMP SUM
MH	MANHOLE
ML	MATCH LINE
N	NORTH
Y	NORTH GRID COORDINATE
NO	NUMBER
PAVT	PAVEMENT
PERM	PERMANENT
PLE	PERMANENT LIMITED EASEMENT
PT	POINT
PCC	PORTLAND CEMENT CONCRETE
PROJ	PROJECT
PL	PROPERTY LINE
R/L	REFERENCE LINE
RT	RIGHT
R/W	RIGHT-OF-WAY
RD	ROAD
RDWY	ROADWAY
SEC	SECTION
SHLDR	SHOULDER
SW	SIDEWALK
S	SOUTH
SPECS	SPECIFICATIONS
SF	SQUARE FEET
SY	SQUARE YARD
STD	STANDARD
SDD	STANDARD DETAIL DRAWINGS
STH	STATE TRUNK HIGHWAYS
STA	STATION
SS	STORM SEWER
STR	STRUCTURE OR STRUCTURAL
TEL	TELEPHONE
TEMP	TEMPORARY
TLE	TEMPORARY LIMITED EASEMENT
T	TON
TYP	TYPICAL
UG	UNDERGROUND
USH	UNITED STATES HIGHWAY
W	WATER
WM	WATER MAIN
WV	WATER VALVE
W	WEST
YD	YARD

RESURFACING SECTIONS

ROADWAY	HMA PAVEMENT	TOTAL PAVEMENT THICKNESS	LAYER THICKNESS	LAYER	NOMINAL MAX AGGREGATE GRADATION
E WISCONSIN AVE (STA. 41'SF'+00 - STA. 52'SF'+30)	5 MT 58-28 V	2-INCHES	2-INCHES	-	9.5 mm
PLANK RD E WISCONSIN AVE (STA. 10'SF'+00 - STA. 35'SF'+41) (STA. 52'SF'+30 - STA. 60'SF'+84)	5 MT 58-28 V	3-INCHES	1.5-INCHES	UPPER	9.5 mm
			1.5-INCHES	LOWER	9.5 mm
E WISCONSIN AVE (STA. 35'SF'+41 - STA. 37'SF'+34)	5 MT 58-28 V	5-INCHES	1.5-INCHES	UPPER	9.5 mm
			3.5-INCHES	LOWER	
E WISCONSIN AVE (STA. 38'SF'+25 - STA. 41'SF'+00)	5 MT 58-28 V	5-INCHES	2-INCHES	UPPER	9.5 mm
			3-INCHES	LOWER	

NOTE: PER THE FDM 14-10-10.10, A TACK COAT APPLICATION RATE OF 0.050 GAL/SY SHOULD BE USED UNLESS THE TACK COAT WILL BE PLACED OVER MILLED HMA, PULVERIZED HMA, CONCRETE OR RUBBLIZED CONCRETE, THEN AN APPLICATION RATE OF 0.070 GAL/SY SHOULD BE USED. FINAL APPLICATION RATES TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

RUNOFF COEFFICIENT TABLE

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

TOTAL PROJECT AREA = 4.17 ACRES
TOTAL AREA EXPECTED TO BE DISTURBED BY CONSTRUCTION ACTIVITIES = 0.20 ACRES

ORDER OF SECTION 2 SHEETS

- GENERAL NOTES
- PROJECT OVERVIEW
- TYPICAL SECTIONS
- CONSTRUCTION DETAILS
- PLAN DETAILS
- EROSION CONTROL
- SIGNING PLANS
- MARKING PLANS
- DETOURS
- ALIGNMENT

WDNR LIAISON

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
CRAIG WEBSTER
141 NW BARSTOW STREET
WAUKESHA, WI 53188
(262) 574-2141
CRAIG.WEBSTER@WISCONSIN.GOV

WISDOT PROJECT MANAGER

WISDOT SE REGION
JONATHAN GILL
141 NW BARSTOW STREET
WAUKESHA, WI 53188
(262) 548-8812
JONATHAN.GILL@DOT.WI.GOV

DESIGN PROJECT MANAGER

AECOM
STEVE PLACHINSKI
1555 N. RIVERCENTER DR, STE 214
MILWAUKEE, WI 53212
(414)-944-6080
STEVE.PLACHINSKI@AECOM.COM

SEWRPC CONTACTS

ROB MERRY
CHIEF SURVEYOR
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187-1607
(920) 912-1036
RMERRY@SEWRPC.ORG

ANDY TRAEGER
CONSTRUCTION COORDINATOR
W239 N1812 ROCKWOOD DRIVE
P.O. BOX 1607
WAUKESHA, WI 53187-1607
(262) 853-8463
ATRAEGER@SEWRPC.ORG

UTILITY CONTACTS

AT&T WISCONSIN - COMMUNICATION LINE
TYLER FLECK
220 WISCONSIN AVENUE
WAUKESHA, WI 53186
(414) 248-6803
TF8394@ATT.COM

CITY OF OCONOMOWOC (ENGINEERING) - WATER
SCOTT OSBORN
808 SOUTH WORTHINGTON ST
OCONOMOWOC, WI 53066
(262) 569-6421
SOSBORN@OCONOMOWOC-WI.GOV

OCONOMOWOC UTILITIES - ELECTRICITY
LUCAS CAINE
808 S. WORTHINGTON STREET
OCONOMOWOC, WI 53066
(262) 569-6870
LCAINE@OCONOMOWOC-WI.GOV

OCONOMOWOC UTILITIES - SEWER
TIM REEL
900 S WORTHINGTON ST
OCONOMOWOC, WI 53066
(262) 569-2192
TREEL@OCONOMOWOC-WI.GOV

SPECTRUM - COMMUNICATION LINE
MICHAEL YAEGER
1515 W. WASHINGTON STREET
WEST BEND, WI 53095
(414) 908-4677
MICHAEL.YAEGER@CHARTER.COM

WE ENERGIES - ELECTRICITY
STEVE KING
513 W33800 HWY 18
DELAFIELD, WI 53018
(262) 968-5768
DISPATCH: (800) 662-4797
STEVE.KING@WE-ENERGIES.COM

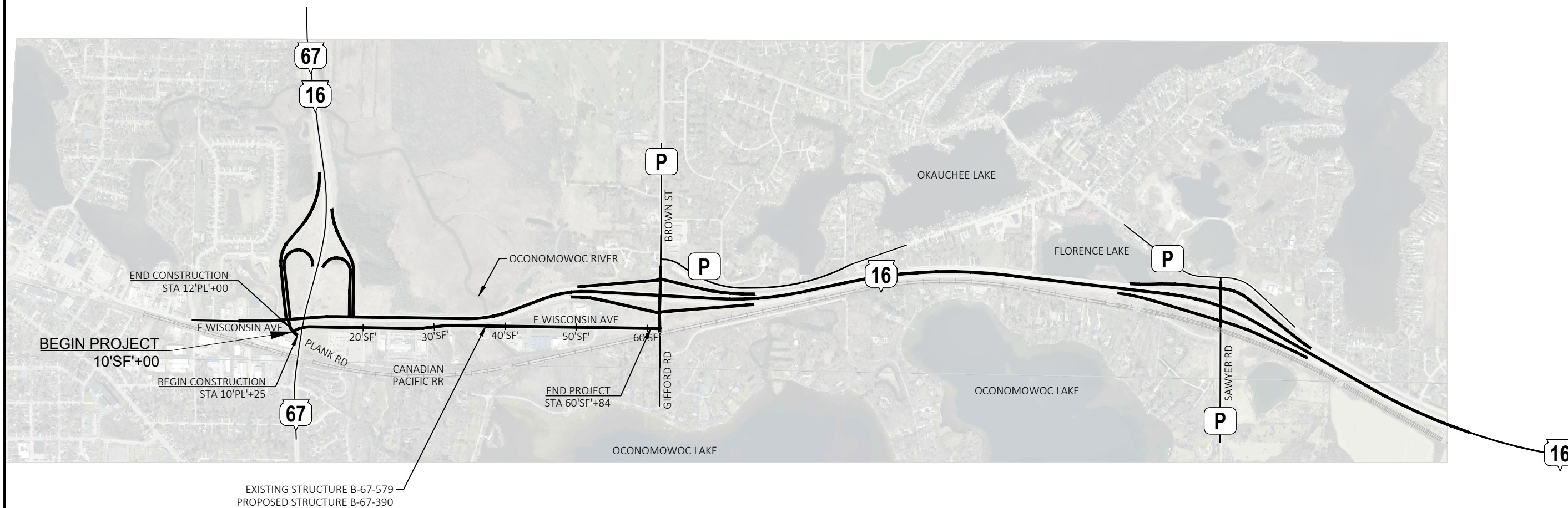
WE ENERGIES - GAS/PETROLEUM
JACOB HULBERT
500 S 116TH STREET
WEST ALLIS, WI 53214
(262) 968-5718
DISPATCH: (800) 261-5325
JACOB.HULBERT@WE-ENERGIES.COM

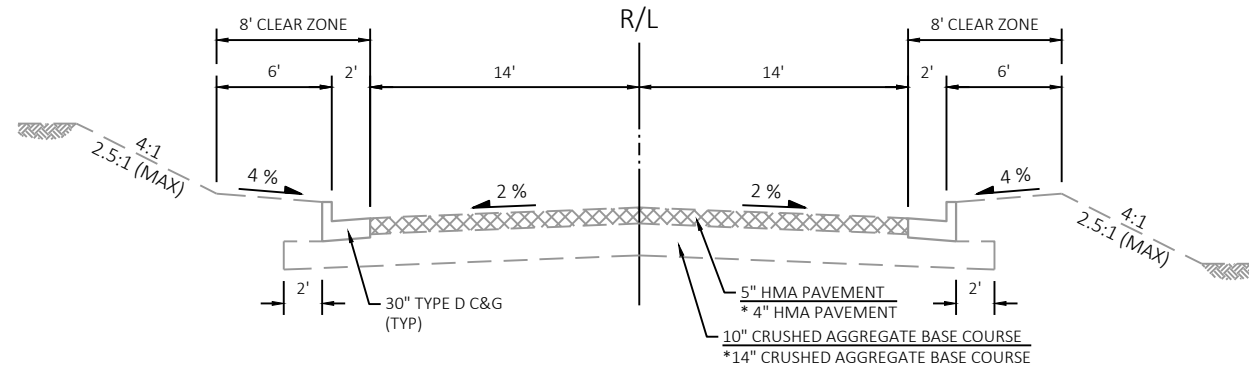
WISDOT ATR PULL BOXES - ELECTRICITY
RUSSELL LEWIS
3625 PIERSTORFF STREET
MADISON, WI 53704
(608) 516-5754
RISSELL.LEWIS@DOT.WI.GOV

DIGGERSHOTLINE

Dial  or (800)242-8511

www.DiggersHotline.com



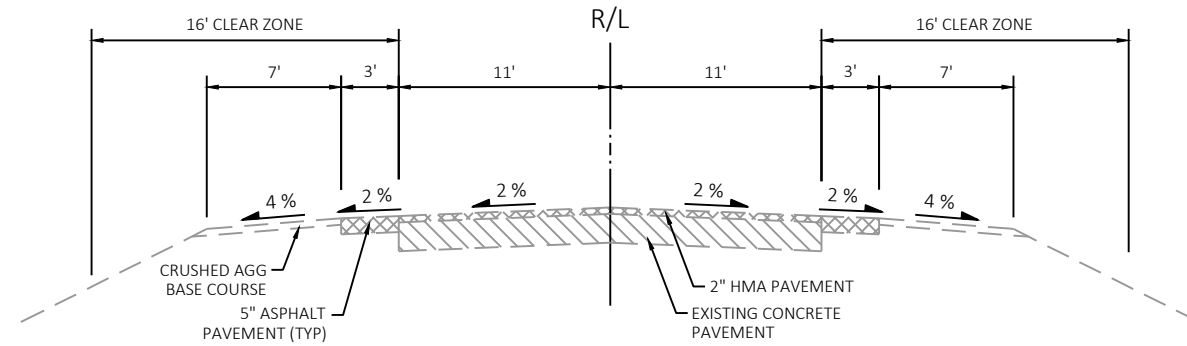


EXISTING TYPICAL SECTION, SOUTH FRONTAGE ROAD (E. WISCONSIN AVENUE)

STA 10'SF+22 TO STA 37'SF+56

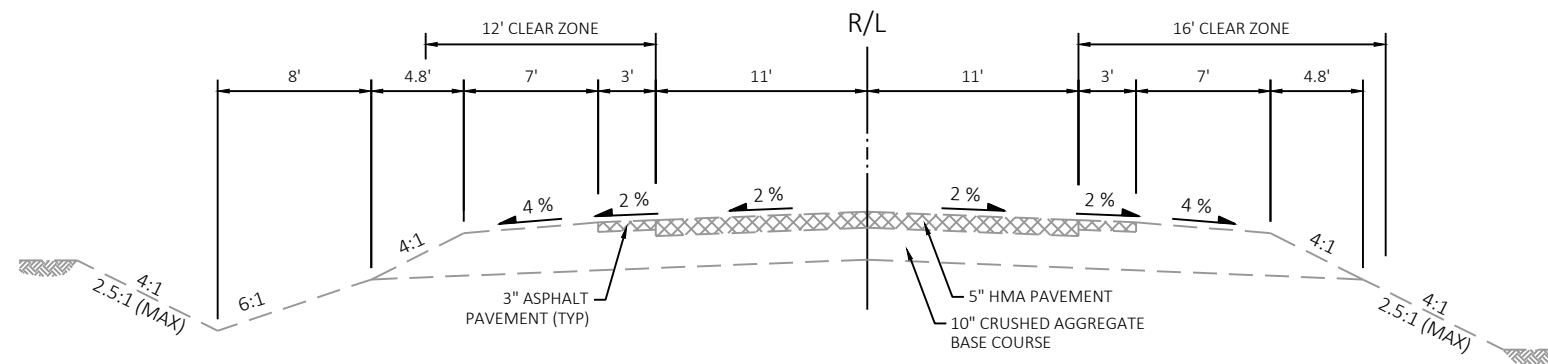
* EXISTING TYPICAL SECTION, PLANK ROAD

STA 10'PL'+25 TO STA 12'PL'+00



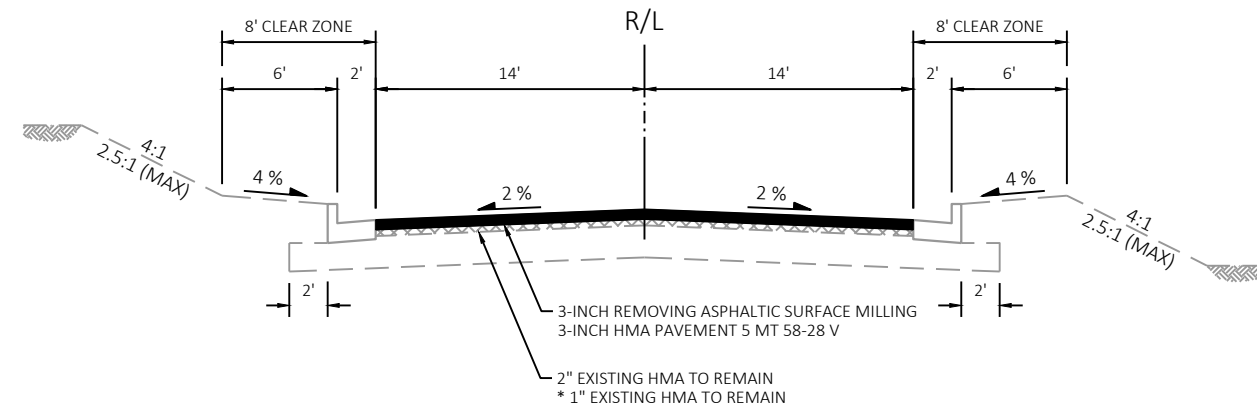
EXISTING TYPICAL SECTION, SOUTH FRONTAGE ROAD (E. WISCONSIN AVENUE)

STA 38'SF+03 TO STA 52'SF+30



EXISTING TYPICAL SECTION, SOUTH FRONTAGE ROAD (E. WISCONSIN AVE)

STA 52'SF+30 TO STA 61'SF+58

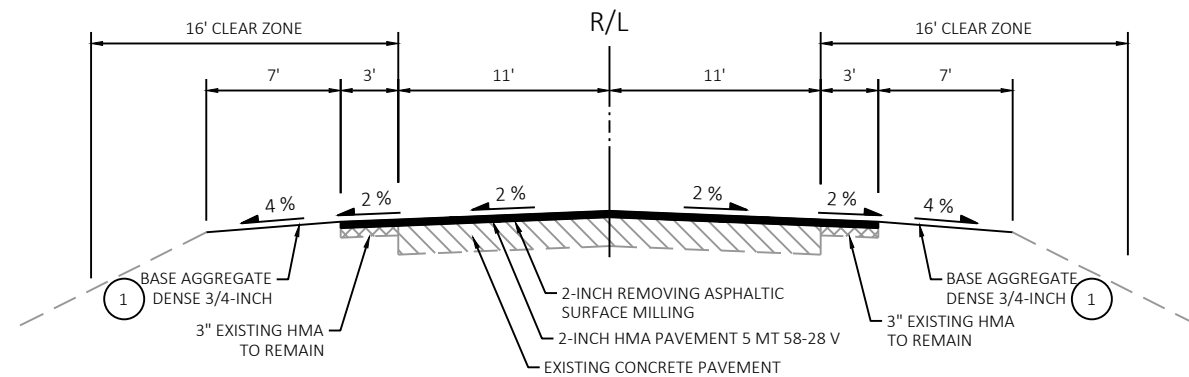


PROPOSED TYPICAL SECTION, SOUTH FRONTAGE ROAD (E. WISCONSIN AVENUE)

STA 10'SF+22 TO STA 35'SF+41

*** PROPOSED TYPICAL SECTION, PLANK ROAD**

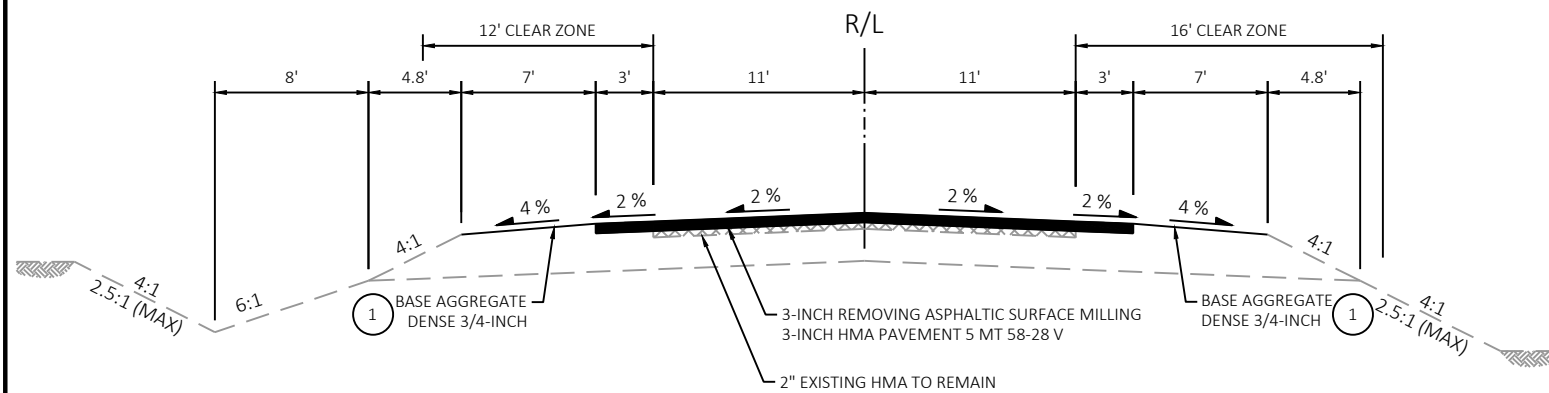
STA 10'PL+25 TO STA 12'PL+00



PROPOSED TYPICAL SECTION, SOUTH FRONTAGE ROAD (E. WISCONSIN AVENUE)

STA 41'SF+00 TO STA 52'SF+30

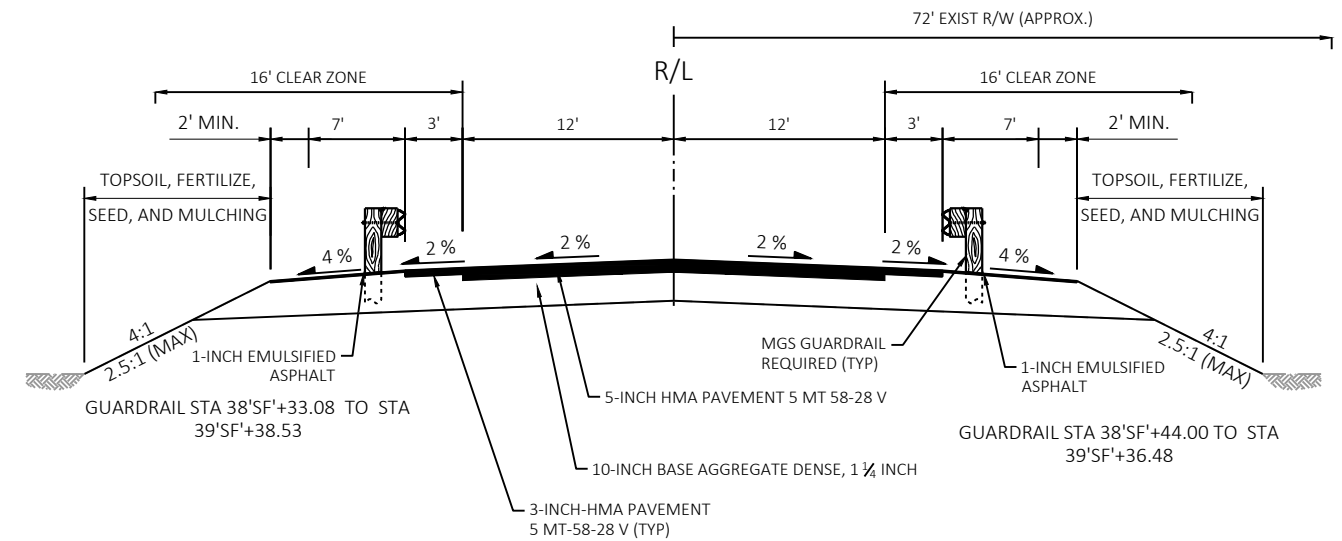
① (ESTIMATED 1 1/2-INCH DEPTH)



PROPOSED TYPICAL SECTION, SOUTH FRONTAGE ROAD (E. WISCONSIN AVENUE)

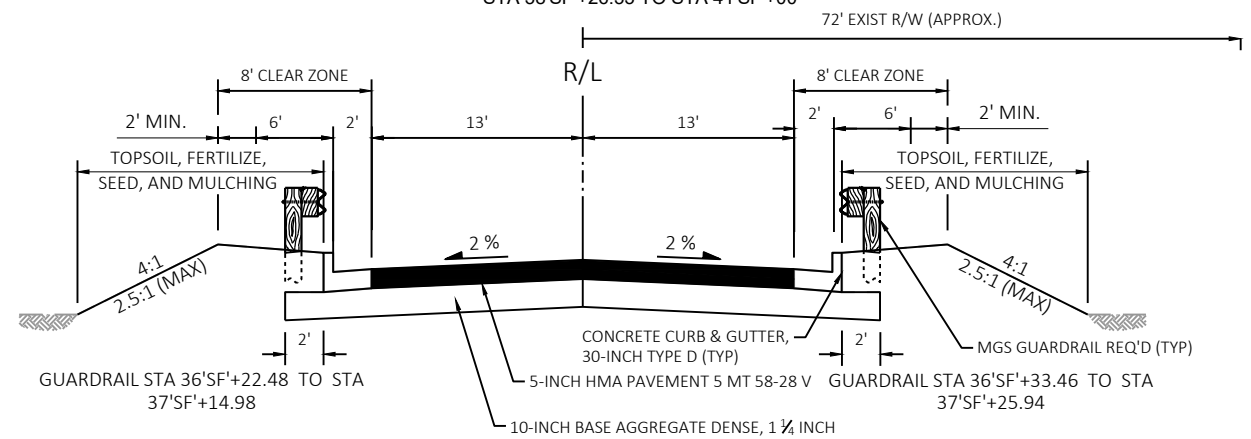
STA 52'SF+30 TO STA 60'SF+84

① (ESTIMATED 1 1/2-INCH DEPTH)



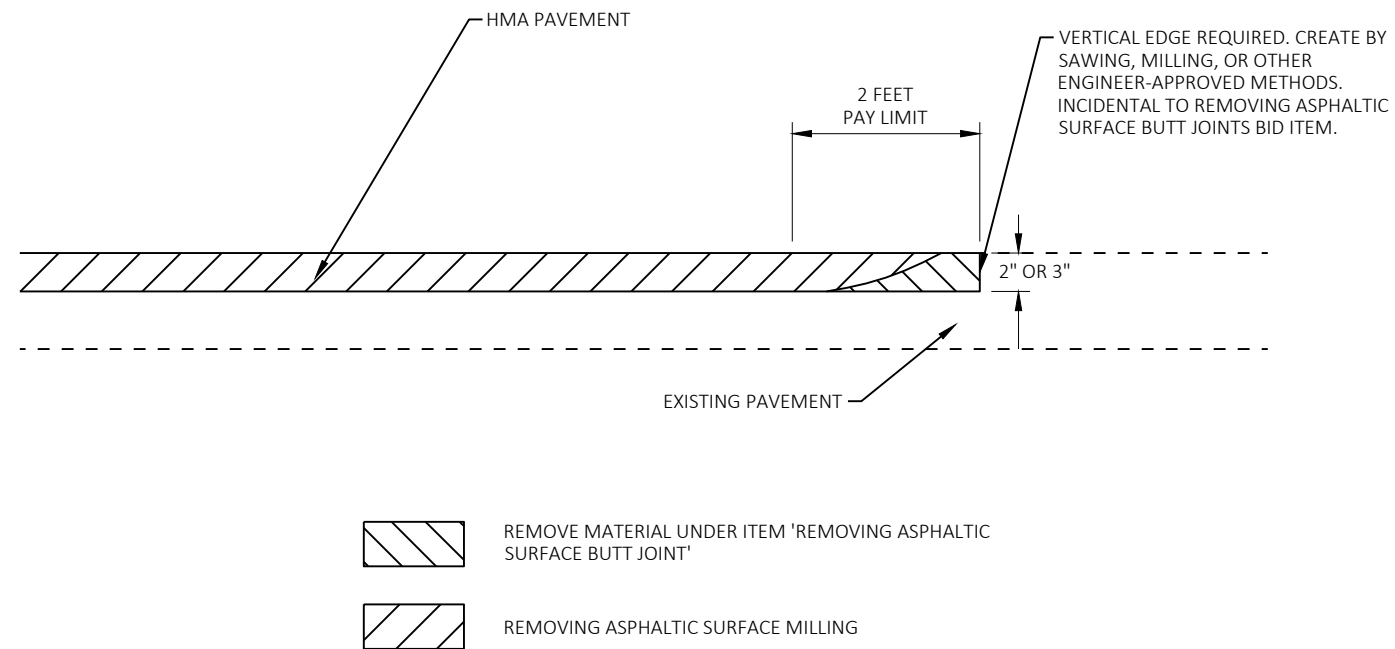
PROPOSED TYPICAL SECTION, SOUTH FRONTAGE ROAD (E. WISCONSIN AVENUE)

STA 38'SF+26.33 TO STA 41'SF+00



PROPOSED TYPICAL SECTION, SOUTH FRONTAGE ROAD (E. WISCONSIN AVENUE)

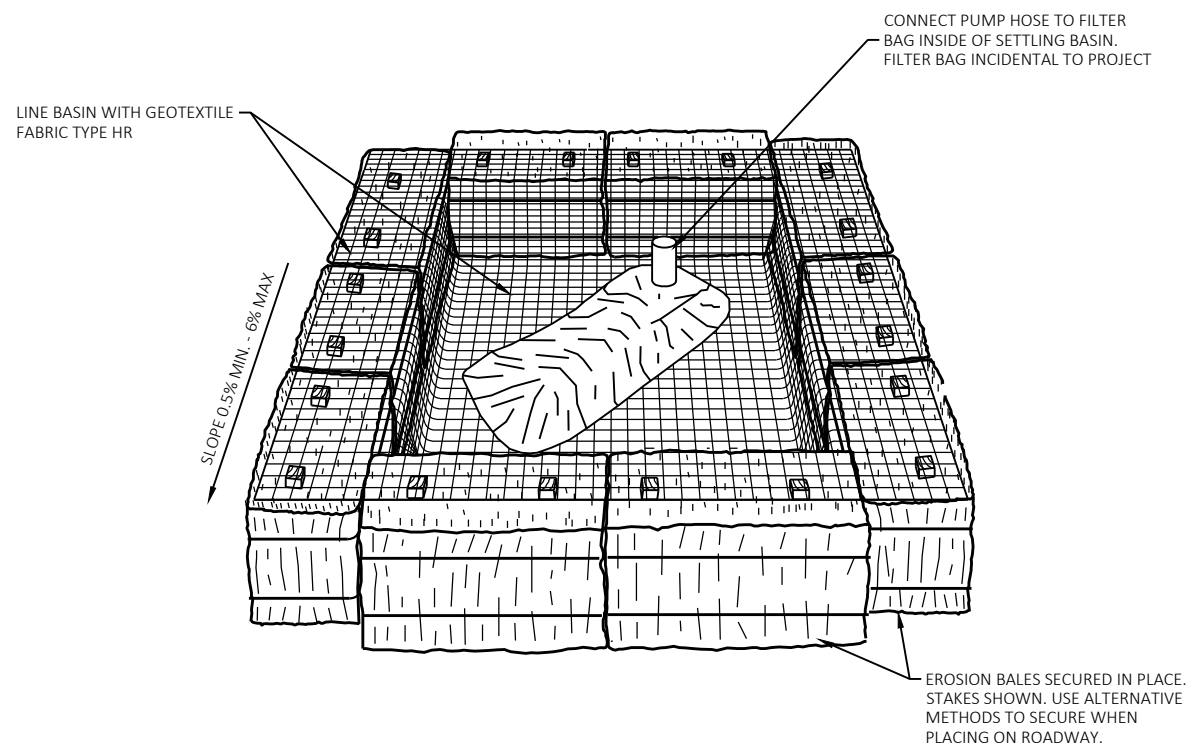
STA 35'SF+41 TO STA 37'SF+32.67



BUTT JOINT - NO CHANGE IN PROFILE

NOTES:

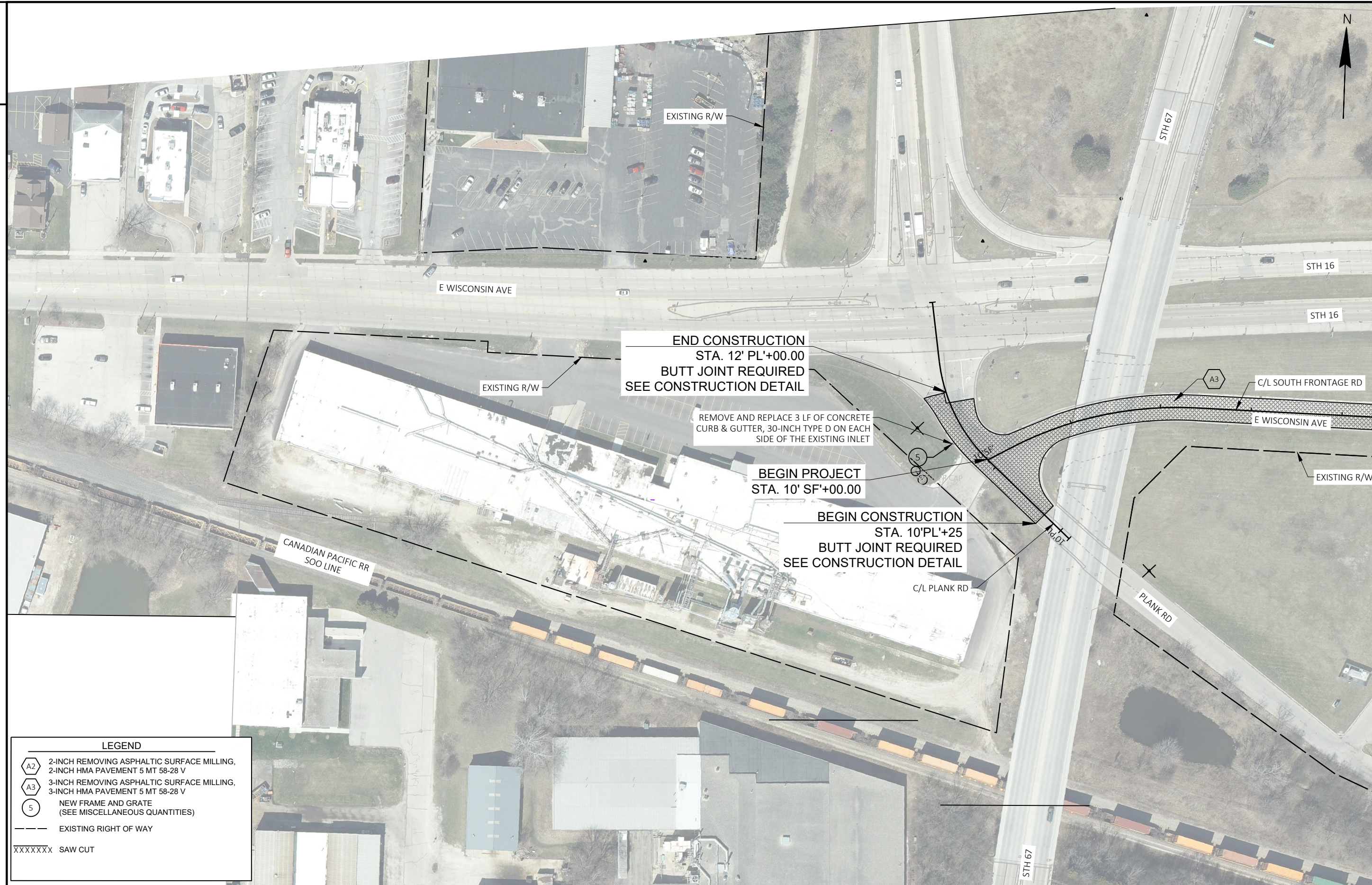
1. PUMP FROM DEWATERING OPERATIONS INTO TEMPORARY SETTLING BASINS PRIOR TO DISCHARGING INTO ROADSIDE DITCHES.
2. BASIN SHALL BE KEPT LESS THAN 10% FULL OF SEDIMENT. GEOTEXTILE FABRIC AND SEDIMENTS SHALL BE DISPOSED BY THE CONTRACTOR OFF THE PROJECT SITE.
3. SETTLING BASIN SHALL BE PLACED IN AN UPLAND, FLAT, VEGETATED AREA, ON THE ROADWAY, SHOULDER OR EQUIVALENT LOCATION APPROVED BY THE ENGINEER.
4. SIZE OF SETTLING BASIN AND FILTER BAG SHALL BE DETERMINED BY THE CONTRACTOR AS PART OF THE EROSION CONTROL IMPLEMENTATION PLAN.
5. ONLY ONE HOSE PER BAG ALLOWED AT A TIME. SIZE BASIN APPROPRIATELY FOR ADDITIONAL BAGS IF MORE THAN ONE HOSE IS NEEDED.
6. THE NECK OF THE BAG WHERE THE HOSE ATTACHES SHALL BE PLACED ON THE UPSTREAM CORNER OF THE SETTLING BASIN.
7. REPLACE SEDIMENT BAG, BALES, AND FABRIC AS NECESSARY OR AS DIRECTED BY THE ENGINEER. REMOVE SPENT BAGS PRIOR TO REPLACING. DO NOT STACK NEW BAG ON TOP OF SPENT BAG.
8. ALL ITEMS ARE INCIDENTAL TO THE CONTRACT. INCLUDING DISPOSAL AND REPLACEMENT OF BAGS AND BASIN MATERIALS



TEMPORARY SETTLING BASIN WITH SEDIMENT BAG

2

2



LEGEND

- | | |
|---|--|
|  | 2-INCH REMOVING ASPHALTIC SURFACE MILLING,
2-INCH HMA PAVEMENT 5 MT 58-28 V |
|  | 3-INCH REMOVING ASPHALTIC SURFACE MILLING,
3-INCH HMA PAVEMENT 5 MT 58-28 V |
|  | NEW FRAME AND GRATE
(SEE MISCELLANEOUS QUANTITIES) |
|  | EXISTING RIGHT OF WAY |

XXXXXX SAW CUT

PROJECT NO: 3310-07-71

HWY: OFF SYSTEM

COUNTY: WAUKESHA

PLAN DETAILS

SHEET

--	--

FILE NAME : C:\PWORKING\USWI\DMS03048\021206-PD.DWG
LAYOUT NAME - 01

PLOT DATE : 4/18/2025 10:43 AM

PLOT BY : ENTWISTLE, CAMERON

PLOT NAME :

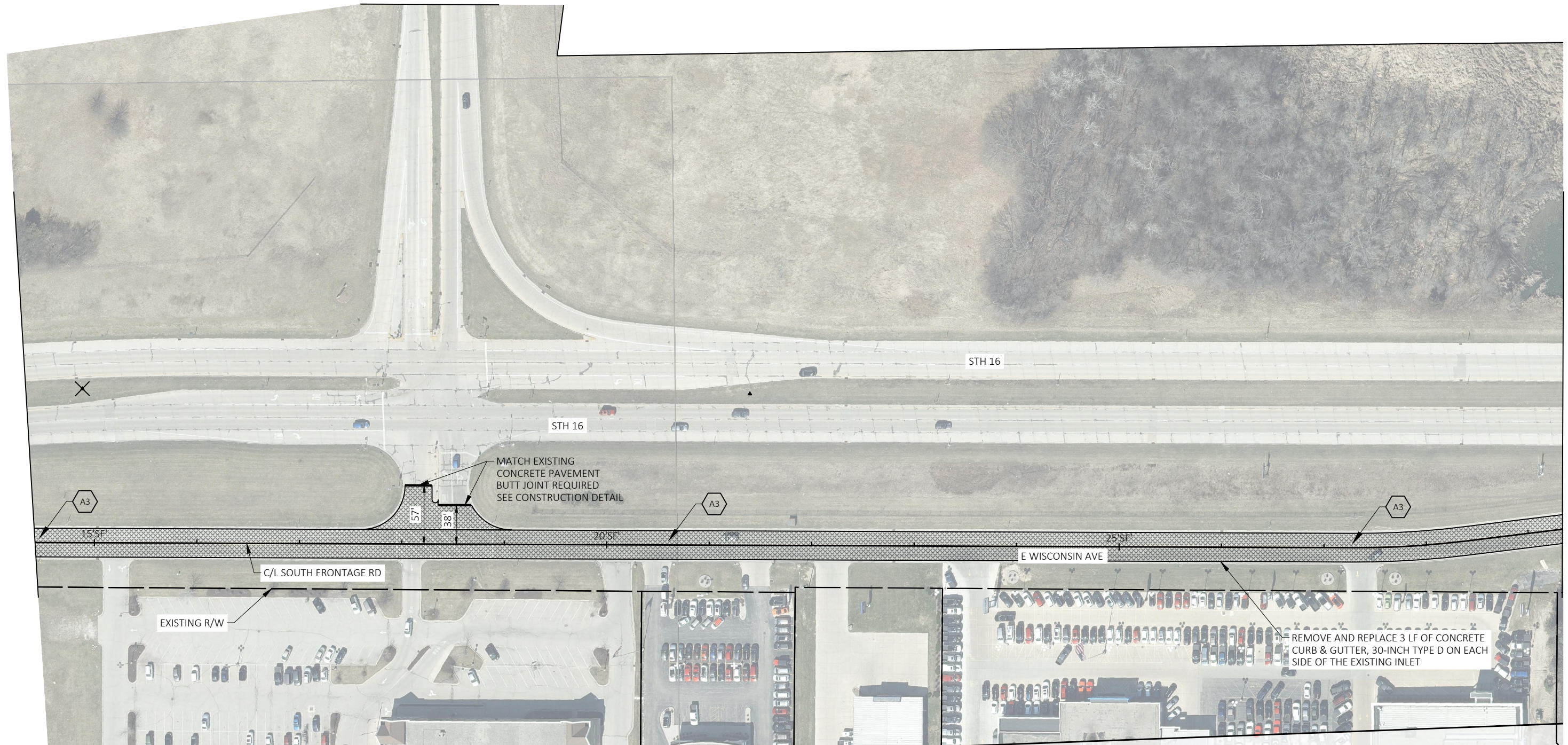
PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42

LEGEND

- A2 2-INCH REMOVING ASPHALTIC SURFACE MILLING,
2-INCH HMA PAVEMENT 5 MT 58-28 V
- A3 3-INCH REMOVING ASPHALTIC SURFACE MILLING,
3-INCH HMA PAVEMENT 5 MT 58-28 V
- 5 NEW FRAME AND GRATE
(SEE MISCELLANEOUS QUANTITIES)
- EXISTING RIGHT OF WAY

XXXXXXX SAW CUT



PROJECT NO: 3310-07-71

HWY: OFF SYSTEM

COUNTY: WAUKESHA

PLAN DETAILS

SHEET

9

E

FILE NAME : C:\PWORKING\USWI\DM503048\021206-PD.DWG
LAYOUT NAME - 03

PLOT DATE : 3/28/2025 5:25 PM

PLOT BY : ENTWISTLE, CAMERON

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDs SHEET 42

LEGEND

A2

2-INCH REMOVING ASPHALTIC SURFACE MILLING,
2-INCH HMA PAVEMENT 5 MT 58-28 V

A3

3-INCH REMOVING ASPHALTIC SURFACE MILLING,
3-INCH HMA PAVEMENT 5 MT 58-28 V

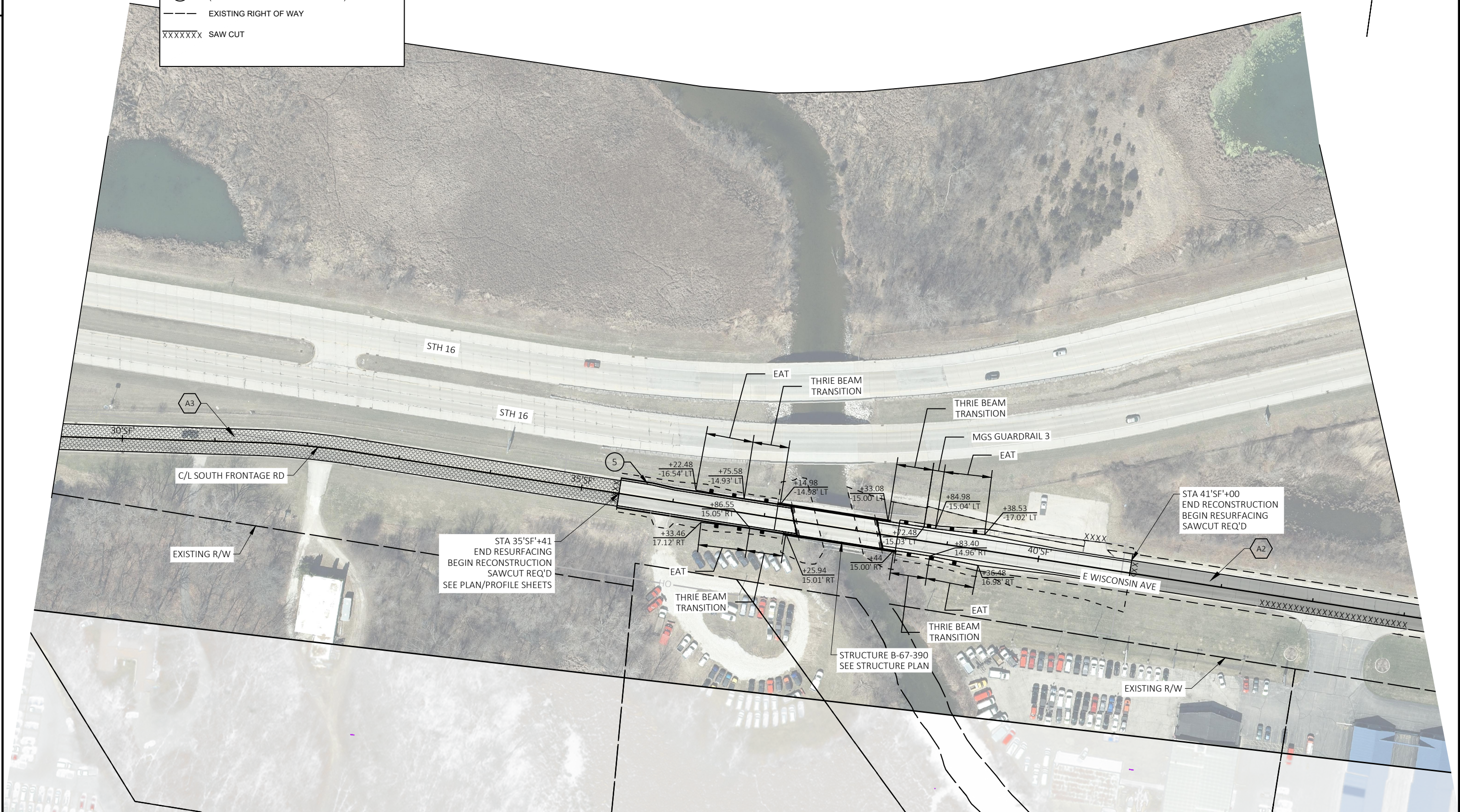
5

NEW FRAME AND GRATE
(SEE MISCELLANEOUS QUANTITIES)

EXISTING RIGHT OF WAY

XXXXXX

SAW CUT



2

2

EXISTING R/W

STH 16

STH 16

LEGEND

A2 2-INCH REMOVING ASPHALTIC SURFACE MILLING,
2-INCH HMA PAVEMENT 5 MT 58-28 V

A3 3-INCH REMOVING ASPHALTIC SURFACE MILLING,
3-INCH HMA PAVEMENT 5 MT 58-28 V

S NEW FRAME AND GRATE
(SEE MISCELLANEOUS QUANTITIES)

--- EXISTING RIGHT OF WAY

XXXXXXX SAW CUT

A2

45'SF'

C/L SOUTH FRONTAGE RD

E WISCONSIN AVE

50'SF'

EXISTING R/W

EXISTING R/W

A3

EXISTING R/W

A3

55'SF'

STA. 52+30
END 2-INCH MILL AND OVERLAY
BEGIN 3-INCH MILL AND OVERLAY

LEGEND

- A2 2-INCH REMOVING ASPHALTIC SURFACE MILLING,
2-INCH HMA PAVEMENT 5 MT 58-28 V
- A3 3-INCH REMOVING ASPHALTIC SURFACE MILLING,
3-INCH HMA PAVEMENT 5 MT 58-28 V
- S NEW FRAME AND GRATE
(SEE MISCELLANEOUS QUANTITIES)
- - - EXISTING RIGHT OF WAY
- XXXXXXX SAW CUT

EXISTING R/W

STH 16

STH 16

EXISTING R/W

EXISTING R/W

EXISTING R/W

C/L SOUTH FRONTAGE RD

E WISCONSIN AVE

45'SF'

50'SF'

55'SF'

STA. 52+30
END 2-INCH MILL AND OVERLAY
BEGIN 3-INCH MILL AND OVERLAY

LEGEND	
	2-INCH REMOVING ASPHALTIC SURFACE MILLING, 2-INCH HMA PAVEMENT 5 MT 58-28 V
	3-INCH REMOVING ASPHALTIC SURFACE MILLING, 3-INCH HMA PAVEMENT 5 MT 58-28 V
	NEW FRAME AND GRATE (SEE MISCELLANEOUS QUANTITIES)
----	EXISTING RIGHT OF WAY
XXXXXXX	SAW CUT

	2-INCH REMOVING ASPHALTIC SURFACE MILLING, 2-INCH HMA PAVEMENT 5 MT 58-28 V
	3-INCH REMOVING ASPHALTIC SURFACE MILLING, 3-INCH HMA PAVEMENT 5 MT 58-28 V
	NEW FRAME AND GRATE (SEE MISCELLANEOUS QUANTITIES)
----	EXISTING RIGHT OF WAY
XXXXXXXX	SAW CUT

5 NEW FRAME AND GRATE
(SEE MISCELLANEOUS QUANTITIES)

— — — EXISTING RIGHT OF WAY

XXXXXX SAW CUT

C/L SOUTH FRONTAGE RD

E WISCONSIN AVE

— EXISTING R/W

EXISTING R/W -

EXISTING R/W —

EXISTING R/W

STA. 52'SF'+30
END 2-INCH MILL AND OVERLAY
BEGIN 3-INCH MILL AND OVERLAY

A2

A3

PROJECT NO:	3310-07-71
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HWY: OFF SYSTEM

COUNTY: WAUKESHA

PLAN DETAILS

SHEET

1

1

FILE NAME : C:\PWWORKING\USWI\DMS03048\021206-PD.DWG
LAYOUT NAME - 05

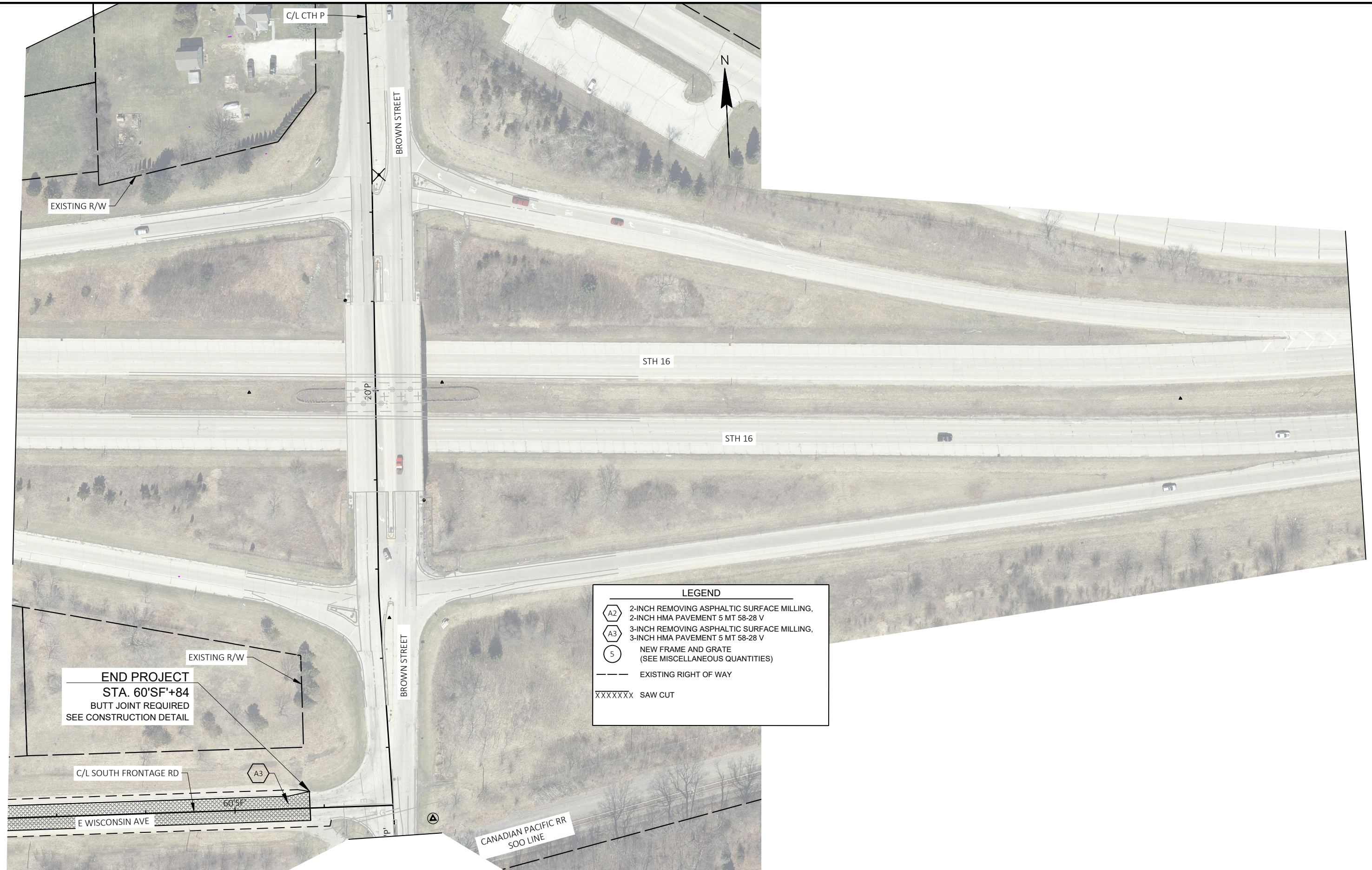
PLOT DATE : 3/28/2025 5:26 PM

PLOT BY : ENTWISTLE, CAMERON

PLOT NAME :

PLOT SCALE : 1 IN:100 FT

WISDOT/CADDS SHEET 42



PROJECT NO: 3310-07-71

HWY: OFF SYSTEM

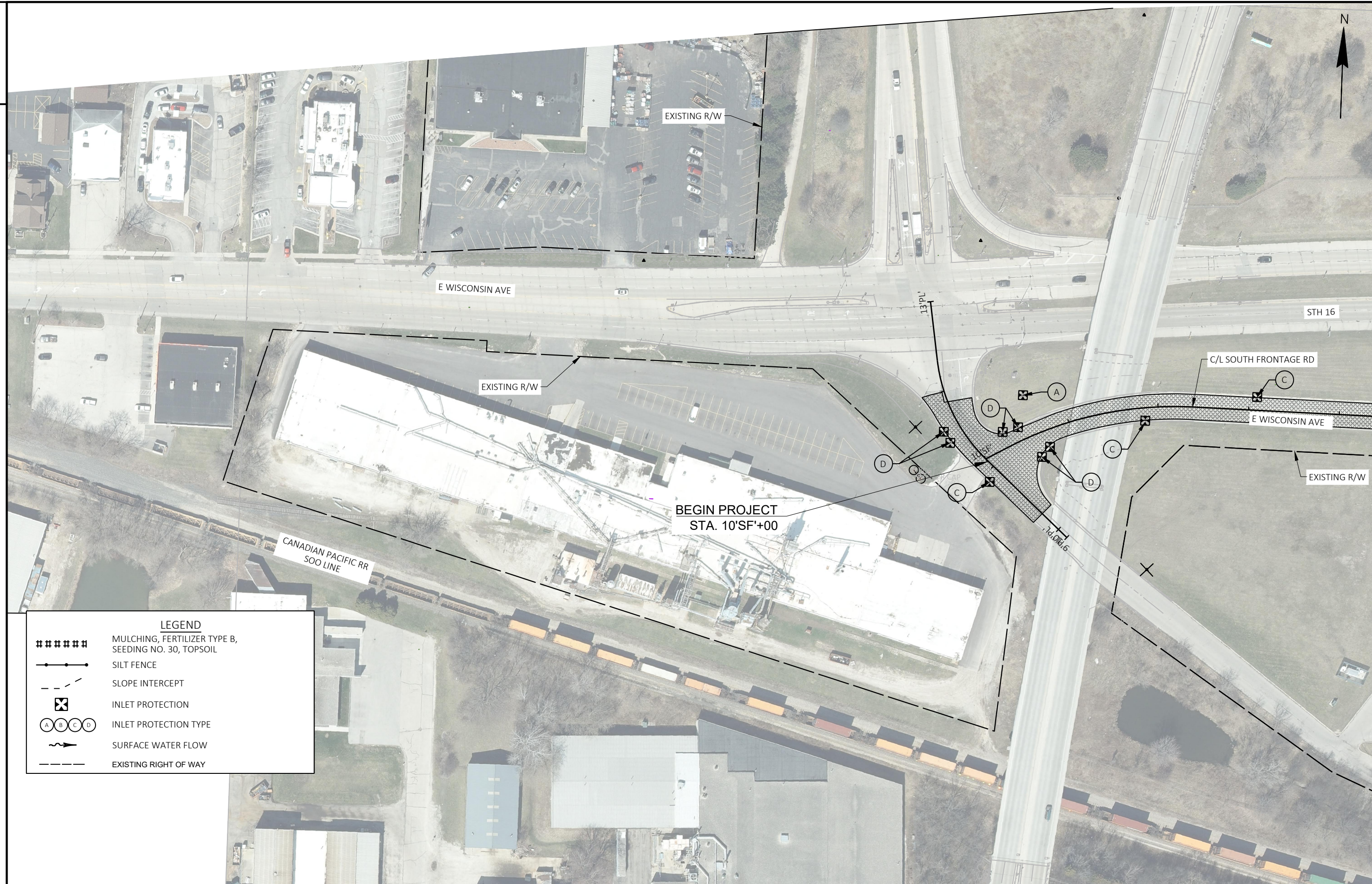
COUNTY: WAUKESHA

PLAN DETAILS

SHEET

12

E



LEGEND

#####	MULCHING, FERTILIZER TYPE B, SEEDING NO. 30, TOPSOIL
—●—●—●—	SILT FENCE
- - -	SLOPE INTERCEPT
⊗	INLET PROTECTION
(A) (B) (C) (D)	INLET PROTECTION TYPE
~>	SURFACE WATER FLOW
- - -	EXISTING RIGHT OF WAY

#####

—●—

- - -

⊗

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LEGEND

MULCHING, FERTILIZER TYPE B,
SEEDING NO. 30, TOPSOIL

SILT FENCE

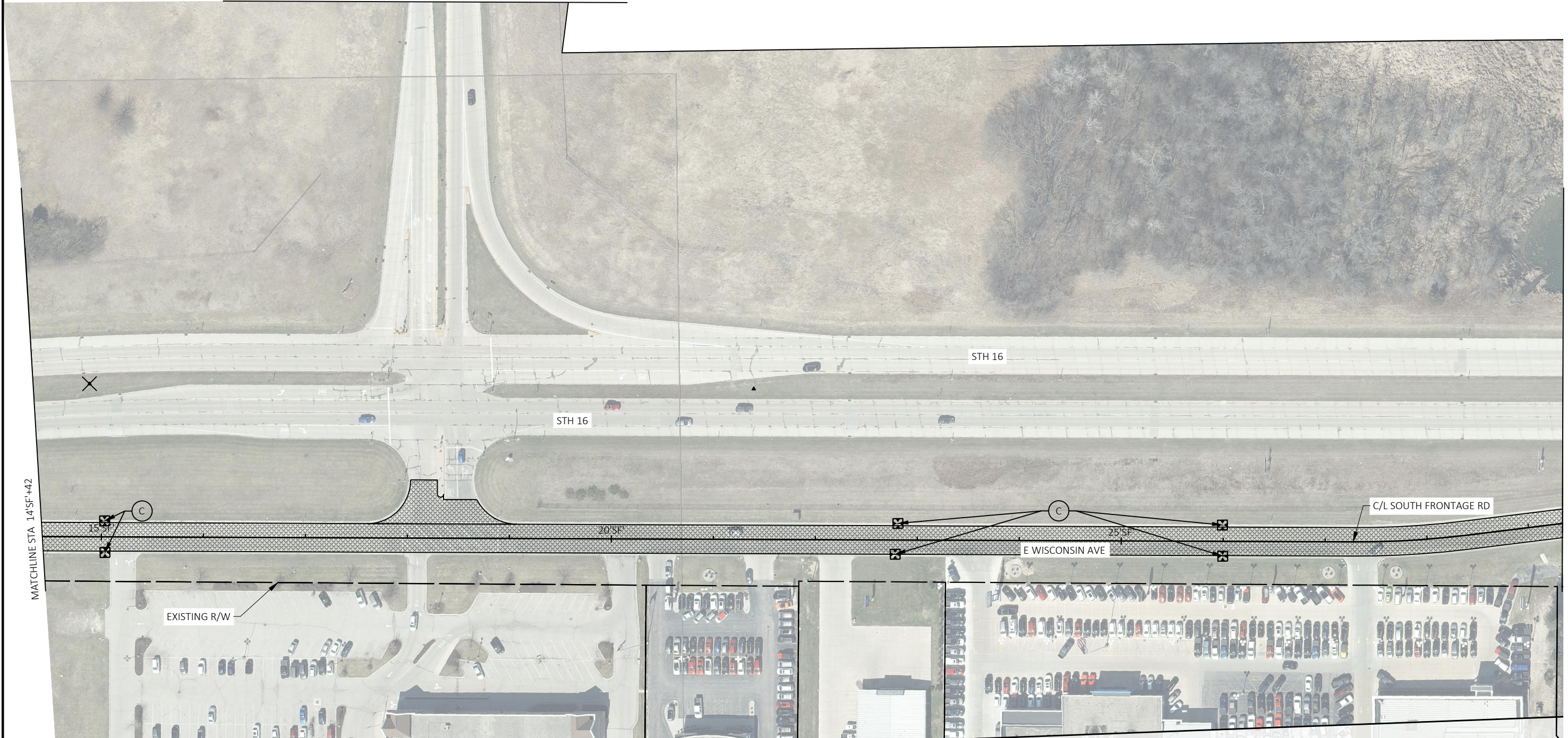
SLOPE INTERCEPT

INLET PROTECTION

INLET PROTECTION TYPE

SURFACE WATER FLOW

EXISTING RIGHT OF WAY



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⊙ ⊙ ⊙ ⊙

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LEGEND

MULCHING, FERTILIZER TYPE B,  
SEEDING NO. 30, TOPSOIL

SILT FENCE

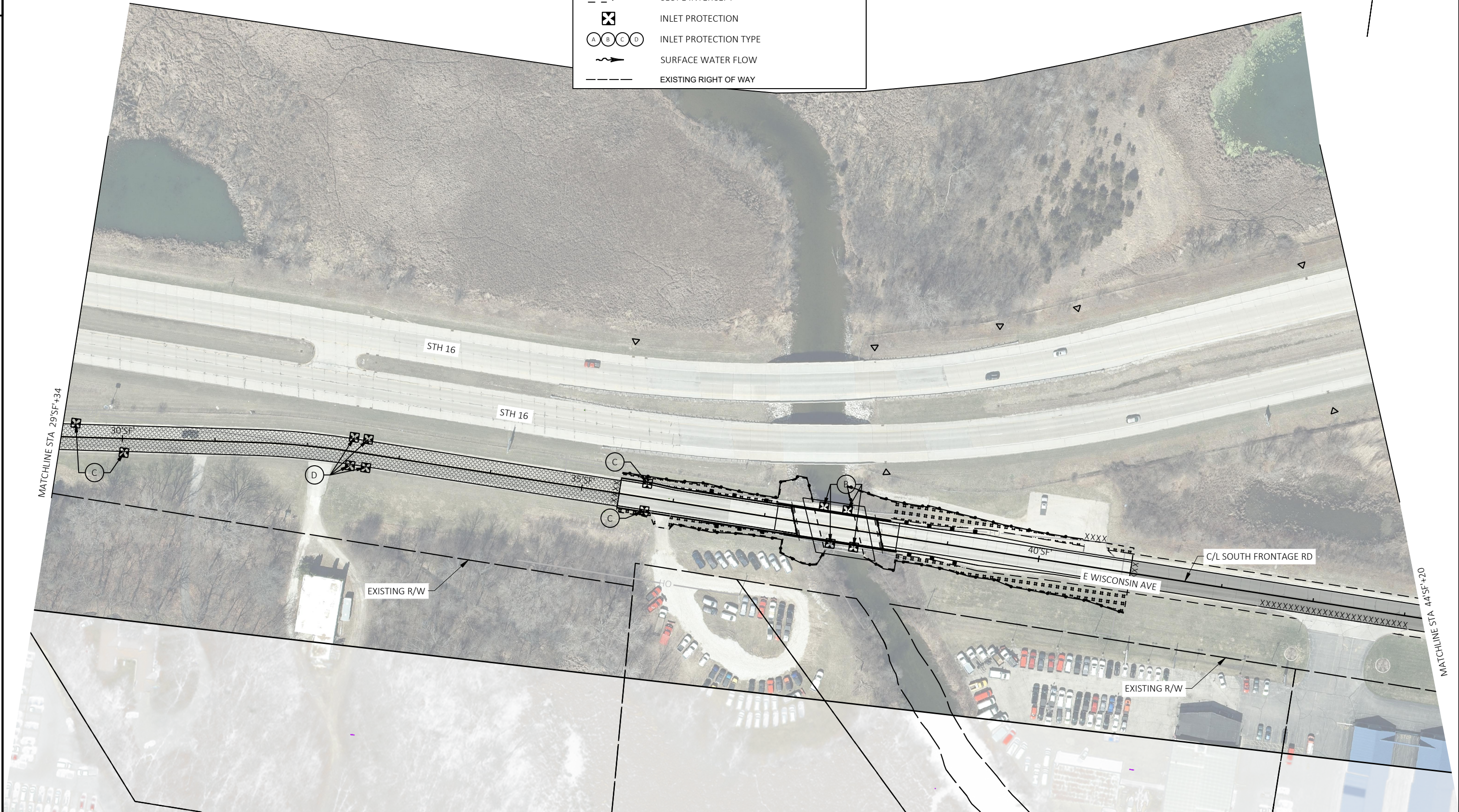
SLOPE INTERCEPT

INLET PROTECTION

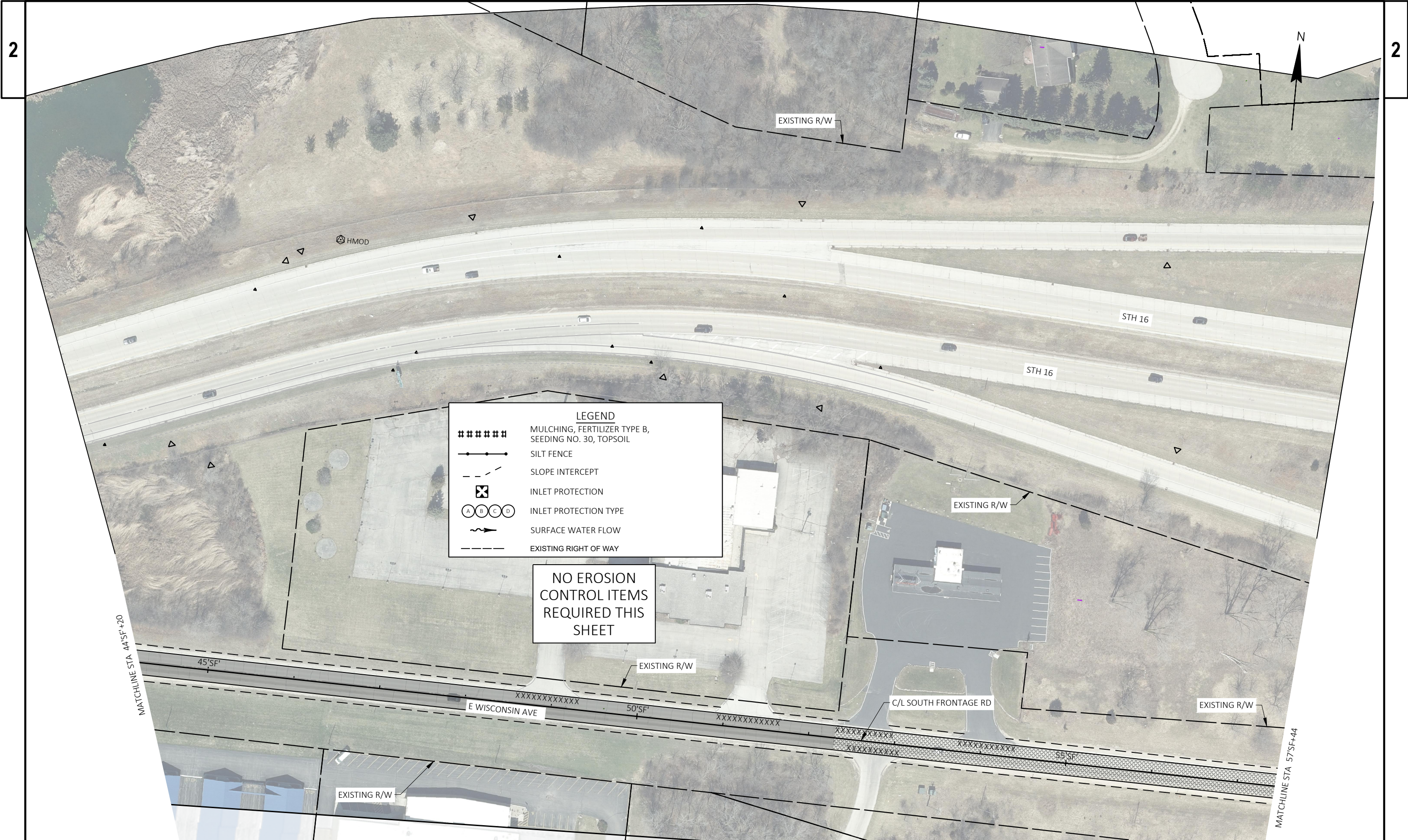
INLET PROTECTION TYPE

SURFACE WATER FLOW

EXISTING RIGHT OF WAY







2

2

#####

—●—

- - -

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**LEGEND**

MULCHING, FERTILIZER TYPE B,  
SEEDING NO. 30, TOPSOIL

SILT FENCE

SLOPE INTERCEPT

INLET PROTECTION

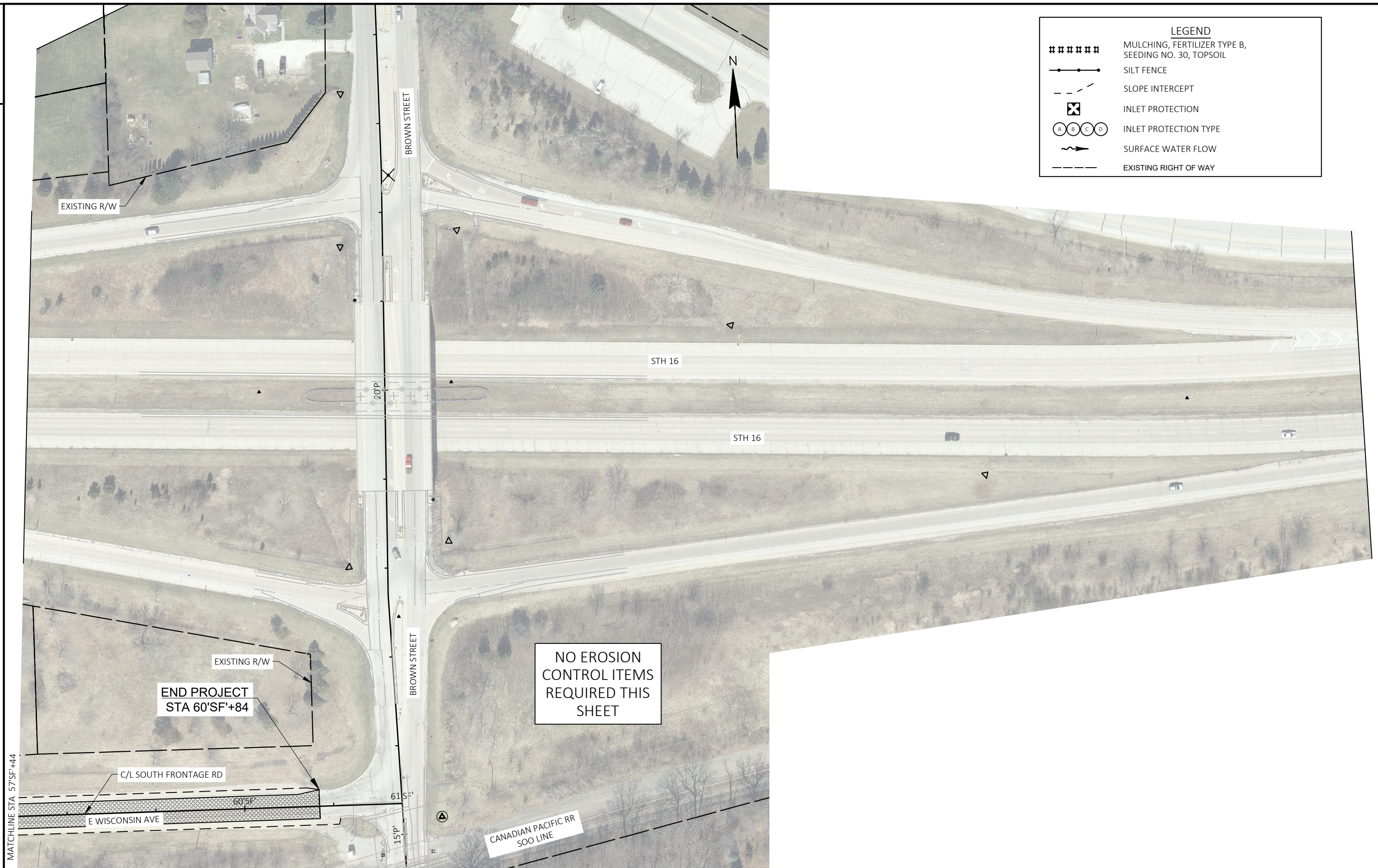
INLET PROTECTION TYPE

SURFACE WATER FLOW

EXISTING RIGHT OF WAY

NO EROSION  
CONTROL ITEMS  
REQUIRED THIS  
SHEET





PROJECT NO: 3310-07-71

HWY: OFF SYSTEM

COUNTY: WAUKESHA

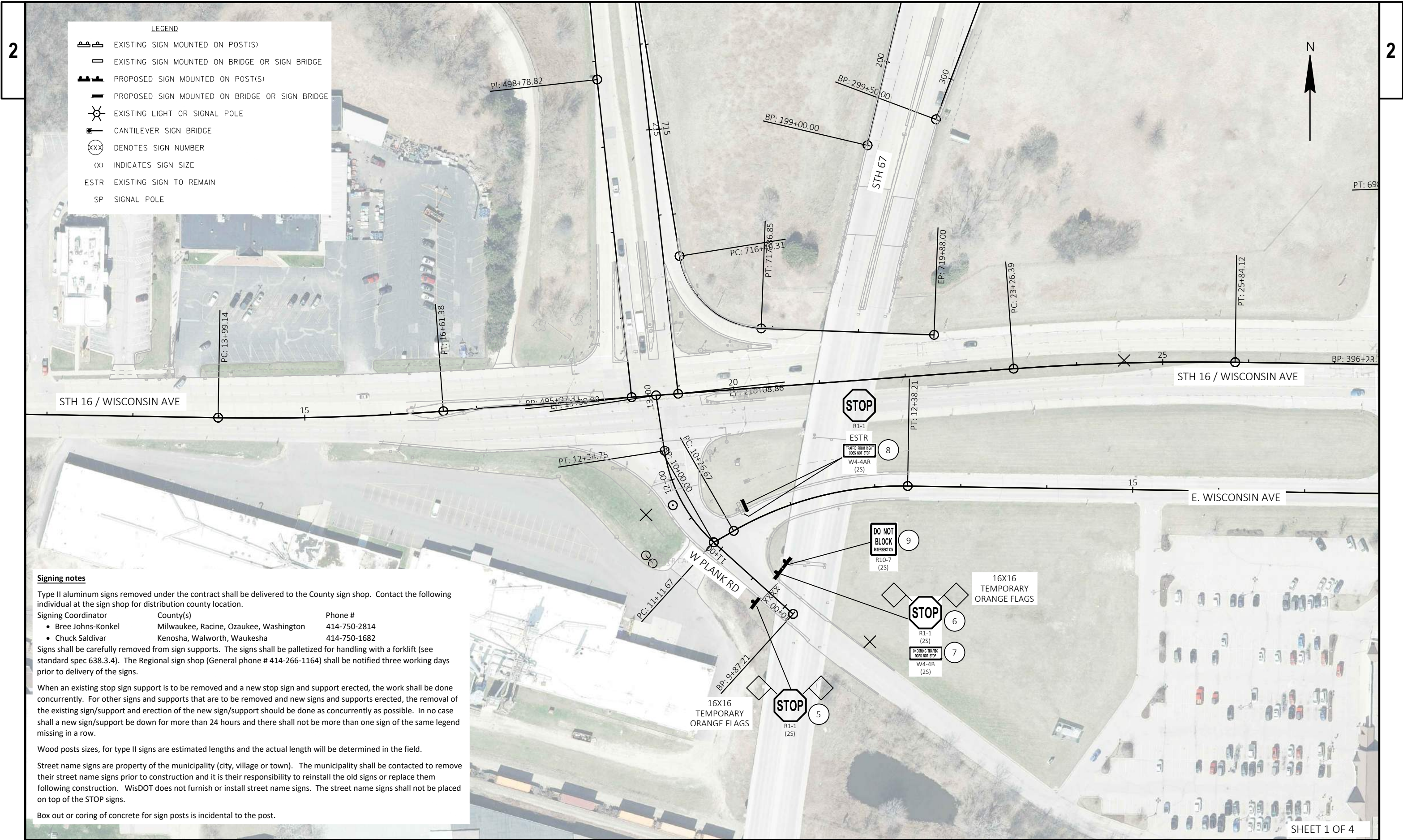
EROSION CONTROL

SHEET

17

E





**Signing notes**

Type II aluminum signs removed under the contract shall be delivered to the County sign shop. Contact the following individual at the sign shop for distribution county location.

| Signing Coordinator | County(s)                              | Phone #      |
|---------------------|----------------------------------------|--------------|
| • Bree Johns-Konkel | Milwaukee, Racine, Ozaukee, Washington | 414-750-2814 |
| • Chuck Saldivar    | Kenosha, Walworth, Waukesha            | 414-750-1682 |

Signs shall be carefully removed from sign supports. The signs shall be palletized for handling with a forklift (see standard spec 638.3.4). The Regional sign shop (General phone # 414-266-1164) shall be notified three working days prior to delivery of the signs.

When an existing stop sign support is to be removed and a new stop sign and support erected, the work shall be done concurrently. For other signs and supports that are to be removed and new signs and supports erected, the removal of the existing sign/support and erection of the new sign/support should be done as concurrently as possible. In no case shall a new sign/support be down for more than 24 hours and there shall not be more than one sign of the same legend missing in a row.

Wood posts sizes, for type II signs are estimated lengths and the actual length will be determined in the field.

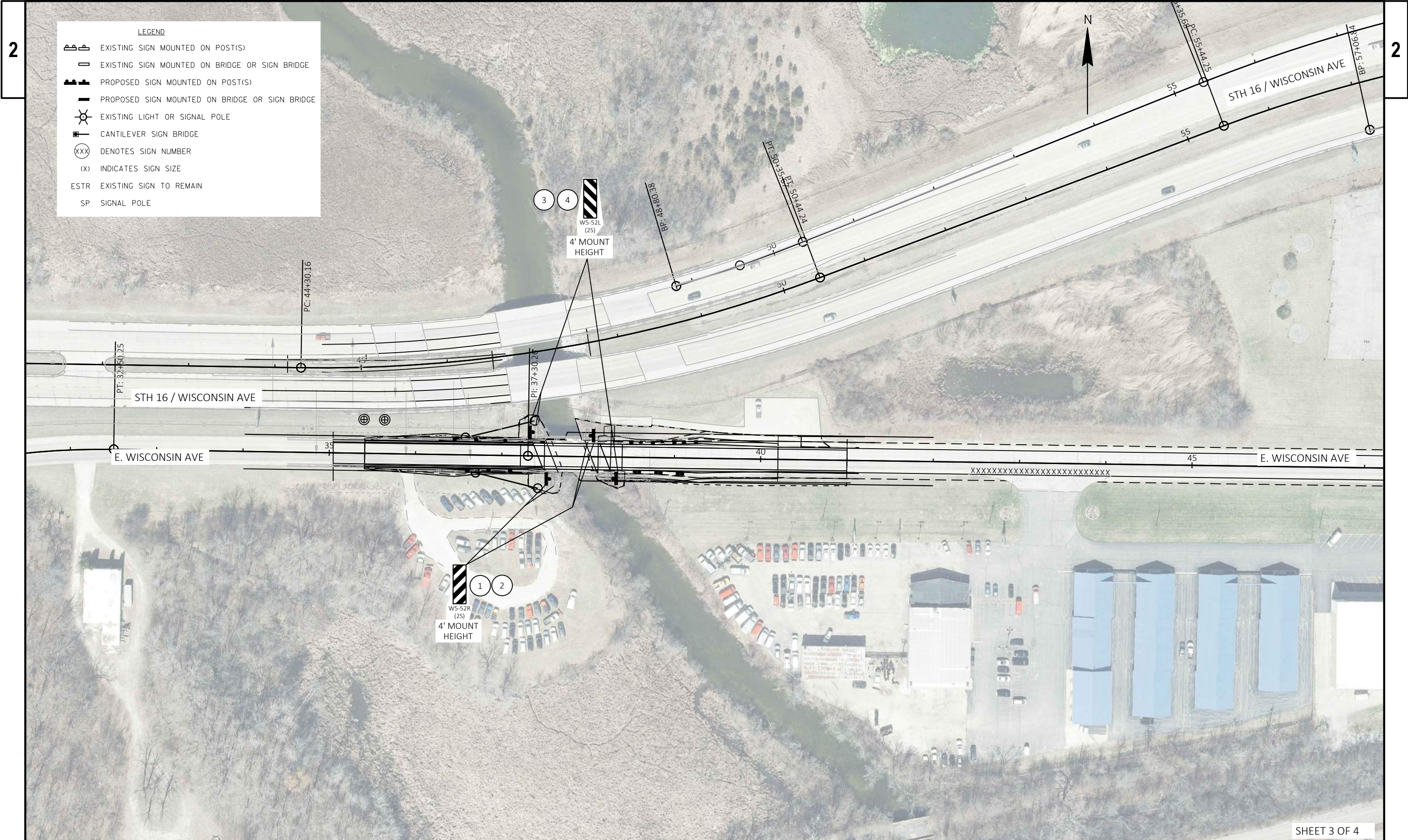
Street name signs are property of the municipality (city, village or town). The municipality shall be contacted to remove their street name signs prior to construction and it is their responsibility to reinstall the old signs or replace them following construction. WisDOT does not furnish or install street name signs. The street name signs shall not be placed on top of the STOP signs.

Box out or coring of concrete for sign posts is incidental to the post.





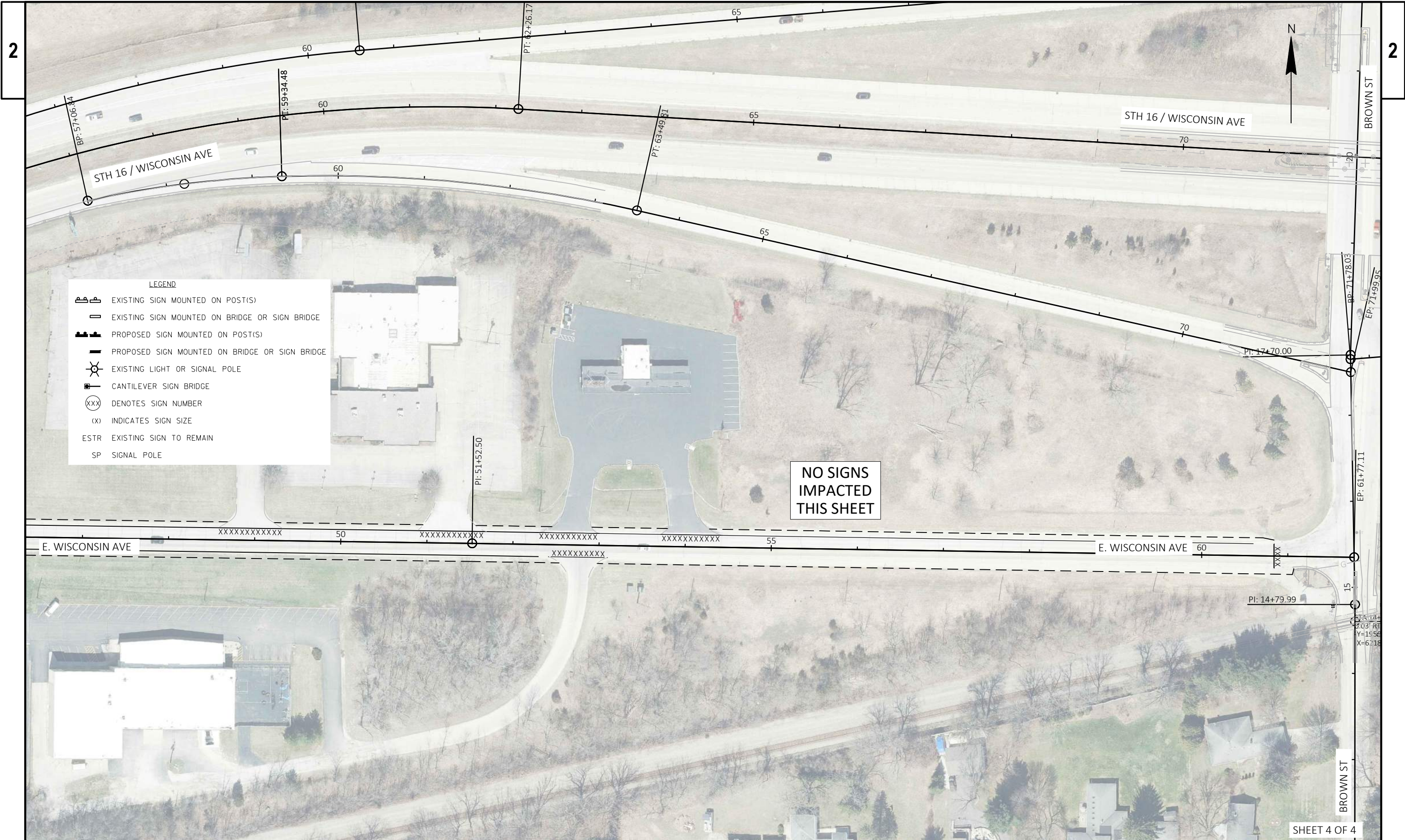




**LEGEND**

- EXISTING SIGN MOUNTED ON POST(S)
- EXISTING SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- PROPOSED SIGN MOUNTED ON POST(S)
- PROPOSED SIGN MOUNTED ON BRIDGE OR SIGN BRIDGE
- EXISTING LIGHT OR SIGNAL POLE
- CANTILEVER SIGN BRIDGE
- DENOTES SIGN NUMBER
- INDICATES SIGN SIZE
- EXISTING SIGN TO REMAIN
- SIGNAL POLE

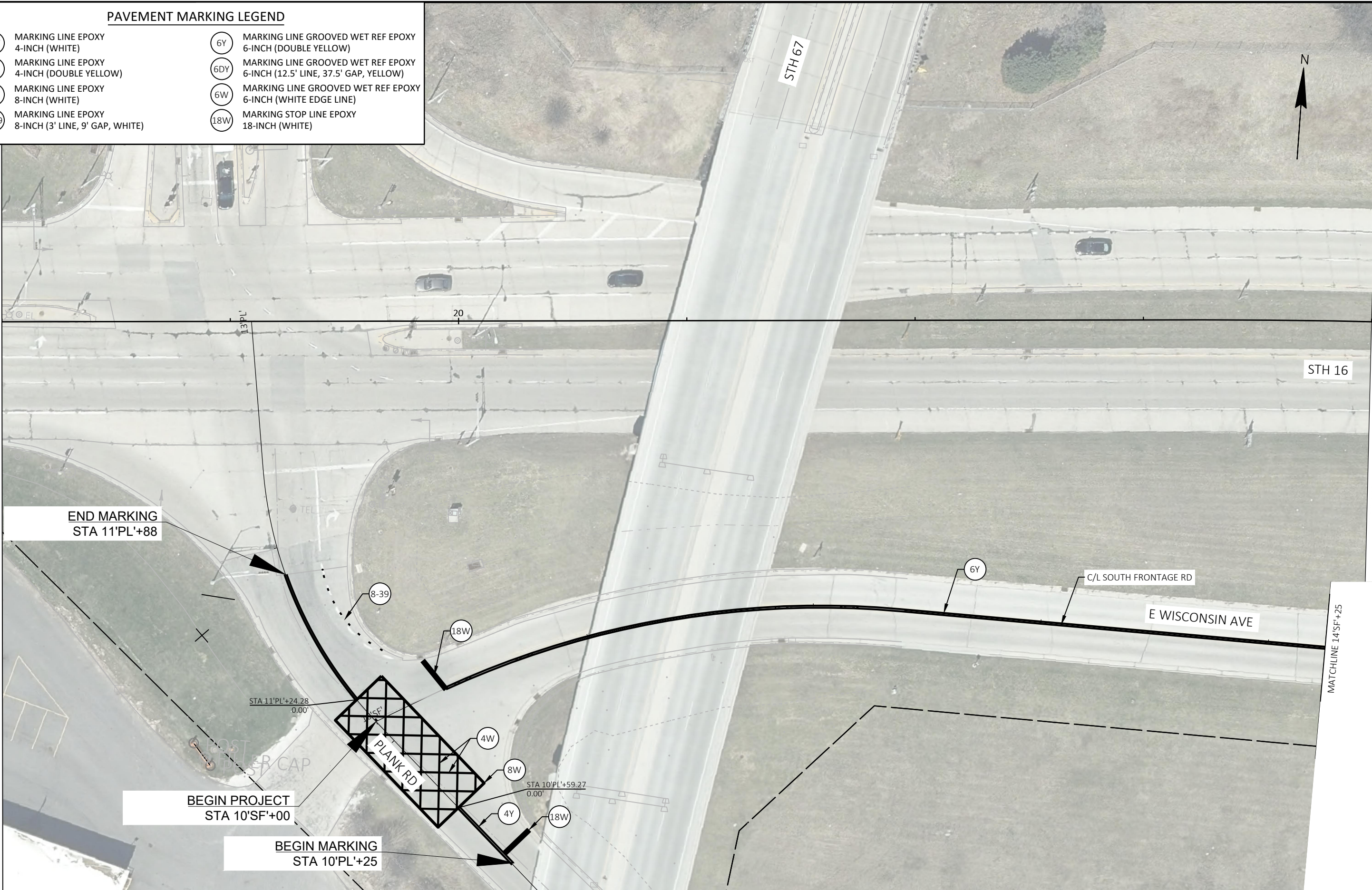






PAVEMENT MARKING LEGEND

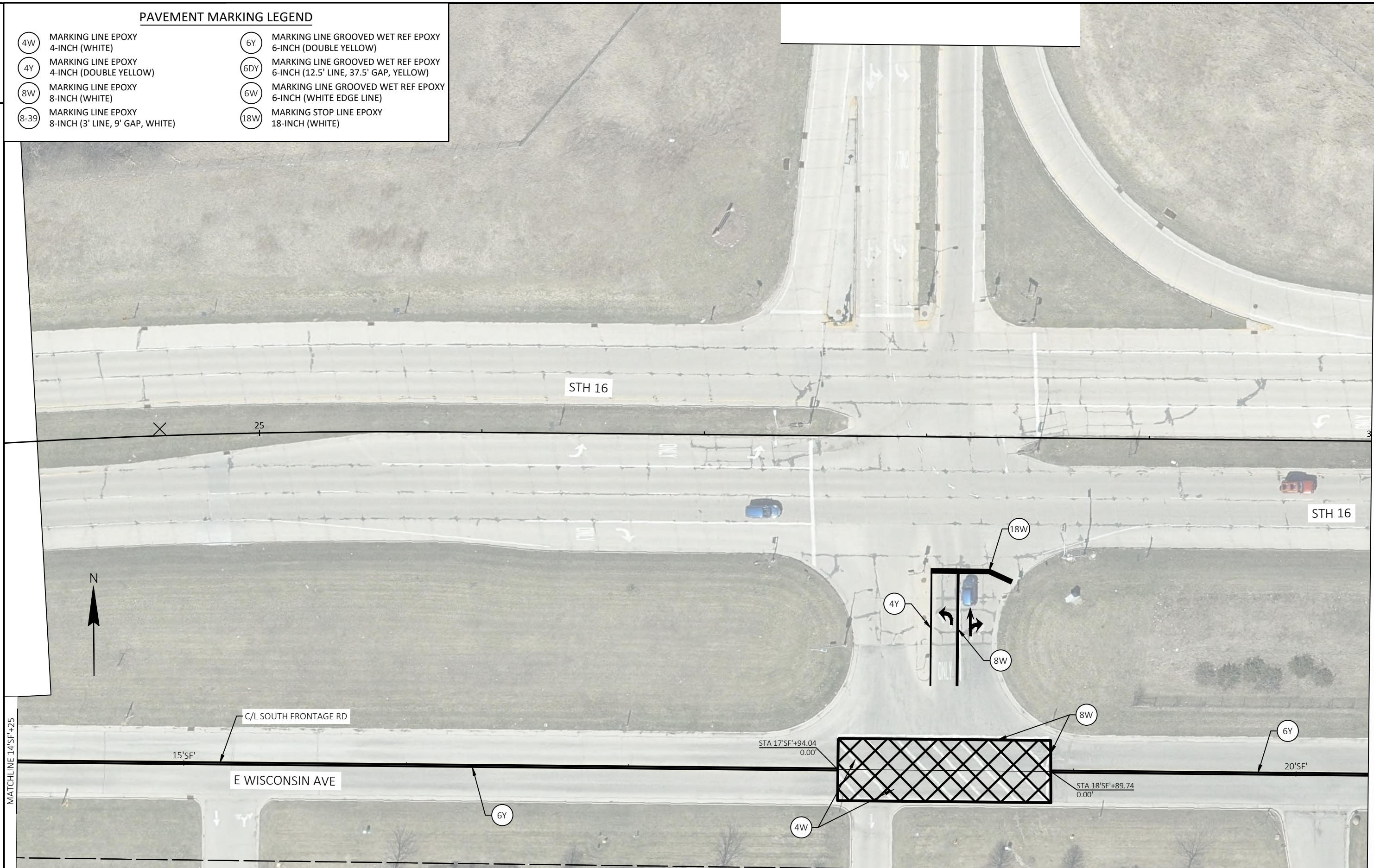
- |        |                                                       |       |                                                                              |
|--------|-------------------------------------------------------|-------|------------------------------------------------------------------------------|
| (4W)   | MARKING LINE EPOXY<br>4-INCH (WHITE)                  | (6Y)  | MARKING LINE GROOVED WET REF EPOXY<br>6-INCH (DOUBLE YELLOW)                 |
| (4Y)   | MARKING LINE EPOXY<br>4-INCH (DOUBLE YELLOW)          | (6DY) | MARKING LINE GROOVED WET REF EPOXY<br>6-INCH (12.5' LINE, 37.5' GAP, YELLOW) |
| (8W)   | MARKING LINE EPOXY<br>8-INCH (WHITE)                  | (6W)  | MARKING LINE GROOVED WET REF EPOXY<br>6-INCH (WHITE EDGE LINE)               |
| (8-39) | MARKING LINE EPOXY<br>8-INCH (3' LINE, 9' GAP, WHITE) | (18W) | MARKING STOP LINE EPOXY<br>18-INCH (WHITE)                                   |





PAVEMENT MARKING LEGEND

- |      |                                                       |     |                                                                              |
|------|-------------------------------------------------------|-----|------------------------------------------------------------------------------|
| 4W   | MARKING LINE EPOXY<br>4-INCH (WHITE)                  | 6Y  | MARKING LINE GROOVED WET REF EPOXY<br>6-INCH (DOUBLE YELLOW)                 |
| 4Y   | MARKING LINE EPOXY<br>4-INCH (DOUBLE YELLOW)          | 6DY | MARKING LINE GROOVED WET REF EPOXY<br>6-INCH (12.5' LINE, 37.5' GAP, YELLOW) |
| 8W   | MARKING LINE EPOXY<br>8-INCH (WHITE)                  | 6W  | MARKING LINE GROOVED WET REF EPOXY<br>6-INCH (WHITE EDGE LINE)               |
| 8-39 | MARKING LINE EPOXY<br>8-INCH (3' LINE, 9' GAP, WHITE) | 18W | MARKING STOP LINE EPOXY<br>18-INCH (WHITE)                                   |



PROJECT NO: 3310-07-71

HWY: OFF SYSTEM

COUNTY: WAUKESHA

PAVEMENT MARKING PLANS

SHEET

23

E



PAVEMENT MARKING LEGEND

- 4W

MARKING LINE EPOXY  
4-INCH (WHITE)
- 4Y

MARKING LINE EPOXY  
4-INCH (DOUBLE YELLOW)
- 8W

MARKING LINE EPOXY  
8-INCH (WHITE)
- 8-39

MARKING LINE EPOXY  
8-INCH (3' LINE, 9' GAP, WHITE)
- 6Y

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (DOUBLE YELLOW)
- 6DY

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (12.5' LINE, 37.5' GAP, YELLOW)
- 6W

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (WHITE EDGE LINE)
- 18W

MARKING STOP LINE EPOXY  
18-INCH (WHITE)



STH 16

STH 16

C/L SOUTH FRONTAGE RD

E WISCONSIN AVE

6Y

25'SF'

MATCHLINE 20'SF+32

MATCHLINE 26'SF+32

PROJECT NO: 3310-07-71

HWY: OFF SYSTEM

COUNTY: WAUKESHA

PAVEMENT MARKING PLANS

SHEET

24

E



PAVEMENT MARKING LEGEND

- 4W

MARKING LINE EPOXY  
4-INCH (WHITE)
- 4Y

MARKING LINE EPOXY  
4-INCH (DOUBLE YELLOW)
- 8W

MARKING LINE EPOXY  
8-INCH (WHITE)
- 8-39

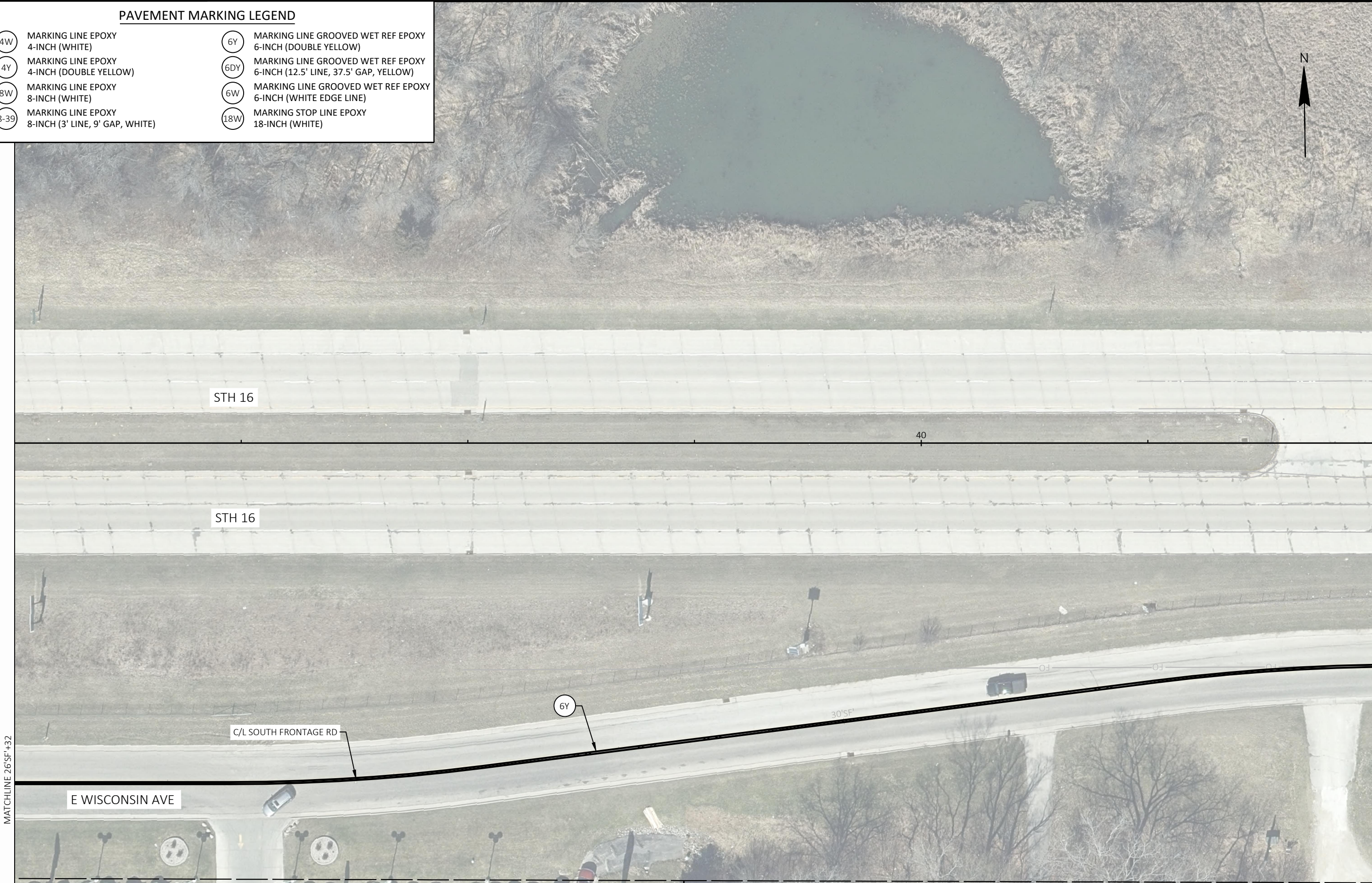
MARKING LINE EPOXY  
8-INCH (3' LINE, 9' GAP, WHITE)
- 6Y

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (DOUBLE YELLOW)
- 6DY

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (12.5' LINE, 37.5' GAP, YELLOW)
- 6W

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (WHITE EDGE LINE)
- 18W

MARKING STOP LINE EPOXY  
18-INCH (WHITE)





PAVEMENT MARKING LEGEND

- 4W

MARKING LINE EPOXY  
4-INCH (WHITE)
- 4Y

MARKING LINE EPOXY  
4-INCH (DOUBLE YELLOW)
- 8W

MARKING LINE EPOXY  
8-INCH (WHITE)
- 8-39

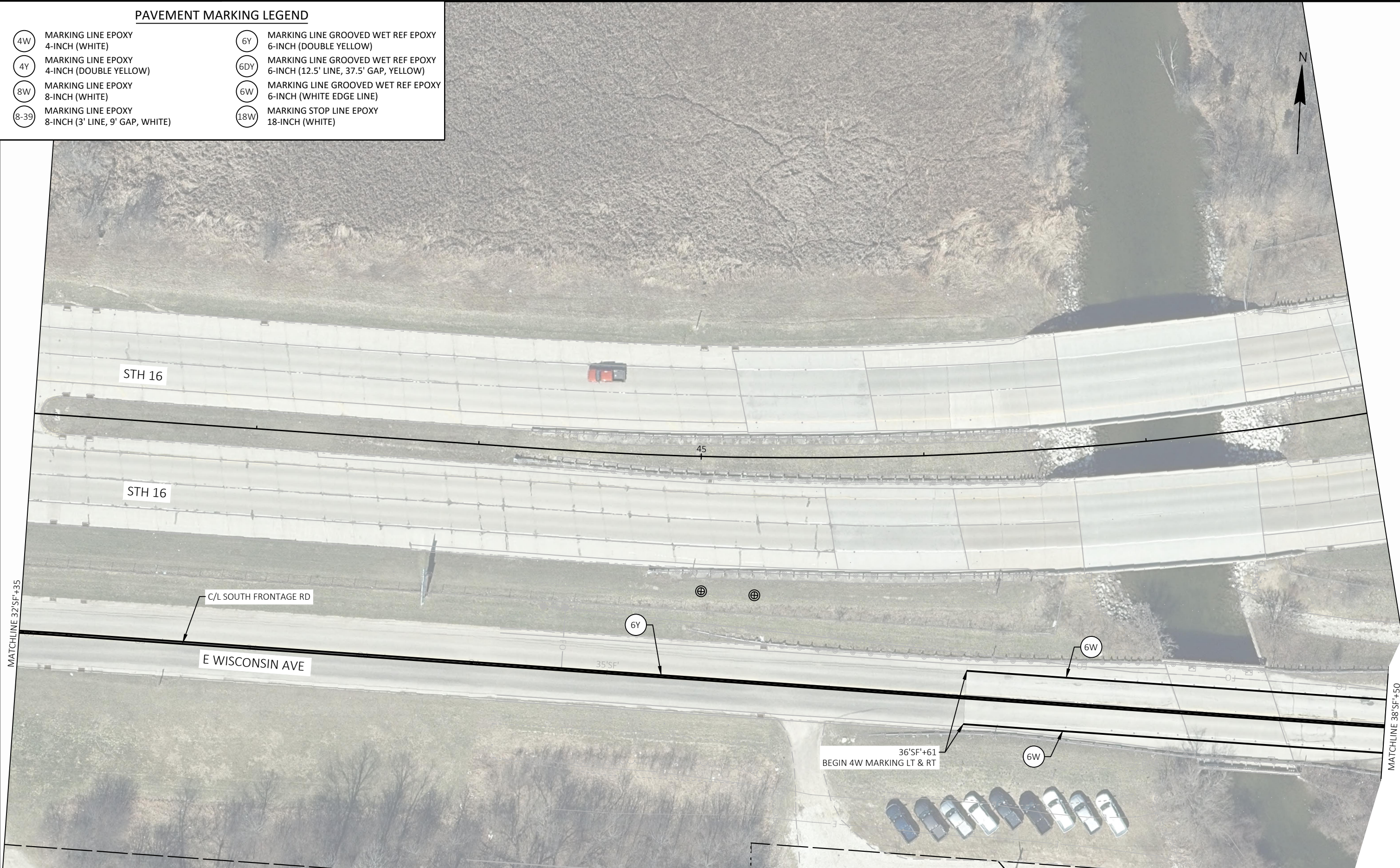
MARKING LINE EPOXY  
8-INCH (3' LINE, 9' GAP, WHITE)
- 6Y

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (DOUBLE YELLOW)
- 6DY

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (12.5' LINE, 37.5' GAP, YELLOW)
- 6W

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (WHITE EDGE LINE)
- 18W

MARKING STOP LINE EPOXY  
18-INCH (WHITE)





PAVEMENT MARKING LEGEND

- 4W

MARKING LINE EPOXY  
4-INCH (WHITE)
- 4Y

MARKING LINE EPOXY  
4-INCH (DOUBLE YELLOW)
- 8W

MARKING LINE EPOXY  
8-INCH (WHITE)
- 8-39

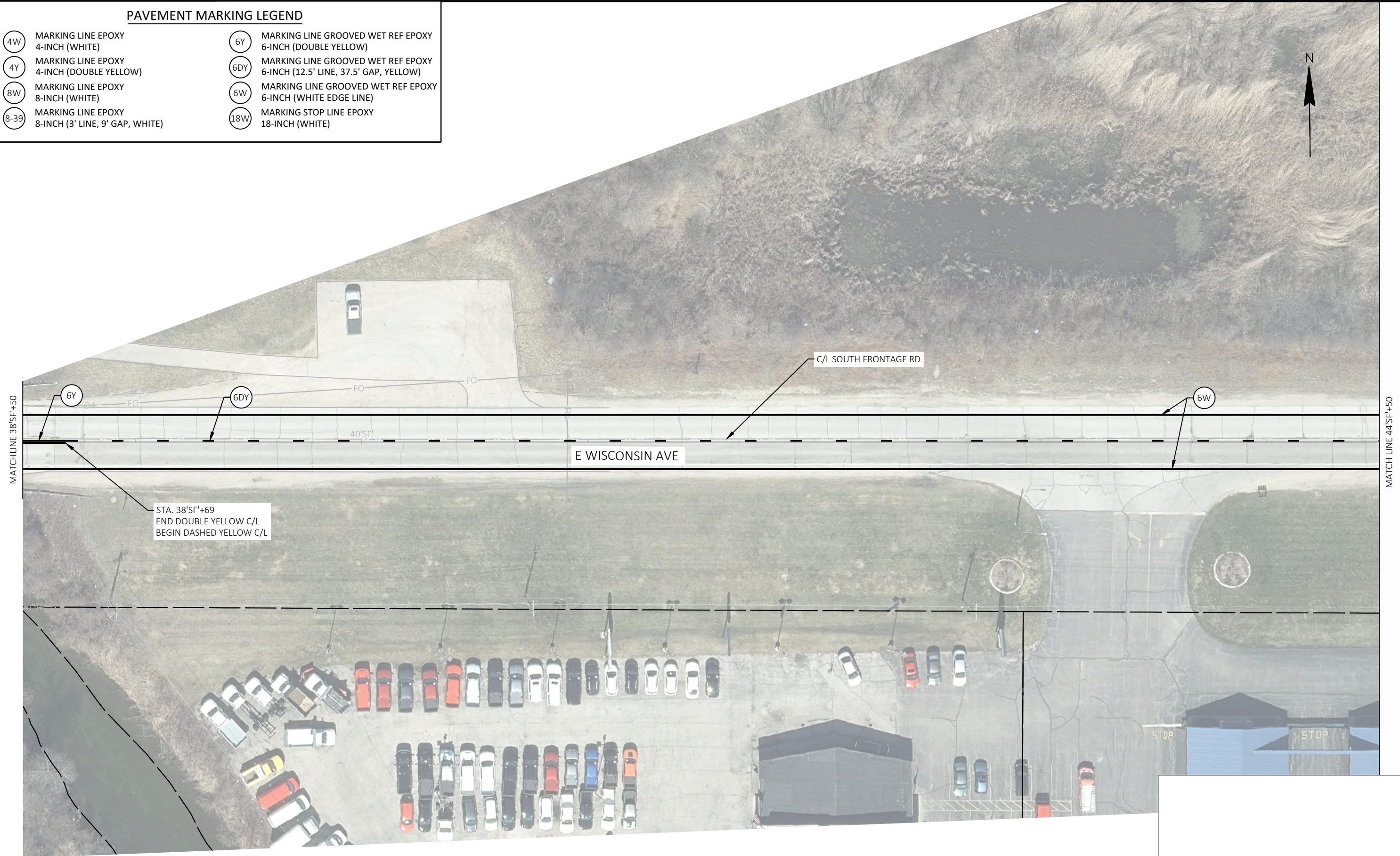
MARKING LINE EPOXY  
8-INCH (3' LINE, 9' GAP, WHITE)
- 6Y

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (DOUBLE YELLOW)
- 6DY

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (12.5' LINE, 37.5' GAP, YELLOW)
- 6W

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (WHITE EDGE LINE)
- 18W

MARKING STOP LINE EPOXY  
18-INCH (WHITE)





PAVEMENT MARKING LEGEND

- 4W

MARKING LINE EPOXY  
4-INCH (WHITE)
- 4Y

MARKING LINE EPOXY  
4-INCH (DOUBLE YELLOW)
- 8W

MARKING LINE EPOXY  
8-INCH (WHITE)
- 8-39

MARKING LINE EPOXY  
8-INCH (3' LINE, 9' GAP, WHITE)
- 6Y

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (DOUBLE YELLOW)
- 6DY

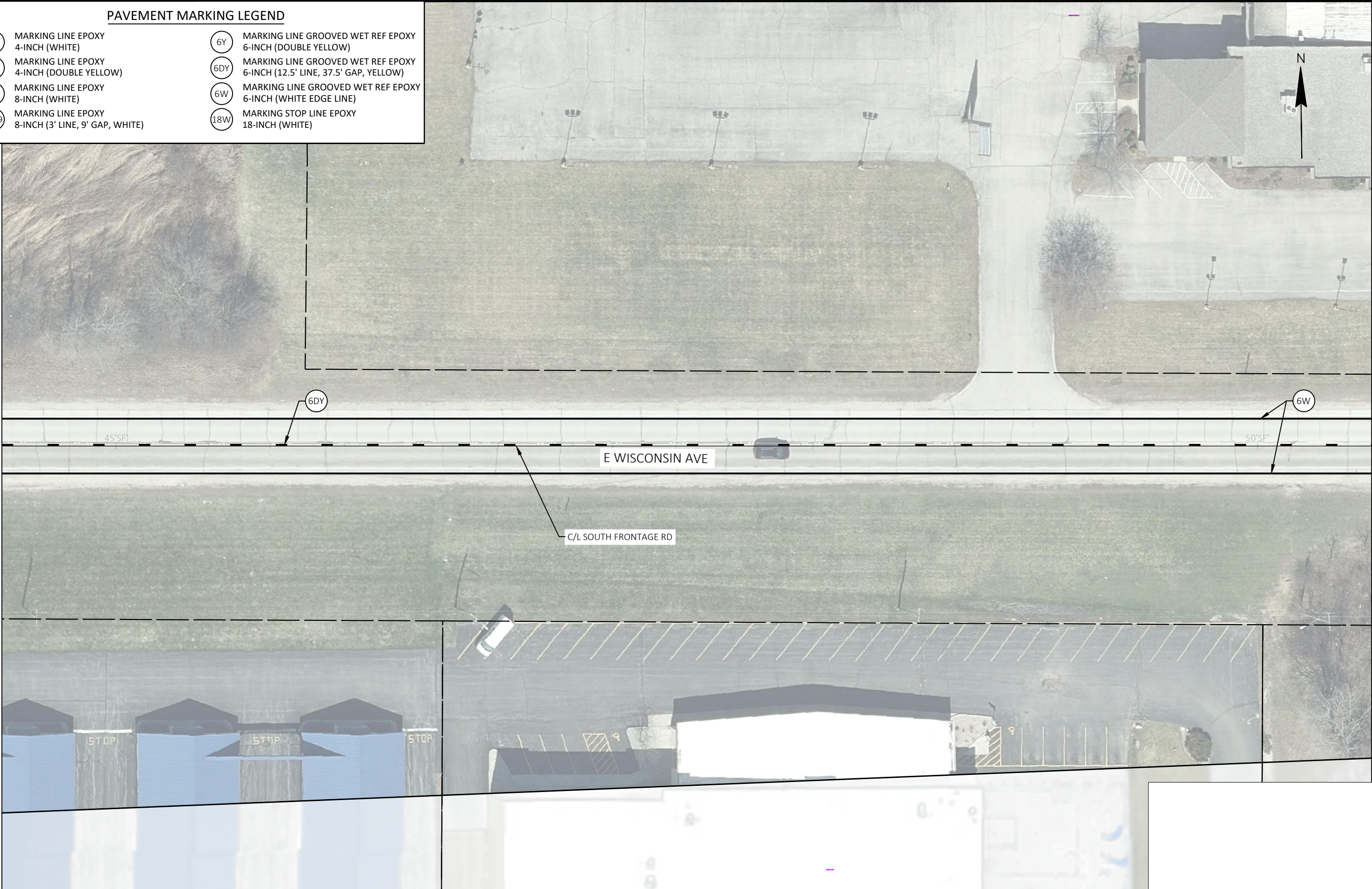
MARKING LINE GROOVED WET REF EPOXY  
6-INCH (12.5' LINE, 37.5' GAP, YELLOW)
- 6W

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (WHITE EDGE LINE)
- 18W

MARKING STOP LINE EPOXY  
18-INCH (WHITE)

MATCH LINE 44'SF+50

MATCH LINE 50'SF+50





PAVEMENT MARKING LEGEND

- 4W

MARKING LINE EPOXY  
4-INCH (WHITE)
- 4Y

MARKING LINE EPOXY  
4-INCH (DOUBLE YELLOW)
- 8W

MARKING LINE EPOXY  
8-INCH (WHITE)
- 8-39

MARKING LINE EPOXY  
8-INCH (3' LINE, 9' GAP, WHITE)
- 6Y

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (DOUBLE YELLOW)
- 6DY

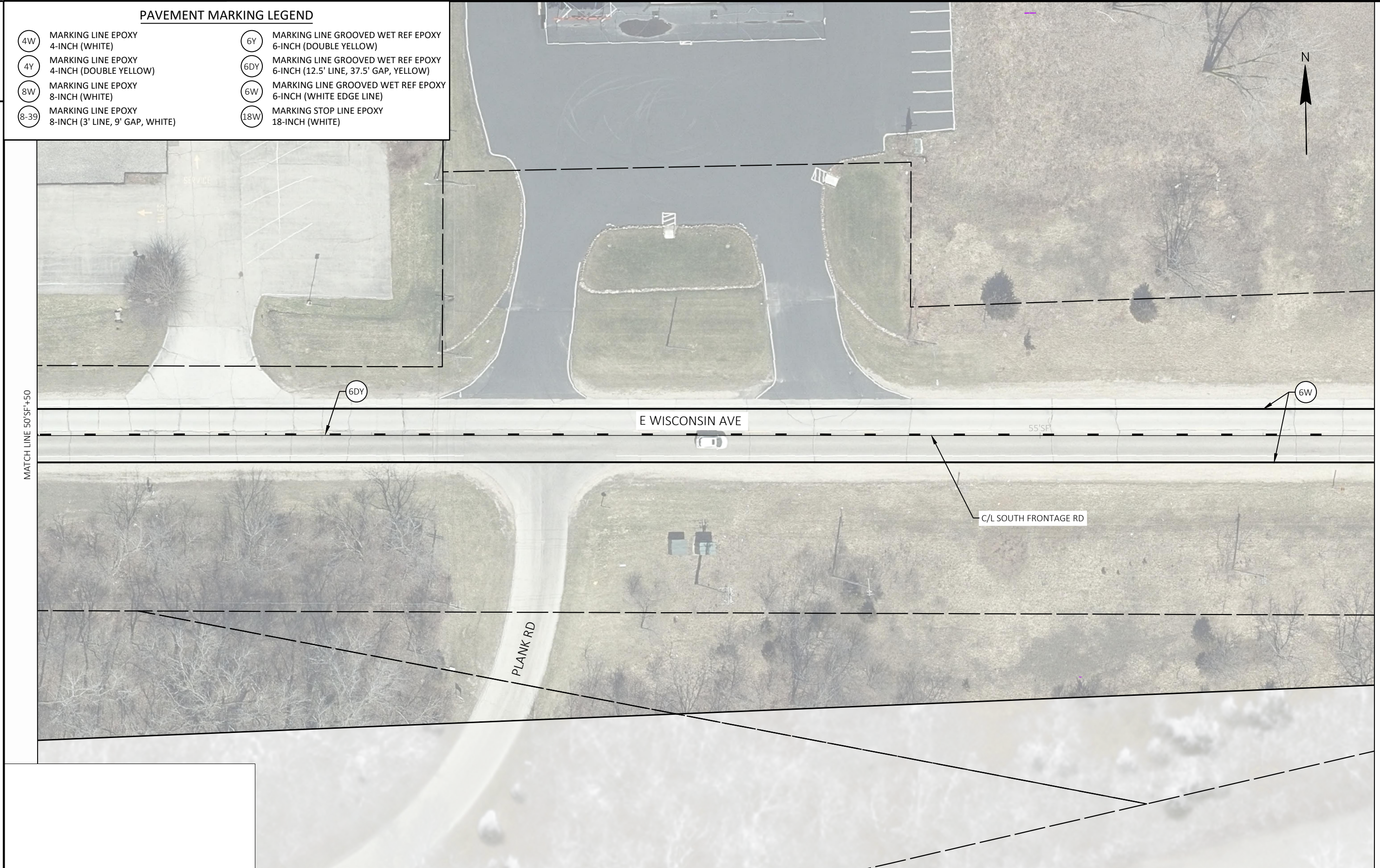
MARKING LINE GROOVED WET REF EPOXY  
6-INCH (12.5' LINE, 37.5' GAP, YELLOW)
- 6W

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (WHITE EDGE LINE)
- 18W

MARKING STOP LINE EPOXY  
18-INCH (WHITE)

MATCH LINE 50'SF+50

MATCH LINE 56'SF+50





PAVEMENT MARKING LEGEND

- 4W

MARKING LINE EPOXY  
4-INCH (WHITE)
- 4Y

MARKING LINE EPOXY  
4-INCH (DOUBLE YELLOW)
- 8W

MARKING LINE EPOXY  
8-INCH (WHITE)
- 8-39

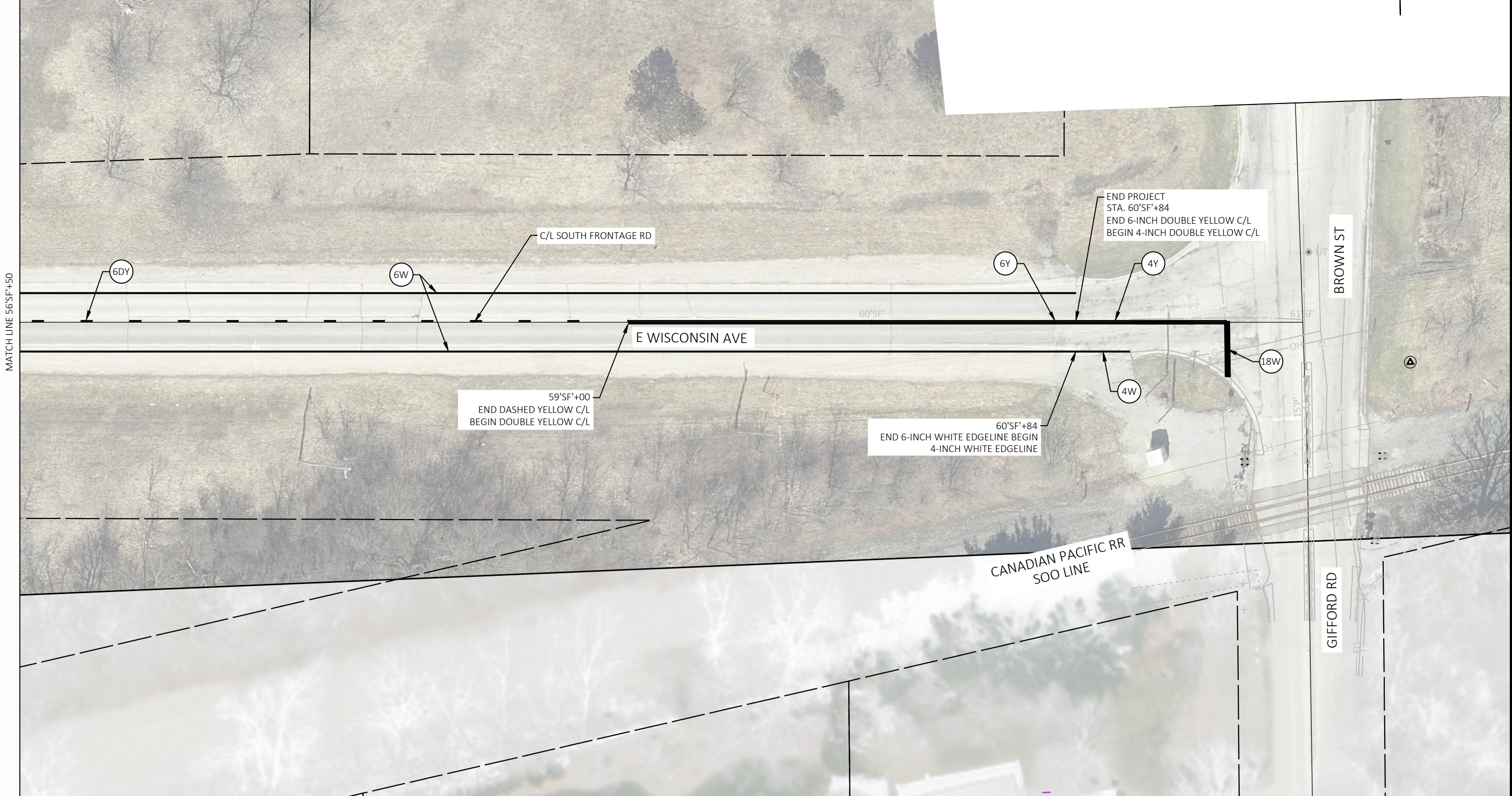
MARKING LINE EPOXY  
8-INCH (3' LINE, 9' GAP, WHITE)
- 6Y

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (DOUBLE YELLOW)
- 6DY

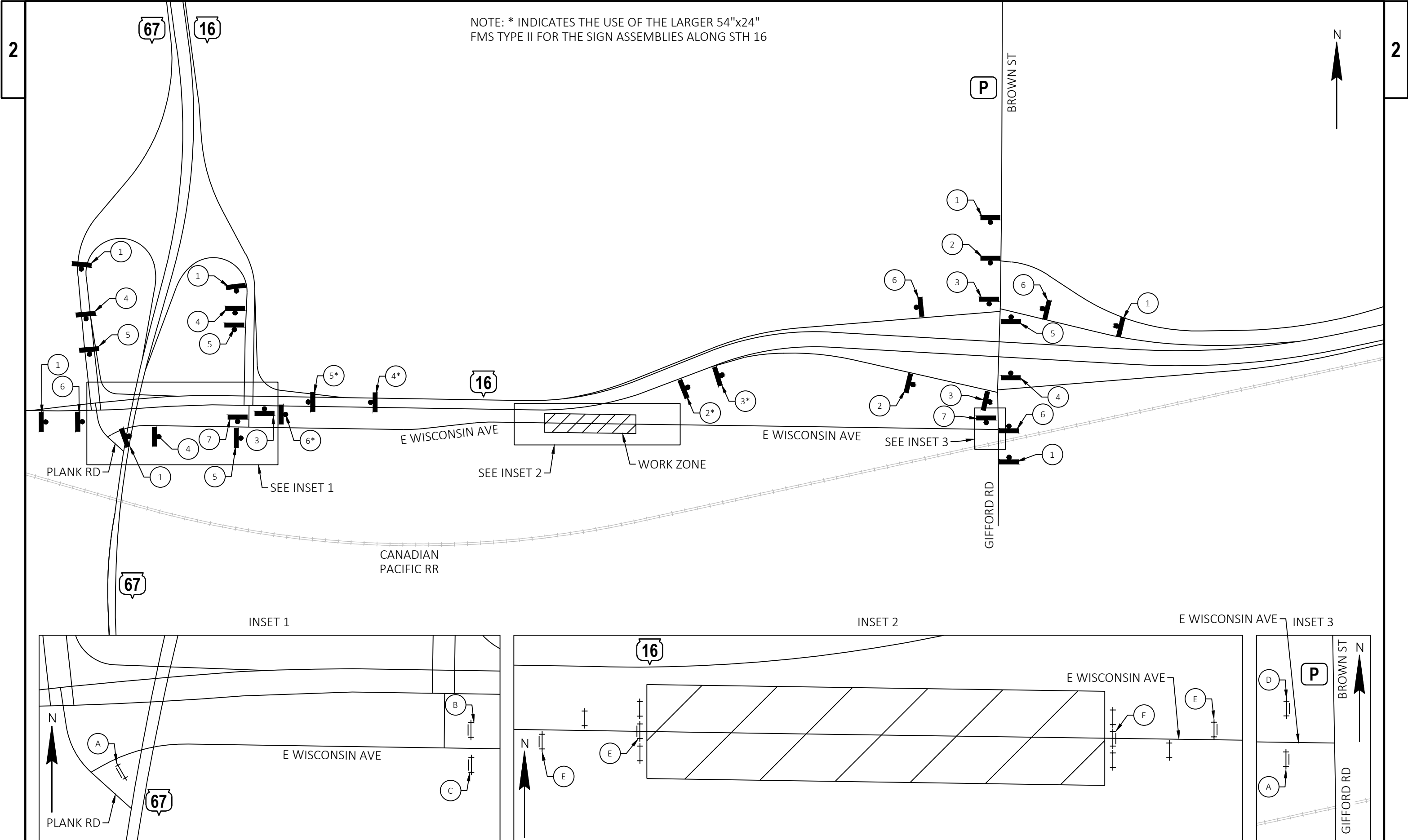
MARKING LINE GROOVED WET REF EPOXY  
6-INCH (12.5' LINE, 37.5' GAP, YELLOW)
- 6W

MARKING LINE GROOVED WET REF EPOXY  
6-INCH (WHITE EDGE LINE)
- 18W

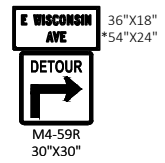
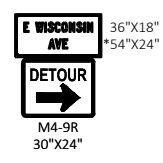
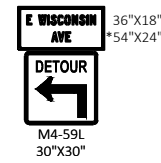
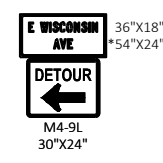
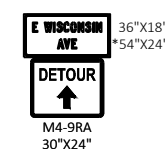
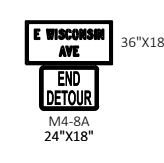
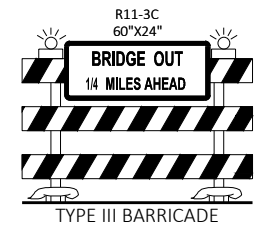
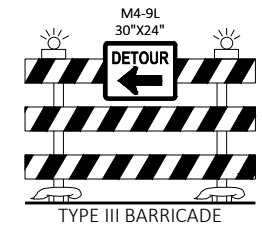
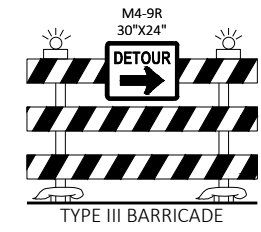
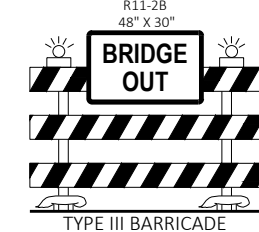
MARKING STOP LINE EPOXY  
18-INCH (WHITE)



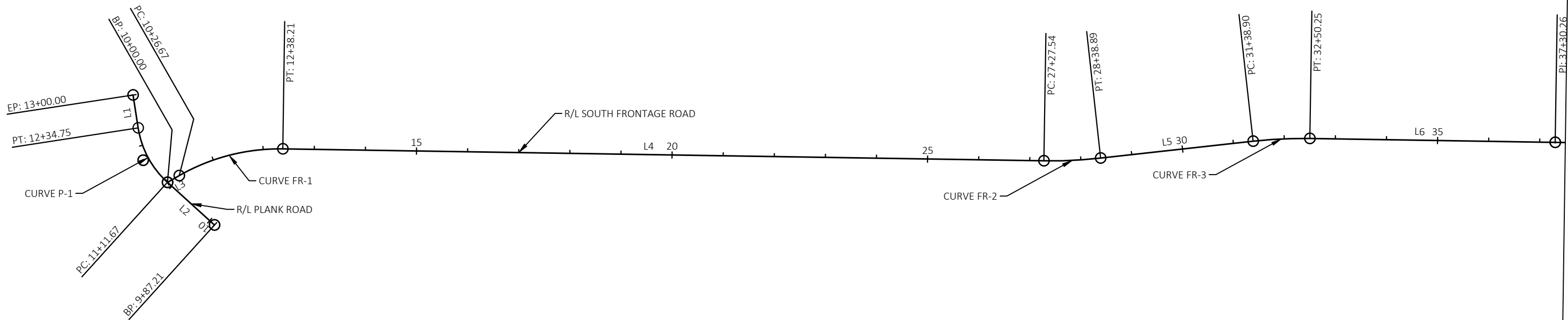






|                                                                                                                                                                                                                                                                                                                            |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |          |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|---|
| 2                                                                                                                                                                                                                                                                                                                          | 1                                                                                 | 2                                                                                  | 3                                                                                   | 4                                                                                   | 5                                                                                   | 6                                                                                   | 7                                                                                   |          | 2 |
|                                                                                                                                                                                                                                                                                                                            |  |   |   |  |  |  |  |          |   |
| A                                                                                                                                                                                                                                                                                                                          | B                                                                                 | C                                                                                  | D                                                                                   | E                                                                                   |                                                                                     |                                                                                     |                                                                                     |          |   |
|                                                                                                                                                                                                                                           |  |  |  |  |                                                                                     |                                                                                     |                                                                                     |          |   |
| <div>NOTES:</div> <div><div>1.</div><div>USE SDD "BARRICADES AND SIGNS FOR MAINLINE CLOSURES" AND "BARRICADES AND SIGNS FOR VARIOUS CLOSURES" FOR ROADWAY CLOSURE.</div></div> <div><div>2.</div><div>USE SDD "TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY" FOR MILLING AND OVERLAY OPERATIONS.</div></div> |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |          |   |
| PROJECT NO: 3310-07-71                                                                                                                                                                                                                                                                                                     |                                                                                   | HWY: OFF SYSTEM                                                                    |                                                                                     | COUNTY: WAUKESHA                                                                    |                                                                                     | DETOUR ROUTE - E. WISCONSIN AVE CLOSURE SIGN ASSEMBLIES                             |                                                                                     | SHEET 32 | E |



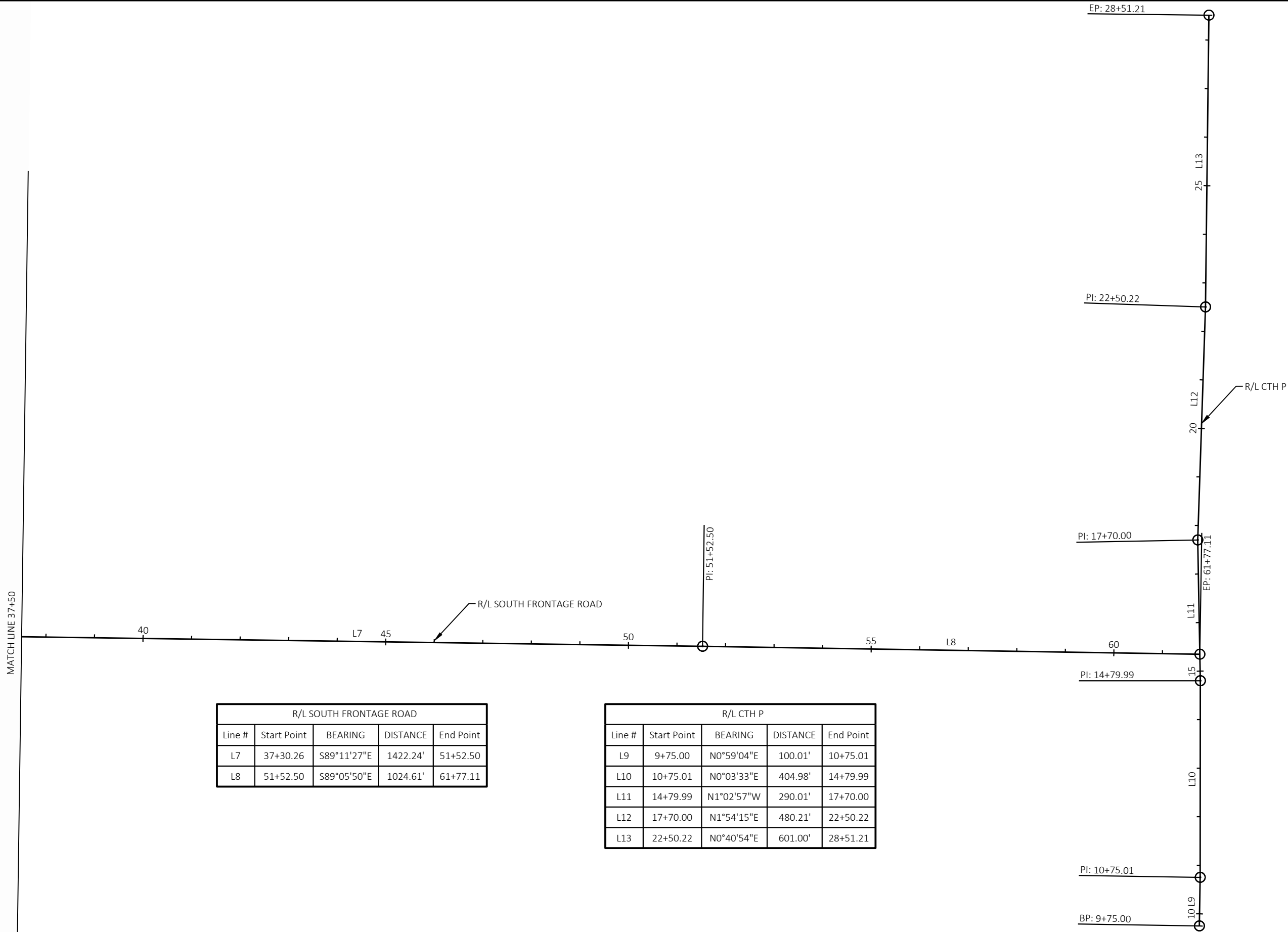


| CURVE P-1            | CURVE FR-1           | CURVE FR-2          | CURVE FR-3          |
|----------------------|----------------------|---------------------|---------------------|
| PI STA = 11+75.73    | PI STA = 11+35.04    | PI STA = 27+83.29   | PI STA = 31+94.65   |
| Y = 195906.267       | Y = 195930.268       | Y = 195904.461      | Y = 195949.928      |
| X = 616673.352       | X = 616838.183       | X = 618491.429      | X = 618900.419      |
| DELTA = 39°10'43" RT | DELTA = 30°40'26" RT | DELTA = 7°14'16" LT | DELTA = 7°14'16" RT |
| D = 31°49'52"        | D = 14°30'00"        | D = 6°30'00"        | D = 6°30'00"        |
| T = 64.06'           | T = 108.37'          | T = 55.75'          | T = 55.75'          |
| L = 123.08'          | L = 211.54'          | L = 111.35'         | L = 111.35'         |
| R = 180.00'          | R = 395.14'          | R = 881.47'         | R = 881.47'         |
| PC STA = 11+11.67    | PC STA = 10+26.67    | PC STA = 27+27.54   | PC STA = 31+38.90   |
| Y = 195863.300       | Y = 195876.444       | Y = 195905.331      | Y = 195943.768      |
| X = 616720.862       | X = 616744.123       | X = 618435.686      | X = 618845.010      |
| PT STA = 12+34.75    | PT STA = 12+38.21    | PT STA = 28+38.89   | PT STA = 32+50.25   |
| Y = 195969.587       | Y = 195928.577       | Y = 195910.620      | Y = 195949.057      |
| X = 616663.668       | X = 616946.542       | X = 618546.837      | X = 618956.162      |
| DB = N47°52'28"W     | DB = N60°13'14"E     | DB = S89°06'20"E    | DB = N83°39'24"E    |
| DA = N08°41'45"W     | DA = S89°06'20"E     | DA = N83°39'24"E    | DA = S89°06'20"E    |

| R/L PLANK ROAD |             |             |          |           |
|----------------|-------------|-------------|----------|-----------|
| Line #         | Start Point | BEARING     | DISTANCE | End Point |
| L1             | 12+34.75    | N8°41'45"W  | 65.25'   | 13+00.00  |
| L2             | 9+87.21     | N47°52'28"W | 124.46'  | 11+11.67  |

| R/L SOUTH FRONTAGE ROAD |             |             |          |           |
|-------------------------|-------------|-------------|----------|-----------|
| Line #                  | Start Point | BEARING     | DISTANCE | End Point |
| L3                      | 10+00.00    | N60°13'14"E | 26.67'   | 10+26.67  |
| L4                      | 12+38.21    | S89°06'20"E | 1489.33' | 27+27.54  |
| L5                      | 28+38.89    | N83°39'24"E | 300.01'  | 31+38.90  |
| L6                      | 32+50.25    | S89°06'20"E | 480.01'  | 37+30.26  |

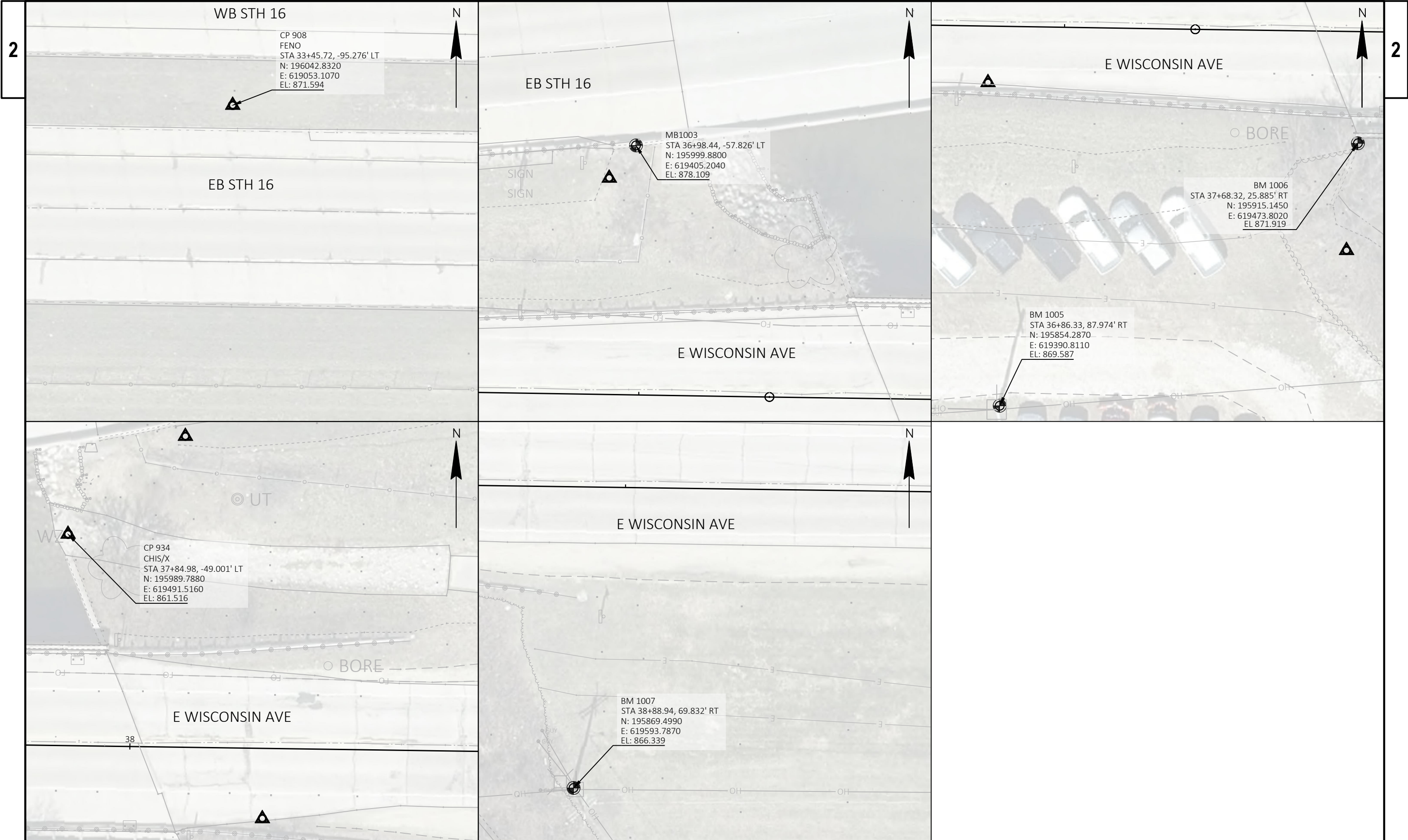




| R/L SOUTH FRONTAGE ROAD |             |             |          |           |
|-------------------------|-------------|-------------|----------|-----------|
| Line #                  | Start Point | BEARING     | DISTANCE | End Point |
| L7                      | 37+30.26    | S89°11'27"E | 1422.24' | 51+52.50  |
| L8                      | 51+52.50    | S89°05'50"E | 1024.61' | 61+77.11  |

| R/L CTH P |             |            |          |           |
|-----------|-------------|------------|----------|-----------|
| Line #    | Start Point | BEARING    | DISTANCE | End Point |
| L9        | 9+75.00     | N0°59'04"E | 100.01'  | 10+75.01  |
| L10       | 10+75.01    | N0°03'33"E | 404.98'  | 14+79.99  |
| L11       | 14+79.99    | N1°02'57"W | 290.01'  | 17+70.00  |
| L12       | 17+70.00    | N1°54'15"E | 480.21'  | 22+50.22  |
| L13       | 22+50.22    | N0°40'54"E | 601.00'  | 28+51.21  |







## Estimate Of Quantities

3310-07-71

| Line | Item     | Item Description                                                         | Unit | Total      | Qty        |
|------|----------|--------------------------------------------------------------------------|------|------------|------------|
| 0002 | 201.0205 | Grubbing                                                                 | STA  | 2.000      | 2.000      |
| 0004 | 203.0270 | Removing Structure Over Waterway Debris Capture (structure) 01. B-67-579 | EACH | 1.000      | 1.000      |
| 0006 | 204.0100 | Removing Concrete Pavement                                               | SY   | 952.000    | 952.000    |
| 0008 | 204.0115 | Removing Asphaltic Surface Butt Joints                                   | SY   | 37.000     | 37.000     |
| 0010 | 204.0125 | Removing Asphaltic Surface Milling                                       | TON  | 2,397.000  | 2,397.000  |
| 0012 | 204.0150 | Removing Curb & Gutter                                                   | LF   | 447.000    | 447.000    |
| 0014 | 204.0165 | Removing Guardrail                                                       | LF   | 607.000    | 607.000    |
| 0016 | 205.0100 | Excavation Common                                                        | CY   | 627.000    | 627.000    |
| 0018 | 206.1001 | Excavation for Structures Bridges (structure) 01. B-67-390               | EACH | 1.000      | 1.000      |
| 0020 | 206.5001 | Cofferdams (structure) 01. B-67-390                                      | EACH | 1.000      | 1.000      |
| 0022 | 208.0100 | Borrow                                                                   | CY   | 15.000     | 15.000     |
| 0024 | 210.1500 | Backfill Structure Type A                                                | TON  | 400.000    | 400.000    |
| 0026 | 213.0100 | Finishing Roadway (project) 01. 3310-07-71                               | EACH | 1.000      | 1.000      |
| 0028 | 305.0110 | Base Aggregate Dense 3/4-Inch                                            | TON  | 257.000    | 257.000    |
| 0030 | 305.0120 | Base Aggregate Dense 1 1/4-Inch                                          | TON  | 1,168.000  | 1,168.000  |
| 0032 | 415.0410 | Concrete Pavement Approach Slab                                          | SY   | 124.000    | 124.000    |
| 0034 | 455.0605 | Tack Coat                                                                | GAL  | 1,190.000  | 1,190.000  |
| 0036 | 460.2000 | Incentive Density HMA Pavement                                           | DOL  | 2,881.000  | 2,881.000  |
| 0038 | 460.6225 | HMA Pavement 5 MT 58-28 S                                                | TON  | 2,881.000  | 2,881.000  |
| 0040 | 465.0120 | Asphaltic Surface Driveways and Field Entrances                          | TON  | 8.000      | 8.000      |
| 0042 | 502.0100 | Concrete Masonry Bridges                                                 | CY   | 224.000    | 224.000    |
| 0044 | 502.3200 | Protective Surface Treatment                                             | SY   | 325.000    | 325.000    |
| 0046 | 502.3210 | Pigmented Surface Sealer                                                 | SY   | 121.000    | 121.000    |
| 0048 | 503.0137 | Prestressed Girder Type I 36W-Inch                                       | LF   | 552.000    | 552.000    |
| 0050 | 505.0400 | Bar Steel Reinforcement HS Structures                                    | LB   | 4,170.000  | 4,170.000  |
| 0052 | 505.0600 | Bar Steel Reinforcement HS Coated Structures                             | LB   | 26,770.000 | 26,770.000 |
| 0054 | 506.2605 | Bearing Pads Elastomeric Non-Laminated                                   | EACH | 12.000     | 12.000     |
| 0056 | 506.4000 | Steel Diaphragms (structure) 01. B-67-390                                | EACH | 10.000     | 10.000     |
| 0058 | 516.0500 | Rubberized Membrane Waterproofing                                        | SY   | 18.000     | 18.000     |
| 0060 | 550.0500 | Pile Points                                                              | EACH | 24.000     | 24.000     |
| 0062 | 550.1100 | Piling Steel HP 10-Inch X 42 Lb                                          | LF   | 2,400.000  | 2,400.000  |
| 0064 | 601.0411 | Concrete Curb & Gutter 30-Inch Type D                                    | LF   | 367.000    | 367.000    |
| 0066 | 606.0200 | Riprap Medium                                                            | CY   | 98.000     | 98.000     |
| 0068 | 606.0300 | Riprap Heavy                                                             | CY   | 456.000    | 456.000    |
| 0070 | 611.0624 | Inlet Covers Type H                                                      | EACH | 2.000      | 2.000      |
| 0072 | 611.8115 | Adjusting Inlet Covers                                                   | EACH | 2.000      | 2.000      |
| 0074 | 612.0406 | Pipe Underdrain Wrapped 6-Inch                                           | LF   | 200.000    | 200.000    |
| 0076 | 614.0010 | Barrier System Grading Shaping Finishing                                 | EACH | 4.000      | 4.000      |
| 0078 | 614.0150 | Anchor Assemblies for Steel Plate Beam Guard                             | EACH | 4.000      | 4.000      |
| 0080 | 614.0397 | Guardrail Mow Strip Emulsified Asphalt                                   | SY   | 85.000     | 85.000     |
| 0082 | 614.2300 | MGS Guardrail 3                                                          | LF   | 12.500     | 12.500     |
| 0084 | 614.2500 | MGS Thrie Beam Transition                                                | LF   | 156.000    | 156.000    |
| 0086 | 614.2610 | MGS Guardrail Terminal EAT                                               | EACH | 4.000      | 4.000      |
| 0088 | 619.1000 | Mobilization                                                             | EACH | 1.000      | 1.000      |
| 0090 | 624.0100 | Water                                                                    | MGAL | 14.700     | 14.700     |
| 0092 | 625.0100 | Topsoil                                                                  | SY   | 1,040.000  | 1,040.000  |
| 0094 | 627.0200 | Mulching                                                                 | SY   | 1,040.000  | 1,040.000  |
| 0096 | 628.1504 | Silt Fence                                                               | LF   | 1,035.000  | 1,035.000  |
| 0098 | 628.1520 | Silt Fence Maintenance                                                   | LF   | 1,035.000  | 1,035.000  |



Estimate Of Quantities

3310-07-71

| Line | Item       | Item Description                                                   | Unit | Total      | Qty        |
|------|------------|--------------------------------------------------------------------|------|------------|------------|
| 0100 | 628.1905   | Mobilizations Erosion Control                                      | EACH | 3.000      | 3.000      |
| 0102 | 628.1910   | Mobilizations Emergency Erosion Control                            | EACH | 2.000      | 2.000      |
| 0104 | 628.7005   | Inlet Protection Type A                                            | EACH | 1.000      | 1.000      |
| 0106 | 628.7010   | Inlet Protection Type B                                            | EACH | 4.000      | 4.000      |
| 0108 | 628.7015   | Inlet Protection Type C                                            | EACH | 13.000     | 13.000     |
| 0110 | 628.7020   | Inlet Protection Type D                                            | EACH | 10.000     | 10.000     |
| 0112 | 629.0210   | Fertilizer Type B                                                  | CWT  | 0.600      | 0.600      |
| 0114 | 630.0130   | Seeding Mixture No. 30                                             | LB   | 40.000     | 40.000     |
| 0116 | 630.0500   | Seed Water                                                         | MGAL | 37.000     | 37.000     |
| 0118 | 634.0618   | Posts Wood 4x6-Inch X 18-FT                                        | EACH | 11.000     | 11.000     |
| 0120 | 637.2210   | Signs Type II Reflective H                                         | SF   | 35.360     | 35.360     |
| 0122 | 637.2230   | Signs Type II Reflective F                                         | SF   | 37.000     | 37.000     |
| 0124 | 638.2602   | Removing Signs Type II                                             | EACH | 8.000      | 8.000      |
| 0126 | 638.3000   | Removing Small Sign Supports                                       | EACH | 8.000      | 8.000      |
| 0128 | 642.5001   | Field Office Type B                                                | EACH | 1.000      | 1.000      |
| 0130 | 643.0420   | Traffic Control Barricades Type III                                | DAY  | 2,055.000  | 2,055.000  |
| 0132 | 643.0705   | Traffic Control Warning Lights Type A                              | DAY  | 4,110.000  | 4,110.000  |
| 0134 | 643.0900   | Traffic Control Signs                                              | DAY  | 8,768.000  | 8,768.000  |
| 0136 | 643.1050   | Traffic Control Signs PCMS                                         | DAY  | 14.000     | 14.000     |
| 0138 | 643.5000   | Traffic Control                                                    | EACH | 1.000      | 1.000      |
| 0140 | 645.0111   | Geotextile Type DF Schedule A                                      | SY   | 82.000     | 82.000     |
| 0142 | 645.0120   | Geotextile Type HR                                                 | SY   | 690.000    | 690.000    |
| 0144 | 646.1020   | Marking Line Epoxy 4-Inch                                          | LF   | 1,518.000  | 1,518.000  |
| 0146 | 646.2040   | Marking Line Grooved Wet Ref Epoxy 6-Inch                          | LF   | 13,234.000 | 13,234.000 |
| 0148 | 646.3020   | Marking Line Epoxy 8-Inch                                          | LF   | 553.000    | 553.000    |
| 0150 | 646.5020   | Marking Arrow Epoxy                                                | EACH | 2.000      | 2.000      |
| 0152 | 646.6120   | Marking Stop Line Epoxy 18-Inch                                    | LF   | 92.000     | 92.000     |
| 0154 | 650.5000   | Construction Staking Base                                          | LF   | 359.000    | 359.000    |
| 0156 | 650.5500   | Construction Staking Curb Gutter and Curb & Gutter                 | LF   | 361.000    | 361.000    |
| 0158 | 650.6501   | Construction Staking Structure Layout (structure) 01. B-67-390     | EACH | 1.000      | 1.000      |
| 0160 | 650.9911   | Construction Staking Supplemental Control (project) 01. 3310-07-71 | EACH | 1.000      | 1.000      |
| 0162 | 690.0150   | Sawing Asphalt                                                     | LF   | 587.000    | 587.000    |
| 0164 | 690.0250   | Sawing Concrete                                                    | LF   | 28.000     | 28.000     |
| 0166 | 715.0502   | Incentive Strength Concrete Structures                             | DOL  | 1,344.000  | 1,344.000  |
| 0168 | 715.0720   | Incentive Compressive Strength Concrete Pavement                   | DOL  | 500.000    | 500.000    |
| 0170 | 740.0440   | Incentive IRI Ride                                                 | DOL  | 4,000.000  | 4,000.000  |
| 0172 | 999.2005.S | Maintaining Bird Deterrent System (station) 01. 37+81              | EACH | 1.000      | 1.000      |
| 0174 | SPV.0060   | Special 01. Fisheries Consultant                                   | EACH | 1.000      | 1.000      |
| 0176 | SPV.0195   | Special 01. Select Crushed Material for Travel Corridor            | TON  | 9.000      | 9.000      |
| 0178 | SPV.0195   | Special 02. Streambed Restoration Material                         | TON  | 34.000     | 34.000     |



GRUBBING

|                          |             | 201.0205<br>GRUBBING |  |
|--------------------------|-------------|----------------------|--|
| STATION                  | - STATION   | STA                  |  |
| 37'SF'+30                | - 38'SF'+80 | 2                    |  |
| PROJECT 3310-07-71 TOTAL |             | 2                    |  |

REMOVING GUARDRAIL

|                          |             | 204.0165<br>REMOVING<br>GUARDRAIL |     |
|--------------------------|-------------|-----------------------------------|-----|
| STATION                  | - STATION   | OFFSET                            | LF  |
| 35'SF'+34                | - 38'SF'+65 | LT                                | 331 |
| 36'SF'+14                | - 38'SF'+85 | RT                                | 276 |
| PROJECT 3310-07-71 TOTAL |             | 607                               |     |

SAWING

|                          |                | 690.0150<br>SAWING<br>ASPHALT | 690.0250<br>SAWING<br>CONCRETE |
|--------------------------|----------------|-------------------------------|--------------------------------|
| STATION                  | - STATION      | LOCATION                      | LF                             |
| 35'SF'+41.00             | - 40'SF'+56.90 | E WISCONSIN DWY LT            | 28                             |
| 41'SF'+00.00             | - 42'SF'+40    | E WISCONSIN DWY RT            | 28                             |
| 42'SF'+40                | - 48'SF'+57    | DWY LT                        | 167                            |
| 48'SF'+57                | - 50'SF'+89    | DWY LT                        | 75                             |
| 50'SF'+89                | - 52'SF'+30    | DWY LT                        | 81                             |
| 52'SF'+30                | - 52'SF'+41    | DWY LT                        | 70                             |
| 52'SF'+41                | - 53'SF'+71    | PLANK RD DWY LT               | 69                             |
| 53'SF'+71                | - 54'SF'+43    | DWY LT                        | 71                             |
| PROJECT 3310-07-71 TOTAL |                | 587                           | 28                             |

REMOVALS

|                       |              |                     | 204.0100                         | 201.0115                  | 204.0150                     |
|-----------------------|--------------|---------------------|----------------------------------|---------------------------|------------------------------|
|                       |              |                     |                                  | REMOVING<br>ASPHALTIC     |                              |
|                       |              |                     | REMOVING<br>CONCRETE<br>PAVEMENT | SURFACE<br>BUTT<br>JOINTS | REMOVING<br>CURB &<br>GUTTER |
| LOCATION              | STA          | STA                 | SY                               | SY                        | LF                           |
| PLANK ROAD            |              | 10'PL'+25           | -                                | 15                        | -                            |
| PLANK ROAD            | 11'PL'+47.60 | LT (AT EXIST INLET) | -                                | -                         | 6                            |
| PLANK ROAD            |              | 12'PL'+00           | -                                | 6                         | -                            |
| STH 16/67 EAST INTER  |              | 18'SF'+30           | -                                | 8                         | -                            |
| E WISCONSIN AVE       | 26'SF'+00    | RT (AT EXIST INLET) | -                                | -                         | 6                            |
| E WISCONSIN AVE       | 35'SF'+41    | 37'SF'+53           | -                                | -                         | 435                          |
| E WISCONSIN AVE       | 38'SF'+08    | 41'SF'+00           | 952                              | -                         | -                            |
| E WISCONSIN AVE       |              | 60'SF'+84           | -                                | 8                         | -                            |
| PROJECT 3310-07-71 TO |              |                     | 952                              | 37                        | 447                          |

EXCAVATION COMMON

|                          |          | 205.0100<br>EXCAVATION<br>COMMON | 208.1000<br>BORROW |
|--------------------------|----------|----------------------------------|--------------------|
| STATION - STATION        | LOCATION | CY                               | CY                 |
| 35'SF'+41 - 37'SF'+53.00 | WEST     | 259                              | 10                 |
| 38'SF'+08.00 - 41'SF'+00 | EAST     | 368                              | 5                  |
| PROJECT 3310-07-71 TOTAL |          | 627                              | 15                 |

REMOVING ASPHALTIC SURFACE MILLING

|                          |   |         |                            | 204.0125 |                                             |
|--------------------------|---|---------|----------------------------|----------|---------------------------------------------|
|                          |   |         |                            | DEPTH    | REMOVING<br>ASPHALTIC<br>SURFACE<br>MILLING |
| STATION                  | - | STATION | LOCATION                   | IN       | TON                                         |
| BEGIN                    | - | 14+42   | PLANK RD / E WISCONSIN AVE | 3        | 345                                         |
| 14+42                    | - | 29+34   | E WISCONSIN AVE            | 3        | 831                                         |
| 29+34                    | - | 44+20   | E WISCONSIN AVE            | 3        | 318                                         |
|                          |   |         |                            | 2        | 112                                         |
| 44+20                    | - | 57+44   | E WISCONSIN AVE            | 2        | 283                                         |
|                          |   |         |                            | 3        | 272                                         |
| 57+44                    | - | END     | E WISCONSIN AVE            | 3        | 236                                         |
| PROJECT 3310-07-71 TOTAL |   |         |                            |          | 2397                                        |

CPM PROGRESS SCHEDULE

|                          |      | 108.4400<br>CPM PROGRESS<br>SCHEDULE |
|--------------------------|------|--------------------------------------|
| PROJECT                  | EACH |                                      |
| 3310-07-71               | 1    |                                      |
| PROJECT 3310-07-71 TOTAL |      |                                      |

FIELD OFFICE

|                          |      | 642.5001<br>TYPE B |
|--------------------------|------|--------------------|
| PROJECT                  | EACH |                    |
| 3310-07-71               | 1    |                    |
| PROJECT 3310-07-71 TOTAL |      | 1                  |

MOBILIZATION

|                          |      | 619.1000<br>MOBILIZATION |
|--------------------------|------|--------------------------|
| PROJECT                  | EACH |                          |
| 3310-07-71               | 1    |                          |
| PROJECT 3310-07-71 TOTAL |      | 1                        |

FINISHING ROADWAY

|                          |      | 213.0100<br>FINISHING<br>ROADWAY |
|--------------------------|------|----------------------------------|
| LOCATION                 | EACH |                                  |
| PROJECT                  | 1    |                                  |
| PROJECT 3310-07-71 TOTAL |      |                                  |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.



CONSTRUCTION STAKING

|                          |           | 650.5000     | 650.5500      | 650.6501     | 650.9911     |
|--------------------------|-----------|--------------|---------------|--------------|--------------|
|                          |           | CONSTRUCTION | CONSTRUCTION  | CONSTRUCTION | CONSTRUCTION |
|                          |           | STAKING      | CURB          | STAKING      | STAKING      |
|                          |           | BASE         | GUTTER        | STRUCTURE    | SUPPLEMENTAL |
|                          |           |              | AND           | LAYOUT       | CONTROL      |
|                          |           |              | CURB & GUTTER | (B-67-390)   | 3310-07-71   |
| STATION                  | - STATION | LF           | LF            | EA           | EA           |
|                          |           | 359          | 367           | 1            | 1            |
| PROJECT 3310-07-71 TOTAL |           | 359          | 367           | 1            | 1            |

ASPHALTIC ITEMS

|                          |           |                            | 455.0605 | 460.6225     | 465.0120          | 614.0397         |
|--------------------------|-----------|----------------------------|----------|--------------|-------------------|------------------|
|                          |           |                            | TACK     | HMA          | ASPHALTIC SURFACE | GUARDRAIL MOW    |
|                          |           |                            | COAT     | PAVEMENT     | DRIVEWAYS AND     | STRIP EMULSIFIED |
|                          |           |                            |          | 5 MT 58-28 S | FIELD ENTRANCES   | ASPHALT          |
| STATION                  | - STATION | LOCATION                   | GAL      | TON          | TON               | SY               |
| BEGIN                    | 14+42     | PLANK RD / E WISCONSIN AVE | 144      | 360          | -                 | -                |
| 14+42                    | 29+34     | E WISCONSIN AVE            | 347      | 868          | -                 | -                |
| 29+34                    | - 44+20   | E WISCONSIN AVE            | OVERLAY  | 133          | 332               | -                |
|                          |           | REPLACEMENT W. ABUT.       | 36       | 150          | -                 | -                |
|                          |           | REPLACEMENT E. ABUT.       | 51       | 199          | 8                 | -                |
|                          |           | SHLDR REPLACEMENT E. ABUT. | 13       | 31           | -                 | 85               |
|                          |           | OVERLAY                    | 70       | 117          | -                 | -                |
| 44+20                    | - 57+44   | E WISCONSIN AVE            | OVERLAY  | 177          | 295               | -                |
|                          |           | OVERLAY                    | 113      | 282          | -                 | -                |
| 57+44                    | - END     | E WISCONSIN AVE            | OVERLAY  | 99           | 247               | -                |
| PROJECT 3310-07-71 TOTAL |           |                            | 1,190    | 2,881        | 8                 | 85               |

PAVING ITEMS

|                          |         |                 |          |          | 305.0110<br>BASE<br>AGGREGATE<br>DENSE<br>3/4-INCH | 305.0120<br>BASE<br>AGGREGATE<br>DENSE<br>1 1/4-INCH | 415.0405<br>CONCRETE<br>PAVEMENT<br>APPROACH<br>SLAB | 624.0100<br>WATER |
|--------------------------|---------|-----------------|----------|----------|----------------------------------------------------|------------------------------------------------------|------------------------------------------------------|-------------------|
| STA                      | - STA   | LOCATION        | SIDE     | SHOULDER | TON                                                | TON                                                  | SY                                                   | MGAL              |
| 35+41                    | - 41+00 | E WISCONSIN AVE | SHLDR    | LT       | 18                                                 | 59                                                   | -                                                    | 0.8               |
|                          |         | 35+70.30        | DWY      | RT       | 9                                                  | 0                                                    | -                                                    | 0.1               |
|                          |         |                 | W. ABUT. | -        | 0                                                  | 438                                                  | 58                                                   | 4.4               |
|                          |         |                 | E. ABUT. | -        | 0                                                  | 584                                                  | 66                                                   | 5.9               |
|                          |         | 40+56.90        | DWY      | LT       | 0                                                  | 15                                                   | -                                                    | 0.2               |
|                          |         |                 | SHLDR    | RT       | 22                                                 | 72                                                   | -                                                    | 1.0               |
| 41+00                    | - 52+30 | E WISCONSIN AVE | SHLDR    | LT       | 74                                                 | 0                                                    | -                                                    | 0.8               |
|                          |         |                 | SHLDR    | RT       | 86                                                 | 0                                                    | -                                                    | 0.9               |
| 52+30                    | - END   | E WISCONSIN AVE | SHLDR    | LT       | 23                                                 | 0                                                    | -                                                    | 0.3               |
|                          |         |                 | SHLDR    | RT       | 25                                                 | 0                                                    | -                                                    | 0.3               |
| PROJECT 3310-07-71 TOTAL |         |                 |          |          | 257                                                | 1,168                                                | 124                                                  | 14.7              |

STORM SEWER STRUCTURES

|                          |              |        | 611.0624 | 611.8115  |
|--------------------------|--------------|--------|----------|-----------|
|                          |              |        | INLET    | ADJUSTING |
|                          |              |        | COVERS   | INLET     |
|                          |              |        | TYPE H   | COVERS    |
| STRUCTURE                | STATION      | OFFSET | EACH     | EACH      |
| INLET                    | 11'PL'+47.60 | LT     | 1        | -         |
| INLET                    | 35'SF'+69.56 | LT     | 1        | 1         |
| INLET                    | 35'SF'+70.3  | RT     | -        | 1         |
| PROJECT 3310-07-71 TOTAL |              |        | 2        | 2         |

CONCRETE CURB & GUTTER

|                           |              |                     | 601.0411 |
|---------------------------|--------------|---------------------|----------|
|                           |              |                     | 30-INCH  |
|                           |              |                     | TYPE D   |
| LOCATION                  | STA          | STA                 | LF       |
| PLANK ROAD                | 11'PL'+47.60 | LT (AT EXIST INLET) | 6        |
| WISCONSIN AVE             | 26'SF'+00    | RT (AT EXIST INLET) | 6        |
| WISCONSIN AVE W. APPROACH | 35'SF'+41    | 37'SF'+41.91        | 355      |
| PROJECT 3310-07-71 TOTAL  |              |                     | 367      |

BIRD DETERRENT SYSTEM

| 999.2005.S                                         |      |
|----------------------------------------------------|------|
| MAINTAINING BIRD DETERRENT<br>SYSTEM STATION 37+81 |      |
| LOCATION                                           | EACH |
| 10+00.00                                           | 1    |
| <hr/>                                              |      |
| PROJECT 3310-07-71 TOTAL                           | 1    |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.



GUARDRAIL

|                          |               | 614.0010        | 614.2300  | 614.2500   | 614.2610     |      |
|--------------------------|---------------|-----------------|-----------|------------|--------------|------|
|                          |               | BARRIER SYSTEM  | MGS       | MGS        | MGS          |      |
|                          |               | GRADING SHAPING | GUARDRAIL | THRIE BEAM | GUARDRAIL    |      |
|                          |               | FINISHING       | 3         | TRANSITION | TERMINAL EAT |      |
| STATION                  | - STATION     | OFFSET          | EACH      | LF         | LF           | EACH |
|                          | WISCONSIN AVE | SW              | 1         | -          | 39           | 1    |
|                          |               | NW              | 1         | -          | 39           | 1    |
|                          |               | SE              | 1         | -          | 39           | 1    |
|                          |               | NE              | 1         | 12.5       | 39           | 1    |
| PROJECT 3310-07-71 TOTAL |               |                 | 4         | 12.5       | 156.0        | 4    |

LANDSCAPING

|                          |            |                 | 625.0100      | 627.0200 | 629.0210   | 630.0130       | 630.0500 |      |
|--------------------------|------------|-----------------|---------------|----------|------------|----------------|----------|------|
|                          |            |                 | TOPSOIL       | MULCHING | FERTILIZER | SEEDING        | SEED     |      |
|                          |            |                 |               |          | TYPE B     | MIXTURE NO. 30 | WATER    |      |
| STATION                  | -          | STATION         | LOCATION      | SY       | SY         | CWT            | LB       | MGAL |
|                          |            | E WISCONSIN AVE | W. ABUT.      | 240      | 240        | 0.15           | 10.8     | 9    |
|                          |            |                 | E. ABUT.      | 585      | 590        | 0.37           | 26.3     | 20.0 |
|                          | 3310-07-71 |                 | UNDISTRIBUTED | 207      | 208        | 0.13           |          | 8    |
| PROJECT 3310-07-71 TOTAL |            |                 |               | 1,040    | 1,040      | 0.6            | 40       | 37   |

PAVEMENT MARKING ITEMS

|                          |           | 646.1020<br>MARKING<br>LINE<br>EPOXY<br>4-INCH |       |       | 646.2040<br>MARKING LINE<br>GROOVED WET REF<br>EPOXY<br>6-INCH |        |                           | 646.3020<br>MARKING<br>LINE<br>EPOXY<br>8-INCH |     |       | 646.5020<br>MARKING<br>ARROW<br>EPOXY |                     |        | 646.6120<br>MARKING<br>STOP LINE<br>EPOXY<br>18-INCH |  |
|--------------------------|-----------|------------------------------------------------|-------|-------|----------------------------------------------------------------|--------|---------------------------|------------------------------------------------|-----|-------|---------------------------------------|---------------------|--------|------------------------------------------------------|--|
|                          |           | YELLOW                                         | WHITE |       |                                                                | YELLOW | WHITE                     |                                                |     | WHITE |                                       |                     |        |                                                      |  |
|                          |           | SOLID                                          | SOLID |       |                                                                | SOLID  | 12.5' LINE -<br>37.5' GAP | SOLID                                          |     |       | SOLID                                 | 3' LINE - 9'<br>GAP | TYPE 2 | TYPE 3                                               |  |
| STATION                  | - STATION | TYPE                                           | LF    | LF    | LF                                                             | LF     | LF                        | LF                                             | LF  | LF    | EACH                                  | EACH                | LF     |                                                      |  |
| BEGIN                    | 14+25     | PLANK RD                                       | 195   | 455   | -                                                              | -      | -                         | -                                              | 186 | 14    | -                                     | -                   | 15     |                                                      |  |
|                          |           | E WISCONSIN AVE                                | -     | -     | 783                                                            | -      | -                         | -                                              | -   | -     | -                                     | -                   | 16     |                                                      |  |
| 14+25                    | 20+32     | E WISCONSIN AVE                                | 52    | 670   | 1,023                                                          | -      | -                         | -                                              | 300 | -     | 1                                     | 1                   | 38     |                                                      |  |
| 20+32                    | - 26+32   | E WISCONSIN AVE                                | -     | -     | 1,200                                                          | -      | -                         | -                                              | -   | -     | -                                     | -                   | -      |                                                      |  |
| 26+32                    | - 32+35   | E WISCONSIN AVE                                | -     | -     | 1,206                                                          | -      | -                         | -                                              | -   | -     | -                                     | -                   | -      |                                                      |  |
| 32+35                    | - 38+50   | E WISCONSIN AVE                                | -     | -     | 1,230                                                          | -      | 378                       | -                                              | -   | -     | -                                     | -                   | -      |                                                      |  |
| 38+50                    | - 44+50   | E WISCONSIN AVE                                | -     | -     | 38                                                             | 146    | 1,200                     | -                                              | -   | -     | -                                     | -                   | -      |                                                      |  |
| 44+50                    | - 50+50   | E WISCONSIN AVE                                | -     | -     | -                                                              | 150    | 1,200                     | -                                              | -   | -     | -                                     | -                   | -      |                                                      |  |
| 50+50                    | - 56+50   | E WISCONSIN AVE                                | -     | -     | -                                                              | 150    | 1,200                     | -                                              | -   | -     | -                                     | -                   | -      |                                                      |  |
| 56+50                    | - END     | E WISCONSIN AVE                                | 124   | 22    | 368                                                            | 63     | 868                       | -                                              | -   | -     | -                                     | -                   | 23     |                                                      |  |
|                          |           |                                                | 371   | 1,147 | 5,848                                                          | 509    | 4,846                     | 486                                            | 14  | 1     | 1                                     | 92                  |        |                                                      |  |
| PROJECT 3310-07-71 TOTAL |           |                                                | 1,518 |       | 13,234                                                         |        | 553                       |                                                | 2   |       | 92                                    |                     |        |                                                      |  |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.



| TRAFFIC CONTROL          |                                        |
|--------------------------|----------------------------------------|
| PROJECT                  | 643.5000<br>TRAFFIC<br>CONTROL<br>EACH |
| 3310-07-71               | 1                                      |
| PROJECT 3310-07-71 TOTAL |                                        |
|                          | 1                                      |

| TRAFFIC CONTROL          |                    |                 |       |                 |       |                 |       |                 |     |
|--------------------------|--------------------|-----------------|-------|-----------------|-------|-----------------|-------|-----------------|-----|
|                          |                    | 643.0420        |       | 643.0705        |       | 643.0900        |       | 643.1050        |     |
|                          |                    | TRAFFIC CONTROL |       | TRAFFIC CONTROL |       | TRAFFIC CONTROL |       | TRAFFIC CONTROL |     |
|                          |                    | BARRICADES      |       | WARNING LIGHTS  |       | SIGNS           |       | PCMS            |     |
|                          |                    | TYPE III        |       | TYPE A          |       |                 |       |                 |     |
| ASSEMBLY                 | DAYS IN<br>SERVICE | NO.             | DAY   | NO.             | DAY   | NO.             | DAY   | NO.             | DAY |
| ADVANCE WARNING          | 7                  | -               | -     | -               | -     | -               | -     | 2               | 14  |
| E WISCONSIN DETOUR       | 137                | 15              | 2055  | 30              | 4,110 | 64              | 8,768 | -               | -   |
| PROJECT 3310-07-71 TOTAL |                    |                 | 2,055 | 4,110           |       | 8,768           |       | 14              |     |

| EROSION CONTROL          |        |             |          |            |            |            |            |
|--------------------------|--------|-------------|----------|------------|------------|------------|------------|
|                          |        | 628.1504    | 628.1520 | 628.7005   | 628.7010   | 628.7015   | 628.7020   |
|                          |        | SILT        | SILT     | INLET      | INLET      | INLET      | INLET      |
|                          |        | FENCE       | FENCE    | PROTECTION | PROTECTION | PROTECTION | PROTECTION |
|                          |        | MAINTENANCE |          | TYPE A     | TYPE B     | TYPE C     | TYPE D     |
| STATION                  | OFFSET | LF          | LF       | EACH       | EACH       | EACH       | EACH       |
| BEGIN                    | 14+42  | -           | -        | 1          | -          | 3          | 6          |
| 14+42                    | 29+34  | -           | -        | -          | -          | 6          | -          |
| 29+34                    | 44+20  | 1035        | 1035     | -          | 4          | 4          | 4          |
| 44+20                    | 57+44  | -           | -        | -          | -          | -          | -          |
| 57+44                    | END    | -           | -        | -          | -          | -          | -          |
| PROJECT 3310-07-71 TOTAL |        | 1,035       | 1,035    | 1          | 4          | 13         | 10         |

| EROSION CONTROL MOBILIZATION |               |                 |
|------------------------------|---------------|-----------------|
|                              | 628.1905      | 628.1910        |
|                              | MOBILIZATIONS | MOBILIZATION    |
|                              | EROSION       | EMERGENCY       |
|                              | CONTROL       | EROSION CONTROL |
| PROJECT                      | EACH          | EACH            |
| 3310-07-71                   | 3             | 2               |
| PROJECT 3310-07-71 TOTAL     | 3             | 2               |

ALL ITEMS ARE CATEGORY 0010 UNLESS OTHERWISE SPECIFIED.



3

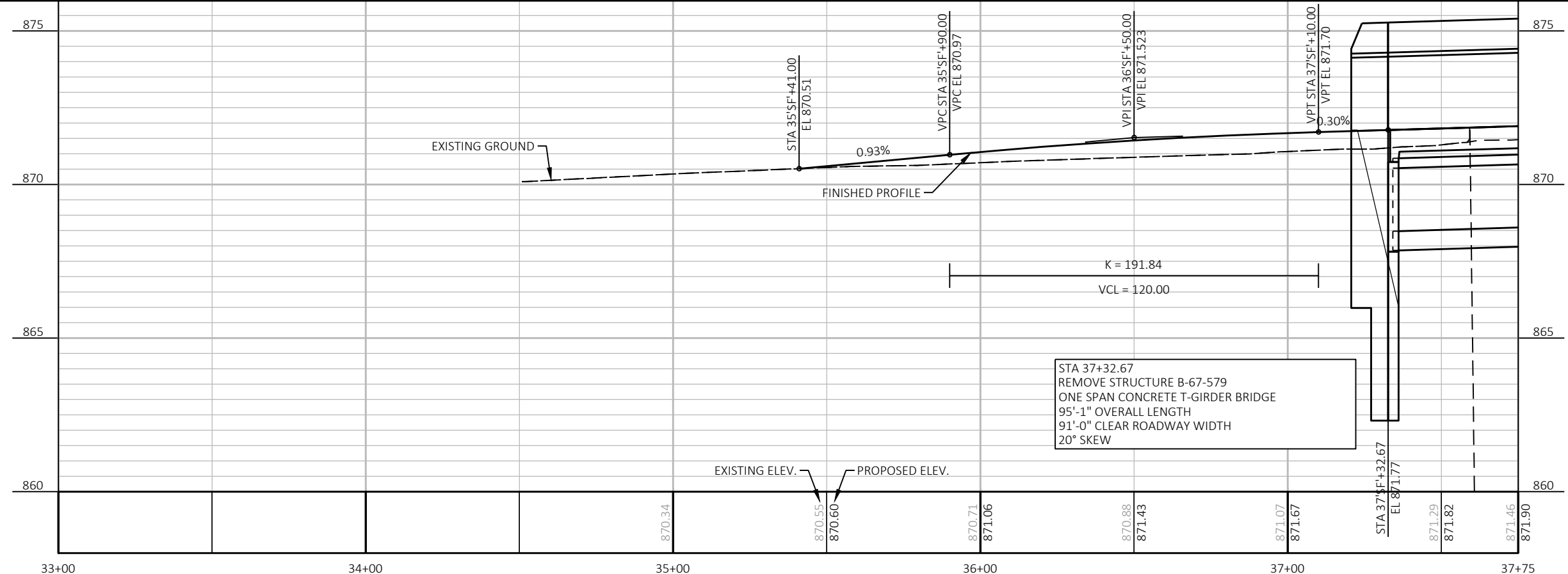
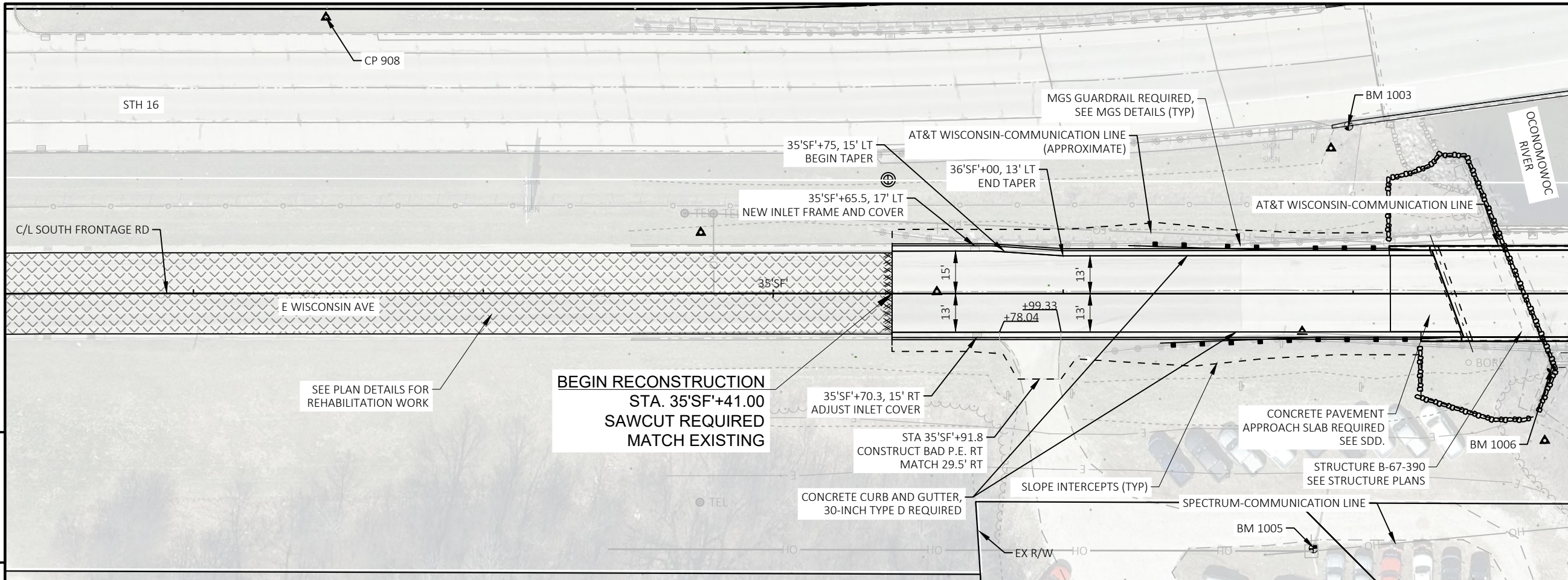
TYPE II PERMANENT SIGNING

3310-07-71 STH 16 W. WISCONSIN AVE

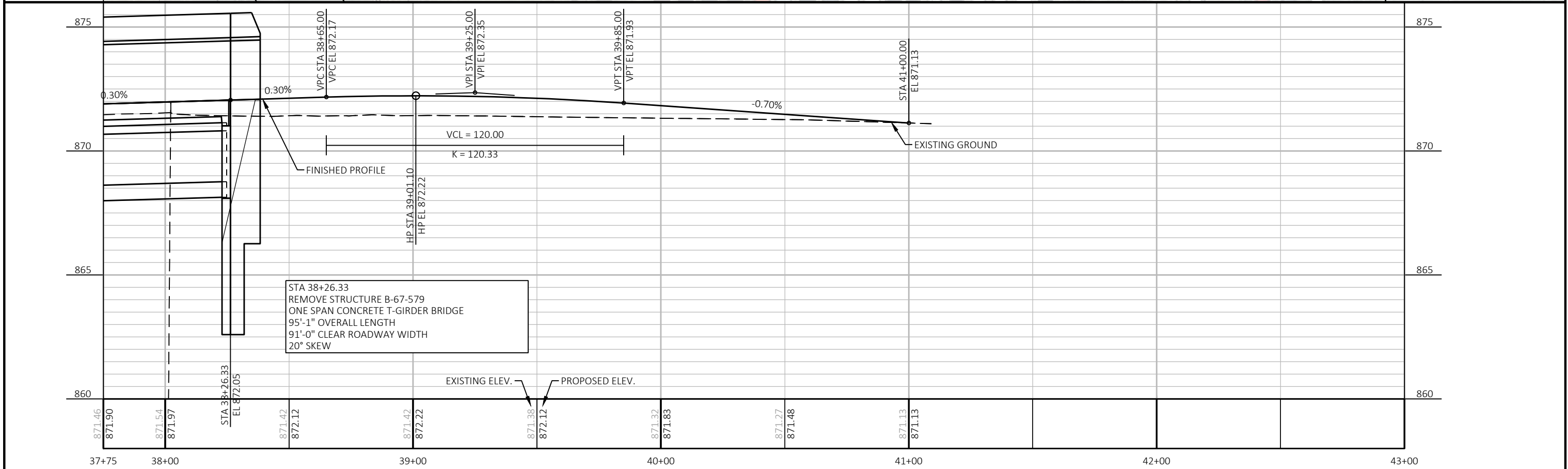
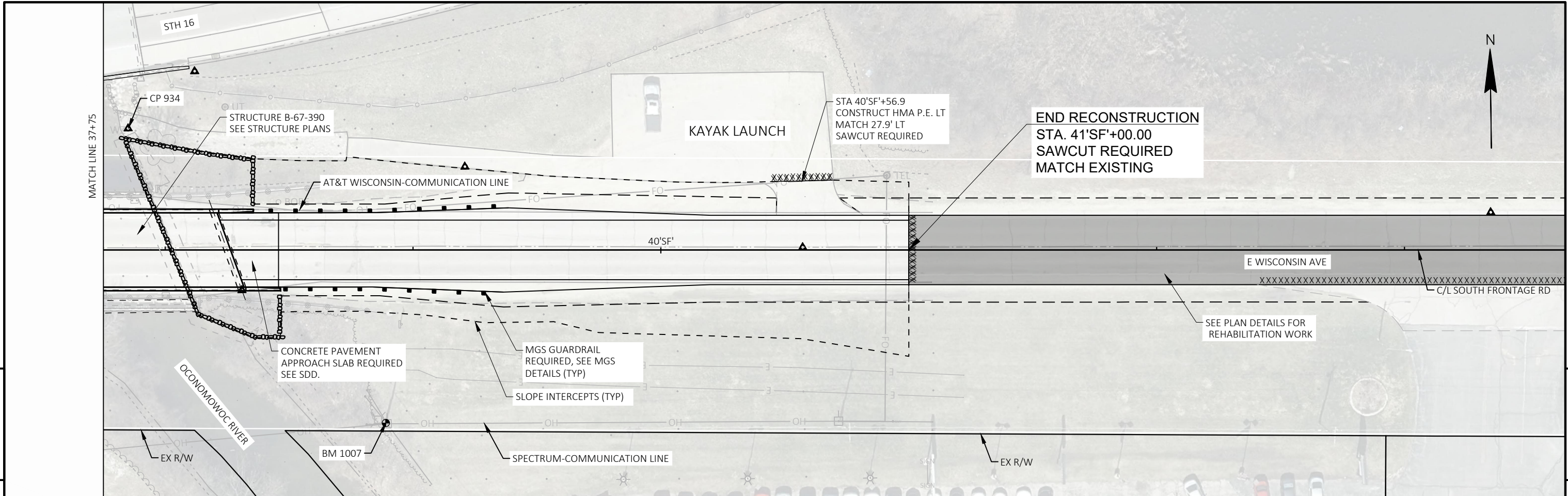
| SIGN NO. | SIGN CODE & SIZE | SIGN MESSAGE  | TYPE II SIGN SIZE<br>W X H<br>[IN.] x [IN.] |   |    | 637.2210<br><br>SIGNS TYPE II REFLC H<br>[SF] | 637.2230<br><br>SIGNS TYPE II REFLECTIVE F<br>[SF] | 638.2602<br><br>REMOVING SIGNS TYPE II<br>[EA] | 638.3000<br><br>REMOVING SMALL SIGN SUPPORTS<br>[EA] | 634.0618<br><br>POSTS WOOD 4"X 6"X18'<br>[EA] | MOUNT ON SAME POST AS SIGN # | REMARKS / NEW SIGN LOCATION               |
|----------|------------------|---------------|---------------------------------------------|---|----|-----------------------------------------------|----------------------------------------------------|------------------------------------------------|------------------------------------------------------|-----------------------------------------------|------------------------------|-------------------------------------------|
| 1        | W5-52R(2S)       |               | 12                                          | X | 36 |                                               | 3.000                                              | 1                                              | 1                                                    | 1                                             | 6                            | 4 FOOT MOUNTING HEIGHT                    |
| 2        | W5-52R(2S)       |               | 12                                          | X | 36 |                                               | 3.000                                              | 1                                              | 1                                                    | 1                                             |                              | 4 FOOT MOUNTING HEIGHT                    |
| 3        | W5-52L(2S)       |               | 12                                          | X | 36 |                                               | 3.000                                              | 1                                              | 1                                                    | 1                                             |                              | 4 FOOT MOUNTING HEIGHT                    |
| 4        | W5-52L(2S)       |               | 12                                          | X | 36 |                                               | 3.000                                              | 1                                              | 1                                                    | 1                                             |                              | 4 FOOT MOUNTING HEIGHT                    |
| 5        | R1-1(2S)         |               | 30                                          | x | 30 | 5.180                                         |                                                    |                                                |                                                      | 1                                             |                              | 16 X 16 TEMPORARY ORANGE FLAGS INCIDENTAL |
| 6        | R1-1(2S)         |               | 30                                          | X | 30 | 5.180                                         |                                                    |                                                |                                                      | 1                                             |                              | 16 X 16 TEMPORARY ORANGE FLAGS INCIDENTAL |
| 7        | W4-4B(2S)        |               | 30                                          | X | 12 |                                               | 2.500                                              |                                                |                                                      |                                               |                              | MOUNT UNDER EXISTING STOP SIGN            |
| 8        | W4-4AR(2S)       |               | 30                                          | X | 12 |                                               | 2.500                                              |                                                |                                                      |                                               |                              |                                           |
| 9        | R10-7(2S)        |               | 24                                          | X | 30 | 5.000                                         |                                                    |                                                |                                                      | 1                                             |                              |                                           |
|          |                  |               |                                             |   |    |                                               |                                                    |                                                |                                                      |                                               |                              |                                           |
|          |                  | UNDISTRIBUTED |                                             |   |    | 20.000                                        | 20.000                                             | 4                                              | 4                                                    | 4                                             | --                           | --                                        |
| TOTALS   |                  |               |                                             |   |    | 35.360                                        | 37.000                                             | 8                                              | 8                                                    | 11                                            |                              |                                           |

3







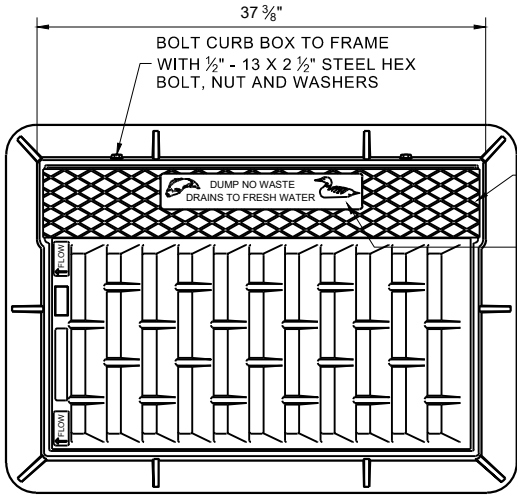




Standard Detail Drawing List

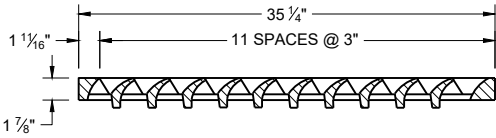
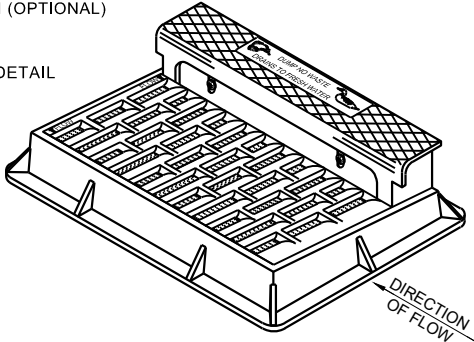
|           |                                                                        |
|-----------|------------------------------------------------------------------------|
| 08A05-21A | INLET COVERS TYPE A, H, A-S, H-S & Z                                   |
| 08D01-23A | CONCRETE CURB & GUTTER                                                 |
| 08D01-23B | CONCRETE CURB, TIES AND CURB AND GUTTER APPLICATIONS                   |
| 08E09-06  | SILT FENCE                                                             |
| 08E10-02  | INLET PROTECTION TYPE A, B, C AND D                                    |
| 12A03-10  | NAME PLATE (STRUCTURES)                                                |
| 13B02-09A | CONCRETE PAVEMENT APPROACH SLAB                                        |
| 13C19-03  | HMA LONGITUDINAL JOINTS                                                |
| 14B28-04A | GUARDRAIL MOW STRIP                                                    |
| 14B28-04B | GUARDRAIL MOW STRIP                                                    |
| 14B42-07A | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                               |
| 14B42-07B | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                               |
| 14B42-07C | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                               |
| 14B42-07D | MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL                               |
| 14B44-04A | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)               |
| 14B44-04B | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)               |
| 14B44-04C | MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)               |
| 14B45-05A | MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION (MGS)                   |
| 15C02-09A | BARRICADES AND SIGNS FOR MAINLINE CLOSURES                             |
| 15C02-09B | BARRICADES AND SIGNS FOR VARIOUS CLOSURES                              |
| 15C05-05  | TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40 M.P.H. OR LESS               |
| 15C06-12  | SIGNING & MARKING FOR TWO LANE BRIDGES                                 |
| 15C07-16C | PAVEMENT MARKING ARROWS                                                |
| 15C08-23A | PERMANENT LONGITUDINAL PAVEMENT MARKINGS                               |
| 15C11-10A | CHANNELIZING DEVICES FLEXIBLE TUBULAR MARKER POST                      |
| 15C11-10B | CHANNELIZING DEVICES DRUMS, CONES, BARRICADES AND VERTICAL PANELS      |
| 15C12-09A | TRAFFIC CONTROL FOR LANE CLOSURE WITH FLAGGING OPERATION               |
| 15C12-09B | TRAFFIC CONTROL, LANE CLOSURE WITH AUTOMATED FLAGGER ASSISTANCE DEVICE |
| 15C33-05  | STOP LINE AND CROSSWALK PAVEMENT MARKING                               |
| 15D51-01  | TRAFFIC CONTROL, MOBILE OPERATIONS ON AN UNDIVIDED ROADWAY             |



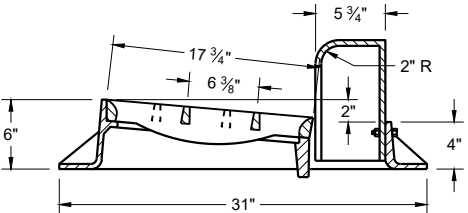
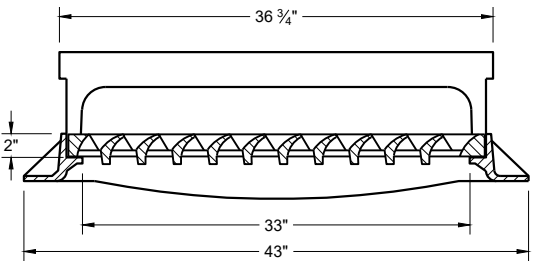
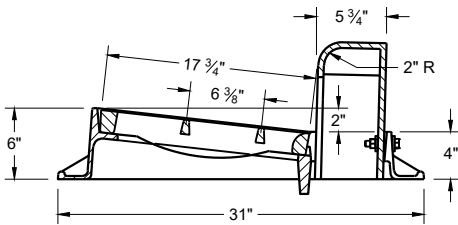
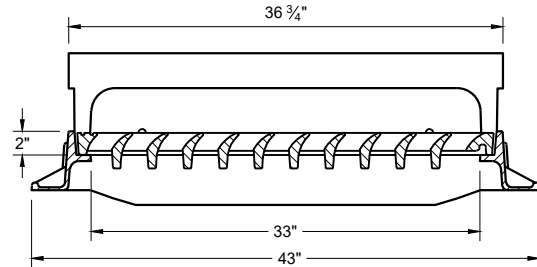


NOTE: EITHER CASTING IS ACCEPTABLE

TYPE "C" CHECKERED TOP DESIGN (OPTIONAL)  
SEE LOGO DETAIL

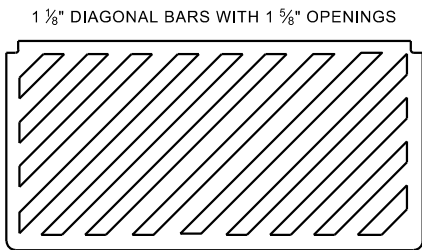


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

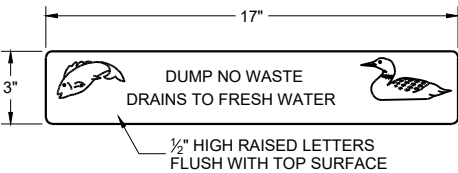


TYPE "H"

NOTE: EITHER CASTING IS ACCEPTABLE



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



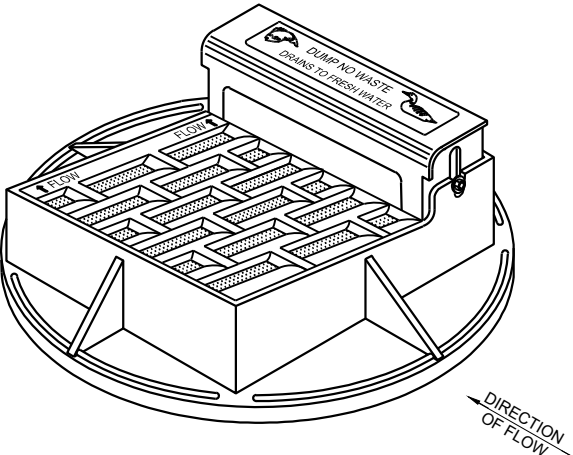
LOGO DETAIL

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.

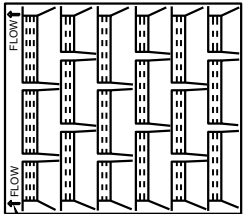
DETAIL DRAWINGS FOR PROPOSED ALTERNATE DESIGNS FOR CATCH BASIN, MANHOLE AND INLET COVERS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PROVIDING THAT SUCH ALTERNATE DESIGNS MAKE PROVISION FOR EQUIVALENT CAPACITY AND STRENGTH.

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

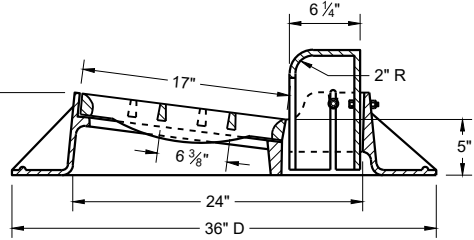
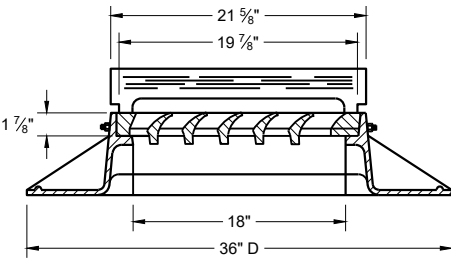
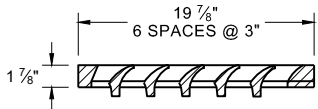


NOTE: CURB BOX HEIGHT ADJUSTABLE 6" - 9"

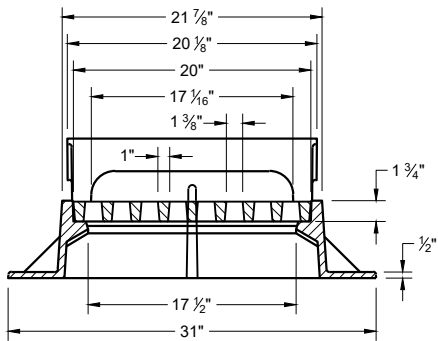
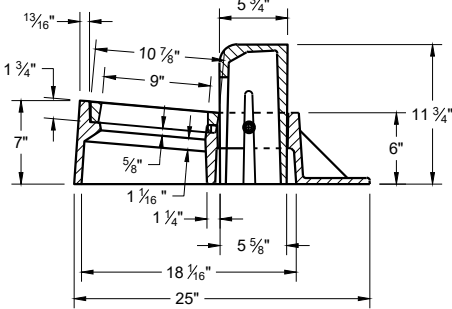
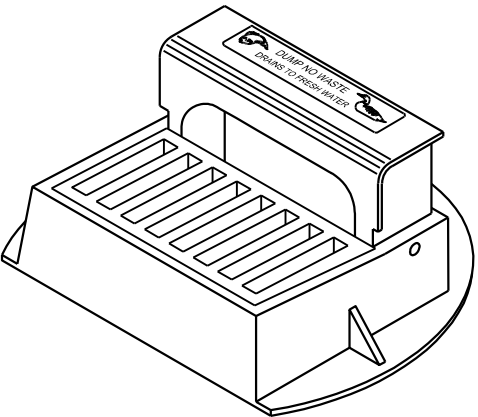
NOTE: EITHER CASTING IS ACCEPTABLE



DIRECTION OF FLOW ARROWS



TYPE "A"



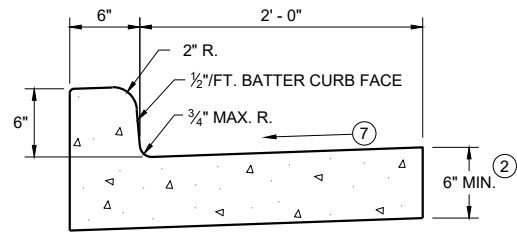
TYPE "Z"

**INLET COVERS  
TYPES A, H, A-S, H-S AND Z**

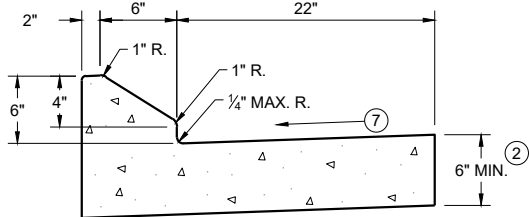
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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

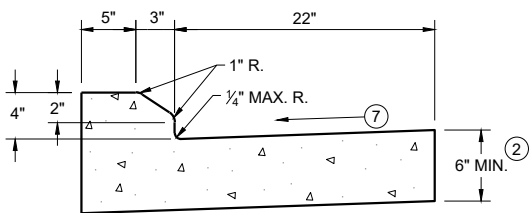




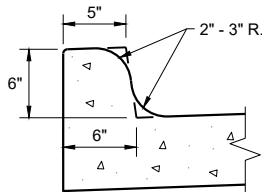
TYPES A<sup>①</sup> & D



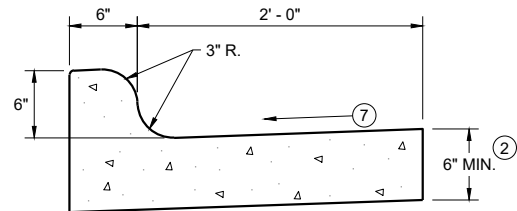
6" SLOPED CURB TYPES G<sup>①</sup> & J



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

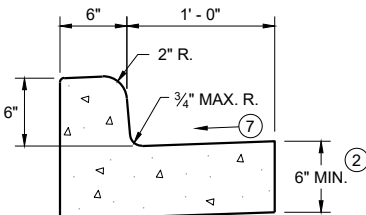


TYPES K<sup>①</sup> & L  
(OPTIONAL CURB SHAPE)



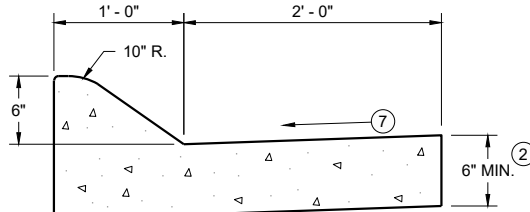
TYPES K<sup>①</sup> & L

CONCRETE CURB AND GUTTER 30"

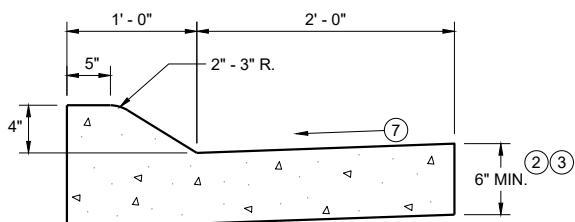


TYPES A<sup>①</sup> & D

CONCRETE CURB AND GUTTER 18"

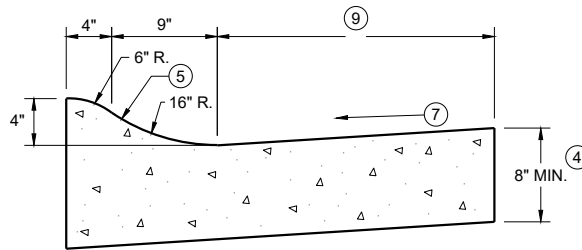


6" SLOPED CURB TYPES A<sup>①</sup> & D



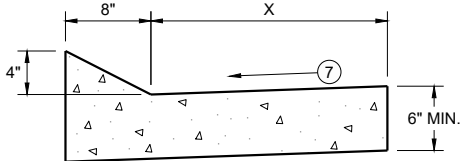
4" SLOPED CURB TYPES A<sup>①</sup> & D

CONCRETE CURB AND GUTTER 36"



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

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

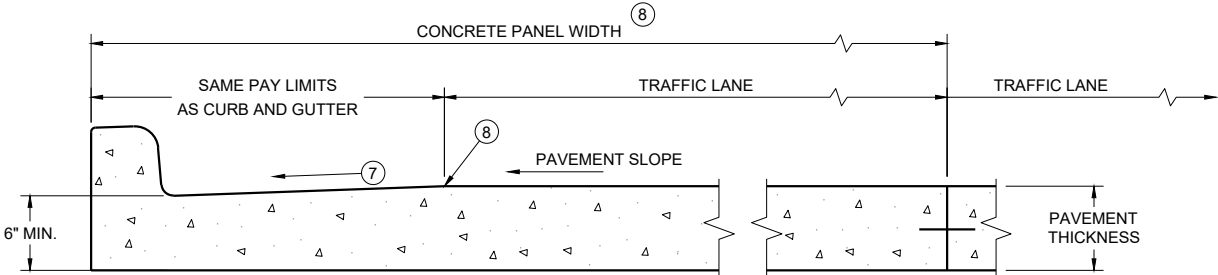


TYPES TBT & TBTT<sup>①</sup>

CONCRETE CURB AND GUTTER

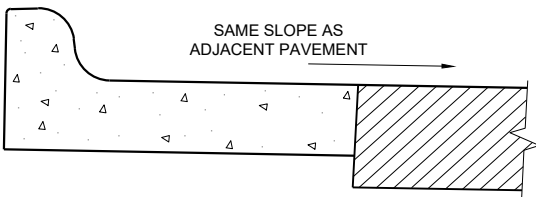
PAVEMENT THICKNESS  
AND MAXIMUM CONCRETE  
PANEL WIDTH TABLE

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



PARTIAL SECTION OF PAVEMENT  
WITH INTEGRAL CURB AND GUTTER \*

\* BIKE LANE IS NOT SHOWN



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

GENERAL NOTES

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

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

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

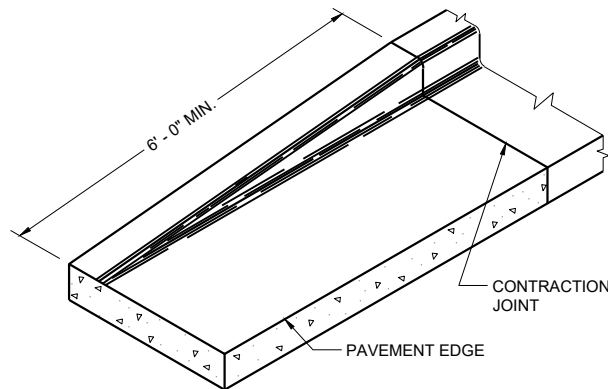
UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2' - 0" BEHIND THE BACK OF CURBS.

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

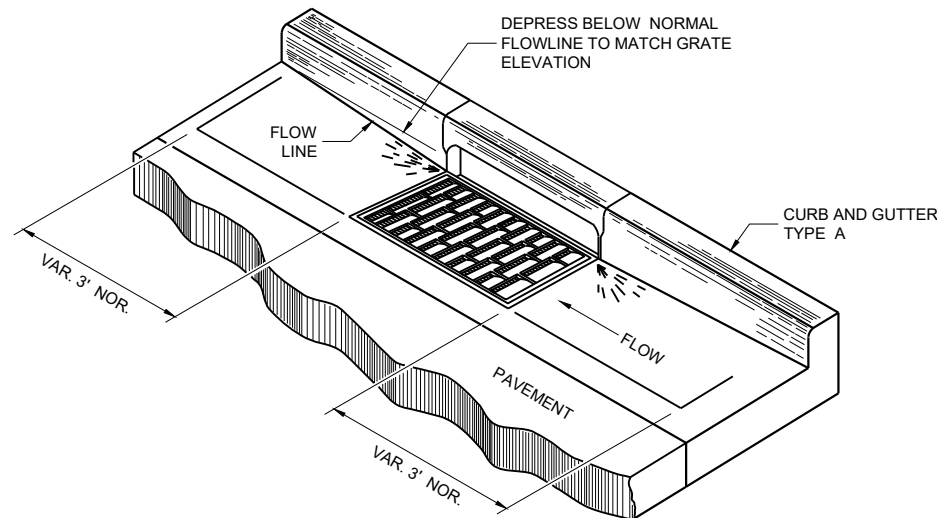
CONCRETE CURB AND GUTTER

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION



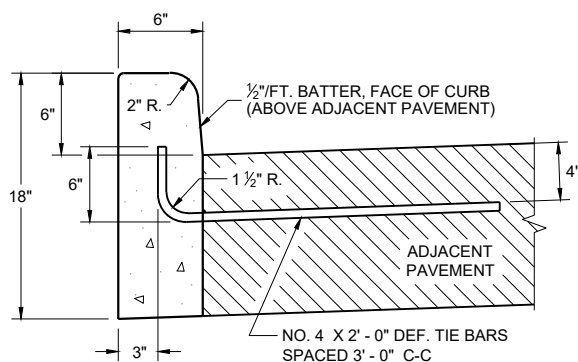


END SECTION CURB AND GUTTER

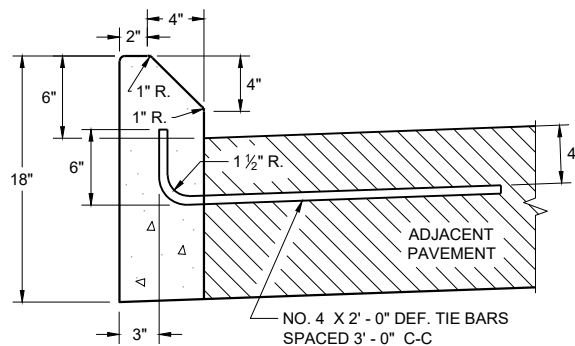


DETAIL OF CURB AND GUTTER AT INLETS

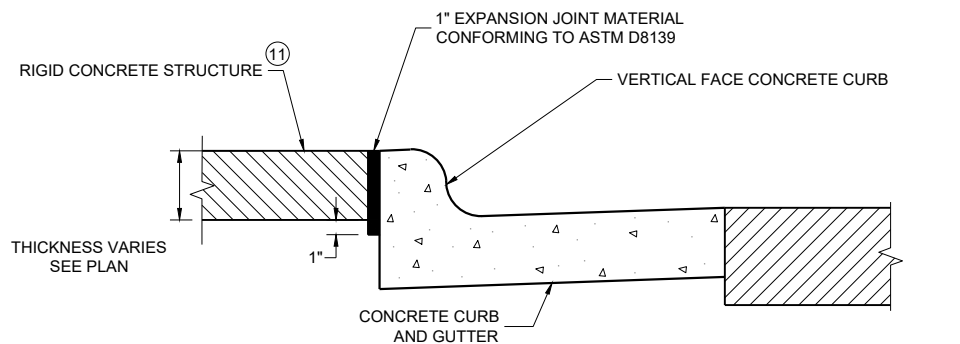
(TYPICAL H INLET COVER SHOWN)



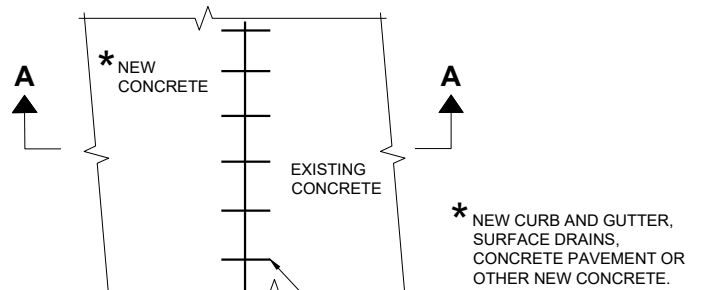
TYPES A<sup>①</sup> & D



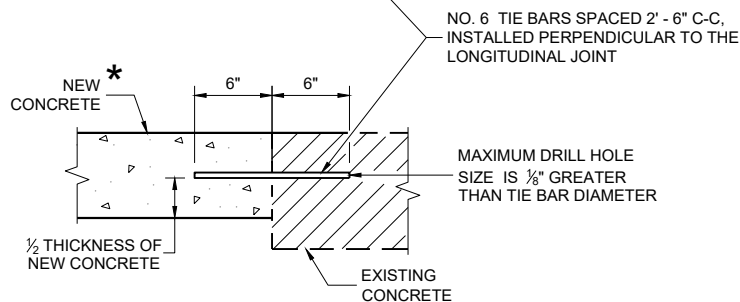
TYPES G<sup>①</sup> & J  
CONCRETE CURB



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



PLAN VIEW



SECTION A - A

TIE BARS DRILLED INTO EXISTING PAVEMENT

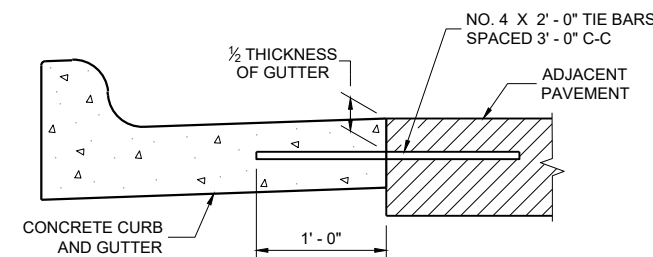
GENERAL NOTES

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

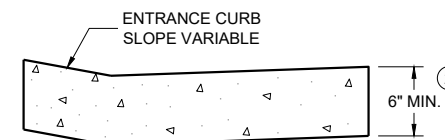
PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

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

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



TYPICAL TIE BAR LOCATION<sup>①</sup>



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

CONCRETE CURB, TIES  
AND CURB AND GUTTER  
APPLICATIONS

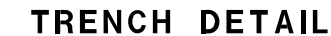
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

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





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



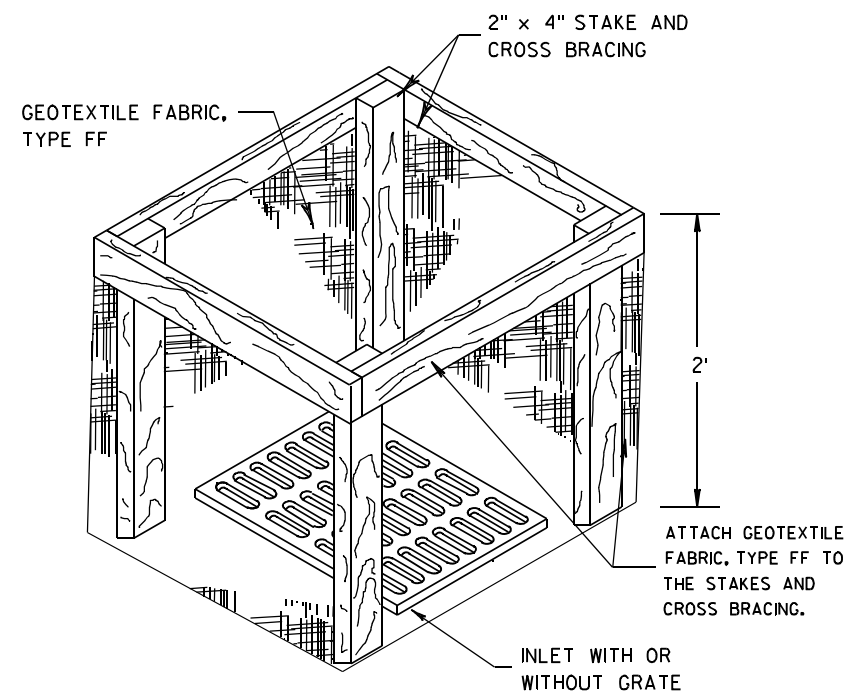
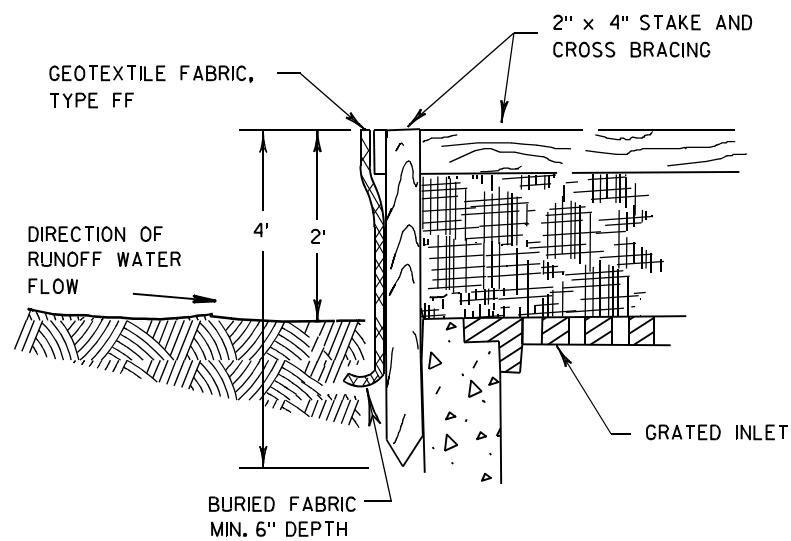
SILT FENCE

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
4-29-05 /S/ Beth Connolly  
DATE CHIEF ROADWAY DEVELOPMENT ENGINEER

FHWA





**INLET PROTECTION, TYPE A**

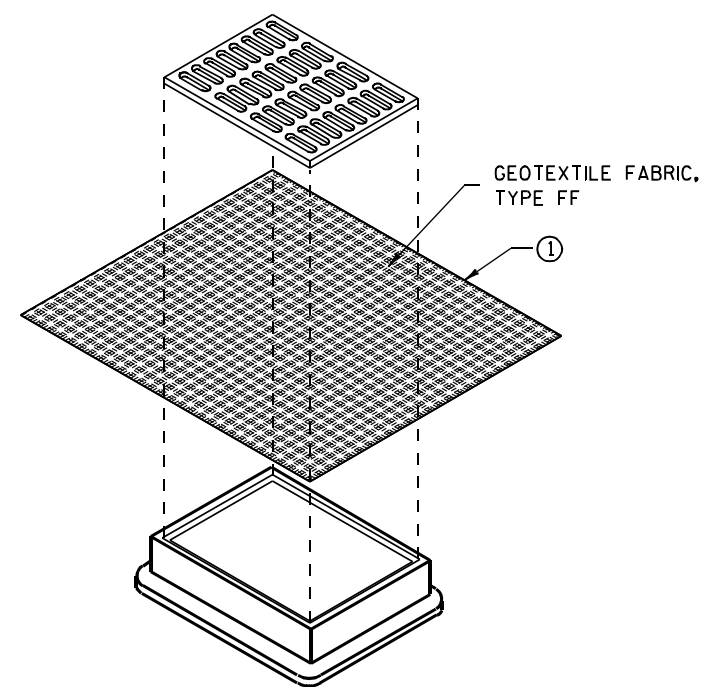
**GENERAL NOTES**

INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.

MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.

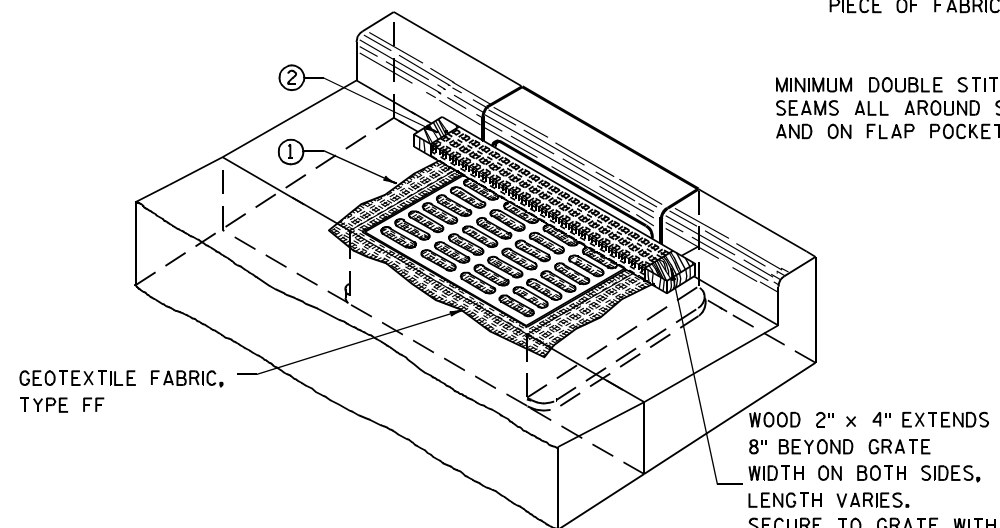
WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.

- ① FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- ② FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- ③ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.



**INLET PROTECTION, TYPE B  
(WITHOUT CURB BOX)**

(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



**INLET PROTECTION, TYPE C (WITH CURB BOX)**

**INSTALLATION NOTES**

**TYPE B & C**

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

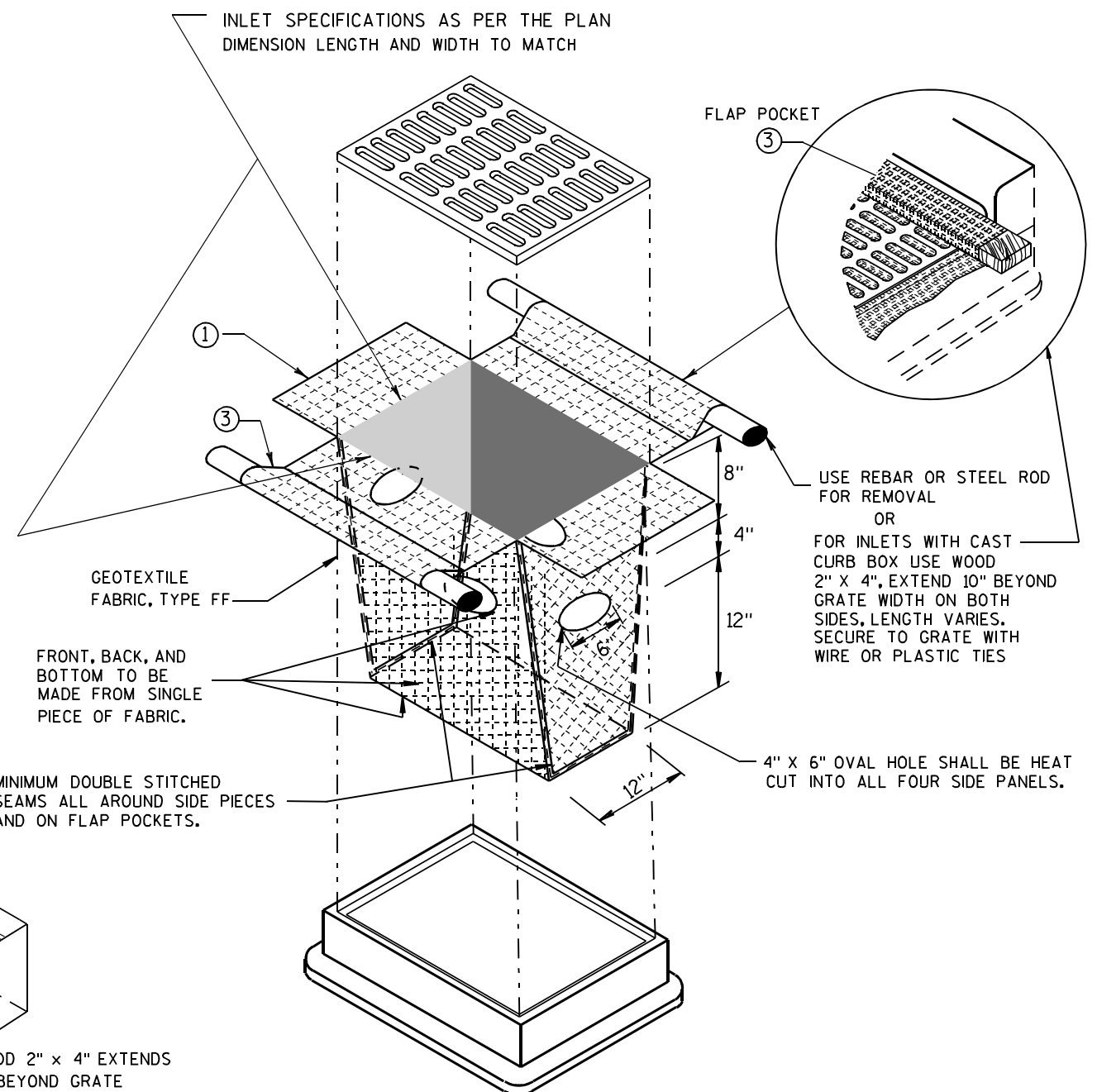
THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

**TYPE D**

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLower THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

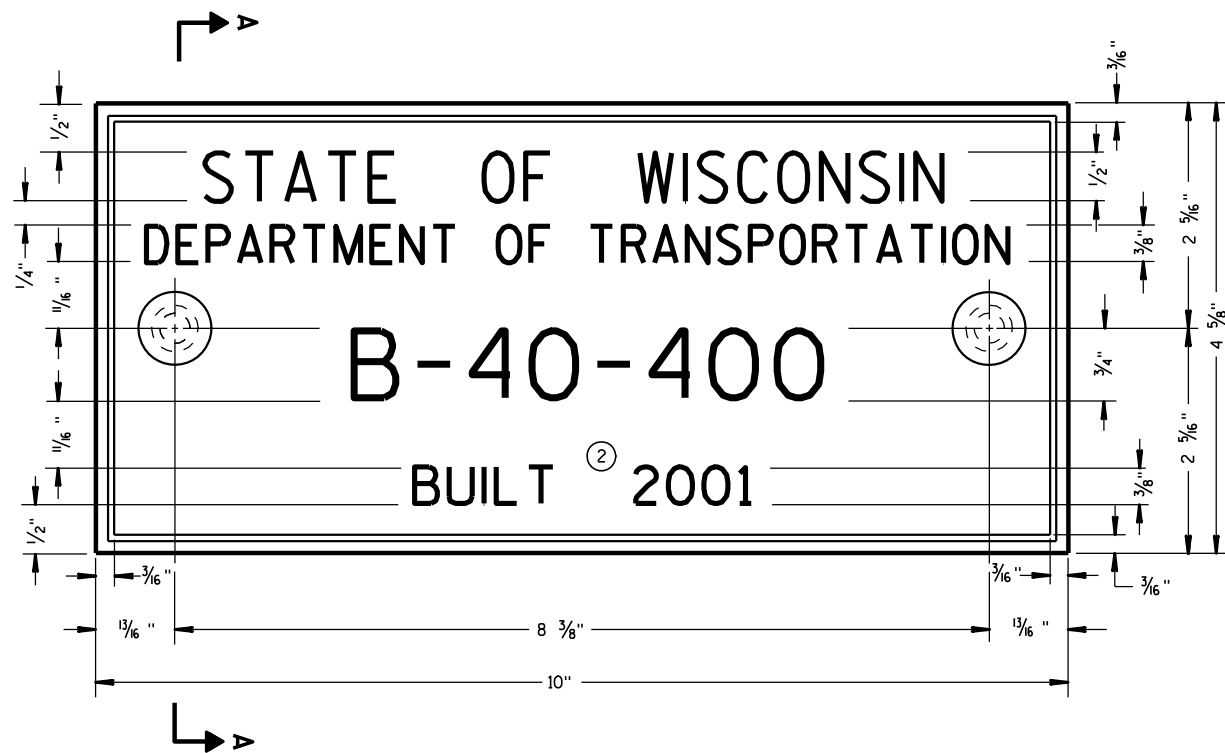


**INLET PROTECTION, TYPE D**

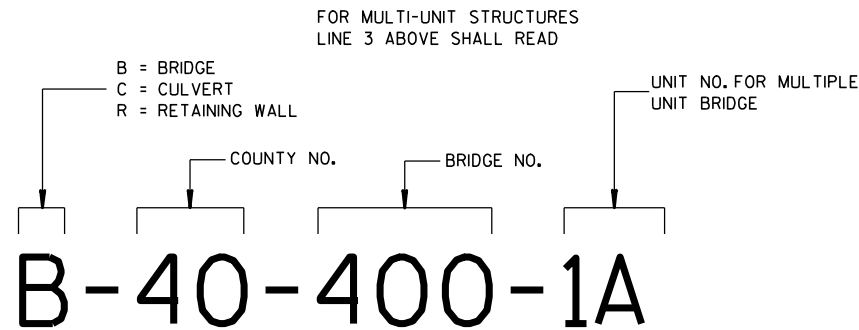
(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE ②)

|                                                            |                                                               |
|------------------------------------------------------------|---------------------------------------------------------------|
| <b>INLET PROTECTION<br/>TYPE A, B, C, AND D</b>            |                                                               |
| <b>STATE OF WISCONSIN<br/>DEPARTMENT OF TRANSPORTATION</b> |                                                               |
| APPROVED<br>10/16/02<br>DATE                               | /S/ Beth Connolly<br>50<br>CHIEF ROADWAY DEVELOPMENT ENGINEER |
| FHWA                                                       |                                                               |





TYPICAL NAME PLATE  
(BRIDGES, CULVERTS, AND RETAINING WALLS)



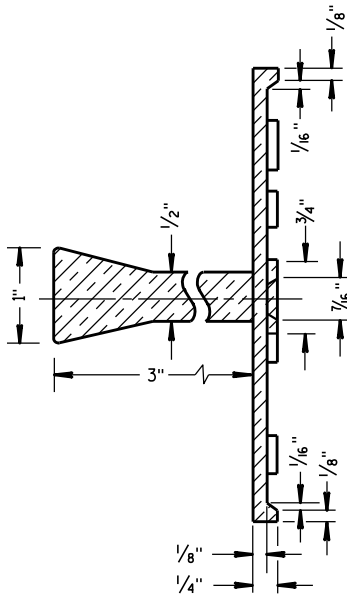
NUMBERING DESIGNATION  
MULTI-UNIT STRUCTURES

GENERAL NOTES

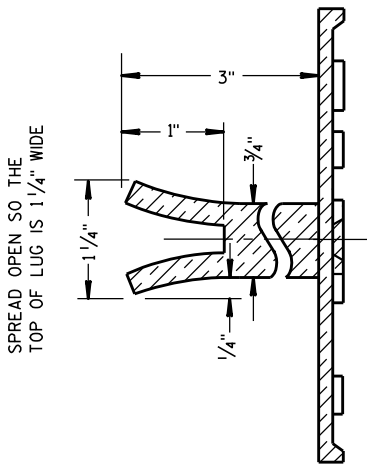
NAME PLATES TO BE INSTALLED ON BRIDGES, CULVERTS, AND RETAINING WALLS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 502.3.11 OF THE STANDARD SPECIFICATIONS.

THE BRIDGE NUMBER AND YEAR BUILT SHOWN ON THIS DRAWING ARE EXAMPLES ONLY. SEE CONSTRUCTION PLANS FOR INDIVIDUAL NUMBERING AND YEAR BUILT.

- 1 EPOXY RESIN SHALL BE FROM AN APPROVED MANUFACTURER AND USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 2 REHABILITATION OF AN EXISTING STRUCTURE SHOULD USE THE DATE OF ORIGINAL STRUCTURE CONSTRUCTION.

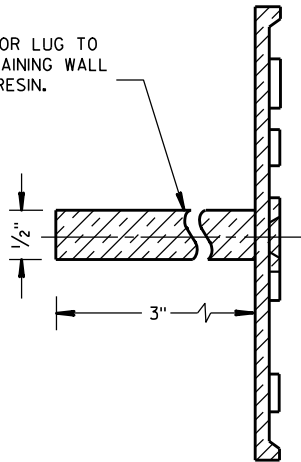


SECTION A-A



ALTERNATE LUG

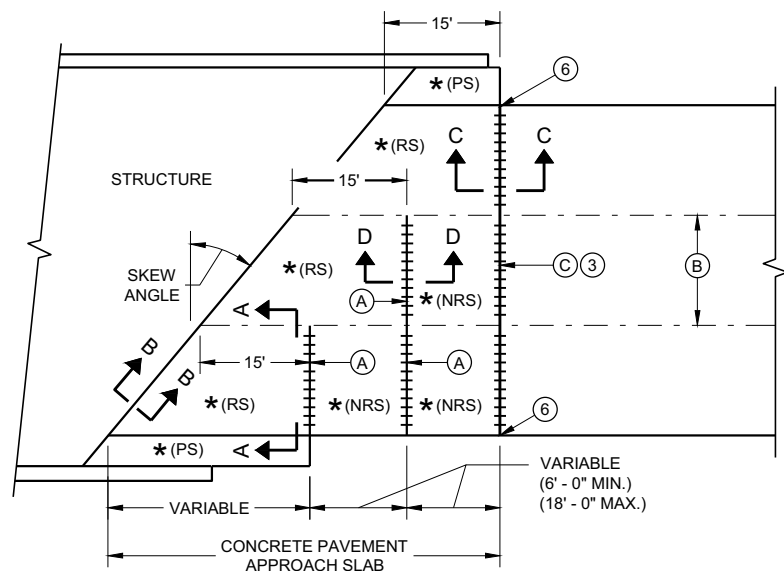
- 1 ADHERE ANCHOR LUG TO PRECAST RETAINING WALL WITH EPOXY RESIN.



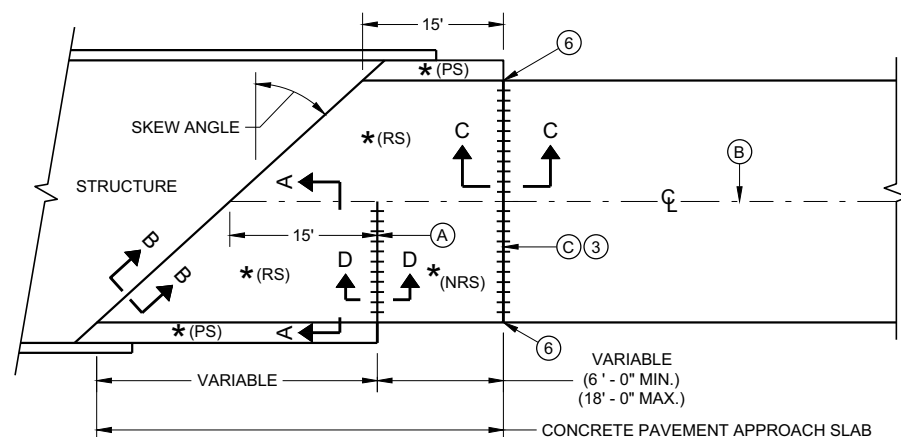
ALTERNATE LUG  
(FOR ATTACHMENT TO PRECAST STRUCTURES)

| NAME PLATE<br>(STRUCTURES)                         |                                                   |      |
|----------------------------------------------------|---------------------------------------------------|------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |                                                   |      |
| APPROVED<br>DATE<br>3/26/10                        | CHIEF STRUCTURAL DEVELOPER<br>/S/ Scot Beck<br>51 | JEER |

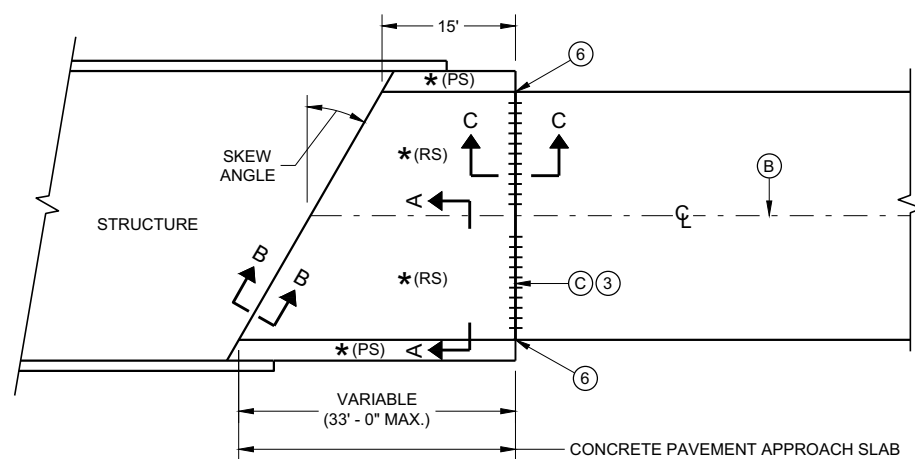




**SKewed APPROACH  
(PAVEMENT MORE THAN TWO LANES)**



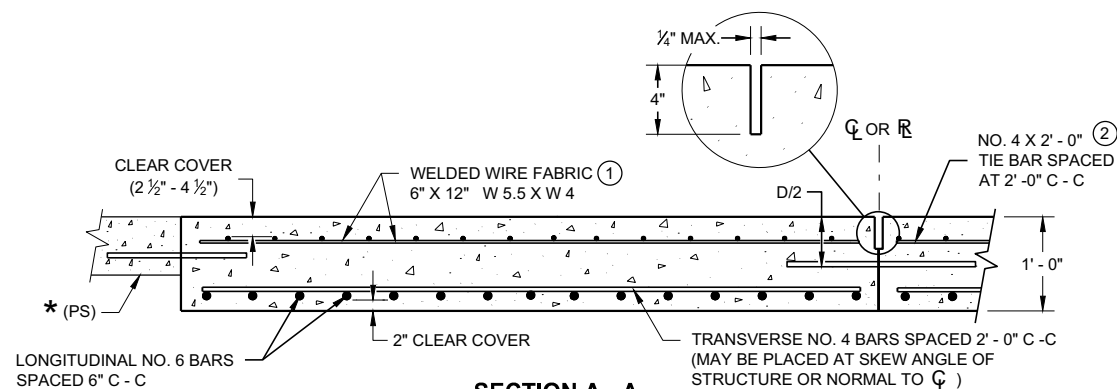
**SKews > 20°  
(PAVEMENT WIDTH ≤ 30')**



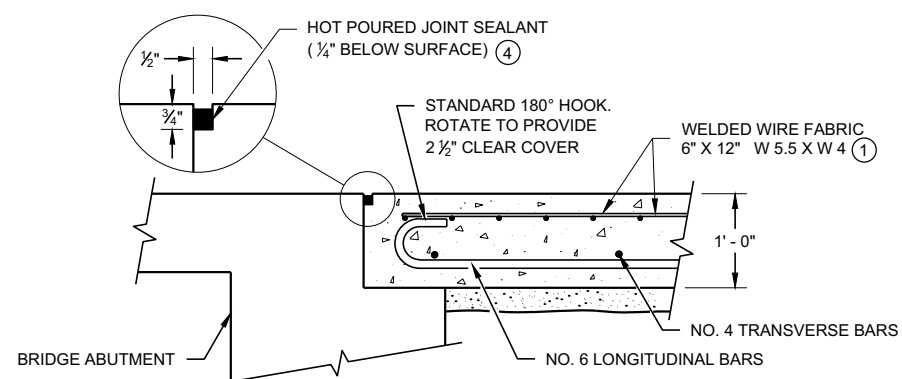
**SKews ≤ 20°  
(PAVEMENT WIDTH ≤ 30')**

**APPROACH SLAB AND ADJACENT PAVEMENT**

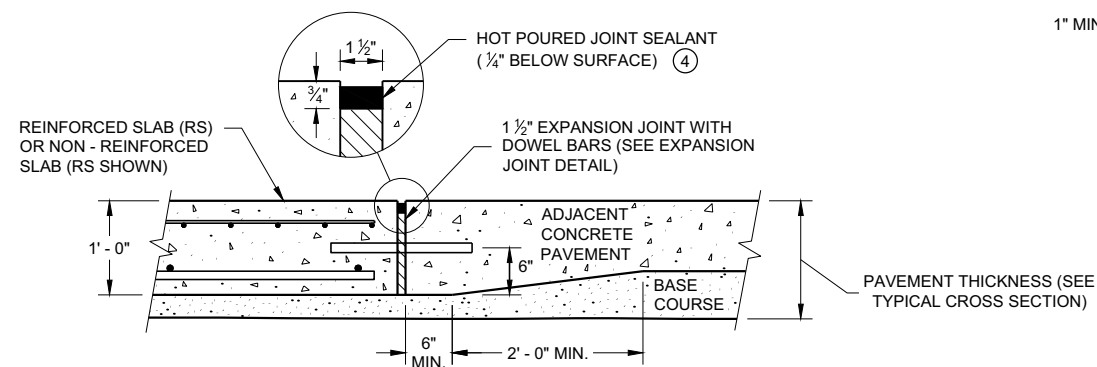
- \* (RS) = REINFORCED CONCRETE SLAB
- \* (PS) = PAVED CONCRETE SHOULDER OR CONCRETE DRAINAGE SLAB
- \* (NRS) = NON - REINFORCED CONCRETE SLAB
- \*\*\* STANDARD DOWEL BAR DIAMETER (SEE SDD 13C11 AND SDD 13C13)



**SECTION A - A  
REINFORCEMENT POSITIONING DETAIL**



**SECTION B - B  
BEND DETAIL  
BOTTOM REINFORCEMENT**



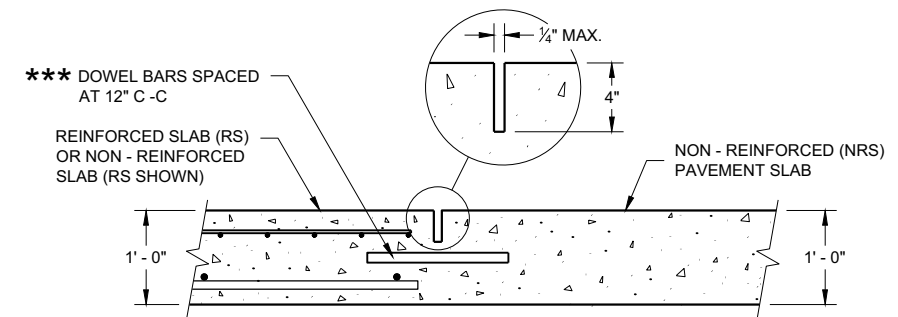
**SECTION C - C  
TRANSITION DETAIL  
APPROACH SLAB TO ADJACENT PAVEMENT**

## GENERAL NOTES

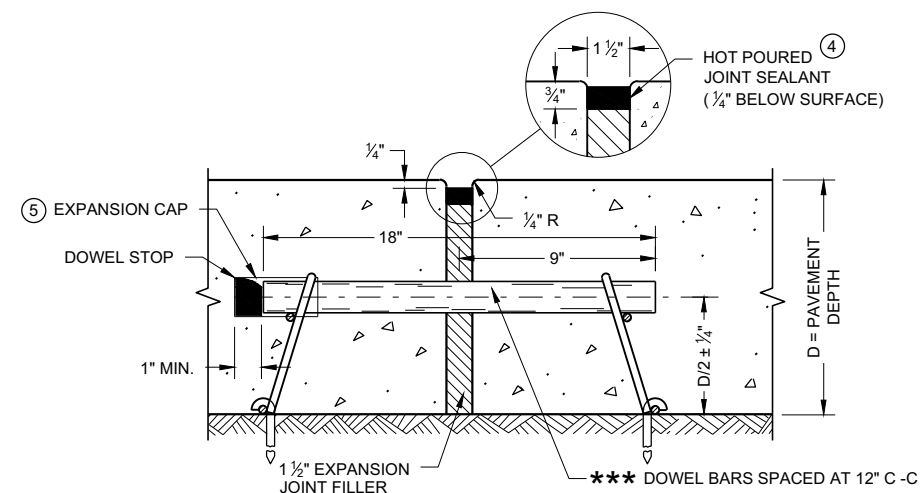
THE CONTRACTOR MAY SPLICE NO. 6 BARS IN THE APPROACH SLAB FOR SKEWED STRUCTURES ONLY. STAGGER SPLICES WITH A MAXIMUM OF ONE SPLICE PER BAR. THE LENGTH OF LAP IS 20 INCHES.

TACK WELD DOWEL BARS TO THE BASKETS ON ALTERNATE ENDS.

- ① THE CONTRACTOR MAY USE NO. 4 BARS SPACED AT 2' - 0" C - C IN BOTH THE LONGITUDINAL AND TRANSVERSE DIRECTIONS FOR TOP REINFORCEMENT AS AN ALTERNATIVE TO THE WELDED WIRE FABRIC.
- ② THE CONTRACTOR MAY OMIT THE BARS BETWEEN REINFORCED SLABS WHERE SLAB REINFORCEMENT BARS EXTEND ACROSS THE CENTERLINE OR REFERENCE LINE.
- ③ DO NOT CONSTRUCT AN EXPANSION JOINT OR INSTALL DOWEL BARS WHEN ABUTTING AN HMA PAVEMENT.
- ④ USE A JOINT SEALANT CONFORMING TO STANDARD SPECIFICATION 415.2.6.
- ⑤ PLACE EXPANSION CAP ON THE END OF THE DOWEL THAT IS NOT TACK WELDED TO THE BASKET. DO NOT FORCE DOWEL BAR PAST THE DOWEL STOP.
- ⑥ EXTEND EXPANSION JOINT THROUGH ANY ADJACENT TIED CONCRETE.
- A STANDARD CONTRACTION JOINT NORMAL TO  $\mathcal{C}$  OR  $\mathcal{R}$ .
- B STANDARD LONGITUDINAL JOINT WITH TIE BARS.
- C 1 1/2" EXPANSION JOINT WITH DOWEL BARS NORMAL TO  $\mathcal{C}$  OR  $\mathcal{R}$ .



**SECTION D - D  
CONTRACTION JOINT**



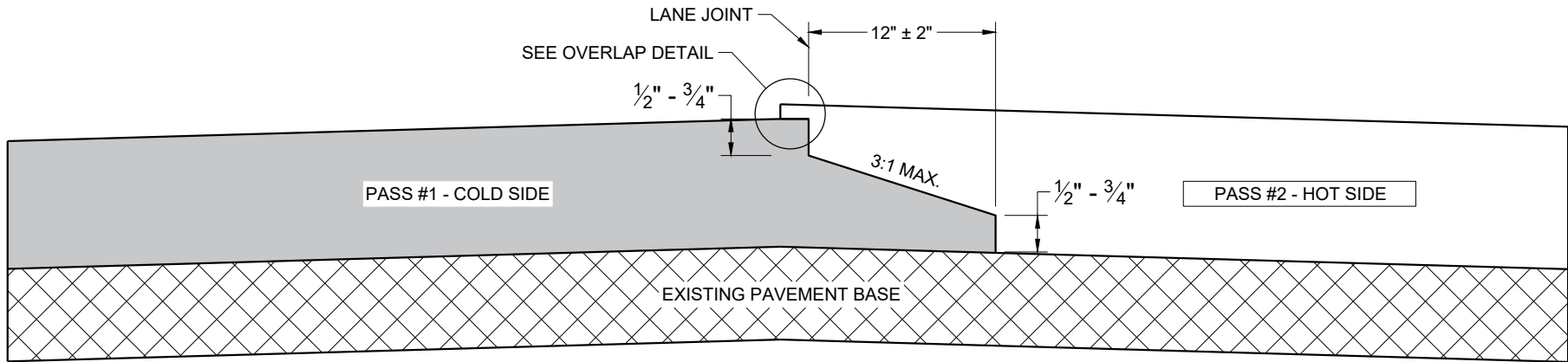
**EXPANSION JOINT DETAIL**

## CONCRETE PAVEMENT APPROACH SLAB

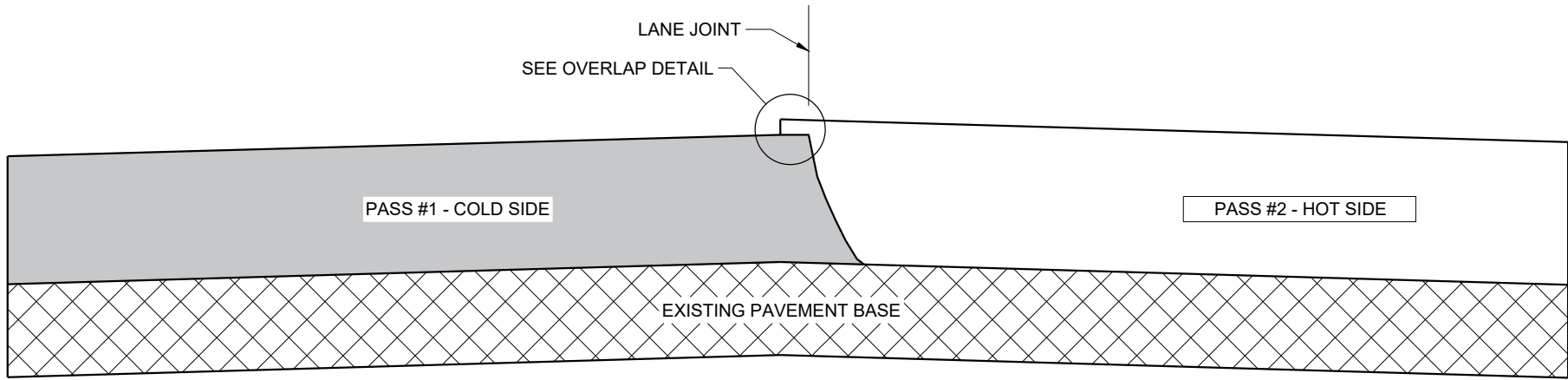
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2018 /S/ Peter Kemp, P.E.  
DATE PAVEMENT SUPERVISOR 52  
FHWA

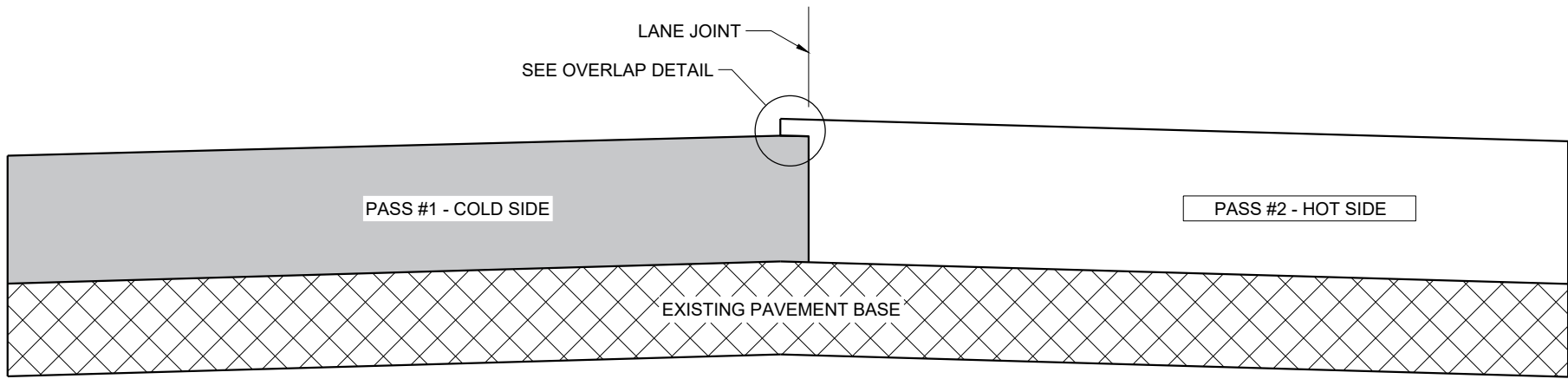




**TYPICAL PAVEMENT CROSS SECTION  
NOTCHED WEDGE JOINT**



**TYPICAL PAVEMENT CROSS SECTION  
VERTICAL JOINT**



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

**GENERAL NOTES**

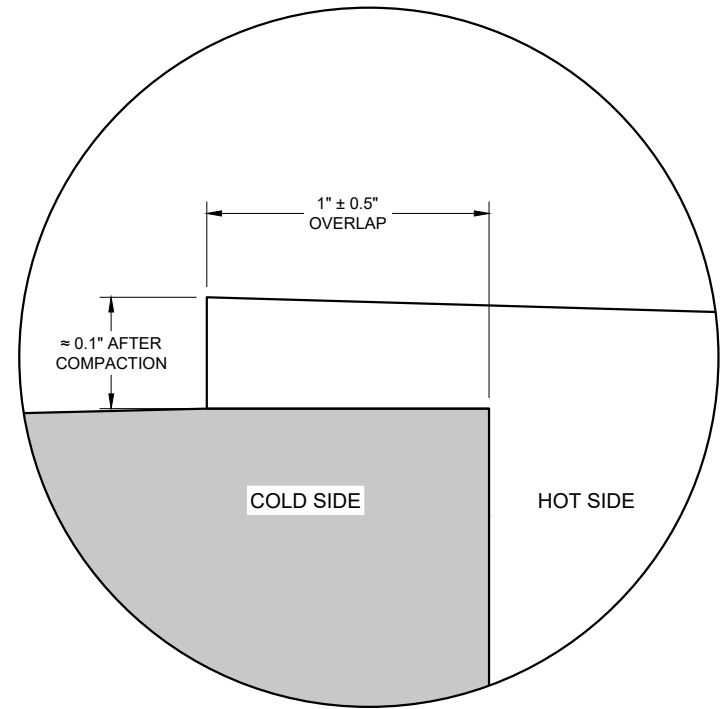
IN ADDITION TO THE DETAILS PROVIDED IN THIS DRAWING, CONFORM TO STANDARD SPECIFICATION 450.3.2.8 FOR WHEN A NOTCHED WEDGE JOINT IS REQUIRED AND FOR GENERAL JOINT CONSTRUCTION REQUIREMENTS.

FOR ALL LONGITUDINAL JOINTS, ENSURE THE PAVER SCREED OVERLAPS THE PREVIOUSLY PLACED PAVEMENT BY  $1" \pm 0.5"$  AND THE HOT SIDE OF THE JOINT REMAINS HIGHER THAN THE COLD SIDE BY APPROXIMATELY 0.1" AFTER FINAL COMPACTION. (IT WILL BE FLUSH WHEN PAVING IN ECHELON.)

ONLY REMOVE THE LONGITUDINAL NOTCHED WEDGE JOINT FOR SMA PAVEMENT OR AS DIRECTED BY THE ENGINEER TO ADDRESS SPECIFIC LENGTHS OF JOINT DAMAGED BY TRAFFIC.

WHEN MILLING BACK OR REMOVING ANY LONGITUDINAL JOINT, LIMIT THE MATERIAL REMOVED TO 2" FROM THE TOP NOTCH OR FROM THE VERTICAL JOINT EDGE ON THE COLD SIDE OF THE JOINT.

USE LONGITUDINAL MILLED JOINT AS PLANS SHOW OR THE AS THE ENGINEER DIRECTS.



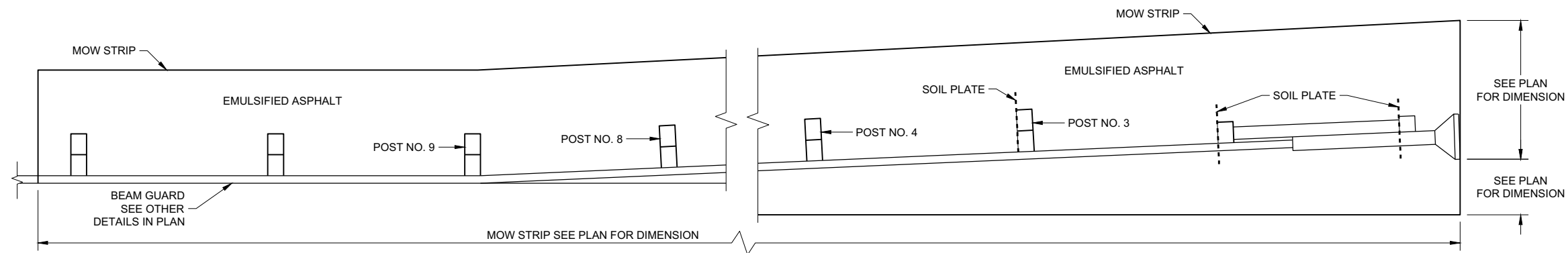
**OVERLAP DETAIL (TYPICAL)**

**HMA LONGITUDINAL JOINTS**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2020 /S/ Steven Hefel  
DATE HMA PAVEMENT ENGIN 53  
FHWA



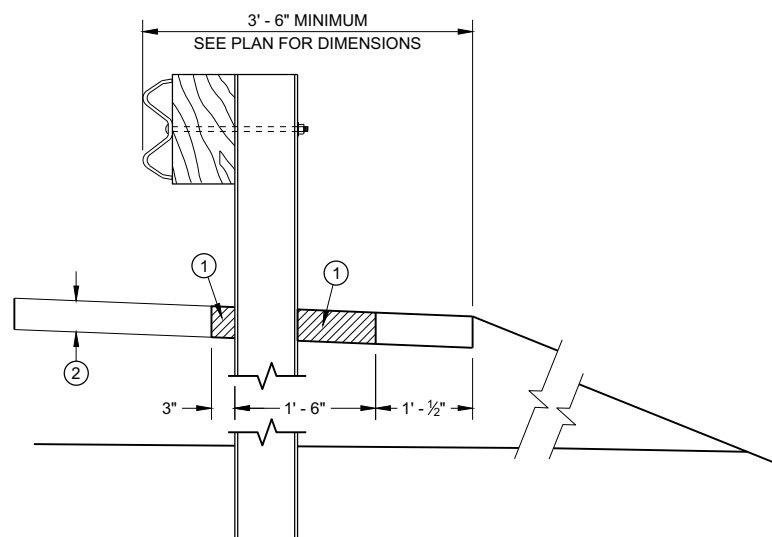


**PLAN VIEW**  
**MOW STRIP LAYOUT FOR ENERGY ABSORBING TERMINAL**

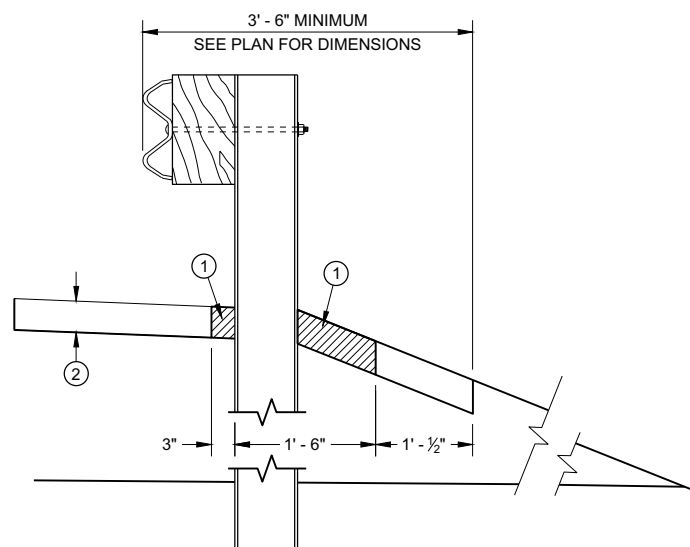
**GENERAL NOTES**

ONLY USE STEEL POSTS IN CONCRETE AND ASPHALT MOW STRIPS.

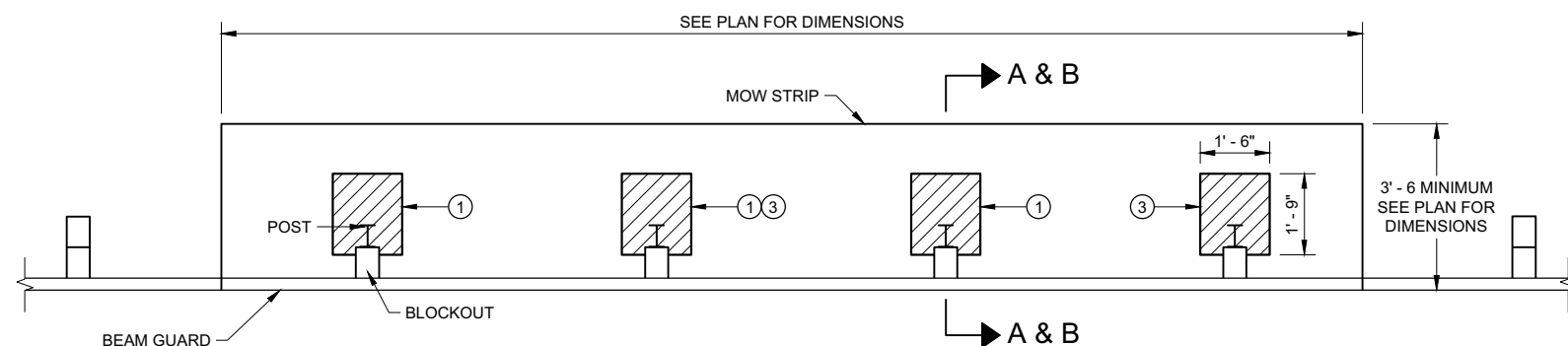
- ① CONTROLLED LOW-STRENGTH BACKFILL OR EMULSIFIED ASPHALT.
- ② DEPTH OF MOW STRIP:  
ASPHALT - 4"  
CONCRETE - 4"  
EMULSIFIED ASPHALT - 1" OR LESS
- ③ FOR EMULSIFIED ASPHALT, MOW STRIP STRIP LEAVE OUTS NOT REQUIRED. (TYPICAL FOR ALL POSTS)



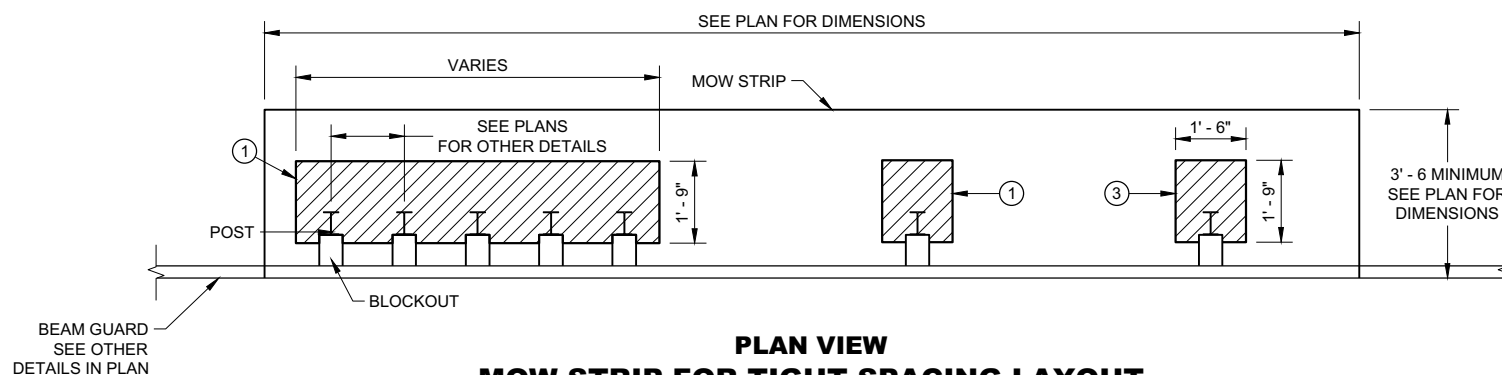
**SECTION A - A**



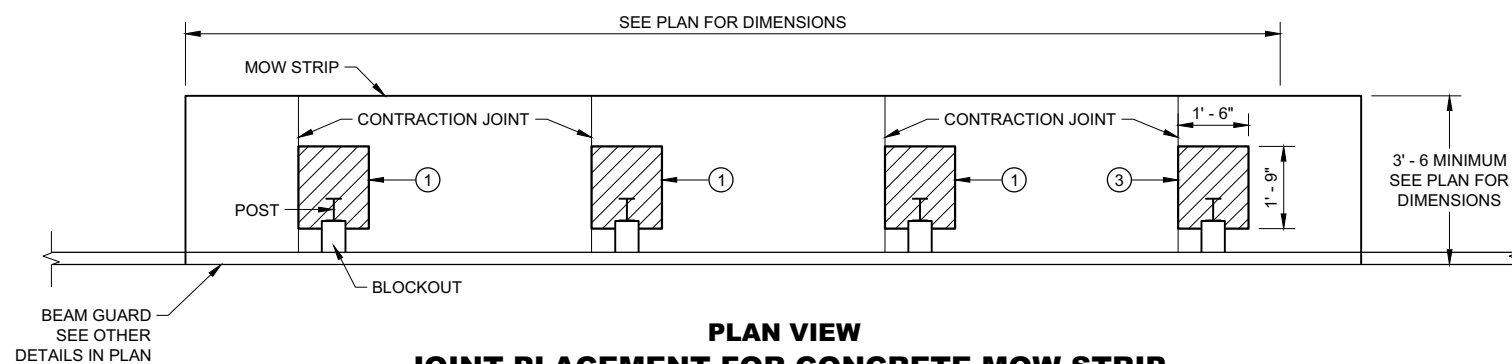
**SECTION B - B**



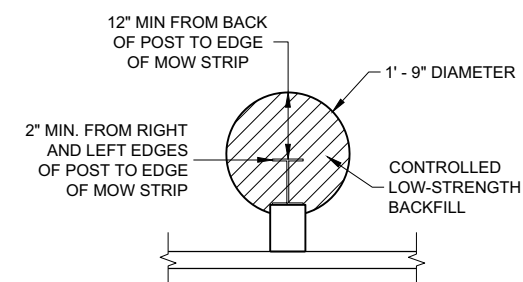
**PLAN VIEW**  
**MOW STRIP FOR TYPICAL BLOCKOUT LAYOUT**



**PLAN VIEW**  
**MOW STRIP FOR TIGHT SPACING LAYOUT**



**PLAN VIEW**  
**JOINT PLACEMENT FOR CONCRETE MOW STRIP**



**ALTERNATIVE HMA**  
**MOW STRIP DESIGN**

**GUARDRAIL MOW STRIP**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

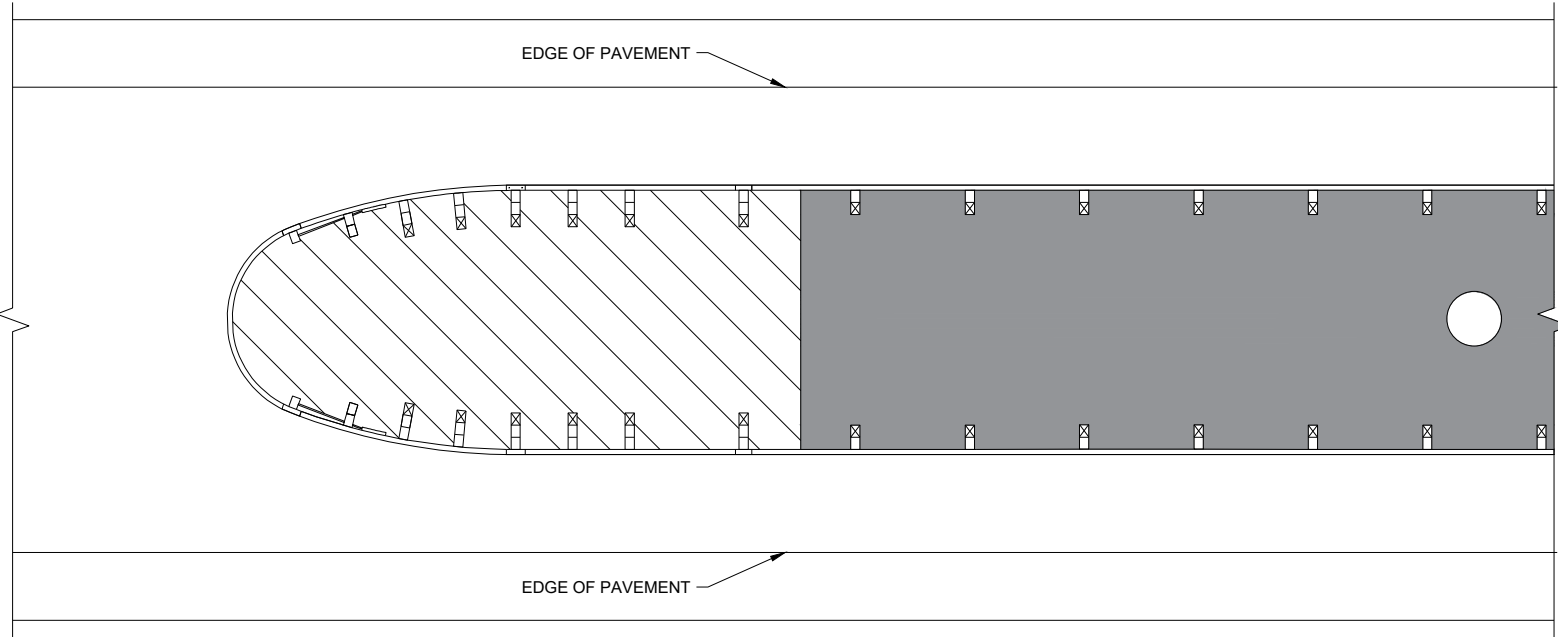


LEGEND

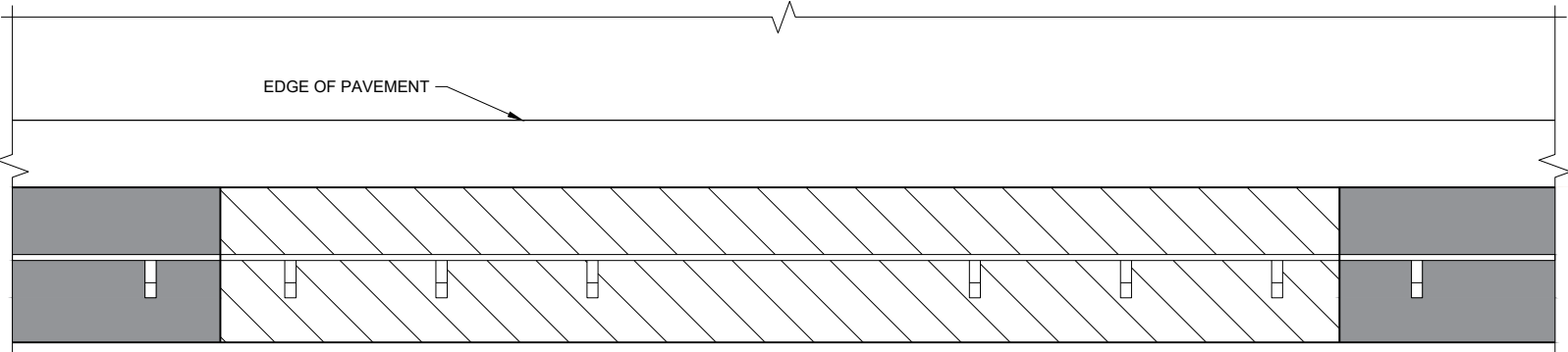
- CONCRETE, ASPHALT, OR EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)
- EMULSIFIED ASPHALT MOW STRIP (SEE OTHER DETAILS)

GENERAL NOTES

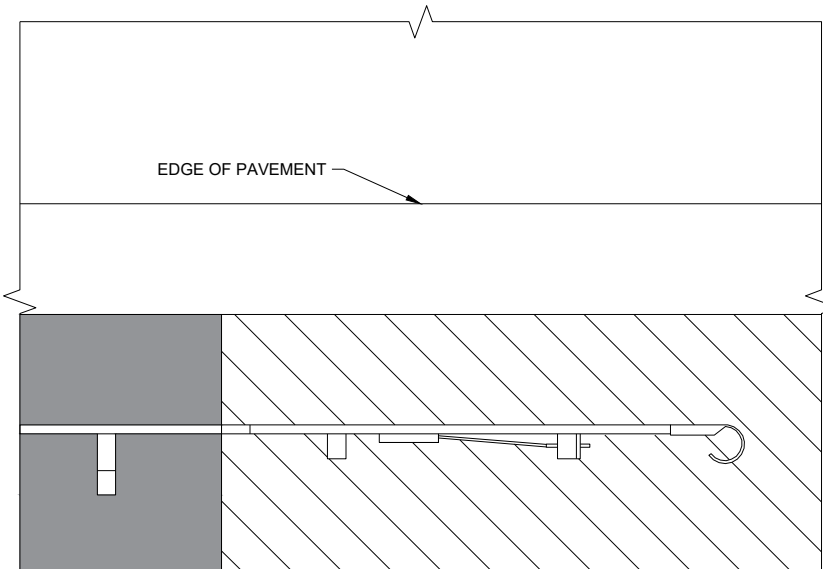
EXISTING THRIE BEAM BULLNOSES MAY HAVE WOOD POSTS. NEW THRIE BEAM BULLNOSE WILL HAVE STEEL POSTS.



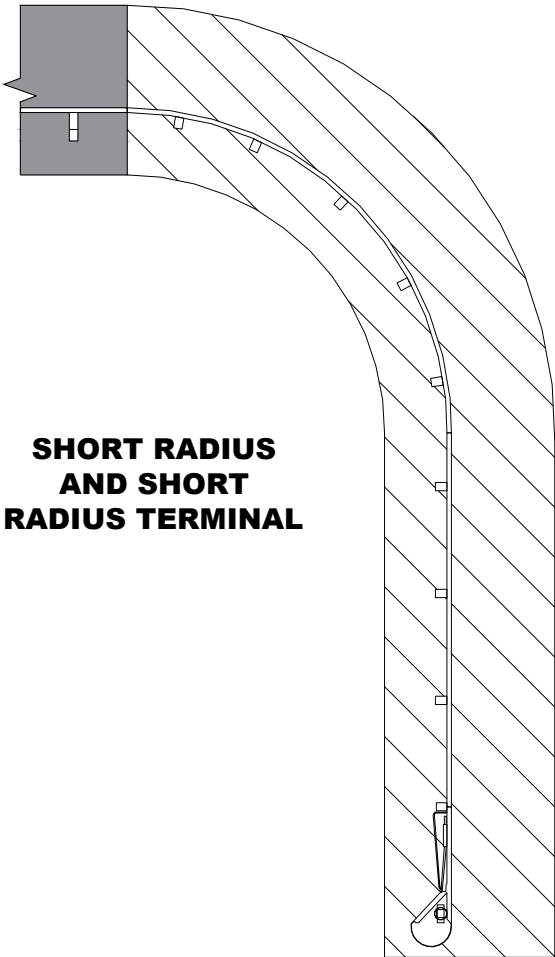
THRIE BEAM BULLNOSE



LONG - SPAN



TYPE 2 TERMINAL



SHORT RADIUS  
AND SHORT  
RADIUS TERMINAL

GUARDRAIL MOW STRIP

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
August 2020  
DATE

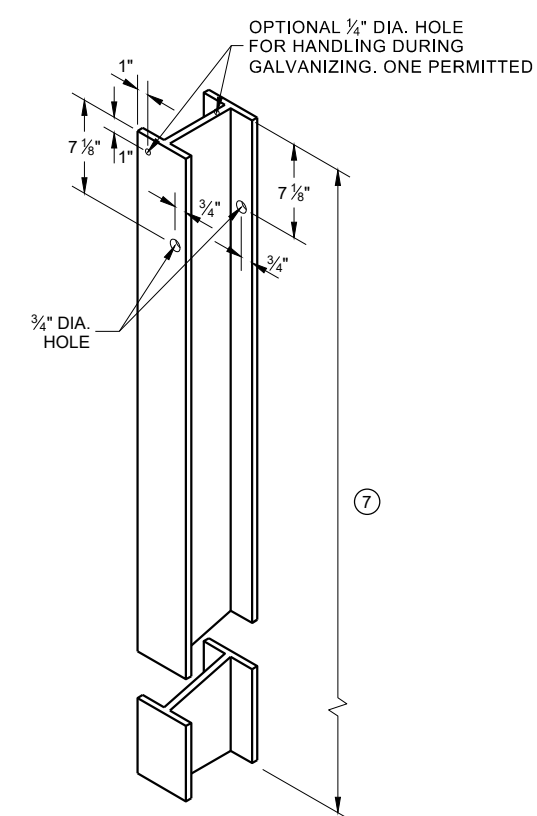
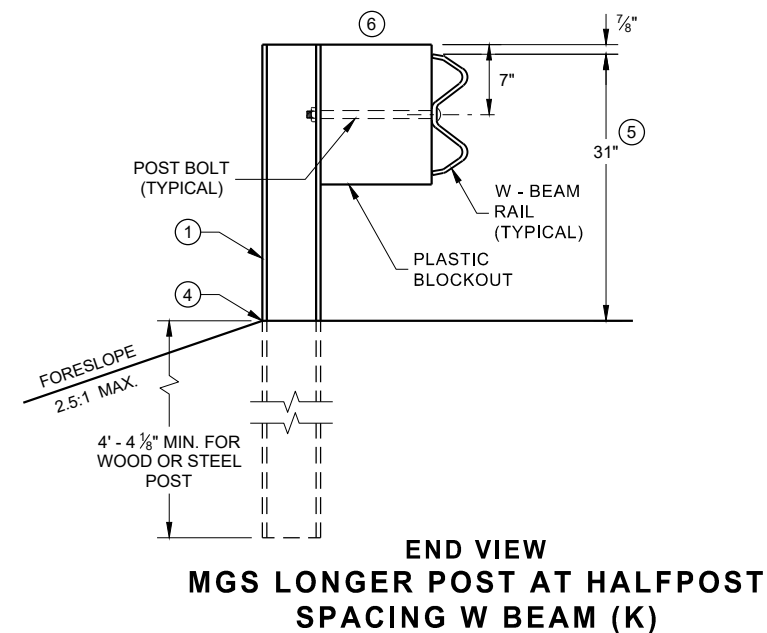
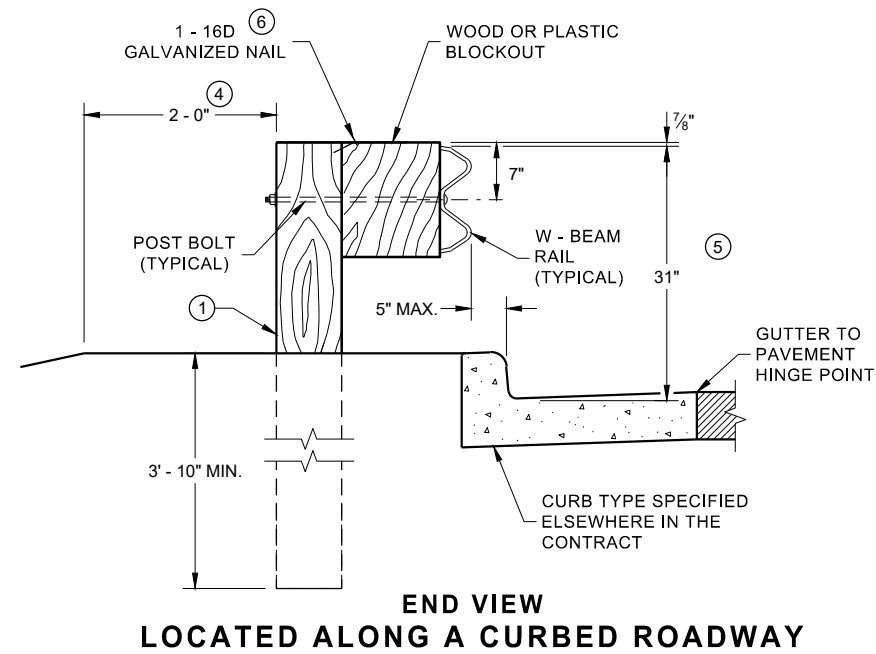
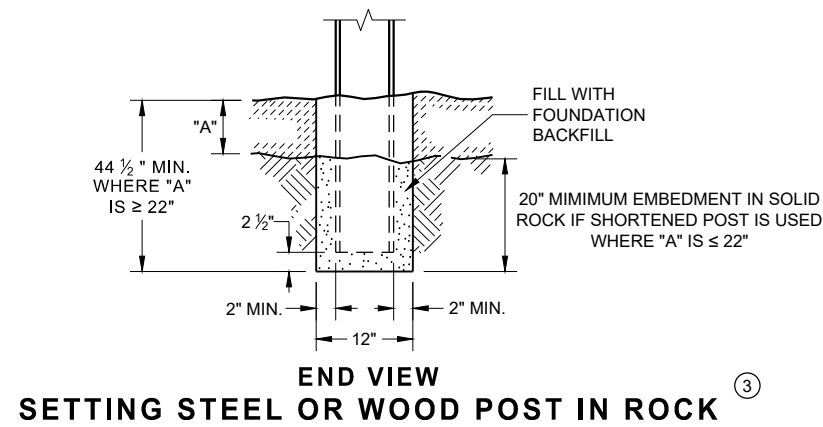
/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
ENGINEER

55

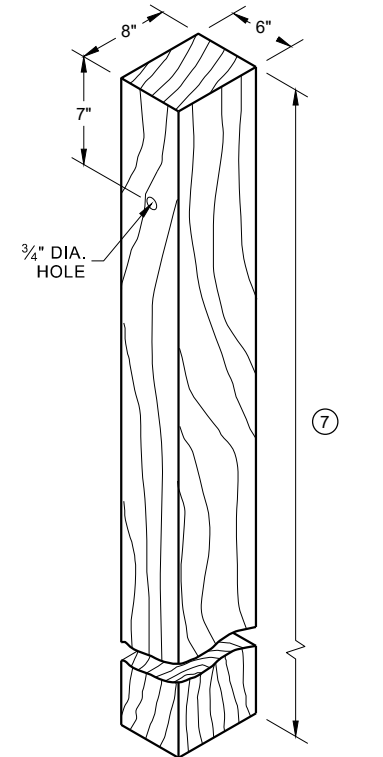
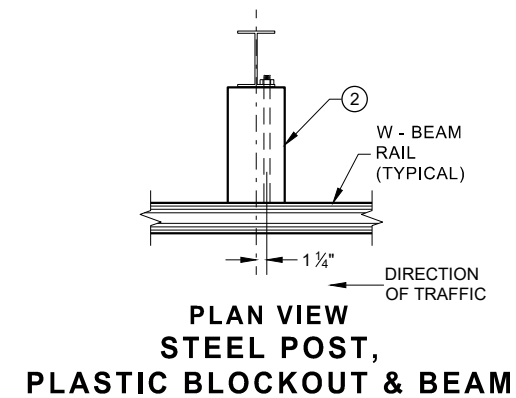
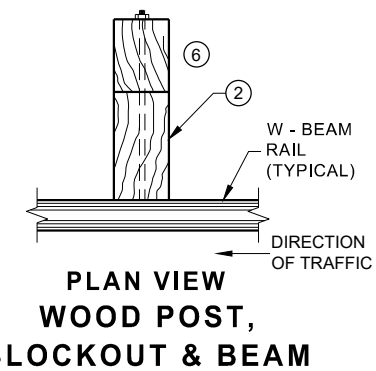
FHWA



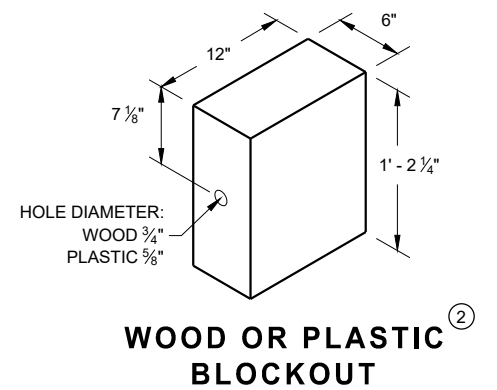
- ① WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- ② USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- ③ IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE 12 INCHES IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AMD INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- ④ WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- ⑤ FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS  $\pm 1"$ . FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- ⑥ WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- ⑦ TOTAL POST LENGTH FOR TYPE K IS 7' - 0". TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



**STEEL POST & HOLE PUNCHING DETAIL (W 6 X 9) ①**



**WOOD POST (6" X 8") NOMINAL ①**

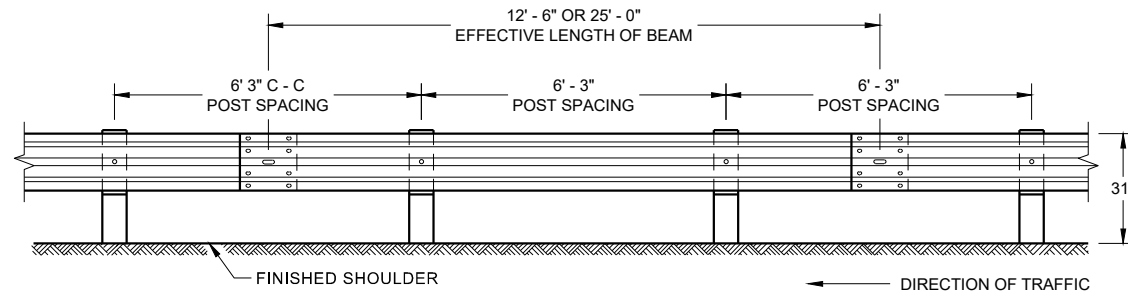


**WOOD OR PLASTIC BLOCKOUT ②**

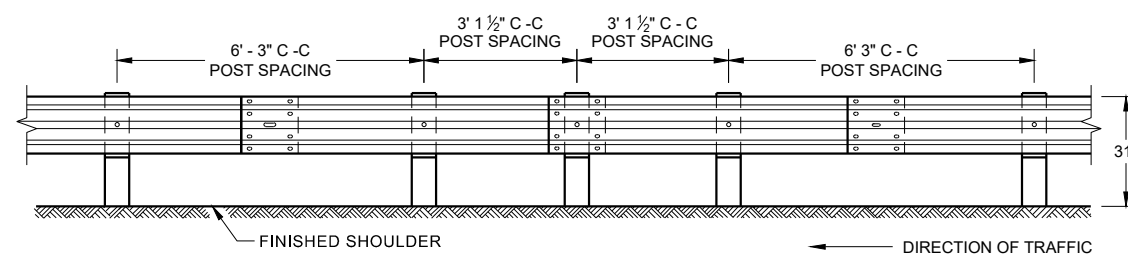
**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 156

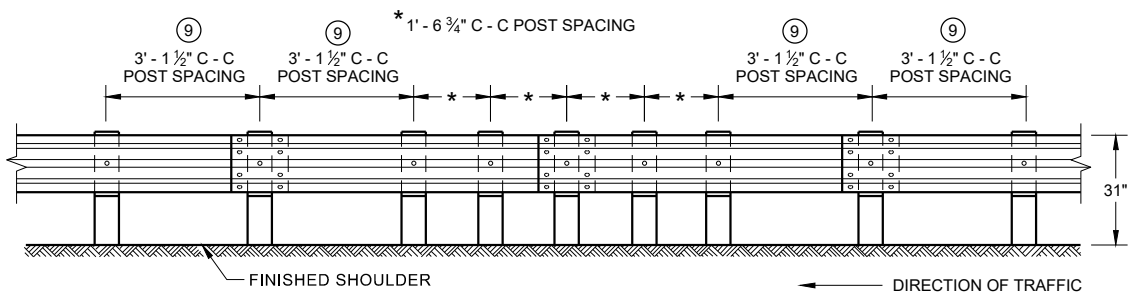




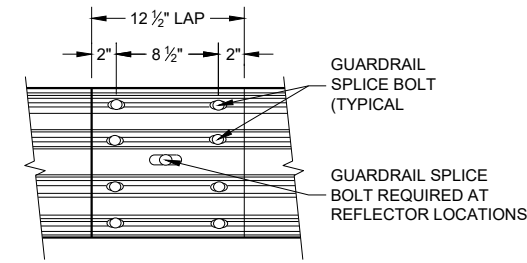
**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



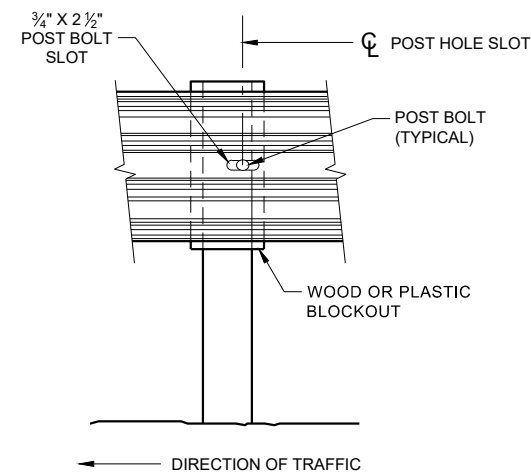
**FRONT VIEW  
HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



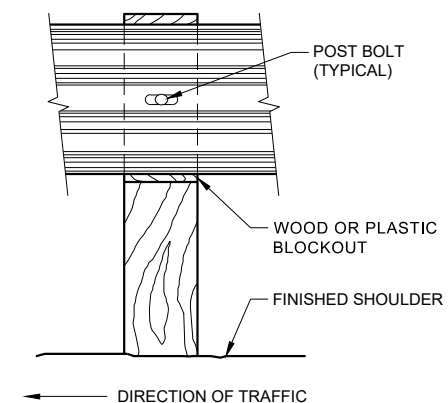
**FRONT VIEW  
QUARTER POST SPACING (QS)**



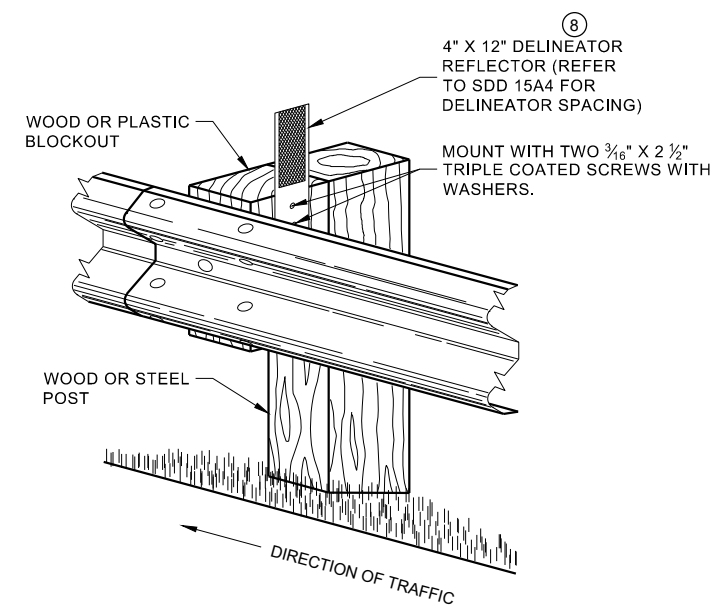
**FRONT VIEW  
MID-SPAN BEAM SPLICE**



**FRONT VIEW AT STEEL POST**



**FRONT VIEW AT WOOD POST**



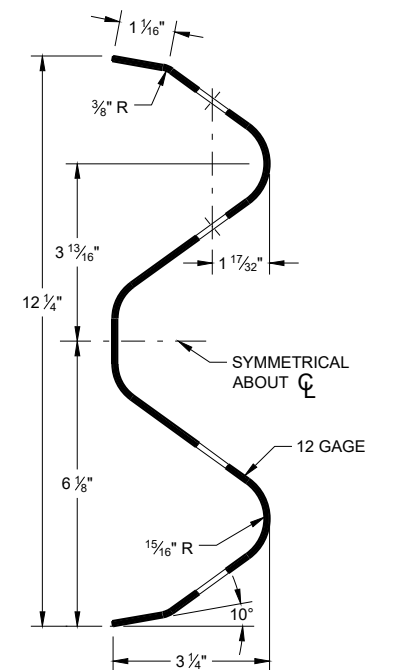
**ONE SIDED REFLECTOR DETAIL  
AND TYPICAL INSTALLATION**

## GENERAL NOTES

- 8 DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- 9 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/8" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

GUARD RAIL SPLICE BOLTS ARE A 3/8" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.

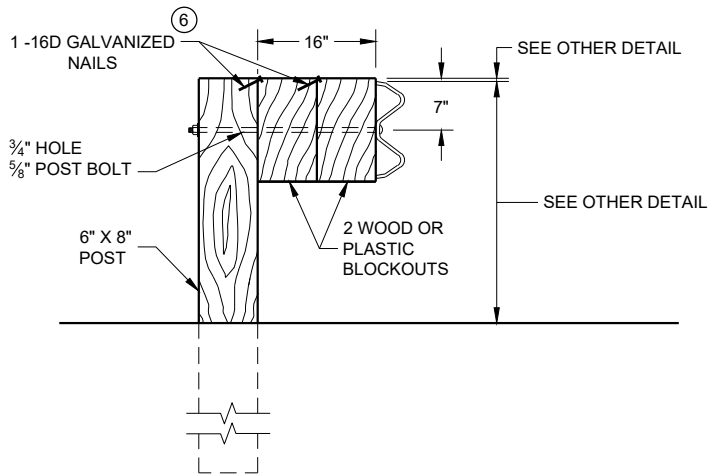


**SECTION THRU W-BEAM RAIL**

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

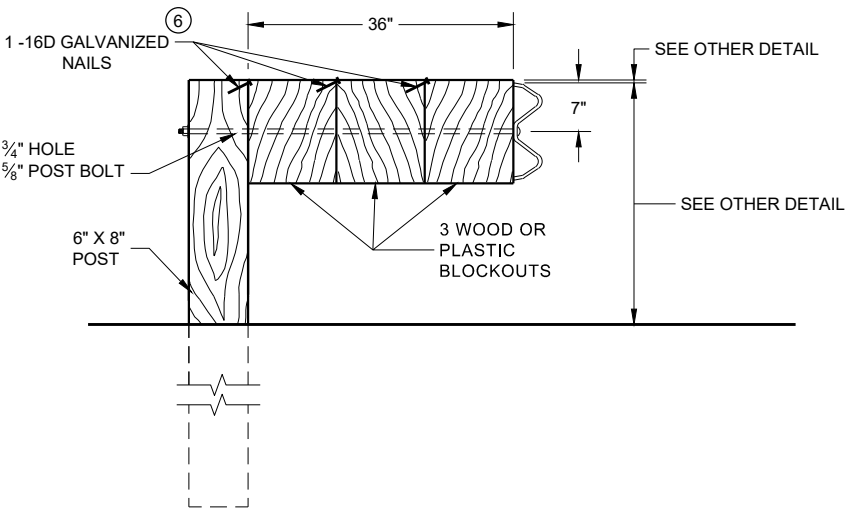
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION





DETAIL FOR 16" BLOCKOUT DEPTH

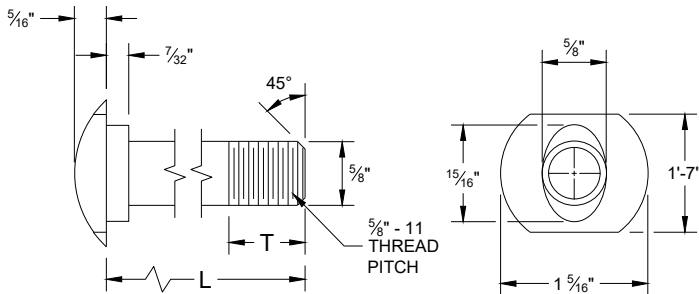
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



DETAIL FOR 36" BLOCKOUT DEPTH

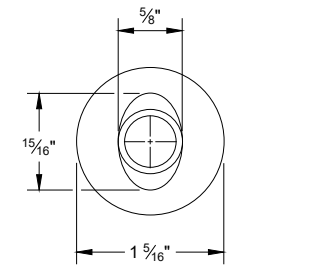
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.  
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

- NOTE:
- 1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".
  - 2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

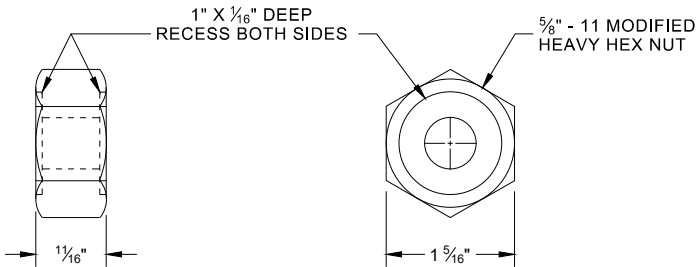


POST BOLT TABLE

| L      | T (MIN.) |
|--------|----------|
| 1 1/4" | 1 1/8"   |
| 2"     | 1 3/4"   |
| 10"    | 4"       |
| 14"    | 4 1/16"  |
| 18"    | 4"       |
| 21"    | 4 1/16"  |
| 25"    | 4"       |

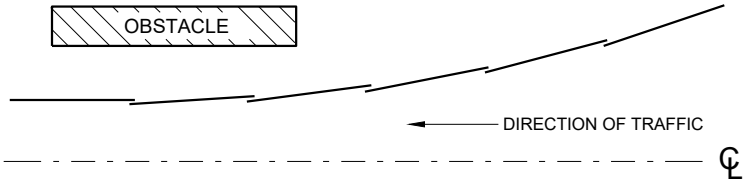


ALTERNATE BOLT HEAD

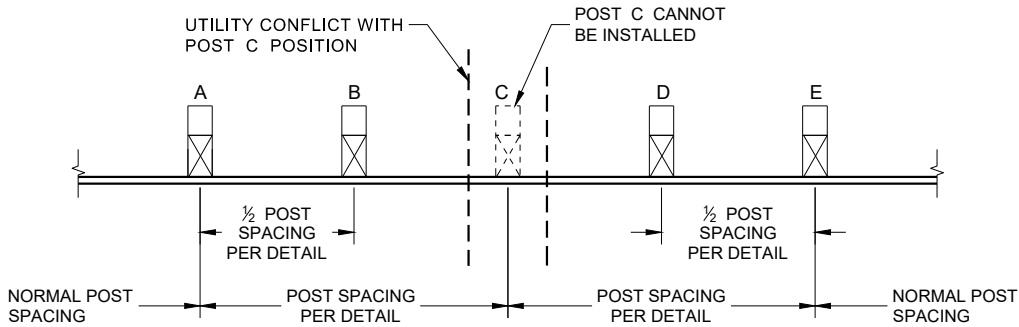


POST BOLT, SPLICE BOLT  
AND RECESS NUT

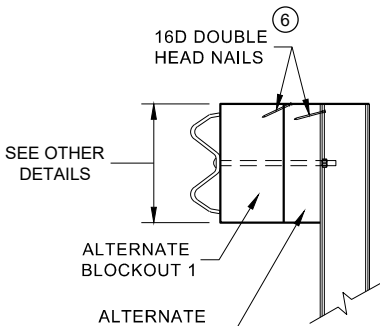
- 6 WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



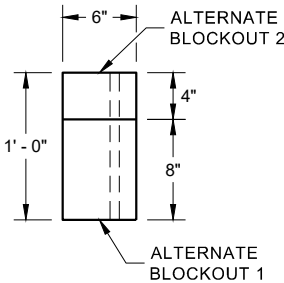
PLAN VIEW  
BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS  
UNDERGROUND OBSTRUCTION



SIDE VIEW



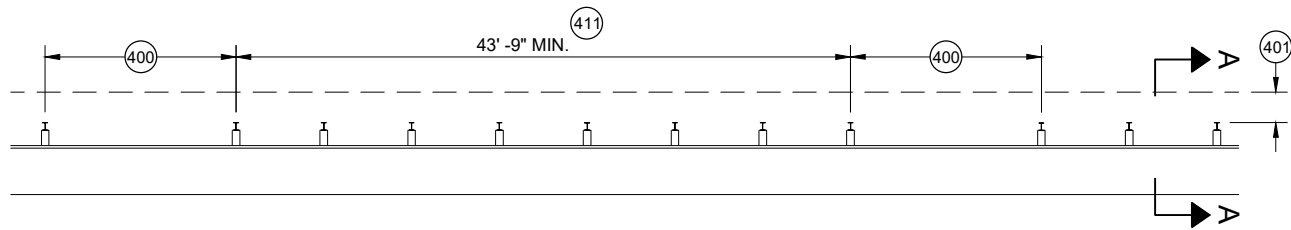
PLAN VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL

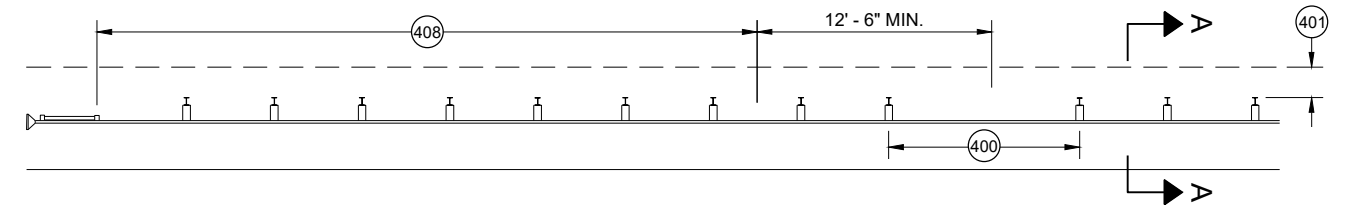
MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

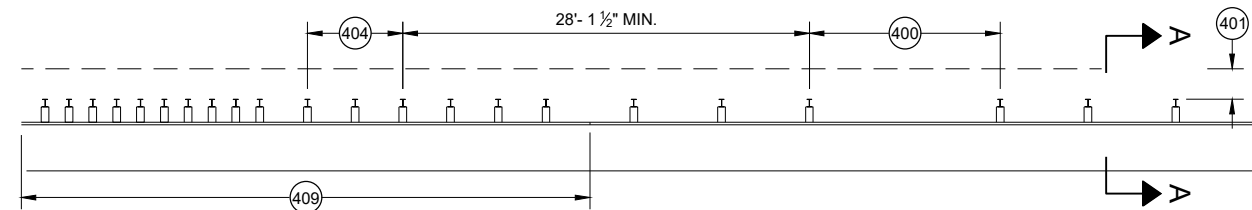




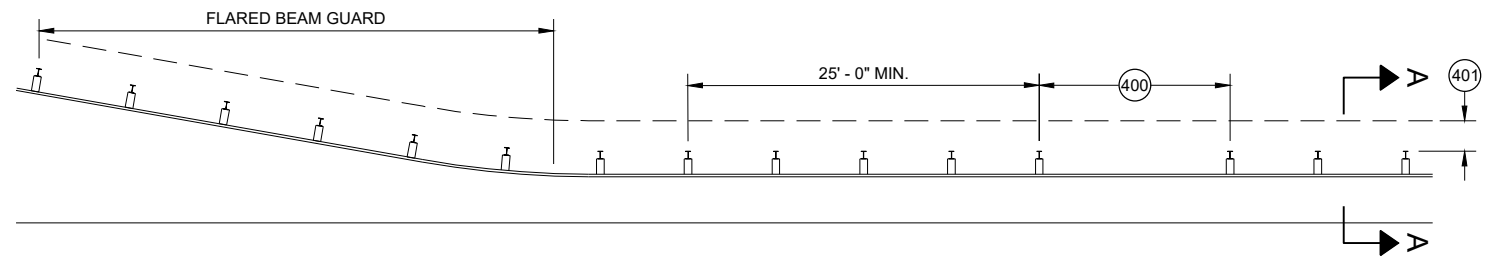
**MISSING POST IN MGS GUARDRAIL**



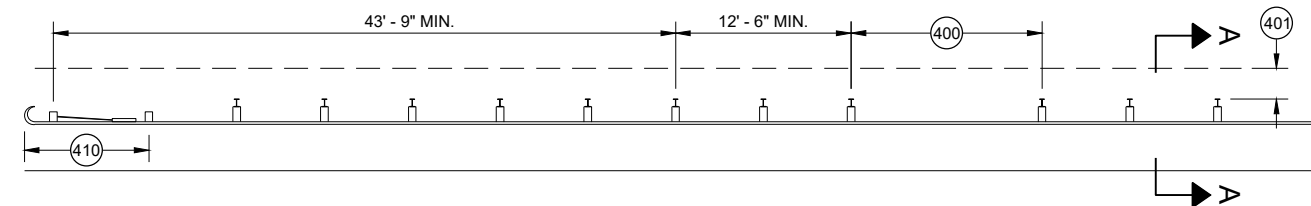
**MISSING POST IN MGS GUARDRAIL NEAR EAT**



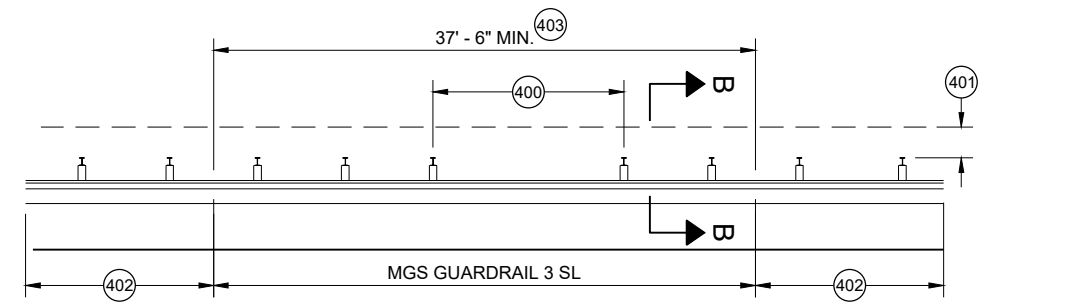
**MISSING POST IN MGS GUARDRAIL NEAR AN APPROACH TRANSITION**



**MISSING POST IN MGS GUARDRAIL NEAR FLARED BEAM GUARD**

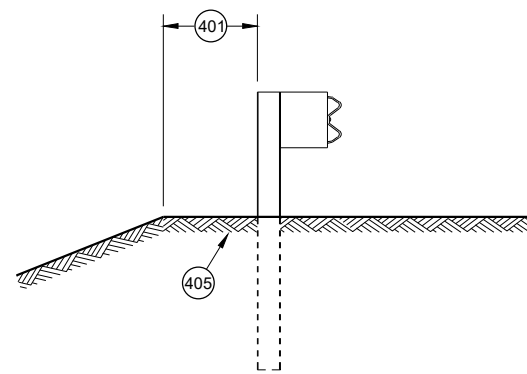


**MISSING POST IN MGS GUARDRAIL NEAR A TYPE 2 END TERMINAL**

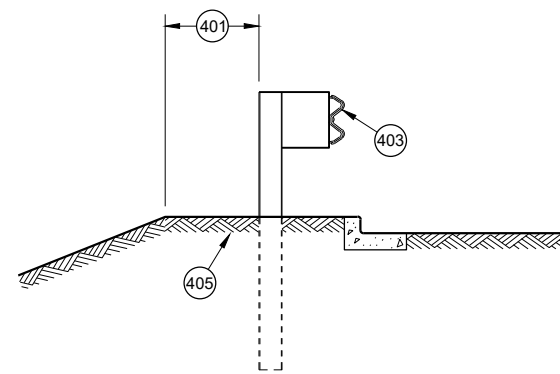


**MISSING POST IN SHORT SPAN MGS GUARDRAIL NEAR CURB (SL)**

- (400) MAX SPAN 12' - 6"
- (401) 2' MIN.
- (402) MGS GUARDRAIL 3
- (403) NESTING BEAM GUARD
- (404) ASYMMETRIC TRANSITION
- (405) SOIL WELL DRAINED AND COMPACTED
- (406) SEE OTHER DRAWINGS IN THIS SDD
- (407) SEE OTHER DRAWINGS FOR MIN. SPACING BETWEEN SPANS
- (408) SEE SDD 14B44
- (409) SEE SDD 14B45
- (410) SEE SDD 14B47
- (411) MINIMUM DISTANCE BETWEEN MISSING POST SPANS.



**SECTION A - A**



**SECTION B - B**

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2021  
DATE  
/S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT  
UNIT SUPERVISOR

FHWA



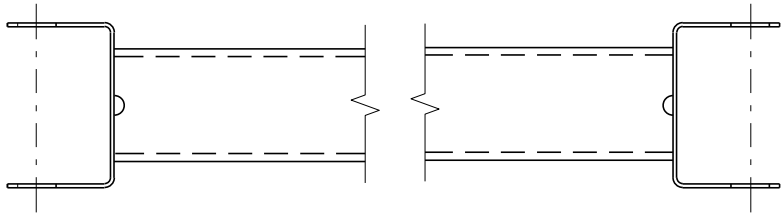
- A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE (HPL) AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
- E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.

DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.

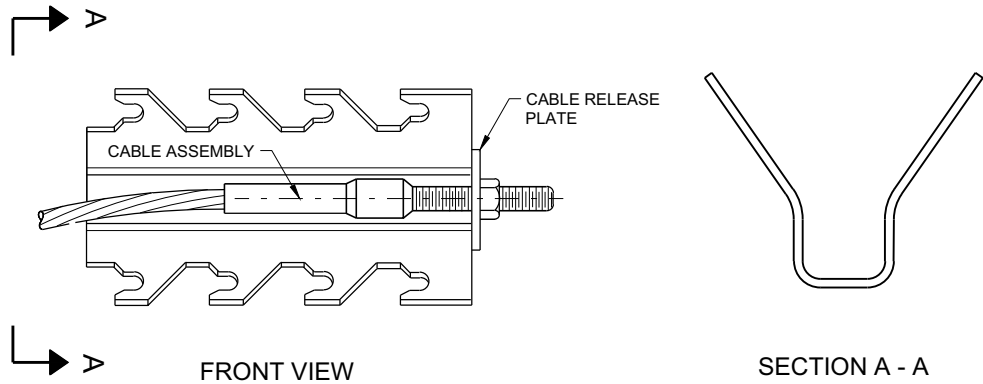
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION 60



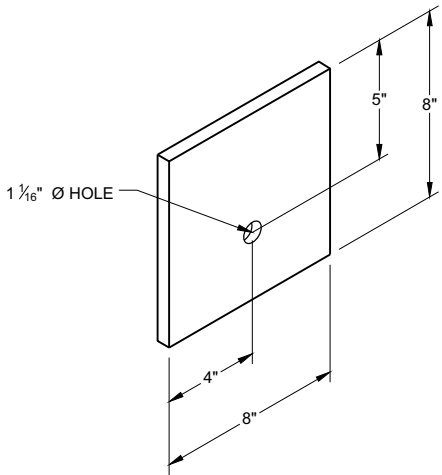


GENERIC GROUND STRUT<sup>9</sup> <sup>E</sup>

| BILL OF MATERIALS |                                                                                                                |
|-------------------|----------------------------------------------------------------------------------------------------------------|
| PART NO.          | DESCRIPTION<br>MATERIALS PROVIDED BY MGS EAT MANUFACTURER.<br>SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION. |
| ①                 | UPPER POST NO. 1 6" X 6" TUBE                                                                                  |
| ②                 | LOWER POST NO. 1                                                                                               |
| ③                 | WOOD CRT                                                                                                       |
| ④                 | WOOD BLOCKOUT                                                                                                  |
| ⑤                 | PIPE SLEEVE                                                                                                    |
| ⑥                 | BEARING PLATE                                                                                                  |
| ⑦                 | BCT CABLE ASSEMBLY                                                                                             |
| ⑧                 | ANCHOR CABLE BOX                                                                                               |
| ⑨                 | GROUND STRUT                                                                                                   |
| ⑩                 | PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.                                                                 |
| ⑪                 | STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED.<br>SECTIONS VARY IN LENGTH.                                  |
| ⑫                 | IMPACT HEAD                                                                                                    |
| ⑬                 | EAT MARKER POST - YELLOW<br>(SEE APPROVED PRODUCTS LIST)                                                       |
| ⑭                 | SOIL PLATE                                                                                                     |
| ⑮                 | UPPER POST NO. 2                                                                                               |
| ⑯                 | LOWER POST NO. 2                                                                                               |



GENERIC ANCHOR CABLE BOX<sup>9</sup> <sup>E</sup>

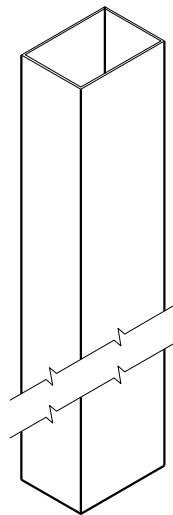


BEARING PLATE<sup>6</sup> <sup>E</sup>

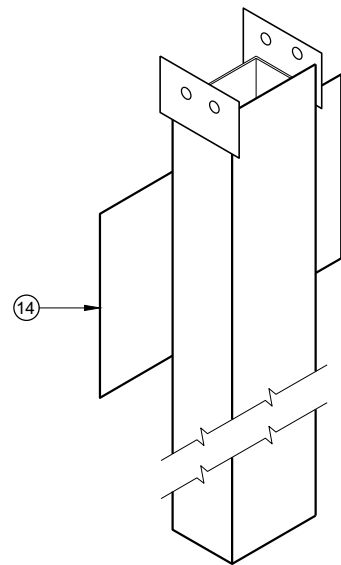
MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

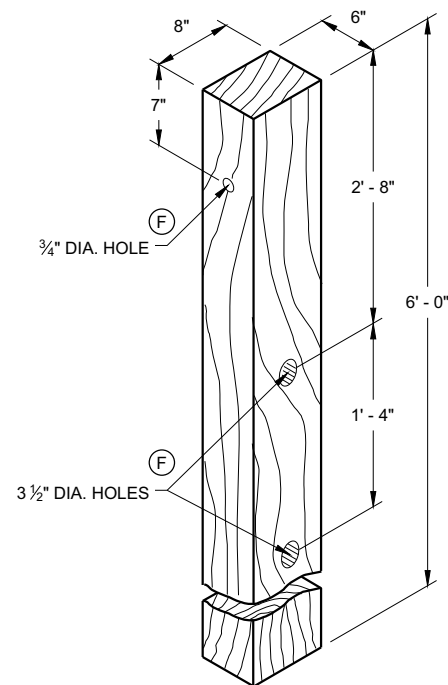




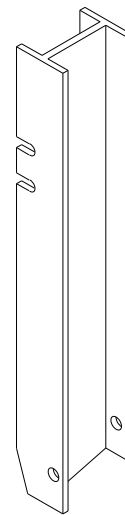
UPPER POST NO. 1 <sup>(1)</sup> (E)



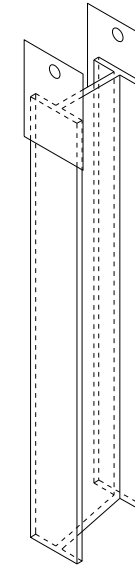
LOWER POST NO. 1 <sup>(2)</sup> (E)



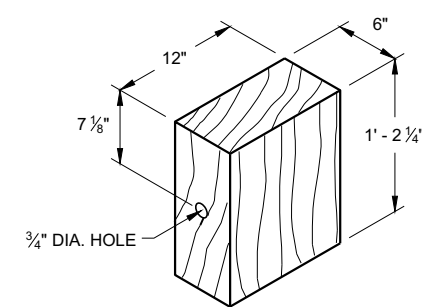
WOOD CRT POST <sup>(3)</sup> (E)  
POSTS NUMBER 3-9



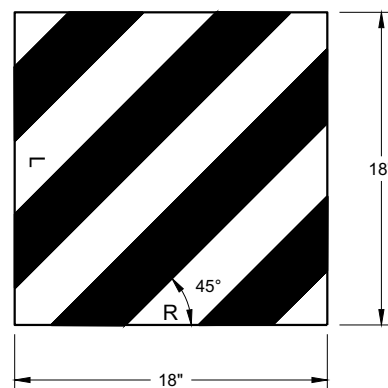
UPPER POST NO. 2 <sup>(15)</sup> (E)



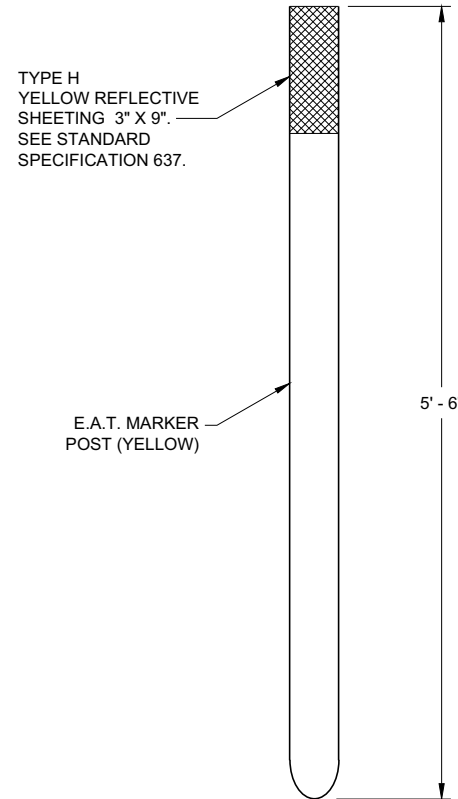
LOWER POST NO. 2 <sup>(16)</sup> (E)



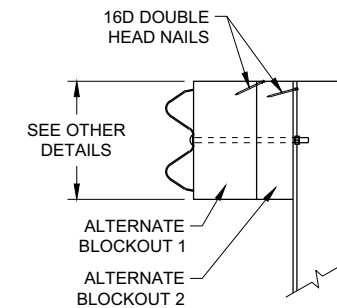
WOOD BLOCKOUT <sup>(4)</sup>  
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



W5 - 59  
REFLECTIVE SHEETING DETAIL <sup>(E)</sup>

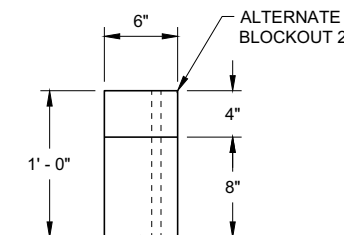


FRONT VIEW  
SIDE VIEW  
E.A.T. MARKER POST <sup>(13)</sup>



SIDE VIEW

ALTERNATE WOOD  
BLOCKOUT DETAIL



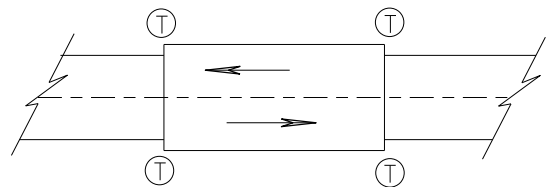
TOP VIEW

**MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)**

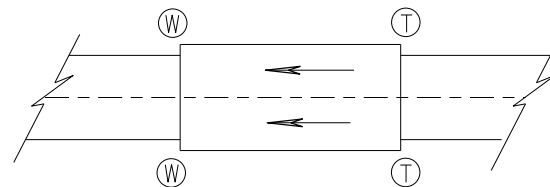
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
7/2018 DATE /S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR  
FHWA 62





**TWO WAY TRAFFIC**



**ONE WAY TRAFFIC**

(T) THRIE BEAM CONNECTION

(W) W-BEAM CONNECTION WHEN REQUIRED

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

**GENERAL NOTES**

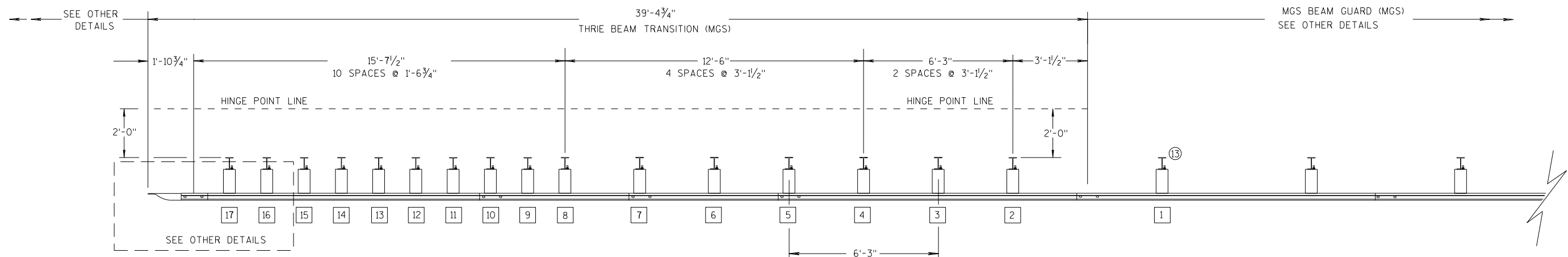
IF ROCK IS ENCOUNTERED, REMOVE ROCK TO FULL DEPTH OF POST PLUS 2 1/2", AND 12" DIAMETER AROUND POST. SEE 14B42 FOR MORE DETAILS.

TRANSITION USES STEEL POSTS ONLY.

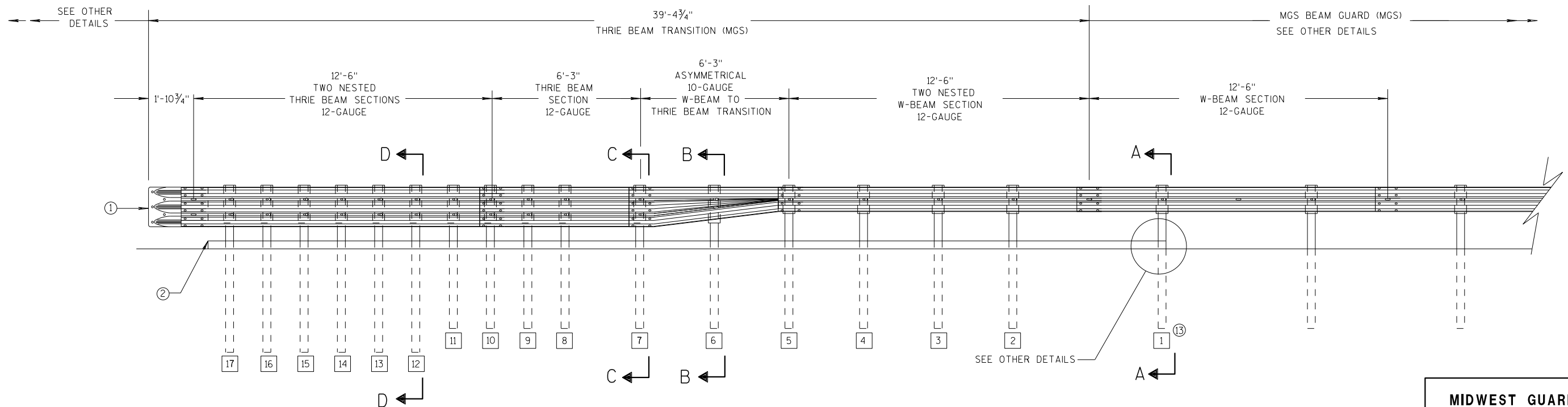
SEE STANDARD DETAIL DRAWING 14 B 42 FOR MORE INFORMATION.

POST 2 THROUGH 17 USES STEEL POST ONLY

- ① BRIDGE RAILING TYPE "W" DOES NOT REQUIRE A TERMINAL CONNECTOR.
- ② OPTIONAL CURB AND GUTTER OR DRAINAGE FEATURE SEE PLAN FOR INFORMATION.
- ⑬ STEEL OR WOOD POST IS ACCEPTABLE AT POST 1. SEE SDD14B42



**PLAN VIEW**



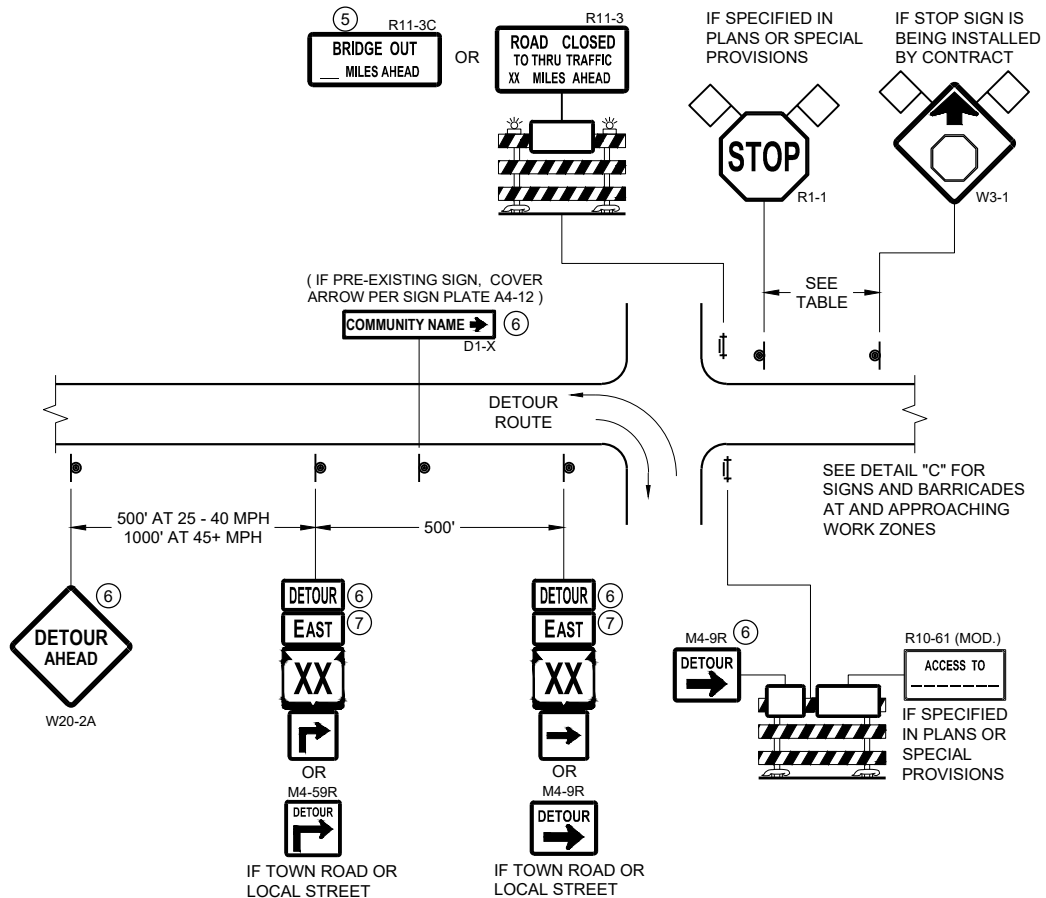
**ELEVATION VIEW**

**MIDWEST GUARDRAIL SYSTEM THRIE BEAM TRANSITION**

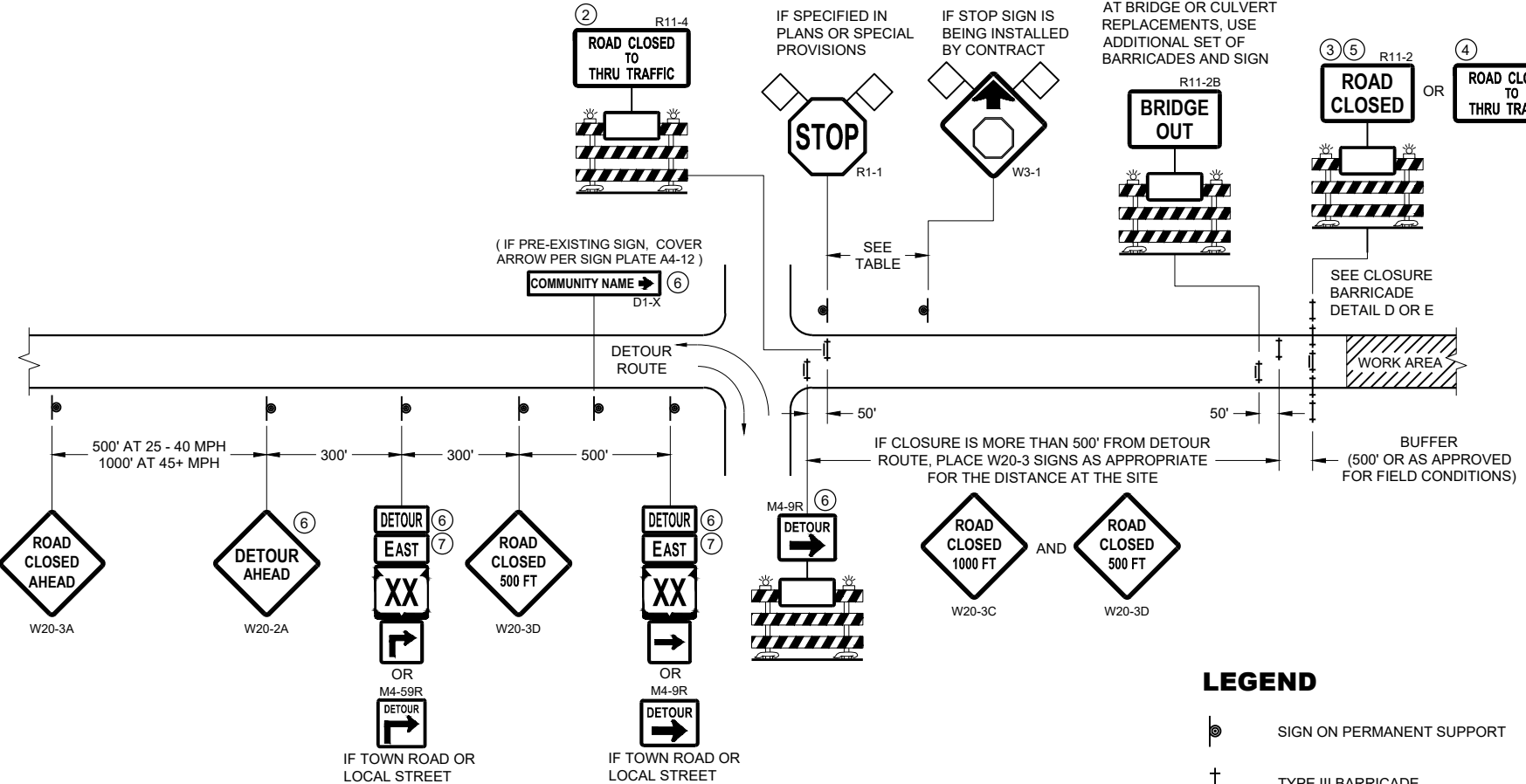
**MIDWEST GUARDRAIL SYSTEM  
THRIE BEAM TRANSITION (MGS)**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION





**DETAIL A**  
**MAINLINE CLOSURE WITH POSTED DETOUR**  
WORK ZONE GREATER THAN OR EQUAL TO ½ MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )



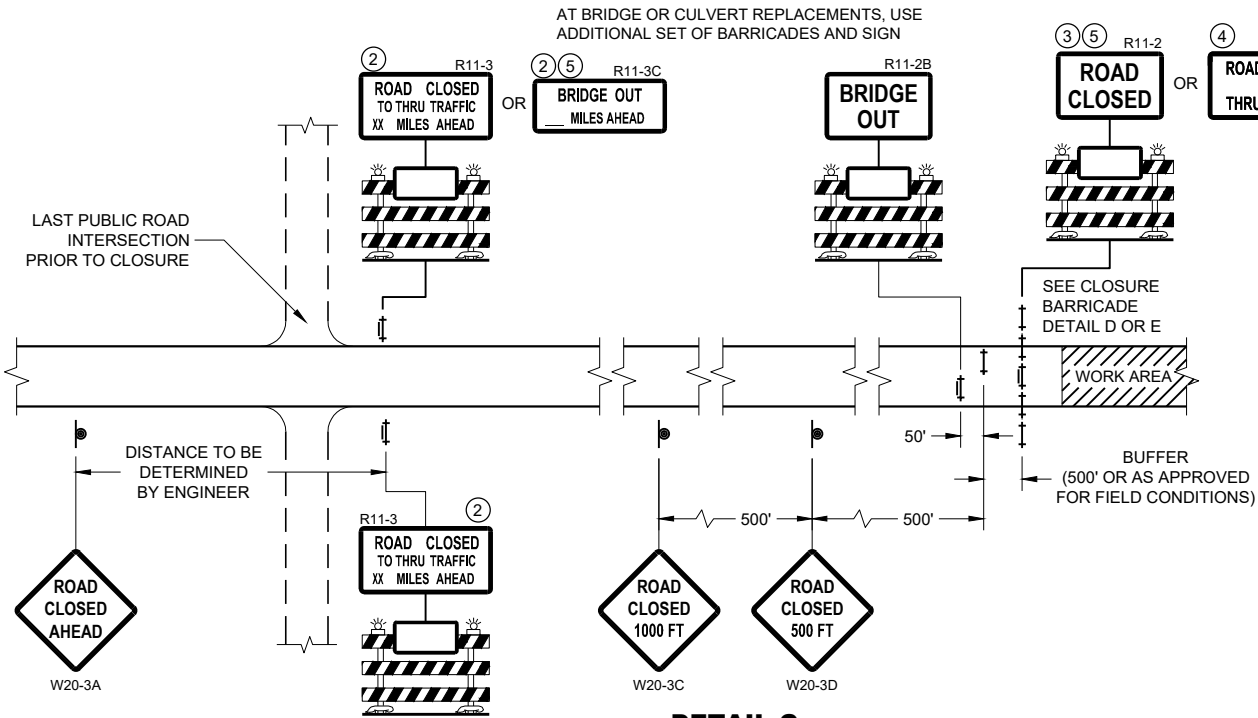
**DETAIL B**  
**MAINLINE CLOSURE WITH POSTED DETOUR**  
WORK ZONE LESS THAN ½ MILE FROM  
DETOUR ROUTE ( 1000 FEET IF URBAN )

- LEGEND**
- SIGN ON PERMANENT SUPPORT
  - TYPE III BARRICADE
  - TYPE III BARRICADE WITH ATTACHED SIGN
  - TYPE "A" WARNING LIGHT (FLASHING)
  - WORK AREA
  - FLAGS, 16" X 16" MIN. (ORANGE)

- DETOUR M4 - 8
- EAST M3 - X
- XX M1 - 4 OR XX M1 - 6 OR COUNTY X M1 - 5A
- OR M05 - 1 OR M06 - 1

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

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



**DETAIL C**  
**MAINLINE CLOSURE, NO POSTED DETOUR**

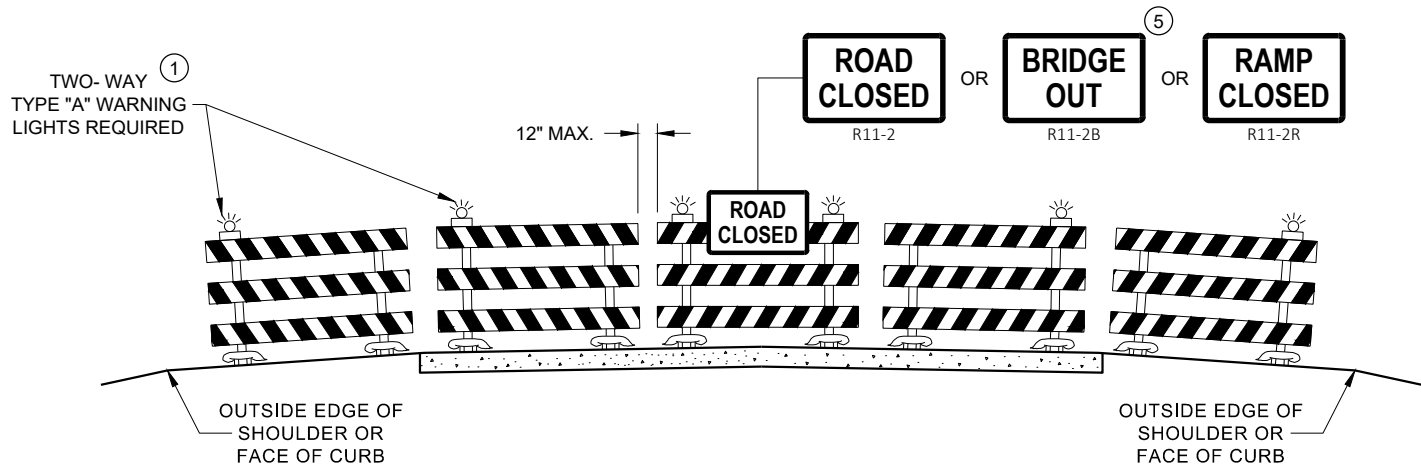
**BARRICADES AND SIGNS  
FOR MAINLINE CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

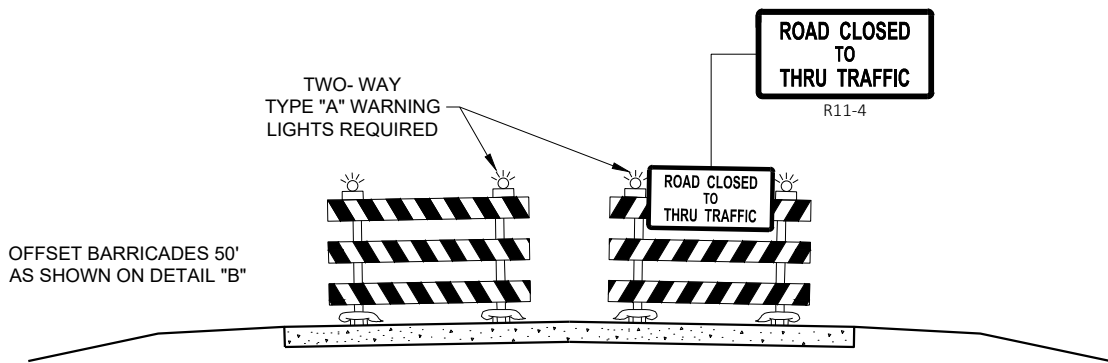
APPROVED  
May 2023 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 64

FHWA





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



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

SEE SDD 15C2 - SHEET "a" FOR LEGEND

**GENERAL NOTES**

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

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

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

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

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

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

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

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

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

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

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

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

**BARRICADES AND SIGNS**  
**FOR**  
**VARIOUS CLOSURES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 65

FHWA



GENERAL NOTES

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

THE SPACING BETWEEN TRAFFIC CONTROL SIGNS SHOULD BE ADJUSTED TO NOT CONFLICT WITH AND SHOULD PROVIDE A MINIMUM OF 200 FEET (500 FEET DESIRABLE) CLEARANCE TO EXISTING SIGNS THAT WILL REMAIN IN PLACE.

ALL SIGNS ARE 48" X 48" UNLESS OTHERWISE NOTED. IF NECESSARY DUE TO SPACE CONSTRAINTS, 36"X36" SIGNS MAY BE USED INSTEAD OF 48" X 48" SIGNS.

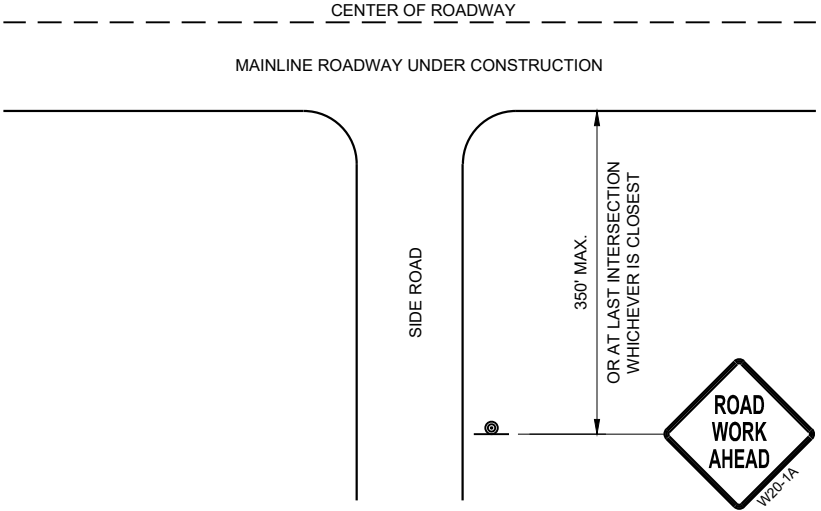
SIGNS THAT WILL BE IN PLACE LESS THAN SEVEN CONTINUOUS DAYS AND NIGHTS MAY BE MOUNTED ON PORTABLE SUPPORTS.

IF A "STOP" SIGN MUST BE REMOVED FOR A WORK OPERATION, A TEMPORARY "STOP" SIGN SHALL BE PLACED PRIOR TO THE SIGN REMOVAL, OR A FLAGGER SHALL BE PROVIDED UNTIL THE SIGN IS REESTABLISHED.

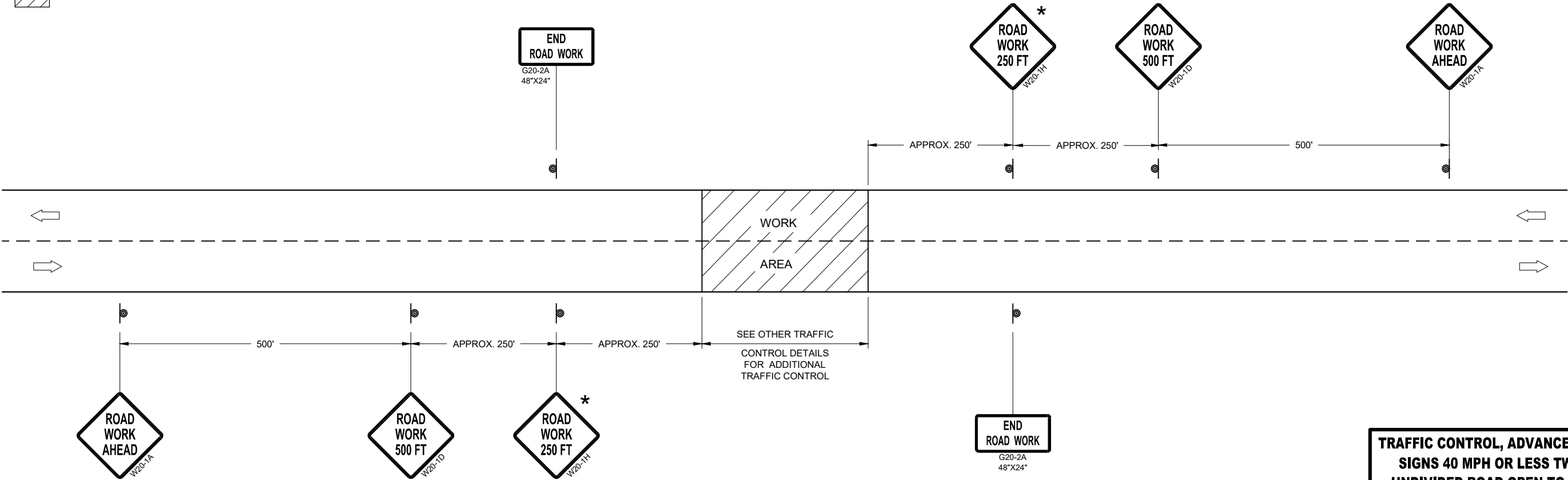
\* THE THIRD W20-1 SIGN IS REQUIRED ONLY IF THERE IS AN INTERSECTION BETWEEN THE "ROAD WORK 500 FEET" SIGN AND THE WORK ZONE. ADJUST THE PLACEMENT OF THIS SIGN BASED ON INTERSECTION LOCATION AND OTHER FIELD CONDITIONS.

LEGEND

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



TYPICAL SIDE ROAD APPROACH  
WARNING SIGN DETAIL



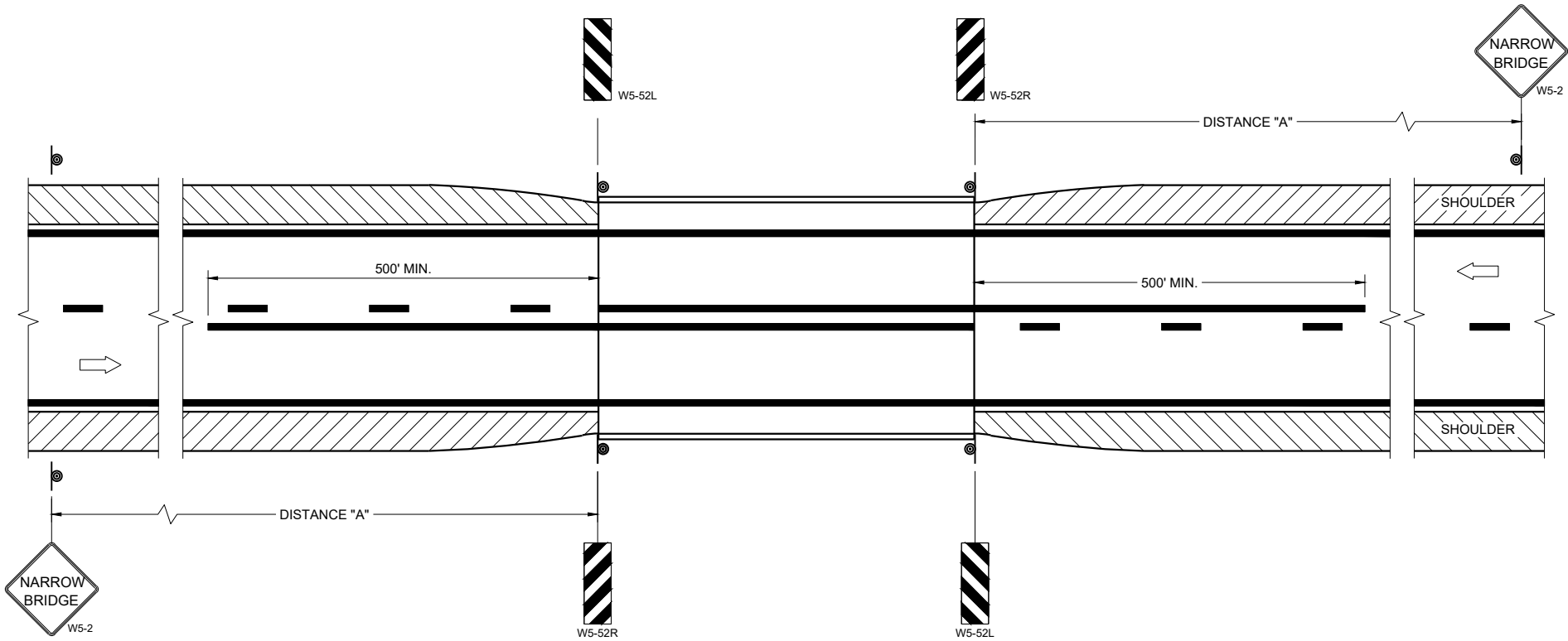
TRAFFIC CONTROL, ADVANCE WARNING SIGNS 40MPH OR LESS

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

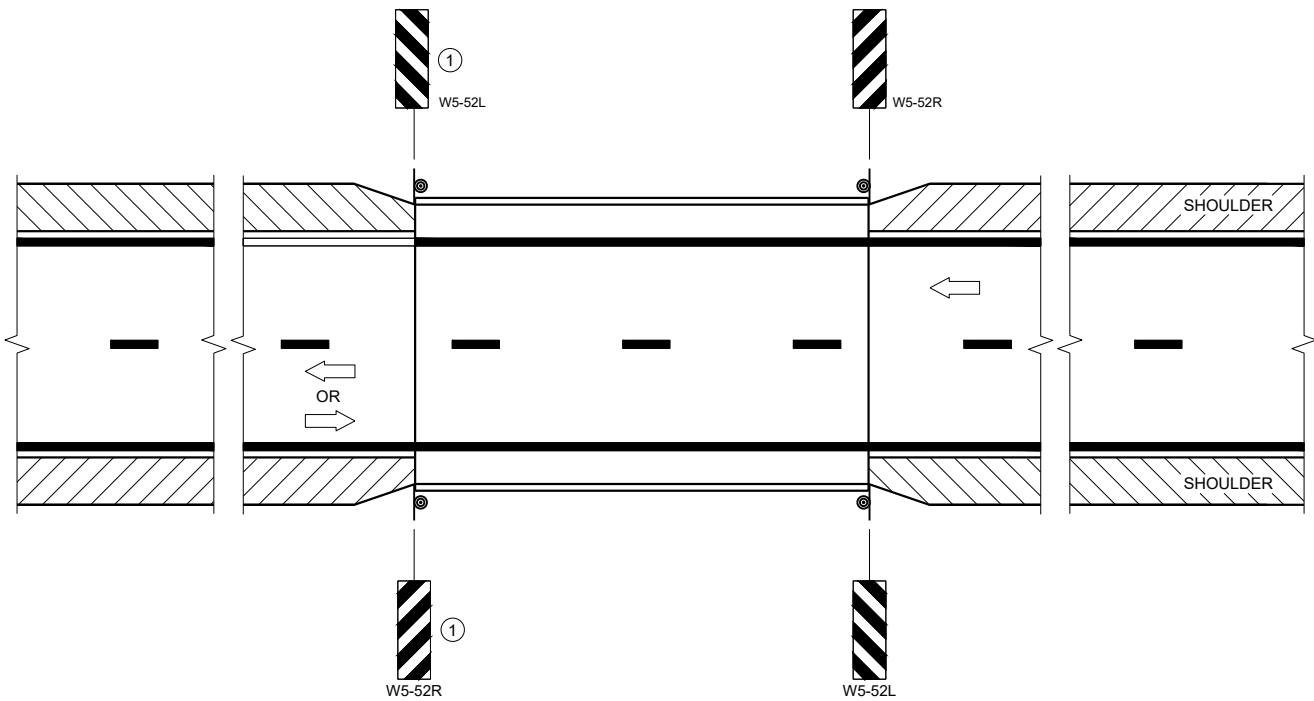
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
July 2018 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 66  
FHWA





**SITUATION 1**  
WARRANTING CRITERIA:  
BRIDGE WIDTH IS AT LEAST 16 FEET BUT LESS THAN 24 FEET.



**SITUATION 2**  
WARRANTING CRITERIA:  
1. BRIDGE WIDTH IS AT LEAST 24 FEET AND  
2. BRIDGE SHOULDER WIDTH IS LESS THAN 6 FEET

**GENERAL NOTES**

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

LOCATE W5-52 SIGN POST(S) BEHIND GUARDRAIL WHEN PRESENT.

PLACE THE EDGE OF THE W5-52 SIGN IN LINE WITH FACE OF CURB OR PARAPET.

ON BRIDGE ONLY PROJECTS, PLACE 300 FEET OF EDGELINE.

OMIT EDGELINES ON ROADWAYS WITHOUT EXISTING EDGELINES.

① OMIT ON ONE-WAY TRAVELED WAYS.

**LEGEND**

● SIGN ON PERMANENT SUPPORT

➡ DIRECTION OF TRAFFIC

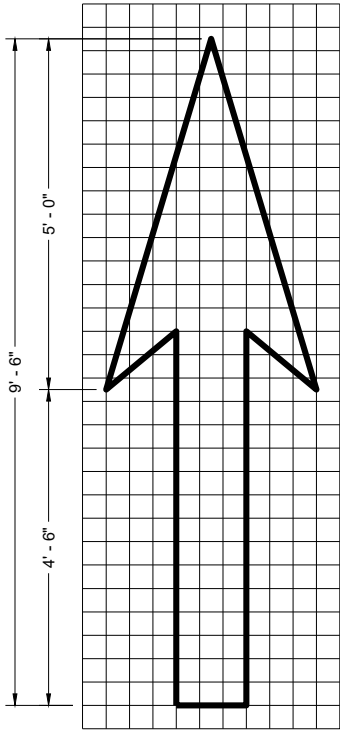
**DISTANCE TABLE**

| POSTED OR 85TH PERCENTILE SPEED | DISTANCE "A" |
|---------------------------------|--------------|
| 25                              | 150'         |
| 30                              | 200'         |
| 35                              | 250'         |
| 40                              | 300'         |
| 45                              | 400'         |
| 50                              | 550'         |
| 55                              | 700'         |

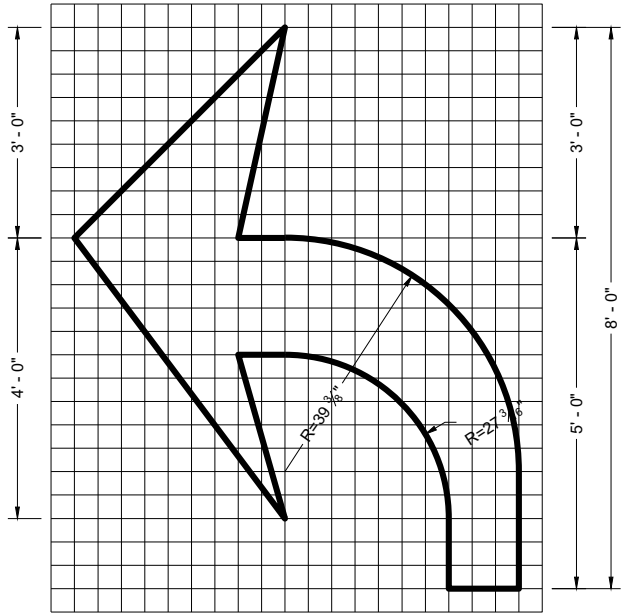
**SIGNING AND MARKING  
FOR TWO LANE BRIDGES**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

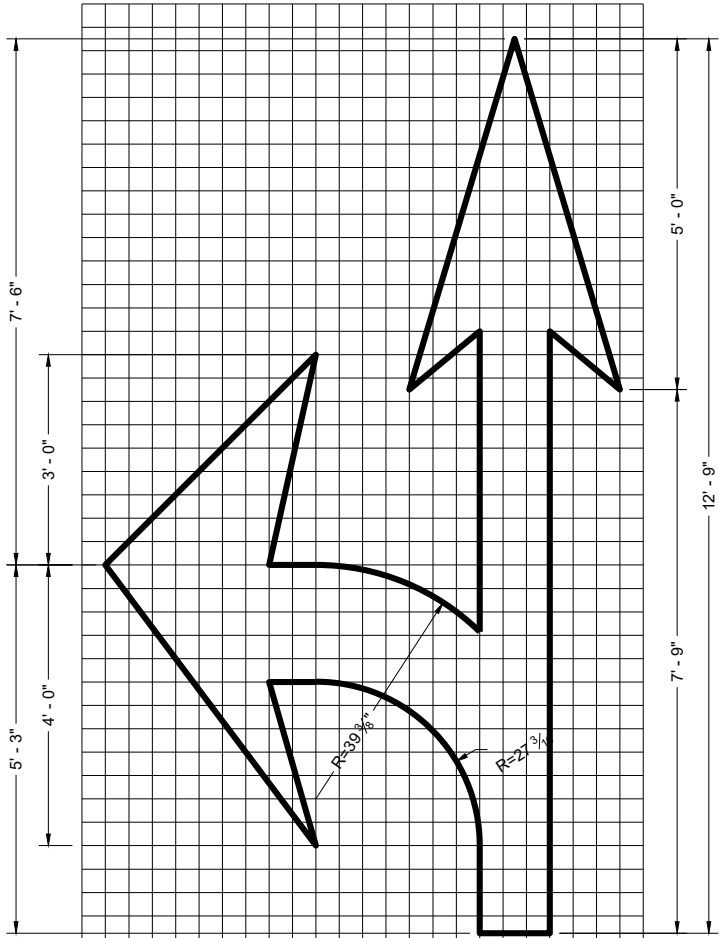
APPROVED  
May 2023 /S/ Jeannie Silver  
DATE Statewide Pavement Marking Engineer



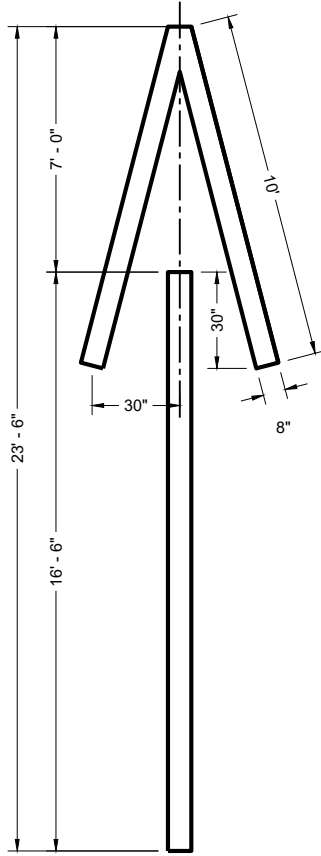
TYPE 1



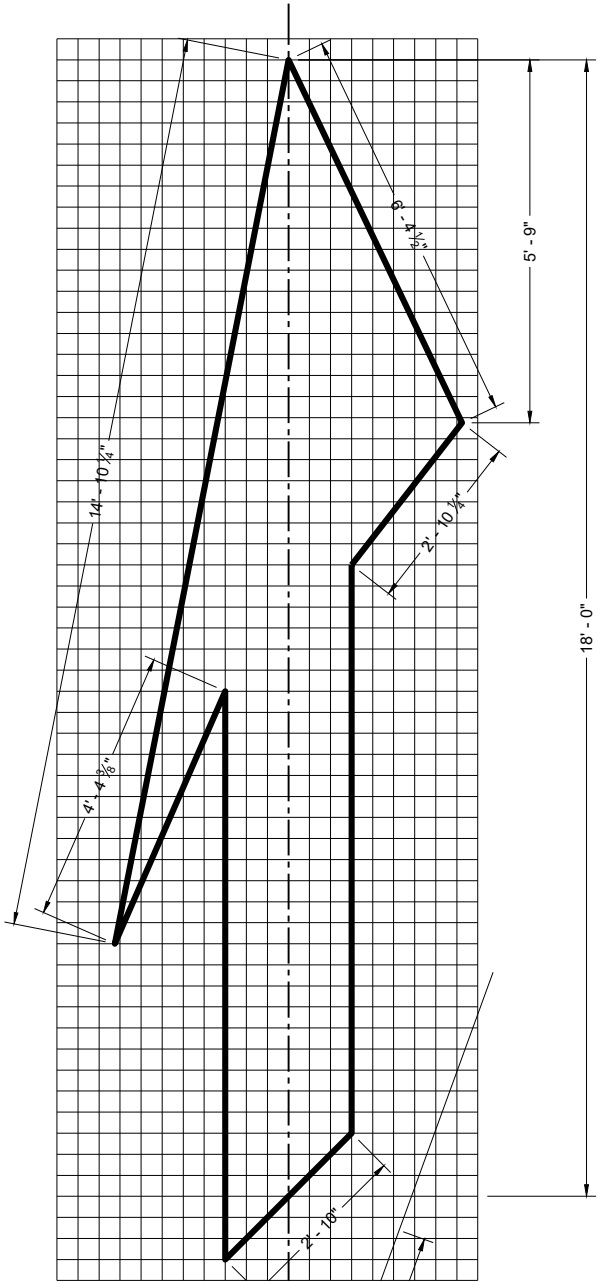
TYPE 2



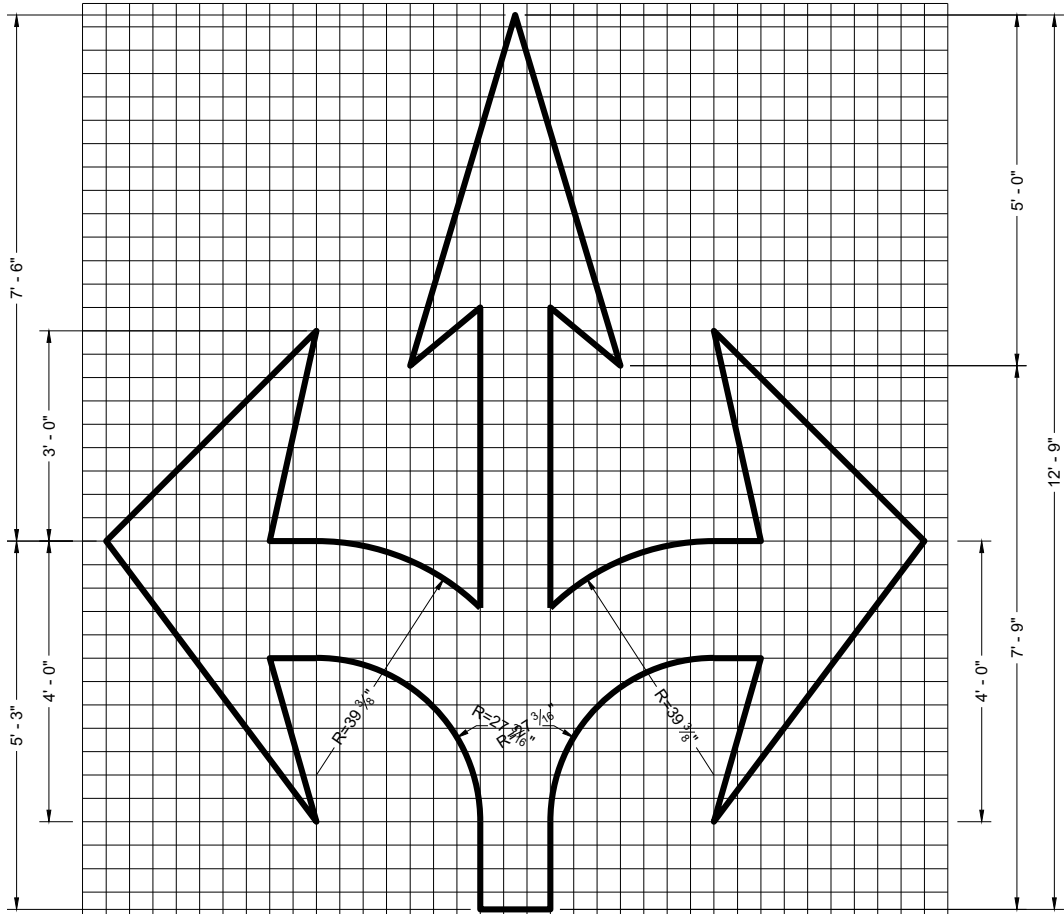
TYPE 3



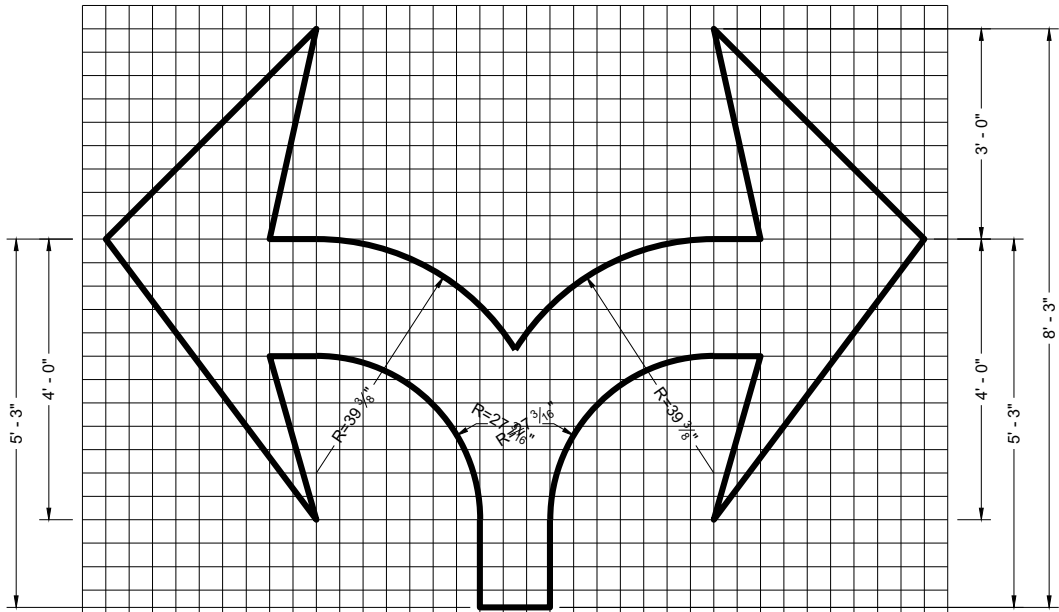
TYPE 4



TYPE 5 LANE DROP ARROW



TYPE 6



TYPE 7

GENERAL NOTES

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

PAVEMENT MARKING ARROWS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2024 /S/ Matthew Rauch  
DATE STATE SIGNING AND MARKING ENGINEER

FHWA



**SDD 15C08-23a**



## PERMANENT PAVEMENT MARKING

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

- ① LOCATE THE NO PASSING ZONE W14-3 SIGN WITHIN 50 FEET OF THE "T" MARKING
- ② MEASURE FROM EDGE OF MARKING TO JOINT LINE. THIS DOES NOT INCLUDE SPACE NEEDED FOR GROOVING OPERATIONS.

## LEGEND

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

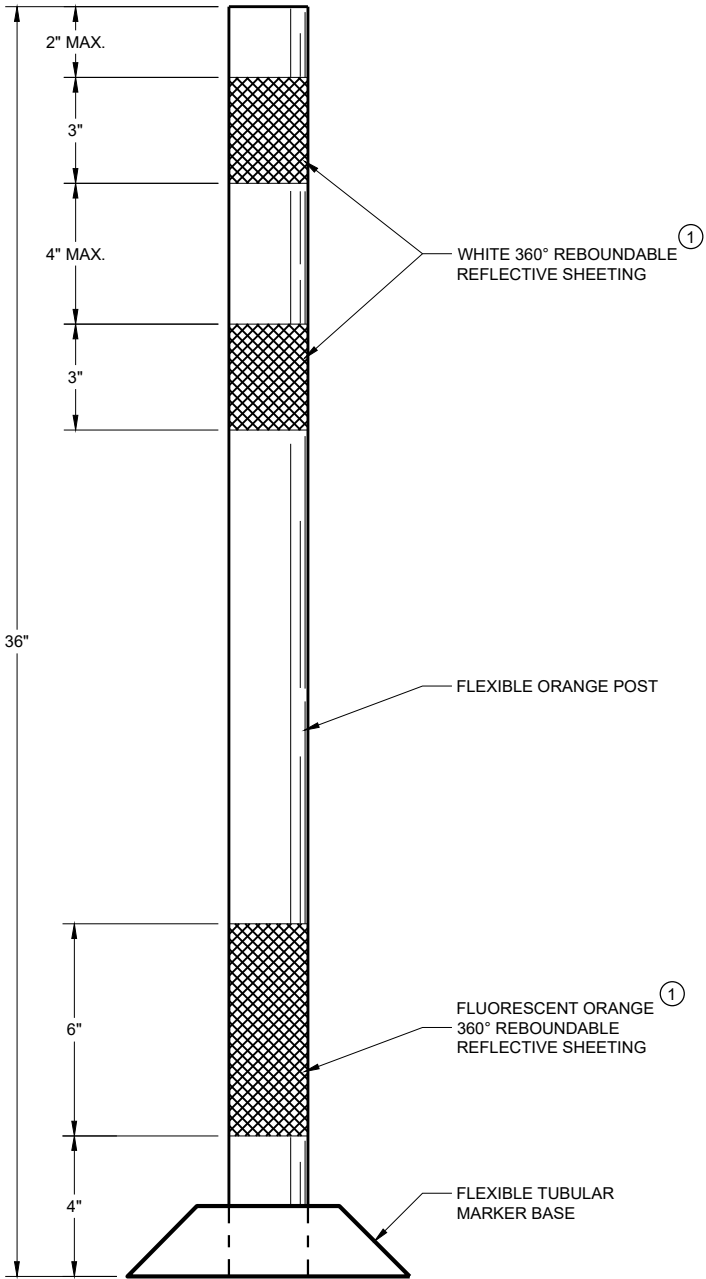
## PERMANENT LONGITUDINAL PAVEMENT MARKINGS

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2023  
DATE

/S/ Jeannie Silver  
Statewide Pavement Marking Engineer

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FLEXIBLE TUBULAR  
MARKER POST  
WORK ZONE

GENERAL NOTES

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

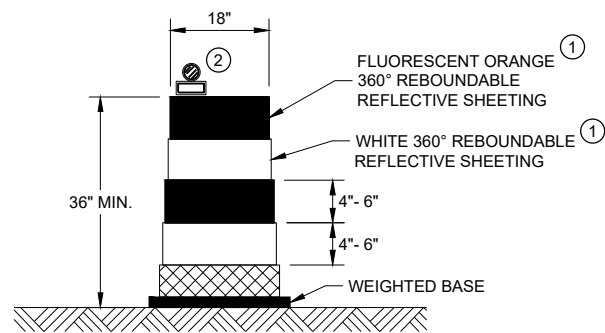
SURFACE MOUNTED BASES SHALL BE FURNISHED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS TO BE COMPATIBLE WITH FLEXIBLE TUBULAR MARKER POSTS TO A SIZE AND SHAPE THAT WILL PROVIDE A STABLE POST FOUNDATION WHEN SECURED TO THE PAVEMENT.

THE ASPHALTIC ADHESIVE OR BUTYL PAD FURNISHED SHALL BE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS, UNLESS DIRECTED BY THE ENGINEER TO USE BOLTS.

① REFLECTIVE SHEETING SHALL FOLLOW THE REQUIREMENTS IN THE APPROVED PRODUCTS LISTING FOR SIGN SHEETING.

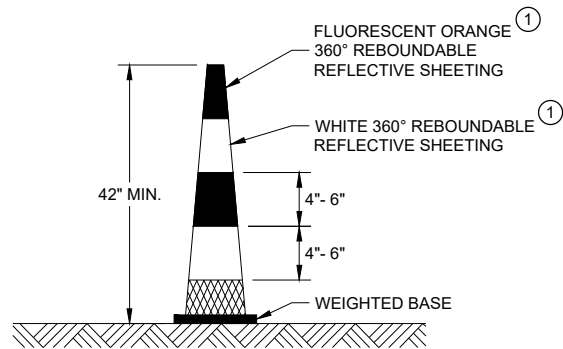
|                                                         |                                             |
|---------------------------------------------------------|---------------------------------------------|
| CHANNELIZING DEVICES<br>FLEXIBLE TUBULAR<br>MARKER POST |                                             |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION      |                                             |
| APPROVED<br>November 2022<br>DATE                       | /S/ Andrew Heidtke<br>WORK ZONE ENGINEER 70 |
| FHWA                                                    |                                             |





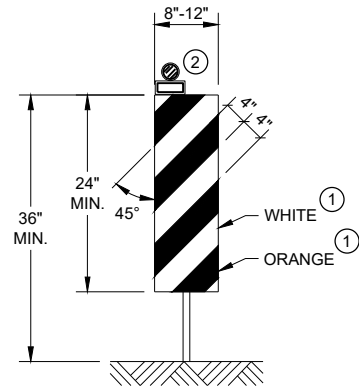
**DRUM**

BALLAST WIDTHS  
RANGE FROM 24"-36"



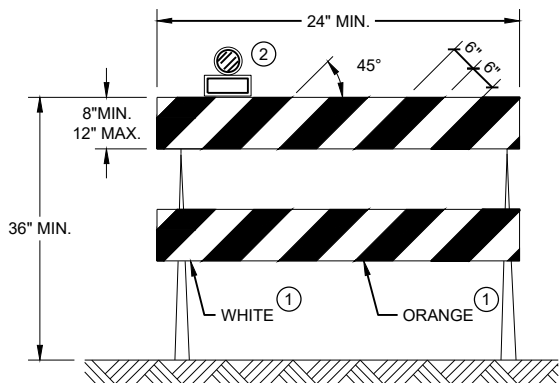
**42" CONE**

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



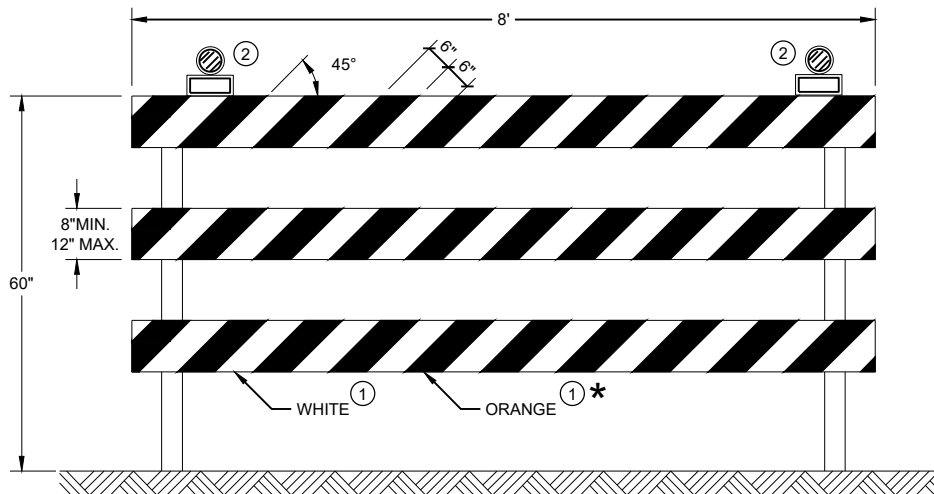
**VERTICAL PANEL**

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



**TYPE II BARRICADE**

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



**TYPE III BARRICADE**

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

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

**GENERAL NOTES**

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

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

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
November 2022 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER  
FHWA 71

LEGEND

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

GENERAL NOTES

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

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

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

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

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

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

FLAGGING

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

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

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

TEMPORARY PORTABLE RUMBLE STRIPS

UTILIZE TEMPORARY PORTABLE RUMBLE STRIPS ON ALL FLAGGING OPERATIONS.

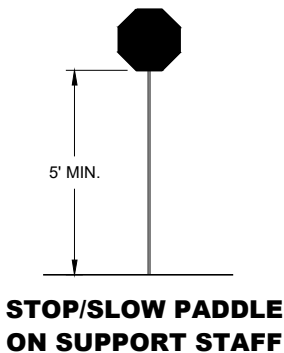
- EACH TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE RUMBLE STRIPS PLACED TRANSVERSE ACROSS THE LANE AT THE LOCATIONS SHOWN. WITHIN EACH ARRAY, SPACING BETWEEN RUMBLE STRIPS SHALL BE 15 FEET ON CENTER

ONLY USE TEMPORARY PORTABLE RUMBLE STRIPS FROM THE APPROVED PRODUCTS LIST.

INSTALL TEMPORARY RUMBLE STRIPS PER MANUFACTURER'S RECOMMENDATIONS.

PLACE ADVANCE SIGNING PRIOR TO INSTALLING TEMPORARY RUMBLE STRIPS.

DO NOT INSTALL TEMPORARY PORTABLE RUMBLE STRIPS ON GRAVEL, MILLED SURFACES, OR ASPHALT THAT HAS BEEN PAVED LESS THAN 12 HOURS.

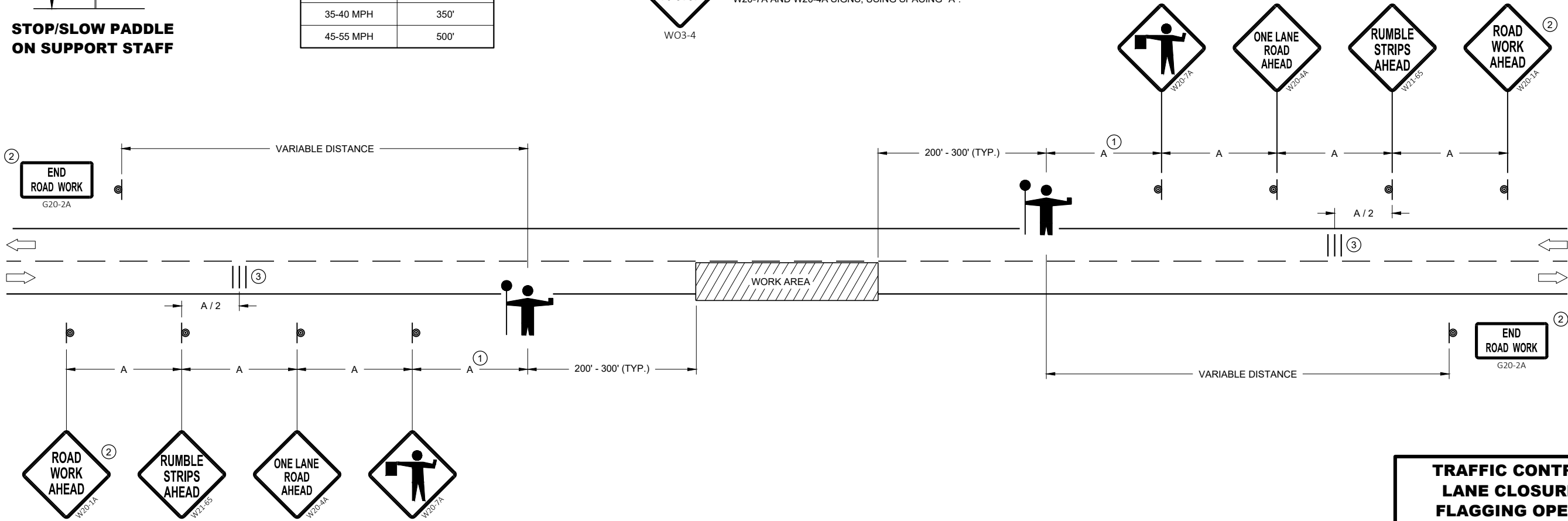


SIGN AND TEMPORARY RUMBLE STRIP ARRAY SPACING TABLE

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



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



TRAFFIC CONTROL FOR  
LANE CLOSURE WITH  
FLAGGING OPERATION

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2022 /S/ Andrew Heidtke  
DATE WORK ZONE ENGINEER 72

FHWA



|                                                                                   |                                                   |
|-----------------------------------------------------------------------------------|---------------------------------------------------|
|  | SIGN ON PERMANENT SUPPORT                         |
|  | TRAFFIC CONTROL CONE 42-INCH                      |
|  | TRAFFIC CONTROL DRUM                              |
|  | TEMPORARY PORTABLE RUMBLE STRIP ARRAY             |
|  | DIRECTION OF TRAFFIC                              |
|  | WORK AREA                                         |
| <b>AFAD</b>                                                                       | <b>AUTOMATED FLAGGER ASSISTANCE DEVICE (AFAD)</b> |

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

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

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

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

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

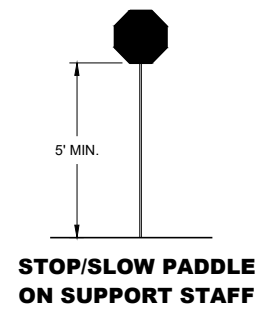
WHEN A SIDE ROAD OR RAMP INTERSECTS THE FACILITY ON WHICH THE WORK IS BEING PERFORMED, ADDITIONAL TRAFFIC CONTROLS SHALL BE PROVIDED AS SPECIFIED IN THE PLANS AND/OR THE SPECIAL PROVISIONS OR AS APPROVED BY THE ENGINEER.

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

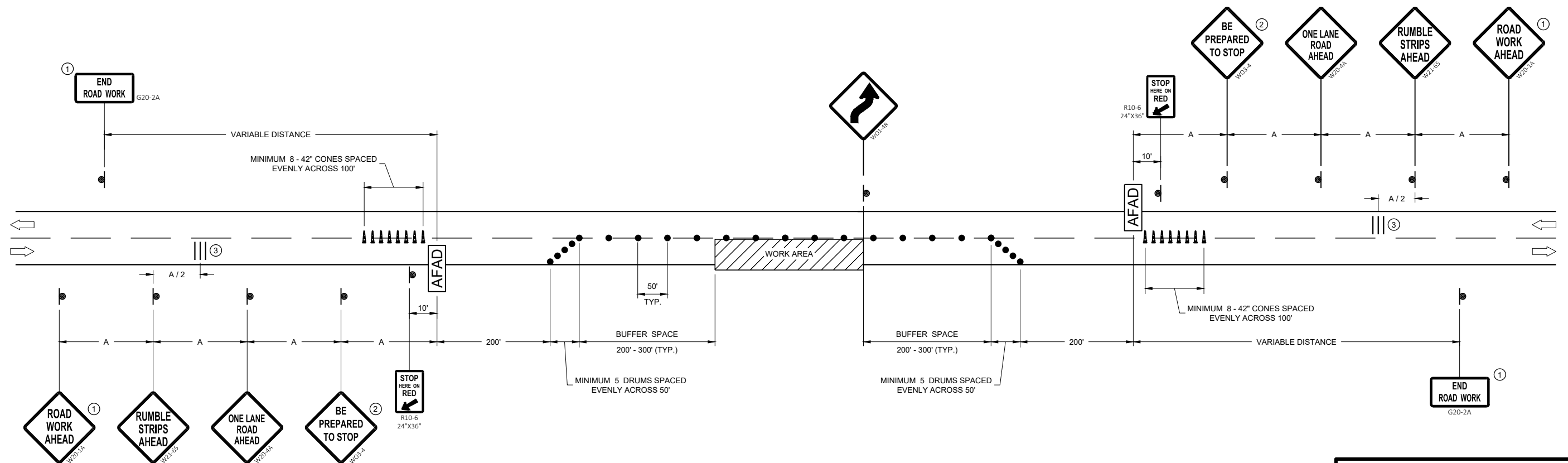
WHEN THE DISTANCE BETWEEN FLAGGERS EXCEEDS 2 MILES, A PILOT CAR IS REQUIRED. WHEN CURVES REDUCE SIGHT DISTANCE BELOW 400', A PILOT CAR IS REQUIRED.

- ① SIGN NOT REQUIRED IF FLAGGING OPERATION OCCURS WITHIN A SIGNED ROAD WORK ZONE AREA.
- ② IF FLAGGERS ARE PHYSICALLY NEEDED TO FLAG, REPLACE W03-4 SIGNS WITH W20-7A SIGNS.

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



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

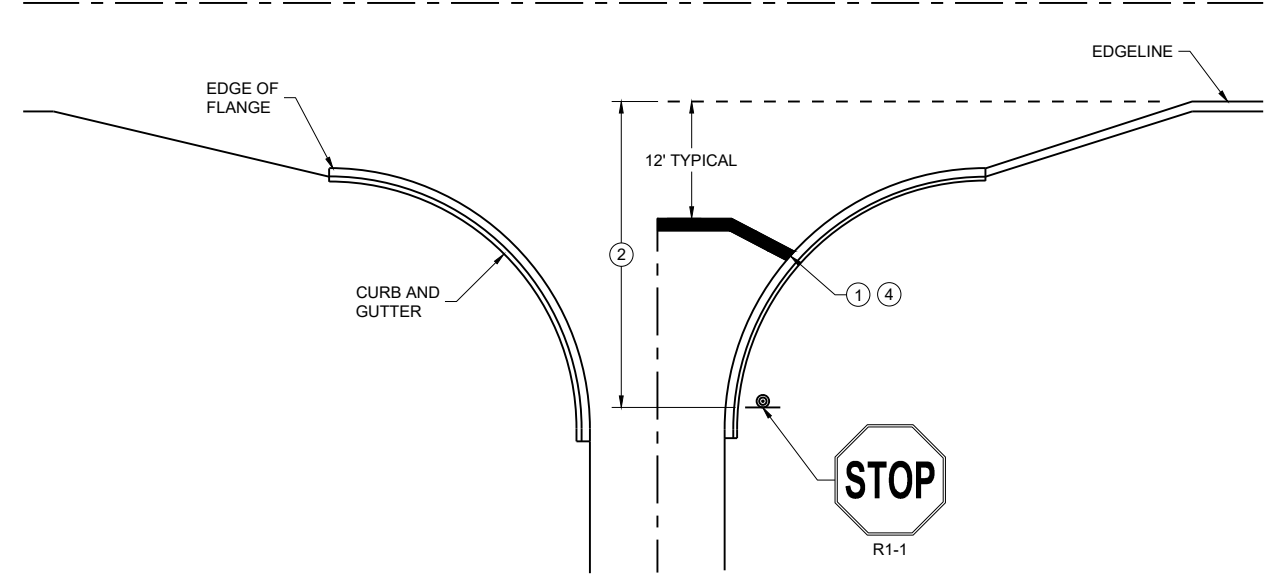


**TRAFFIC CONTROL, LANE  
CLOSURE WITH AUTOMATED  
FLAGGER ASSISTANCE DEVICE**

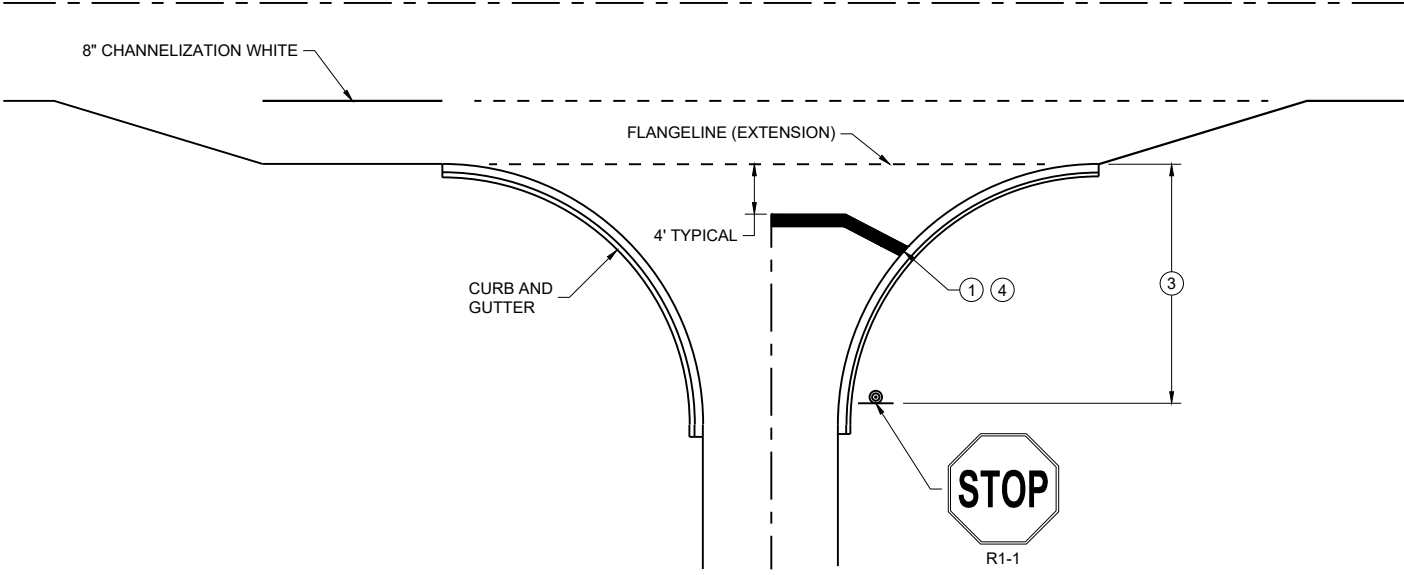
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
May 2022 /S/ Andrew Heidtke  
 DATE WORK ZONE ENGINEER 73

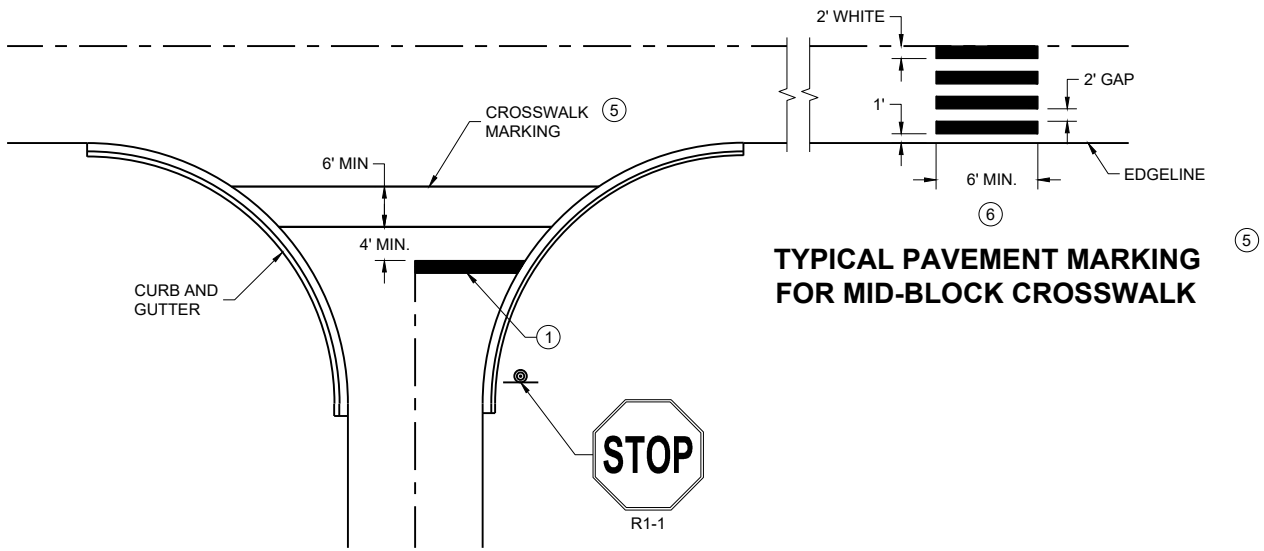
FHWA



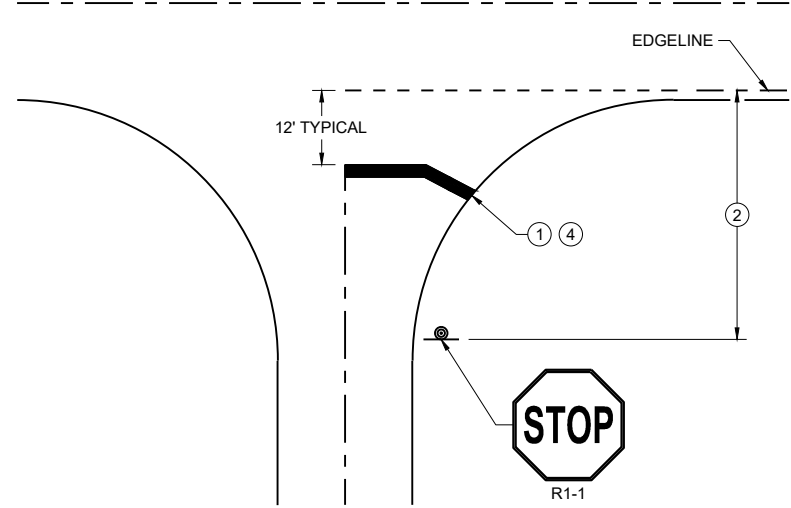
TYPICAL STOP LINE PAVEMENT MARKING  
WITH CURB AND GUTTER



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



TYPICAL STOP LINE PAVEMENT MARKING  
FOR SIDE ROADS WITH CROSSWALK MARKING



TYPICAL STOP LINE PAVEMENT MARKING  
WITHOUT CURB AND GUTTER

GENERAL NOTES

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

- ① 18-INCH STOP LINES MAY BE DELETED OR ADDED BY THE REGION MARKING ENGINEER BASED ON VISIBILITY AND SIGHT LINES.
- ② NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 40 FEET FROM THE EDGELINE.
- ③ NO STOP LINE IS REQUIRED IF STOP SIGN IS LESS THAN OR EQUAL TO 30 FEET FROM THE FLANGE LINE EXTENSION.
- ④ MOVE CLOSER TO THE EDGE OF TRAVEL LINE AS NEEDED FOR VISIBILITY AND SIGHT LINES (NO CLOSER THAN 4 FEET).
- ⑤ LADDER BAR CROSSWALKS SHOULD ONLY BE USED FOR MID BLOCK CROSSINGS. USE 2 - 6" TRANSVERSE LINES.
- ⑥ POSTED SPEED LIMITS OF 40 MPH OR GREATER USE A MINIMUM WIDTH OF 8' FOR MIDBLOCK CROSSWALKS

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

FHWA 74



LEGEND

- V1

WORK VEHICLE
- V2

SHADOW VEHICLE
- 

TRUCK MOUNTED ATTENUATOR (TMA)
- 

FLASHING ARROW PANEL (CAUTION)
- 

WORK AREA
- 

DIRECTION OF TRAFFIC

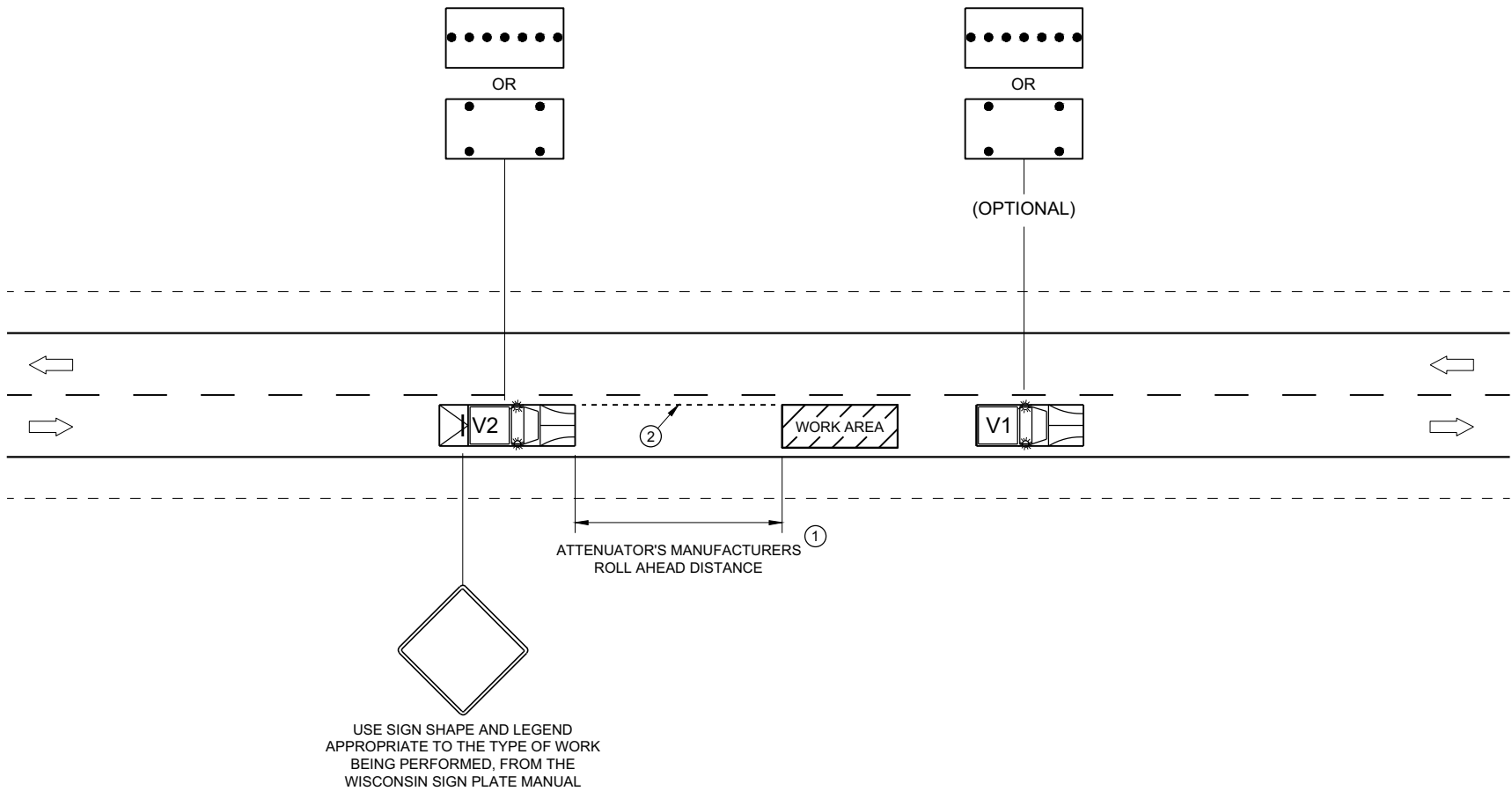
| POSTED SPEED PRIOR TO WORK STARTING (MPH) | DECISION SIGHT DISTANCE (D) |
|-------------------------------------------|-----------------------------|
| 0 - 25                                    | 550'                        |
| 30                                        | 550'                      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

GENERAL NOTES

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

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

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



TRAFFIC CONTROL,  
MOBILE OPERATIONS ON  
AN UNDIVIDED ROADWAY

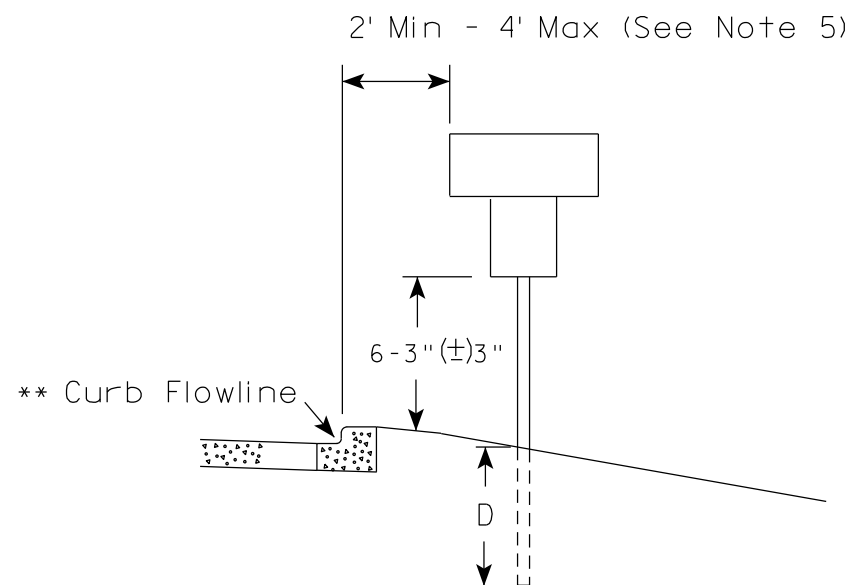
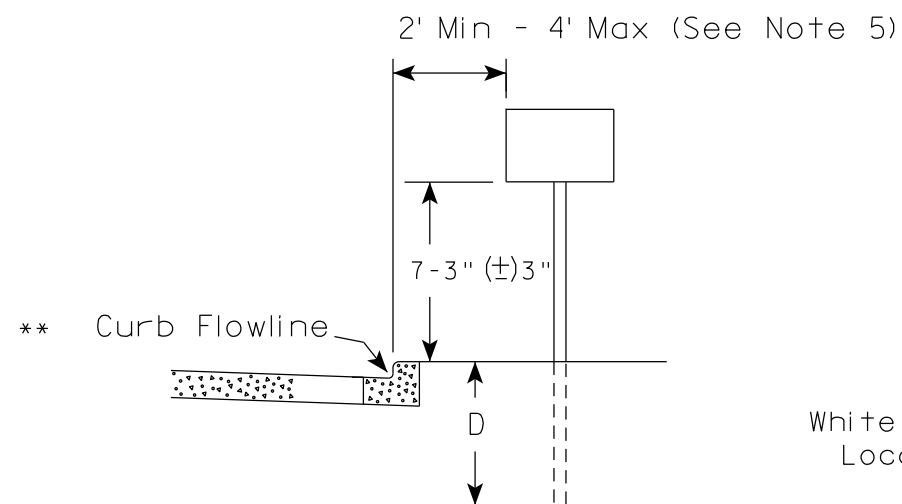
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
February 2021  
DATE

/S/ Andrew Heidtke  
STATEWIDE WORK ZONE T  
SAFETY ENGINEER 75

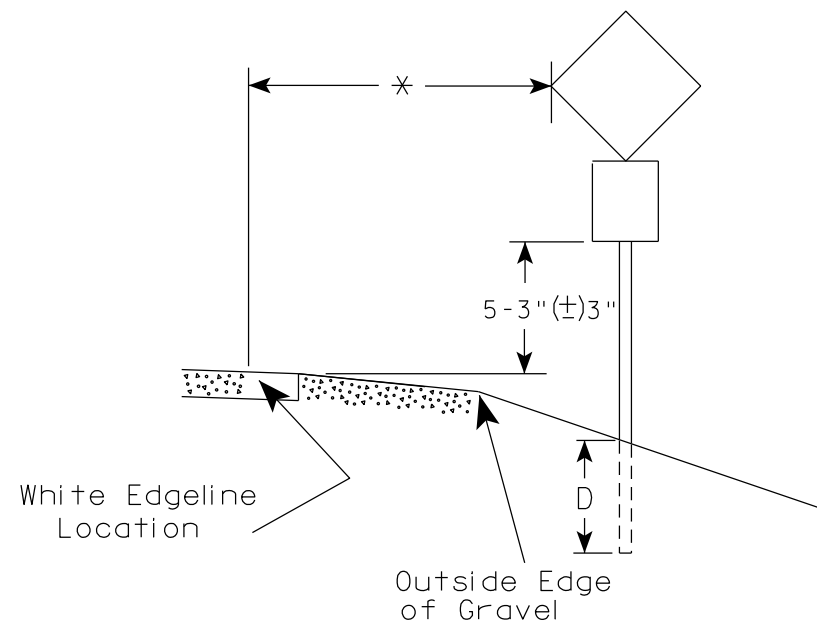
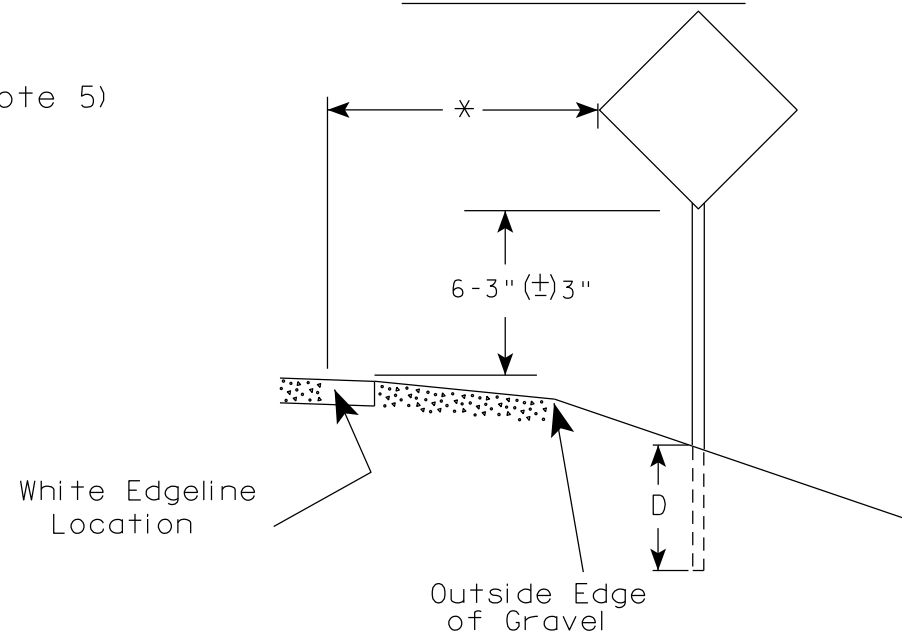
FHWA

## URBAN AREA



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

## RURAL AREA (See Note 2)



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

### POST EMBEDMENT DEPTH

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

### GENERAL NOTES

- Signs wider than 4 feet or 20 sq.ft or larger, shall be mounted on multiple posts. Refer to plate A4-4.
- If signs are mounted on or behind barrier wall, see A4-10 sign plate.  
The Double Arrow sign (W12-1D) shall be mounted at a height of 2'-3" (±) 3". The Chevron sign (W1-8), Roundabout Chevron panel (R6-4B), Enhanced Reference Markers, Clearance Markers (W5-52), Mile Markers (D10 series), In Road Object Markers (W5-54) & End of Road Markers (W5-56) shall be mounted at a height of 4'-3" (±) 3".
- For expressways and freeways, mounting height is 7'- 3" (±) 3" or 6'-3" (±) 3" depending upon existence of a sub-sign.
- Minimum mounting height for signs mounted on traffic signal poles is 5'- 3" (±) 3".
- Offset distance shall be consistent with existing signs or consistent throughout length of project.
- Folding signs shall be mounted at a height of 5'-3" (±) 3" or as directed by the Engineer.

TYPICAL INSTALLATION  
OF PERMANENT TYPE II  
SIGNS ON SINGLE POSTS

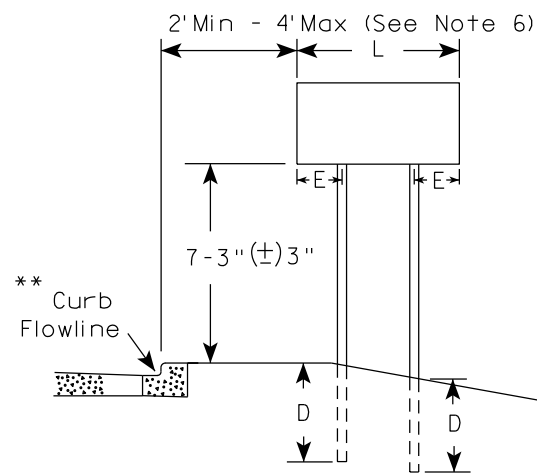
WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

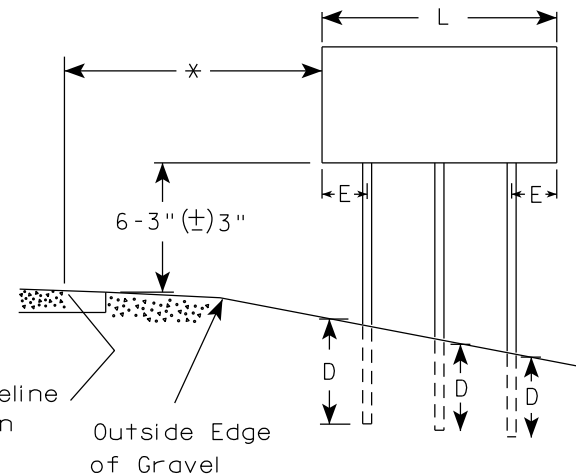
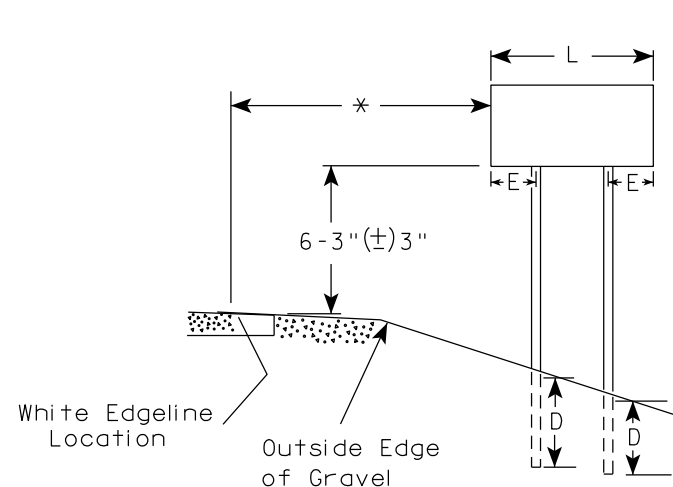
DATE 12/6/23 PLATE NO. A4-3.23



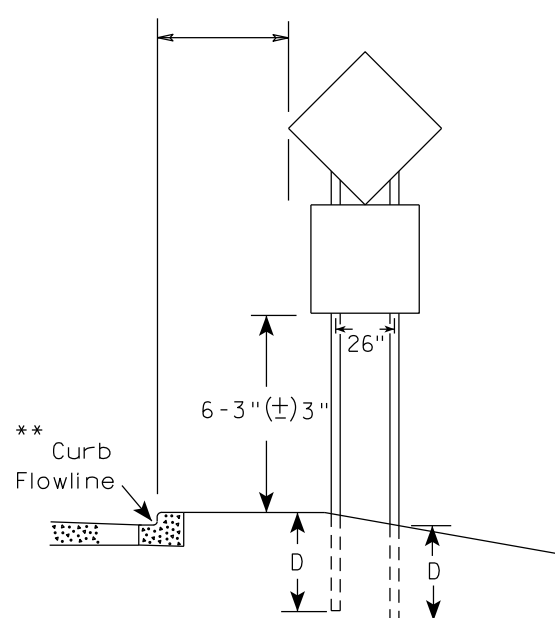
URBAN AREA



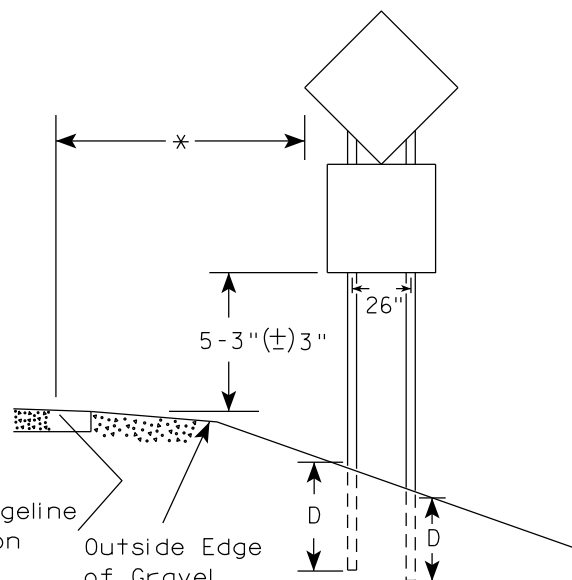
RURAL AREA (See Note 3)



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



48" DIAMOND WARNING SIGN



48" DIAMOND WARNING SIGN

\*\*\*

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

| SIGN SHAPE OTHER THAN DIAMOND<br>(THREE POSTS REQUIRED) |     |
|---------------------------------------------------------|-----|
| L                                                       | E   |
| Greater than 108"<br>to 144"                            | 12" |

POST EMBEDMENT DEPTH

| Area of Sign<br>Installation<br>( Sq.Ft. ) | D<br>( Min ) |
|--------------------------------------------|--------------|
| 20 or Less                                 | 4'           |
| Greater than 20                            | 5'           |

TYPICAL INSTALLATION  
OF TYPE II SIGNS  
ON MULTIPLE POSTS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

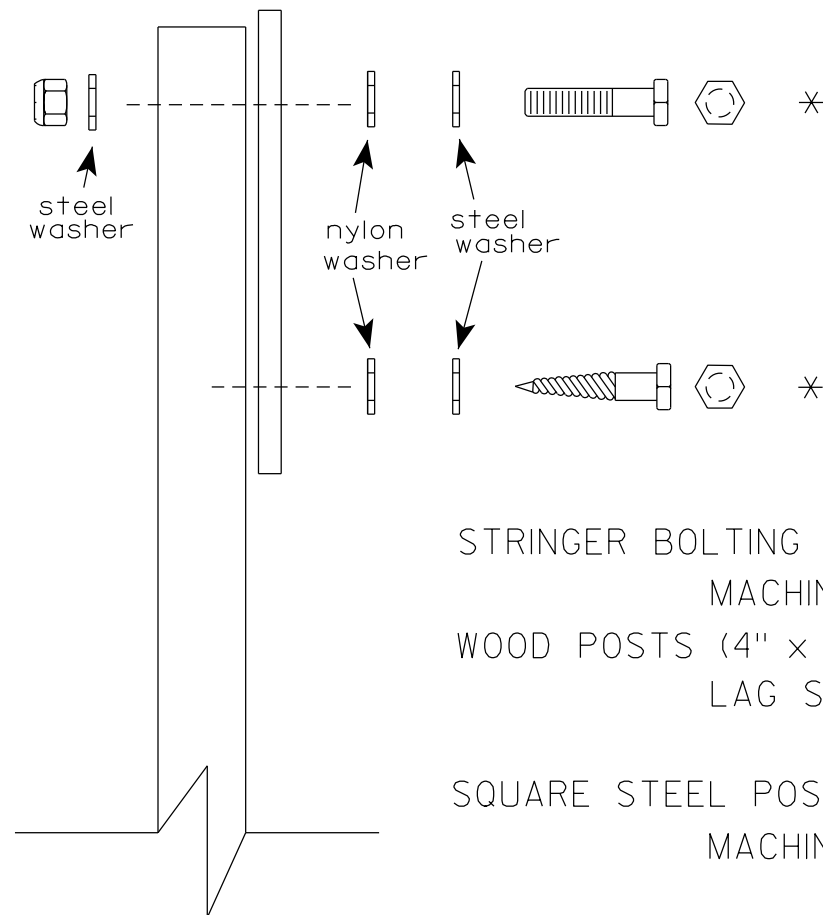
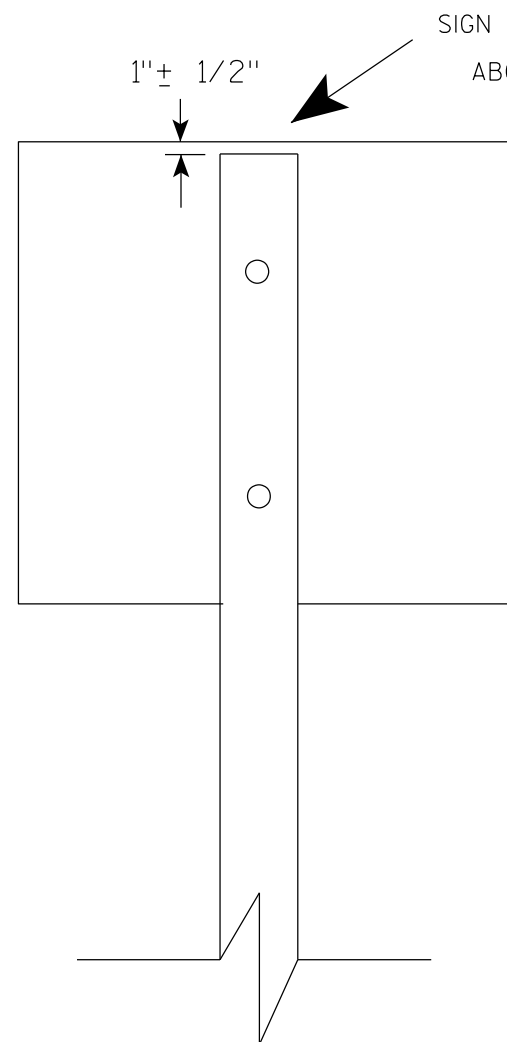
GENERAL NOTES

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

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

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

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



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

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

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

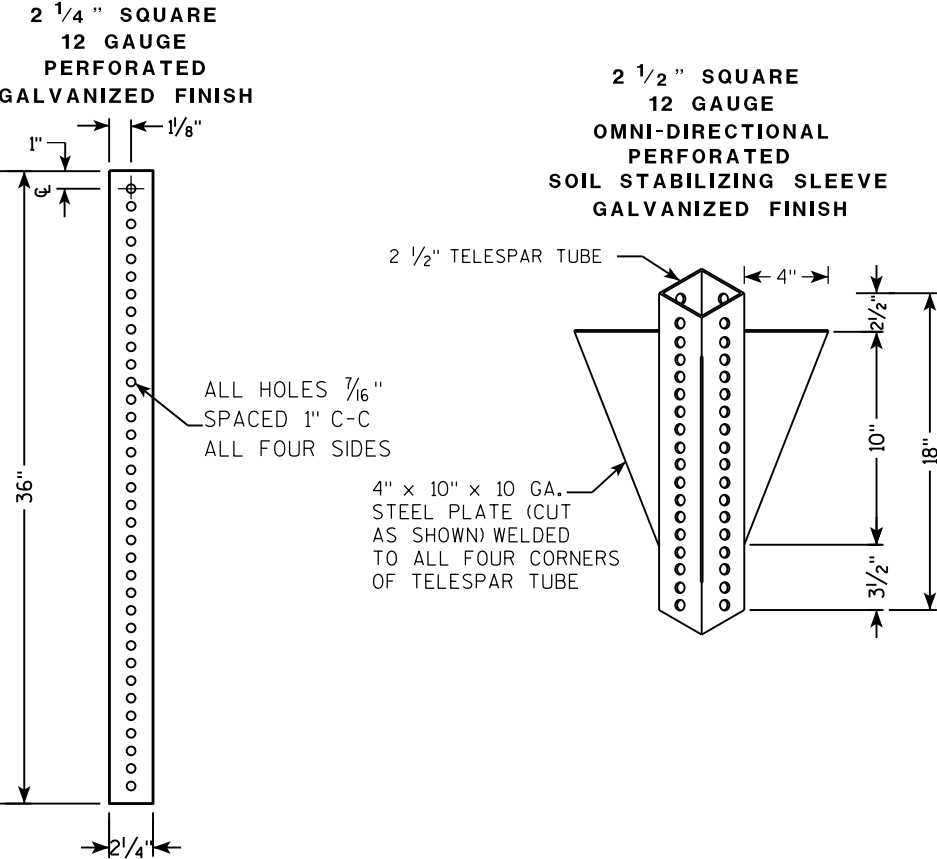
- STRINGER BOLTING TO ALUMINUM SIGNS (SEE SIGN PLATE A4-18)
- MACHINE BOLTS -  $\frac{5}{16}$ " X 1-3/4" Length w/ lock nuts
- WOOD POSTS (4" x 6")
- LAG SCREWS -  $\frac{3}{8}$ " X 3" (NO STRINGERS ON BACK OF SIGN)  
 $\frac{3}{8}$ " X 4" (STRINGERS ON BACK OF SIGN)
- SQUARE STEEL POSTS (2" x 2")
-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

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

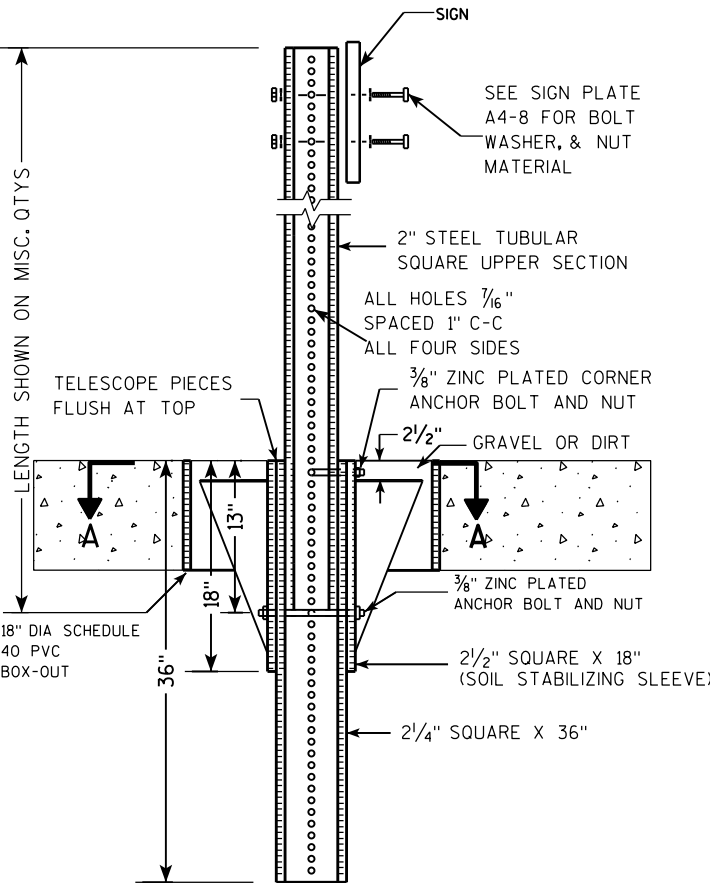
|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| ATTACHMENT OF SIGNS<br>TO POSTS  |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION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



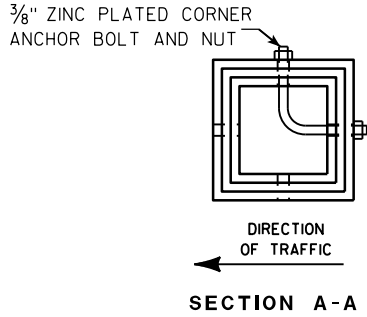
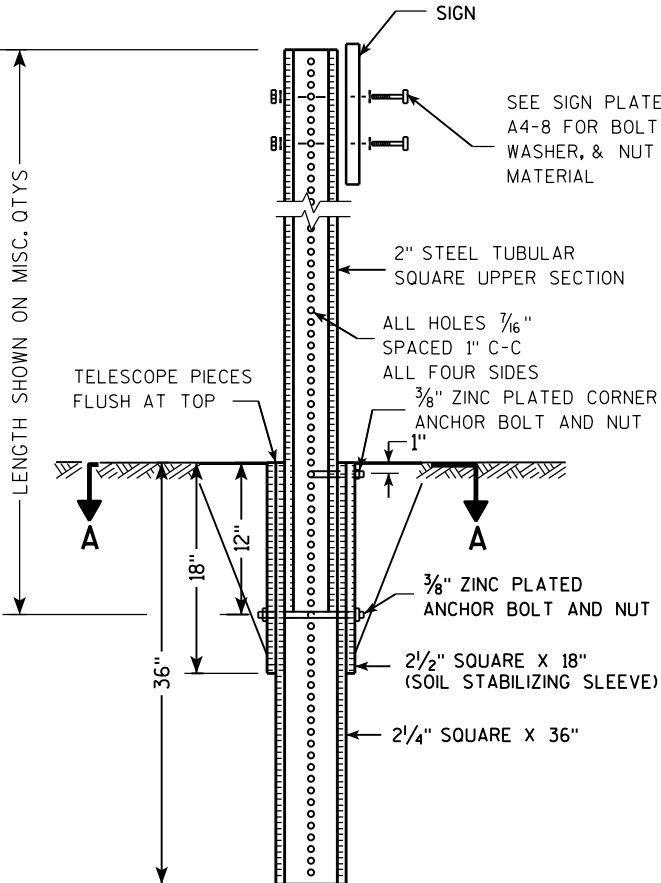
TELESCOPIC TUBING ANCHORS  
TWO PIECE SYSTEM



DETAIL OF TUBULAR STEEL SIGN POST  
(IN POURED CONCRETE OR ASPHALT)



DETAIL OF TUBULAR STEEL SIGN POST  
(IN LOCATIONS OTHER THAN POURED CONCRETE OR ASPHALT)



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

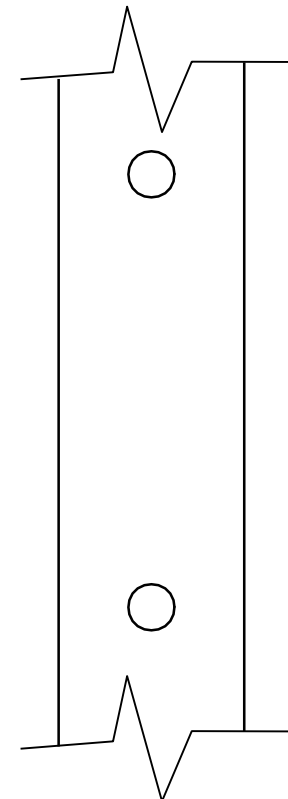
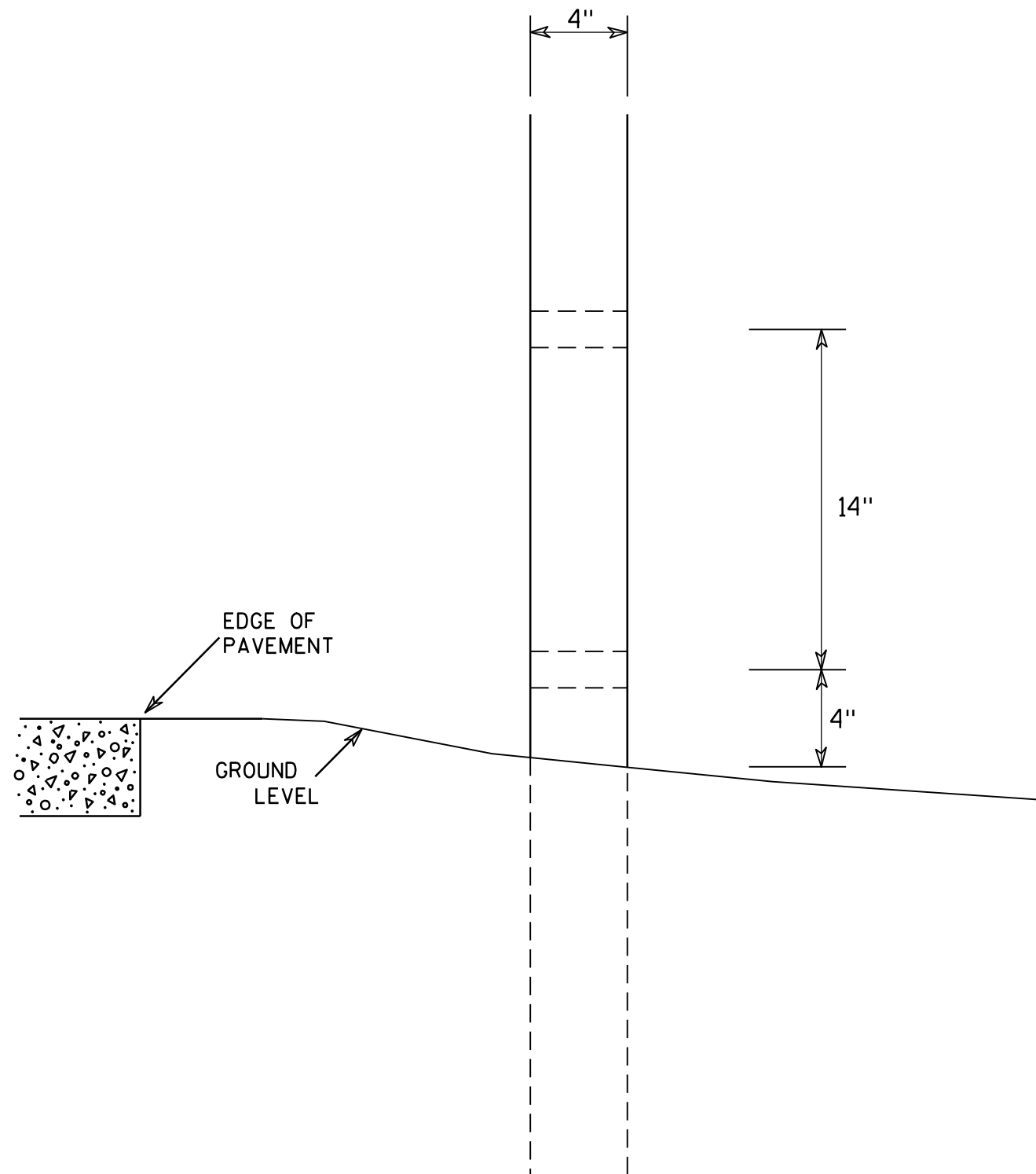
Signs wider than 3 feet or larger than 9 sq. ft shall be mounted on multiple posts (see above table).

TUBULAR STEEL  
SIGN POST  
A4-9

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/05/15 PLAT 14-9.9



SIDE VIEW

# GENERAL NOTES

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

## 4 X 6 WOOD POST MODIFICATIONS

WISCONSIN DEPT OF TRANSPORTATION

APPROVED

*Chester J. Spang*  
for State Traffic Engineer

DATE 3/27/97

PLATE NO. A4-11.2

PROJECT NO:

HWY:

COUNTY:

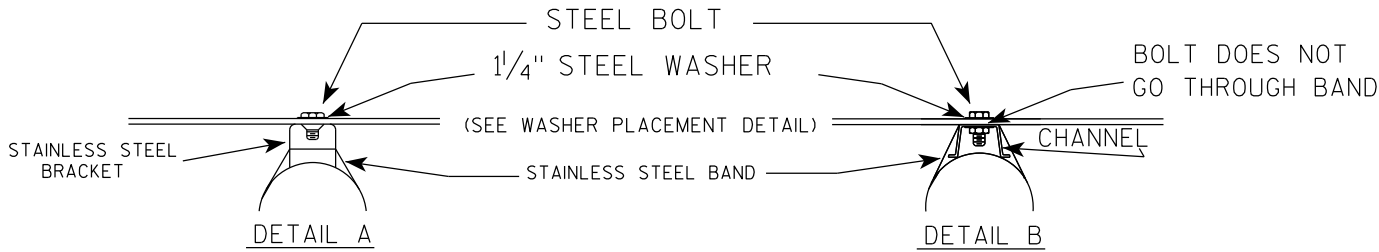
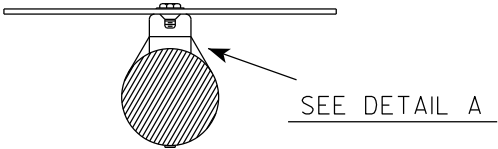
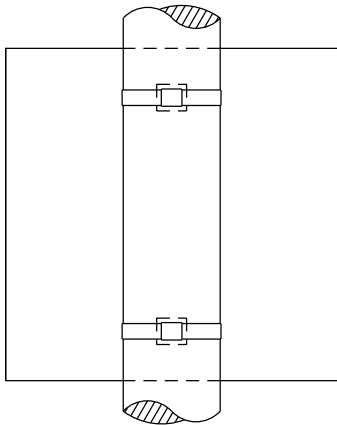
SHEET NO: 80

E



BANDING

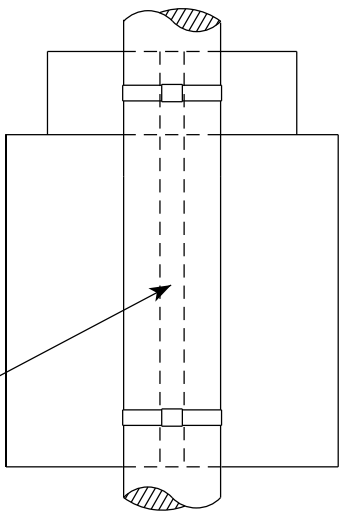
SINGLE SIGN



GENERAL NOTES

1. Any sign over 3 feet in width shall use the V-Block banding method. See A5-10 standard plate.
2. Signs 3 feet or greater in height shall have three bracket bands installed. Signs less than 3 feet in height shall have two bracket bands installed.
3. Banding and assembly bracket shall be stainless steel. All bands shall be  $\frac{3}{4}$ " in width and 0.025" thickness.
4. ALL SIGN MOUNTING BOLTS AND WASHERS SHALL BE EITHER:
  - a. Hot dip or mechanically galvanized in accordance with ASTM Designation: A 153, Class D
  - b. Electro-galvanized in accordance with ASTM designation: B 633, Type III, SC 3

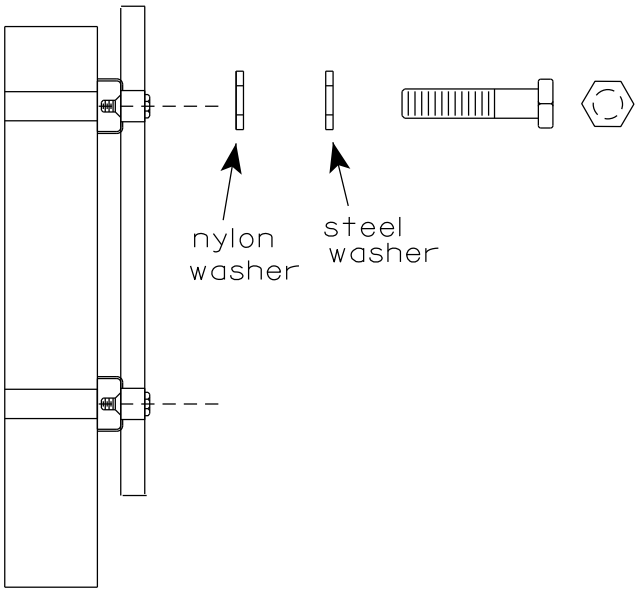
"J" ASSEMBLY



CHANNEL  
SEE TYPICAL PANEL  
INSTALLATION SHEET

SEE DETAIL B

WASHER PLACEMENT

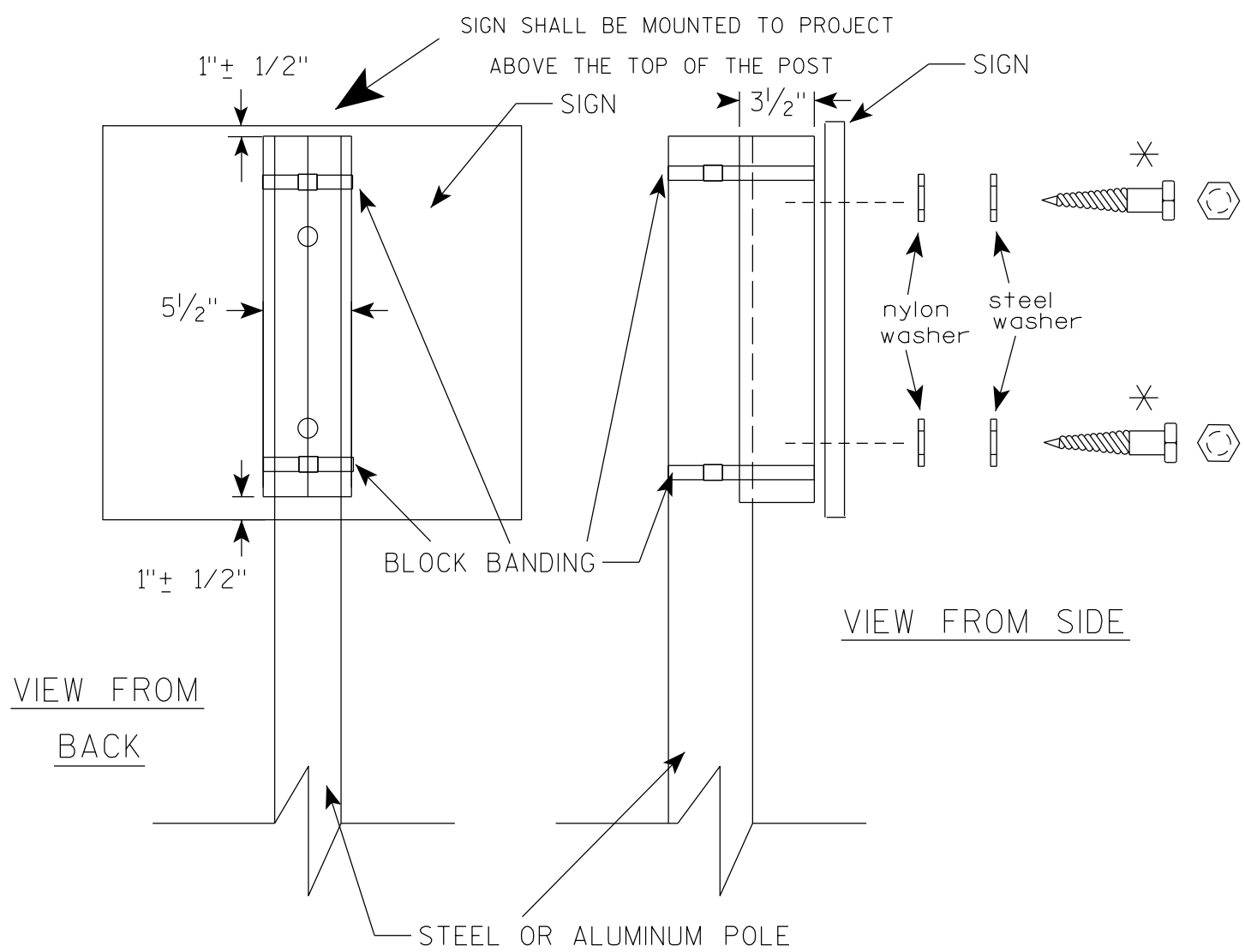


WASHERS (ALL POSTS) -  
1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X  $\frac{1}{16}$ " STEEL  
1-1/4" O.D. X  $\frac{3}{8}$ " I.D. X .080 NYLON  
FOR ALL TYPE H SIGNS

STANDARD SIGN  
SIGN BANDING DETAILS

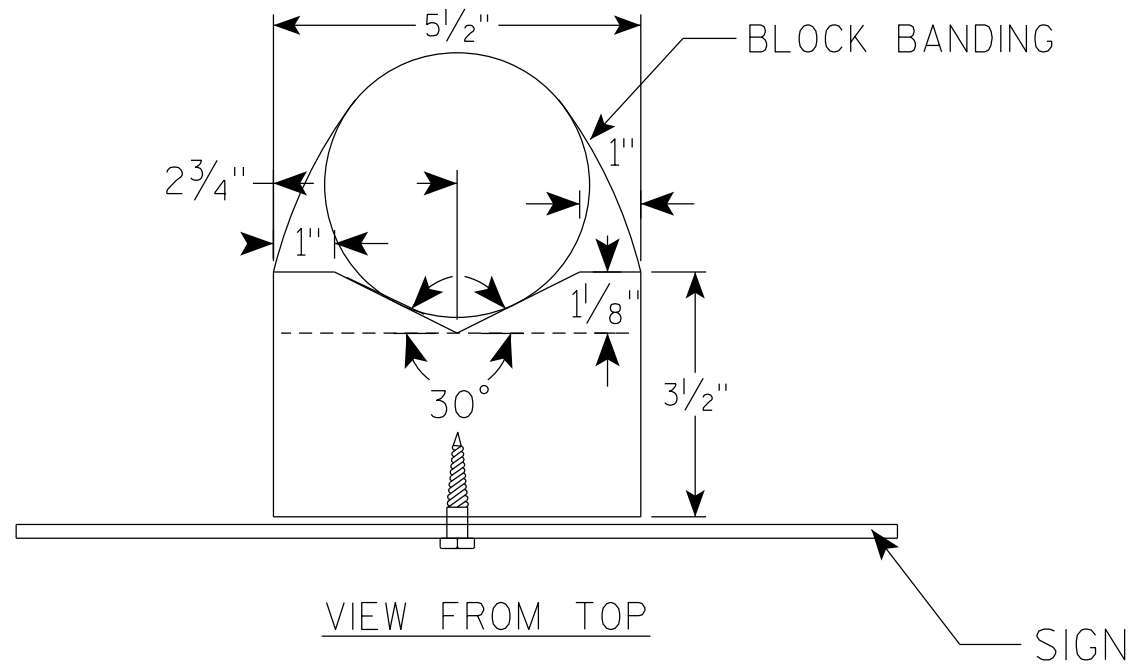
WISCONSIN DEPT OF TRANSPORTATION

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



VIEW FROM  
BACK

VIEW FROM SIDE



VIEW FROM TOP

## GENERAL NOTES

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

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

BLOCK BANDING DETAIL  
( V-BLOCK OPTION )

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

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

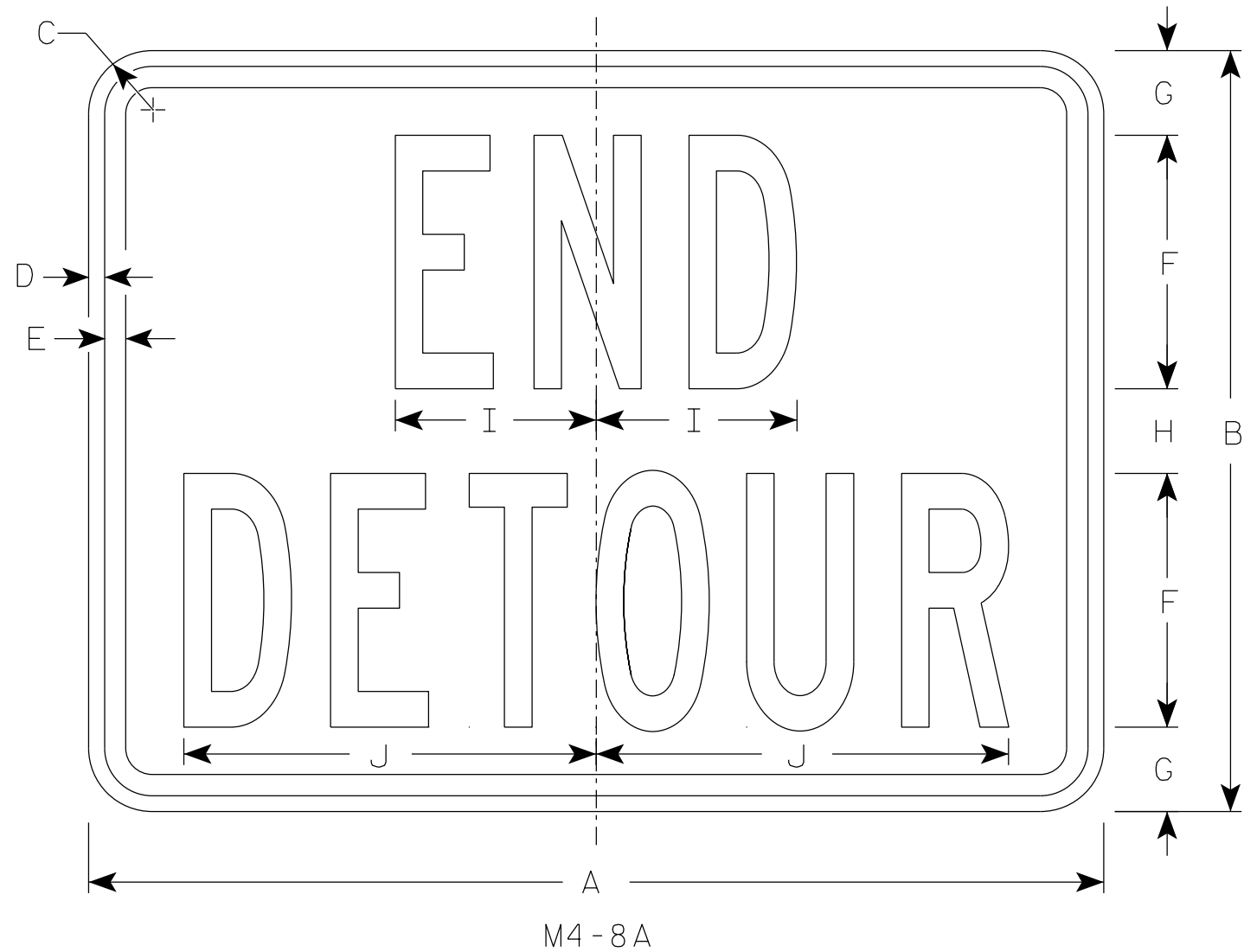
PROJECT NO:

SHEET NO: 82

E



7



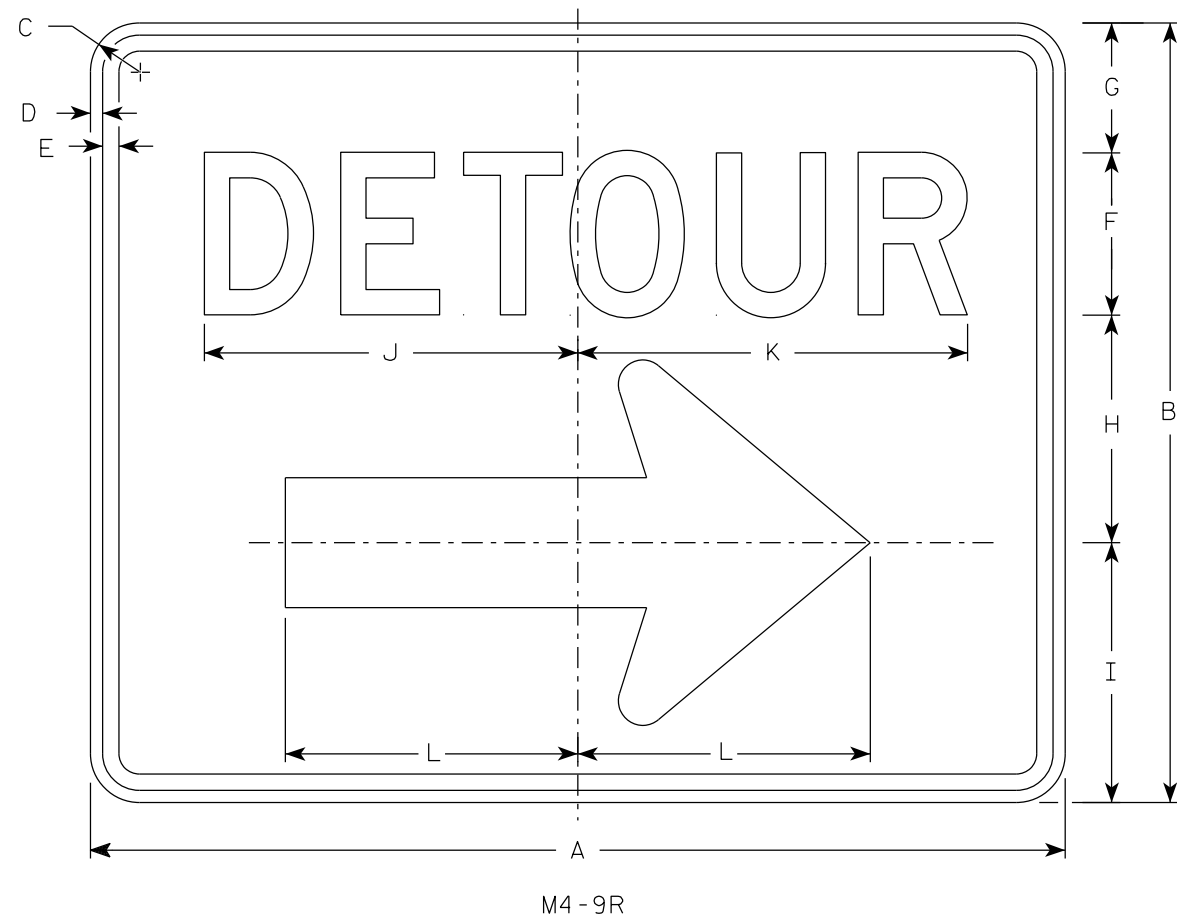
NOTES

1. Sign is Type II - Type F Reflective
2. Color:  
Background - Orange  
Message - Black
3. Message Series - B
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

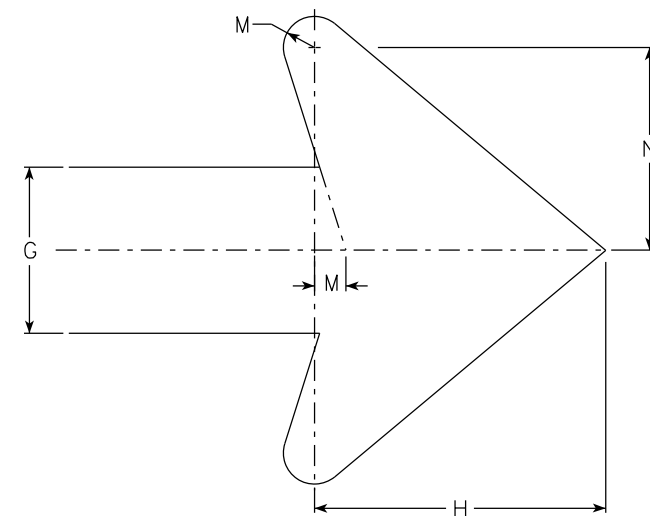
7

| SIZE | A  | B  | C     | D   | E   | F | G     | H | I     | J     | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|---|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |   |       |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2    | 24 | 18 | 1 1/2 | 3/8 | 1/2 | 6 | 2     | 2 | 4 3/4 | 9 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.0             |
| 2M   | 24 | 18 | 1 1/2 | 3/8 | 1/2 | 6 | 2     | 2 | 4 3/4 | 9 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.0             |
| 3    | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.0             |
| 4    | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.0             |
| 5    | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 8 | 2 1/2 | 3 | 6 3/4 | 13    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.0             |

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| STANDARD SIGN                    |                                                       |
| M4-8A                            |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>For State Traffic Engineer |
| DATE 2/9/2023                    | PLATE NO. M4-8A.4                                     |



- NOTES
1. Sign is Type II - Type F Reflective
  2. Color:  
Background - Orange  
Message - Black
  3. Message Series - D
  4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
  4. M4-9L is the same as M4-9R except the arrow is reversed.



Arrow Detail

| SIZE | A  | B  | C     | D   | E   | F | G | H      | I      | J      | K      | L      | M     | N     | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|--------|--------|--------|--------|--------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |   |        |        |        |        |        |       |       |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2    | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 5 | 4 | 7      | 8      | 11 1/2 | 12     | 9      | 3/4   | 4 7/8 |   |   |   |   |   |   |   |   |   |   |   |   | 5.00            |
| 2M   | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 5 | 4 | 7      | 8      | 11 1/2 | 12     | 9      | 3/4   | 4 7/8 |   |   |   |   |   |   |   |   |   |   |   |   | 5.00            |
| 3    | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 5 | 4 | 7      | 8      | 11 1/2 | 12     | 9      | 3/4   | 4 7/8 |   |   |   |   |   |   |   |   |   |   |   |   | 5.00            |
| 4    | 48 | 36 | 1 7/8 | 1/2 | 5/8 | 8 | 6 | 10 1/2 | 11 5/8 | 20 5/8 | 20 1/2 | 13 1/4 | 1 1/8 | 6 7/8 |   |   |   |   |   |   |   |   |   |   |   |   | 12.0            |
| 5    | 48 | 36 | 1 7/8 | 1/2 | 5/8 | 8 | 6 | 10 1/2 | 11 5/8 | 20 5/8 | 20 1/2 | 13 1/4 | 1 1/8 | 6 7/8 |   |   |   |   |   |   |   |   |   |   |   |   | 12.0            |

STANDARD SIGN  
M4-9 R & L

WISCONSIN DEPT OF TRANSPORTATION

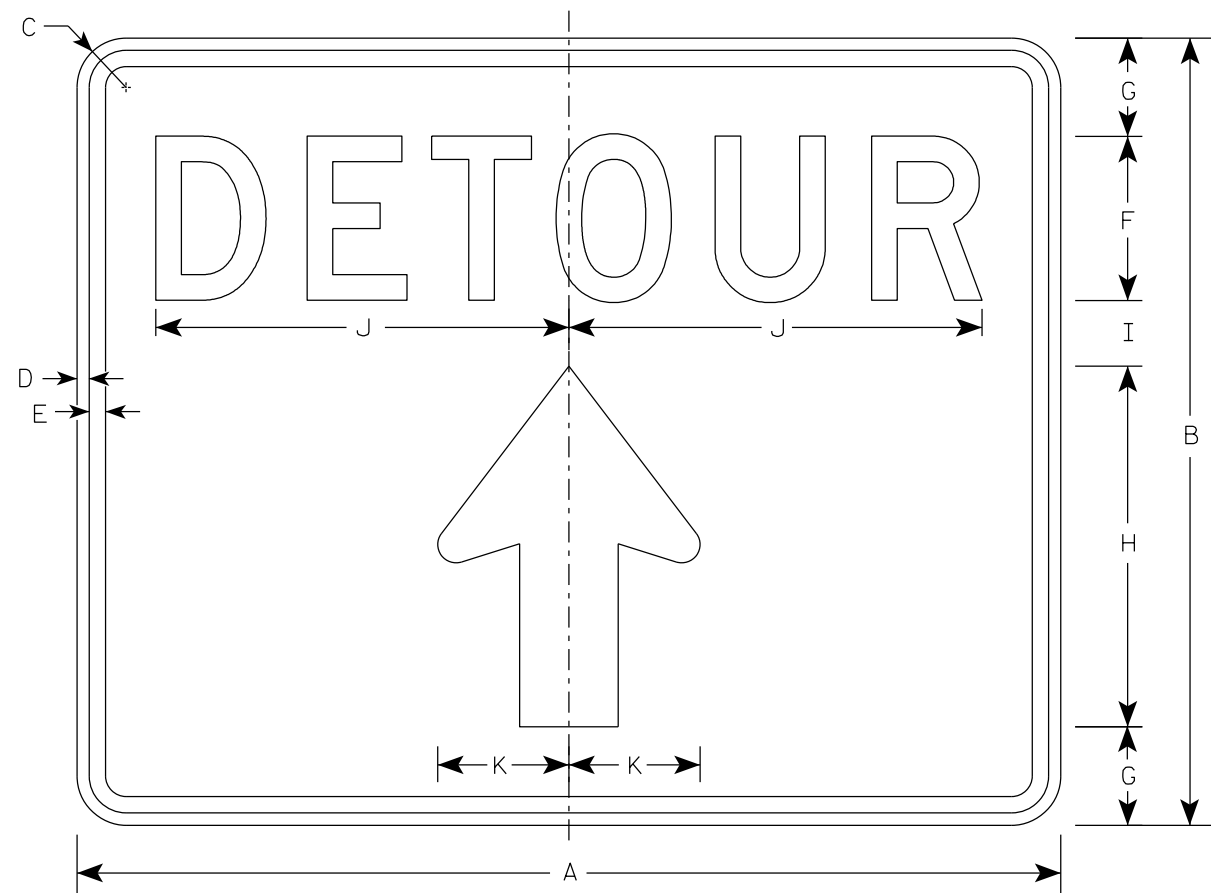
APPROVED *Matthew R. Rauch*  
For State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-9R.6

PROJECT NO: HWY: COUNTY: SHEET NO: 84 E



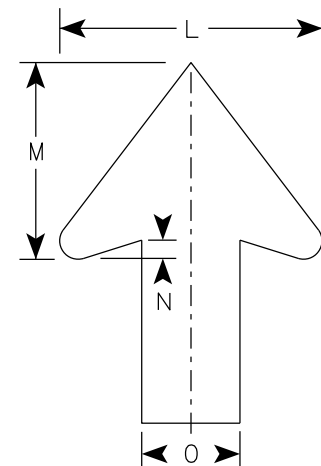
7



M4 - 9RA

NOTES

1. Sign is Type II-Type F Reflective
2. Color:  
Background - Orange  
Message - Black
3. Message Series - D



Arrow Detail

7

| SIZE | A  | B  | C     | D   | E   | F | G | H  | I | J      | K | L | M | N   | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|----|---|--------|---|---|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |   |    |   |        |   |   |   |     |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 5 | 3 | 11 | 2 | 12 5/8 | 4 | 8 | 6 | 1/2 | 3 |   |   |   |   |   |   |   |   |   |   |   | 5.00            |
| 2M   | 30 | 24 | 1 1/2 | 3/8 | 1/2 | 5 | 3 | 11 | 2 | 12 5/8 | 4 | 8 | 6 | 1/2 | 3 |   |   |   |   |   |   |   |   |   |   |   | 5.00            |
| 3    |    |    |       |     |     |   |   |    |   |        |   |   |   |     |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 4    |    |    |       |     |     |   |   |    |   |        |   |   |   |     |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |     |   |   |    |   |        |   |   |   |     |   |   |   |   |   |   |   |   |   |   |   |   |                 |

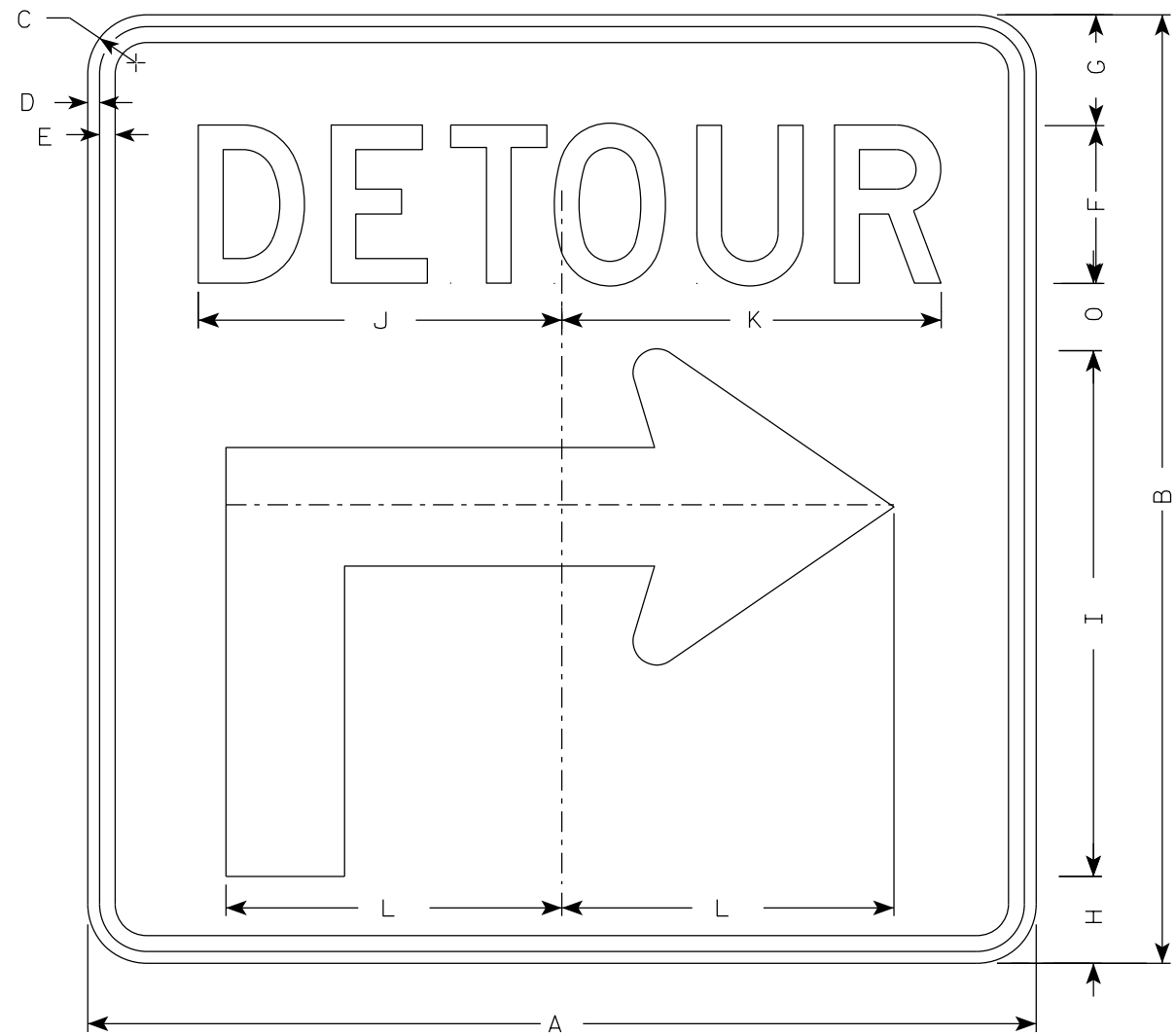
STANDARD SIGN  
M4-9RA

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 2/9/2023 PLATE NO. M4-9RA.3

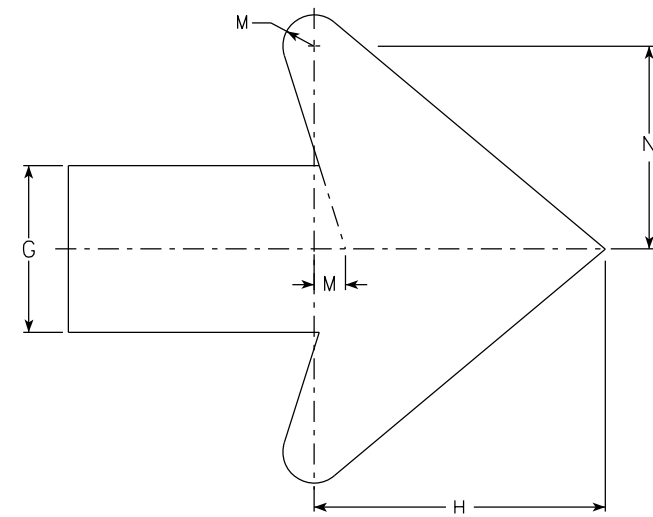
7



M4-59R

NOTES

1. Sign is Type II - Type F Reflective
2. Color:  
Background - Orange  
Message - Black
3. Message Series - D
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown when base material is metal.
5. M4-59L is the same as M4-59R except the arrow is reversed.



Arrow Detail

7

| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I      | J      | K      | L      | M     | N     | O     | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|--------|--------|--------|--------|-------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |       |        |        |        |        |       |       |       |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 30 | 30 | 1 7/8 | 3/8 | 1/2 | 5 | 3 1/2 | 2 3/4 | 16 5/8 | 11 1/2 | 12     | 10 1/2 | 3/4   | 4 7/8 | 2 1/8 |   |   |   |   |   |   |   |   |   |   |   | 6.25            |
| 2M   | 30 | 30 | 1 7/8 | 3/8 | 1/2 | 5 | 3 1/2 | 2 3/4 | 16 5/8 | 11 1/2 | 12     | 10 1/2 | 3/4   | 4 7/8 | 2 1/8 |   |   |   |   |   |   |   |   |   |   |   | 6.25            |
| 3    | 30 | 30 | 1 7/8 | 3/8 | 1/2 | 5 | 3 1/2 | 2 3/4 | 16 5/8 | 11 1/2 | 12     | 10 1/2 | 3/4   | 4 7/8 | 2 1/8 |   |   |   |   |   |   |   |   |   |   |   | 6.25            |
| 4    | 48 | 48 | 2 1/4 | 1/2 | 5/8 | 8 | 5 5/8 | 4 3/8 | 26 5/8 | 20 5/8 | 20 1/2 | 17     | 1 1/8 | 6 7/8 | 3 3/8 |   |   |   |   |   |   |   |   |   |   |   | 16.0            |
| 5    | 48 | 48 | 2 1/4 | 1/2 | 5/8 | 8 | 5 5/8 | 4 3/8 | 26 5/8 | 20 5/8 | 20 1/2 | 17     | 1 1/8 | 6 7/8 | 3 3/8 |   |   |   |   |   |   |   |   |   |   |   | 16.0            |

PROJECT NO:

HWY:

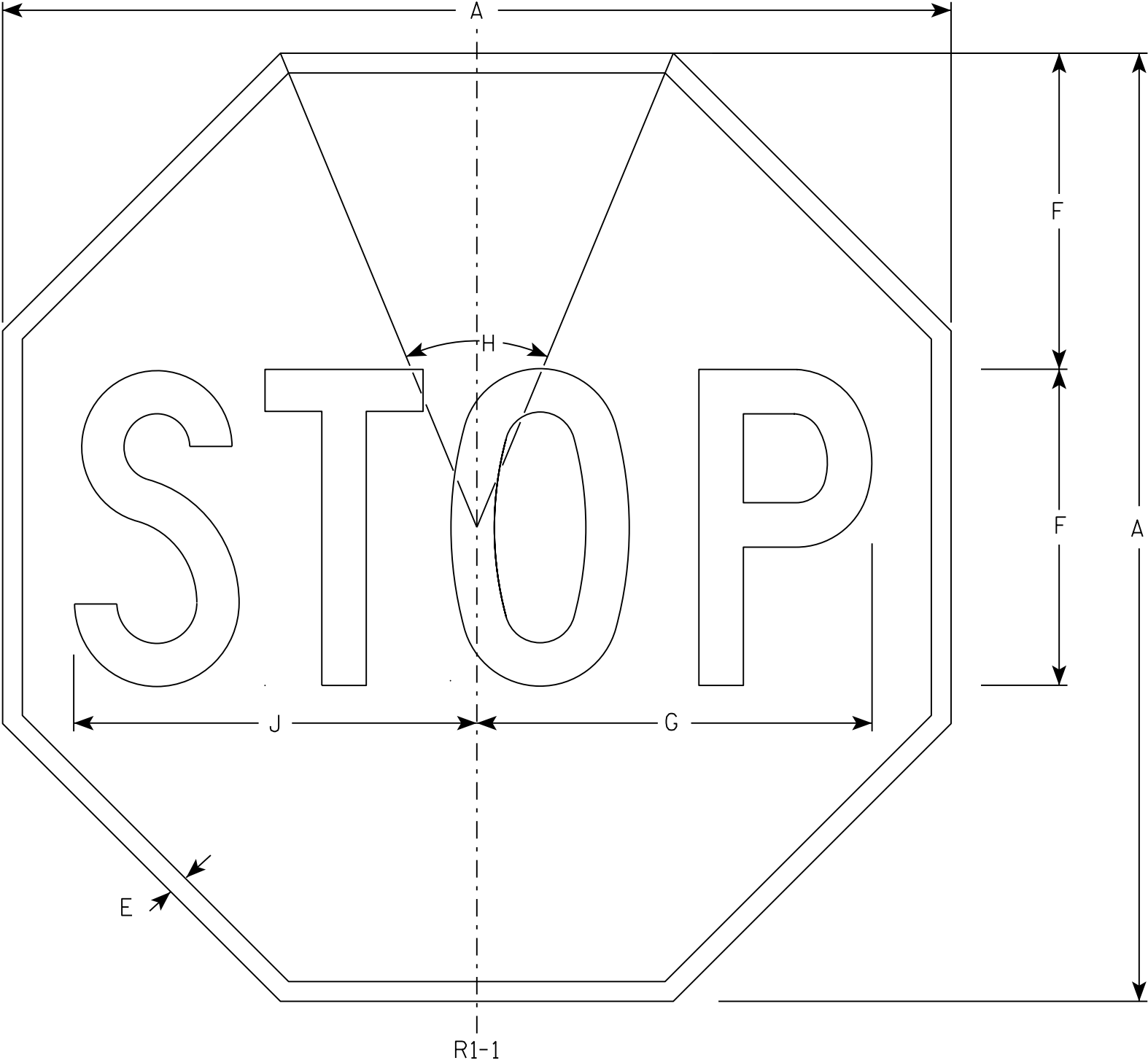
COUNTY:

SHEET NO:

E



7



NOTES

- 1. Sign is Type II - Type H Reflective - reference WIS DOT Standard Specification for HIGHWAY and STRUCTURE CONSTRUCTION latest edition.
- 2. Color:  
Background - Red  
Message - White
- 3. Message Series - C

7

R1-1

| SIZE | A  | B | C | D | E   | F  | G      | H   | I | J      | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|---|---|---|-----|----|--------|-----|---|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    | 30 |   |   |   | 5/8 | 10 | 12 1/2 | 45° |   | 12 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.18            |
| 2S   | 30 |   |   |   | 5/8 | 10 | 12 1/2 | 45° |   | 12 3/4 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5.18            |
| 2M   | 36 |   |   |   | 3/4 | 12 | 15     | 45° |   | 15 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 7.46            |
| 3    | 36 |   |   |   | 3/4 | 12 | 15     | 45° |   | 15 3/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 7.46            |
| 4    | 48 |   |   |   | 1   | 16 | 20     | 45° |   | 20 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 13.25           |
| 5    | 48 |   |   |   | 1   | 16 | 20     | 45° |   | 20 1/2 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 13.25           |
| 6    | 18 |   |   |   | 3/8 | 6  | 7 3/4  | 45° |   | 7 3/4  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1.86            |
| 7    | 12 |   |   |   | 1/4 | 4  | 5      | 45° |   | 5 1/8  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0.78            |

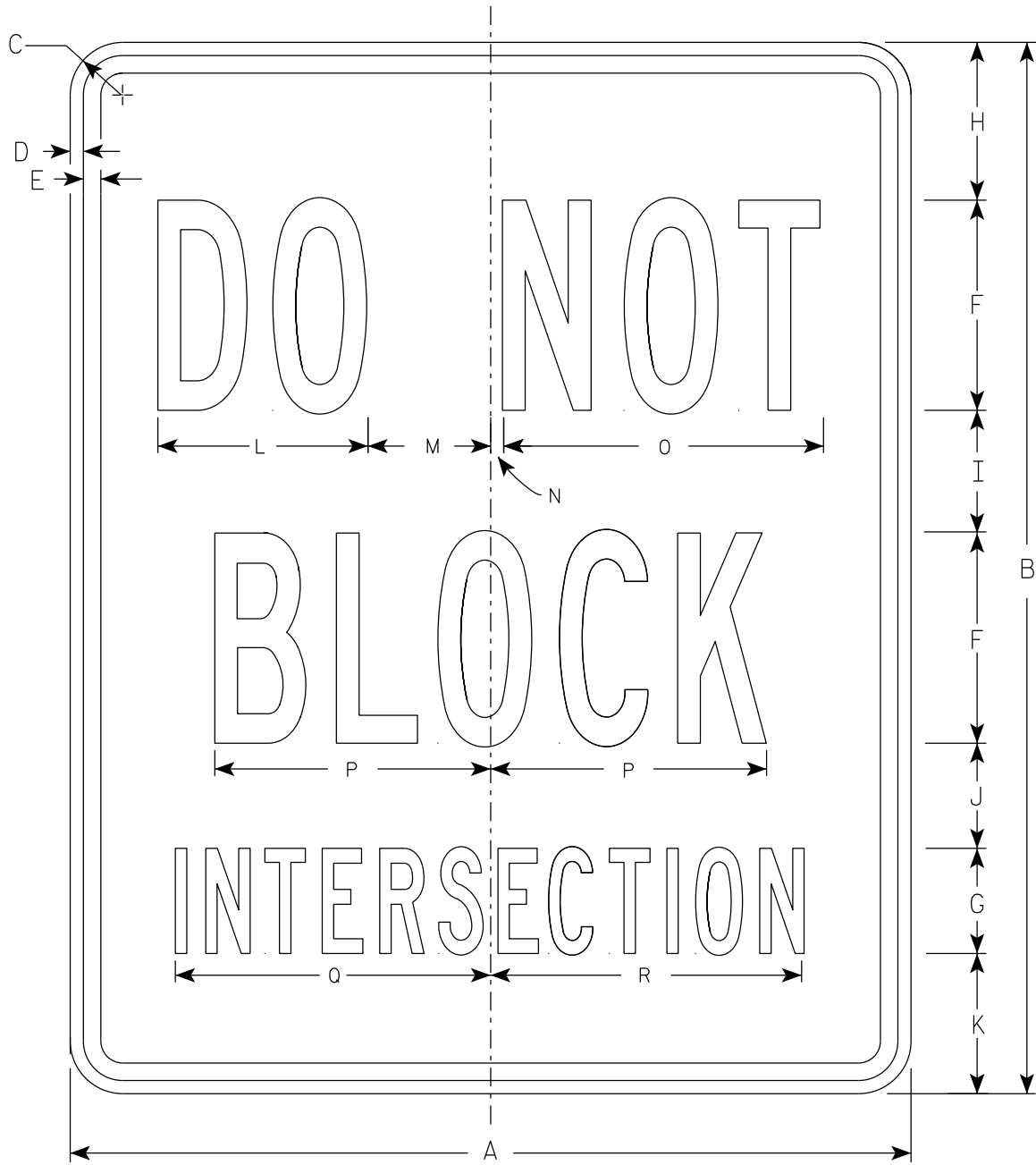
STANDARD SIGN  
R1 - 1

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 11/12/15 PLATE NO. R1-1.13

7



R10-7

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
  - Background - White
  - Message - Black
- 3. Message Series - B

7

| SIZE | A  | B  | C     | D   | E   | F  | G | H     | I     | J     | K     | L  | M     | N   | O      | P      | Q  | R      | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|----|---|-------|-------|-------|-------|----|-------|-----|--------|--------|----|--------|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |    |   |       |       |       |       |    |       |     |        |        |    |        |   |   |   |   |   |   |   |   |                 |
| 2S   | 24 | 30 | 1 1/2 | 3/8 | 1/2 | 6  | 3 | 4 1/2 | 3 1/2 | 3     | 4     | 6  | 3 1/2 | 3/8 | 9 1/8  | 7 7/8  | 9  | 8 7/8  |   |   |   |   |   |   |   |   | 5.0             |
| 2M   | 24 | 30 | 1 1/2 | 3/8 | 1/2 | 6  | 3 | 4 1/2 | 3 1/2 | 3     | 4     | 6  | 3 1/2 | 3/8 | 9 1/8  | 7 7/8  | 9  | 8 7/8  |   |   |   |   |   |   |   |   | 5.0             |
| 3    | 36 | 48 | 1 7/8 | 1/2 | 5/8 | 10 | 5 | 7     | 5 1/4 | 4 1/2 | 6 1/4 | 10 | 5 5/8 | 1/2 | 15 1/8 | 13 1/8 | 15 | 14 7/8 |   |   |   |   |   |   |   |   | 12.0            |
| 4    |    |    |       |     |     |    |   |       |       |       |       |    |       |     |        |        |    |        |   |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |     |    |   |       |       |       |       |    |       |     |        |        |    |        |   |   |   |   |   |   |   |   |                 |

PROJECT NO:

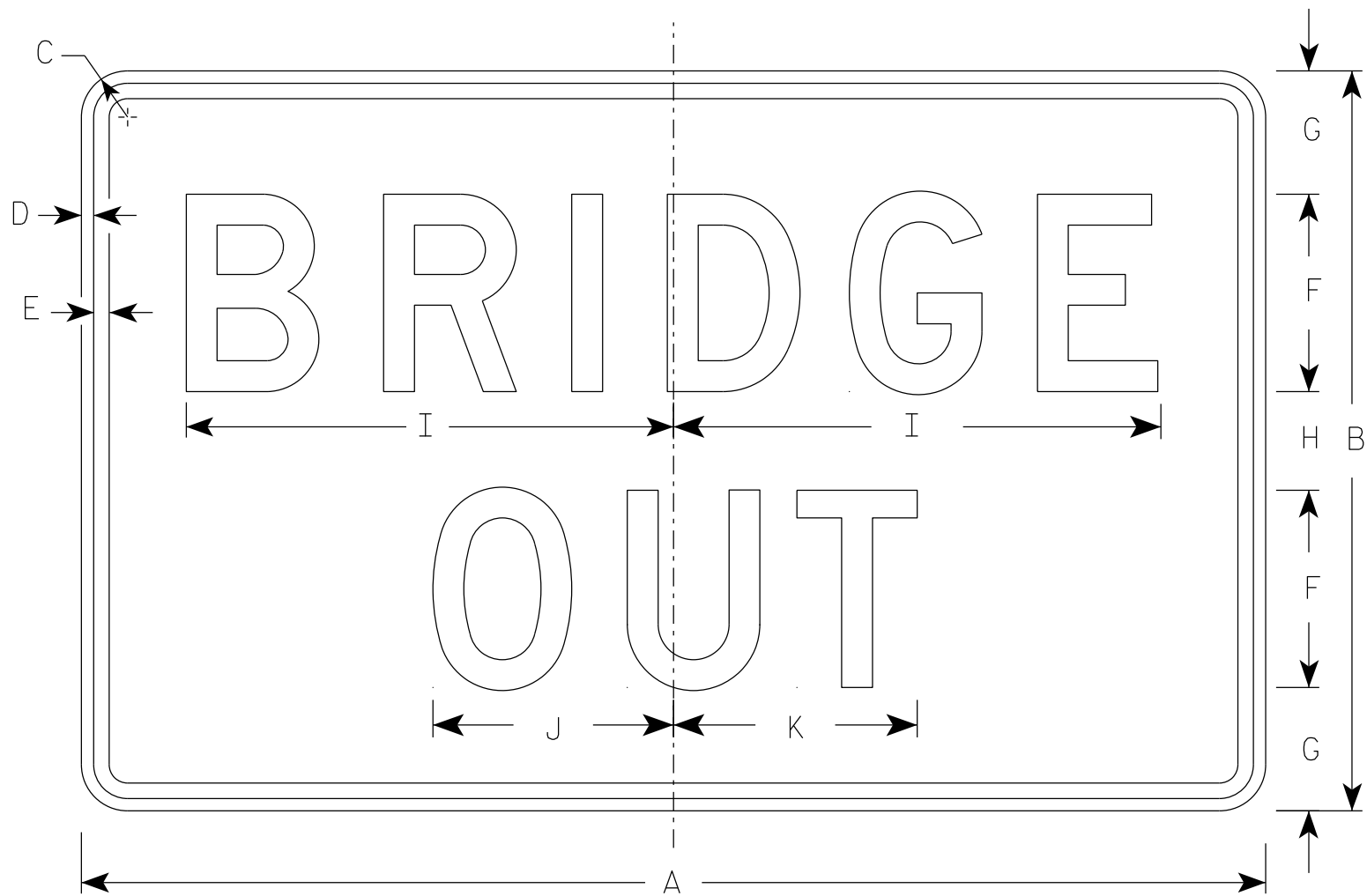
HWY:

COUNTY:

SHEET NO: 88

E





R11-2B

NOTES

- 1. Sign is Type II - Type H Reflective
- 2. Color:
  - Background - White
  - Message - Black
- 3. Message Series - D
- 4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.

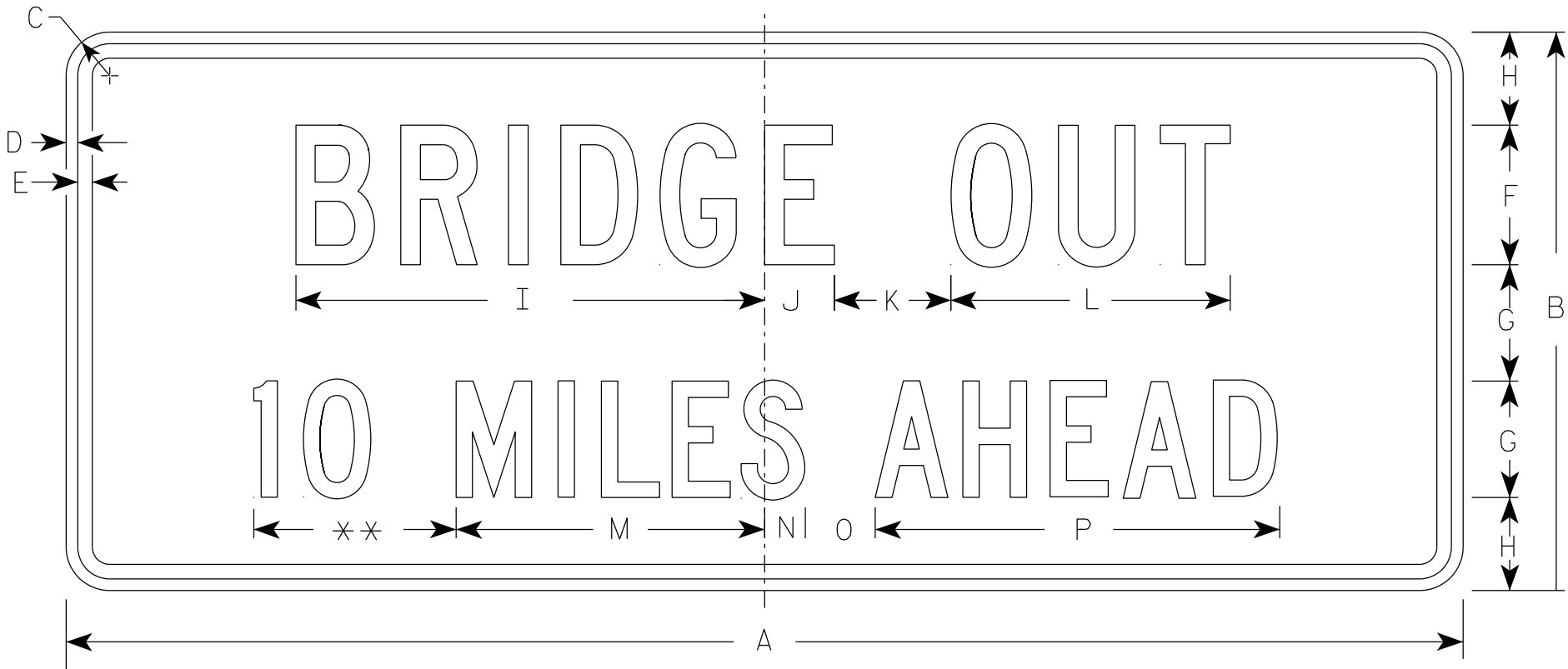
| SIZE | A  | B  | C     | D   | E   | F | G | H | I      | J     | K     | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|---|--------|-------|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |   |   |        |       |       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 19 3/4 | 9 3/4 | 9 7/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10.0            |
| 2M   | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 19 3/4 | 9 3/4 | 9 7/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10.0            |
| 3    | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 19 3/4 | 9 3/4 | 9 7/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10.0            |
| 4    | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 19 3/4 | 9 3/4 | 9 7/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10.0            |
| 5    | 48 | 30 | 1 7/8 | 1/2 | 5/8 | 8 | 5 | 4 | 19 3/4 | 9 3/4 | 9 7/8 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 10.0            |

NOTES

1. Sign is Type II - Type H Reflective
2. Color:

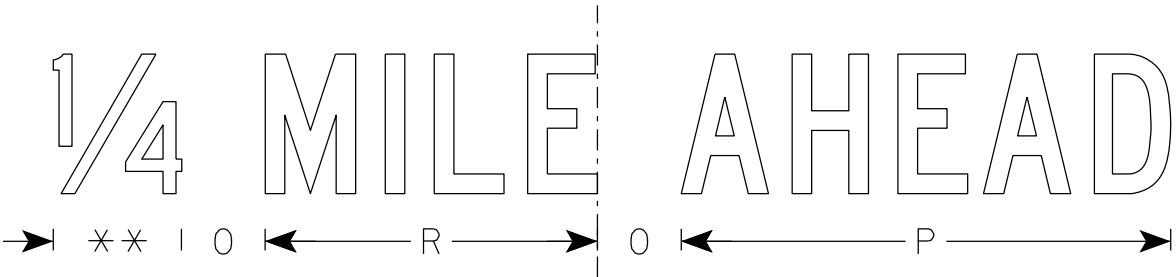
Background - White

Message - Black
3. Message Series - C
4. Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
5. Substitute appropriate numerals to nearest quarter mile and optically adjust spacing to achieve proper balance.



R11-3C

\*\* See Note 5



| SIZE | A  | B  | C     | D   | E   | F | G | H     | I      | J     | K | L  | M      | N     | O | P      | Q | R      | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|---|-------|--------|-------|---|----|--------|-------|---|--------|---|--------|---|---|---|---|---|---|---|---|-----------------|
| 1    | 36 | 15 | 1 1/2 | 1/2 | 5/8 | 4 | 3 | 2 1/2 | 13 1/4 | 2 1/4 | 3 | 8  | 8      | 1 1/2 | 2 | 10 3/4 |   | 7 1/8  |   |   |   |   |   |   |   |   | 3.75            |
| 2S   | 60 | 24 | 1 7/8 | 1/2 | 5/8 | 6 | 5 | 4     | 20 1/8 | 3     | 5 | 12 | 13 1/4 | 1 3/4 | 3 | 17 3/8 |   | 11 7/8 |   |   |   |   |   |   |   |   | 10.0            |
| 2M   | 60 | 24 | 1 7/8 | 1/2 | 5/8 | 6 | 5 | 4     | 20 1/8 | 3     | 5 | 12 | 13 1/4 | 1 3/4 | 3 | 17 3/8 |   | 11 7/8 |   |   |   |   |   |   |   |   | 10.0            |
| 3    |    |    |       |     |     |   |   |       |        |       |   |    |        |       |   |        |   |        |   |   |   |   |   |   |   |   |                 |
| 4    |    |    |       |     |     |   |   |       |        |       |   |    |        |       |   |        |   |        |   |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |     |     |   |   |       |        |       |   |    |        |       |   |        |   |        |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN  
R11-3C

WISCONSIN DEPT OF TRANSPORTATION

APPROVED  
*Matthew R. Rauch*  
for State Traffic Engineer

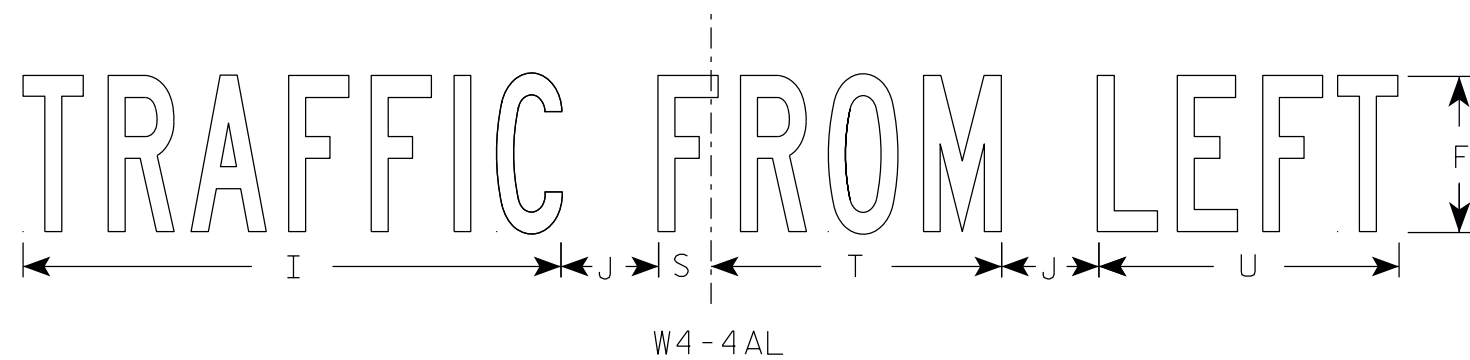
DATE 2/5/24 PLATE NO. R11-3C.4

PROJECT NO:

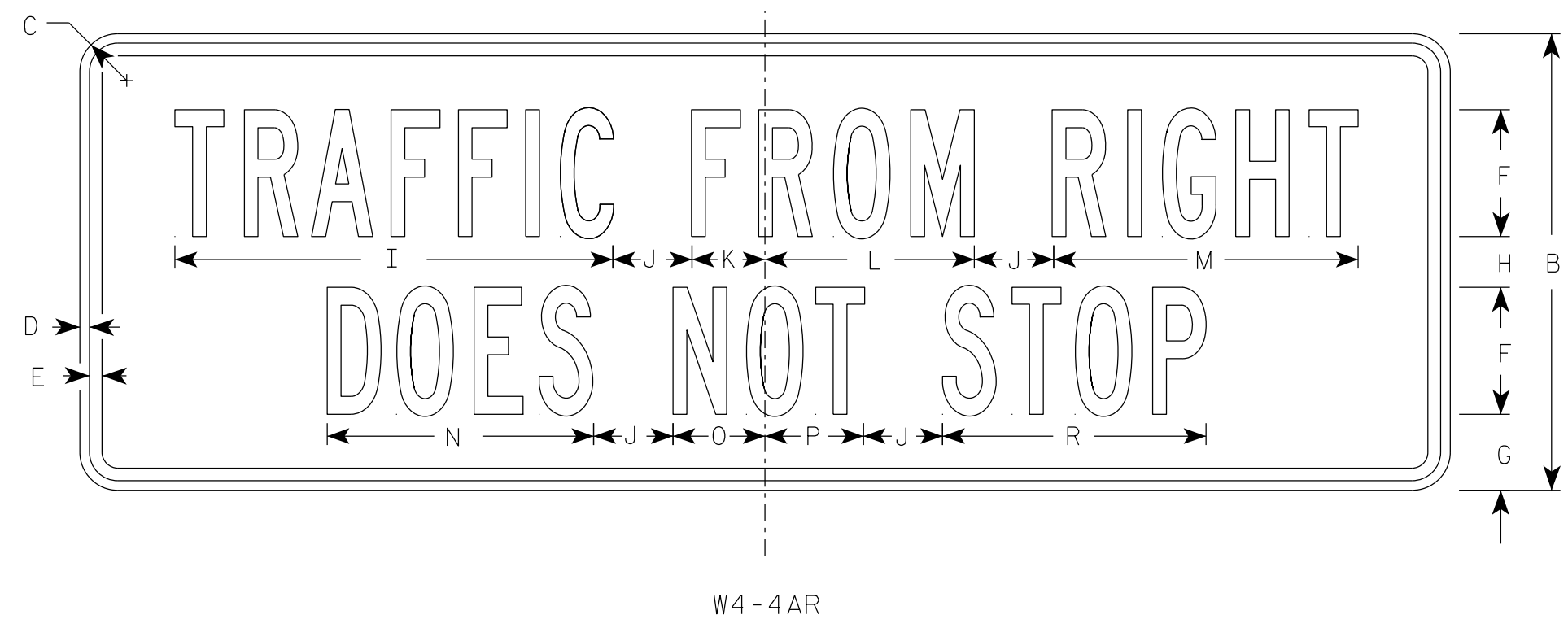
SHEET NO: 90

E





- NOTES
- 1. Sign is Type II - Type F Reflective
  - 2. Color:
    - Background - Yellow
    - Message - Black
  - 3. Message Series - B



| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I      | J     | K     | L     | M     | N      | O     | P     | Q | R      | S     | T     | U     | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|--------|-------|-------|-------|-------|--------|-------|-------|---|--------|-------|-------|-------|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |       |        |       |       |       |       |        |       |       |   |        |       |       |       |   |   |   |   |   |                 |
| 2S   | 30 | 12 | 1 1/2 | 3/8 | 3/8 | 3 | 2 1/4 | 1 1/2 | 10 3/8 | 1 1/2 | 1 3/4 | 4 7/8 | 7 1/4 | 6 1/4  | 2 1/4 | 2 1/4 |   | 6 1/4  | 1     | 5 5/8 | 5 3/4 |   |   |   |   |   | 2.5             |
| 2M   | 30 | 12 | 1 1/2 | 3/8 | 3/8 | 3 | 2 1/4 | 1 1/2 | 10 3/8 | 1 1/2 | 1 3/4 | 4 7/8 | 7 1/4 | 6 1/4  | 2 1/4 | 2 1/4 |   | 6 1/4  | 1     | 5 5/8 | 5 3/4 |   |   |   |   |   | 2.5             |
| 3    | 42 | 15 | 1 1/2 | 3/8 | 1/2 | 4 | 2 5/8 | 1 3/4 | 13 7/8 | 2 3/8 | 2 1/8 | 6 3/4 | 9 3/4 | 8 3/8  | 2 3/4 | 3 3/8 |   | 8 3/8  | 1 1/8 | 7 3/4 | 7 3/4 |   |   |   |   |   | 4.38            |
| 4    | 54 | 18 | 1 1/2 | 3/8 | 1/2 | 5 | 3     | 2     | 17 1/4 | 3 1/8 | 2 7/8 | 8 1/4 | 12    | 10 1/2 | 3 5/8 | 3 7/8 |   | 10 3/8 | 1 3/4 | 9 3/8 | 9 5/8 |   |   |   |   |   | 6.75            |
| 5    |    |    |       |     |     |   |       |       |        |       |       |       |       |        |       |       |   |        |       |       |       |   |   |   |   |   |                 |

STANDARD SIGN

W4-4AL & W4-4AR

WISCONSIN DEPT OF TRANSPORTATION

APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

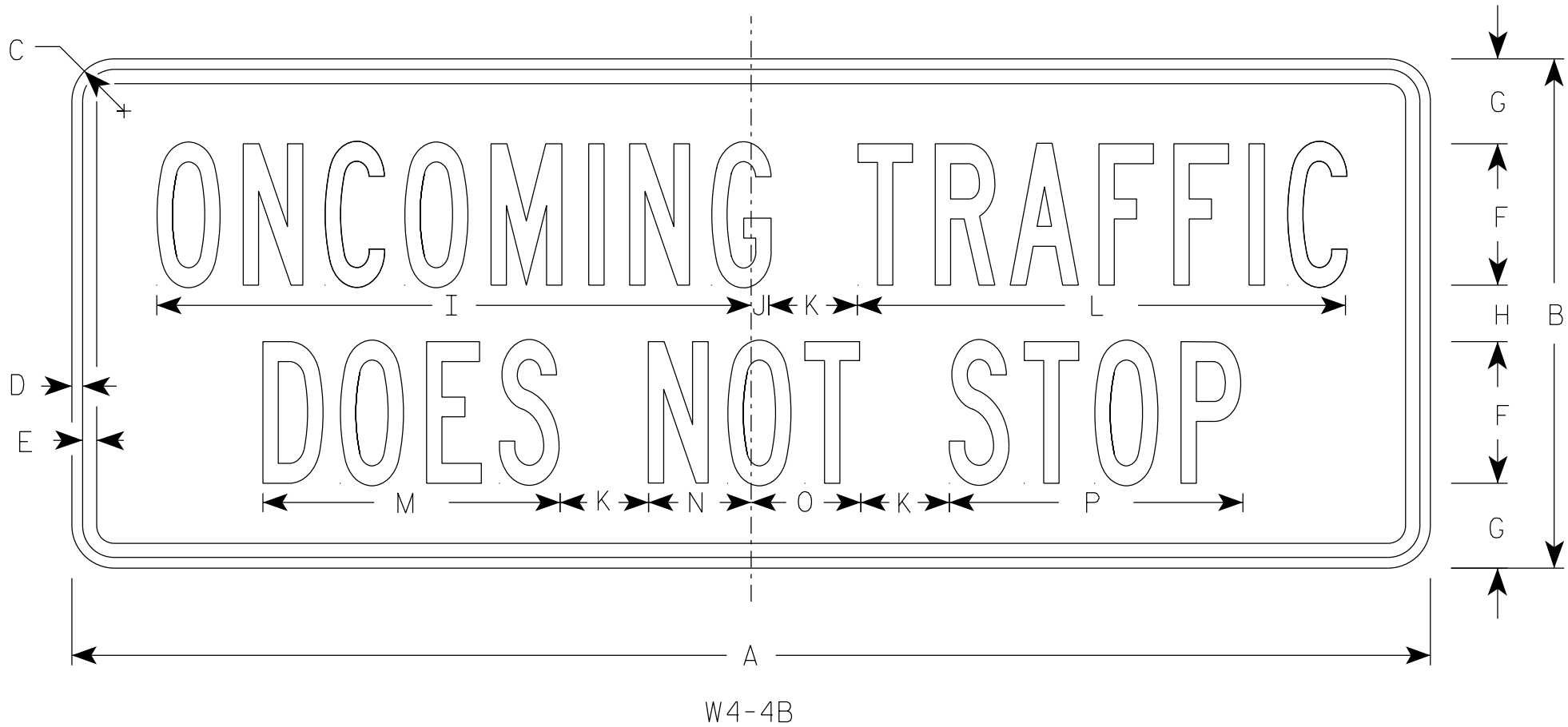
DATE 8/31/2023 PLATE NO. W4-4A.3

7

7

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
  - Background - Yellow
  - Message - Black
- 3. Message Series - B



| SIZE | A  | B  | C     | D   | E   | F | G     | H     | I      | J   | K     | L      | M      | N     | O     | P      | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|-----|-----|---|-------|-------|--------|-----|-------|--------|--------|-------|-------|--------|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |     |     |   |       |       |        |     |       |        |        |       |       |        |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 30 | 12 | 1 1/2 | 3/8 | 1/2 | 3 | 2 1/4 | 1 1/2 | 12 3/8 | 5/8 | 1 1/2 | 10 3/8 | 6 1/4  | 2 1/4 | 2 1/4 | 6 1/4  |   |   |   |   |   |   |   |   |   |   | 2.5             |
| 2M   | 30 | 12 | 1 1/2 | 3/8 | 1/2 | 3 | 2 1/4 | 1 1/2 | 12 3/8 | 5/8 | 1 1/2 | 10 3/8 | 6 1/4  | 2 1/4 | 2 1/4 | 6 1/4  |   |   |   |   |   |   |   |   |   |   | 2.5             |
| 3    | 42 | 15 | 1 1/2 | 3/8 | 1/2 | 4 | 2 5/8 | 1 3/4 | 16 7/8 | 5/8 | 2 3/8 | 13 7/8 | 8 3/8  | 3     | 3 1/8 | 8 3/8  |   |   |   |   |   |   |   |   |   |   | 4.38            |
| 4    | 48 | 18 | 1 1/2 | 3/8 | 1/2 | 5 | 3     | 2     | 21     | 5/8 | 3 1/8 | 17 1/4 | 10 1/2 | 3 5/8 | 3 7/8 | 10 3/8 |   |   |   |   |   |   |   |   |   |   | 6.0             |
| 5    |    |    |       |     |     |   |       |       |        |     |       |        |        |       |       |        |   |   |   |   |   |   |   |   |   |   |                 |

STANDARD SIGN

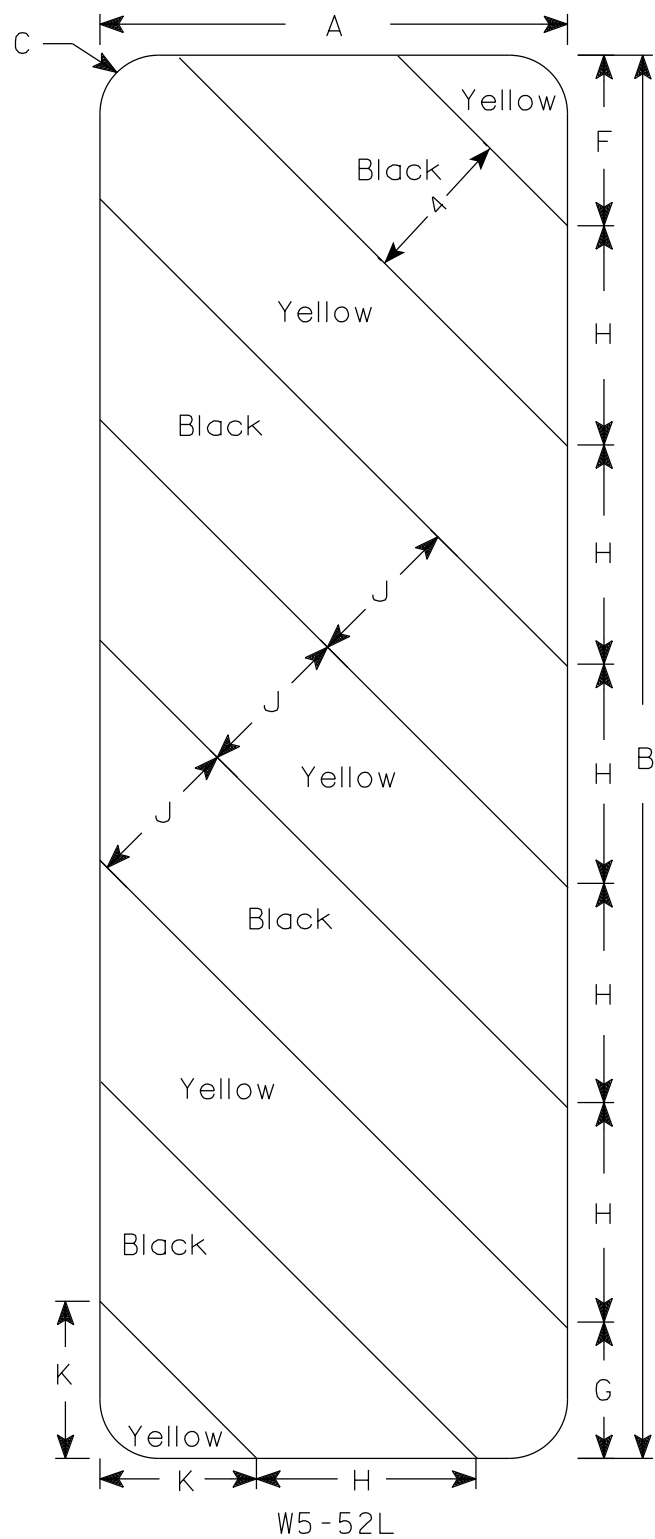
W4-4B

WISCONSIN DEPT OF TRANSPORTATION

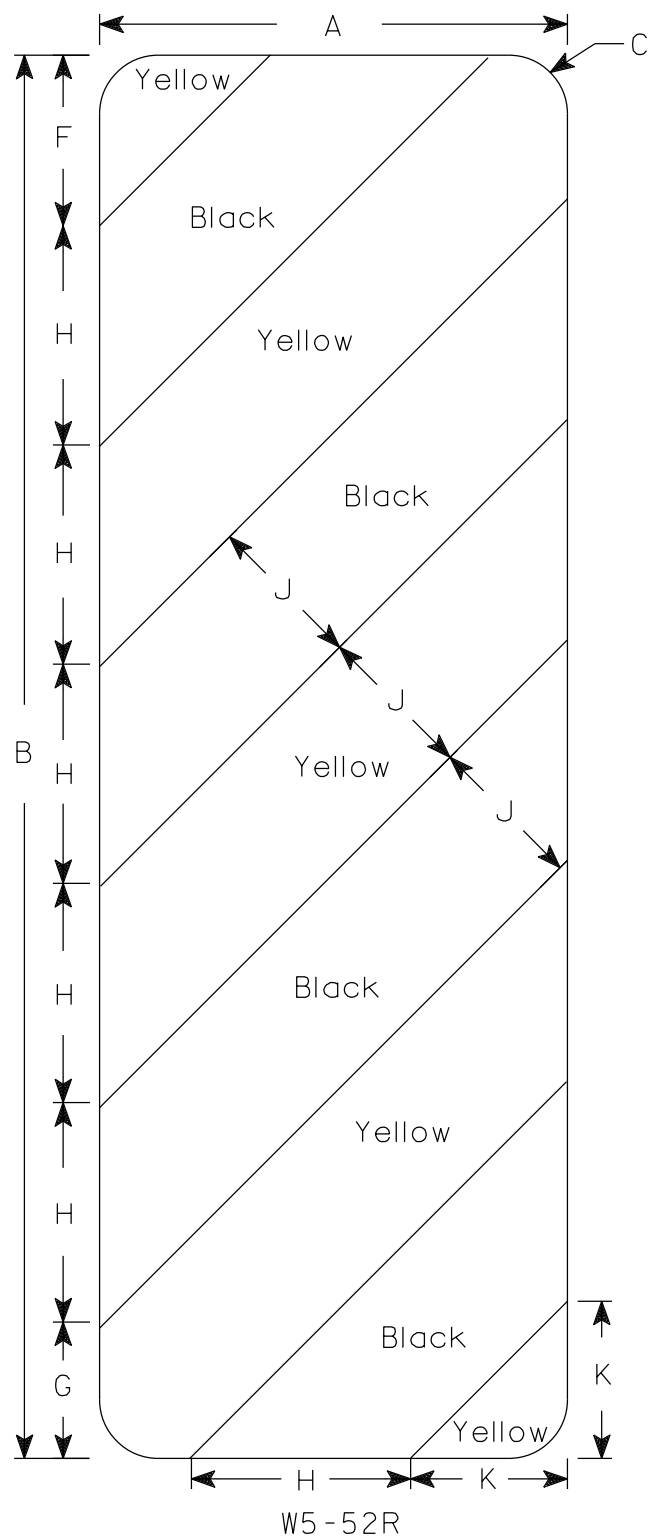
APPROVED *Matthew R. Rauch*  
for State Traffic Engineer

DATE 9/5/2023 PLATE NO. W4-4B.3





W5-52L



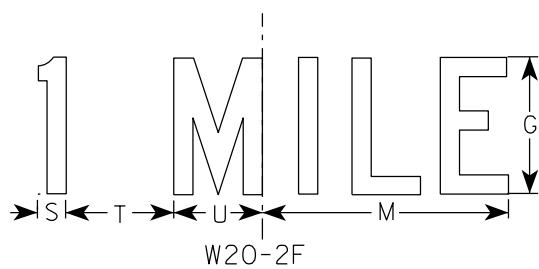
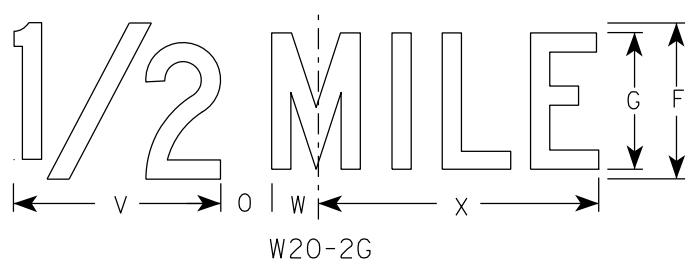
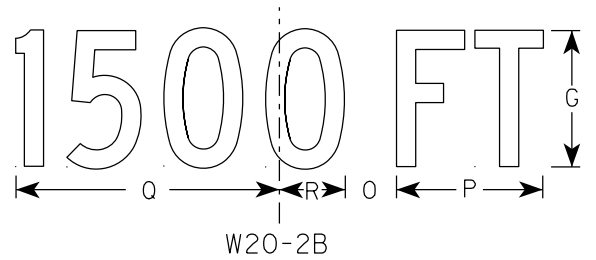
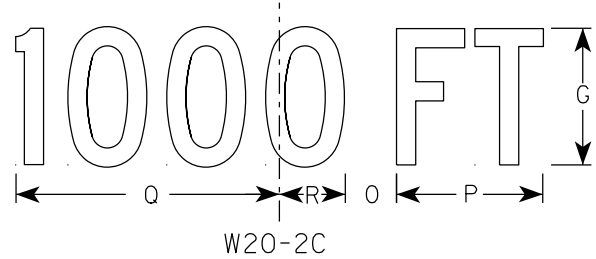
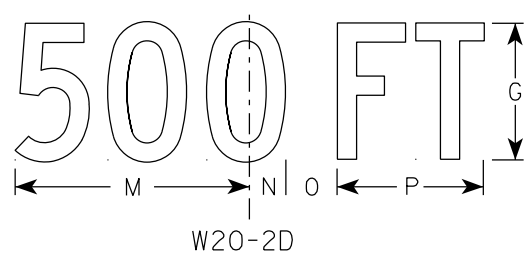
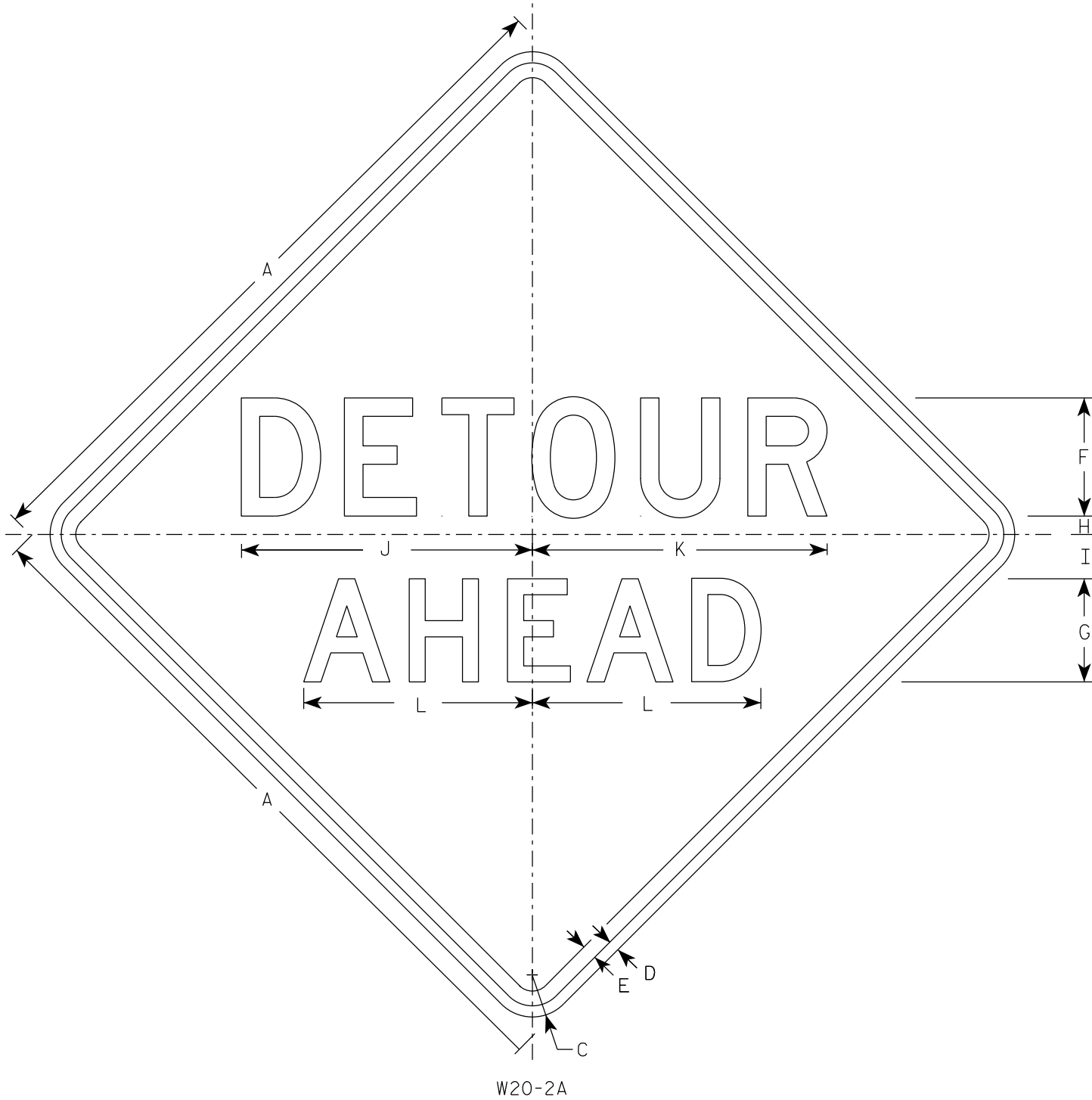
W5-52R

NOTES

- 1. Sign is Type II - Type F Reflective
- 2. Color:
  - Background - Yellow
  - Message - Black
- 3. Alternate colors of stripes as shown.

| SIZE | A  | B  | C     | D | E | F     | G     | H     | I   | J | K      | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | Area<br>sq. ft. |
|------|----|----|-------|---|---|-------|-------|-------|-----|---|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----------------|
| 1    |    |    |       |   |   |       |       |       |     |   |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 2S   | 12 | 36 | 1 1/2 |   |   | 4 3/8 | 3 1/2 | 5 5/8 | 45° | 4 | 4      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.0             |
| 2M   | 12 | 36 | 1 1/2 |   |   | 4 3/8 | 3 1/2 | 5 5/8 | 45° | 4 | 4      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3.0             |
| 3    | 18 | 54 | 1 1/2 |   |   | 6     | 5 1/2 | 8 1/2 | 45° | 6 | 6 9/16 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6.75            |
| 4    |    |    |       |   |   |       |       |       |     |   |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |
| 5    |    |    |       |   |   |       |       |       |     |   |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |                 |

|             |  |      |  |         |  |              |  |   |
|-------------|--|------|--|---------|--|--------------|--|---|
| PROJECT NO: |  | HWY: |  | COUNTY: |  | SHEET NO: 93 |  | E |
|-------------|--|------|--|---------|--|--------------|--|---|



### NOTES

- Sign is Type II - Type F Reflective
- Color:  
Background - Orange  
Message - Black
- Message Series - See note 5
- Corners may be square or rounded when base material is plywood but borders shall be rounded as shown. When base material is metal, the corners and borders shall be rounded.
- Line 1 is Series D.  
Line 2 is Series D for AHEAD and Series C for all other distances.

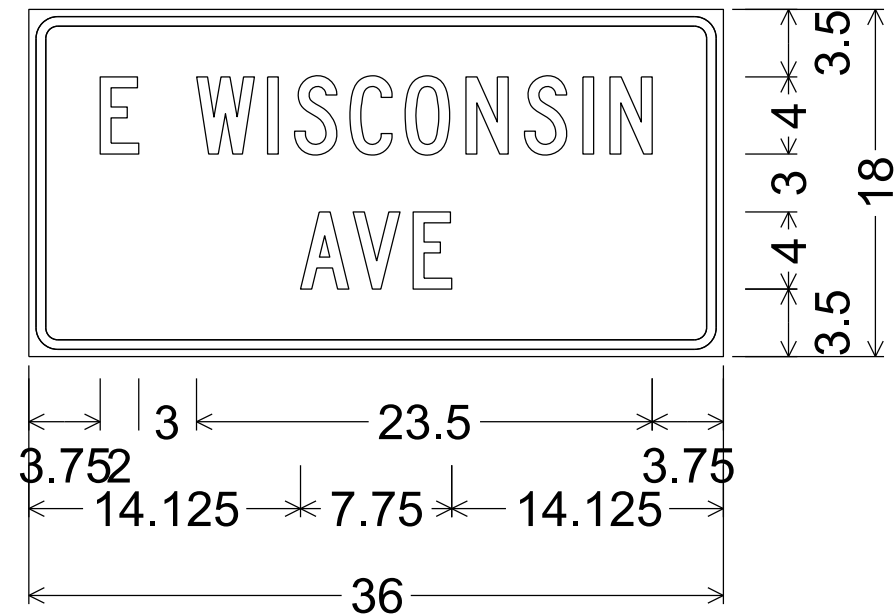
| SIZE | A  | B | C     | D   | E   | F | G | H     | I     | J      | K  | L      | M  | N     | O     | P     | Q      | R     | S     | T     | U     | v      | w     | X      | Y | Z | Area<br>sq. ft. |
|------|----|---|-------|-----|-----|---|---|-------|-------|--------|----|--------|----|-------|-------|-------|--------|-------|-------|-------|-------|--------|-------|--------|---|---|-----------------|
| 1    | 36 |   | 2 1/4 | 5/8 | 3/4 | 6 | 5 | 1     | 2 1/4 | 14 3/4 | 15 | 11 5/8 | 9  | 1 3/8 | 1 7/8 | 5 5/8 | 10 1/8 | 2 1/2 | 1 1/8 | 4 1/2 | 3 1/2 | 8      | 1 3/4 | 10 3/4 |   |   | 9.0             |
| 2S   | 48 |   | 3     | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 2M   | 48 |   | 3     | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 3    | 48 |   | 3     | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 4    | 48 |   | 3     | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |
| 5    | 48 |   | 3     | 3/4 | 1   | 8 | 7 | 1 1/4 | 3     | 19 3/4 | 20 | 15 1/2 | 12 | 1 7/8 | 2 5/8 | 7 1/2 | 13 1/2 | 3 3/8 | 1 1/2 | 6     | 4 5/8 | 10 5/8 | 2 3/8 | 14 3/8 |   |   | 16.0            |

|                                  |                                                       |
|----------------------------------|-------------------------------------------------------|
| STANDARD SIGN                    |                                                       |
| W20-2A,B,C,D,F & G               |                                                       |
| WISCONSIN DEPT OF TRANSPORTATION |                                                       |
| APPROVED                         | <i>Matthew R. Rauch</i><br>For State Traffic Engineer |
| DATE 1/10/2024                   | PLATE NO. W20-2.7                                     |

|             |      |         |              |   |
|-------------|------|---------|--------------|---|
| PROJECT NO: | HWY: | COUNTY: | SHEET NO: 94 | E |
|-------------|------|---------|--------------|---|



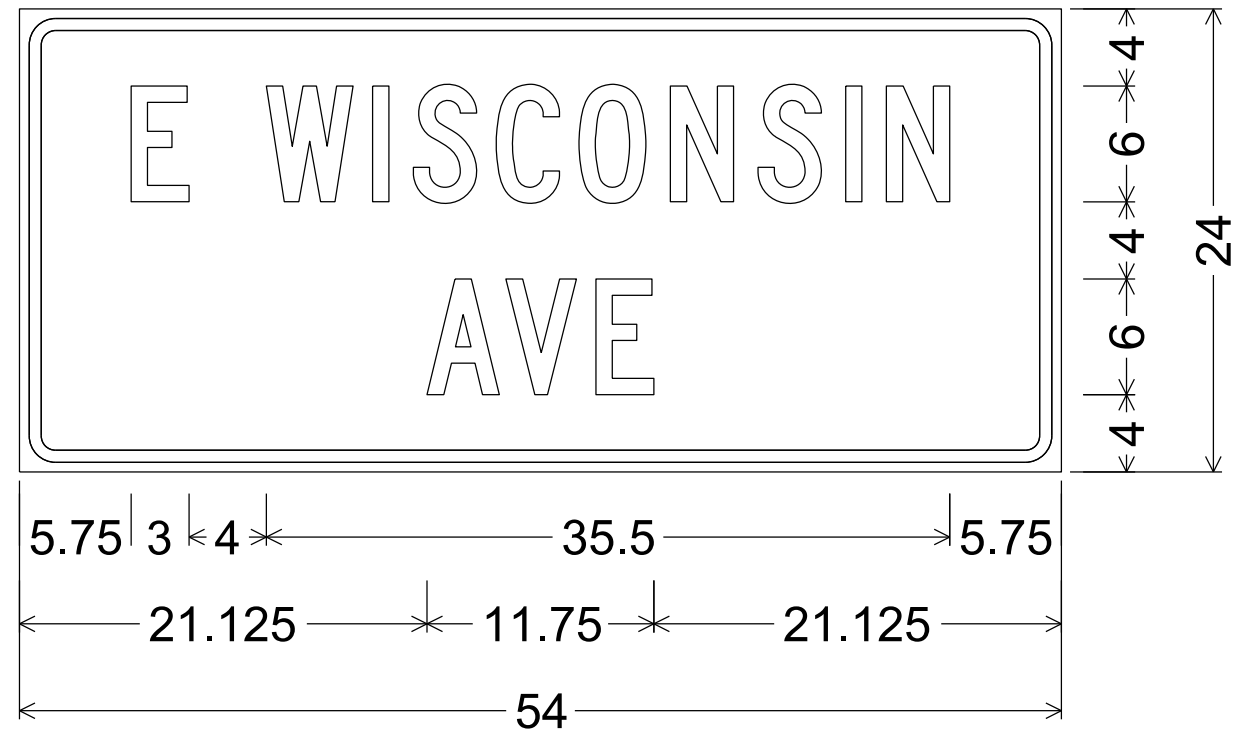
7



1.500" Radius, 0.500" Border, 0.375" Indent

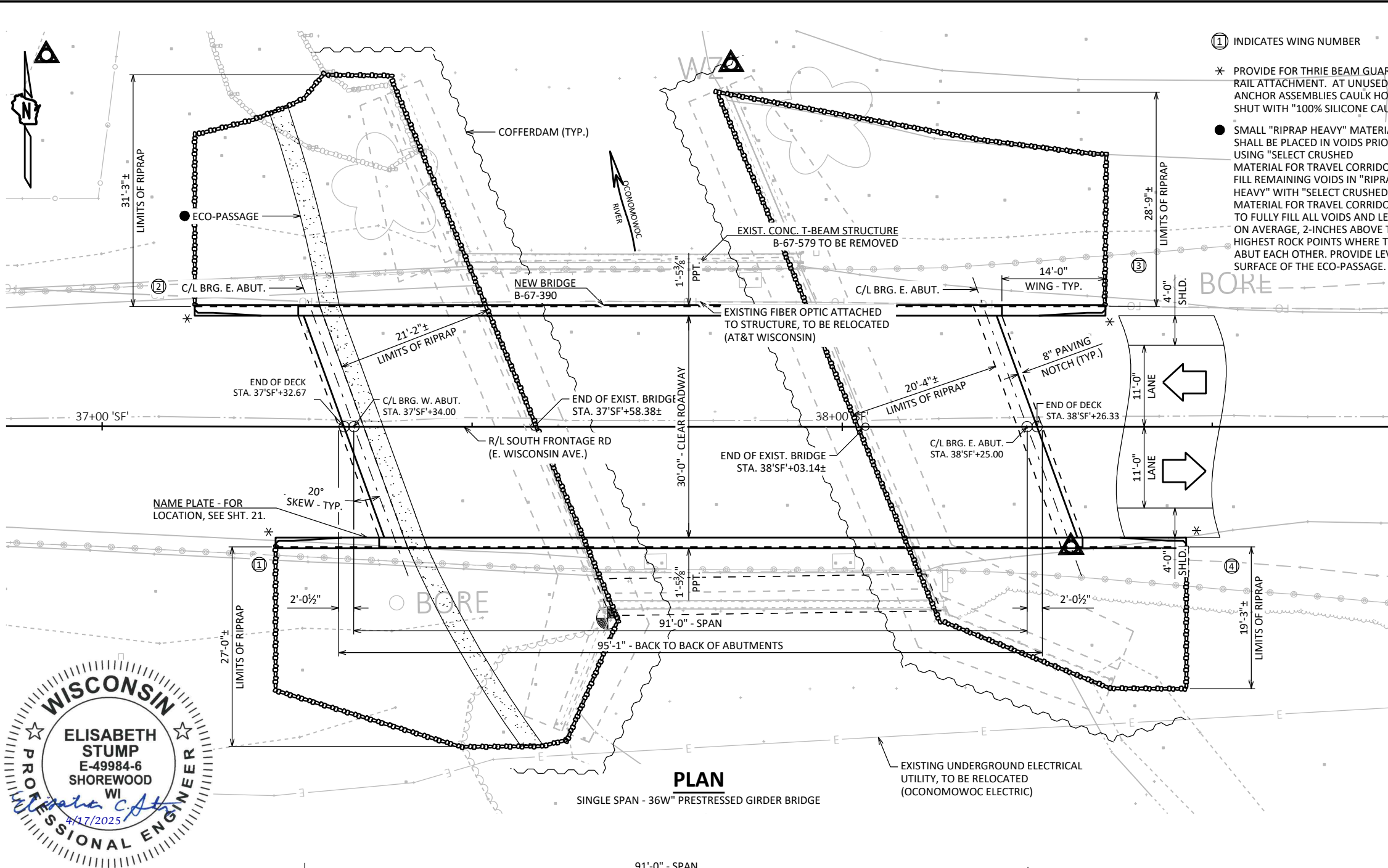
NOTES

1. Fixed Message Signs Type II - Type F Reflective
2. Color:  
Background - Orange  
Message - Black
3. Message Series - D



1.875" Radius, 0.625" Border, 0.500" Indent

7



| DESIGN DATA                                                                      |           | STATE PROJECT NUMBER |
|----------------------------------------------------------------------------------|-----------|----------------------|
| LIVE LOAD:                                                                       |           | 3310-07-71           |
| DESIGN LOADING:                                                                  | HL-93     |                      |
| INVENTORY RATING:                                                                | RF = 1.12 |                      |
| OPERATING RATING:                                                                | RF = 1.85 |                      |
| WISCONSIN STANDARD PERMIT VEHICLE (WIS-SPV): 250 (KIPS)                          |           |                      |
| STRUCTURE IS DESIGNED FOR A FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT. |           |                      |
| MATERIAL PROPERTIES:                                                             |           |                      |
| CONCRETE MASONRY:                                                                |           |                      |
| SUPERSTRUCTURE                                                                   |           | $f'_c = 4,000$ PSI   |
| ALL OTHER                                                                        |           | $f'_c = 3,500$ PSI   |
| BAR STEEL REINFORCEMENT                                                          |           |                      |
| GRADE 60                                                                         |           | $f_y = 60,000$ PSI   |
| 36-W" PRESTRESSED GIRDERS:                                                       |           |                      |
| CONCRETE MASONRY                                                                 |           | $f'_c = 8,000$ PSI   |
| STRANDS: 0.6" DIA. WITH ULTIMATE TENSILE STRENGTH OF 270,000 P.S.I.              |           |                      |

**FOUNDATION DATA**

ABUTMENTS TO BE SUPPORTED ON HP 10-INCH X 42 LB PILING (WITH PILE POINTS) DRIVEN TO A REQUIRED DRIVING RESISTANCE OF 180 TONS \*\* PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.

ESTIMATED 105'-0" LONG AT WEST ABUTMENT.

ESTIMATED 95'-0" LONG AT EAST ABUTMENT.

\*\*THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE PILE CAPACITY.

| HYDRAULIC DATA                | TRAFFIC DATA            |
|-------------------------------|-------------------------|
| <b>100-YEAR FREQUENCY:</b>    | <b>E. WISCONSIN AVE</b> |
| $Q_{100} = 430$ C.F.S.        | ADT = 1,116 (2035)      |
| $V_{100} = 1.18$ F.P.S.       | R.D.S. = 40 MPH         |
| $HW_{100} = EL. 862.45$       |                         |
| WATERWAY AREA = 240.0 SQ. FT. |                         |
| DRAINAGE AREA = 72.9 SQ. MI.  |                         |
| ROADWAY OVERTOPPING = N/A     |                         |
| SCOUR CRITICAL CODE = 8       |                         |
| <b>2-YEAR FREQUENCY:</b>      |                         |
| $Q_2 = 46$ C.F.S.             |                         |
| $V_2 = 0.2$ F.P.S.            |                         |
| $HW_2 = EL. 860.13$           |                         |

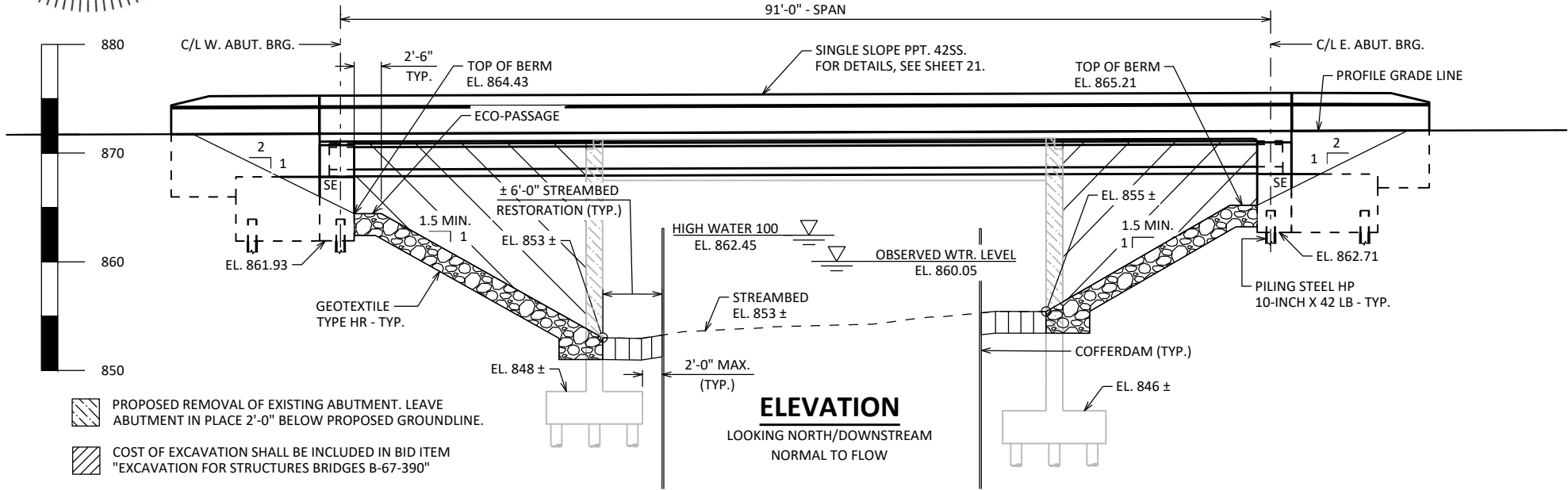
| BENCH MARK |              |                                                                         |         |
|------------|--------------|-------------------------------------------------------------------------|---------|
| NO.        | STATION      | DESCRIPTION                                                             | ELEV.   |
| BM 3       | 36'SF'+98.44 | DISK IN SW WINGWALL OF B-67-154-89                                      | 878.110 |
| BM 5       | 36'SF'+86.33 | 60d NAIL IN POWER POLE, SOUTH SIDE OF WISC. AVE., WEST SIDE OF B-67-579 | 869.590 |
| BM 6       | 37'SF'+68.32 | CHISELED SQUARE IN SW WINGWALL OF B-67-579                              | 871.920 |
| BM 7       | 38'SF'+88.94 | 60d NAIL IN POWER POLE, SOUTH SIDE OF WISC. AVE., EAST SIDE OF B-67-579 | 866.340 |

LIST OF DRAWINGS:

- GENERAL PLAN
- CROSS SECTION & QUANTITIES
- SUBSURFACE EXPLORATION
- WEST ABUTMENT
- WEST ABUTMENT DETAILS
- WING 1
- WING 2
- WEST ABUTMENT BILL OF BARS
- EAST ABUTMENT
- EAST ABUTMENT DETAILS
- WING 3
- WING 4
- EAST ABUTMENT BILL OF BARS
- 36W" PRESTRESSED GIRDER DETAILS 1
- 36W" PRESTRESSED GIRDER DETAILS 2
- STEEL INTER. DIAPHRAGM DETAILS
- SUPERSTRUCTURE
- SUPERSTRUCTURE PLAN
- SUPERSTRUCTURE DETAILS
- SUPERSTRUCTURE BILL OF BARS
- SINGLE SLOPE PARAPET 42SS

**STRUCTURE DESIGN CONTACTS:**

CONSULTANT:  
ELISABETH STUMP 714-872-1825  
BUREAU OF STRUCTURES:  
AARON BONK 608-261-0261



NO.

DATE

REVISION

BY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

ACCEPTED 04/17/25  
CHIEF STRUCTURES DESIGN ENGINEER DATE

STRUCTURE B-67-390

E. WISCONSIN AVE. OVER OCONOMOWOC RIVER

COUNTY WAUKESHA TOWN/CITY/VILLAGE OCONOMOWOC

DESIGN SPEC. AASHTO LRFD BRIDGE DESIGN SPECIFICATION 9TH ED.

DESIGNED BY JAC CK'D ECS DRAWN BY JAC CK'D ECS

GENERAL PLAN

SHEET 1 OF 21  
96



DRAWINGS SHALL NOT BE SCALED.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BEVEL EXPOSED EDGES OF CONCRETE  $\frac{3}{4}$ " UNLESS OTHERWISE NOTED.

THE UPPER LIMITS OF "EXCAVATION FOR STRUCTURES B-67-390" SHALL BE THE EXISTING GROUNDLINE.

AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE PLACED BEFORE ABUTMENT CONSTRUCTION AND IS NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH STRUCTURE BACKFILL TYPE A.

EXCAVATION BELOW THE ABUTMENT AND ABUTMENT BEDDING MATERIALS REQUIRES ENGINEER APPROVAL. GEOTEXTILE SHALL BE SET AT THE BOTTOM OF EXCAVATION AND EXTEND 2'-0" ABOVE BOTTOM OF ABUTMENT.

THE QUANTITY FOR BACKFILL STRUCTURE IS CALCULATED BASED ON THE DETAIL SHOWN IN THE PLANS.

ELASTOMERIC BEARING PADS NEED NOT BE INDIVIDUALLY MOLDED PROVIDED THE CUT EDGES ARE SMOOTH AND TRUE.

PROTECTIVE SURFACE TREATMENT TO BE APPLIED TO THE ENTIRE EXPOSED TOP OF DECK AND TO THE VERTICAL AND HORIZONTAL SURFACES OF THE PAVING NOTCHES AT ABUTMENT DIAPHRAGMS.

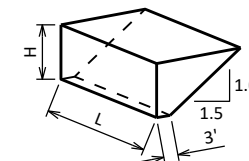
PIGMENTED SURFACE SEALER TO BE APPLIED TO THE FRONT FACE AND THE TOP OF THE PARAPETS.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIPRAP, SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR, AND GEOTEXTILE TYPE "HR" TO THE EXTENT SHOWN ON SHEET 1 AND THE ABUTMENT DETAILS.

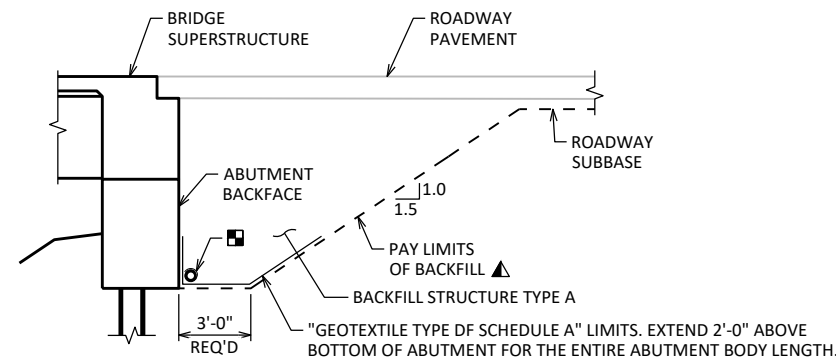
AT ABUTMENTS, HP 12X53 STEEL PILING MAY BE USED IN LIEU OF HP 10X42 STEEL PILING. PAYMENT SHALL BE BASED ON BID PRICE FOR HP 10X42 STEEL PILING.

THE HAUNCH CONCRETE QUANTITY IS BASED ON THE AVERAGE HAUNCH SHOWN ON THE "36W PRESTRESSED GIRDER DETAILS 2" SHEET.

THE COFFERDAM SHALL NOT BE INSTALLED DURING IN-STREAM RESTRICTION DATES; HOWEVER, THE COFFERDAM CAN BE REMOVED DURING THE IN-STREAM RESTRICTION DATES.

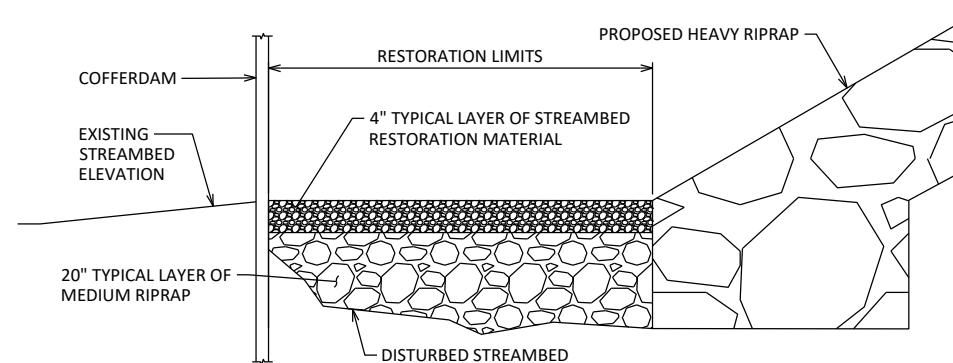


L = OUT TO OUT OF ABUTMENT BODY INCLUDING WINGS (FT)  
H = AVERAGE ABUTMENT FILL HEIGHT (FT)  
EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS AND  
1.00 FOR TON BID ITEMS)  
 $V_{CF} = (L)(3.0')(H) + (L)(0.5')(1.5H)(H)$   
 $V_{CY} = V_{CF}(EF)/27$   
 $V_{TON} = V_{CY}(2.0)$



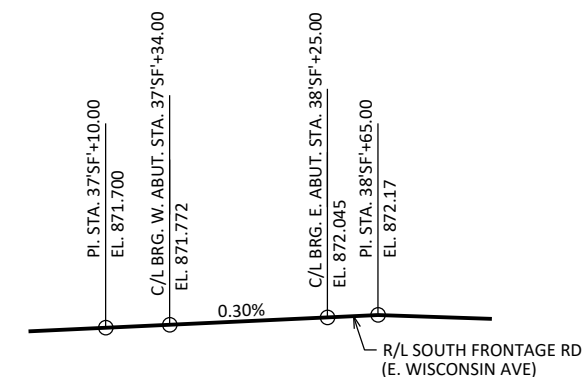
▲ BACKFILL PAY LIMITS. BACKFILL BEYOND PAY LIMITS SHALL BE INCIDENTAL TO EXCAVATION FOR STRUCTURES. LIMITS OF EXCAVATION SHALL BE DETERMINED BY THE CONTRACTOR.

- PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.



**NOTE:**

1. DO NOT DISTURB STREAMBED OUTSIDE OF LIMITS SHOWN ON GENERAL PLAN SHEET.
2. RESTORE STREAM BED TO PRE-CONSTRUCTION ELEVATIONS.



|                                                    |      |                     |                      |
|----------------------------------------------------|------|---------------------|----------------------|
|                                                    |      |                     |                      |
| NO.                                                | DATE | REVISION            | BY                   |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                     |                      |
| <b>STRUCTURE B-67-390</b>                          |      |                     |                      |
| DRAWN<br>BY                                        |      | JAC                 | PLANS<br>CK'D<br>ECS |
| <b>CROSS SECTION &amp;<br/>QUANTITIES</b>          |      | SHEET 2 OF 21<br>97 |                      |

| BID ITEM NUMBER | BID ITEMS                                                | UNIT | WEST ABUT. | EAST ABUT. | SUPER  | TOTALS |
|-----------------|----------------------------------------------------------|------|------------|------------|--------|--------|
| 203.0270        | REMOVING STRUCTURE OVER WATERWAY DEBRIS CAPTURE B-67-579 | EACH | ---        | ---        | ---    | 1      |
| 206.1001        | EXCAVATION FOR STRUCTURES BRIDGES B-67-390               | EACH | ---        | ---        | ---    | 1      |
| 206.5001        | COFFERDAMS B-67-390                                      | EACH | ---        | ---        | ---    | 1      |
| 210.1500        | BACKFILL STRUCTURE TYPE A                                | TON  | 210        | 190        | ---    | 400    |
| 502.0100        | CONCRETE MASONRY BRIDGES                                 | CY   | 38.9       | 35.9       | 149.5  | 224    |
| 502.3200        | PROTECTIVE SURFACE TREATMENT                             | SY   | ---        | ---        | 325    | 325    |
| 502.3210        | PIGMENTED SURFACE SEALER                                 | SY   | ---        | ---        | 121    | 121    |
| 503.0137        | PRESTRESSED GIRDER TYPE I 36W-INCH                       | LF   | ---        | ---        | 552    | 552    |
| 505.0400        | BAR STEEL REINFORCEMENT HS STRUCTURES                    | LB   | 2,130      | 2,040      | ---    | 4,170  |
| 505.0600        | BAR STEEL REINFORCEMENT HS COATED STRUCTURES             | LB   | 1,540      | 1,510      | 23,720 | 26,770 |
| 506.2605        | BEARING PADS ELASTOMERIC NON-LAMINATED                   | EACH | 6          | 6          | ---    | 12     |
| 506.4000        | STEEL DIAPHRAGMS B-67-390                                | EACH | ---        | ---        | 10     | 10     |
| 516.0500        | RUBBERIZED MEMBRANE WATERPROOFING                        | SY   | 9          | 9          | ---    | 18     |
| 550.0500        | PILE POINTS                                              | EACH | 12         | 12         | ---    | 24     |
| 550.1100        | PIILING STEEL HP 10-INCH X 42 LB                         | LF   | 1,260      | 1,140      | ---    | 2,400  |
| 606.0200        | RIPRAP MEDIUM                                            | CY   | 49         | 49         | ---    | 98     |
| 606.0300        | RIPRAP HEAVY                                             | CY   | 246        | 210        | ---    | 456    |
| 612.0406        | PIPE UNDERDRAIN WRAPPED 6-INCH                           | LF   | 100        | 100        | ---    | 200    |
| 614.0150        | ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD             | EACH | ---        | ---        | 4      | 4      |
| 645.0111        | GEOTEXTILE TYPE DF SCHEDULE A                            | SY   | 41         | 41         | ---    | 82     |
| 645.0120        | GEOTEXTILE TYPE HR                                       | SY   | 370        | 320        | ---    | 690    |
| SPV.0060.01     | FISHERIES CONSULTANT                                     | EACH | ---        | ---        | ---    | 1      |
| SPV.0195.01     | SELECT CRUSHED MATERIAL FOR TRAVEL CORRIDOR              | TON  | 9          | ---        | ---    | 9      |
| SPV.0195.02     | STREAMBED RESTORATION MATERIAL                           | TON  | 17         | 17         | ---    | 34     |
|                 |                                                          |      |            |            |        |        |
|                 | NON-BID ITEMS                                            |      |            |            |        |        |
|                 | FILLER                                                   | SIZE | ---        | ---        | ---    | ½"     |
|                 |                                                          |      |            |            |        |        |

8

STATE PROJECT NUMBER

3310-07-71

MATERIAL SYMBOLS

ASPHALT

CONCRETE

SAND

BOULDERS OR COBBLES

SHALE



TOPSOIL



FILL



CLAY



LIMESTONE



SANDSTONE



PEAT



GRAVEL



SILT



BEDROCK (UNKNOWN)



IGNEOUS/META

LEGEND OF BORING

BORING #/EL.  
STA/OFFSET

ST

(1)  
0.25

(2)  
17



F-C  
COBBLE OR BOULDER



WEATHERED LIMESTONE

CORE RUN #1 - 24'-29'  
REC=80%, RQD=72%

UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)

UNLESS OTHERWISE SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION



AT TIME OF DRILLING



END OF DRILLING



AFTER DRILLING

ABBREVIATIONS

FINE

M-MEDIUM

C-COARSE

ST-SHELBY TUBE

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS LOCATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR AROUND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS COULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.

DATE

REVISION

BY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

STRUCTURE

B-67-390

DRAWN BY

JAC

PLANS CK'D

ECS

SUBSURFACE EXPLORATION

SHEET 3 OF 21

98



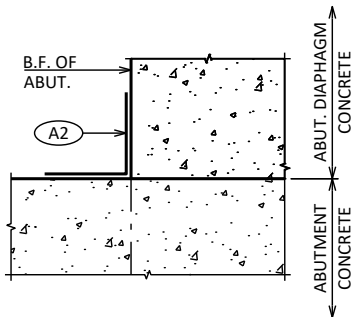
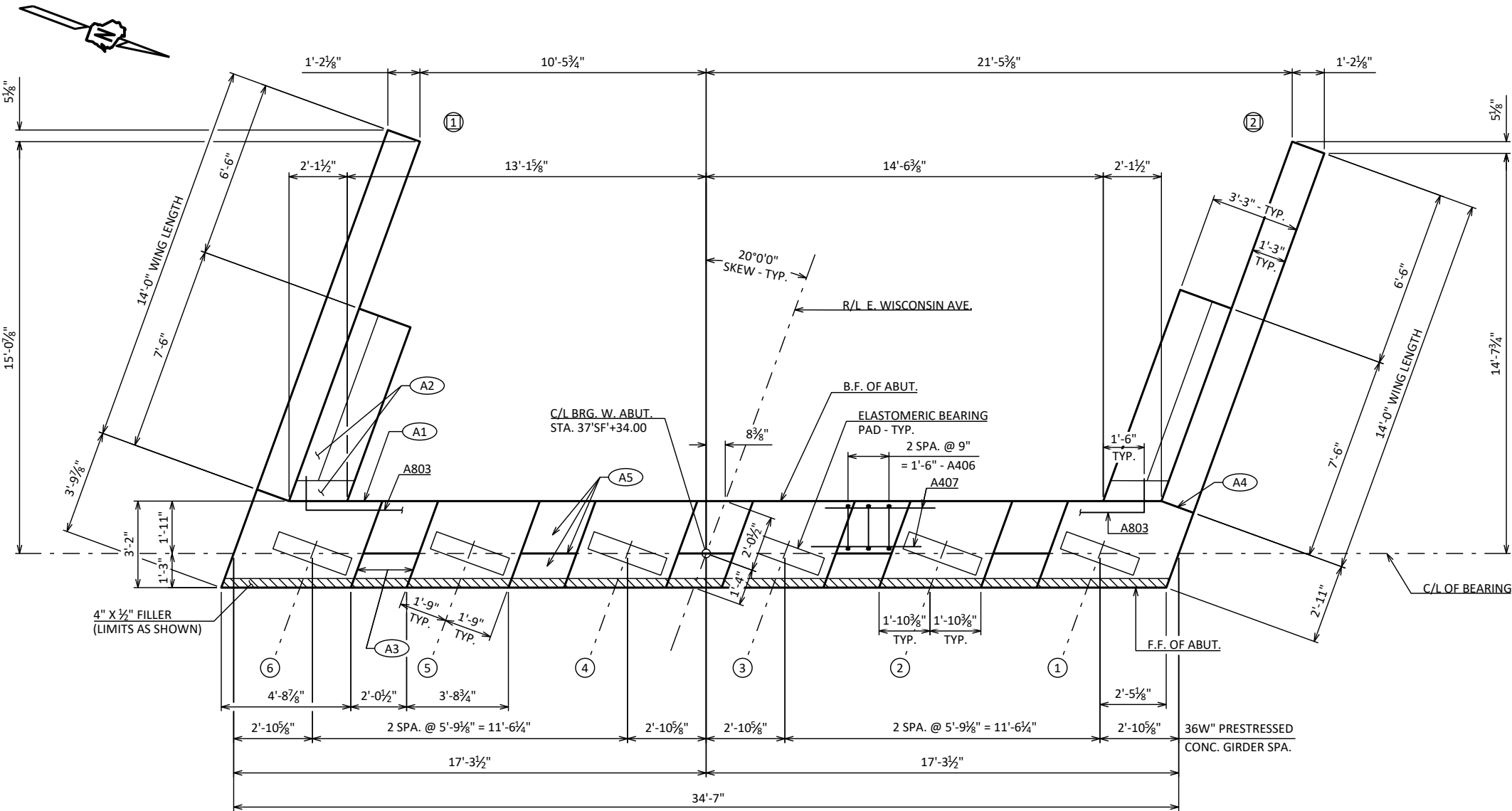
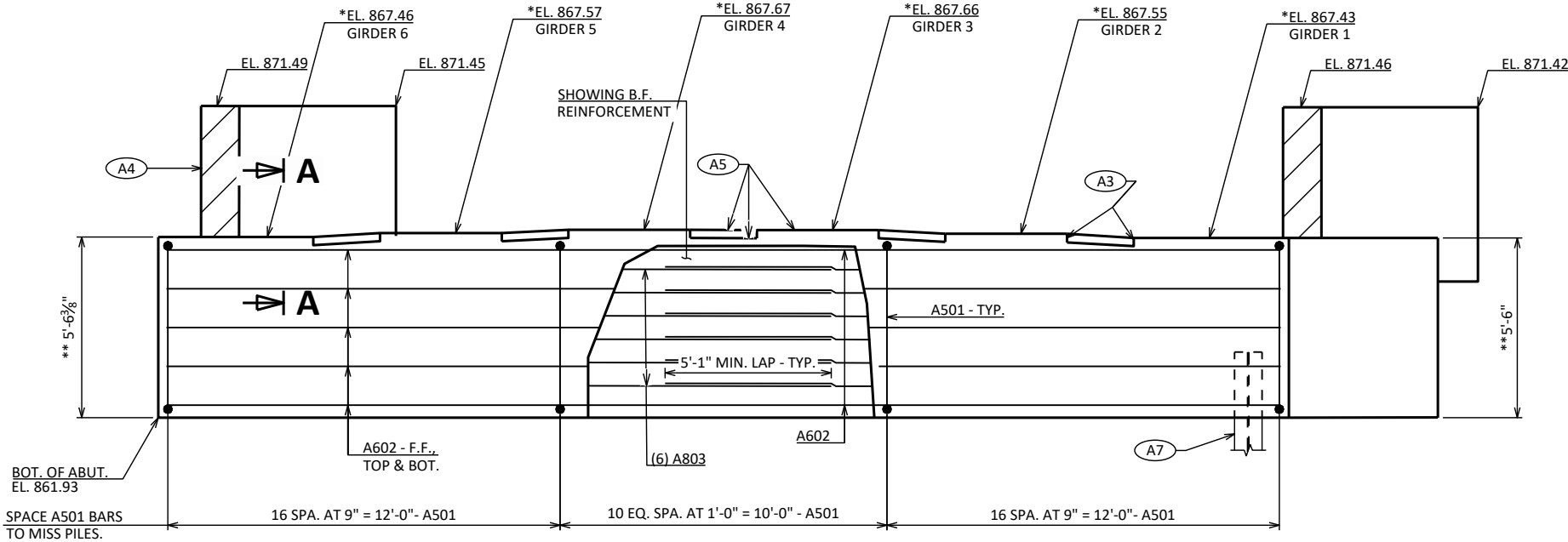
LEGEND

- \* ELEVATIONS ARE GIVEN AT THE TOP OF CONCRETE AT THE C/L OF BEARING
- \* \* DIMENSIONS AND ELEVATIONS ARE GIVEN AT THE B.F. OF ABUTMENT, FOR WING DETAILS AND ELEVATIONS, SEE SHEETS 6 & 7.
- (X) INDICATES WING/CORNER NUMBER
- (X) INDICATE GIRDER NUMBER
- (A1) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A2) PLACE BOTTOM HALF OF RUBBERIZED MEMBRANE WATERPROOFING HORIZONTAL IN THIS AREA. SEE SECTION A-A ON THIS SHEET.
- (A3) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A4) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND FROM BRIDGE SEAT TO TOP OF WING.
- (A5) STEEL TROWEL TOP SURFACE OF ABUTMENT AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE ABUTMENT.
- (A7) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING (WITH PILE POINTS), ESTIMATED 105'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.

NOTES

FOR 'SECTION THRU BODY', SEE SHEET 5.

ELEVATION  
LOOKING WEST



SECTION A-A

| NO.                                                | DATE | REVISION       | BY                  |
|----------------------------------------------------|------|----------------|---------------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                |                     |
| STRUCTURE B-67-390                                 |      |                |                     |
| DRAWN BY JAC/UD                                    |      | PLANS CK'D ECS |                     |
| WEST ABUTMENT                                      |      |                | SHEET 4 OF 21<br>99 |



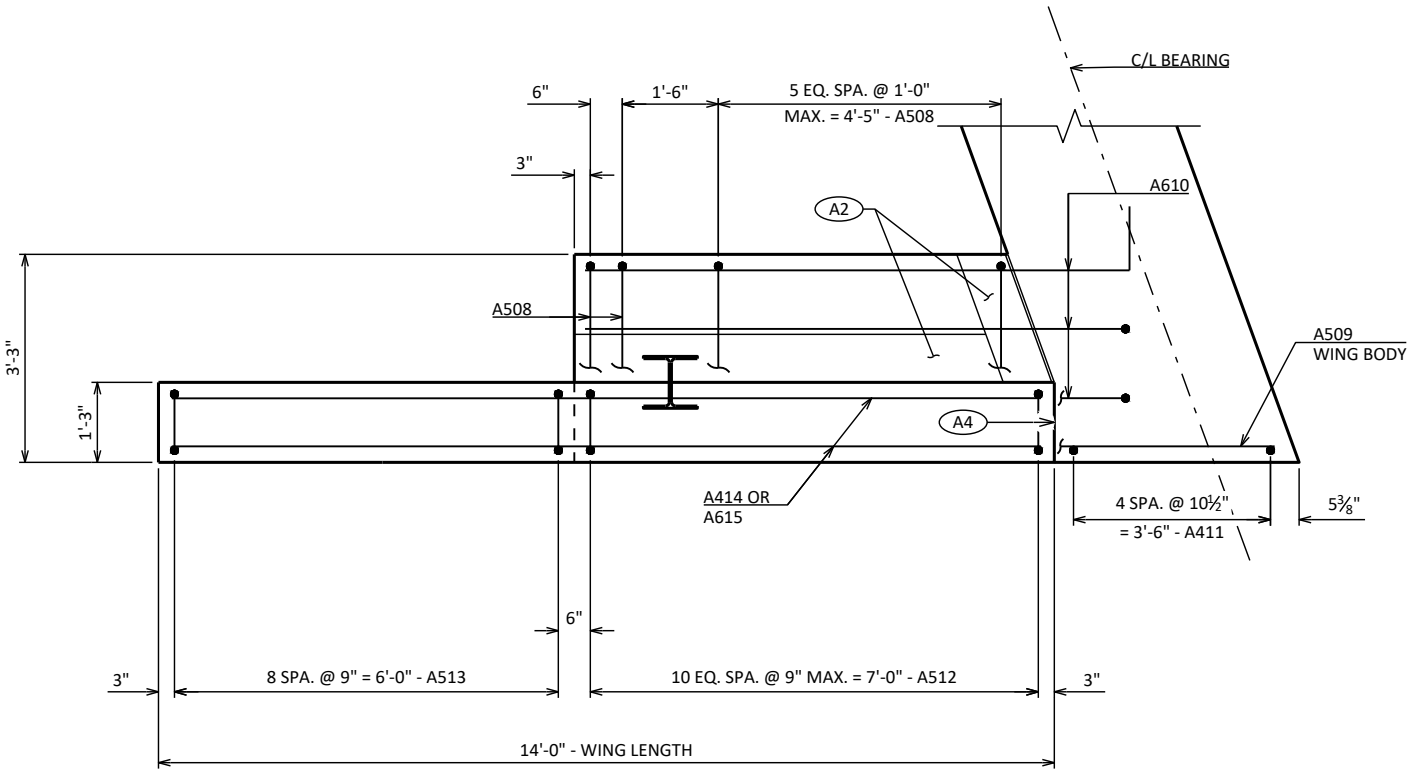
(X) INDICATES WING/CORNER NUMBER

(A8) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN.  
TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

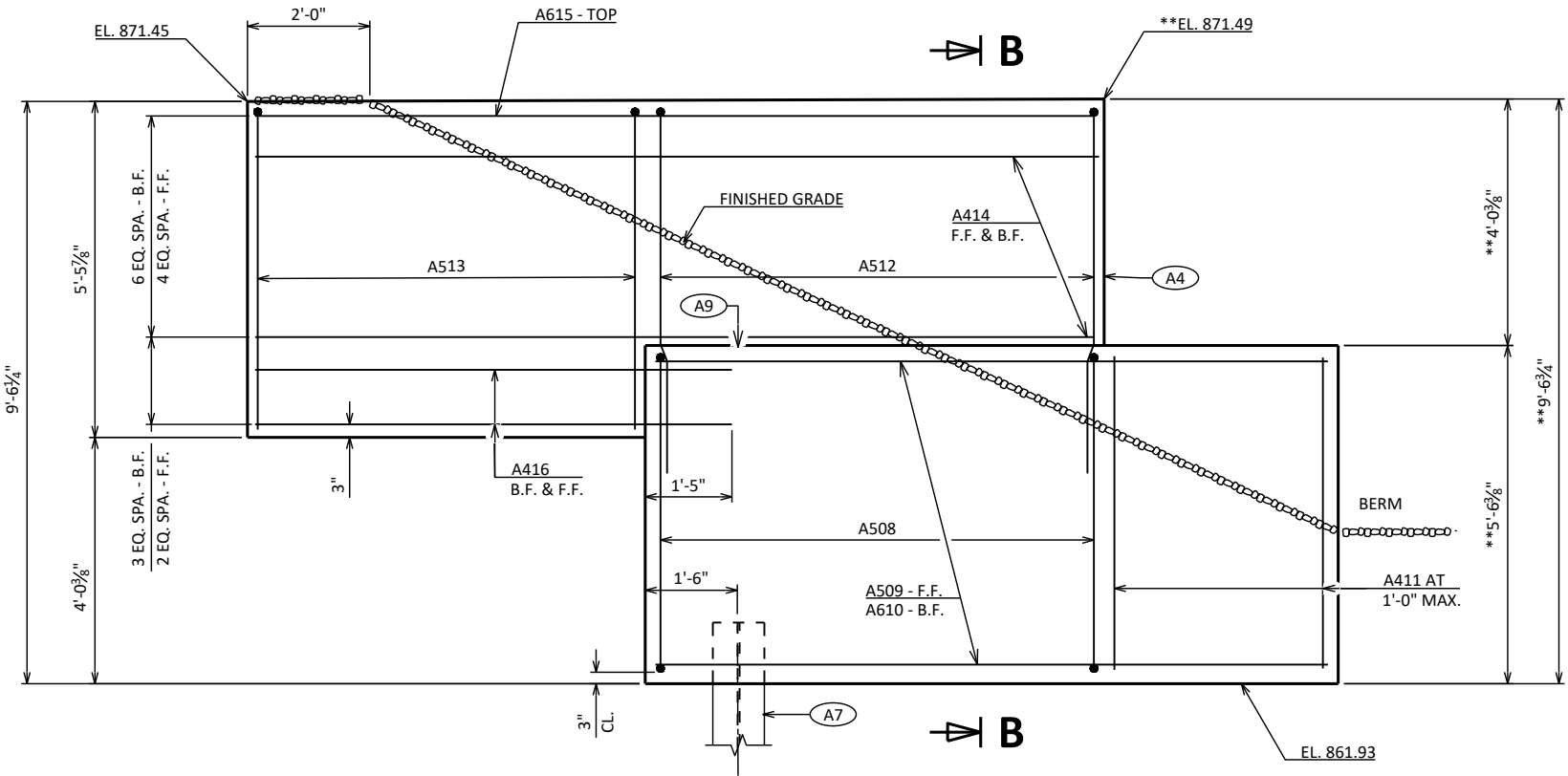
(A5) FOR SYMBOL DESCRIPTION, SEE SHEET 7.

|                                                    |      |                    |                   |
|----------------------------------------------------|------|--------------------|-------------------|
|                                                    |      |                    |                   |
| NO.                                                | DATE | REVISION           | BY                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                    |                   |
| <b>STRUCTURE</b>                                   |      | <b>B-67-390</b>    |                   |
|                                                    |      | DRAWN<br>BY JAC/UD | PLANS<br>CK'D ECS |
| <b>WEST ABUTMENT<br/>DETAILS</b>                   |      | SHEET 5 OF 21      |                   |
|                                                    |      | 100                |                   |





PLAN - WING 1



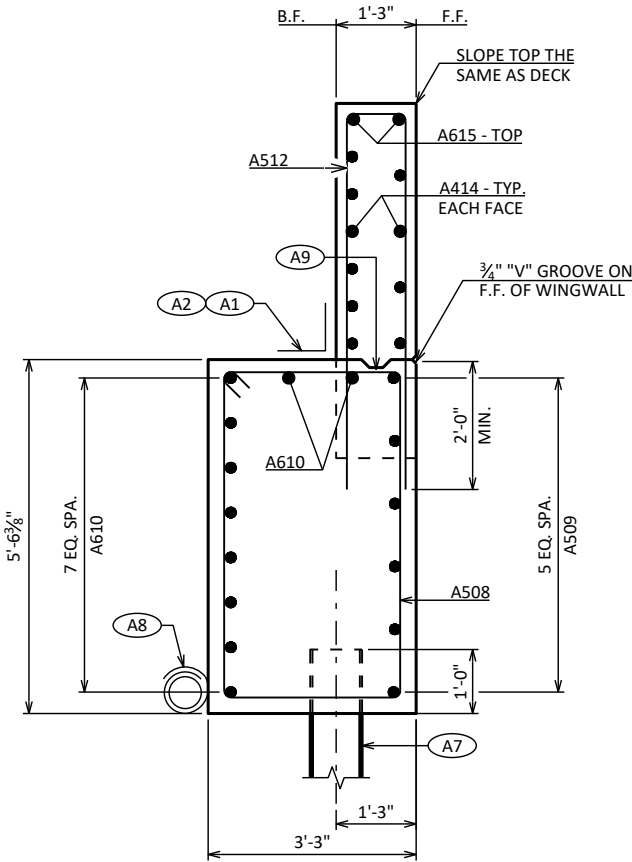
ELEVATION - WING 1  
PARAPET NOT SHOWN. FOR DETAILS, SEE SHT 21.

LEGEND

× × DIMENSIONS AND ELEVATION ARE GIVEN AT THE B.F.

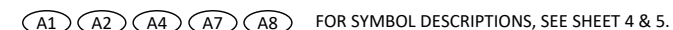
A9 OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH RUBBERIZED MEMBRANE WATERPROOFING ON BACKFACE. ("V" GROOVE NOT REQUIRED IF CONST. JOINT IS NOT USED.)

A1 A2 A4 A7 A8 FOR SYMBOL DESCRIPTIONS, SEE SHEET 4 & 5.



SECTION B-B

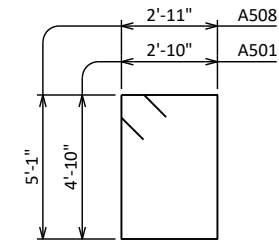
| NO.                                                | DATE | REVISION             | BY |
|----------------------------------------------------|------|----------------------|----|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                      |    |
| STRUCTURE B-67-390                                 |      |                      |    |
| DRAWN<br>BY JAC/UD                                 |      | PLANS<br>CK'D ECS    |    |
| WING 1                                             |      | SHEET 6 OF 21<br>101 |    |



## SECTION C-C

|                                                    |             |                 |                      |
|----------------------------------------------------|-------------|-----------------|----------------------|
|                                                    |             |                 |                      |
| NO.                                                | DATE        | REVISION        | BY                   |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |             |                 |                      |
| <b>STRUCTURE</b>                                   |             | <b>B-67-390</b> |                      |
|                                                    | DRAWN<br>BY | JAC/UD          | PLANS<br>CK'D<br>ECS |
| <b>WING 2</b>                                      |             | SHEET 7 OF 21   |                      |
|                                                    |             | 102             |                      |

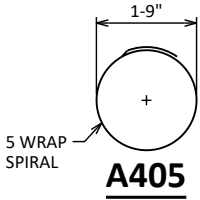




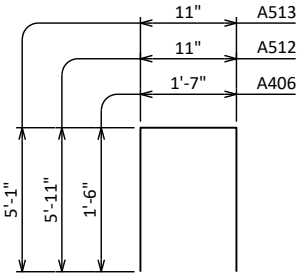
A501 & A508



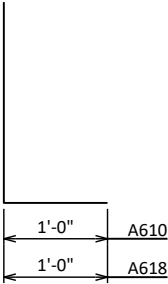
A803



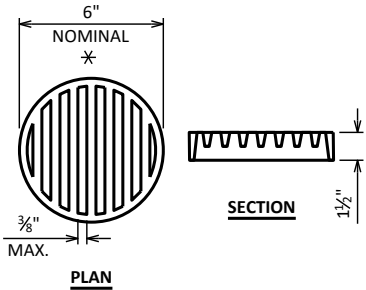
A405



A406, A512 & A513



A610 & A618



RODENT SHIELD DETAIL

✱ DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

| MARK            | NO. | REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION                        | ORIEN. |
|-----------------|-----|--------|--------|------|------------|---------------------------------|--------|
| NON-COATED BARS |     |        |        |      |            | TOTAL WEIGHT = 2130             |        |
| A501            | 43  | 16-0   | X      |      |            | ABUT. BODY - STIRRUPS           | VERT.  |
| A602            | 10  | 34-1   |        |      |            | ABUT. BODY - F.F., BOT. & TOP   | HORIZ. |
| A803            | 12  | 19-1   | X      |      |            | ABUT. BODY - B.F.               | HORIZ. |
| A404            | 20  | 2-3    |        |      |            | ABUT. BODY - 2 PER PILE         | VERT.  |
| A405            | 10  | 28-0   | X      |      |            | ABUT. BODY - SPIRAL WRAP @ PILE | VERT.  |
| A406            | 15  | 4-5    | X      |      |            | ABUT. BODY - TOP                | VERT.  |
| A407            | 10  | 4-1    |        |      |            | ABUT. BODY - TOP                | HORIZ. |
|                 |     |        |        |      |            |                                 |        |
|                 |     |        |        |      |            |                                 |        |
|                 |     |        |        |      |            |                                 |        |
| COATED BARS     |     |        |        |      |            | TOTAL WEIGHT = 1540             |        |
| A508            | 16  | 16-8   | X      |      |            | WING 1 & 2 BODY - STIRRUPS      | VERT.  |
| A509            | 6   | 10-11  |        |      |            | WING 1 BODY - F.F.              | HORIZ. |
| A610            | 10  | 9-6    | X      |      |            | WING 1 BODY - B.F. & TOP        | HORIZ. |
| A411            | 9   | 5-1    |        |      |            | WING 1 & 2 BODY - ENDS          | VERT.  |
| A512            | 22  | 12-6   | X      |      |            | WING 1 & 2 - F.F. & B.F.        | VERT.  |
| A513            | 18  | 10-10  | X      |      |            | WING 1 & 2 - F.F. & B.F.        | VERT.  |
| A414            | 20  | 13-8   |        |      |            | WING 1 & 2 - F.F. & B.F.        | HORIZ. |
| A615            | 4   | 13-8   |        |      |            | WING 1 & 2 - TOP                | HORIZ. |
| A416            | 10  | 7-9    |        |      |            | WING 1 & 2 - F.F. & B.F. - BOT. | HORIZ. |
| A517            | 6   | 10-1   |        |      |            | WING 2 BODY - F.F.              | HORIZ. |
| A618            | 10  | 10-0   | X      |      |            | WING 2 BODY - B.F. & TOP        | HORIZ. |
|                 |     |        |        |      |            |                                 |        |
|                 |     |        |        |      |            |                                 |        |
|                 |     |        |        |      |            |                                 |        |

|                                                    |      |                      |                |
|----------------------------------------------------|------|----------------------|----------------|
|                                                    |      |                      |                |
| NO.                                                | DATE | REVISION             | BY             |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                      |                |
| STRUCTURE B-67-390                                 |      |                      |                |
|                                                    |      | DRAWN BY JAC/UD      | PLANS CK'D ECS |
| WEST ABUTMENT<br>BILL OF BARS                      |      | SHEET 8 OF 21<br>103 |                |

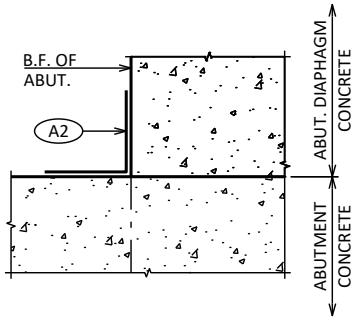
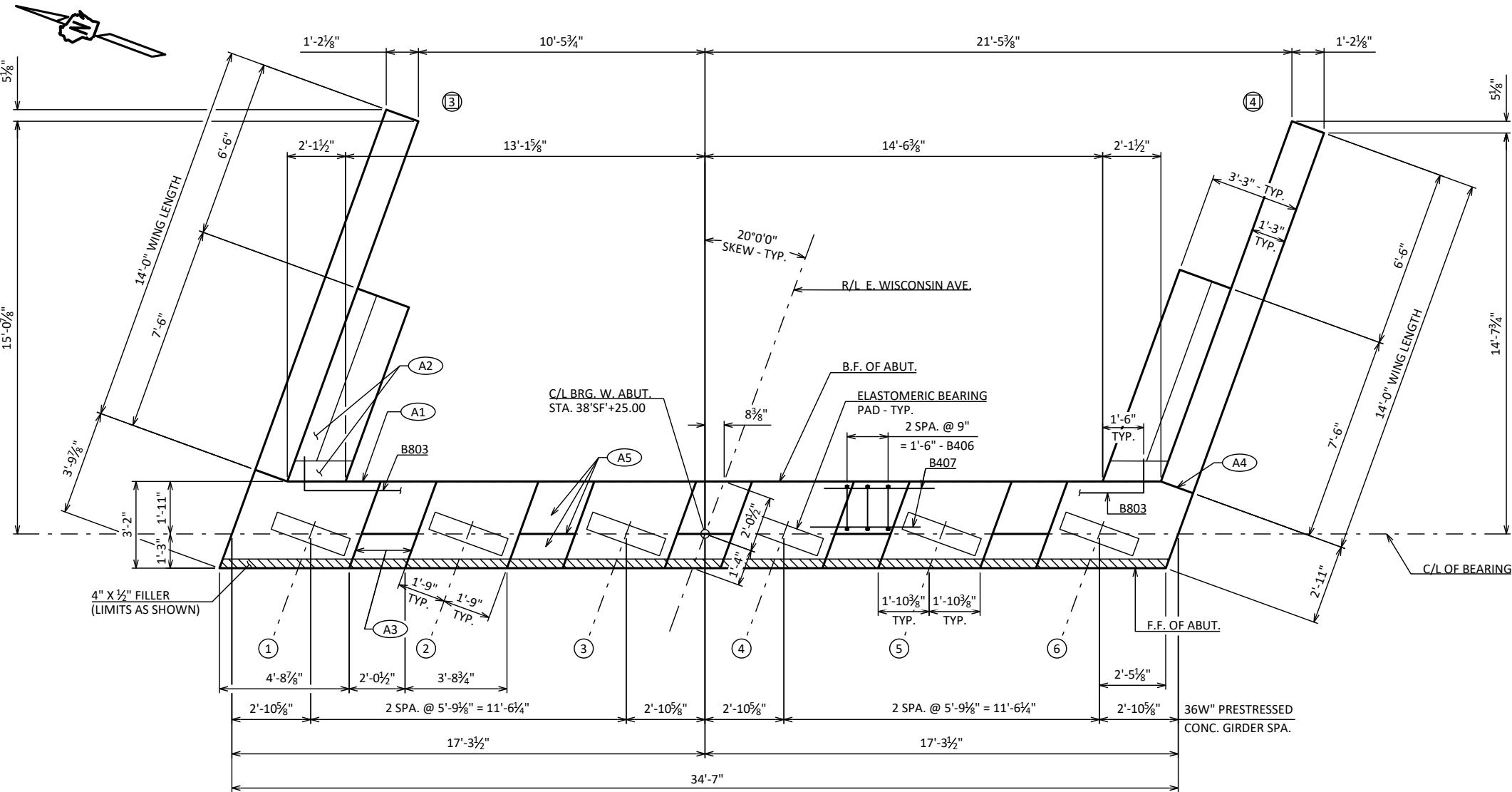
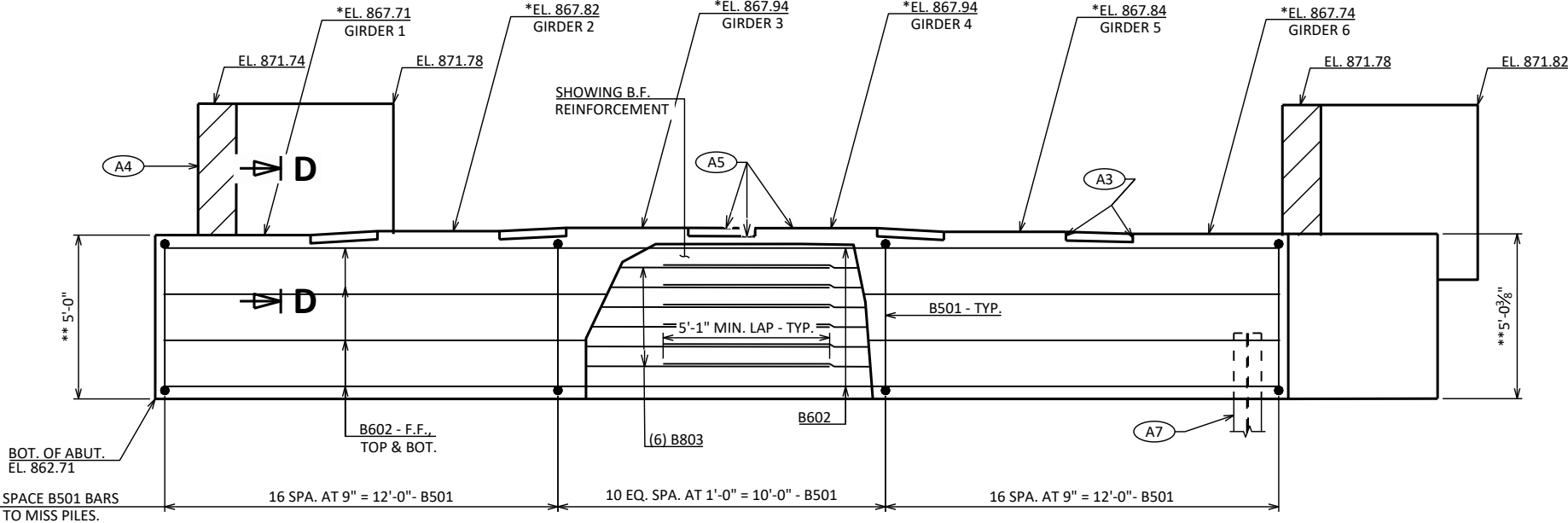
LEGEND

- \* ELEVATIONS ARE GIVEN AT THE TOP OF CONCRETE AT THE C/L OF BEARING
- \* \* DIMENSIONS AND ELEVATIONS ARE GIVEN AT THE B.F. OF ABUTMENT, FOR WING DETAILS AND ELEVATIONS, SEE SHEETS 11 & 12.
- (X) INDICATES WING/CORNER NUMBER
- (X) INDICATE GIRDER NUMBER
- (A1) 18" (RMW) RUBBERIZED MEMBRANE WATERPROOFING. SEAL ALL HORIZ. & VERT. JOINTS AT BACKFACE.
- (A2) PLACE BOTTOM HALF OF RUBBERIZED MEMBRANE WATERPROOFING HORIZONTAL IN THIS AREA. SEE SECTION D-D ON THIS SHEET.
- (A3) 3/4" CORK FILLER UP VERT. BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A4) 1/2" FILLER (INCLUDED IN WING LENGTH): SEAL ALL EXPOSED HORIZ. & VERT. SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND FROM BRIDGE SEAT TO TOP OF WING.
- (A5) STEEL TROWEL TOP SURFACE OF ABUTMENT AND PLACE MULTIPLE LAYERS (0.03" MIN. TOTAL THK.) OF POLYETHYLENE SHEETS OVER THE ENTIRE LENGTH OF THE ABUTMENT.
- (A7) SUPPORT ABUTMENT ON HP 10 X 42 STEEL PILING (WITH PILE POINTS), ESTIMATED 95'-0" LONG WITH A REQUIRED DRIVING RESISTANCE OF 180 TONS PER PILE.

NOTES

FOR 'SECTION THRU BODY', SEE SHEET 10.

ELEVATION  
LOOKING EAST



SECTION D-D

| NO.                                                | DATE | REVISION             | BY |
|----------------------------------------------------|------|----------------------|----|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                      |    |
| STRUCTURE B-67-390                                 |      |                      |    |
| DRAWN BY JAC/UD                                    |      | PLANS CK'D ECS       |    |
| EAST ABUTMENT                                      |      | SHEET 9 OF 21<br>104 |    |



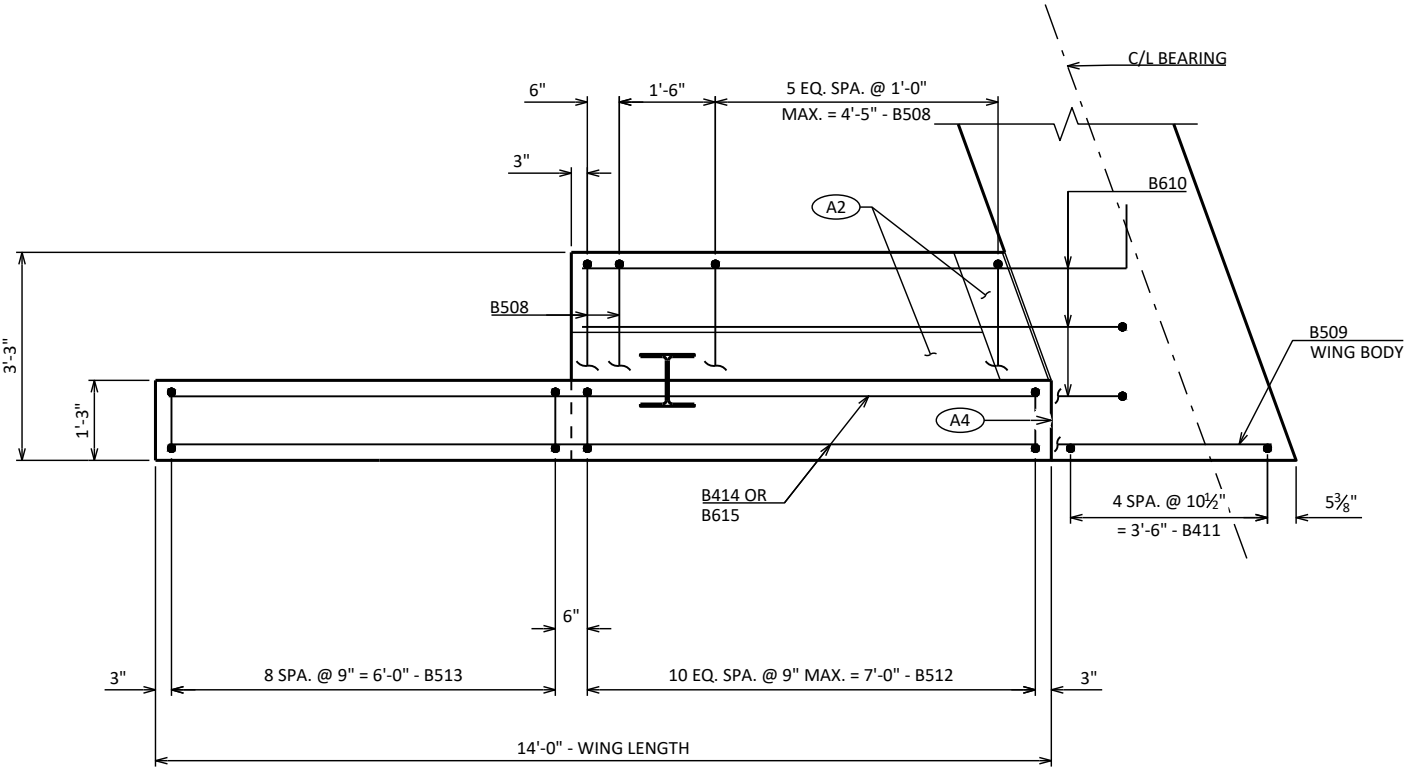


(X) INDICATES WING/CORNER NUMBER

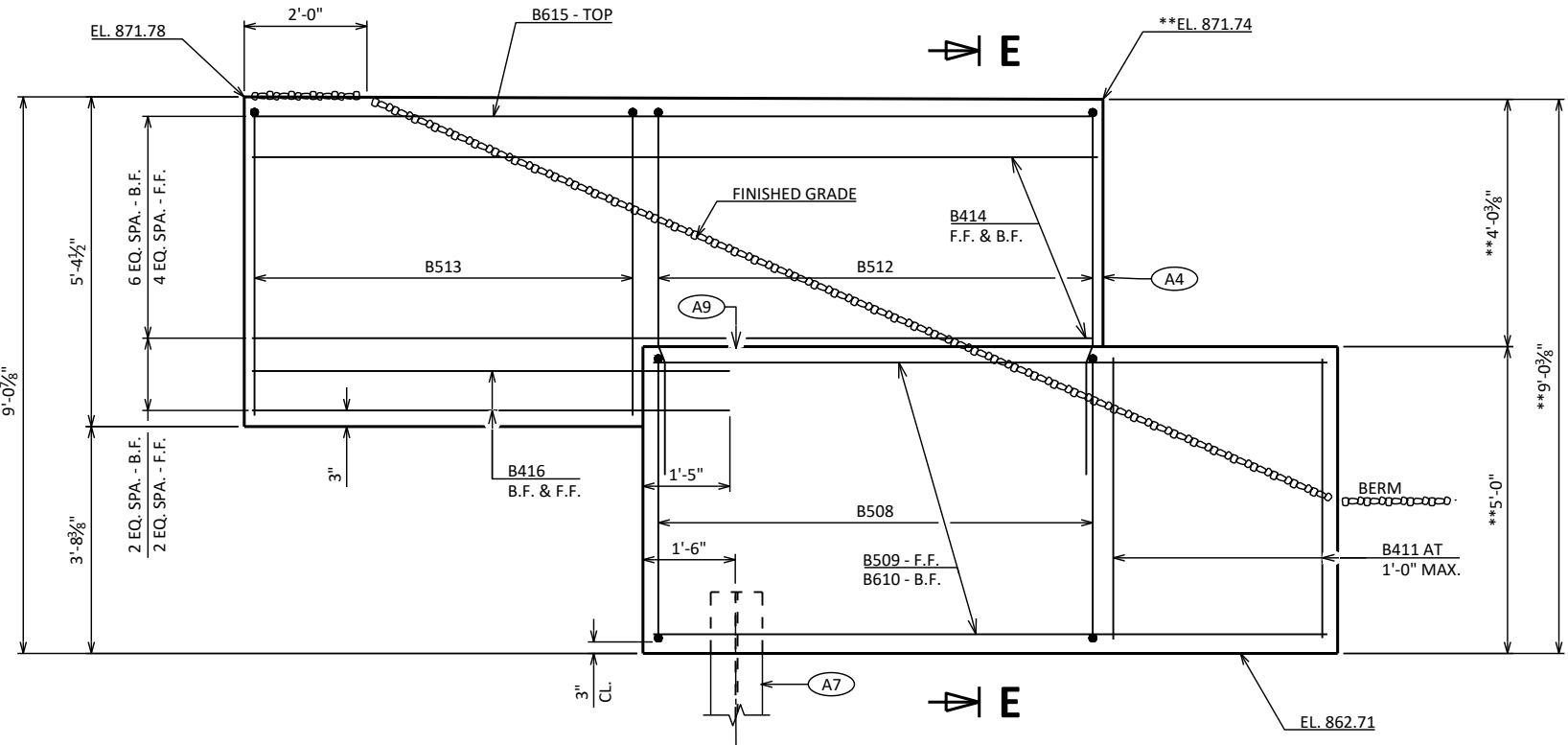
(A8) PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. RODENT SHIELD REQUIRED.

(A5) FOR SYMBOL DESCRIPTION, SEE SHEET 7.

|                                                    |             |                 |                      |
|----------------------------------------------------|-------------|-----------------|----------------------|
|                                                    |             |                 |                      |
| NO.                                                | DATE        | REVISION        | BY                   |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |             |                 |                      |
| <b>STRUCTURE</b>                                   |             | <b>B-67-390</b> |                      |
|                                                    | DRAWN<br>BY | JAC/UD          | PLANS<br>CK'D<br>ECS |
| <b>EAST ABUTMENT<br/>DETAILS</b>                   |             | SHEET 10 OF 21  |                      |
|                                                    |             | 105             |                      |



PLAN - WING 3



ELEVATION - WING 3

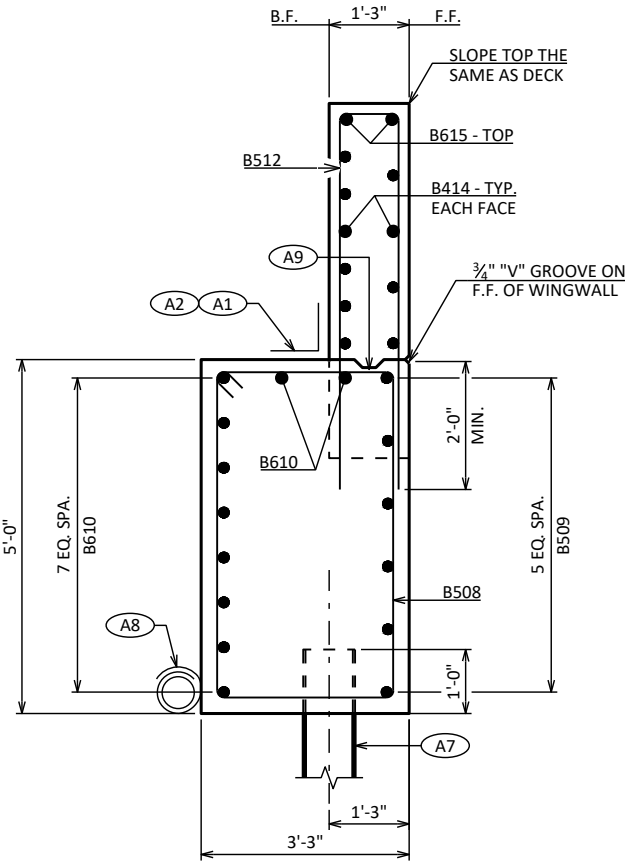
PARAPET NOT SHOWN. FOR DETAILS, SEE SHT 21.

LEGEND

× × DIMENSIONS AND ELEVATION ARE GIVEN AT THE B.F.

A9 OPTIONAL CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6" KEYWAY WITH RUBBERIZED MEMBRANE WATERPROOFING ON BACKFACE. ("V" GROOVE NOT REQUIRED IF CONST. JOINT IS NOT USED.)

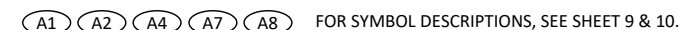
A1 A2 A4 A7 A8 FOR SYMBOL DESCRIPTIONS, SEE SHEET 9 & 10.



SECTION E-E

| NO.                                                | DATE | REVISION              | BY |
|----------------------------------------------------|------|-----------------------|----|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                       |    |
| STRUCTURE B-67-390                                 |      |                       |    |
| DRAWN<br>BY JAC/UD                                 |      | PLANS<br>CK'D ECS     |    |
| WING 3                                             |      | SHEET 11 OF 21<br>106 |    |

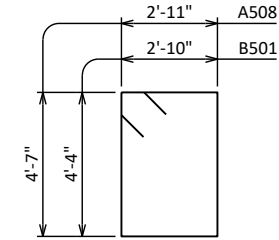




## PLAN - WING 4



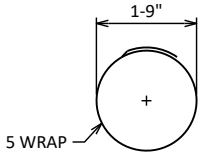
|                                                    |      |                    |                   |
|----------------------------------------------------|------|--------------------|-------------------|
|                                                    |      |                    |                   |
| NO.                                                | DATE | REVISION           | BY                |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                    |                   |
| <b>STRUCTURE</b>                                   |      | <b>B-67-390</b>    |                   |
|                                                    |      | DRAWN<br>BY JAC/UD | PLANS<br>CK'D ECS |
| <b>WING 4</b>                                      |      | SHEET 12 OF 21     |                   |
|                                                    |      | 107                |                   |



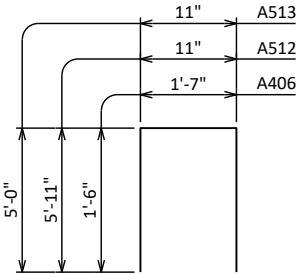
**B501 & A508**



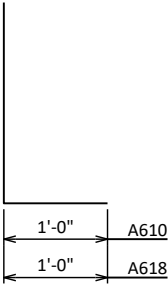
**B803**



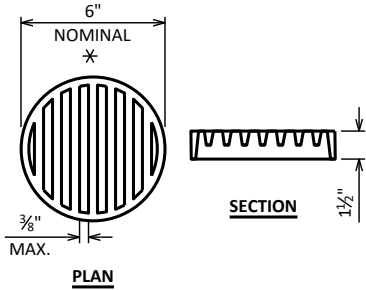
**B405**



**A406, A512 & A513**



**A610 & A618**



**RODENT SHIELD DETAIL**

✱ DIMENSIONS ARE APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL.

THE RODENT SHIELD, PIPE COUPLING AND SCREWS SHALL BE CONSIDERED INCIDENTAL TO THE BID ITEM "PIPE UNDERDRAIN WRAPPED 6-INCH".

THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.

**BILL OF BARS**

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

| MARK            | NO. | REQ'D. | LENGTH | BENT | BAR SERIES | LOCATION                        | ORIEN. |
|-----------------|-----|--------|--------|------|------------|---------------------------------|--------|
| NON-COATED BARS |     |        |        |      |            | TOTAL WEIGHT = 2040             |        |
| B501            | 43  | 14-12  | X      |      |            | ABUT. BODY - STIRRUPS           | VERT.  |
| B602            | 9   | 34-1   |        |      |            | ABUT. BODY - F.F., BOT. & TOP   | HORIZ. |
| B803            | 12  | 19-1   | X      |      |            | ABUT. BODY - B.F.               | HORIZ. |
| B404            | 20  | 2-3    |        |      |            | ABUT. BODY - 2 PER PILE         | VERT.  |
| B405            | 10  | 28-0   | X      |      |            | ABUT. BODY - SPIRAL WRAP @ PILE | VERT.  |
| B406            | 15  | 4-5    | X      |      |            | ABUT. BODY - TOP                | VERT.  |
| B407            | 10  | 4-1    |        |      |            | ABUT. BODY - TOP                | HORIZ. |
|                 |     |        |        |      |            |                                 |        |
|                 |     |        |        |      |            |                                 |        |
|                 |     |        |        |      |            |                                 |        |
| COATED BARS     |     |        |        |      |            | TOTAL WEIGHT = 1510             |        |
| B508            | 16  | 15-8   | X      |      |            | WING 3 & 4 BODY - STIRRUPS      | VERT.  |
| B509            | 6   | 10-11  |        |      |            | WING 3 BODY - F.F.              | HORIZ. |
| B610            | 10  | 9-6    | X      |      |            | WING 3 BODY - B.F. & TOP        | HORIZ. |
| B411            | 9   | 4-7    |        |      |            | WING 3 & 4 BODY - ENDS          | VERT.  |
| B512            | 22  | 12-6   | X      |      |            | WING 3 & 4 - F.F. & B.F.        | VERT.  |
| B513            | 18  | 10-8   | X      |      |            | WING 3 & 4 - F.F. & B.F.        | VERT.  |
| B414            | 20  | 13-8   |        |      |            | WING 3 & 4 - F.F. & B.F.        | HORIZ. |
| B615            | 4   | 13-8   |        |      |            | WING 3 & 4 - TOP                | HORIZ. |
| B416            | 8   | 7-9    |        |      |            | WING 3 & 4 - F.F. & B.F. - BOT. | HORIZ. |
| B517            | 6   | 10-1   |        |      |            | WING 4 BODY - F.F.              | HORIZ. |
| B618            | 10  | 10-0   | X      |      |            | WING 4 BODY - B.F. & TOP        | HORIZ. |
|                 |     |        |        |      |            |                                 |        |
|                 |     |        |        |      |            |                                 |        |
|                 |     |        |        |      |            |                                 |        |

NO.

DATE

REVISION

BY

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

STRUCTURE    B-67-390

DRAWN  
BY

JAC/UD

PLANS  
CK'D

ECS

EAST ABUTMENT  
BILL OF BARS

SHEET 13 OF 21  
108

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 8" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 8" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER OR EPOXY TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS. SEE SECT. 503.3.4 OF STANDARD SPECIFICATIONS FOR GUIDANCE.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

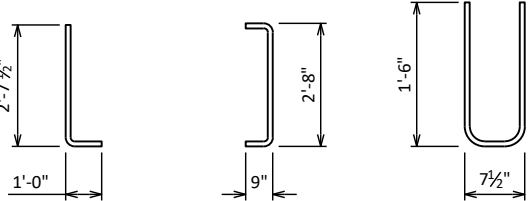
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

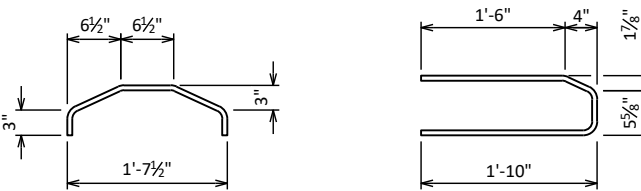
AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DESIGN SECTION. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE WISDOT FABRICATION LIBRARY AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

PRESTRESSING STRANDS SHALL BE (0.6" DIA.)-7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



#6 BAR 2 @ EACH END #6 BAR 8 @ EACH END #5 BAR 1 @ EACH END



#3 BAR 3 @ EACH END (EPOXY COATED) #3 BAR 23 PAIRS EACH END (EPOXY COATED)

SIDE VIEW & TYPICAL SECTION IN SPAN

- (A) DETAIL TYP. AT EACH END
- (B) 6 #4 BARS, FULL LENGTH, MIN. LAP = 2'-4"

NOTE "P" VARIES AT POINTS OTHER THAN 1/3. SEE TABLE BELOW.

\* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

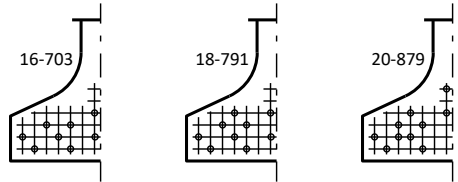
GIRDER DATA

| GIRDER DATA |        |                                |                       |      |      |      |      |      |      |      |      |                                             |                          |                          |                          |                            |                            |                                  |       |             |             |                  |                            |                                  |
|-------------|--------|--------------------------------|-----------------------|------|------|------|------|------|------|------|------|---------------------------------------------|--------------------------|--------------------------|--------------------------|----------------------------|----------------------------|----------------------------------|-------|-------------|-------------|------------------|----------------------------|----------------------------------|
| SPAN        | GIRDER | GIRDER LENGTH<br>"L"<br>(FEET) | DEAD LOAD DEFL. (IN.) |      |      |      |      |      |      |      |      | CONC.<br>STRGTH.<br>f <sub>c</sub> (P.S.I.) | "P" (IN.)                |                          |                          | DIA. OF<br>STRAND<br>(IN.) | DRAPED PATTERN             |                                  |       |             |             | UNDRAPED PATTERN |                            |                                  |
|             |        |                                | 1/10                  | 2/10 | 3/10 | 4/10 | 5/10 | 6/10 | 7/10 | 8/10 | 9/10 |                                             | 1ST 1/10<br>OF<br>GIRDER | MID 5/10<br>OF<br>GIRDER | END 1/10<br>OF<br>GIRDER |                            | TOTAL NO.<br>OF<br>STRANDS | f <sub>ci</sub><br>(P.S.I.)<br>✱ | (IN.) |             |             |                  | TOTAL NO.<br>OF<br>STRANDS | f <sub>ci</sub><br>(P.S.I.)<br>✱ |
|             |        |                                |                       |      |      |      |      |      |      |      |      |                                             |                          |                          |                          |                            |                            |                                  | "A"   | "B"<br>MIN. | "B"<br>MAX. | "C"              |                            |                                  |
| 1           | 1 & 6  | 92.0                           | 0.6                   | 1.1  | 1.5  | 1.8  | 1.9  | 1.8  | 1.5  | 1.1  | 0.6  | 8,000                                       | 8.0                      | 7.0                      | 8.0                      | 0.6                        | 30                         | 6,800                            | 32    | 11          | 14          | 4                |                            |                                  |
| 1           | 2 - 4  | 92.0                           | 0.5                   | 1.1  | 1.5  | 1.7  | 1.8  | 1.7  | 1.5  | 1.1  | 0.5  | 8,000                                       | 8.0                      | 7.0                      | 8.0                      | 0.6                        | 30                         | 6,800                            | 32    | 11          | 14          | 4                |                            |                                  |

|                                                                                 |      |                       |    |
|---------------------------------------------------------------------------------|------|-----------------------|----|
| NO.                                                                             | DATE | REVISION              | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                       |    |
| STRUCTURE B-67-390                                                              |      |                       |    |
| DRAWN BY JAC                                                                    |      | PLANS CK'D ECS        |    |
| 36W" PRESTRESSED GIRDER DETAILS 1                                               |      | SHEET 14 OF 21<br>109 |    |

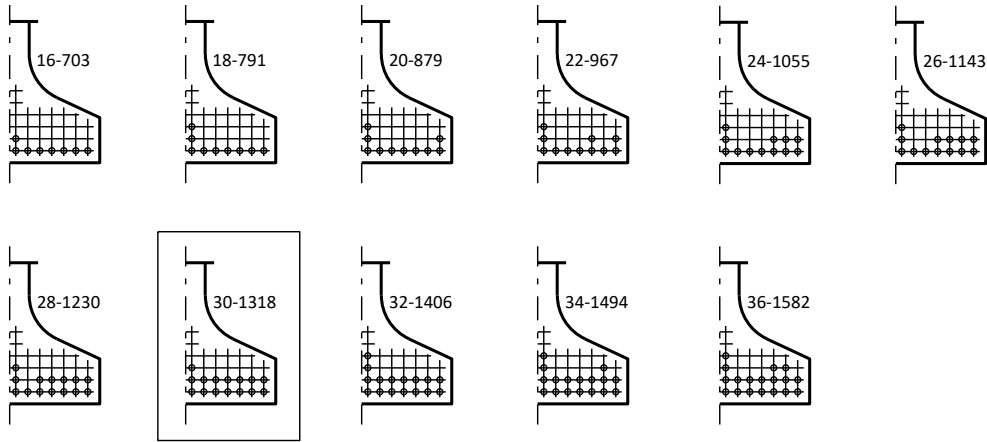
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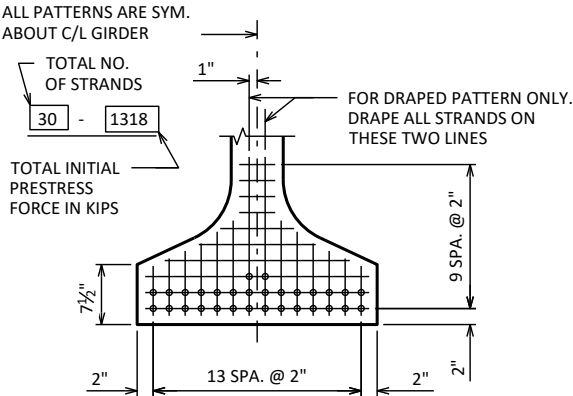
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY  
TO AVOID DRAPING OF STRANDS

0.6" DIA. STRANDS

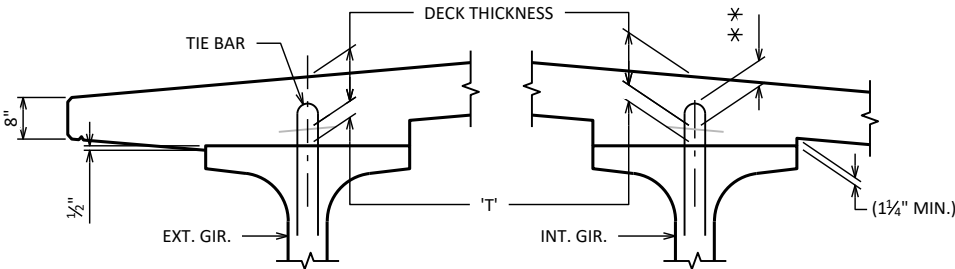


ARRANGEMENT AT C/L SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" DIA. STRANDS



TYP. STRAND PATTERN



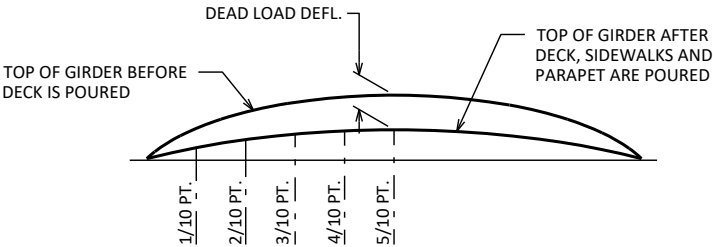
DECK HAUNCH DETAIL

IF 1 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

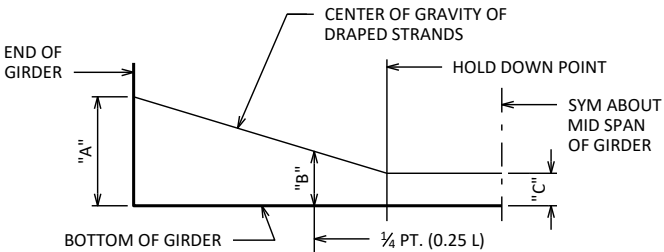
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT C/L OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

- TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
- + DEAD LOAD DEFLECTION
- DECK THICKNESS
- = HAUNCH HEIGHT 'T'

NOTE: AN AVERAGE HAUNCH ('T') OF 3/4" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".



DEAD LOAD DEFLECTION DIAGRAM



DRAPED STRAND PROFILE

SEE SHEET 14 FOR A, B, & C VALUES.

\* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

| SPAN | CAMBER (IN.) * |
|------|----------------|
| 1    | 3.508          |

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS.

THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.

|                                                                                 |      |                       |    |
|---------------------------------------------------------------------------------|------|-----------------------|----|
|                                                                                 |      |                       |    |
| NO.                                                                             | DATE | REVISION              | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION<br>STRUCTURES DESIGN SECTION |      |                       |    |
| STRUCTURE B-67-390                                                              |      |                       |    |
| DRAWN BY JAC                                                                    |      | PLANS CK'D ECS        |    |
| 36W" PRESTRESSED GIRDER DETAILS 2                                               |      | SHEET 15 OF 21<br>110 |    |

SCALE = 2.00

NOTES

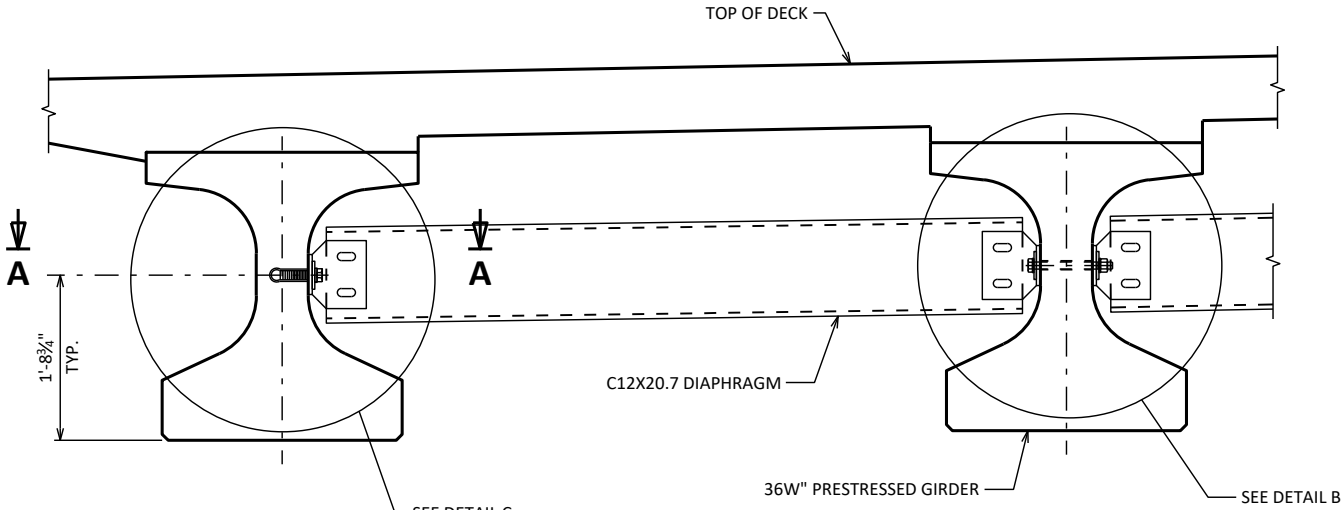
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGMS B-67-390", EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

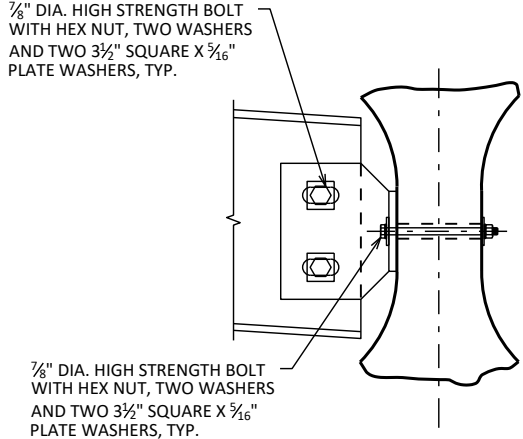
STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS ¼ TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.



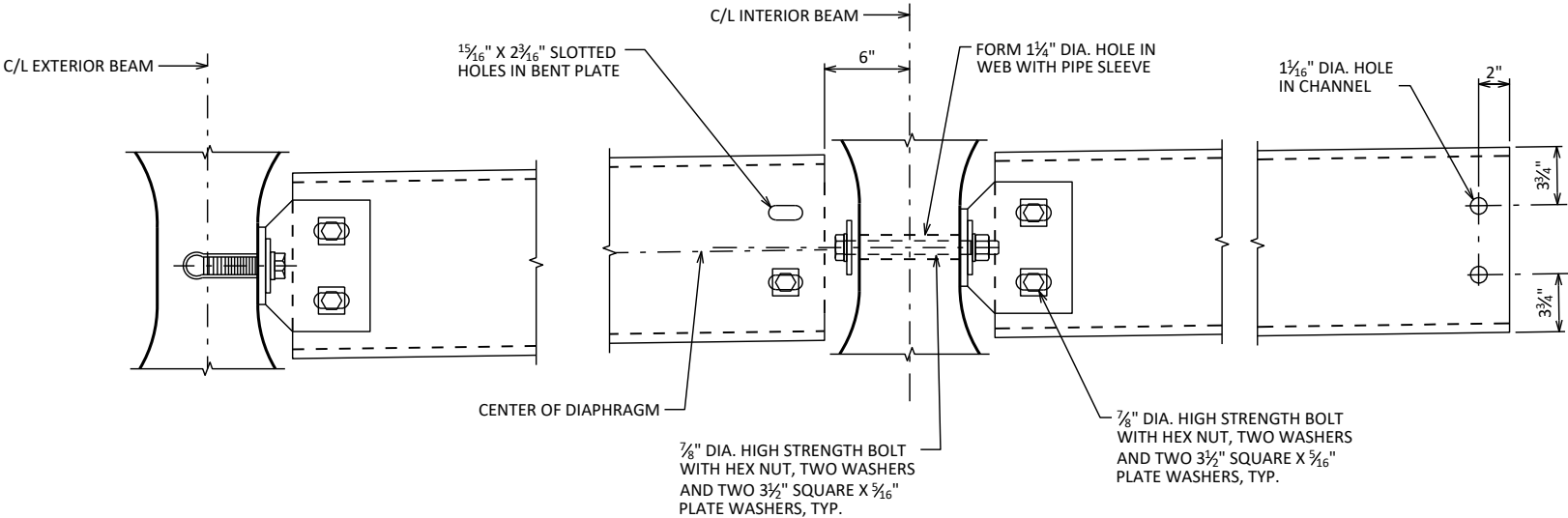
EXTERIOR GIRDER

INTERIOR GIRDER

PART TRANSVERSE SECTION AT DIAPHRAGM

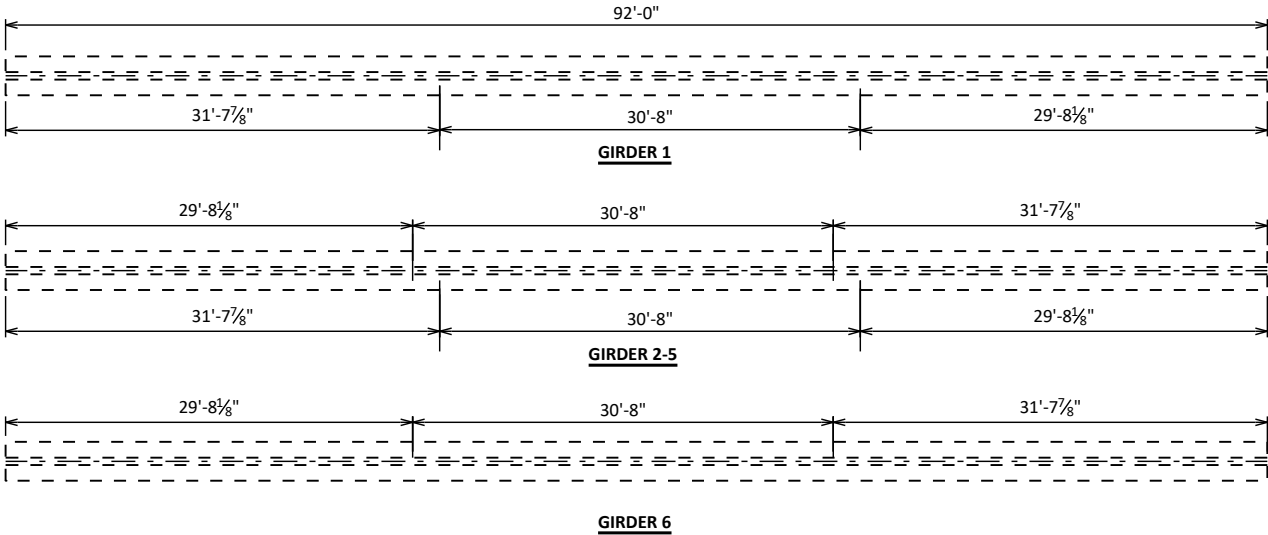


SECTION AT INTERIOR GIRDERS THRU DIAPHRAGM FOR SKEW ANGLES > 10°

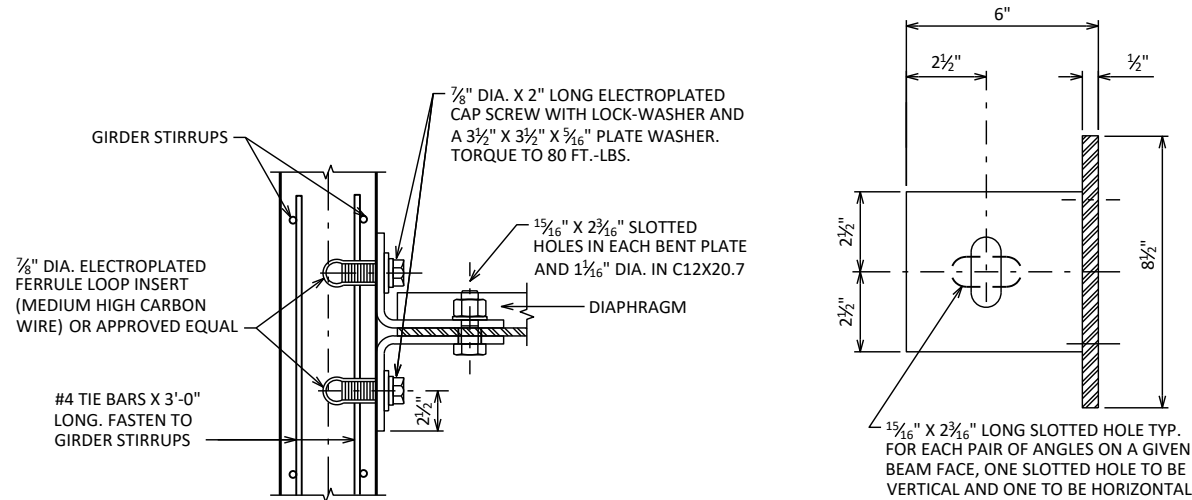


DETAIL C

DETAIL B

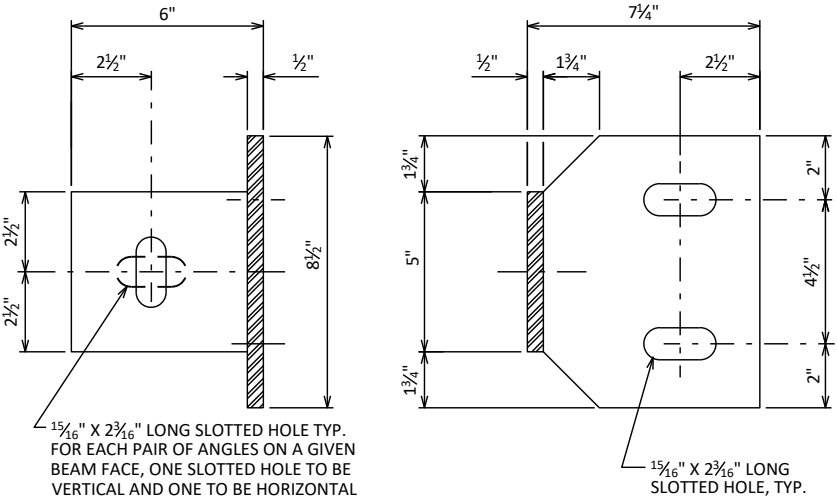


DIAPHRAGM CONNECTION SPACING



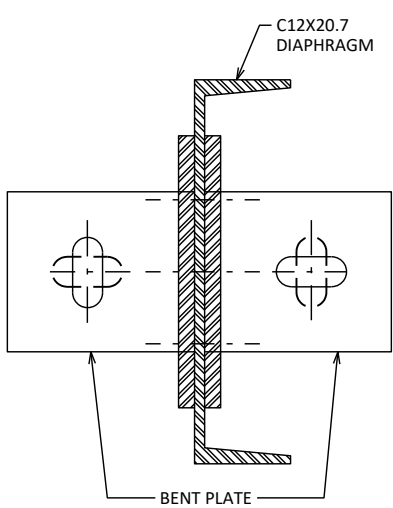
SECTION A-A

(FOR EXTERIOR ATTACHMENT)



BEAM FACE

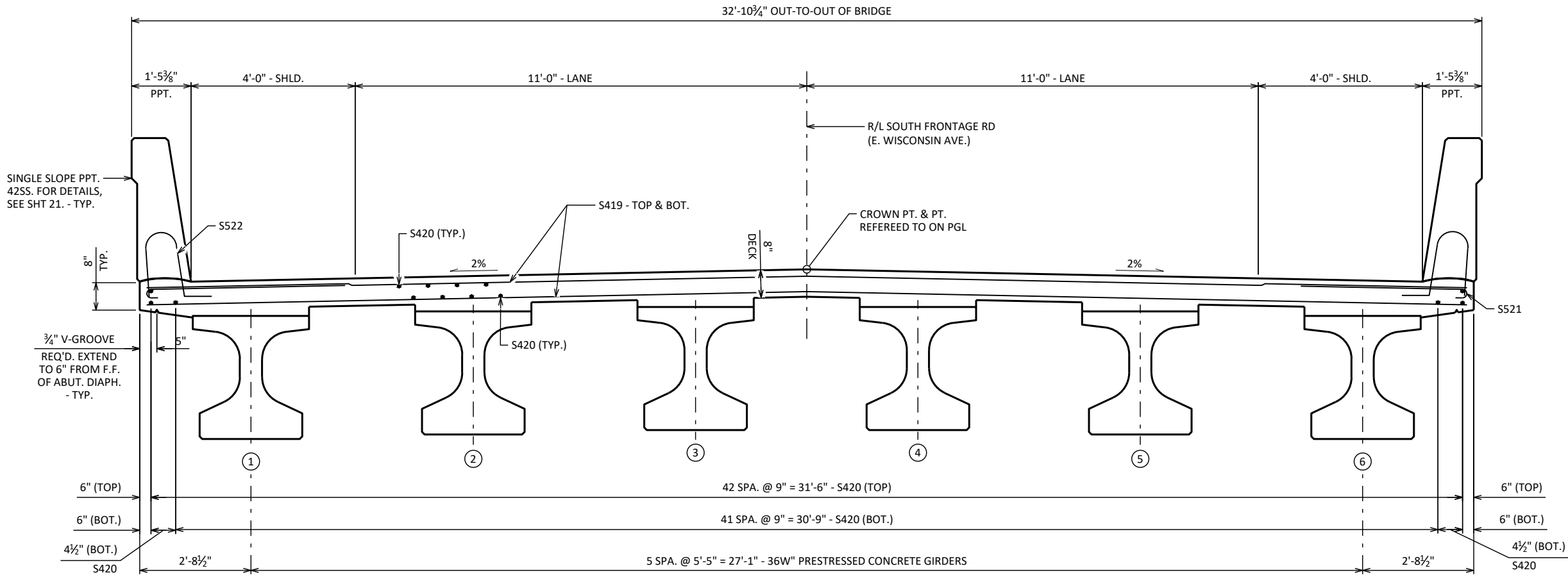
DIAPHRAGM FACE



ATTACHMENT TO CHANNEL

| NO.                                                | DATE | REVISION              | BY             |
|----------------------------------------------------|------|-----------------------|----------------|
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                       |                |
| STRUCTURE B-67-390                                 |      |                       |                |
| DRAWN BY                                           |      | JAC                   | PLANS CK'D ECS |
| STEEL INTER. DIAPHRAGM DETAILS                     |      | SHEET 16 OF 21<br>111 |                |

SCALE = 2.00



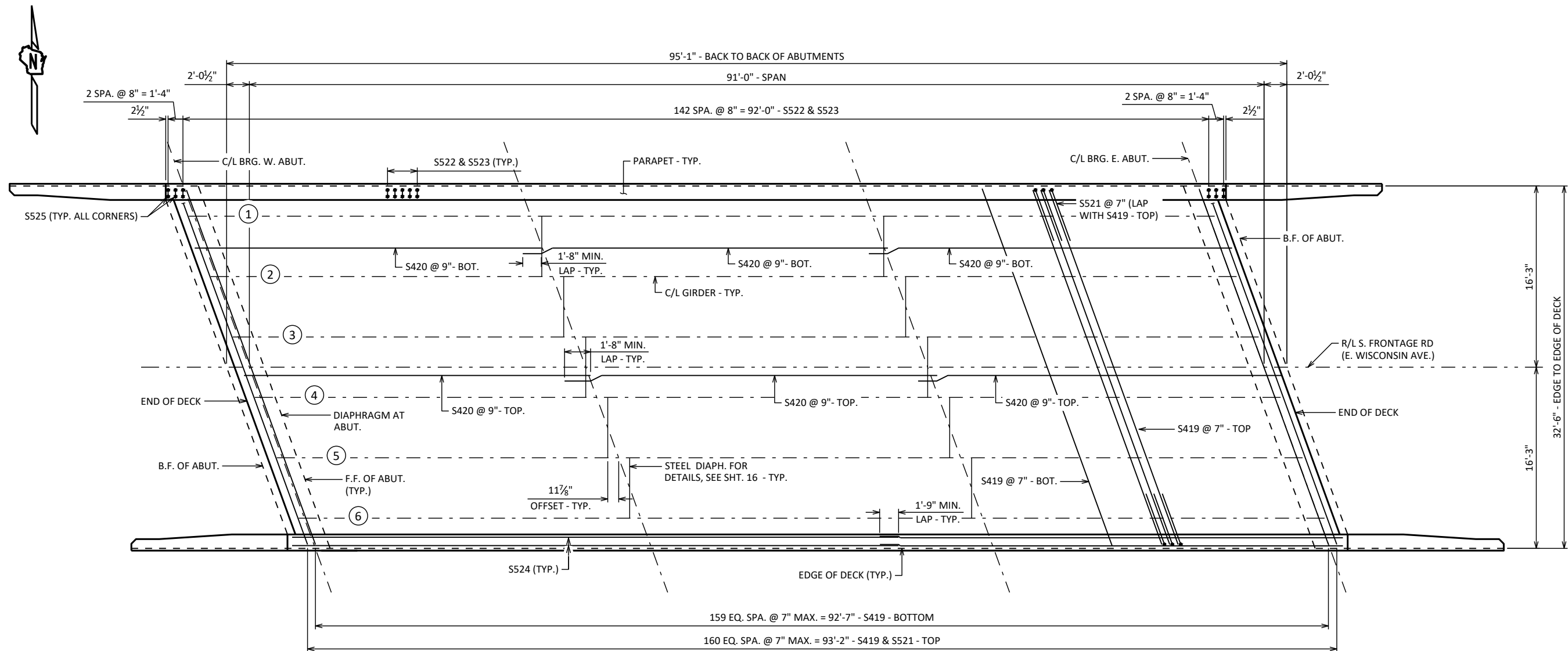
CROSS SECTION THRU ROADWAY  
LOOKING EAST

TOP OF DECK ELEVATIONS

| LOCATION | C.L. BRG.<br>W. ABUT. | 0.10 PT. | 0.20 PT. | 0.30 PT. | 0.40 PT. | 0.50 PT. | 0.60 PT. | 0.70 PT. | 0.80 PT. | 0.90 PT. | C.L. BRG.<br>E. ABUT. |
|----------|-----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------------------|
| N. EOD   | 871.46                | 871.48   | 871.51   | 871.54   | 871.56   | 871.59   | 871.62   | 871.65   | 871.67   | 871.70   | 871.73                |
| GIRDER 1 | 871.49                | 871.51   | 871.54   | 871.57   | 871.60   | 871.62   | 871.65   | 871.68   | 871.70   | 871.73   | 871.76                |
| GIRDER 2 | 871.60                | 871.63   | 871.66   | 871.68   | 871.71   | 871.74   | 871.76   | 871.79   | 871.82   | 871.85   | 871.87                |
| GIRDER 3 | 871.71                | 871.74   | 871.77   | 871.80   | 871.82   | 871.85   | 871.88   | 871.91   | 871.93   | 871.96   | 871.99                |
| GIRDER 4 | 871.72                | 871.75   | 871.78   | 871.80   | 871.83   | 871.86   | 871.88   | 871.91   | 871.94   | 871.97   | 871.99                |
| GIRDER 5 | 871.62                | 871.65   | 871.67   | 871.70   | 871.73   | 871.75   | 871.78   | 871.81   | 871.84   | 871.86   | 871.89                |
| GIRDER 6 | 871.52                | 871.54   | 871.57   | 871.60   | 871.63   | 871.65   | 871.68   | 871.71   | 871.73   | 871.76   | 871.79                |
| S. EOD   | 871.49                | 871.52   | 871.54   | 871.57   | 871.60   | 871.62   | 871.65   | 871.68   | 871.71   | 871.73   | 871.76                |

|                                                    |      |                       |    |
|----------------------------------------------------|------|-----------------------|----|
|                                                    |      |                       |    |
| NO.                                                | DATE | REVISION              | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                       |    |
| STRUCTURE B-67-390                                 |      |                       |    |
| DRAWN<br>BY JAC/UD                                 |      | PLANS<br>CK'D ECS     |    |
| SUPERSTRUCTURE                                     |      | SHEET 17 OF 21<br>112 |    |



**PLAN****NOTES**

ALL TRANSVERSE BAR STEEL REINFORCEMENT SHALL BE PLACED PARALLEL TO SUBSTRUCTURE UNITS.

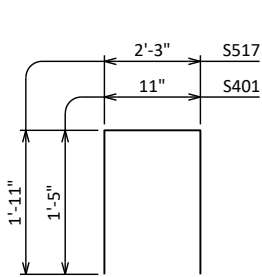
SEE SHEET 21 'PARAPET 42SS' FOR PARAPET REINFORCEMENT DETAILS.

|                                                    |      |                       |    |
|----------------------------------------------------|------|-----------------------|----|
| NO.                                                | DATE | REVISION              | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                       |    |
| STRUCTURE B-67-390                                 |      |                       |    |
| DRAWN BY JAC/UD                                    |      | PLANS CK'D ECS        |    |
| SUPERSTRUCTURE PLAN                                |      | SHEET 18 OF 21<br>113 |    |

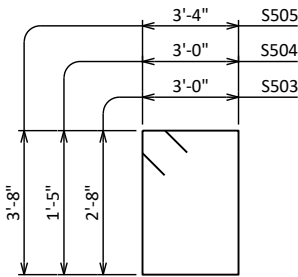


8

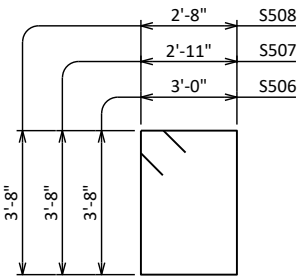
8



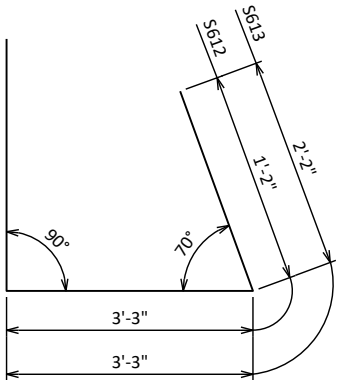
S401, S517



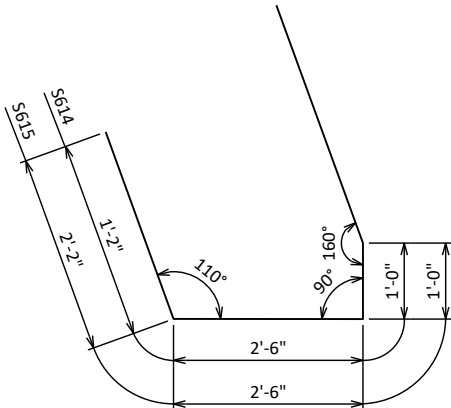
S503 THRU S505



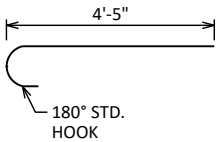
S506 THRU S508



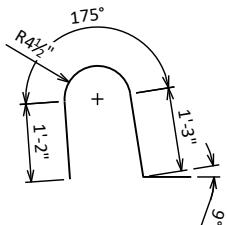
S612 & S613



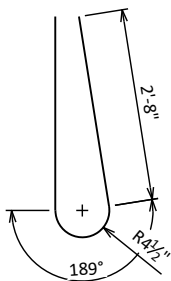
S614 & S615



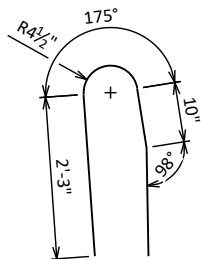
S521



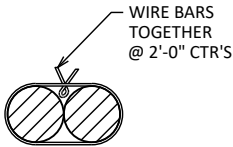
S522



S523



S525



BUNDLING DETAIL

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

| MARK        | NO. REQD. | LENGTH | BENT | BAR SERIES | LOCATION                              | ORIEN.  |
|-------------|-----------|--------|------|------------|---------------------------------------|---------|
| COATED BARS |           |        |      |            | TOTAL WEIGHT = 21810                  |         |
| S401        | 30        | 3-7    | X    |            | ABUT DIAPH. - BOT.                    | VERT.   |
| S402        | 20        | 2-0    |      |            | ABUT DIAPH. - BOT.                    | HORIZ.  |
| S503        | 40        | 12-0   | X    |            | ABUT. DIAPH. - STIRRUPS               | VERT.   |
| S504        | 24        | 9-6    | X    |            | ABUT. DIAPH. - STIRRUPS               | VERT.   |
| S505        | 2         | 14-8   | X    |            | ABUT. DIAPH. - STIRRUPS - WINGS 1 & 3 | VERT.   |
| S506        | 2         | 14-0   | X    |            | ABUT. DIAPH. - STIRRUPS - WINGS 1 & 3 | VERT.   |
| S507        | 2         | 13-10  | X    |            | ABUT. DIAPH. - STIRRUPS - WINGS 2 & 4 | VERT.   |
| S508        | 2         | 13-4   | X    |            | ABUT. DIAPH. - STIRRUPS - WINGS 2 & 4 | VERT.   |
| S409        | 8         | 2-6    |      |            | ABUT. DIAPH. - ENDS                   | VERT.   |
| S610        | 6         | 2-9    |      |            | ABUT. DIAPH. - BTW. GIRDERS           | HORIZ.  |
| S611        | 40        | 4-0    |      |            | ABUT. DIAPH. - BTW. GIRDERS           | HORIZ.  |
| S612        | 2         | 7-7    | X    |            | ABUT. DIAPH. - WINGS 1 & 3 ENDS       | HORIZ.  |
| S613        | 4         | 7-7    | X    |            | ABUT. DIAPH. - WINGS 1 & 3 ENDS       | HORIZ.  |
| S614        | 2         | 7-10   | X    |            | ABUT. DIAPH. - WINGS 2 & 4 ENDS       | HORIZ.  |
| S615        | 4         | 8-10   | X    |            | ABUT. DIAPH. - WINGS 2 & 4 ENDS       | HORIZ.  |
| S516        | 24        | 6-0    |      |            | ABUT. DIAPH. - THRU GRIDER WEB        | HORIZ.  |
| S517        | 52        | 5-10   | X    |            | ABUT. DIAPH. - TOP                    | VERT.   |
| S618        | 10        | 34-2   |      |            | ABUT. DIAPH. - B.F.                   | HORIZ.  |
| S419        | 321       | 34-2   |      |            | DECK - TOP & BOT.                     | TRANS.  |
| S420        | 255       | 32-2   |      |            | DECK - TOP & BOT.                     | LONGIT. |
| S521        | 322       | 5-0    | X    |            | DECK - TOP - OVERHANG                 | TRANS.  |
| S522        | 286       | 4-5    | X    |            | PARAPET                               | VERT.   |
| S523        | 286       | 6-8    | X    |            | PARAPET                               | VERT.   |
| S524        | 32        | 48-3   |      |            | PARAPET                               | HORIZ.  |
| S525        | 8         | 5-10   | X    |            | PARAPET                               | VERT.   |
|             |           |        |      |            |                                       |         |
|             |           |        |      |            |                                       |         |

|                                                    |      |                       |    |
|----------------------------------------------------|------|-----------------------|----|
| NO.                                                | DATE | REVISION              | BY |
| STATE OF WISCONSIN<br>DEPARTMENT OF TRANSPORTATION |      |                       |    |
| STRUCTURE B-67-390                                 |      |                       |    |
| DRAWN BY JAC/UD                                    |      | PLANS CK'D ECS        |    |
| SUPERSTRUCTURE<br>BILL OF BARS                     |      | SHEET 20 OF 21<br>115 |    |

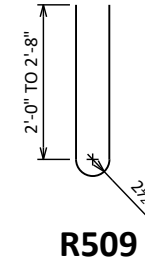
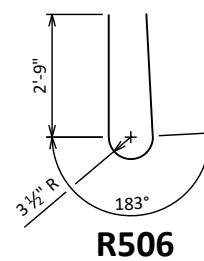
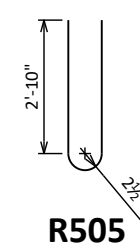
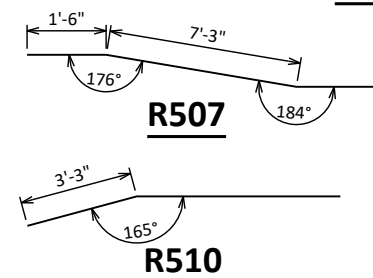
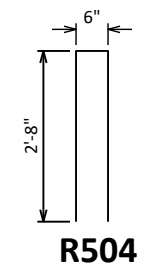
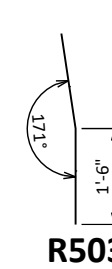
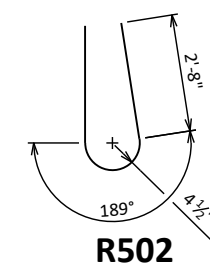
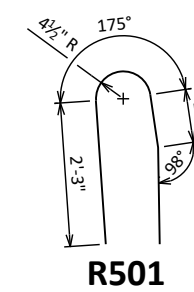


## FOR WING PARAPETS

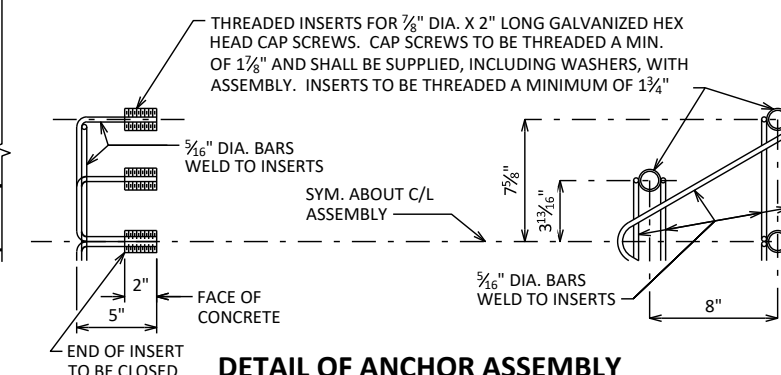
| BAR MARK                 | COAT | WEST ABUT. | EAST ABUT. | LENGTH | BENT | BAR SERIES | LOCATION       |
|--------------------------|------|------------|------------|--------|------|------------|----------------|
| TOTAL WEIGHT = 1910 LBS. |      |            |            |        |      |            |                |
| R501                     | X    | 18         | 18         | 5'-10" | X    |            | PARAPET VERT.  |
| R502                     | X    | 18         | 18         | 6'-8"  | X    |            | PARAPET VERT.  |
| R503                     | X    | 24         | 24         | 3'-0"  | X    |            | PARAPET VERT.  |
| R504                     | X    | 34         | 34         | 5'-7"  | X    |            | PARAPET VERT.  |
| R505                     | X    | 10         | 10         | 6'-5"  | X    |            | PARAPET VERT.  |
| R506                     | X    | 12         | 12         | 6'-6"  | X    |            | PARAPET VERT.  |
| R507                     | X    | 2          | 2          | 13'-7" | X    |            | PARAPET HORIZ. |
| R508                     | X    | 10         | 10         | 13'-8" |      |            | PARAPET HORIZ. |
| R509                     | X    | 12         | 12         | 5'-5"  | X    | ▲          | PARAPET VERT.  |
| R510                     | X    | 4          | 4          | 13'-7" | X    |            | PARAPET HORIZ. |

**BUNDLE AND TAG EACH SERIES SEPARATELY.**

| BAR MARK | NO. REQ'D.    | LENGTH         |
|----------|---------------|----------------|
| R509     | 4 SERIES OF 6 | 4'-9" TO 6'-1" |

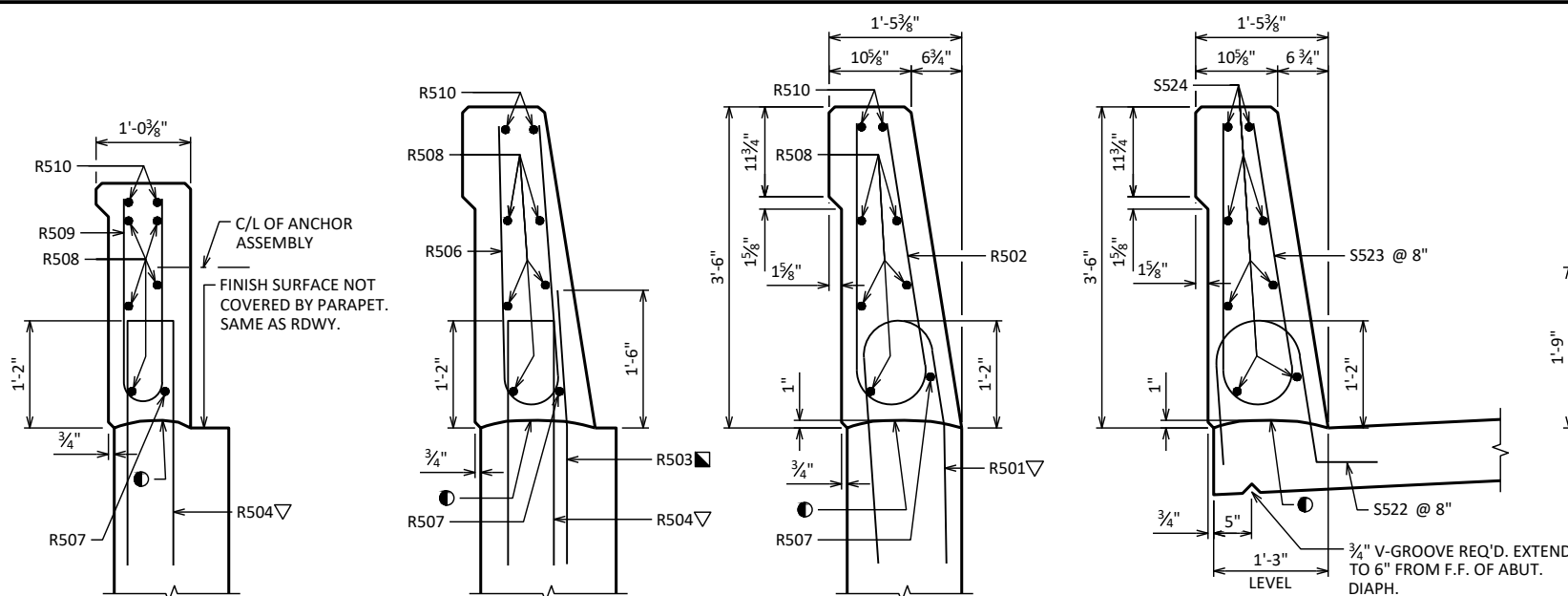


▽ R501 AND R504 BARS TO BE TIED TO WING STEEL BEFORE WING IS POURED.

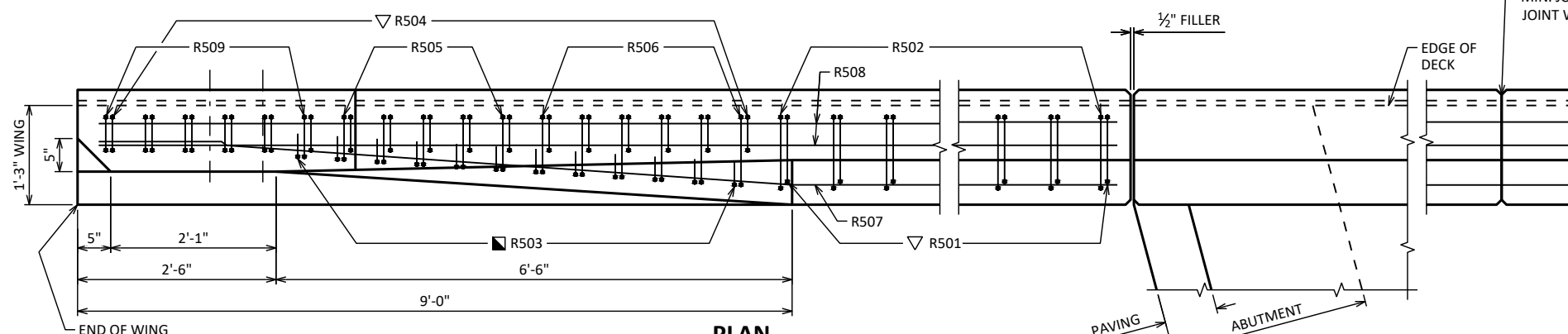


NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH ASTM F2329.

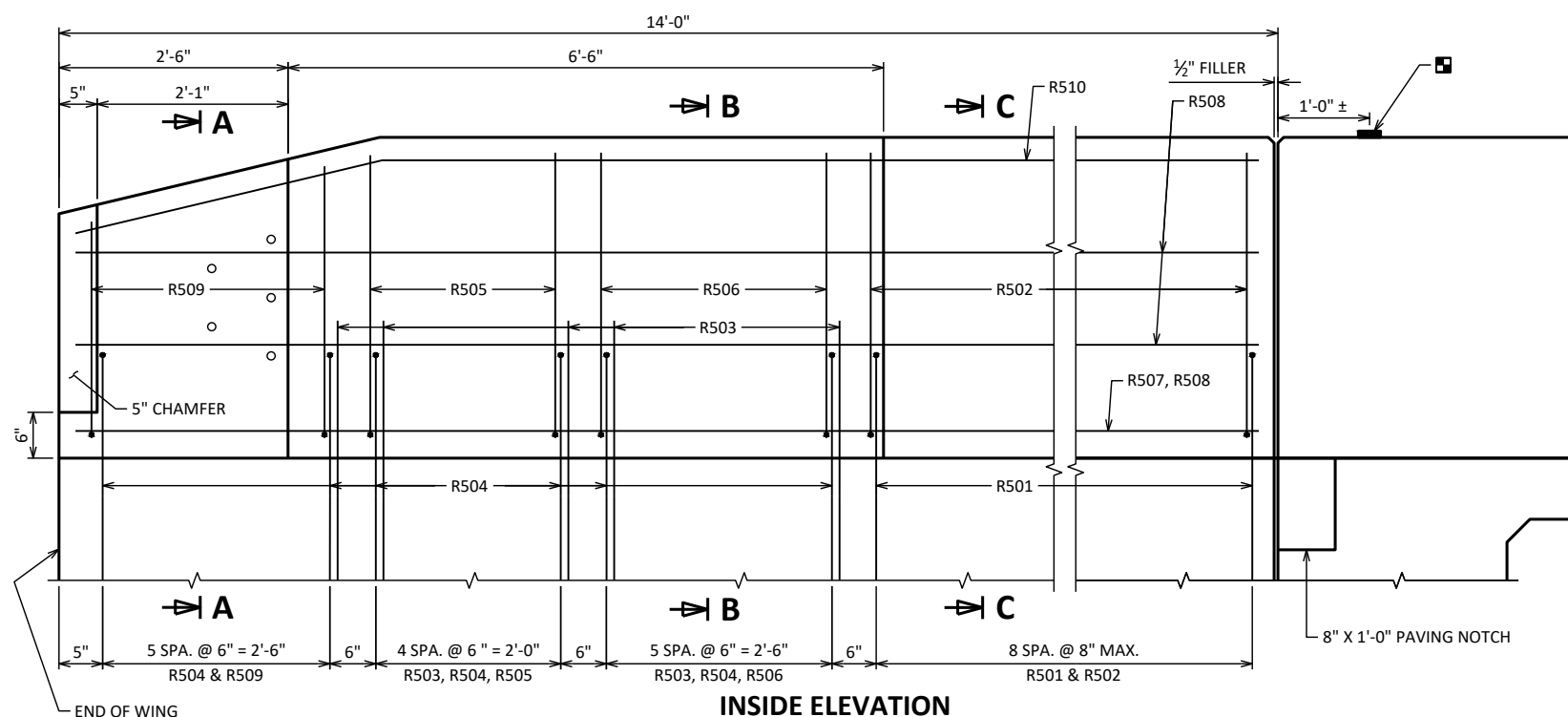
ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLIES FOR STEEL PLATE BEAM GUARD". EACH.



### SECTION THRU PARAPET ON DECK



CORNER 2 SHOWN. OTHERS SIMILAR



CORNER 2 SHOWN. OTHERS SIMILAR

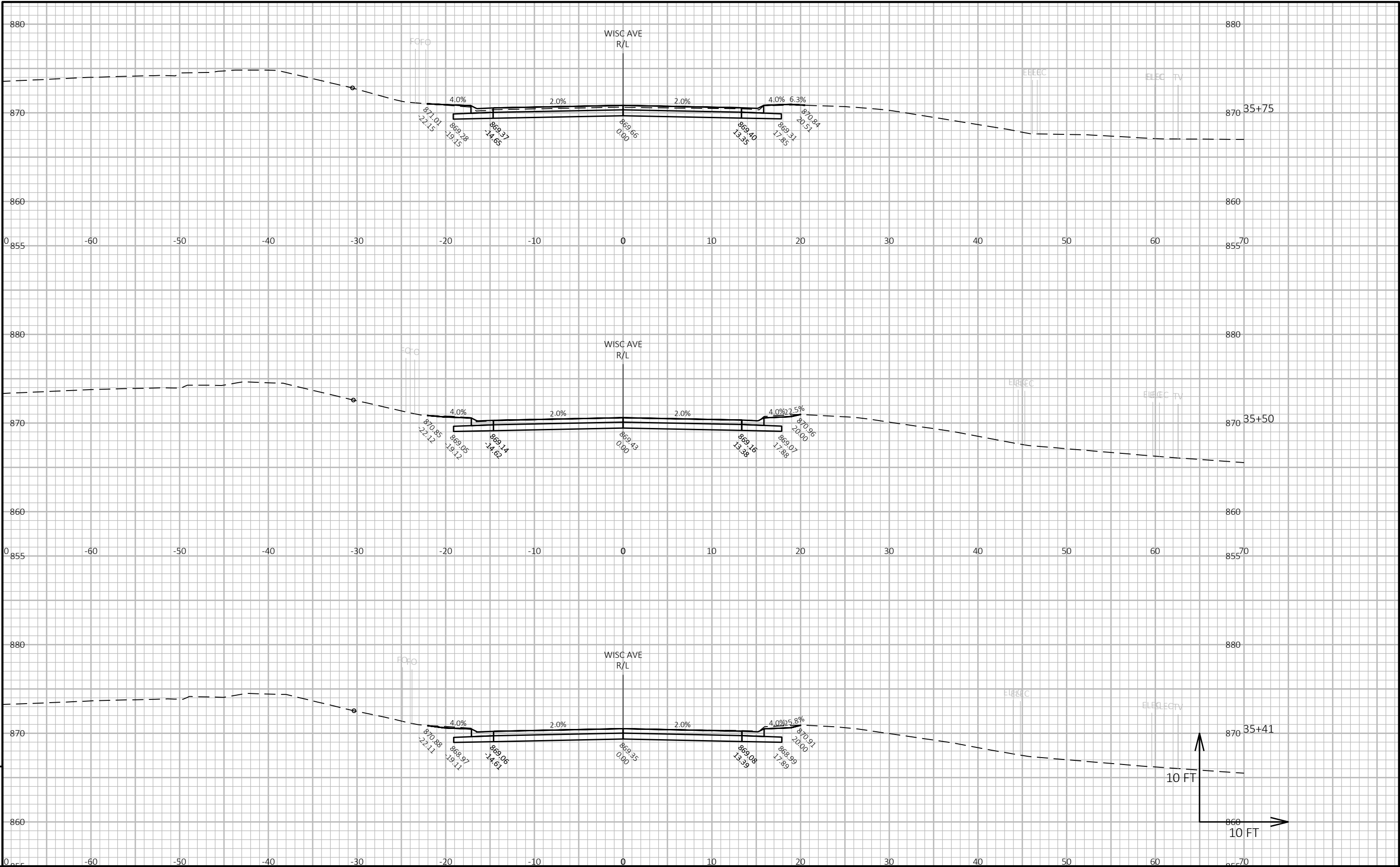
E WISCONSIN AVE - WEST APPROACH

| STATION  | REAL STATION | DISTANCE | AREA (SF) |                                        |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |        | CUMULATIVE VOL (CY) |                       |              |
|----------|--------------|----------|-----------|----------------------------------------|------|-----------------------------------|----------------------------------------|--------|---------------------|-----------------------|--------------|
|          |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | CUT<br>1.00         | EXPANDED FILL<br>1.25 | MASS ORDNATE |
|          |              |          |           |                                        |      |                                   |                                        |        |                     |                       |              |
|          |              |          |           |                                        |      | NOTE 1                            | NOTE 2                                 | NOTE 3 | NOTE 1              |                       | NOTE 4       |
| 35+00.00 | 3500.00      | 0.00     | 0.00      | 0.00                                   | 0.00 | 0                                 | 0                                      | 0      | 0                   | 0                     | 0            |
| 35+25.00 | 3525.00      | 25.00    | 0.00      | 0.00                                   | 0.00 | 0                                 | 0                                      | 0      | 0                   | 0                     | 0            |
| 35+41.00 | 3541.00      | 16.00    | 48.66     | 10.83                                  | 0.00 | 14                                | 3                                      | 0      | 14                  | 0                     | 11           |
| 35+50.00 | 3550.00      | 9.00     | 46.45     | 10.83                                  | 0.00 | 16                                | 4                                      | 0      | 30                  | 0                     | 23           |
| 35+75.00 | 3575.00      | 25.00    | 39.80     | 10.83                                  | 0.11 | 40                                | 10                                     | 0      | 70                  | 0                     | 53           |
| 36+00.00 | 3600.00      | 25.00    | 29.23     | 10.83                                  | 3.05 | 32                                | 10                                     | 1      | 102                 | 1                     | 74           |
| 36+25.00 | 3625.00      | 25.00    | 30.04     | 10.83                                  | 1.62 | 27                                | 10                                     | 2      | 129                 | 4                     | 88           |
| 36+32.48 | 3632.48      | 7.48     | 29.17     | 10.83                                  | 2.12 | 8                                 | 3                                      | 1      | 137                 | 5                     | 92           |
| 36+50.00 | 3650.00      | 17.52    | 27.53     | 10.83                                  | 1.62 | 18                                | 7                                      | 1      | 155                 | 6                     | 102          |
| 36+75.00 | 3675.00      | 25.00    | 25.66     | 10.83                                  | 0.78 | 25                                | 10                                     | 1      | 180                 | 8                     | 116          |
| 36+82.46 | 3682.46      | 7.46     | 24.77     | 10.83                                  | 0.85 | 7                                 | 3                                      | 0      | 187                 | 8                     | 120          |
| 37+00.00 | 3700.00      | 17.54    | 24.39     | 10.83                                  | 1.59 | 16                                | 7                                      | 1      | 203                 | 9                     | 127          |
| 37+25.00 | 3725.00      | 25.00    | 56.33     | 10.83                                  | 0.30 | 37                                | 10                                     | 1      | 240                 | 10                    | 153          |
| 37+32.67 | 3732.67      | 7.67     | 77.47     | 10.83                                  | 0.22 | 19                                | 3                                      | 0      | 259                 | 10                    | 169          |

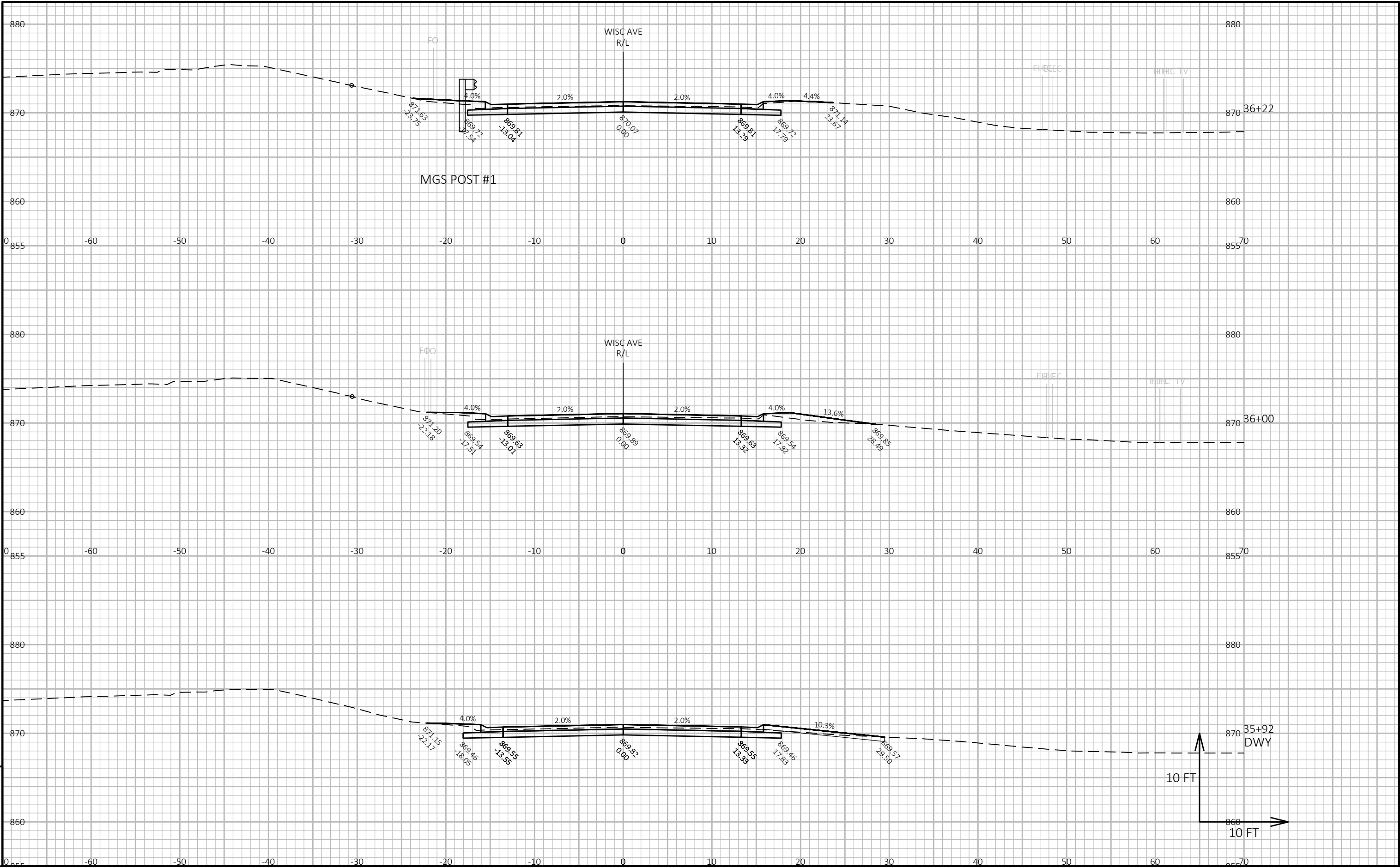
E WISCONSIN AVE - EAST APPROACH

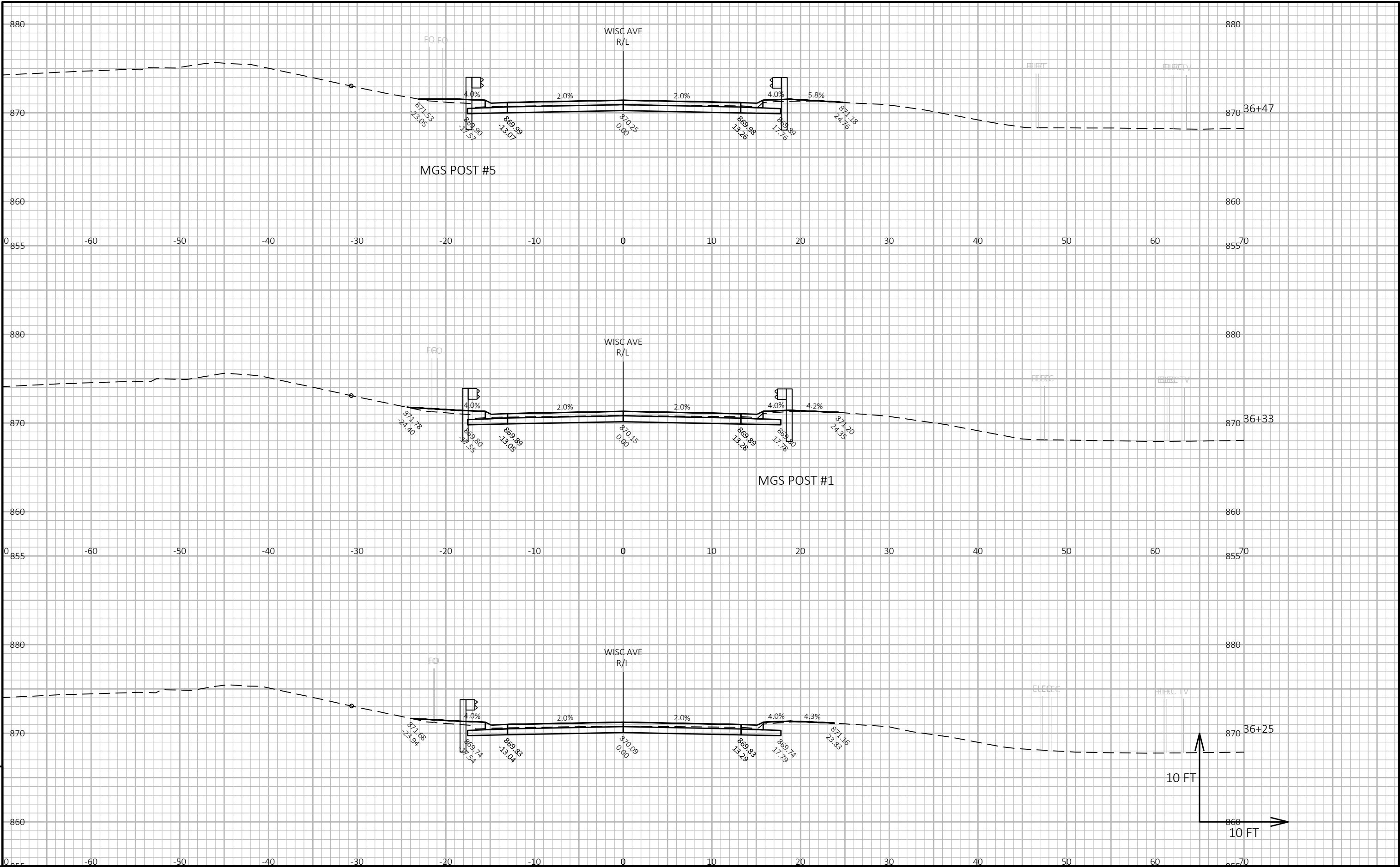
| STATION  | REAL STATION | DISTANCE | AREA (SF) |                                        |      | INCREMENTAL VOL (CY) (UNADJUSTED) |                                        |        | CUMULATIVE VOL (CY) |                       |              |
|----------|--------------|----------|-----------|----------------------------------------|------|-----------------------------------|----------------------------------------|--------|---------------------|-----------------------|--------------|
|          |              |          | CUT       | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL | CUT                               | SALVAGED/UNUSABLE<br>PAVEMENT MATERIAL | FILL   | CUT<br>1.00         | EXPANDED FILL<br>1.25 | MASS ORDNATE |
|          |              |          |           |                                        |      |                                   |                                        |        |                     |                       |              |
|          |              |          |           |                                        |      | NOTE 1                            | NOTE 2                                 | NOTE 3 | NOTE 1              |                       | NOTE 4       |
| 38+26.33 | 3826.33      | 0.00     | 87.86     | 5.00                                   | 1.31 | 0                                 | 0                                      | 0      | 0                   | 0                     | 0            |
| 38+50.00 | 3850.00      | 23.67    | 26.03     | 5.00                                   | 1.69 | 50                                | 4                                      | 1      | 50                  | 1                     | 45           |
| 38+75.00 | 3875.00      | 25.00    | 23.17     | 5.00                                   | 0.54 | 23                                | 5                                      | 1      | 73                  | 3                     | 62           |
| 38+79.39 | 3879.39      | 4.39     | 21.89     | 5.00                                   | 0.78 | 4                                 | 1                                      | 0      | 77                  | 3                     | 65           |
| 39+00.00 | 3900.00      | 20.61    | 17.11     | 5.00                                   | 0.55 | 15                                | 4                                      | 1      | 92                  | 4                     | 74           |
| 39+25.00 | 3925.00      | 25.00    | 18.39     | 5.00                                   | 1.06 | 16                                | 5                                      | 1      | 108                 | 5                     | 84           |
| 39+29.36 | 3929.36      | 4.36     | 19.01     | 5.00                                   | 1.26 | 3                                 | 1                                      | 0      | 111                 | 5                     | 86           |
| 39+50.00 | 3950.00      | 20.64    | 22.60     | 5.00                                   | 0.00 | 16                                | 4                                      | 0      | 127                 | 5                     | 98           |
| 39+75.00 | 3975.00      | 25.00    | 27.51     | 5.00                                   | 0.19 | 23                                | 5                                      | 0      | 150                 | 5                     | 116          |
| 40+00.00 | 4000.00      | 25.00    | 33.12     | 5.00                                   | 0.28 | 28                                | 5                                      | 0      | 178                 | 5                     | 139          |
| 40+20.00 | 4020.00      | 20.00    | 39.14     | 5.00                                   | 0.10 | 27                                | 4                                      | 0      | 205                 | 5                     | 162          |
| 40+25.00 | 4025.00      | 5.00     | 40.93     | 5.00                                   | 0.07 | 7                                 | 1                                      | 0      | 212                 | 5                     | 168          |
| 40+50.00 | 4050.00      | 25.00    | 51.18     | 5.00                                   | 0.00 | 43                                | 5                                      | 0      | 255                 | 5                     | 206          |
| 40+75.00 | 4075.00      | 25.00    | 60.75     | 5.00                                   | 0.00 | 52                                | 5                                      | 0      | 307                 | 5                     | 253          |
| 41+00.00 | 4100.00      | 25.00    | 72.01     | 5.00                                   | 0.00 | 61                                | 5                                      | 0      | 368                 | 5                     | 309          |

| NOTES:                                  |                                                  |
|-----------------------------------------|--------------------------------------------------|
| 1 - CUT                                 | CUT INCLUDES SALVAGED/UNUSABLE PAVEMENT MATERIAL |
| 2 - SALVAGED/UNUSABLE PAVEMENT MATERIAL | THIS DOES NOT SHOW UP IN CROSS SECTIONS          |
| 3 - FILL                                | DOES NOT INCLUDE UNUSABLE PAVEMENT EXC VOLUME    |
| 4 - MASS ORDNATE                        | CUT - SALVAGED PAVT - FILL                       |



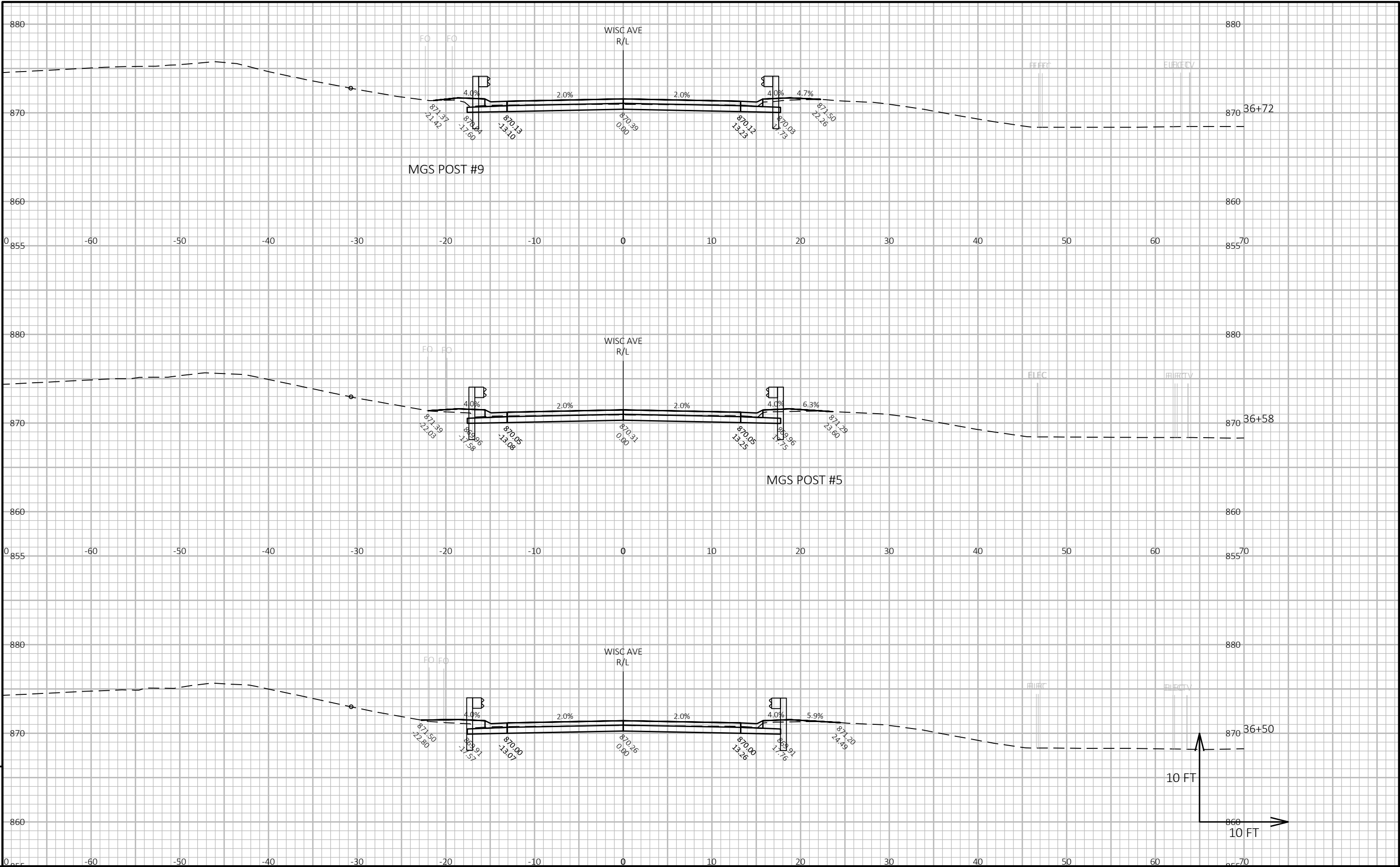




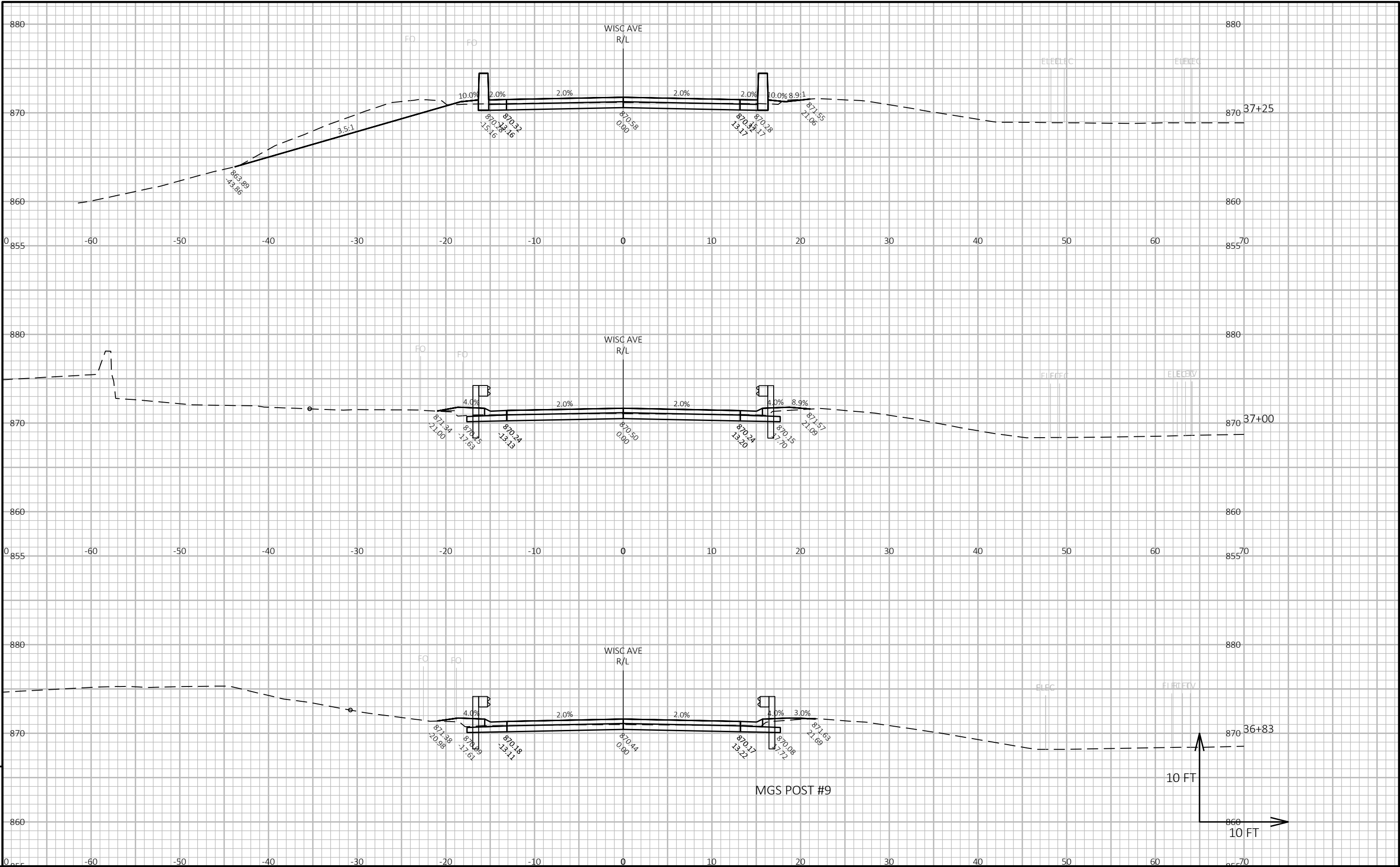


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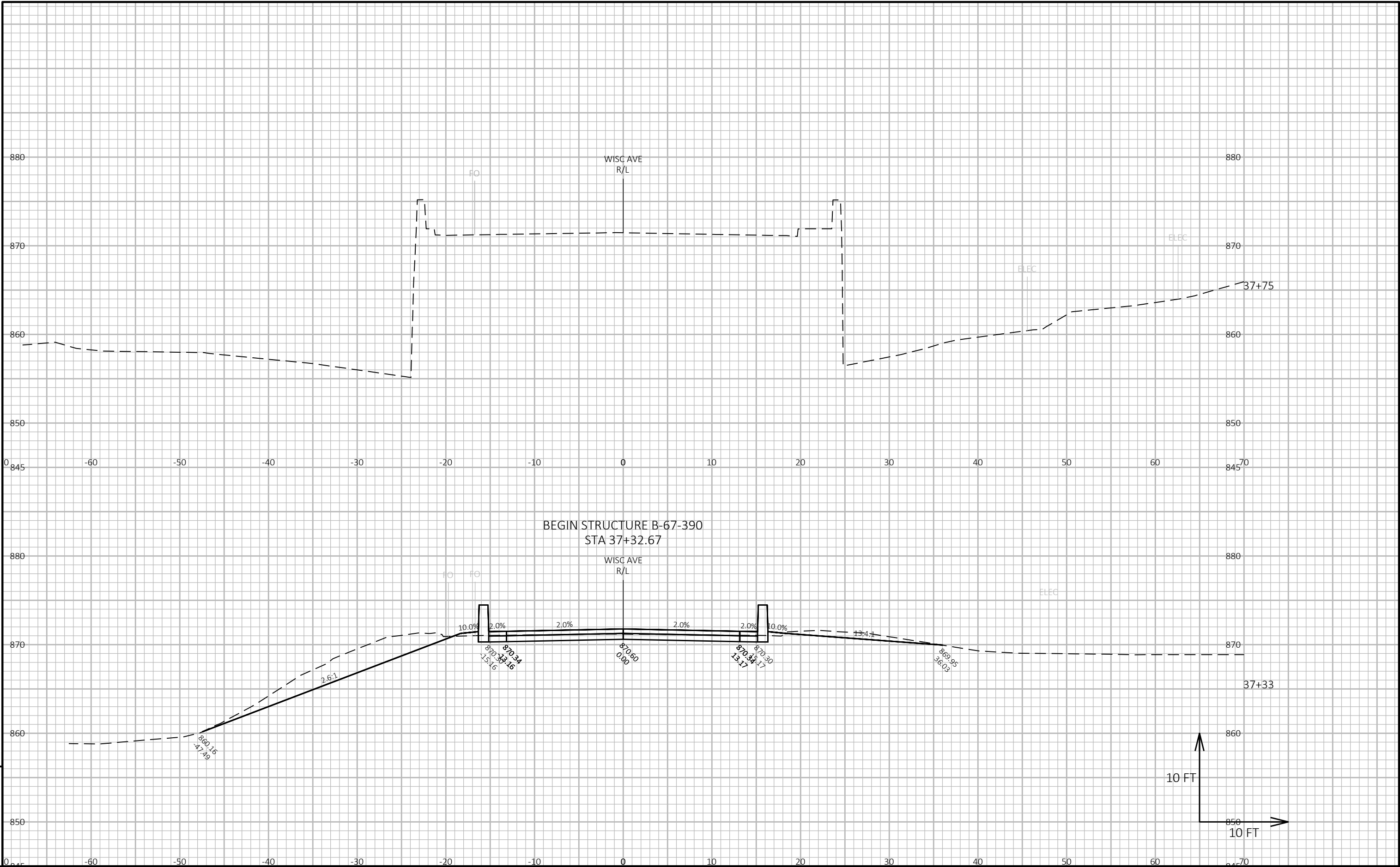




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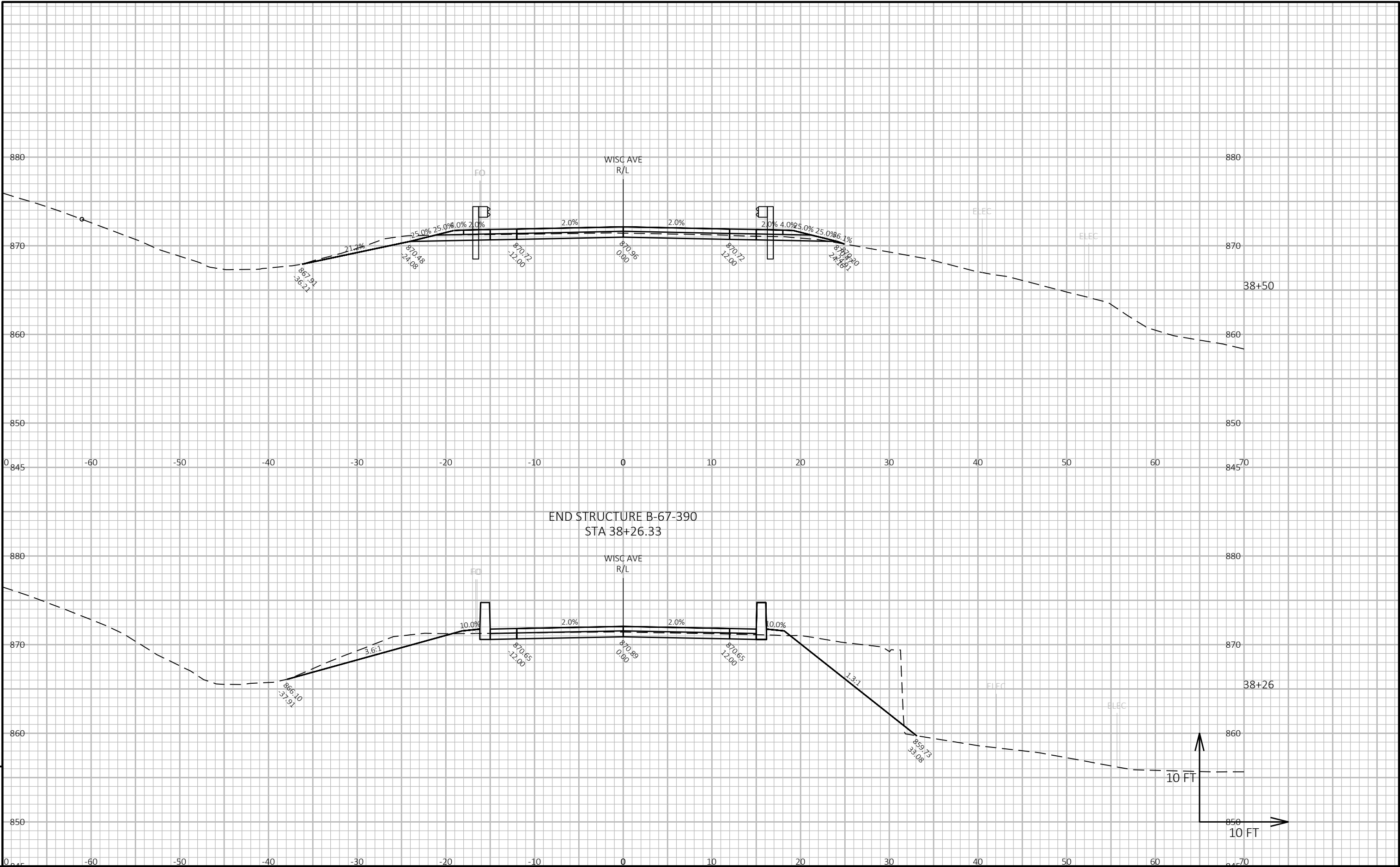
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|                        |                 |                  |                                |           |   |
|------------------------|-----------------|------------------|--------------------------------|-----------|---|
| PROJECT NO: 3310-07-71 | HWY: OFF SYSTEM | COUNTY: WAUKESHA | CROSS SECTIONS: CROSS-SECTIONS | SHEET 122 | E |
|------------------------|-----------------|------------------|--------------------------------|-----------|---|



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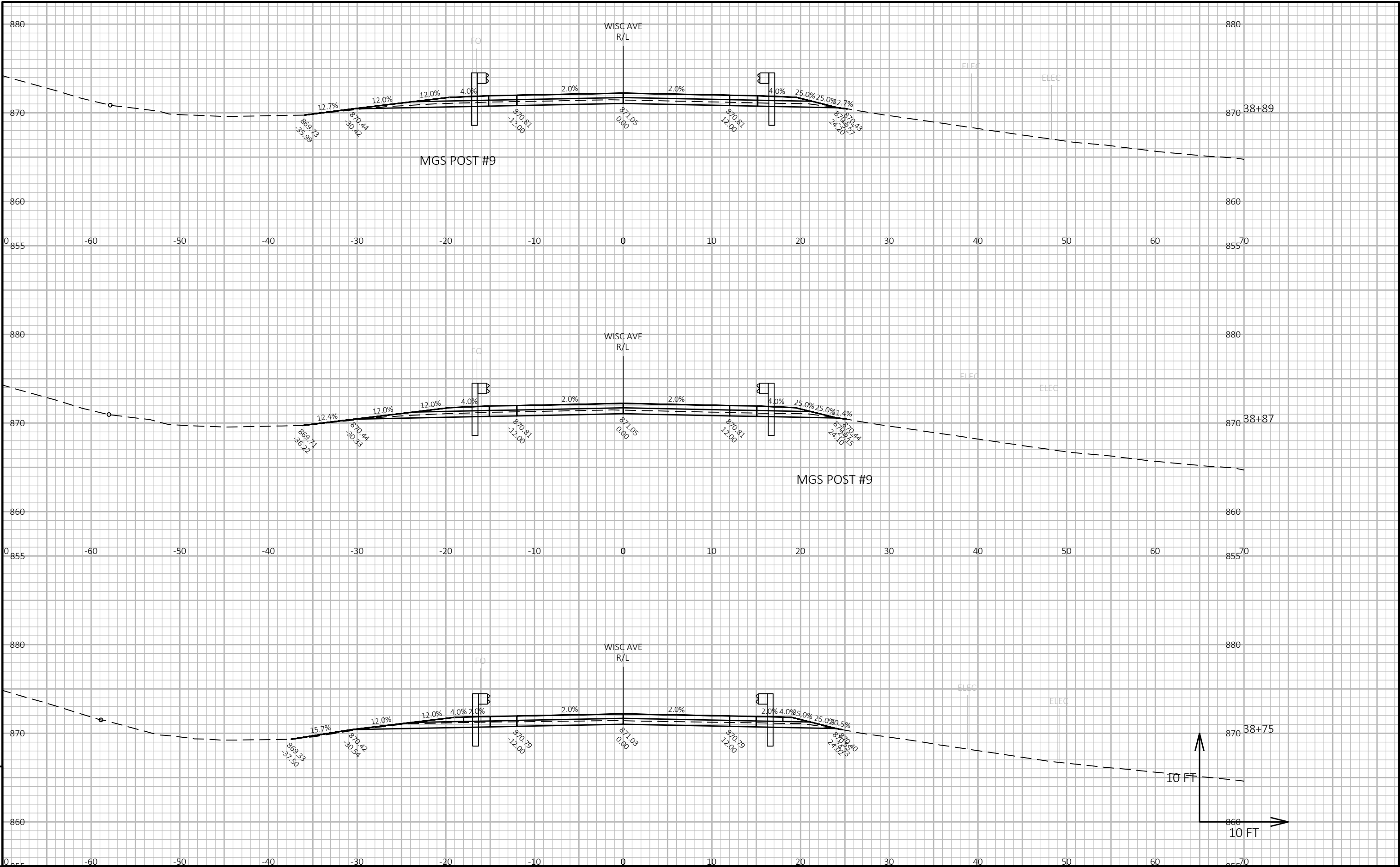


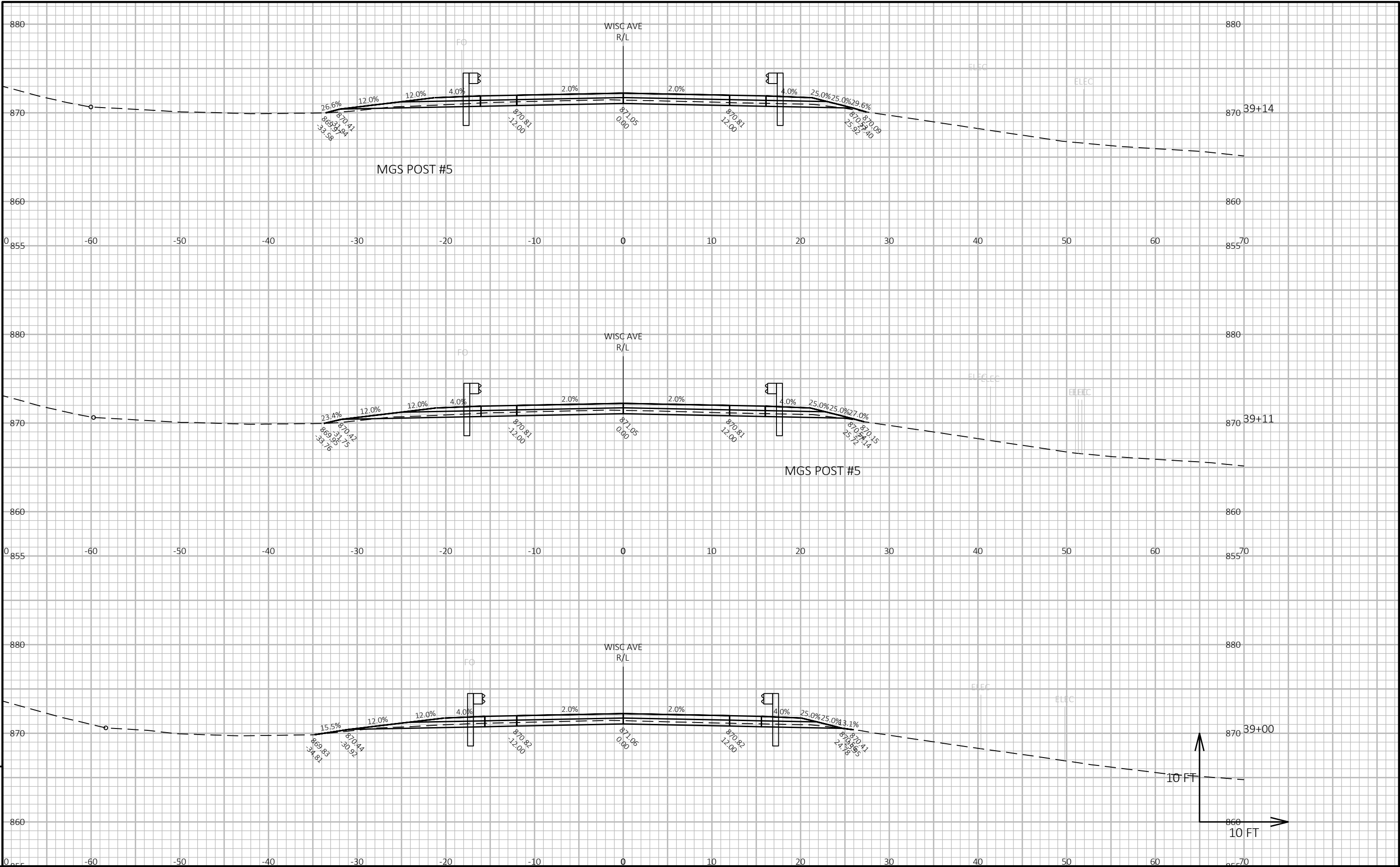
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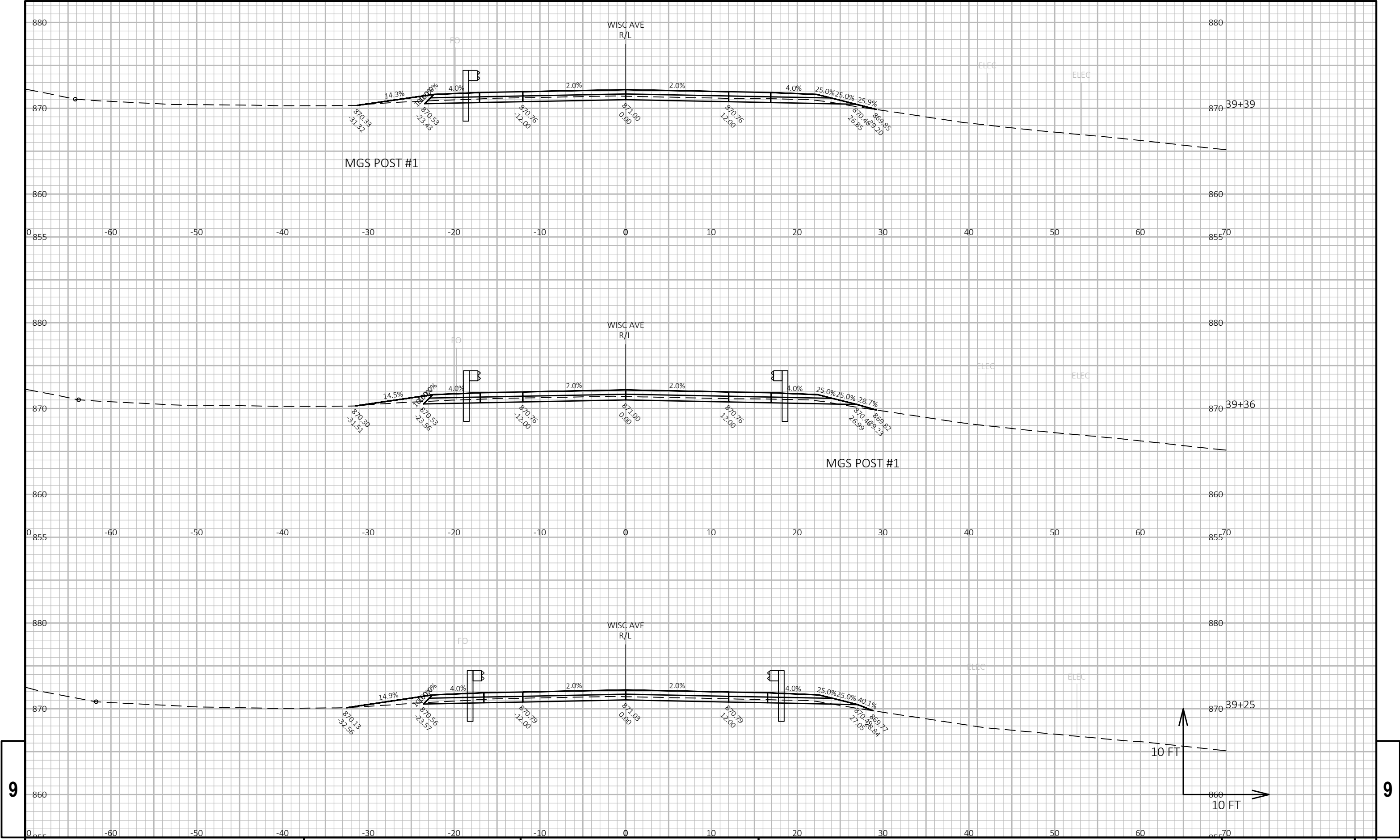
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|                        |                 |                  |                                |           |   |
|------------------------|-----------------|------------------|--------------------------------|-----------|---|
| PROJECT NO: 3310-07-71 | HWY: OFF SYSTEM | COUNTY: WAUKESHA | CROSS SECTIONS: CROSS-SECTIONS | SHEET 124 | E |
|------------------------|-----------------|------------------|--------------------------------|-----------|---|

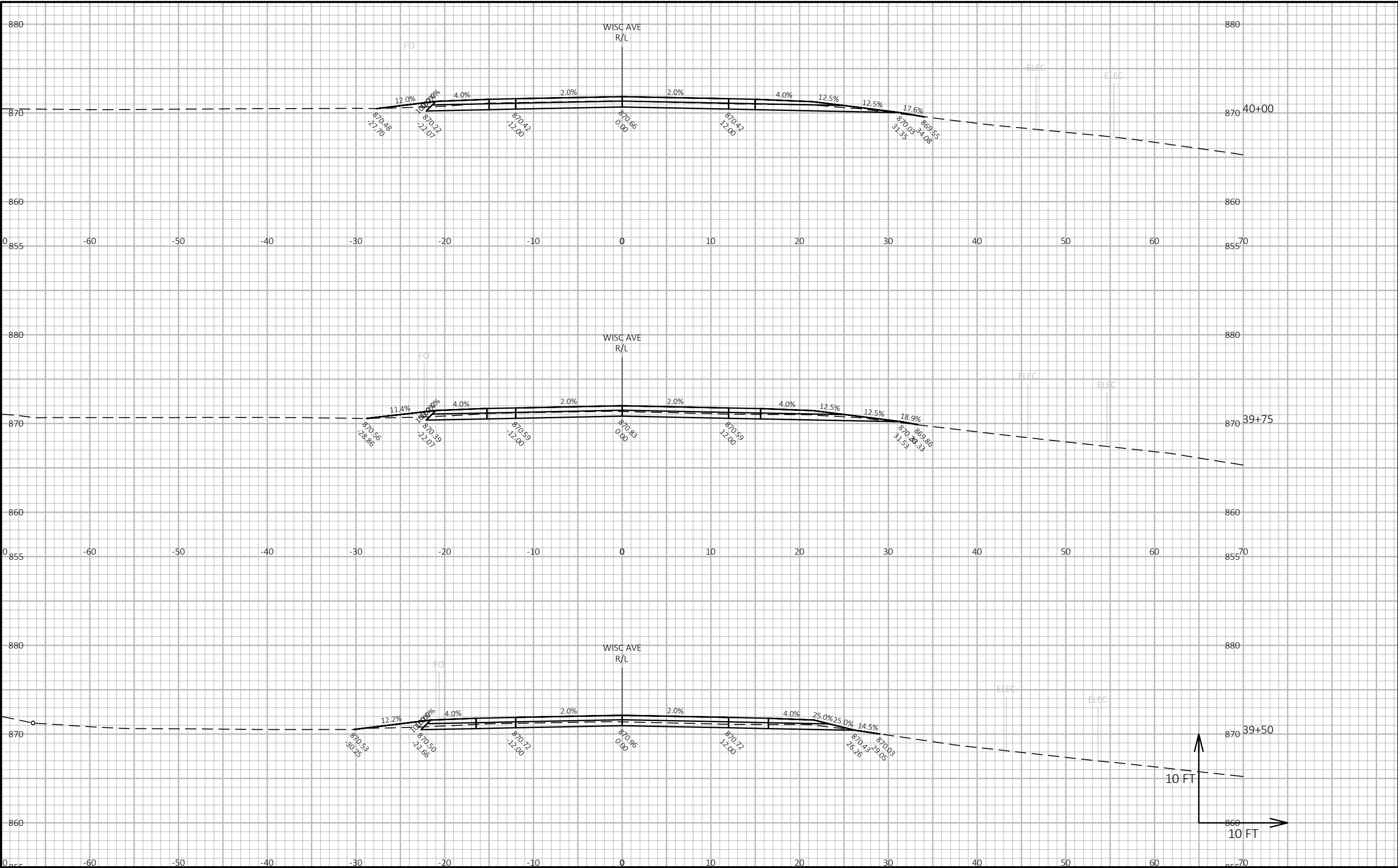


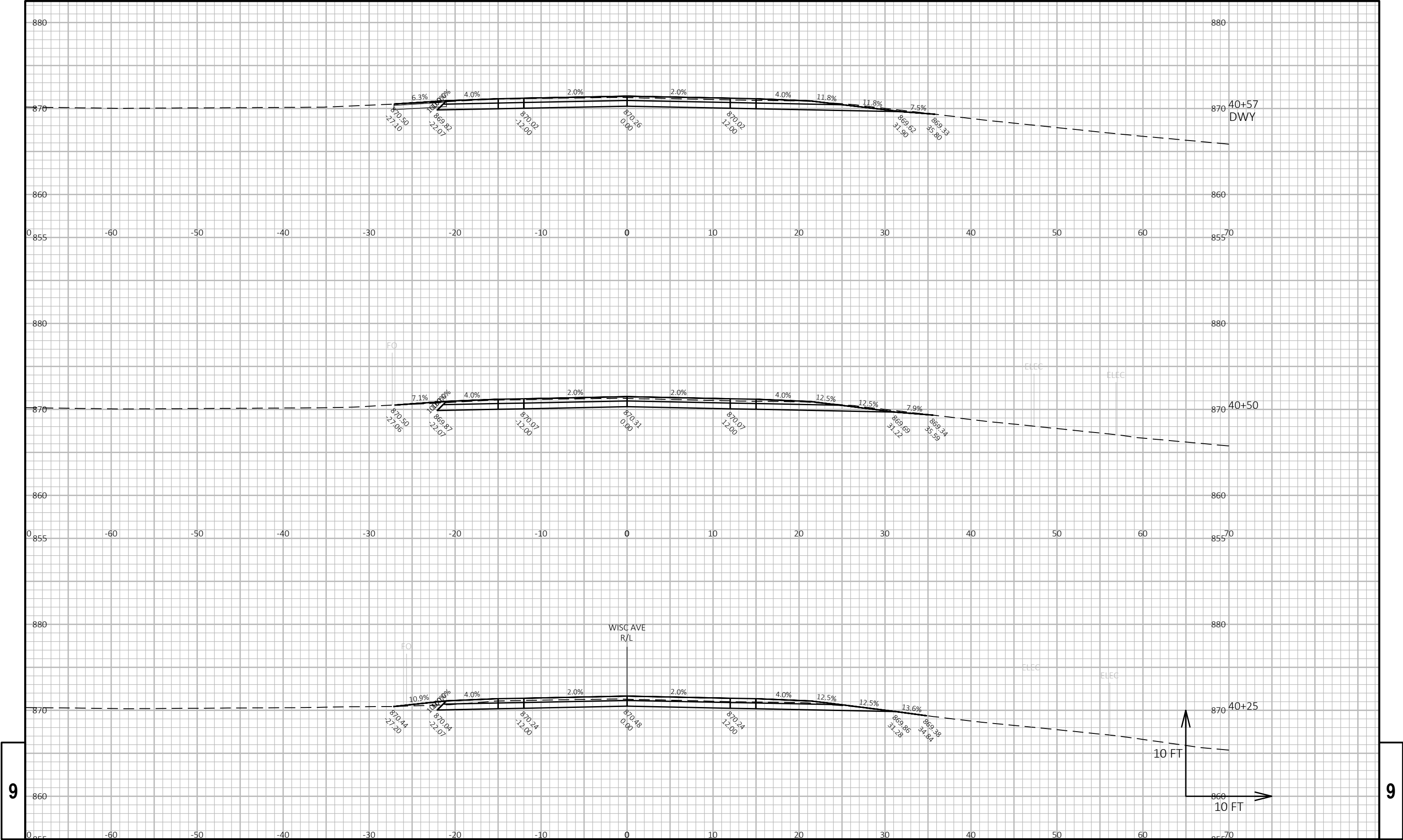






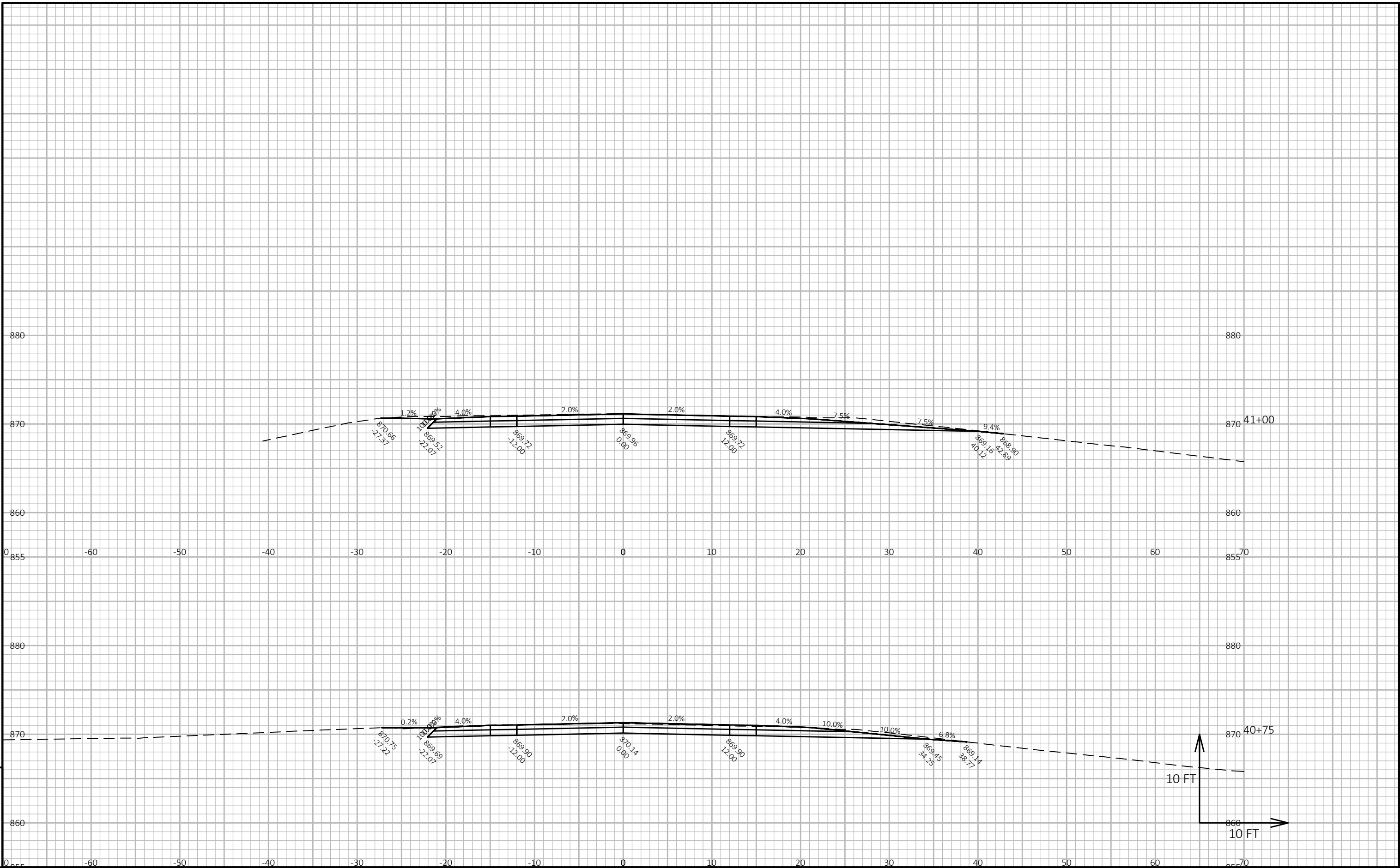






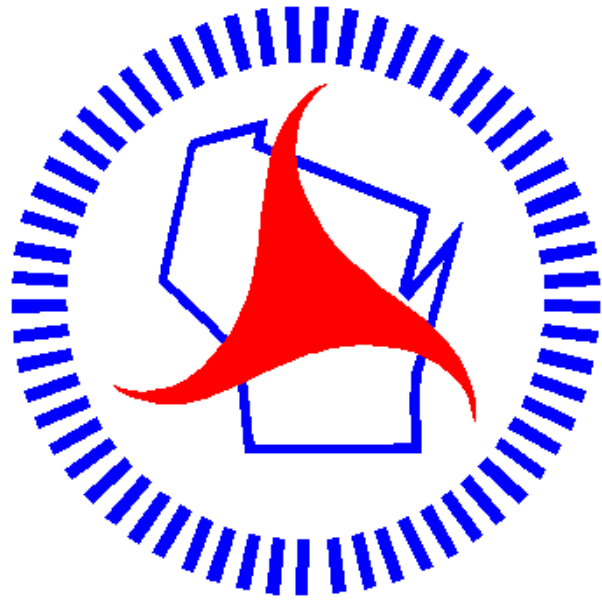
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## Notes



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

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